

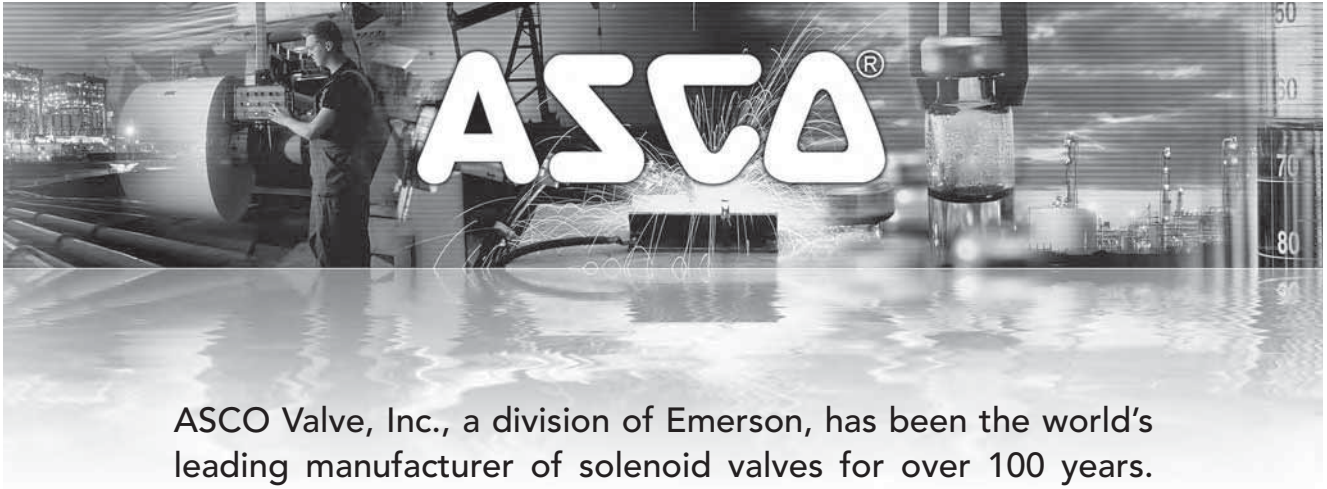
ASCO®

Solenoid Valves
Air Operated Valves
Combustion Products
Accessories



www.ascovalve.com





ASCO Valve, Inc., a division of Emerson, has been the world's leading manufacturer of solenoid valves for over 100 years. ASCO products are designed to control the flow of air, gas, water, oil, and steam. Our heritage of innovation has resulted in an extensive line of ASCO products that range from two position on/off valves to entire flow control solutions. Whether you need a minor modification of a core product or a complete flow control solution, we can help.

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In an effort to continue our company's tradition of addressing our customers' needs, ASCO is proud to offer the ASCO Today program. Over 2000 of today's most popular products are now available for same day shipment. ASCO guarantees† to ship any order received before 3:00 P.M. EST for up to 25 pieces per product or ASCO pays the freight.



As part of our continued drive for customer service, we expanded the ASCO Today program with over 15,000 products that can be shipped within five business days.

† As industry requirements change, ASCO reserves the right to modify the contents of the program parameters without notification. Updates on this program can be obtained from the ASCO website www.ascovalve.com or by calling 800-972-2726, or by contacting your local ASCO representative or distributor and referencing the ASCO Today program.



WARNING

Improper selection or use of products and related items in catalog can cause death, serious injury, or property damage.

This document and other information from ASCO Valve, Inc., its subsidiaries and authorized distributors provide product options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product in the current product catalog. Due to the variety of operating conditions and applications for these products, the user, through analysis and testing, is solely responsible for making the final selection of the products and assuring that all performance, safety, and warning requirements of the application are met.

The product described herein, including but without limitation, product features, specifications, and options are subject to change by ASCO Valve, Inc. and its subsidiaries at any time without notice.

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| 8030 | General Service | 3 | 8266 | Combustion Fuel Oil | 421 | 8360 | Plastic Body | 63 |
| 8030 | Electronically Enhanced | 91 | 8267 | Hot Water/Steam | 247 | 8377 | Combustion Fuel Oil | 431 |
| 8030 | Shielded Core | 269 | 8290 | Air Operated | 207 | 8380 | Direct Mount | 189 |
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| 8040 | General Service | 7 | 8308 | Manual Reset | 163 | 8408 | Intrinsically Safe | 137 |
| 8040 | Combustion Index | 277 | 8310 | Manual Reset | 163 | 8408 | Manual Reset | 171 |
| 8042 | Combustion Fuel Gas | 295 | 8314 | General Service | 39 | 8410 | Manual Reset | 171 |
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| 8044 | Combustion Specialty | 439 | 8314 | Intrinsically Safe | 137 | 8551 | General Service RH II (3/2) | 67 |
| 8047 | Manual Reset | 171 | 8314 | Non-Incendive Field Wiring | 123 | 8551 | Direct Mount Inline | 195 |
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| 8203 | Proportional Valves | 261 | 8316 | Air and Water | 43 | 8551, 8553 | Non-Incendive Field Wiring | 123 |
| 8210 | General Service | 11 | 8316 | Electronically Enhanced | 91 | 8551, 8553 | Low Power | 109 |
| 8210 | Electronically Enhanced | 91 | 8316 | Intrinsically Safe | 137 | 8553 | General Service Inline (5/2) | 87 |
| 8210 | Cryogenic and Liquid CO2 | 229 | 8316 | Non-Incendive Field Wiring | 123 | 8553 | General Service RH II (5/2) | 89 |
| 8210 | Hot Water and Steam | 247 | 8316 | Long Life | 257 | 8553 | Direct Mount Inline | 195 |
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| 8210 | Combustion Index | 277 | 8317 | General Service | 49 | 8908 | Electronic Control Unit | 265 |
| 8214 | Combustion Index | 277 | 8317 | Electronically Enhanced | 91 | 125468 to 125847 | Dust Collector | 245 |
| 8215 | General Service | 7 | 8317 | Harsh Environment | 155 | 272839-001 | Electronic Timer | 467 |
| 8215 | Long Life | 257 | 8317 | Intrinsically Safe | 137 | 342 | Filter, Regulator, Lubricator | 469 |
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| 8221 | Hot Water and Steam | 247 | 8320 | Direct Mount | 185 | Control Panel | Combustion Specialty | 449 |
| 8222 | Cryogenic and Liquid CO2 | 229 | 8320 | Dribble Control | 203 | F210 to F444 | Air Operated | 217 |
| 8222 | Hot Water and Steam | 247 | 8320 | Electronically Enhanced | 91 | H117 | Combustion Fuel Gas | 367 |
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| 8223 | Electronically Enhanced | 91 | 8320 | Long Life | 257 | H137 | Combustion Fuel Gas | 375 |
| 8223 | Intrinsically Safe | 137 | 8321 | General Service | 49 | H0V1 | Combustion Fuel Oil | 425 |
| 8223 | Non-Incendive Field Wiring | 123 | 8321 | Electronically Enhanced | 91 | H0V13 | Combustion Fuel Oil | 435 |
| 8223 | Low Power | 109 | 8321 | Harsh Environment | 155 | HV216 | Combustion Specialty | 445 |
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| 8256 | Combustion Index | 277 | 8327 | Direct Mount | 187 | K3A4 | Combustion Fuel Gas | 383 |
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| 8260 | Plastic Body | 25 | 8329 | Solenoid Operator | 457 | K3A6 | Combustion Fuel Gas | 391 |
| 8260 | Shielded Core | 269 | 8340 | General Service | 71 | K3A7 | Combustion Fuel Gas | 395 |
| 8262 | General Service | 29 | 8342 | General Service | 75 | LP Gas Sys. | Combustion Specialty | 451 |
| 8262 | Cryogenic and Liquid CO2 | 229 | 8342 | Direct Mount | 193 | S261 | Combustion Fuel Gas | 399 |
| 8262 | Dust Collector | 241 | 8344 | General Service | 77 | S262 | Combustion Fuel Gas | 403 |
| 8262 | Electronically Enhanced | 91 | 8344 | Electronically Enhanced | 91 | SV311 | Combustion Index | 407 |
| 8262 | Intrinsically Safe | 137 | 8344 | Intrinsically Safe | 137 | SV401 | Combustion Fuel Oil | 411 |
| 8262 | Non-Incendive Field Wiring | 123 | 8344 | Non-Incendive Field Wiring | 123 | P210 to P444 | Air Operated | 217 |
| 8262 | Long Life | 257 | 8344 | Long Life | 257 | V012 | Check Valves | 465 |
| 8262 | Low Power | 109 | 8344 | Low Power | 109 | V022 | Flow Control | 459 |
| 8262 | Vacuum | 273 | 8345 | General Service | 81 | V043 | Quick Exhaust | 463 |
| 8262 | Combustion Index | 277 | 8345 | Intrinsically Safe | 137 | V710 | Combustion Fuel Gas | 363 |
| 8263 | Cryogenic and Liquid CO2 | 229 | 8345 | Long Life | 257 | HV-264-153 | Low Power | 109 |
| 8263 | Electronically Enhanced | 91 | 8345 | Non-Incendive Field Wiring | 123 | HV-264-153 | Manual Reset | 179 |
| 8263 | Hot Water and Steam | 247 | 8345 | Low Power | 109 | | | |



This catalog is designed to make it easier to select and order the right valve for your application from the world's leading manufacturer of solenoid and air operated valves.

To assist in selecting the proper valve for your application, we recommend two approaches. First, if you know the valve series that meets your needs, you can go directly to the appropriate page as listed in the Numerical Listing, or the Main Index. If you do not know the proper valve Series, please refer to the Condensed Listing, which provides an overview of key specifications for all General Service valves included in this catalog. This listing is organized by valve type and operation, then indexed by pipe size, flow factor, and other vital specifications.

If you are unable to locate the desired valve in the Condensed Listing, refer to the individual valve series in the main catalog for a more complete listing.

In order to select a valve, you will need the following application information:

- Valve Type** 2-Way, 3-Way, 4-Way
- Operation** Normally Open, Normally Closed, Universal
- Pipe Size** Pipe size or flow requirement
- Media** Fluid to be controlled
- Pressure** Minimum and maximum operating pressure
- Temperature** Minimum and maximum fluid and ambient temperature (if unusual, contact technical support)
- Voltage** Voltage and frequency to be used
- Extras** Special seals, special seats, brackets, etc.

Once you have determined the above application information, the next steps can navigate you to the appropriate valve in this catalog:

Turn to the Condensed Listing section relevant to the **VALVE TYPE** and **OPERATION** you are looking for (Example: 2-Way, Normally Closed).

Locate the family of valves corresponding to the **PIPE SIZE** of the valve desired (Example: 1/8").

Select the applicable **MEDIA** and relevant **PRESSURE** rating in the "Operating Pressure Differential" column for AC or DC, respectively (Example: 300 psi for water, maximum AC).

If the field of possible valves has not been narrowed to one valve at this point, the Cv Flow Factor, Orifice Size, Maximum Fluid Temperature, or Watt Rating (power consumption) may then be used as additional deciding factors.

After the proper valve Catalog Number has been identified, refer to the "Page No." column to find more specifications on any given valve Series (Example: 8210 Series).

After you have made your selection, order by catalog number with its appropriate prefix or suffix, voltage and frequency. If necessary, include fluid handled, and the operating pressure of your application. We strongly recommend ordering strainers for your valves.

Example:

For an 8210G002 valve with an Explosionproof enclosure to control 100 psi air in a hazardous area, order:

Option Prefix and Catalog Number: EF8210G002

Voltage and

Frequency: 120/60

Fluid: Air

Pressure: 100 psi

Note that Type 7 Explosionproof enclosures do not require a different catalog number. Simply add the prefix "EF."



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ASCO's sales and service organization is staffed by factory-trained sales engineers. They are highly qualified to verify that your selection is best for your application or to help with your selection. They can also help customize an ASCO valve to meet unique application requirements or help you contact your local Authorized Valve Distributor.

For additional technical assistance, contact technical support by calling (973) 966-2082 or email Techsales@asco.com. The Technical Support Group is available to assist in all aspects of your application or product related matters.

Visit us online at www.ascovalve.com to see our comprehensive product portfolio, online product configurators, and our complete listing of ASCO Today and 5Day products.

Condensed Listing

General Service Valves



2-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① |
|---|---------------------|----------------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|---------------------|-----|----------------|---------------|--|--------|------------|
| | | | Min | Maximum AC | | | Maximum DC | | | AC | DC | | | AC | DC | |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | 0.05 | 0 | 500 | 500 | 400 | 360 | 360 | 330 | 180 | 180 | U8256A001V | BRASS | 6.3/F | 6.9/F | 23 |
| 1/8 | 3/64 | 0.05 | 0 | 500 | 500 | 400 | 360 | 360 | 330 | 180 | 180 | U8256A013V | SS | 6.3/F | 6.9/F | 23 |
| 1/8 | 3/64 | 0.06 | 0 | 750 | 750 | 530 | 650 | 640 | 550 | 180 | 120 | 8262G001* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/8 | 3/64 | 0.06 | 0 | 750 | 750 | 530 | 650 | 640 | 550 | 180 | 120 | 8262G012 | SS | 6.1/F | 10.6/F | 29 |
| 1/8 | 1/16 | 0.08 | 0 | 400 | 390 | 230 | 220 | 220 | 220 | 180 | 180 | U8256A002V* | BRASS | 6.3/F | 6.9/F | 23 |
| 1/8 | 1/16 | 0.08 | 0 | 400 | 390 | 230 | 220 | 220 | 220 | 180 | 180 | U8256A014V | SS | 6.3/F | 6.9/F | 23 |
| 1/8 | 3/32 | 0.15 | 0 | 180 | 180 | 105 | 90 | 90 | 90 | 180 | 180 | U8256A004V | BRASS | 6.3/F | 6.9/F | 23 |
| 1/8 | 3/32 | 0.15 | 0 | 180 | 180 | 105 | 90 | 90 | 90 | 180 | 180 | U8256A016V | SS | 6.3/F | 6.9/F | 23 |
| 1/8 | 3/32 | 0.2 | 0 | 275 | 290 | 130 | 150 | 140 | 145 | 180 | 120 | 8262G014* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/8 | 3/32 | 0.2 | 0 | 275 | 290 | 130 | 150 | 140 | 145 | 180 | 120 | 8262G015 | SS | 6.1/F | 10.6/F | 29 |
| 1/8 | 7/64 | 0.19 | 0 | 135 | 126 | 80 | 63 | 63 | 63 | 180 | 180 | U8256B045V* | BRASS | 6.3/F | 6.9/F | 23 |
| 1/8 | 7/64 | 0.19 | 0 | 135 | 126 | 80 | 63 | 63 | 63 | 180 | 180 | U8256B046V* | SS | 6.3/F | 6.9/F | 23 |
| 1/8 | 1/8 | 0.34 | 0 | 155 | 180 | 140 | 80 | 80 | 80 | 180 | 120 | 8262G002* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/8 | 1/8 | 0.34 | 0 | 155 | 180 | 140 | 80 | 80 | 80 | 180 | 120 | 8262G006* | SS | 6.1/F | 10.6/F | 29 |
| 1/8 | 5/16 | 1 | 0 | 15 | - | - | - | - | - | 125 | - | 8040H006* | ALUM | 6.1/F | - | 7 |
| 1/4 | 3/64 | 0.06 | 0 | 750 | 750 | 500 | 500 | 500 | 500 | 180 | 120 | 8262G019* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/4 | 3/64 | 0.06 | 0 | 750 | 750 | 500 | 500 | 500 | 500 | 180 | 120 | 8262G080* | SS | 6.1/F | 10.6/F | 29 |
| 1/4 | 3/64 | 0.06 | 0 | 1500 | 1500 | 1100 | 475 | 475 | 450 | 140 | 140 | 8262G200* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 3/64 | 0.06 | 0 | 2200 | 2000 | 1100 | - | - | - | 140 | 140 | 8262G214* | SS | 10.1/F | - | 29 |
| 1/4 | 3/32 | 0.17 | 0 | 360 | 340 | 160 | 150 | 125 | 125 | 180 | 120 | 8262G020* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/4 | 3/32 | 0.17 | 0 | 360 | 340 | 160 | 150 | 125 | 125 | 180 | 120 | 8262G086* | SS | 6.1/F | 10.6/F | 29 |
| 1/4 | 1/8 | 0.35 | 0 | 140 | 165 | 90 | 65 | 60 | 60 | 180 | 120 | 8262G022* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/4 | 1/8 | 0.35 | 0 | 140 | 165 | 90 | 65 | 60 | 60 | 180 | 120 | 8262G007* | SS | 6.1/F | 10.6/F | 29 |
| 1/4 | 1/8 | 0.35 | 0 | 300 | 300 | 200 | 75 | 70 | 70 | 180 | 150 | 8262G232* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 9/64 | 0.35 | 0 | 120 | 120 | - | 50 | 50 | - | 130 | 120 | 8260G071* | PLAST | 6.1/F | 10.6/F | 25 |
| 1/4 | 9/64 | 0.35 | 0 | 120 | 120 | - | 50 | 50 | - | 130 | 120 | 8260G054* | PLAST | 6.1/F | 10.6/F | 25 |
| 1/4 | 9/64 | 0.35 | 0 | 120 | 120 | - | 50 | 50 | - | 130 | 120 | 8260G042 | PLAST | 6.1/F | 10.6/F | 25 |
| 1/4 | 5/32 | 0.5 | 0 | 180 | 200 | 145 | 40 | 40 | 45 | 180 | 150 | 8262G202* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 5/32 | 0.5 | 0 | 180 | 200 | 145 | 40 | 40 | 45 | 180 | 150 | 8262G220* | SS | 10.1/F | 11.6/F | 29 |
| 1/4 | 7/32 | 0.72 | 0 | 90 | 100 | 100 | 25 | 25 | 25 | 180 | 150 | 8262G208* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 7/32 | 0.72 | 0 | 90 | 100 | 100 | 25 | 25 | 25 | 180 | 150 | 8262G226* | SS | 10.1/F | 11.6/F | 29 |
| 1/4 | 7/32 | 0.85 | 0 | 40 | 50 | 40 | 17 | 20 | 21 | 180 | 120 | 8262G013* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/4 | 7/32 | 0.85 | 0 | 40 | 50 | 40 | 17 | 20 | 21 | 180 | 120 | 8262G036* | SS | 6.1/F | 10.6/F | 29 |
| 1/4 | 9/32 | 0.88 | 0 | 60 | 75 | 60 | 18 | 15 | 18 | 180 | 150 | 8262G210* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 9/32 | 0.88 | 0 | 90 | 100 | 90 | 25 | 20 | 22 | 180 | 150 | 8262G212* | BRASS | 17.1/F | 22.6/F | 29 |
| 1/4 | 9/32 | 0.88 | 0 | 90 | 100 | 90 | 25 | 20 | 22 | 180 | 150 | 8262G230* | SS | 17.1/F | 22.6/F | 29 |
| 1/4 | 9/32 | 0.96 | 0 | 27 | 36 | 28 | 15 | 16 | 16 | 180 | 120 | 8262G090* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/4 | 9/32 | 0.96 | 0 | 27 | 36 | 28 | 15 | 16 | 16 | 180 | 120 | 8262G038* | SS | 6.1/F | 10.6/F | 29 |
| 1/4 | 5/16 | 1.5 | 10 | 750 | 750 | 750 | - | - | - | 200 | - | 8223G021* | BRASS | 10.1/F | - | 21 |
| 1/4 | 5/16 | 1.5 | 10 | 1500 | 1500 | 1500 | 500 | 500 | 500 | 200 | 150 | 8223G025* | BRASS | 17.1/F | 22.6/F | 21 |
| 1/4 | 5/16 | 1.1 | 0 | 15 | - | - | - | - | - | 125 | - | 8040H007* | ALUM | 6.1/F | - | 7 |
| 3/8 | 1/8 | 0.35 | 0 | 160 | 150 | 90 | 65 | 60 | 60 | 180 | 120 | 8263G002* | BRASS | 6.1/F | 10.6/F | 29 |
| 3/8 | 1/8 | 0.35 | 0 | 160 | 150 | 90 | 65 | 60 | 60 | 180 | 120 | 8263G330* | SS | 6.1/F | 10.6/F | 29 |
| 3/8 | 5/32 | 0.52 | 0 | 100 | 100 | 100 | 35 | 35 | 35 | 180 | 150 | 8263G200* | BRASS | 10.1/F | 11.6/F | 29 |
| 3/8 | 5/32 | 0.52 | 0 | 100 | 100 | 100 | 35 | 35 | 35 | 180 | 150 | 8263G331* | SS | 10.1/F | 11.6/F | 29 |
| 3/8 | 7/32 | 0.72 | 0 | 100 | 100 | 100 | 25 | 25 | 25 | 180 | 150 | 8263G206* | BRASS | 17.1/F | 11.6/F | 29 |
| 3/8 | 7/32 | 0.72 | 0 | 100 | 100 | 100 | 25 | 25 | 25 | 180 | 150 | 8263G332 | SS | 17.1/F | 11.6/F | 29 |
| 3/8 | 9/32 | 0.85 | 0 | 100 | 100 | 70 | - | - | - | 180 | - | 8263G210* | BRASS | 17.1/F | - | 29 |
| 3/8 | 9/32 | 0.85 | 0 | 100 | 100 | 70 | - | - | - | 180 | - | 8263G333* | SS | 17.1/F | - | 29 |
| 3/8 | 5/16 | 1.5 | 10 | 750 | 750 | 750 | 400 | 400 | 400 | 200 | 150 | 8223G023* | BRASS | 10.1/F | 22.6/F | 21 |
| 3/8 | 5/16 | 1.5 | 10 | 1500 | 1500 | 1500 | 500 | 500 | 500 | 200 | 150 | 8223G027* | BRASS | 17.1/F | 22.6/F | 21 |
| 3/8 | 5/16 | 1.2 | 0 | 15 | - | - | - | - | - | 125 | - | 8040H008* | ALUM | 6.1/F | - | 7 |
| 3/8 | 3/8 | 1.5 | ② | 150 | 125 | - | 40 | 40 | - | 180 | 150 | 8210G073* | BRASS | 6.1/F | 11.6/F | 11 |
| 3/8 | 3/8 | 1.5 | ② | 150 | 125 | - | 40 | 40 | - | 180 | 150 | 8210G036* | SS | 6.1/F | 11.6/F | 11 |
| 3/8 | 3/8 | 1.8 | 0 | 7 | 5 | - | 3 | 3 | - | 180 | 120 | 8030G010* | BRASS | 6.1/F | 10.6/F | 3 |
| 3/8 | 3/8 | 1.8 | 0 | 7 | 5 | - | 3 | 3 | - | 180 | 120 | 8030G064 | SS | 6.1/F | 10.6/F | 3 |
| 3/8 | 3/8 | 1.8 | 0 | 15 | 15 | - | 3.5 | 3.5 | - | 180 | 150 | 8030G013* | BRASS | 10.1/F | 11.6/F | 3 |
| 3/8 | 3/8 | 1.8 | 0 | 15 | 15 | - | 3.5 | 3.5 | - | 180 | 150 | 8030G065* | SS | 10.1/F | 11.6/F | 3 |
| 3/8 | 9/16 | 3 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G001* | BRASS | 6.1/F | 11.6/F | 17 |
| 3/8 | 5/8 | 3 | 0 | 150 | 150 | - | 40 | 40 | - | 180 | 150 | 8210G093* | BRASS | 10.1/F | 11.6/F | 11 |
| 3/8 | 5/8 | 3 | 5 | 200 | 150 | 135 | 125 | 100 | 100 | 180 | 150 | 8210G001* | BRASS | 6.1/F | 11.6/F | 11 |
| 3/8 | 5/8 | 3 | 5 | 300 | 300 | 300 | - | - | - | 175 | - | 8210G006* | BRASS | 17.1/F | - | 11 |
| 3/8 | 3/4 | 3.4 | 0 | 50 | - | - | 25 | - | - | 125 | 104 | 8215G010* | ALUM | 10.1/F | 11.6/F | 7 |

① See specific valve series for detailed specifications. ② 5 psi on air, 1 psi on water. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.





Condensed Listing

General Service Valves

2-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① |
|---|---------------------|----------------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|---------------------|------|----------------|---------------|--|--------|------------|
| | | | Min | Maximum AC | | | Maximum DC | | | AC | DC | | | AC | DC | |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| 3/8 | 3/4 | 3.5 | 5 | 125 | - | - | 125 | 125 | 104 | 8215G001* | ALUM | 6.1/F | 11.6/F | 7 | | |
| 1/2 | 3/8 | 3.2 | 25 | 1500 | 1500 | 1500 | 500 | 500 | 500 | 200 | 150 | 8223G003* | BRASS | 17.1/F | 22.6/F | 21 |
| 1/2 | 3/8 | 3.2 | 25 | 1500 | 1500 | 1500 | 500 | 500 | 500 | 200 | 150 | 8223G010* | SS | 17.1/F | 22.6/F | 21 |
| 1/2 | 7/16 | 2.2 | ② | 150 | 125 | - | 40 | 40 | - | 180 | 150 | 8210G015* | BRASS | 6.1/F | 11.6/F | 11 |
| 1/2 | 7/16 | 2.2 | ② | 150 | 125 | - | 40 | 40 | - | 180 | 150 | 8210G037* | SS | 6.1/F | 11.6/F | 11 |
| 1/2 | 7/16 | 2.8 | 0 | 4 | 6 | - | - | - | - | 180 | - | 8030G016* | BRASS | 6.1/F | - | 3 |
| 1/2 | 7/16 | 2.8 | 0 | 4 | 6 | - | - | - | - | 180 | - | 8030G066* | SS | 6.1/F | - | 3 |
| 1/2 | 7/16 | 2.8 | 0 | 15 | 15 | - | - | - | - | 200 | - | 8030G017* | BRASS | 16.1/F | - | 3 |
| 1/2 | 7/16 | 2.8 | 0 | 15 | 15 | - | - | - | - | 200 | - | 8030G067 | SS | 16.1/F | - | 3 |
| 1/2 | 9/16 | 3.5 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G003* | BRASS | 6.1/F | 11.6/F | 17 |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | - | 40 | 40 | - | 180 | 150 | 8210G094* | BRASS | 10.1/F | 11.6/F | 11 |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | 125 | 40 | 40 | - | 175 | 150 | 8210G087* | SS | 17.1/F | 11.6/F | 11 |
| 1/2 | 5/8 | 4 | 5 | 200 | 150 | 135 | 125 | 100 | 100 | 180 | 150 | 8210G002* | BRASS | 6.1/F | 11.6/F | 11 |
| 1/2 | 5/8 | 4 | 5 | 300 | 300 | 300 | - | - | - | 175 | - | 8210G007* | BRASS | 17.1/F | - | 11 |
| 1/2 | 3/4 | 4 | 5 | - | 300 | - | - | 300 | - | 180 | 125 | 8210G227* | BRASS | 17.1/F | 40.6/H | 11 |
| 1/2 | 3/4 | 4.4 | 0 | 50 | - | - | 25 | - | - | 125 | 104 | 8215G020* | ALUM | 10.1/F | 11.6/F | 7 |
| 1/2 | 3/4 | 4.8 | 5 | 125 | - | - | 125 | - | - | 125 | 104 | 8215G002* | ALUM | 6.1/F | 11.6/F | 7 |
| 1/2 | 3/4 | 5.4 | 0 | 2 | - | - | - | - | - | 125 | - | 8040G022* | ALUM | 10.1/F | - | 7 |
| 3/4 | 5/8 | 4.5 | 0 | 150 | 150 | 125 | 40 | 40 | - | 175 | 150 | 8210G088* | SS | 17.1/F | 11.6/F | 11 |
| 3/4 | 5/8 | 5.4 | 0 | 2.5 | 2.5 | - | - | - | - | 180 | - | 8030G063 | SS | 10.1/F | - | 3 |
| 3/4 | 3/4 | 5 | 0 | 2 | 2 | - | 1 | 1 | - | 180 | 150 | 8030G003* | BRASS | 10.1/F | 11.6/F | 3 |
| 3/4 | 3/4 | 5 | 0 | 4 | 4 | - | - | - | - | 180 | - | 8030G043* | BRASS | 17.1/F | - | 3 |
| 3/4 | 3/4 | 5 | 0 | 150 | 150 | - | 40 | 40 | - | 180 | 150 | 8210G095* | BRASS | 10.1/F | 11.6/F | 11 |
| 3/4 | 3/4 | 5 | 5 | 125 | 125 | 125 | 100 | 90 | 75 | 180 | 150 | 8210G009* | BRASS | 6.1/F | 11.6/F | 11 |
| 3/4 | 3/4 | 5.1 | 0 | 50 | - | - | 25 | - | - | 125 | 104 | 8215G030* | ALUM | 10.1/F | 11.6/F | 7 |
| 3/4 | 3/4 | 5.1 | 5 | 125 | - | - | 125 | - | - | 125 | 104 | 8215G003* | ALUM | 6.1/F | 11.6/F | 7 |
| 3/4 | 3/4 | 5.5 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G005* | BRASS | 6.1/F | 11.6/F | 17 |
| 3/4 | 3/4 | 6 | 0 | - | - | - | 200 | 180 | 180 | - | 77 | 8210B026* | BRASS | - | 30.6/H | 11 |
| 3/4 | 3/4 | 6 | 0 | 350 | 300 | 200 | - | - | - | 200 | 77 | 8210G026* | BRASS | 16.1/F | - | 11 |
| 3/4 | 3/4 | 6.5 | 5 | 250 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G003* | BRASS | 6.1/F | 11.6/F | 11 |
| 3/4 | 3/4 | 7.8 | 25 | 750 | 750 | 750 | 450 | 450 | 450 | 200 | 150 | 8223G005* | BRASS | 17.1/F | 22.6/F | 21 |
| 3/4 | 3/4 | 7.8 | 25 | 750 | 750 | 750 | 450 | 450 | 450 | 200 | 150 | 8223G012 | SS | 17.1/F | 22.6/F | 21 |
| 3/4 | 3/4 | 9.5 | 0 | 2 | - | - | - | - | - | 125 | - | 8040G023* | ALUM | 10.1/F | - | 7 |
| 1 | 1 | 11.5 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G007* | BRASS | 6.1/F | 11.6/F | 17 |
| 1 | 1 | 13 | 0 | - | - | - | 100 | 100 | 80 | - | 77 | 8210B054* | BRASS | - | 30.6/H | 11 |
| 1 | 1 | 13 | 0 | - | - | - | 100 | 100 | 80 | - | 77 | 8210D089* | SS | - | 30.6/H | 11 |
| 1 | 1 | 13 | 0 | 150 | 125 | 125 | - | - | - | 180 | - | 8210G054* | BRASS | 16.1/F | - | 11 |
| 1 | 1 | 13 | 0 | 150 | 125 | 125 | - | - | - | 180 | - | 8210G089* | SS | 16.1/F | - | 11 |
| 1 | 1 | 13 | 5 | 150 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G004* | BRASS | 6.1/F | 11.6/F | 11 |
| 1 | 1 | 13.5 | 0 | 300 | 225 | 115 | - | - | - | 200 | - | 8210G027* | BRASS | 20.1/F | - | 11 |
| 1 | 1 | 13.5 | 10 | 300 | 300 | 300 | - | - | - | 175 | - | 8210G078* | BRASS | 17.1/F | - | 11 |
| 1 | 1 5/8 | 21 | 0 | 25 | - | - | 25 | - | - | 125 | 77 | 8215B050* | ALUM | 15.4/F | 14.9/B | 7 |
| 1 1/4 | 1 1/8 | 13 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G009* | BRASS | 6.1/F | 11.6/F | 17 |
| 1 1/4 | 1 1/8 | 15 | 0 | - | - | - | 100 | 100 | 80 | - | 77 | 8210B055* | BRASS | - | 30.6/F | 11 |
| 1 1/4 | 1 1/8 | 15 | 0 | 150 | 125 | 125 | - | - | - | 180 | 77 | 8210G055* | BRASS | 16.1/F | - | 11 |
| 1 1/4 | 1 1/8 | 15 | 5 | 150 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G008* | BRASS | 6.1/F | 11.6/F | 11 |
| 1 1/4 | 1 5/8 | 32 | 0 | 25 | - | - | 25 | - | - | 125 | 77 | 8215B060* | ALUM | 15.4/F | 14.9/B | 7 |
| 1 1/2 | 1 1/4 | 22.5 | 0 | - | - | - | 100 | 100 | 80 | - | 77 | 8210B056* | BRASS | - | 30.6/F | 11 |
| 1 1/2 | 1 1/4 | 22.5 | 0 | 150 | 125 | 125 | - | - | - | 180 | - | 8210G056* | BRASS | 16.1/F | - | 11 |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 150 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G022* | BRASS | 6.1/F | 11.6/F | 11 |
| 1 1/2 | 1 1/4 | 24 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G011* | BRASS | 6.1/F | 11.6/F | 17 |
| 1 1/2 | 1 5/8 | 35 | 0 | 25 | - | - | 25 | - | - | 125 | 77 | 8215B070 | ALUM | 15.4/F | 14.9/B | 7 |
| 2 | 1 3/4 | 36 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G013* | BRASS | 6.1/F | 22.6/F | 17 |
| 2 | 1 3/4 | 43 | 5 | 150 | 125 | 90 | 50 | 50 | 50 | 180 | 150 | 8210G100* | BRASS | 6.1/F | 11.6/F | 11 |
| 2 | 2 3/32 | 60 | 0 | 25 | - | - | 15 | - | - | 125 | 77 | 8215B080* | ALUM | 15.4/F | 14.9/B | 7 |
| 2 1/2 | 1 3/4 | 38 | 5 | - | 150 | - | - | 125 | - | 180 | 150 | 8221G015* | BRASS | 6.1/F | 22.6/F | 17 |
| 2 1/2 | 1 3/4 | 45 | 5 | 150 | 125 | 90 | 50 | 50 | 50 | 180 | 150 | 8210G101* | BRASS | 6.1/F | 11.6/F | 11 |
| 2 1/2 | 3 | 117 | 0 | 5 | - | - | - | - | - | 125 | - | 8215A090* | ALUM | 28.2/F | - | 7 |
| 3 | 3 | 138 | 0 | 5 | - | - | - | - | - | 125 | - | 8215A040* | ALUM | 28.2/F | - | 7 |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 1/16 | .09 | 0 | 500 | 300 | 225 | 400 | 250 | 150 | 180 | 120 | 8262G091* | BRASS | 6.1/F | 10.6/F | 29 |
| 1/8 | 1/16 | .09 | 0 | 500 | 300 | 225 | 400 | 250 | 150 | 180 | 120 | 8262G092 | SS | 6.1/F | 10.6/F | 29 |
| 1/8 | 3/32 | .15 | 0 | 275 | 200 | 150 | 190 | 110 | 110 | 180 | 120 | 8262G093 | BRASS | 6.1/F | 10.6/F | 29 |
| 1/8 | 3/32 | .15 | 0 | 275 | 200 | 150 | 190 | 110 | 110 | 180 | 120 | 8262G094 | SS | 6.1/F | 10.6/F | 29 |
| 1/8 | 1/8 | .21 | 0 | 125 | 100 | 85 | 80 | 60 | 50 | 180 | 120 | 8262G031* | BRASS | 6.1/F | 10.6/F | 29 |

① See specific valve series for detailed specifications. ② 5 psi on air, 1 psi on water. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.



Condensed Listing

General Service Valves



2-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① |
|------------------|---------------------|----------------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|---------------------|-----|----------------|---------------|--|--------|------------|
| | | | Min | Maximum AC | | | Maximum DC | | | AC | DC | | | AC | DC | |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| 1/8 | 1/8 | 0.21 | 0 | 125 | 100 | 85 | 80 | 60 | 50 | 180 | 120 | 8262G035* | SS | 6.1/F | 10.6/F | 29 |
| 1/4 | 3/64 | 0.06 | 0 | 750 | 700 | 700 | 500 | 500 | 500 | 140 | 140 | 8262G260* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 3/64 | 0.06 | 0 | 750 | 700 | 700 | 500 | 500 | 500 | 140 | 140 | 8262G130* | SS | 10.1/F | 11.6/F | 29 |
| 1/4 | 3/32 | 0.17 | 0 | 300 | 250 | 230 | 200 | 150 | 125 | 140 | 140 | 8262G261* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 3/32 | 0.17 | 0 | 300 | 250 | 230 | 200 | 150 | 125 | 140 | 140 | 8262G134* | SS | 10.1/F | 11.6/F | 29 |
| 1/4 | 1/8 | 0.35 | 0 | 130 | 110 | 100 | 80 | 60 | 60 | 180 | 150 | 8262G262* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 1/8 | 0.35 | 0 | 130 | 110 | 100 | 80 | 60 | 60 | 180 | 150 | 8262G138* | SS | 10.1/F | 11.6/F | 29 |
| 1/4 | 5/32 | 0.49 | 0 | 85 | 75 | 60 | 45 | 30 | 30 | 180 | 150 | 8262G263* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 5/32 | 0.49 | 0 | 85 | 75 | 60 | 45 | 30 | 30 | 180 | 150 | 8262G142 | SS | 10.1/F | 11.6/F | 29 |
| 1/4 | 7/32 | 0.83 | 0 | 45 | 45 | 40 | 25 | 20 | 20 | 180 | 150 | 8262G264* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 7/32 | 0.83 | 0 | 45 | 45 | 40 | 25 | 20 | 20 | 180 | 150 | 8262G148* | SS | 10.1/F | 11.6/F | 29 |
| 1/4 | 9/32 | 0.96 | 0 | 30 | 25 | 20 | 15 | 15 | 15 | 180 | 150 | 8262G265* | BRASS | 10.1/F | 11.6/F | 29 |
| 1/4 | 9/32 | 0.96 | 0 | 30 | 25 | 20 | 15 | 15 | 15 | 180 | 150 | 8262G152* | SS | 10.1/F | 11.6/F | 29 |
| 3/8 | 3/8 | 1.6 | 0 | 15 | 15 | - | - | - | - | 200 | - | 8030G070 | BRASS | 16.1/F | - | 3 |
| 3/8 | 9/16 | 3 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 021 | BRASS | - | 16.8/F | 17 |
| 3/8 | 9/16 | 3 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G021 | BRASS | 16.1/F | - | 17 |
| 3/8 | 5/8 | 3 | 0 | 150 | 150 | 125 | 125 | 125 | 80 | 180 | 150 | 8210G033* | BRASS | 10.1/F | 11.6/F | 11 |
| 3/8 | 5/8 | 3 | 5 | 250 | 200 | 200 | 250 | 200 | 200 | 180 | 180 | 8210G011* | BRASS | 10.1/F | 11.6/F | 11 |
| 3/8 | 3/4 | 3.2 | 0 | 125 | - | - | 125 | - | - | 125 | 104 | 8215G013 | ALUM | 10.1/F | 11.6/F | 7 |
| 1/2 | 7/16 | 2.2 | 0 | 15 | 15 | - | - | - | - | 200 | - | 8030G071* | BRASS | 20.1/F | - | 3 |
| 1/2 | 9/16 | 3.5 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 023 | BRASS | - | 16.8/F | 17 |
| 1/2 | 9/16 | 3.5 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G023 | BRASS | 16.1/F | - | 17 |
| 1/2 | 5/8 | 3 | 0 | 150 | 150 | 100 | 125 | 125 | 80 | 180 | 150 | 8210G030* | SS | 10.1/F | 11.6/F | 11 |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | 125 | 125 | 125 | 80 | 180 | 150 | 8210G034* | BRASS | 10.1/F | 11.6/F | 11 |
| 1/2 | 5/8 | 4 | 5 | 250 | 200 | 200 | 250 | 200 | 200 | 180 | 180 | 8210G012* | BRASS | 10.1/F | 11.6/F | 11 |
| 1/2 | 3/4 | 4 | 0 | 125 | - | - | 125 | - | - | 125 | 104 | 8215G023* | ALUM | 10.1/F | 11.6/F | 7 |
| 1/2 | 3/4 | 5 | 0 | 2 | 2 | - | - | - | - | 180 | - | 8030G082 | BRASS | 10.1/F | - | 3 |
| 3/4 | 5/8 | 3 | 0 | 150 | 150 | 100 | 125 | 125 | 80 | 180 | 150 | 8210G038* | SS | 10.1/F | 11.6/F | 11 |
| 3/4 | 3/4 | 4.6 | 0 | 125 | - | - | 125 | - | - | 125 | 104 | 8215G033* | ALUM | 10.1/F | 11.6/F | 7 |
| 3/4 | 3/4 | 5.5 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 025 | BRASS | - | 16.8/F | 17 |
| 3/4 | 3/4 | 5.5 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G025 | BRASS | 16.1/F | - | 17 |
| 3/4 | 3/4 | 5.5 | 0 | 2 | 2 | - | - | - | - | 180 | - | 8030G083* | BRASS | 10.1/F | - | 3 |
| 3/4 | 3/4 | 5.5 | 0 | 150 | 150 | 125 | 125 | 125 | 80 | 180 | 150 | 8210G035* | BRASS | 10.1/F | 11.6/F | 11 |
| 3/4 | 3/4 | 6.5 | 5 | - | - | - | 250 | 200 | 200 | - | 180 | 8210C013 | BRASS | - | 16.8/F | 11 |
| 3/4 | 3/4 | 6.5 | 5 | 250 | 200 | 200 | - | - | - | 180 | - | 8210G013* | BRASS | 16.1/F | - | 11 |
| 1 | 1 | 11.5 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 027 | BRASS | - | 16.8/F | 17 |
| 1 | 1 | 11.5 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G027* | BRASS | 16.1/F | - | 17 |
| 1 | 1 | 13 | 0 | 125 | 125 | 125 | - | - | - | 180 | - | 8210B057* | BRASS | 20/F | - | 11 |
| 1 | 1 | 13 | 5 | - | - | - | 125 | 125 | 125 | - | 180 | 8210D014* | BRASS | - | 16.8/F | 11 |
| 1 | 1 | 13 | 5 | 150 | 150 | 125 | - | - | - | 180 | - | 8210G014* | BRASS | 16.1/F | - | 11 |
| 1 | 1 5/8 | 22 | 0 | 25 | - | - | 15 | - | - | 125 | 77 | 8215C053* | ALUM | 15.4/F | 14.9/B | 7 |
| 1 1/4 | 1 1/8 | 13 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 029 | BRASS | - | 16.8/F | 17 |
| 1 1/4 | 1 1/8 | 13 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G029 | BRASS | 16.1/F | - | 17 |
| 1 1/4 | 1 1/8 | 15 | 0 | 125 | 125 | 125 | - | - | - | 180 | - | 8210B058 | BRASS | 20/F | - | 11 |
| 1 1/4 | 1 1/8 | 15 | 5 | - | - | - | 125 | 125 | 125 | - | 180 | 8210D018 | BRASS | - | 16.8/F | 11 |
| 1 1/4 | 1 1/8 | 15 | 5 | 150 | 150 | 125 | - | - | - | 180 | - | 8210G018* | BRASS | 16.1/F | - | 11 |
| 1 1/4 | 1 5/8 | 33 | 0 | 25 | - | - | 15 | - | - | 125 | 77 | 8215C063* | ALUM | 15.4/F | 14.9/B | 7 |
| 1 1/2 | 1 1/4 | 22.5 | 0 | 125 | 125 | 125 | - | - | - | 180 | - | 8210B059* | BRASS | 20/F | - | 11 |
| 1 1/2 | 1 1/4 | 22.5 | 5 | - | - | - | 125 | 125 | 125 | - | 180 | 8210D032* | BRASS | - | 16.8/F | 11 |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 150 | 150 | 125 | - | - | - | 180 | - | 8210G032* | BRASS | 16.1/F | - | 11 |
| 1 1/2 | 1 1/4 | 24 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 031 | BRASS | - | 16.8/F | 17 |
| 1 1/2 | 1 1/4 | 24 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G031* | BRASS | 16.1/F | - | 17 |
| 1 1/2 | 1 5/8 | 37 | 0 | 25 | - | - | 15 | - | - | 125 | 77 | 8215C073* | ALUM | 15.4/F | 14.9/B | 7 |
| 2 | 1 3/4 | 36 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 033 | BRASS | - | 16.8/F | 17 |
| 2 | 1 3/4 | 36 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G033 | BRASS | 16.1/F | - | 17 |
| 2 | 1 3/4 | 43 | 5 | - | - | - | 125 | 125 | 125 | - | 150 | 8210 103* | BRASS | - | 16.8/F | 11 |
| 2 | 1 3/4 | 43 | 5 | 125 | 125 | 125 | - | - | - | 180 | - | 8210G103* | BRASS | 16.1/F | - | 11 |
| 2 | 2 3/32 | 58 | 0 | 25 | - | - | 15 | - | - | 125 | 77 | 8215C083* | ALUM | 15.4/F | 14.9/B | 7 |
| 2 1/2 | 1 3/4 | 38 | 5 | - | - | - | - | 125 | - | - | 150 | 8221 035 | BRASS | - | 16.8/F | 17 |
| 2 1/2 | 1 3/4 | 38 | 5 | - | 150 | - | - | - | - | 180 | - | 8221G035 | BRASS | 16.1/F | - | 17 |
| 2 1/2 | 1 3/4 | 45 | 5 | - | - | - | 125 | 125 | 125 | - | 150 | 8210 104 | BRASS | - | 16.8/F | 11 |
| 2 1/2 | 1 3/4 | 45 | 5 | 125 | 125 | 125 | - | - | - | 180 | - | 8210G104* | BRASS | 16.1/F | - | 11 |
| 2 1/2 | 3 | 117 | 0 | 5 | - | - | - | - | - | 125 | - | 8215B093 | ALUM | 28.2/F | - | 7 |

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.



3-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp.*F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① | |
|---|---------------------|------|----------------|------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|-----|----------------|--------------------|--|--------|------------|----|
| | Press. | Exh. | Press. | Exh. | Min | Maximum AC | | | Maximum DC | | | AC | | | DC | AC | | DC |
| | | | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | - | 0.04 | - | 0 | 230 | 230 | 230 | 120 | 140 | 135 | 200 | 104 | 8314G031 | BRASS | 10.1/F | 11.6/F | 39 |
| 1/8 | 3/64 | - | 0.06 | - | 0 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8320G132* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/64 | - | 0.06 | - | 0 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8320G142 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/64 | - | 0.06 | 0.06 | 0 | 230 | 235 | 245 | 230 | 235 | 245 | 180 | 180 | U8356A001V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/64 | - | 0.06 | 0.06 | 0 | 230 | 235 | 245 | 230 | 235 | 245 | 180 | 180 | U8356A013V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/16 | - | 0.09 | 0.06 | 0 | 140 | 140 | 150 | 140 | 140 | 150 | 180 | 180 | U8356A002V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/16 | - | 0.09 | 0.06 | 0 | 140 | 140 | 150 | 140 | 140 | 150 | 180 | 180 | U8356A014V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/16 | - | 0.09 | - | 0 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 120 | 8320G013* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 1/16 | - | 0.09 | - | 0 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 120 | 8320G045 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/32 | - | 0.13 | 0.06 | 0 | 75 | 72 | 77 | 75 | 72 | 77 | 180 | 180 | U8356A004V | BRASS | 6.3/F | 6.9/F | 57 |
| 1/8 | 3/32 | - | 0.13 | 0.06 | 0 | 75 | 72 | 77 | 75 | 72 | 77 | 180 | 180 | U8356A016V | SS | 6.3/F | 6.9/F | 57 |
| 1/8 | 3/32 | - | 0.12 | - | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 180 | 120 | 8320G015* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/32 | - | 0.12 | - | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 180 | 120 | 8320G047 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 7/64 | - | 0.15 | 0.06 | 0 | 70 | 61 | 72 | 70 | 61 | 72 | 180 | 180 | U8356B045V* | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 7/64 | - | 0.15 | 0.06 | 0 | 70 | 61 | 72 | 70 | 61 | 72 | 180 | 180 | U8356B046V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/8 | - | 0.13 | - | 0 | - | - | - | 250 | 250 | 250 | - | 180 | 8300D055F | BRASS | - | 36.2/H | 35 |
| 1/8 | 1/8 | - | 0.13 | - | 0 | 550 | 550 | 550 | - | - | - | 200 | - | 8300G055F | BRASS | 20.1/F | - | 35 |
| 1/8 | 1/8 | - | 0.21 | - | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 180 | 120 | 8320G017* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 1/8 | - | 0.21 | - | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 180 | 120 | 8320G049 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/16 | - | 0.35 | - | 0 | - | - | - | 125 | 125 | 125 | - | 180 | 8300D003F | BRASS | - | 36.2/H | 35 |
| 1/8 | 3/16 | - | 0.35 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300G003F | BRASS | 20.1/F | - | 35 |
| 1/4 | 3/64 | - | 0.04 | - | 0 | 230 | - | - | 120 | - | - | 200 | 104 | 8314G022* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 3/64 | - | 0.04 | - | 0 | 230 | 230 | 230 | 120 | 140 | 135 | 200 | 104 | 8314G034* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 1/16 | - | 0.09 | - | 0 | 210 | 225 | 225 | 160 | 160 | 160 | 200 | 150 | 8320G182* | BRASS | 17.1/F | 11.6/F | 53 |
| 1/4 | 1/16 | - | 0.07 | - | 0 | 125 | 125 | - | 125 | 125 | - | 130 | 120 | 8360G075* | PLAST | 6.1/F | 10.6/F | 63 |
| 1/4 | 3/32 | 1/4 | 0.2 | 0.73 | 5 | 150 | - | - | - | - | - | 180 | - | 8317G023* | BRASS | 10.1/F | - | 49 |
| 1/4 | 3/32 | 1/4 | 0.2 | 0.73 | 5 | 150 | - | - | - | - | - | 180 | - | 8317G024* | SS | 10.1/F | - | 49 |
| 1/4 | 3/32 | 1/4 | 0.2 | 0.73 | 5 | 150 | 150 | 95 | 75 | 55 | 30 | 180 | 104 | 8317G035* | BRASS | 10.1/F | 11.6/F | 49 |
| 1/4 | 3/32 | 1/4 | 0.2 | 0.73 | 5 | 150 | 150 | 95 | 75 | 55 | 30 | 180 | 104 | 8317G036* | SS | 10.1/F | 11.6/F | 49 |
| 1/4 | 3/32 | - | 0.15 | - | 0 | 150 | - | - | 60 | - | - | 200 | 104 | 8314G023* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 3/32 | - | 0.15 | - | 0 | 150 | 100 | 100 | 60 | 70 | 30 | 200 | 104 | 8314G035* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 3/32 | - | 0.15 | - | 0 | 150 | 100 | 100 | 60 | 70 | 30 | 200 | 104 | 8314G121* | SS | 10.1/F | 11.6/F | 39 |
| 1/4 | 3/32 | - | 0.12 | - | 0 | 150 | 150 | 150 | 115 | 115 | 115 | 200 | 150 | 8320G184* | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/32 | - | 0.12 | - | 0 | 150 | 150 | 150 | 115 | 115 | 115 | 200 | 150 | 8320G202* | SS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/32 | - | 0.11 | - | 0 | 100 | 100 | - | 100 | 100 | - | 130 | 120 | 8360G077* | PLAST | 6.1/F | 10.6/F | 63 |
| 1/4 | 1/8 | - | 0.25 | - | 0 | 75 | 60 | 60 | 30 | 40 | 25 | 200 | 104 | 8314G036* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 1/8 | - | 0.25 | - | 0 | 85 | 85 | 85 | 60 | 60 | 60 | 200 | 150 | 8320G186* | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 1/8 | - | 0.25 | - | 0 | 85 | 85 | 85 | 60 | 60 | 60 | 200 | 150 | 8320G203* | SS | 10.1/F | 11.6/F | 53 |
| 1/4 | 1/8 | - | 0.16 | - | 0 | 40 | 40 | - | 40 | 40 | - | 130 | 120 | 8360G078* | PLAST | 6.1/F | 10.6/F | 63 |
| 1/4 | 11/64 | - | 0.35 | - | 0 | 45 | 45 | 45 | 25 | 25 | 25 | 200 | 150 | 8320G188* | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/16 | - | 0.35 | - | 0 | - | - | - | 125 | 125 | 125 | - | 180 | 8300D058F | BRASS | - | 36.2/H | 35 |
| 1/4 | 3/16 | - | 0.25 | - | 0 | - | - | - | 125 | 125 | 125 | - | 180 | 8300D058RF* | BRASS | - | 36.2/H | 35 |
| 1/4 | 3/16 | - | 0.35 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300G058F | BRASS | 20.1/F | - | 35 |
| 1/4 | 3/16 | - | 0.25 | - | 0 | 250 | 250 | 250 | - | - | - | 180 | - | 8300G058RF | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/4 | - | 0.45 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300D061F* | BRASS | 28/H | - | 35 |
| 1/4 | 1/4 | - | 0.39 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A081RF | BRASS | - | 36.2/H | 35 |
| 1/4 | 1/4 | - | 0.45 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A081F | BRASS | - | 36.2/H | 35 |
| 1/4 | 1/4 | - | 0.45 | - | 0 | 190 | 190 | 190 | - | - | - | 200 | - | 8300G081F* | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/4 | - | 0.39 | - | 0 | 150 | 150 | 150 | - | - | - | 180 | - | 8300G081RF* | BRASS | 20.1/F | - | 35 |

① See specific valve series for detailed specifications. * Qualify for ASCO TODAY and/or 5DAY Program based on voltage required.

Condensed Listing

General Service Valves



3-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① | |
|------------------|---------------------|-------|----------------|------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|-----|----------------|---------------|--|--------|------------|----|
| | Press. | Exh. | Press. | Exh. | Min | Maximum AC | | | Maximum DC | | | AC | | | DC | AC | | DC |
| | | | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G405 | ALUM | 10.1 | 11.6 | 67 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G406 | ALUM | 10.1 | 11.6 | 67 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8551A005MS | ALUM | 2.5 | 3 | 65 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8551A006MS | ALUM | 2.5 | 3 | 65 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | EF8551G407 | Brass | 10.1 | 11.6 | 67 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | EF8551G408 | Brass | 10.1 | 11.6 | 67 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | EV8551G413 | SS | 10.1 | 11.6 | 67 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | EV8551G414 | SS | 10.1 | 11.6 | 67 |
| 1/4 | 9/32 | 11/32 | 0.8 | 1.2 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G001* | BRASS | 6.1/F | 10.6/F | 49 |
| 1/4 | 5/16 | - | 1.5 | - | 0 | 150 | - | - | 120 | - | - | 180 | 120 | 8316G001 | BRASS | 10.1 | 11.6 | 47 |
| 1/4 | 5/16 | - | 1.5 | - | 0 | 150 | - | - | 120 | - | - | 180 | 120 | EV8316G081V | SS | 10.1 | 11.6 | 47 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300D009F* | BRASS | 28/H | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A082F | BRASS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | 0.39 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A082RF | BRASS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 190 | 190 | 190 | - | - | - | 200 | - | 8300G082F | BRASS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.39 | - | 0 | 150 | 150 | 150 | - | - | - | 180 | - | 8300G082RF | BRASS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | - | - | - | 50 | 50 | 50 | - | 180 | 8300B410F | SS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 150 | 150 | 150 | - | - | - | 200 | - | 8300G410F | SS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 175 | 175 | 175 | - | - | - | 200 | - | 8300B411F | SS | 28/H | - | 35 |
| 3/8 | 9/32 | 11/32 | 0.8 | 1.2 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G002* | BRASS | 6.1/F | 10.6/F | 49 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D064F | BRASS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.53 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D064RF | BRASS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G064F | BRASS | 20.1/F | - | 35 |
| 3/8 | 5/16 | - | 0.53 | - | 0 | 120 | 120 | 120 | - | - | - | 180 | - | 8300G064RF | BRASS | 20.1/F | - | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300B412F | SS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G412F | SS | 20.1/F | - | 35 |
| 3/8 | 5/16 | - | 1.8 | - | 0 | 150 | - | - | 120 | - | - | 180 | 120 | 8316G002 | BRASS | 10.1 | 11.6 | 47 |
| 3/8 | 5/16 | - | 1.8 | - | 0 | 150 | - | - | 120 | - | - | 180 | 120 | EV8316G082V | SS | 10.1 | 11.6 | 47 |
| 3/8 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300D072F | BRASS | - | 36.2/H | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G072F | BRASS | 20.1/F | - | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300B413F | SS | - | 36.2/H | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G413F | SS | 20.1/F | - | 35 |
| 3/8 | 5/8 | - | 4 | - | - | 150 | - | - | 120 | - | - | 180 | 120 | 8316G003 | BRASS | 10.1 | 11.6 | 47 |
| 3/8 | 5/8 | - | 2.5 | - | 10 | 250 | 250 | - | 250 | 250 | - | 180 | 120 | 8316G014* | BRASS | 17.1/F | 22.6/F | 43 |
| 3/8 | 5/8 | - | 3 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G054* | BRASS | 6.1/F | 10.6/F | 43 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D068F | BRASS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.53 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D068RF | BRASS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G068F* | BRASS | 20.1/F | - | 35 |
| 1/2 | 5/16 | - | 0.53 | - | 0 | 120 | 120 | 120 | - | - | - | 180 | - | 8300G068RF | BRASS | 20.1/F | - | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300B403F | SS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G403F | SS | 20.1/F | - | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300D076F | BRASS | - | 36.2/H | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G076F | BRASS | 20.1/F | - | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300B404F | SS | - | 36.2/H | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G404F | SS | 20.1/F | - | 35 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8553G405 | ALUM | 10.1 | 11.6 | 67 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8553G406 | ALUM | 10.1 | 11.6 | 67 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8553A005MS | ALUM | 5 | 6.9 | 65 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8553A006MS | ALUM | 5 | 6.9 | 65 |
| 1/2 | 5/8 | - | 4 | - | 0 | 150 | - | - | 120 | - | - | 180 | 120 | 8316G004 | BRASS | 10.1 | 11.6 | 47 |
| 1/2 | 5/8 | - | 3.2 | - | 10 | 250 | 250 | - | 250 | 250 | - | 180 | 120 | 8316G024* | BRASS | 17.1/F | 22.6/F | 43 |
| 1/2 | 5/8 | - | 3.2 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G064* | BRASS | 6.1/F | 10.6/F | 43 |
| 1/2 | 5/8 | - | 4 | - | 0 | 150 | - | - | 120 | - | - | 180 | 120 | EV8316G084V | SS | 10.1 | 11.6 | 47 |
| 3/4 | 11/16 | - | 4.8 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G074* | BRASS | 6.1/F | 10.6/F | 43 |
| 3/4 | 11/16 | - | 4.8 | - | 10 | 250 | 250 | - | 250 | 250 | - | 180 | 120 | 8316G044* | BRASS | 17.1/F | 22.6/F | 43 |
| 1 | 1 | - | 12.5 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G034* | BRASS | 6.1/F | 10.6/F | 43 |

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.



3-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp.*F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① | |
|---|---------------------|-------|----------------|------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|-----|----------------|-------------------|--|--------|------------|----|
| | Press. | Exh. | Press. | Exh. | Min | Maximum AC | | | Maximum DC | | | AC | | | DC | AC | | DC |
| | | | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | - | .04 | - | 0 | 300 | 300 | 300 | 200 | 200 | 120 | 200 | 104 | 8314G049 | BRASS | 10.1/F | 11.6/F | 39 |
| 1/8 | 3/64 | - | .06 | - | 0 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8320G136* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/64 | - | .06 | - | 0 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8320G146 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/64 | - | 0.06 | 0.06 | 0 | 175 | 180 | 175 | 150 | 122 | 90 | 180 | 180 | U8356A005V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/64 | - | 0.06 | 0.06 | 0 | 175 | 180 | 175 | 150 | 122 | 90 | 180 | 180 | U8356A017V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/16 | - | .09 | - | 0 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 120 | 8320G027* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 1/16 | - | .09 | - | 0 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 120 | 8320G051 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 1/16 | - | 0.09 | 0.06 | 0 | 165 | 180 | 175 | 75 | 72 | 70 | 180 | 180 | U8356A006V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/16 | - | 0.09 | 0.06 | 0 | 165 | 180 | 175 | 75 | 72 | 70 | 180 | 180 | U8356A018V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/32 | - | .12 | - | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 180 | 120 | 8320G029* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/32 | - | .12 | - | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 180 | 120 | 8320G053 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/32 | - | 0.13 | 0.06 | 0 | 160 | 175 | 120 | 86 | 66 | 40 | 180 | 180 | U8356A008V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/32 | - | 0.13 | 0.06 | 0 | 160 | 175 | 120 | 86 | 66 | 40 | 180 | 180 | U8356A020V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 7/64 | - | 0.15 | 0.06 | 0 | 148 | 180 | 99 | 148 | 157 | 72 | 180 | 180 | U8356B054V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 7/64 | - | 0.15 | 0.06 | 0 | 148 | 180 | 99 | 148 | 157 | 72 | 180 | 180 | U8356B055V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/8 | - | .13 | - | 0 | - | - | - | 250 | 250 | 250 | - | 180 | 8300D055G | BRASS | - | 36.2/H | 35 |
| 1/8 | 1/8 | - | .13 | - | 0 | 550 | 550 | 550 | - | - | - | 200 | - | 8300G055G | BRASS | 20.1/F | - | 35 |
| 1/8 | 1/8 | - | .21 | - | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 180 | 120 | 8320G031* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 1/8 | - | .21 | - | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 180 | 120 | 8320G055* | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/16 | - | .35 | - | 0 | - | - | - | 125 | 125 | 125 | - | 180 | 8300D003G | BRASS | - | 36.2/H | 35 |
| 1/8 | 3/16 | - | .35 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300G003G* | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/16 | - | .09 | - | 0 | 250 | 250 | 250 | 160 | 160 | 160 | 200 | 150 | 8320G192* | BRASS | 17.1/F | 11.6/F | 53 |
| 1/4 | 1/16 | - | .07 | - | 0 | 125 | 125 | - | 125 | 125 | - | 130 | 120 | 8360G067 | PLAST | 6.1/F | 10.6/F | 63 |
| 1/4 | 3/32 | 1/4 | .15 | .73 | 5 | 160 | 160 | 95 | 75 | 45 | 25 | 180 | 104 | 8317G053 | BRASS | 10.1/F | 11.6/F | 49 |
| 1/4 | 3/32 | 1/4 | .15 | .73 | 5 | 160 | 160 | 95 | 75 | 45 | 25 | 180 | 104 | 8317G054 | SS | 10.1/F | 11.6/F | 49 |
| 1/4 | 3/32 | - | .15 | - | 0 | 175 | 175 | 175 | 70 | 90 | 45 | 200 | 104 | 8314G053* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 3/32 | - | .15 | - | 0 | 175 | 175 | 175 | 70 | 90 | 45 | 200 | 104 | 8314G122 | SS | 10.1/F | 11.6/F | 39 |
| 1/4 | 3/32 | - | .12 | - | 0 | 150 | 140 | 140 | 100 | 100 | 100 | 200 | 150 | 8320G194* | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/32 | - | .12 | - | 0 | 150 | 140 | 140 | 100 | 100 | 100 | 200 | 150 | 8320G204 | SS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/32 | - | .11 | - | 0 | 100 | 100 | - | 100 | 100 | - | 130 | 120 | 8360G069* | PLAST | 6.1/F | 10.6/F | 63 |
| 1/4 | 1/8 | - | .25 | - | 0 | 90 | 90 | 90 | 40 | 40 | 25 | 200 | 104 | 8314G054 | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 1/8 | - | .25 | - | 0 | 70 | 70 | 70 | 55 | 55 | 55 | 200 | 150 | 8320G196* | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 1/8 | - | .25 | - | 0 | 70 | 70 | 70 | 55 | 55 | 55 | 200 | 150 | 8320G205 | SS | 10.1/F | 11.6/F | 53 |
| 1/4 | 1/8 | - | .16 | - | 0 | 40 | 40 | - | 40 | 40 | - | 130 | 120 | 8360G070 | PLAST | 6.1/F | 10.6/F | 63 |
| 1/4 | 11/64 | - | .35 | - | 0 | 40 | 40 | 40 | 30 | 30 | 30 | 200 | 150 | 8320G198 | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/16 | - | .35 | - | 0 | - | - | - | 125 | 125 | 125 | - | 180 | 8300D058G | BRASS | - | 36.2/H | 35 |
| 1/4 | 3/16 | - | .25 | - | 0 | - | - | - | 125 | 125 | 125 | - | 180 | 8300D058RG | BRASS | - | 36.2/H | 35 |
| 1/4 | 3/16 | - | .35 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300G058G | BRASS | 20.1/F | - | 35 |
| 1/4 | 3/16 | - | .25 | - | 0 | 250 | 250 | 250 | - | - | - | 180 | - | 8300G058RG | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/4 | - | .45 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300D061G | BRASS | 28/H | - | 35 |
| 1/4 | 1/4 | - | .45 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A081G | BRASS | - | 36.2/H | 35 |
| 1/4 | 1/4 | - | .39 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A081RG | BRASS | - | 36.2/H | 35 |
| 1/4 | 1/4 | - | .45 | - | 0 | 190 | 190 | 190 | - | - | - | 200 | - | 8300G081G | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/4 | - | .39 | - | 0 | 150 | 150 | 150 | - | - | - | 180 | - | 8300G081RG | BRASS | 20.1/F | - | 35 |
| 1/4 | 9/32 | 11/32 | .80 | 1.20 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G003* | BRASS | 6.1/F | 10.6/F | 49 |
| 3/8 | 1/4 | - | .45 | - | 0 | 250 | 250 | 250 | - | - | - | 200 | - | 8300D009G | BRASS | 28/H | - | 35 |
| 3/8 | 1/4 | - | .45 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A082G | BRASS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | .39 | - | 0 | - | - | - | 75 | 75 | 75 | - | 180 | 8300A082RG | BRASS | - | 36.2/H | 35 |

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.

3-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① |
|----------------------------|---------------------|-------|----------------|------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|---------------------|-----|----------------|---------------|--|--------|------------|
| | Press. | Exh. | Press. | Exh. | Min | Maximum AC | | | Maximum DC | | | AC | DC | | | AC | DC | |
| | | | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 190 | 190 | 190 | - | - | - | 200 | - | 8300G082G | BRASS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.39 | - | 0 | 150 | 150 | 150 | - | - | - | 180 | - | 8300G082RG | BRASS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | - | - | - | 50 | 50 | 50 | - | 180 | 8300B410G | SS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 150 | 150 | 150 | - | - | - | 200 | - | 8300G410G | SS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 175 | 175 | 175 | - | - | - | 200 | - | 8300B411G | SS | 28/H | - | 35 |
| 3/8 | 9/32 | 11/32 | 0.8 | 1.2 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G004* | BRASS | 6.1/F | 10.6/F | 49 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D064G | BRASS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.53 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D064RG | BRASS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G064G | BRASS | 20.1/F | - | 35 |
| 3/8 | 5/16 | - | 0.53 | - | 0 | 120 | 120 | 120 | - | - | - | 180 | - | 8300G064RG | BRASS | 20.1/F | - | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300B412G | SS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G412G | SS | 20.1/F | - | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300D072G | BRASS | - | 36.2/H | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G072G | BRASS | 20.1/F | - | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300B413G | SS | - | 36.2/H | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G413G | SS | 20.1/F | - | 35 |
| 3/8 | 5/8 | - | 2.5 | - | 10 | 250 | 250 | - | 250 | 250 | - | 180 | 120 | 8316G016* | BRASS | 17.1/F | 22.6/F | 43 |
| 3/8 | 5/8 | - | 2.5 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G056* | BRASS | 6.1/F | 10.6/F | 43 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D068G | BRASS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.53 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300D068RG | BRASS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G068G | BRASS | 20.1/F | - | 35 |
| 1/2 | 5/16 | - | 0.53 | - | 0 | 120 | 120 | 120 | - | - | - | 180 | - | 8300G068RG | BRASS | 20.1/F | - | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | - | - | - | 40 | 40 | 40 | - | 180 | 8300B403G | SS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300G403G | SS | 20.1/F | - | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300D076G | BRASS | - | 36.2/H | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G076G | BRASS | 20.1/F | - | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | - | - | - | 30 | 30 | 30 | - | 180 | 8300B404G | SS | - | 36.2/H | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G404G | SS | 20.1/F | - | 35 |
| 1/2 | 5/8 | - | 3.2 | - | 10 | 250 | 250 | - | 250 | 250 | - | 180 | 120 | 8316G026* | BRASS | 17.1/F | 22.6/F | 43 |
| 1/2 | 5/8 | - | 3.2 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G066* | BRASS | 6.1/F | 10.6/F | 43 |
| 3/4 | 11/16 | - | 4.8 | - | 10 | 250 | 250 | - | 250 | 250 | - | 180 | 120 | 8316G046* | BRASS | 17.1/F | 22.6/F | 43 |
| 3/4 | 11/16 | - | 4.8 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G076* | BRASS | 6.1/F | 10.6/F | 43 |
| 1 | 1 | - | 12.5 | - | 10 | 150 | 125 | - | 125 | 125 | - | 180 | 120 | 8316G036 | BRASS | 6.1/F | 10.6/F | 43 |
| UNIVERSAL OPERATION | | | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | - | 0.04 | - | 0 | 160 | 160 | 160 | 70 | 65 | 65 | 200 | 104 | 8314G041* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/8 | 3/64 | - | 0.06 | 0.06 | 0 | 135 | 135 | 135 | 135 | 135 | 100 | 180 | 180 | U8356A009V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/64 | - | 0.06 | 0.06 | 0 | 135 | 135 | 135 | 135 | 135 | 100 | 180 | 180 | U8356A021V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/64 | - | 0.06 | - | 0 | 175 | 175 | 175 | 125 | 125 | 125 | 140 | 120 | 8320G130* | BRASS | 9.1/F | 10.6/F | 53 |
| 1/8 | 3/64 | - | 0.06 | - | 0 | 175 | 175 | 175 | 125 | 125 | 125 | 140 | 120 | 8320G140* | SS | 9.1/F | 10.6/F | 53 |
| 1/8 | 1/16 | - | 0.09 | - | 0 | 100 | 100 | 100 | 65 | 65 | 65 | 180 | 120 | 8320G001* | BRASS | 9.1/F | 10.6/F | 53 |
| 1/8 | 1/16 | - | 0.09 | - | 0 | 100 | 100 | 100 | 65 | 65 | 65 | 180 | 120 | 8320G041 | SS | 9.1/F | 10.6/F | 53 |
| 1/8 | 1/16 | - | 0.09 | 0.06 | 0 | 72 | 72 | 72 | 72 | 72 | 72 | 180 | 180 | U8356A010V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 1/16 | - | 0.09 | 0.06 | 0 | 72 | 72 | 72 | 72 | 72 | 72 | 180 | 180 | U8356A022V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/32 | - | 0.12 | - | 0 | 50 | 50 | 50 | 50 | 50 | 50 | 180 | 120 | 8320G083* | BRASS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/32 | - | 0.12 | - | 0 | 50 | 50 | 50 | 50 | 50 | 50 | 180 | 120 | 8320G087 | SS | 6.1/F | 10.6/F | 53 |
| 1/8 | 3/32 | - | 0.13 | 0.06 | 0 | 36 | 33 | 40 | 32 | 28 | 40 | 180 | 180 | U8356A012V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 3/32 | - | 0.13 | 0.06 | 0 | 36 | 33 | 40 | 32 | 28 | 40 | 180 | 180 | U8356A024V | SS | 6.3/F | 6.9/F | 59 |
| 1/8 | 7/64 | - | 0.15 | 0.06 | 0 | 45 | 32 | 27 | 25 | 32 | 27 | 180 | 180 | U8356B047V | BRASS | 6.3/F | 6.9/F | 59 |
| 1/8 | 7/64 | - | 0.15 | 0.06 | 0 | 45 | 32 | 27 | 25 | 32 | 27 | 180 | 180 | U8356B048V | SS | 6.3/F | 6.9/F | 59 |

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.

3-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① | |
|------------------|---------------------|------|----------------|------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|-----|----------------|---------------|--|--------|------------|----|
| | Press. | Exh. | Press. | Exh. | Min | Maximum AC | | | Maximum DC | | | AC | | | DC | AC | | DC |
| | | | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| 1/8 | 1/8 | - | 0.13 | - | 0 | - | - | - | 125 | 125 | 125 | - | 180 | 8300D055U | BRASS | - | 36.2/H | 35 |
| 1/8 | 1/8 | - | 0.13 | - | 0 | 300 | 300 | 300 | - | - | - | 200 | - | 8300G055U | BRASS | 20.1/F | - | 35 |
| 1/8 | 1/8 | - | 0.21 | - | 0 | 30 | 30 | 30 | 20 | 20 | 20 | 180 | 120 | 8320G003* | BRASS | 9.1/F | 10.6/F | 53 |
| 1/8 | 1/8 | - | 0.21 | - | 0 | 30 | 30 | 30 | 20 | 20 | 20 | 180 | 120 | 8320G043* | SS | 9.1/F | 10.6/F | 53 |
| 1/8 | 3/16 | - | 0.35 | - | 0 | - | - | - | 60 | 60 | 60 | - | 180 | 8300D003U | BRASS | - | 36.2/H | 35 |
| 1/8 | 3/16 | - | 0.35 | - | 0 | 150 | 150 | 150 | - | - | - | 200 | - | 8300G003U | BRASS | 20.1/F | - | 35 |
| 1/4 | 3/64 | - | 0.04 | - | 0 | 160 | 160 | 160 | 70 | 65 | 65 | 200 | 104 | 8314G006* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 1/16 | - | 0.07 | - | 0 | 100 | 100 | - | 65 | 65 | - | 130 | 120 | 8360G071* | PLAST | 9.1/F | 10.6/F | 63 |
| 1/4 | 1/16 | - | 0.09 | - | 0 | 125 | 130 | 130 | 75 | 75 | 75 | 200 | 150 | 8320G172* | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/32 | 1/4 | 0.2 | 0.73 | 5 | 80 | 50 | 50 | 40 | 30 | 15 | 180 | 104 | 8317G007* | BRASS | 10.1/F | 11.6/F | 49 |
| 1/4 | 3/32 | 1/4 | 0.2 | 0.73 | 5 | 80 | 50 | 50 | 40 | 30 | 15 | 180 | 104 | 8317G008* | SS | 10.1/F | 11.6/F | 49 |
| 1/4 | 3/32 | - | 0.12 | - | 0 | 100 | 100 | 100 | 60 | 60 | 60 | 200 | 150 | 8320G174* | BRASS | 17.1/F | 11.6/F | 53 |
| 1/4 | 3/32 | - | 0.12 | - | 0 | 100 | 100 | 100 | 60 | 60 | 60 | 200 | 150 | 8320G200* | SS | 17.1/F | 11.6/F | 53 |
| 1/4 | 3/32 | - | 0.11 | - | 0 | 50 | 50 | - | 50 | 50 | - | 130 | 120 | 8360G073 | PLAST | 6.1/F | 10.6/F | 63 |
| 1/4 | 3/32 | - | 0.15 | - | 0 | 80 | 40 | 40 | 35 | 35 | 15 | 200 | 104 | 8314G007* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 3/32 | - | 0.15 | - | 0 | 80 | 40 | 40 | 35 | 35 | 15 | 200 | 104 | 8314G120* | SS | 10.1/F | 11.6/F | 39 |
| 1/4 | 1/8 | - | 0.16 | - | 0 | 30 | 30 | - | 20 | 20 | - | 130 | 120 | 8360G074* | PLAST | 9.1/F | 10.6/F | 63 |
| 1/4 | 1/8 | - | 0.25 | - | 0 | 45 | 25 | 25 | 20 | 15 | 15 | 200 | 104 | 8314G008* | BRASS | 10.1/F | 11.6/F | 39 |
| 1/4 | 1/8 | - | 0.25 | - | 0 | 50 | 50 | 50 | 25 | 25 | 25 | 200 | 150 | 8320G176* | BRASS | 17.1/F | 11.6/F | 53 |
| 1/4 | 1/8 | - | 0.25 | - | 0 | 50 | 50 | 50 | 25 | 25 | 25 | 200 | 150 | 8320G201* | SS | 17.1/F | 11.6/F | 53 |
| 1/4 | 11/64 | - | 0.35 | - | 0 | 20 | 20 | 20 | 12 | 12 | 12 | 200 | 150 | 8320G178* | BRASS | 10.1/F | 11.6/F | 53 |
| 1/4 | 3/16 | - | 0.35 | - | 0 | - | - | - | 60 | 60 | 60 | - | 180 | 8300D058U | BRASS | - | 36.2/H | 35 |
| 1/4 | 3/16 | - | 0.25 | - | 0 | - | - | - | 60 | 60 | 60 | - | 180 | 8300D058RU* | BRASS | - | 36.2/H | 35 |
| 1/4 | 3/16 | - | 0.35 | - | 0 | 150 | 150 | 150 | - | - | - | 200 | - | 8300G058U | BRASS | 20.1/F | - | 35 |
| 1/4 | 3/16 | - | 0.25 | - | 0 | 150 | 150 | 150 | - | - | - | 180 | - | 8300G058RU* | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/4 | - | 0.45 | - | 0 | - | - | - | 35 | 35 | 35 | - | 180 | 8300A081U | BRASS | - | 36.2/H | 35 |
| 1/4 | 1/4 | - | 0.39 | - | 0 | - | - | - | 35 | 35 | 35 | - | 180 | 8300A081RU | BRASS | - | 36.2/H | 35 |
| 1/4 | 1/4 | - | 0.45 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300D061U* | BRASS | 28/H | - | 35 |
| 1/4 | 1/4 | - | 0.45 | - | 0 | 90 | 90 | 90 | - | - | - | 200 | - | 8300G081U | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/4 | - | 0.39 | - | 0 | 75 | 75 | 75 | - | - | - | 180 | - | 8300G081RU | BRASS | 20.1/F | - | 35 |
| 1/4 | 1/4 | - | 0.49 | 0.56 | 0 | 150 | 150 | 150 | 150 | 150 | 150 | 176 | 176 | 8327G041* | BRASS | 12.0/F | 11.6/F | 57 |
| 1/4 | 1/4 | - | 0.49 | 0.56 | 0 | 150 | - | - | - | - | - | 131 | 131 | 8327G051 | BRASS | 12.0/F | 11.6/F | 57 |
| 1/4 | 1/4 | - | 0.49 | 0.56 | 0 | 150 | 150 | 150 | 150 | 150 | 150 | 248 | 248 | EV8327G042 | SS | 12.0/F | 11.6/F | 57 |
| 1/4 | 1/4 | - | 0.49 | 0.56 | 0 | 150 | - | - | - | - | - | 131 | 131 | EV8327G052 | SS | 12.0/F | 11.6/F | 57 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | - | - | - | 35 | 35 | 35 | - | 180 | 8300A082U | BRASS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | 0.39 | - | 0 | - | - | - | 35 | 35 | 35 | - | 180 | 8300A082RU | BRASS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 120 | 120 | 120 | - | - | - | 200 | - | 8300D009U* | BRASS | 28/H | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 90 | 90 | 90 | - | - | - | 200 | - | 8300G082U | BRASS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.39 | - | 0 | 75 | 75 | 75 | - | - | - | 180 | - | 8300G082RU | BRASS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | - | - | - | 25 | 25 | 25 | - | 180 | 8300B410U | SS | - | 36.2/H | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 75 | 75 | 75 | - | - | - | 200 | - | 8300G410U | SS | 20.1/F | - | 35 |
| 3/8 | 1/4 | - | 0.45 | - | 0 | 85 | 85 | 85 | - | - | - | 200 | - | 8300B411U | SS | 28/H | - | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | - | - | - | 20 | 20 | 20 | - | 180 | 8300D064U | BRASS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.53 | - | 0 | - | - | - | 20 | 20 | 20 | - | 180 | 8300D064RU | BRASS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | 60 | 60 | 60 | - | - | - | 200 | - | 8300G064U | BRASS | 20.1/F | - | 35 |

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.

3-Way/2 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① | |
|------------------|---------------------|------|----------------|------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|-----|----------------|---------------|--|--------|------------|----|
| | Press. | Exh. | Press. | Exh. | Min | Maximum AC | | | Maximum DC | | | AC | | | DC | AC | | DC |
| | | | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| 3/8 | 5/16 | - | 0.53 | - | 0 | 60 | 60 | 60 | - | - | - | 180 | - | 8300G064RU | BRASS | 20.1/F | - | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | - | - | - | 20 | 20 | 20 | - | 180 | 8300B412U | SS | - | 36.2/H | 35 |
| 3/8 | 5/16 | - | 0.75 | - | 0 | 60 | 60 | 60 | - | - | - | 200 | - | 8300G412U | SS | 20.1/F | - | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | - | - | - | 15 | 15 | 15 | - | 180 | 8300D072U | BRASS | - | 36.2/H | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | 35 | 35 | 35 | - | - | - | 200 | - | 8300G072U | BRASS | 20.1/F | - | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | - | - | - | 15 | 15 | 15 | - | 180 | 8300B413U | SS | - | 36.2/H | 35 |
| 3/8 | 3/8 | - | 1 | - | 0 | 35 | 35 | 35 | - | - | - | 200 | - | 8300G413U | SS | 20.1/F | - | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | - | - | - | 20 | 20 | 20 | - | 180 | 8300D068U | BRASS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.53 | - | 0 | - | - | - | 20 | 20 | 20 | - | 180 | 8300D068RU | BRASS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | 60 | 60 | 60 | - | - | - | 200 | - | 8300G068U | BRASS | 20.1/F | - | 35 |
| 1/2 | 5/16 | - | 0.53 | - | 0 | 60 | 60 | 60 | - | - | - | 180 | - | 8300G068RU | BRASS | 20.1/F | - | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | - | - | - | 20 | 20 | 20 | - | 180 | 8300B403U | SS | - | 36.2/H | 35 |
| 1/2 | 5/16 | - | 0.75 | - | 0 | 60 | 60 | 60 | - | - | - | 200 | - | 8300G403U | SS | 20.1/F | - | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | - | - | - | 15 | 15 | 15 | - | 180 | 8300D076U | BRASS | - | 36.2/H | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | 35 | 35 | 35 | - | - | - | 200 | - | 8300G076U* | BRASS | 20.1/F | - | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | - | - | - | 15 | 15 | 15 | - | 180 | 8300B404U | SS | - | 36.2/H | 35 |
| 1/2 | 3/8 | - | 1 | - | 0 | 35 | 35 | 35 | - | - | - | 200 | - | 8300G404U | SS | 20.1/F | - | 35 |

① See specific valve series for detailed specifications. * Qualify for ASCO TODAY and/or 5DAY Program based on voltage required.

4-Way/2 or 3 Position Valves

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Catalog Number | Body Material | Watt Rating / Class of Coil Insulation | | Page No. ① | |
|------------------|---------------------|------|----------------|------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|-----|----------------|---------------|--|--------|------------|----|
| | Press. | Exh. | Press. | Exh. | Min | Maximum AC | | | Maximum DC | | | AC | | | DC | AC | | DC |
| | | | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | |
| 1/4 | 1/16 | 3/32 | 0.09 | 0.09 | 10 | 150 | 150 | 150 | 100 | 100 | 100 | 180 | 104 | 8345G001* | BRASS | 10.1/F | 11.6/F | 81 |
| 1/4 | 1/16 | 3/32 | 0.09 | 0.09 | 10 | 150 | 150 | 150 | 100 | 100 | 100 | 180 | 104 | EV8345G081 | SS | 10.1/F | 11.6/F | 81 |
| 1/4 | 1/16 | 3/32 | 0.09 | 0.09 | 10 | 150 | - | - | 100 | - | - | 180 | 104 | 8345H003* | BRASS | 10.1/F | 11.6/F | 81 |
| 1/4 | 5/64 | - | 0.1 | - | 0 | 150 | - | - | 100 | - | - | 104 | 95 | 8340A003* | ALUM | 16.7/F | 19.7/F | 71 |
| 1/4 | 5/64 | - | 0.08 | - | 0 | 150 | - | - | 100 | - | - | 104 | 95 | 8340A004 | ALUM | 16.7/F | 19.7/F | 71 |
| 1/4 | 5/64 | - | 0.08 | - | 0 | 150 | - | - | 150 | - | - | 104 | 95 | 8340A005 | ALUM | 10.5/F | 19.7/F | 71 |
| 1/4 | 5/64 | - | 0.1 | - | 0 | 150 | - | - | 100 | - | - | 104 | 95 | 8340A008 | ALUM | 10.5/F | 19.7/F | 71 |
| 1/4 | 5/64 | - | 0.1 | - | 0 | 150 | - | - | 100 | - | - | 130 | 95 | 8340G001* | ALUM | 17.1/F | 22.6/F | 71 |
| 1/4 | 5/64 | - | 0.1 | - | 0 | 150 | - | - | 100 | - | - | 104 | 95 | 8340G002 | ALUM | 10.1/F | 22.6/F | 71 |
| 1/4 | 3/16 | - | 0.7 | - | 0 | 125 | 100 | 100 | - | - | - | 160 | - | 8342G001 | BRASS | 20.1/F | - | 75 |
| 1/4 | 3/16 | - | 0.7 | - | 0 | 125 | 125 | 125 | - | - | - | 160 | - | 8342G020* | BRASS | 16.1/F | - | 75 |
| 1/4 | 3/16 | - | 0.7 | - | 0 | 125 | 100 | 100 | - | - | - | 160 | - | 8342G701* | SS | 20.1/F | - | 75 |
| 1/4 | 3/16 | - | 0.7 | - | 0 | 125 | 125 | 125 | - | - | - | 160 | - | 8342G720 | SS | 16.1/F | - | 75 |
| 1/4 | 1/4 | - | 0.8 | 1 | 10 | 250 | 250 | 250 | 250 | 250 | 250 | 180 | 180 | 8344G000* | BRASS | 17.1/F | 22.6/F | 77 |
| 1/4 | 1/4 | - | 0.8 | 1 | 10 | 250 | 200 | 125 | 125 | 125 | 100 | 180 | 120 | 8344G044* | BRASS | 6.1/F | 10.6/F | 77 |
| 1/4 | 1/4 | - | 0.8 | 1 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G070* | BRASS | 10.1/F | 11.6/F | 77 |
| 1/4 | 1/4 | - | 0.8 | - | 20 | 150 | - | - | 150 | - | - | 135 | 77 | U8401B101 | ALUM | 6.3/F | 6.9/F | 83 |
| 1/4 | 1/4 | - | 0.8 | - | 20 | 150 | - | - | 150 | - | - | 135 | 77 | U8401B103 | ALUM | 6.3/F | 6.9/F | 83 |
| 1/4 | 1/4 | - | 0.8 | - | 20 | 150 | - | - | 150 | - | - | 135 | 77 | U8401B105 | ALUM | 6.3/F | 6.9/F | 83 |
| 1/4 | 1/4 | - | 0.8 | - | 20 | 150 | - | - | 150 | - | - | 135 | 77 | U8401B107 | ALUM | 6.3/F | 6.9/F | 83 |
| 1/4 | 1/4 | - | 0.8 | - | 20 | 150 | - | - | 150 | - | - | 135 | 135 | 8402A101 | ALUM | - | - | 83 |
| 1/4 | 1/4 | - | 0.8 | - | 20 | 150 | - | - | 150 | - | - | 135 | 135 | 8402A103 | ALUM | - | - | 83 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G417 | ALUM | 10.1 | 11.6 | 89 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G418 | ALUM | 10.1 | 11.6 | 89 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8551A017MS* | ALUM | 2.5 | 3 | 87 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8551A018MS* | ALUM | 2.5 | 3 | 87 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G419 | BRASS | 10.1 | 11.6 | 89 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G420 | BRASS | 10.1 | 11.6 | 89 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | EV8551G421 | SS | 10.1 | 11.6 | 89 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | EV8551G422 | SS | 10.1 | 11.6 | 89 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G467 | ALUM | 10.1 | 11.6 | 89 |
| 1/4 | 1/4 | 1/4 | .86 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8551G468 | ALUM | 10.1 | 11.6 | 89 |
| 3/8 | 3/16 | - | 0.7 | - | 0 | 125 | 100 | 100 | - | - | - | 160 | - | 8342G003 | BRASS | 20.1/F | - | 75 |
| 3/8 | 3/16 | - | 0.7 | - | 0 | 125 | 125 | 125 | - | - | - | 160 | - | 8342G022* | BRASS | 16.1/F | - | 75 |
| 3/8 | 3/16 | - | 0.7 | - | 0 | 125 | 100 | 100 | - | - | - | 160 | - | 8342G703* | SS | 20.1/F | - | 75 |
| 3/8 | 3/16 | - | 0.7 | - | 0 | 125 | 125 | 125 | - | - | - | 160 | - | 8342G722 | SS | 16.1/F | - | 75 |
| 3/8 | 1/4 | - | 0.8 | 1 | 10 | 250 | 250 | 250 | 250 | 250 | 250 | 180 | 180 | 8344G001 | BRASS | 17.1/F | 22.6/F | 77 |
| 3/8 | 3/8 | - | 1.4 | 2.2 | 10 | 300 | 300 | 200 | - | - | - | 180 | - | 8344G050* | BRASS | 10.1/F | - | 77 |
| 3/8 | 3/8 | - | 1.4 | 2.2 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G072* | BRASS | 10.1/F | 11.6/F | 77 |
| 3/8 | 3/8 | - | 1.4 | 2.2 | 10 | 250 | 200 | 125 | 125 | 125 | 100 | 180 | 120 | 8344G080* | BRASS | 6.1/F | 10.6/F | 77 |
| 1/2 | 3/8 | - | 1.4 | 2.2 | 10 | 250 | 250 | 250 | 250 | 250 | 250 | 180 | 180 | 8344G027* | BRASS | 17.1/F | 22.6/F | 77 |
| 1/2 | 3/8 | - | 1.4 | 2.2 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G074* | BRASS | 10.1/F | 11.6/F | 77 |
| 1/2 | 3/8 | - | 1.4 | 2.2 | 10 | 250 | 200 | 125 | 125 | 125 | 100 | 180 | 120 | 8344G082* | BRASS | 6.1/F | 10.6/F | 77 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8553G417 | ALUM | 10.1 | 11.6 | 89 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 120 | - | - | 140 | 120 | 8553G418 | ALUM | 10.1 | 11.6 | 89 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8553A017MS | ALUM | 5 | 6.9 | 87 |
| 1/2 | 1/2 | 1/2 | 3.7 | - | 30 | 150 | - | - | 150 | - | - | 140 | 140 | SC8553A018MS | ALUM | 5 | 6.9 | 87 |
| 3/4 | 3/4 | - | 5.2 | 5.6 | 10 | 250 | 250 | 250 | 250 | 250 | 250 | 180 | 180 | 8344G029* | BRASS | 17.1/F | 22.6/F | 77 |
| 3/4 | 3/4 | - | 5.2 | 5.6 | 10 | 300 | 300 | 200 | 125 | 125 | 100 | 180 | 120 | 8344G054 | BRASS | 10.1/F | 10.6/F | 77 |
| 3/4 | 3/4 | - | 5.2 | 5.6 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G076* | BRASS | 10.1/F | 11.6/F | 77 |
| 1 | 3/4 | - | 5.2 | 5.6 | 10 | 250 | 250 | 250 | 250 | 250 | 250 | 180 | 180 | 8344G031 | BRASS | 17.1/F | 22.6/F | 77 |
| 1 | 3/4 | - | 5.2 | 5.6 | 10 | 300 | 300 | 200 | 125 | 125 | 100 | 180 | 120 | 8344G056 | BRASS | 10.1/F | 10.6/F | 77 |
| 1 | 3/4 | - | 5.2 | 5.6 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G078 | BRASS | 10.1/F | 11.6/F | 77 |

① See specific valve series for detailed specifications. * Qualify for ASCO TODAY and/or 5DAY Program based on voltage required.

Bleed-orifice or Bleed Hole

Small orifice or channel, most often located in the diaphragm or piston of pilot-operated valves, to allow the inlet flow to pressurize the top side of the diaphragm or piston.

Bonnet

Screwed plug or bolted cover on the valve body, on which the core tube with inner parts is fitted.

Coil

Electrical part of the valve consisting of a spool wound with insulated copper wire which creates a magnetic flux when energized.

Core

The soft-magnetic stainless steel part of the solenoid which is moved by magnetic forces (flux generated by the coil).

Core Spring

Spring which returns the core to the original position when the coil is de-energized.

Core Tube

Stainless steel tube, closed at one end, which isolates the media in the valve from the external solenoid parts.

Disc, Valve Disc

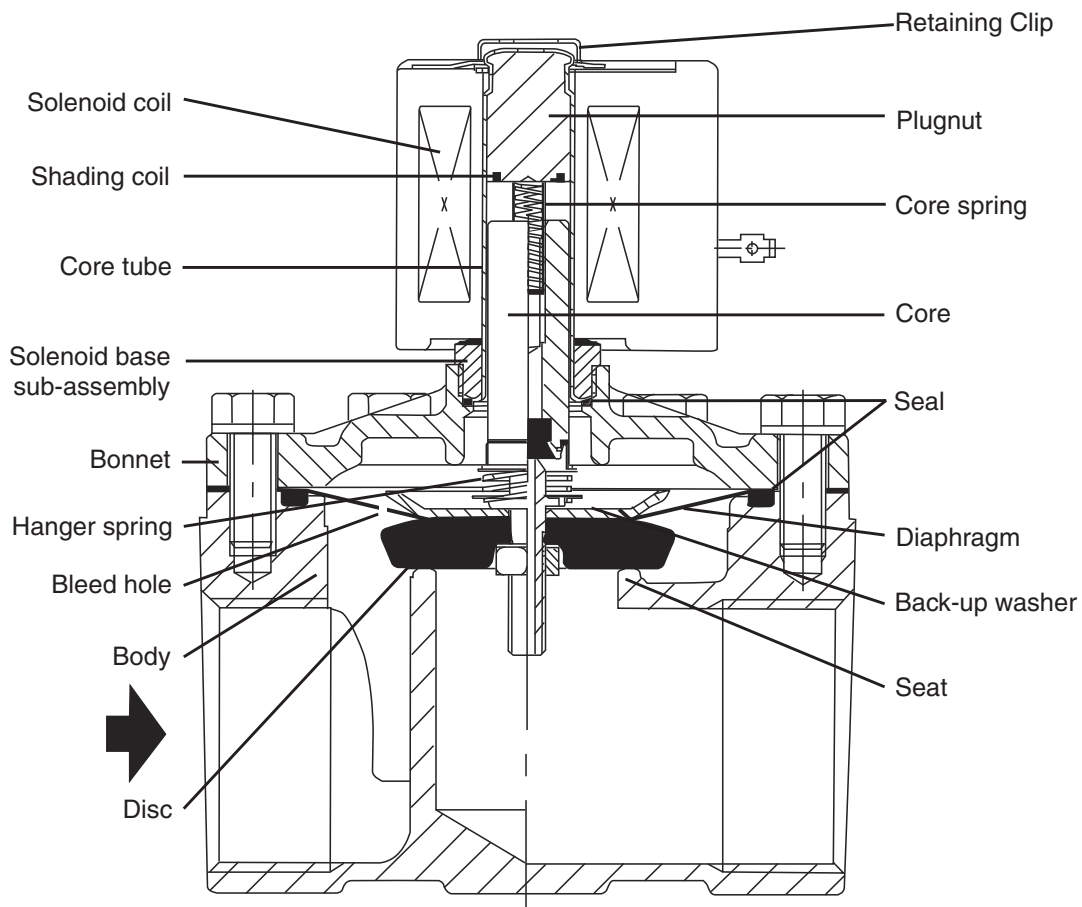
Sealing material on the core or disc-holder, which shuts off the seat orifice.

Disc-holder

Valve part, actuated by the core, in which a sealing disc is inserted.

Main Orifice

Principle passage between inlet and outlet of the valve.



Maximum Ambient Temperature

The nominal maximum ambient temperatures listed are based primarily on test conditions in determining safe limits for coil insulation. They are energized conditions, with maximum fluid temperatures existing in the valve.

Maximum Operating Pressure Differential (M.O.P.D.)

The maximum operating pressure differential refers to the difference in pressure between the inlet and the outlet sides of the valve, against which the solenoid can safely operate. If the pressure at the valve outlet is not known, the conservative approach is to regard the supply pressure as the M.O.P.D.

Minimum Ambient Temperature

The nominal limitation of 32°F (0°C) is advisable for any valve that might contain moisture (water vapor). Where freezing water is not a factor, minimum ambients as low as -4°F (-20°C) can be tolerated. In addition, special constructions are available for ambient temperatures down to -40°F (-40°C). *Consult your local ASCO sales office with your specific needs.*

Minimum Operating Pressure Differential

The minimum operating pressure differential is that which is required to open the valve and keep it open. For 2-way valves with floating piston or diaphragm, the valve will start to close below the minimum differential pressure.

Note: Direct acting hung diaphragm or hung piston valves do not require a minimum operating pressure.

For 3- and 4-way pilot valves, the minimum operating pressure is measured between the pressure and exhaust ports and must be maintained throughout the operation cycle to ensure complete transfer from one position to the other.

Pilot Orifice

Orifice located in the center of a diaphragm or piston, or in the pilot area of pilot-operated valves, opened or closed by the core.

Plugnut

Stationary soft magnetic stainless part, pressed in the closed end of the core tube, installed to improve the magnetic flux of the solenoid coil when energized.

Response Time

This is the time lapse after energizing (or de-energizing) a solenoid valve until the outlet pressure reaches a specific percentage of its maximum steady value, the outlet being connected to a circuit having specified flow parameters. Response time depends on five factors:

1. Electrical supply: AC or DC.
2. Fluid handled by the valve, viscosity and pressure level.
3. Type of operation: direct or pilot operated.
4. Size of the moving parts of the valve mechanism.
5. Circuit in which the time is measured.

Seating or Valve Seat

Geometry within valve that creates internal seal.

Shading Coil

Ring (typically copper) inserted in the core-side surface of the plugnut to limit core vibration in AC-powered solenoids.

Solenoid Base Sub-assembly

Assembly of core tube, plugnut, and bonnet.

Solenoid

Electromagnetic part of a valve, comprised of a coil, core tube, core, and enclosure.

Solenoid Construction

Internal parts in contact with the fluid are made of non-magnetic 300 and magnetic 400 Series stainless steel. In AC constructions, the shading coil is copper, except for valves in which silver is used. Other materials are available, when required. Generally, no shading coil is used in DC valves. The core tube in ASCO valves is 300 Series stainless steel and formed by deep drawing.

Solenoid Enclosure

Housing around the coil for electrical and mechanical protection, as well as protection against environmental hazards.

Valve Body

Main part of the valve, in which ports and main seats are located.

The function of a valve is shown by two figures. The first shows the number of ports, the second shows the number of valve positions (pilot ports do not count).

Example: 4/2 = 4 ports, 2 positions (open or closed).

The symbol for a valve has the same number of squares as the valve has positions.

Example: 2 positions =



Arrows in the squares show the flow direction of the fluid.

Examples: One flow path =



Two flow paths =



T-lines in the squares show the number of closed ports.

Example:



Two flow paths and one closed port.

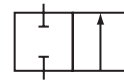
Example:



In this catalog, the vast majority of valves listed have only two positions, in which the right-hand square shows the valve unoperated and the left-hand square shows the valve operated.

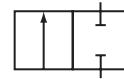
Normally Open (NO)

Example:



Normally Closed (NC)

Example:



Normally, the pipework is shown connected to the square representing the valve unoperated.

Symbols Showing Connections to Ports:

Exhaust that cannot be piped:



Exhaust that can be piped:

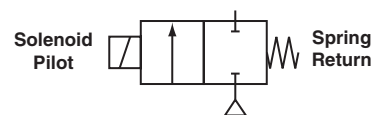


Connected to pressure source:



The methods of controlling the valve are shown as an addition to the squares. The left-hand side control shows the pilot (i.e. solenoid) and the right-hand side control shows the return pilot method (i.e. spring).

Example:



ISO Symbols for Valves Included in This Catalog:

| Ports/Positions | Function | Pilot | Return Pilot | Symbol |
|-----------------|----------|------------------------|--------------|--------|
| 2/2 | NC | Solenoid | Spring | |
| 2/2 | NC | Solenoid/Ext. Pressure | Spring | |
| 2/2 | NC | Solenoid/Int. Pressure | Spring | |
| 2/2 | NO | Solenoid | Spring | |
| 2/2 | NC | Ext. Pressure | Spring | |
| 2/2 | NO | Ext. Pressure | Spring | |
| 3/2 | NC | Solenoid | Spring | |
| 3/2 | NC | Solenoid/Int. Pressure | Spring | |
| 3/2 | NO | Solenoid | Spring | |
| 3/2 | NO | Solenoid/Ext. Pressure | Spring | |
| 3/2 | NO | Solenoid/Int. Pressure | Spring | |
| 3/2 | U | Solenoid | Spring | |
| 3/2 | NC | Ext. Pressure | Spring | |
| 3/2 | NO | Ext. Pressure | Spring | |
| 3/2 - (4/2) | NC | Solenoid/Int. Pressure | Spring | |
| 4/2 | - | Solenoid | Spring | |
| 4/2 | - | Solenoid/Int. Pressure | Spring | |

Two-way solenoid valves have one inlet and one outlet, and are used to permit and shut off fluid flow.

Two Types of Operations Apply

Normally Closed (NC)

Fluid is shut off when the coil is de-energized, flows through the valve when the coil is energized.

Normally Open (NO)

Fluid flows through the valve when the coil is de-energized, shuts off when the coil is energized.

Two Types of Constructions Apply

Direct Acting

When the solenoid is energized, the core directly opens the orifice of a Normally Closed valve or closes the orifice in a Normally Open valve. The valve will operate at pressures from 0 psi to its rated maximum. The force needed to open the valve is proportional to the orifice size and fluid pressure. As orifice size increases, so does the required force. To open larger orifices without increasing solenoid size, internal pilots are used.

Internally Piloted

These valves use line pressure to assist operation.

When the coil is de-energized (on a Normally Closed valve), the pilot orifice is closed and line pressure is applied to the top of the piston or diaphragm through the bleed orifice, closing the valve. When the coil is energized, the core opens the pilot orifice, relieving pressure from the diaphragm or piston. Line pressure, alone, opens the valve by lifting the diaphragm or piston off the main orifice.

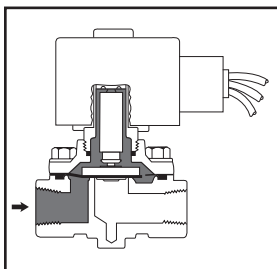
See *Engineering Section* for further details.

Standard and Optional Features

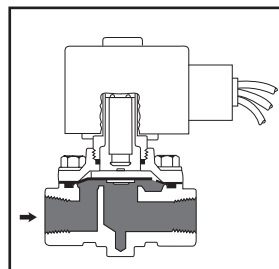
Solenoid valves are supplied, as listed, with either RedHat II molded epoxy solenoids or RedHat solenoids with metal enclosures. RedHat II valves are identified by the letter "G" or "H" in their catalog numbers; e.g., 8030G016. Many optional features may be added to your valves; e.g., high-temperature Class H molded coils, manual operators, and metering devices.

See the *Optional Features Section* for details.

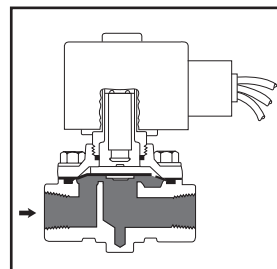
2-Way/2 Position Valves Flow Diagrams



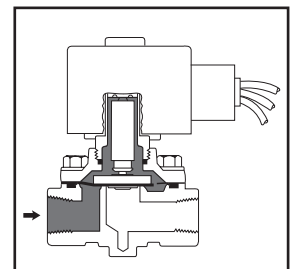
Normally Closed Valve De-Energized



Normally Closed Valve Energized



Normally Open Valve De-Energized



Normally Open Valve Energized

Index

| Series | General Description | Pipe Size (NPT) | Page |
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| 8030 | Low Pressure | 3/8" - 3/4" | 3 |
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Features

- Operate at low pressures: no minimum required; up to 15 psi (1 bar) maximum differential
- Normally closed or normally open operation
- Widely used for dispensing, collating, gas shutoff, vacuum holding, and tank draining applications
- Normally open valve well suited for venting systems

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Brass | 304 Stainless Steel |
| Seals and Disc | NBR | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Spring | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |
| Stem | PA (Normally Open) | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 40 | 238210 | 238310 | 238214 | 238314 |
| F | 11.6 | 10.1 | 25 | 70 | 238610 | 238710 | 238614 | 238714 |
| F | - | 16.1 | 35 | 95 | 272610 | - | 272614 | - |
| F | 16.8 | - | - | - | - | 97617 | - | 97617 |
| F | - | 17.1 | 40 | 93 | 238610 | - | 238614 | - |
| F | - | 20.1 | 48 | 240 | 272610 | - | 272614 | - |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz), 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

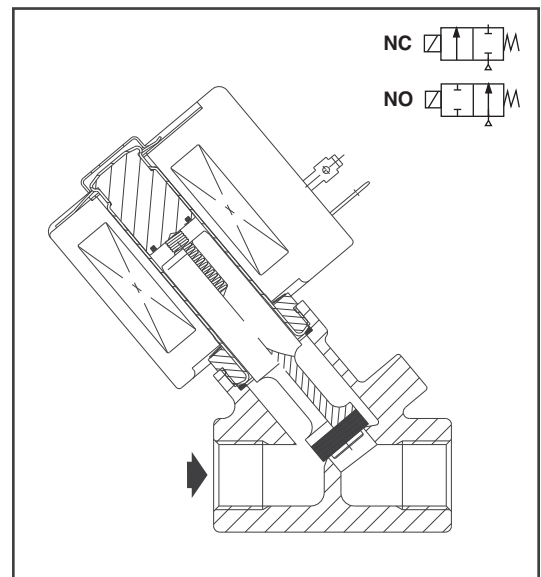
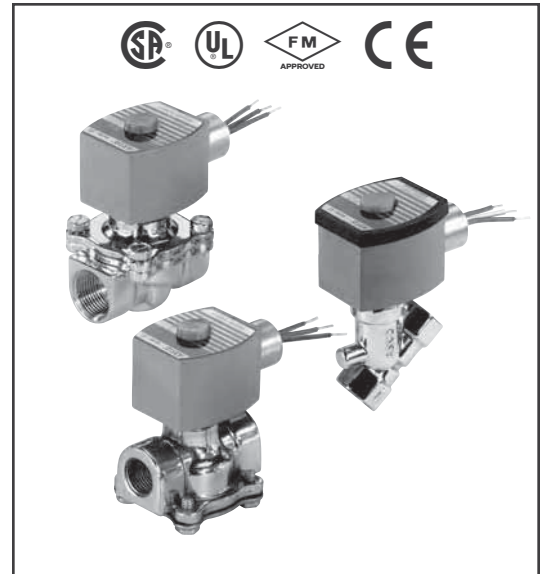
Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X (all except 16.8 watt). Metal Type 1 General Purpose housing with 7/8" hole for 1/2" conduit hub (16.8 watt)

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

Note: Wattages 16.1 and 20.1 meet Type 7 Groups A, B, C, and D; and Type 9 Groups E and F only.

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed, as indicated. FM approved (Normally closed only except 8030G017 and 8030G067). Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | Max. Fluid Temp. °F | | Brass Body | | | Stainless Steel Body | | | Watt Rating/ Class of Coil Insulation ① | | |
|---|---------------------|----------------|---------------------------------------|---------------|-------|---------------|---------------------|-----|------------|----------------|-------------|----------------------|----------------|-------------|---|--------|--------|
| | | | Min. | Max. AC | | Max. DC | | AC | DC | Catalog Number | Const. Ref. | UL ② Listing | Catalog Number | Const. Ref. | UL ② Listing | AC | DC |
| | | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | | |
| 3/8 | 3/8 | 1.8 | 0 | 7 | 5 | 3 | 3 | 180 | 120 | 8030G010 | 1 | ○ | 8030G064 | 1 | ○ | 6.1/F | 10.6/F |
| 3/8 | 3/8 | 1.8 | 0 | 15 | 15 | 3.5 | 3.5 | 180 | 150 | 8030G013 | 2 | ○ | 8030G065 | 2 | ○ | 10.1/F | 11.6/F |
| 1/2 | 7/16 | 2.8 | 0 | 4 | 6 | - | - | 180 | - | 8030G016 | 3 | ○ | 8030G066 | 3 | ○ | 6.1/F | - |
| 1/2 | 7/16 | 2.8 | 0 | - | - | 6 | 6 | - | 180 | 8030A017 | 11 | ○ | 8030A067 | 11 | ○ | - | 16.8/F |
| 1/2 | 7/16 | 2.8 | 0 | 15 | 15 | - | - | 200 | - | 8030G017 | 11 | ○ | 8030G067 | 11 | ○ | 16.1/F | - |
| 3/4 | 3/4 | 5 | 0 | 2 | 2 | 1 | 1 | 180 | 150 | 8030G003 | 9 | ○ | - | - | - | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 5 | 0 | 4 | 4 | - | - | 180 | - | 8030G043 | 9 | ○ | - | - | - | 17.1/F | - |
| 3/4 | 5/8 | 5.4 | 0 | 2.5 | 2.5 | - | - | 180 | - | - | - | - | 8030G063 | 10 | ○ | 10.1/F | - |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | | |
| 3/8 | 3/8 | 1.6 | 0 | 15 | 15 | - | - | 200 | - | 8030G070 | 12 | ● | - | - | - | 16.1/F | - |
| 1/2 | 7/16 | 2.2 | 0 | 15 | 15 | - | - | 200 | - | 8030G071 | 13 | ● | - | - | - | 20.1/F | - |
| 1/2 | 3/4 | 5 | 0 | 2 | 2 | - | - | 180 | - | 8030G082 | 7 | ● | - | - | - | 10.1/F | - |
| 3/4 | 3/4 | 5.5 | 0 | 2 | 2 | - | - | 180 | - | 8030G083 | 8 | ● | - | - | - | 10.1/F | - |

① On all 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ② ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | Max. Fluid Temp. °C | | Brass Body | | | Stainless Steel Body | | | Watt Rating/ Class of Coil Insulation ① | | |
|---|-------------------|-----------------------|---------------------------------------|---------------|-------|---------------|---------------------|----|------------|----------------|-------------|----------------------|----------------|-------------|---|--------|--------|
| | | | Min. | Max. AC | | Max. DC | | AC | DC | Catalog Number | Const. Ref. | UL ② Listing | Catalog Number | Const. Ref. | UL ② Listing | AC | DC |
| | | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | | |
| 3/8 | 10 | 1.5 | 0 | 0.5 | 0.3 | 0.2 | 0.2 | 82 | 49 | 8030G010 | 1 | ○ | 8030G064 | 1 | ○ | 6.1/F | 10.6/F |
| 3/8 | 10 | 1.5 | 0 | 1.0 | 1.0 | 0.2 | 0.2 | 82 | 65 | 8030G013 | 2 | ○ | 8030G065 | 2 | ○ | 10.1/F | 11.6/F |
| 1/2 | 11 | 2.4 | 0 | 0.3 | 0.4 | - | - | 82 | - | 8030G016 | 3 | ○ | 8030G066 | 3 | ○ | 6.1/F | - |
| 1/2 | 11 | 2.4 | 0 | - | - | 0.4 | 0.4 | - | 82 | 8030A017 | 11 | ○ | 8030A067 | 11 | ○ | - | 16.8/F |
| 1/2 | 11 | 2.4 | 0 | 1.0 | 1.0 | - | - | 93 | - | 8030G017 | 11 | ○ | 8030G067 | 11 | ○ | 16.1/F | - |
| 3/4 | 19 | 4.3 | 0 | 0.1 | 0.1 | 0.1 | 0.1 | 82 | 65 | 8030G003 | 9 | ○ | - | - | - | 10.1/F | 11.6/F |
| 3/4 | 19 | 4.3 | 0 | 0.3 | 0.3 | - | - | 82 | - | 8030G043 | 9 | ○ | - | - | - | 17.1/F | - |
| 3/4 | 16 | 4.6 | 0 | 0.2 | 0.2 | - | - | 82 | - | - | - | - | 8030G063 | 10 | ○ | 10.1/F | - |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | | |
| 3/8 | 10 | 1.4 | 0 | 1.0 | 1.0 | - | - | 93 | - | 8030G070 | 12 | ● | - | - | - | 16.1/F | - |
| 1/2 | 11 | 1.9 | 0 | 1.0 | 1.0 | - | - | 93 | - | 8030G071 | 13 | ● | - | - | - | 20.1/F | - |
| 1/2 | 19 | 4.3 | 0 | 0.1 | 0.1 | - | - | 82 | - | 8030G082 | 7 | ● | - | - | - | 10.1/F | - |
| 3/4 | 19 | 4.7 | 0 | 0.1 | 0.1 | - | - | 82 | - | 8030G083 | 8 | ● | - | - | - | 10.1/F | - |

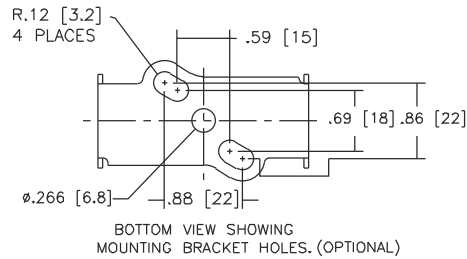
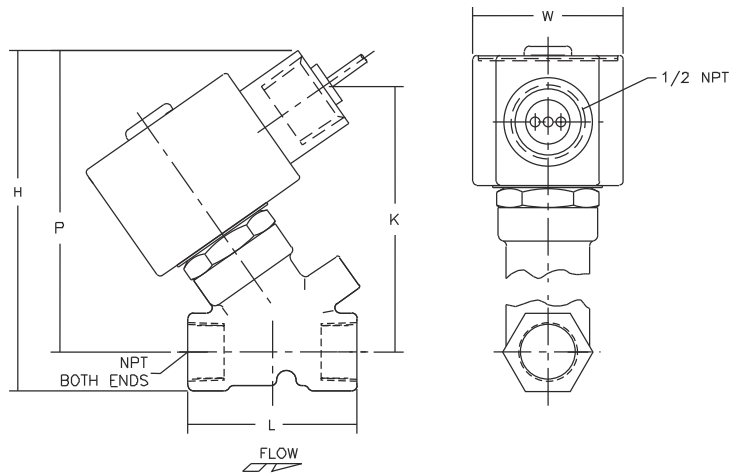
① On all 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ② ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Dimensions: inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 3.85 | 3 | 1.91 | 3.41 | 1.69 |
| | mm | 98 | 76 | 49 | 87 | 43 |
| 2 | ins. | 4 | 3.14 | 1.91 | 3.55 | 1.95 |
| | mm | 102 | 80 | 49 | 90 | 50 |
| 3 | ins. | 4.07 | 3.25 | 2.28 | 3.63 | 1.69 |
| | mm | 103 | 83 | 58 | 92 | 43 |
| 7 | ins. | 3.97 | 1.88 | 2.81 | 2.85 | 2.29 |
| | mm | 101 | 48 | 71 | 72 | 58 |
| 8 | ins. | 3.97 | 1.88 | 2.81 | 2.85 | 2.29 |
| | mm | 101 | 48 | 71 | 72 | 58 |
| 9 | ins. | 4.1 | 2.44 | 2.81 | 3.41 | 2.28 |
| | mm | 104 | 62 | 71 | 87 | 58 |
| 10 | ins. | 4.16 | 2.47 | 2.81 | 3.44 | 2.28 |
| | mm | 106 | 63 | 71 | 87 | 58 |
| 11 | ins. | 4.31 | 3.39 | 2.28 | 3.77 | 2.06 |
| | mm | 110 | 86 | 58 | 96 | 52 |
| 12 | ins. | 4.16 | 1.1 | 1.91 | 3.72 | 2.06 |
| | mm | 106 | 28 | 49 | 94 | 52 |
| 13 | ins. | 4.37 | 1.05 | 2.28 | 3.83 | 2.06 |
| | mm | 111 | 27 | 58 | 97 | 52 |

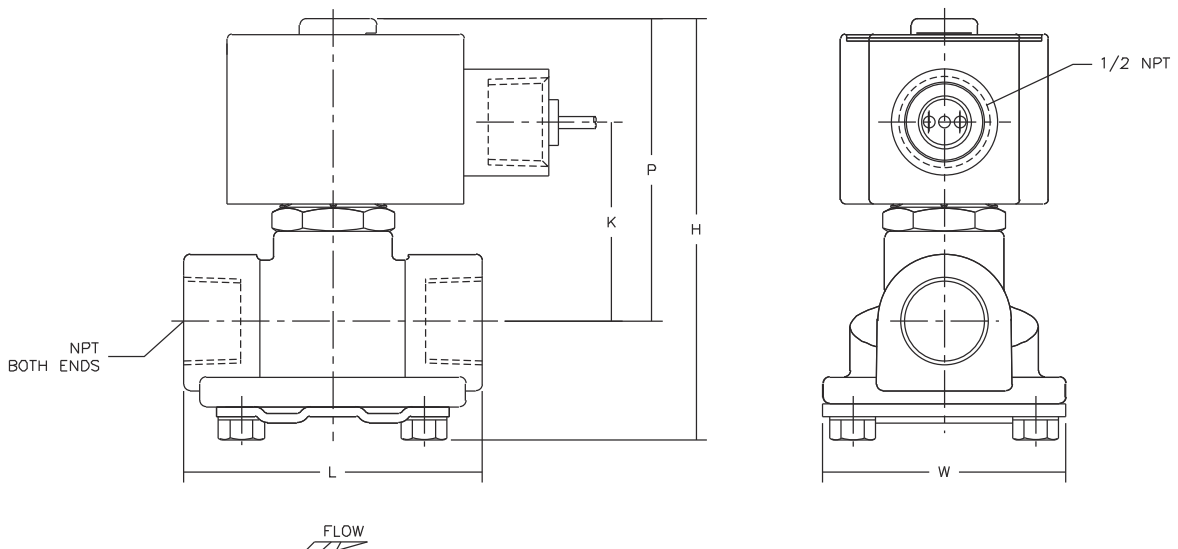
IMPORTANT: Valves may be mounted in any position, except for 8030G003 DC, which must be mounted with the solenoid vertical and upright.

Const. Ref. 1, 2, 3



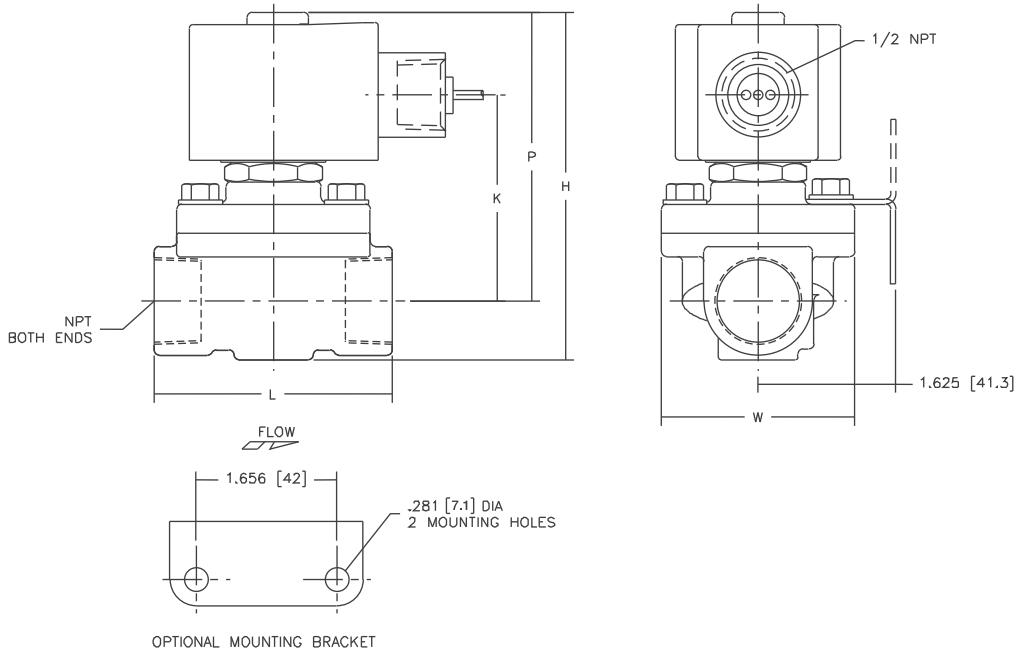
BOTTOM VIEW SHOWING MOUNTING BRACKET HOLES. (OPTIONAL)

Const. Ref. 7, 8

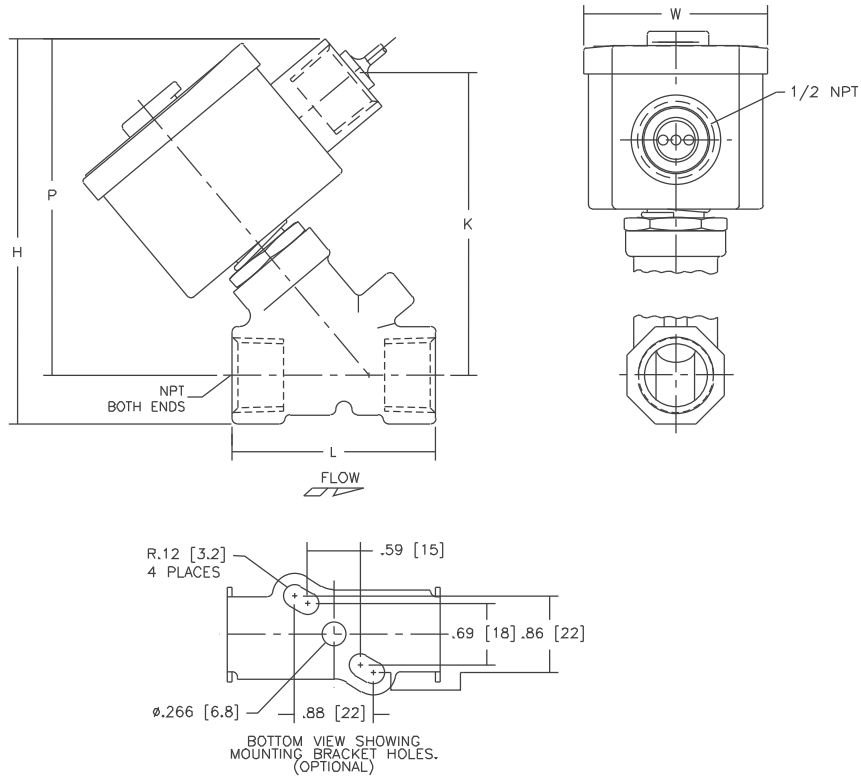


Dimensions: inches (mm)

Const. Ref. 9, 10



Const. Ref. 11, 12, 13



Features

- Lightweight, low-cost valves for air service
- Ideal for low pressure applications
- Provides high flow, Cv up to 138 (Kv 118)
- Air and vacuum service

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|--|
| Body | Aluminum |
| Seals, Diaphragms, Disc | NBR |
| Disc-Holder | PA (10.1 and 11.6 watt Normally Open only) |
| Core Guide | CA |
| Core Tube | 305 Stainless Steel |
| Rider Rings | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs* | 302 Stainless Steel |
| Shading Coil | Copper |

* For 8040H006, 8040H007, 8040H008, spring material is 17-7 PH

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part No. | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|---------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | - | 6.1 | 16 | 40 | 238210 | - | 238214 | - |
| F | 11.6 | 10.1 | 25 | 70 | 238610 | 238710 | 238614 | 238714 |
| B | 14.9 | - | - | - | - | 62691 | - | - |
| F | - | 15.4 | 27 | 160 | 99257 | - | 99257 | - |
| F | - | 28.2 | 50 | 385 | 206409 | - | 206409 | - |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz), 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type I.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9. (Except EF8215A40 and EF8215A90, which are suitable for Types 3 and 7 (C and D) only and have a T2B temperature rating code.)

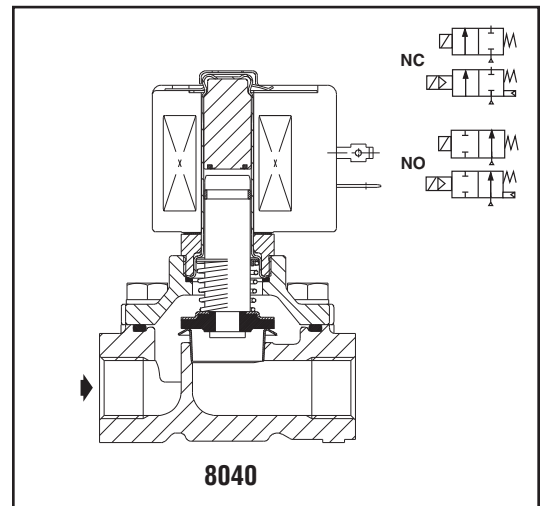
To order, add prefix "EF" to catalog number.

See *Optional Features Section* for other available options.

Nominal Ambient Temp. Ranges

| Series | AC | | DC | |
|--------|-----------------------------------|--------------------------------|--|--|
| | RedHat II/RedHat | RedHat II | RedHat | |
| 8040 | -40°F to 125°F (-40°C to 52°C) | - | - | |
| 8215 | 32°F to 125°F (0°C to 52°C) | 32°F to 104°F (0°C to 40°C) | 32°F to 77°F (0°C to 25°C) (104°F/40°C occasionally) | |

Refer to Engineering Section for details.



Approvals:

CSA certified to:

8040 Series:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 10381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

8215 Series Normally Closed:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 10381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

8215 Series Normally Open:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 10381.

UL listed, as indicated. FM approved (Normally Closed only, except Catalog Numbers 8215A090 and 8215A040). RedHat II meets applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity Btu/hr ⑥ | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Aluminum Body Catalog Number | Const. Ref. | | UL ⑤ Listing | Watt Rating/ Class of Coil Insulation ② | |
|--|---------------------|----------------|-----------------------|---------------------------------------|--------------|--------------|---------------------|-----|------------------------------|-------------|----|--------------|---|--------|
| | | | | Min. | Max. AC | Max. DC | AC | DC | | AC | DC | | AC | DC |
| | | | | | Air-Fuel Gas | Air-Fuel Gas | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | |
| 1/8 | 5/16 | 1.0 | 53,700 | 0 | 15 | - | 125 | - | 8040H006 | 11 | | ○ | 6.1/F | - |
| 1/4 | 5/16 | 1.1 | 59,000 | 0 | 15 | - | 125 | - | 8040H007 | 11 | | ○ | 6.1/F | - |
| 3/8 | 5/16 | 1.2 | 64,400 | 0 | 15 | - | 125 | - | 8040H008 | 11 | | ○ | 6.1/F | - |
| 3/8 | 3/4 | 3.4 | 183,000 | 0 | 50 | 25 | 125 | 104 | 8215G010 | 2 | | ○ | 10.1/F | 11.6/F |
| 3/8 | 3/4 | 3.5 | - | 5 | 125 | 125 | 125 | 104 | 8215G001 ① | 1 | | ○ | 6.1/F | 11.6/F |
| 1/2 | 3/4 | 5.4 | 291,000 | 0 | 2 | - | 125 | - | 8040G022 | 13A | | ○ | 10.1/F | - |
| 1/2 | 3/4 | 4.4 | 238,500 | 0 | 50 | 25 | 125 | 104 | 8215G020 | 2 | | ○ | 10.1/F | 11.6/F |
| 1/2 | 3/4 | 4.8 | - | 5 | 125 | 125 | 125 | 104 | 8215G002 ① | 1 | | ○ | 6.1/F | 11.6/F |
| 3/4 | 3/4 | 9.5 | 512,000 | 0 | 2 | - | 125 | - | 8040G023 | 13B | | ○ | 10.1/F | - |
| 3/4 | 3/4 | 5.1 | 247,500 | 0 | 50 | 25 | 125 | 104 | 8215G030 | 4 | | ○ | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 5.1 | - | 5 | 125 | 125 | 125 | 104 | 8215G003 ① | 3 | | ○ | 6.1/F | 11.6/F |
| 1 | 1 5/8 | 21 | 1,119,000 | 0 | 25 | 25 | 125 | 77 | 8215B050 ③ | 6 | 16 | ○ | 15.4/F | 14.9/B |
| 1 1/4 | 1 5/8 | 32 | 1,730,000 | 0 | 25 | 25 | 125 | 77 | 8215B060 ③ | 6 | 16 | ○ | 15.4/F | 14.9/B |
| 1 1/2 | 1 5/8 | 35 | 1,900,000 | 0 | 25 | 25 | 125 | 77 | 8215B070 ③ | 6 | 16 | ○ | 15.4/F | 14.9/B |
| 2 | 2 3/32 | 60 | 3,251,000 | 0 | 25 | 15 | 125 | 77 | 8215B080 ③ | 7 | 17 | ○ | 15.4/F | 14.9/B |
| 2 1/2 | 3 | 117 | 5,821,000 | 0 | 5 | - | 125 | - | 8215A090 | 8 | | ○ | 28.2/F | - |
| 3 | 3 | 138 | 7,430,000 | 0 | 5 | - | 125 | - | 8215A040 | 8 | | ○ | 28.2/F | - |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | |
| 3/8 | 3/4 | 3.2 | 172,500 | 0 | 125 | 125 | 125 | 104 | 8215G013 | 9 | | ● | 10.1/F | 11.6/F |
| 1/2 | 3/4 | 4 | 206,250 | 0 | 125 | 125 | 125 | 104 | 8215G023 | 9 | | ● | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 4.6 | 247,500 | 0 | 125 | 125 | 125 | 104 | 8215G033 | 10 | | ● | 10.1/F | 11.6/F |
| 1 | 1 5/8 | 22 | 1,191,750 | 0 | 25 | 15 | 125 | 77 | 8215C053 | 12 | 18 | ● | 15.4/F | 14.9/B |
| 1 1/4 | 1 5/8 | 33 | 1,793,250 | 0 | 25 | 15 | 125 | 77 | 8215C063 | 12 | 18 | ● | 15.4/F | 14.9/B |
| 1 1/2 | 1 5/8 | 37 | 1,988,250 | 0 | 25 | 15 | 125 | 77 | 8215C073 | 13 | 19 | ● | 15.4/F | 14.9/B |
| 2 | 2 3/32 | 58 | 3,100,000 | 0 | 25 | 15 | 125 | 77 | 8215C083 | 14 | 20 | ● | 15.4/F | 14.9/B |
| 2 1/2 | 3 | 117 | 6,290,000 | 0 | 5 | - | 125 | - | 8215B093 ④ | 15 | | ● | 28.2/F | - |
| ① Do not use for Fuel Gas. ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts. ③ FM Approved Process Control Valves. See Engineering Section (Approvals) for details. ④ Type I enclosure only. ⑤ ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details. ⑥ 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. | | | | | | | | | | | | | | |

Specifications (Metric units)

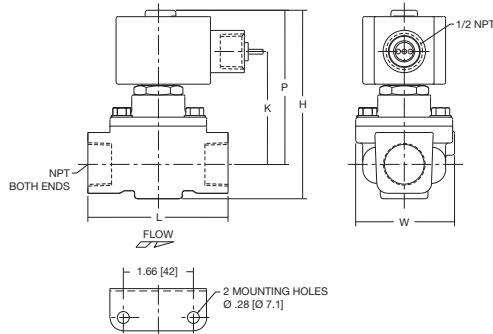
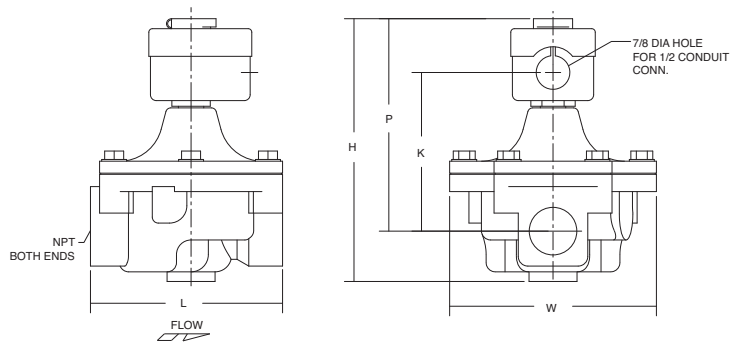
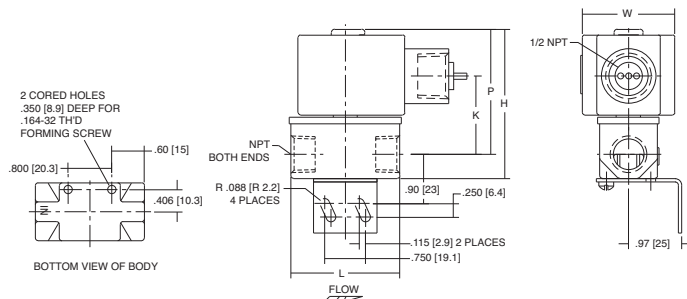
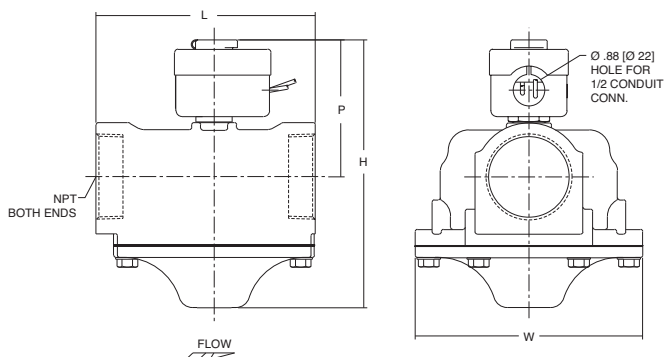
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Gas Capacity Btu/hr ⑥ | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Aluminum Body Catalog Number | Const. Ref. | | UL ⑤ Listing | Watt Rating/ Class of Coil Insulation ② | |
|---|-------------------|-----------------------|-----------------------|---------------------------------------|--------------|--------------|---------------------|----|------------------------------|-------------|----|--------------|---|--------|
| | | | | Min. | Max. AC | Max. DC | AC | DC | | AC | DC | | AC | DC |
| | | | | | Air-Fuel Gas | Air-Fuel Gas | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | |
| 1/8 | 7.9 | .86 | 53,700 | 0 | 1.0 | - | 52 | - | 8040H006 | 11 | ○ | 6.1/F | - | |
| 1/4 | 7.9 | .94 | 59,000 | 0 | 1.0 | - | 52 | - | 8040H007 | 11 | ○ | 6.1/F | - | |
| 3/8 | 7.9 | 1.03 | 64,400 | 0 | 1.0 | - | 52 | - | 8040H008 | 11 | ○ | 6.1/F | - | |
| 3/8 | 19 | 2.91 | 183,000 | 0 | 3.4 | 1.7 | 52 | 40 | 8215G010 | 2 | ○ | 10.1/F | 11.6/F | |
| 3/8 | 19 | 3.00 | - | 0.3 | 8.6 | 8.6 | 52 | 40 | 8215G001 ① | 1 | ○ | 6.1/F | 11.6/F | |
| 1/2 | 19 | 4.63 | 291,000 | 0 | 0.1 | - | 52 | - | 8040G022 | 13A | ○ | 10.1/F | - | |
| 1/2 | 19 | 3.77 | 238,500 | 0 | 3.4 | 1.7 | 52 | 40 | 8215G020 | 2 | ○ | 10.1/F | 11.6/F | |
| 1/2 | 19 | 4.11 | - | 0.3 | 8.6 | 8.6 | 52 | 40 | 8215G002 ① | 1 | ○ | 6.1/F | 11.6/F | |
| 3/4 | 19 | 8.14 | 449,000 | 0 | 0.1 | - | 52 | - | 8040G023 | 13B | ○ | 10.1/F | - | |
| 3/4 | 19 | 4.37 | 247,500 | 0 | 3.4 | 1.7 | 52 | 40 | 8215G030 | 4 | ○ | 10.1/F | 11.6/F | |
| 3/4 | 19 | 4.37 | - | 0.3 | 8.6 | 8.6 | 52 | 40 | 8215G003 ① | 3 | ○ | 6.1/F | 11.6/F | |
| 1 | 41 | 18.00 | 1,119,000 | 0 | 1.7 | 1.7 | 52 | 25 | 8215B050 ③ | 6 | 16 | ○ | 15.4/F | 14.9/B |
| 1 1/4 | 41 | 27.43 | 1,730,000 | 0 | 1.7 | 1.7 | 52 | 25 | 8215B060 ③ | 6 | 16 | ○ | 15.4/F | 14.9/B |
| 1 1/2 | 41 | 30.00 | 1,900,000 | 0 | 1.7 | 1.7 | 52 | 25 | 8215B070 ③ | 6 | 16 | ○ | 15.4/F | 14.9/B |
| 2 | 53 | 51.43 | 3,251,000 | 0 | 1.7 | 1.0 | 52 | 25 | 8215B080 ③ | 7 | 17 | ○ | 15.4/F | 14.9/B |
| 2 1/2 | 76 | 100.28 | 5,821,000 | 0 | 0.3 | - | 52 | - | 8215A090 | 8 | ○ | 28.2/F | - | |
| 3 | 76 | 118.28 | 7,430,000 | 0 | 0.3 | - | 52 | - | 8215A040 | 8 | ○ | 28.2/F | - | |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | |
| 3/8 | 19 | 2.74 | 172,500 | 0 | 8.6 | 8.6 | 52 | 40 | 8215G013 | 9 | ● | 10.1/F | 11.6/F | |
| 1/2 | 19 | 3.43 | 206,250 | 0 | 8.6 | 8.6 | 52 | 40 | 8215G023 | 9 | ● | 10.1/F | 11.6/F | |
| 3/4 | 19 | 3.94 | 247,500 | 0 | 8.6 | 8.6 | 52 | 40 | 8215G033 | 10 | ● | 10.1/F | 11.6/F | |
| 1 | 41 | 18.86 | 1,191,750 | 0 | 1.7 | 1.0 | 52 | 25 | 8215C053 | 12 | 18 | ● | 15.4/F | 14.9/B |
| 1 1/4 | 41 | 28.28 | 1,793,250 | 0 | 1.7 | 1.0 | 52 | 25 | 8215C063 | 12 | 18 | ● | 15.4/F | 14.9/B |
| 1 1/2 | 41 | 31.71 | 1,988,250 | 0 | 1.7 | 1.0 | 52 | 25 | 8215C073 | 13 | 19 | ● | 15.4/F | 14.9/B |
| 2 | 53 | 49.71 | 3,100,000 | 0 | 1.7 | 1.0 | 52 | 25 | 8215C083 | 14 | 20 | ● | 15.4/F | 14.9/B |
| 2 1/2 | 76 | 100.28 | 6,290,000 | 0 | 0.3 | - | 52 | - | 8215B093 ④ | 15 | ● | 28.2/F | - | |

① Do not use for Fuel Gas.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ③ FM Approved Process Control Valves. See Engineering Section (Approvals) for details.
 ④ Type 1 enclosure only.
 ⑤ ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details.
 ⑥ 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions: inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|-------|------|------|------|------|
| 1 | ins. | 3.42 | 2.00 | 2.75 | 2.87 | 2.46 |
| | mm | 87 | 51 | 70 | 73 | 63 |
| 2 | ins. | 4.02 | 2.49 | 2.75 | 3.46 | 2.46 |
| | mm | 102 | 63 | 70 | 88 | 63 |
| 3 | ins. | 3.87 | 2.19 | 3.31 | 3.05 | 2.33 |
| | mm | 98 | 56 | 84 | 77 | 59 |
| 4 | ins. | 4.46 | 2.68 | 3.31 | 3.64 | 2.33 |
| | mm | 113 | 68 | 84 | 92 | 59 |
| 6 ① | ins. | 6.84 | 4.25 | 5.00 | 5.59 | 5.38 |
| | mm | 174 | 108 | 127 | 142 | 137 |
| 7 ① | ins. | 7.47 | 4.53 | 6.09 | 5.94 | 6.31 |
| | mm | 190 | 115 | 155 | 151 | 160 |
| 8 ① | ins. | 10.25 | 5.75 | 7.79 | 7.91 | 7.94 |
| | mm | 260 | 146 | 198 | 201 | 202 |
| 9 | ins. | 4.42 | 2.72 | 2.75 | 3.86 | 2.36 |
| | mm | 112 | 69 | 70 | 98 | 60 |
| 10 | ins. | 4.86 | 2.72 | 3.31 | 4.04 | 2.36 |
| | mm | 123 | 69 | 84 | 103 | 60 |
| 11 | ins. | 2.74 | 1.44 | 2.00 | 2.30 | 1.69 |
| | mm | 69 | 36 | 51 | 58 | 43 |
| 12 | ins. | 6.84 | 2.22 | 5.00 | 3.63 | 5.38 |
| | mm | 174 | 56 | 127 | 92 | 137 |
| 13 | ins. | 6.84 | 2.16 | 5.00 | 3.56 | 5.38 |
| | mm | 174 | 55 | 127 | 90 | 137 |
| 13A | ins. | 4.05 | 2.46 | 2.75 | 3.44 | 2.42 |
| | mm | 103 | 63 | 70 | 87 | 62 |
| 13B | ins. | 4.49 | 2.65 | 3.31 | 3.63 | 2.39 |
| | mm | 114 | 67 | 84 | 92 | 61 |
| 14 ② | ins. | 7.44 | 2.41 | 6.09 | 3.81 | 6.31 |
| | mm | 189 | 61 | 155 | 97 | 160 |
| 15 ② | ins. | 10.25 | 3.07 | 7.80 | 5.22 | 7.94 |
| | mm | 260 | 78 | 198 | 133 | 202 |
| 16 | ins. | 7.59 | 4.03 | 5.00 | 6.34 | 5.38 |
| | mm | 193 | 102 | 127 | 161 | 137 |
| 17 | ins. | 8.19 | 4.38 | 6.09 | 6.69 | 6.31 |
| | mm | 208 | 111 | 155 | 170 | 160 |
| 18 | ins. | 6.16 | 2.09 | 5.00 | 4.41 | 5.38 |
| | mm | 156 | 53 | 127 | 112 | 137 |
| 19 | ins. | 7.59 | 2.03 | 5.00 | 4.34 | 5.38 |
| | mm | 193 | 52 | 127 | 110 | 137 |
| 20 | ins. | 8.19 | 2.28 | 6.09 | 4.59 | 6.31 |
| | mm | 208 | 58 | 155 | 117 | 160 |

IMPORTANT: Valves may be mounted in any position except all DC constructions and those marked ①, which must be mounted with the solenoid vertical and upright. Constructions marked ② must be mounted with the solenoid vertical and upright or horizontal only.

Const. Ref. 1-4, 9, 10, 13A, 13B

Const. Ref. 6, 7, 8, 16, 17

Const. Ref. 11

Const. Ref. 12-15, 18-20


Features

- Wide range of pressure ratings, sizes, and resilient materials provide long service life and low internal leakage
- High Flow Valves for liquid, corrosive, and air/inert gas service
- Industrial applications include:
 - Car wash
 - Laundry equipment
 - Air compressors
 - Industrial water control
 - Pumps

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Brass | 304 Stainless Steel |
| Seals and Discs | NBR or PTFE | |
| Disc-Holder | PA | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | - | 6.1 | 16 | 40 | 238210 | - | 238214 | - |
| F | 11.6 | 10.1 | 25 | 70 | 238610 | 238710 | 238614 | 238714 |
| F | 16.8 | 16.1 | 35 | 180 | 272610 | 97617 | 272614 | 97617 |
| F | - | 17.1 | 40 | 93 | 238610 | - | 238614 | - |
| F | - | 20 | 43 | 240 | 99257 | - | 99257 | - |
| F | - | 20.1 | 48 | 240 | 272610 | - | 272614 | - |
| H | 30.6 | - | - | - | - | 74073 | - | 74073 |
| H | 40.6 | - | - | - | - | 238910 | - | 238914 |

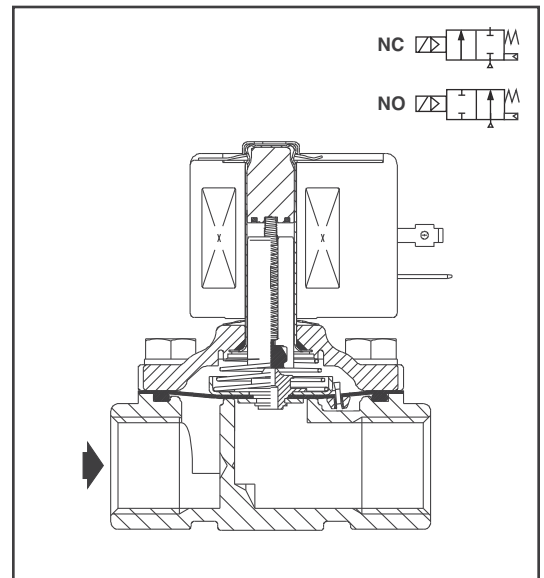
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type I.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; Red-Hat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9.

(To order, add prefix "EF" to catalog number, except Catalog Numbers 8210B057, 8210B058, and 8210B059, which are not available with Explosionproof enclosures.)
 See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

RedHat II/
 RedHat AC: 32°F to 125°F (0°C to 52°C)

RedHat II DC: 32°F to 104°F (0°C to 40°C)
 RedHat DC: 32°F to 77°F (0°C to 25°C)
 (104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals

CSA certified. RedHat II meets applicable CE directives.
 Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | | Max. Fluid Temp. °F | | Brass Body | | | Stainless Steel Body | | | Watt Rating/ Class of Coil Insulation ⑦ | |
|--|---------------------|----------------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|---------------------|-----|----------------|---------------|--------------|----------------------|---------------|--------------|---|--------|
| | | | Min. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. ④ | UL Listing ⑤ | Catalog Number | Const. Ref. ④ | UL Listing ⑤ | AC | DC |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized), NBR or PTFE ② Seating | | | | | | | | | | | | | | | | | | | |
| 3/8 | 3/8 | 1.5 | ① | 150 | 125 | - | 40 | 40 | - | 180 | 150 | 8210G073 ③ | 1P | ● | 8210G036 ③ | 1P | ● | 6.1/F | 11.6/F |
| 3/8 | 5/8 | 3 | 0 | 150 | 150 | - | 40 | 40 | - | 180 | 150 | 8210G093 | 5D | ○ | - | - | - | 10.1/F | 11.6/F |
| 3/8 | 5/8 | 3 | 5 | 200 | 150 | 135 | 125 | 100 | 100 | 180 | 150 | 8210G001 | 6D | ○ | - | - | - | 6.1/F | 11.6/F |
| 3/8 | 5/8 | 3 | 5 | 300 | 300 | 300 | - | - | - | 175 | - | 8210G006 | 5D | ○ | - | - | - | 17.1/F | - |
| 1/2 | 7/16 | 2.2 | ① | 150 | 125 | - | 40 | 40 | - | 180 | 150 | 8210G015 ③ | 2P | ● | 8210G037 ③ | 2P | ● | 6.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | - | 40 | 40 | - | 180 | 150 | 8210G094 | 5D | ○ | - | - | - | 10.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | 125 | 40 | 40 | - | 175 | 150 | - | - | - | 8210G087 | 7D | ● | 17.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 5 | 200 | 150 | 135 | 125 | 100 | 100 | 180 | 150 | 8210G002 | 6D | ○ | - | - | - | 6.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 5 | 300 | 300 | 300 | - | - | - | 175 | - | 8210G007 | 5D | ○ | - | - | - | 17.1/F | - |
| 1/2 | 3/4 | 4 | 5 | - | 300 | - | - | 300 | - | 180 | 125 | 8210G227 | 5D | ○ | - | - | - | 17.1/F | 40.6/H |
| 3/4 | 5/8 | 4.5 | 0 | 150 | 150 | 125 | 40 | 40 | - | 175 | 150 | - | - | - | 8210G088 | 7D | ● | 17.1/F | 11.6/F |
| 3/4 | 3/4 | 5 | 5 | 125 | 125 | 125 | 100 | 90 | 75 | 180 | 150 | 8210G009 | 9D | ○ | - | - | - | 6.1/F | 11.6/F |
| 3/4 | 3/4 | 5 | 0 | 150 | 150 | - | 40 | 40 | - | 180 | 150 | 8210G095 | 8D | ○ | - | - | - | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 6.5 | 5 | 250 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G003 | 11D | ○ | - | - | - | 6.1/F | 11.6/F |
| 3/4 | 3/4 | 6 | 0 | - | - | - | 200 | 180 | 180 | - | 77 | 8210B026 ② ‡ | 10P | - | - | - | - | - | 30.6/H |
| 3/4 | 3/4 | 6 | 0 | 350 | 300 | 200 | - | - | - | 200 | - | 8210G026 ② ‡ | 40P | ● | - | - | - | 16.1F | - |
| 1 | 1 | 13 | 0 | - | - | - | 100 | 100 | 80 | - | 77 | 8210B054 ‡ | 31D | - | 8210D089 | 15D | - | - | 30.6/H |
| 1 | 1 | 13 | 0 | 150 | 125 | 125 | - | - | - | 180 | - | 8210G054 | 41D | ● | 8210G089 | 45D | ● | 16.1/F | - |
| 1 | 1 | 13 | 5 | 150 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G004 | 12D | ○ | - | - | - | 6.1/F | 11.6/F |
| 1 | 1 | 13.5 | 0 | 300 | 225 | 115 | - | - | - | 200 | - | 8210G027 ‡ | 42P | ● | - | - | - | 20.1/F | - |
| 1 | 1 | 13.5 | 10 | 300 | 300 | 300 | - | - | - | 175 | - | 8210G078 ② | 13P | - | - | - | - | 17.1/F | - |
| 1 1/4 | 1 1/8 | 15 | 0 | - | - | - | 100 | 100 | 80 | - | 77 | 8210B055 ‡ | 32D | - | - | - | - | - | 30.6/H |
| 1 1/4 | 1 1/8 | 15 | 0 | 150 | 125 | 125 | - | - | - | 180 | - | 8210G055 | 43D | ● | - | - | - | 16.1/F | - |
| 1 1/4 | 1 1/8 | 15 | 5 | 150 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G008 | 16D | ○ | - | - | - | 6.1/F | 11.6/F |
| 1 1/2 | 1 1/4 | 22.5 | 0 | - | - | - | 100 | 100 | 80 | - | 77 | 8210B056 ‡ | 33D | - | - | - | - | - | 30.6/H |
| 1 1/2 | 1 1/4 | 22.5 | 0 | 150 | 125 | 125 | - | - | - | 180 | - | 8210G056 | 44D | ● | - | - | - | 16.1/F | - |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 150 | 150 | 100 | 125 | 125 | 125 | 180 | 150 | 8210G022 | 18D | ● | - | - | - | 6.1/F | 11.6/F |
| 2 | 1 3/4 | 43 | 5 | 150 | 125 | 90 | 50 | 50 | 50 | 180 | 150 | 8210G100 | 20P | ● | - | - | - | 6.1/F | 11.6/F |
| 2 1/2 | 1 3/4 | 45 | 5 | 150 | 125 | 90 | 50 | 50 | 50 | 180 | 150 | 8210G101 | 21P | ● | - | - | - | 6.1/F | 11.6/F |
| NORMALLY OPEN (Open when de-energized), NBR Seating (PA Disc-Holder, except as noted) | | | | | | | | | | | | | | | | | | | |
| 3/8 | 5/8 | 3 | 0 | 150 | 150 | 125 | 125 | 125 | 80 | 180 | 150 | 8210G033 | 23D | ● | - | - | - | 10.1/F | 11.6/F |
| 3/8 | 5/8 | 3 | 5 | 250 | 200 | 200 | 250 | 200 | 200 | 180 | 180 | 8210G011 ⑧ ⑨ | 39D | ● | - | - | - | 10.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | 125 | 125 | 125 | 80 | 180 | 150 | 8210G034 | 23D | ● | - | - | - | 10.1/F | 11.6/F |
| 1/2 | 5/8 | 3 | 0 | 150 | 150 | 100 | 125 | 125 | 80 | 180 | 150 | - | - | - | 8210G030 | 37D | ● | 10.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 5 | 250 | 200 | 200 | 250 | 200 | 200 | 180 | 180 | 8210G012 ⑧ ⑨ | 39D | ● | - | - | - | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 5.5 | 0 | 150 | 150 | 125 | 125 | 125 | 80 | 180 | 150 | 8210G035 | 25D | ● | - | - | - | 10.1/F | 11.6/F |
| 3/4 | 5/8 | 3 | 0 | 150 | 150 | 100 | 125 | 125 | 80 | 180 | 150 | - | - | - | 8210G038 | 38D | ● | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 6.5 | 5 | - | - | - | 250 | 200 | 200 | - | 180 | 8210C013 | 24D | ● | - | - | - | - | 16.8/F |
| 3/4 | 3/4 | 6.5 | 5 | 250 | 200 | 200 | - | - | - | 180 | - | 8210G013 | 46D | ● | - | - | - | 16.1/F | - |
| 1 | 1 | 13 | 0 | 125 | 125 | 125 | - | - | - | 180 | - | 8210B057 ⑧ ⑨ | 34D | ● | - | - | - | 20/F | - |
| 1 | 1 | 13 | 5 | - | - | - | 125 | 125 | 125 | - | 180 | 8210D014 | 26D | ● | - | - | - | - | 16.8/F |
| 1 | 1 | 13 | 5 | 150 | 150 | 125 | - | - | - | 180 | - | 8210G014 | 47D | ● | - | - | - | 16.1/F | - |
| 1 1/4 | 1 1/8 | 15 | 0 | 125 | 125 | 125 | - | - | - | 180 | - | 8210B058 ⑧ ⑨ | 35D | ● | - | - | - | 20/F | - |
| 1 1/4 | 1 1/8 | 15 | 5 | - | - | - | 125 | 125 | 125 | - | 180 | 8210D018 | 28D | ● | - | - | - | - | 16.8/F |
| 1 1/4 | 1 1/8 | 15 | 5 | 150 | 150 | 125 | - | - | - | 180 | - | 8210G018 | 48D | ● | - | - | - | 16.1/F | - |
| 1 1/2 | 1 1/4 | 22.5 | 0 | 125 | 125 | 125 | - | - | - | 180 | - | 8210B059 ⑧ ⑨ | 36D | ● | - | - | - | 20/F | - |
| 1 1/2 | 1 1/4 | 22.5 | 5 | - | - | - | 125 | 125 | 125 | - | 180 | 8210D032 | 29D | ● | - | - | - | - | 16.8/F |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 150 | 150 | 125 | - | - | - | 180 | - | 8210G032 | 49D | ● | - | - | - | 16.1/F | - |
| 2 | 1 3/4 | 43 | 5 | - | - | - | 125 | 125 | 125 | - | 150 | 8210 103 | 30P | ● | - | - | - | - | 16.8/F |
| 2 | 1 3/4 | 43 | 5 | 125 | 125 | 125 | - | - | - | 180 | - | 8210G103 | 50P | ● | - | - | - | 16.1/F | - |
| 2 1/2 | 1 3/4 | 45 | 5 | - | - | - | 125 | 125 | 125 | - | 150 | 8210 104 | 27P | ● | - | - | - | - | 16.8/F |
| 2 1/2 | 1 3/4 | 45 | 5 | 125 | 125 | 125 | - | - | - | 180 | - | 8210G104 | 51P | ● | - | - | - | 16.1/F | - |

① 5 psi on Air; 1 psi on Water.
 ② Valve provided with PTFE main disc.
 ③ Valve includes Ultem (G.E. trademark) piston.
 ④ Letter "D" denotes diaphragm construction; "P" denotes piston construction.
 ⑤ Safety Shutoff Valve; ● General Purpose Valve.
 Refer to Engineering Section (Approvals) for details.

⑥ Valves not available with Explosionproof enclosures.
 ⑦ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ⑧ AC construction also has PA seating.
 ⑨ No disc-holder.
 ⑩ Stainless steel disc-holder.
 ‡ Must have solenoid mounted vertical and upright.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | | | | | | Max. Fluid Temp. °C | | Brass Body | | | Stainless Steel Body | | | Watt Rating/ Class of Coil Insulation ⑦ | |
|--|-------------------|-----------------------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|----|----|---------------------|---------------|--------------|----------------|---------------|----------------------|--------|--------|---|--|
| | | | Min. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. ④ | UL ⑤ Listing | Catalog Number | Const. Ref. ④ | UL ⑤ Listing | AC | DC | | |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized), NBR or PTFE ② Seating | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | 10 | 1.29 | ① | 10 | 9 | - | 3 | 3 | - | 82 | 65 | 8210G073 ③ | 1P | ● | 8210G036 ③ | 1P | ● | 6.1/F | 11.6/F | | |
| 3/8 | 16 | 2.57 | 0 | 10 | 10 | - | 3 | 3 | - | 82 | 65 | 8210G093 | 5D | ○ | - | - | - | 10.1/F | 11.6/F | | |
| 3/8 | 16 | 2.57 | 0.3 | 14 | 10 | 9 | 9 | 7 | 7 | 82 | 65 | 8210G001 | 6D | ○ | - | - | - | 6.1/F | 11.6/F | | |
| 3/8 | 16 | 2.57 | 0.3 | 21 | 21 | 21 | - | - | - | 79 | - | 8210G006 | 5D | ○ | - | - | - | 17.1/F | - | | |
| 1/2 | 11 | 1.89 | ① | 10 | 9 | - | 3 | 3 | - | 82 | 65 | 8210G015 ③ | 2P | ● | 8210G037 ③ | 2P | ● | 6.1/F | 11.6/F | | |
| 1/2 | 16 | 3.43 | 0 | 10 | 10 | - | 3 | 3 | - | 82 | 65 | 8210G094 | 5D | ○ | - | - | - | 10.1/F | 11.6/F | | |
| 1/2 | 16 | 3.43 | 0 | 10 | 10 | 9 | 3 | 3 | - | 79 | 65 | - | - | - | 8210G087 | 7D | ● | 17.1/F | 11.6/F | | |
| 1/2 | 16 | 3.43 | 0.3 | 14 | 10 | 9 | 9 | 7 | 7 | 82 | 65 | 8210G002 | 6D | ○ | - | - | - | 6.1/F | 11.6/F | | |
| 1/2 | 16 | 3.43 | 0.3 | 21 | 21 | 21 | - | - | - | 79 | - | 8210G007 | 5D | ○ | - | - | - | 17.1/F | - | | |
| 1/2 | 19 | 3.43 | 0.3 | - | 21 | - | - | 21 | - | 82 | 52 | 8210G227 | 5D | ○ | - | - | - | 17.1/F | 40.6H | | |
| 3/4 | 16 | 3.86 | 0 | 10 | 10 | 9 | 3 | 3 | - | 79 | 65 | - | - | - | 8210G088 | 7D | ● | 17.1/F | 11.6/F | | |
| 3/4 | 19 | 4.29 | 0.3 | 9 | 9 | 9 | 7 | 6 | 5 | 82 | 65 | 8210G009 | 9D | ○ | - | - | - | 6.1/F | 11.6/F | | |
| 3/4 | 19 | 4.29 | 0 | 10 | 10 | - | 3 | 3 | - | 82 | 65 | 8210G095 | 8D | ○ | - | - | - | 10.1/F | 11.6/F | | |
| 3/4 | 19 | 5.57 | 0.3 | 17 | 10 | 7 | 9 | 9 | 9 | 82 | 65 | 8210G003 | 11D | ○ | - | - | - | 6.1/F | 11.6/F | | |
| 3/4 | 19 | 5.14 | 0 | - | - | - | 14 | 12 | 12 | - | 25 | 8210B026 ② ‡ | 10P | - | - | - | - | - | 30.6/H | | |
| 3/4 | 19 | 5.14 | 0 | 24 | 21 | 14 | - | - | - | 93 | - | 8210G026 ② ‡ | 40P | ● | - | - | - | 16.1F | - | | |
| 1 | 25 | 11.14 | 0 | - | - | - | 7 | 7 | 6 | - | 25 | 8210B054 ‡ | 31D | - | 8210D089 | 15D | - | - | 30.6/H | | |
| 1 | 25 | 11.14 | 0 | 10 | 9 | 9 | - | - | - | 82 | - | 8210G054 | 41D | ● | 8210G089 | 45D | ● | 16.1/F | - | | |
| 1 | 25 | 11.14 | 0.3 | 10 | 10 | 7 | 9 | 9 | 9 | 82 | 65 | 8210G004 | 12D | ○ | - | - | - | 6.1/F | 11.6/F | | |
| 1 | 25 | 11.57 | 0 | 21 | 16 | 8 | - | - | - | 93 | - | 8210G027 ‡ | 42P | ● | - | - | - | 20.1/F | - | | |
| 1 | 25 | 11.57 | 0.7 | 21 | 21 | 21 | - | - | - | 79 | - | 8210G078 ② | 13P | - | - | - | - | 17.1/F | - | | |
| 1 1/4 | 29 | 12.86 | 0 | - | - | - | 7 | 7 | 6 | - | 25 | 8210B055 ‡ | 32D | - | - | - | - | - | 30.6/H | | |
| 1 1/4 | 29 | 12.86 | 0 | 10 | 9 | 9 | - | - | - | 82 | - | 8210G055 | 43D | ● | - | - | - | 16.1/F | - | | |
| 1 1/4 | 29 | 12.86 | 0.3 | 10 | 10 | 7 | 9 | 9 | 9 | 82 | 65 | 8210G008 | 16D | ○ | - | - | - | 6.1/F | 11.6/F | | |
| 1 1/2 | 32 | 19.29 | 0 | - | - | - | 7 | 7 | 6 | - | 25 | 8210B056 ‡ | 33D | - | - | - | - | - | 30.6/H | | |
| 1 1/2 | 32 | 19.29 | 0 | 10 | 9 | 9 | - | - | - | 82 | - | 8210G056 | 44D | ● | - | - | - | 16.1/F | - | | |
| 1 1/2 | 32 | 19.29 | 0.3 | 10 | 10 | 7 | 9 | 9 | 9 | 82 | 65 | 8210G022 | 18D | ● | - | - | - | 6.1/F | 11.6/F | | |
| 2 | 44 | 36.86 | 0.3 | 10 | 9 | 6 | 3 | 3 | 3 | 82 | 65 | 8210G100 | 20P | ● | - | - | - | 6.1/F | 11.6/F | | |
| 2 1/2 | 44 | 38.57 | 0.3 | 10 | 9 | 6 | 3 | 3 | 3 | 82 | 65 | 8210G101 | 21P | ● | - | - | - | 6.1/F | 11.6/F | | |
| NORMALLY OPEN (Open when de-energized), NBR Seating (PA Disc-Holder, except as noted) | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | 16 | 2.57 | 0.0 | 10 | 10 | 10 | 9 | 9 | 9 | 6 | 82 | 65 | 8210G033 | 23D | ● | - | - | - | 10.1/F | 11.6/F | |
| 3/8 | 16 | 2.57 | 0.3 | 17 | 14 | 14 | 17 | 14 | 14 | 82 | 82 | 8210G011 ⑧ ⑨ | 39D | ● | - | - | - | 10.1/F | 11.6/F | | |
| 1/2 | 16 | 3.43 | 0 | 10 | 10 | 9 | 9 | 9 | 6 | 82 | 65 | 8210G034 | 23D | ● | - | - | - | 10.1/F | 11.6/F | | |
| 1/2 | 16 | 2.57 | 0 | 10 | 10 | 7 | 9 | 9 | 6 | 82 | 65 | - | - | - | 8210G030 | 37D | ● | 10.1/F | 11.6/F | | |
| 1/2 | 16 | 3.43 | 0.3 | 17 | 14 | 14 | 17 | 14 | 14 | 82 | 82 | 8210G012 ⑧ ⑨ | 39D | ● | - | - | - | 10.1/F | 11.6/F | | |
| 3/4 | 19 | 4.71 | 0 | 10 | 10 | 9 | 9 | 9 | 6 | 82 | 65 | 8210G035 | 25D | ● | - | - | - | 10.1/F | 11.6/F | | |
| 3/4 | 16 | 2.57 | 0 | 10 | 10 | 7 | 9 | 9 | 6 | 82 | 65 | - | - | - | 8210G038 | 38D | ● | 10.1/F | 11.6/F | | |
| 3/4 | 19 | 5.57 | 0.3 | - | - | - | 17 | 14 | 14 | - | 82 | 8210C013 | 24D | ● | - | - | - | - | 16.8/F | | |
| 3/4 | 19 | 5.57 | 0.3 | 17 | 14 | 14 | - | - | - | 82 | - | 8210G013 | 46D | ● | - | - | - | 16.1/F | - | | |
| 1 | 25 | 11.14 | 0 | 9 | 9 | 9 | - | - | - | 82 | - | 8210B057 ⑥ ⑩ | 34D | ● | - | - | - | 20/F | - | | |
| 1 | 25 | 11.14 | 0.3 | - | - | - | 9 | 9 | 9 | - | 82 | 8210D014 | 26D | ● | - | - | - | - | 16.8/F | | |
| 1 | 25 | 11.14 | 0.3 | 10 | 10 | 9 | - | - | - | 82 | - | 8210G014 | 47D | ● | - | - | - | 16.1/F | - | | |
| 1 1/4 | 29 | 12.86 | 0 | 9 | 9 | 9 | - | - | - | 82 | - | 8210B058 ⑥ ⑩ | 35D | ● | - | - | - | 20/F | - | | |
| 1 1/4 | 29 | 12.86 | 0.3 | - | - | - | 9 | 9 | 9 | - | 82 | 8210D018 | 28D | ● | - | - | - | - | 16.8/F | | |
| 1 1/4 | 29 | 12.86 | 0.3 | 10 | 10 | 9 | - | - | - | 82 | - | 8210G018 | 48D | ● | - | - | - | 16.1/F | - | | |
| 1 1/2 | 32 | 19.29 | 0 | 9 | 9 | 9 | - | - | - | 82 | - | 8210B059 ⑥ ⑩ | 36D | ● | - | - | - | 20/F | - | | |
| 1 1/2 | 32 | 19.29 | 0.3 | - | - | - | 9 | 9 | 9 | - | 82 | 8210D032 | 29D | ● | - | - | - | - | 16.8/F | | |
| 1 1/2 | 32 | 19.29 | 0.3 | 10 | 10 | 9 | - | - | - | 82 | - | 8210G032 | 49D | ● | - | - | - | 16.1/F | - | | |
| 2 | 44 | 36.86 | 0.3 | - | - | - | 9 | 9 | 9 | - | 65 | 8210 103 | 30P | ● | - | - | - | - | 16.8/F | | |
| 2 | 44 | 36.86 | 0.3 | 9 | 9 | 9 | - | - | - | 82 | - | 8210G103 | 50P | ● | - | - | - | 16.1/F | - | | |
| 2 1/2 | 44 | 38.57 | 0.3 | - | - | - | 9 | 9 | 9 | - | 65 | 8210 104 | 27P | ● | - | - | - | - | 16.8/F | | |
| 2 1/2 | 44 | 38.57 | 0.3 | 9 | 9 | 9 | - | - | - | 82 | - | 8210G104 | 51P | ● | - | - | - | 16.1/F | - | | |

① 0.3 bar on Air; 0.0 bar on Water.

② Valve provided with PTFE main disc.

③ Valve includes Ultem (G.E. trademark) piston.

④ Letter "D" denotes diaphragm construction; "P" denotes piston construction.

⑤ ○ Safety Shutoff Valve; ● General Purpose Valve.

Refer to Engineering Section (Approvals) for details.

⑧ Valves not available with Explosionproof enclosures.

⑦ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

⑨ AC construction also has PA seating.

⑩ No disc-holder.

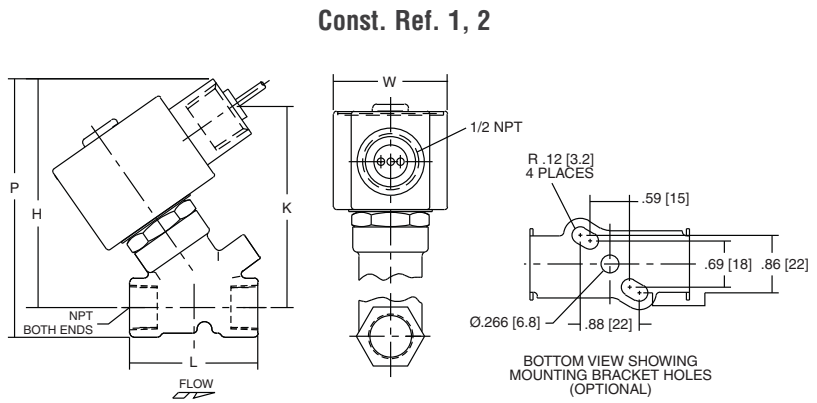
⑪ Stainless steel disc-holder.

‡ Must have solenoid mounted vertical and upright.

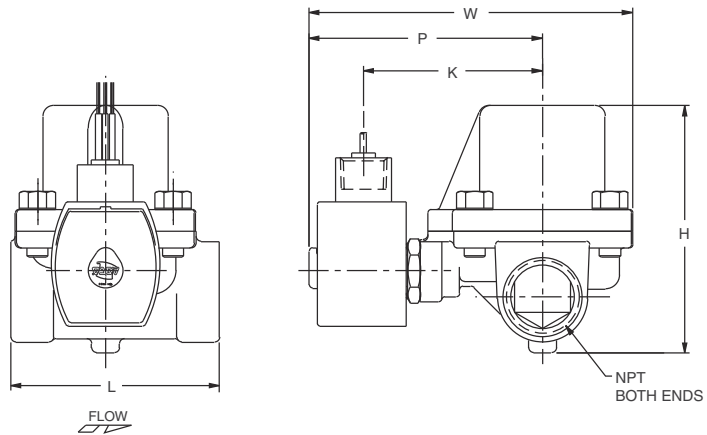
Dimensions: inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1* | ins. | 3.85 | 3.00 | 1.91 | 3.41 | 1.69 |
| | mm | 98 | 76 | 49 | 87 | 43 |
| 2* | ins. | 4.17 | 3.25 | 2.28 | 3.63 | 1.69 |
| | mm | 106 | 83 | 58 | 92 | 43 |
| 5 | ins. | 3.84 | 2.31 | 2.75 | 3.28 | 2.28 |
| | mm | 98 | 59 | 70 | 83 | 58 |
| 6* | ins. | 3.38 | 1.94 | 2.75 | 2.80 | 2.28 |
| | mm | 86 | 49 | 70 | 71 | 58 |
| 7 | ins. | 4.19 | 2.50 | 2.81 | 3.47 | 2.39 |
| | mm | 106 | 64 | 71 | 88 | 61 |
| 8 | ins. | 4.13 | 2.47 | 2.81 | 3.44 | 2.29 |
| | mm | 105 | 63 | 71 | 87 | 58 |
| 9* | ins. | 3.66 | 2.10 | 2.81 | 2.96 | 2.28 |
| | mm | 93 | 53 | 71 | 75 | 58 |
| 10* | ins. | 5.25 | X | 2.81 | 4.59 | 2.31 |
| | mm | 133 | X | 71 | 117 | 59 |
| 11* | ins. | 4.16 | 2.66 | 3.84 | 3.52 | 2.75 |
| | mm | 106 | 68 | 98 | 89 | 70 |
| 12 | ins. | 5.64 | 3.15 | 3.75 | 4.01 | 3.36 |
| | mm | 143 | 80 | 95 | 102 | 85 |
| 13 | ins. | 4.44 | 3.22 | 3.75 | 4.19 | 5.81 |
| | mm | 113 | 82 | 95 | 106 | 147 |
| 15* | ins. | 5.34 | X | 3.75 | 4.47 | 3.84 |
| | mm | 136 | X | 95 | 114 | 98 |
| 16 | ins. | 5.64 | 3.15 | 3.66 | 4.01 | 3.56 |
| | mm | 143 | 80 | 93 | 102 | 90 |
| 18 | ins. | 6.11 | 3.30 | 4.38 | 4.16 | 3.92 |
| | mm | 155 | 84 | 111 | 106 | 100 |
| 20* | ins. | 7.33 | 3.71 | 5.06 | 4.57 | 4.87 |
| | mm | 186 | 94 | 129 | 116 | 124 |
| 21* | ins. | 7.33 | 3.71 | 5.50 | 4.57 | 4.87 |
| | mm | 186 | 94 | 140 | 116 | 124 |
| 23 | ins. | 4.35 | 2.65 | 2.75 | 3.79 | 2.28 |
| | mm | 110 | 67 | 70 | 96 | 58 |
| 24 | ins. | 5.06 | X | 3.78 | 4.44 | 2.75 |
| | mm | 129 | X | 96 | 113 | 70 |
| 25 | ins. | 4.64 | 2.81 | 2.81 | 3.94 | 2.28 |
| | mm | 118 | 71 | 71 | 100 | 58 |
| 26 | ins. | 6.53 | X | 3.75 | 4.91 | 3.19 |
| | mm | 166 | X | 95 | 125 | 81 |
| 27 | ins. | 8.22 | X | 5.50 | 5.47 | 4.87 |
| | mm | 209 | X | 140 | 139 | 124 |
| 28 | ins. | 6.53 | X | 3.66 | 4.91 | 3.19 |
| | mm | 166 | X | 93 | 125 | 81 |
| 29 | ins. | 7.03 | X | 4.38 | 5.06 | 4.40 |
| | mm | 179 | X | 111 | 129 | 112 |

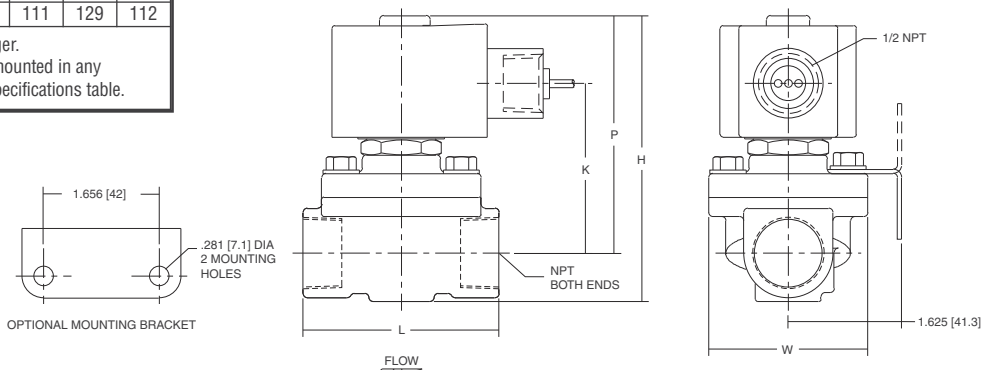
* DC dimensions slightly larger.
IMPORTANT: Valves may be mounted in any position, except as noted in specifications table.



Const. Ref. 13



Const. Ref. 5-9, 11, 20, 21, 23, 25, 37, 38

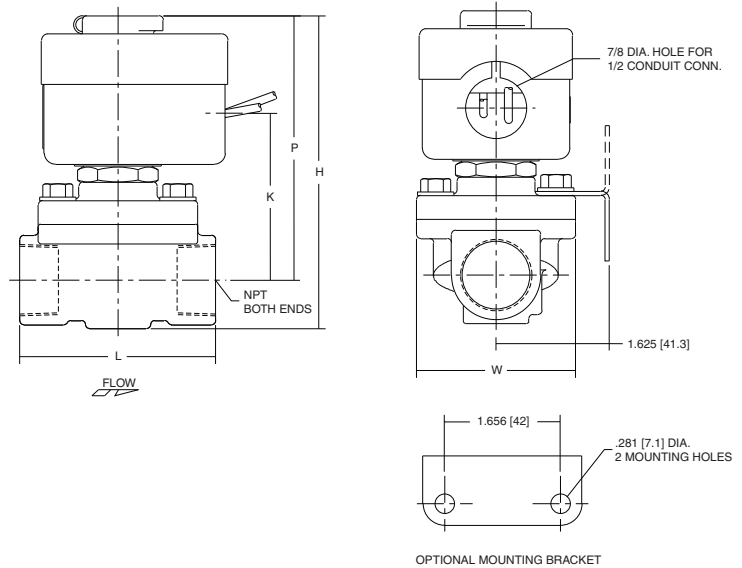


Dimensions: inches (mm)

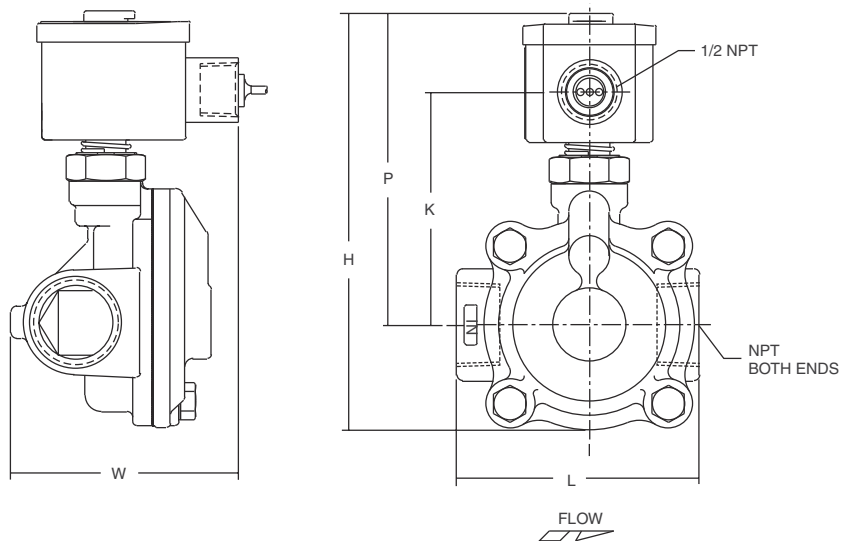
| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 30 | ins. | 8.22 | X | 5.06 | 5.47 | 4.87 |
| | mm | 209 | X | 129 | 139 | 124 |
| 31 | ins. | 5.25 | X | 3.75 | 4.44 | 3.25 |
| | mm | 133 | X | 95 | 113 | 83 |
| 32 | ins. | 5.69 | X | 3.66 | 4.69 | 3.25 |
| | mm | 145 | X | 93 | 119 | 83 |
| 33 | ins. | 6.06 | X | 4.38 | 4.94 | 3.91 |
| | mm | 154 | X | 111 | 125 | 99 |
| 34 | ins. | 6.91 | X | 3.75 | 6.09 | 3.25 |
| | mm | 176 | X | 95 | 155 | 83 |
| 35 | ins. | 7.34 | X | 3.66 | 6.34 | 3.25 |
| | mm | 186 | X | 93 | 161 | 83 |
| 36 | ins. | 7.66 | X | 4.38 | 6.56 | 3.91 |
| | mm | 195 | X | 111 | 167 | 99 |
| 37 | ins. | 4.61 | 2.75 | 2.81 | 3.89 | 2.39 |
| | mm | 117 | 70 | 71 | 99 | 61 |
| 38 | ins. | 4.61 | 2.75 | 2.81 | 3.89 | 2.39 |
| | mm | 117 | 70 | 71 | 99 | 61 |
| 39 | ins. | 5.42 | 2.31 | 2.75 | 4.86 | 3.80 |
| | mm | 138 | 59 | 70 | 123 | 97 |
| 40 | ins. | 5.20 | 3.29 | 2.81 | 4.50 | 2.28 |
| | mm | 132 | 83 | 71 | 114 | 58 |
| 41 | ins. | 5.13 | 3.10 | 3.75 | 4.32 | 3.25 |
| | mm | 130 | 79 | 95 | 110 | 83 |
| 42 | ins. | 6.43 | 4.40 | 3.93 | 5.62 | 3.25 |
| | mm | 163 | 112 | 100 | 143 | 83 |
| 43 | ins. | 5.57 | 3.35 | 3.66 | 4.57 | 3.25 |
| | mm | 142 | 85 | 93 | 116 | 83 |
| 44 | ins. | 5.90 | 3.57 | 4.38 | 4.79 | 3.91 |
| | mm | 150 | 91 | 111 | 122 | 99 |
| 45 | ins. | 5.26 | 3.17 | 3.75 | 4.38 | 3.84 |
| | mm | 134 | 81 | 95 | 111 | 98 |
| 46 | ins. | 4.95 | 3.10 | 3.84 | 4.31 | 2.75 |
| | mm | 126 | 79 | 98 | 110 | 70 |
| 47 | ins. | 6.43 | 3.59 | 3.75 | 4.81 | 3.52 |
| | mm | 163 | 91 | 95 | 122 | 90 |
| 48 | ins. | 6.43 | 3.59 | 3.66 | 4.81 | 3.73 |
| | mm | 163 | 91 | 93 | 122 | 95 |
| 49 | ins. | 6.91 | 3.75 | 4.38 | 4.96 | 4.40 |
| | mm | 176 | 95 | 111 | 126 | 112 |
| 50 | ins. | 8.13 | 4.15 | 5.06 | 5.37 | 4.87 |
| | mm | 207 | 105 | 129 | 136 | 124 |
| 51 | ins. | 8.13 | 4.15 | 5.50 | 5.37 | 5.18 |
| | mm | 207 | 105 | 140 | 136 | 132 |

IMPORTANT: Valves may be mounted in any position, except as noted in specifications table.

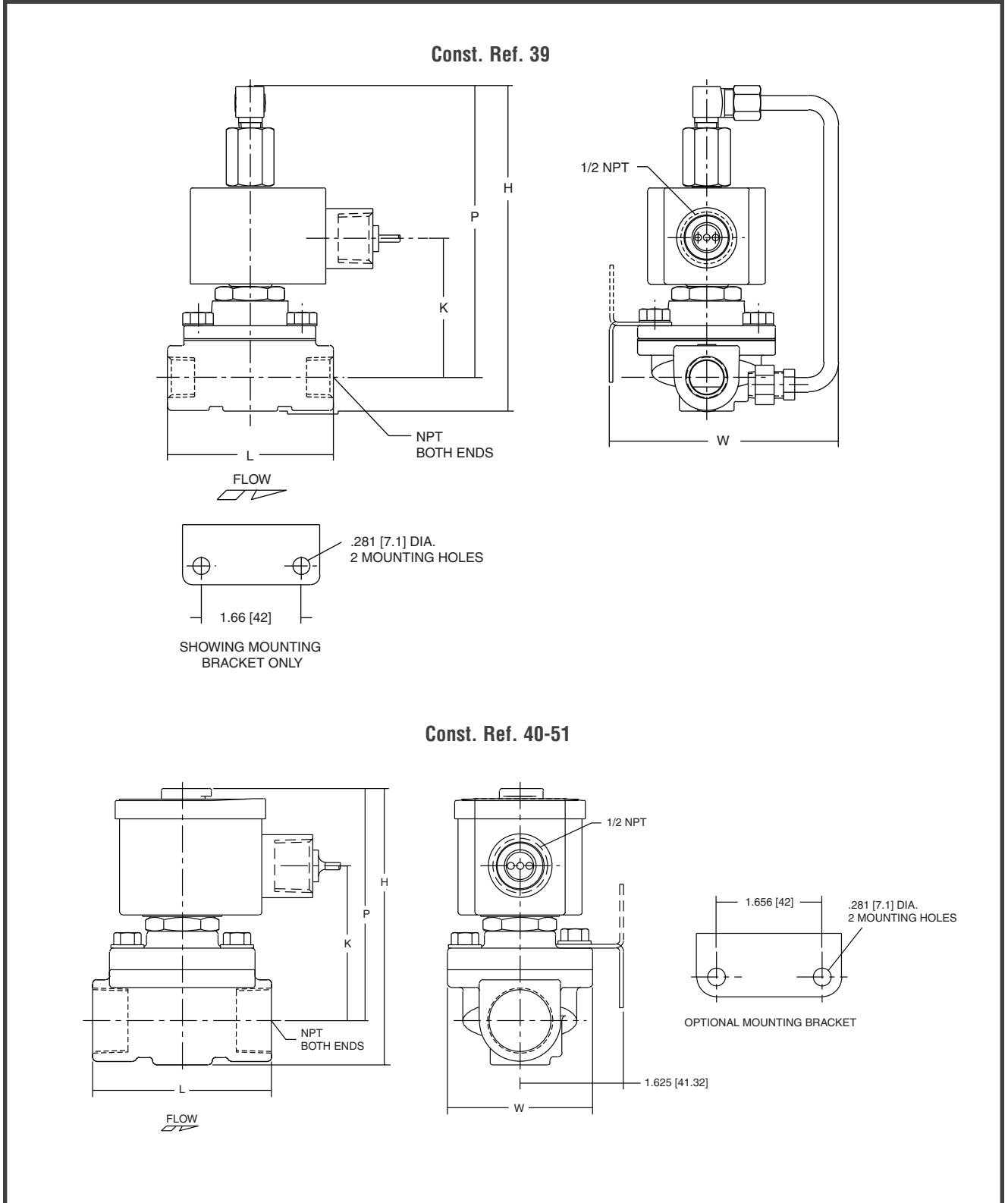
Const. Ref. 10, 15, 24, 26-36



Const. Ref. 12, 16, 18



Dimensions: inches (mm)



Features

- Pilot operated, normally open or normally closed
- Snubber slows disc closing speed to protect system against water hammer damage more effectively than other techniques
- Pressure spike due to water hammer is reduced to a point eliminating the need for suppressors or other controls in most water systems
- Fluid Controls Institute Inc. evaluations have classified these valves:

| Pipe Sizes | FCI-82-1 Class |
|--------------------------------|----------------|
| 3/8", 1/2", 3/4" | CC |
| 1", 1 1/4", 1 1/2", 2", 2 1/2" | BB |

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|--------------------------|
| Body | Brass |
| Disc | NBR |
| Seals | PTFE & NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Piston | Stainless Steel or Brass |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part No. | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|---------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 6.1 | 16 | 30 | 238210 | 238710 | 238214 | 238714 |
| F | 16.8 | 16.1 | 35 | 95 | 272610 | 97617 | 272614 | 97617 |
| F | 22.6 | - | - | - | - | 238710 | - | 238714 |

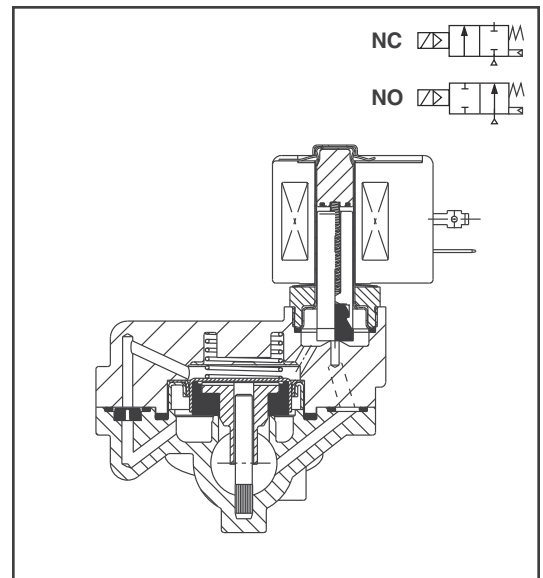
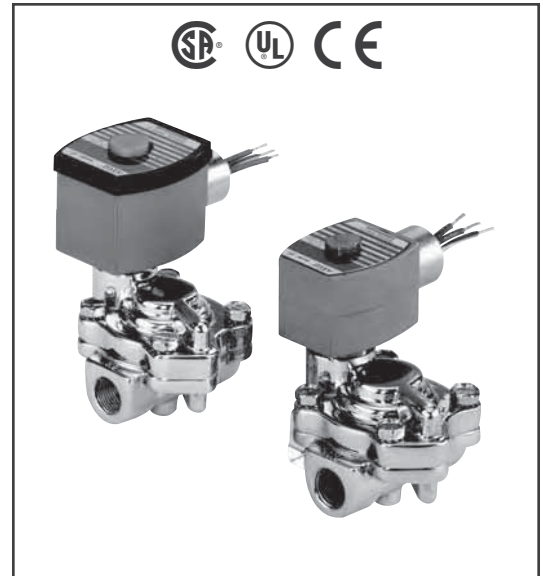
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type I.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges:

RedHat II/

RedHat AC: 32°F to 125°F (0°C to 52°C)

RedHat II DC: 32°F to 104°F (0°C to 40°C)

RedHat DC: 32°F to 77°F (0°C to 25°C)
 (104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals:

CSA certified. UL listed, General Purpose Valves.

RedHat II meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Brass Body Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation ③ | |
|---|---------------------|----------------|---------------------------------------|---------|---------|---------------------|-----|---------------------------|-------------|---|--------|
| | | | Min. ① | Max. AC | Max. DC | AC | DC | | | AC | DC |
| | | | | Water ② | Water ② | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | |
| 3/8 | 9/16 | 3 | 5 | 150 | 125 | 180 | 150 | 8221G001 | 1 | 6.1/F | 11.6/F |
| 1/2 | 9/16 | 3.5 | 5 | 150 | 125 | 180 | 150 | 8221G003 | 1 | 6.1/F | 11.6/F |
| 3/4 | 3/4 | 5.5 | 5 | 150 | 125 | 180 | 150 | 8221G005 | 2 | 6.1/F | 11.6/F |
| 1 | 1 | 11.5 | 5 | 150 | 125 | 180 | 150 | 8221G007 | 5 | 6.1/F | 11.6/F |
| 1 1/4 | 1 1/8 | 13 | 5 | 150 | 125 | 180 | 150 | 8221G009 | 6 | 6.1/F | 11.6/F |
| 1 1/2 | 1 1/4 | 24 | 5 | 150 | 125 | 180 | 150 | 8221G011 | 7 | 6.1/F | 11.6/F |
| 2 | 1 3/4 | 36 | 5 | 150 | 125 | 180 | 150 | 8221G013 | 11 | 6.1/F | 22.6/F |
| 2 1/2 | 1 3/4 | 38 | 5 | 150 | 125 | 180 | 150 | 8221G015 | 12 | 6.1/F | 22.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | |
| 3/8 | 9/16 | 3 | 5 | - | 125 | - | 150 | 8221 021 | 15 | - | 16.8/F |
| 3/8 | 9/16 | 3 | 5 | 150 | - | 180 | - | 8221G021 | 3 | 16.1/F | - |
| 1/2 | 9/16 | 3.5 | 5 | - | 125 | - | 150 | 8221 023 | 15 | - | 16.8/F |
| 1/2 | 9/16 | 3.5 | 5 | 150 | - | 180 | - | 8221G023 | 3 | 16.1/F | - |
| 3/4 | 3/4 | 5.5 | 5 | - | 125 | - | 150 | 8221 025 | 16 | - | 16.8/F |
| 3/4 | 3/4 | 5.5 | 5 | 150 | - | 180 | - | 8221G025 | 4 | 16.1/F | - |
| 1 | 1 | 11.5 | 5 | - | 125 | - | 150 | 8221 027 | 17 | - | 16.8/F |
| 1 | 1 | 11.5 | 5 | 150 | - | 180 | - | 8221G027 | 8 | 16.1/F | - |
| 1 1/4 | 1 1/8 | 13 | 5 | - | 125 | - | 150 | 8221 029 | 18 | - | 16.8/F |
| 1 1/4 | 1 1/8 | 13 | 5 | 150 | - | 180 | - | 8221G029 | 9 | 16.1/F | - |
| 1 1/2 | 1 1/4 | 24 | 5 | - | 125 | - | 150 | 8221 031 | 19 | - | 16.8/F |
| 1 1/2 | 1 1/4 | 24 | 5 | 150 | - | 180 | - | 8221G031 | 10 | 16.1/F | - |
| 2 | 1 3/4 | 36 | 5 | - | 125 | - | 150 | 8221 033 | 20 | - | 16.8/F |
| 2 | 1 3/4 | 36 | 5 | 150 | - | 180 | - | 8221G033 | 13 | 16.1/F | - |
| 2 1/2 | 1 3/4 | 38 | 5 | - | 125 | - | 150 | 8221 035 | 21 | - | 16.8/F |
| 2 1/2 | 1 3/4 | 38 | 5 | 150 | - | 180 | - | 8221G035 | 14 | 16.1/F | - |

① Valves require a 5 psi Minimum Pressure Differential to open. Once open, they remain open with 3 psi differential pressure.
 ② Refer to Steam/Hot Water Valve Series for Hot Water constructions.
 ③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Response time upon energization: 3/8" - 1/2" (2-4 seconds), 3/4" - 1 1/4" (4-8 seconds), 1 1/2" - 2 1/2" (8-10 seconds)

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Brass Body Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation ③ | |
|---|-------------------|-----------------------|---------------------------------------|---------|---------|---------------------|----|---------------------------|-------------|---|--------|
| | | | Min. ① | Max. AC | Max. DC | AC | DC | | | AC | DC |
| | | | | Water ② | Water ② | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | |
| 3/8 | 14 | 2.57 | 0.3 | 10 | 9 | 82 | 65 | 8221G001 | 1 | 6.1/F | 11.6/F |
| 1/2 | 14 | 3.00 | 0.3 | 10 | 9 | 82 | 65 | 8221G003 | 1 | 6.1/F | 11.6/F |
| 3/4 | 19 | 4.71 | 0.3 | 10 | 9 | 82 | 65 | 8221G005 | 2 | 6.1/F | 11.6/F |
| 1 | 25 | 9.86 | 0.3 | 10 | 9 | 82 | 65 | 8221G007 | 5 | 6.1/F | 11.6/F |
| 1 1/4 | 29 | 11.14 | 0.3 | 10 | 9 | 82 | 65 | 8221G009 | 6 | 6.1/F | 11.6/F |
| 1 1/2 | 32 | 20.57 | 0.3 | 10 | 9 | 82 | 65 | 8221G011 | 7 | 6.1/F | 11.6/F |
| 2 | 44 | 30.86 | 0.3 | 10 | 9 | 82 | 65 | 8221G013 | 11 | 6.1/F | 22.6/F |
| 2 1/2 | 44 | 32.57 | 0.3 | 10 | 9 | 82 | 65 | 8221G015 | 12 | 6.1/F | 22.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | |
| 3/8 | 14 | 2.57 | 0.3 | - | 9 | - | 65 | 8221 021 | 15 | - | 16.8/F |
| 3/8 | 14 | 2.57 | 0.3 | 10 | - | 82 | - | 8221G021 | 3 | 16.1/F | - |
| 1/2 | 14 | 3.00 | 0.3 | - | 9 | - | 65 | 8221 023 | 15 | - | 16.8/F |
| 1/2 | 14 | 3.00 | 0.3 | 10 | - | 82 | - | 8221G023 | 3 | 16.1/F | - |
| 3/4 | 19 | 4.71 | 0.3 | - | 9 | - | 65 | 8221 025 | 16 | - | 16.8/F |
| 3/4 | 19 | 4.71 | 0.3 | 10 | - | 82 | - | 8221G025 | 4 | 16.1/F | - |
| 1 | 25 | 9.86 | 0.3 | - | 9 | - | 65 | 8221 027 | 17 | - | 16.8/F |
| 1 | 25 | 9.86 | 0.3 | 10 | - | 82 | - | 8221G027 | 8 | 16.1/F | - |
| 1 1/4 | 29 | 11.14 | 0.3 | - | 9 | - | 65 | 8221 029 | 18 | - | 16.8/F |
| 1 1/4 | 29 | 11.14 | 0.3 | 10 | - | 82 | - | 8221G029 | 9 | 16.1/F | - |
| 1 1/2 | 32 | 20.57 | 0.3 | - | 9 | - | 65 | 8221 031 | 19 | - | 16.8/F |
| 1 1/2 | 32 | 20.57 | 0.3 | 10 | - | 82 | - | 8221G031 | 10 | 16.1/F | - |
| 2 | 44 | 30.86 | 0.3 | - | 9 | - | 65 | 8221 033 | 20 | - | 16.8/F |
| 2 | 44 | 30.86 | 0.3 | 10 | - | 82 | - | 8221G033 | 13 | 16.1/F | - |
| 2 1/2 | 44 | 32.57 | 0.3 | - | 9 | - | 65 | 8221 035 | 21 | - | 16.8/F |
| 2 1/2 | 44 | 32.57 | 0.3 | 10 | - | 82 | - | 8221G035 | 14 | 16.1/F | - |

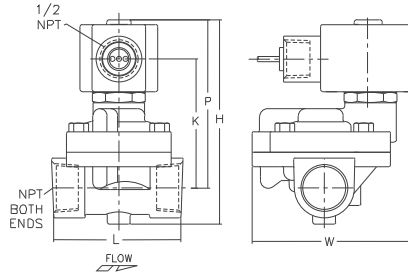
① Valves require a 0.3 bar Minimum Pressure Differential to open. Once open, they remain open with 0.2 bar differential pressure.
 ② Refer to Steam/Hot Water Valve Series for Hot Water constructions.
 ③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
Response time upon energization: 3/8" - 1/2" (2-4 seconds), 3/4" - 1 1/4" (4-8 seconds), 1 1/2" - 2 1/2" (8-10 seconds)

Dimensions: inches (mm)

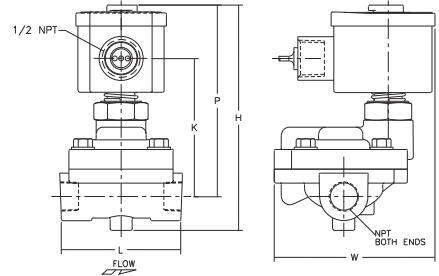
| Const. Ref. | H | K | L | P | W |
|-------------|-----------|------|------|------|------|
| 1 | ins. 4.34 | 2.69 | 2.72 | 3.59 | 3.41 |
| | mm 110 | 68 | 69 | 91 | 87 |
| 2 | ins. 4.53 | 2.69 | 2.78 | 3.75 | 3.41 |
| | mm 115 | 68 | 71 | 95 | 87 |
| 3 | ins. 5.22 | 3.14 | 2.72 | 4.47 | 3.69 |
| | mm 133 | 80 | 69 | 114 | 94 |
| 4 | ins. 5.41 | 3.30 | 2.78 | 4.62 | 3.69 |
| | mm 137 | 84 | 71 | 117 | 94 |
| 5 | ins. 5.62 | 3.15 | 3.75 | 4.03 | 3.16 |
| | mm 143 | 80 | 95 | 102 | 80 |
| 6 | ins. 5.56 | 3.15 | 3.66 | 4.03 | 3.56 |
| | mm 141 | 80 | 93 | 102 | 90 |
| 7 | ins. 6.12 | 3.30 | 4.38 | 4.19 | 4.12 |
| | mm 156 | 84 | 111 | 106 | 105 |
| 8 | ins. 6.53 | 3.59 | 3.75 | 4.91 | 3.16 |
| | mm 166 | 91 | 95 | 125 | 80 |
| 9 | ins. 6.47 | 3.59 | 3.56 | 4.91 | 3.56 |
| | mm 164 | 91 | 93 | 125 | 90 |
| 10 | ins. 7.03 | 3.74 | 4.38 | 5.06 | 4.12 |
| | mm 179 | 95 | 111 | 129 | 105 |
| 11 | ins. 7.38 | 3.71 | 5.06 | 4.59 | 4.72 |
| | mm 188 | 94 | 129 | 117 | 120 |
| 12 | ins. 7.38 | 3.71 | 5.50 | 4.59 | 5.19 |
| | mm 188 | 94 | 140 | 117 | 132 |
| 13 | ins. 8.22 | 4.15 | 5.06 | 5.47 | 4.72 |
| | mm 209 | 105 | 129 | 139 | 120 |
| 14 | ins. 8.22 | 4.15 | 5.50 | 5.47 | 5.19 |
| | mm 209 | 105 | 140 | 139 | 132 |
| 15 | ins. 5.22 | - | 2.72 | 4.47 | 3.69 |
| | mm 133 | - | 69 | 114 | 94 |
| 16 | ins. 5.41 | - | 2.78 | 4.62 | 3.69 |
| | mm 137 | - | 71 | 117 | 94 |
| 17 | ins. 6.53 | - | 3.75 | 4.91 | 3.16 |
| | mm 166 | - | 95 | 125 | 80 |
| 18 | ins. 6.47 | - | 3.66 | 4.91 | 3.56 |
| | mm 164 | - | 93 | 125 | 90 |
| 19 | ins. 7.03 | - | 4.38 | 5.06 | 4.12 |
| | mm 179 | - | 111 | 129 | 105 |
| 20 | ins. 8.22 | - | 5.06 | 5.47 | 4.72 |
| | mm 209 | - | 129 | 139 | 120 |
| 21 | ins. 8.22 | - | 5.50 | 5.47 | 5.19 |
| | mm 209 | - | 140 | 139 | 132 |

IMPORTANT: Valves may be mounted in any position.

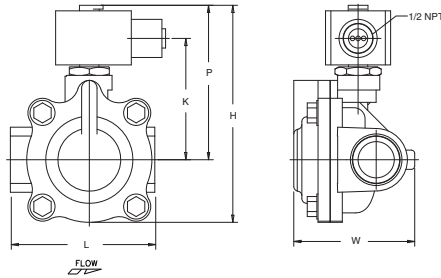
Const. Ref. 1, 2



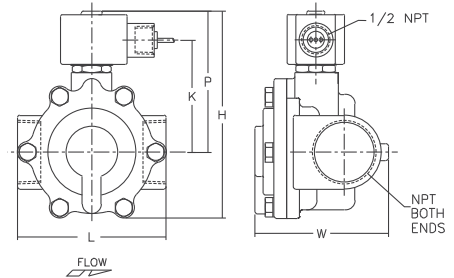
Const. Ref. 3, 4



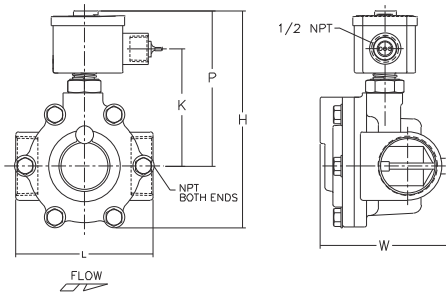
Const. Ref. 5, 6



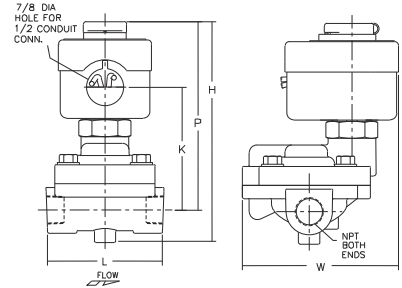
Const. Ref. 7, 11, 12



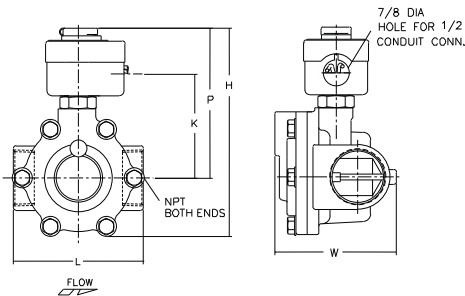
Const. Ref. 8, 9, 10, 13, 14



Const. Ref. 15, 16



Const. Ref. 17 - 21



Features

- Rugged piston construction built to withstand pressure ratings of 450 to 1500 psi
- Angle body design for high flows
- Ideal for high-pressure water applications, such as car washes
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Brass | 300 Stainless Steel |
| Seals and Disc | NBR, PA, PTFE | PTFE, NBR |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Spring | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | - | 10.1 | 25 | 50 | 238610 | - | 238614 | - |
| F | 22.6 | 17.1 | 40 | 70 | 238610 | 238710 | 238614 | 238714 |

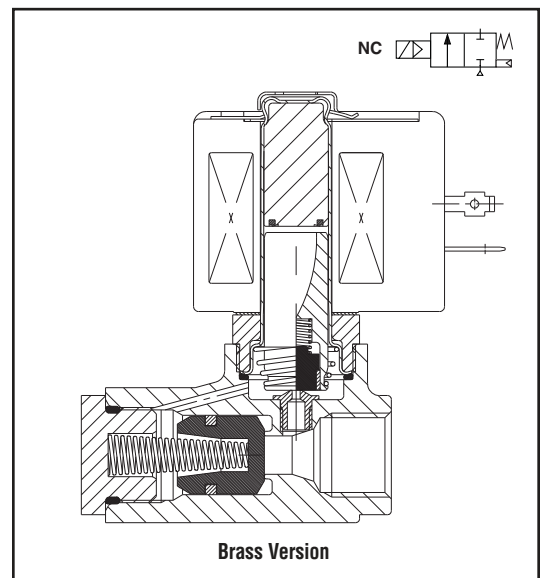
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|---------------------|-----|----------------|-------------|----------------------|-------------|---------------------------------------|--------|
| | | | Min. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | | |
| 1/4 | 5/16 | 1.5 | 10 | 750 | 750 | 750 | - | - | - | 200 | - | 8223G021 | 1 | - | - | 10.1/F | - |
| 1/4 | 5/16 | 1.5 | 10 | 1500 | 1500 | 1500 | 500 | 500 | 500 | 200 | 150 | 8223G025 | 1 | - | - | 17.1/F | 22.6/F |
| 3/8 | 5/16 | 1.5 | 10 | 750 | 750 | 750 | 400 | 400 | 400 | 200 | 150 | 8223G023 | 1 | - | - | 10.1/F | 22.6/F |
| 3/8 | 5/16 | 1.5 | 10 | 1500 | 1500 | 1500 | 500 | 500 | 500 | 200 | 150 | 8223G027 | 1 | - | - | 17.1/F | 22.6/F |
| 1/2 | 3/8 | 3.2 | 25 | 1500 | 1500 | 1500 | 500 | 500 | 500 | 200 | 150 | 8223G003 | 2 | 8223G010 | 4 | 17.1/F | 22.6/F |
| 3/4 | 3/4 | 7.8 | 25 | 750 | 750 | 750 | 450 | 450 | 450 | 200 | 150 | 8223G005 | 3 | 8223G012 | 5 | 17.1/F | 22.6/F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|---------------------------------------|---------------|-------|---------------------|---------------|-------|---------------------|---------------------|----|----------------|-------------|----------------------|-------------|---------------------------------------|--------|
| | | | Min. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | | |
| 1/4 | 8 | 1.29 | 0.7 | 52 | 52 | 52 | - | - | - | 93 | - | 8223G021 | 1 | - | - | 10.1/F | - |
| 1/4 | 8 | 1.29 | 0.7 | 103 | 103 | 103 | 34 | 34 | 34 | 93 | 65 | 8223G025 | 1 | - | - | 17.1/F | 22.6/F |
| 3/8 | 8 | 1.29 | 0.7 | 52 | 52 | 52 | 28 | 28 | 28 | 93 | 65 | 8223G023 | 1 | - | - | 10.1/F | 22.6/F |
| 3/8 | 8 | 1.29 | 0.7 | 103 | 103 | 103 | 34 | 34 | 34 | 93 | 65 | 8223G027 | 1 | - | - | 17.1/F | 22.6/F |
| 1/2 | 10 | 2.74 | 1.7 | 103 | 103 | 103 | 34 | 34 | 34 | 93 | 65 | 8223G003 | 2 | 8223G010 | 4 | 17.1/F | 22.6/F |
| 3/4 | 19 | 6.69 | 1.7 | 52 | 52 | 52 | 31 | 31 | 31 | 93 | 65 | 8223G005 | 3 | 8223G012 | 5 | 17.1/F | 22.6/F |

Dimensions: inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 3.41 | 1.91 | 2.44 | 2.88 | 1.95 |
| | mm | 87 | 49 | 62 | 73 | 50 |
| 2 | ins. | 4.32 | 2.17 | 3.03 | 3.13 | 1.95 |
| | mm | 110 | 55 | 77 | 80 | 50 |
| 3 | ins. | 5.03 | 2.64 | 3.60 | 3.61 | 2.00 |
| | mm | 128 | 67 | 91 | 92 | 51 |
| 4 | ins. | 4.34 | 2.15 | 2.50 | 3.13 | 1.95 |
| | mm | 110 | 55 | 64 | 80 | 50 |
| 5 | ins. | 5.03 | 2.53 | 3.53 | 3.50 | 3.50 |
| | mm | 128 | 64 | 90 | 89 | 89 |

Const. Ref. 1 - 5

1/2 NPT

OUTLET

NPT 2 PLACES

INLET

INLET LOCATED ON BOTTOM FOR CAT. NO'S 8223G003, 005, 010, 012

Features

- 2-way normally closed operation
- Compact design
- Brass and 316 stainless steel body constructions
- Mountable in any position
- Available with manual operator
- NSF 61 and 169 version available for potable water and food service

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|---------------------|---------------------|---------------------|
| | General Purpose | | NSF |
| Body | Brass | 316 Stainless Steel | 316 Stainless Steel |
| Core Tube/Bonnet | S.S. / Plated Steel | S.S. / S.S. | S.S. / S.S. |
| Core and Plugnut | Stainless Steel | | |
| Springs | Stainless Steel | | |
| Seals and Disc | FKM | | EPDM |
| Shading Coil | Copper | | Silver |

Electrical

| Prefix | Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Ambient Temp. °F | Spare Coil Family | |
|--------|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------|-------------------|--------|
| | | DC Watts | AC | | | | AC | DC |
| | | | Watts | VA Holding | VA Inrush | | | |
| U | F | 6.9 | 6.3 | 8.8 | 12.1 | 15 to 140 | 400115 | 400115 |
| SC | F | 6.9 | 6.3 | 8.8 | 12.1 | 15 to 140 | 400125 | 400125 |

Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

Solenoid Enclosures

Standard: Open frame (Prefix U) 18" leads

Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

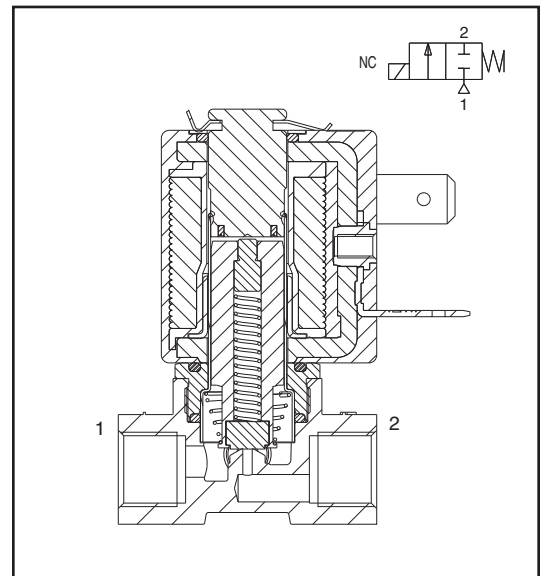
Kits

1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs of each: threaded hub, gasket, and attaching screw.)

DIN connector kit for SC coils 226061-001-*

(Kit contains 10 pcs of each: connector, gasket, and attaching screw.)

Mounting adapter kit 289719 (Kit contains 2 screws and plate.)



Approvals

UL recognized coil - File MH28173

CSA recognized coil - see CSA certificate No. 235748

Meets applicable CE directives

NSF 61 - Drinking water system components

NSF 169 - Special purpose food Equipment and Devices

The NSF Certification Program is accredited by the Standards Council of Canada and ANSI.

Specifications (English Units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Brass | Stainless Steel | Const. Ref. | Wattage | | Approx. Shipping Weight (lbs.) |
|--|---------------------|----------------|---------------------------------------|-------|---------------------|-----------------|-------|---------------------|---------------------|-----|------------|-----------------|-------------|---------|-----|--------------------------------|
| | | | Max. AC ① | | | Max. DC ① | | | AC | DC | | | | AC | DC | |
| | | | Air - Inert Gas | Water | Light Oil @ 300 SSU | Air - Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | 0.05 | 500 | 500 | 400 | 360 | 360 | 330 | 180 | 180 | U8256A001V | U8256A013V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 1/16 | 0.08 | 400 | 390 | 230 | 220 | 220 | 220 | 180 | 180 | U8256A002V | U8256A014V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 3/32 | 0.15 | 180 | 180 | 105 | 90 | 90 | 90 | 180 | 180 | U8256A004V | U8256A016V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 7/64 | 0.19 | 135 | 126 | 80 | 63 | 63 | 63 | 180 | 180 | U8256B045V | U8256B046V | 2 | 6.3 | 6.9 | 0.6 |
| NSF 61 and 169 Listed | | | | | | | | | | | | | | | | |
| 1/8 | 3/32 | 0.15 | - | 200 | - | - | 130 | - | 180 | 180 | - | U8256A103E | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 7/64 | 0.17 | - | 150 | - | - | 100 | - | 180 | 180 | - | U8256A104E | 2 | 6.3 | 6.9 | 0.6 |
| 1/4 | 3/32 | 0.15 | - | 200 | - | - | 130 | - | 180 | 180 | - | U8256A107E | 3 | 6.3 | 6.9 | 0.5 |
| 1/4 | 7/64 | 0.17 | - | 150 | - | - | 100 | - | 180 | 180 | - | U8256A108E | 3 | 6.3 | 6.9 | 0.6 |

① MS option limits max. pressures to 220 psi (unless limited by operating pressure).

Specifications (Metric Units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Brass | Stainless Steel | Const. Ref. | Wattage | | Approx. Shipping Weight (kgs.) |
|--|-------------------|-----------------------|---------------------------------------|-------|---------------------|-----------------|-------|---------------------|---------------------|----|------------|-----------------|-------------|---------|-----|--------------------------------|
| | | | Max. AC ① | | | Max. DC ① | | | AC | DC | | | | AC | DC | |
| | | | Air - Inert Gas | Water | Light Oil @ 300 SSU | Air - Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | 0.04 | 34 | 34 | 27 | 25 | 25 | 23 | 82 | 82 | U8256A001V | U8256A013V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 1.6 | 0.07 | 27 | 27 | 16 | 15 | 15 | 15 | 82 | 82 | U8256A002V | U8256A014V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.4 | 0.13 | 12 | 12 | 7 | 6 | 6 | 6 | 82 | 82 | U8256A004V | U8256A016V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.7 | 0.16 | 9 | 8 | 5 | 4 | 4 | 4 | 82 | 82 | U8256B045V | U8256B046V | 2 | 6.3 | 6.9 | 0.27 |
| NSF 61 and 169 Listed | | | | | | | | | | | | | | | | |
| 1/8 | 2.4 | 0.13 | - | 14 | - | - | 9 | - | 82 | 82 | - | U8256A103E | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.7 | 0.16 | - | 10 | - | - | 7 | - | 82 | 82 | - | U8256A104E | 2 | 6.3 | 6.9 | 0.22 |
| 1/4 | 2.4 | 0.13 | - | 14 | - | - | 9 | - | 82 | 82 | - | U8256A107E | 3 | 6.3 | 6.9 | 0.22 |
| 1/4 | 2.7 | 0.16 | - | 10 | - | - | 7 | - | 82 | 82 | - | U8256A108E | 3 | 6.3 | 6.9 | 0.27 |

① MS option limits max. pressures to 15 bar (unless limited by operating pressure).

Capabilities Chart

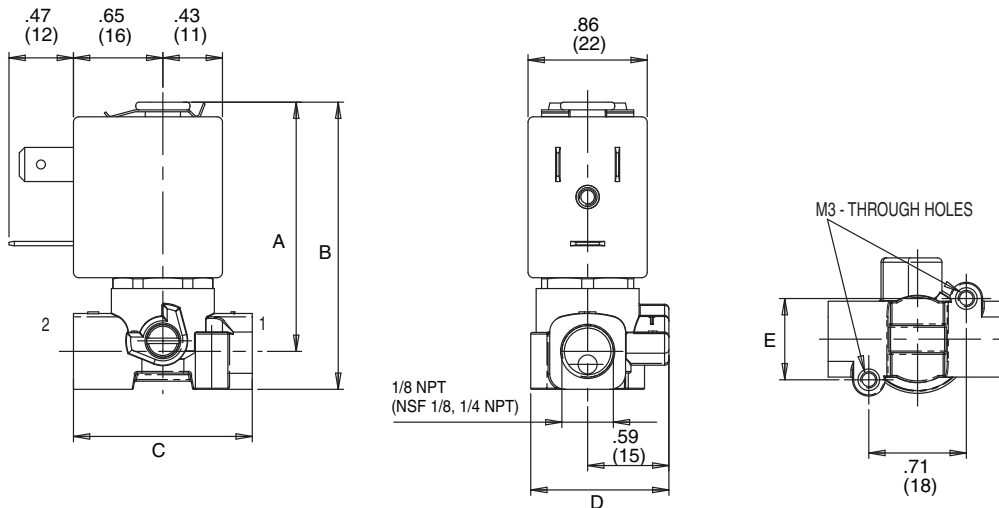
| Solenoid Options ② | | | | | | | | Base Catalog Number | | Resilient Materials ① | | | | | | Other | | Standard Rebuild Kit | | |
|--------------------|----------------|---------------------------|----------|-----|-------|-----------------------|------------|---------------------|-----------------|-----------------------|------|------|----------------|------|----------|--------|-----------------|----------------------|-------------|-----------------|
| NEMA Type 3-9 | High Temp. DIN | Wiring Box Screw Terminal | Multipin | DIN | Spade | Open Frame with Leads | | Brass | Stainless Steel | FKM | EPDM | RUBY | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass AC/DC | Stainless AC/DC |
| - | - | - | - | SC | - | ● | U8256A001V | U8256A013V | ● | E | - | NV | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8256A002V | U8256A014V | ● | E | - | NV | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8256A004V | U8256A016V | ● | E | - | NV | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8256B045V | U8256B046V | ● | E | - | NV | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8256A103E | - | ● | - | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8256A104E | - | ● | - | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8256A107E | - | ● | - | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8256A108E | - | ● | - | - | - | - | - | - | MS | - | - | - |

● = Standard. ① Replace V suffix. ② Replace U prefix with SC prefix.

Dimensions: inches (mm)

| Const. Ref. | | A | B | C | D | E |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 1.81 | 2.08 | 1.29 | 1 | 0.59 |
| | mm | 46 | 53 | 33 | 25 | 15 |
| 2 | ins. | 1.98 | 2.25 | .984 | 1 | 0.59 |
| | mm | 50 | 57 | 25 | 25 | 15 |
| 3 | ins. | 1.86 | 2.25 | 1.73 | 1.12 | .83 |
| | mm | 46 | 57 | 44 | 28 | 21 |

Shown with DIN coil without connector



Features

- Corrosion-resistant plastic bodies
- Available with compression fitting ends for metal or plastic tube to save installation cost
- Mountable in any position
- Dispensing vending construction NSF listed

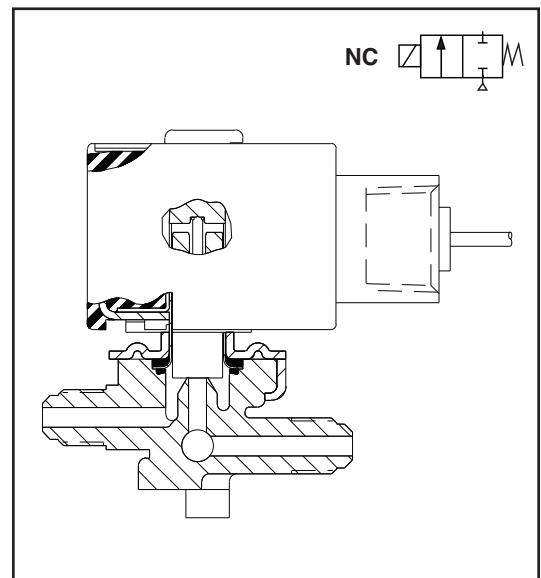
Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | CA, PA, PP |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|
| | DC Watts | Watts | AC | | General Purpose | |
| | | | VA Holding | VA Inrush | AC | DC |
| B | 6.4 | 6.5 | 9.2 | 17.3 | 174879 | 180555 |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.



Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Open Frame Solenoid, Junction Box enclosures.
 See *Optional Features* Section for descriptions on these options.

Nominal Ambient Temp. Range:

AC: 32°F to 125°F (0°C to 52°C)
 DC: 32°F to 104°F (0°C to 40°C)
 Refer to *Engineering* Section for details.

Approvals:

CSA certified. UL Recognized Component. Meets applicable CE directives.
 Refer to *Engineering* Section for details.

Specifications (English units)

| Pipe Connections | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | Max. Fluid Temp. °F | | Plastic Body | | Watt Rating/ Class of Coil Insulation ② | |
|---|---------------------|----------------|---------------------------------------|-------|---------------|-------|---------------------|-----|----------------|--------------|---|--------|
| | | | Max. AC | | Max. DC | | AC | DC | Catalog Number | Constr. Ref. | AC | DC |
| | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | |
| GENERAL SERVICE CONSTRUCTION - CA Body, Watertight enclosure with leads | | | | | | | | | | | | |
| 1/4" Male Flare | 9/64 | .35 | 120 | 120 | 50 | 50 | 130 | 120 | 8260G042 | 1 | 6.1/F | 10.6/F |
| Bib for 1/4" I.D. Tube | 9/64 | .35 | 120 | 120 | 50 | 50 | 130 | 120 | 8260G054 | 2 | 6.1/F | 10.6/F |
| 1/4" O.D. ① Compression | 9/64 | .35 | 120 | 120 | 50 | 50 | 130 | 120 | 8260G071 | 3 | 6.1/F | 10.6/F |
| GENERAL SERVICE CONSTRUCTION - PP Body, Open Frame Solenoid and Spade Terminal Coils | | | | | | | | | | | | |
| 1/4" O.D. ① Compression | 1/16 | .09 | 150 | 150 | 60 | 60 | 130 | 120 | USM8260 073 | 5 | 6.5/B | 6.4/B |
| | 3/32 | .19 | 100 | 100 | 20 | 20 | 130 | 120 | USM8260 074 | 5 | 6.5/B | 6.4/B |
| | 1/8 | .31 | 60 | 60 | 10 | 10 | 130 | 120 | USM8260 075 | 5 | 6.5/B | 6.4/B |
| | 5/32 | .43 | 35 | 35 | 5 | 5 | 130 | 120 | USM8260 076 | 5 | 6.5/B | 6.4/B |
| DISPENSING VENDING CONSTRUCTION - NSF Listed - PP Body, Open Frame Solenoid and Spade Terminal Coils | | | | | | | | | | | | |
| 1/4" O.D. ① Compression | 1/16 | .09 | 150 | 150 | 60 | 60 | 130 | 120 | USM8260 077 | 4 | 6.5/B | 6.4/B |
| | 3/32 | .19 | 100 | 100 | 20 | 20 | 130 | 120 | USM8260 078 | 4 | 6.5/B | 6.4/B |
| | 1/8 | .31 | 60 | 60 | 10 | 10 | 130 | 120 | USM8260 079 | 4 | 6.5/B | 6.4/B |
| | 5/32 | .43 | 35 | 35 | 5 | 5 | 130 | 120 | USM8260 080 | 4 | 6.5/B | 6.4/B |
| PA Body, Open Frame Solenoid and Spade Terminal Coils | | | | | | | | | | | | |
| 3/8" O.D. ① Compression | 5/16 | 1.3 | 5 | 5 | - | - | 130 | - | USM8260 089 | 6 | 6.5/B | - |

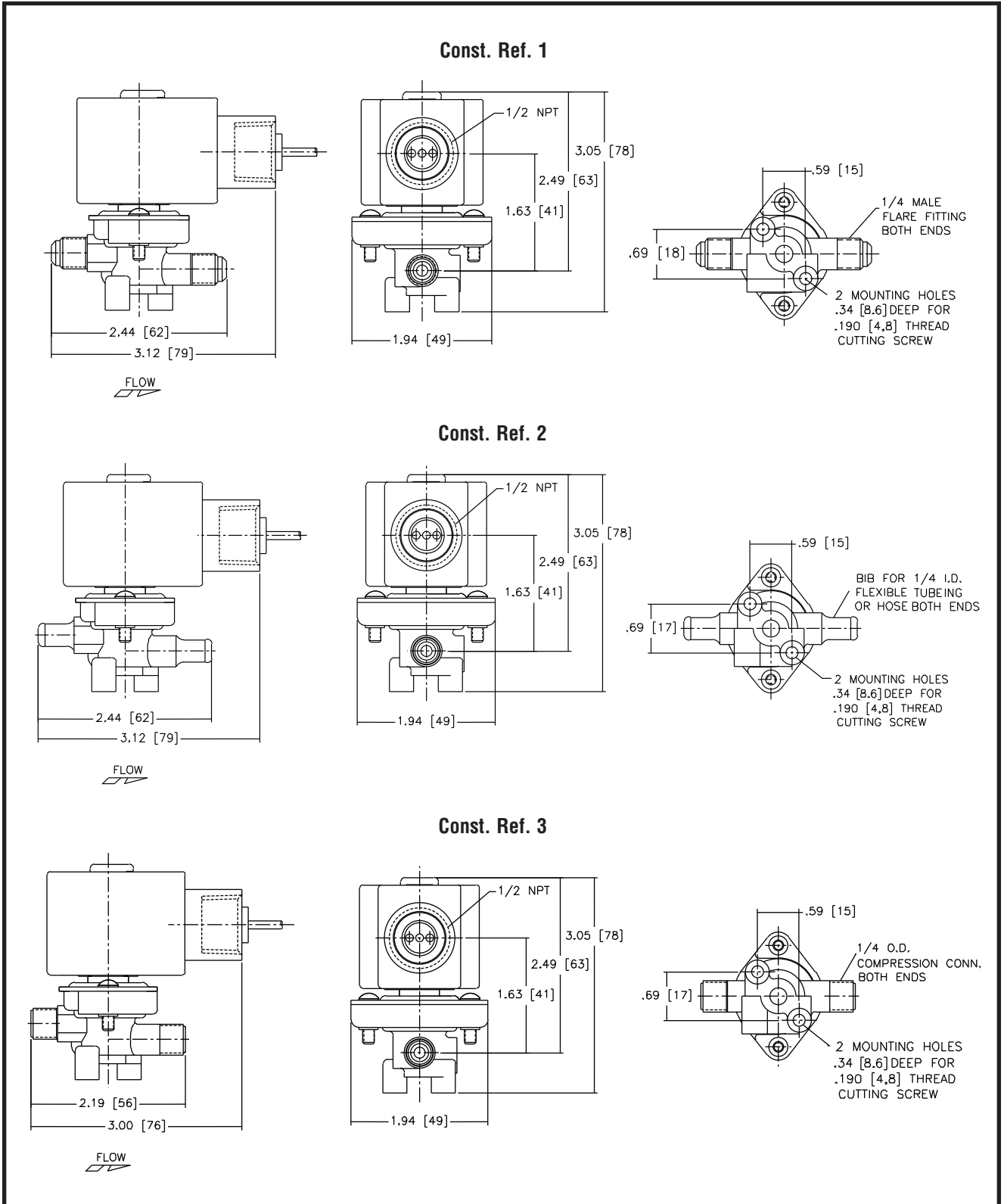
① Fittings not supplied with valve. To order, refer to Kit No. 224150 - plastic tubing, and Kit No. 224151 - metal tubing.
② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

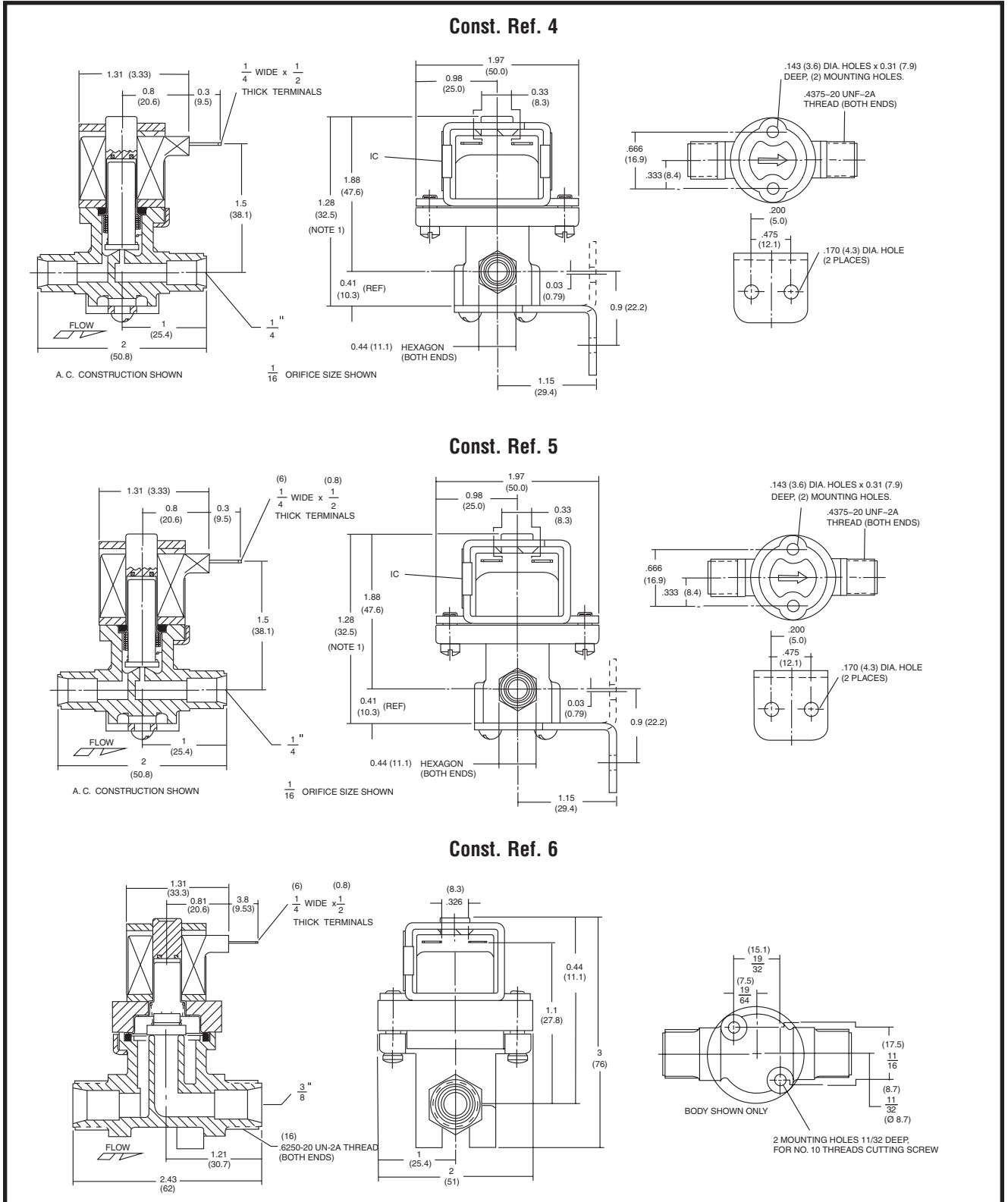
| Pipe Connections | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | Max. Fluid Temp. °C | | Plastic Body | | Watt Rating/ Class of Coil Insulation ② | |
|---|-------------------|-----------------------|---------------------------------------|-------|---------------|-------|---------------------|----|----------------|--------------|---|--------|
| | | | Max. AC | | Max. DC | | AC | DC | Catalog Number | Constr. Ref. | AC | DC |
| | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | |
| GENERAL SERVICE CONSTRUCTION - CA Body, Watertight enclosure with leads | | | | | | | | | | | | |
| 1/4" Male Flare | 3.6 | .30 | 8.3 | 8.3 | 3.4 | 3.4 | 54 | 49 | 8260G042 | 1 | 6.1/F | 10.6/F |
| Bib for 1/4" I.D. Tube | 3.6 | .30 | 8.3 | 8.3 | 3.4 | 3.4 | 54 | 49 | 8260G054 | 2 | 6.1/F | 10.6/F |
| 1/4" O.D. ① Compression | 3.6 | .30 | 8.3 | 8.3 | 3.4 | 3.4 | 54 | 49 | 8260G071 | 3 | 6.1/F | 10.6/F |
| GENERAL SERVICE CONSTRUCTION - PP Body, Open Frame Solenoid and Spade Terminal Coils | | | | | | | | | | | | |
| 1/4" O.D. ① Compression | 1.6 | .08 | 10.3 | 10.3 | 4.1 | 4.1 | 54 | 49 | USM8260 073 | 5 | 6.5/B | 6.4/B |
| | 2.4 | .16 | 6.9 | 6.9 | 1.4 | 1.4 | 54 | 49 | USM8260 074 | 5 | 6.5/B | 6.4/B |
| | 3.2 | .27 | 4.1 | 4.1 | 0.7 | 0.7 | 54 | 49 | USM8260 075 | 5 | 6.5/B | 6.4/B |
| | 4.0 | .37 | 2.4 | 2.4 | 0.3 | 0.3 | 54 | 49 | USM8260 076 | 5 | 6.5/B | 6.4/B |
| DISPENSING VENDING CONSTRUCTION - NSF Listed - PP Body, Open Frame Solenoid and Spade Terminal Coils | | | | | | | | | | | | |
| 1/4" O.D. ① Compression | 1.6 | .08 | 10.3 | 10.3 | 4.1 | 4.1 | 54 | 49 | USM8260 077 | 4 | 6.5/B | 6.4/B |
| | 2.4 | .16 | 6.9 | 6.9 | 1.4 | 1.4 | 54 | 49 | USM8260 078 | 4 | 6.5/B | 6.4/B |
| | 3.2 | .27 | 4.1 | 4.1 | 0.7 | 0.7 | 54 | 49 | USM8260 079 | 4 | 6.5/B | 6.4/B |
| | 4.0 | .37 | 2.4 | 2.4 | 0.3 | 0.3 | 54 | 49 | USM8260 080 | 4 | 6.5/B | 6.4/B |
| PA Body, Open Frame Solenoid and Spade Terminal Coils | | | | | | | | | | | | |
| 3/8" O.D. ① Compression | 7.9 | 1.11 | 0.3 | 0.3 | - | - | 54 | - | USM8260 089 | 6 | 6.5/B | - |

① Fittings not supplied with valve. To order, refer to Kit No. 224150 - plastic tubing, and Kit No. 224151 - metal tubing.
② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Dimensions: inches (mm)



Dimensions: inches (mm)



Features

- Reliable, proven design with high flows
- Small poppet valves for tight shutoff
- Wide range of elastomers for specialty service
- Mountable in any position
- Brass and stainless steel constructions

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|-------------------------|
| Body | Brass | 303/304 Stainless Steel |
| Seals and Discs | NBR or Cast UR | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |
| Stem | PA (Normally Open) | |

Note: All 1/8" NPT Normally Open valves contain CA. All 1/4" NPT Normally Open valves contain PA.

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part No. | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|---------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |
| F | - | 9.1 | 20 | 45 | 238210 | - | 238214 | - |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |
| F | 22.6 | 17.1 | 40 | 70 | 238610 | 238710 | 238614 | 238714 |

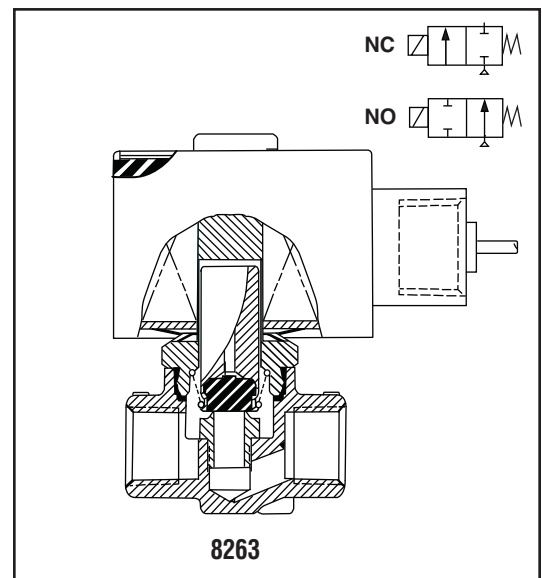
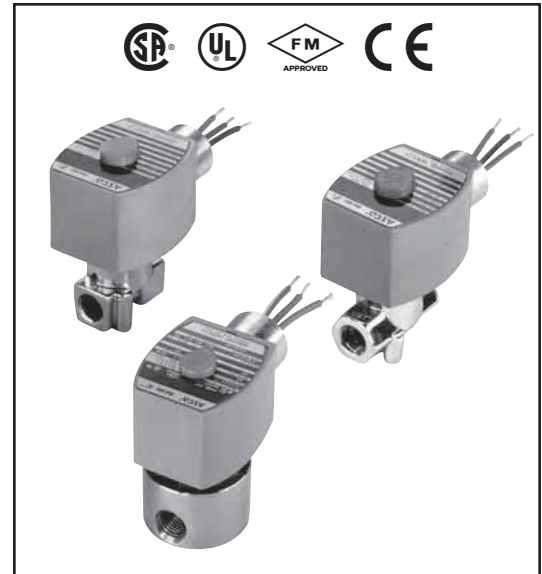
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to catalog number)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed, as indicated. Normally Closed Valves FM approved. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Brass Body | | | Stainless Steel Body | | | Watt Rating/ Class of Coil Insulation ② | |
|--|---------------------|----------------|---------------------------------------|-------|-------------------|---------------|-------|-------------------|---------------------|-----|----------------|-------------|--------------|----------------------|-------------|--------------|---|--------|
| | | | Max. AC | | | Max. DC | | | | | | | | | | | | |
| | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | AC | DC | Catalog Number | Const. Ref. | UL ③ Listing | Catalog Number | Const. Ref. | UL ③ Listing | AC | DC |
| NORMALLY CLOSED (Closed when de-energized), NBR Disc | | | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | .06 | 750 | 750 | 530 | 650 | 640 | 550 | 180 | 120 | 8262G001 | 1 | ○ | 8262G012 | 1 | ○ | 6.1/F | 10.6/F |
| 1/8 | 3/32 | .20 | 275 | 290 | 130 | 150 | 140 | 145 | 180 | 120 | 8262G014 | 1 | ○ | 8262G015 | 1 | ○ | 6.1/F | 10.6/F |
| 1/8 | 1/8 | .34 | 155 | 180 | 140 | 80 | 80 | 80 | 180 | 120 | 8262G002 | 1 | ○ | 8262G006 | 1 | ○ | 6.1/F | 10.6/F |
| 1/4 | 3/64 | .06 | 750 | 750 | 500 | 500 | 500 | 500 | 180 | 120 | 8262G019 | 16 | ○ | 8262G080 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 3/64 | .06 | 1500 | 1500 | 1100 | 475 | 475 | 450 | 140 | 140 | 8262G200 ① | 17 | ● | - | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/64 | .06 | 2200 | 2000 | 1100 | - | - | - | 140 | 140 | - | - | - | 8262G214 ① | 12 | ● | 10.1/F | - |
| 1/4 | 3/32 | .17 | 360 | 340 | 160 | 150 | 125 | 125 | 180 | 120 | 8262G020 | 16 | ○ | 8262G086 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 3/32 | .17 | 500 | 500 | 280 | - | - | - | 180 | - | 8262G021 | 16 | ○ | - | - | - | 9.1/F | - |
| 1/4 | 1/8 | .35 | 140 | 165 | 90 | 65 | 60 | 60 | 180 | 120 | 8262G022 | 16 | ○ | 8262G007 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 1/8 | .35 | 300 | 300 | 200 | 75 | 70 | 70 | 180 | 150 | 8262G232 | 17 | ○ | - | - | - | 10.1/F | 11.6/F |
| 1/4 | 5/32 | .50 | 180 | 200 | 145 | 40 | 40 | 45 | 180 | 150 | 8262G202 | 4 | ○ | 8262G220 | 12 | ○ | 10.1/F | 11.6/F |
| 1/4 | 7/32 | .72 | 90 | 100 | 100 | 25 | 25 | 25 | 180 | 150 | 8262G208 | 4 | ○ | 8262G226 | 12 | ○ | 10.1/F | 11.6/F |
| 1/4 | 7/32 | .85 | 40 | 50 | 40 | 17 | 20 | 21 | 180 | 120 | 8262G013 | 2 | ○ | 8262G036 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 9/32 | .88 | 60 | 75 | 60 | 18 | 15 | 18 | 180 | 150 | 8262G210 | 4 | ○ | - | - | - | 10.1/F | 11.6/F |
| 1/4 | 9/32 | .88 | 90 | 100 | 90 | 25 | 20 | 22 | 180 | 150 | 8262G212 | 6 | ○ | 8262G230 | 13 | ○ | 17.1/F | 22.6/F |
| 1/4 | 9/32 | .96 | 27 | 36 | 28 | 15 | 16 | 16 | 180 | 120 | 8262G090 | 2 | ○ | 8262G038 | 11 | ○ | 6.1/F | 10.6/F |
| 3/8 | 1/8 | .35 | 160 | 150 | 90 | 65 | 60 | 60 | 180 | 120 | 8263G002 | 3 | ○ | 8263G330 | 3 | ○ | 6.1/F | 10.6/F |
| 3/8 | 5/32 | .52 | 100 | 100 | 100 | 35 | 35 | 35 | 180 | 150 | 8263G200 | 5 | ○ | 8263G331 | 5 | ○ | 10.1/F | 11.6/F |
| 3/8 | 7/32 | .72 | 100 | 100 | 100 | 25 | 25 | 25 | 180 | 150 | 8263G206 | 5 | ○ | 8263G332 | 5 | ○ | 17.1/F | 11.6/F |
| 3/8 | 9/32 | .85 | 100 | 100 | 70 | - | - | - | 180 | - | 8263G210 | 7 | ○ | 8263G333 | 7 | ○ | 17.1/F | - |
| NORMALLY OPEN (Open when de-energized), NBR Disc (except where noted) | | | | | | | | | | | | | | | | | | |
| 1/8 | 1/16 | .09 | 500 | 300 | 225 | 400 | 250 | 150 | 180 | 120 | 8262G091 | 8 | ● | 8262G092 | 8 | ● | 6.1/F | 10.6/F |
| 1/8 | 3/32 | .15 | 275 | 200 | 150 | 190 | 110 | 110 | 180 | 120 | 8262G093 | 8 | ● | 8262G094 | 8 | ● | 6.1/F | 10.6/F |
| 1/8 | 1/8 | .21 | 125 | 100 | 85 | 80 | 60 | 50 | 180 | 120 | 8262G031 | 8 | ● | 8262G035 | 8 | ● | 6.1/F | 10.6/F |
| 1/4 | 3/64 | .06 | 750 | 700 | 700 | 500 | 500 | 500 | 140 | 140 | 8262G260 ① | 9 | ● | 8262G130 ① | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 3/32 | .17 | 300 | 250 | 230 | 200 | 150 | 125 | 140 | 140 | 8262G261 ① | 9 | ● | 8262G134 ① | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 1/8 | .35 | 130 | 110 | 100 | 80 | 60 | 60 | 180 | 150 | 8262G262 | 9 | ● | 8262G138 | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 5/32 | .49 | 85 | 75 | 60 | 45 | 30 | 30 | 180 | 150 | 8262G263 | 4 | ● | 8262G142 | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 7/32 | .83 | 45 | 45 | 40 | 25 | 20 | 20 | 180 | 150 | 8262G264 | 4 | ● | 8262G148 | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 9/32 | .96 | 30 | 25 | 20 | 15 | 15 | 15 | 180 | 150 | 8262G265 | 4 | ● | 8262G152 | 14 | ● | 10.1/F | 11.6/F |

① Cast UR disc supplied as standard.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ ○ Safety Shutoff Valve; ● General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m ³ /h) | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Brass Body | | | Stainless Steel Body | | | Watt Rating/ Class of Coil Insulation ② | |
|--|-------------------|------------------------------------|---------------------------------------|-------|-------------------|---------------|-------|-------------------|---------------------|----|----------------|-------------|--------------|----------------------|-------------|--------------|---|--------|
| | | | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | UL ③ Listing | Catalog Number | Const. Ref. | UL ③ Listing | AC | DC |
| | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | | | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized), NBR Disc | | | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | .05 | 52 | 52 | 37 | 45 | 44 | 38 | 82 | 49 | 8262G001 | 1 | ○ | 8262G012 | 1 | ○ | 6.1/F | 10.6/F |
| 1/8 | 2.4 | .17 | 19 | 20 | 9 | 10 | 10 | 10 | 82 | 49 | 8262G014 | 1 | ○ | 8262G015 | 1 | ○ | 6.1/F | 10.6/F |
| 1/8 | 3.2 | .29 | 11 | 12 | 10 | 6 | 6 | 6 | 82 | 49 | 8262G002 | 1 | ○ | 8262G006 | 1 | ○ | 6.1/F | 10.6/F |
| 1/4 | 1.2 | .05 | 52 | 52 | 34 | 34 | 34 | 34 | 82 | 49 | 8262G019 | 16 | ○ | 8262G080 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 1.2 | .05 | 103 | 103 | 76 | 33 | 33 | 31 | 60 | 60 | 8262G200 ① | 17 | ● | - | - | - | 10.1/F | 11.6/F |
| 1/4 | 1.2 | .05 | 152 | 138 | 76 | - | - | - | 60 | 60 | - | - | - | 8262G214 ① | 12 | ● | 10.1/F | - |
| 1/4 | 2.4 | .15 | 25 | 23 | 11 | 10 | 9 | 9 | 82 | 49 | 8262G020 | 16 | ○ | 8262G086 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 2.4 | .15 | 34 | 34 | 19 | - | - | - | 82 | - | 8262G021 | 16 | ○ | - | - | - | 9.1/F | - |
| 1/4 | 3.2 | .30 | 10 | 11 | 6 | 4 | 4 | 4 | 82 | 49 | 8262G022 | 16 | ○ | 8262G007 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 3.2 | .30 | 21 | 21 | 14 | 5 | 5 | 5 | 82 | 65 | 8262G232 | 17 | ○ | - | - | - | 10.1/F | 11.6/F |
| 1/4 | 4.0 | .43 | 12 | 14 | 10 | 3 | 3 | 3 | 82 | 65 | 8262G202 | 4 | ○ | 8262G220 | 12 | ○ | 10.1/F | 11.6/F |
| 1/4 | 5.6 | .62 | 6 | 7 | 7 | 2 | 2 | 2 | 82 | 65 | 8262G208 | 4 | ○ | 8262G226 | 12 | ○ | 10.1/F | 11.6/F |
| 1/4 | 5.6 | .73 | 3 | 3 | 3 | 1 | 1 | 1 | 82 | 49 | 8262G013 | 2 | ○ | 8262G036 | 11 | ○ | 6.1/F | 10.6/F |
| 1/4 | 7.1 | .75 | 4 | 5 | 4 | 1 | 1 | 1 | 82 | 65 | 8262G210 | 4 | ○ | - | - | - | 10.1/F | 11.6/F |
| 1/4 | 7.1 | .75 | 6 | 7 | 6 | 2 | 1 | 2 | 82 | 65 | 8262G212 | 6 | ○ | 8262G230 | 13 | ○ | 17.1/F | 22.6/F |
| 1/4 | 7.1 | .82 | 2 | 2 | 2 | 1 | 1 | 1 | 82 | 49 | 8262G090 | 2 | ○ | 8262G038 | 11 | ○ | 6.1/F | 10.6/F |
| 3/8 | 3.3 | .30 | 11 | 10 | 6 | 4 | 4 | 4 | 82 | 49 | 8263G002 | 3 | ○ | 8263G330 | 3 | ○ | 6.1/F | 10.6/F |
| 3/8 | 4.0 | .45 | 7 | 7 | 7 | 2 | 2 | 2 | 82 | 65 | 8263G200 | 5 | ○ | 8263G331 | 5 | ○ | 10.1/F | 11.6/F |
| 3/8 | 5.6 | .62 | 7 | 7 | 7 | 2 | 2 | 2 | 82 | 65 | 8263G206 | 5 | ○ | 8263G332 | 5 | ○ | 17.1/F | 11.6/F |
| 3/8 | 7.1 | .73 | 7 | 7 | 5 | - | - | - | 82 | - | 8263G210 | 7 | ○ | 8263G333 | 7 | ○ | 17.1/F | - |
| NORMALLY OPEN (Open when de-energized), NBR Disc (except where noted) | | | | | | | | | | | | | | | | | | |
| 1/8 | 1.6 | .08 | 34 | 21 | 16 | 28 | 17 | 10 | 82 | 49 | 8262G091 | 8 | ● | 8262G092 | 8 | ● | 6.1/F | 10.6/F |
| 1/8 | 2.4 | .13 | 19 | 14 | 10 | 13 | 8 | 8 | 82 | 49 | 8262G093 | 8 | ● | 8262G094 | 8 | ● | 6.1/F | 10.6/F |
| 1/8 | 3.2 | .18 | 9 | 7 | 6 | 6 | 4 | 3 | 82 | 49 | 8262G031 | 8 | ● | 8262G035 | 8 | ● | 6.1/F | 10.6/F |
| 1/4 | 1.2 | .05 | 52 | 48 | 48 | 34 | 34 | 34 | 60 | 60 | 8262G260 ① | 9 | ● | 8262G130 ① | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 2.4 | .15 | 21 | 17 | 16 | 14 | 10 | 9 | 60 | 60 | 8262G261 ① | 9 | ● | 8262G134 ① | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 3.2 | .30 | 9 | 8 | 7 | 6 | 4 | 4 | 82 | 65 | 8262G262 | 9 | ● | 8262G138 | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 4.0 | .42 | 6 | 5 | 4 | 3 | 2 | 2 | 82 | 65 | 8262G263 | 4 | ● | 8262G142 | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 5.6 | .71 | 3 | 3 | 3 | 2 | 1 | 1 | 82 | 65 | 8262G264 | 4 | ● | 8262G148 | 14 | ● | 10.1/F | 11.6/F |
| 1/4 | 7.1 | .82 | 2 | 2 | 1 | 1 | 1 | 1 | 82 | 65 | 8262G265 | 4 | ● | 8262G152 | 14 | ● | 10.1/F | 11.6/F |

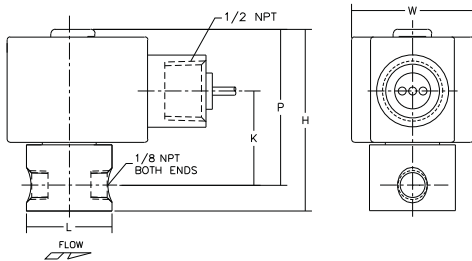
① Cast UR disc supplied as standard.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ ○ Safety Shutoff Valve; ● General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Dimensions: inches (mm)

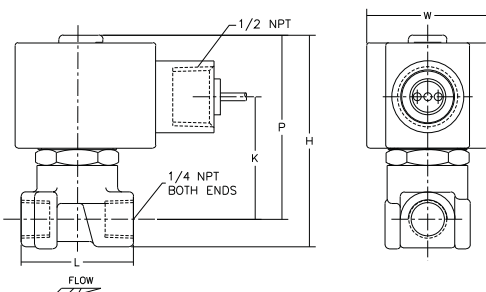
| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 2.52 | 1.30 | 1.19 | 2.16 | 1.69 |
| | mm | 64 | 33 | 30 | 55 | 43 |
| 2 | ins. | 2.98 | 1.71 | 1.56 | 2.57 | 1.69 |
| | mm | 76 | 43 | 40 | 65 | 43 |
| 3 | ins. | 3.07 | 1.63 | 1.88 | 2.49 | 1.69 |
| | mm | 78 | 41 | 48 | 63 | 43 |
| 4 | ins. | 3.20 | 1.78 | 1.56 | 2.79 | 1.95 |
| | mm | 81 | 45 | 40 | 71 | 50 |
| 5 | ins. | 3.25 | 1.70 | 2.00 | 2.77 | 1.95 |
| | mm | 83 | 43 | 51 | 70 | 50 |
| 6 | ins. | 3.16 | 1.78 | 1.56 | 2.75 | 1.95 |
| | mm | 80 | 45 | 40 | 70 | 50 |
| 7 | ins. | 3.25 | 1.70 | 2.00 | 2.67 | 1.95 |
| | mm | 83 | 43 | 51 | 68 | 50 |
| 8 | ins. | 3.15 | 1.32 | 1.19 | 2.18 | 1.69 |
| | mm | 80 | 34 | 30 | 55 | 43 |
| 9 | ins. | 3.23 | 1.67 | 1.25 | 2.81 | 1.95 |
| | mm | 82 | 42 | 32 | 71 | 50 |
| 11 | ins. | 2.94 | 1.71 | 1.56 | 2.57 | 1.69 |
| | mm | 75 | 43 | 40 | 65 | 43 |
| 12 | ins. | 3.12 | 1.78 | 1.56 | 2.75 | 1.95 |
| | mm | 79 | 45 | 40 | 70 | 50 |
| 13 | ins. | 3.12 | 1.78 | 1.56 | 2.75 | 1.95 |
| | mm | 79 | 45 | 40 | 70 | 50 |
| 14 | ins. | 3.16 | 1.65 | 1.56 | 2.79 | 1.95 |
| | mm | 80 | 42 | 40 | 71 | 50 |
| 16 | ins. | 3.01 | 1.73 | 1.25 | 2.59 | 1.69 |
| | mm | 76 | 44 | 32 | 66 | 43 |
| 17 | ins. | 3.19 | 1.80 | 1.25 | 2.77 | 1.95 |
| | mm | 81 | 46 | 32 | 70 | 50 |

IMPORTANT: Valves may be mounted in any position.

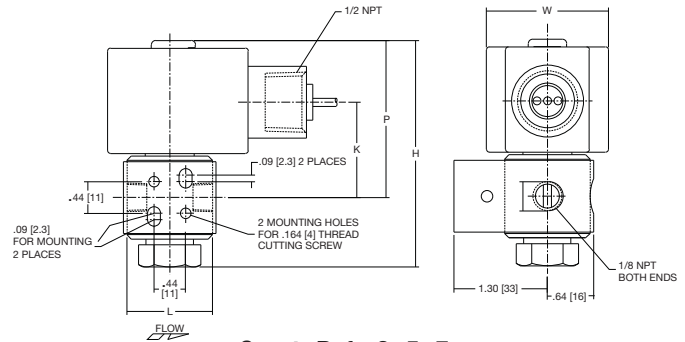
Const. Ref. 1



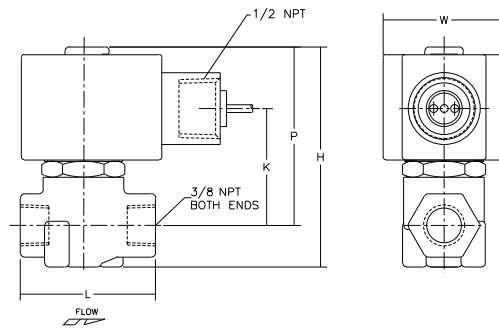
Const. Ref. 2, 4, 6, 9



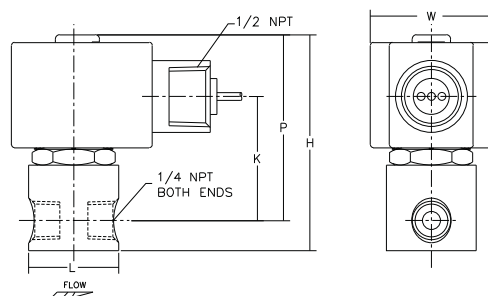
Const. Refs. 8



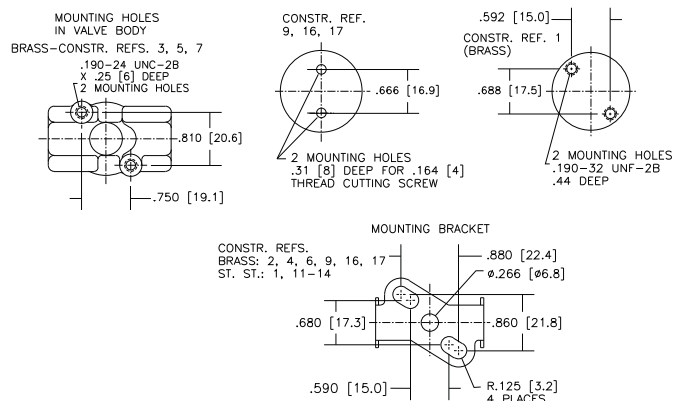
Const. Ref. 3, 5, 7



Const. Ref. 11-14, 16, 17



Mounting Details



Three-way valves have three pipe connections and two orifices. When one orifice is open, the other is closed, and vice versa. They are commonly used to alternately apply pressure to and exhaust pressure from a valve actuator or a single-acting cylinder.

Three Types of Operations Apply

Normally Closed (NC)

When the valve is de-energized, the pressure port is closed and the exhaust port is connected to the cylinder port. When the valve is energized, the exhaust port is closed and the pressure port is connected to the cylinder port.

Normally Open (NO)

When the valve is de-energized, the pressure port is connected to the cylinder port and the exhaust port is closed. When the valve is energized, the pressure port is closed and the cylinder port is connected to the exhaust port.

Universal (Univ)

This allows the valve to be connected in either the Normally Closed or Normally Open position... or to select one of two fluids or to divert flow from one port to another.

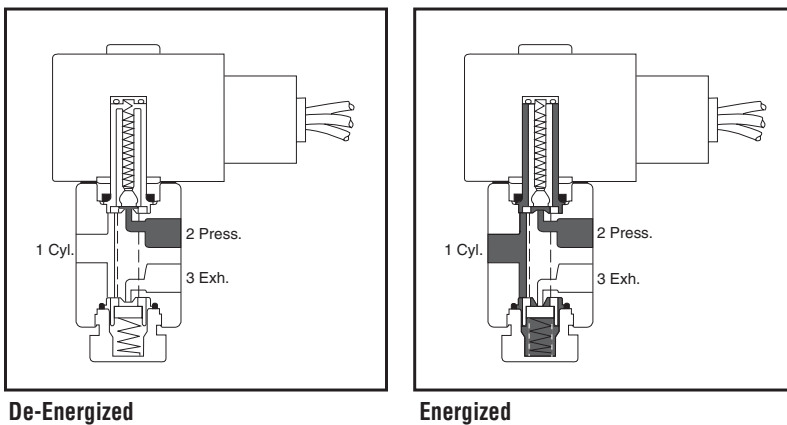
See *Engineering Section* for further details.

Standard and Optional Features

Solenoid valves are supplied, as listed, with either RedHat II molded epoxy solenoids or RedHat solenoids with metal enclosures. RedHat II valves are identified by the letter "G" or "H" in their catalog numbers; e.g., 8320G001. Many optional features may be added to your valves; e.g. high-temperature Class H molded coils and manual operators.

See the *Optional Features Section* for details.

3-Way/2 Position NC Valves Flow Diagrams



Index

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| 8316 | Zero Minimum | 1/4" - 1/2" | 47 |
| 8317/8321 | Quick Exhaust | 1/4" and 3/8" | 49 |
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| 8327 | High Flow Direct Acting | 1/4" | 57 |
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Features

- Designed for high flow and high pressure service
- Direct acting, requires no minimum operating pressure
- Choice of metal seating materials to handle aggressive fluids, or resilient seating for airtight shutoff
- Ideal for power plants and similar applications

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|---|---------------------|
| Body | Brass | 304 Stainless Steel |
| Disc | 303 Stainless Steel (Metal), PA, or Brass (Resilient) | |
| Seats | NBR, Phosphor Bronze | 303 Stainless Steel |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel, 17-7PH, or Inconel | |
| Shading Coil | Copper | Silver |
| Gaskets | NBR | PTFE |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | - | 20.1 | 43 | 240 | 272610 | - | 272614 | - |
| H | 36.2 | 28 | 60 | 330 | 222345 | 222184 | 222345 | 222184 |
| H | - | 16.1 | 35 | 180 | 272810 | - | 272814 | - |
| H | - | 28.2 | 50 | 385 | 224195 | - | 224195 | - |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.

Note: 125 and 250 volts DC are battery voltages applied in power plants. Special AC and DC constructions are available to pilot power plant control valves. Consult your local ASCO sales office for details.

Solenoid Enclosures

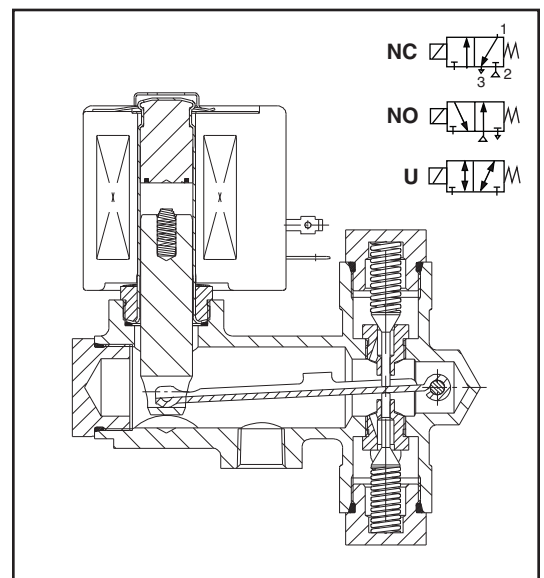
Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9. See footnote on next page. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



3-WAY



Nominal Ambient Temp. Ranges:

Class F Coils AC: 32°F to 125°F (0°C to 52°C)

Class H Coils AC: 32°F to 140°F (0°C to 59°C)

Class H Coils DC: 32°F to 77°F (0°C to 25°C)

(104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals

CSA certified (8300 Series only).

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---------------------------------------|-------|---------|-------|--|-----|----------------|-------------|----------------------|-------------|---------------------------------------|--------|
| | | | Air-Inert Gas, Water, Lt. Oil | | | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | | |
| | | | Max. AC | | Max. DC | | Add Suffix "F" for NC, "G" for NO, "U" for Univ. ① | | | | | | | |
| | | | NC/NO | Univ. | NC/NO | Univ. | AC | DC | | | | | AC | DC |
| METAL SEATS AND DISCS | | | | | | | | | | | | | | |
| 1/8 | 1/8 | .13 | - | - | 250 | 125 | - | 180 | 8300D055 | 1 | - | - | - | 36.2/H |
| 1/8 | 1/8 | .13 | 550 | 300 | - | - | 200 | - | 8300G055 | 1 | - | - | 20.1/F | - |
| 1/8 | 3/16 | .35 | - | - | 125 | 60 | - | 180 | 8300D003 | 1 | - | - | - | 36.2/H |
| 1/8 | 3/16 | .35 | 250 | 150 | - | - | 200 | - | 8300G003 | 1 | - | - | 20.1/F | - |
| 1/4 | 3/16 | .35 | - | - | 125 | 60 | - | 180 | 8300D058 | 1 | - | - | - | 36.2/H |
| 1/4 | 3/16 | .35 | 250 | 150 | - | - | 200 | - | 8300G058 | 1 | - | - | 20.1/F | - |
| 1/4 | 1/4 | .45 | - | - | 75 | 35 | - | 180 | 8300A081 | 1 | - | - | - | 36.2/H |
| 1/4 | 1/4 | .45 | 190 | 90 | - | - | 200 | - | 8300G081 | 1 | - | - | 20.1/F | - |
| 1/4 | 1/4 | .45 | 250 | 120 | - | - | 200 | - | 8300D061 ② | 1 | - | - | 28/H | - |
| 3/8 | 1/4 | .45 | - | - | 50 | 25 | - | 180 | - | - | 8300B410 | 2 | - | 36.2/H |
| 3/8 | 1/4 | .45 | 150 | 75 | - | - | 200 | - | - | - | 8300G410 | 2 | 20.1/F | - |
| 3/8 | 1/4 | .45 | - | - | 75 | 35 | - | 180 | 8300A082 | 1 | - | - | - | 36.2/H |
| 3/8 | 1/4 | .45 | 190 | 90 | - | - | 200 | - | 8300G082 | 1 | - | - | 20.1/F | - |
| 3/8 | 1/4 | .45 | 250 | 120 | - | - | 200 | - | 8300D009 ② | 1 | - | - | 28/H | - |
| 3/8 | 1/4 | .45 | 175 | 85 | - | - | 200 | - | - | - | 8300B411 ② | 2 | 28/H | - |
| 3/8 | 5/16 | .75 | - | - | 40 | 20 | - | 180 | 8300D064 | 2 | 8300B412 | 2 | - | 36.2/H |
| 3/8 | 5/16 | .75 | 120 | 60 | - | - | 200 | - | 8300G064 | 2 | 8300G412 | 2 | 20.1/F | - |
| 3/8 | 3/8 | 1.00 | - | - | 30 | 15 | - | 180 | 8300D072 | 2 | 8300B413 | 2 | - | 36.2/H |
| 3/8 | 3/8 | 1.00 | 75 | 35 | - | - | 200 | - | 8300G072 | 2 | 8300G413 | 2 | 20.1/F | - |
| 1/2 | 5/16 | .75 | - | - | 40 | 20 | - | 180 | 8300D068 | 2 | 8300B403 | 3 | - | 36.2/H |
| 1/2 | 5/16 | .75 | 120 | 60 | - | - | 200 | - | 8300G068 | 2 | 8300G403 | 3 | 20.1/F | - |
| 1/2 | 3/8 | 1.00 | - | - | 30 | 15 | - | 180 | 8300D076 | 2 | 8300B404 | 3 | - | 36.2/H |
| 1/2 | 3/8 | 1.00 | 75 | 35 | - | - | 200 | - | 8300G076 | 2 | 8300G404 | 3 | 20.1/F | - |
| NBR SEATS AND BRASS DISCS | | | | | | | | | | | | | | |
| 1/4 | 3/16 | .25 | - | - | 125 | 60 | - | 180 | 8300D058R | 1 | - | - | - | 36.2/H |
| 1/4 | 3/16 | .25 | 250 | 150 | - | - | 180 | - | 8300G058R | 1 | - | - | 20.1/F | - |
| 1/4 | 1/4 | .39 | - | - | 75 | 35 | - | 180 | 8300A081R | 1 | - | - | - | 36.2/H |
| 1/4 | 1/4 | .39 | 150 | 75 | - | - | 180 | - | 8300G081R | 1 | - | - | 20.1/F | - |
| 3/8 | 1/4 | .39 | - | - | 75 | 35 | - | 180 | 8300A082R | 1 | - | - | - | 36.2/H |
| 3/8 | 1/4 | .39 | 150 | 75 | - | - | 180 | - | 8300G082R | 1 | - | - | 20.1/F | - |
| 3/8 | 5/16 | .53 | - | - | 40 | 20 | - | 180 | 8300D064R | 2 | - | - | - | 36.2/H |
| 3/8 | 5/16 | .53 | 120 | 60 | - | - | 180 | - | 8300G064R | 2 | - | - | 20.1/F | - |
| 1/2 | 5/16 | .53 | - | - | 40 | 20 | - | 180 | 8300D068R | 2 | - | - | - | 36.2/H |
| 1/2 | 5/16 | .53 | 120 | 60 | - | - | 180 | - | 8300G068R | 2 | - | - | 20.1/F | - |
| PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .45 | 100 | 50 | - | - | 344 | - | 8315G002 | 1 | - | - | 16.1/H | - |
| 3/8 | 1/4 | .45 | 100 | 50 | - | - | 344 | - | 8315G003 | 1 | - | - | 16.1/H | - |
| 3/8 | 5/16 | .75 | 100 | 50 | - | - | 344 | - | 8315 034 | 4 | - | - | 28.2/H | - |
| 1/2 | 5/16 | .75 | 100 | 50 | - | - | 344 | - | 8315 035 | 4 | - | - | 28.2/H | - |

① NC = Normally Closed: Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port.
 ② "EF" Prefix variations are suitable for enclosures Types 3, 4, 7 (C&D), and 9 (E) only and have a temperature range code T3A. Refer to Engineering Section for details.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|---------------------------------------|-------|---------|-------|---------------------|----|--|-------------|----------------------|-------------|---------------------------------------|--------|
| | | | Air-Inert Gas, Water, Lt. Oil | | | | | | Add Suffix "F" for NC, "G" for NO, "U" for Univ. ① | | | | | |
| | | | Max. AC | | Max. DC | | | | | | | | | |
| | | | NC/NO | Univ. | NC/NO | Univ. | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC |
| METAL SEATS AND DISCS | | | | | | | | | | | | | | |
| 1/8 | 3 | .11 | - | - | 17 | 9 | - | 82 | 8300D055 | 1 | - | - | - | 36.2/H |
| 1/8 | 3 | .11 | 38 | 21 | - | - | 93 | - | 8300G055 | 1 | - | - | 20.1/F | - |
| 1/8 | 5 | .30 | - | - | 9 | 4 | - | 82 | 8300D003 | 1 | - | - | - | 36.2/H |
| 1/8 | 5 | .30 | 17 | 10 | - | - | 93 | - | 8300G003 | 1 | - | - | 20.1/F | - |
| 1/4 | 5 | .30 | - | - | 9 | 4 | - | 82 | 8300D058 | 1 | - | - | - | 36.2/H |
| 1/4 | 5 | .30 | 17 | 10 | - | - | 93 | - | 8300G058 | 1 | - | - | 20.1/F | - |
| 1/4 | 6 | .39 | - | - | 5 | 2 | - | 82 | 8300A081 | 1 | - | - | - | 36.2/H |
| 1/4 | 6 | .39 | 13 | 6 | - | - | 93 | - | 8300G081 | 1 | - | - | 20.1/F | - |
| 1/4 | 6 | .39 | 17 | 8 | - | - | 93 | - | 8300D061 ② | 1 | - | - | 28/H | - |
| 3/8 | 6 | .39 | - | - | 3 | 2 | - | 82 | - | - | 8300B410 | 2 | - | 36.2/H |
| 3/8 | 6 | .39 | 10 | 5 | - | - | 93 | - | - | - | 8300G410 | 2 | 20.1/F | - |
| 3/8 | 6 | .39 | - | - | 5 | 2 | - | 82 | 8300A082 | 1 | - | - | - | 36.2/H |
| 3/8 | 6 | .39 | 13 | 6 | - | - | 93 | - | 8300G082 | 1 | - | - | 20.1/F | - |
| 3/8 | 6 | .39 | 17 | 8 | - | - | 93 | - | 8300D009 ② | 1 | - | - | 28/H | - |
| 3/8 | 6 | .39 | 12 | 6 | - | - | 93 | - | - | - | 8300B411 ② | 2 | 28/H | - |
| 3/8 | 8 | .64 | - | - | 3 | 1 | - | 82 | 8300D064 | 2 | 8300B412 | 2 | - | 36.2/H |
| 3/8 | 8 | .64 | 8 | 4 | - | - | 93 | - | 8300G064 | 2 | 8300G412 | 2 | 20.1/F | - |
| 3/8 | 10 | .86 | - | - | 2 | 1 | - | 82 | 8300D072 | 2 | 8300B413 | 2 | - | 36.2/H |
| 3/8 | 10 | .86 | 5 | 2 | - | - | 93 | - | 8300G072 | 2 | 8300G413 | 2 | 20.1/F | - |
| 1/2 | 8 | .64 | - | - | 3 | 1 | - | 82 | 8300D068 | 2 | 8300B403 | 3 | - | 36.2/H |
| 1/2 | 8 | .64 | 8 | 4 | - | - | 93 | - | 8300G068 | 2 | 8300G403 | 3 | 20.1/F | - |
| 1/2 | 10 | .86 | - | - | 2 | 1 | - | 82 | 8300D076 | 2 | 8300B404 | 3 | - | 36.2/H |
| 1/2 | 10 | .86 | 5 | 2 | - | - | 93 | - | 8300G076 | 2 | 8300G404 | 3 | 20.1/F | - |
| NBR SEATS AND BRASS DISCS | | | | | | | | | | | | | | |
| 1/4 | 5 | .21 | - | - | 9 | 4 | - | 82 | 8300D058R | 1 | - | - | - | 36.2/H |
| 1/4 | 5 | .21 | 17 | 10 | - | - | 82 | - | 8300G058R | 1 | - | - | 20.1/F | - |
| 1/4 | 6 | .33 | - | - | 5 | 2 | - | 82 | 8300A081R | 1 | - | - | - | 36.2/H |
| 1/4 | 6 | .33 | 10 | 5 | - | - | 82 | - | 8300G081R | 1 | - | - | 20.1/F | - |
| 3/8 | 6 | .33 | - | - | 5 | 2 | - | 82 | 8300A082R | 1 | - | - | - | 36.2/H |
| 3/8 | 6 | .33 | 10 | 5 | - | - | 82 | - | 8300G082R | 1 | - | - | 20.1/F | - |
| 3/8 | 8 | .45 | - | - | 3 | 1 | - | 82 | 8300D064R | 2 | - | - | - | 36.2/H |
| 3/8 | 8 | .45 | 8 | 4 | - | - | 82 | - | 8300G064R | 2 | - | - | 20.1/F | - |
| 1/2 | 8 | .45 | - | - | 3 | 1 | - | 82 | 8300D068R | 2 | - | - | - | 36.2/H |
| 1/2 | 8 | .45 | 8 | 4 | - | - | 82 | - | 8300G068R | 2 | - | - | 20.1/F | - |
| PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY | | | | | | | | | | | | | | |
| 1/4 | .5 | .39 | 7 | 3 | - | - | 173 | - | 8315G002 | 1 | - | - | 16.1/H | - |
| 3/8 | .5 | .39 | 7 | 3 | - | - | 173 | - | 8315G003 | 1 | - | - | 16.1/H | - |
| 3/8 | .6 | .64 | 7 | 3 | - | - | 173 | - | 8315 034 | 4 | - | - | 28.2/H | - |
| 1/2 | .6 | .64 | 7 | 3 | - | - | 173 | - | 8315 035 | 4 | - | - | 28.2/H | - |

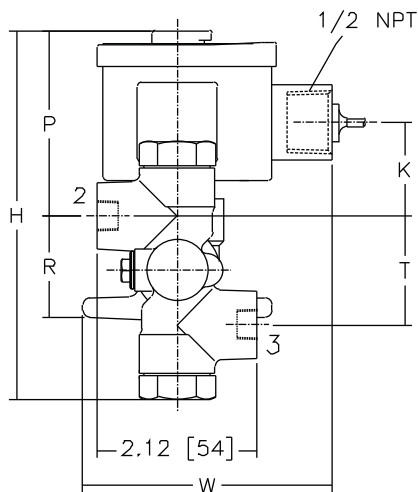
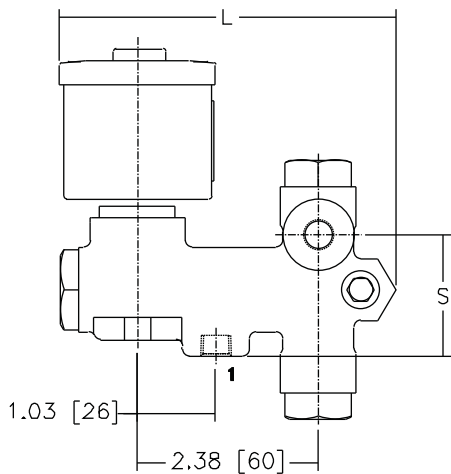
① NC = Normally Closed; Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port.
 ② "EF" Prefix variations are suitable for enclosures Types 3, 4, 7 (C&D), and 9 (E) only and have a temperature range code T3A. Refer to Engineering Section for details.

Dimensions: inches (mm)

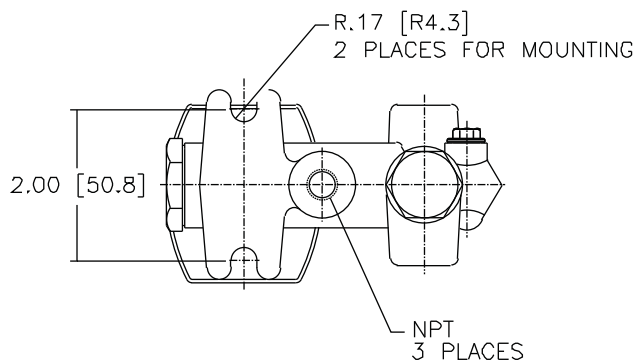
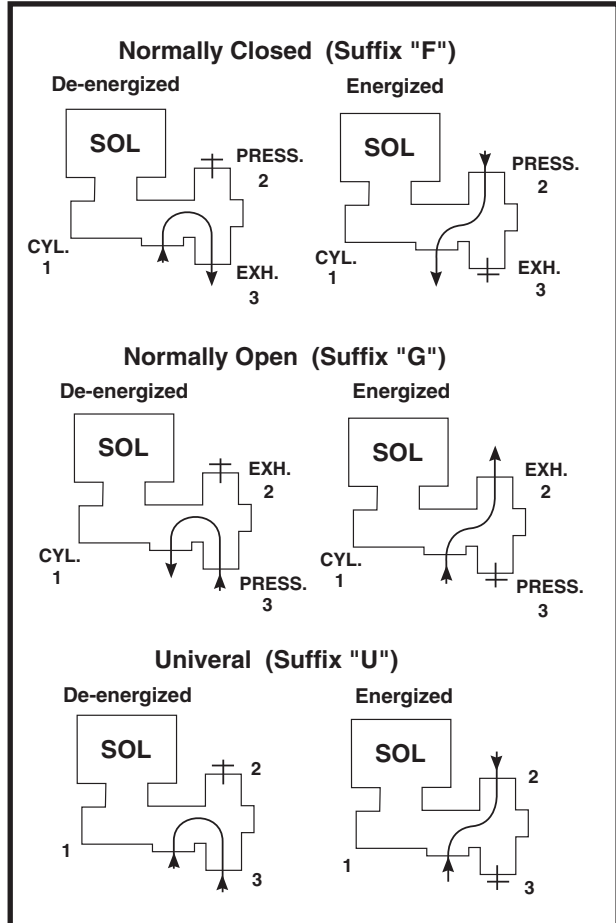
| Const. Ref. | | H | K | L | P | R | S | W | T |
|-------------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 4.89 | 1.44 | 4.44 | 2.46 | 1.34 | 1.60 | 3.30 | 1.44 |
| | mm | 124 | 37 | 113 | 62 | 34 | 40 | 84 | 37 |
| 2 | ins. | 5.91 | 1.88 | 4.44 | 2.37 | 1.66 | 2.00 | 3.30 | 1.88 |
| | mm | 150 | 48 | 113 | 60 | 42 | 51 | 84 | 48 |
| 3 | ins. | 5.90 | 1.88 | 4.62 | 2.37 | 1.66 | 2.00 | 3.55 | 1.88 |
| | mm | 150 | 48 | 117 | 60 | 42 | 51 | 90 | 48 |
| 4 | ins. | 4.89 | 1.44 | 4.44 | 2.46 | 1.34 | 1.60 | 3.30 | 1.44 |
| | mm | 124 | 37 | 113 | 62 | 34 | 40 | 84 | 37 |

IMPORTANT: Valves must be mounted vertical and upright.

Const. Ref. 1, 2, 3, 4



Flow Diagrams



Features

- No minimum operating pressure required
- The original 3-way valve design
- High-speed general service
- Simplest valve for basic 3-way piloting operation, only a spring and two moving parts
- Moderate flow pilots, smaller control valves and actuators
- Can also be used for low-volume fluid diversion

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|---|---------------------|
| Body | Brass | 303 Stainless Steel |
| Seals and Disc | NBR, PA | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Springs | 302 Stainless Steel and 17-7PH Stainless Steel | |
| Shading Coil | Copper | Silver |
| Core Guide | CA (All AC valves and 1/8" orifice Normally Open DC valves) | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

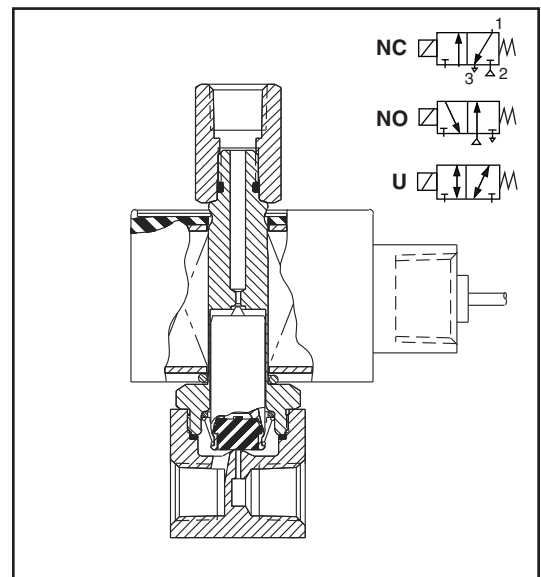
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



3-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | |
|--|---------------------|----------------|---------------------------------------|-------|------------------|---------------|-------|------------------|---------------------|-----|----------------|-------------|----------------------|-------------|---------------------------------------|--------|
| | | | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC |
| | | | Air-Inert Gas | Water | Lt. Oil @ 45 SSU | Air-Inert Gas | Water | Lt. Oil @ 45 SSU | | | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | .04 | 160 | 160 | 160 | 70 | 65 | 65 | 200 | 104 | 8314G041 | 1 | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/64 | .04 | 160 | 160 | 160 | 70 | 65 | 65 | 200 | 104 | 8314G006 | 2 | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/32 | .15 | 80 | 40 | 40 | 35 | 35 | 15 | 200 | 104 | 8314G007 | 2 | 8314G120 ① | 4 | 10.1/F | 11.6/F |
| 1/4 | 1/8 | .25 | 45 | 25 | 25 | 20 | 15 | 15 | 200 | 104 | 8314G008 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | .04 | 230 | 230 | 230 | 120 | 140 | 135 | 200 | 104 | 8314G031 | 1 | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/64 | .04 | 230 | 230 | 230 | 120 | 140 | 135 | 200 | 104 | 8314G034 | 2 | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/32 | .15 | 150 | 100 | 100 | 60 | 70 | 30 | 200 | 104 | 8314G035 | 2 | 8314G121 ① | 4 | 10.1/F | 11.6/F |
| 1/4 | 1/8 | .25 | 75 | 60 | 60 | 30 | 40 | 25 | 200 | 104 | 8314G036 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized), Air Only - Exhausts to Atmosphere | | | | | | | | | | | | | | | | |
| 1/4 | 3/64 | .04 | 230 | - | - | 120 | - | - | 200 | 104 | 8314G022 | 3 | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/32 | .15 | 150 | - | - | 60 | - | - | 200 | 104 | 8314G023 | 3 | - | - | 10.1/F | 11.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | .04 | 300 | 300 | 300 | 200 | 200 | 120 | 200 | 104 | 8314G049 | 1 | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/32 | .15 | 175 | 175 | 175 | 70 | 90 | 45 | 200 | 104 | 8314G053 | 2 | 8314G122 ① | 4 | 10.1/F | 11.6/F |
| 1/4 | 1/8 | .25 | 90 | 90 | 90 | 40 | 40 | 25 | 200 | 104 | 8314G054 | 2 | - | - | 10.1/F | 11.6/F |

① Can be used for **dry** natural gas service with the EF prefix.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | |
|--|-------------------|-----------------------|---------------------------------------|-------|------------------|---------------|-------|------------------|---------------------|----|----------------|-------------|----------------------|-------------|---------------------------------------|--------|
| | | | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC |
| | | | Air-Inert Gas | Water | Lt. Oil @ 45 SSU | Air-Inert Gas | Water | Lt. Oil @ 45 SSU | | | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | | | | | |
| 1/8 | 1 | .03 | 11 | 11 | 11 | 5 | 4 | 4 | 93 | 40 | 8314G041 | 1 | - | - | 10.1/F | 11.6/F |
| 1/4 | 1 | .03 | 11 | 11 | 11 | 5 | 4 | 4 | 93 | 40 | 8314G006 | 2 | - | - | 10.1/F | 11.6/F |
| 1/4 | 2 | .13 | 6 | 3 | 3 | 2 | 2 | 1 | 93 | 40 | 8314G007 | 2 | 8314G120 ① | 4 | 10.1/F | 11.6/F |
| 1/4 | 3 | .21 | 3 | 2 | 2 | 1 | 1 | 1 | 93 | 40 | 8314G008 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 1 | .03 | 16 | 16 | 16 | 8 | 10 | 9 | 93 | 40 | 8314G031 | 1 | - | - | 10.1/F | 11.6/F |
| 1/4 | 1 | .03 | 16 | 16 | 16 | 8 | 10 | 9 | 93 | 40 | 8314G034 | 2 | - | - | 10.1/F | 11.6/F |
| 1/4 | 2 | .13 | 10 | 7 | 7 | 4 | 5 | 2 | 93 | 40 | 8314G035 | 2 | 8314G121 ① | 4 | 10.1/F | 11.6/F |
| 1/4 | 3 | .21 | 5 | 4 | 4 | 2 | 3 | 2 | 93 | 40 | 8314G036 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized), Air Only - Exhausts to Atmosphere | | | | | | | | | | | | | | | | |
| 1/4 | 1 | .03 | 16 | - | - | 8 | - | - | 93 | 40 | 8314G022 | 3 | - | - | 10.1/F | 11.6/F |
| 1/4 | 2 | .13 | 10 | - | - | 4 | - | - | 93 | 40 | 8314G023 | 3 | - | - | 10.1/F | 11.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 1 | .03 | 21 | 21 | 21 | 14 | 14 | 8 | 93 | 40 | 8314G049 | 1 | - | - | 10.1/F | 11.6/F |
| 1/4 | 2 | .13 | 12 | 12 | 12 | 5 | 6 | 3 | 93 | 40 | 8314G053 | 2 | 8314G122 ① | 4 | 10.1/F | 11.6/F |
| 1/4 | 3 | .21 | 6 | 6 | 6 | 3 | 3 | 2 | 93 | 40 | 8314G054 | 2 | - | - | 10.1/F | 11.6/F |

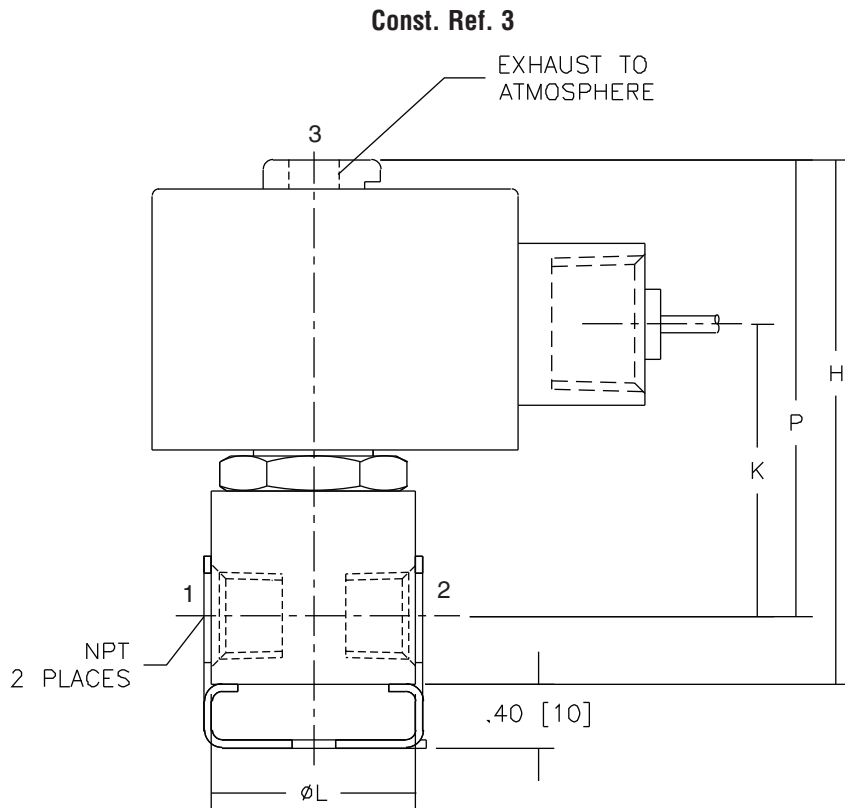
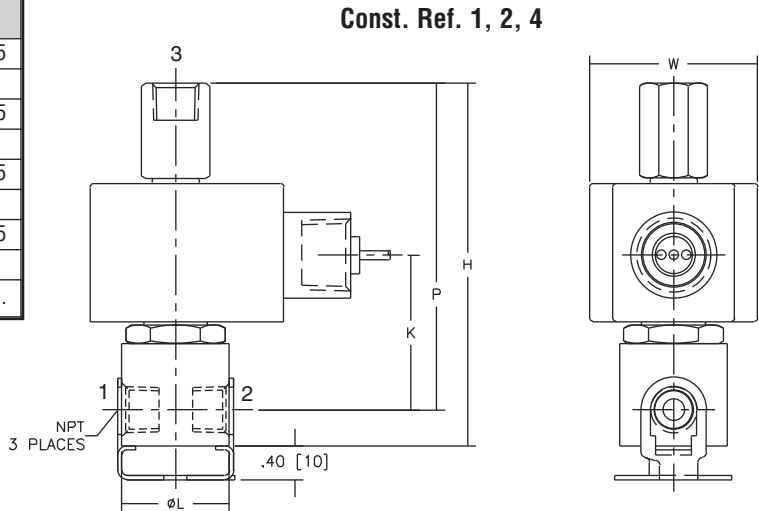
① Can be used for **dry** natural gas service with the EF prefix.

Dimensions: inches (mm)

3-WAY

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|-------|------|------|
| 1 | ins. | 3.87 | 1.67 | Ø1.19 | 3.51 | 1.95 |
| | mm | 98 | 42 | Ø30 | 89 | 50 |
| 2 | ins. | 4.21 | 1.80 | Ø1.25 | 3.79 | 1.95 |
| | mm | 107 | 46 | Ø32 | 96 | 50 |
| 3 | ins. | 3.34 | 1.80 | Ø1.25 | 2.92 | 1.95 |
| | mm | 85 | 46 | Ø32 | 74 | 50 |
| 4 | ins. | 4.14 | 1.78 | Ø1.63 | 3.77 | 1.95 |
| | mm | 105 | 45 | Ø41 | 96 | 50 |

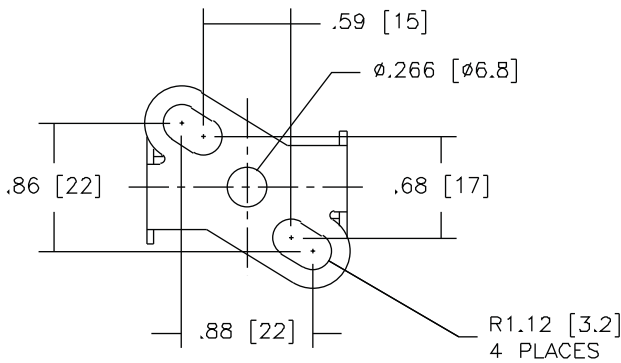
IMPORTANT: Valves can be mounted in any position.



Dimensions: inches (mm)

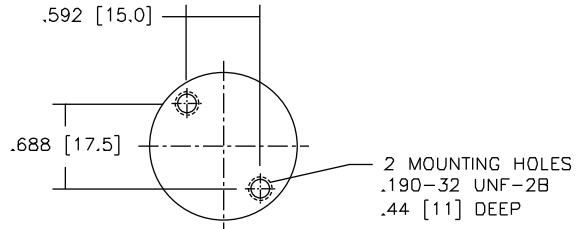
**Mounting Bracket Standard
1/4 NPT Size only**

Const. Ref. 2, 3, 4

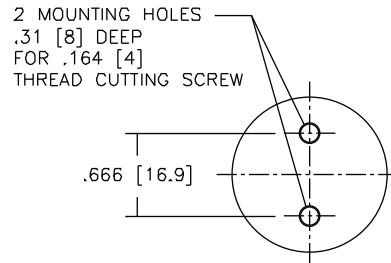


Mounting Holes in Valve Body

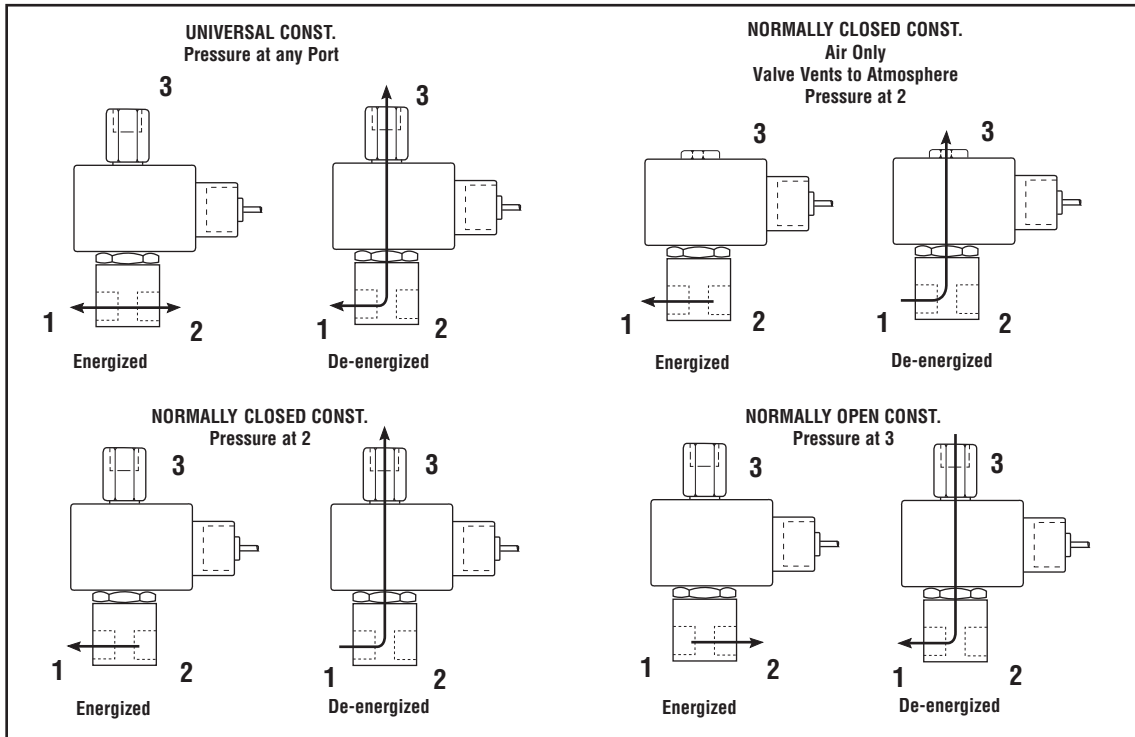
Const. Ref. 1



Const. Ref. 2, 3



FLOW DIAGRAMS



Features

- Diaphragm poppet valves suitable for controlling air, inert gas, and liquids
- Internal piloting controls large orifices to provide high flows
- Can be used to pilot large actuators to provide quick closing of large control valves
- Resilient seating for tight shutoff
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|--------------------------------------|--|
| Body | Brass |
| Seals and Disc | NBR |
| Diaphragm Assembly | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Springs | 302 Stainless Steel and 17-7PH Stainless Steel |
| Shading Coil | Copper |
| Pilot Seat Cartridge and Disc-Holder | CA |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|----------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC Watts | VA Holding | VA Inrush | General Purpose | | Explosionproof | |
| | | | | | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |
| F | 22.6 | 17.1 | 40 | 70 | 238610 | 238710 | 238614 | 238714 |

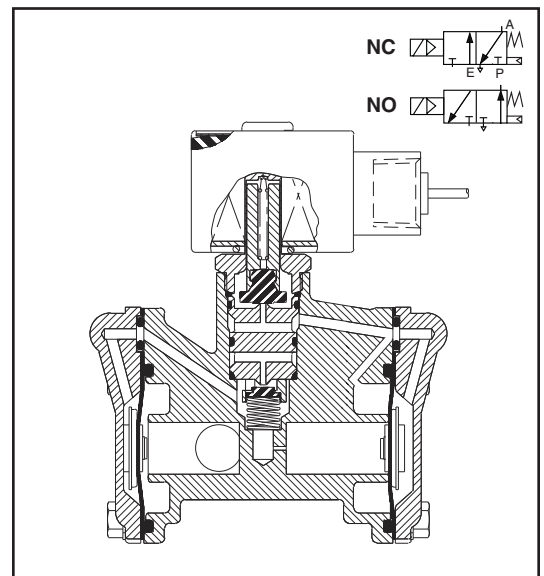
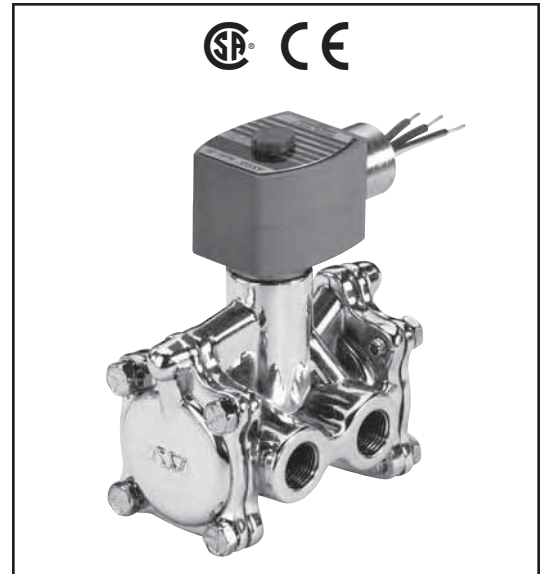
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Important

A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

3-WAY

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | Max. Fluid Temp. °F | | Brass Body | | Const. Ref. | Watt Rating/ Class of Coil Insulation ② | |
|---|---------------------|----------------|---------------------------------------|---------------|-------|---------------|---------------------|-----|------------|----------------|-------------|---|--------|
| | | | Min. ① | Max. AC | | Max. DC | | AC | DC | Catalog Number | | AC | DC |
| | | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | |
| 3/8 | 5/8 | 2.5 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G054 | 1 | 6.1/F | 10.6/F |
| 3/8 | 5/8 | 2.5 | 10 | 250 | 250 | 250 | 250 | 180 | 120 | 8316G014 | 2 | 17.1/F | 22.6/F |
| 1/2 | 5/8 | 3.2 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G064 | 1 | 6.1/F | 10.6/F |
| 1/2 | 5/8 | 3.2 | 10 | 250 | 250 | 250 | 250 | 180 | 120 | 8316G024 | 2 | 17.1/F | 22.6/F |
| 3/4 | 11/16 | 4.8 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G074 | 3 | 6.1/F | 10.6/F |
| 3/4 | 11/16 | 4.8 | 10 | 250 | 250 | 250 | 250 | 180 | 120 | 8316G044 | 4 | 17.1/F | 22.6/F |
| 1 | 1 | 12.5 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G034 | 5 | 6.1/F | 10.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | |
| 3/8 | 5/8 | 2.5 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G056 | 1 | 6.1/F | 10.6/F |
| 3/8 | 5/8 | 2.5 | 10 | 250 | 250 | 250 | 250 | 180 | 120 | 8316G016 | 2 | 17.1/F | 22.6/F |
| 1/2 | 5/8 | 3.2 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G066 | 1 | 6.1/F | 10.6/F |
| 1/2 | 5/8 | 3.2 | 10 | 250 | 250 | 250 | 250 | 180 | 120 | 8316G026 | 2 | 17.1/F | 22.6/F |
| 3/4 | 11/16 | 4.8 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G076 | 3 | 6.1/F | 10.6/F |
| 3/4 | 11/16 | 4.8 | 10 | 250 | 250 | 250 | 250 | 180 | 120 | 8316G046 | 4 | 17.1/F | 22.6/F |
| 1 | 1 | 12.5 | 10 | 150 | 125 | 125 | 125 | 180 | 120 | 8316G036 | 5 | 6.1/F | 10.6/F |

① 10 psi Minimum Operating Pressure Differential required. Valve vents to "zero" psi.
 ② On 50 hertz service, the watt rating for 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

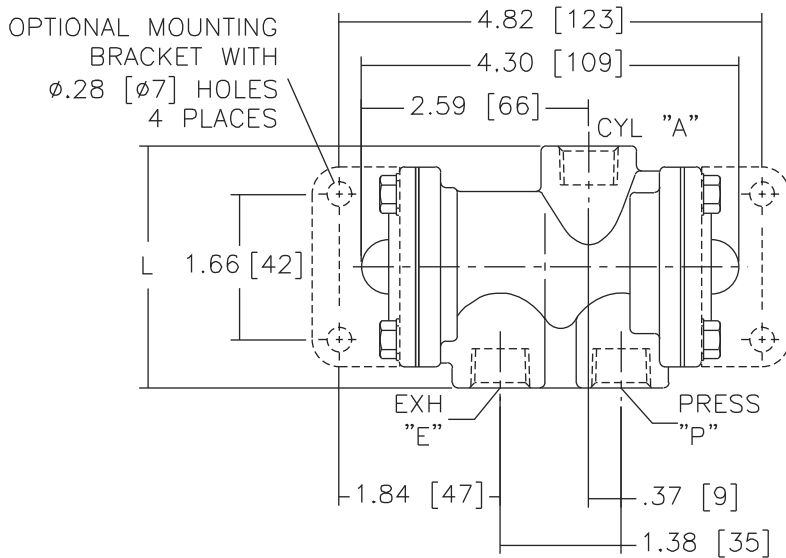
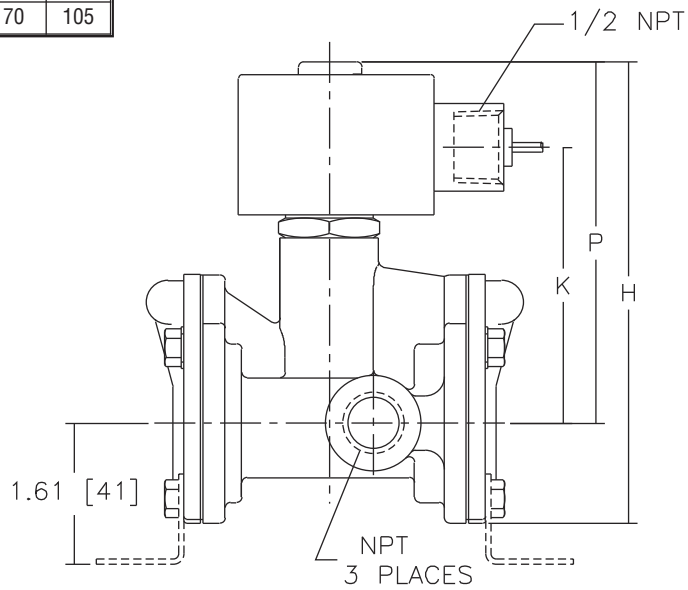
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | Max. Fluid Temp. °C | | Brass Body | | Const. Ref. | Watt Rating/ Class of Coil Insulation ② | |
|---|-------------------|-----------------------|---------------------------------------|---------------|-------|---------------|---------------------|----|------------|----------------|-------------|---|--------|
| | | | Min. ① | Max. AC | | Max. DC | | AC | DC | Catalog Number | | AC | DC |
| | | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | |
| 3/8 | 16 | 2.14 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G054 | 1 | 6.1/F | 10.6/F |
| 3/8 | 16 | 2.14 | 0.7 | 17 | 17 | 17 | 17 | 82 | 49 | 8316G014 | 2 | 17.1/F | 22.6/F |
| 1/2 | 16 | 2.74 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G064 | 1 | 6.1/F | 10.6/F |
| 1/2 | 16 | 2.74 | 0.7 | 17 | 17 | 17 | 17 | 82 | 49 | 8316G024 | 2 | 17.1/F | 22.6/F |
| 3/4 | 17 | 4.11 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G074 | 3 | 6.1/F | 10.6/F |
| 3/4 | 17 | 4.11 | 0.7 | 17 | 17 | 17 | 17 | 82 | 49 | 8316G044 | 4 | 17.1/F | 22.6/F |
| 1 | 25 | 10.17 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G034 | 5 | 6.1/F | 10.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | |
| 3/8 | 16 | 2.14 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G056 | 1 | 6.1/F | 10.6/F |
| 3/8 | 16 | 2.14 | 0.7 | 17 | 17 | 17 | 17 | 82 | 49 | 8316G016 | 2 | 17.1/F | 22.6/F |
| 1/2 | 16 | 2.74 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G066 | 1 | 6.1/F | 10.6/F |
| 1/2 | 16 | 2.74 | 0.7 | 17 | 17 | 17 | 17 | 82 | 49 | 8316G026 | 2 | 17.1/F | 22.6/F |
| 3/4 | 17 | 4.11 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G076 | 3 | 6.1/F | 10.6/F |
| 3/4 | 17 | 4.11 | 0.7 | 17 | 17 | 17 | 17 | 82 | 49 | 8316G046 | 4 | 17.1/F | 22.6/F |
| 1 | 25 | 10.71 | 0.7 | 10 | 9 | 9 | 9 | 82 | 49 | 8316G036 | 5 | 6.1/F | 10.6/F |

① 1 bar Minimum Operating Pressure Differential required. Valve vents to "zero" bar.
 ② On 50 hertz service, the watt rating for 6.1/F solenoid is 8.1 watts.

Dimensions: inches (mm)

| Const. Ref. | | H | K | L | P |
|-------------|------|------|------|------|------|
| 1 | ins. | 5.08 | 3.08 | 2.76 | 3.94 |
| | mm | 129 | 78 | 70 | 100 |
| 2 | ins. | 5.26 | 3.15 | 2.76 | 4.12 |
| | mm | 134 | 80 | 70 | 105 |

Const. Ref. 1,2

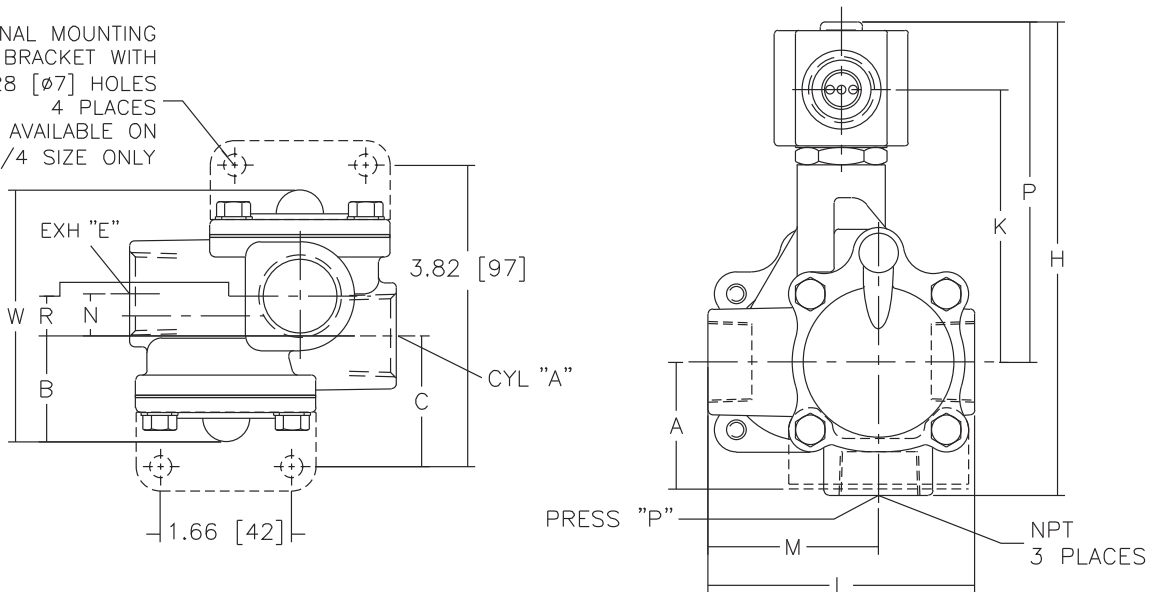


Dimensions: inches (mm)

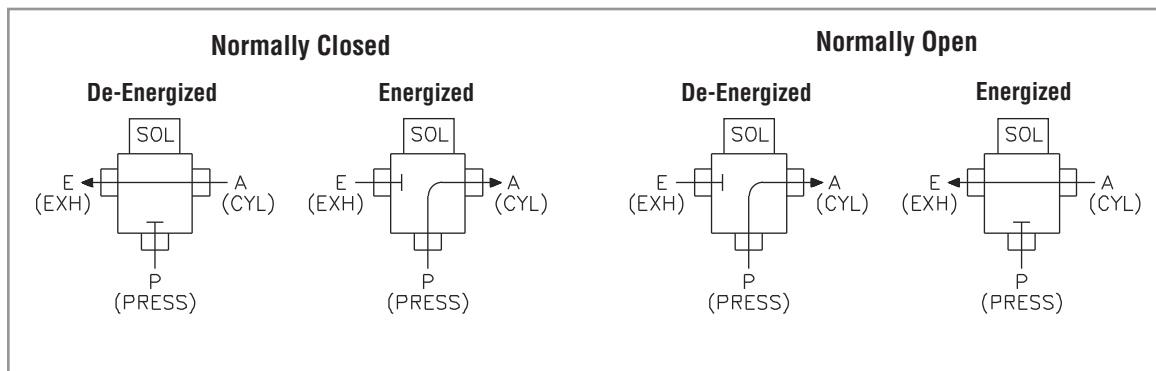
| Const. Ref. | | A | B | C | H | K | L | M | N | P | R | W |
|-------------|------|------|------|------|------|------|------|------|-----|------|------|------|
| 3 | ins. | 1.61 | 1.41 | 1.66 | 6.01 | 3.46 | 3.38 | 2.16 | .53 | 4.32 | .50 | 3.31 |
| | mm | 41 | 36 | 42 | 153 | 88 | 86 | 55 | 13 | 110 | 13 | 84 |
| 4 | ins. | 1.61 | 1.41 | 1.66 | 6.19 | 3.53 | 3.38 | 2.16 | .53 | 4.50 | .50 | 3.31 |
| | mm | 41 | 36 | 42 | 157 | 90 | 86 | 55 | 13 | 114 | 13 | 84 |
| 5 | ins. | X | 1.80 | X | 6.63 | 3.71 | 4.44 | 2.81 | .88 | 4.57 | 1.74 | 5.32 |
| | mm | X | 46 | X | 168 | 94 | 113 | 71 | 22 | 116 | 44 | 135 |

Const. Ref. 3, 4, 5

OPTIONAL MOUNTING BRACKET WITH $\phi.28$ [$\phi 7$] HOLES 4 PLACES AVAILABLE ON 3/4 SIZE ONLY



FLOW DIAGRAMS



Features

- Brass body construction for general atmospheres; stainless steel for corrosive atmospheres
- Can be internally piloted, or externally piloted to convert valve to zero minimum operation by flipping a gasket
- When externally piloted, loss of electrical power or auxiliary air exhausts air from the actuator and shifts process valve to its original position
- When internally piloted, loss of electric power returns the valve to its original position
- Also available with Low Power or Intrinsically Safe solenoids. See *Special Service Valve Section*

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|---------------------|---------------------|
| Body | Brass | 316 Stainless Steel |
| End Plate | 304 Stainless Steel | 316 Stainless Steel |
| Seals and Discs | Low Temp NBR | FKM (Suffix V) |
| Core Tube | 305 Stainless Steel | |
| Core Guide | CA | |
| Shading Coil | Copper | Silver |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|---------------------|--------|---------------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof (EF) | | Explosionproof (EV) | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 272614 | 238714 | 274614 | 274714 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts, AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Brass Body Valves:

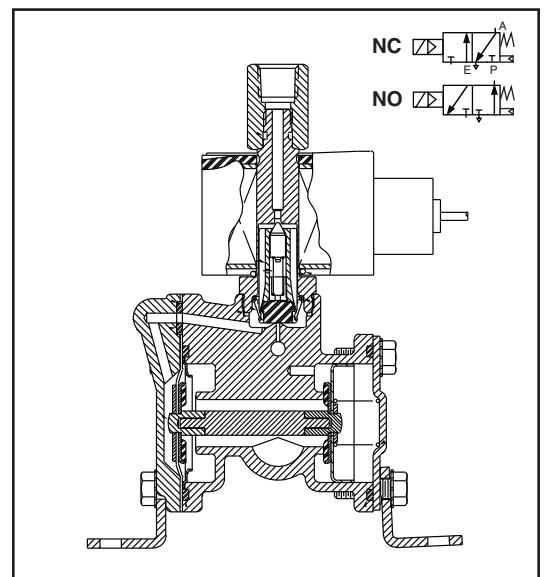
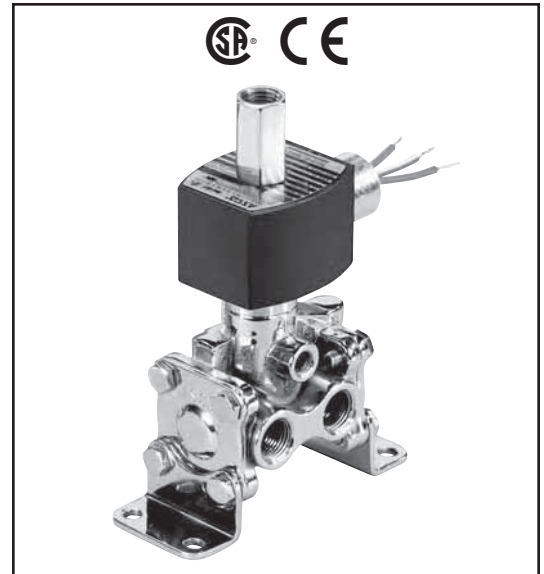
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (Add prefix "EF" to catalog number.)

Stainless Steel Valves:

Standard: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

See *Optional Features Section* for other available options.



3-WAY

Nominal Ambient Temp. Ranges

Standard Construction:

AC: -4°F to 125°F (-20°C to 52°C)

DC: -4°F to 104°F (-20°C to 40°C)

-40°F on certain models (consult factory)

Suffix V Construction:

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Approvals

Valves with prefix "EF" or "EV"; UL approved and CSA certified solenoid. Meets applicable CE directives.

Installation

All valves may be mounted in any position.

316 Stainless Steel mounting brackets available from ASCO. Add suffix "MB".

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | CV Flow Factor | Min. | Max. Air Press. (psi) | | Catalog Number | | Const. Ref. | Max. Fluid Temp. °F | | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|------|-----------------------|-----|----------------|-----------------|-------------|---------------------|-----|---------------------------------------|--------|
| | | | | AC | DC | Brass Body | Stainless Steel | | AC | DC | AC | DC |
| NORMALLY CLOSED (Closed when de-energized) ① | | | | | | | | | | | | |
| 1/4 | 5/16 | 1.5 | ② | 150 | 120 | 8316G001 | EV8316G081V | 1 | 180 | 120 | 10.1/F | 11.6/F |
| 3/8 | 5/16 | 1.5 | ② | 150 | 120 | 8316G002 | EV8316G082V | 1 | 180 | 120 | 10.1/F | 11.6/F |
| 3/8 | 5/8 | 4 | ② | 150 | 120 | 8316G003 | - | 3 | 180 | 120 | 10.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | ② | 150 | 120 | 8316G004 | EV8316G084V | 3 | 180 | 120 | 10.1/F | 11.6/F |

① Consult factory for Normally Open. ② Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph below for pilot line pressure vs. mainline pressure. Minimum 15 psi (1 bar) operating pressure differential when selection gasket is in the internal position.

IMPORTANT: Internal mode Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area and unrestricted. ASCO flow controls and similar components must be installed in the cylinder lines only.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Min. | Max. Air Press. (bar) | | Catalog Number | | Const. Ref. | Max. Fluid Temp. °C | | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|------|-----------------------|----|----------------|-----------------|-------------|---------------------|----|---------------------------------------|--------|
| | | | | AC | DC | Brass Body | Stainless Steel | | AC | DC | AC | DC |
| NORMALLY CLOSED (Closed when de-energized) ① | | | | | | | | | | | | |
| 1/4 | 8 | 1.29 | ② | 10 | 8 | 8316G001 | EV8316G081V | 1 | 82 | 49 | 10.1/F | 11.6/F |
| 3/8 | 8 | 1.37 | ② | 10 | 8 | 8316G002 | EV8316G082V | 1 | 82 | 49 | 10.1/F | 11.6/F |
| 3/8 | 16 | 3.43 | ② | 10 | 8 | 8316G003 | - | 3 | 82 | 49 | 10.1/F | 11.6/F |
| 1/2 | 16 | 3.43 | ② | 10 | 8 | 8316G004 | EV8316G084V | 3 | 82 | 49 | 10.1/F | 11.6/F |

Dimensions: inches (mm)

MAINLINE PRESSURE vs. PILOT LINE PRESSURE WHEN SELECTION GASKET IS IN EXTERNAL POSITION

Const. Ref. 1

Const. Ref. 3

INTERNAL PILOTING MODE FLOW DIAGRAMS

| De-Energized | Energized |
|--------------|-----------|
| | |

EXTERNAL PILOTING MODE FLOW DIAGRAMS

| De-Energized with Auxiliary Pressure Applied | Energized with Auxiliary Pressure Applied |
|--|---|
| | |

Features

- Designed for quick venting to 0 psi through the exhaust orifice
- Resilient seated poppets for tight shutoff
- Air is exhausted to quickly shift control valves
- Multi-industry applications
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | |
|--------------------------------------|---|---------------------|
| Body | Brass | 304 Stainless Steel |
| Seals and Disc | NBR (PA upper disc for 8317 Series) | |
| Diaphragm | CR (8317 Series only) | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Springs | 302 Stainless Steel and 17-7 PH Stainless Steel | |
| Shading Coil | Copper | Silver |
| Pilot Seat Cartridge and Disc-Holder | CA (8321 Series only) | |
| Piston | Brass and 303 Stainless Steel (8321 only) | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |

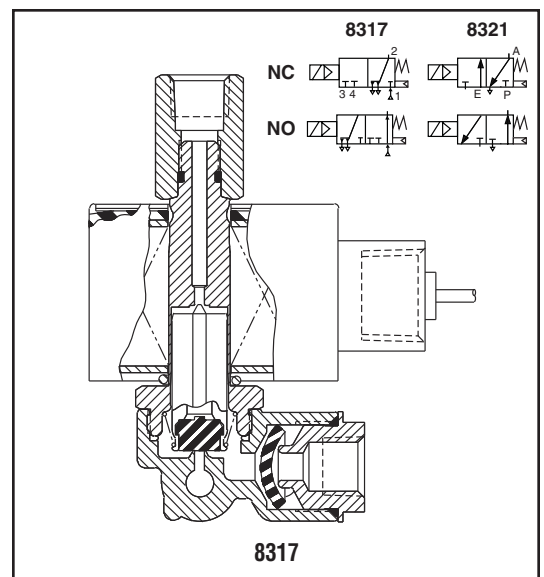
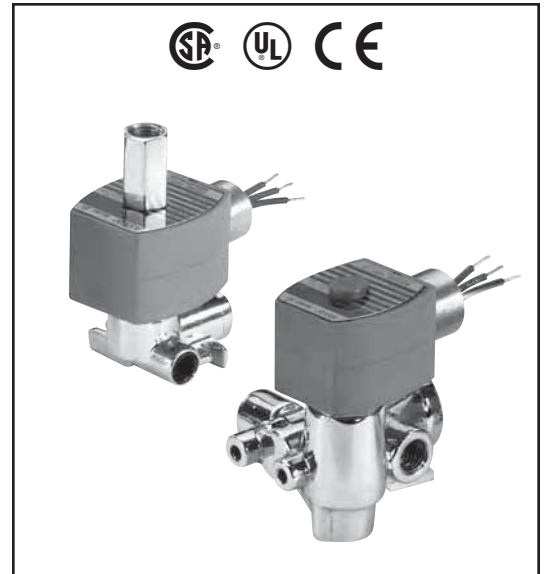
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Important

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

3-WAY

**3/2
SERIES
8317
8321**



3-WAY

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation ③ | | |
|---|---------------------|-------|----------------|------|---------------------------------------|---------------|-------|-------------------|---------------|-------|---------------------|-----|----------------|-------------|----------------------|-------------|---|--------|-------------------|
| | Press. | Exh. | Press. | Exh. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC | |
| | | | | | Min. ① | Air-Inert Gas | Water | Lt. Oil ① @45 SSU | Air-Inert Gas | Water | | | | | | | | | Lt. Oil ① @45 SSU |
| NORMALLY CLOSED (Pressure at Port 2) / NORMALLY OPEN (Pressure at Port 3) | | | | | | | | | | | | | | | | | | | |
| 1/4 | 3/32 | 1/4 | .20 | .73 | 5 ② | 80 | 50 | 50 | 40 | 30 | 15 | 180 | 104 | 8317G007 | 2 | 8317G008 | 4 | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | | | | |
| 1/4 | 3/32 | 1/4 | .20 | .73 | 5 ② | 150 | 150 | 95 | 75 | 55 | 30 | 180 | 104 | 8317G035 | 2 | 8317G036 | 4 | 10.1/F | 11.6/F |
| 1/4 | 9/32 | 11/32 | .80 | 1.20 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G001 | 3 | - | - | 6.1/F | 10.6/F |
| 3/8 | 9/32 | 11/32 | .80 | 1.20 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G002 | 3 | - | - | 6.1/F | 10.6/F |
| NORMALLY CLOSED (Closed when de-energized), Air Only - Vents to Atmosphere | | | | | | | | | | | | | | | | | | | |
| 1/4 | 3/32 | 1/4 | .20 | .73 | 5 | 150 | - | - | - | - | - | 180 | - | 8317G023 | 1 | 8317G024 | 5 | 10.1/F | - |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | | | | |
| 1/4 | 3/32 | 1/4 | .15 | .73 | 5 ② | 160 | 160 | 95 | 75 | 45 | 25 | 180 | 104 | 8317G053 | 2 | 8317G054 | 4 | 10.1/F | 11.6/F |
| 1/4 | 9/32 | 11/32 | .80 | 1.20 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G003 | 3 | - | - | 6.1/F | 10.6/F |
| 3/8 | 9/32 | 11/32 | .80 | 1.20 | 10 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8321G004 | 3 | - | - | 6.1/F | 10.6/F |

① Rating for 8321 valves established with 300 SSU light oil. ② Minimum Operating Pressure Differential on light oil is 10 psi.
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation ③ | | |
|---|-------------------|------|-----------------------|------|---------------------------------------|---------------|-------|-------------------|---------------|-------|---------------------|----|----------------|-------------|----------------------|-------------|---|--------|-------------------|
| | Press. | Exh. | Press. | Exh. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC | |
| | | | | | Min. ① | Air-Inert Gas | Water | Lt. Oil ① @45 SSU | Air-Inert Gas | Water | | | | | | | | | Lt. Oil ① @45 SSU |
| NORMALLY CLOSED (Pressure at Port 2) / NORMALLY OPEN (Pressure at Port 3) | | | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 6 | .17 | .63 | .3 ② | 6 | 3 | 3 | 2.7 | 2 | 1 | 82 | 40 | 8317G007 | 2 | 8317G008 | 4 | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 6 | .17 | .63 | .3 ② | 10 | 7 | 7 | 5 | 4 | 2 | 82 | 40 | 8317G035 | 2 | 8317G036 | 4 | 10.1/F | 11.6/F |
| 1/4 | 7 | 9 | .69 | 1.03 | .7 | 14 | 14 | 14 | 14 | 14 | 14 | 82 | 49 | 8321G001 | 3 | - | - | 6.1/F | 10.6/F |
| 3/8 | 7 | 9 | .69 | 1.03 | .7 | 14 | 14 | 14 | 14 | 14 | 14 | 82 | 49 | 8321G002 | 3 | - | - | 6.1/F | 10.6/F |
| NORMALLY CLOSED (Closed when de-energized), Air Only - Vents to Atmosphere | | | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 6 | .17 | .63 | .3 | 10 | - | - | - | - | - | 82 | - | 8317G023 | 1 | 8317G024 | 5 | 10.1/F | - |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 6 | .13 | .63 | .3 ② | 11 | 11 | 7 | 5 | 3 | 2 | 82 | 40 | 8317G053 | 2 | 8317G054 | 4 | 10.1/F | 11.6/F |
| 1/4 | 7 | 9 | .69 | 1.03 | .7 | 14 | 14 | 14 | 14 | 14 | 14 | 82 | 49 | 8321G003 | 3 | - | - | 6.1/F | 10.6/F |
| 3/8 | 7 | 9 | .69 | 1.03 | .7 | 14 | 14 | 14 | 14 | 14 | 14 | 82 | 49 | 8321G004 | 3 | - | - | 6.1/F | 10.6/F |

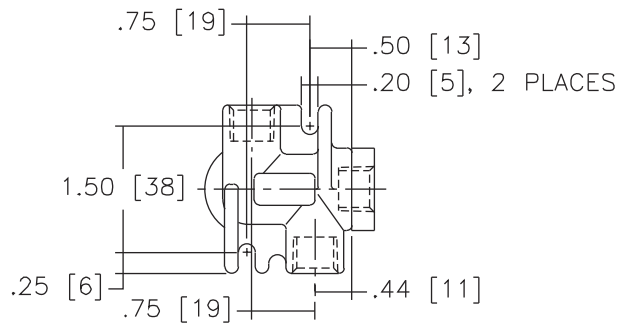
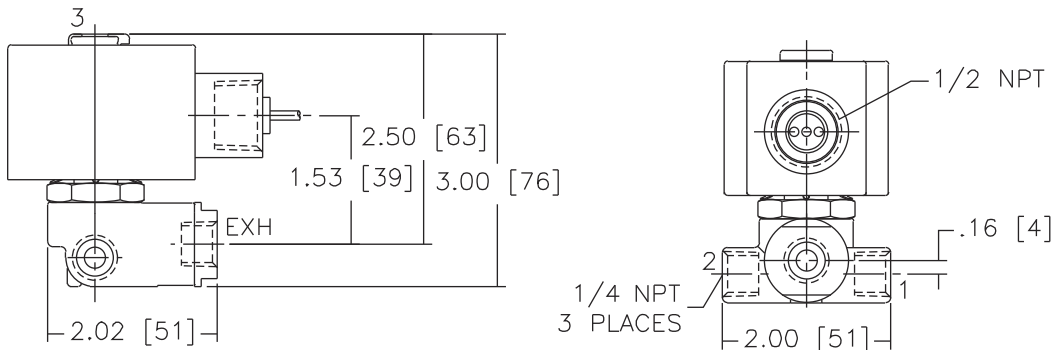
① Rating for 8321 valves established with 300 SSU light oil. ② Minimum Operating Pressure Differential on light oil is .7 bar.
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.



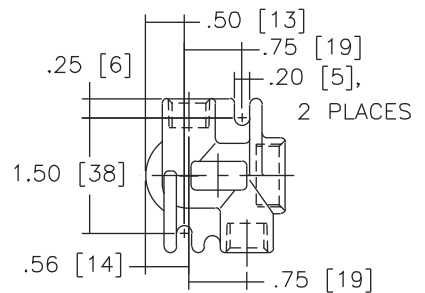
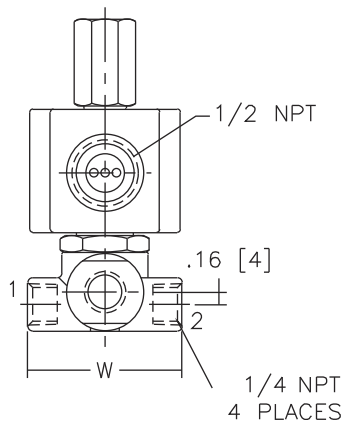
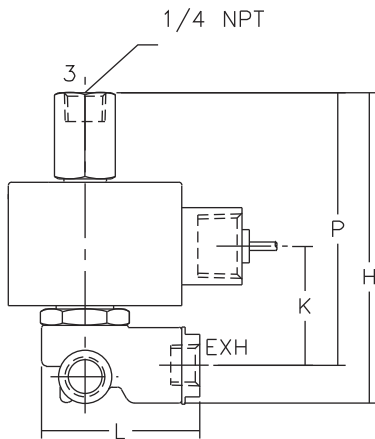
Dimensions: inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 2 | ins. | 4.04 | 1.55 | 2.05 | 3.54 | 2.00 |
| | mm | 103 | 39 | 52 | 90 | 51 |
| 4 | ins. | 4.02 | 1.53 | 2.02 | 3.52 | 2.00 |
| | mm | 102 | 39 | 51 | 89 | 51 |

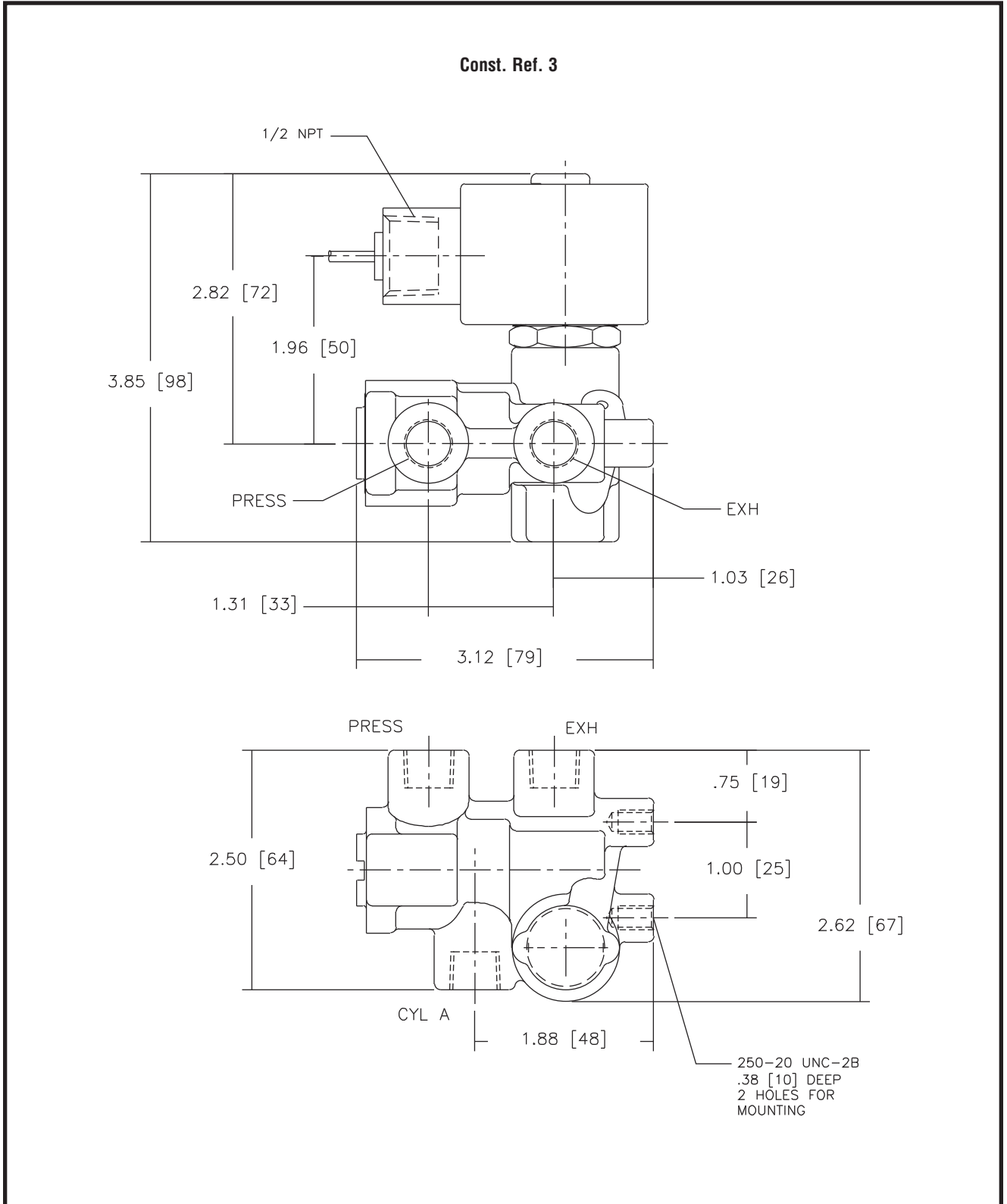
Const. Ref. 1, 5



Const. Ref. 2, 4



Dimensions: inches (mm)



Features

- All NPT connections are in the valve body to allow in-line piping
- No Minimum Operating Pressure Differential required
- Broadest range of applications
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|------------------------------|---------------------|
| Body | Brass | 303 Stainless Steel |
| Seals and Disc | NBR or Cast UR, as Listed | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Springs | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |
| Disc-Holder | CA | |
| Core Guide | CA (10.1 and 17.1 Watt only) | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |
| F | - | 9.1 | 25 | 40 | 238210 | - | 238214 | - |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |
| F | - | 17.1 | 40 | 70 | 238610 | - | 238614 | - |

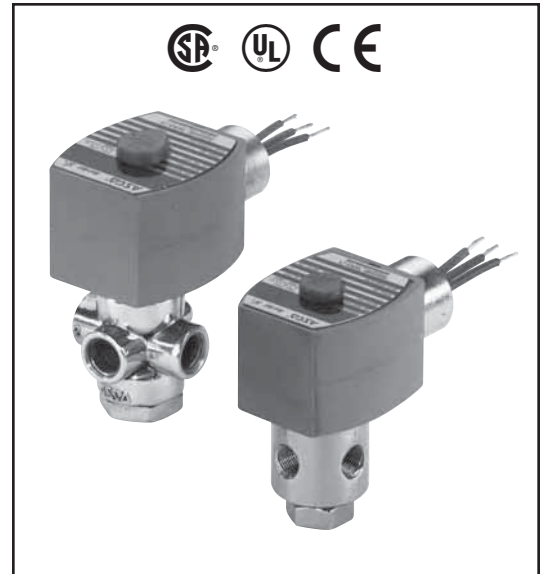
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

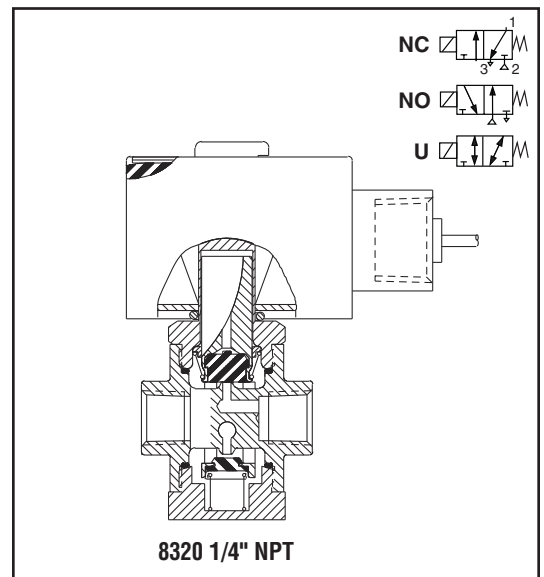
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

See *Optional Features Section* for other available options.



3-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | Watt Rating/Class of Coil Insulation ^② | |
|---|---------------------|----------------|---------------------------------------|-------|-------------------|---------------|-------|-------------------|---------------------|-----|----------------|-------------|----------------------|-------------|---|--------|
| | | | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC |
| | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | | | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | .06 | 175 | 175 | 175 | 125 | 125 | 125 | 140 | 120 | 8320G130 ① | 1 | 8320G140 ① | 1 | 9.1/F | 10.6/F |
| 1/8 | 1/16 | .09 | 100 | 100 | 100 | 65 | 65 | 65 | 180 | 120 | 8320G001 | 1 | 8320G041 ③ | 1 | 9.1/F | 10.6/F |
| 1/8 | 3/32 | .12 | 50 | 50 | 50 | 50 | 50 | 50 | 180 | 120 | 8320G083 | 1 | 8320G087 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 1/8 | .21 | 30 | 30 | 30 | 20 | 20 | 20 | 180 | 120 | 8320G003 | 1 | 8320G043 ③ | 1 | 9.1/F | 10.6/F |
| 1/4 | 1/16 | .09 | 125 | 130 | 130 | 75 | 75 | 75 | 200 | 150 | 8320G172 | 2 | - | - | 10.1/F | 11.6/F |
| 1/4 | 3/32 | .12 | 100 | 100 | 100 | 60 | 60 | 60 | 200 | 150 | 8320G174 | 2 | 8320G200 ③ | 3 | 17.1/F | 11.6/F |
| 1/4 | 1/8 | .25 | 50 | 50 | 50 | 25 | 25 | 25 | 200 | 150 | 8320G176 | 2 | 8320G201 ③ | 3 | 17.1/F | 11.6/F |
| 1/4 | 11/64 | .35 | 20 | 20 | 20 | 12 | 12 | 12 | 200 | 150 | 8320G178 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | .06 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8320G132 | 1 | 8320G142 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 1/16 | .09 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 120 | 8320G013 | 1 | 8320G045 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 3/32 | .12 | 100 | 100 | 100 | 100 | 100 | 100 | 180 | 120 | 8320G015 | 1 | 8320G047 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 1/8 | .21 | 40 | 40 | 40 | 40 | 40 | 40 | 180 | 120 | 8320G017 | 1 | 8320G049 ③ | 1 | 6.1/F | 10.6/F |
| 1/4 | 1/16 | .09 | 210 | 225 | 225 | 160 | 160 | 160 | 200 | 150 | 8320G182 | 2 | - | - | 17.1/F | 11.6/F |
| 1/4 | 3/32 | .12 | 150 | 150 | 150 | 115 | 115 | 115 | 200 | 150 | 8320G184 | 2 | 8320G202 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 1/8 | .25 | 85 | 85 | 85 | 60 | 60 | 60 | 200 | 150 | 8320G186 | 2 | 8320G203 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 11/64 | .35 | 45 | 45 | 45 | 25 | 25 | 25 | 200 | 150 | 8320G188 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | .06 | 200 | 200 | 200 | 200 | 200 | 200 | 180 | 120 | 8320G136 | 1 | 8320G146 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 1/16 | .09 | 150 | 125 | 125 | 125 | 125 | 125 | 180 | 120 | 8320G027 | 1 | 8320G051 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 3/32 | .12 | 100 | 100 | 100 | 100 | 100 | 100 | 180 | 120 | 8320G029 | 1 | 8320G053 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 1/8 | .21 | 40 | 40 | 40 | 40 | 40 | 40 | 180 | 120 | 8320G031 | 1 | 8320G055 ③ | 1 | 6.1/F | 11.6/F |
| 1/4 | 1/16 | .09 | 250 | 250 | 250 | 160 | 160 | 160 | 200 | 150 | 8320G192 | 2 | - | - | 17.1/F | 11.6/F |
| 1/4 | 3/32 | .12 | 150 | 140 | 140 | 100 | 100 | 100 | 200 | 150 | 8320G194 | 2 | 8320G204 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 1/8 | .25 | 70 | 70 | 70 | 55 | 55 | 55 | 200 | 150 | 8320G196 | 2 | 8320G205 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 11/64 | .35 | 40 | 40 | 40 | 30 | 30 | 30 | 200 | 150 | 8320G198 | 2 | - | - | 10.1/F | 11.6/F |

① Supplied with cast UR disc.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.
 ③ Can be used for **dry** natural gas service with the EF prefix.

Specifications (Metric units)

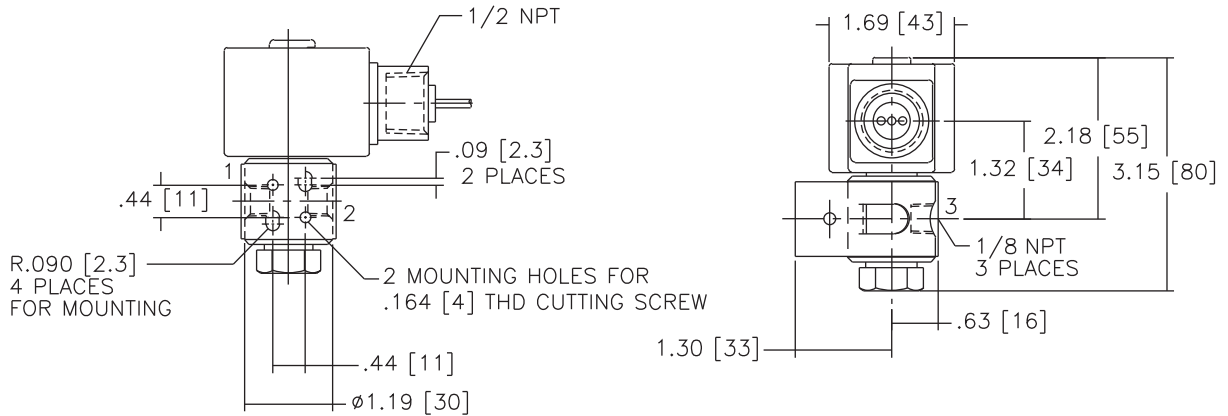
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation ^② | |
|---|-------------------|-----------------------|---------------------------------------|-------|-------------------|---------------|-------|-------------------|---------------------|----|----------------|-------------|----------------------|-------------|--|--------|
| | | | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | AC | DC |
| | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | | | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | .05 | 12 | 12 | 12 | 9 | 9 | 9 | 60 | 49 | 8320G130 ① | 1 | 8320G140 ① | 1 | 9.1/F | 10.6/F |
| 1/8 | 1.6 | .08 | 7 | 7 | 7 | 4 | 4 | 4 | 82 | 49 | 8320G001 | 1 | 8320G041 ③ | 1 | 9.1/F | 10.6/F |
| 1/8 | 2.4 | .10 | 3 | 3 | 3 | 3 | 3 | 3 | 82 | 49 | 8320G083 | 1 | 8320G087 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 3.2 | .18 | 2 | 2 | 2 | 1 | 1 | 1 | 82 | 49 | 8320G003 | 1 | 8320G043 ③ | 1 | 9.1/F | 10.6/F |
| 1/4 | 1.6 | .08 | 9 | 9 | 9 | 5 | 5 | 5 | 93 | 65 | 8320G172 | 2 | - | - | 10.1/F | 11.6/F |
| 1/4 | 2.4 | .10 | 7 | 7 | 7 | 4 | 4 | 4 | 93 | 65 | 8320G174 | 2 | 8320G200 ③ | 3 | 17.1/F | 11.6/F |
| 1/4 | 3.2 | .21 | 3 | 3 | 3 | 2 | 2 | 2 | 93 | 65 | 8320G176 | 2 | 8320G201 ③ | 3 | 17.1/F | 11.6/F |
| 1/4 | 4.4 | .30 | 1 | 1 | 1 | 1 | 1 | 1 | 93 | 65 | 8320G178 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | .05 | 14 | 14 | 14 | 14 | 14 | 14 | 82 | 49 | 8320G132 | 1 | 8320G142 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 1.6 | .08 | 10 | 9 | 9 | 9 | 9 | 9 | 82 | 49 | 8320G013 | 1 | 8320G045 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 2.4 | .10 | 7 | 7 | 7 | 7 | 7 | 7 | 82 | 49 | 8320G015 | 1 | 8320G047 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 3.2 | .18 | 3 | 3 | 3 | 3 | 3 | 3 | 82 | 49 | 8320G017 | 1 | 8320G049 ③ | 1 | 6.1/F | 10.6/F |
| 1/4 | 1.6 | .08 | 14 | 16 | 16 | 11 | 11 | 11 | 93 | 65 | 8320G182 | 2 | - | - | 17.1/F | 11.6/F |
| 1/4 | 2.4 | .10 | 10 | 10 | 10 | 8 | 8 | 8 | 93 | 65 | 8320G184 | 2 | 8320G202 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 3.2 | .21 | 6 | 6 | 6 | 4 | 4 | 4 | 93 | 65 | 8320G186 | 2 | 8320G203 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 4.4 | .30 | 3 | 3 | 3 | 2 | 2 | 2 | 93 | 65 | 8320G188 | 2 | - | - | 10.1/F | 11.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | .05 | 14 | 14 | 14 | 14 | 14 | 14 | 82 | 48 | 8320G136 | 1 | 8320G146 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 1.6 | .08 | 10 | 9 | 9 | 9 | 9 | 9 | 82 | 48 | 8320G027 | 1 | 8320G051 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 2.4 | .01 | 7 | 7 | 7 | 7 | 7 | 7 | 82 | 48 | 8320G029 | 1 | 8320G053 ③ | 1 | 6.1/F | 10.6/F |
| 1/8 | 3.2 | .18 | 3 | 3 | 3 | 3 | 3 | 3 | 82 | 48 | 8320G031 | 1 | 8320G055 ③ | 1 | 6.1/F | 11.6/F |
| 1/4 | 1.6 | .08 | 17 | 17 | 17 | 11 | 11 | 11 | 93 | 65 | 8320G192 | 2 | - | - | 17.1/F | 11.6/F |
| 1/4 | 2.4 | .10 | 10 | 10 | 10 | 7 | 7 | 7 | 93 | 65 | 8320G194 | 2 | 8320G204 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 3.2 | .21 | 5 | 5 | 5 | 4 | 4 | 4 | 93 | 65 | 8320G196 | 2 | 8320G205 ③ | 3 | 10.1/F | 11.6/F |
| 1/4 | 4.4 | .30 | 3 | 3 | 3 | 2 | 2 | 2 | 93 | 65 | 8320G198 | 2 | - | - | 10.1/F | 11.6/F |

① Supplied with cast UR disc.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.
 ③ Can be used for *dry* natural gas service with the EF prefix.

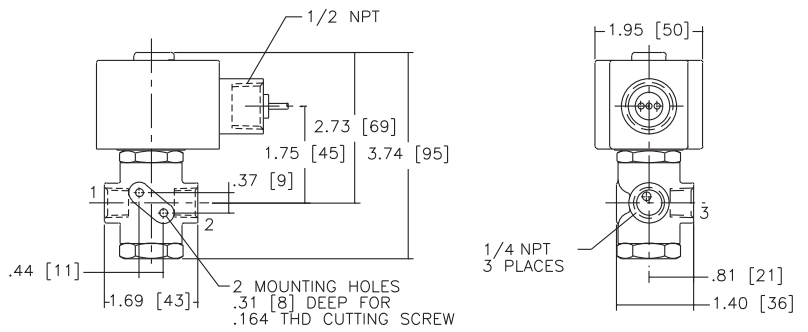
3-WAY

Dimensions: inches (mm)

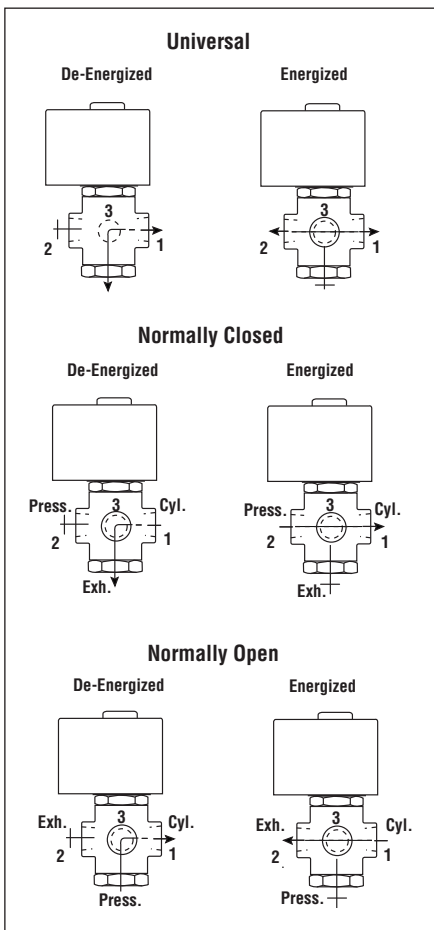
Const. Ref. 1



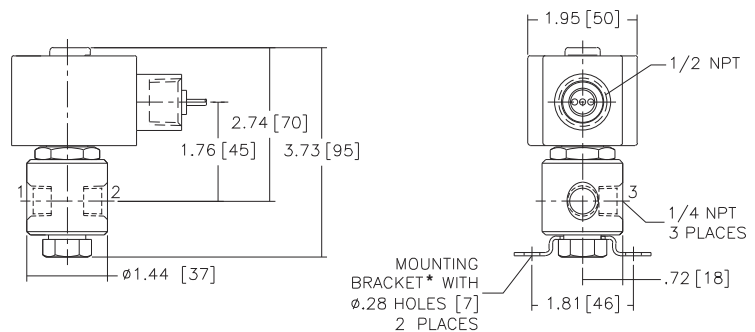
Const. Ref. 2



FLOW DIAGRAMS



Const. Ref. 3



* MOUNTING BRACKET IS STANDARD ON THIS CONSTRUCTION

Features

- Designed for high flow piloting with no minimum operating pressure required; e.g. power plants, refineries, chemical processing
- Balanced Poppet construction for high flow at minimum power levels
- PTFE rider rings and graphite-filled seals reduce friction and eliminate sticking to provide exceptional service life
- 316 Stainless Steel construction for highly corrosive atmospheres
- Available with manual reset
See Special Service Section

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|------------------------------------|---------------------|
| Body | Brass | 316 Stainless Steel |
| Core Tube | 305 Stainless Steel | |
| Stem and Insert | 303 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| O-ring Holder | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Seals and Discs | NBR | FKM |
| | VMQ (Low-Temperature Construction) | |
| Rider Ring | PTFE | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 12 | 12 | 12 | 276000 | 238710 | 276002 | 238714 |

Standard Voltages: 24/50-60, 120/50-60, 240/50-60, and 480/50-60, or 6, 12, 24, 120, and 240 DC.

Solenoid Enclosures

Standard:

For Brass Valves: Standard Solenoid enclosure is Types, 1, 2, 3, 3S, 4, and 4X.

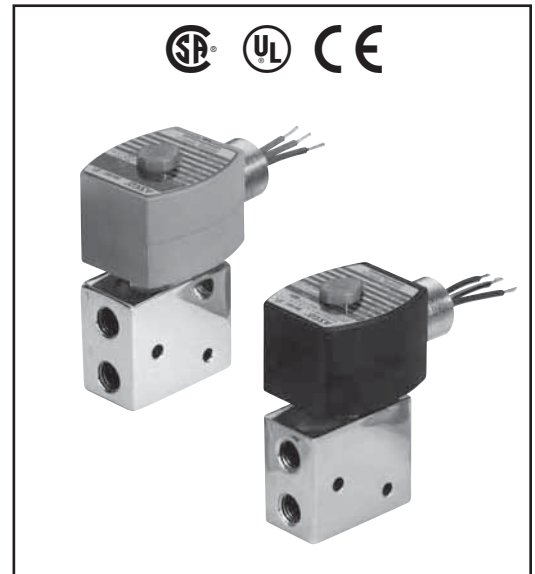
For 316 Stainless Steel valves: Standard Solenoid enclosure is Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, and 6P.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)

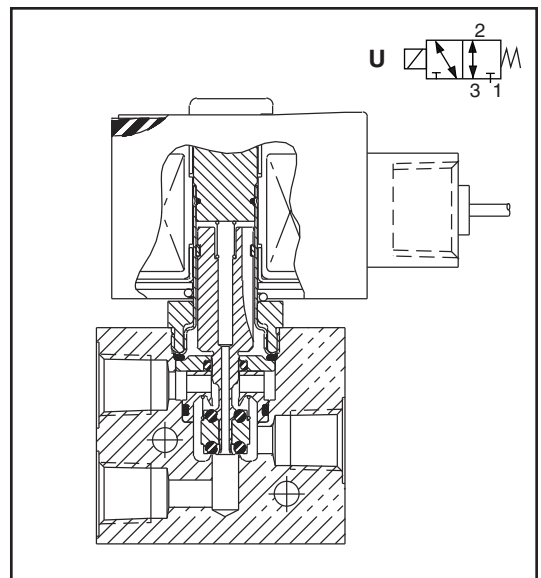
See Optional Features Section for other available options.

SIL (Safety Integrity Level) Information:

- PFD (Probability of Failure on Demand) $<4 \times 10^{-7}$ at a confidence factor of 95%.
- SFF (Safe Failure Fraction) according to IEC 61508-2 Table A1 is ≥ 0.99 .
- Only constructions without manual operators apply to the above criteria.



3-WAY



Nominal Ambient Temp. Ranges

8327G041, 042, 021, 022, 031, 032:

-4°F to 131°F (-20°C to 55°C)

8327G051 and 052:

-40°F to 131°F (-40°C to 55°C)

Refer to Engineering Section for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Maximum Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Brass Body | | 316 Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | | |
|---|---------------------|----------------|-----------|---|-------|---------------------|---------------------|----------------|----------------|--------------------------|--------|---------------------------------------|--|--|
| | | Ports 1-2 | Ports 2-3 | Air-Inert Gas | Water | Light Oil @ 300 SSU | | Catalog Number | Catalog Number | Const. Ref. | AC | DC | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .49 | .56 | 150 | 150 | 150 | 176 | 8327G041 | - | 1 | 12.0/F | 11.6/F | | |
| 1/4 | 1/4 | .49 | .56 | 150 | 150 | 150 | 248 | - | EV8327G042 | 1 | 12.0/F | 11.6/F | | |
| UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port) | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .49 | .56 | 150 | - | - | 131 | 8327G051 | - | 1 | 12.0/F | 11.6/F | | |
| 1/4 | 1/4 | .49 | .56 | 150 | - | - | 131 | - | EV8327G052 | 1 | 12.0/F | 11.6/F | | |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Maximum Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | Brass Body | | 316 Stainless Steel Body | | Watt Rating/ Class of Coil Insulation | | |
|---|-------------------|-----------------------|-----------|---|-------|---------------------|---------------------|----------------|----------------|--------------------------|--------|---------------------------------------|--|--|
| | | Ports 1-2 | Ports 2-3 | Air-Inert Gas | Water | Light Oil @ 300 SSU | | Catalog Number | Catalog Number | Const. Ref. | AC | DC | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | | | |
| 1/4 | 6 | .42 | .48 | 10 | 10 | 10 | 80 | 8327G041 | - | 1 | 12.0/F | 11.6/F | | |
| 1/4 | 6 | .42 | .48 | 10 | 10 | 10 | 120 | - | EV8327G042 | 1 | 12.0/F | 11.6/F | | |
| UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port) | | | | | | | | | | | | | | |
| 1/4 | 6 | .42 | .48 | 10 | - | - | 55 | 8327G051 | - | 1 | 12.0/F | 11.6/F | | |
| 1/4 | 6 | .42 | .48 | 10 | - | - | 55 | - | EV8327G052 | 1 | 12.0/F | 11.6/F | | |

Dimensions: inches (mm)

FLOW DIAGRAMS

| OPERATION | DE-ENERGIZED | ENERGIZED |
|--------------------------------|--------------|-----------|
| NORMALLY CLOSED PRESSURE AT 3 | | |
| NORMALLY OPEN PRESSURE AT 1 | | |
| UNIVERSAL PRESSURE AT ANY PORT | | |

Const. Ref. 1

IMPORTANT: Valves may be mounted in any position.

Features

- 3-way normally closed, normally open, or universal operation
- Compact design
- Brass and 316 stainless steel body constructions
- Mountable in any position
- Available with manual operator
- NSF 61 and 169 version available for potable water and food service

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|---------------------|----------------------------|----------------------------|
| | General Purpose | | NSF |
| Body | Brass | 316 Stainless Steel | 316 Stainless Steel |
| Core Tube/Bonnet | S.S. / Plated Steel | S.S. / S.S. | S.S. / S.S. |
| Core and Plugnut | Stainless Steel | | |
| Springs | Stainless Steel | | |
| Seals and Disc | FKM | | EPDM |
| Shading Coil | Copper | | Silver |

Electrical

| Prefix | Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Ambient Temp. °F | Spare Coil Family | |
|--------|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------|-------------------|--------|
| | | DC Watts | AC | | | | AC | DC |
| | | | Watts | VA Holding | VA Inrush | | | |
| U | F | 6.9 | 6.3 | 8.8 | 12.1 | 15 to 140 | 400115 | 400115 |
| SC | F | 6.9 | 6.3 | 8.8 | 12.1 | 15 to 140 | 400125 | 400125 |

Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

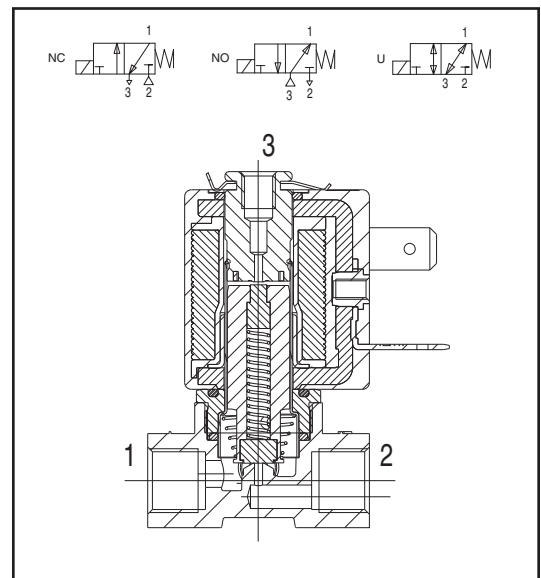
Solenoid Enclosures

Standard: Open frame (Prefix U) 18" leads

Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

Kits

- 1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs of each: threaded hub, gasket, and attaching screw.)
- DIN connector kit for SC coils 226061-001-*
 (Kit contains 10 pcs of each: connector, gasket, and attaching screw.)
- Mounting adapter kit 289719 (Kit contains 2 screws and plate.)
- M5 to 1/8" port adaptors: HV289666001 (Brass), HV289667001 (SS)
 (Kit contains 10 pcs)



Approvals

UL recognized coil - File MH28173

CSA recognized coil - see CSA certificate No. 235748

Meets applicable CE directives

NSF 61 - Drinking water system components

NSF 169 - Special purpose food Equipment and Devices

The NSF Certification Program is accredited by the Standards Council of Canada and ANSI.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Brass | Stainless Steel | Const. Ref. | Wattage | | Approx. Shipping Weight (lbs.) |
|--|---------------------|-----------|-----------|---------------------------------------|-------|---------------------|-----------------|-------|---------------------|---------------------|-----|------------|-----------------|-------------|---------|-----|--------------------------------|
| | | | | Max. AC ① | | | Max. DC ① | | | | | | | | | | |
| | | At Port 2 | At Port 3 | Air - Inert Gas | Water | Light Oil @ 300 SSU | Air - Inert Gas | Water | Light Oil @ 300 SSU | AC | DC | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | 0.06 | 0.06 | 230 | 235 | 245 | 230 | 235 | 245 | 180 | 180 | U8356A001V | U8356A013V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 1/16 | 0.09 | 0.06 | 140 | 140 | 150 | 140 | 140 | 150 | 180 | 180 | U8356A002V | U8356A014V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 3/32 | 0.13 | 0.06 | 75 | 72 | 77 | 75 | 72 | 77 | 180 | 180 | U8356A004V | U8356A016V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 7/64 | 0.15 | 0.06 | 70 | 61 | 72 | 70 | 61 | 72 | 180 | 180 | U8356B045V | U8356B046V | 2 | 6.3 | 6.9 | 0.6 |
| NSF 61 and 169 Listed - Normally Closed | | | | | | | | | | | | | | | | | |
| 1/8 | 3/32 | 0.13 | 0.04 | - | 70 | - | - | 70 | - | 180 | 180 | - | U8356A103E | 1 | 6.3 | 6.9 | 0.5 |
| 1/4 | 3/32 | 0.13 | 0.04 | - | 70 | - | - | 70 | - | 180 | 180 | - | U8356A115E | 3 | 6.3 | 6.9 | 0.5 |
| General Service - Normally Open | | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | 0.06 | 0.06 | 175 | 180 | 175 | 150 | 122 | 90 | 180 | 180 | U8356A005V | U8356A017V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 1/16 | 0.09 | 0.06 | 165 | 180 | 175 | 75 | 72 | 70 | 180 | 180 | U8356A006V | U8356A018V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 3/32 | 0.13 | 0.06 | 160 | 175 | 120 | 86 | 66 | 40 | 180 | 180 | U8356A008V | U8356A020V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 7/64 | 0.15 | 0.06 | 148 | 180 | 99 | 148 | 157 | 72 | 180 | 180 | U8356B054V | U8356B055V | 2 | 6.3 | 6.9 | 0.6 |
| NSF 61 and 169 Listed - Normally Open | | | | | | | | | | | | | | | | | |
| 1/8 | 3/32 | 0.13 | 0.04 | - | 140 | - | - | 85 | - | 180 | 180 | - | U8356A107E | 1 | 6.3 | 6.9 | 0.5 |
| 1/4 | 3/32 | 0.13 | 0.04 | - | 140 | - | - | 85 | - | 180 | 180 | - | U8356A119E | 3 | 6.3 | 6.9 | 0.5 |
| General Service - Universal | | | | | | | | | | | | | | | | | |
| 1/8 | 3/64 | 0.06 | 0.06 | 135 | 135 | 135 | 135 | 135 | 100 | 180 | 180 | U8356A009V | U8356A021V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 1/16 | 0.09 | 0.06 | 72 | 72 | 72 | 72 | 72 | 72 | 180 | 180 | U8356A010V | U8356A022V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 3/32 | 0.13 | 0.06 | 36 | 33 | 40 | 32 | 28 | 40 | 180 | 180 | U8356A012V | U8356A024V | 1 | 6.3 | 6.9 | 0.5 |
| 1/8 | 7/64 | 0.15 | 0.06 | 45 | 32 | 27 | 25 | 32 | 27 | 180 | 180 | U8356B047V | U8356B048V | 2 | 6.3 | 6.9 | 0.6 |
| NSF 61 and 169 Listed - Universal | | | | | | | | | | | | | | | | | |
| 1/8 | 3/32 | 0.13 | 0.04 | - | 35 | - | - | 35 | - | 180 | 180 | - | U8356A111E | 1 | 6.3 | 6.9 | 0.5 |
| 1/4 | 3/32 | 0.13 | 0.04 | - | 35 | - | - | 35 | - | 180 | 180 | - | U8356A123E | 3 | 6.3 | 6.9 | 0.5 |

① MS option limits pressures to 220 psi (unless limited by operating pressure).

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Brass | Stainless Steel | Const. Ref. | Wattage | | Approx. Shipping Weight (kgs.) |
|--|-------------------|-----------------------|-----------|---------------------------------------|-------|---------------------|-----------------|-------|---------------------|---------------------|----|------------|-----------------|-------------|---------|-----|--------------------------------|
| | | | | Max. AC ① | | | Max. DC ① | | | | | | | | | | |
| | | At Port 2 | At Port 3 | Air - Inert Gas | Water | Light Oil @ 300 SSU | Air - Inert Gas | Water | Light Oil @ 300 SSU | AC | DC | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | 0.05 | 0.05 | 16 | 16 | 17 | 16 | 16 | 17 | 82 | 82 | U8356A001V | U8356A013V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 1.6 | 0.08 | 0.05 | 9 | 9 | 10 | 9 | 9 | 10 | 82 | 82 | U8356A002V | U8356A014V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.4 | 0.11 | 0.05 | 5 | 5 | 5 | 5 | 5 | 5 | 82 | 82 | U8356A004V | U8356A016V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.7 | 0.13 | 0.05 | 4 | 4 | 5 | 4 | 4 | 5 | 82 | 82 | U8356B045V | U8356B046V | 2 | 6.3 | 6.9 | 0.27 |
| NSF 61 and 169 Listed - Normally Closed | | | | | | | | | | | | | | | | | |
| 1/8 | 2.4 | 0.11 | 0.03 | - | 5 | - | - | 5 | - | 82 | 82 | - | U8356A103E | 1 | 6.3 | 6.9 | 0.22 |
| 1/4 | 2.4 | 0.11 | 0.03 | - | 5 | - | - | 5 | - | 82 | 82 | - | U8356A115E | 3 | 6.3 | 6.9 | 0.22 |
| General Service - Normally Open | | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | 0.05 | 0.05 | 12 | 12 | 12 | 10 | 8 | 6 | 82 | 82 | U8356A005V | U8356A017V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 1.6 | 0.08 | 0.05 | 11 | 12 | 12 | 5 | 5 | 5 | 82 | 82 | U8356A006V | U8356A018V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.4 | 0.11 | 0.05 | 11 | 12 | 8 | 6 | 4 | 2 | 82 | 82 | U8356A008V | U8356A020V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.7 | 0.15 | 0.05 | 10 | 12 | 7 | 10 | 10 | 5 | 82 | 82 | U8356B054V | U8356B055V | 2 | 6.3 | 6.9 | 0.27 |
| NSF 61 and 169 Listed - Normally Open | | | | | | | | | | | | | | | | | |
| 1/8 | 2.4 | 0.11 | 0.03 | - | 10 | - | - | 6 | - | 82 | 82 | - | U8356A107E | 1 | 6.3 | 6.9 | 0.22 |
| 1/4 | 2.4 | 0.11 | 0.03 | - | 10 | - | - | 6 | - | 82 | 82 | - | U8356A119E | 3 | 6.3 | 6.9 | 0.22 |
| General Service - Universal | | | | | | | | | | | | | | | | | |
| 1/8 | 1.2 | 0.05 | 0.05 | 9 | 9 | 9 | 9 | 9 | 7 | 82 | 82 | U8356A009V | U8356A021V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 1.6 | 0.08 | 0.05 | 5 | 5 | 5 | 5 | 5 | 5 | 82 | 82 | U8356A010V | U8356A022V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.4 | 0.11 | 0.05 | 2 | 2 | 3 | 2 | 2 | 3 | 82 | 82 | U8356A012V | U8356A024V | 1 | 6.3 | 6.9 | 0.22 |
| 1/8 | 2.7 | 0.13 | 0.05 | 3 | 2 | 2 | 1.7 | 2 | 2 | 82 | 82 | U8356B047V | U8356B048V | 2 | 6.3 | 6.9 | 0.27 |
| NSF 61 and 169 Listed - Universal | | | | | | | | | | | | | | | | | |
| 1/8 | 2.4 | 0.11 | 0.03 | - | 2 | - | - | 2 | - | 82 | 82 | - | U8356A111E | 1 | 6.3 | 6.9 | 0.22 |
| 1/4 | 2.4 | 0.11 | 0.03 | - | 2 | - | - | 2 | - | 82 | 82 | - | U8356A123E | 3 | 6.3 | 6.9 | 0.22 |

① MS option limits pressures to 15 bar (unless limited by operating pressure).

3-WAY

Capabilities Chart

| Solenoid Options ② | | | | | | | Base Catalog Number | | Resilient Materials ① | | | | | | | Other | | Standard Rebuild Kit | |
|--------------------|----------------|---------------------------|----------|-----|-------|-----------------------|---------------------|-----------------|-----------------------|------|------|----------------|------|----------|--------|-----------------|------------------|----------------------|-----------------|
| NEMA Type 3-9 | High Temp. DIN | Wiring Box Screw Terminal | Multipin | DIN | Spade | Open Frame with Leads | Brass | Stainless Steel | FKM | EPDM | RUBY | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass AC/DC | Stainless AC/DC |
| - | - | - | - | SC | - | ● | U8356A001V | U8356A013V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A002V | U8356A014V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A004V | U8356A016V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356B045V | U8356B046V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8356A103E | - | ● | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8356A115E | - | ● | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A005V | U8356A017V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A006V | U8356A018V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A008V | U8356A020V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356B054V | U8356B055V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8356A107E | - | ● | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8356A119E | - | ● | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A009V | U8356A021V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A010V | U8356A022V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356A012V | U8356A024V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | U8356B047V | U8356B048V | ● | E | - | NV | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8356A111E | - | ● | - | - | - | - | - | MS | - | - | - |
| - | - | - | - | SC | - | ● | - | U8356A123E | - | ● | - | - | - | - | - | MS | - | - | - |

● = Standard. ① Replace V suffix. ② Replace U prefix with SC prefix.

Dimensions: inches (mm)

| Const. Ref. | | A | B | C | D | E |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 1.81 | 2.08 | 1.29 | 1 | 0.59 |
| | mm | 46 | 53 | 33 | 25 | 15 |
| 2 | ins. | 1.98 | 2.25 | .984 | 1 | 0.59 |
| | mm | 50 | 57 | 25 | 25 | 15 |
| 3 | ins. | 1.86 | 2.25 | 1.73 | 1.12 | .83 |
| | mm | 46 | 57 | 44 | 28 | 21 |

Shown with DIN coil without connector

1/8 NPT THREADED ADAPTOR PORT 3
(ADD .59 (15) TO HEIGHT DIMENSIONS)
KIT #
BRASS HV289666001
S. S. HV289667001
(PKG OF 10 PCS)

M3 - THROUGH HOLES

8356_NSFR1

Features

- Available with compression fitting ends for metal or plastic tube to save installation cost
- Direct acting for reliable performance; resilient seating for tight shutoff
- Operation similar to 8320, but with plastic body
- Ideal valve for dispensing, damper control, and water applications
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|--|
| Body | CA |
| Disc | NBR |
| Disc-Holder | CA |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel and 17-7PH Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|
| | DC Watts | AC | | | General Purpose | |
| | | Watts | VA Holding | VA Inrush | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 |
| F | - | 9.1 | 25 | 40 | 238210 | - |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

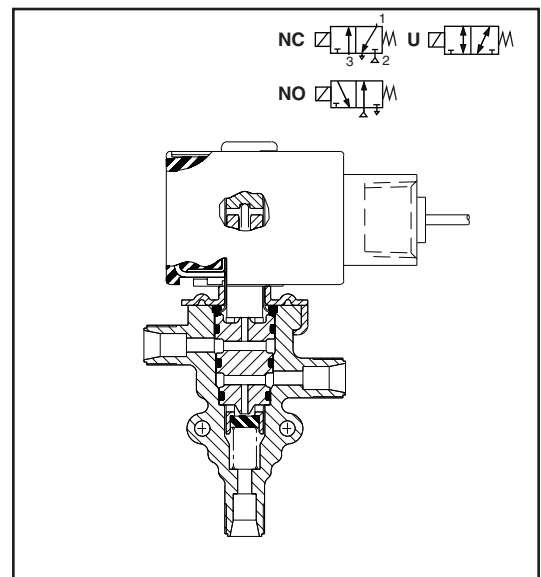
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Open Frame Solenoid, Junction Box.

See *Optional Features Section* for descriptions on these and other available options.



3-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL recognized components.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

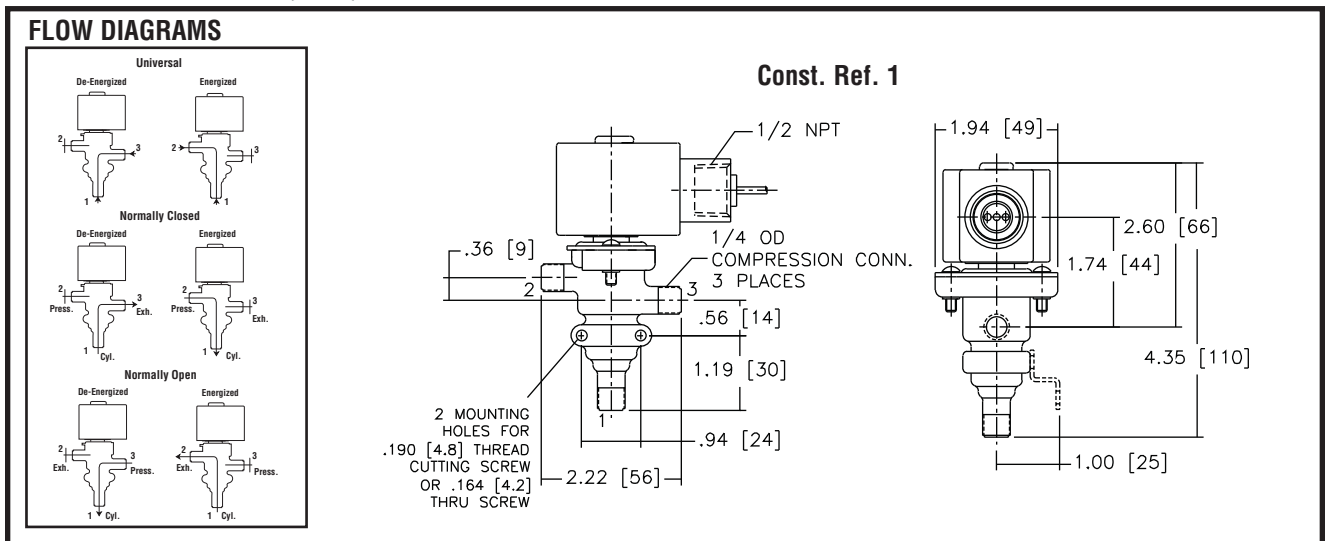
| Pipe Connections | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | Max. Fluid Temp. °F | | Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation ② | |
|---|---------------------|----------------|---------------------------------------|-------|---------------|-------|---------------------|-----|----------------|-------------|---|--------|
| | | | Max. AC | | Max. DC | | AC | DC | | | AC | DC |
| | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | |
| 1/4" O.D. Compression ① | 1/16 | .07 | 100 | 100 | 65 | 65 | 130 | 120 | 8360G071 | 1 | 9.1/F | 10.6/F |
| | 3/32 | .11 | 50 | 50 | 50 | 50 | 130 | 120 | 8360G073 | 1 | 6.1/F | 10.6/F |
| | 1/8 | .16 | 30 | 30 | 20 | 20 | 130 | 120 | 8360G074 | 1 | 9.1/F | 10.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 1/4" O.D. Compression ① | 1/16 | .07 | 125 | 125 | 125 | 125 | 130 | 120 | 8360G075 | 1 | 6.1/F | 10.6/F |
| | 3/32 | .11 | 100 | 100 | 100 | 100 | 130 | 120 | 8360G077 | 1 | 6.1/F | 10.6/F |
| | 1/8 | .16 | 40 | 40 | 40 | 40 | 130 | 120 | 8360G078 | 1 | 6.1/F | 10.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | |
| 1/4" O.D. Compression ① | 1/16 | .07 | 125 | 125 | 125 | 125 | 130 | 120 | 8360G067 | 1 | 6.1/F | 10.6/F |
| | 3/32 | .11 | 100 | 100 | 100 | 100 | 130 | 120 | 8360G069 | 1 | 6.1/F | 10.6/F |
| | 1/8 | .16 | 40 | 40 | 40 | 40 | 130 | 120 | 8360G070 | 1 | 6.1/F | 10.6/F |

① Fittings not supplied with valve. To order, refer to List Price Schedule.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.

Specifications (Metric units)

| Pipe Connections | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | | Max. Fluid Temp. °C | | Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation ② | |
|---|-------------------|-----------------------|---------------------------------------|-------|---------------|-------|---------------------|----|----------------|-------------|---|--------|
| | | | Max. AC | | Max. DC | | AC | DC | | | AC | DC |
| | | | Air-Inert Gas | Water | Air-Inert Gas | Water | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | | | | | |
| 1/4" O.D. Compression ① | 1.6 | .06 | 7 | 7 | 4 | 4 | 54 | 49 | 8360G071 | 1 | 9.1/F | 10.6/F |
| | 2.4 | .09 | 3 | 3 | 3 | 3 | 54 | 49 | 8360G073 | 1 | 6.1/F | 10.6/F |
| | 3.2 | .14 | 2 | 2 | 1 | 1 | 54 | 49 | 8360G074 | 1 | 9.1/F | 10.6/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 1/4" O.D. Compression ① | 1.6 | .06 | 9 | 9 | 9 | 9 | 54 | 49 | 8360G075 | 1 | 6.1/F | 10.6/F |
| | 2.4 | .09 | 7 | 7 | 7 | 7 | 54 | 49 | 8360G077 | 1 | 6.1/F | 10.6/F |
| | 3.2 | .14 | 3 | 3 | 3 | 3 | 54 | 49 | 8360G078 | 1 | 6.1/F | 10.6/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | |
| 1/4" O.D. Compression ① | 1.6 | .06 | 9 | 9 | 9 | 9 | 54 | 49 | 8360G067 | 1 | 6.1/F | 10.6/F |
| | 2.4 | .09 | 7 | 7 | 7 | 7 | 54 | 49 | 8360G069 | 1 | 6.1/F | 10.6/F |
| | 3.2 | .14 | 3 | 3 | 3 | 3 | 54 | 49 | 8360G070 | 1 | 6.1/F | 10.6/F |

Dimensions: inches (mm)



Features

- Compact spool valve with threaded port connections
- All exhaust ports are pipable, providing better protection against harsh environments
- Standard manual operator
- DIN, Watertight and Explosionproof solenoids available
- Single and dual solenoid constructions
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------------|
| Body | Black Anodized Aluminum |
| Spring | Phosphate Treated Black Steel |
| Shading Coil | Copper |
| Seals | NBR + PUR |
| Core and Core Tube | Stainless Steel/Brass |
| End Covers | 6/6 Glass Filled PA/FG |
| Spool | Aluminum |
| Internal Parts | Zamak, Steel, CA, Aluminum |

Electrical

| Standard Coil and Class of Insulation | Enclosure Type | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|----------------|-----------------------------------|----------|------------|-----------|------------------------|----------|
| | | DC Watts | AC Watts | VA Holding | VA Inrush | AC | DC |
| F | SC | 3 | 2.5 | 3.5 | 6 | 400125 | 400125 |
| F | SC | 6.9 | 5 | 7 | 15 | 43004649 | 43004647 |
| F | EF | 6.9 | 6.3 | 7 | 10.1 | 266762 | 270007 |
| F | WT | 6.9 | 6.3 | 7 | 10.1 | 266763 | 270008 |

Standard Voltages: SC: 24, 120, 240 Volts AC, 50-60 Hz; 12, 24, 120 Volts DC.
 WT and EF: 24/50-60HZ, (120/60, 110-120/50)①, (240/60, 220-240/50)② Volts AC;
 6, 12, 24, 120 Volts DC.
 ① Order as 120/60, 110/50
 ② Order as 240/60, 220/50

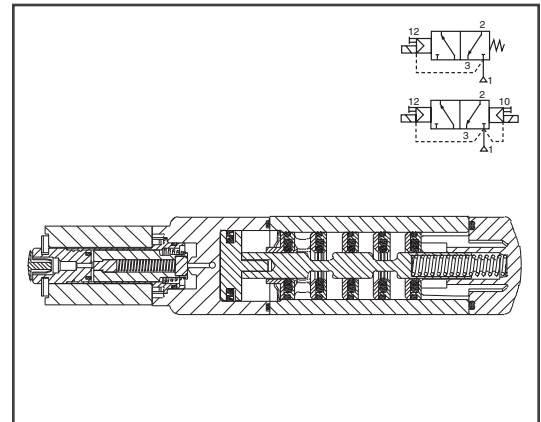
Solenoid Enclosures

Standard: - Prefix

SC = IP65 type DIN (open frame) per 46244

WT = Combination General Purpose and Watertight Types 1, 2, 3, 3S, 4, and 4X

EF = Combination Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, 6P, 7, 9 Class I, Div. 1 (Groups A - D) and Class II, Div. 1 Type 9 (Groups E-G)



Nominal Ambient Temp. Ranges

SC: AC/DC: 5°F to +140°F (-15°C to 60°C)

EF: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

WT: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

Note: For temperatures below 32°F (0°C) moisture-free air must be used.

Refer to Engineering Section for details.

Approvals

SC (2.5W and 3W only) UL recognized component, CSA certified.

WT: UL recognized component, CSA certified.

EF: UL and CSA solenoid approval.

Meets applicable CE directives.

Refer to Engineering Section for details.

Note

When mounting inline 8551 valves with WT & EF solenoids (6.3 & 6.9 watts), ASCO recommends using two (2) 1/8" thick washers under the valve body to provide clearance for the solenoid coil.

3-WAY

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Fluid Temp. °F (for single and dual solenoid) | | | Single Solenoid | Dual Solenoid | Watt Rating/ Class of Coil Insulation | |
|---------------------------------|---------------------|----------------|---------------------------------------|------|---|---------|---------|-----------------|----------------|---------------------------------------|-----|
| | | | Min. | Max. | Min. | Max. AC | Max. DC | Catalog Number | Catalog Number | AC | DC |
| OPEN FRAME DIN COIL | | | | | | | | | | | |
| 1/4 | 1/4 | .86 | 30 | 150 | 5 | 140 | 140 | SC8551A005MS | SC8551A006MS | 2.5 | 3 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | SC8553A005MS | SC8553A006MS | 5 | 6.9 |
| WATERTIGHT ENCLOSURE | | | | | | | | | | | |
| 1/4 | 1/4 | .86 | 30 | 150 | 5 | 104 | 77 | WT8551A005MS | WT8551A006MS | 6.3 | 6.9 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | WT8553A005MS | WT8553A006MS | 6.3 | 6.9 |
| EXPLOSIONPROOF ENCLOSURE | | | | | | | | | | | |
| 1/4 | 1/4 | .86 | 30 | 150 | 5 | 104 | 77 | EF8551A005MS | EF8551A006MS | 6.3 | 6.9 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | EF8553A005MS | EF8553A006MS | 6.3 | 6.9 |

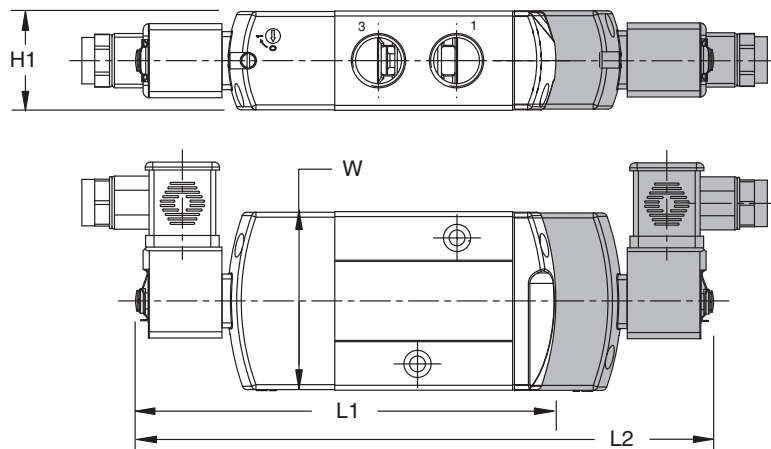
Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Fluid Temp. °C (for single and dual solenoid) | | | Single Solenoid | Dual Solenoid | Watt Rating/ Class of Coil Insulation | |
|---------------------------------|-------------------|-----------------------|---------------------------------------|------|---|---------|---------|-----------------|----------------|---------------------------------------|-----|
| | | | Min. | Max. | Min. | Max. AC | Max. DC | Catalog Number | Catalog Number | AC | DC |
| OPEN FRAME DIN COIL | | | | | | | | | | | |
| 1/4 | 6 | .75 | 2 | 10 | -15 | 60 | 60 | SC8551A005MS | SC8551A006MS | 2.5 | 3 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | SC8553A005MS | SC8553A006MS | 5 | 6.9 |
| WATERTIGHT ENCLOSURE | | | | | | | | | | | |
| 1/4 | 6 | .75 | 2 | 10 | -15 | 40 | 25 | WT8551A005MS | WT8551A006MS | 6.3 | 6.9 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | WT8553A005MS | WT8553A006MS | 6.3 | 6.9 |
| EXPLOSIONPROOF ENCLOSURE | | | | | | | | | | | |
| 1/4 | 6 | .75 | 2 | 10 | -15 | 40 | 25 | EF8551A005MS | EF8551A006MS | 6.3 | 6.9 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | EF8553A005MS | EF8553A006MS | 6.3 | 6.9 |

Dimensions inches (mm)

| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 | 5.69 (145) | 6.70 (170) |
| L2 | 7.79 (198) | 9.18 (233) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

NOTE: Valve shown with CM22 DIN terminal coil and connector. Connector sold separately.



Features

- Compact Spool Valve
- Single and dual solenoid constructions available
- Unique design combines hard T-seals and flexible o-rings, provides bubble-tight shutoff, resistance to dirt and multimillion cycle life controlling air or inert gas
- Low Power and Intrinsically Safe construction available
See Special Service Pilot Valve Section for details

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|--|-----------------------------|----------------------|
| Body | Aluminum, Black Anodized | Brass | 316L Stainless Steel |
| End Cover (Spring end) | Glass-filled Polyamide | Brass | 316L Stainless Steel |
| Spool Valve Internals | Zamak, Stainless Steel, Acetal (POM), Aluminum | Brass, Acetal (POM), Delrin | |
| Pilot End Covers | Aluminum, Black Anodized | Brass | 316L Stainless Steel |
| Core Tube | Stainless Steel | | |
| Core and Plugnut | Stainless Steel | | |
| Springs | Stainless Steel | | |
| Seals and Discs | NBR | | |
| Top Disc | Nylon (PA) | | |
| Core Guide | Acetal | | |
| Seat and Seat Insert | Brass, Acetal | | |
| Shading Coil | Copper | | |
| Rider Ring (low power) | PTFE | | |

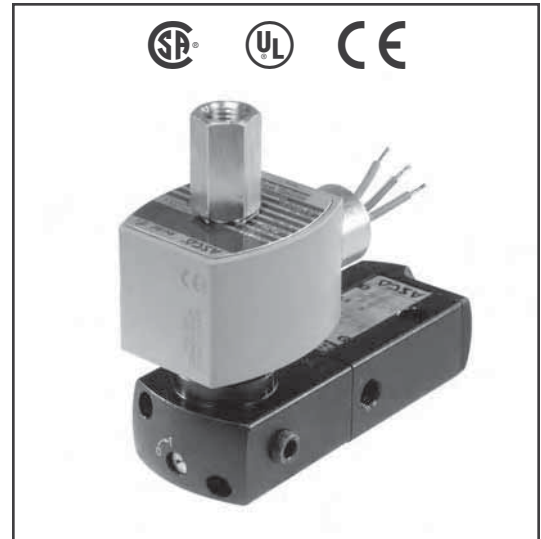
Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |

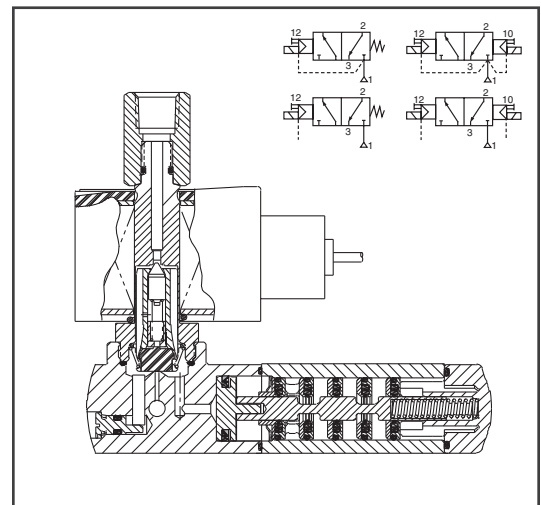
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or "EV" for stainless steel) to catalog number.)
See Optional Features Section for other available options.



3-WAY



Nominal Ambient Temp. Ranges

| Body Material | Description |
|-----------------|--|
| Aluminum | AC: 5°F to 125°F (-15°C to 52°C) DC: 5°F to 104°F (-15°C to 40°C) |
| Brass | AC: -40°F to 125°F (-40°C to 52°C) |
| Stainless Steel | DC: -40°F to 104°F (-40°C to 40°C) |

Approvals

UL/CSA approvals for aluminum constructions pending. EF and EV are UL listed solenoids. CSA certified. Meet applicable CE directives.
Refer to Engineering Section for details.

Specifications (English units)

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | | | Dual Solenoid | | | | | | | | | |
|----------------------|------------------|---------------------|----------------|---------------------------------------|---------|---------|---------------------|-----|----------------|-------------|---------------------------------------|-----|---------------|---------------------|---------|----------------|-------------|--------------------------------------|--------|----|
| | | | | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Catalog Number | Const. Ref. | Watt Rating/Class of Coil Insulation | | |
| | | | | Air-Inert Gas | | | AC | DC | | | AC | DC | Air-Inert Gas | | | | | AC | DC | AC |
| | | | | Min. | Max. AC | Max. DC | | | Min. | Max. AC | | | Max. DC | Min. | Max. AC | Max. DC | AC | | | |
| Aluminum | 1/4 | 1/4 | .86 | 30 | 150 | 120 | 140 | 120 | 8551G405 | 1 | 30 | 150 | 120 | 140 | 120 | 8551G406 | 1 | 10.1/F | 11.6/F | |
| Brass | | | | | | | | | EF8551G407 ① | | | | | | | EF8551G408 ① | | | | |
| 316L Stainless Steel | | | | | | | | | EV8551G413 ② | | | | | | | EV8551G414 ② | | | | |
| Aluminum | 1/2 | 1/2 | 3.7 | | | | | | 8553G405 | | | | | | | | | | | |

① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

Specifications (Metric units)

| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Single Solenoid | | | | | | | Dual Solenoid | | | | | | | | |
|----------------------|------------------|-------------------|-----------------------|---------------------------------------|---------|---------|---------------------|----|----------------|-------------|---------------------------------------|----|---------------|---------------------|---------|----------------|-------------|--------------------------------------|--------|
| | | | | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Catalog Number | Const. Ref. | Watt Rating/Class of Coil Insulation | |
| | | | | Air-Inert Gas | | | AC | DC | | | AC | DC | Air-Inert Gas | | | | | AC | DC |
| | | | | Min. | Max. AC | Max. DC | | | Min. | Max. AC | | | Max. DC | Min. | Max. AC | Max. DC | AC | | |
| Aluminum | 1/4 | 6.4 | .75 | 2 | 10 | 8.2 | 60 | 48 | 8551G405 | 1 | 2 | 10 | 8.2 | 60 | 48 | 8551G406 | 1 | 10.1/F | 11.6/F |
| Brass | | | | | | | | | EF8551G407 ① | | | | | | | EF8551G408 ① | | | |
| 316L Stainless Steel | | | | | | | | | EV8551G413 ② | | | | | | | EV8551G414 ② | | | |
| Aluminum | 1/2 | 13 | 3.15 | | | | | | 8553G405 | | | | | | | | | | |

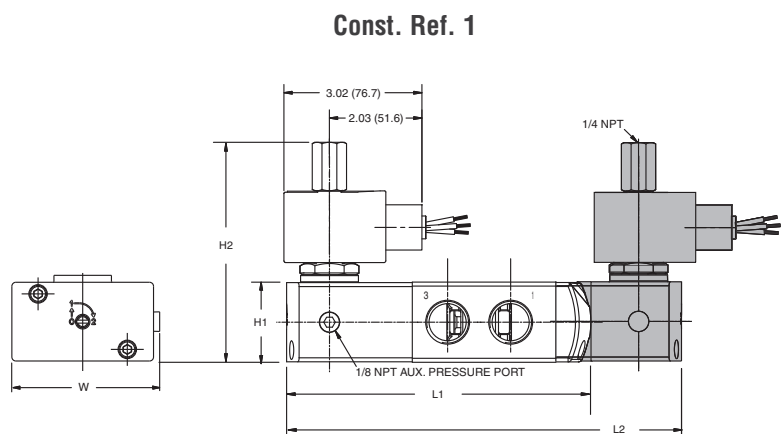
① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

Dimensions inches (mm)

| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.12 (132) | 6.00 (153) |
| L2 ① | 6.73 (171) | 7.80 (198) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

① Manual override option MH adds .250" (6.4), MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |



Four-ported valves are generally used to operate double-acting cylinders or actuators.

They have four or five pipe connections, commonly called ports:

- One pressure inlet.
- Two cylinder ports providing pressure to the double-acting cylinder or actuator.
- One or two outlets to exhaust pressure from the cylinders.

In a de-energized position, pressure is connected to one cylinder port; the other port is connected to the exhaust. In an energized position, pressure and exhaust are reversed.

Four ports means less piping is required. With five ports, independent speed controls can be mounted in each port.

Three Types of Constructions Apply

Single Solenoid

When the solenoid is energized, the valve shifts, then returns to the original position when de-energized.

Dual Solenoid

When one solenoid is energized, the valve shifts, then returns when the other solenoid is energized. They may be energized momentarily or continuously, but never concurrently. Some valves, both single and dual solenoid, may change position on loss of fluid pressure.

Single Air Operator

When the operator is pressurized, the valve shifts, then returns when the pressure is removed.

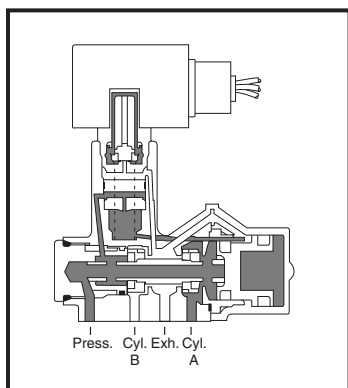
See Engineering Section for further details.

Standard and Optional Features

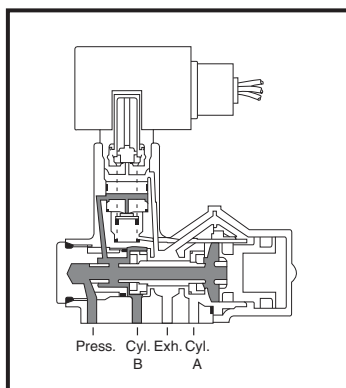
Solenoid valves are supplied, as listed, with either RedHat II molded epoxy solenoids or RedHat solenoids with metal enclosures (except for Series 8401). RedHat II valves are identified by the letter "G" or "H" in their catalog numbers; e.g., 8344-G027. Many optional features may be added to your valves; e.g., high-temperature Class H molded coils and manual operators.

See the Optional Features Section for details..

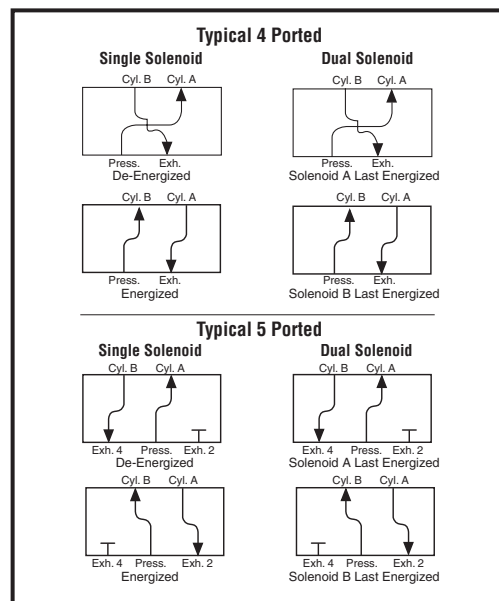
4 and 5-Ported Valves Flow Diagrams



De-Energized



Energized



Index

| Series | General Description | Pipe Size (NPT) | Page |
|-----------|-----------------------|-----------------|------|
| 8340 | Air Only | 1/4" | 71 |
| 8342 | General Service | 1/4" and 3/8" | 75 |
| 8344 | Piston/Poppet | 1/4" - 1" | 77 |
| 8345 | General Service | 1/4" | 81 |
| 8401/8402 | Slide Valve | 1/4" | 83 |
| 8551/8553 | Inline Spool Valve | 1/4" and 1/2" | 87 |
| 8551/8553 | RedHat II Spool Valve | 1/4" and 1/2" | 89 |

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Features

- Air-only design for cylinder control
- Up to eight single and dual solenoid valves, in any combination, can be manifolded
- Sub-base constructions have separate cylinder connections and common pressure and exhaust connections at each end. Can be assembled in the field by simply inserting tie rods through holes in base
- Group-mounted constructions have common pressure connections at each end and separate cylinder and exhaust connections
- Can be factory assembled or grouped in the field with strong snap-on clamps, supplied

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|------------------------|
| Body | Hard Anodized Aluminum |
| Disc | PE |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Spring | 302 Stainless Steel |
| Shading Coil | Copper |
| Seals | NBR |
| Miscellaneous | PA, CA |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | - | 10.5 | 24 | 65 | 64982 | - | 64982 | - |
| F | 19.7 | 16.7 | 36 | 85 | 64982 | 66611 | 64982 | 66611 |
| F | - | 10.1 | 25 | 70 | 238610 | - | 238614 | - |
| F | 22.6 | 17.1 | 40 | 93 | 238610 | 238710 | 238614 | 238714 |

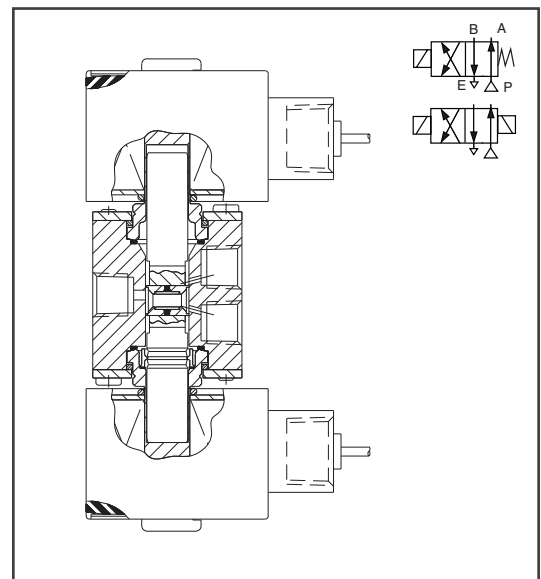
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type 1.
Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9 (For 8340G001 and 8340G002 only); RedHat - Types 3, 4, 4X, 7, and 9. (To order, add prefix "EF" to catalog number.)
 See *Optional Features Section* for other available options.



4-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)
 DC: 32°F to 77°F (0°C to 25°C) (104°F/40°C occasionally)
 Refer to *Engineering Section* for details.

Leakage

Break-in leakage rate of 2 SCFH is reduced to a very slight amount as the valve wears in.

Approvals

CSA certified. AC is UL listed as General Purpose Valve. RedHat II meets applicable CE directives.
 Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | | Aluminum Body Catalog Number | Watt Rating/ Class of Coil Insulation | |
|--|---------------------|----------------|---------------------------------------|---------------|---------------------|------|------------------------------|---------------------------------------|--------|
| | | | Max. AC | Max. DC | AC | DC | | AC | DC |
| | | | Air-Inert Gas | Air-Inert Gas | | | | | |
| SINGLE VALVE CONSTRUCTION - Single Solenoid | | | | | | | | | |
| 1/4 | 5/64 | .10 | 150 | 100 | 130 | 95 | 8340G001 | 17.1/F | 22.6/F |
| SINGLE VALVE CONSTRUCTION - Dual Solenoid | | | | | | | | | |
| 1/4 | 5/64 | .10 | 150 | 100 | 104 | 95 | 8340G002 | 10.1/F | 22.6/F |
| GROUP MOUNTED CONSTRUCTION - Single Solenoid | | | | | | | | | |
| 1/4 | 5/64 | .10 | 150 | 100 | 104 | 95 | 8340A003 | 16.7/F | 19.7/F |
| GROUP MOUNTED CONSTRUCTION - Dual Solenoid | | | | | | | | | |
| 1/4 | 5/64 | .10 | 150 | 100 | 104 ① | 95 ① | 8340A008 | 10.5/F | 19.7/F |
| SUB-BASE MOUNTED CONSTRUCTION - Single Solenoid | | | | | | | | | |
| 1/4 | 5/64 | .08 | 150 | 100 | 104 | 95 | 8340A004 | 16.7/F | 19.7/F |
| SUB-BASE MOUNTED CONSTRUCTION - Dual Solenoid | | | | | | | | | |
| 1/4 | 5/64 | .08 | 150 | 100 | 104 ① | 95 ① | 8340A005 | 10.5/F | 19.7/F |

① Rating shown for individual mounted valves; when group mounted, maximum UL allowable fluid and ambient temperature is 86°F.

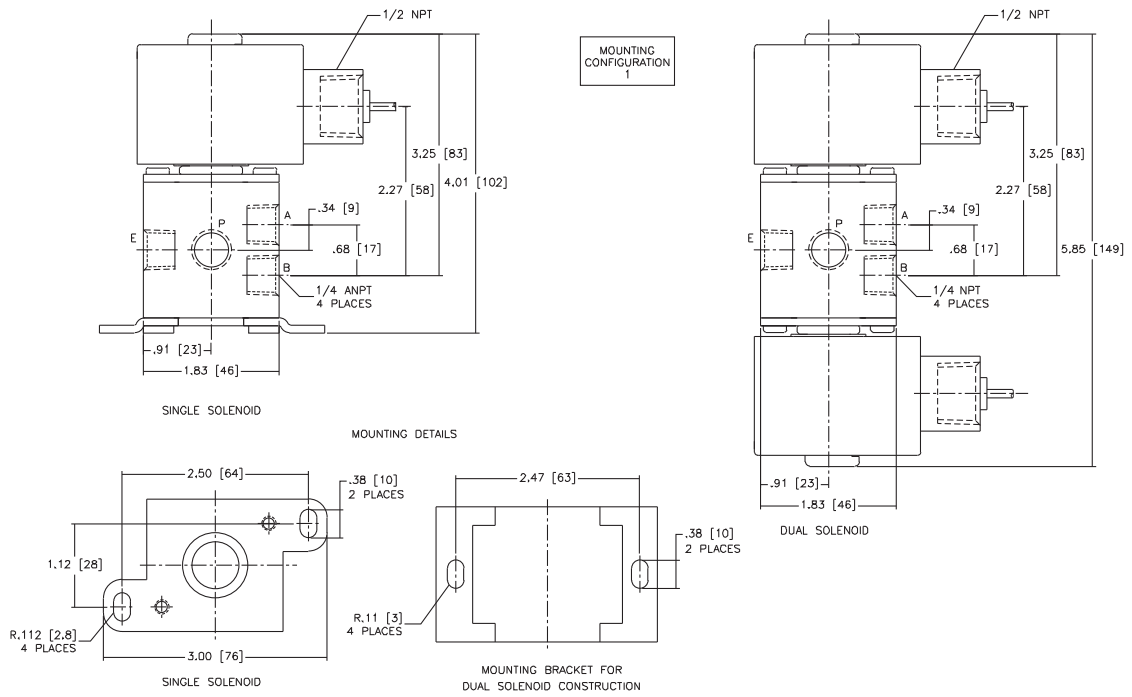
Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | | Aluminum Body Catalog Number | Watt Rating/ Class of Coil Insulation | |
|--|-------------------|-----------------------|---------------------------------------|---------------|---------------------|------|------------------------------|---------------------------------------|--------|
| | | | Max. AC | Max. DC | AC | DC | | AC | DC |
| | | | Air-Inert Gas | Air-Inert Gas | | | | | |
| SINGLE VALVE CONSTRUCTION - Single Solenoid | | | | | | | | | |
| 1/4 | 2.0 | .09 | 10 | 7 | 54 | 35 | 8340G001 | 17.1/F | 22.6/F |
| SINGLE VALVE CONSTRUCTION - Dual Solenoid | | | | | | | | | |
| 1/4 | 2.0 | .09 | 10 | 7 | 40 | 35 | 8340G002 | 10.1/F | 22.6/F |
| GROUP MOUNTED CONSTRUCTION - Single Solenoid | | | | | | | | | |
| 1/4 | 2.0 | .09 | 10 | 7 | 40 | 35 | 8340A003 | 16.7/F | 19.7/F |
| GROUP MOUNTED CONSTRUCTION - Dual Solenoid | | | | | | | | | |
| 1/4 | 2.0 | .09 | 10 | 7 | 40 ① | 35 ① | 8340A008 | 10.5/F | 19.7/F |
| SUB-BASE MOUNTED CONSTRUCTION - Single Solenoid | | | | | | | | | |
| 1/4 | 2.0 | .07 | 10 | 7 | 40 | 35 | 8340A004 | 16.7/F | 19.7/F |
| SUB-BASE MOUNTED CONSTRUCTION - Dual Solenoid | | | | | | | | | |
| 1/4 | 2.0 | .07 | 10 | 7 | 40 ① | 35 ① | 8340A005 | 10.5/F | 19.7/F |

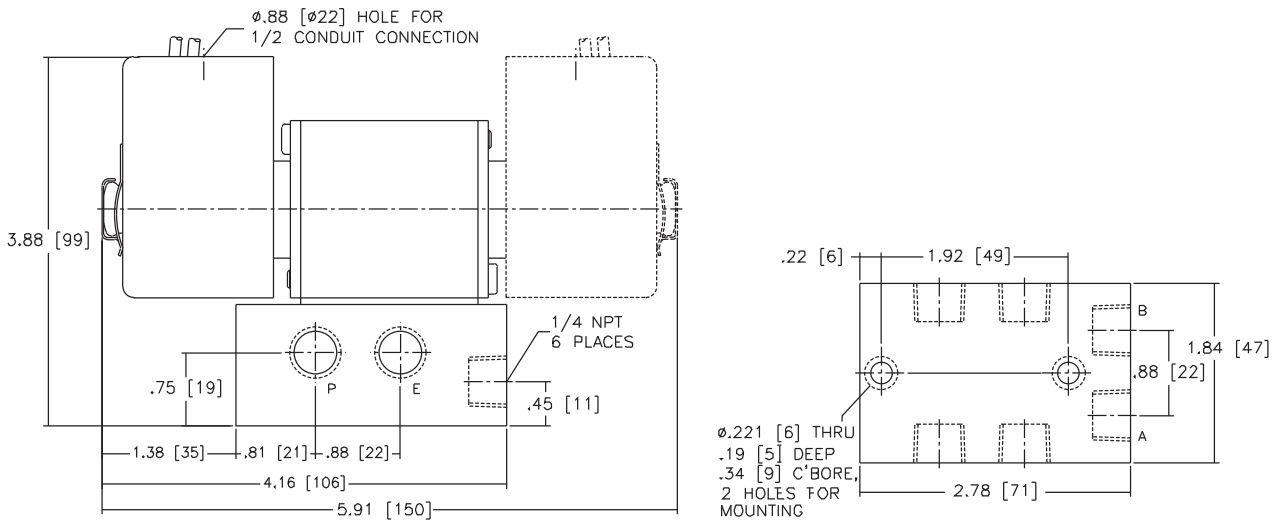
① Rating shown for individual mounted valves; when group mounted, maximum UL allowable fluid and ambient temperature is 30°C.

Dimensions: inches (mm)

Single Valve Construction - Single And Dual Solenoids



Sub-Base Mounted Single and Dual Solenoid Construction



Note: Dual solenoid shown dotted in.

4-WAY

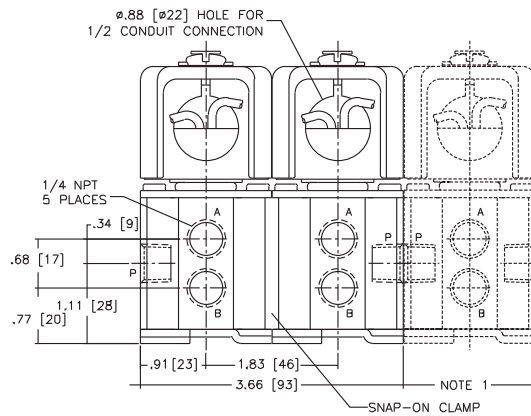
Dimensions: inches (mm)

4-WAY

| Mounting Brackets | | |
|-------------------|--|------------------------------|
| Catalog Number | With General Purpose Solenoid Enclosure | When Manual Operator is Used |
| 8340G001 | Mounting Holes on Body | Order Kit No. 206-737 |
| 8340G002 | Standard | NA |
| 8340A003 | Mounting Holes on Body | Order Kit No. 206-554 |
| 8340A004 | Mounting Holes on Body | NA |
| 8340A005 | Mounting Holes on Body | NA |
| 8340A008 | Standard when factory assembled, but must order Kit No. 206-554 for Individual valves. | NA |

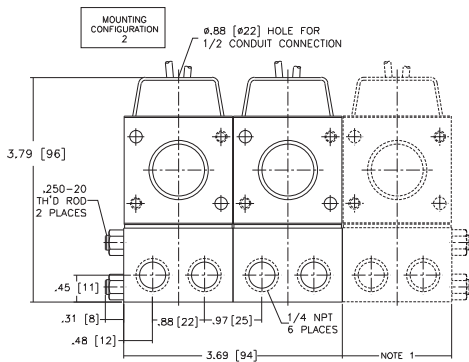
NA - Not Available

**Group-Mounted Construction
Single Solenoid**

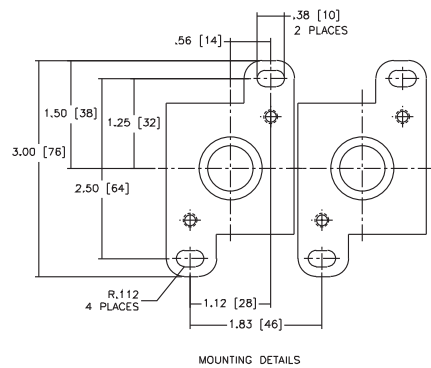


NOTE 1: FOR EACH ADDITIONAL VALVE ADD 1.83 [46].

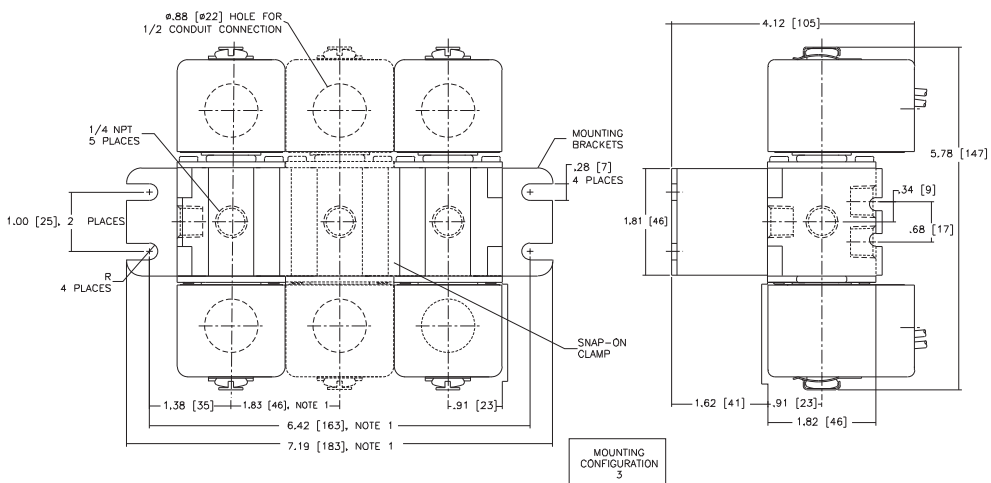
**Sub-Base Mounted Construction
(Shown As Group-Mounted)**



NOTE 1: FOR EACH ADDITIONAL VALVE ADD 1.84 [47].



Group-Mounted Construction - Dual Solenoid



NOTE 1: THIS DIMENSION IS FOR ONE VALVE; FOR EACH ADDITIONAL VALVE ADD 1.83 [46].

Features

- Direct acting operation and high flow construction
- Direct acting, high flow slide-style valve
- Optional flow control regulates cylinder speed independently, in either direction
- Mechanical detent on dual solenoids holds last position, even after loss of electric power, pneumatics or pressure
- No Minimum Operating Pressure Differential required to shift valve
- Dual solenoid operation: solenoid may be energized momentarily (1/10 second) or continuously
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|---|---------------------|
| Body | Brass | 304 Stainless Steel |
| Seals and Discs | NBR and FKM | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel / 17-7 PH Stainless Steel | |
| Shading Coil | Copper | |
| Sleeve | PA | |
| Seats | Graphite-filled PTFE | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------------|----------------|
| | AC | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | AC | AC |
| F | 16.1 | 35 | 115 | 272610 | 272614 |
| F | 20.1 | 45 | 140 | 272610 | 272614 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 24, 110, 115, 220, 230 volts AC, 50 Hz. Other voltages are available when required.

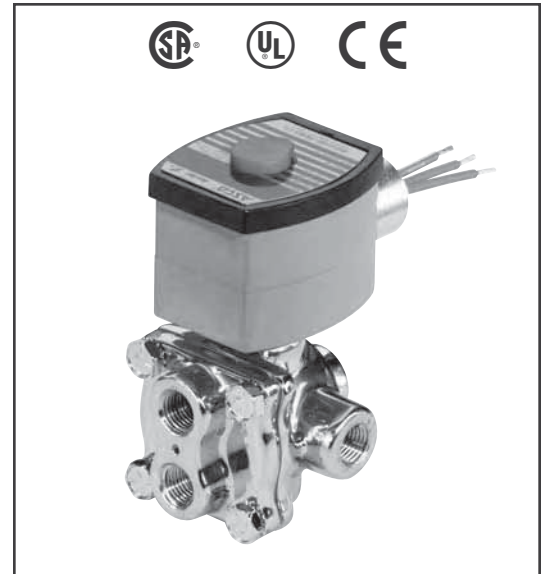
Note: No combination 120/60, 110/50 coil available. Must order either 120/60 or 110/50, etc.

Solenoid Enclosures

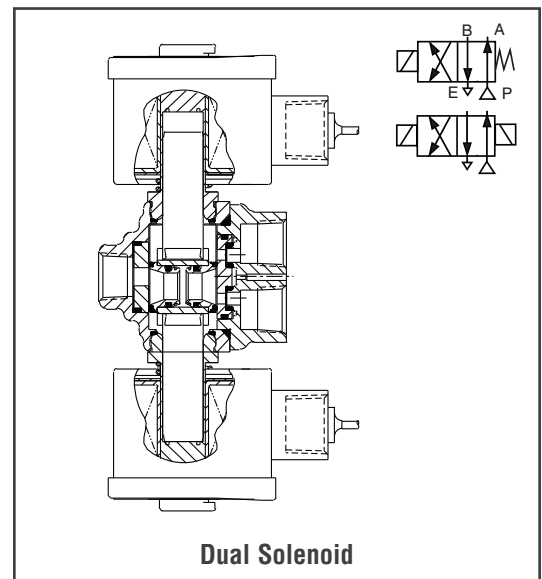
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



4-WAY



Nominal Ambient Temp. Ranges

Standard Class F insulation: 32°F to 125°F (0°C to 52°C)
 Optional Class H insulation: 32°F to 140°F (0°C to 60°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed as General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor ① | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation |
|-------------------------------------|---------------------|------------------|---------------------------------------|-------|-------------------|---------------------|----------------|-------------|----------------------|-------------|---------------------------------------|
| | | | Max. AC | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | |
| | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | AC | | | | | AC |
| SINGLE SOLENOID CONSTRUCTION | | | | | | | | | | | |
| 1/4 | 3/16 | .70 | 125 | 100 | 100 | 160 | 8342G001 | 1 | 8342G701 | 2 | 20.1/F |
| 3/8 | 3/16 | .70 | 125 | 100 | 100 | 160 | 8342G003 | 1 | 8342G703 | 2 | 20.1/F |
| DUAL SOLENOID CONSTRUCTION | | | | | | | | | | | |
| 1/4 | 3/16 | .70 | 125 | 125 | 125 | 160 | 8342G020 | 3 | 8342G720 | 4 | 16.1/F |
| 3/8 | 3/16 | .70 | 125 | 125 | 125 | 160 | 8342G022 | 3 | 8342G722 | 4 | 16.1/F |

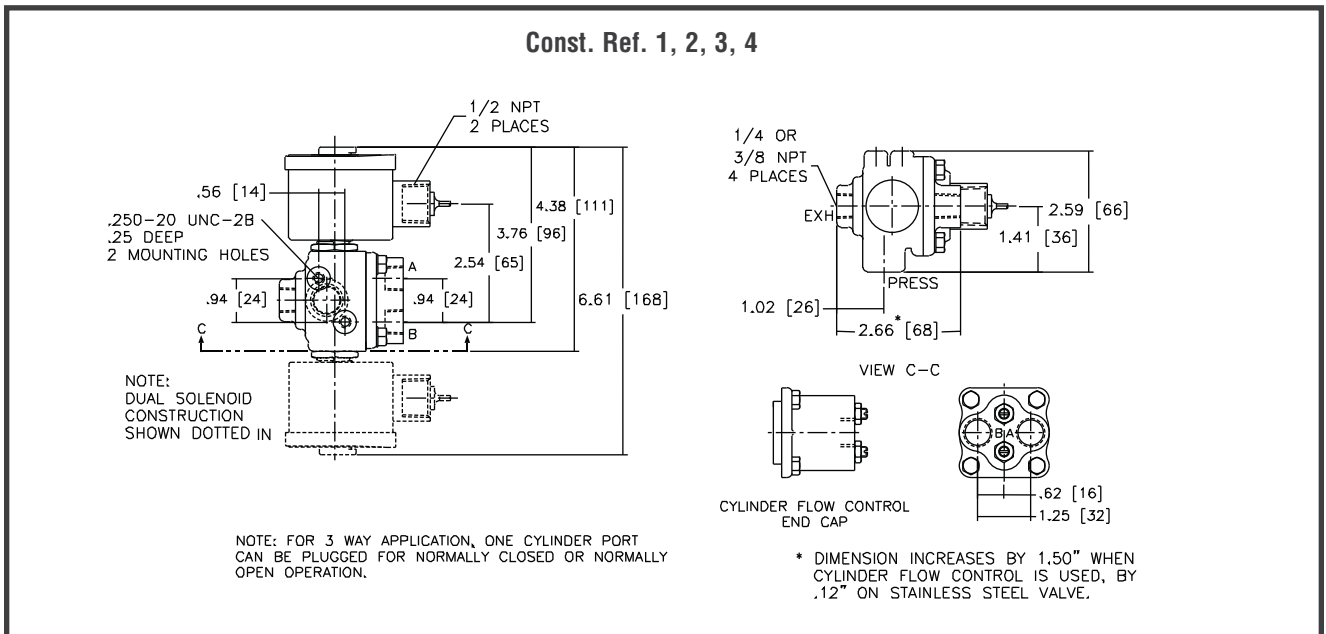
① With built-in flow control (Suffix "M"), the Cv is 0.44 and an 0.5 psi minimum operating pressure is required.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) ① | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | Brass Body | | Stainless Steel Body | | Watt Rating/ Class of Coil Insulation |
|-------------------------------------|-------------------|-------------------------|---------------------------------------|-------|-------------------|---------------------|----------------|-------------|----------------------|-------------|---------------------------------------|
| | | | Max. AC | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | |
| | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | AC | | | | | AC |
| SINGLE SOLENOID CONSTRUCTION | | | | | | | | | | | |
| 1/4 | 4.8 | .60 | 9 | 7 | 7 | 71 | 8342G001 | 1 | 8342G701 | 2 | 20.1/F |
| 3/8 | 4.8 | .60 | 9 | 7 | 7 | 71 | 8342G003 | 1 | 8342G703 | 2 | 20.1/F |
| DUAL SOLENOID CONSTRUCTION | | | | | | | | | | | |
| 1/4 | 4.8 | .60 | 9 | 9 | 9 | 71 | 8342G020 | 3 | 8342G720 | 4 | 16.1/F |
| 3/8 | 4.8 | .60 | 9 | 9 | 9 | 71 | 8342G022 | 3 | 8342G722 | 4 | 16.1/F |

① With built-in flow control (Suffix "M"), the Kv is 0.38 and an 0.03 bar minimum operating pressure is required.

Dimensions inches (mm)



Features

- Sturdy, robust construction
- Piston-operated poppet design provides high flow
- For use with air or water
- Wide range of sizes and flow rates
- Single or dual solenoid constructions
- Dual solenoid can be shifted with a momentary signal and remain in position even if electrical power is lost
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|--------------------------------------|--|
| Body | Brass |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel / 17-7PH Stainless Steel |
| Shading Coil | Copper |
| Pilot Seat Cartridge and Disc-Holder | CA |
| Shaft Gasket | PA |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |
| F | 22.6 | 17.1 | 40 | 70 | 238610 | 238710 | 238614 | 238714 |

Dual Solenoid Operation: Minimum coil on-time for dual solenoid valves is 0.3 seconds on air service and 1.0 seconds on liquids.

Caution: Do not energize both solenoids simultaneously. Refer to Engineering Section for details.

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

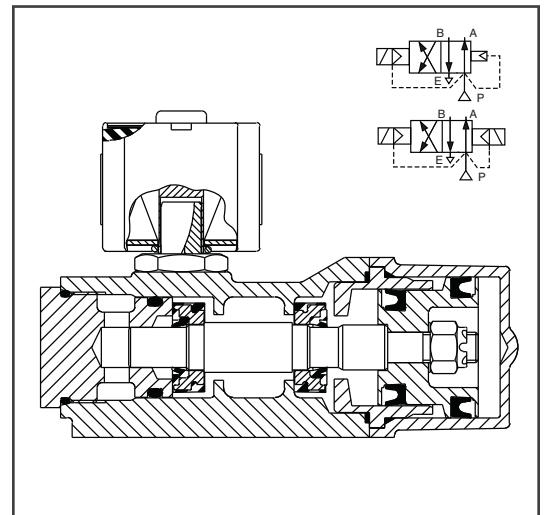
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

See *Optional Features Section* for other available options.



4-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to Engineering Section for details.

Approvals

CSA certified. Meets applicable CE directives.

Important

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

- Loss of air pressure may allow valve to shift on dual solenoid constructions.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | | Max. Fluid Temp. °F | | Brass Body | | Watt Rating/ Class of Coil Insulation | | |
|------------------------|---------------------|----------------|------|---------------------------------------|---------------|-------|-------------------|---------------|-------|-------------------|---------------------|-----|----------------|-------------|---------------------------------------|--------|--------|
| | | | | ① Min. | Max. AC | | | Max. DC | | | | | | | | | |
| | | Press. | Exh. | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | AC | DC | Catalog Number | Const. Ref. | AC | DC | |
| SINGLE SOLENOID | | | | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .80 | 1.0 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G070 | 1 | 10.1/F | 11.6/F |
| 1/4 | 1/4 | .80 | 1.0 | 10 | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 180 | 180 | 8344G000 | 1 | 17.1/F | 22.6/F |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G072 | 2 | 10.1/F | 11.6/F |
| 3/8 | 1/4 | .80 | 1.0 | 10 | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 180 | 180 | 8344G001 | 1 | 17.1/F | 22.6/F |
| 1/2 | 3/8 | 1.4 | 2.2 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G074 | 2 | 10.1/F | 11.6/F |
| 1/2 | 3/8 | 1.4 | 2.2 | 10 | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 180 | 180 | 8344G027 | 2 | 17.1/F | 22.6/F |
| 3/4 | 3/4 | 5.2 | 5.6 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G076 | 3 | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 5.2 | 5.6 | 10 | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 180 | 180 | 8344G029 | 3 | 17.1/F | 22.6/F |
| 1 | 3/4 | 5.2 | 5.6 | 10 | 150 | 125 | 125 | 125 | 125 | 125 | 125 | 180 | 150 | 8344G078 | 3 | 10.1/F | 11.6/F |
| 1 | 3/4 | 5.2 | 5.6 | 10 | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 250 ② | 180 | 180 | 8344G031 | 3 | 17.1/F | 22.6/F |
| DUAL SOLENOID ③ | | | | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .80 | 1.0 | 10 | 250 | 200 | 125 | 125 | 125 | 100 | 180 | 120 | 8344G044 | 4 | 6.1/F | 10.6/F | |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 | 250 | 200 | 125 | 125 | 125 | 100 | 180 | 120 | 8344G080 | 6 | 6.1/F | 10.6/F | |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 | 300 | 300 | 200 | - | - | - | 180 | - | 8344G050 | 7 | 10.1/F | - | |
| 1/2 | 3/8 | 1.4 | 2.2 | 10 | 250 | 200 | 125 | 125 | 125 | 100 | 180 | 120 | 8344G082 | 6 | 6.1/F | 10.6/F | |
| 3/4 | 3/4 | 5.2 | 5.6 | 10 | 300 | 300 | 200 | 125 | 125 | 100 | 180 | 120 | 8344G054 | 8 | 10.1/F | 10.6/F | |
| 1 | 3/4 | 5.2 | 5.6 | 10 | 300 | 300 | 200 | 125 | 125 | 100 | 180 | 120 | 8344G056 | 8 | 10.1/F | 10.6/F | |

① 25 psi (1.7 bar) minimum on light oil service. ② For best results, do not use valve rated 250 psi (17 bar) on mainline pressure of less than 125 psi (9 bar).
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

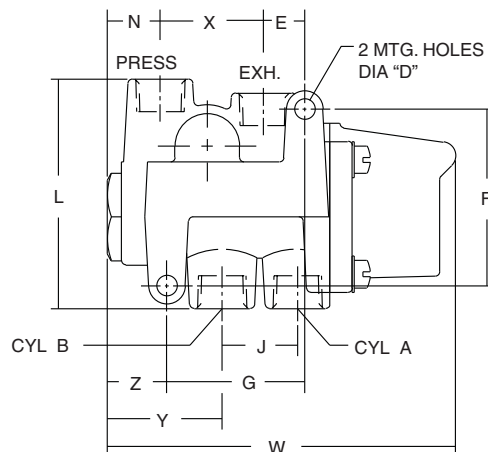
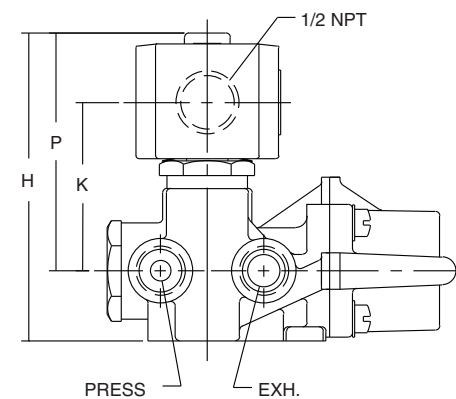
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | | | | | | Max. Fluid Temp. °C | | Brass Body | | Watt Rating/ Class of Coil Insulation | |
|------------------------|-------------------|-----------------------|------|---------------------------------------|---------------|-------|-------------------|---------------|-------|-------------------|---------------------|----|----------------|-------------|---------------------------------------|--------|
| | | | | ① Min. | Max. AC | | | Max. DC | | | | | | | | |
| | | Press. | Exh. | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | AC | DC | Catalog Number | Const. Ref. | AC | DC |
| SINGLE SOLENOID | | | | | | | | | | | | | | | | |
| 1/4 | 6 | .69 | .86 | 0.7 | 10 | 9 | 9 | 9 | 9 | 9 | 82 | 65 | 8344G070 | 1 | 10.1/F | 11.6/F |
| 1/4 | 6 | .69 | .86 | 0.7 | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 82 | 82 | 8344G000 | 1 | 17.1/F | 22.6/F |
| 3/8 | 10 | 1.2 | 1.89 | 0.7 | 10 | 9 | 9 | 9 | 9 | 9 | 82 | 65 | 8344G072 | 2 | 10.1/F | 11.6/F |
| 3/8 | 6 | .69 | .86 | 0.7 | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 82 | 82 | 8344G001 | 1 | 17.1/F | 22.6/F |
| 1/2 | 10 | 1.2 | 1.89 | 0.7 | 10 | 9 | 9 | 9 | 9 | 9 | 82 | 65 | 8344G074 | 2 | 10.1/F | 11.6/F |
| 1/2 | 10 | 1.2 | 1.89 | 0.7 | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 82 | 82 | 8344G027 | 2 | 17.1/F | 22.6/F |
| 3/4 | 19 | 4.5 | 4.80 | 0.7 | 10 | 9 | 9 | 9 | 9 | 9 | 82 | 65 | 8344G076 | 3 | 10.1/F | 11.6/F |
| 3/4 | 19 | 4.5 | 4.80 | 0.7 | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 82 | 82 | 8344G029 | 3 | 17.1/F | 22.6/F |
| 1 | 19 | 4.5 | 4.80 | 0.7 | 10 | 9 | 9 | 9 | 9 | 9 | 82 | 65 | 8344G078 | 3 | 10.1/F | 11.6/F |
| 1 | 19 | 4.5 | 4.80 | 0.7 | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 17 ② | 82 | 82 | 8344G031 | 3 | 17.1/F | 22.6/F |
| DUAL SOLENOID ③ | | | | | | | | | | | | | | | | |
| 1/4 | 6 | .80 | .86 | 0.7 | 17 | 14 | 9 | 9 | 9 | 7 | 82 | 49 | 8344G044 | 4 | 6.1/F | 10.6/F |
| 3/8 | 10 | 1.4 | 1.89 | 0.7 | 17 | 14 | 9 | 9 | 9 | 7 | 82 | 49 | 8344G080 | 6 | 6.1/F | 10.6/F |
| 3/8 | 10 | 1.4 | 1.89 | 0.7 | 21 | 21 | 14 | - | - | - | 82 | - | 8344G050 | 7 | 10.1/F | - |
| 1/2 | 10 | 1.4 | 1.89 | 0.7 | 17 | 14 | 9 | 9 | 9 | 7 | 82 | 49 | 8344G082 | 6 | 6.1/F | 10.6/F |
| 3/4 | 19 | 5.2 | 4.80 | 0.7 | 21 | 21 | 14 | 9 | 9 | 7 | 82 | 49 | 8344G054 | 8 | 10.1/F | 10.6/F |
| 1 | 19 | 5.2 | 4.80 | 0.7 | 21 | 21 | 14 | 9 | 9 | 7 | 82 | 49 | 8344G056 | 8 | 10.1/F | 10.6/F |

① 25 psi (1.7 bar) minimum on light oil service. ② For best results, do not use valve rated 250 psi (17 bar) on mainline pressure of less than 125 psi (9 bar).
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Dimensions inches (mm)

| Const. Ref. | | ØD | E | F | G | H | J | K | L | N | P | W | X | Y | Z | Exhaust Pipe Size |
|-------------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|
| 1 | ins. | Ø .28 | .56 | 2.41 | 1.88 | 4.08 | 1.03 | 2.15 | 3.13 | .72 | 3.12 | 4.75 | 1.41 | 1.56 | .81 | 3/8 |
| | mm | Ø 7.1 | 14 | 61 | 48 | 104 | 26 | 55 | 80 | 18 | 79 | 121 | 36 | 40 | 21 | 3/8 |
| 2 | ins. | Ø .34 | .75 | 3.12 | 2.63 | 4.06 | 1.50 | 1.97 | 3.18 | .83 | 2.94 | 6.06 | 1.88 | 1.90 | .84 | 1/2 |
| | mm | Ø 8.6 | 19 | 79 | 67 | 103 | 38 | 50 | 81 | 21 | 75 | 154 | 47 | 48 | 21 | 1/2 |
| 3 | ins. | Ø .34 | 1.34 | 3.81 | 3.88 | 4.86 | 2.09 | 2.34 | 4.56 | 1.56 | 3.31 | 8.25 | 2.12 | 2.63 | 1.16 | 1 |
| | mm | Ø 8.6 | 34 | 97 | 99 | 123 | 53 | 59 | 116 | 39 | 84 | 210 | 54 | 67 | 30 | 1 |
| 4 | ins. | Ø .28 | .56 | 2.41 | 1.88 | 4.34 | 1.03 | 2.52 | 3.13 | .72 | 3.38 | 4.81 | 1.41 | 1.56 | .81 | 3/8 |
| | mm | Ø 7.1 | 14 | 61 | 48 | 110 | 26 | 64 | 80 | 18 | 86 | 122 | 36 | 40 | 21 | 3/8 |
| 6 | ins. | Ø .34 | .75 | 3.12 | 2.63 | 4.50 | 1.50 | 2.52 | 3.18 | .83 | 3.38 | 6.06 | 1.88 | 1.90 | .84 | 1/2 |
| | mm | Ø 8.6 | 19 | 79 | 67 | 114 | 38 | 64 | 81 | 21 | 86 | 154 | 47 | 48 | 21 | 1/2 |
| 7 | ins. | Ø .34 | .75 | 3.12 | 2.63 | 4.68 | 1.50 | 2.59 | 3.18 | .83 | 3.56 | 6.06 | 1.88 | 1.90 | .84 | 1/2 |
| | mm | Ø 8.6 | 19 | 79 | 67 | 119 | 38 | 66 | 81 | 21 | 90 | 154 | 47 | 48 | 21 | 1/2 |
| 8 | ins. | Ø .34 | 1.34 | 3.81 | 3.88 | 5.56 | 2.09 | 3.03 | 4.56 | 1.55 | 4.00 | 8.25 | 2.12 | 2.63 | 1.16 | 1 |
| | mm | Ø 8.6 | 34 | 97 | 99 | 141 | 53 | 77 | 116 | 39 | 102 | 210 | 54 | 67 | 30 | 1 |

Const. Ref 1 - 3

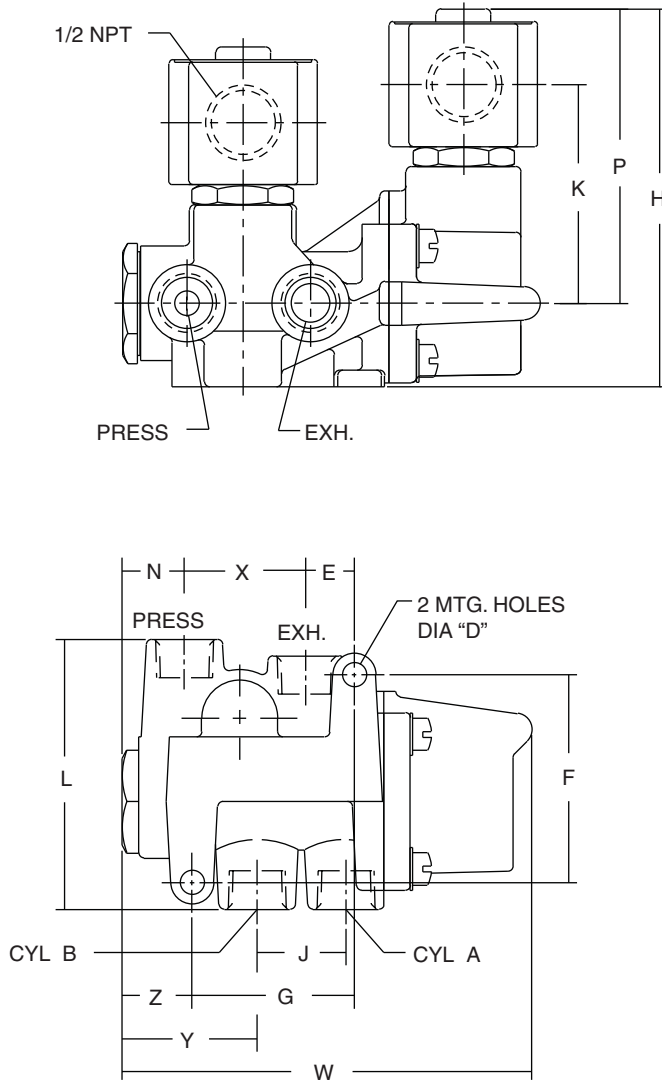


4-WAY

Dimensions inches (mm)

Const. Ref. 4 - 8

4-WAY



Features

- Compact valves for general service applications
- Low-cost, 4-way valve when low flow is sufficient
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Brass | 316 Stainless Steel |
| Seals and Disc | NBR and PA | FKM, PA and UR |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |
| Piston | PA | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|---------------------|--------|---------------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof (EF) | | Explosionproof (EV) | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 | 274614 | 274714 |

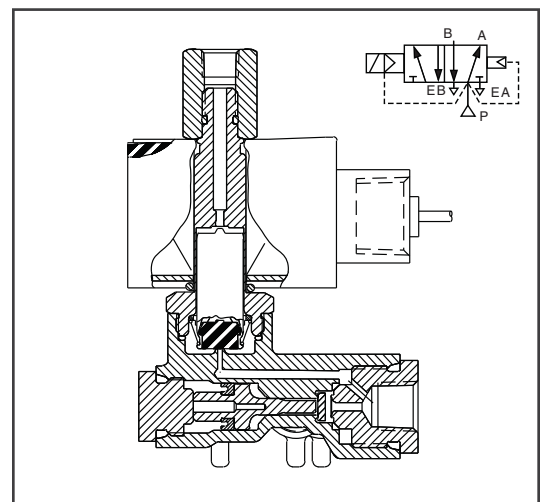
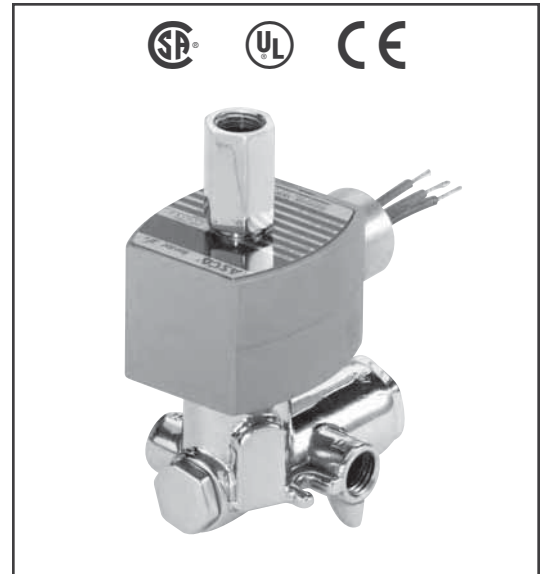
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed as General Purpose Valve.

EV8345G081 solenoid only UL approved.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Important

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

Refer to *Engineering Section* for details.

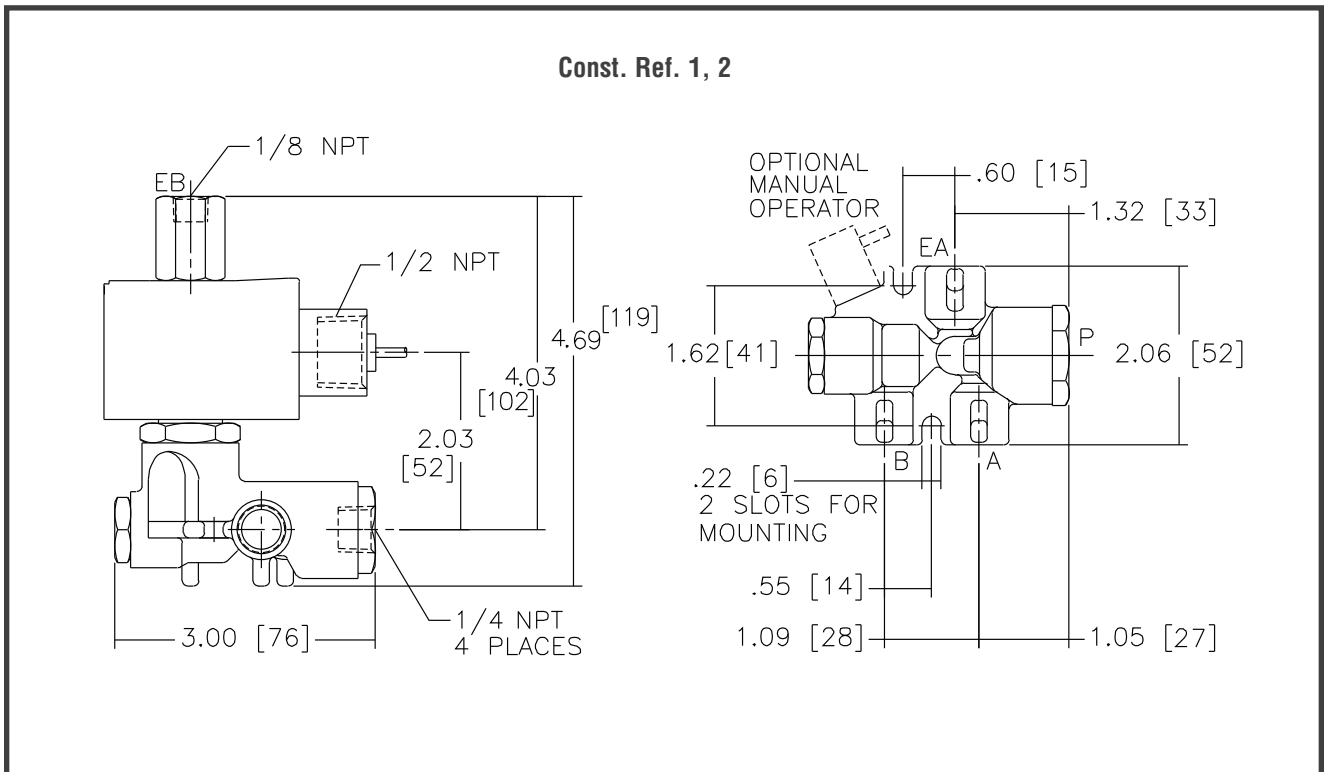
Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | Watt Rating/Class of Coil Insulation | |
|--|---------------------|------|----------------|------|---------------------------------------|---------------|-------|------------------|---------------|-------|---------------------|-----|----------------|----------------|----------------------|----|--------------------------------------|------------------|
| | Press. | Exh. | Inlet | Exh. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Catalog Number | Const. Ref. | AC | DC | |
| | | | | | Min. | Air-Inert Gas | Water | Lt. Oil @ 50 SSU | Air-Inert Gas | Water | | | | | | | | Lt. Oil @ 50 SSU |
| SINGLE SOLENOID | | | | | | | | | | | | | | | | | | |
| 1/4 | 1/16 | 3/32 | .09 | .09 | 10 | 150 | 150 | 150 | 100 | 100 | 100 | 180 | 104 | 8345G001 | EV8345G081 | 1 | 10.1/F | 11.6/F |
| SINGLE SOLENOID AIR-ONLY CONSTRUCTION - Exhaust to Atmosphere | | | | | | | | | | | | | | | | | | |
| 1/4 | 1/16 | 3/32 | .09 | .09 | 10 | 150 | - | - | 100 | - | - | 180 | 104 | 8345H003 | - | 2 | 10.1/F | 11.6/F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | Watt Rating/Class of Coil Insulation | |
|--|-------------------|------|-----------------------|------|---------------------------------------|---------------|-------|------------------|---------------|-------|---------------------|----|----------------|----------------|----------------------|----|--------------------------------------|------------------|
| | Press. | Exh. | Inlet | Exh. | Max. AC | | | Max. DC | | | AC | DC | Catalog Number | Catalog Number | Const. Ref. | AC | DC | |
| | | | | | Min. | Air-Inert Gas | Water | Lt. Oil @ 50 SSU | Air-Inert Gas | Water | | | | | | | | Lt. Oil @ 50 SSU |
| SINGLE SOLENOID | | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 2 | .08 | .08 | 0.7 | 10 | 10 | 10 | 7 | 7 | 7 | 82 | 40 | 8345G001 | EV8345G081 | 1 | 10.1/F | 11.6/F |
| SINGLE SOLENOID AIR-ONLY CONSTRUCTION - Exhaust to Atmosphere | | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 2 | .08 | .08 | 0.7 | 10 | - | - | 7 | - | - | 82 | 40 | 8345H003 | - | 2 | 10.1/F | 11.6/F |

Dimensions inches (mm)



Features

- Unique sliding, sealing member
- Optional flow control regulates cylinder speed in either direction
- Dual solenoid versions hold last position, even after loss of electric power
- Dual solenoid operation: solenoid may be energized momentarily (1/10 second) or continuously
- Air/inert gas service only
- Durable and "non-sticking" sealing method
- Standard manual operator both momentary and maintained
- Optional flow control provides adjustable Cv from 0.2 to 0.8

Construction

| Valve Parts in Contact with Fluids | |
|---|---|
| Main Valve Body, Sub- and Manifold Base, End Caps | Aluminum |
| Pilot Valve Body | Molded CA |
| End Caps | Stainless Steel (non-metering) Molded CA (metering) |
| Seals | NBR (Carboxylated Nitrile) |
| Spool | Molded Delrin |
| Slide | Molded Delrin |
| Flow Plate | Ceramic (alumina) |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core and Plugnut | 302 Stainless Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|---------------------|--------|
| | DC Watts | AC | | | Spare Coil Part No. | |
| | | Watts | VA Holding | VA Inrush | AC | DC |
| F | 6.9 | 6.3 | 8.8 | 12.1 | 400125 | 400125 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

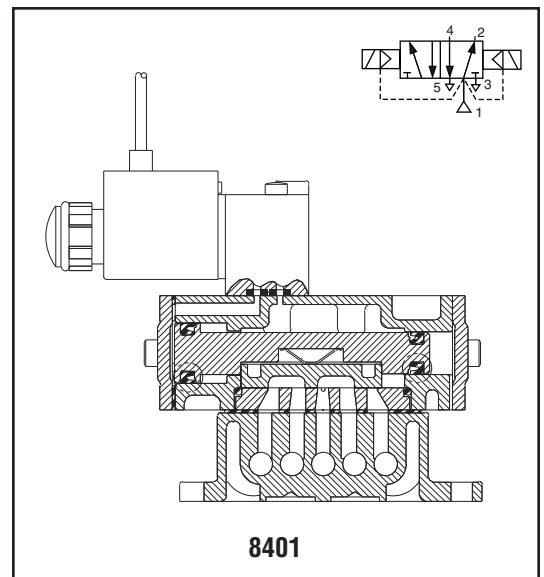
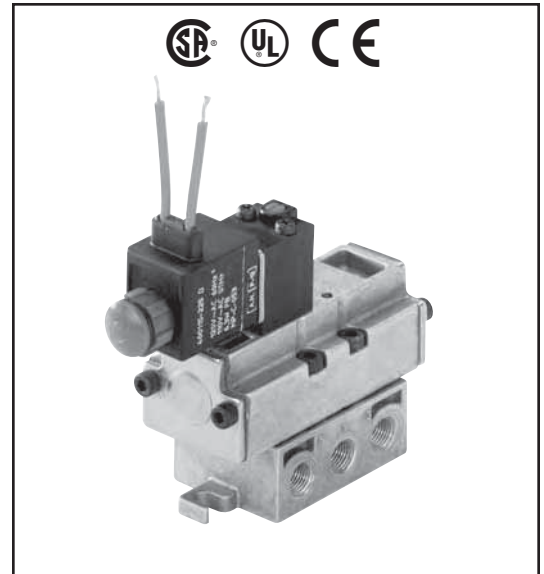
Solenoid Enclosures

Standard: Open Frame Solenoid.

Optional: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

(To order, substitute with prefix "WT".) Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, substitute with prefix "EF".)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

Standard Class F insulation:

AC: 0°F to 135°F (-18°C to 57°C) ("U" and "SC" prefix)

AC: 0°F to 104°F (-18°C to 40°C)

(optional "WT" or "EF" prefix)

DC: 0°F to 77°F (-18°C to 25°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL recognized components for "U" and "SC" prefix. With prefix "WT", UL listed as a General Purpose Valve. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Main Line Supply Pressure (psi) | | | Max. Fluid Temp. °F | | Molded Epoxy Open Frame Solenoid | | | | Watt Rating/ Class of Coil Insulation | | |
|---------------------------|---------------------|----------------|---------------------------------|---------------|---------|---------------------|-----|----------------------------------|-------------|------------------|-------------|---------------------------------------|-------|--|
| | | | Min. | Air-Inert Gas | | AC | DC | Sub-Base Mounted | | Manifold Mounted | | AC | DC | |
| | | | | Max. AC | Max. DC | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | | | |
| SINGLE SOLENOID | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .80 | 20 | 150 | 150 | 135 | 77 | U8401B101 | 2 | U8401B103 | 3 | 6.3/F | 6.9/F | |
| DUAL SOLENOID | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .80 | 20 | 150 | 150 | 135 | 77 | U8401B105 | 5 | U8401B107 | 6 | 6.3/F | 6.9/F | |
| SINGLE AIR PILOTED | | | | | | | | | | | | | | |
| 1/4 | 1/4 | .80 | 20 | 150 | 150 | 135 | 135 | 8402A101 | 8 | 8402A103 | 9 | - | - | |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Main Line Supply Pressure (bar) | | | Max. Fluid Temp. °C | | Molded Epoxy Open Frame Solenoid | | | | Watt Rating/ Class of Coil Insulation | | |
|---------------------------|-------------------|-----------------------|---------------------------------|---------------|---------|---------------------|----|----------------------------------|-------------|------------------|-------------|---------------------------------------|-------|--|
| | | | Min. | Air-Inert Gas | | AC | DC | Sub-Base Mounted | | Manifold Mounted | | AC | DC | |
| | | | | Max. AC | Max. DC | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | | | |
| SINGLE SOLENOID | | | | | | | | | | | | | | |
| 1/4 | 6 | .69 | 1.4 | 10 | 10 | 57 | 25 | U8401B101 | 2 | U8401B103 | 3 | 6.3/F | 6.9/F | |
| DUAL SOLENOID | | | | | | | | | | | | | | |
| 1/4 | 6 | .69 | 1.4 | 10 | 10 | 57 | 25 | U8401B105 | 5 | U8401B107 | 6 | 6.3/F | 6.9/F | |
| SINGLE AIR PILOTED | | | | | | | | | | | | | | |
| 1/4 | 6 | .69 | 1.4 | 10 | 10 | 57 | 57 | 8402A101 | 8 | 8402A103 | 9 | - | - | |

Dimensions: inches (mm)

| Const. Ref. | A | B | C | E | F |
|-------------|----------|-----|-----|------|--------|
| 2 | ins. .73 | .60 | .80 | 1.02 | 4.43 ① |
| | mm 19 | 15 | 20 | 26 | 112 ① |
| 3 | ins. X | X | .79 | .91 | 4.43 ① |
| | mm X | X | 20 | 23 | 112 ① |
| 5 | ins. .73 | .60 | .80 | 1.02 | X |
| | mm 19 | 15 | 20 | 26 | X |

① Add .54 (13.7mm) for metering.
See drawings for dimensions not shown.
Note: "EF" and "WT" dimensions shown by dotted lines.
IMPORTANT: Valve can be mounted in any position.

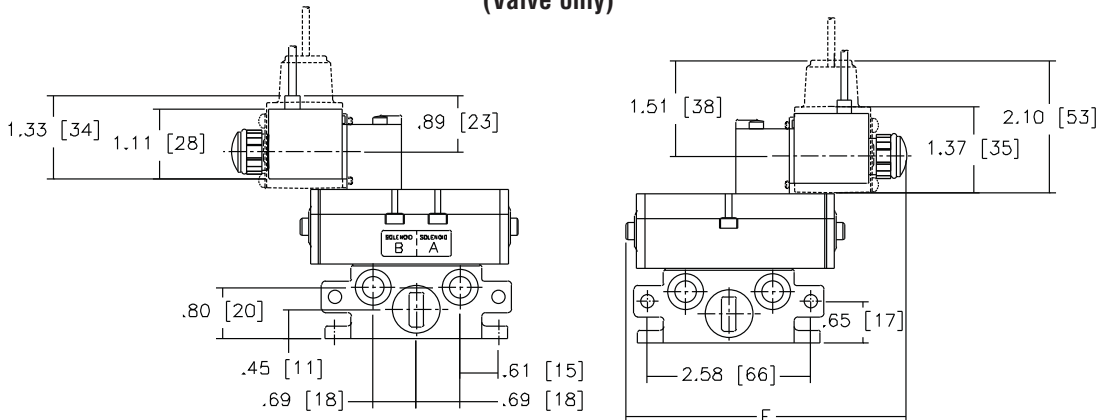
Const. Ref. 2

1.33 [34] 1.11 [28] .89 [23] 4.22 [107] 3.60 [91] 1.50 [38] .38 [10] 5 PLACES NPT 5 1-A A B-1

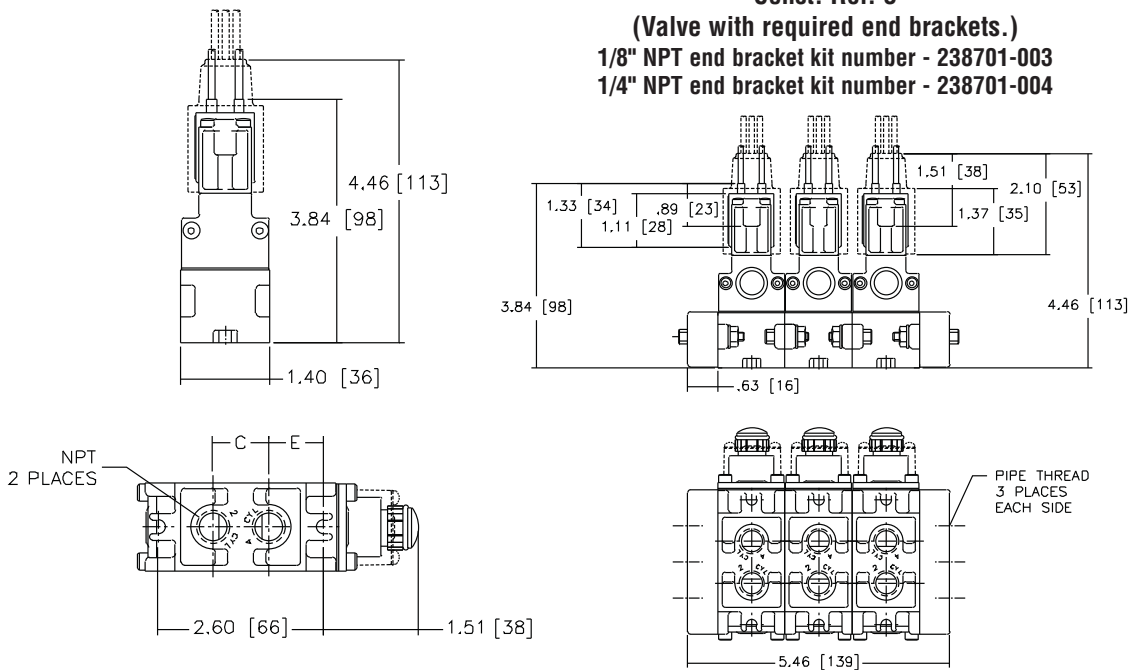
1.51 [38] 2.10 [53] 1.36 [34] 2.75 [70] 1.39 [35] .75 [19] R.110 2 PLACES

Dimensions: inches (mm)

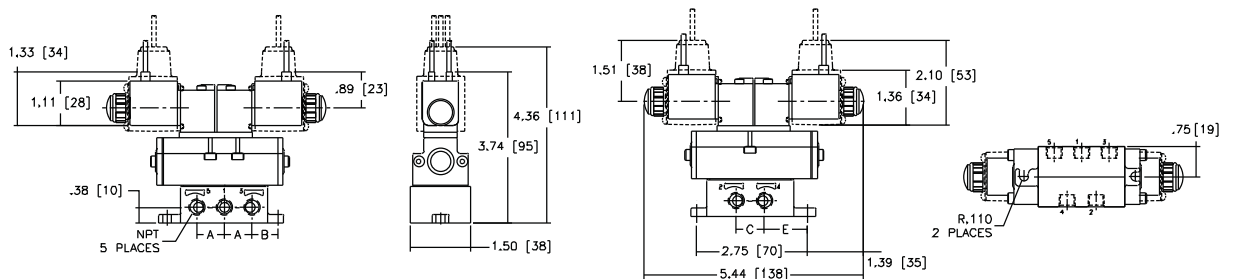
**Const. Ref. 3
(Valve only)**



**Const. Ref. 3
(Valve with required end brackets.)
1/8" NPT end bracket kit number - 238701-003
1/4" NPT end bracket kit number - 238701-004**



Const. Ref. 5



4-WAY

Dimensions: inches (mm)

4-WAY

| Const. Ref. | | A | B | C | E | F | G | H |
|-------------|------|-----|-----|-----|------|-----|--------|--------|
| 6* | ins. | X | X | .79 | .91 | X | X | X |
| | mm | X | X | 20 | 23 | X | X | X |
| 8 | ins. | .73 | .60 | .80 | 1.02 | .41 | 3.45 ② | 1.22 ① |
| | mm | 19 | 15 | 20 | 26 | 10 | 88 ② | 31 ① |
| 9* | ins. | X | X | .79 | .91 | X | 3.45 ② | 1.22 ① |
| | mm | X | X | 20 | 23 | X | 88 ② | 31 ① |

① Add .54 (13.7 mm) for metering. ② Add 1.07 (27.2 mm)

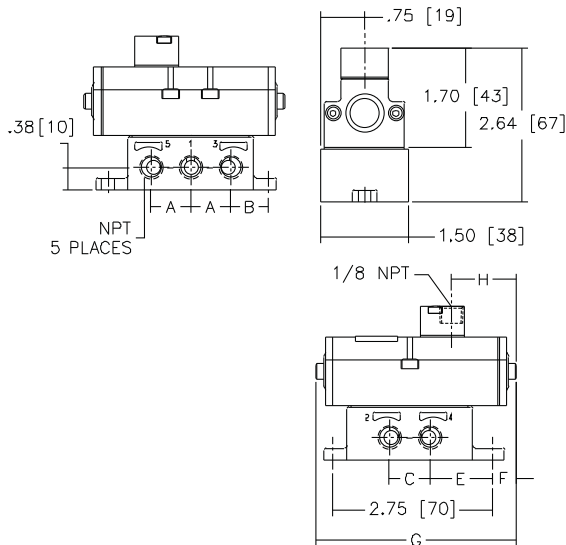
See drawings for dimensions not shown.

Note: "EF" and "WT" dimensions shown by dotted lines. Male 1/2" connection on EF/WT coil, conduit connector provided.

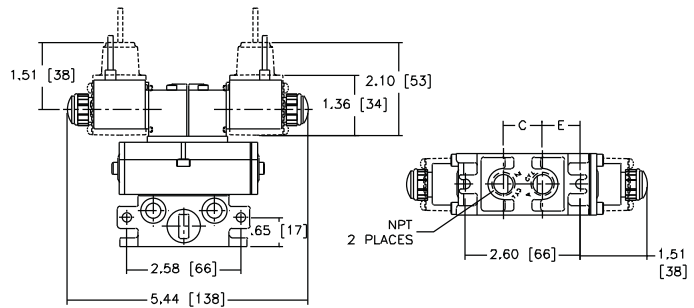
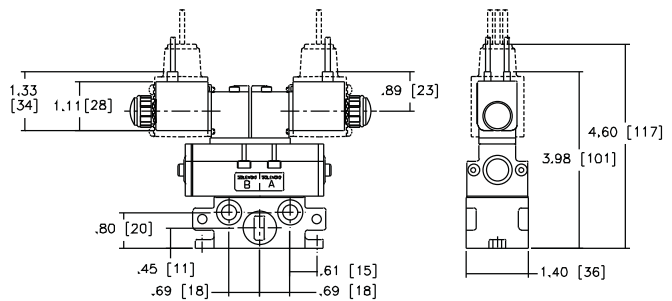
*For dimensions with required end brackets see Const. Ref. 3.

IMPORTANT: Valve can be mounted in any position.

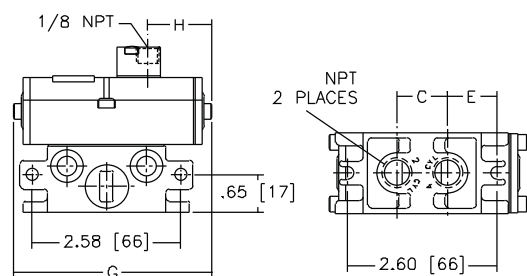
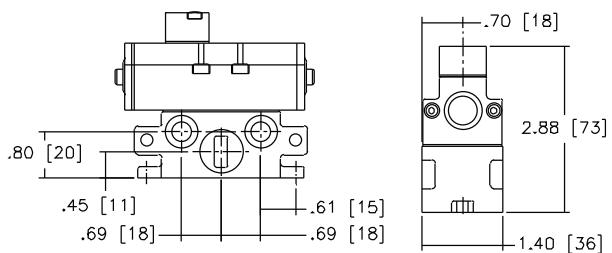
Const. Ref. 8



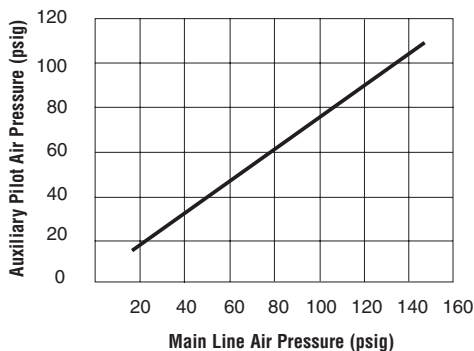
Const. Ref. 6



Const. Ref. 9



SINGLE AIR PILOTED VALVES
Auxiliary Pilot Air Pressure vs. Main Line Air Pressure



Features

- Compact spool valve with threaded port connections
- All exhaust ports are pipable, providing better protection against harsh environments
- Standard manual operator
- DIN, Watertight and Explosionproof solenoids available
- Single and dual solenoid constructions
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------------|
| Body | Black Anodized Aluminum |
| Spring | Phosphate Treated Black Steel |
| Shading Coil | Copper |
| Seals | NBR + PUR |
| Core and Core Tube | Stainless Steel/Brass |
| End Covers | 6/6 Glass Filled PA/FG |
| Spool | Aluminum |
| Internal Parts | Zamak, Steel, CA, Aluminum |

Electrical

| Standard Coil and Class of Insulation | Enclosure Type | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|----------------|-----------------------------------|----------|------------|-----------|------------------------|----------|
| | | DC Watts | AC Watts | VA Holding | VA Inrush | AC | DC |
| F | SC | 3 | 2.5 | 3.5 | 6 | 400125 | 400125 |
| F | SC | 6.9 | 5 | 7 | 15 | 43004649 | 43004647 |
| F | EF | 6.9 | 6.3 | 7 | 10.1 | 266762 | 270007 |
| F | WT | 6.9 | 6.3 | 7 | 10.1 | 266763 | 270008 |

Standard Voltages: SC: 24, 120, 240 Volts AC, 50-60 Hz; 12, 24, 120 Volts DC.
 WT and EF: 24/50-60HZ, (120/60, 110-120/50)①, (240/60, 220-240/50)② Volts AC;
 6, 12, 24, 120 Volts DC.
 ① Order as 120/60, 110/50
 ② Order as 240/60, 220/50

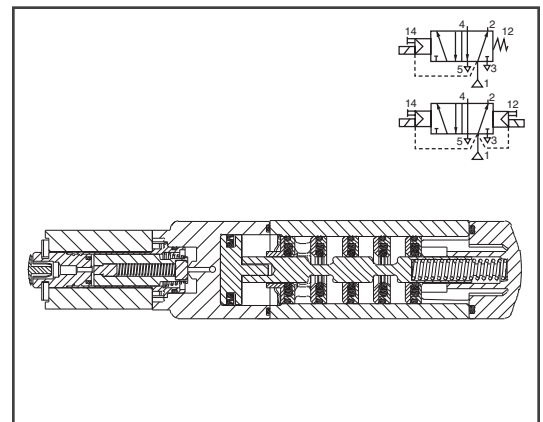
Solenoid Enclosures

Standard: - Prefix

SC = IP65 type DIN (open frame) per 46244

WT = Combination General Purpose and Watertight Types 1, 2, 3, 3S, 4, and 4X

EF = Combination Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, 6P, 7, 9 Class I, Div. 1 (Groups A - D) and Class II, Div. 1 Type 9 (Groups E-G)



Nominal Ambient Temp. Ranges

SC: AC/DC: 5°F to +140°F (-15°C to 60°C)

EF: AC: 5°F to +104°F (-15°C to 40°C)
 DC: 5°F to +77°F (-15°C to 25°C)

WT: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

Note: For temperatures below 32°F (0°C) moisture-free air must be used.

Refer to Engineering Section for details.

Approvals

SC (2.5W and 3W only) UL recognized component, CSA certified.

WT: UL recognized component, CSA certified.

EF: UL and CSA solenoid approval.
 Meets applicable CE directives.

Refer to Engineering Section for details.

Note

When mounting inline 8551 valves with WT & EF solenoids (6.3 & 6.9 watts), ASCO recommends using two (2) 1/8" thick washers under the valve body to provide clearance for the solenoid coil.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Fluid Temp. °F (for single and dual solenoid) | | | Single Solenoid | Dual Solenoid | Watt Rating/ Class of Coil Insulation | |
|---------------------------------|---------------------|----------------|---------------------------------------|------|---|---------|---------|-----------------|----------------|---------------------------------------|-----|
| | | | Min. | Max. | Min. | Max. AC | Max. DC | Catalog Number | Catalog Number | AC | DC |
| OPEN FRAME DIN COIL | | | | | | | | | | | |
| 1/4 | 1/4 | .86 | 30 | 150 | 5 | 140 | 140 | SC8551A017MS | SC8551A018MS | 2.5 | 3 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | SC8553A017MS | SC8553A018MS | 5 | 6.9 |
| WATERTIGHT ENCLOSURE | | | | | | | | | | | |
| 1/4 | 1/4 | .86 | 30 | 150 | 5 | 104 | 77 | WT8551A017MS | WT8551A018MS | 6.3 | 6.9 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | WT8553A017MS | WT8553A018MS | 6.3 | 6.9 |
| EXPLOSIONPROOF ENCLOSURE | | | | | | | | | | | |
| 1/4 | 1/4 | .86 | 30 | 150 | 5 | 104 | 77 | EF8551A017MS | EF8551A018MS | 6.3 | 6.9 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | EF8553A017MS | EF8553A018MS | 6.3 | 6.9 |

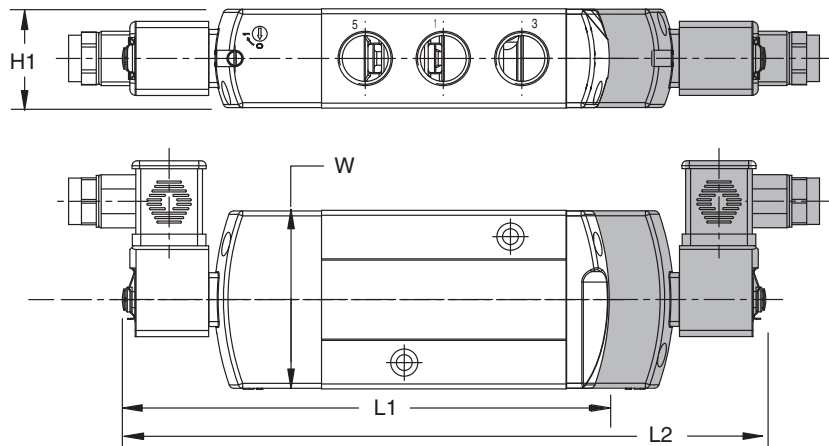
Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Fluid Temp. °C (for single and dual solenoid) | | | Single Solenoid | Dual Solenoid | Watt Rating/ Class of Coil Insulation | |
|---------------------------------|-------------------|-----------------------|---------------------------------------|------|---|---------|---------|-----------------|----------------|---------------------------------------|-----|
| | | | Min. | Max. | Min. | Max. AC | Max. DC | Catalog Number | Catalog Number | AC | DC |
| OPEN FRAME DIN COIL | | | | | | | | | | | |
| 1/4 | 6 | .75 | 2 | 10 | -15 | 60 | 60 | SC8551A017MS | SC8551A018MS | 2.5 | 3 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | SC8553A017MS | SC8553A018MS | 5 | 6.9 |
| WATERTIGHT ENCLOSURE | | | | | | | | | | | |
| 1/4 | 6 | .75 | 2 | 10 | -15 | 40 | 25 | WT8551A017MS | WT8551A018MS | 6.3 | 6.9 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | WT8553A017MS | WT8553A018MS | 6.3 | 6.9 |
| EXPLOSIONPROOF ENCLOSURE | | | | | | | | | | | |
| 1/4 | 6 | .75 | 2 | 10 | -15 | 40 | 25 | EF8551A017MS | EF8551A018MS | 6.3 | 6.9 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | EF8553A017MS | EF8553A018MS | 6.3 | 6.9 |

Dimensions inches (mm)

| Series | 8551 | 8553 |
|--------|------------|-------------|
| NPT | 1/4 | 1/2 |
| L1 | 6.18 (157) | 7.76 (197) |
| L2 | 8.28 (210) | 10.25 (260) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

NOTE: Valve shown with CM22 DIN terminal coil and connector. Connector sold separately.





Pilot Operated • High Flow
RedHat II Spool Valves
 Anodized Aluminum, Brass and Stainless Steel Bodies
 1/4" and 1/2" NPT

5/2•5/3
SERIES
8551
8553

Features

- Compact Spool Valve
- Single and dual solenoid constructions available
- Unique design combines hard T-seals and flexible o-rings, provides bubble-tight shutoff, resistance to dirt and multimillion cycle life controlling air or inert gas
- Low Power and Intrinsically Safe construction available
See Special Service Pilot Valve Section for details

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|--|-----------------------------|----------------------|
| Body | Aluminum, Black Anodized | Brass | 316L Stainless Steel |
| End Cover (Spring end) | Glass-filled Polyamide | Brass | 316L Stainless Steel |
| Spool Valve Internals | Zamak, Stainless Steel, Acetal (POM), Aluminum | Brass, Acetal (POM), Delrin | |
| Pilot End Covers | Aluminum, Black Anodized | Brass | 316L Stainless Steel |
| Core Tube | Stainless Steel | | |
| Core and Plugnut | Stainless Steel | | |
| Springs | Stainless Steel | | |
| Seals and Discs | NBR | | |
| Top Disc | Nylon (PA) | | |
| Core Guide | Acetal | | |
| Seat and Seat Insert | Brass, Acetal | | |
| Shading Coil | Copper | | |
| Rider Ring (low power) | PTFE | | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |

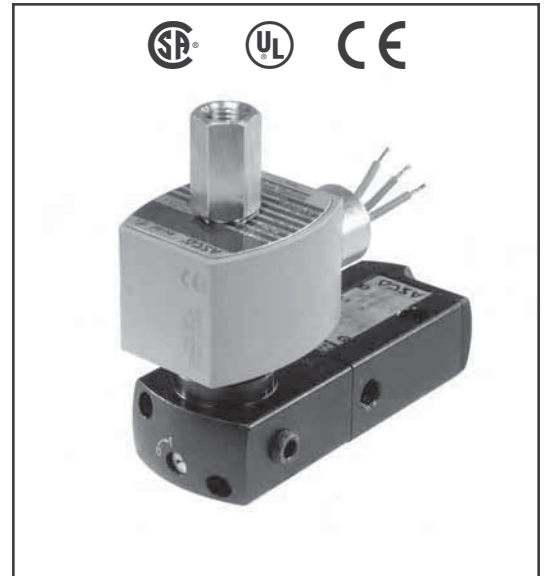
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

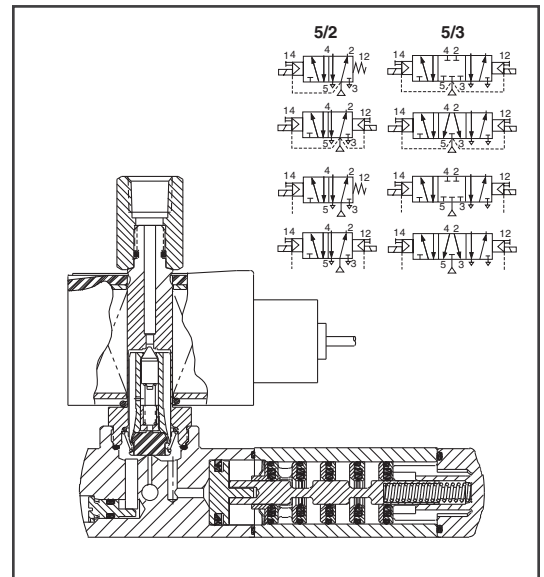
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or "EV" for stainless steel) to catalog number.)

See Optional Features Section for other available options.



4-WAY



Nominal Ambient Temp. Ranges

| Body Material | Description |
|-----------------|--|
| Aluminum | AC: 5°F to 125°F (-15°C to 52°C) DC: 5°F to 104°F (-15°C to 40°C) |
| Brass | AC: -40°F to 125°F (-40°C to 52°C) |
| Stainless Steel | DC: -40°F to 104°F (-40°C to 40°C) |

Approvals

UL/CSA approvals for aluminum constructions pending. EF and EV are UL listed solenoids. CSA certified. Meet applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | | Dual Solenoid | | | | | | | | | | | |
|----------------------------|------------------|---------------------|----------------|---------------------------------------|---------|---------|---------------------|-----|--------------|----------------|-------------|---------------------------------------|---------|-----|---------------------|--------------|----|----------------|-------------|--------------------------------------|----|
| | | | | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | | Catalog Number | Const. Ref. | Watt Rating/Class of Coil Insulation | |
| | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | AC | DC |
| | | | | Min. | Max. AC | Max. DC | AC | DC | AC | DC | Min. | Max. AC | Max. DC | AC | DC | AC | DC | | | | |
| Aluminum 5/2 | 1/4 | 1/4 | .86 | 30 | 150 | 120 | 140 | 120 | 8551G417 | 1 | 30 | 150 | 120 | 140 | 120 | 8551G418 | 1 | 10.1/F | 11.6/F | | |
| Aluminum 5/3 Center Closed | | | | | | | | | - | | | | | | | 8551G467 | | | | | |
| Aluminum 5/3 Center Open | | | | | | | | | - | | | | | | | 8551G468 | | | | | |
| Brass 5/2 | | | | | | | | | EF8551G419 ① | | | | | | | EF8551G420 ① | | | | | |
| 316L Stainless Steel 5/2 | | | | | | | | | EV8551G421 ② | | | | | | | EV8551G422 ② | | | | | |
| Aluminum 5/2 | 1/2 | 1/2 | 3.7 | 30 | 150 | 120 | 140 | 120 | 8553G417 | 1 | 30 | 150 | 120 | 140 | 120 | 8553G418 | 1 | 10.1/F | 11.6/F | | |

① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

Specifications (Metric units)

| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Single Solenoid | | | | | | Dual Solenoid | | | | | | | | | | | |
|----------------------------|------------------|-------------------|-----------------------|---------------------------------------|---------|---------|---------------------|----|--------------|----------------|-------------|---------------------------------------|---------|----|---------------------|--------------|---------|----------------|-------------|--------------------------------------|----|
| | | | | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | | Catalog Number | Const. Ref. | Watt Rating/Class of Coil Insulation | |
| | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | AC | DC |
| | | | | Min. | Max. AC | Max. DC | AC | DC | AC | DC | Min. | Max. AC | Max. DC | AC | DC | Min. | Max. AC | Max. DC | AC | | |
| Aluminum 5/2 | 1/4 | 6.4 | .75 | 2 | 10 | 8.2 | 60 | 48 | 8551G417 | 1 | 2 | 10 | 8.2 | 60 | 48 | 8551G418 | 1 | 10.1/F | 11.6/F | | |
| Aluminum 5/3 Center Closed | | | | | | | | | - | | | | | | | 8551G467 | | | | | |
| Aluminum 5/3 Center Open | | | | | | | | | - | | | | | | | 8551G468 | | | | | |
| Brass 5/2 | | | | | | | | | EF8551G419 ① | | | | | | | EF8551G420 ① | | | | | |
| 316L Stainless Steel 5/2 | | | | | | | | | EV8551G421 ② | | | | | | | EV8551G422 ② | | | | | |
| Aluminum 5/2 | 1/2 | 13 | 3.15 | 2 | 10 | 8.2 | 60 | 48 | 8553G417 | 1 | 2 | 10 | 8.2 | 60 | 48 | 8553G418 | 1 | 10.1/F | 11.6/F | | |

① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

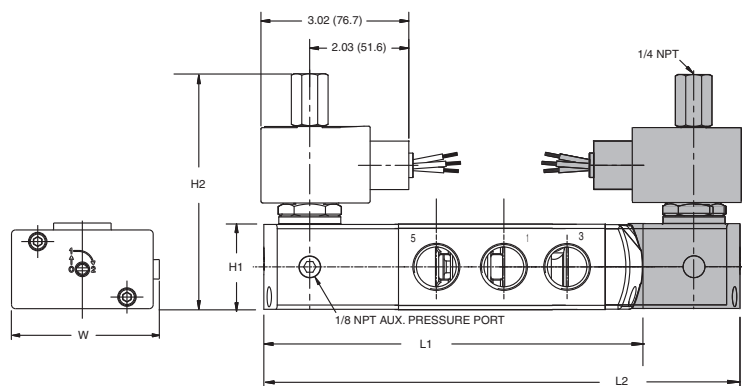
Dimensions inches (mm)

| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.63 (143) | 7.06 (179) |
| L2 ① | 7.20 (183) | 8.86 (225) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

① Manual override option MH adds .250", MS option adds .468" to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |

Const. Ref. 1





Electronically Enhanced Solenoid Valves (Next Generation)

RedHat Next Generation is the future of solenoid valve technology, designed and manufactured to provide new capabilities. The Next Generation of solenoid valves provides lower operating cost, and represents an advancement in the performance, reliability, and ruggedness that you have come to expect from ASCO.

RedHat Next Generation valves use electronics technology to manage power, providing a new standard of operation. The solenoid incorporates a power management circuit providing lower power consumption, enhanced pressure and flow ratings, and electrical surge suppression to both the solenoid and electronic controls.

The new solenoid draws only 2 watts of power. A conventional solenoid with the same performance can draw as high as 17 watts of power. The savings in power usage over the installed life of the valve will lower the total cost of ownership up to 14%.

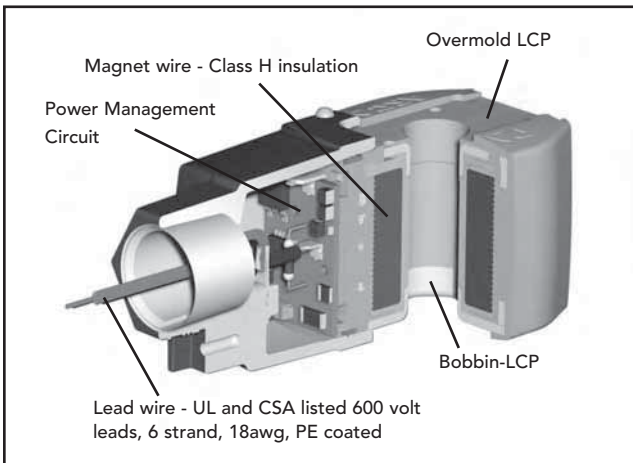
The new technology accepts both AC and DC voltages without sacrificing flow or pressure specifications. DC performance has been increased by 150% to 500% from today's

industry standards, making the valves' DC characteristics equivalent to AC pressure and flow values. This simplifies your control by eliminating the need for AC output cards, reduces wiring costs, and provides safer working environments for users operating on DC.

RedHat Next Generation coils are offered in three voltage ranges covering most electrical requirements – 100-240/AC or DC, 24-99/AC or DC, or 12-24/DC. Each coil has built-in electrical surge suppression that protects the coil from external voltage spikes and eliminates inductive voltage spikes associated with conventional solenoids. An optional solenoid is available for use in Class I, Division 2 hazardous locations.

ASCO RedHat Next Generation addresses many other operating characteristics that will further improve the life of your solenoid valves. These include a much lower temperature rise, and an increase in valve ambient temperature rating to 140°F/60°C. Because of our confidence in the rugged design of the RedHat Next Generation solenoids, ASCO is pleased to extend a 3-year warranty on the coils.

ELECTRONICALLY ENHANCED



Index

| General Description | Pipe Size (NPT) | Page |
|-----------------------|-----------------|---------|
| 2-Way Normally Closed | 1/4" - 2" | 94-98 |
| 2-Way Normally Open | 1/4" - 3/4" | 94-98 |
| 3-Way Normally Closed | 1/4" - 3/4" | 99-103 |
| 3-Way Normally Open | 1/4" | 99-103 |
| 3-Way Universal | 1/4" | 99-103 |
| 4-Way Inline | 1/4" - 1" | 104-106 |



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 - Over 2000 of ASCO's most popular products qualify for ASCO Today's guarantee
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Features

- Increase in DC pressure ratings to AC levels on all products (up to a 500% improvement)
- Lower power operation
- Voltage ranging
- Built in surge suppression
- Elimination of AC hum
- Increase in AC and DC operating temperatures
- Low solenoid temperature rise
- Longer coil life due to lower operating temperatures and electrical surge suppression
- Solenoid approvals to UL, CSA, and CE directives
- Available with Class I, Division 2 coils (EE prefix)



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How to order

Find the valve that you are looking for in the provided specifications tables.

The tables contain the following information designed to help you in making your selection:

| Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow | Operating Pressure Differential (psi) | | | | Max Fluid Temp. °F | Brass ① | Const. Ref. | Agency | | Stainless Steel | Const. Ref. | Agency | | Wattage AC/DC | Approx. Shipping Weight (lbs.) |
|------------------|---------------------|---------|---------------------------------------|---------------|-------|-----------|--------------------|----------|-------------|--------|----|-----------------|-------------|--------|---|---------------|--------------------------------|
| | | | Min. | Max. AC/DC | | | | | | UL | UL | | | | | | |
| | | | | Air-Inert Gas | Water | Light Oil | | | | | | | | | | | |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | - | 180 | 8210P094 | 4 | ○ | - | - | - | - | 2 | 3.2 | |

① When ordering a valve product, specify the ASCO base catalog number (Ex. **8210P094**). This number will always be 8 digits long.

Choose one of the three operating voltage ranges (100-240V/50-60Hz/DC, 24-99V/50-60Hz/DC or 12-24/DC) and add it to the base catalog number (Ex. 8210P094 **24-99V/50-60Hz/DC**).

If you want to enhance the product with one or more of the options allowed in the Optional Features Chart for that catalog number, please add the appropriate prefix or suffix (as shown):

| Pipe Size (ins.) | Orifice Dia. (ins.) | Solenoid Options ② | Base Catalog Number | | Resilient Materials ③ | | | | | | | | Other ③ | | Standard Rebuild Kit ④ | |
|------------------|---------------------|--------------------------|---------------------|-----------------|-----------------------|-----|------|----------|----------------|------|----------|--------|-----------------|------------------|------------------------|-----------------------|
| | | Class I, Division 2 Coil | Brass | Stainless Steel | NBR | FKM | EPDM | Neoprene | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass AC/DC | Stainless Steel AC/DC |
| 1/2 | 5/8 | EE | 8210P094 | - | ● | V | E | J | N | - | - | VH | MO | MB | 322670 | - |

② Optional Class I, Division 2 solenoid (Ex. **EE8210P094** 24-99V/50-60Hz/DC)

③ If an FKM elastomer and manual operator are required, add VMO to the back of the base catalog number. (Ex. 8210P094**VMO** 24-99V/50-60Hz/DC)

④ When ordering a rebuild kit for a valve, supply the rebuild kit number as shown in the table. (Ex. 322670) When ordering a rebuild kit for a valve with a suffix, add the suffix to the appropriate standard rebuild kit. (Ex. The rebuild kit for the above valve with FKM is 322670-V)

All constructions are available with prefix EE for Class I, Division 2 requirements.

When ordering a replacement coil, select from the following:

| Voltage Range | Valve Prefix | Replacement Coil Part Number |
|---------------------|--------------|------------------------------|
| 100-240V/50-60Hz/DC | - | 250404-601-* |
| 24-99V/50-60Hz/DC | - | 250404-602-* |
| 12-24/DC | - | 250404-603-* |
| 100-240V/50-60Hz/DC | EE | 250504-601-* |
| 24-99V/50-60Hz/DC | EE | 250504-602-* |
| 12-24/DC | EE | 250504-603-* |

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Class I, Division 2 for Hazardous Locations and Watertight, Types 3, 3S, 4, 4X. (To order, add prefix "EE" to catalog number.)

Note

See Engineering Section for valve parts in contact with fluids and additional information.

2-Way Features

- Two-way (2/2) Next Generation solenoid valves have one inlet port and one outlet port
- Control of air, water, light oil, and non-corrosive media
- Normally closed (opens when energized) and normally open (closed when energized) operation
- Pipe sizes – 1/4 to 2 inch

2-Way Specifications (English units)

| Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow | Operating Pressure Differential (psi) | | | | Max Fluid Temp. °F | Brass | Const. Ref. | Agency UL | Stainless Steel | Const. Ref. | Agency UL | Wattage AC/DC | Approx. Shipping Weight (lbs.) |
|--|---------------------|---------|---------------------------------------|-------|---------------------|------|--------------------|----------|-------------|-----------|-----------------|-------------|-----------|---------------|--------------------------------|
| | | | Max. AC/DC | | | Min. | | | | | | | | | |
| | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | |
| 1/4 | 1/8 | 0.34 | 0 | 500 | 500 | 330 | 180 | 8262P232 | 1 | ○ | - | - | - | 2 | 2.4 |
| 1/4 | 5/32 | 0.47 | 0 | 290 | 250 | 250 | 180 | 8262P202 | 1 | ○ | 8262P220 | 1 | ○ | 2 | 2.4 |
| 1/4 | 7/32 | 0.72 | 0 | 145 | 125 | 120 | 180 | 8262P208 | 1 | ○ | 8262P226 | 1 | ○ | 2 | 2.4 |
| 1/4 | 9/32 | 0.96 | 0 | 90 | 85 | 80 | 180 | 8262P212 | 1 | ○ | 8262P230 | 1 | ○ | 2 | 2.4 |
| 1/4 | 5/16 | 1.5 | 10 | 1500 | 1500 | 1500 | 180 | 8223P025 | 2 | - | - | - | - | 2 | 2.9 |
| 3/8 | 5/32 | 0.52 | 0 | 150 | 150 | 100 | 180 | 8263P200 | 3 | ○ | - | - | - | 2 | 1.8 |
| 3/8 | 9/32 | 0.85 | 0 | 80 | 80 | 70 | 180 | 8263P210 | 3 | ○ | - | - | - | 2 | 2.3 |
| 3/8 | 5/16 | 1.5 | 10 | 1500 | 1500 | 1500 | 180 | 8223P027 | 2 | - | - | - | - | 2 | 2.9 |
| 3/8 | 5/8 | 3 | 0 | 150 | 150 | - | 180 | 8210P093 | 4 | ○ | - | - | - | 2 | 3.2 |
| 1/2 | 3/8 | 3.2 | 25 | 1500 | 1500 | 1500 | 180 | 8223P003 | 5 | - | 8223P010 | 6 | - | 2 | 3.4 |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | - | 180 | 8210P094 | 4 | ○ | - | - | - | 2 | 3.2 |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | 125 | 180 | - | - | - | 8210P087 | 7 | ● | 2 | 3.5 |
| 1/2 | 5/8 | 4 | 5 | 300 | 300 | 300 | 180 | 8210P007 | 4 | ○ | - | - | - | 2 | 3.2 |
| 3/4 | 5/8 | 4.5 | 0 | 150 | 150 | 125 | 180 | - | - | - | 8210P088 | 7 | ● | 2 | 3.5 |
| 3/4 | 3/4 | 5 | 0 | 150 | 150 | - | 180 | 8210P095 | 7 | ○ | - | - | - | 2 | 3.4 |
| 3/4 | 3/4 | 5 | 0 | 3 | 3 | - | 180 | 8030P003 | 8 | ○ | - | - | - | 2 | 3.4 |
| 3/4 | 3/4 | 7.8 | 25 | 750 | 750 | 750 | 180 | 8223P005 | 9 | - | - | - | - | 2 | 4.4 |
| 1 | 1 | 13 | 5 | 150 | 150 | 100 | 180 | 8210P004 | 10 | ○ | - | - | - | 2 | 5.4 |
| 1 1/4 | 1 1/8 | 15 | 5 | 150 | 150 | 100 | 180 | 8210P008 | 10 | ○ | - | - | - | 2 | 6.6 |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 150 | 150 | 100 | 180 | 8210P022 | 11 | ○ | - | - | - | 2 | 7.7 |
| 2 | 1 3/4 | 43 | 5 | 150 | 125 | 90 | 180 | 8210P100 | 12 | ● | - | - | - | 2 | 9.9 |
| General Service - Normally Open | | | | | | | | | | | | | | | |
| 1/4 | 3/32 | 0.17 | 0 | 300 | 250 | 230 | 140 | 8262P261 | 13 | ● | - | - | - | 2 | 2.6 |
| 1/4 | 1/8 | 0.35 | 0 | 130 | 110 | 100 | 180 | 8262P262 | 13 | ● | - | - | - | 2 | 2.6 |
| 1/4 | 5/32 | 0.49 | 0 | 85 | 75 | 60 | 180 | 8262P263 | 14 | ● | - | - | - | 2 | 2.6 |
| 1/4 | 9/32 | 0.96 | 0 | 30 | 20 | 20 | 180 | 8262P265 | 14 | ● | - | - | - | 2 | 2.6 |
| 3/8 | 5/8 | 3 | 0 | 150 | 150 | 125 | 180 | 8210P033 | 15 | ● | - | - | - | 2 | 3.4 |
| 1/2 | 5/8 | 4 | 0 | 150 | 150 | 125 | 180 | 8210P034 | 15 | ● | - | - | - | 2 | 3.4 |
| 3/4 | 3/4 | 5.5 | 0 | 150 | 150 | 125 | 180 | 8210P035 | 16 | ● | - | - | - | 2 | 4.2 |
| 3/4 | 3/4 | 5.5 | 0 | 2 | 2 | - | 180 | 8030P083 | 17 | ● | - | - | - | 2 | 3.4 |

○ = Safety Shut-off Valve. ● = General Purpose Valve

2-Way Specifications (Metric units)

| Pipe Size (ins.) | Orifice Dia. (mm) | Kv Flow | Operating Pressure Differential (bar) | | | | Max Fluid Temp. °C | Brass | Const. Ref. | Agency UL | Stainless Steel | Const. Ref. | Agency UL | Wattage AC/DC | Approx. Shipping Weight (kgs) |
|--|-------------------|---------|---------------------------------------|---------------|-------|---------------------|--------------------|----------|-------------|-----------|-----------------|-------------|-----------|---------------|-------------------------------|
| | | | Min. | Max. AC/DC | | | | | | | | | | | |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | |
| 1/4 | 3.2 | 0.29 | 0 | 34 | 34 | 22 | 82 | 8262P232 | 1 | ○ | - | - | - | 2 | 1.1 |
| 1/4 | 3.9 | 0.4 | 0 | 20 | 17 | 17 | 82 | 8262P202 | 1 | ○ | 8262P220 | 1 | ○ | 2 | 1.1 |
| 1/4 | 5.5 | 0.62 | 0 | 10 | 8 | 8 | 82 | 8262P208 | 1 | ○ | 8262P226 | 1 | ○ | 2 | 1.1 |
| 1/4 | 7.1 | 0.83 | 0 | 6 | 5 | 5 | 82 | 8262P212 | 1 | ○ | 8262P230 | 1 | ○ | 2 | 1.1 |
| 1/4 | 7.9 | 1.3 | 0.7 | 103 | 103 | 103 | 82 | 8223P025 | 2 | - | - | - | - | 2 | 1.3 |
| 3/8 | 3.9 | 0.45 | 0 | 10 | 10 | 7 | 82 | 8263P200 | 3 | ○ | - | - | - | 2 | 0.8 |
| 3/8 | 7.1 | 0.73 | 0 | 5 | 5 | 5 | 82 | 8263P210 | 3 | ○ | - | - | - | 2 | 1 |
| 3/8 | 7.9 | 1.3 | 0.7 | 103 | 103 | 103 | 82 | 8223P027 | 2 | - | - | - | - | 2 | 1.3 |
| 3/8 | 15.8 | 2.6 | 0 | 10 | 10 | - | 82 | 8210P093 | 4 | ○ | - | - | - | 2 | 1.4 |
| 1/2 | 9.5 | 2.7 | 1.7 | 103 | 103 | 103 | 82 | 8223P003 | 5 | - | 8223P010 | 6 | - | 2 | 1.5 |
| 1/2 | 15.8 | 3.4 | 0 | 10 | 10 | - | 82 | 8210P094 | 4 | ○ | - | - | - | 2 | 1.4 |
| 1/2 | 15.8 | 3.4 | 0 | 10 | 10 | 8 | 82 | - | - | - | 8210P087 | 7 | ● | 2 | 1.6 |
| 1/2 | 15.8 | 3.4 | 0.3 | 20 | 20 | 20 | 82 | 8210P007 | 4 | ○ | - | - | - | 2 | 1.4 |
| 3/4 | 15.8 | 3.9 | 0 | 10 | 10 | 8 | 82 | - | - | - | 8210P088 | 7 | ● | 2 | 1.6 |
| 3/4 | 19 | 4.3 | 0 | 150 | 150 | - | 82 | 8210P095 | 7 | ○ | - | - | - | 2 | 1.5 |
| 3/4 | 19 | 4.3 | 0 | 0.2 | 0.2 | - | 82 | 8030P003 | 8 | ○ | - | - | - | 2 | 1.5 |
| 3/4 | 19 | 6.7 | 1.7 | 51 | 51 | 51 | 82 | 8223P005 | 9 | - | - | - | - | 2 | 2 |
| 1 | 25.4 | 11.2 | 0.3 | 10 | 10 | 7 | 82 | 8210P004 | 10 | ○ | - | - | - | 2 | 2.4 |
| 1 1/4 | 28.5 | 13 | 0.3 | 10 | 10 | 7 | 82 | 8210P008 | 10 | ○ | - | - | - | 2 | 3 |
| 1 1/2 | 31.7 | 19.4 | 0.3 | 10 | 10 | 7 | 82 | 8210P022 | 11 | ○ | - | - | - | 2 | 3.5 |
| 2 | 44.4 | 37 | 0.3 | 10 | 8 | 6 | 82 | 8210P100 | 12 | ● | - | - | - | 2 | 4.5 |
| General Service - Normally Open | | | | | | | | | | | | | | | |
| 1/4 | 2.3 | 0.14 | 0 | 20 | 17 | 16 | 60 | 8262P261 | 13 | ● | - | - | - | 2 | 1.2 |
| 1/4 | 3.1 | 0.3 | 0 | 9 | 7 | 7 | 82 | 8262P262 | 13 | ● | - | - | - | 2 | 1.2 |
| 1/4 | 3.9 | 0.42 | 0 | 6 | 5 | 4 | 82 | 8262P263 | 14 | ● | - | - | - | 2 | 1.2 |
| 1/4 | 7.1 | 0.83 | 0 | 2 | 1 | 1 | 82 | 8262P265 | 14 | ● | - | - | - | 2 | 1.2 |
| 3/8 | 15.8 | 2.6 | 0 | 10 | 10 | 8 | 82 | 8210P033 | 15 | ● | - | - | - | 2 | 1.5 |
| 1/2 | 15.8 | 3.4 | 0 | 10 | 10 | 8 | 82 | 8210P034 | 15 | ● | - | - | - | 2 | 1.5 |
| 3/4 | 19 | 4.7 | 0 | 10 | 10 | 8 | 82 | 8210P035 | 16 | ● | - | - | - | 2 | 2 |
| 3/4 | 19 | 4.7 | 0 | 0.1 | 0.1 | - | 82 | 8030P083 | 17 | ● | - | - | - | 2 | 4.5 |

○ = Safety Shut-off Valve. ● = General Purpose Valve

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2-Way Optional Features Chart

| Pipe Size (ins.) | Orifice Dia. (ins.) | Base Catalog Number | | Resilient Materials | | | | | | | | | Other | | Standard Rebuild Kit | |
|------------------|---------------------|---------------------|-----------------|---------------------|-----|------|----------|----------------|--------|----------|--------|-----------------|------------------|-------------|-----------------------|---|
| | | Brass | Stainless Steel | NBR | FKM | EPDM | Neoprene | Oxygen Service | PTFE ② | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass AC/DC | Stainless Steel AC/DC | |
| 1/4 | 3/32 | 8262P261 | - | - | V | E | J | N | T | ● | - | - | - | - | 322777 | - |
| 1/4 | 1/8 | 8262P232 | - | ● | V | E | J | N | T | - | - | MS ⑤ | ⑥ | 322595 | - | |
| 1/4 | 1/8 | 8262P262 | - | ● | V | E | J | N | T | - | - | - | - | 322778 | - | |
| 1/4 | 5/32 | 8262P202 | 8262P220 | ● | V | E | J | N | T | - | - | MS | ⑥ | 322595 | 322596 | |
| 1/4 | 5/32 | 8262P263 | - | ● | V | E | J | N | T | - | - | - | - | 322778 | - | |
| 1/4 | 7/32 | 8262P208 | 8262P226 | ● | V | E | J | N | T | - | - | MS | ⑥ | 322595 | 322596 | |
| 1/4 | 9/32 | 8262P212 | 8262P230 | ● | V | E | J | N | T | - | VH | MS | ⑥ | 322595 | 322596 | |
| 1/4 | 9/32 | 8262P265 | - | ● | V | E | J | N | T | - | - | - | - | 322778 | - | |
| 1/4 | 5/16 | 8223P025 ④ | - | ● | - | - | - | - | - | - | - | - | - | 322815 | - | |
| 3/8 | 5/32 | 8263P200 | - | ● | V | E | J | N | T | - | - | - | - | 322806 | - | |
| 3/8 | 9/32 | 8263P210 | - | ● | V | E | J | N | T | - | - | - | - | 322807 | - | |
| 3/8 | 5/16 | 8223P027 ④ | - | ● | - | - | - | - | - | - | - | - | - | 322815 | - | |
| 3/8 | 5/8 | 8210P093 | - | ● | V | E | J | N | - | - | VH | MO | MB | 322670 | - | |
| 3/8 | 5/8 | 8210P033 | - | ● | V | E | J | N | - | - | VH | - | MB | 322770 | - | |
| 1/2 | 3/8 | 8223P003 ④ | 8223P010 ① | ● | - | - | - | - | - | - | - | - | - | 322816 | 322817 | |
| 1/2 | 5/8 | 8210P094 | - | ● | V | E | J | N | - | - | VH | MO | MB | 322670 | - | |
| 1/2 | 5/8 | 8210P034 | - | ● | V | E | J | N | - | - | VH | - | MB | 322770 | - | |
| 1/2 | 5/8 | - | 8210P087 | ● | V | E | J | N | - | - | - | MO | MB | - | 322676 | |
| 1/2 | 5/8 | 8210P007 | - | ● | V | E | J | N | - | - | - | MO ③ | MB | 322654 | - | |
| 3/4 | 5/8 | - | 8210P088 | ● | V | E | J | N | - | - | - | MO | MB | - | 322676 | |
| 3/4 | 3/4 | 8210P095 | - | ● | V | E | J | N | - | - | VH | MO | MB | 322673 | - | |
| 3/4 | 3/4 | 8030P003 | - | ● | V | E | J | N | - | - | - | MO | MB | 322758 | - | |
| 3/4 | 3/4 | 8210P035 | - | ● | V | E | J | N | - | - | VH | - | MB | 322771 | - | |
| 3/4 | 3/4 | 8030P083 | - | ● | V | E | J | N | - | - | - | - | MB | 322763 | - | |
| 3/4 | 3/4 | 8223P005 ④ | - | ● | - | - | - | - | - | - | - | - | - | 322818 | - | |
| 1 | 1 | 8210P004 | - | ● | V | E | J | N | - | - | - | MO | - | 322677 | - | |
| 1 1/4 | 1 1/8 | 8210P008 | - | ● | V | E | J | N | - | - | - | MO | - | 322680 | - | |
| 1 1/2 | 1 1/4 | 8210P022 | - | ● | V | E | J | N | - | - | - | MO | - | 322680 | - | |
| 2 | 1 3/4 | 8210P100 | - | ● | V | E | J | N | - | - | - | MO | - | 322682 | - | |

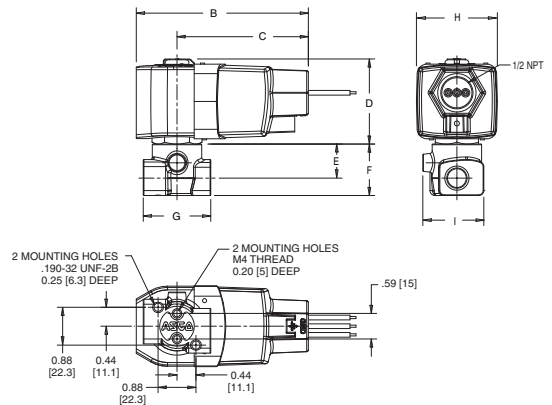
● = Standard. Other options may be available. All option combinations may not be available. Please consult your local ASCO contact.
 ① Valve contains PTFE main disc; ② Pressure rating reduced by 25%; ③ Pressure rating limited to 250 psi; ④ Valve contains Nylon 11 piston.
 ⑤ Pressure rating limited to 400 psi. ⑥ Valves supplied with mounting holes in body.

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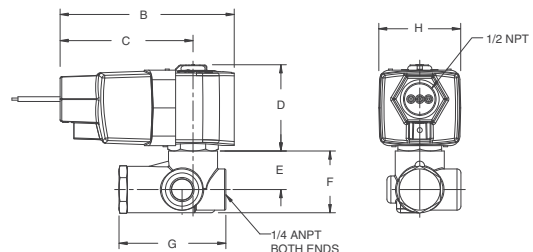
Dimensions: inches (mm)

| Const. Ref. | | B | C | D | E | F | G | H | I |
|-------------|-----|--------|-------|-------|-------|--------|--------|-------|--------|
| 1 | ins | 4.00 | 3.04 | 1.97 | 0.79 | 1.19 | 1.56 | 1.87 | 1.41 |
| | mm | 101.60 | 77.22 | 50.04 | 20.07 | 30.23 | 39.62 | 47.50 | 35.81 |
| 2 | ins | 4.00 | 3.04 | 1.97 | 0.88 | 1.41 | 2.44 | 1.87 | - |
| | mm | 101.60 | 77.22 | 50.04 | 22.35 | 35.81 | 61.98 | 47.50 | - |
| 3 | ins | 4.00 | 3.04 | 1.97 | 0.67 | 1.25 | 1.88 | 1.87 | 1.15 |
| | mm | 101.60 | 77.22 | 50.04 | 17.02 | 31.75 | 47.75 | 47.50 | 29.21 |
| 4 | ins | 4.00 | 3.04 | 1.97 | 1.28 | 1.84 | 2.75 | 1.87 | 2.28 |
| | mm | 101.60 | 77.22 | 50.04 | 32.51 | 46.74 | 69.85 | 47.50 | 57.91 |
| 5 | ins | 4.00 | 3.04 | 1.97 | 1.05 | 2.31 | - | 1.87 | 3.03 |
| | mm | 101.60 | 77.22 | 50.04 | 26.67 | 58.67 | - | 47.50 | 76.96 |
| 6 | ins | 4.00 | 3.04 | 1.97 | 1.13 | 2.31 | - | 1.87 | 3.13 |
| | mm | 101.60 | 77.22 | 50.04 | 28.70 | 58.67 | - | 47.50 | 79.50 |
| 7 | ins | 4.00 | 3.04 | 1.97 | 1.46 | 2.19 | 2.81 | 1.87 | 2.28 |
| | mm | 101.60 | 77.22 | 50.04 | 37.08 | 55.63 | 71.37 | 47.50 | 57.91 |
| 8 | ins | 4.00 | 3.04 | 1.97 | 1.44 | 2.13 | 2.81 | 1.87 | 2.28 |
| | mm | 101.60 | 77.22 | 50.04 | 36.58 | 54.10 | 71.37 | 47.50 | 57.91 |
| 9 | ins | 4.00 | 3.04 | 1.97 | 1.61 | 3.03 | - | 1.87 | 3.6 |
| | mm | 101.60 | 77.22 | 50.04 | 40.89 | 76.96 | - | 47.50 | 91.44 |
| 10 | ins | 4.00 | 3.04 | 1.97 | 2.21 | 3.67 | 3.75 | 1.87 | - |
| | mm | 101.60 | 77.22 | 50.04 | 56.13 | 93.22 | 95.25 | 47.50 | - |
| 11 | ins | 4.00 | 3.04 | 1.97 | 2.36 | 4.14 | 4.38 | 1.87 | 3.92 |
| | mm | 101.60 | 77.22 | 50.04 | 59.94 | 105.16 | 111.25 | 47.50 | 99.57 |
| 12 | ins | 4.00 | 3.04 | 1.97 | 2.75 | 5.52 | 5.06 | 1.87 | 4.72 |
| | mm | 101.60 | 77.22 | 50.04 | 69.85 | 140.21 | 128.52 | 47.50 | 119.89 |
| 13 | ins | 4.00 | 3.04 | 1.97 | 0.79 | 1.19 | 1.25 | 1.87 | 1.19 |
| | mm | 101.60 | 77.22 | 50.04 | 20.07 | 30.23 | 31.75 | 47.50 | 30.23 |
| 14 | ins | 4.00 | 3.04 | 1.97 | 0.79 | 1.19 | 1.56 | 1.87 | 1.19 |
| | mm | 101.60 | 77.22 | 50.04 | 20.07 | 30.23 | 39.62 | 47.50 | 30.23 |
| 15 | ins | 4.00 | 3.04 | 1.97 | 1.72 | 2.18 | 2.75 | 1.87 | 2.28 |
| | mm | 101.60 | 77.22 | 50.04 | 43.69 | 55.37 | 69.85 | 47.50 | 57.91 |
| 16 | ins | 4.00 | 3.04 | 1.97 | 1.88 | 2.57 | 2.81 | 1.87 | 2.28 |
| | mm | 101.60 | 77.22 | 50.04 | 47.75 | 65.28 | 71.37 | 47.50 | 57.91 |
| 17 | ins | 4.00 | 3.04 | 1.97 | 0.85 | 1.81 | 2.81 | 1.87 | 2.28 |
| | mm | 101.60 | 77.22 | 50.04 | 21.59 | 45.97 | 71.37 | 47.50 | 57.91 |

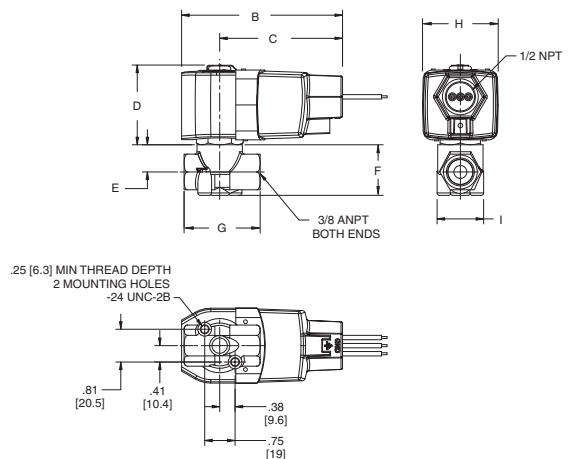
Const. Ref. 1



Const. Ref. 2



Const. Ref. 3

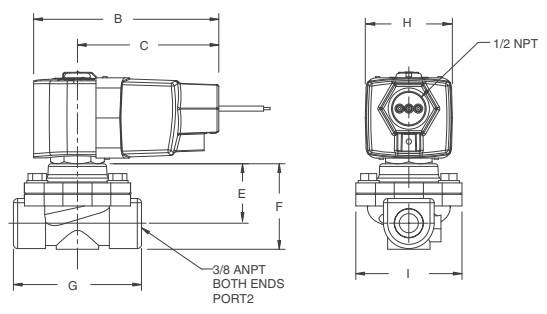


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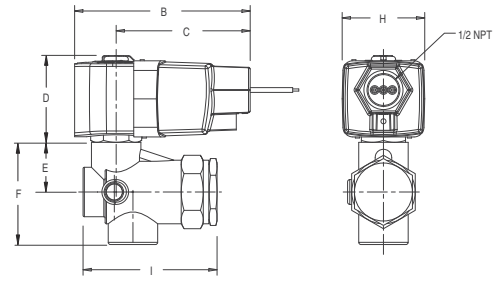
Dimensions: inches (mm)

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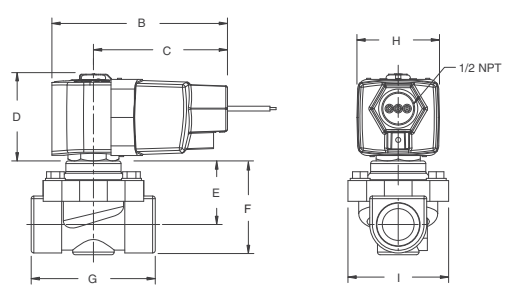
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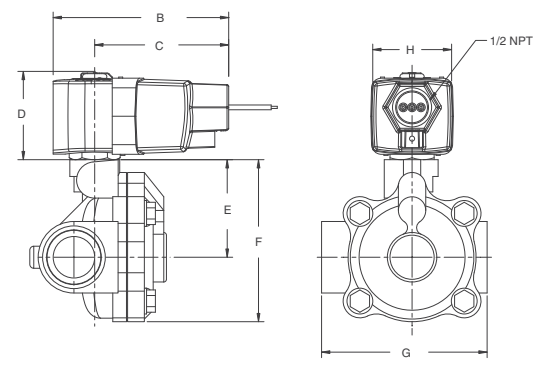
Const. Ref. 5, 6, 9



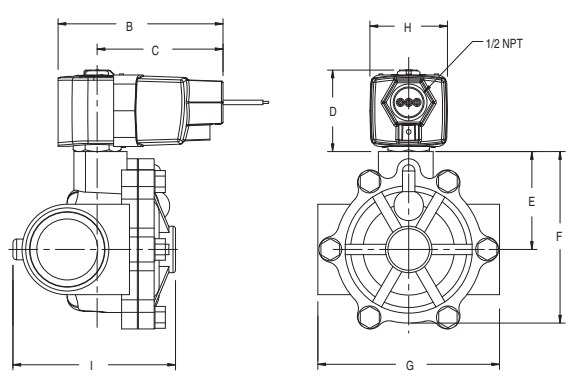
Const. Ref. 8



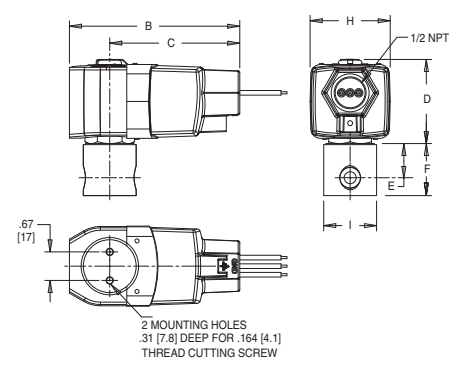
Const. Ref. 10



Const. Ref. 11, 12



Const. Ref. 13, 14



3-Way Features

- Three-way (3/2) Next Generation solenoid valves have three ports and two orifices. When one orifice is open, the other is closed
- Control of air, water, light oil, and other non-corrosive media
- Normally closed (pressure to cylinder port when energized) operation
- Normally open (cylinder port exhausts when energized) operation
- Universal operation (can function as normally open, normally closed, diverter of fluid flow, or selector of 2 fluid sources configurable by piping)
- Pipe sizes – 1/4 to 3/4 inch

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3-Way Specifications (English units)

| Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow | Operating Pressure Differential (psi) | | | | Max. Fluid Temp. °F | Brass | Const. Ref. | Agency | | Stainless Steel | Const. Ref. | Agency | | Wattage AC/DC | Approx. Shipping Weight (lbs.) |
|--|---------------------|---------|---------------------------------------|---------------|-------|---------------------|---------------------|----------|-------------|--------|----------|-----------------|-------------|--------|-----|---------------|--------------------------------|
| | | | Min. | Max. AC/DC | | | | | | UL | UL | | | | | | |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | | | |
| 1/4 | 3/32 ③ | 0.17 ③ | 0 | 205 | 205 | 205* | 180 | 8314P035 | 1 | ● | 8314P121 | 1 | ● | 2 | 2.6 | | |
| 1/4 | 1/8 | 0.27 | 0 | 145 | 145 | 145* | 180 | 8314P036 | 1 | ● | - | - | - | 2 | 2.6 | | |
| 1/4 | 5/64 | 0.12 | 0 | 232 | 232 | 232 | 180 | 8320P182 | 2 | ● | - | - | - | 2 | 2.5 | | |
| 1/4 | 7/64 | 0.23 | 0 | 150 | 150 | 150 | 180 | 8320P184 | 2 | ● | - | - | - | 2 | 2.5 | | |
| 1/4 | 5/32 | 0.35 | 0 | 75 | 75 | 75 | 180 | 8320P186 | 2 | ● | - | - | - | 2 | 2.5 | | |
| 1/4 | 3/32 ① | 0.20 ① | 5 ④ | 150 | 150 | 100* | 180 | 8317P035 | 3 | ● | - | - | - | 2 | 2.7 | | |
| 1/4 | 9/32 ② | 0.80 ② | 10 | 200 | 200 | 200* | 180 | 8321P001 | 4 | ● | - | - | - | 2 | 3.8 | | |
| 3/8 | 9/32 ② | 0.80 ② | 10 | 200 | 200 | 200* | 180 | 8321P002 | 4 | ● | - | - | - | 2 | 3.8 | | |
| 3/8 | 5/8 | 2.5 | 10 | 250 | 250 | - | 180 | 8316P054 | 5 | ● | - | - | - | 2 | 4.9 | | |
| 1/2 | 5/8 | 3.2 | 10 | 250 | 250 | - | 180 | 8316P064 | 5 | ● | - | - | - | 2 | 4.9 | | |
| 3/4 | 11/16 | 4.8 | 10 | 250 | 250 | - | 180 | 8316P074 | 6 | ● | - | - | - | 2 | 5.1 | | |
| General Service - Normally Open | | | | | | | | | | | | | | | | | |
| 1/4 | 5/64 | 0.12 | 0 | 210 | 210 | 210 | 180 | 8320P192 | 2 | ● | - | - | - | 2 | 2.5 | | |
| 1/4 | 7/64 | 0.23 | 0 | 150 | 150 | 150 | 180 | 8320P194 | 2 | ● | - | - | - | 2 | 2.5 | | |
| General Service - Universal Operation | | | | | | | | | | | | | | | | | |
| 1/4 | 5/64 | 0.12 | 0 | 116 | 116 | 116 | 180 | 8320P172 | 2 | ● | - | - | - | 2 | 2.5 | | |
| 1/4 | 7/64 | 0.23 | 0 | 60 | 60 | 60 | 180 | 8320P174 | 2 | ● | - | - | - | 2 | 2.5 | | |
| 1/4 | 5/32 | 0.35 | 0 | 35 | 35 | 35 | 180 | 8320P176 | 2 | ● | - | - | - | 2 | 2.5 | | |

● = General Purpose Valve. ① 1/4" exhaust orifice with 0.73 Cv flow; ② 11/32" exhaust orifice with 1.20 Cv flow; ③ 3/32" exhaust orifice with 0.27 Cv flow.
 ④ 10 psi minimum for light oils. * 45 SSU.

3-Way Specifications (Metric units)

| Pipe Size (ins.) | Orifice Dia. (mm) | Kv Flow | Operating Pressure Differential (bar) | | | | Max. Fluid Temp. °C | Brass | Const. Ref. | Agency | | Stainless Steel | Const. Ref. | Agency | | Wattage AC/DC | Approx. Shipping Weight (kgs.) |
|--|-------------------|---------|---------------------------------------|---------------|-------|---------------------|---------------------|----------|-------------|--------|----------|-----------------|-------------|--------|-----|---------------|--------------------------------|
| | | | Min. | Max. AC/DC | | | | | | UL | UL | | | | | | |
| | | | | Air-Inert Gas | Water | Light Oil @ 300 SSU | | | | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | | | | |
| 1/4 | 2.3 ③ | 0.14 ③ | 0 | 14 | 14 | 14* | 82 | 8314P035 | 1 | ● | 8314P121 | 1 | ● | 2 | 1.2 | | |
| 1/4 | 3.1 | 0.23 | 0 | 10 | 10 | 10* | 82 | 8314P036 | 1 | ● | - | - | - | 2 | 1.2 | | |
| 1/4 | 1.9 | 0.1 | 0 | 16 | 16 | 16 | 82 | 8320P182 | 2 | ● | - | - | - | 2 | 1.1 | | |
| 1/4 | 2.7 | 0.2 | 0 | 10 | 10 | 10 | 82 | 8320P184 | 2 | ● | - | - | - | 2 | 1.1 | | |
| 1/4 | 3.9 | 0.3 | 0 | 5 | 5 | 5 | 82 | 8320P186 | 2 | ● | - | - | - | 2 | 1.1 | | |
| 1/4 | 2.3 ① | 0.17 ① | 0.3 ④ | 10 | 10 | 7* | 82 | 8317P035 | 3 | ● | - | - | - | 2 | 1.2 | | |
| 1/4 | 7.1 ② | 0.7 ② | 0.7 | 14 | 14 | 14* | 82 | 8321P001 | 4 | ● | - | - | - | 2 | 1.7 | | |
| 3/8 | 7.1 ② | 0.7 ② | 0.7 | 14 | 14 | 14* | 82 | 8321P002 | 4 | ● | - | - | - | 2 | 1.7 | | |
| 3/8 | 3.3 | 2.1 | 0.7 | 17 | 17 | - | 82 | 8316P054 | 5 | ● | - | - | - | 2 | 2.2 | | |
| 1/2 | 3.3 | 2.7 | 0.7 | 17 | 17 | - | 82 | 8316P064 | 5 | ● | - | - | - | 2 | 2.2 | | |
| 3/4 | 17 | 4.1 | 0.7 | 17 | 17 | - | 82 | 8316P074 | 6 | ● | - | - | - | 2 | 2.3 | | |
| General Service - Normally Open | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 0.1 | 0 | 14 | 14 | 14 | 82 | 8320P192 | 2 | ● | - | - | - | 2 | 1.1 | | |
| 1/4 | 2.7 | 0.2 | 0 | 10 | 10 | 10 | 82 | 8320P194 | 2 | ● | - | - | - | 2 | 1.1 | | |
| General Service - Universal Operation | | | | | | | | | | | | | | | | | |
| 1/4 | 2 | 0.1 | 0 | 8 | 8 | 8 | 82 | 8320P172 | 2 | ● | - | - | - | 2 | 1.1 | | |
| 1/4 | 2.7 | 0.2 | 0 | 4 | 4 | 4 | 82 | 8320P174 | 2 | ● | - | - | - | 2 | 1.1 | | |
| 1/4 | 3.9 | 0.3 | 0 | 2 | 2 | 2 | 82 | 8320P176 | 2 | ● | - | - | - | 2 | 1.1 | | |

● = General Purpose Valve. ① 6.3mm exhaust orifice with 0.63 Kv flow; ② 8.7mm exhaust orifice with 1.0 Kv flow; ③ 2.4mm exhaust orifice with 0.23 Kv flow.
④ 0.7 bar minimum for light oils. * 45 SSU.

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3-Way Optional Features Chart

| Pipe Size (ins.) | Orifice Dia. (ins.) | Base Catalog Number | | Resilient Materials | | | | | | | | Other | | Standard Rebuild Kit | |
|------------------|---------------------|---------------------|-----------------|---------------------|-----|------|----------|----------------|--------|----------|--------|-------------------|------------------|----------------------|-----------------------|
| | | Brass | Stainless Steel | NBR | FKM | EPDM | Neoprene | Oxygen Service | PTFE ① | Urethane | Vacuum | Manual Operator ③ | Mounting Bracket | Brass AC/DC | Stainless Steel AC/DC |
| 1/4 | 5/64 | 8320P182 | - | ● | V | E | J | N | T | - | - | MO/MS | MB | 322722 | - |
| 1/4 | 5/64 | 8320P192 | - | ● | V | E | J | N | T | - | - | MO/MS ④ | MB | 322723 | - |
| 1/4 | 5/64 | 8320P172 | - | ● | V | E | J | N | T | - | - | MO/MS ④ | MB | 322721 | - |
| 1/4 | 3/32 | 8314P035 | 8314P121 | ● ② | V | E | - | N | - | - | - | MS | MB | 322864 | 322872 |
| 1/4 | 3/32 | 8317P035 | - | ● ② | V | - | - | N | - | - | - | - | - | 322919 | - |
| 1/4 | 7/64 | 8320P184 | - | ● | V | E | J | N | T | - | - | MO/MS | MB | 322722 | - |
| 1/4 | 7/64 | 8320P194 | - | ● | V | E | J | N | T | - | - | MO/MS ④ | MB | 322723 | - |
| 1/4 | 7/64 | 8320P174 | - | ● | V | E | J | N | T | - | - | MO/MS ④ | MB | 322721 | - |
| 1/4 | 1/8 | 8314P036 | - | ● ② | V | E | - | N | - | - | - | MS | MB | 322864 | - |
| 1/4 | 5/32 | 8320P186 | - | ● | V | E | J | N | T | - | - | MO/MS | MB | 322722 | - |
| 1/4 | 5/32 | 8320P176 | - | ● | V | E | J | N | T | - | - | MO/MS ④ | MB | 322721 | - |
| 1/4 | 9/32 | 8321P001 | - | ● | V | E | - | - | - | - | - | MO/MS | - | 322688 | - |
| 3/8 | 9/32 | 8321P002 | - | ● | V | E | - | - | - | - | - | MO/MS | - | 322688 | - |
| 3/8 | 5/8 | 8316P054 | - | ● | V | E | J | N | - | - | - | MO | MB | 322690 | - |
| 1/2 | 5/8 | 8316P064 | - | ● | V | E | J | N | - | - | - | MO | MB | 322690 | - |
| 3/4 | 11/16 | 8316P074 | - | ● | V | E | J | N | - | - | - | MO | MB | 322692 | - |

● = Standard. Other options may be available. All option combinations may not be available. Please consult your local ASCO contact.
 ① Pressure rating reduced by 25%; ② Upper disc is FKM; ③ Not available with PTFE resilient materials. ④ Pressure rating limited to 100 psi (6.9 bar) for MO constructions.

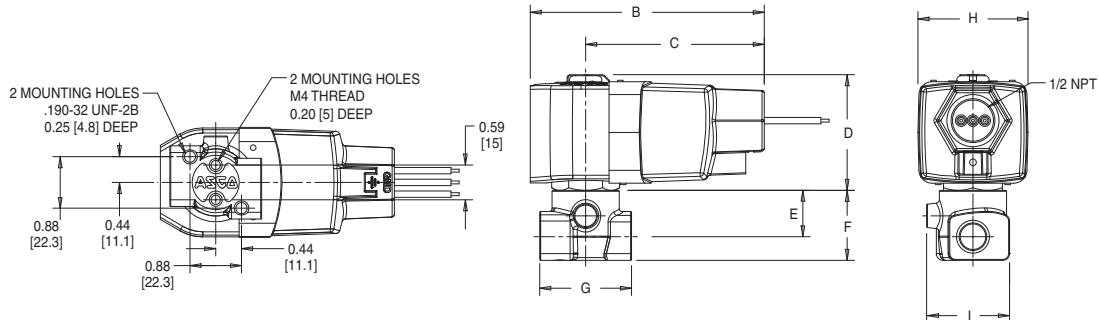
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Dimensions: inches (mm)

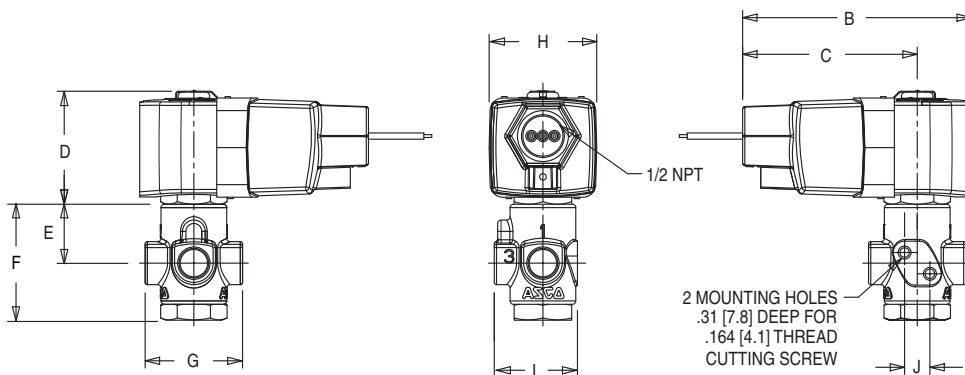
| Const. Ref. | | B | C | D | E | F | G | H | I | J |
|-------------|------|--------|-------|-------|-------|--------|-------|-------|--------|-------|
| 1 | ins. | 4.00 | 3.04 | 2.09 | 0.79 | 1.19 | 1.56 | 1.87 | 1.41 | 0.44 |
| | mm | 101.60 | 77.22 | 53.09 | 20.07 | 30.23 | 39.62 | 47.50 | 35.81 | 11.18 |
| 2 | ins. | 4.00 | 3.04 | 1.97 | 1.02 | 2.02 | 1.69 | 1.87 | 1.45 | - |
| | mm | 101.60 | 77.22 | 50.04 | 25.91 | 51.31 | 42.93 | 47.50 | 36.83 | - |
| 3 | ins. | 4.00 | 3.04 | 1.97 | 0.57 | 1.07 | 2.00 | 1.87 | 2.05 | - |
| | mm | 101.60 | 77.22 | 50.04 | 14.48 | 27.18 | 50.80 | 47.50 | 52.07 | - |
| 4 | ins. | 4.00 | 3.04 | 1.97 | 1.00 | 2.03 | 1.31 | 1.87 | 3.12 | 1.00 |
| | mm | 101.60 | 77.22 | 50.04 | 25.40 | 51.56 | 33.27 | 47.50 | 79.25 | 25.40 |
| 5 | ins. | 4.00 | 3.04 | 1.97 | 2.12 | 3.77 | 2.76 | 1.87 | 4.29 | - |
| | mm | 101.60 | 77.22 | 50.04 | 53.85 | 95.76 | 70.10 | 47.50 | 108.97 | - |
| 6 | ins. | 4.00 | 3.04 | 1.97 | 2.50 | 4.19 | - | 1.87 | 3.38 | - |
| | mm | 101.60 | 77.22 | 50.04 | 63.50 | 106.43 | - | 47.50 | 85.85 | - |

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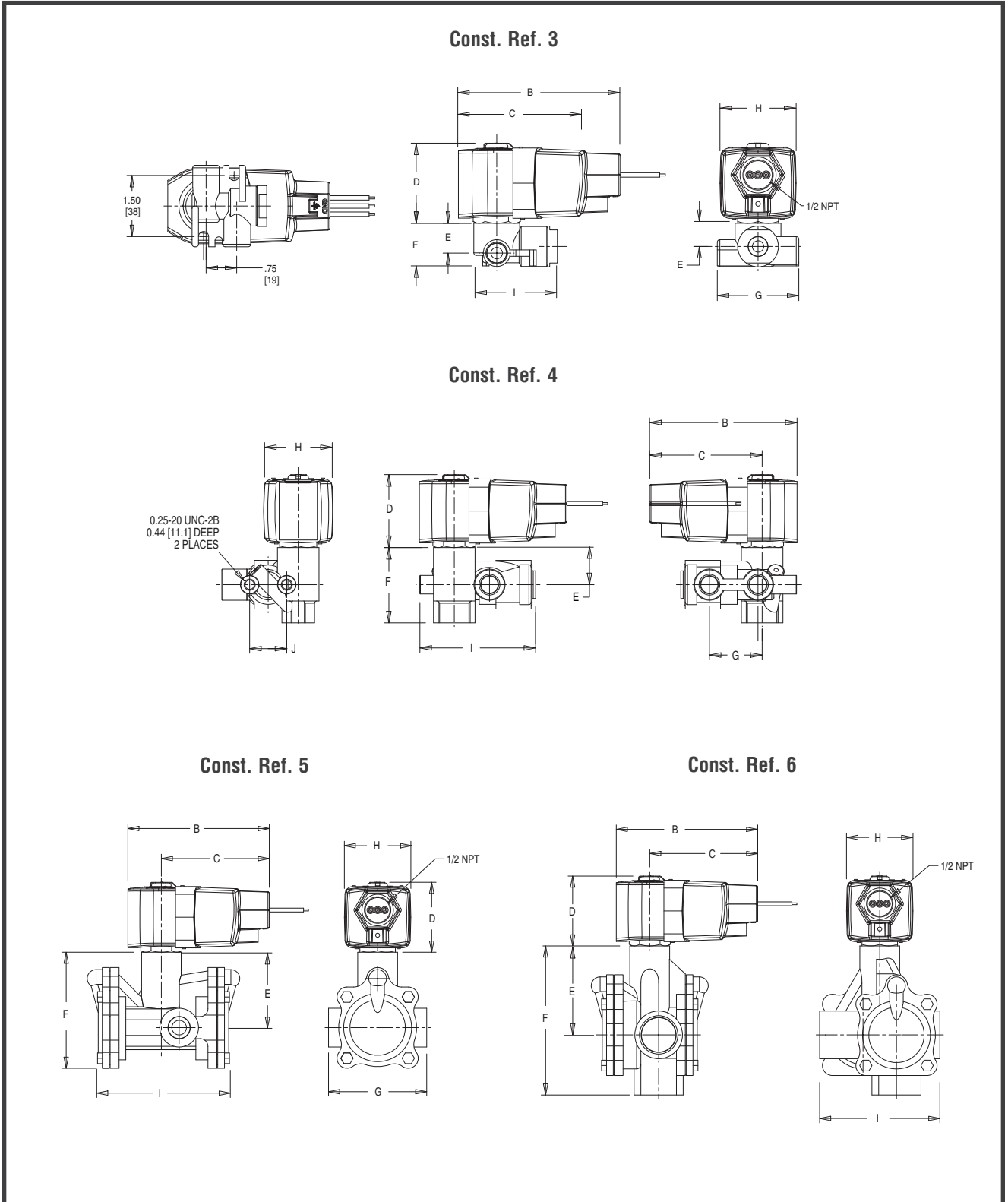
Const. Ref. 1



Const. Ref. 2



Dimensions: inches (mm)



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4-Way Features

- Four-way, four port (4/2) and five port (5/2) Next Generation solenoid valves have one pressure port, 2 cylinder ports, and either 1 or 2 exhaust ports
- Control of air, water, light oil, and non-corrosive media
- Single solenoid operation (pressure and exhaust ports and cylinder ports alternate connection based on solenoid operation)
- Pipe sizes – 1/4 to 1 inch

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4-Way Specifications (English units)

| Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow | | Operating Pressure Differential (psi) | | | Brass | Max. Fluid Temp. °F | Const. Ref. | Agency | Wattage AC/DC | Approx. Shipping Weight (lbs.) | |
|-----------------------------------|---------------------|----------|---------|---------------------------------------|---------------|-------|-------|---------------------|-------------|--------|---------------|--------------------------------|---------------------|
| | | | | Min. | Max. AC/DC | | | | | | | | |
| | | Pressure | Exhaust | | Air-Inert Gas | Water | | | | | | | Light Oil @ 300 SSU |
| General Service - Single Solenoid | | | | | | | | | | | | | |
| 1/4 | 1/16 ② | 0.09 | 0.09 | 10 | 150 | 150 | 150* | 8345P001 | 180 | 2 | ● | 2 | 4.8 |
| 1/4 | 1/4 | 0.8 | 1.0 | 10 ① | 250 | 250 | 250 | 8344P070 | 180 | 1 | ● | 2 | 5.2 |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 ① | 250 | 250 | 250 | 8344P072 | 180 | 3 | ● | 2 | 9.6 |
| 1/2 | 3/8 | 1.4 | 2.2 | 10 ① | 250 | 250 | 250 | 8344P074 | 180 | 3 | ● | 2 | 9.6 |
| 3/4 | 3/4 | 5.2 | 5.6 | 10 ① | 250 | 250 | 250 | 8344P076 | 180 | 4 | ● | 2 | 18.6 |
| 1 | 3/4 | 5.2 | 5.6 | 10 ① | 250 | 250 | 250 | 8344P078 | 180 | 4 | ● | 2 | 18.6 |

● = General Purpose Valve. ① 25 psi minimum for light oils; ② 3/32" exhaust orifice. * 50 SSU.

4-Way Specifications (Metric units)

| Pipe Size (ins.) | Orifice Dia. (mm) | Kv Flow | | Operating Pressure Differential (bar) | | | Brass | Max. Fluid Temp. °C | Const. Ref. | Agency | Wattage AC/DC | Approx. Shipping Weight (kgs.) | |
|-----------------------------------|-------------------|----------|---------|---------------------------------------|---------------|-------|-------|---------------------|-------------|--------|---------------|--------------------------------|---------------------|
| | | | | Min. | Max. AC/DC | | | | | | | | |
| | | Pressure | Exhaust | | Air-Inert Gas | Water | | | | | | | Light Oil @ 300 SSU |
| General Service - Single Solenoid | | | | | | | | | | | | | |
| 1/4 | 1.5 ② | 0.07 | 0.07 | 0.7 | 10 | 10 | 10* | 8345P001 | 82 | 2 | ● | 2 | 2.2 |
| 1/4 | 6.3 | 0.7 | 0.86 | 0.7 ① | 17 | 17 | 17 | 8344P070 | 82 | 1 | ● | 2 | 2.4 |
| 3/8 | 9.5 | 1.2 | 2 | 0.7 ① | 17 | 17 | 17 | 8344P072 | 82 | 3 | ● | 2 | 4.4 |
| 1/2 | 9.5 | 1.2 | 2 | 0.7 ① | 17 | 17 | 17 | 8344P074 | 82 | 3 | ● | 2 | 4.4 |
| 3/4 | 19 | 4.5 | 4.8 | 0.7 ① | 17 | 17 | 17 | 8344P076 | 82 | 4 | ● | 2 | 8.5 |
| 1 | 19 | 4.5 | 4.8 | 0.7 ① | 17 | 17 | 17 | 8344P078 | 82 | 4 | ● | 2 | 8.5 |

● = General Purpose Valve. ① 1.7 bar minimum for light oils; ② 2.4mm exhaust orifice. * 50 SSU.

Important

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

Refer to Engineering Section for details.

4-Way Optional Features Chart

| Pipe Size (ins.) | Orifice Dia. (ins.) | Base Catalog Number | Resilient Materials | | | | | | | | Other | | Standard Rebuild Kit |
|------------------|---------------------|---------------------|---------------------|-----|------|----------|----------------|------|----------|--------|-----------------|------------------|----------------------|
| | | Brass | NBR | FKM | EPDM | Neoprene | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass AC/DC |
| 1/4 | 1/16 | 8345P001 | ● | V | - | - | - | - | - | - | MO | - | 322925 |
| 1/4 | 1/4 | 8344P070 | ● | V | - | - | - | - | - | - | MO | - | 322696 |
| 3/8 | 3/8 | 8344P072 | ● | V | - | - | - | - | - | - | MO | - | 322697 |
| 1/2 | 3/8 | 8344P074 | ● | V | - | - | - | - | - | - | MO | - | 322697 |
| 3/4 | 3/4 | 8344P076 | ● | V | - | - | - | - | - | - | MO | - | 322698 |
| 1 | 3/4 | 8344P078 | ● | V | - | - | - | - | - | - | MO | - | 322698 |

● = Standard.

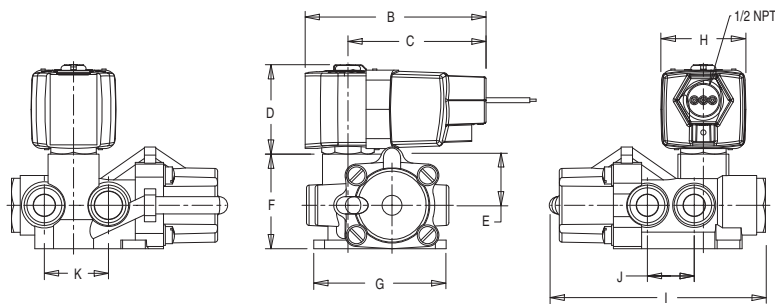
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Dimensions: inches (mm)

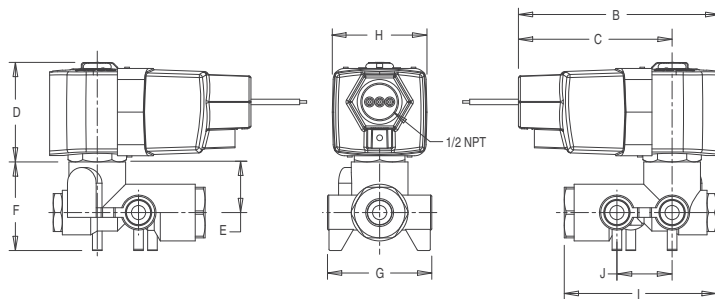
| Const. Ref. | | B | C | D | E | F | G | H | I | J | K | Exhaust Pipe Size |
|-------------|------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------------------|
| 1 | ins. | 4.00 | 3.04 | 1.97 | 1.12 | 2.08 | 2.94 | 1.87 | 4.82 | 1.03 | 1.41 | 3/8 |
| | mm | 101.60 | 77.22 | 50.04 | 28.45 | 52.83 | 74.68 | 47.50 | 122.43 | 26.16 | 112.01 | |
| 2 | ins. | 4.00 | 3.04 | 2.09 | 1.00 | 1.75 | 2.06 | 1.87 | 3.00 | 1.09 | - | 1/4 |
| | mm | 101.60 | 77.22 | 53.09 | 25.40 | 44.45 | 52.32 | 35.23 | 76.20 | 27.69 | - | |
| 3 | ins. | 4.00 | 3.04 | 1.97 | 0.94 | 2.06 | 3.18 | 1.87 | 6.05 | 1.50 | 1.86 | 1/2 |
| | mm | 101.60 | 77.22 | 50.04 | 23.88 | 52.32 | 80.77 | 47.50 | 153.67 | 38.10 | 47.24 | |
| 4 | ins. | 4.00 | 3.04 | 1.97 | 1.31 | 2.86 | 4.12 | 1.87 | 8.25 | 2.10 | 2.12 | 1 |
| | mm | 101.60 | 77.22 | 50.04 | 33.27 | 72.64 | 104.65 | 47.50 | 209.55 | 53.34 | 53.85 | |

ELECTRONICALLY
 ENHANCED

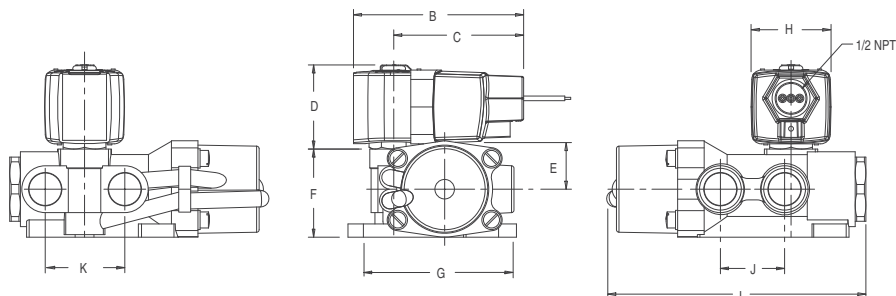
Const. Ref. 1



Const. Ref. 2



Const. Ref. 3, 4





Special Service Pilot Valves

ASCO has a complete line of 3 and 4-way pilot valves to meet these stringent demands. From harsh offshore platforms to the clean corridors of biotech manufacturing, ASCO has the pilot valve for your application. In this section, you will find the most complete line of low power, intrinsically safe, and non-incendive pilot valves in the world.

If you cannot find the pilot valve you are looking for, please try our website at www.ascovalve.com and click on process control pilot valves.

Index

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|-----------------------------|------|
| Low Power | 109 |
| Non-Incendive Field Wiring | 123 |
| Intrinsically Safe | 137 |
| Harsh Environment | 155 |
| Manual Reset | 157 |

SPECIAL
SERVICE PILOT



ASCO® TODAY



Because Time Matters...

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Features

- Molded one-piece solenoid with highly efficient solenoid cartridge and special low wattage coil
- Increased ambient temperature capabilities up to 175°F (80°C)
- Designed for use in automation of plant control systems to provide:
 - PLC compatibility
 - Reduced battery drain
 - Reduced heat rise
 - Reduced wiring cost
- Wide selection includes 2/2 normally closed, 3/2 normally closed (including Quick Exhaust), 3/2 universal, 4/2, 5/2, and 5/3
- Air or inert gas only
- Lower-cost alternative to intrinsically safe valves in critical applications not requiring a safety barrier

Construction

| Valve Parts in Contact with Fluids | | | |
|--|------------------------------|-------|-----------------|
| Body | Aluminum | Brass | Stainless Steel |
| Seals and Discs | PUR, NBR, FKM, CR, as listed | | |
| Sleeve | 304L Stainless Steel | | |
| Core and Plugnut | 430F Stainless Steel | | |
| Core Springs | 302 Stainless Steel | | |
| Pilot Seat Cartridge (Series 8316 & 8344 only) | CA | | |
| Rider Rings | PTFE | | |
| Spring Retainer | CA | | |

Electrical (Normal Ambient Version, +60°C)

Coil: Continuous duty Class F. **IMPORTANT:** Leakage current existing in your system above 7 mA will cause improper operation.

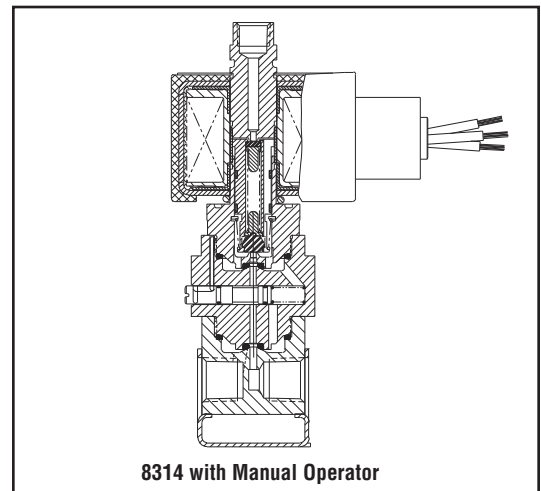
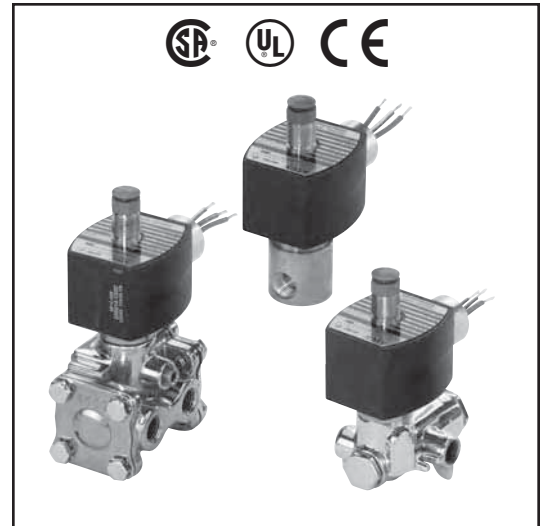
| DC Watt Rating and Power Consumption | 24 DC Spare Coil Part No. | | Maximum Line Resistance vs. Length of Wire | | |
|---|---------------------------|----------------|--|----------------------|--|
| | General Purpose | Explosionproof | Power Source | Max. Loop Resistance | Max. Wire Run 18AWG 7x26 Stranded (ft) |
| 1.4 at 68°F (20°C) | 238710-902-D | 238714-902-D | Volts | Ohms | |
| Low Power Solenoid: Standard voltages 12 and 24 DC Nominal Operating Range +10%, -15% Must be specified when ordering Typical 24 Volts DC System: Min. pull-in: 0.042 amps Min. dropout: 0.007 amps Coil resistance: 410 ohms at 68°F (20°C) ±10% Max. ambient temp: 140°F (60°C) | | | 21 | 16.5 | 1120 |
| | | | 22 | 40.5 | 2750 |
| | | | 23 | 64.0 | 4350 |
| | | | 24 | 88.0 | 5980 |

Electrical (High Ambient Version, +80°C)

Coil: Continuous duty Class F. **IMPORTANT:** Leakage current existing in your system above 8 mA will cause improper operation.

| DC Watt Rating and Power Consumption | 24 DC Spare Coil Part No. | | Maximum Line Resistance vs. Length of Wire | | |
|--|---------------------------|----------------|--|----------------------|---|
| | General Purpose | Explosionproof | Power Source | Max. Loop Resistance | Max. Wire Run 18 AWG 7x26 Stranded (ft) |
| 1.8 at 68°F (20°C) | 238710-908-D | 238714-905-D | Volts | Ohms | |
| Low Power Solenoid: Standard voltages: 12, 24 and 48 VDC Nominal Operating Range: +10%, -15% Must be specified when ordering Typical 24 Volts DC System: Min. pull-in: 0.051 amps Min. dropout: 0.008 amps Coil resistance: 320 ohms at 68°F (20°C) ±10% Max. ambient temp: 175°F (80°C) | | | 21 | 3.8 | 260 |
| | | | 22 | 23.4 | 1590 |
| | | | 23 | 43 | 2920 |
| | | | 24 | 62.6 | 4260 |

Note: The applicable T code for the 1.8 watt construction is T5 (100°C)



SPECIAL SERVICE PILOT

Ordering

Normal Ambient Version

EV8551G322 24VDC

High Ambient Version (always add TPL #23033)

EFX8316G301-23033 24VDC

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

(To order, add prefix "EF" to catalog number. For explosionproof with 316 Stainless Steel hub and trim, specify prefix "EV".) Surge suppression coils also available "MF" prefix.

See *Optional Features Section* for other available options.

Approvals

UL listed General Purpose Valves (Hazardous Location Classified). EV8345G381 solenoid only UL listed. CSA certified; nonincendive for Class I, Division 2 UL E25549. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Nominal Ambient Temp. Ranges

| Series | Body Material | Normal Temperature Range | High Ambient Version |
|---------------|----------------------|--------------------------------|--|
| 8551/8553 | Aluminum | 5°F to 140°F (-15°C to 60°C) | Not Available |
| 8262 | Brass | -40°F to 140°F (-40°C to 60°C) | Low Limit is Same, High Limit = 175°F (80°C) |
| 8314 | | | |
| 8317 | | | |
| 8551 | | | |
| 8551 | 316L Stainless Steel | | |
| 8316 Suffix V | Misc. | 32°F to 140°F (0°C to 60°C) | |
| All Other | | -4°F to 140°F (-20°C to 60°C) | |

Important

These solenoids are intended for use on clean, dry air or inert gas filtered to 50 microns or better. To prevent freezing, the dew point of the media should be at least 18°F (-8°C) below the minimum temperature to which any portion of the clean air or gas system could be exposed. Instrument air in compliance with ANSI/ISA Standard S7.3-1975 (R1981) exceeds the above requirements and is, therefore, an acceptable medium for these valves.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F | Brass Body | | Stainless Steel Body | |
|--|---------------------|----------------|-----|---------------------------------------|---------------------|---------------------------------|-----------------|-------------|----------------------|-------------|
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Pressure to Cylinder | Cylinder to Exhaust | | | | | |
| 2/2 VALVES, NORMALLY CLOSED, with NBR Disc | | | | | | | | | | |
| 1/4 | 1/16 | .08 | | 0 | 150 | 140 | 8262G320 | 18 | 8262G386 ⑥ | 18 |
| 3/8 | 5/16 | 1.5 | | 10 | 150 | 140 | 8223G323 | 19 | - | - |
| 1/2 | 3/8 | 3.2 | | 25 | 150 | 140 | 8223G303 | 20 | 8223G310 ⑥ | 20 |
| 3/2 VALVES, UNIVERSAL OPERATION (Pressure at any port) with NBR Disc | | | | | | | | | | |
| 1/4 | 1/16 | .08 | .08 | 0 | 150 | 140 | 8314G300 | 1 | 8314G301 ⑥ | 2 |
| 3/2 VALVES, NORMALLY CLOSED (Closed when de-energized) with NBR Disc or FPM, as Listed | | | | | | | | | | |
| 1/4 | 5/16 | 1.5 | 1.5 | ⑤ | 150 | 140 | 8316G301 ③ | 3 | EV8316G381V ④⑥ | 3 |
| 3/8 | 5/16 | 1.8 | 1.8 | ⑤ | 150 | 140 | 8316G302 ③ | 3 | EV8316G382V ④⑥ | 3 |
| 3/8 | 5/8 | 4 | 4 | ⑤ | 150 | 140 | 8316G303 ③ | 3A | - | - |
| 1/2 | 5/8 | 4 | 4 | ⑤ | 150 | 140 | 8316G304 ③ | 3A | EV8316G384V ④⑥ | 3A |
| 3/4 | 11/16 | 5.5 | 5.5 | 10 | 150 | 140 | 8316H374 ③ | 4 | - | - |
| 1 | 1 | 13 | 13 | 10 | 150 | 140 | 8316G334 ③ | 5 | - | - |
| 3/2 VALVES, UNIVERSAL (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc | | | | | | | | | | |
| 1/4 | ② | .08 | .73 | 5 | 150 | 140 | 8317G307 ① | 6 | 8317G308 ①⑥ | 7 |
| 4/2 VALVES, with NBR Disc and Seals | | | | | | | | | | |
| 1/4 | 1/16 | .08 | .08 | 10 | 150 | 140 | 8345G301 ①③ | 6 | EV8345G381 ①③⑥ | 8 |
| 4/2 VALVES, Brass Body with NBR Disc | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F | Single Solenoid | | Dual Solenoid | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Pressure to Cylinder | Cylinder to Exhaust | | | | | |
| 1/4 | 1/4 | .80 | 1 | 10 | 150 | 140 | 8344G370 ①③ | 9 | 8344G344 ③ | 12 |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 | 150 | 140 | 8344G372 ①③ | 11 | 8344G380 ③ | 10 |
| 1/2 | 3/8 | 1.4 | 2.2 | 10 | 150 | 140 | 8344G374 ①③ | 11 | 8344G382 ③ | 10 |
| 3/4 | 3/4 | 5.2 | 5.6 | 10 | 150 | 140 | 8344G376 ①③ | 13 | 8344G354 ③ | 14 |
| 1 | 3/4 | 5.2 | 5.6 | 10 | 150 | 140 | 8344G378 ①③ | 13 | 8344G356 ③ | 14 |

① There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas cannot be exhausted to atmosphere.
 ② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".
 ③ **IMPORTANT:** A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.
 ④ Diaphragm and main disc FKM only (pilot is low-temperature NBR).
 ⑤ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position.
 ⑥ Can be used for *dry* natural gas service with the EF or EV prefix.

Specifications (English units)

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|---|------------------|---------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|------|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | | | | Min. | Max. | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals | | | | | | | | | | | | | |
| Aluminum 3/2 | 1/4 | 1/4 | .86 | 30 | 150 | 140 | 8551G305 | 21 | 30 | 150 | 140 | 8551G306 | 21 |
| Aluminum 5/2 | | | | | | | 8551G317 | 22 | | | | 8551G318 | 22 |
| Aluminum 5/3 Center Closed | | | | | | | - | 22 | | | | 8551G367 | 22 |
| Aluminum 5/3 Center Open | | | | | | | - | 22 | | | | 8551G368 | 22 |
| Brass 3/2 | | | | | | | EF8551G307 ② | 21 | | | | EF8551G308 ② | 21 |
| Brass 5/2 | | | | | | | EF8551G319 ② | 22 | | | | EF8551G320 ② | 22 |
| 316L Stainless Steel 3/2 | | | | | | | EV8551G313 ③⑥ | 21 | | | | EV8551G314 ③⑥ | 21 |
| 316L Stainless Steel 5/2 | | | | | | | EV8551G321 ③⑥ | 22 | | | | EV8551G322 ③⑥ | 22 |
| Aluminum 3/2 | 1/2 | 1/2 | 3.7 | 30 | 150 | 140 | 8553G305 | 21 | 30 | 150 | 140 | 8553G306 | 21 |
| Aluminum 5/2 | | | | | | | 8553G317 | 22 | | | | 8553G318 | 22 |

② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|--|------------------|---------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|------|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | | | | Min. | Max. | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount | | | | | | | | | | | | | |
| Aluminum 3/2, 5/2 | 1/4 | 1/4 | .86 | 30 | 150 | 140 | 8551G301 ① | 23 | 30 | 150 | 140 | 8551G302 ① | 23 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | 8551G365 | 24 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | 8551G366 | 24 |
| Brass 3/2, 5/2 | | | | | | | EF8551G303 ②① | 23 | | | | EF8551G304 ②① | 23 |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | EV8551G309 ③⑥ | 24 | | | | EV8551G310 ③⑥ | 24 |
| Aluminum 3/2, 5/2 | 1/2 | 1/2 | 3.7 | 30 | 150 | 140 | 8553G301 | 24 | 30 | 150 | 140 | 8553G302 | 24 |

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid. ⑥ Can be used for **dry** natural gas service with the EF or EV prefix.

SPECIAL SERVICE PILOT

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m ³ /h) | | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C | Brass Body | | Stainless Steel Body | |
|--|-------------------|------------------------------------|---------------------|---------------------------------------|------|---------------------------------|-----------------|-------------|----------------------|-------------|
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | Pressure to Cylinder | Cylinder to Exhaust | Min. | Max. | | | | | |
| 2/2 VALVES, NORMALLY CLOSED, with NBR Disc | | | | | | | | | | |
| 1/4 | 2 | .07 | | 0 | 10 | 60 | 8262G320 | 18 | 8262G386 ⑥ | 18 |
| 3/8 | 8 | 1.29 | | 0.7 | 10 | 60 | 8223G323 | 19 | - | - |
| 1/2 | 10 | 2.74 | | 1.7 | 10 | 60 | 8223G303 | 20 | 8223G310 ⑥ | 20 |
| 3/2 VALVES, UNIVERSAL OPERATION (Pressure at any port) with NBR Disc | | | | | | | | | | |
| 1/4 | 2 | .07 | .07 | 0 | 10 | 60 | 8314G300 | 1 | 8314G301 ⑥ | 2 |
| 3/2 VALVES, NORMALLY CLOSED (Closed when de-energized) with NBR Disc or FPM, as Listed | | | | | | | | | | |
| 1/4 | 8 | 1.29 | 1.29 | ⑤ | 10 | 60 | 8316G301 ③ | 3 | EV8316G381V ④⑥ | 3 |
| 3/8 | 8 | 1.37 | 1.37 | ⑤ | 10 | 60 | 8316G302 ③ | 3 | EV8316G382V ④⑥ | 3 |
| 3/8 | 16 | 2.57 | 2.57 | ⑤ | 10 | 60 | 8316G303 ③ | 3A | - | - |
| 1/2 | 16 | 3.43 | 3.43 | ⑤ | 10 | 60 | 8316G304 ③ | 3A | EV8316G384V ④⑥ | 3A |
| 3/4 | 17 | 4.71 | 4.71 | 0.7 | 10 | 60 | 8316H374 ③ | 4 | - | - |
| 1 | 25 | 11.14 | 11.14 | 0.7 | 10 | 60 | 8316G334 ③ | 5 | - | - |
| 3/2 VALVES, UNIVERSAL (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc | | | | | | | | | | |
| 1/4 | ② | .07 | .63 | 0.3 | 10 | 60 | 8317G307 ① | 6 | 8317G308 ①⑥ | 7 |
| 4/2 VALVES, with NBR Disc and Seals | | | | | | | | | | |
| 1/4 | 2 | .07 | .07 | 0.7 | 10 | 60 | 8345G301 ①③ | 6 | EV8345G381 ①③⑥ | 8 |
| 4/2 VALVES, Brass Body with NBR Disc | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m ³ /h) | | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C | Single Solenoid | | Dual Solenoid | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | Pressure to Cylinder | Cylinder to Exhaust | Min. | Max. | | | | | |
| 1/4 | 6 | 0.69 | 0.86 | 0.7 | 10 | 60 | 8344G370 ①③ | 9 | 8344G344 ③ | 12 |
| 3/8 | 10 | 1.20 | 1.89 | 0.7 | 10 | 60 | 8344G372 ①③ | 11 | 8344G380 ③ | 10 |
| 1/2 | 10 | 1.20 | 1.89 | 0.7 | 10 | 60 | 8344G374 ①③ | 11 | 8344G382 ③ | 10 |
| 3/4 | 19 | 4.46 | 4.80 | 0.7 | 10 | 60 | 8344G376 ①③ | 13 | 8344G354 ③ | 14 |
| 1 | 19 | 4.46 | 4.80 | 0.7 | 10 | 60 | 8344G378 ①③ | 13 | 8344G356 ③ | 14 |

① There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas cannot be exhausted to atmosphere.
 ② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".
 ③ **IMPORTANT:** A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.
 ④ Diaphragm and main disc FKM only (pilot is low-temperature NBR).
 ⑤ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. Minimum 1.0 bar Operating Pressure Differential when selection gasket is in the internal position.
 ⑥ Can be used for *dry* natural gas service with the EF or EV prefix.

SPECIAL SERVICE PILOT

Specifications (Metric units)

| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Single Solenoid | | | | | Dual Solenoid | | | | |
|---|------------------|-------------------|-----------------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|------|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | | | | Min. | Max. | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals | | | | | | | | | | | | | |
| Aluminum 3/2 | 1/4 | 6 | .7 | 2 | 10 | 60 | 8551G305 | 21 | 2 | 10 | 60 | 8551G306 | 21 |
| Aluminum 5/2 | | | | | | | 8551G317 | 22 | | | | 8551G318 | 22 |
| Aluminum 5/3 Center Closed | | | | | | | - | 22 | | | | 8551G367 | 22 |
| Aluminum 5/3 Center Open | | | | | | | - | 22 | | | | 8551G368 | 22 |
| Brass 3/2 | | | | | | | EF8551G307 ② | 21 | | | | EF8551G308 ② | 21 |
| Brass 5/2 | | | | | | | EF8551G319 ② | 22 | | | | EF8551G320 ② | 22 |
| 316L Stainless Steel 3/2 | | | | | | | EV8551G313 ③⑥ | 21 | | | | EV8551G314 ③⑥ | 21 |
| 316L Stainless Steel 5/2 | | | | | | | EV8551G321 ③⑥ | 22 | | | | EV8551G322 ③⑥ | 22 |
| Aluminum 3/2 | 1/2 | 13 | 3.15 | | | | 8553G305 | 21 | | | | 8553G306 | 21 |
| Aluminum 5/2 | | | | | | | 8553G317 | 22 | | | | 8553G318 | 22 |

② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

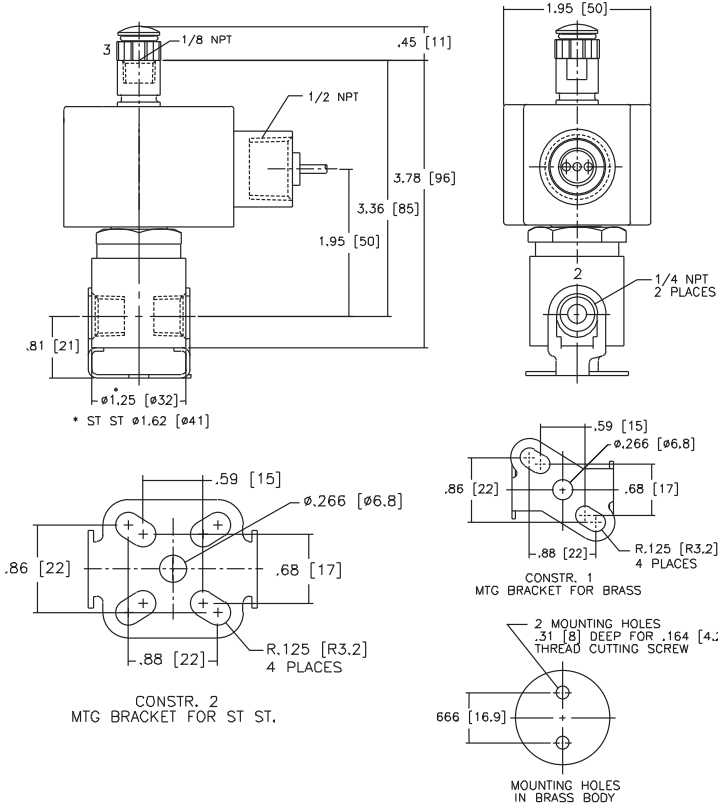
| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Single Solenoid | | | | | Dual Solenoid | | | | |
|--|------------------|-------------------|-----------------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|------|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | | | | Min. | Max. | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount | | | | | | | | | | | | | |
| Aluminum 3/2, 5/2 | 1/4 ① | 6 | .7 | 2 | 10 | 60 | 8551G301 ① | 23 | 2 | 10 | 60 | 8551G302 ① | 23 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | 8551G365 | 24 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | 8551G366 | 24 |
| Brass 3/2, 5/2 | | | | | | | EF8551G303 ②① | 23 | | | | EF8551G304 ②① | 23 |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | EV8551G309 ③⑥ | 24 | | | | EV8551G310 ③⑥ | 24 |
| Aluminum 3/2, 5/2 | 1/2 | 13 | 3.15 | | | | 8553G301 | 24 | | | | 8553G302 | 24 |

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.
⑥ Can be used for **dry** natural gas service with the EF or EV prefix.

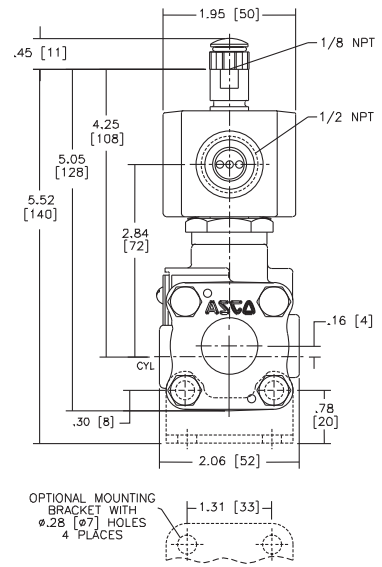
SPECIAL SERVICE PILOT

Dimensions: inches (mm)

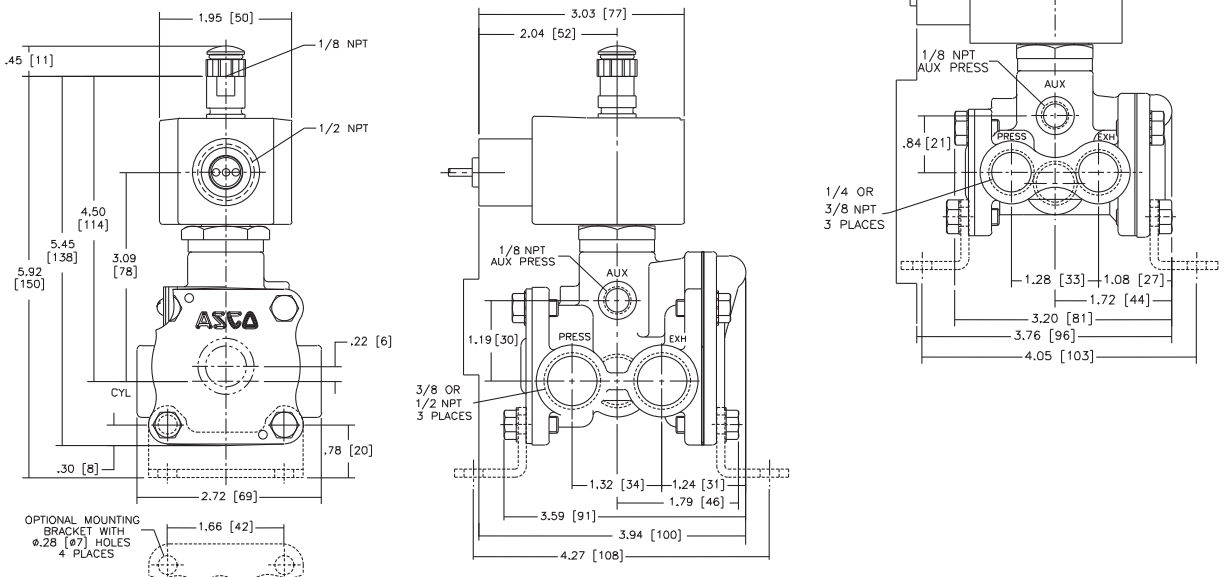
Const. Ref. 1, 2



Const. Ref. 3



Const. Ref. 3A

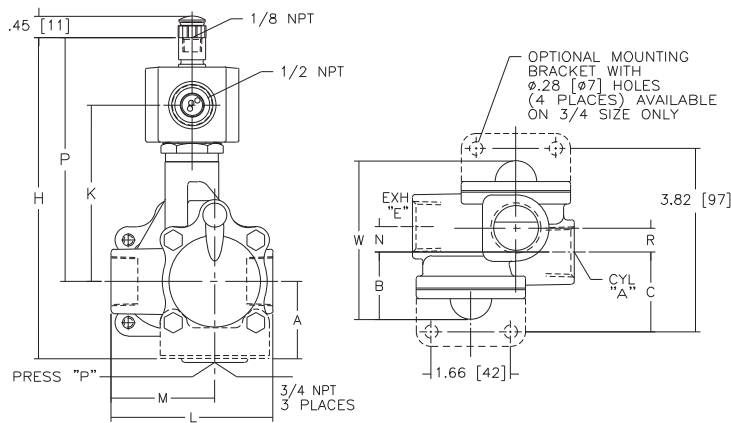


SPECIAL SERVICE
PILOT

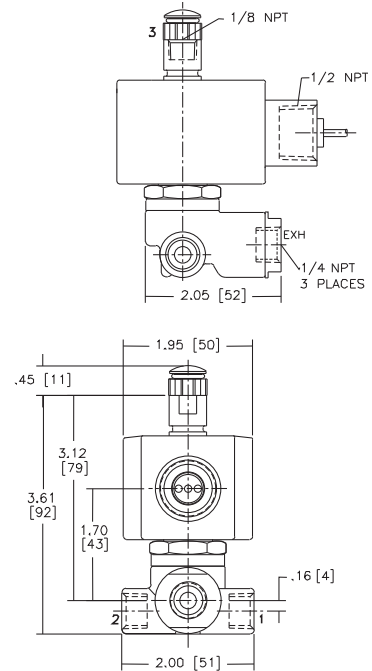
Dimensions: inches (mm)

| Const. Ref. | | A | B | C | H | K | L | M | N | P | R | W |
|-------------|------|------|------|------|------|------|------|------|-----|------|------|------|
| 4 | ins. | 1.61 | 1.41 | 1.66 | 6.78 | 3.68 | 3.38 | 2.16 | .53 | 5.09 | .50 | 3.31 |
| | mm | 41 | 36 | 42 | 172 | 93 | 86 | 55 | 13 | 129 | 13 | 84 |
| 5 | ins. | X | 1.78 | X | 7.40 | 3.93 | 4.44 | 2.81 | .87 | 5.34 | 1.74 | 5.31 |
| | mm | X | 45 | X | 188 | 100 | 113 | 71 | 22 | 136 | 44 | 135 |

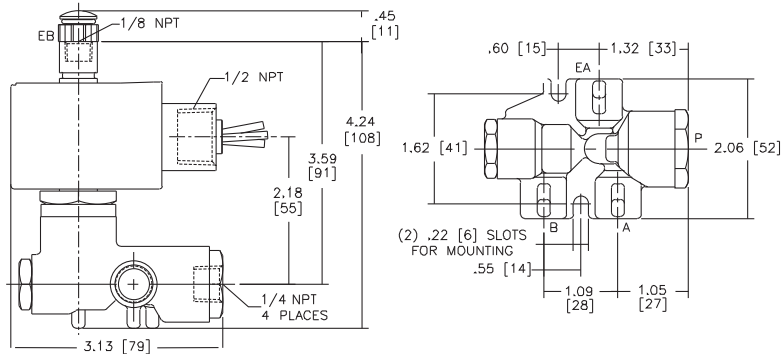
Const. Ref. 4, 5



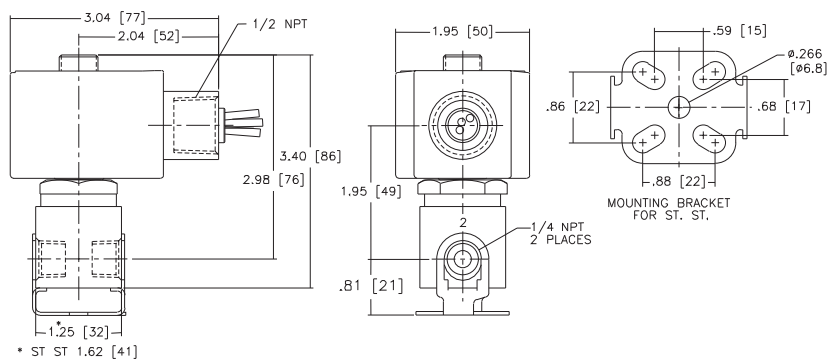
Const. Ref. 6, 7



Const. Ref. 8



Const. Ref. 18

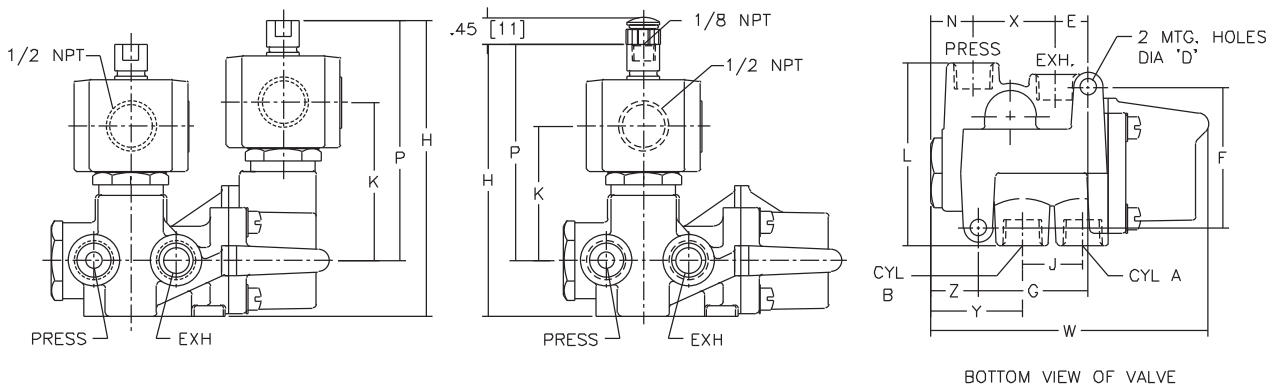


SPECIAL SERVICE PILOT

Dimensions: inches (mm)

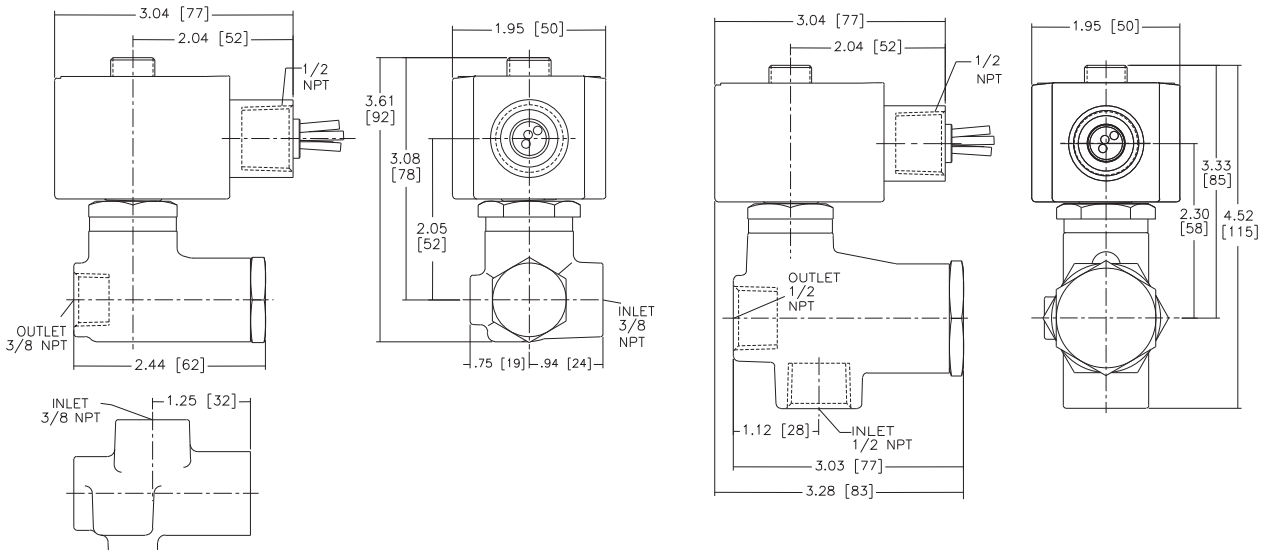
| Const. Ref. | | Dia "D" | E | F | G | H | J | K | L | N | P | W | X | Y | Z | Exhaust Pipe Size |
|-------------|------|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|
| 9 | ins. | Ø .28 | .56 | 2.41 | 1.88 | 4.67 | 1.03 | 2.30 | 3.12 | .72 | 3.72 | 4.75 | 1.41 | 1.56 | .81 | 3/8 |
| | mm | 7 | 14 | 61 | 48 | 119 | 26 | 58 | 79 | 18 | 95 | 121 | 36 | 40 | 21 | |
| 10 | ins. | Ø .34 | .76 | 3.12 | 2.62 | 4.89 | 1.50 | 2.11 | 3.18 | .83 | 3.77 | 6.06 | 1.86 | 1.89 | .83 | 1/2 |
| | mm | 9 | 16 | 79 | 67 | 118 | 38 | 70 | 81 | 21 | 90 | 154 | 48 | 49 | 21 | |
| 11 | ins. | Ø .34 | .76 | 3.12 | 2.62 | 4.65 | 1.50 | 2.11 | 3.18 | .83 | 3.53 | 6.06 | 1.86 | 1.89 | .83 | 1/2 |
| | mm | 9 | 35 | 97 | 99 | 138 | 53 | 54 | 116 | 40 | 99 | 210 | 54 | 67 | 30 | |
| 12 | ins. | Ø .28 | .56 | 2.41 | 1.88 | 5.06 | 1.03 | 2.71 | 3.12 | .72 | 4.12 | 4.81 | 1.41 | 1.56 | .81 | 3/8 |
| | mm | 7 | 14 | 61 | 48 | 129 | 26 | 69 | 79 | 18 | 105 | 122 | 36 | 40 | 21 | |
| 13 | ins. | Ø .34 | .78 | 3.12 | 2.62 | 5.27 | 1.50 | 2.49 | 3.19 | .84 | 4.16 | 6.06 | 1.88 | 1.91 | .84 | 1 |
| | mm | 9 | 16 | 79 | 67 | 134 | 38 | 63 | 81 | 21 | 106 | 154 | 48 | 49 | 21 | |
| 14 | ins. | Ø .34 | 1.38 | 3.81 | 3.88 | 6.09 | 2.09 | 3.18 | 4.56 | 1.56 | 4.59 | 8.25 | 2.12 | 2.62 | 1.16 | 1 |
| | mm | 9 | 35 | 97 | 99 | 155 | 53 | 81 | 116 | 40 | 117 | 210 | 54 | 67 | 30 | |

Const. Ref. 9, 10, 11, 12, 13, 14



Const. Ref. 19





Const. Ref. 20



Dimensions: inches (mm)





| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.12 (132) | 6.00 (153) |
| L2 ① | 6.73 (171) | 7.80 (198) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

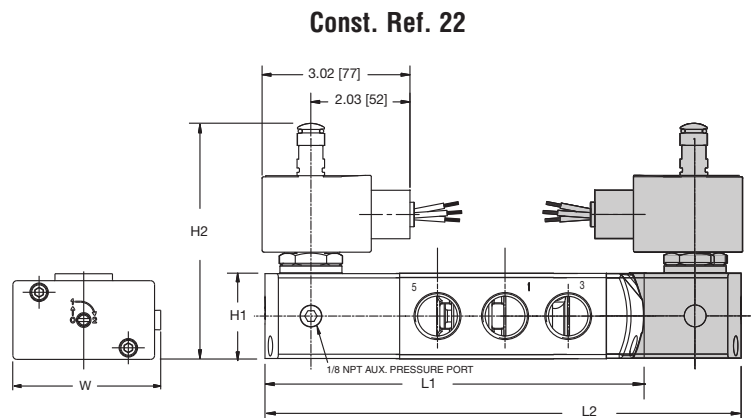
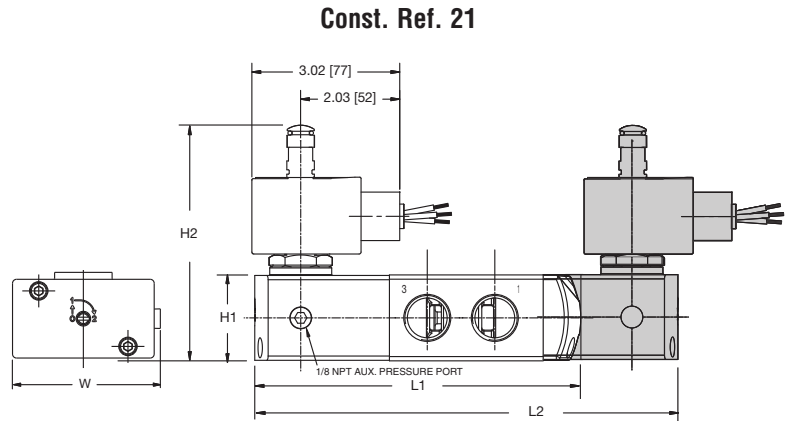
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.63 (144) | 7.06 (180) |
| L2 ① | 7.20 (183) | 8.86 (225) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

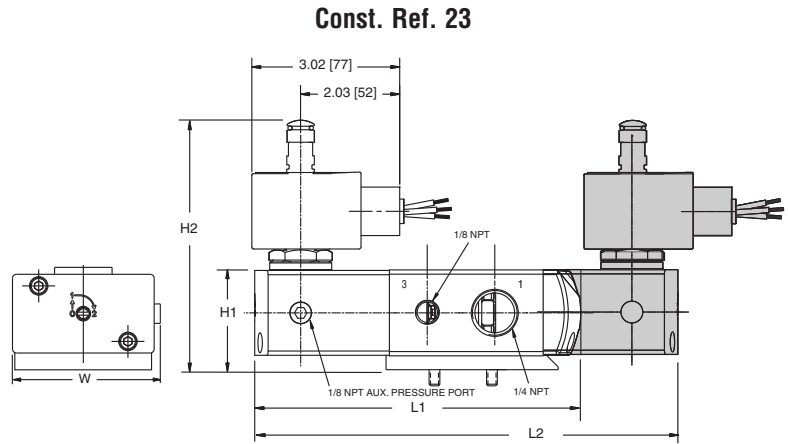


Dimensions: inches (mm)

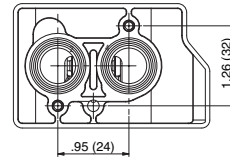
| Series | 8551 (Aluminum, Brass) |
|--------|------------------------|
| NPT | 1/4 |
| L1 ① | 4.96 (126) |
| L2 ① | 6.49 (165) |
| H2 | 4.38 (111) |
| H1 | 1.57 (40) |
| W | 1.77 (45) |

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |



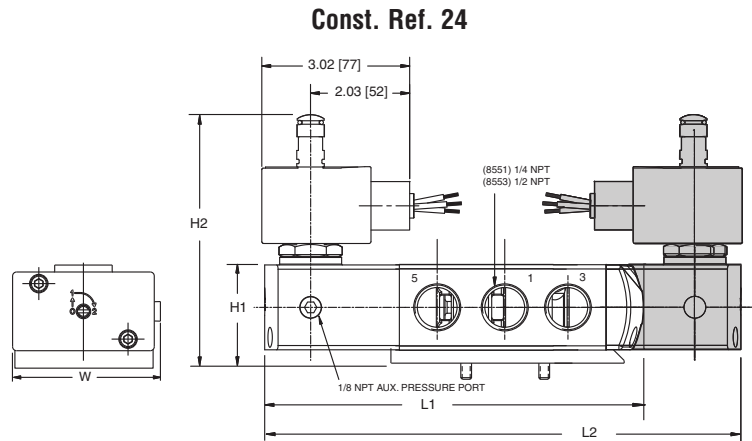
8551 NAMUR Footprint



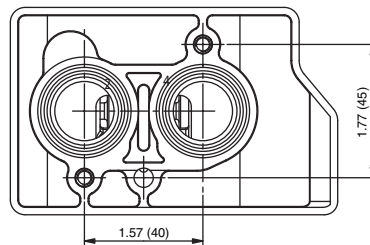
| Series | 8551 (316L SS) | 8551 (5/3) | 8553 |
|--------|----------------|------------|------------|
| NPT | 1/4 | 1/4 | 1/2 |
| L1 ① | 5.20 (132) | - | 7.08 (180) |
| L2 ① | 6.73 (171) | 7.44 (189) | 8.85 (225) |
| H2 | 4.38 (111) | 4.38 (111) | 4.77 (121) |
| H1 | 1.57 (40) | 1.57 (40) | 2.08 (53) |
| W | 1.77 (45) | 1.77 (45) | 2.87 (73) |

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

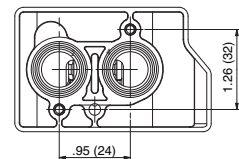
| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |



8553 NAMUR Footprint



8551 NAMUR Footprint



Features

- Designed to meet vibration and/or shock per ISA specification S71.03C2. High shock construction
- Handles aggressive atmosphere per salt resistance testing (ASTM B117)
- Most hardware is stainless steel, and all aluminum components are hard anodized and Nituff® coated for corrosion resistance
- Manual reset housing is sealed with closed-cell CR sponge rubber, and equipped with a sintered bronze breather to prevent condensation
- Last chance filter installed in auxiliary air port of the pilot valve
- Intrinsically Safe and General Service constructions available

Nituff is a registered trademark of Nimet Industries, Inc.

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------|
| Main Valve | |
| Body | Brass |
| Disc | 303 Stainless Steel |
| Seats | Phosphor Bronze |
| Springs | 17-7 PH Stainless Steel |
| Seals | FKM |
| Air Operator Diaphragm | FMQ |
| Bearing Screw | 430 Stainless Steel |
| Lever | 302 Stainless Steel |
| Low Power Pilot Valve (1.4 watts) | |
| Body | Brass |
| Seals | Low Temperature NBR |
| Rider Rings | PTFE |
| Spring Retainer | CA |
| Core and Plugnut | 430F Stainless Steel |
| Sieve | 304L Stainless Steel |
| Core Springs | 302 Stainless Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number DC | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|---------------------------|----------------|
| | DC Watts | AC | | | General Purpose | Explosionproof |
| | | Watts | VA Holding | VA Inrush | | |
| F | 1.4 | - | - | - | 238710-902-D | 238714-902-D |

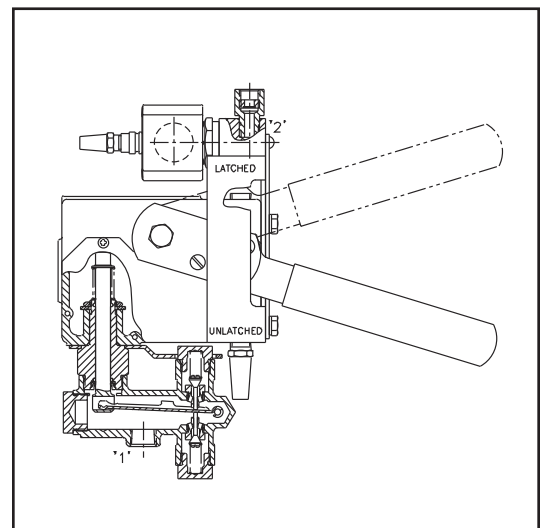
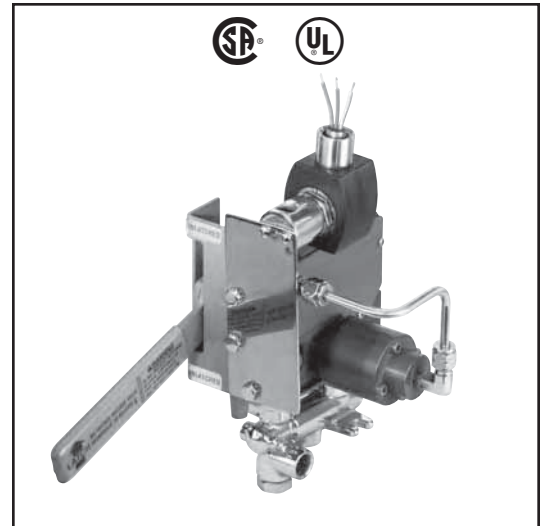
Standard Voltages: 12 and 24 volts DC, +10% -15%.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6D, 7, and 9.

Approvals

CSA certified and UL listed General Purpose Valve (pilot).



SPECIAL SERVICE PILOT

Options

Stainless steel body; 1/8" to 1/2" NPT pipe sizes; position indicator switch; main valve resilient seats; 4-way construction with metering; pneumatic time delay; redundant pilot valves.

Contact factory for ordering information.

Operation Alternatives

Electrically Tripped – Manually move the lever to the latched position with the solenoid de-energized. Trips when solenoid is energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

No Voltage Release – Manually move the lever to the latched position with the solenoid energized. Trips when solenoid is de-energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

Specifications (English units)

| MAIN VALVE - AC or DC Constructions | | | | | |
|-------------------------------------|---------------------|----------------|---------------------------------------|------|---------------------------------|
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F |
| | | | Min. | Max. | |
| 3/8 | 1/4 | .45 | 0 | 125 | 200 |

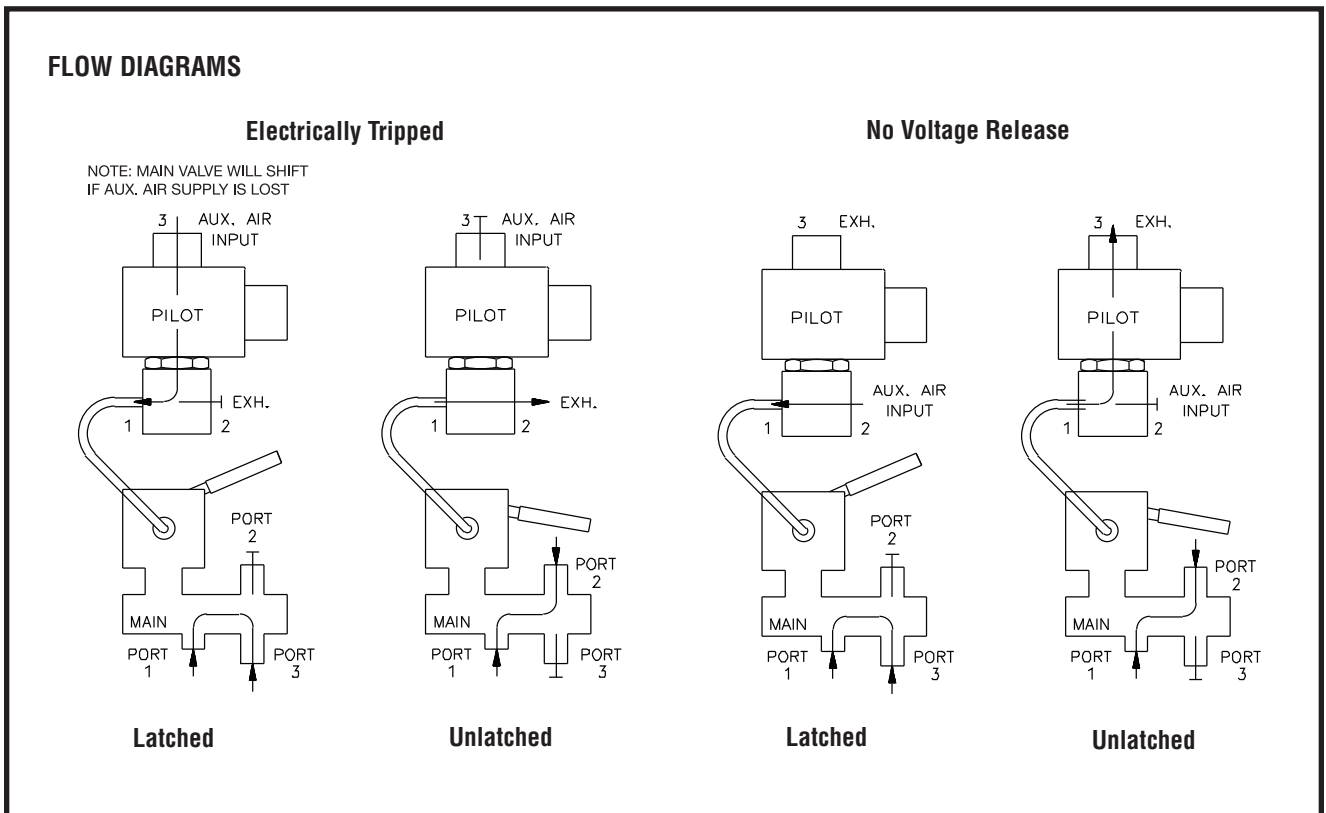
| Catalog Number | Construction Type | Pilot Pressure (psi) | | Fluid Temp. °F | | Ambient Temp. °F | | Watt Rating/Class of Coil Insulation | Pilot Valve (For reference only) |
|----------------|----------------------|----------------------|------|----------------|------|------------------|------|--------------------------------------|----------------------------------|
| | | Min. | Max. | Min. | Max. | Min. | Max. | | |
| HV264153-13 | No Voltage Release | 25 | 125 | -40 | 140 | -40 | 140 | 1.4/F | EF8314G300 |
| HV264153-14 | Electrically Tripped | 25 | 125 | -40 | 140 | -40 | 140 | 1.4/F | EF8314G300 |

Specifications (Metric units)

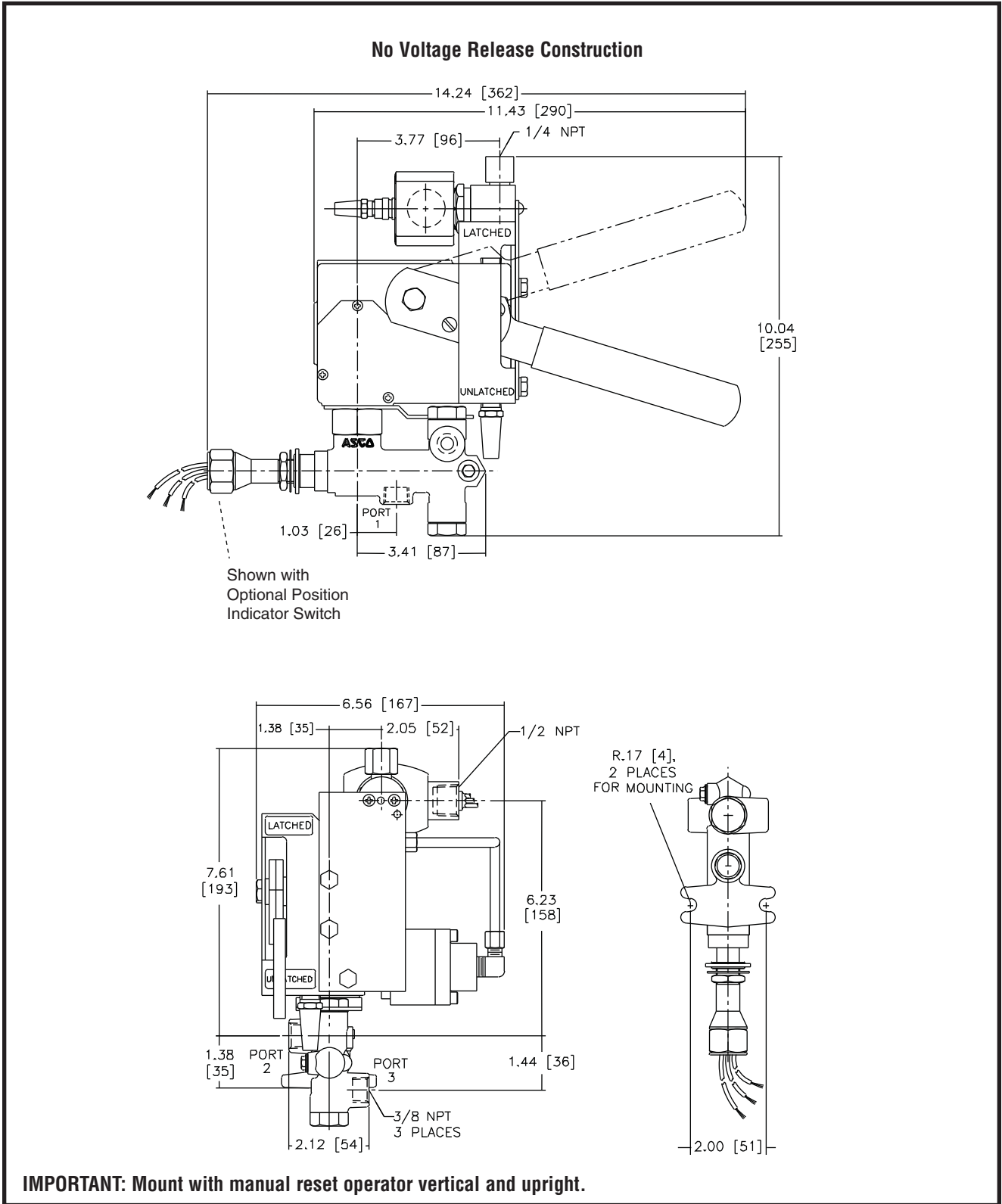
| MAIN VALVE - AC or DC Constructions | | | | | |
|-------------------------------------|-------------------|-----------------------|---------------------------------------|------|---------------------------------|
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C |
| | | | Min. | Max. | |
| 3/8 | 6 | 0.39 | 0 | 9 | 93 |

| Catalog Number | Construction Type | Pilot Pressure (bar) | | Fluid Temp. °C | | Ambient Temp. °C | | Watt Rating/Class of Coil Insulation | Pilot Valve (For reference only) |
|----------------|----------------------|----------------------|------|----------------|------|------------------|------|--------------------------------------|----------------------------------|
| | | Min. | Max. | Min. | Max. | Min. | Max. | | |
| HV264153-13 | No Voltage Release | 2 | 9 | -40 | 60 | -40 | 60 | 1.4/F | EF8314G300 |
| HV264153-14 | Electrically Tripped | 2 | 9 | -40 | 60 | -40 | 60 | 1.4/F | EF8314G300 |

Dimensions: inches (mm)



Dimensions: inches (mm)



**SPECIAL SERVICE
PILOT**



Air and Inert Gas Non-Incendive Field Wiring Valves

Brass, Aluminum, or Stainless Steel Bodies
1/4" to 1" NPT

2/2•3/2
4/2•5/2•5/3
SERIES
NIFW

Features

- NIFW solenoid enclosures to provide corrosion resistance in harsh environments
- Designed solely for installation in non-incendive field wiring areas, with properly approved and sized current and voltage-limiting safety barriers
- Acceptable for use in hazardous locations, as classified by the National Electrical Code: Classes I, II, and III, Division 2, including Groups A through G
- Electronically enhanced solenoids have efficient cartridge operators and nonpolarized coils
- Triple redundant diodes prevent electrical pulse from flowing back into the hazardous area
- Mountable in any position

Solenoid Operators

WBEE: Watertight, Type 3, 3S, 4, 4X, IP-67. Liquid Crystal Polymer (LCP) overmolded with 1/2" NPT conduit connection and screw terminals for simple wiring. The terminal block will accommodate 18 gage (AWG) wire, and grounding screw is located inside the enclosure.

Solenoid Construction

| | |
|--------------------|----------------------|
| Gasket Cover | NBR |
| Cover Screw | 18-8 Stainless Steel |
| Cover Screw Gasket | NBR |
| Sleeve | 430F Stainless Steel |
| Nameplate | Stainless Steel |
| Burp Cap Assembly | PA/CR |

Valve Construction

| Valve Parts in Contact with Fluids | | | |
|--|------------------------------|-------|-----------------|
| Body | Aluminum | Brass | Stainless Steel |
| Seals and Discs | PUR, NBR, FKM, CR, as listed | | |
| Sleeve | 304L Stainless Steel | | |
| Core and Plugnut | 430F Stainless Steel | | |
| Core Springs | 302 Stainless Steel | | |
| Pilot Seat Cartridge (Series 8316 & 8344 only) | CA | | |
| Rider Rings | PTFE | | |
| Spring Retainer | CA | | |

Electrical

Nominal Wattage is 0.35 @ 24 VDC
Maximum Allowable "Off" State Current to the valves must be less than 1 mA.

Electronically Enhanced Solenoid:

Maximum Capacitor Charge Time — 1 second
Minimum Time between Cycles — 1 second
Minimum Drop Current to Reset Electronic Coil — 2 mA
Nominal Temperature Rise at 24 VDC and 300 Ohms — 2°C (36°F)
Maximum Recommended Wire Run (#18 Wire) — 1.5 miles from barrier to valve

Important: Minimum series resistance of 200 ohms required in wiring circuit if a safety barrier is not used for non-"IS" system.



Ordering Information

The LCP NIFW solenoid enclosure is designated by the prefix "WBEE". **Example: WBEE8314A300**
Spare Coil P/Ns: WBEE: 290209-001*

Nominal Ambient Temp. Ranges

| Series | Body Material | Temperature Range |
|---------------|----------------------|--------------------------------|
| 8551 | Aluminum | 5°F to 140°F (-15°C to 60°C) |
| 8262 | Brass | -40°F to 140°F (-40°C to 60°C) |
| 8314 | | |
| 8317 | | |
| 8551 | | |
| 8551 | 316L Stainless Steel | |
| 8316 Suffix V | Misc. | 32°F to 140°F (0°C to 60°C) |
| All Other | | -4°F to 140°F (-20°C to 60°C) |

Approvals (pending)

FM approved under J.I.3W8A8. AX (3610).
NIFW/I, II, III/2/ABCDEFG/T6 Ta = 60°C;
-V9536;ENTITY;Type 4X;
CSA certified under File LR-13976-116C.
NIFW/I/2/ABCD/T6 Ta = 60°C;
-V9536;ENTITY;Type 4X;
Meets applicable CE directives.

Refer to Engineering Section for details.

Important

These solenoids are intended for use on clean, dry air or inert gas filtered to 50 micrometers or better. To prevent freezing, the dew point of the media should be at least 18°F (-8°C) below the minimum temperature to which any portion of the clean air or gas system could be exposed. Instrument air in compliance with ANSI/ISA Standard S7.3-1975 (R1981) exceeds the above requirements and is, therefore, an acceptable medium for these valves.

Maximum Entity Parameters

| Entity | Groups A-D | Groups A-D |
|------------|-----------------|-----------------|
| Parameters | V max - 30 VDC | V max - 34 VDC |
| | I max - 100 mA | I max - 125 mA |
| | Capacitance = 0 | Capacitance = 0 |
| | Inductance = 0 | Inductance = 0 |

Standard Voltage: 24 VDC only (±10%)

Minimum Operating Current: 0.028 amps

SPECIAL SERVICE
PILOT



Specifications (English units)

| 2/2 VALVES, NORMALLY CLOSED, with NBR Disc | | | | | | | | | | |
|---|---------------------|----------------|-----|---------------------------------------|---------------------|--|-----------------|-------------|----------------------|-------------|
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Min. | Max. | | | | | |
| 1/4 | 1/16 | .08 | | 0 | 150 | 140 | WBEE8262A320 | 1 | WBEE8262A386 | 1A |
| 3/8 | 5/16 | 1.5 | | 10 | 150 | 140 | WBEE8223A323 | 2 | - | - |
| 1/2 | 3/8 | 3.2 | | 25 | 150 | 140 | WBEE8223A303 | 3 | WBEE8223A310 | 3 |
| 3/2 VALVES | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Pressure to Cylinder | Cylinder to Exhaust | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) with NBR Disc | | | | | | | | | | |
| 1/4 | 1/16 | .08 | .08 | 0 | 150 | 140 | WBEE8314A300 | 4 | WBEE8314A301 | 4A |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | |
| 1/4 | 5/16 | 1.5 | 1.5 | Ⓞ | 150 | 140 | WBEE8316A301 ③ | 5 | WBEE8316A381V ⑤ | 8 |
| 3/8 | 5/16 | 1.8 | 1.8 | Ⓞ | 150 | 140 | WBEE8316A302 ③ | 5 | WBEE8316A382V ⑤ | 8 |
| 3/8 | 5/8 | 4 | 4 | Ⓞ | 150 | 140 | WBEE8316A303 ③ | 6 | - | - |
| 1/2 | 5/8 | 4 | 4 | Ⓞ | 150 | 140 | WBEE8316A304 ③ | 6 | WBEE8316A384V ⑤ | 9 |
| 3/4 | 11/16 | 5.5 | 5.5 | 10 | 150 | 140 | WBEE8316A374 ③ | 7 | - | - |
| 1 | 1 | 13 | 13 | 10 | 150 | 140 | WBEE8316A334 ③ | 7A | - | - |
| UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc | | | | | | | | | | |
| 1/4 | ② | .08 | .73 | 5 | 150 | 140 | WBEE8317A307 ① | 10 | WBEE8317A308 ① | 11 |
| 4/2 VALVES, with NBR Disc and Seal | | | | | | | | | | |
| 1/4 | 1/16 | .08 | .08 | 10 | 150 | 140 | WBEE8345A301 ①③ | 12 | WBEE8345A381 ①③ | 12 |
| 4/2 VALVES, Brass Body with NBR Disc | | | | | | | | | | |
| | | | | | | | Single Solenoid | Const. Ref. | Dual Solenoid | Const. Ref. |
| 1/4 | 1/4 | .80 | 1 | 10 | 150 | 140 | WBEE8344A370 ①③ | 13 | WBEE8344A344 ③ | 16 |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 | 150 | 140 | WBEE8344A372 ①③ | 14 | WBEE8344A380 ③ | 17 |
| 1/2 | 3/8 | 1.4 | 2.2 | 10 | 150 | 140 | WBEE8344A374 ①③ | 14 | WBEE8344A382 ③ | 17 |
| 3/4 | 3/4 | 5.2 | 5.6 | 10 | 150 | 140 | WBEE8344A376 ①③ | 15 | WBEE8344A354 ③ | 18 |
| 1 | 3/4 | 5.2 | 5.6 | 10 | 150 | 140 | WBEE8344A378 ①③ | 15 | WBEE8344A356 ③ | 18 |
| ① There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas can not be exhausted to the atmosphere. | | | | | | ⑤ Diaphragm and main disc FKM only (pilot is low-temperature NBR). | | | | |
| ② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4". | | | | | | ⑥ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 136 for auxiliary pressure vs. mainline pressure. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position. | | | | |
| ③ IMPORTANT: A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only. | | | | | | | | | | |

SPECIAL SERVICE PILOT

Specifications (English units)

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|---|------------------|---------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|------|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | | | | Min. | Max. | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals | | | | | | | | | | | | | |
| Aluminum 3/2 | 1/4 | 1/4 | .86 | 30 | 150 | 140 | WBEE8551A305 | 19 | 30 | 150 | 140 | WBEE8551A306 | 19 |
| Aluminum 5/2 | | | | | | | WBEE8551A317 | 20 | | | | WBEE8551A318 | 20 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBEE8551A367 | 20 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBEE8551A368 | 20 |
| Brass 3/2 | | | | | | | WBEE8551A307 | 19 | | | | WBEE8551A308 | 19 |
| Brass 5/2 | | | | | | | WBEE8551A319 | 20 | | | | WBEE8551A320 | 20 |
| 316L Stainless Steel 3/2 | | | | | | | WBEE8551A313 ② | 19 | | | | WBEE8551A314 ② | 19 |
| 316L Stainless Steel 5/2 | | | | | | | WBEE8551A321 ② | 20 | | | | WBEE8551A322 ② | 20 |
| Aluminum 3/2 | 1/2 | 1/2 | 3.7 | | | | WBEE8553A305 | 19 | | | | WBEE8553A306 | 19 |
| Aluminum 5/2 | | | | | | | WBEE8553A317 | 20 | | | | WBEE8553A318 | 20 |

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|--|------------------|---------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|------|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | | | | Min. | Max. | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount | | | | | | | | | | | | | |
| Aluminum 3/2, 5/2 | 1/4 | 1/4 | .86 | 30 | 150 | 140 | WBEE8551A301 ① | 21 | 30 | 150 | 140 | WBEE8551A302 ① | 21 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBEE8551A365 | 22 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBEE8551A366 | 22 |
| Brass 3/2, 5/2 | | | | | | | WBEE8551A303 ① | 21 | | | | WBEE8551A304 ① | 21 |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | WBEE8551A309 ② | 22 | | | | WBEE8551A310 ② | 22 |
| Aluminum 3/2, 5/2 | 1/2 | 1/2 | 3.7 | | | | WBEE8553A301 | 22 | | | | WBEE8553A302 | 22 |

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

SPECIAL SERVICE PILOT

Specifications (Metric units)

| 2/2 VALVES, NORMALLY CLOSED, with NBR Disc | | | | | | | | | | |
|---|-------------------|-----------------------|-------|---------------------------------------|---------------------|---|-----------------|-------------|----------------------|-------------|
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Min. | Max. | | | | | |
| 1/4 | 1 | .07 | | 0 | 10.3 | 60 | WBEE8262A320 | 1 | WBEE8262A386 | 1A |
| 3/8 | 8 | 1.29 | | 0.7 | 10.3 | 60 | WBEE8223A323 | 2 | - | - |
| 1/2 | 10 | 2.74 | | 1.7 | 10.3 | 60 | WBEE8223A303 | 3 | WBEE8223A310 | 3 |
| 3/2 VALVES | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Pressure to Cylinder | Cylinder to Exhaust | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) with NBR Disc | | | | | | | | | | |
| 1/4 | 2 | .08 | .08 | 0 | 10.3 | 60 | WBEE8314A300 | 4 | WBEE8314A301 | 4A |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | |
| 1/4 | 8 | 1.29 | 1.29 | ⓐ | 10.3 | 60 | WBEE8316A301 ⓐ | 5 | WBEE8316A381V ⓐ | 8 |
| 3/8 | 8 | 1.37 | 1.37 | ⓐ | 10.3 | 60 | WBEE8316A302 ⓐ | 5 | WBEE8316A382V ⓐ | 8 |
| 3/8 | 16 | 3.43 | 3.43 | ⓐ | 10.3 | 60 | WBEE8316A303 ⓐ | 6 | - | - |
| 1/2 | 16 | 3.43 | 3.43 | ⓐ | 10.3 | 60 | WBEE8316A304 ⓐ | 6 | WBEE8316A384V ⓐ | 9 |
| 3/4 | 17 | 4.7 | 4.7 | 0.7 | 10.3 | 60 | WBEE8316A374 ⓐ | 7 | - | - |
| 1 | 25 | 11.14 | 11.14 | 0.7 | 10.3 | 60 | WBEE8316A334 ⓐ | 7A | - | - |
| UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc | | | | | | | | | | |
| 1/4 | ⓑ | .07 | .63 | 0.3 | 10.3 | 60 | WBEE8317A307 ⓑ | 10 | WBEE8317A308 ⓑ | 11 |
| 4/2 VALVES, with NBR Disc and Seal | | | | | | | | | | |
| 1/4 | 2 | .07 | .07 | 0.7 | 10.3 | 60 | WBEE8345A301 ⓑⓓ | 12 | WBEE8345A381 ⓑⓓ | 12 |
| 4/2 VALVES, Brass Body with NBR Disc | | | | | | | | | | |
| | | | | | | | Single Solenoid | Const. Ref. | Dual Solenoid | Const. Ref. |
| 1/4 | 6 | .69 | .86 | 0.7 | 10.3 | 60 | WBEE8344A370 ⓑⓓ | 13 | WBEE8344A344 ⓑ | 16 |
| 3/8 | 10 | 1.89 | 2.2 | 0.7 | 10.3 | 60 | WBEE8344A372 ⓑⓓ | 14 | WBEE8344A380 ⓑ | 17 |
| 1/2 | 10 | 1.89 | 2.2 | 0.7 | 10.3 | 60 | WBEE8344A374 ⓑⓓ | 14 | WBEE8344A382 ⓑ | 17 |
| 3/4 | 19 | 4.80 | 5.6 | 0.7 | 10.3 | 60 | WBEE8344A376 ⓑⓓ | 15 | WBEE8344A354 ⓑ | 18 |
| 1 | 19 | 4.80 | 5.6 | 0.7 | 10.3 | 60 | WBEE8344A378 ⓑⓓ | 15 | WBEE8344A356 ⓑ | 18 |
| ⓑ There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas can not be exhausted to the atmosphere. | | | | | | ⓐ Diaphragm and main disc FKM only (pilot is low-temperature NBR). | | | | |
| ⓑ For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4". | | | | | | ⓐ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 136 for auxiliary pressure vs. mainline pressure. Minimum 1 bar Operating Pressure Differential when selection gasket is in the internal position. | | | | |
| ⓑ IMPORTANT: A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only. | | | | | | | | | | |

SPECIAL SERVICE PILOT

Specifications (Metric units)

| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|---|------------------|-------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|----|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | Min. | Max. | | | | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals | | | | | | | | | | | | | |
| Aluminum 3/2 | 1/4 | 6 | .7 | 2 | 10 | 60 | WBEE8551A305 | 19 | 2 | 10 | 60 | WBEE8551A306 | 19 |
| Aluminum 5/2 | | | | | | | WBEE8551A317 | 20 | | | | WBEE8551A318 | 20 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBEE8551A367 | 20 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBEE8551A368 | 20 |
| Brass 3/2 | | | | | | | WBEE8551A307 | 19 | | | | WBEE8551A308 | 19 |
| Brass 5/2 | | | | | | | WBEE8551A319 | 20 | | | | WBEE8551A320 | 20 |
| 316L Stainless Steel 3/2 | | | | | | | WBEE8551A313 ② | 19 | | | | WBEE8551A314 ② | 19 |
| 316L Stainless Steel 5/2 | | | | | | | WBEE8551A321 ② | 20 | | | | WBEE8551A322 ② | 20 |
| Aluminum 3/2 | 1/2 | 13 | 3.7 | | | | WBEE8553A305 | 19 | | | | WBEE8553A306 | 19 |
| Aluminum 5/2 | | | | | | | WBEE8553A317 | 20 | | | | WBEE8553A318 | 20 |

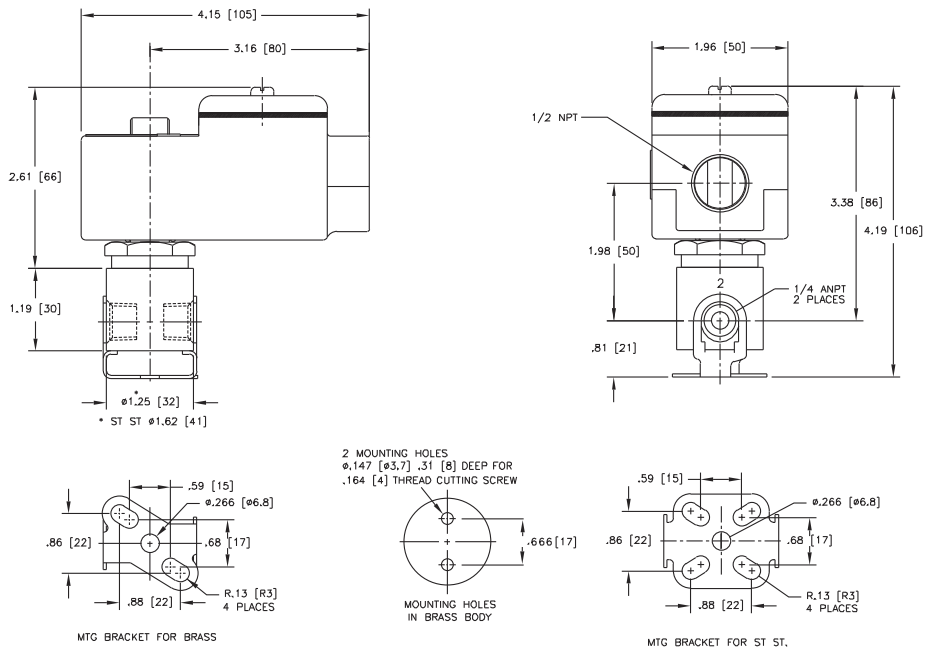
| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|--|------------------|-------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|----|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | Min. | Max. | | | | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount | | | | | | | | | | | | | |
| Aluminum 3/2, 5/2 | 1/4 | 6 | .7 | 2 | 10 | 60 | WBEE8551A301 ① | 21 | 2 | 10 | 60 | WBEE8551A302 ① | 21 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBEE8551A365 | 22 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBEE8551A366 | 22 |
| Brass 3/2, 5/2 | | | | | | | WBEE8551A303 ① | 21 | | | | WBEE8551A304 ① | 21 |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | WBEE8551A309 ② | 22 | | | | WBEE8551A310 ② | 22 |
| Aluminum 3/2, 5/2 | 1/2 | 13 | 3.7 | | | | WBEE8553A301 | 22 | | | | WBEE8553A302 | 22 |

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

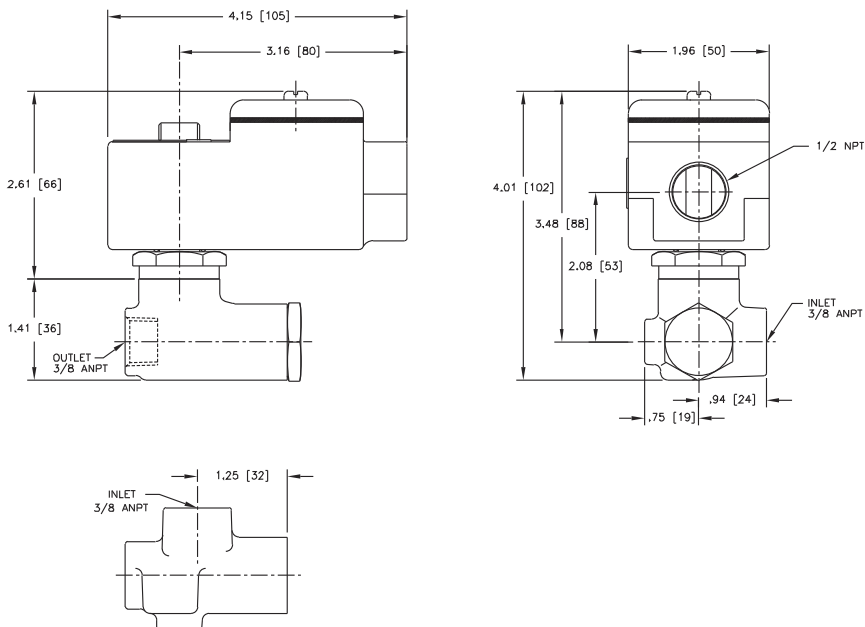
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 1, 1A

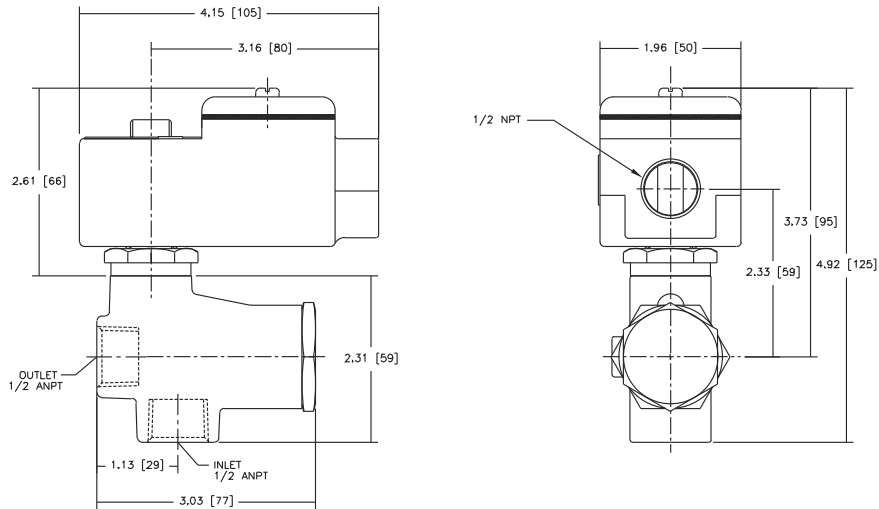


Const. Ref. 2

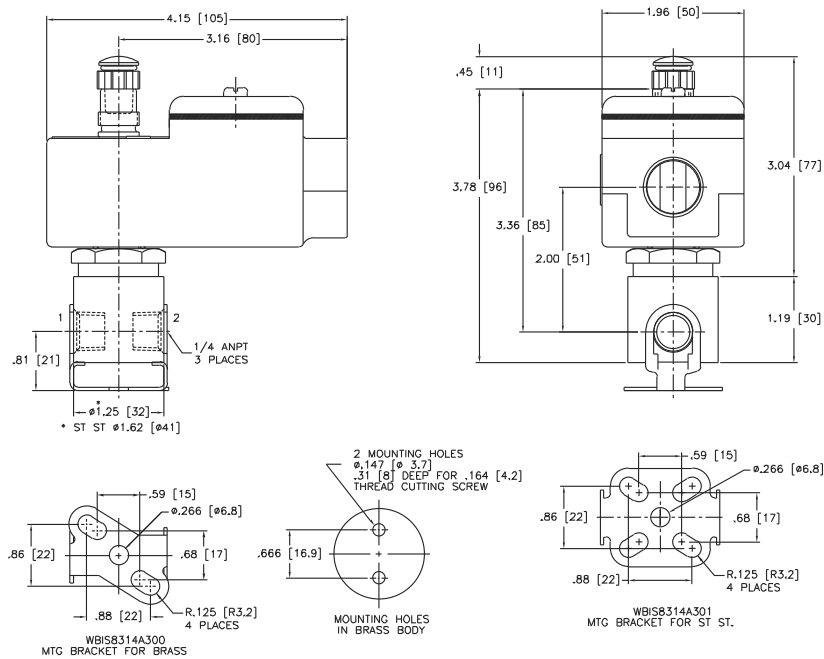


Dimensions: inches (mm)

Const. Ref. 3



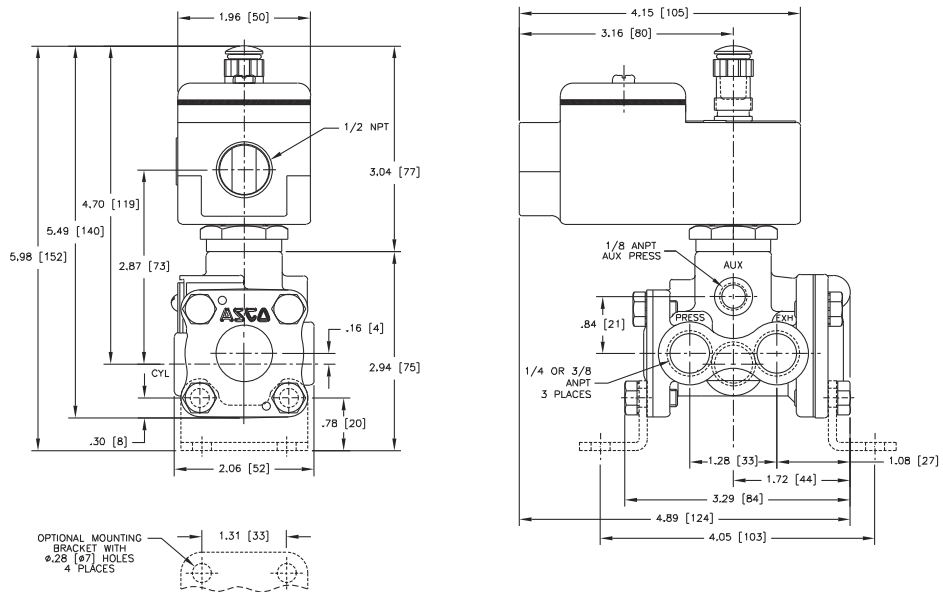
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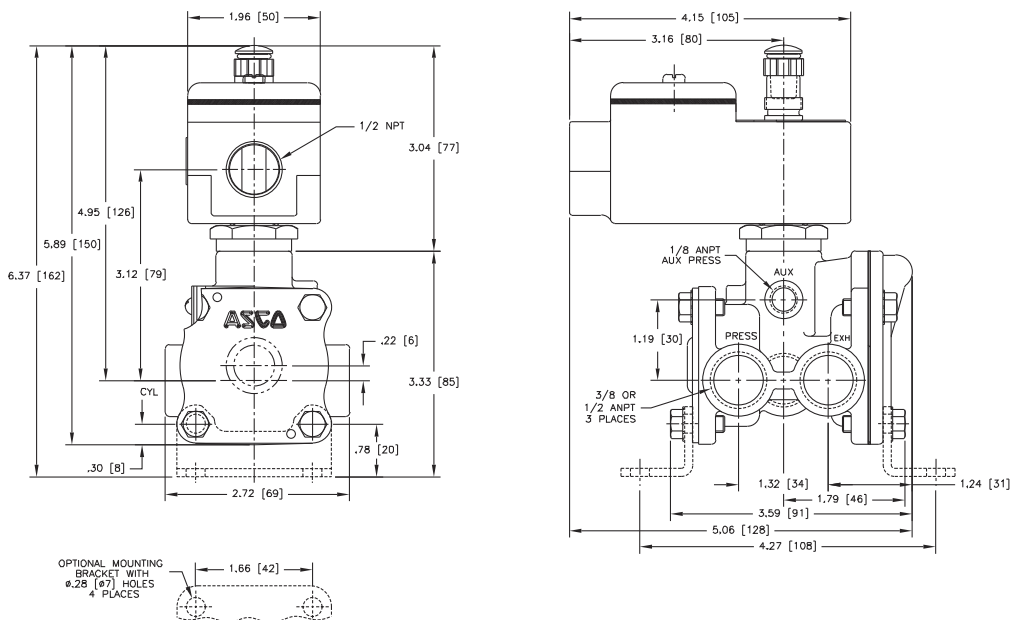
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 5

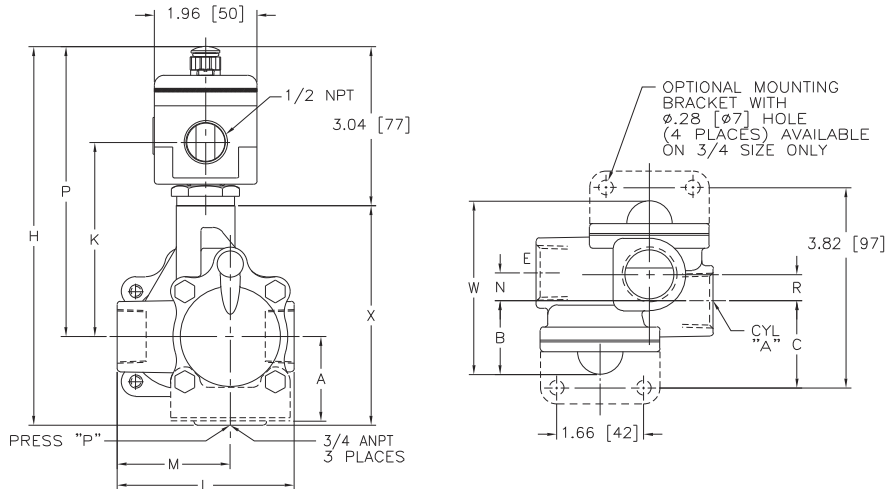


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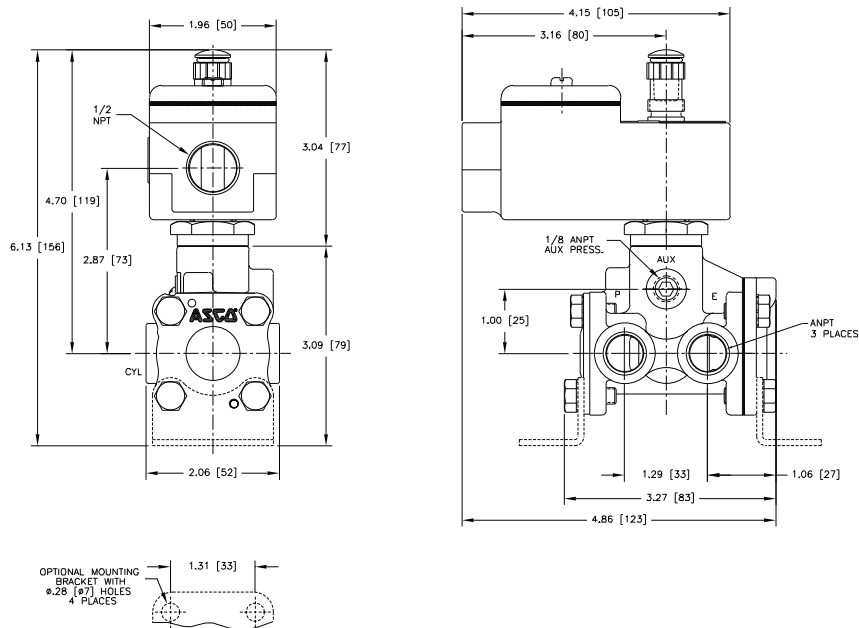
Dimensions: inches (mm)

Const. Ref. 7, 7A



| Catalog No. | | A | B | C | H | K | L | M | N | P | R | W | X |
|--------------|------|------|------|------|------|------|------|------|-----|------|------|------|------|
| WBEE8316A374 | ins. | 1.61 | 1.41 | 1.66 | 7.23 | 3.71 | 3.38 | 2.16 | .53 | 5.54 | .50 | 3.31 | 4.19 |
| | mm | 41 | 36 | 42 | 184 | 94 | 86 | 55 | 13 | 141 | 13 | 84 | 106 |
| WBEE8316A334 | ins. | - | 1.78 | - | 7.85 | 3.96 | 4.44 | 2.81 | .87 | 5.79 | 1.74 | 5.32 | 4.81 |
| | mm | - | 45 | - | 199 | 100 | 113 | 71 | 22 | 147 | 44 | 135 | 122 |

Const. Ref. 8

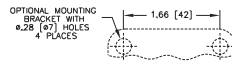
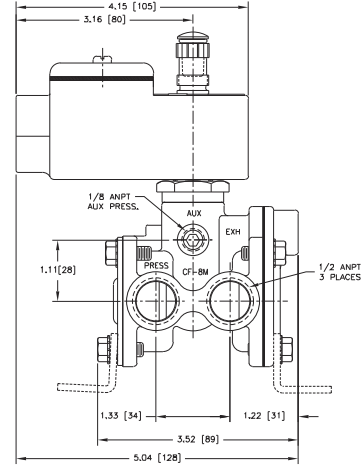
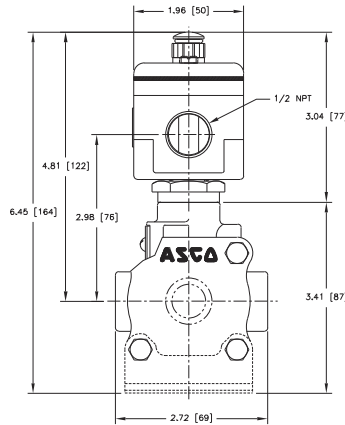
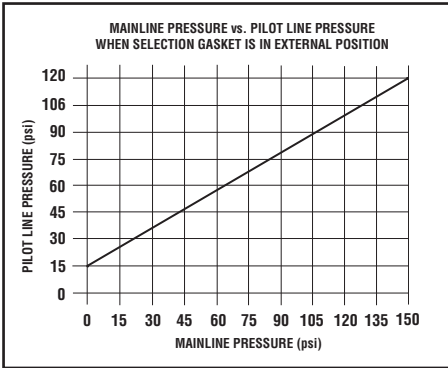


SPECIAL SERVICE
PILOT

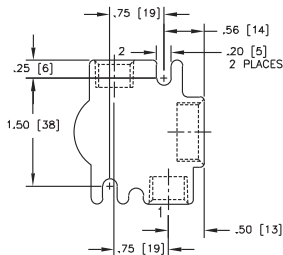
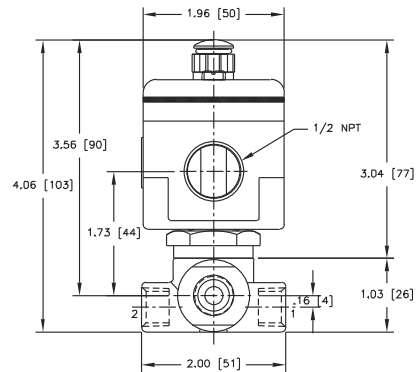
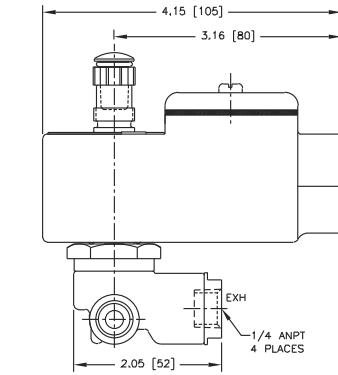
Dimensions: inches (mm)

Const. Ref. 9

Refer to note ⑥.
For all 8316 "0" Minimum Series only.



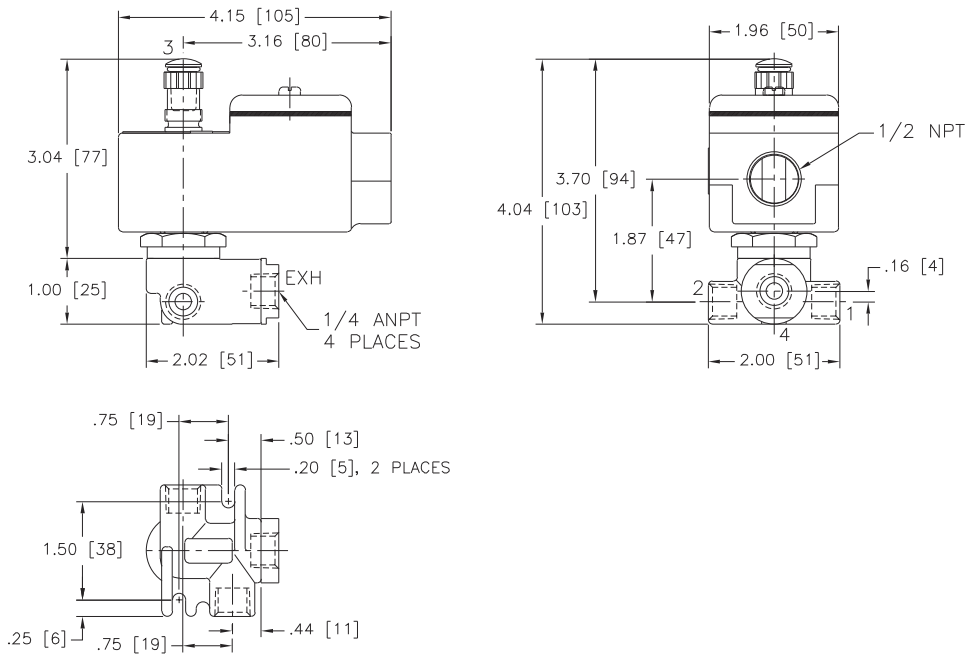
Const. Ref. 10



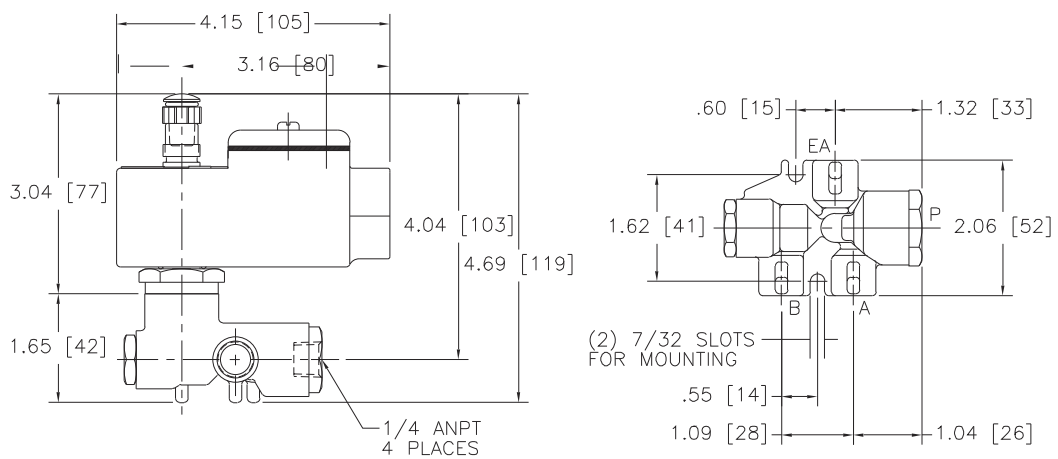
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 11

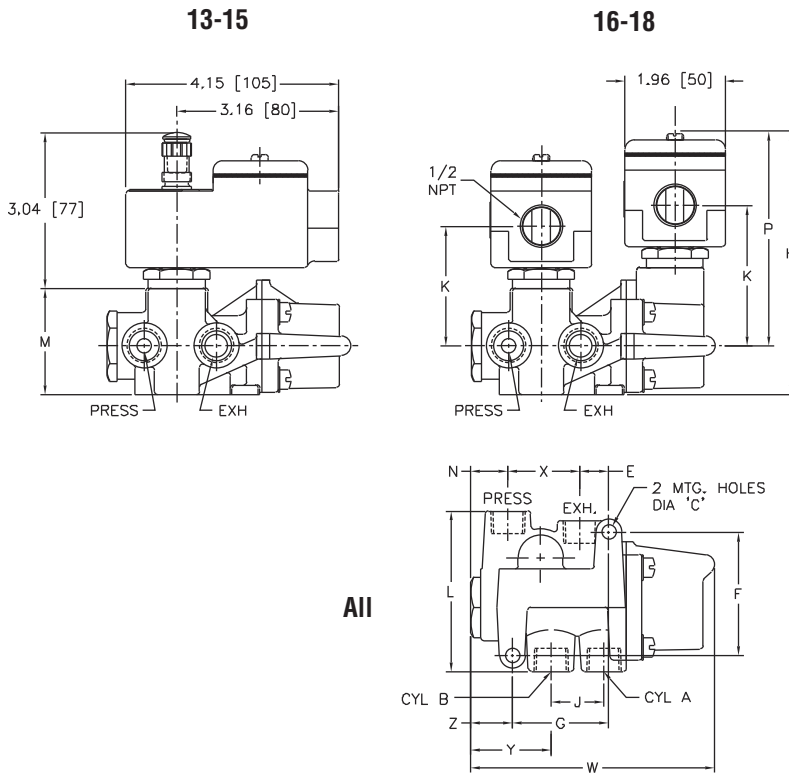


Const. Ref. 12



Dimensions: inches (mm)

Const. Ref. 13-18



All





| Catalog No. | | ØC | E | F | G | H | J | K | L | M | N | P | W | X | Y | Z | Exhaust Pipe Size |
|-------------------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|
| WBEE8344A370 | ins. | .28 | .56 | 2.41 | 1.88 | 5.12 | 1.03 | 2.33 | 3.13 | 2.08 | .72 | 4.16 | 4.75 | 1.41 | 1.56 | .81 | 3/8" |
| | mm | 7.1 | 14 | 61 | 48 | 130 | 26 | 59 | 80 | 53 | 18 | 106 | 121 | 36 | 40 | 21 | |
| WBEE8344A380, 382 | ins. | .34 | .77 | 3.12 | 2.62 | 5.72 | 1.50 | 2.77 | 3.18 | 2.06 | .83 | 4.60 | 6.06 | 1.86 | 1.90 | .84 | 1/2" |
| | mm | 8.6 | 20 | 79 | 67 | 145 | 38 | 70 | 81 | 52 | 21 | 117 | 154 | 47 | 48 | 21 | |
| WBEE8344A372, 374 | ins. | .34 | .77 | 3.12 | 2.62 | 5.10 | 1.50 | 2.14 | 3.18 | 2.06 | .83 | 3.98 | 6.06 | 1.86 | 1.90 | .84 | 1/2" |
| | mm | 8.6 | 20 | 79 | 67 | 120 | 38 | 54 | 81 | 52 | 21 | 101 | 154 | 47 | 48 | 21 | |
| WBEE8344A344 | ins. | .28 | .56 | 2.41 | 1.88 | 5.12 | 1.03 | 2.74 | 3.13 | 2.08 | .72 | 4.16 | 4.75 | 1.41 | 1.56 | .81 | 3/8" |
| | mm | 7.1 | 14 | 61 | 48 | 130 | 26 | 70 | 80 | 53 | 18 | 106 | 121 | 36 | 40 | 21 | |
| WBEE8344A376, 378 | ins. | .34 | 1.37 | 3.81 | 3.88 | 5.90 | 2.09 | 2.52 | 4.56 | 2.86 | 1.55 | 4.35 | 8.25 | 2.12 | 2.63 | 1.16 | 1" |
| | mm | 8.6 | 35 | 97 | 99 | 150 | 53 | 64 | 116 | 73 | 39 | 110 | 210 | 54 | 67 | 30 | |
| WBEE8344A354, 356 | ins. | .34 | 1.37 | 3.81 | 3.88 | 6.54 | 2.09 | 3.21 | 4.56 | 2.81 | 1.55 | 4.35 | 8.25 | 2.12 | 2.63 | 1.16 | 1" |
| | mm | 8.6 | 35 | 97 | 99 | 168 | 53 | 81 | 116 | 71 | 39 | 110 | 210 | 54 | 67 | 30 | |

IMPORTANT: Valves can be mounted in any position.

Dimensions: inches (mm)





| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.12 (132) | 6.00 (153) |
| L2 ① | 6.73 (171) | 7.80 (198) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

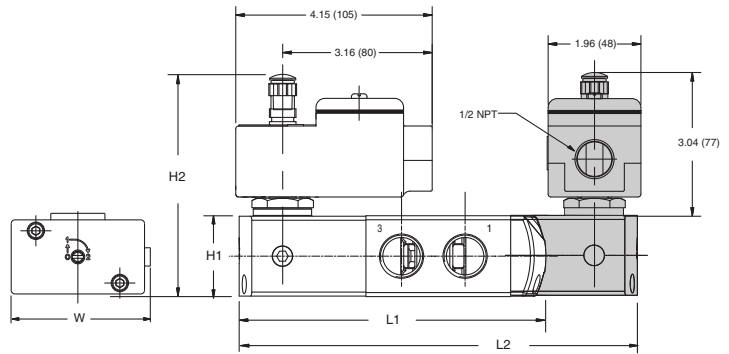
| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.63 (144) | 7.06 (180) |
| L2 ① | 7.20 (183) | 8.86 (225) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

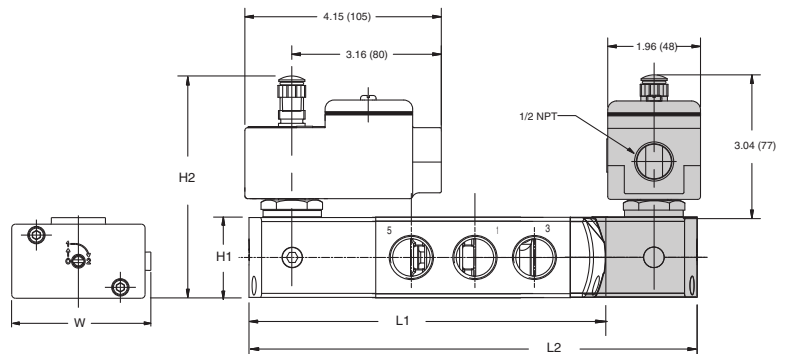
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

Const. Ref. 19



Const. Ref. 20



Dimensions: inches (mm)

| Series | 8551 (Aluminum, Brass) |
|--------|------------------------|
| NPT | 1/4 |
| L1 ① | 4.96 (126) |
| L2 ① | 6.49 (165) |
| H2 | 4.38 (111) |
| H1 | 1.57 (40) |
| W | 1.77 (45) |

① Manual override option MH adds .250" (6.4), MS option adds .468" (11.9) to each solenoid endcap.

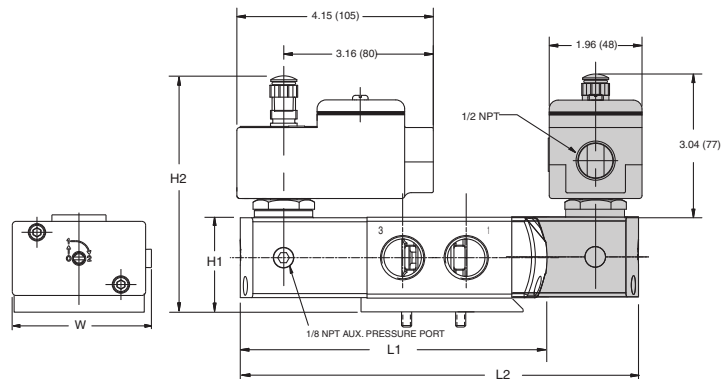
| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |

| Series | 8551 (316L SS) | 8551 (5/3) | 8553 |
|--------|----------------|------------|------------|
| NPT | 1/4 | 1/4 | 1/2 |
| L1 ① | 5.20 (132) | - | 7.08 (180) |
| L2 ① | 6.73 (171) | 7.44 (189) | 8.85 (225) |
| H2 | 4.38 (111) | 4.38 (111) | 4.77 (121) |
| H1 | 1.57 (40) | 1.57 (40) | 2.08 (53) |
| W | 1.77 (45) | 1.77 (45) | 2.87 (73) |

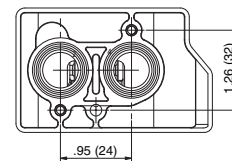
① Manual override option MH adds .250" (6.4), MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |

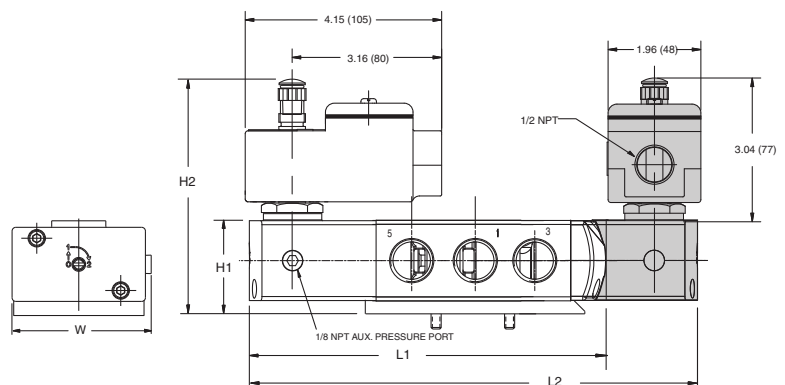
Const. Ref. 21



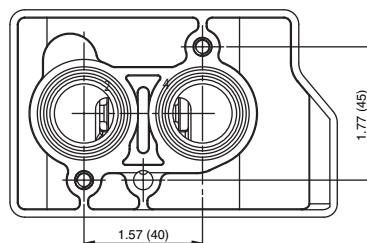
8551 NAMUR Footprint



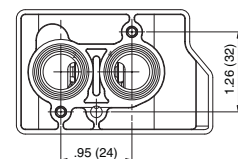
Const. Ref. 22



8553 NAMUR Footprint



8551 NAMUR Footprint





Air and Inert Gas
Intrinsically Safe Valves
 Brass, Aluminum, or Stainless Steel Bodies
 1/4" to 1" NPT

2/2•3/2
4/2•5/2•5/3
SERIES
IS

Features

- Intrinsically safe solenoid enclosures to provide corrosion resistance in harsh environments
- Designed solely for installation in intrinsically safe areas, with properly approved and sized current and voltage-limiting safety barriers
- Acceptable for use in hazardous locations, as classified by the National Electrical Code: Classes I, II, and III, Division 1, including Groups A through G
- Electronically enhanced solenoids have efficient cartridge operators and nonpolarized coils
- Triple redundant diodes prevent electrical pulse from flowing back into the hazardous area
- Mountable in any position

Solenoid Operators

WBIS: Watertight, Type 3, 3S, 4, 4X, IP-67. Liquid Crystal Polymer (LCP) overmolded with 1/2" NPT conduit connection and screw terminals for simple wiring. The terminal block will accommodate 18 gage (AWG) wire, and grounding screw is located inside the enclosure.

ISSC: DIN 43650/ISO 4400, IP-65 Epoxy overmolded with Din Connector supplied, suitable to accept wiring cable diameters of 0.310 to 0.400 inches.

Solenoid Construction

| | |
|--------------------|----------------------|
| Gasket Cover | NBR |
| Cover Screw | 18-8 Stainless Steel |
| Cover Screw Gasket | NBR |
| Sleeve | 430F Stainless Steel |
| Nameplate | Stainless Steel |
| Burp Cap Assembly | PA/CR |

Valve Construction

| Valve Parts in Contact with Fluids | | | |
|--|------------------------------|-------|-----------------|
| Body | Aluminum | Brass | Stainless Steel |
| Seals and Discs | PUR, NBR, FKM, CR, as listed | | |
| Sleeve | 304L Stainless Steel | | |
| Core and Plugnut | 430F Stainless Steel | | |
| Core Springs | 302 Stainless Steel | | |
| Pilot Seat Cartridge (Series 8316 & 8344 only) | CA | | |
| Rider Rings | PTFE | | |
| Spring Retainer | CA | | |

Electrical

Nominal Wattage is 0.35 @ 24 VDC
 Maximum Allowable "Off" State Current to the Valves must be less than 1 mA.
Electronically Enhanced "IS" Solenoid:
 Maximum Capacitor Charge Time — 1 second
 Minimum Time between Cycles — 1 second
 Minimum Drop Current to Reset Electronic Coil — 2 mA
 Nominal Temperature Rise at 24 VDC and 300 Ohms — 2°C (36°F)
 Maximum Recommended Wire Run (#18 Wire) — 1.5 miles from barrier to valve
Important: Minimum series resistance of 200 ohms required in wiring circuit if a safety barrier is not used for non-"IS" system. IS_ValvesR1



Ordering Information

The LCP Intrinsically Safe solenoid enclosure is designated by the prefix "WBIS". The Epoxy Din Connector is ordered by prefix "ISSC".

Example: WBIS8314A300 Spare Coil P/Ns
 ISSC8314A300 WBIS: 274445-001*
 ISSC: 268976-001*

Nominal Ambient Temp. Ranges

| Series | Body Material | Temperature Range |
|---------------|----------------------|--------------------------------|
| 8551 | Aluminum | 5°F to 140°F (-15°C to 60°C) |
| 8262 | Brass | -40°F to 140°F (-40°C to 60°C) |
| 8314 | | |
| 8317 | | |
| 8551 | | |
| 8551 | 316L Stainless Steel | |
| 8316 Suffix V | Misc. | 32°F to 140°F (0°C to 60°C) |
| All Other | | -4°F to 140°F (-20°C to 60°C) |

Approvals

FM approved under J.I.3W8A8. AX (3610).
 CSA certified under File LR-13976.
 ATEX EEx ia IIC T6 approved - pending
 Meets applicable CE directives.
Refer to Engineering Section for details.

Important

These solenoids are intended for use on clean, dry air or inert gas filtered to 50 micrometers or better. To prevent freezing, the dew point of the media should be at least 18°F (-8°C) below the minimum temperature to which any portion of the clean air or gas system could be exposed. Instrument air in compliance with ANSI/ISA Standard S7.3-1975 (R1981) exceeds the above requirements and is, therefore, an acceptable medium for these valves.

Maximum Entity Parameters

| Entity | Groups A-D | Groups C-D |
|------------|-----------------|-----------------|
| Parameters | V max - 30 VDC | V max - 34 VDC |
| | I max - 100 mA | I max - 125 mA |
| | Capacitance = 0 | Capacitance = 0 |
| | Inductance = 0 | Inductance = 0 |

Standard Voltage: 24 VDC only (±10%)

Minimum Operating Current: 0.028 amps

SPECIAL SERVICE PILOT



Specifications (English units)

| 2/2 VALVES, NORMALLY CLOSED, with NBR Disc | | | | | | | | | | |
|---|---------------------|----------------|-----|---------------------------------------|---------------------|--|-----------------|-------------|----------------------|-------------|
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Min. | Max. | | | | | |
| 1/4 | 1/16 | .08 | | 0 | 150 | 140 | WBIS8262A320 | 1 | WBIS8262A386 | 1A |
| 3/8 | 5/16 | 1.5 | | 10 | 150 | 140 | WBIS8223A323 | 2 | - | - |
| 1/2 | 3/8 | 3.2 | | 25 | 150 | 140 | WBIS8223A303 | 3 | WBIS8223A310 | 3 |
| 3/2 VALVES | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Pressure to Cylinder | Cylinder to Exhaust | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) with NBR Disc | | | | | | | | | | |
| 1/4 | 1/16 | .08 | .08 | 0 | 150 | 140 | WBIS8314A300 | 4 | WBIS8314A301 | 4A |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | |
| 1/4 | 5/16 | 1.5 | 1.5 | ⑥ | 150 | 140 | WBIS8316A301 ③ | 5 | WBIS8316A381V ⑤ | 8 |
| 3/8 | 5/16 | 1.8 | 1.8 | ⑥ | 150 | 140 | WBIS8316A302 ③ | 5 | WBIS8316A382V ⑤ | 8 |
| 3/8 | 5/8 | 4 | 4 | ⑥ | 150 | 140 | WBIS8316A303 ③ | 6 | - | - |
| 1/2 | 5/8 | 4 | 4 | ⑥ | 150 | 140 | WBIS8316A304 ③ | 6 | WBIS8316A384V ⑤ | 9 |
| 3/4 | 11/16 | 5.5 | 5.5 | 10 | 150 | 140 | WBIS8316A374 ③ | 7 | - | - |
| 1 | 1 | 13 | 13 | 10 | 150 | 140 | WBIS8316A334 ③ | 7A | - | - |
| UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc | | | | | | | | | | |
| 1/4 | ② | .08 | .73 | 5 | 150 | 140 | WBIS8317A307 ① | 10 | WBIS8317A308 ① | 11 |
| 4/2 VALVES, with NBR Disc and Seal | | | | | | | | | | |
| 1/4 | 1/16 | .08 | .08 | 10 | 150 | 140 | WBIS8345A301 ①③ | 12 | WBIS8345A381 ①③ | 12 |
| 4/2 VALVES, Brass Body with NBR Disc | | | | | | | | | | |
| | | | | | | | Single Solenoid | Const. Ref. | Dual Solenoid | Const. Ref. |
| 1/4 | 1/4 | .80 | 1 | 10 | 150 | 140 | WBIS8344A370 ①③ | 13 | WBIS8344A344 ③ | 16 |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 | 150 | 140 | WBIS8344A372 ①③ | 14 | WBIS8344A380 ③ | 17 |
| 1/2 | 3/8 | 1.4 | 2.2 | 10 | 150 | 140 | WBIS8344A374 ①③ | 14 | WBIS8344A382 ③ | 17 |
| 3/4 | 3/4 | 5.2 | 5.6 | 10 | 150 | 140 | WBIS8344A376 ①③ | 15 | WBIS8344A354 ③ | 18 |
| 1 | 3/4 | 5.2 | 5.6 | 10 | 150 | 140 | WBIS8344A378 ①③ | 15 | WBIS8344A356 ③ | 18 |
| ① There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas can not be exhausted to the atmosphere. | | | | | | ⑤ Diaphragm and main disc FKM only (pilot is low-temperature NBR). | | | | |
| ② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4". | | | | | | ⑥ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 150 for auxiliary pressure vs. mainline pressure. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position. | | | | |
| ③ IMPORTANT: A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only. | | | | | | | | | | |

SPECIAL SERVICE PILOT

Specifications (English units)

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|---|------------------|---------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|-----|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | Min. | Max. | | | | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals | | | | | | | | | | | | | |
| Aluminum 3/2 | 1/4 | 1/4 | .86 | 30 | 150 | 140 | WBIS8551A305 | 19 | 30 | 150 | 140 | WBIS8551A306 | 19 |
| Aluminum 5/2 | | | | | | | WBIS8551A317 | 20 | | | | WBIS8551A318 | 20 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBIS8551A367 | 20 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBIS8551A368 | 20 |
| Brass 3/2 | | | | | | | WBIS8551A307 | 19 | | | | WBIS8551A308 | 19 |
| Brass 5/2 | | | | | | | WBIS8551A319 | 20 | | | | WBIS8551A320 | 20 |
| 316L Stainless Steel 3/2 | | | | | | | WBIS8551A313 ② | 19 | | | | WBIS8551A314 ② | 19 |
| 316L Stainless Steel 5/2 | | | | | | | WBIS8551A321 ② | 20 | | | | WBIS8551A322 ② | 20 |
| Aluminum 3/2 | 1/2 | 1/2 | 3.7 | 30 | 150 | 140 | WBIS8553A305 | 19 | 30 | 150 | 140 | WBIS8553A306 | 19 |
| Aluminum 5/2 | | | | | | | WBIS8553A317 | 20 | | | | WBIS8553A318 | 20 |

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|--|------------------|---------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|-----|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | Min. | Max. | | | | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount | | | | | | | | | | | | | |
| Aluminum 3/2, 5/2 | 1/4 | 1/4 | .86 | 30 | 150 | 140 | WBIS8551A301 ① | 21 | 30 | 150 | 140 | WBIS8551A302 ① | 21 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBIS8551A365 | 22 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBIS8551A366 | 22 |
| Brass 3/2, 5/2 | | | | | | | WBIS8551A303 ① | 21 | | | | WBIS8551A304 ① | 21 |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | WBIS8551A309 ② | 22 | | | | WBIS8551A310 ② | 22 |
| Aluminum 3/2, 5/2 | 1/2 | 1/2 | 3.7 | 30 | 150 | 140 | WBIS8553A301 | 22 | 30 | 150 | 140 | WBIS8553A302 | 22 |

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

SPECIAL SERVICE
PILOT

Specifications (Metric units)

| 2/2 VALVES, NORMALLY CLOSED, with NBR Disc | | | | | | | | | | |
|---|-------------------|-----------------------|-------|---------------------------------------|---------------------|---|-----------------|-------------|----------------------|-------------|
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Min. | Max. | | | | | |
| 1/4 | 1 | .07 | | 0 | 10.3 | 60 | WBIS8262A320 | 1 | WBIS8262A386 | 1A |
| 3/8 | 8 | 1.29 | | 0.7 | 10.3 | 60 | WBIS8223A323 | 2 | - | - |
| 1/2 | 10 | 2.74 | | 1.7 | 10.3 | 60 | WBIS8223A303 | 3 | WBIS8223A310 | 3 |
| 3/2 VALVES | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C | Brass Body | | Stainless Steel Body | |
| | | | | Air-Inert Gas | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Pressure to Cylinder | Cylinder to Exhaust | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) with NBR Disc | | | | | | | | | | |
| 1/4 | 2 | .07 | .07 | 0 | 10.3 | 60 | WBIS8314A300 | 4 | WBIS8314A301 | 4A |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | |
| 1/4 | 8 | 1.29 | 1.29 | ⓐ | 10.3 | 60 | WBIS8316A301 ⓐ | 5 | WBIS8316A381V ⓐ | 8 |
| 3/8 | 8 | 1.37 | 1.37 | ⓐ | 10.3 | 60 | WBIS8316A302 ⓐ | 5 | WBIS8316A382V ⓐ | 8 |
| 3/8 | 16 | 3.43 | 3.43 | ⓐ | 10.3 | 60 | WBIS8316A303 ⓐ | 6 | - | - |
| 1/2 | 16 | 3.43 | 3.43 | ⓐ | 10.3 | 60 | WBIS8316A304 ⓐ | 6 | WBIS8316A384V ⓐ | 9 |
| 3/4 | 17 | 4.71 | 4.71 | 0.7 | 10.3 | 60 | WBIS8316A374 ⓐ | 7 | - | - |
| 1 | 25 | 11.14 | 11.14 | 0.7 | 10.3 | 60 | WBIS8316A334 ⓐ | 7A | - | - |
| UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc | | | | | | | | | | |
| 1/4 | ⓑ | .07 | .63 | 0.3 | 10.3 | 60 | WBIS8317A307 ⓑ | 10 | WBIS8317A308 ⓑ | 11 |
| 4/2 VALVES, with NBR Disc and Seal | | | | | | | | | | |
| 1/4 | 2 | .07 | .07 | 0.7 | 10.3 | 60 | WBIS8345A301 ⓑⓓ | 12 | WBIS8345A381 ⓑⓓ | 12 |
| 4/2 VALVES, Brass Body with NBR Disc | | | | | | | | | | |
| 1/4 | 6 | .69 | .86 | 0.7 | 10.3 | 60 | WBIS8344A370 ⓑⓓ | 13 | WBIS8344A344 ⓑ | 16 |
| 3/8 | 10 | 1.20 | 1.89 | 0.7 | 10.3 | 60 | WBIS8344A372 ⓑⓓ | 14 | WBIS8344A380 ⓑ | 17 |
| 1/2 | 10 | 1.20 | 1.89 | 0.7 | 10.3 | 60 | WBIS8344A374 ⓑⓓ | 14 | WBIS8344A382 ⓑ | 17 |
| 3/4 | 19 | 4.46 | 4.80 | 0.7 | 10.3 | 60 | WBIS8344A376 ⓑⓓ | 15 | WBIS8344A354 ⓑ | 18 |
| 1 | 19 | 4.46 | 4.80 | 0.7 | 10.3 | 60 | WBIS8344A378 ⓑⓓ | 15 | WBIS8344A356 ⓑ | 18 |
| ⓐ There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas can not be exhausted to the atmosphere. ⓑ For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4". ⓓ IMPORTANT: A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only. | | | | | | ⓔ Diaphragm and main disc FKM only (pilot is low-temperature NBR). ⓕ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 150 for auxiliary pressure vs. mainline pressure. Minimum 1 bar Operating Pressure Differential when selection gasket is in the internal position. | | | | |

SPECIAL SERVICE PILOT

Specifications (Metric units)

| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|---|------------------|-------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|----|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | Min. | Max. | | | | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals | | | | | | | | | | | | | |
| Aluminum 3/2 | 1/4 | 6 | .7 | 2 | 10 | 60 | WBIS8551A305 | 19 | 2 | 10 | 60 | WBIS8551A306 | 19 |
| Aluminum 5/2 | | | | | | | WBIS8551A317 | 20 | | | | WBIS8551A318 | 20 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBIS8551A367 | 20 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBIS8551A368 | 20 |
| Brass 3/2 | | | | | | | WBIS8551A307 | 19 | | | | WBIS8551A308 | 19 |
| Brass 5/2 | | | | | | | WBIS8551A319 | 20 | | | | WBIS8551A320 | 20 |
| 316L Stainless Steel 3/2 | | | | | | | WBIS8551A313 ② | 19 | | | | WBIS8551A314 ② | 19 |
| 316L Stainless Steel 5/2 | | | | | | | WBIS8551A321 ② | 20 | | | | WBIS8551A322 ② | 20 |
| Aluminum 3/2 | 1/2 | 13 | 3.7 | | | | WBIS8553A305 | 19 | | | | WBIS8553A306 | 19 |
| Aluminum 5/2 | | | | | | | WBIS8553A317 | 20 | | | | WBIS8553A318 | 20 |

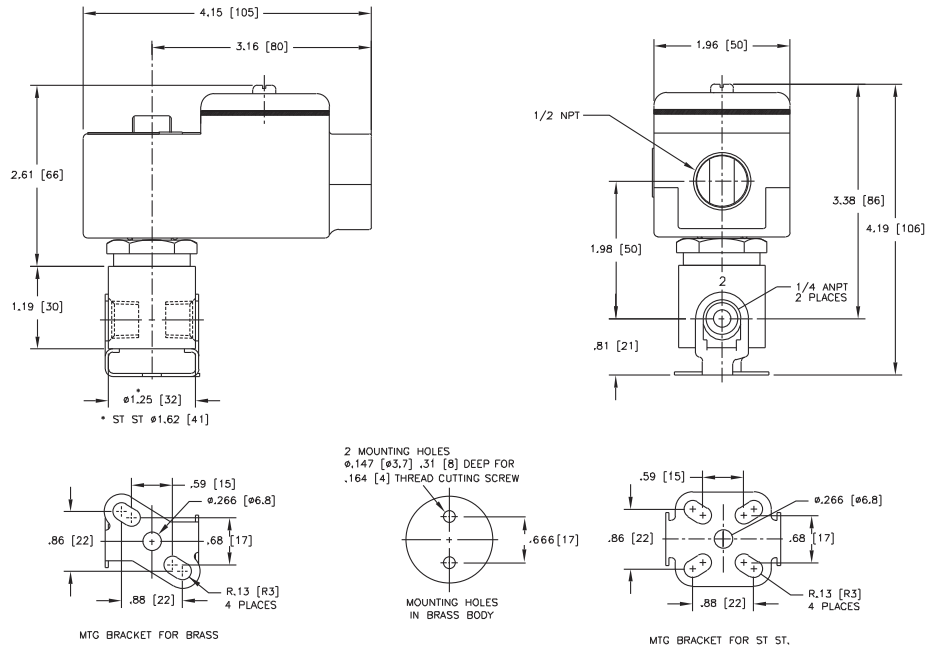
| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor | Single Solenoid | | | | | Dual Solenoid | | | | |
|--|------------------|-------------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|---------------------------------------|----|---------------------|----------------|-------------|
| | | | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | | | | | Air-Inert Gas | | | | |
| | | | | Min. | Max. | Min. | Max. | | | | | | |
| 3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount | | | | | | | | | | | | | |
| Aluminum 3/2, 5/2 | 1/4 | 6 | .7 | 2 | 10 | 60 | WBIS8551A301 ① | 21 | 2 | 10 | 60 | WBIS8551A302 ① | 21 |
| Aluminum 5/3 Center Closed | | | | | | | - | - | | | | WBIS8551A365 | 22 |
| Aluminum 5/3 Center Open | | | | | | | - | - | | | | WBIS8551A366 | 22 |
| Brass 3/2, 5/2 | | | | | | | WBIS8551A303 ① | 21 | | | | WBIS8551A304 ① | 21 |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | WBIS8551A309 ② | 22 | | | | WBIS8551A310 ② | 22 |
| Aluminum 3/2, 5/2 | 1/2 | 13 | 3.7 | | | | WBIS8553A301 | 22 | | | | WBIS8553A302 | 22 |

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

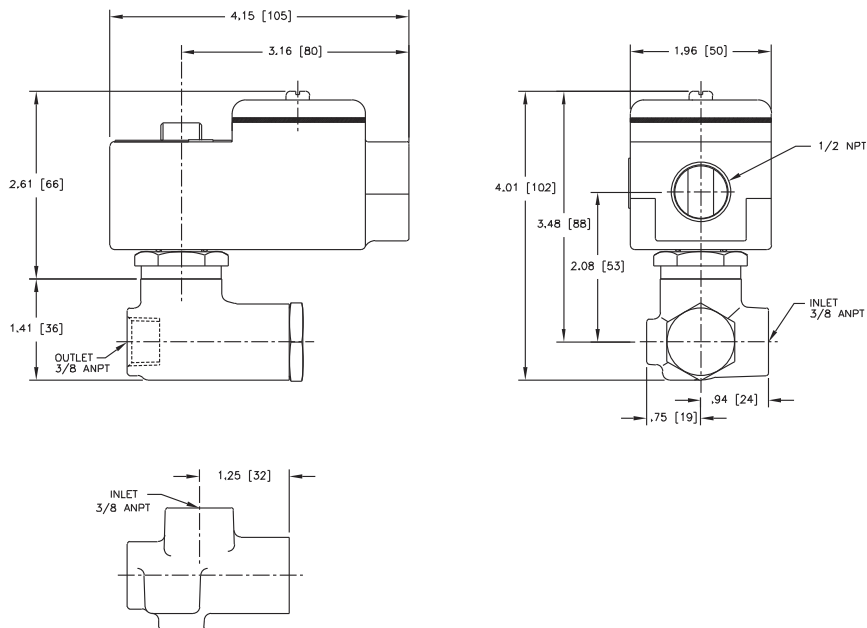
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 1, 1A



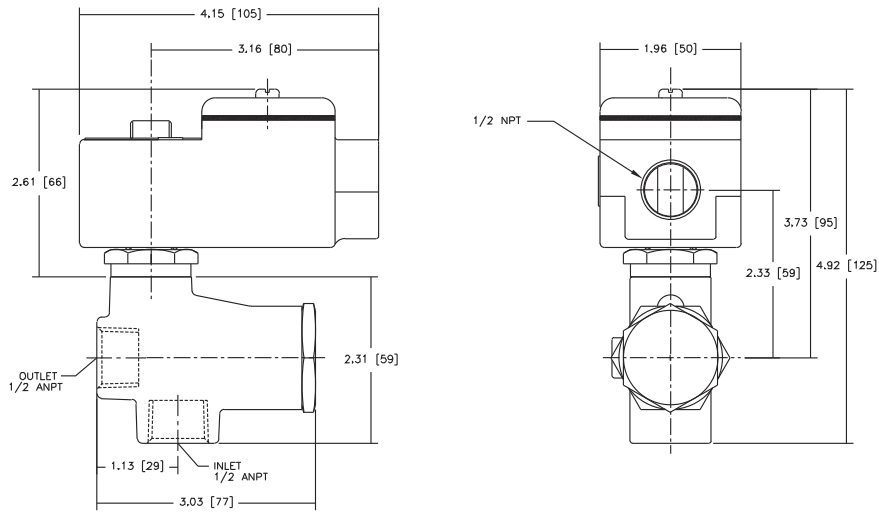
Const. Ref. 2



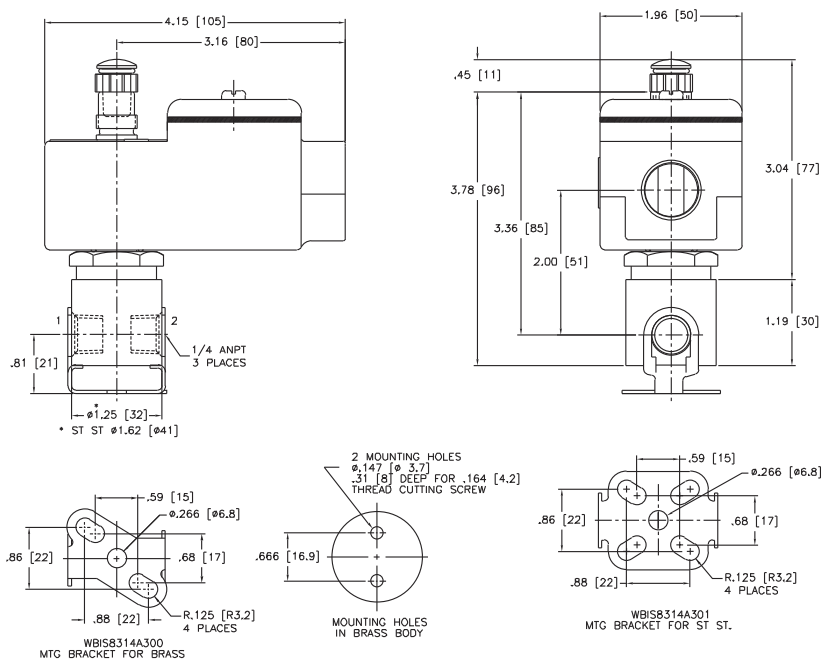
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 3



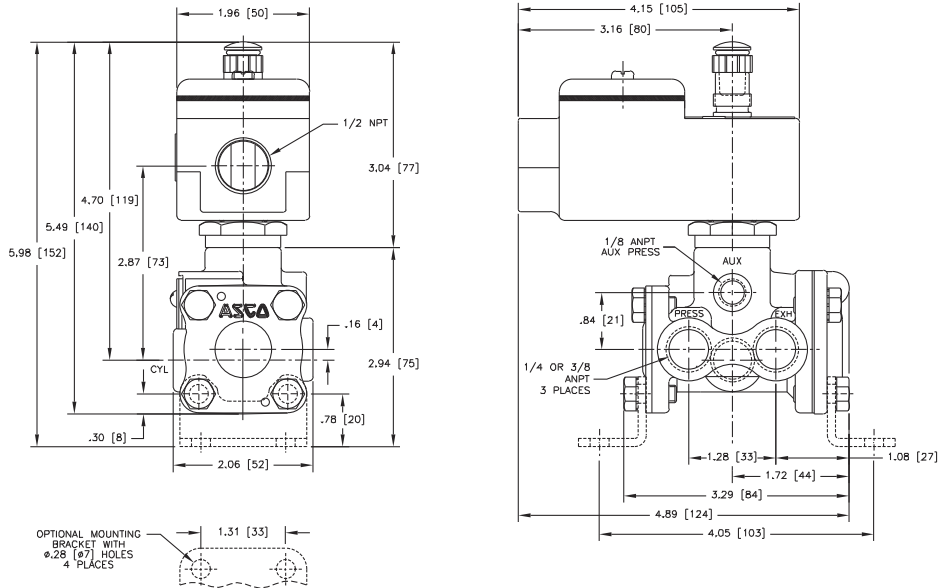
Const. Ref. 4, 4A



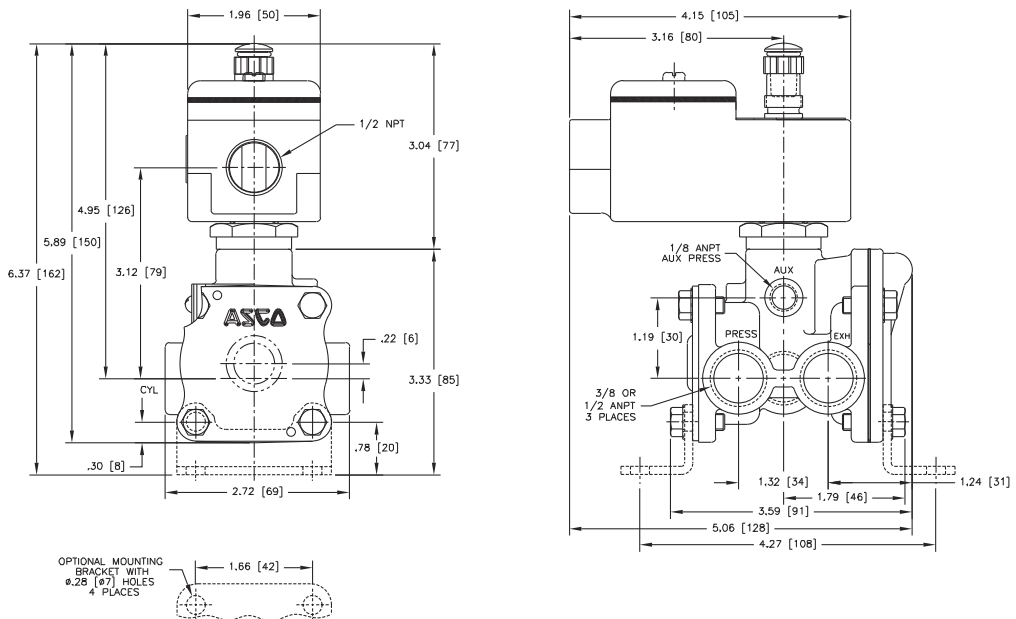
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 5



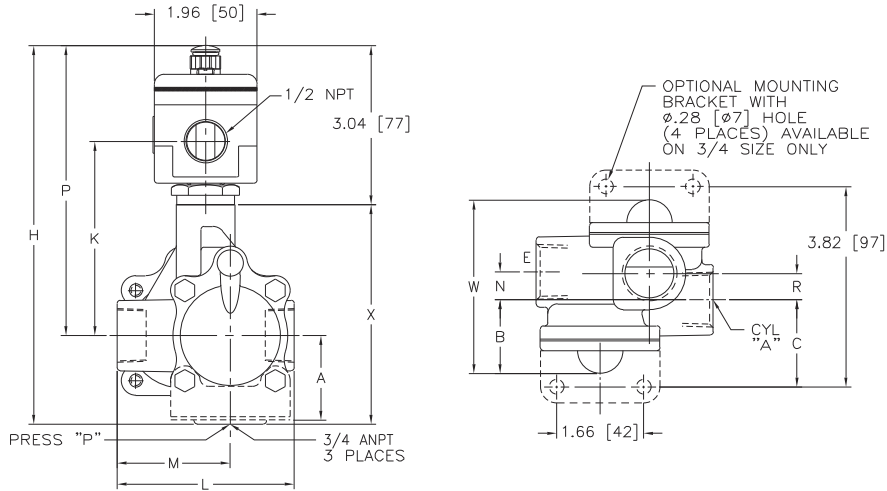
Const. Ref. 6



SPECIAL SERVICE
PILOT

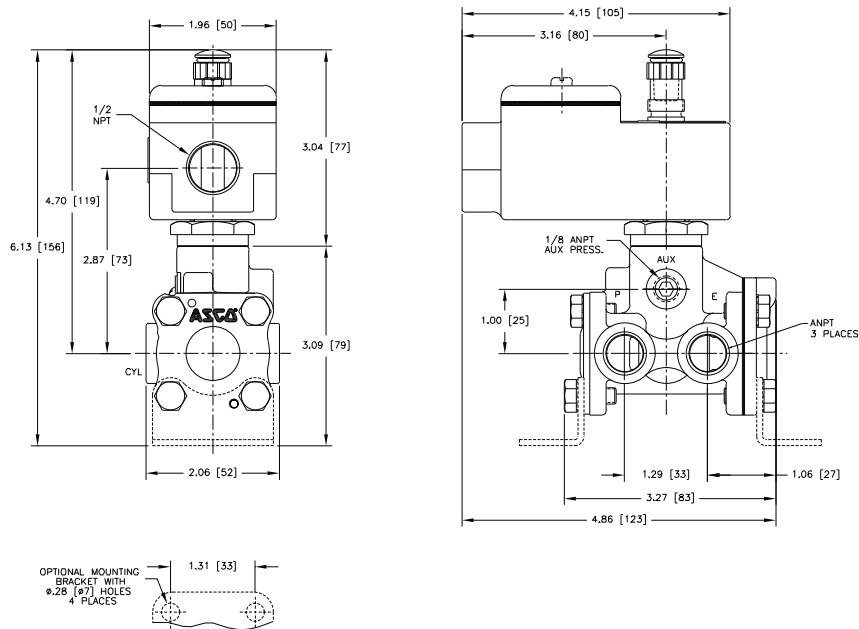
Dimensions: inches (mm)

Const. Ref. 7, 7A



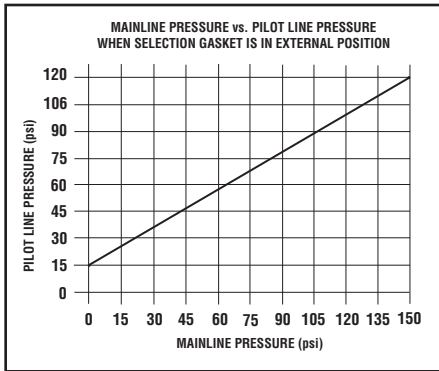
| Catalog No. | | A | B | C | H | K | L | M | N | P | R | W | X |
|--------------|------|------|------|------|------|------|------|------|-----|------|------|------|------|
| WBIS8316A374 | ins. | 1.61 | 1.41 | 1.66 | 7.23 | 3.71 | 3.38 | 2.16 | .53 | 5.54 | .50 | 3.31 | 4.19 |
| | mm | 41 | 36 | 42 | 184 | 94 | 86 | 55 | 13 | 141 | 13 | 84 | 106 |
| WBIS8316A334 | ins. | - | 1.78 | - | 7.85 | 3.96 | 4.44 | 2.81 | .87 | 5.79 | 1.74 | 5.32 | 4.81 |
| | mm | - | 45 | - | 199 | 100 | 113 | 71 | 22 | 147 | 44 | 135 | 122 |

Const. Ref. 8

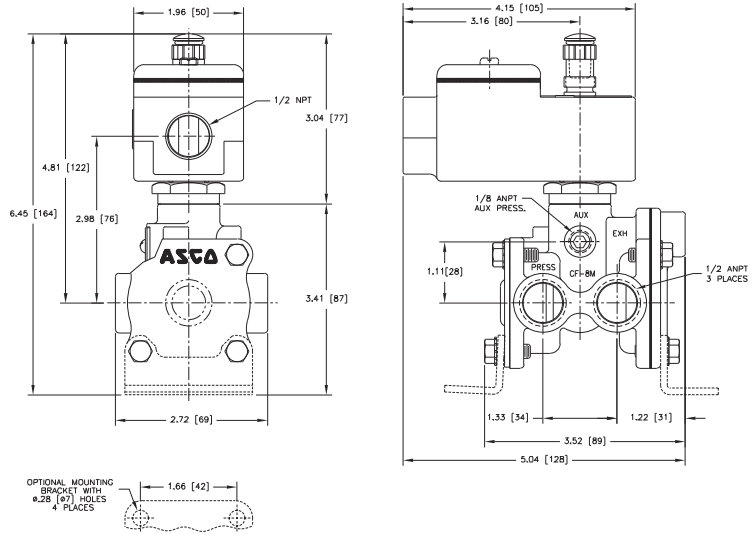


Dimensions: inches (mm)

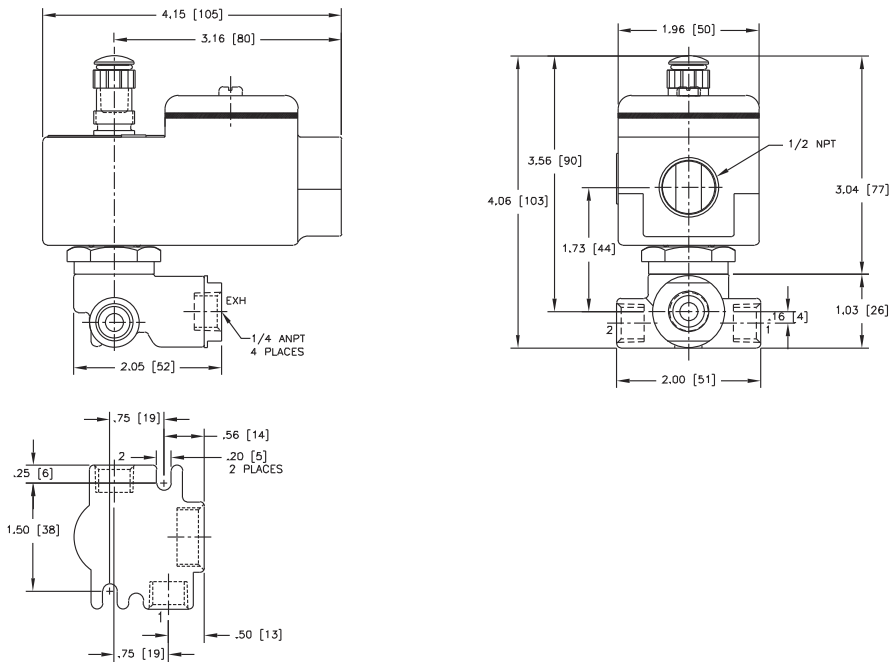
Refer to note ⑥.
For all 8316 "0" Minimum Series only.



Const. Ref. 9



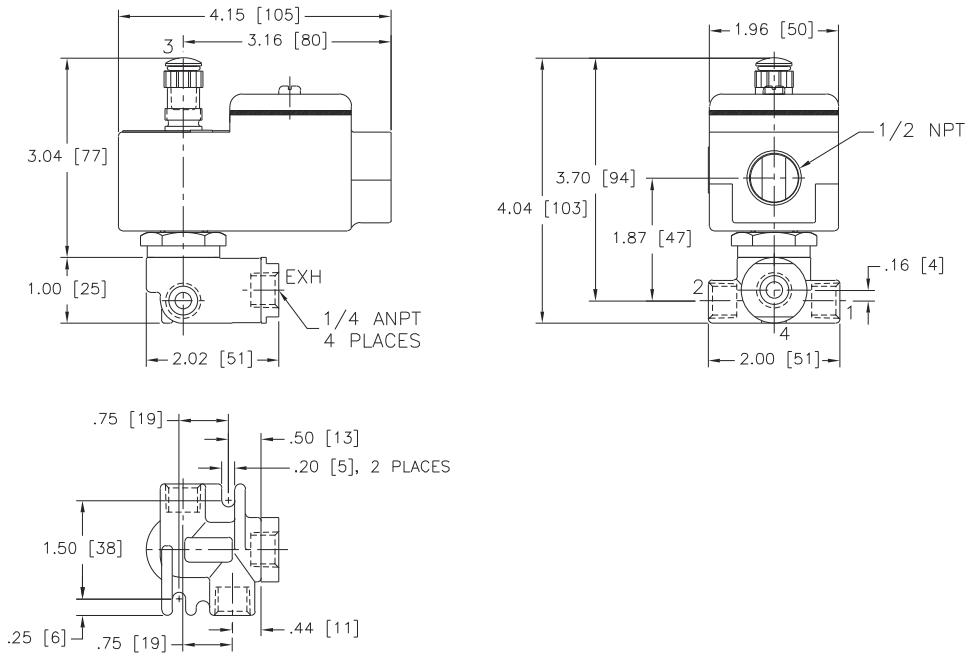
Const. Ref. 10



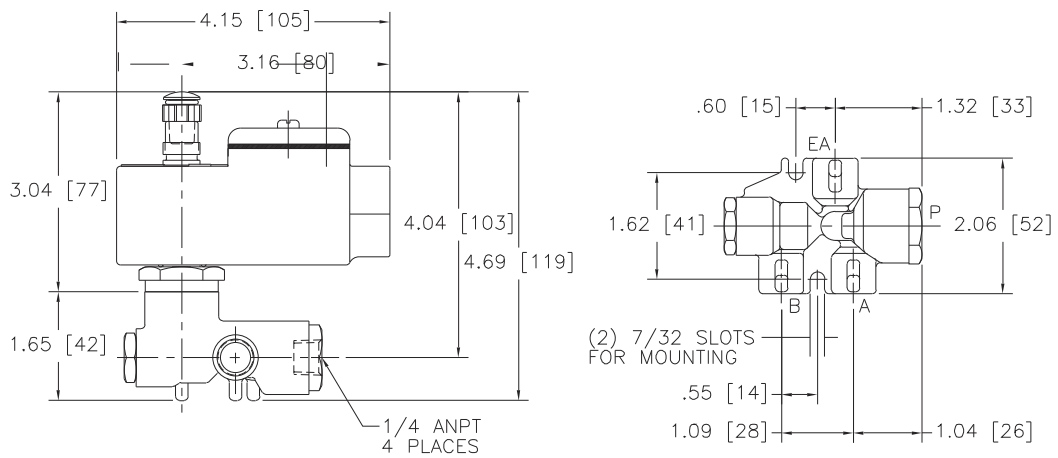
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 11



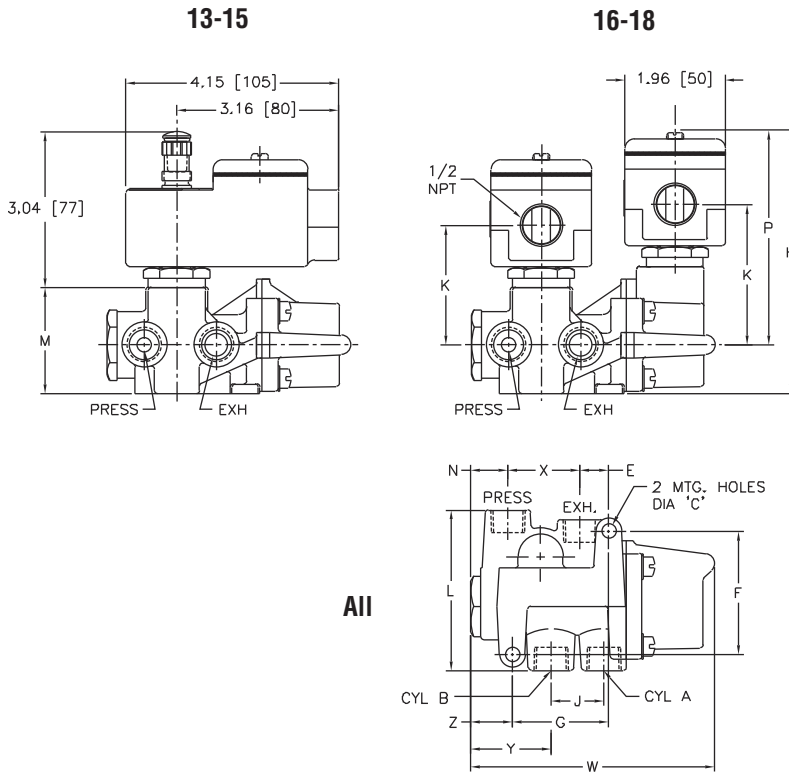
Const. Ref. 12



SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 13-18







| Catalog No. | | ØC | E | F | G | H | J | K | L | M | N | P | W | X | Y | Z | Exhaust Pipe Size |
|-------------------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|
| WBIS8344A370 | ins. | .28 | .56 | 2.41 | 1.88 | 5.12 | 1.03 | 2.33 | 3.13 | 2.08 | .72 | 4.16 | 4.75 | 1.41 | 1.56 | .81 | 3/8" |
| | mm | 7.1 | 14 | 61 | 48 | 130 | 26 | 59 | 80 | 53 | 18 | 106 | 121 | 36 | 40 | 21 | |
| WBIS8344A380, 382 | ins. | .34 | .77 | 3.12 | 2.62 | 5.72 | 1.50 | 2.77 | 3.18 | 2.06 | .83 | 4.60 | 6.06 | 1.86 | 1.90 | .84 | 1/2" |
| | mm | 8.6 | 20 | 79 | 67 | 145 | 38 | 70 | 81 | 52 | 21 | 117 | 154 | 47 | 48 | 21 | |
| WBIS8344A372, 374 | ins. | .34 | .77 | 3.12 | 2.62 | 5.10 | 1.50 | 2.14 | 3.18 | 2.06 | .83 | 3.98 | 6.06 | 1.86 | 1.90 | .84 | 1/2" |
| | mm | 8.6 | 20 | 79 | 67 | 120 | 38 | 54 | 81 | 52 | 21 | 101 | 154 | 47 | 48 | 21 | |
| WBIS8344A344 | ins. | .28 | .56 | 2.41 | 1.88 | 5.12 | 1.03 | 2.74 | 3.13 | 2.08 | .72 | 4.16 | 4.75 | 1.41 | 1.56 | .81 | 3/8" |
| | mm | 7.1 | 14 | 61 | 48 | 130 | 26 | 70 | 80 | 53 | 18 | 106 | 121 | 36 | 40 | 21 | |
| WBIS8344A376, 378 | ins. | .34 | 1.37 | 3.81 | 3.88 | 5.90 | 2.09 | 2.52 | 4.56 | 2.86 | 1.55 | 4.35 | 8.25 | 2.12 | 2.63 | 1.16 | 1" |
| | mm | 8.6 | 35 | 97 | 99 | 150 | 53 | 64 | 116 | 73 | 39 | 110 | 210 | 54 | 67 | 30 | |
| WBIS8344A354, 356 | ins. | .34 | 1.37 | 3.81 | 3.88 | 6.54 | 2.09 | 3.21 | 4.56 | 2.81 | 1.55 | 4.35 | 8.25 | 2.12 | 2.63 | 1.16 | 1" |
| | mm | 8.6 | 35 | 97 | 99 | 168 | 53 | 81 | 116 | 71 | 39 | 110 | 210 | 54 | 67 | 30 | |

IMPORTANT: Valves can be mounted in any position.

Dimensions: inches (mm)





| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.12 (132) | 6.00 (153) |
| L2 ① | 6.73 (171) | 7.80 (198) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

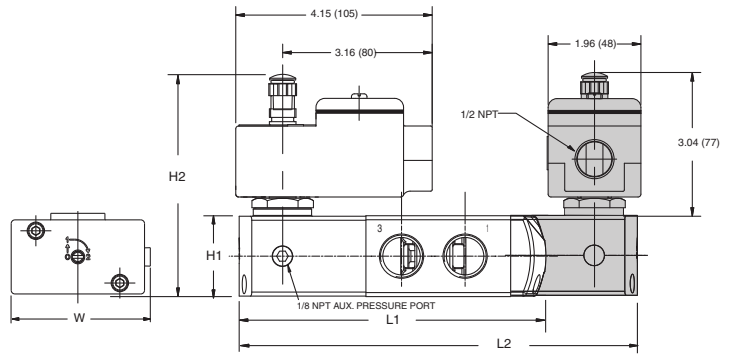
| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

| Series | 8551 | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | 5.63 (144) | 7.06 (180) |
| L2 ① | 7.20 (183) | 8.86 (225) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.10 (28) | 1.58 (40) |
| W | 1.77 (45) | 2.85 (72) |

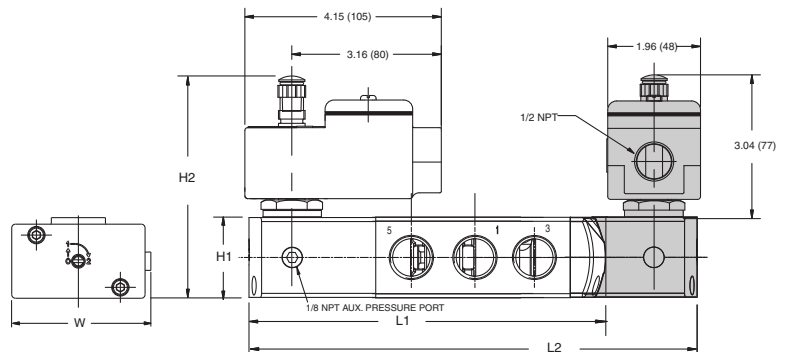
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

Const. Ref. 19







Const. Ref. 20



Dimensions: inches (mm)





| Series | 8551 (Aluminum, Brass) |
|--------|------------------------|
| NPT | 1/4 |
| L1 ① | 4.96 (126) |
| L2 ① | 6.49 (165) |
| H2 | 4.38 (111) |
| H1 | 1.57 (40) |
| W | 1.77 (45) |

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

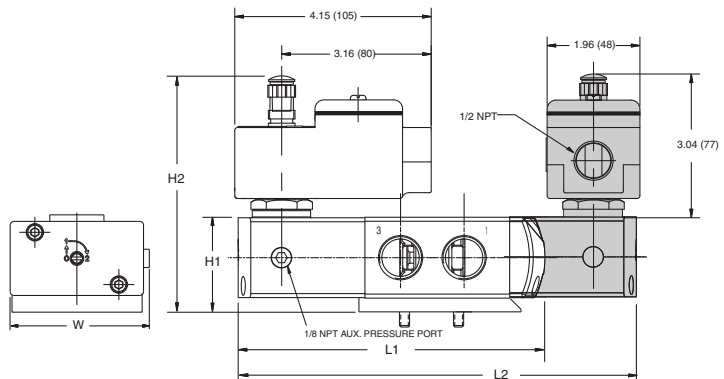
| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

| Series | 8551 (316L SS) | 8551 (5/3) | 8553 |
|--------|----------------|------------|------------|
| NPT | 1/4 | 1/4 | 1/2 |
| L1 ① | 5.20 (132) | - | 7.08 (180) |
| L2 ① | 6.73 (171) | 7.44 (189) | 8.85 (225) |
| H2 | 4.38 (111) | 4.38 (111) | 4.77 (121) |
| H1 | 1.57 (40) | 1.57 (40) | 2.08 (53) |
| W | 1.77 (45) | 1.77 (45) | 2.87 (73) |

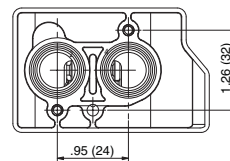
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|---|---|
| Add Suffix | | Description |
| MO |  | Push and turn to lock with flat head screwdriver slot |
| MI |  | Momentary push in with flat head screwdriver slot |
| MH |  | Momentary push in by hand |
| MS |  | Push and turn to lock by hand |

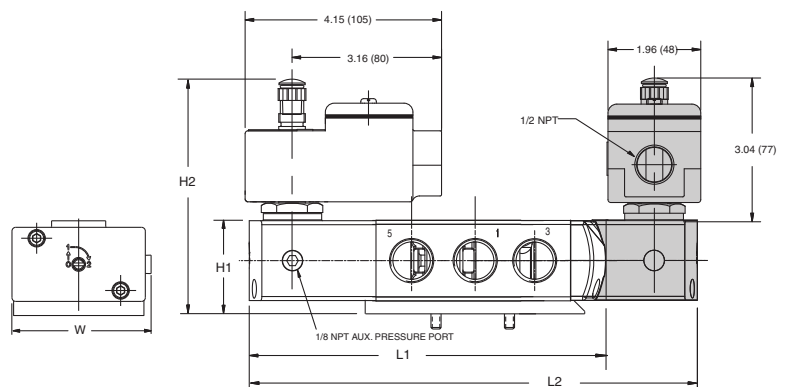
Const. Ref. 21



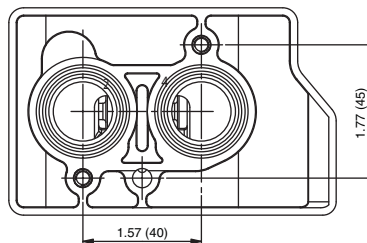
8551 NAMUR Footprint



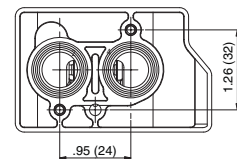
Const. Ref. 22



8553 NAMUR Footprint



8551 NAMUR Footprint



Features

- Intrinsically safe solenoid. When energized, holds the manual reset mechanism in the latched position
- Normally closed, normally open, or universal constructions
- Valve operates when the solenoid has been energized and the lever latched while holding in the yellow button
- Valve trips when power is interrupted. Valve can be manually cycled, but must be manually reset for automatic operation
- Designed solely for installation in intrinsically safe areas, with properly approved and sized current and voltage-limiting safety barriers
- Acceptable for use in hazardous locations as classified by the National Electrical Code: Classes I, II, and III, Division 1, including Groups A through G

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------------------|-----------------|
| Body | Brass | Stainless Steel |
| Seals and Disc | NBR | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Springs | 302 Stainless Steel | |
| Core Tube | 305 Stainless Steel | |
| Pilot Seat Cartridge | CA (Series WPIS8308A041, -2, -3) | |
| Rider Rings | PTFE | |
| Spring Retainer | CA | |

Electrical

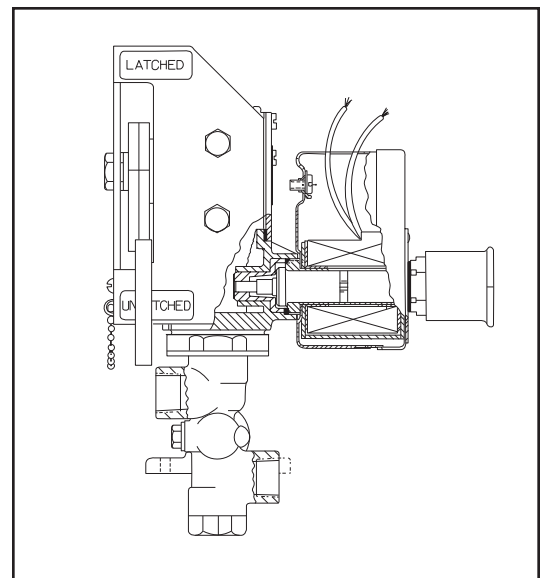
| Standard Voltages: 24 volts DC | | |
|--|-----------------|-----------------|
| Coil: Continuous duty molded Class A. | | |
| Minimum Operating Current: 0.024 amps | | |
| Parameters | Groups A-D | Groups C-D |
| Entity | V max - 28 VDC | V max - 34 VDC |
| | I max - 92 mA | I max - 125 mA |
| | Capacitance = 0 | Capacitance = 0 |
| | Inductance = 0 | Inductance = 0 |
| IMPORTANT: Electrical parameters are unique to the manual reset line and will differ from other Intrinsically Safe valve's electrical data. | | |

Enclosure

Standard: RedHat Type 4, Watertight Splice Box enclosure.

Optional: No standard options are available.

Consult local sales office for your needs.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to 200°F (-20°C to 93°C), as indicated.

Refer to Engineering Section for details.

Approvals

FM approved under J. I. 3W2A7.AX (3610).

CSA certified under File LR-13976.

FM Nonincendive approved for Class 1, Division 2.

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid and Ambient Temp. °F | Catalog Number | Const. Ref. |
|---|---------------------|----------------|---------------------------------------|------|---------------------------------|----------------|-------------|
| | | | Air-Inert Gas | | | | |
| | | | Min. | Max. | | | |
| 3/2 UNIVERSAL OPERATION, Brass Body with NBR Disc or Stainless Steel Seats and Discs ② | | | | | | | |
| 1/4 | 11/64 | .38 | 0 | 125 | 180 | WPIS8308B040 | 4 |
| 1/4 | 1/4 | .45 | 0 | 125 | 180 | WPIS8308044 ② | 1 |
| 3/8 | 1/4 | .45 | 0 | 125 | 180 | WPIS8308045 ② | 1 |
| 1/2 | 5/16 | .75 | 0 | 125 | 180 | WPIS8308046 ② | 2 |
| 3/2 NORMALLY CLOSED OR NORMALLY OPEN, Brass Body with NBR Disc | | | | | | | |
| 3/8 | 5/8 | 3 | 10 | 250 | 180 | WPIS8308C041 ① | 5 |
| 1/2 | 5/8 | 4 | 10 | 250 | 180 | WPIS8308C042 ① | 5 |
| 3/4 | 11/16 | 5.5 | 10 | 250 | 180 | WPIS8308C043 ① | 6 |
| 3/2 UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs | | | | | | | |
| 1/2 | 5/16 | .75 | 0 | 125 | 200 | WPIS8308047 | 3 |
| 4/2 OPERATION, Brass Body with PTFE and FPM Seats and Discs | | | | | | | |
| 1/4 | 3/16 | .80 | 0 | 250 | 160 | WPIS8408B006 | 7 |
| 3/8 | 3/16 | .80 | 0 | 250 | 160 | WPIS8408B007 | 7 |

① For Normally Closed operation, add suffix "F" to catalog number; for Normally Open operation, add suffix "G" to catalog number.
② Supplied with stainless steel seats and discs.

SPECIAL SERVICE PILOT

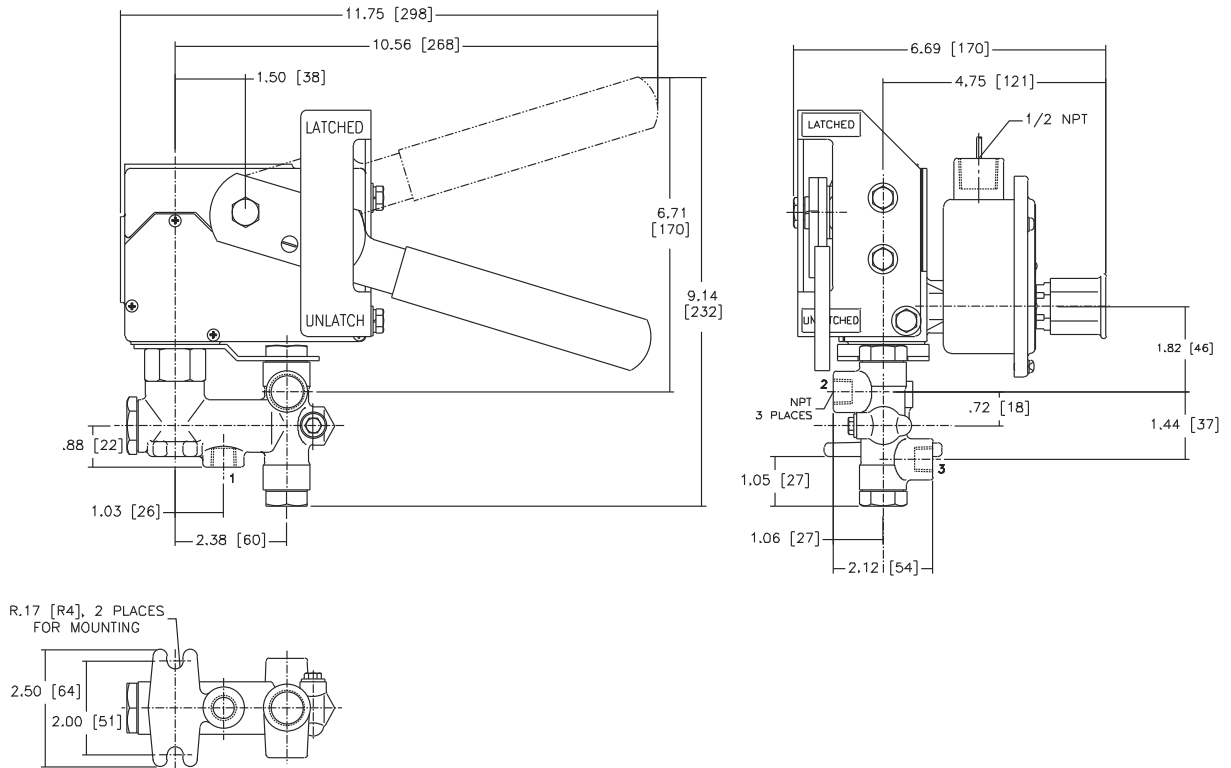
Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Max. Fluid and Ambient Temp. °C | Catalog Number | Const. Ref. |
|---|-------------------|-----------------------|---------------------------------------|------|---------------------------------|----------------|-------------|
| | | | Air-Inert Gas | | | | |
| | | | Min. | Max. | | | |
| 3/2 UNIVERSAL OPERATION, Brass Body with NBR Disc or Stainless Steel Seats and Discs ② | | | | | | | |
| 1/4 | 4 | .33 | 0 | 8.6 | 81 | WPIS8308B040 | 4 |
| 1/4 | 6 | .39 | 0 | 8.6 | 81 | WPIS8308044 ② | 1 |
| 3/8 | 6 | .39 | 0 | 8.6 | 81 | WPIS8308045 ② | 1 |
| 1/2 | 8 | .64 | 0 | 8.6 | 81 | WPIS8308046 ② | 2 |
| 3/2 NORMALLY CLOSED OR NORMALLY OPEN, Brass Body with NBR Disc | | | | | | | |
| 3/8 | 16 | 2.57 | 0.7 | 17.2 | 81 | WPIS8308C041 ① | 5 |
| 1/2 | 16 | 3.43 | 0.7 | 17.2 | 81 | WPIS8308C042 ① | 5 |
| 3/4 | 17 | 4.71 | 0.7 | 17.2 | 81 | WPIS8308C043 ① | 6 |
| 3/2 UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs | | | | | | | |
| 1/2 | 8 | .64 | 0 | 8.6 | 92 | WPIS8308047 | 3 |
| 4/2 OPERATION, Brass Body with PTFE and FPM Seats and Discs | | | | | | | |
| 1/4 | 5 | .69 | 0 | 17.2 | 70 | WPIS8408B006 | 7 |
| 3/8 | 5 | .69 | 0 | 17.2 | 70 | WPIS8408B007 | 7 |

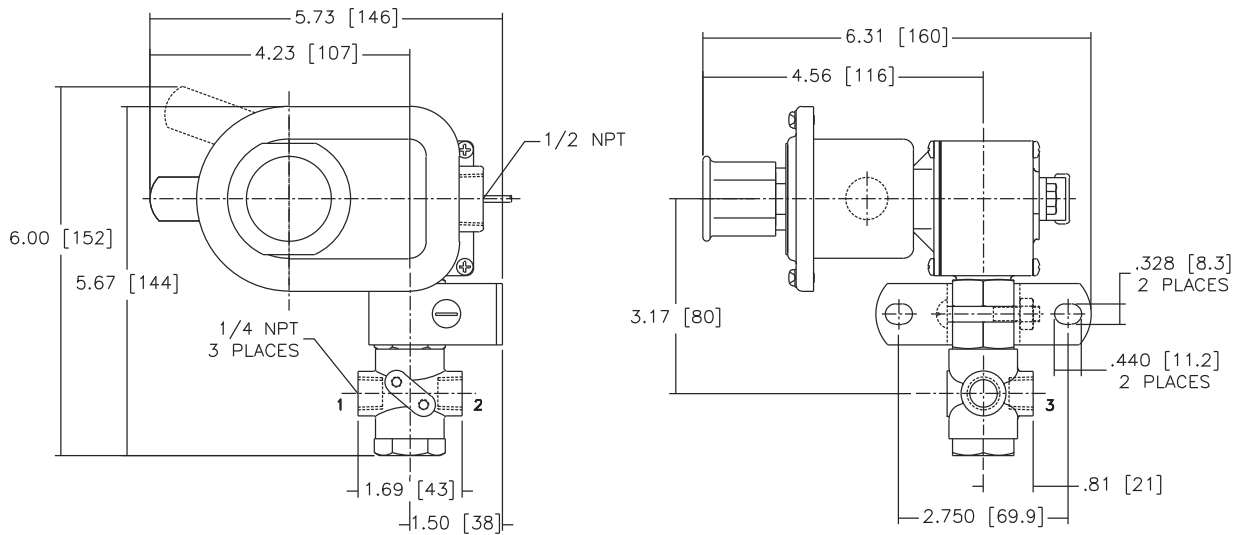
① For Normally Closed operation, add suffix "F" to catalog number; for Normally Open operation, add suffix "G" to catalog number.
② Supplied with stainless steel seats and discs.

Dimensions: inches (mm)

Const. Ref. 1, 2, 3

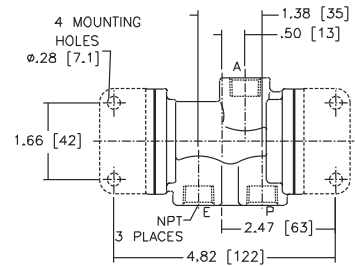
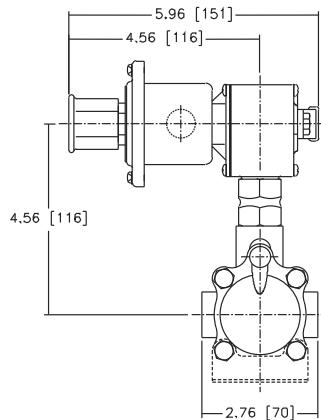
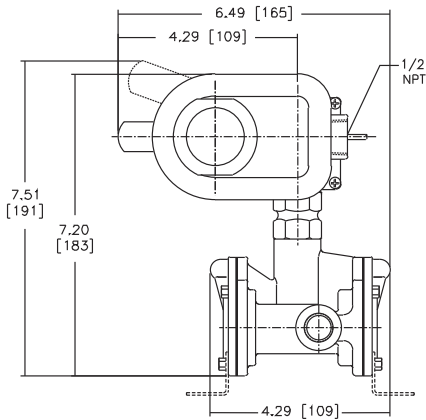


Const. Ref. 4

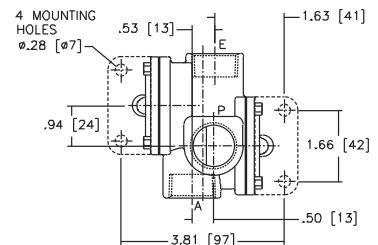
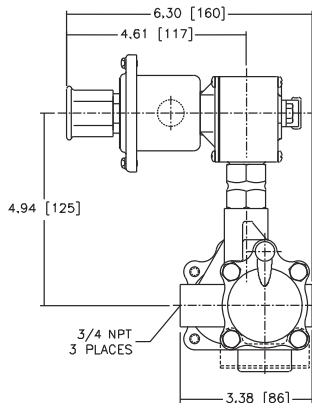
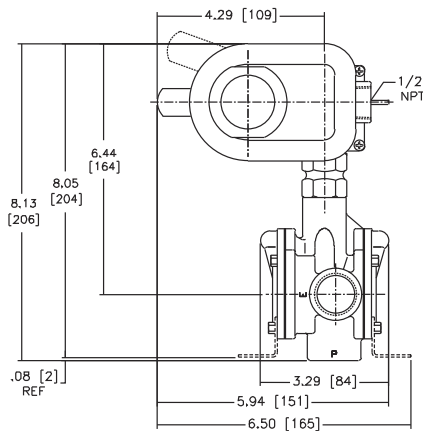


Dimensions: inches (mm)

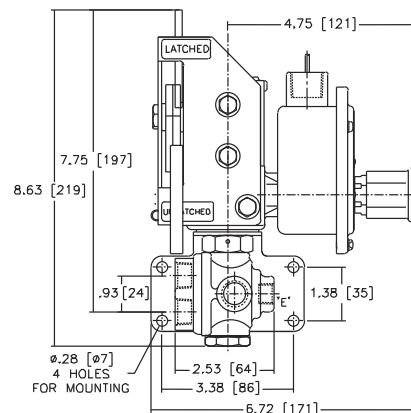
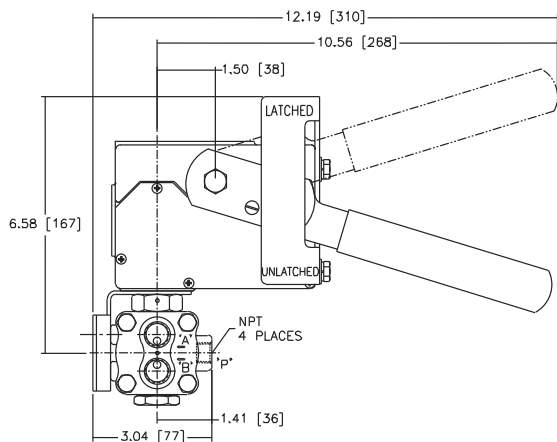
Const. Ref. 5



Const. Ref. 6



Const. Ref. 7



SPECIAL SERVICE
PILOT

Features

- Designed for harsh, hazardous environments, including offshore applications
- Provides quick shutdown of valves and actuators
- Low power DC for solar panels and PLC control
- Factory-sealed leads
- Explosionproof Types 4 and 7, Class I, Division 1, Groups C and D protection, or ATEX EEx d IIB T6 with EC or ED prefix
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | 316 Stainless Steel |
| Seals and Disc | FKM |
| Core and Plugnut | 430F Stainless Steel |
| Core Spring | 302 Stainless Steel |
| Rider Rings | PTFE |
| Disc-Holder and Core Guide | CA |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption |
|---------------------------------------|-----------------------------------|
| | DC Watts |
| F | 1.44 |
| F | 2.88 |

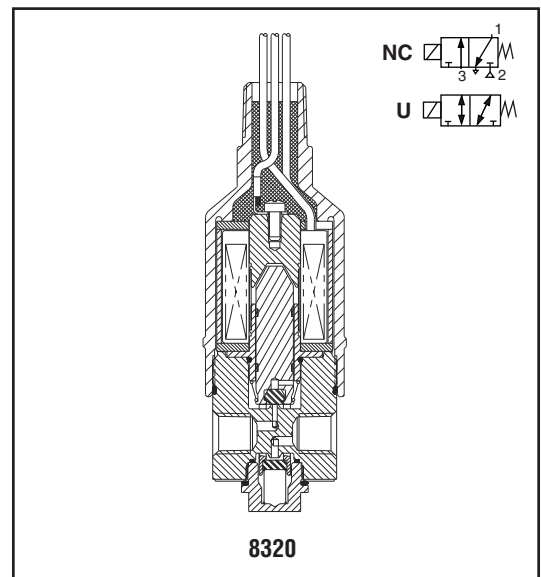
Standard Voltages: 12 and 24 volts DC.

Solenoid Enclosures

Standard: 316 Stainless Steel, Explosionproof and Watertight with 72" leads. Types 1, 2, 3, 4, 4X, 6, 6P, 7, and 9, Class I, Division 1, Groups C & D.

Optional: For ATEX approved valves with 20mm conduit connection use prefix "EC" instead of "EF". Use prefix "ED" for 1/2" NPT conduits.

See Engineering Section under "Enclosures" for details.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to 120°F (-20°C to 49°C)

Refer to Engineering Section for details.

Approvals

UL listed, CSA certified General Purpose valve, hazardous location classified.

Meets applicable CE directives.

Electric Solenoid Operator

ATEX category 2G

II 2G Ex d IIB T6; Ta = -20°C to 49°C

DEMCO 03 ATEX 0238269

Refer to Engineering Section for details.

Specifications (English units)

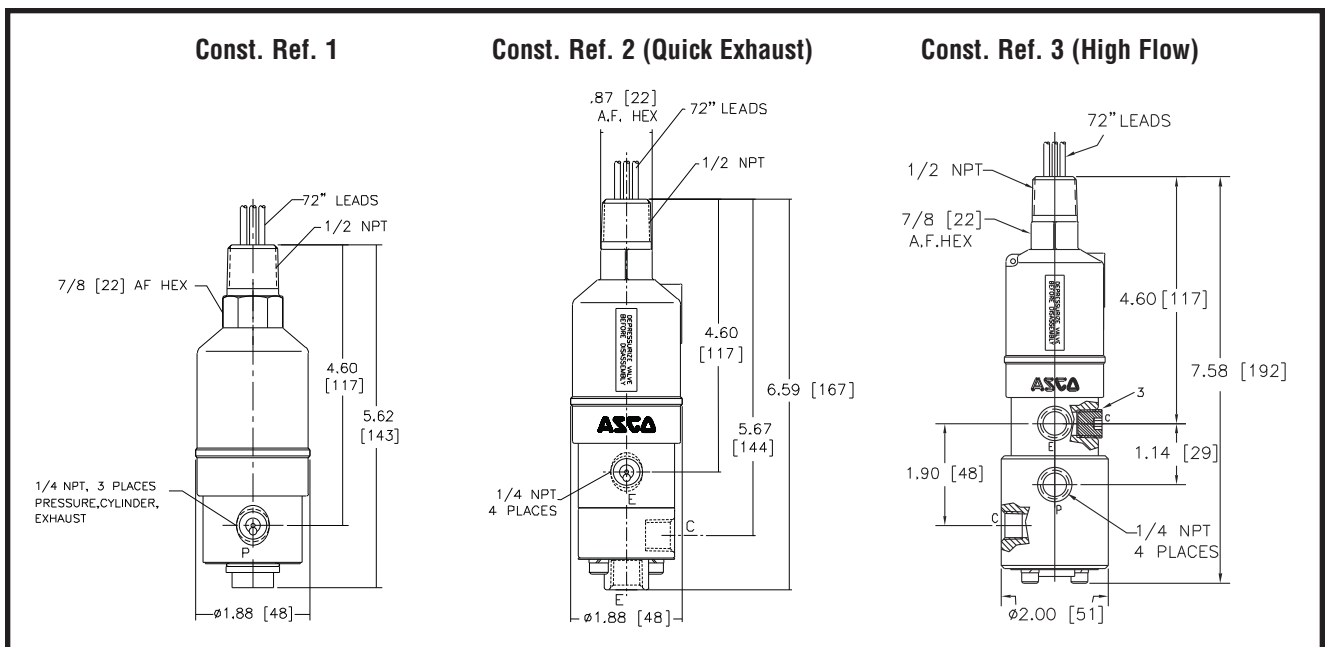
| Pipe Size (ins.) | Orifice Size (ins.) | | Cv Flow Factor | | Operating Pressure Differential (psi) | | | Const. Ref. | Watt Rating/ Class of Coil Insulation 12 or 24 VDC |
|---|---------------------|---------|----------------|------|---------------------------------------|-------|----------------|-------------|---|
| | | | | | Air/Natural Gas | | Catalog Number | | |
| | Pressure | Exhaust | Min. | Max. | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | |
| 1/4 | 1/16 | 3/32 | .08 | .16 | 0 | 150 ① | EF8320511 | 1 | 2.88/F |
| 1/4 | 1/16 | 3/32 | .08 | .16 | 0 | 55 | EF8320512 | 1 | 1.44/F |
| 1/4 | 1/16 | 1/4 | .08 | 1.4 | 15 | 150 | EF8317511 ③ | 2 | 2.88/F |
| 1/4 | 1/16 | 1/4 | .08 | 1.4 | 15 | 55 | EF8317512 ③ | 2 | 1.44/F |
| 1/4 | 3/8 | 3/8 | 1.12 | 1.23 | 20 | 150 | EF8321511 ② | 3 | 2.88/F |
| 1/4 | 3/8 | 3/8 | 1.12 | 1.23 | 20 | 55 | EF8321512 ② | 3 | 1.44/F |
| UNIVERSAL FLOW (Pressure at any port) | | | | | | | | | |
| 1/4 | 1/16 | 3/32 | .08 | .16 | 0 | 65 | EF8320515 | 1 | 2.88/F |

① Light Oil Max Pressure 100 psi (7 bar). ② Main disc is NBR ③ This valve has a Hytrel diaphragm..

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | | Kv Flow Factor (m3/h) | | Operating Pressure Differential (bar) | | | Const. Ref. | Watt Rating/ Class of Coil Insulation 12 or 24 VDC |
|---|-------------------|---------|-----------------------|------|---------------------------------------|------|----------------|-------------|---|
| | | | | | Air/Natural Gas | | Catalog Number | | |
| | Pressure | Exhaust | Min. | Max. | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | |
| 1/4 | 1.6 | 2.4 | .07 | .14 | 0 | 10 ① | EF8320511 | 1 | 2.88/F |
| 1/4 | 1.6 | 2.4 | .07 | .14 | 0 | 4 | EF8320512 | 1 | 1.44/F |
| 1/4 | 1.6 | 6.4 | .07 | 1.20 | 1 | 10 | EF8317511 ③ | 2 | 2.88/F |
| 1/4 | 1.6 | 6.4 | .07 | 1.20 | 1 | 4 | EF8317512 ③ | 2 | 1.44/F |
| 1/4 | 9.5 | 9.5 | 0.96 | 1.05 | 1.4 | 10.3 | EF8321511 ② | 3 | 2.88/F |
| 1/4 | 9.5 | 9.5 | 0.96 | 1.05 | 1.4 | 3.8 | EF8321512 ② | 3 | 1.44/F |
| UNIVERSAL FLOW (Pressure at any port) | | | | | | | | | |
| 1/4 | 1.6 | 2.4 | .07 | .14 | 0 | 4 | EF8320515 | 1 | 2.88/F |

Dimensions: inches (mm)



Features

- Designed to prevent inadvertent valve start-up
- Once tripped, requires electrical power restoration and manual operation to reset
- Electrically Tripped (trips when energized) or No Voltage Release (trips when de-energized) constructions
- Available for Latched Open or Latched Closed operation.
- Ideal for controlling critical processes
- Handles air, inert gas, water, light oil, steam, and corrosive fluids

Construction

| Valve Parts in Contact with Fluids | | |
|--|------------------------------------|-----------------|
| Body | Brass | Stainless Steel |
| Stem | 303 Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Disc, Diaphragm, Seat, & Seal Material | FKM, NBR, PTFE, or EPDM, as listed | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|
| | DC Watts | AC | | | AC | DC |
| | | Watts | VA Holding | VA Inrush | | |
| F | - | 20 | 45 | 96 | 99257 | - |
| H | 36.2 | - | - | - | - | 222184 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.
Notes: 125 and 250 volts DC are battery voltages applied in power plants. Special valves are available to pilot control valves in power plants.
 Consult your local ASCO sales office for a listing.

Solenoid Enclosures

Standard: RedHat metal solenoid enclosure. Type 1 General Purpose Junction Box.

Optional: Explosionproof and Watertight, Types 3, 7(C and D), and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.

Nominal Ambient Temp. Ranges

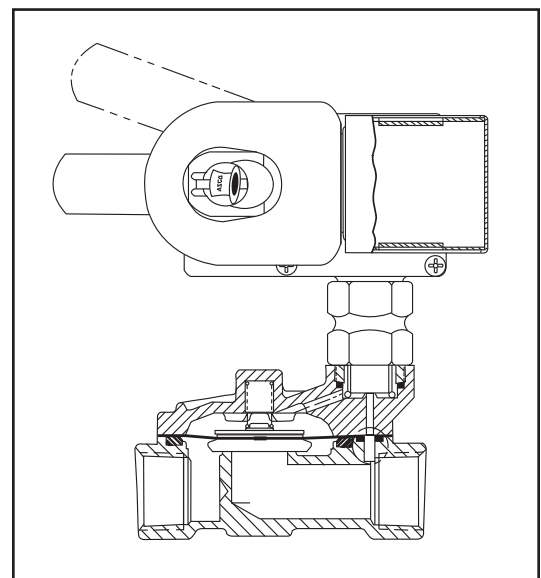
-20°F to 104°F (-29°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets shock and vibration ISA S71.03C2.

Refer to *Engineering Section* for details.



SPECIAL SERVICE PILOT

Operation Alternatives

Electrically Tripped – Valves move to latched position when the solenoid is de-energized, trips when they receive a continuous or momentary (at least 0.3 sec.) electrical signal. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been de-energized.

No Voltage Release – Valves move to latched position when the solenoid is energized, trips when de-energized. When tripped, they can be manually cycled open/ closed, but must be reset when the solenoid has once again been energized.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Latched Open | | Latched Closed | | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---------------------------------------|----------------|----------------|---------------------|-----|------------------------------------|---------------------------------|-----------------------------------|--------------------------------|---------------------------------------|--------|
| | | | | | | | | No Voltage Release | Electrically Tripped | No Voltage Release | Electrically Tripped | | |
| | | | Min. | Max. AC | Max. DC | AC | DC | (closes when coil is de-energized) | (closes when coil is energized) | (opens when coil is de-energized) | (opens when coil is energized) | | |
| | | | Catalog Number | Catalog Number | Catalog Number | Catalog Number | AC | DC | | | | | |
| BRASS BODY with NBR Diaphragm for Air, Inert Gas, Water, and Light Oil | | | | | | | | | | | | | |
| 3/4 | 3/4 | 6.5 | 5 | 250 | 250 | 180 | 180 | 8025B201 | 8015B201 | 8025B214 | 8015B214 | 20/F | 36.2/H |
| 1 | 1 | 13 | 5 | 125 | 125 | 180 | 180 | 8025B202 | 8015B202 | 8025B215 | 8015B215 | 20/F | 36.2/H |
| 1 1/4 | 1 1/8 | 15 | 5 | 125 | 125 | 180 | 180 | 8025B203 | 8015B203 | 8025B216 | 8015B216 | 20/F | 36.2/H |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 125 | 125 | 180 | 180 | 8025B204 | 8015B204 | 8025B217 | 8015B217 | 20/F | 36.2/H |
| 2 | 1 3/4 | 43 | 5 | 125 | 125 | 180 | 180 | 8025B205 | 8015B205 | 8025B218 | 8015B218 | 20/F | 36.2/H |
| 2 1/2 | 1 3/4 | 45 | 5 | 125 | 125 | 180 | 180 | 8025B206 | 8015B206 | 8025B219 | 8015B219 | 20/F | 36.2/H |
| BRASS BODY with PTFE Disc (EPDM, FPM and PTFE Seals) for Steam Service | | | | | | | | | | | | | |
| 3/4 | 3/4 | 7.8 | 5 | 125 | 125 | 353 | 353 | 8025B207 | 8015B207 | 8025B220 | 8015B220 | 20/F | 36.2/H |
| 1 | 1 | 13.5 | 5 | 125 | 125 | 353 | 353 | 8025B208 | 8015B208 | 8025B221 | 8015B221 | 20/F | 36.2/H |
| 1 1/4 | 1 1/8 | 15 | 5 | 125 | 125 | 353 | 353 | 8025B209 | 8015B209 | 8025B222 | 8015B222 | 20/F | 36.2/H |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 125 | 125 | 353 | 353 | 8025B210 | 8015B210 | 8025B223 | 8015B223 | 20/F | 36.2/H |
| STAINLESS STEEL BODY with PTFE Disc (FPM Seals) for Corrosive Service | | | | | | | | | | | | | |
| 1/2 | 3/8 | 3.2 | 5 | 250 | 250 | 350 | 350 | 8025B211 | 8015B211 | 8025B224 | 8015B224 | 20/F | 36.2/H |
| 3/4 | 3/4 | 7.8 | 5 | 250 | 250 | 350 | 350 | 8025B212 | 8015B212 | 8025B225 | 8015B225 | 20/F | 36.2/H |
| 1 | 1 | 11.2 | 5 | 125 | 125 | 350 | 350 | 8025B213 | 8015B213 | 8025B226 | 8015B226 | 20/F | 36.2/H |

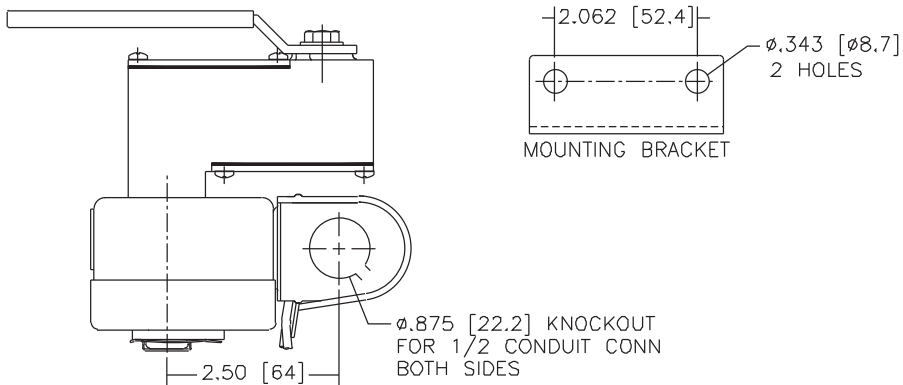
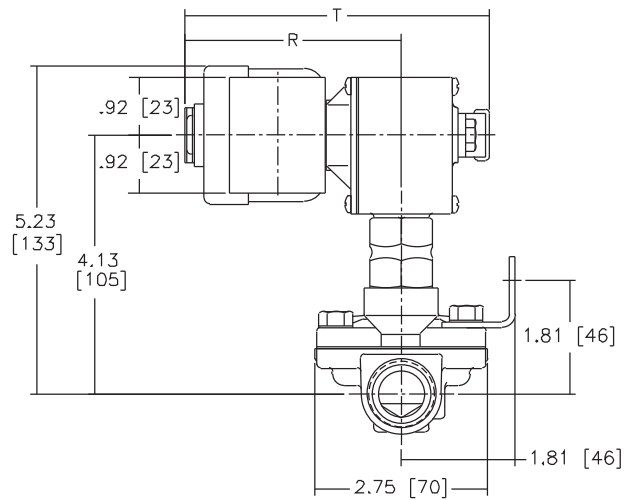
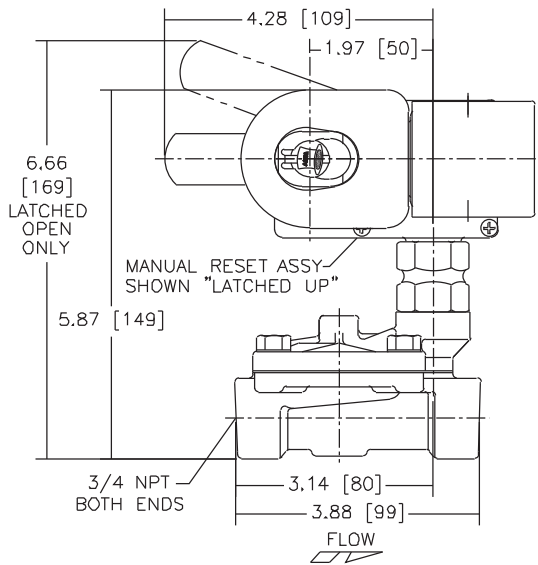
SPECIAL SERVICE PILOT

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Latched Open | | Latched Closed | | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|---------------------------------------|----------------|----------------|---------------------|----------------|------------------------------------|---------------------------------|-----------------------------------|--------------------------------|---------------------------------------|--------|
| | | | | | | | | No Voltage Release | Electrically Tripped | No Voltage Release | Electrically Tripped | | |
| | | | Min. | Max. AC | Max. DC | AC | DC | (closes when coil is de-energized) | (closes when coil is energized) | (opens when coil is de-energized) | (opens when coil is energized) | | |
| | | | Catalog Number | Catalog Number | Catalog Number | Catalog Number | Catalog Number | AC | DC | | | | |
| BRASS BODY with NBR Diaphragm for Air, Inert Gas, Water, and Light Oil | | | | | | | | | | | | | |
| 3/4 | 19 | 5.57 | 0.3 | 17 | 17 | 82 | 82 | 8025B201 | 8015B201 | 8025B214 | 8015B214 | 20/F | 36.2/H |
| 1 | 25 | 11.14 | 0.3 | 9 | 9 | 82 | 82 | 8025B202 | 8015B202 | 8025B215 | 8015B215 | 20/F | 36.2/H |
| 1 1/4 | 29 | 12.86 | 0.3 | 9 | 9 | 82 | 82 | 8025B203 | 8015B203 | 8025B216 | 8015B216 | 20/F | 36.2/H |
| 1 1/2 | 32 | 19.29 | 0.3 | 9 | 9 | 82 | 82 | 8025B204 | 8015B204 | 8025B217 | 8015B217 | 20/F | 36.2/H |
| 2 | 44 | 36.86 | 0.3 | 9 | 9 | 82 | 82 | 8025B205 | 8015B205 | 8025B218 | 8015B218 | 20/F | 36.2/H |
| 2 1/2 | 44 | 38.57 | 0.3 | 9 | 9 | 82 | 82 | 8025B206 | 8015B206 | 8025B219 | 8015B219 | 20/F | 36.2/H |
| BRASS BODY with PTFE Disc (EPDM, FPM and PTFE Seals) for Steam Service | | | | | | | | | | | | | |
| 3/4 | 19 | 6.69 | 0.3 | 9 | 9 | 177 | 177 | 8025B207 | 8015B207 | 8025B220 | 8015B220 | 20/F | 36.2/H |
| 1 | 25 | 11.57 | 0.3 | 9 | 9 | 177 | 177 | 8025B208 | 8015B208 | 8025B221 | 8015B221 | 20/F | 36.2/H |
| 1 1/4 | 29 | 12.86 | 0.3 | 9 | 9 | 177 | 177 | 8025B209 | 8015B209 | 8025B222 | 8015B222 | 20/F | 36.2/H |
| 1 1/2 | 32 | 19.29 | 0.3 | 9 | 9 | 177 | 177 | 8025B210 | 8015B210 | 8025B223 | 8015B223 | 20/F | 36.2/H |
| STAINLESS STEEL BODY with PTFE Disc (FPM Seals) for Corrosive Service | | | | | | | | | | | | | |
| 1/2 | 10 | 2.74 | 0.3 | 17 | 17 | 175 | 175 | 8025B211 | 8015B211 | 8025B224 | 8015B224 | 20/F | 36.2/H |
| 3/4 | 19 | 6.69 | 0.3 | 17 | 17 | 175 | 175 | 8025B212 | 8015B212 | 8025B225 | 8015B225 | 20/F | 36.2/H |
| 1 | 25 | 9.60 | 0.3 | 9 | 9 | 175 | 175 | 8025B213 | 8015B213 | 8025B226 | 8015B226 | 20/F | 36.2/H |

Dimensions: inches (mm)

| Catalog Number | | R | T |
|----------------|------|------|------|
| 8025B201 | ins. | 3.44 | 4.84 |
| 8025B214 | mm | 87 | 123 |
| 8015B201 | ins. | 3.22 | 4.62 |
| 8015B214 | mm | 82 | 117 |

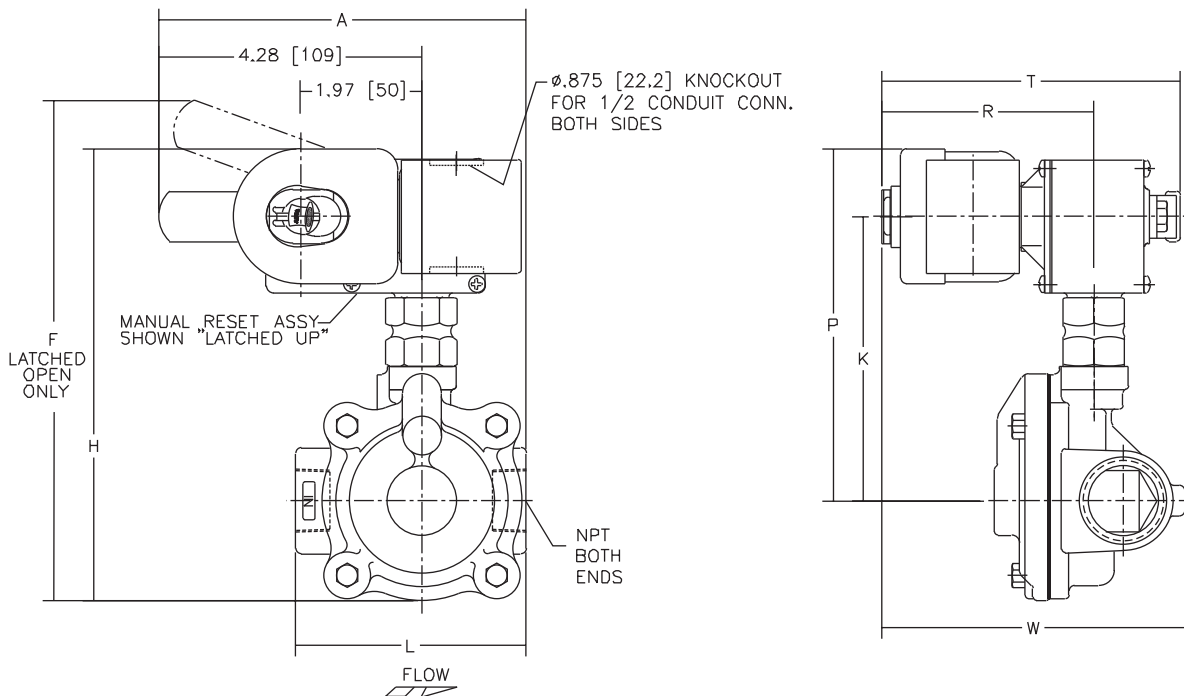


Dimensions: inches (mm)

| Catalog Number | | A | F | H | K | L | P | R | T | W |
|----------------|------|------|------|------|------|------|------|------|------|------|
| 8025B215 | ins. | 5.98 | 8.13 | 7.36 | 4.63 | 3.75 | 5.74 | 3.44 | 4.84 | 4.91 |
| | mm | 152 | 207 | 187 | 118 | 95 | 146 | 87 | 123 | 125 |
| 8025B202 | ins. | 5.98 | 8.13 | 7.63 | 4.63 | 3.75 | 5.74 | 3.44 | 4.84 | 4.91 |
| | mm | 152 | 207 | 187 | 118 | 95 | 146 | 87 | 123 | 125 |
| 8015B215 | ins. | 5.98 | 8.13 | 7.36 | 4.63 | 3.75 | 5.74 | 3.22 | 4.62 | 4.69 |
| | mm | 152 | 207 | 187 | 118 | 95 | 146 | 82 | 117 | 119 |
| 8015B202 | ins. | 5.98 | 8.13 | 7.36 | 4.63 | 3.75 | 5.74 | 3.22 | 4.62 | 4.69 |
| | mm | 152 | 207 | 187 | 118 | 95 | 146 | 82 | 117 | 119 |
| 8025B216 | ins. | 5.91 | 8.13 | 7.36 | 4.63 | 3.66 | 5.74 | 3.44 | 4.84 | 5.11 |
| | mm | 150 | 207 | 187 | 118 | 93 | 146 | 87 | 123 | 130 |
| 8025B203 | ins. | 5.91 | 8.13 | 7.36 | 4.63 | 3.66 | 5.74 | 3.44 | 4.84 | 5.11 |
| | mm | 150 | 207 | 187 | 118 | 93 | 146 | 87 | 123 | 130 |
| 8015B216 | ins. | 5.91 | 8.13 | 7.36 | 4.63 | 3.66 | 5.74 | 3.22 | 4.62 | 4.89 |
| | mm | 150 | 207 | 187 | 118 | 93 | 146 | 82 | 117 | 124 |
| 8015B203 | ins. | 5.91 | 8.13 | 7.36 | 4.63 | 3.66 | 5.74 | 3.22 | 4.62 | 4.89 |
| | mm | 150 | 207 | 187 | 118 | 93 | 146 | 82 | 117 | 124 |
| 8025B217 | ins. | 6.47 | 8.60 | 7.84 | 4.78 | 4.38 | 5.89 | 3.44 | 4.84 | 5.47 |
| | mm | 164 | 219 | 199 | 121 | 111 | 150 | 87 | 123 | 139 |
| 8025B204 | ins. | 6.47 | 8.60 | 7.84 | 4.78 | 4.38 | 5.89 | 3.44 | 4.84 | 5.47 |
| | mm | 164 | 219 | 199 | 121 | 111 | 150 | 87 | 123 | 139 |
| 8015B217 | ins. | 6.47 | 8.60 | 7.84 | 4.78 | 4.38 | 5.89 | 3.22 | 4.62 | 5.25 |
| | mm | 164 | 219 | 199 | 121 | 111 | 150 | 82 | 117 | 133 |
| 8015B204 | ins. | 6.47 | 8.60 | 7.84 | 4.78 | 4.38 | 5.89 | 3.22 | 4.62 | 5.25 |
| | mm | 164 | 219 | 199 | 121 | 111 | 150 | 82 | 117 | 133 |
| 8025B221 | ins. | 5.75 | 8.13 | 7.63 | 4.63 | 3.75 | 5.74 | 3.44 | 4.84 | 5.48 |
| | mm | 146 | 207 | 194 | 118 | 95 | 146 | 87 | 123 | 139 |

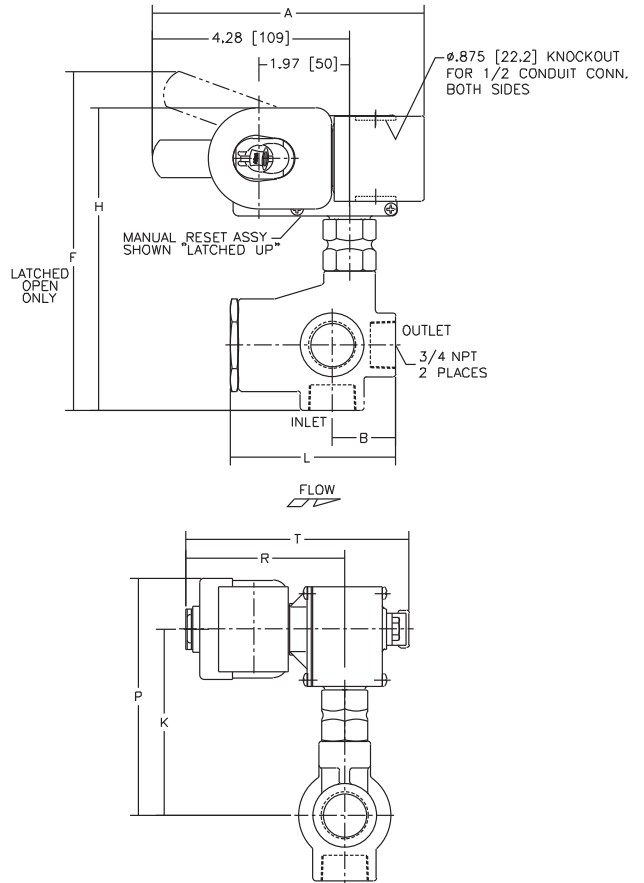
| Catalog Number | | A | F | H | K | L | P | R | T | W |
|----------------|------|------|------|------|------|------|------|------|------|------|
| 8025B208 | ins. | 5.75 | 8.13 | 7.63 | 4.63 | 3.75 | 5.74 | 3.44 | 4.84 | 5.48 |
| | mm | 146 | 207 | 194 | 118 | 95 | 146 | 87 | 123 | 139 |
| 8015B221 | ins. | 5.75 | 8.13 | 7.63 | 4.63 | 3.75 | 5.74 | 3.22 | 4.62 | 5.27 |
| | mm | 146 | 207 | 194 | 118 | 95 | 146 | 82 | 117 | 134 |
| 8015B208 | ins. | 5.75 | 8.13 | 7.63 | 4.63 | 3.75 | 5.74 | 3.22 | 4.62 | 5.27 |
| | mm | 146 | 207 | 194 | 118 | 95 | 146 | 82 | 117 | 134 |
| 8025B222 | ins. | 5.95 | 8.13 | 7.63 | 4.63 | 3.66 | 5.74 | 3.44 | 4.84 | 5.47 |
| | mm | 151 | 207 | 194 | 118 | 93 | 146 | 87 | 123 | 139 |
| 8025B209 | ins. | 5.95 | 8.13 | 7.63 | 4.63 | 3.66 | 5.74 | 3.44 | 4.84 | 5.47 |
| | mm | 151 | 207 | 194 | 118 | 93 | 146 | 87 | 123 | 139 |
| 8015B222 | ins. | 5.95 | 8.13 | 7.63 | 4.63 | 3.66 | 5.74 | 3.22 | 4.62 | 5.25 |
| | mm | 151 | 207 | 194 | 118 | 93 | 146 | 82 | 117 | 133 |
| 8015B209 | ins. | 5.95 | 8.13 | 7.63 | 4.63 | 3.66 | 5.74 | 3.22 | 4.62 | 5.63 |
| | mm | 151 | 207 | 194 | 118 | 93 | 146 | 82 | 117 | 143 |
| 8025B223 | ins. | 6.31 | 8.60 | 8.10 | 4.78 | 4.38 | 5.89 | 3.44 | 4.84 | 5.25 |
| | mm | 160 | 219 | 206 | 121 | 111 | 150 | 87 | 123 | 133 |
| 8025B210 | ins. | 6.31 | 8.60 | 8.10 | 4.78 | 4.38 | 5.89 | 3.44 | 4.84 | 5.63 |
| | mm | 160 | 219 | 206 | 121 | 111 | 150 | 87 | 123 | 143 |
| 8015B223 | ins. | 6.31 | 8.60 | 8.10 | 4.78 | 4.38 | 5.89 | 3.22 | 4.62 | 5.41 |
| | mm | 160 | 219 | 206 | 121 | 111 | 150 | 82 | 117 | 137 |
| 8015B210 | ins. | 6.31 | 8.60 | 8.10 | 4.78 | 4.38 | 5.89 | 3.22 | 4.62 | 5.41 |
| | mm | 160 | 219 | 206 | 121 | 111 | 150 | 82 | 117 | 137 |

**SPECIAL SERVICE
PILOT**

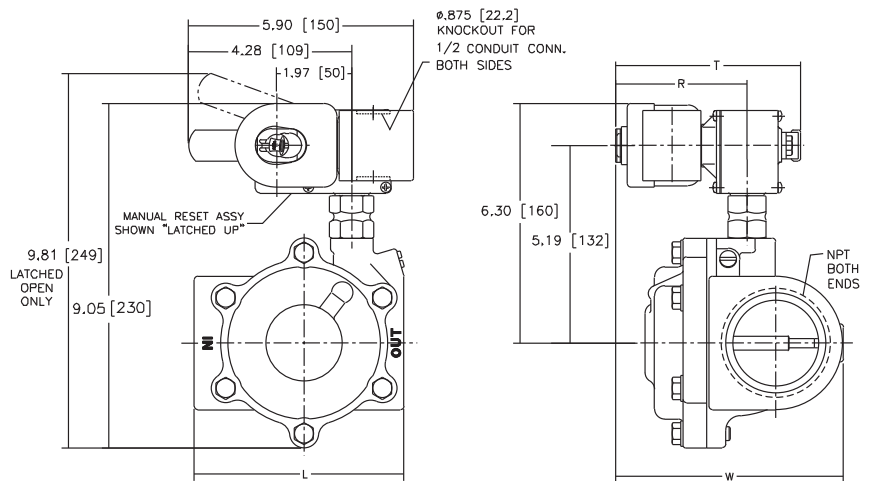


Dimensions: inches (mm)

| Catalog Number | | A | B | F | H | K | L | P | R | T |
|----------------|------|------|------|------|------|------|------|------|------|------|
| 8015B207 | ins. | 5.31 | 1.38 | 7.34 | 6.58 | 4.05 | 3.59 | 5.16 | 3.22 | 4.62 |
| | mm | 135 | 35 | 186 | 167 | 103 | 91 | 131 | 82 | 117 |
| 8015B220 | ins. | 5.31 | 1.38 | 7.34 | 6.58 | 4.05 | 3.59 | 5.16 | 3.22 | 4.62 |
| | mm | 135 | 35 | 186 | 167 | 103 | 91 | 131 | 82 | 117 |
| 8025B207 | ins. | 5.31 | 1.38 | 7.34 | 6.58 | 4.05 | 3.59 | 5.16 | 3.44 | 4.84 |
| | mm | 135 | 35 | 186 | 167 | 103 | 91 | 131 | 87 | 123 |
| 8025B220 | ins. | 5.31 | 1.38 | 7.34 | 6.58 | 4.05 | 3.59 | 5.16 | 3.44 | 4.84 |
| | mm | 135 | 35 | 186 | 167 | 103 | 91 | 131 | 87 | 123 |
| 8015B211 | ins. | 5.90 | 1.19 | 6.66 | 5.89 | 3.56 | 3.13 | 4.67 | 3.22 | 4.62 |
| | mm | 150 | 30 | 169 | 150 | 90 | 80 | 119 | 82 | 117 |
| 8015B224 | ins. | 5.90 | 1.19 | 6.66 | 5.89 | 3.56 | 3.13 | 4.67 | 3.22 | 4.62 |
| | mm | 150 | 30 | 169 | 150 | 90 | 80 | 119 | 82 | 117 |
| 8025B211 | ins. | 5.90 | 1.19 | 6.66 | 5.89 | 3.56 | 3.13 | 4.67 | 3.44 | 4.84 |
| | mm | 150 | 30 | 169 | 150 | 90 | 80 | 119 | 87 | 123 |
| 8025B224 | ins. | 5.90 | 1.19 | 6.66 | 5.89 | 3.56 | 3.13 | 4.67 | 3.44 | 4.84 |
| | mm | 150 | 30 | 169 | 150 | 90 | 80 | 119 | 87 | 123 |



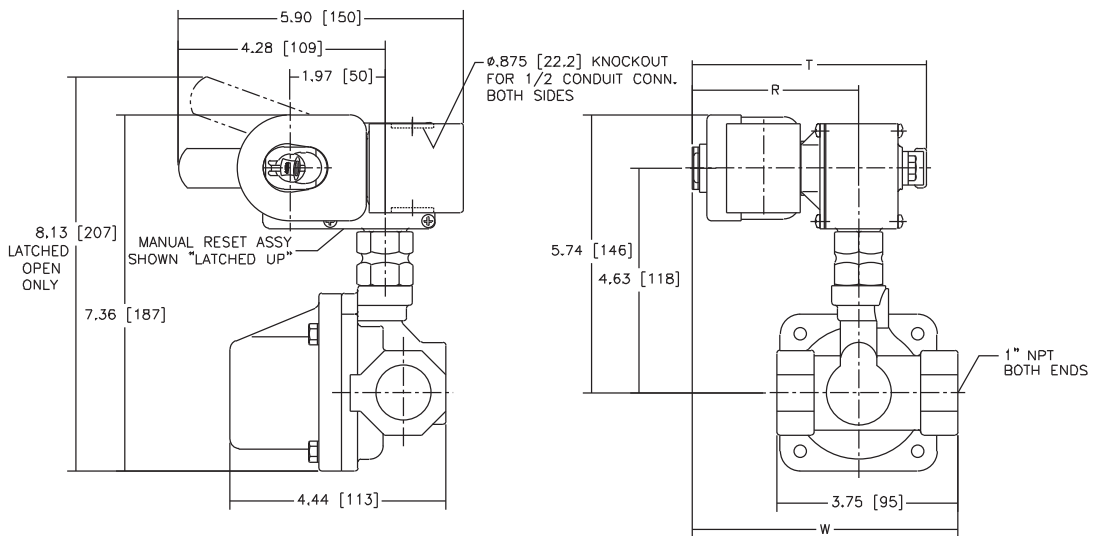
| Catalog Number | | L | R | T | W |
|----------------|------|------|------|------|------|
| 8025B218 | ins. | 5.06 | 3.44 | 4.84 | 5.47 |
| | mm | 129 | 87 | 123 | 139 |
| 8025B205 | ins. | 5.06 | 3.44 | 4.84 | 5.47 |
| | mm | 129 | 87 | 123 | 139 |
| 8015B218 | ins. | 5.06 | 3.22 | 4.62 | 5.25 |
| | mm | 129 | 82 | 117 | 113 |
| 8015B205 | ins. | 5.06 | 3.22 | 4.62 | 5.25 |
| | mm | 129 | 82 | 117 | 113 |
| 8025B219 | ins. | 5.50 | 3.44 | 4.84 | 5.94 |
| | mm | 140 | 87 | 123 | 151 |
| 8025B206 | ins. | 5.50 | 3.44 | 4.84 | 5.94 |
| | mm | 140 | 87 | 123 | 151 |
| 8015B219 | ins. | 5.50 | 3.22 | 4.62 | 5.72 |
| | mm | 140 | 82 | 117 | 145 |
| 8015B206 | ins. | 5.50 | 3.22 | 4.62 | 5.72 |
| | mm | 140 | 82 | 117 | 145 |



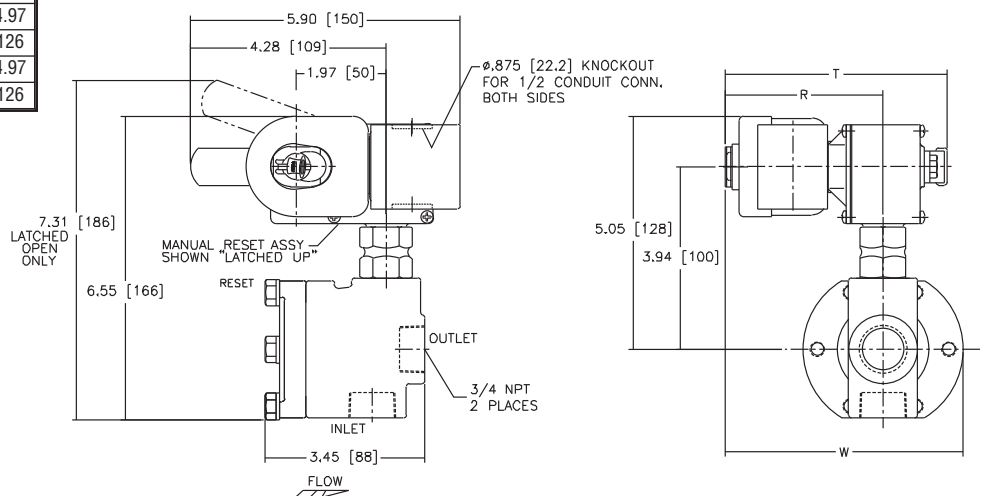
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

| Catalog Number | | R | T | W |
|----------------|------|------|------|------|
| 8025B213 | ins. | 3.44 | 4.84 | 5.48 |
| | mm | 87 | 123 | 139 |
| 8025B226 | ins. | 3.44 | 4.84 | 5.48 |
| | mm | 87 | 123 | 139 |
| 8015B213 | ins. | 3.22 | 4.62 | 5.27 |
| | mm | 82 | 117 | 134 |
| 8015B226 | ins. | 3.22 | 4.62 | 5.27 |
| | mm | 82 | 117 | 134 |



| Catalog Number | | R | T | W |
|----------------|------|------|------|------|
| 8025B212 | ins. | 3.44 | 4.84 | 5.19 |
| | mm | 87 | 123 | 132 |
| 8025B225 | ins. | 3.44 | 4.84 | 5.19 |
| | mm | 87 | 123 | 132 |
| 8015B212 | ins. | 3.22 | 4.62 | 4.97 |
| | mm | 82 | 117 | 126 |
| 8015B225 | ins. | 3.22 | 4.62 | 4.97 |
| | mm | 82 | 117 | 126 |



SPECIAL SERVICE
PILOT

Features

- High flow/high-pressure bodies with manual reset to prevent inadvertent valve start-up
- Once tripped, can only be manually reset
- Electrically Tripped (trips when energized), No Voltage Release (trips when de-energized), or Free Handle constructions
- Available for Latched Open or Latched Closed operation
- Ideal for controlling critical processes
- Some constructions can control aggressive fluids, including steam
- Intrinsically Safe constructions are available
See Pilot Valve Section for details

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|--|-----------------|
| Body | Brass | Stainless Steel |
| Stem | 303 Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Pilot Seat Cartridge | CA (when listed) | |
| Disc, Diaphragm, Seat | NBR, PA, PTFE, or Stainless Steel, as listed | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|
| | DC Watts | AC | | | AC | DC |
| | | Watts | VA Holding | VA Inrush | | |
| F | - | 20 | 45 | 96 | 99257 | - |
| H | 36.2 | - | - | - | - | 222184 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Notes: 125 and 250 volts DC are battery voltages applied in power plants. Special valves are available to pilot control valves in power plants.

Consult your local ASCO sales office for a listing.

Solenoid Enclosures

Standard: RedHat metal solenoid enclosure.
 Type 1 General Purpose Junction Box.

Optional: Explosionproof and Watertight, Types 3, 7 (C and D), and 9.
 (To order, add prefix "EF" to catalog number.)

See Optional Features Section for other available options.

Nominal Ambient Temp. Ranges

AC: -20°F to 104°F (-29°C to 40°C)

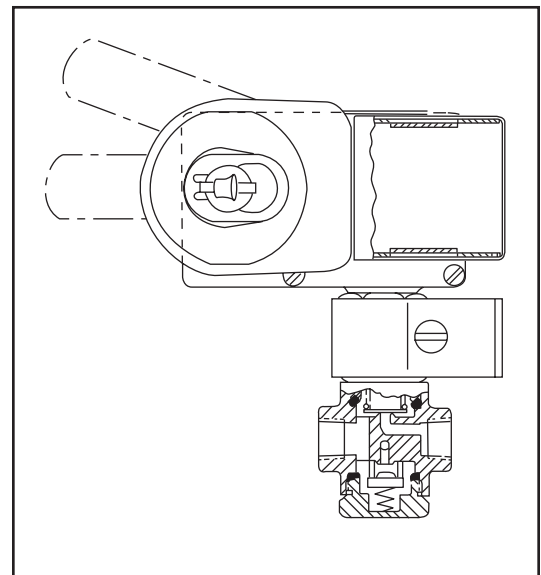
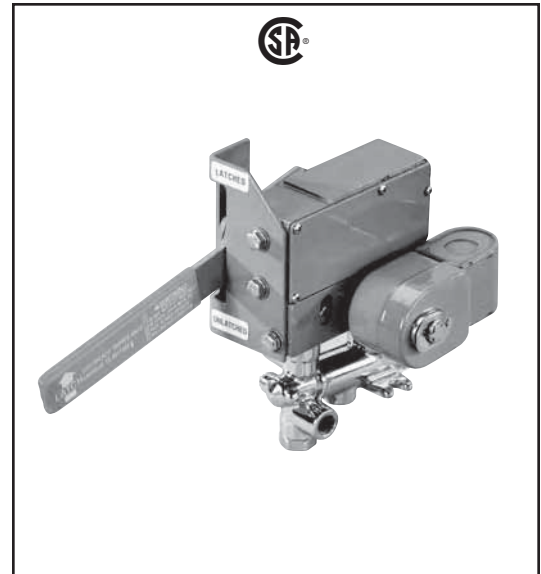
DC: -20°F to 77°F (-29°C to 25°C)

Refer to Engineering Section for details.

Approvals

CSA certified. Some constructions meet shock and vibration ISA S71.03C2.

Refer to Engineering Section for details.



SPECIAL SERVICE PILOT

Operation Alternatives

Electrically Tripped – Manually move the lever to the latched position with the solenoid de-energized. Trips when solenoid is energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

No Voltage Release – Manually move the lever to the latched position with the solenoid energized. Trips when solenoid is de-energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

Free Handle – Solenoid must be energized before the lever can engage and be manually moved to the latched position. While engaged, lever may be cycled causing the valve discs to open and close. Will trip instantly when solenoid is de-energized.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | No Voltage Release Catalog Number | Electrically Tripped Catalog Number | Const. Ref. | Flow Diagram | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---------------------------------------|---------|---------|---------------------|-----|-----------------------------------|-------------------------------------|-------------|--------------|---------------------------------------|--------|
| | | | Min. | Max. AC | Max. DC | AC | DC | | | | | AC | DC |
| UNIVERSAL OPERATION (Except as Noted ①), Brass Body with NBR Disc/Diaphragm (CA Pilot Cartridge) for Air-Inert Gas and Water. This group of valves meets shock and vibration ISA S71.03C2. | | | | | | | | | | | | | |
| 1/4 | 11/64 | .38 | 0 | 125 | 125 | 180 | 180 | 8308B040 | 8310B040 | 1 | B | 20/F | 36.2/H |
| 3/8 | 5/8 | 3 | 10 | 250 | 250 | 180 | 180 | 8308C041 ① ② | 8310C041 ① ② | 2 | C | 20/F | 36.2/H |
| 1/2 | 5/8 | 4 | 10 | 250 | 250 | 180 | 180 | 8308C042 ① ② | 8310C042 ① ② | 2 | C | 20/F | 36.2/H |
| 3/4 | 11/16 | 5.5 | 10 | 250 | 250 | 180 | 180 | 8308C043 ① ② | 8310C043 ① ② | 3 | C | 20/F | 36.2/H |
| 1 | 1 | 13 | 10 | 125 | 125 | 180 | 180 | 8308A050 ① ② | 8310A050 ① ② | 8 | C | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Brass Body with Stainless Steel Seats and Discs for Air-Inert Gas, Water and Light Oil | | | | | | | | | | | | | |
| 1/4 | 1/4 | .45 | 0 | 125 | 125 | 200 | 200 | 8308044 | 8310044 | 4 | A | 20/F | 36.2/H |
| 3/8 | 1/4 | .45 | 0 | 125 | 125 | 200 | 200 | 8308045 | 8310045 | 4 | A | 20/F | 36.2/H |
| 1/2 | 5/16 | .75 | 0 | 125 | 125 | 200 | 200 | 8308046 | 8310046 | 5 | A | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Brass Body with NBR Seats and PA Discs for Air-Inert Gas, Water and Light Oil | | | | | | | | | | | | | |
| 1/4 | 1/4 | .39 | 0 | 125 | 125 | 180 | 180 | 8308044R | 8310044R | 4 | A | 20/F | 36.2/H |
| 3/8 | 1/4 | .39 | 0 | 125 | 125 | 180 | 180 | 8308045R | 8310045R | 4 | A | 20/F | 36.2/H |
| 1/2 | 5/16 | .53 | 0 | 125 | 125 | 180 | 180 | 8308046R | 8310046R | 5 | A | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water | | | | | | | | | | | | | |
| 1/4 | 1/8 | .21 | 0 | 125 | 125 | 180 | 180 | 8308A011 | 8310A011 | 1 | B | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs for Corrosive Service | | | | | | | | | | | | | |
| 1/2 | 5/16 | .75 | 0 | 125 | 125 | 200 | 200 | 8308047 | 8310047 | 5 | A | 20/F | 36.2/H |
| Free Handle Construction | | | | | | | | | | | | | |
| UNIVERSAL OPERATION, Brass Body with NBR Discs for Air-Inert Gas and Water | | | | | | | | | | | | | |
| 1/4 | 11/64 | .38 | 0 | 125 | 125 | 180 | 180 | 8037014 | | 6 | D | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Brass Body with PTFE Seats and FKM Discs for Air-Inert Gas, Water and Light Oil | | | | | | | | | | | | | |
| 1/4 | 3/16 | .70 | 0 | 125 | 125 | 160 | 160 | 8037A008 ① | | 7 | E | 20/F | 36.2/H |
| 3/8 | 3/16 | .70 | 0 | 125 | 125 | 160 | 160 | 8037A010 ① | | 7 | E | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water | | | | | | | | | | | | | |
| 1/4 | 1/8 | .21 | 0 | 125 | 125 | 180 | 180 | 8037012 | | 6 | D | 20/F | 36.2/H |

① When ordering, specify suffix "F" for Normally Closed construction or Suffix "G" for Normally Open construction. ② Supplied with CA pilot cartridge.

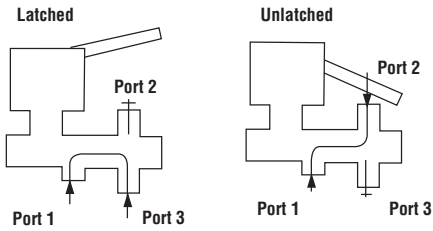
Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | No Voltage Release Catalog Number | Electrically Tripped Catalog Number | Const. Ref. | Flow Diagram | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|---------------------------------------|---------|---------|---------------------|----|-----------------------------------|-------------------------------------|-------------|--------------|---------------------------------------|--------|
| | | | Min. | Max. AC | Max. DC | AC | DC | | | | | AC | DC |
| UNIVERSAL OPERATION (Except as Noted ①), Brass Body with NBR Disc/Diaphragm (CA Pilot Cartridge) for Air-Inert Gas and Water. This group of valves meets shock and vibration ISA S71.03C2. | | | | | | | | | | | | | |
| 1/4 | 4 | .33 | 0.0 | 9 | 9 | 82 | 82 | 8308B040 | 8310B040 | 1 | B | 20/F | 36.2/H |
| 3/8 | 16 | 2.57 | 0.7 | 17 | 17 | 82 | 82 | 8308C041 ① ② | 8310C041 ① ② | 2 | C | 20/F | 36.2/H |
| 1/2 | 16 | 3.43 | 0.7 | 17 | 17 | 82 | 82 | 8308C042 ① ② | 8310C042 ① ② | 2 | C | 20/F | 36.2/H |
| 3/4 | 17 | 4.71 | 0.7 | 17 | 17 | 82 | 82 | 8308C043 ① ② | 8310C043 ① ② | 3 | C | 20/F | 36.2/H |
| 1 | 25 | 11.14 | 0.7 | 9 | 9 | 82 | 82 | 8308A050 ① ② | 8310A050 ① ② | 8 | C | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Brass Body with Stainless Steel Seats and Discs for Air-Inert Gas, Water and Light Oil | | | | | | | | | | | | | |
| 1/4 | 6 | .39 | 0 | 9 | 9 | 93 | 93 | 8308044 | 8310044 | 4 | A | 20/F | 36.2/H |
| 3/8 | 6 | .39 | 0 | 9 | 9 | 93 | 93 | 8308045 | 8310045 | 4 | A | 20/F | 36.2/H |
| 1/2 | 8 | .64 | 0 | 9 | 9 | 93 | 93 | 8308046 | 8310046 | 5 | A | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Brass Body with NBR Seats and PA Discs for Air-Inert Gas, Water and Light Oil | | | | | | | | | | | | | |
| 1/4 | 6 | .33 | 0 | 9 | 9 | 82 | 82 | 8308044R | 8310044R | 4 | A | 20/F | 36.2/H |
| 3/8 | 6 | .33 | 0 | 9 | 9 | 82 | 82 | 8308045R | 8310045R | 4 | A | 20/F | 36.2/H |
| 1/2 | 8 | .45 | 0 | 9 | 9 | 82 | 82 | 8308046R | 8310046R | 5 | A | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water | | | | | | | | | | | | | |
| 1/4 | 8 | .18 | 0 | 9 | 9 | 82 | 82 | 8308A011 | 8310A011 | 1 | B | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs for Corrosive Service | | | | | | | | | | | | | |
| 1/2 | 8 | .64 | 0 | 9 | 9 | 93 | 93 | 8308047 | 8310047 | 5 | A | 20/F | 36.2/H |
| Free Handle Construction | | | | | | | | | | | | | |
| UNIVERSAL OPERATION, Brass Body with NBR Discs for Air-Inert Gas and Water | | | | | | | | | | | | | |
| 1/4 | 4 | .33 | 0 | 9 | 9 | 82 | 82 | 803714 | | 6 | D | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Brass Body with PTFE Seats and FKM Discs for Air-Inert Gas, Water and Light Oil | | | | | | | | | | | | | |
| 1/4 | 5 | .60 | 0 | 9 | 9 | 71 | 71 | 8037A008 ① | | 7 | E | 20/F | 36.2/H |
| 3/8 | 5 | .60 | 0 | 9 | 9 | 71 | 71 | 8037A010 ① | | 7 | E | 20/F | 36.2/H |
| UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water | | | | | | | | | | | | | |
| 1/4 | 3 | .18 | 0 | 9 | 9 | 82 | 82 | 8037012 | | 6 | D | 20/F | 36.2/H |

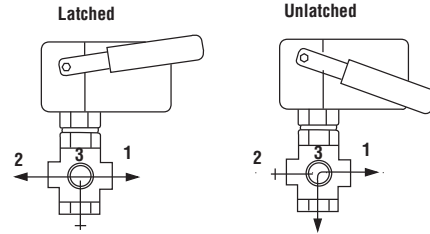
Flow Diagrams

Electrically Tripped and No Voltage Release Constructions

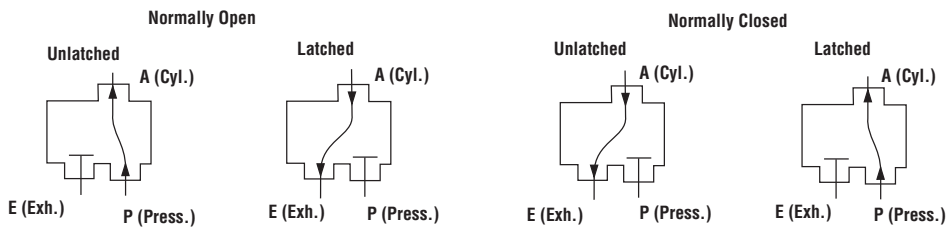
Flow Diagram A



Flow Diagram B

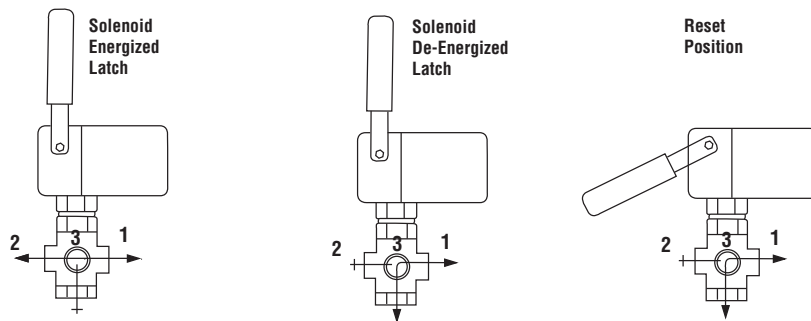


Flow Diagram C

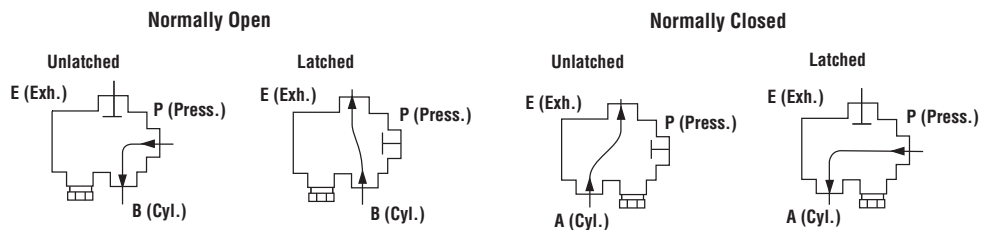


Free Handle Construction

Flow Diagram D



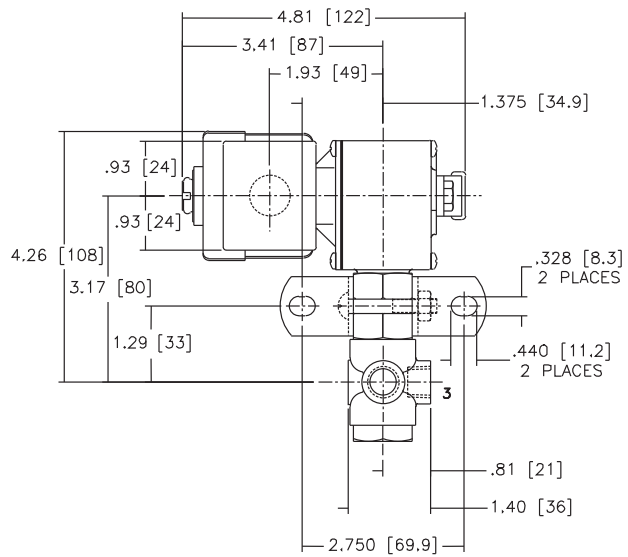
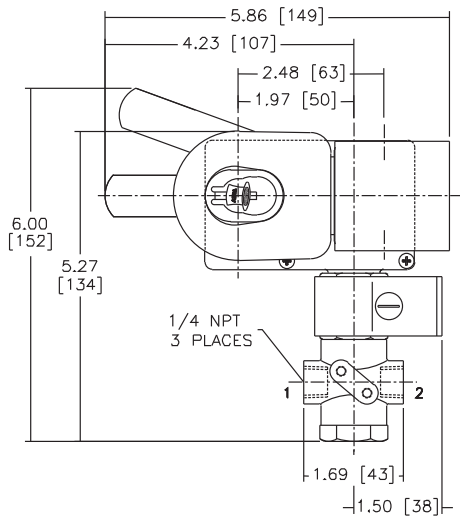
Flow Diagram E



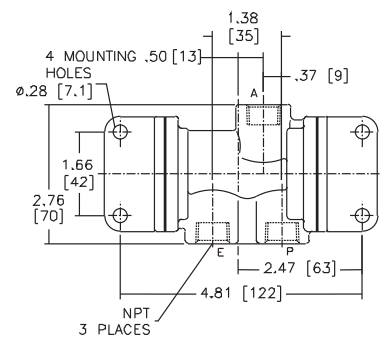
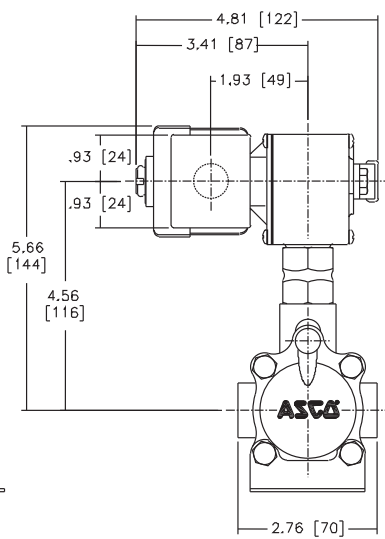
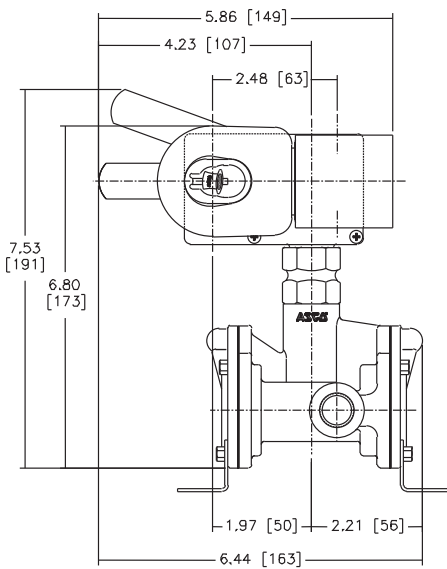
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 1



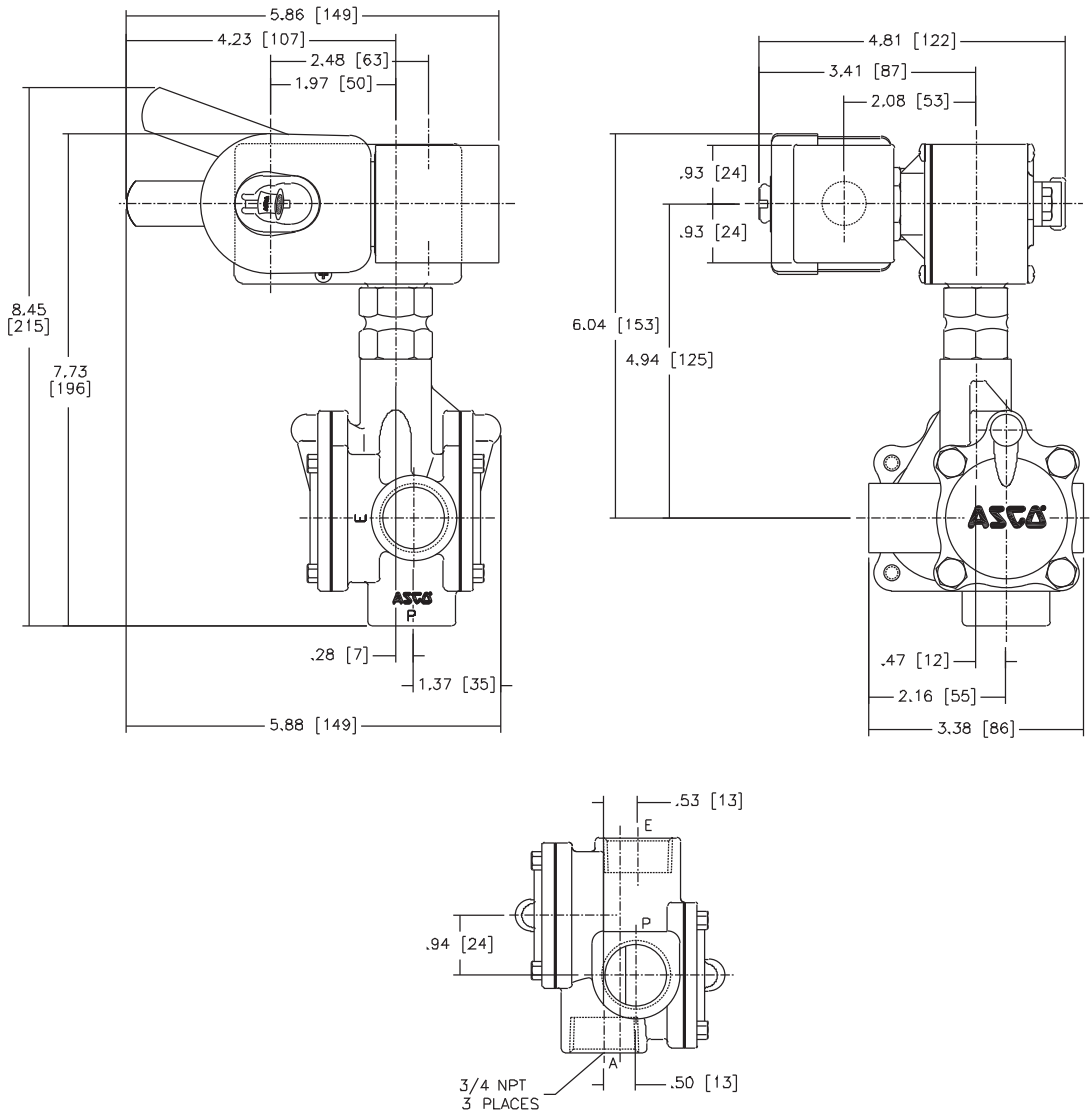
Const. Ref. 2



SPECIAL SERVICE
 PILOT

Dimensions: inches (mm)

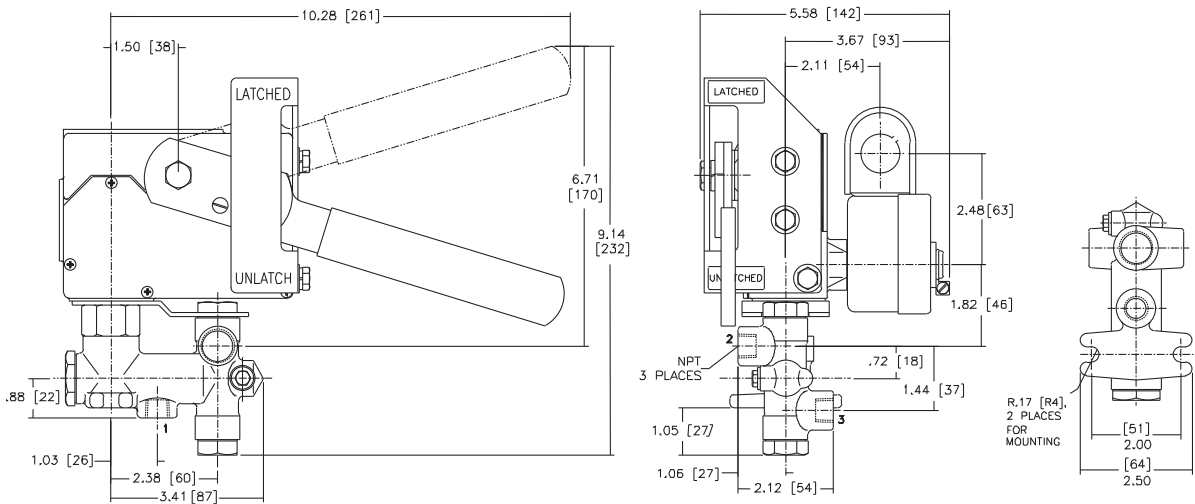
Const. Ref. 3



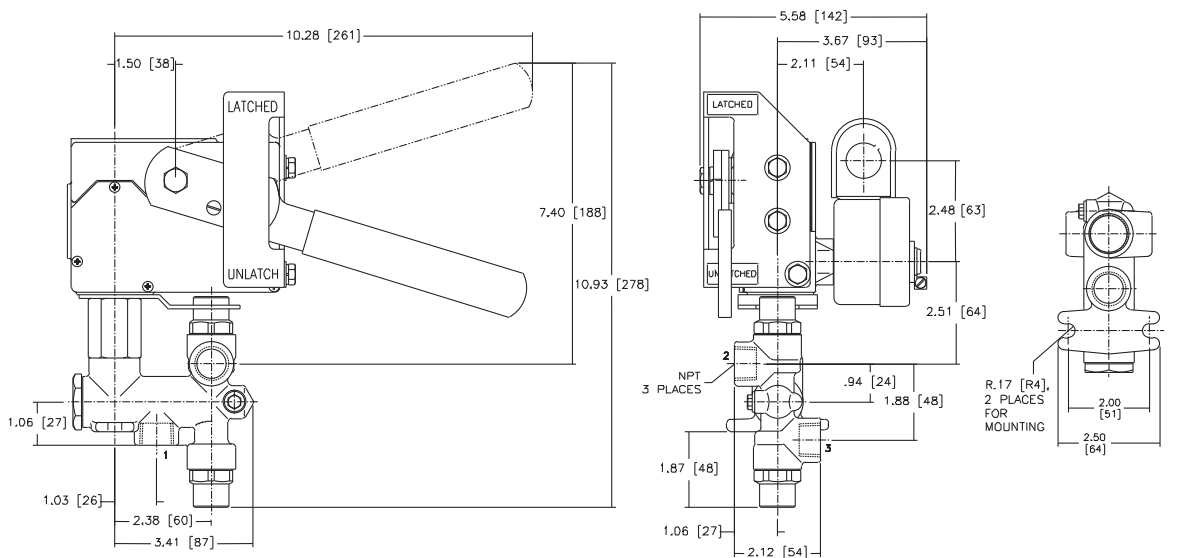
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 4 ①



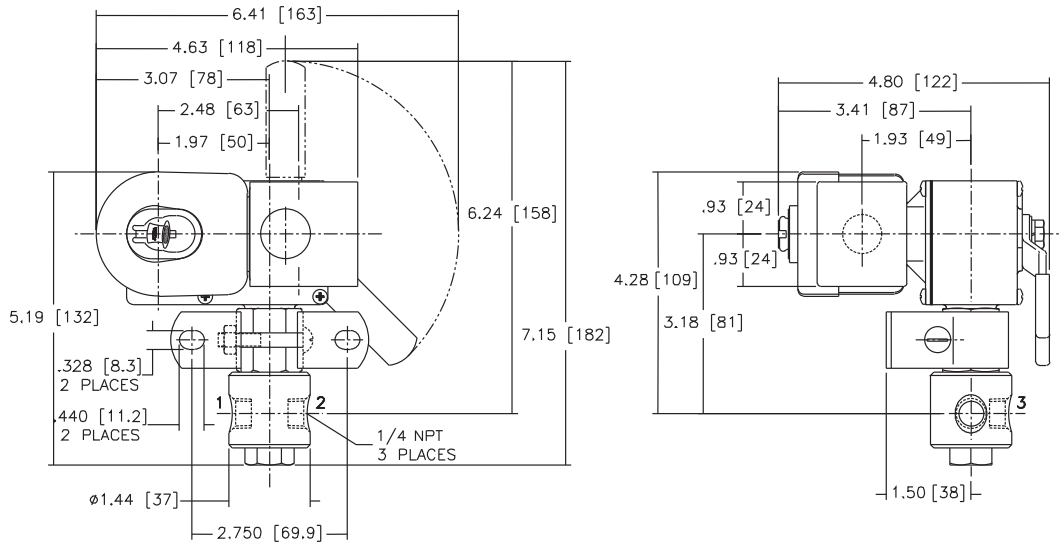
Const. Ref. 5 ①



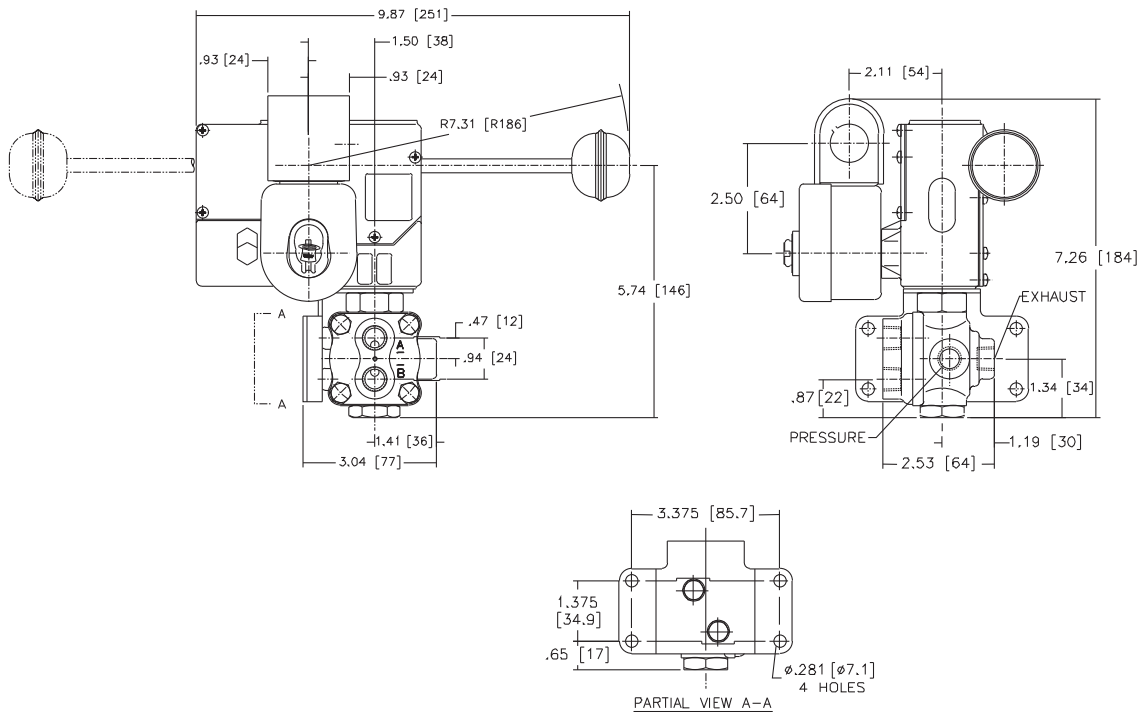
① **IMPORTANT: Valves must be mounted with manual reset operator vertical and upright.**

Dimensions: inches (mm)

Const. Ref. 6 ①



Const. Ref. 7 ①

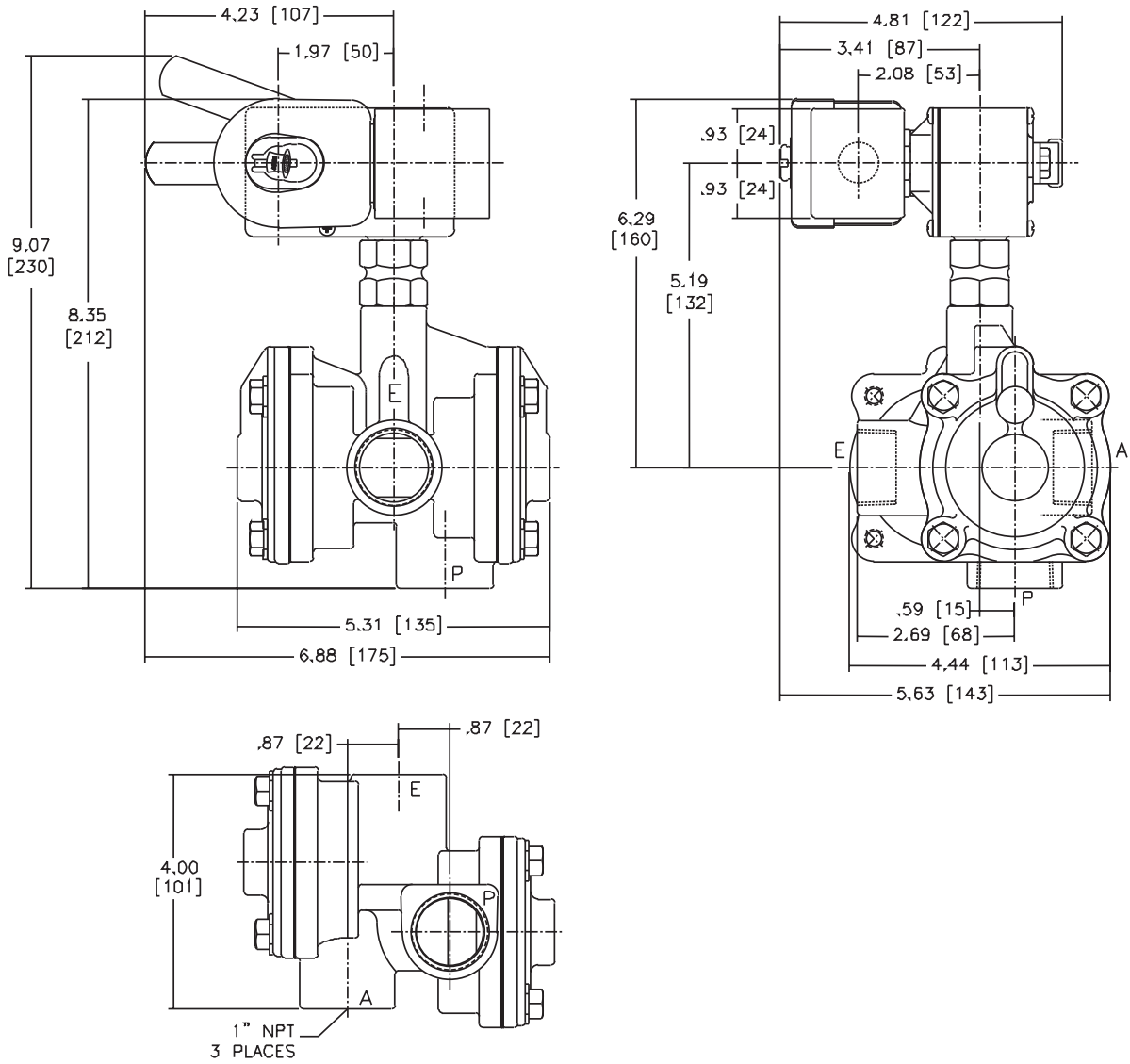


① **IMPORTANT: Valves must be mounted with manual reset operator vertical and upright.**

SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 8



SPECIAL SERVICE
 PILOT

Features

- Manual reset versions of sturdy ASCO 8342 Series (1/4" and 3/8" NPT) and Series 8344 (1/2" to 1" NPT)
- 1/4" and 3/8" NPT are direct acting to provide maximum flow for their size
- 1/2" to 1" NPT have Poppet construction for high flows and tight shutoff
- Once tripped, can only be manually reset to automatic operation
- Electrically Tripped (trips when energized), No Voltage Release (trips when de-energized), or Free Handle constructions
- Intrinsically Safe constructions are available
See Pilot Valve Section for details

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------------|
| Body | Brass |
| Stem | 303 Stainless Steel |
| Springs | 302 Stainless Steel |
| Pilot Seat Cartridge | CA (when listed) |
| Disc, Diaphragm, Seat | PTFE, FKM, or NBR (as listed) |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|
| | DC Watts | AC | | | AC | DC |
| | | Watts | VA Holding | VA Inrush | | |
| F | - | 20 | 45 | 96 | 99257 | - |
| H | 36.2 | - | - | - | - | 222184 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Note: 125 and 250 volts DC are battery voltages applied in power plants. Special valves are available to pilot control valves in power plants.
Consult your local ASCO sales office for a listing.

Solenoid Enclosures

Standard: RedHat metal solenoid enclosure. Type 1 General Purpose Junction Box.

Optional: Explosionproof and Watertight, Types 3, 7 (C and D), and 9. (To order, add prefix "EF" to catalog number.)

See Optional Features Section for other available options.

Nominal Ambient Temp. Ranges

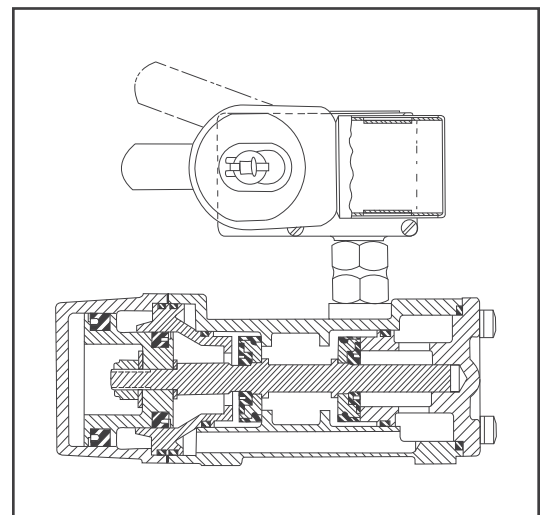
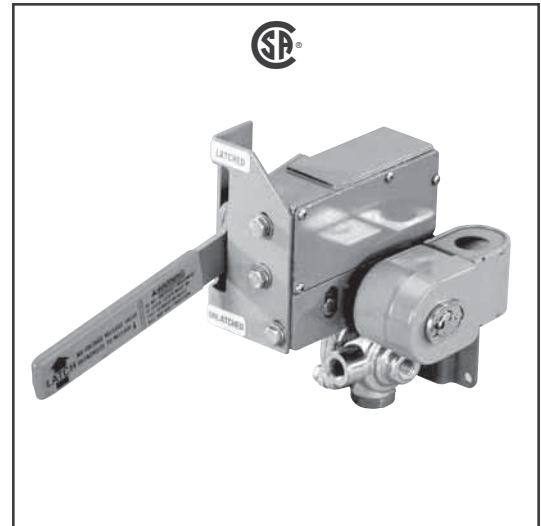
AC: -20°F to 104°F (-29°C to 40°C)

Refer to Engineering Section for details.

Approvals

CSA certified. Some constructions meet shock and vibration ISA S71.03C2

Refer to Engineering Section for details.



SPECIAL SERVICE PILOT

Operation Alternatives

Electrically Tripped – Valves move to latched position when the solenoid is de-energized, trips when they receive a continuous or momentary (at least 0.3 seconds) electrical signal. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been de-energized.

No Voltage Release – Valves move to latched position when the solenoid is energized, trips when de-energized. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been energized.

Free Handle – Valves move to latched position when the solenoid is energized, trips when de-energized. They cannot be manually cycled open/closed when de-energized. They can be manually cycled open/closed or reset only when energized.

Specifications (English units)

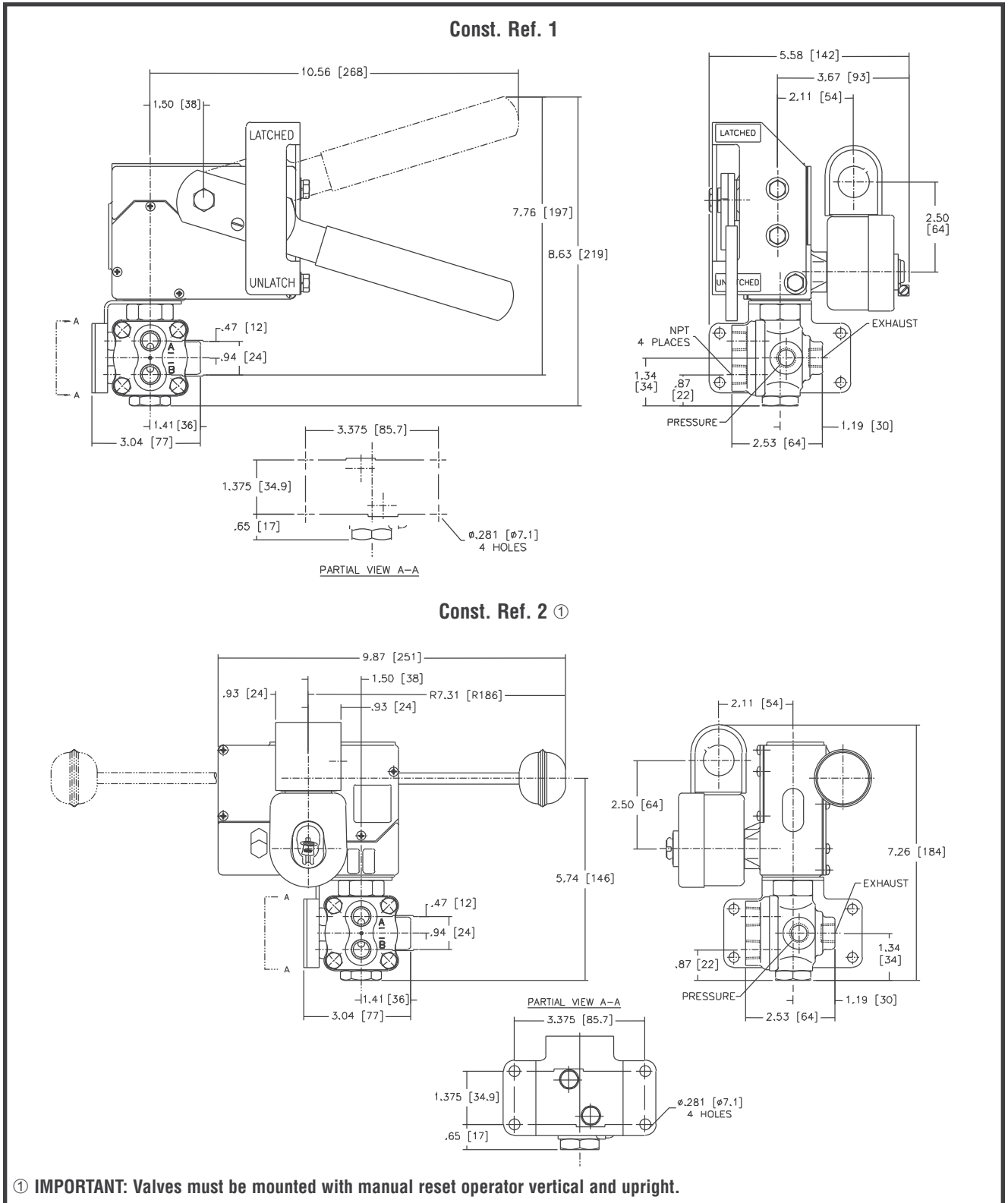
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | No Voltage Release Catalog Number | Electrically Tripped Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---------------------------------------|---------|---------|---------------------------------|-----|--------------------------------------|--|-------------|---|--------|
| | | | Min. | Max. AC | Max. DC | AC | DC | | | | AC | DC |
| BRASS BODY with PTFE + FKM Seats and Discs for Air and Inert Gas | | | | | | | | | | | | |
| 1/4 | 3/16 | .70 | 0 | 250 | 250 | 160 | 160 | 8408B006 | 8410B006 | 1 | 20/F | 36.2/H |
| 3/8 | 3/16 | .70 | 0 | 250 | 250 | 160 | 160 | 8408B007 | 8410B007 | 1 | 20/F | 36.2/H |
| BRASS BODY with NBR Seats and Discs (CA Pilot Cartridge) for Air, Inert Gas, Water, and Light Oil. This group of valves meets shock and vibration ISA S71.03C2. | | | | | | | | | | | | |
| 1/2 | 3/4 | 2.2 | 10 | 250 | 250 | 200 | 200 | 8408A008 ① | 8410A008 ① | 4 | 20/F | 36.2/H |
| 3/4 | 3/4 | 5.6 | 10 | 250 | 250 | 200 | 200 | 8408A009 ① | 8410A009 ① | 3 | 20/F | 36.2/H |
| 1 | 3/4 | 5.6 | 10 | 250 | 250 | 200 | 200 | 8408A010 ① | 8410A010 ① | 3 | 20/F | 36.2/H |
| BRASS BODY with PTFE + FKM Seats and Discs for Air | | | | | | Free Handle Construction | | | | | | |
| 1/4 | 3/16 | .70 | 0 | 125 | 125 | 160 | 160 | 8047A001 | | 2 | 20/F | 36.2/H |
| 3/8 | 3/16 | .70 | 0 | 125 | 125 | 160 | 160 | 8047A002 | | 2 | 20/F | 36.2/H |
| ① A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only. | | | | | | | | | | | | |

SPECIAL SERVICE PILOT

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | No Voltage Release Catalog Number | Electrically Tripped Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|---------------------------------------|---------|---------|---------------------------------|----|--------------------------------------|--|-------------|---|--------|
| | | | Min. | Max. AC | Max. DC | AC | DC | | | | AC | DC |
| BRASS BODY with PTFE + FKM Seats and Discs for Air and Inert Gas | | | | | | | | | | | | |
| 1/4 | 5 | .60 | 0 | 17 | 17 | 71 | 71 | 8408B006 | 8410B006 | 1 | 20/F | 36.2/H |
| 3/8 | 5 | .60 | 0 | 17 | 17 | 71 | 71 | 8408B007 | 8410B007 | 1 | 20/F | 36.2/H |
| BRASS BODY with NBR Seats and Discs (CA Pilot Cartridge) for Air, Inert Gas, Water, and Light Oil. This group of valves meets shock and vibration ISA S71.03C2. | | | | | | | | | | | | |
| 1/2 | 10 | 1.89 | 0.7 | 17 | 17 | 93 | 93 | 8408A008 ① | 8410A008 ① | 4 | 20/F | 36.2/H |
| 3/4 | 19 | 4.80 | 0.7 | 17 | 17 | 93 | 93 | 8408A009 ① | 8410A009 ① | 3 | 20/F | 36.2/H |
| 1 | 19 | 4.80 | 0.7 | 17 | 17 | 93 | 93 | 8408A010 ① | 8410A010 ① | 3 | 20/F | 36.2/H |
| BRASS BODY with PTFE + FKM Seats and Discs for Air | | | | | | Free Handle Construction | | | | | | |
| 1/4 | 5 | .60 | 0 | 9 | 9 | 71 | 71 | 8047A001 | | 2 | 20/F | 36.2/H |
| 3/8 | 5 | .60 | 0 | 9 | 9 | 71 | 71 | 8047A002 | | 2 | 20/F | 36.2/H |
| ① A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only. | | | | | | | | | | | | |

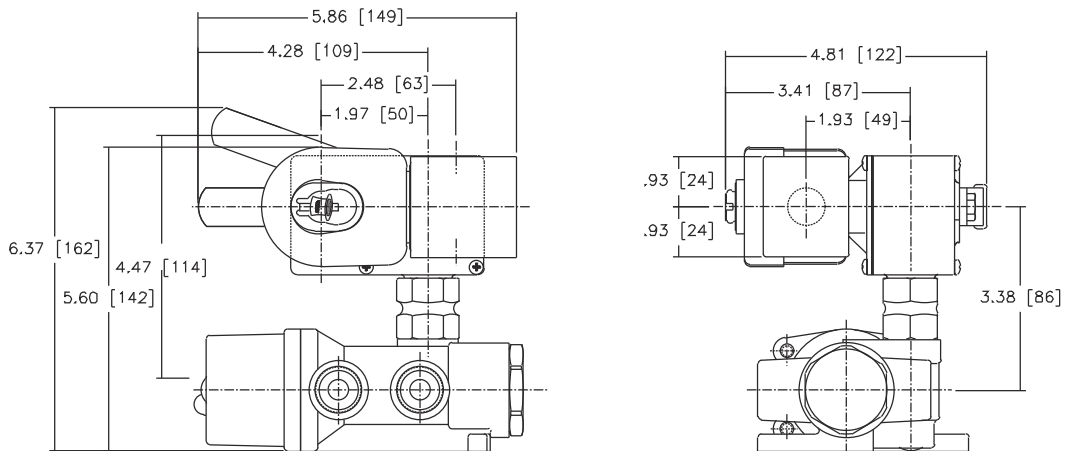
Dimensions inches (mm)



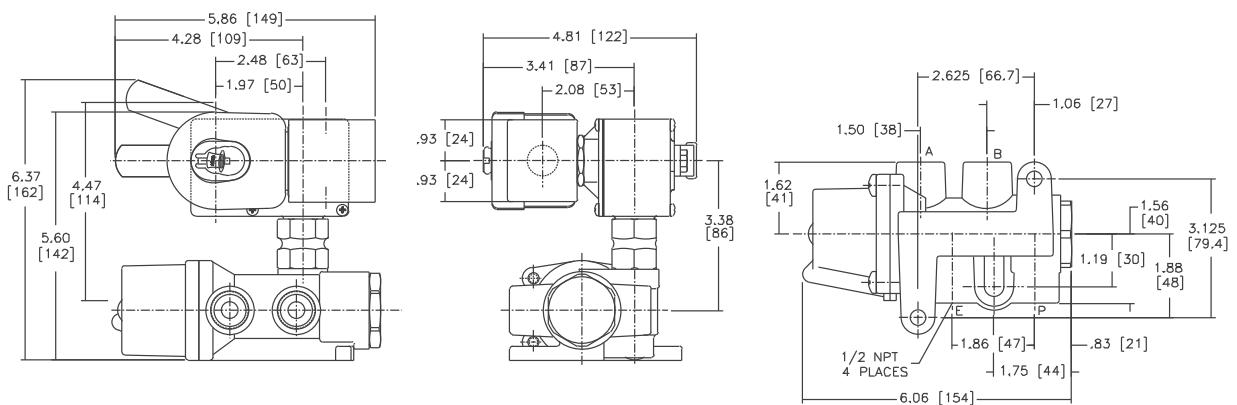
SPECIAL SERVICE PILOT

Dimensions inches (mm)

**Const. Ref. 3
No Voltage Release**



**Const. Ref. 4
Electrically Tripped**



SPECIAL SERVICE
PILOT

Features

- Designed for high-flow piloting with no minimum operating pressure required; e.g. power plants, refineries, chemical processing
- Balanced poppet construction for high flow at minimum power levels
- PTFE rider rings and graphite-filled seals reduce friction and eliminate sticking to provide exceptional service life
- 316 Stainless Steel construction for highly corrosive atmospheres

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|--------------------|
| Body | Brass | 316Stainless Steel |
| Core Tube | 305 Stainless Steel | |
| Stem and Insert | 303 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| O-Ring Holder | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Seals and Discs | NBR | FKM |
| Rider Ring | PTFE | |

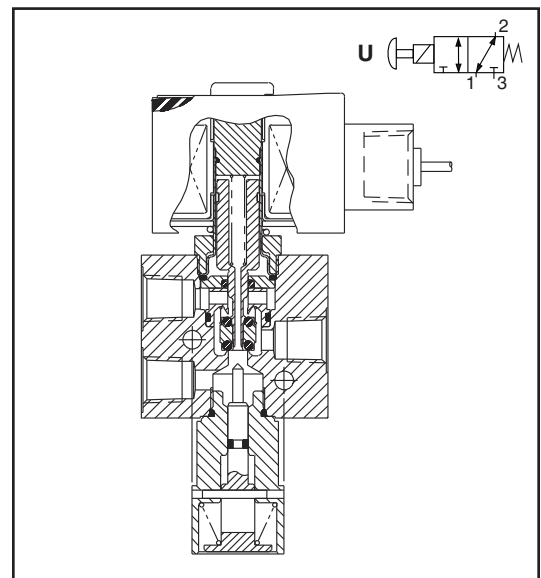
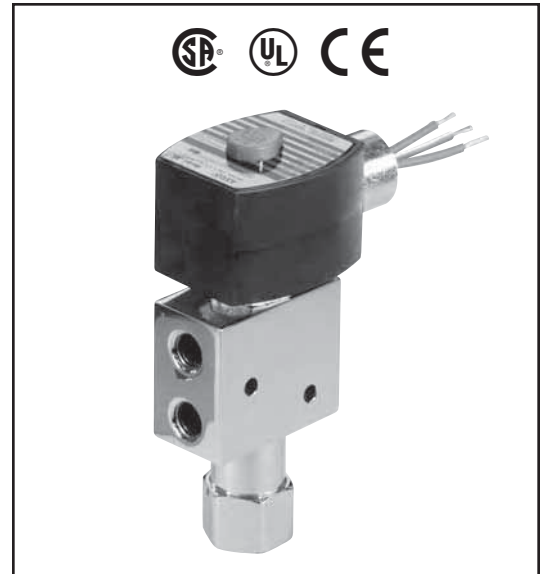
Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 12.0 | 12 | 12 | 276000 | 238710 | 276002 | 238714 |

Standard Voltages: 24/50-60, 120/50-60, 240/50-60, and 480/50-60 volts AC, or 6, 12, 24, 120 and 240 volts DC.

Solenoid Enclosures

Standard: Brass valves: Types, 1, 2, 3, 3S, 4, and 4X.
 316 Stainless Steel valves: Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, and 6P.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF", or for explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)
 See *Optional Features Section* for other available options.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to 131°F (-20°C to 55°C)
 Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.
 Refer to *Engineering Section* for details.

Operation Alternatives

No Voltage Release - valves must be manually moved to the "open" latched position with the solenoid energized.
 Tamperproof No Voltage Release - valves operate as above, but cannot be held open manually.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Maximum Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Brass Body | 316 Stainless Steel Body | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|-----------|---|-------|---------------------|---------------------|----------------|--------------------------|-------------|---------------------------------------|--------|
| | | Ports 1-2 | Ports 2-3 | Air-Inert Gas | Water | Light Oil @ 300 SSU | | Catalog Number | Catalog Number | | AC | DC |
| UNIVERSAL MANUAL RESET- No Voltage Release | | | | | | | | | | | | |
| 1/4 | 1/4 | .60 | .73 | 150 | 150 | 150 | 176 | 8327G021 | - | 1 | 12.0/F | 11.6/F |
| 1/4 | 1/4 | .60 | .73 | 150 | 150 | 150 | 248 | - | EV8327G022 | 1 | 12.0/F | 11.6/F |
| UNIVERSAL MANUAL RESET- Tamperproof No Voltage Release | | | | | | | | | | | | |
| 1/4 | 1/4 | .60 | .73 | 150 | 150 | 150 | 176 | 8327G031 | - | 1 | 12.0/F | 11.6/F |
| 1/4 | 1/4 | .60 | .73 | 150 | 150 | 150 | 248 | - | EV8327G032 | 1 | 12.0/F | 11.6/F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Maximum Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | Brass Body | 316 Stainless Steel Body | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|-----------|---|-------|---------------------|---------------------|----------------|--------------------------|-------------|---------------------------------------|--------|
| | | Ports 1-2 | Ports 2-3 | Air-Inert Gas | Water | Light Oil @ 300 SSU | | Catalog Number | Catalog Number | | AC | DC |
| UNIVERSAL MANUAL RESET- No Voltage Release | | | | | | | | | | | | |
| 1/4 | 6 | .51 | .63 | 10 | 10 | 10 | 80 | 8327G021 | - | 1 | 12.0/F | 11.6/F |
| 1/4 | 6 | .51 | .63 | 10 | 10 | 10 | 120 | - | EV8327G022 | 1 | 12.0/F | 11.6/F |
| UNIVERSAL MANUAL RESET- Tamperproof No Voltage Release | | | | | | | | | | | | |
| 1/4 | 6 | .51 | .63 | 10 | 10 | 10 | 80 | 8327G031 | - | 1 | 12.0/F | 11.6/F |
| 1/4 | 6 | .51 | .63 | 10 | 10 | 10 | 120 | - | EV8327G032 | 1 | 12.0/F | 11.6/F |

Dimensions: inches (mm)

FLOW DIAGRAMS

| OPERATION | DE-ENERGIZED | ENERGIZED |
|--------------------------------|--------------|-----------|
| NORMALLY CLOSED PRESSURE AT 3 | | |
| NORMALLY OPEN PRESSURE AT 1 | | |
| UNIVERSAL PRESSURE AT ANY PORT | | |

Const. Ref. 1

IMPORTANT: Valves may be mounted in any position.

Features

- NAMUR direct mount construction
- Balanced Poppet construction provides high flow with low power consumption
- PTFE rider rings and graphite-filled PTFE seals reduce friction and eliminate sticking for long life
- No minimum pressure required
- Tamperproof no-voltage release manual reset provides added safety

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Aluminum | 316 Stainless Steel |
| Seals and Discs | NBR | FKM |
| Core Tube | 305 Stainless Steel | |
| Stem and Insert | 303 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Rider Rings | PTFE | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 12 | 12 | 12 | 276000 | 238710 | 276002 | 238714 |

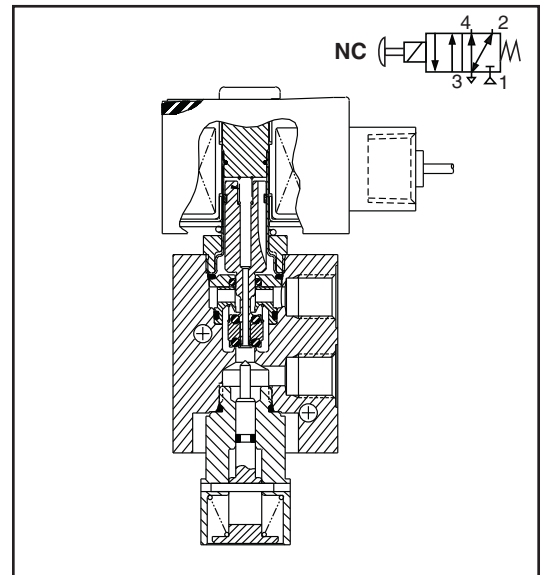
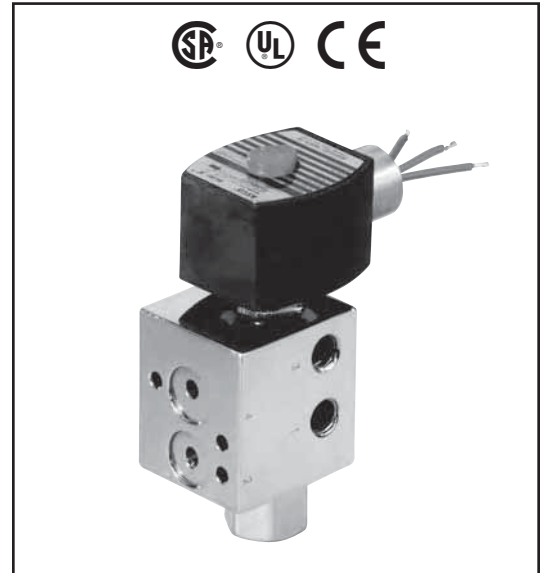
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC.
 Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Aluminum-Bodied valves, add "EV" to catalog number.)

See *Optional Features Section* for other available options.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to +131°F (-20°C to +55°C)

Refer to *Engineering Section* for details.

Approvals

General Purpose Solenoid:

UL recognized component,
 CSA certified (8327G033 pending).

Explosionproof Solenoid: (Prefix EF and EV)

UL listed solenoid.

CSA certified for use in hazardous locations.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

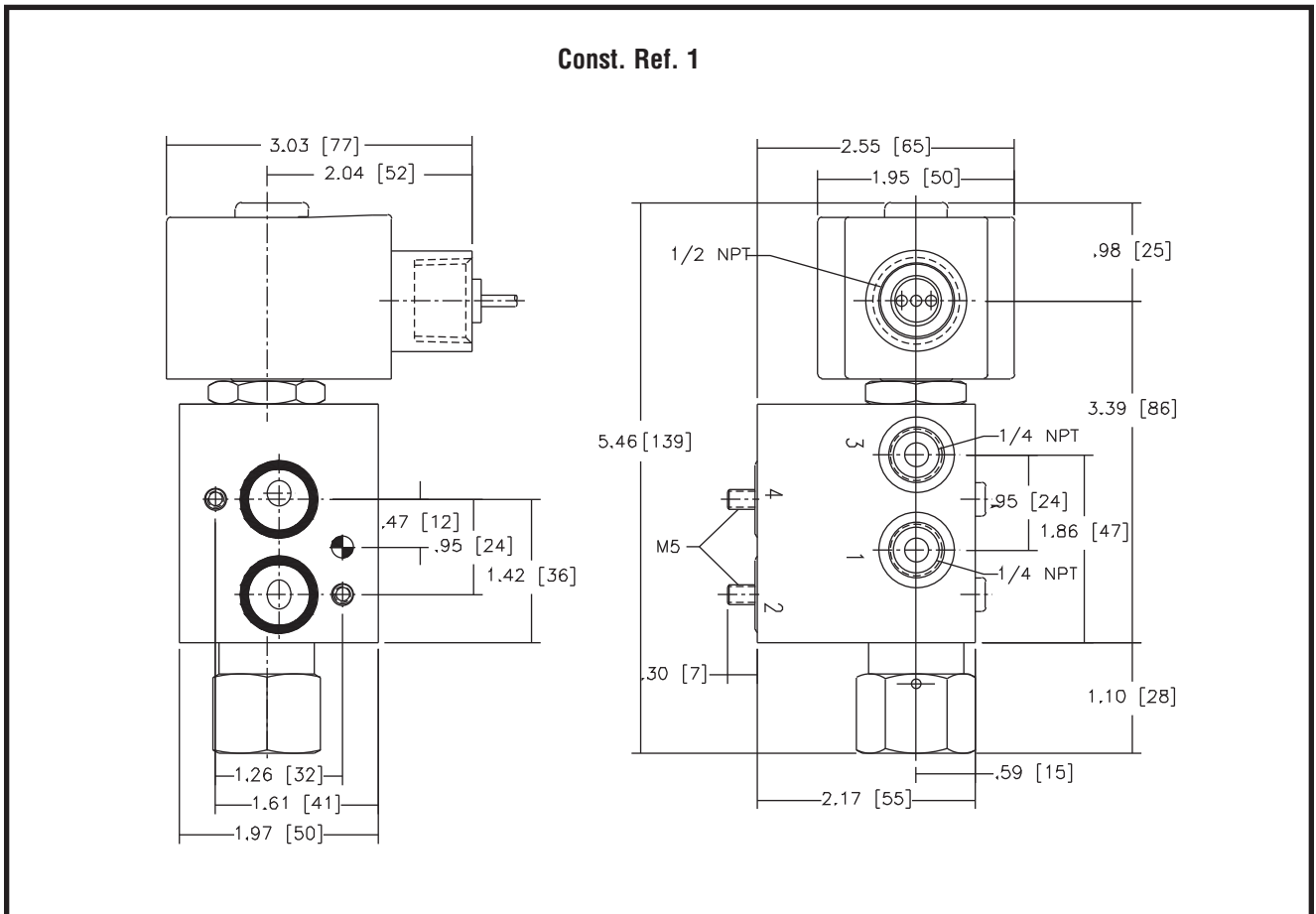
Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Maximum Operating Pressure Diff. (psi) | | Fluid Temp. Range °F | Aluminum Body | Stainless Steel Body | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|--|---------------------|----------------|-----------|--|----------------|----------------------|----------------|----------------------|-------------|---------------------------------------|--|
| | | Ports 1-2 | Ports 2-3 | Air-Inert Gas | Catalog Number | | Catalog Number | AC | | DC | |
| NORMALLY CLOSED MANUAL RESET - Tamperproof No-Voltage Release | | | | | | | | | | | |
| 1/4 | 1/4 | .62 | .43 | 150 | -4 to 176 | 8327G033 | - | 1 | 12.0/F | 11.6/H | |
| 1/4 | 1/4 | .62 | .43 | 150 | -4 to 248 | - | EV8327G035 | 1 | 12.0/F | 11.6/H | |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Maximum Operating Pressure Diff. (bar) | | Fluid Temp. Range °C | Aluminum Body | Stainless Steel Body | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|--|-------------------|-----------------------|-----------|--|----------------|----------------------|----------------|----------------------|-------------|---------------------------------------|--|
| | | Ports 1-2 | Ports 2-3 | Air-Inert Gas | Catalog Number | | Catalog Number | AC | | DC | |
| NORMALLY CLOSED MANUAL RESET - Tamperproof No-Voltage Release | | | | | | | | | | | |
| 1/4 | 6.4 | .53 | .37 | 10 | -20 to 80 | 8327G033 | - | 1 | 12.0/F | 11.6/H | |
| 1/4 | 6.4 | .53 | .37 | 10 | -20 to 120 | - | EV8327G035 | 1 | 12.0/F | 11.6/H | |

Dimensions: inches (mm)



Features

- Designed to meet vibration and/or shock per ISA specification S71.03C2
- Handles aggressive atmosphere per salt resistance testing (ASTM B117)
- Most hardware is stainless steel, and all aluminum components are hard anodized and Nituff® coated
- Manual reset housing is sealed with closed-cell CR sponge rubber and equipped with sintered bronze breather to prevent condensation
- Last chance filter installed in auxiliary air port of the pilot valve
- Intrinsically Safe and Low Power constructions available

Nituff is a registered trademark of Nimet Industries, Inc.

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|--------------------------------|
| Main Valve | |
| Body | Brass |
| Disc | 303 Stainless Steel |
| Seats | Phosphor Bronze |
| Springs | 17-7 PH Stainless Steel |
| Seals | FKM |
| Air Operator Diaphragm | FMQ |
| Bearing Screw | 430 Stainless Steel |
| Lever | 302 Stainless Steel |
| Pilot Valve | |
| Body | Brass |
| Shading Coil | Copper (AC only) |
| Seals | NBR and PA (AC), NBR (DC) |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Guide | CA |
| Core Springs | 302 and 17-7PH Stainless Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 76 | 238610 | 238710 | 238614 | 238714 |

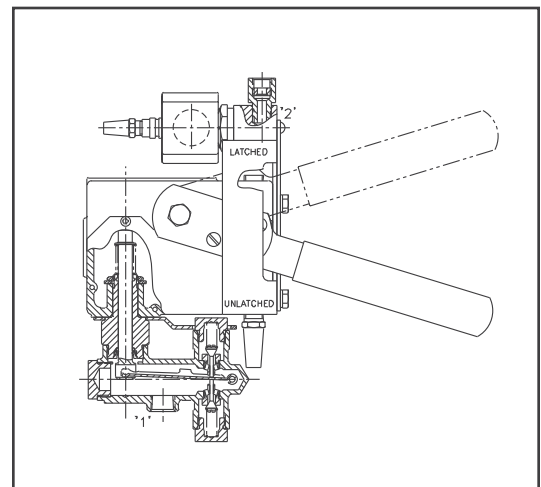
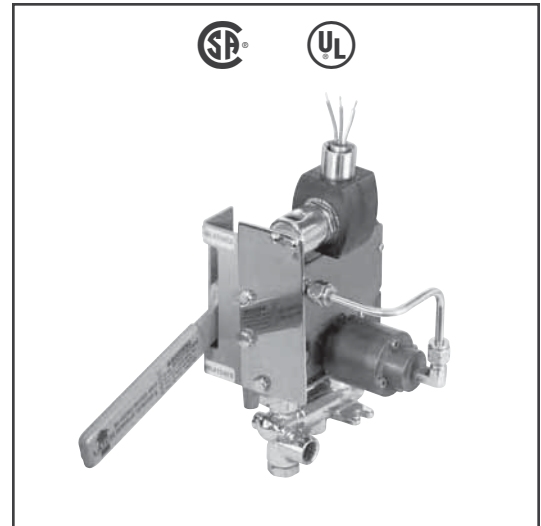
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.

Solenoid Enclosures

Standard: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6D, 7, and 9.

Approvals

CSA certified and UL listed General Purpose Valve (pilot).



SPECIAL SERVICE PILOT

Options

Stainless Steel body; 1/8" to 1/2" NPT pipe sizes; Position indicator Switch; Main Valve Resilient Seats; 4-way construction with metering; Pneumatic Time Delay; redundant pilot valves.

Contact factory for ordering information.

Operation Alternatives

Electrically Tripped – Manually move the lever to the latched position with the solenoid de-energized. Trips when solenoid is energized. Once tripped, the lever may be cycled causing the valve discs to open and close. If auxiliary air supply to the pilot valve is lost, the main valve will shift position.

No Voltage Release – Manually move the lever to the latched position with the solenoid energized. Trips when solenoid is de-energized. Once tripped, the lever may be cycled causing the valve discs to open and close. If the auxiliary air supply to the pilot valve is lost, the main valve will shift position.

Specifications (English units)

| MAIN VALVE - AC or DC Constructions | | | | | |
|-------------------------------------|---------------------|----------------|------------------------------|------|---------------------------------|
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Press. Diff. (psi) | | Max. Fluid and Ambient Temp. °F |
| | | | Min. | Max. | |
| 3/8 | 1/4 | .45 | 0 | 125 | 200 |

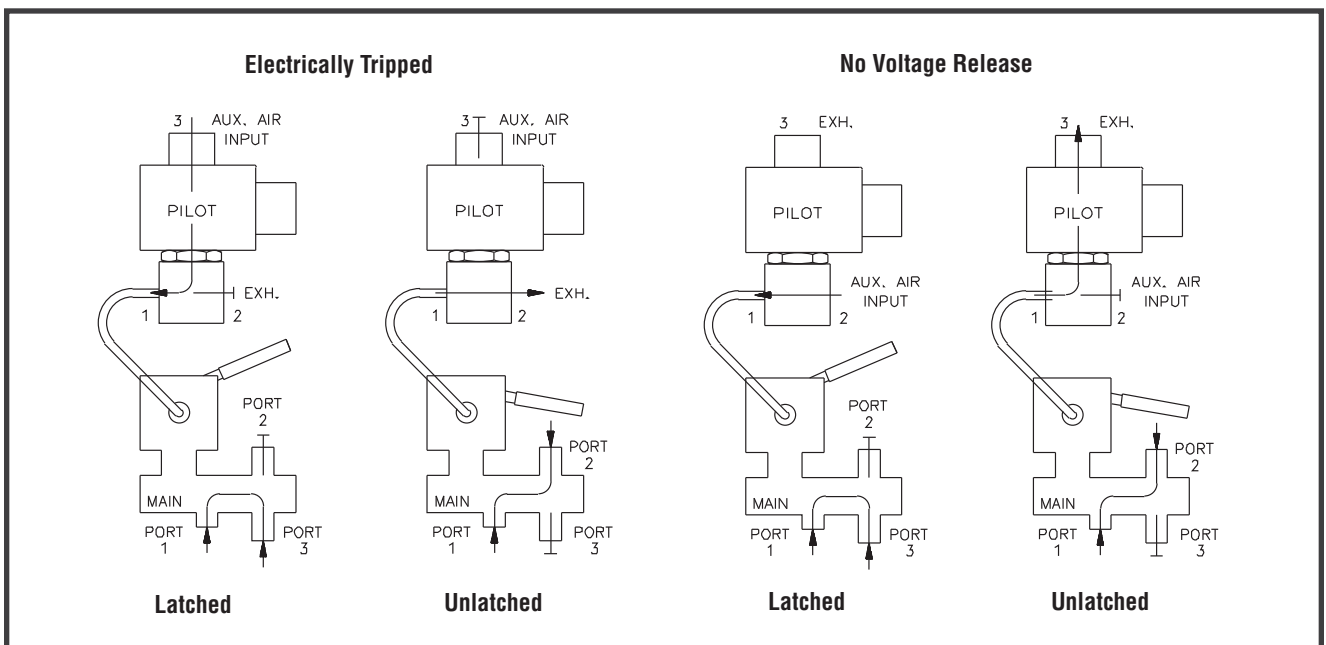
| Catalog Number | Construction Type | Pilot Pressure (psi) | | Fluid Temperature °F | | Ambient Temperature °F | | Watt Rating/ Class of Coil Insulation | Pilot Valve (For reference only) |
|------------------------|----------------------|----------------------|------|----------------------|------|------------------------|------|---------------------------------------|----------------------------------|
| | | Min. | Max. | Min. | Max. | Min. | Max. | | |
| AC CONSTRUCTION | | | | | | | | | |
| HV264153-15 | No Voltage Release | 25 | 125 | -20 | 200 | -20 | 125 | 10.1/F | EF8314G034 |
| HV264153-16 | Electrically Tripped | 25 | 125 | -20 | 200 | -20 | 125 | 10.1/F | EF8314G052 |
| DC CONSTRUCTION | | | | | | | | | |
| HV264153-11 | No Voltage Release | 25 | 125 | -20 | 104 | -20 | 104 | 11.6/F | EF8314G034 |
| HV264153-12 | Electrically Tripped | 25 | 125 | -20 | 104 | -20 | 104 | 11.6/F | EF8314G052 |

Specifications (Metric units)

| MAIN VALVE - AC or DC Constructions | | | | | |
|-------------------------------------|-------------------|-----------------------|------------------------------|------|---------------------------------|
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Press. Diff. (bar) | | Max. Fluid and Ambient Temp. °C |
| | | | Min. | Max. | |
| 3/8 | 6 | 0.39 | 0 | 9 | 93 |

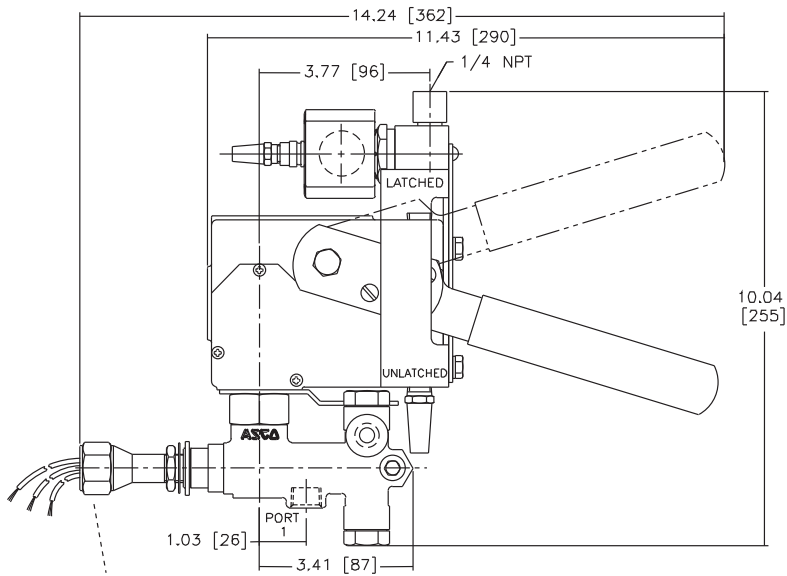
| Catalog Number | Construction Type | Pilot Pressure (bar) | | Fluid Temperature °C | | Ambient Temperature °C | | Watt Rating/ Class of Coil Insulation | Pilot Valve (For reference only) |
|------------------------|----------------------|----------------------|------|----------------------|------|------------------------|------|---------------------------------------|----------------------------------|
| | | Min. | Max. | Min. | Max. | Min. | Max. | | |
| AC CONSTRUCTION | | | | | | | | | |
| HV264153-15 | No Voltage Release | 2 | 9 | -29 | 93 | -29 | 52 | 10.1/F | EF8314G034 |
| HV264153-16 | Electrically Tripped | 2 | 9 | -29 | 93 | -29 | 52 | 10.1/F | EF8314G052 |
| DC CONSTRUCTION | | | | | | | | | |
| HV264153-11 | No Voltage Release | 2 | 9 | -29 | 40 | -29 | 40 | 11.6/F | EF8314G034 |
| HV264153-12 | Electrically Tripped | 2 | 9 | -29 | 40 | -29 | 40 | 11.6/F | EF8314G052 |

Flow Diagrams

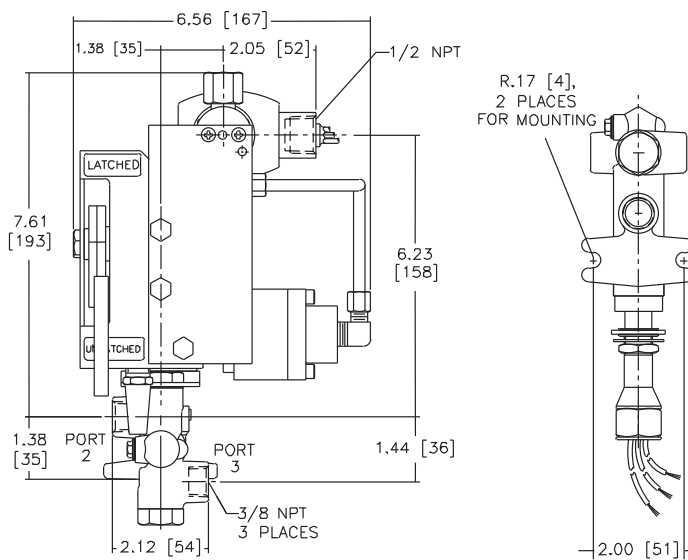


Dimensions inches (mm)

No Voltage Release Construction



Shown with
Optional Position
Indicator Switch



IMPORTANT: Mount with manual reset assembly vertical and upright.

SPECIAL SERVICE
PILOT

The valve automation market has demanding product requirements and specifications. ASCO is uniquely qualified to meet these needs. With our offering of direct mount NAMUR valves and valve position indicators ASCO can offer one source of supply for your valve automation solutions.

ASCO offers a complete range of 3 and 4-way valves which mount directly onto single acting and double acting actuators, including 3/2 - 5/2 combination valves that can be converted from 3-way operation to 4-way operation by simply flipping a gasket or changing a plate. These direct mount pilot valves eliminate the need for piping the valve to the actuator, and allow for fast, easy installation on the actuator. These valves are offered with RedHat II molded epoxy solenoids, along with optional features such as high temperature Class H molded coils and manual operators. Additional coil types are available.

Index

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| Direct Mount (NAMUR) | |
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| 8551/8553 RedHat II Spool Valve | 199 |
| 8320 Dribble Control | 203 |

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www.ascovalve.com



Features

- Mount directly to spring return actuators with NAMUR interface
- Same poppet valve performance as in standard 8320 valves
- Integral breather block prevents ingestion of contaminants or corrosives
- Variety of flow and pressure ratings
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|-------------------------------|---------------------|
| Body | Brass | 303 Stainless Steel |
| Seals and Discs | NBR | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Springs | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |
| Disc-Holder | CA | |
| Core Guide | CA (10.1 and 17.1 watts only) | |

Electrical

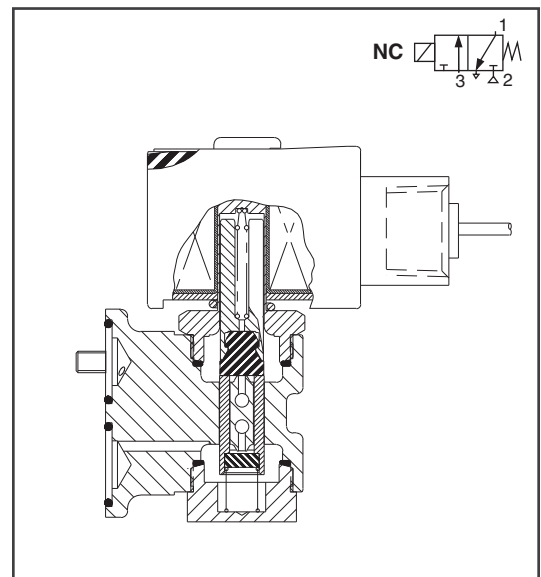
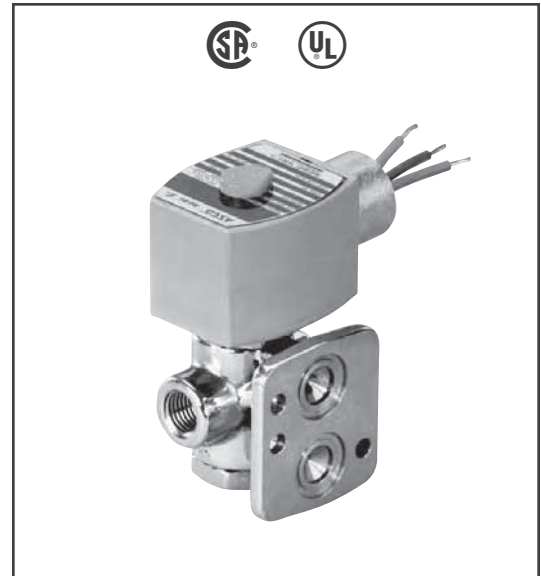
| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |
| F | 22.6 | 17.1 | 40 | 70 | 238610 | 238710 | 238614 | 238714 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Special Construction: Dual solenoid construction for redundant controls and dribble control available. Consult your local ASCO sales office for details.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to catalog number.)
 See *Optional Features Section* for other available options.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

AC: 0°F to 125°F (-18°C to 52°C)
 DC: 0°F to 104°F (-18°C to 40°C)
 When used at temperatures below 32°F (0°C), media must be moisture free. Also available: -40° construction.
 Please contact ASCO sales office for details.

Approvals

UL component and CSA certified.
 Refer to *Engineering Section* for details.

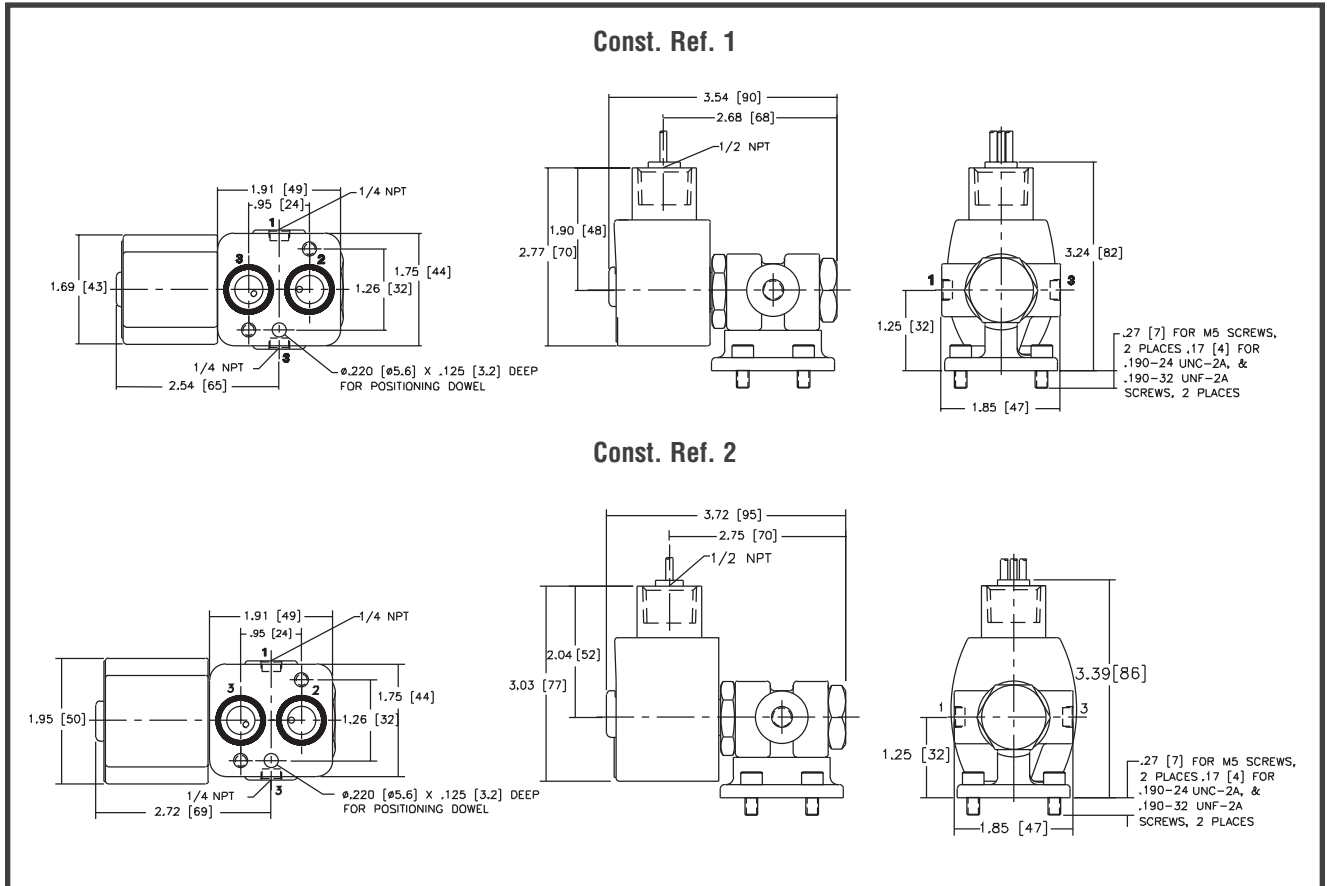
Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | | Brass Body Catalog Number | Stainless Steel Body Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---------------------------------------|---------|---------------------|-----|---------------------------|-------------------------------------|-------------|---------------------------------------|--------|
| | | | Air-Inert Gas | | AC | DC | | | | AC | DC |
| | | | Max. AC | Max. DC | AC | DC | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | |
| 1/4 | 1/16 | .09 | 150 | 125 | 180 | 120 | 8320G701 | 8320G711 | 1 | 6.1/F | 10.6/F |
| 1/4 | 3/32 | .12 | 100 | 100 | 180 | 120 | 8320G702 | 8320G712 | 1 | 6.1/F | 10.6/F |
| 1/4 | 1/16 | .09 | 210 | 160 | 200 | 150 | 8320G703 | 8320G713 | 2 | 17.1/F | 11.6/F |
| 1/4 | 3/32 | .12 | 150 | 150 | 200 | 150 | 8320G704 | 8320G714 | 2 | 10.1/F | 22.6/F |
| 1/4 | 1/8 | .21 | 100 | - | 200 | - | 8320G705 | 8320G715 | 2 | 17.1/F | - |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bars) | | Max. Fluid Temp. °C | | Brass Body Catalog Number | Stainless Steel Body Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|--|---------|---------------------|----|---------------------------|-------------------------------------|-------------|---------------------------------------|--------|
| | | | Air-Inert Gas | | AC | DC | | | | AC | DC |
| | | | Max. AC | Max. DC | AC | DC | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | |
| 1/4 | 2 | .08 | 10 | 9 | 81 | 48 | 8320G701 | 8320G711 | 1 | 6.1/F | 10.6/F |
| 1/4 | 2 | .10 | 7 | 7 | 81 | 48 | 8320G702 | 8320G712 | 1 | 6.1/F | 10.6/F |
| 1/4 | 2 | .08 | 14 | 11 | 92 | 65 | 8320G703 | 8320G713 | 2 | 17.1/F | 11.6/F |
| 1/4 | 2 | .10 | 10 | 10 | 92 | 65 | 8320G704 | 8320G714 | 2 | 10.1/F | 22.6/F |
| 1/4 | 3 | .18 | 7 | - | 92 | - | 8320G705 | 8320G715 | 2 | 17.1/F | - |

Dimensions inches (mm)



Features

- NAMUR direct mount construction
- Balanced Poppet construction provides high flow with low power consumption
- PTFE rider rings and graphite-filled PTFE seals reduce friction and eliminate sticking for long life
- No minimum pressure required
- Tamperproof no-voltage release manual reset provides added safety

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Aluminum | 316 Stainless Steel |
| Seals and Discs | VMQ | |
| | NBR | FKM |
| Core Tube | 305 Stainless Steel | |
| Stem and Insert | 303 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Rider Rings | PTFE | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 12 | 24 | 24 | 276000 | 238710 | 276002 | 238714 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

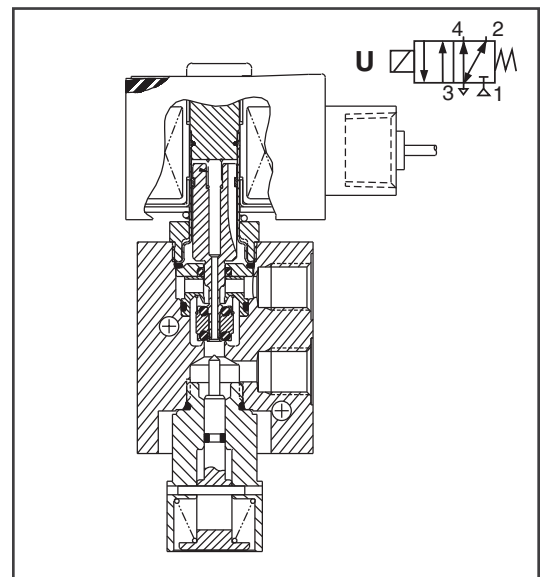
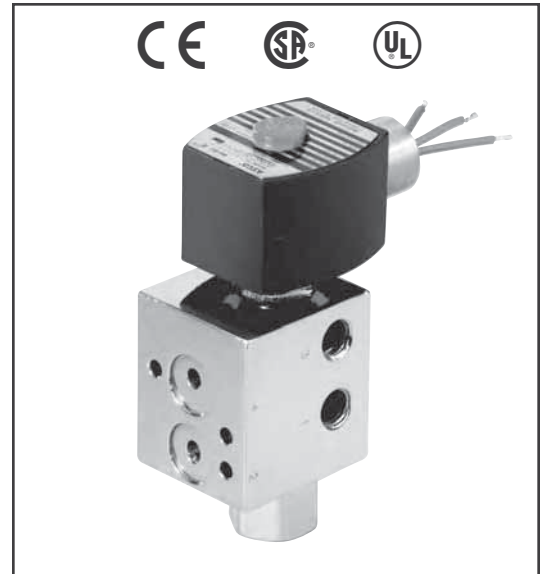
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Aluminum-Bodied valves, add "EV" to catalog number.)

See *Optional Features Section* for other available options.

SIL (Safety Integrity Level) Information:

- PFD (Probability of Failure on Demand) < 4 x 10⁻⁷ at a confidence factor of 95%.
- SFF (Safe Failure Fraction) according to IEC 61508-2 Table A1 is ≥ 0.99.
- Only constructions without manual operators apply to the above criteria.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

8327G033 and 35: -4°F to 131°F (-20°C to 55°C)
 8327G053 and 55: -40°F to 131°F (-40°C to 55°C)
 Refer to *Engineering Section* for details.

Approvals

General Purpose Solenoid:

UL recognized component, CSA certified.

Explosionproof Solenoid: (Prefix EF and EV)

UL listed solenoid.

CSA certified for use in hazardous Locations.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

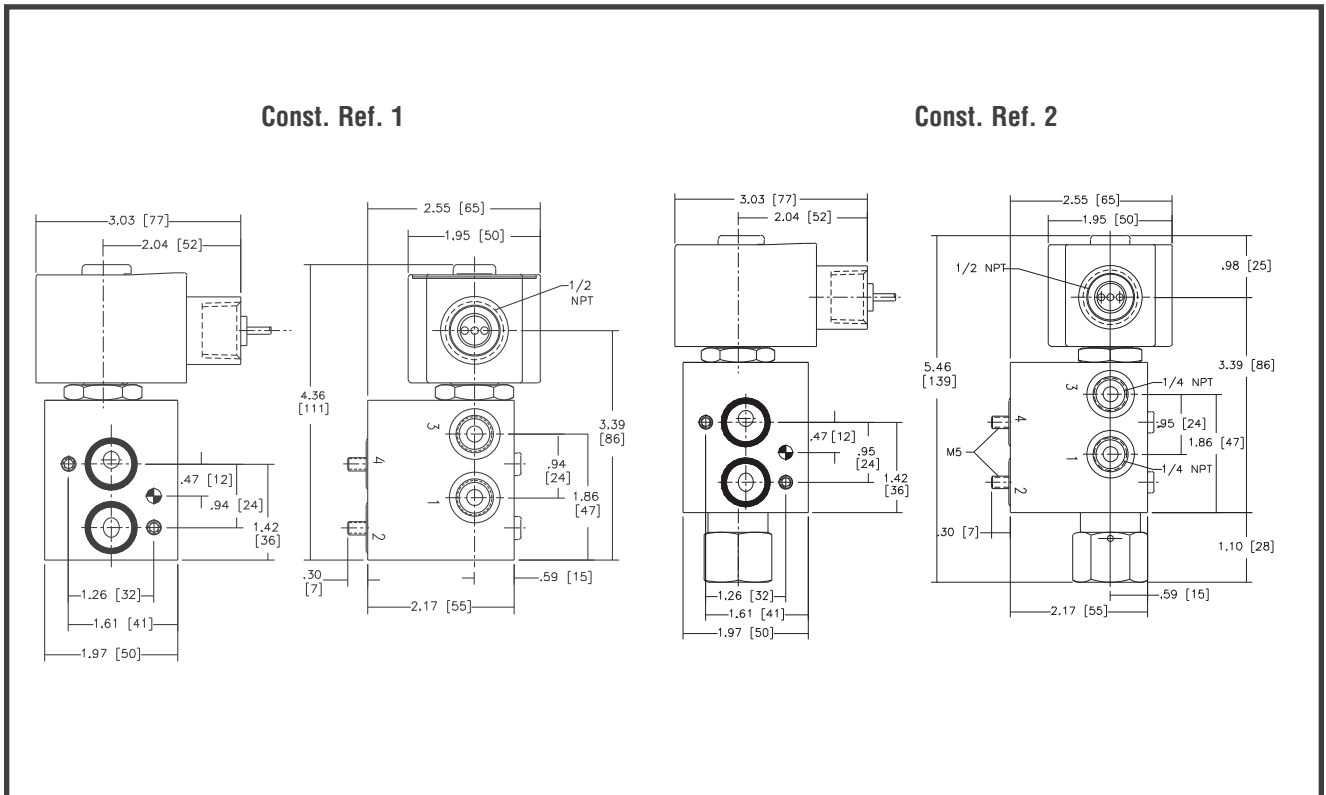
Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Maximum Operating Pressure Diff. (psi) Air-Inert Gas | Fluid Temp. Range °F | Aluminum Body Catalog Number | Stainless Steel Body Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|--|---------------------|----------------|-----------|---|----------------------|---------------------------------|--|-------------|--|--------|
| | | Ports 1-2 | Ports 2-3 | | | | | | AC | DC |
| UNIVERSAL - Low-Temperature Operation | | | | | | | | | | |
| 1/4 | 1/4 | .52 | .53 | 150 | -40 to 131 | 8327G053 | EV8327G055 | 1 | 12.0/F | 11.6/F |
| UNIVERSAL MANUAL RESET - Tamperproof No-Voltage Release | | | | | | | | | | |
| 1/4 | 1/4 | .62 | .43 | 150 | -4 to 176 | 8327G033 | - | 2 | 12.0/F | 11.6/F |
| 1/4 | 1/4 | .62 | .43 | 150 | -4 to 248 | - | EV8327G035 | 2 | 12.0/F | 11.6/F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Maximum Operating Pressure Diff. (bar) Air-Inert Gas | Fluid Temp. Range °C | Aluminum Body Catalog Number | Stainless Steel Body Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|--|-------------------|-----------------------|-----------|---|----------------------|---------------------------------|--|-------------|--|--------|
| | | Ports 1-2 | Ports 2-3 | | | | | | AC | DC |
| UNIVERSAL - Low-Temperature Operation | | | | | | | | | | |
| 1/4 | 6.4 | .45 | .45 | 10 | -40 to 55 | 8327G053 | EV8327G055 | 1 | 12.0/F | 11.6/F |
| UNIVERSAL MANUAL RESET - Tamperproof No-Voltage Release | | | | | | | | | | |
| 1/4 | 6.4 | .53 | .37 | 10 | -20 to 80 | 8327G033 | - | 2 | 12.0/F | 11.6/F |
| 1/4 | 6.4 | .53 | .37 | 10 | -20 to 120 | - | EV8327G035 | 2 | 12.0/F | 11.6/F |

Dimensions inches (mm)



Features

- Mount directly to actuators with NAMUR, Keystone, or Worcester interfaces
- Easy conversion from AC to DC by simply changing coil
- Standard momentary/maintained manual operator
- 3/2 is normally closed poppet design for spring return actuators
- 3/2 normally closed or 4/2 operation can be selected by rotating sub-base gasket
- 3/2 normally closed or 4/2 valves have built-in linear flow device capable of controlling Cv from 0.10 to 0.50
- Breather block exhausts to spring side of actuator to prevent corrosion of the actuator
- Unique CA slide and ceramic flow plate for extra-long life

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------------|
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Seals | Low-Friction, Low-Wear NBR |
| Interface Plate | Molded PA |
| 8401 Series Only | |
| Pressure Port | 303 Stainless Steel |
| Main and Pilot Body | Molded PA |
| Spool | CA |
| Slide | Graphite-filled PTFE |
| Flow Plate | Ceramic (Alumina) |
| Worcester Version | |
| Main Body and Sub-Base | Anodized Aluminum |

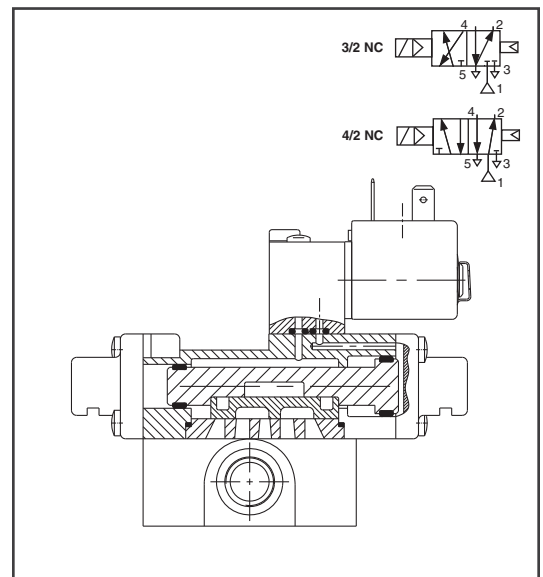
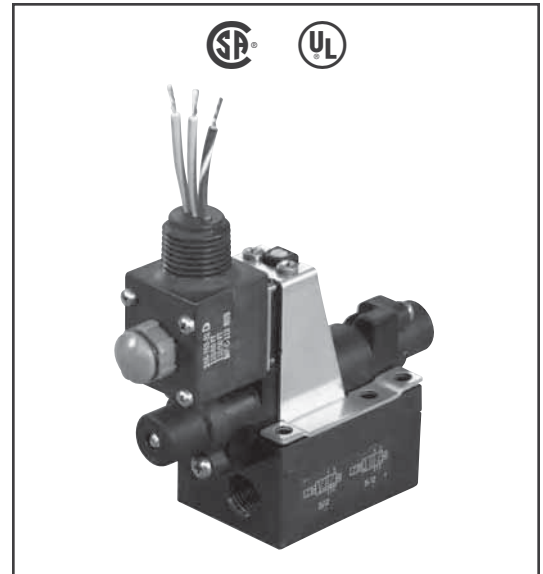
Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|
| | DC Watts | AC | | | AC | AC |
| | | Watts | VA Holding | VA Inrush | | |
| F | 6.9 | 6.3 | 8.8 | 12.1 | 266763 | 270008 |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available upon request.

Solenoid Enclosures

- Standard:** Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, change "WT" catalog number prefix to "EF".)
 Molded epoxy coil per 3 x DIN 46244. (To order, change "WT" catalog number prefix to "SC".)
 Molded epoxy open frame Class F coil with 18" leads. (To order, change "WT" catalog number prefix to "U".)
 See *Optional Features Section* for other available options.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

AC: 0°F to 104°F (-18°C to 40°C),
 except prefixes "U" and "SC" to 135°F (57°C)
 DC: 0°F to 77°F (-18°C to 25°C)

Approvals

- "WT" - UL recognized component General Purpose Valve, CSA certified.
 "EF" - UL listed solenoid, CSA certified.
 "U" and "SC" - UL recognized component, CSA certified.
 Refer to *Engineering Section* for details.

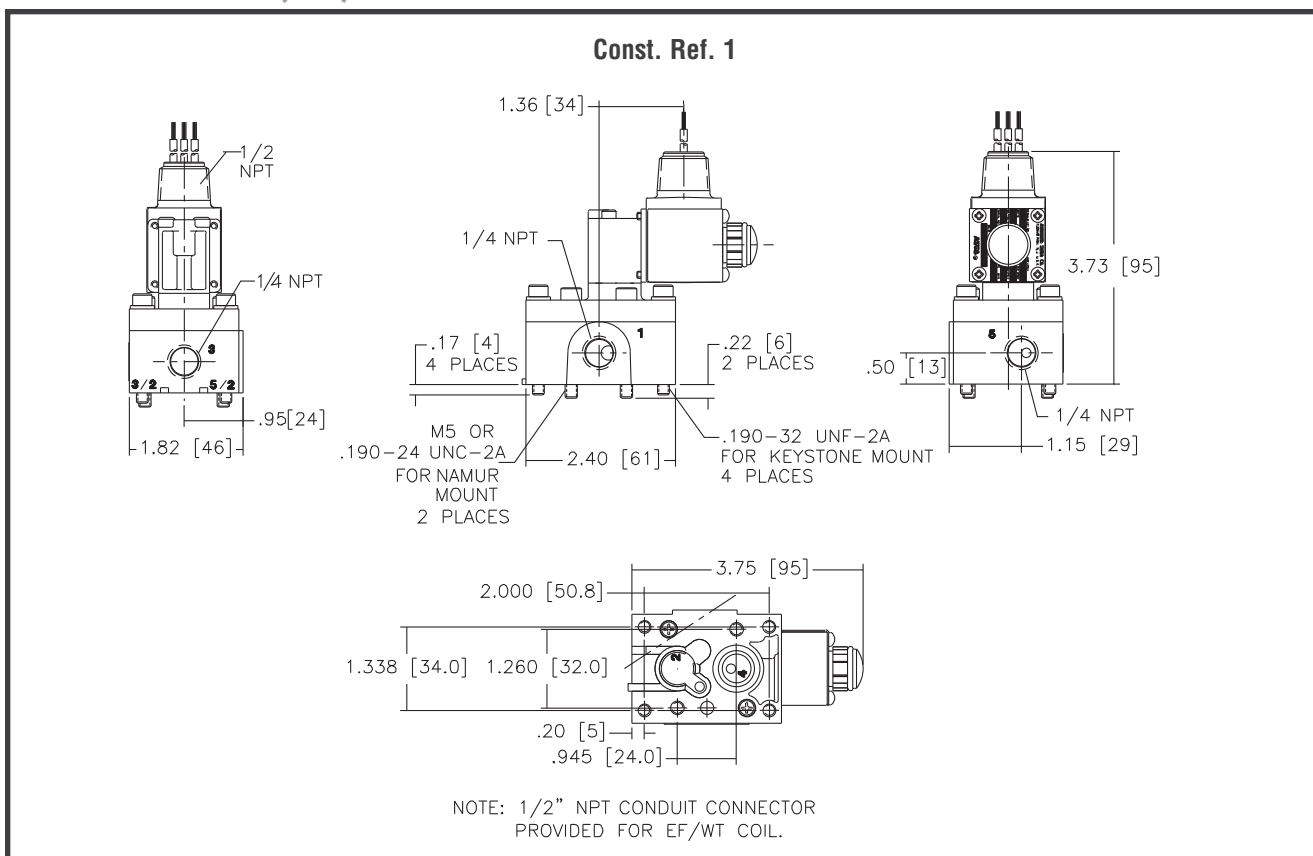
Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Main Line Supply Pressure (psi) AC and DC | | | | Catalog Number | Const. Ref. | Interface Type | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---|------|---------------------|----|----------------|-------------|----------------|---------------------------------------|-------|
| | | | Air-Inert Gas | | Max. Fluid Temp. °F | | | | | AC | DC |
| | | | Min. | Max. | AC | DC | | | | | |
| 3-WAY NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | |
| 1/4 | 3/64 | .05 | 0 | 150 | 104 | 77 | WT8380B202 | 1 | NAMUR | 6.3/F | 6.9/F |
| 3-WAY NORMALLY CLOSED OR 4-WAY | | | | | | | | | | | |
| 1/4 | 1/4 | .50 | 20 | 150 | 104 | 77 | WT8401B202M | 2 | NAMUR | 6.3/F | 6.9/F |
| 1/4 | 1/4 | .50 | 20 | 150 | 104 | 77 | WT8401B204M | 2 | Keystone | 6.3/F | 6.9/F |
| 1/8 | 1/4 | .40 | 20 | 135 | 104 | 77 | WT8401B200M | 3 | Worcester | 6.3/F | 6.9/F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Main Line Supply Pressure (bar) AC and DC | | | | Catalog Number | Const. Ref. | Interface Type | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|---|------|---------------------|----|----------------|-------------|----------------|---------------------------------------|-------|
| | | | Air-Inert Gas | | Max. Fluid Temp. °C | | | | | AC | DC |
| | | | Min. | Max. | AC | DC | | | | | |
| 3-WAY NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | |
| 1/4 | 1 | .04 | 0 | 10 | 40 | 25 | WT8380B202 | 1 | NAMUR | 6.3/F | 6.9/F |
| 3-WAY NORMALLY CLOSED OR 4-WAY | | | | | | | | | | | |
| 1/4 | 6 | .43 | 1 | 10 | 40 | 25 | WT8401B202M | 2 | NAMUR | 6.3/F | 6.9/F |
| 1/4 | 6 | .43 | 1 | 10 | 40 | 25 | WT8401B204M | 2 | Keystone | 6.3/F | 6.9/F |
| 1/8 | 6 | .34 | 1 | 9 | 40 | 25 | WT8401B200M | 3 | Worcester | 6.3/F | 6.9/F |

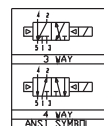
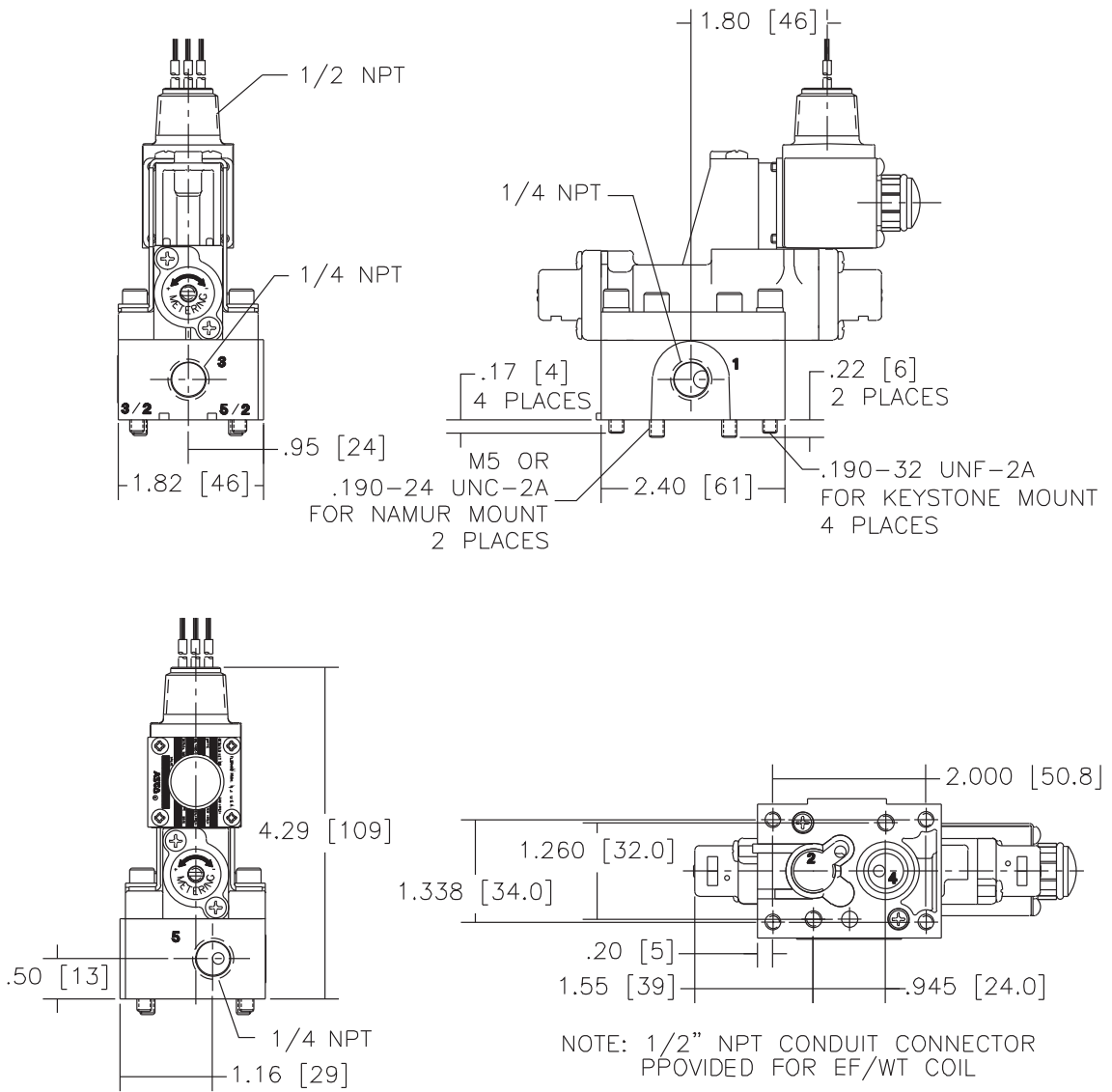
Dimensions inches (mm)



VALVE AUTOMATION

Dimensions inches (mm)

Const. Ref. 2

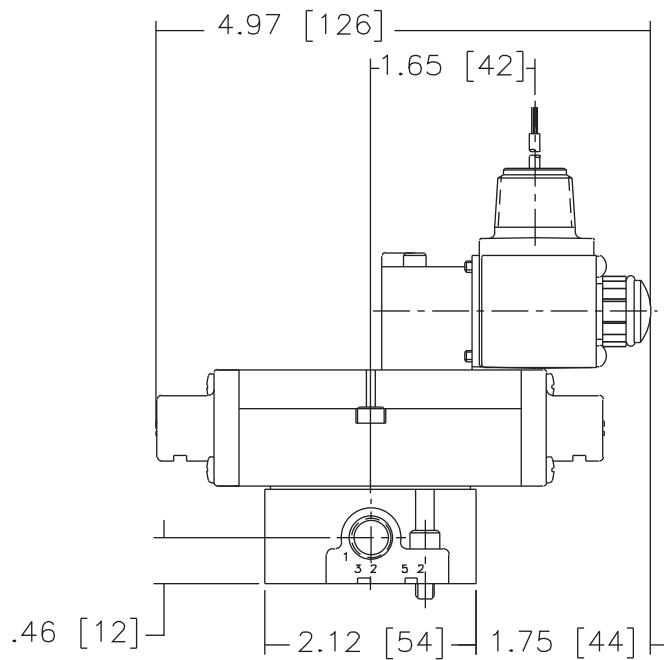
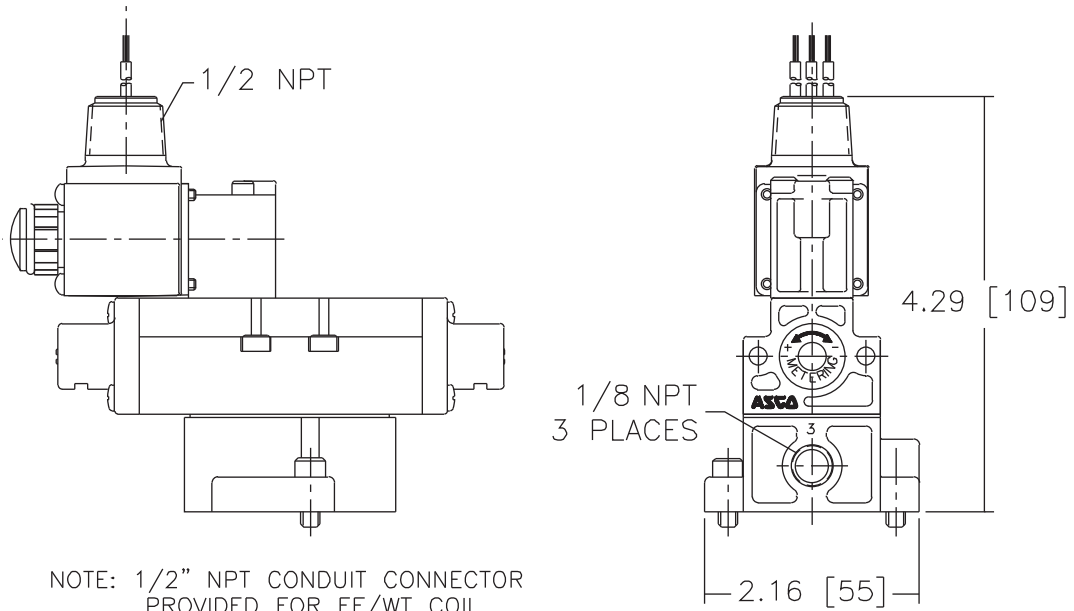


WT8401B202M-27280601

VALVE
AUTOMATION

Dimensions inches (mm)

Const. Ref. 3



Features

- NAMUR direct mount version of the rugged, dependable 8342 Series valves
- Direct acting, high flow slide-style valve
- No Minimum Operating Pressure Differential required to shift valve
- Available with single or dual solenoid operation
- Mechanical detent on dual solenoids holds last position, even after loss of electric power, pneumatics, or pressure

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Brass | 303 Stainless Steel |
| Seals and Discs | NBR and FKM | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Shading Coil | Copper | |
| Sleeve | PA | |
| Seats | PTFE | |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------------|----------------|
| | AC | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | AC | AC |
| F | 20.1 | 35 | 115 | 272610 | 272614 |
| F | 16.1 | 45 | 140 | 272610 | 272614 |

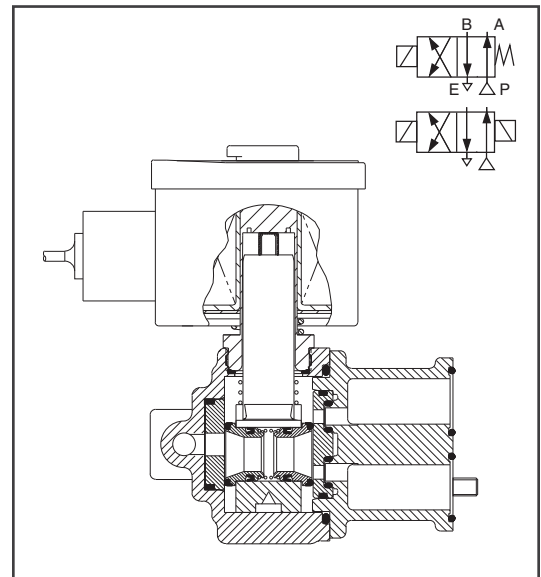
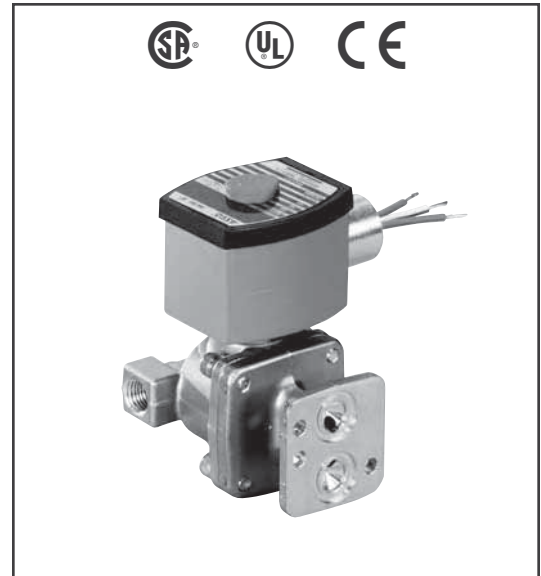
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 Must be specified when ordering. Other voltages, except combinations 120/60 and 110/50, are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to *Engineering Section* for details.

Approvals

General Purpose Solenoid:

UL recognized component, CSA certified.

Explosionproof Solenoid: (EF Brass, EV S.S)

UL listed solenoid.

CSA certified for use in hazardous Locations.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

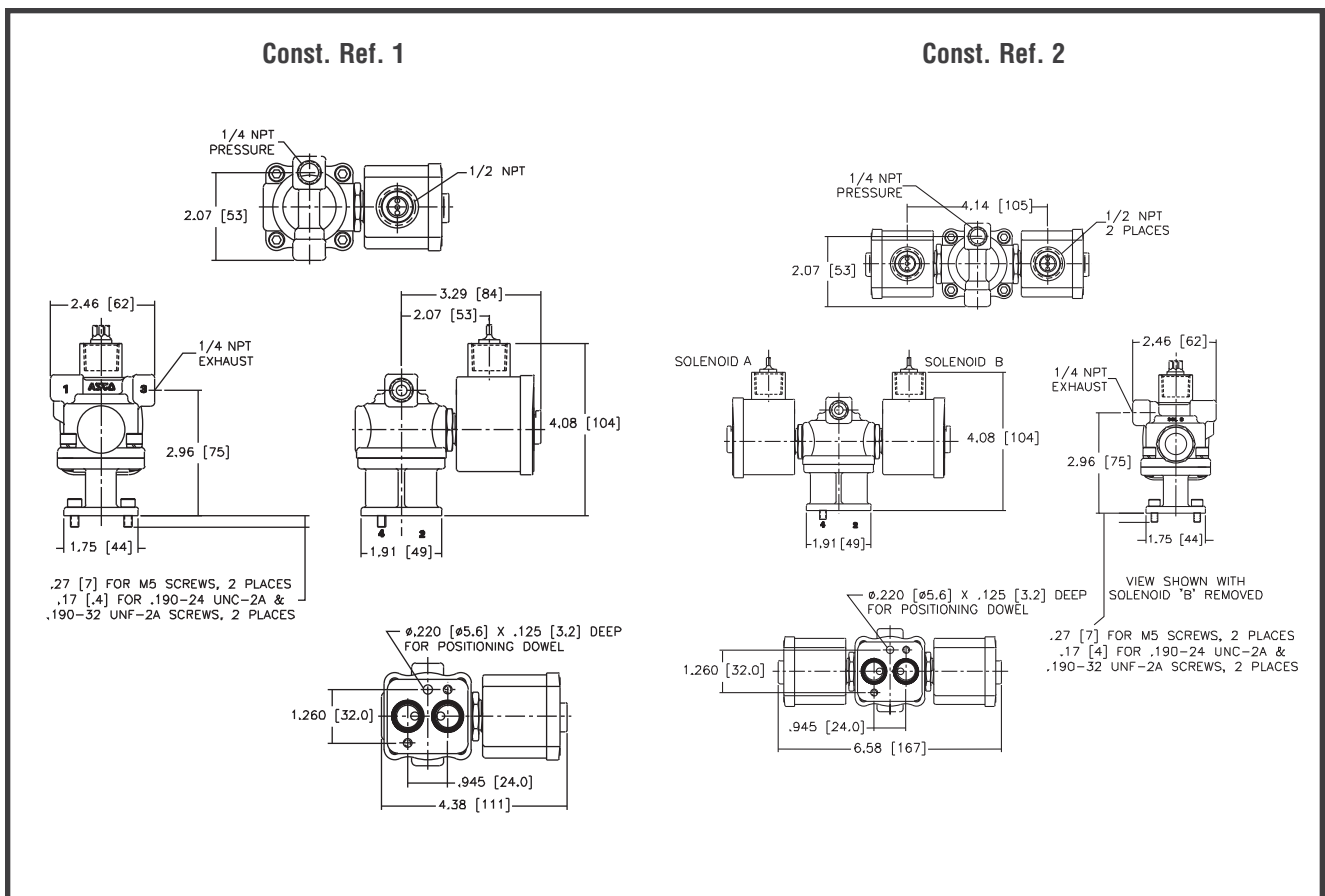
Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor Ports 1-2 | Cv Flow Factor Ports 2-3 | Maximum Operating Pressure Differential (psi) | Maximum Fluid Temperature Range °F | Brass Body | Stainless Steel Body | Const. Ref. | Watt Rating/ Class of Coil Insulation |
|------------------------|---------------------|--------------------------|--------------------------|---|------------------------------------|----------------|----------------------|-------------|---------------------------------------|
| | | | | | | Catalog Number | Catalog Number | | AC |
| SINGLE SOLENOID | | | | | | | | | |
| 1/4 | 3/16 | .7 | .5 | 125 | 160 | 8342G501 | 8342G511 | 1 | 20.1/F |
| DUAL SOLENOID | | | | | | | | | |
| 1/4 | 3/16 | .7 | .5 | 125 | 160 | 8342G502 | 8342G512 | 2 | 16.1/F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor Ports 1-2 (m3/h) | Kv Flow Factor Ports 2-3 (m3/h) | Maximum Operating Pressure Differential (bar) | Maximum Fluid Temperature Range °C | Brass Body | Stainless Steel Body | Const. Ref. | Watt Rating/ Class of Coil Insulation |
|------------------------|-------------------|---------------------------------|---------------------------------|---|------------------------------------|----------------|----------------------|-------------|---------------------------------------|
| | | | | | | Catalog Number | Catalog Number | | AC |
| SINGLE SOLENOID | | | | | | | | | |
| 1/4 | 5 | .60 | .43 | 9 | 71 | 8342G501 | 8342G511 | 1 | 20.1/F |
| DUAL SOLENOID | | | | | | | | | |
| 1/4 | 5 | .60 | .43 | 9 | 71 | 8342G502 | 8342G512 | 2 | 16.1/F |

Dimensions inches (mm)



Features

- Compact spool valve convertible from 3/2 to 5/2
- NAMUR mount construction
- Standard manual operator
- DIN, Watertight and Explosionproof solenoids available
- Single and dual solenoid constructions
- Mountable in any position
- Vents air from spring side of actuator to prevent corrosion of actuator

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------------|
| Body | Black Anodized Aluminum |
| Spring | Phosphate treated black steel |
| Shading Coil | Copper |
| Seals | NBR + PUR |
| Core and Core Tube | Stainless Steel / Brass |
| End Covers and Plate | 6/6 glass filled PA/FV |
| Spool | Aluminum |
| Internal Parts | Zamak, Steel, CA |

Electrical

| Standard Coil and Class of Insulation | Enclosure Type | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|----------------|-----------------------------------|----------|------------|-----------|------------------------|----------|
| | | DC Watts | AC Watts | VA Holding | VA Inrush | AC | DC |
| F | SC | 3 | 2.5 | 3.5 | 6 | 400125 | 400125 |
| F | SC | 6.9 | 5 | 7 | 15 | 43004649 | 43004647 |
| F | EF | 6.9 | 6.3 | 7 | 10.1 | 266762 | 270007 |
| F | WT | 6.9 | 6.3 | 7 | 10.1 | 266763 | 270008 |

Standard Voltages: SC: 24, 120, 240 Volts AC, 50-60 Hz; 12, 24, 120 Volts DC.
 WT and EF: 24/50-60HZ, (120/60, 110-120/50)①, (240/60, 220-240/50)② Volts AC;
 6, 12, 24, 120 Volts DC.
 ① Order as 120/60, 110/50
 ② Order as 240/60, 220/50

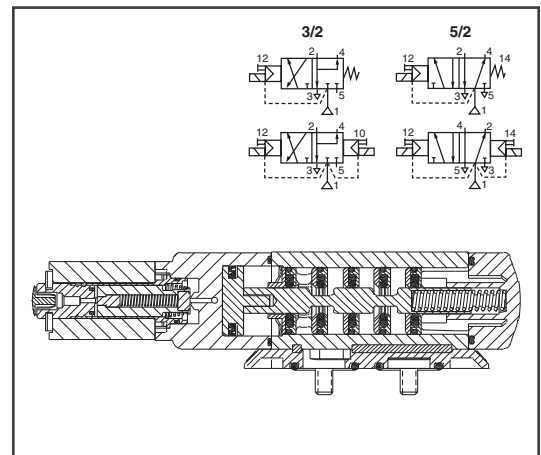
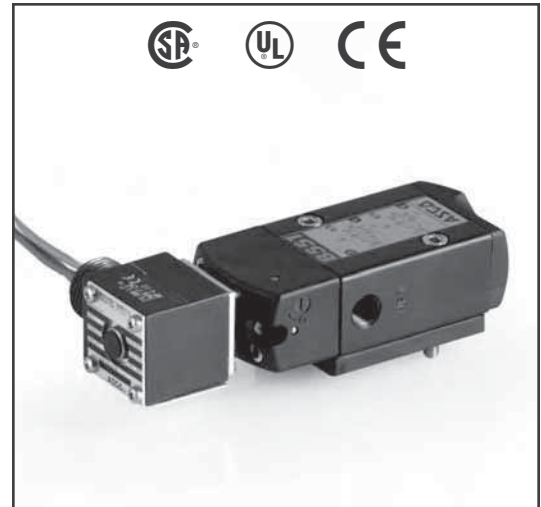
Solenoid Enclosures

Standard: - Prefix

SC = IP65 type DIN (open frame) per 46244

WT = Combination General Purpose and Watertight Types 1, 2, 3, 3S, 4, and 4X

EF = Combination Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, 5P, 7, 9 Class I, Div. 1 (Groups A - D) and Class II, Div. 1 Type 9 (Groups E-G)



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

SC: AC/DC: 5°F to +140°F (-15°C to 60°C)

EF: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

WT: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

Note: For temperatures below 32°F (0°C) moisture-free air must be used.

Refer to Engineering Section for details.

Approvals

SC (2.5W and 3W only) UL recognized component, CSA certified.

WT: UL recognized component, CSA certified.

EF: UL and CSA solenoid approval.
 Meets applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Fluid Temperature °F (for single and dual solenoid) | | | Single Solenoid | Dual Solenoid | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---------------------------------|---------------------|----------------|---------------------------------------|------|---|---------|---------|-----------------|----------------|-------------|---------------------------------------|-----|
| | | | Min. | Max. | Min. | Max. AC | Max. DC | Catalog Number | Catalog Number | | AC | DC |
| OPEN FRAME DIN COIL | | | | | | | | | | | | |
| 1/4 ① | 1/4 | .86 | 30 | 150 | 5 | 140 | 140 | SC8551A001MS | SC8551A002MS | 1 | 2.5 | 3 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | SC8553A001MS | SC8553A002MS | 2 | 5 | 6.9 |
| WATERTIGHT ENCLOSURE | | | | | | | | | | | | |
| 1/4 ① | 1/4 | .86 | 30 | 150 | 5 | 104 | 77 | WT8551A001MS | WT8551A002MS | 1 | 6.3 | 6.9 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | WT8553A001MS | WT8553A002MS | 2 | 6.3 | 6.9 |
| EXPLOSIONPROOF ENCLOSURE | | | | | | | | | | | | |
| 1/4 ① | 1/4 | .86 | 30 | 150 | 5 | 104 | 77 | EF8551A001MS | EF8551A002MS | 1 | 6.3 | 6.9 |
| 1/2 | 1/2 | 3.7 | 30 | 150 | -15 | 140 | 140 | EF8553A001MS | EF8553A002MS | 2 | 6.3 | 6.9 |

① 1/8 inch NPT exhausts.

Specifications (Metric units)

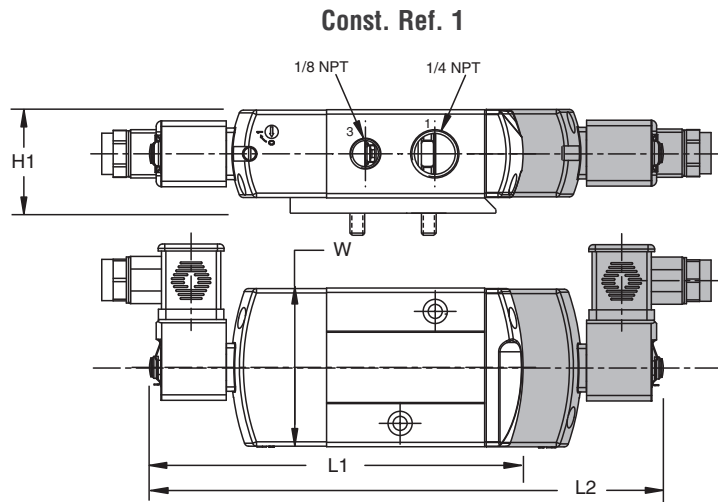
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Fluid Temperature °C (for single and dual solenoid) | | | Single Solenoid | Dual Solenoid | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---------------------------------|-------------------|-----------------------|---------------------------------------|------|---|---------|---------|-----------------|----------------|-------------|---------------------------------------|-----|
| | | | Min. | Max. | Min. | Max. AC | Max. DC | Catalog Number | Catalog Number | | AC | DC |
| OPEN FRAME DIN COIL | | | | | | | | | | | | |
| 1/4 ① | 6.4 | .7 | 2 | 10 | -15 | 60 | 60 | SC8551A001MS | SC8551A002MS | 1 | 2.5 | 3 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | SC8553A001MS | SC8553A002MS | 2 | 5 | 6.9 |
| WATERTIGHT ENCLOSURE | | | | | | | | | | | | |
| 1/4 ① | 6.4 | .7 | 2 | 10 | -15 | 40 | 25 | WT8551A001MS | WT8551A002MS | 1 | 6.3 | 6.9 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | WT8553A001MS | WT8553A002MS | 2 | 6.3 | 6.9 |
| EXPLOSIONPROOF ENCLOSURE | | | | | | | | | | | | |
| 1/4 ① | 6.4 | .7 | 2 | 10 | -15 | 40 | 25 | EF8551A001MS | EF8551A002MS | 1 | 6.3 | 6.9 |
| 1/2 | 13 | 3.15 | 2 | 10 | -25 | 60 | 60 | EF8553A001MS | EF8553A002MS | 2 | 6.3 | 6.9 |

① 1/8 inch NPT exhausts.

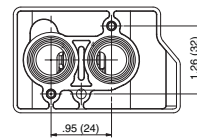
Dimensions inches (mm)

| Series | 8551 |
|--------|------------|
| NPT | 1/4 |
| L1 | 5.47 (139) |
| L2 | 7.56 (192) |
| H1 | 1.30 (33) |
| W | 1.77 (45) |

NOTE: Valve shown with CM22
DIN terminal coil and connector.
Connector sold separately.

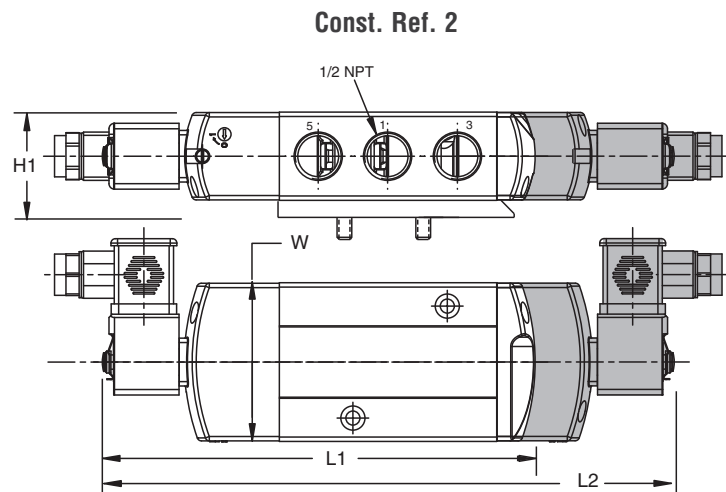


8551 NAMUR Footprint

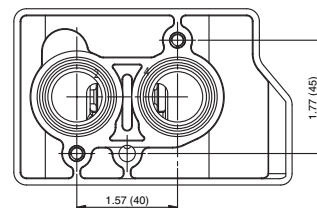


| Series | 8553 |
|--------|-------------|
| NPT | 1/2 |
| L1 | 7.76 (197) |
| L2 | 10.25 (260) |
| H1 | 1.94 (49) |
| W | 2.85 (72) |

NOTE: Valve shown with CM22
DIN terminal coil and connector.
Connector sold separately.



8553 NAMUR Footprint



VALVE
AUTOMATION



Pilot Operated • High Flow
Direct Mount RedHat II Spool Valves
 Anodized Aluminum, Brass and Stainless Steel Bodies
 1/4" and 1/2" NPT

**3/2•5/2•5/3
 SERIES
 8551, 8553
 Direct
 Mount**

Features

- Compact Spool Valve convertible from 3/2 to 5/2 with flow plates
- Mount directly to actuators with NAMUR interface per VDI/VDE 3845
- Single and dual solenoid constructions available
- Integral Breather Block vents to spring side of actuator to exhaust, preventing corrosion of the actuator
- Unique design combines hard T-seals and flexible o-rings, provides bubble-tight shutoff, resistance to dirt and multimillion cycle life controlling air or inert gas
- Low Power and Intrinsically Safe construction available
See Special Service Pilot Valve Section for details

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|--|-----------------------------|----------------------|
| Body | Aluminum, Black Anodized | Brass | 316L Stainless Steel |
| End Cover (Spring end) | Glass-filled Polyamide | Brass | 316L Stainless Steel |
| Spool Valve Internals | Zamak, Stainless Steel, Acetal (POM), Aluminum | Brass, Acetal (POM), Delrin | |
| Pilot End Covers | Aluminum, Black Anodized | Brass | 316L Stainless Steel |
| Core Tube | Stainless Steel | | |
| Core and Plugnut | Stainless Steel | | |
| Springs | Stainless Steel | | |
| Seals and Discs | NBR | | |
| Top Disc | Nylon (PA) | | |
| Core Guide | Acetal | | |
| Seat and Seat Insert | Brass, Acetal | | |
| Shading Coil | Copper | | |
| Rider Ring (low power) | PTFE | | |

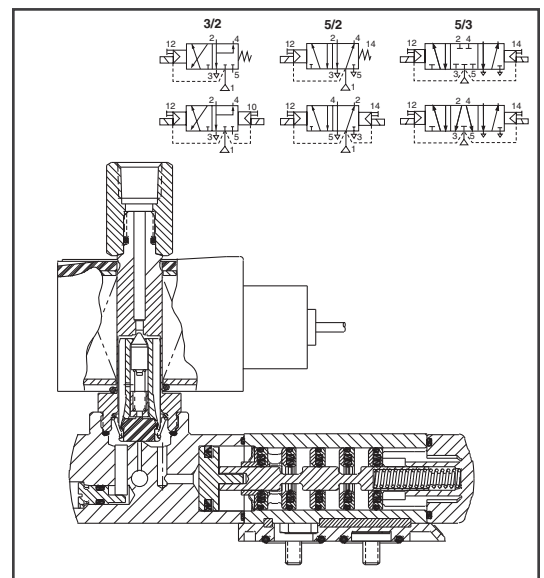
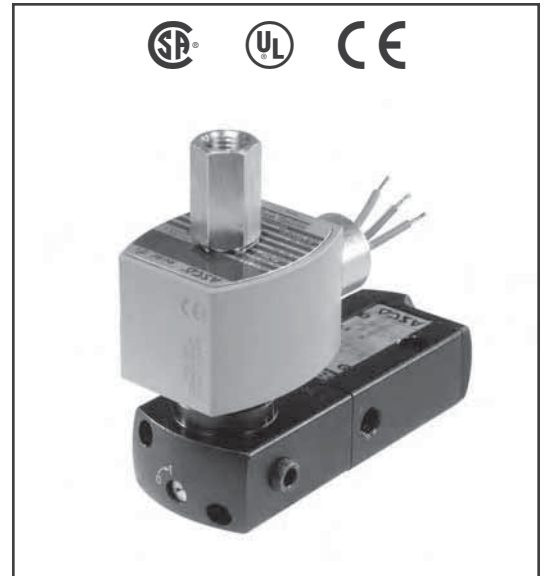
Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or "EV" for stainless steel) to catalog number.)
See Optional Features Section for other available options.



Nominal Ambient Temp. Ranges

| Body Material | Description |
|------------------------|--|
| Aluminum | AC: 5°F to 125°F (-15°C to 52°C) DC: 5°F to 104°F (-15°C to 40°C) |
| Brass | AC: -40°F to 125°F (-40°C to 52°C) |
| Stainless Steel | DC: -40°F to 104°F (-40°C to 40°C) |

Approvals

UL/CSA approvals for aluminum constructions pending. EF and EV are UL listed solenoids. CSA certified. Meet applicable CE directives.
Refer to Engineering Section for details.

VALVE AUTOMATION



Specifications (English units)

| Body Material | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Single Solenoid | | | | | | Dual Solenoid | | | | | | | | | | | |
|-------------------------------|------------------|---------------------|----------------|---------------------------------------|---------|---------|---------------------|-----|--------------|----------------|-------------|---------------------------------------|-----|-----|---------------------|--------------|----|----------------|-------------|--------------------------------------|----|
| | | | | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | | Catalog Number | Const. Ref. | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | | Catalog Number | Const. Ref. | Watt Rating/Class of Coil Insulation | |
| | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | AC | DC |
| | | | | Min. | Max. AC | Max. DC | AC | DC | DC | Min. | Max. AC | Max. DC | AC | DC | DC | AC | DC | | | | |
| Aluminum 3/2, 5/2 | 1/4 ① | 1/4 | .86 | 30 | 150 | 120 | 140 | 120 | 8551G401 | 1 | 30 | 150 | 120 | 140 | 120 | 8551G402 | 1 | 10.1/F | 11.6/F | | |
| Aluminum 5/3 Center Closed | | | | | | | | | - | 2 | | | | | | 8551G465 | 2 | | | | |
| Aluminum 5/3 Center Open | | | | | | | | | - | 2 | | | | | | 8551G466 | 2 | | | | |
| Brass 3/2, 5/2 | | | | | | | | | EF8551G403 ② | 1 | | | | | | EF8551G404 ② | 1 | | | | |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | | | EV8551G409 ③ | 2 | | | | | | EV8551G410 ③ | 2 | | | | |
| Aluminum 3/2, 5/2 | | | | | | | | | 8553G401 | 2 | | | | | | 8553G402 | 2 | | | | |

① 1/8 inch NPT exhaust for aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

Specifications (Metric units)

| Body Material | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Single Solenoid | | | | | | Dual Solenoid | | | | | | | | | | | |
|-------------------------------|------------------|-------------------|-----------------------|---------------------------------------|---------|---------|---------------------|----|--------------|----------------|-------------|---------------------------------------|-----|----|---------------------|--------------|---------|----------------|-------------|--------------------------------------|----|
| | | | | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | | Catalog Number | Const. Ref. | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | | Catalog Number | Const. Ref. | Watt Rating/Class of Coil Insulation | |
| | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | Air-Inert Gas | | | Air-Inert Gas | | | | | AC | DC |
| | | | | Min. | Max. AC | Max. DC | AC | DC | DC | Min. | Max. AC | Max. DC | AC | DC | DC | Min. | Max. AC | Max. DC | AC | | |
| Aluminum 3/2, 5/2 | 1/4 ① | 6.4 | .7 | 2 | 10 | 8.2 | 60 | 48 | 8551G401 | 1 | 2 | 10 | 8.2 | 60 | 48 | 8551G402 | 1 | 10.1/F | 11.6/F | | |
| Aluminum 5/3 Center Closed | | | | | | | | | - | 2 | | | | | | 8551G465 | 2 | | | | |
| Aluminum 5/3 Center Open | | | | | | | | | - | 2 | | | | | | 8551G466 | 2 | | | | |
| Brass 3/2, 5/2 | | | | | | | | | EF8551G403 ② | 1 | | | | | | EF8551G404 ② | 1 | | | | |
| 316L Stainless Steel 3/2, 5/2 | | | | | | | | | EV8551G409 ③ | 2 | | | | | | EV8551G410 ③ | 2 | | | | |
| Aluminum 3/2, 5/2 | | | | | | | | | 8553G401 | 2 | | | | | | 8553G402 | 2 | | | | |

① 1/8 inch NPT exhaust for aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

VALVE
AUTOMATION

Dimensions inches (mm)

| Series | 8551 |
|--------|------------|
| NPT | 1/4 |
| L1 ① | 4.96 (126) |
| L2 ① | 6.50 (165) |
| H2 | 4.38 (111) |
| H1 | 1.57 (40) |
| W | 1.77 (45) |

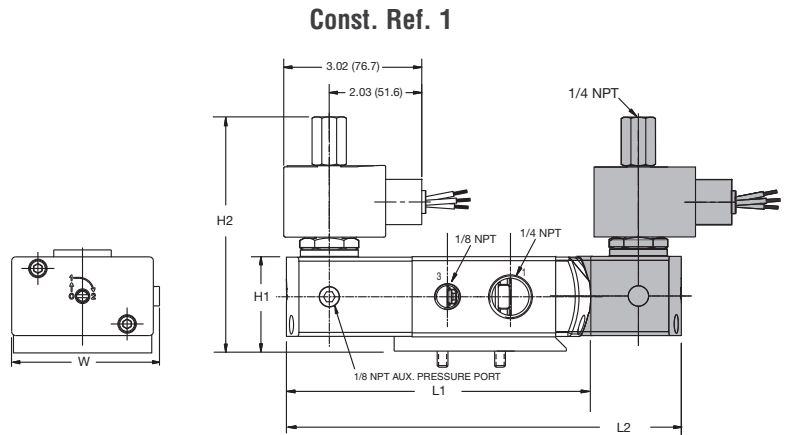
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |

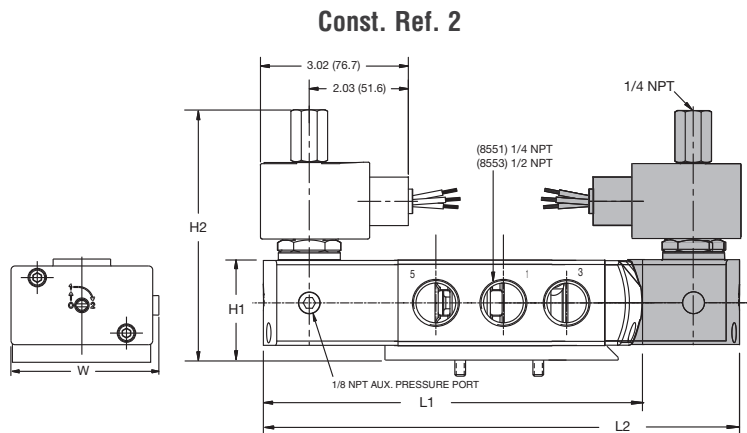
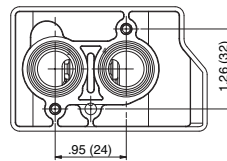
| Series | 8551 (5/3) | 8553 |
|--------|------------|------------|
| NPT | 1/4 | 1/2 |
| L1 ① | - | 7.09 (180) |
| L2 ① | 7.44 (189) | 8.85 (225) |
| H2 | 4.38 (111) | 4.77 (121) |
| H1 | 1.57 (40) | 2.08 (53) |
| W | 1.77 (45) | 2.87 (73) |

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

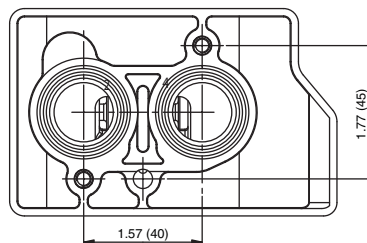
| Optional Manual Operators | | |
|---------------------------|--|---|
| Add Suffix | | Description |
| MO | | Push and turn to lock with flat head screwdriver slot |
| MI | | Momentary push in with flat head screwdriver slot |
| MH | | Momentary push in by hand |
| MS | | Push and turn to lock by hand |



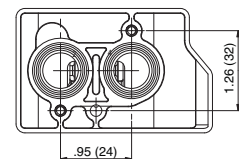
8551 NAMUR Footprint



8553 NAMUR Footprint



8551 NAMUR Footprint



Features

- Unique 3-way design for locking quarter turn actuators in multiple positions for applications which require modulated flow
- Solenoids can be pulsed independently to bleed air into or out of actuator for fine positioning
- Direct acting on/off construction
- NAMUR mount construction reduces complex piping arrangements
- 10X32, 10X24, M5 hardware supplied

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|---------------------|
| Body | Brass | 303 Stainless Steel |
| Seals and Discs | NBR | |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Core Springs | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |
| Disc-Holder | CA | |
| Core Guide | CA | |

Electrical

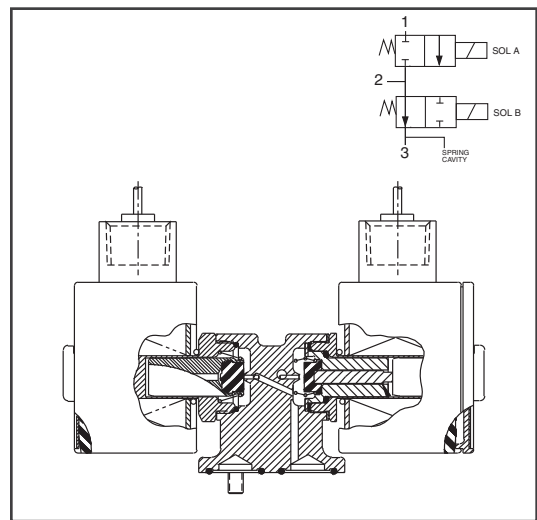
| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |

Standard Voltages: 24, 120, 240, 480 volts AC, (or 100, 200 volts AC, 50 Hz)
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.



VALVE AUTOMATION

Options

Explosionproof solenoids are available.
 Prefix EF - Brass
 Prefix EV - Stainless Steel
 All other RedHat Solenoid options are available.
Optional elastomer contact ASCO.

Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)
 DC: 32°F to 104°F (0°C to 40°C)
Refer to Engineering Section for details.

Approvals

UL recognized component. CSA certified.
 Meets applicable CE directives.
Refer to Engineering Section for details.

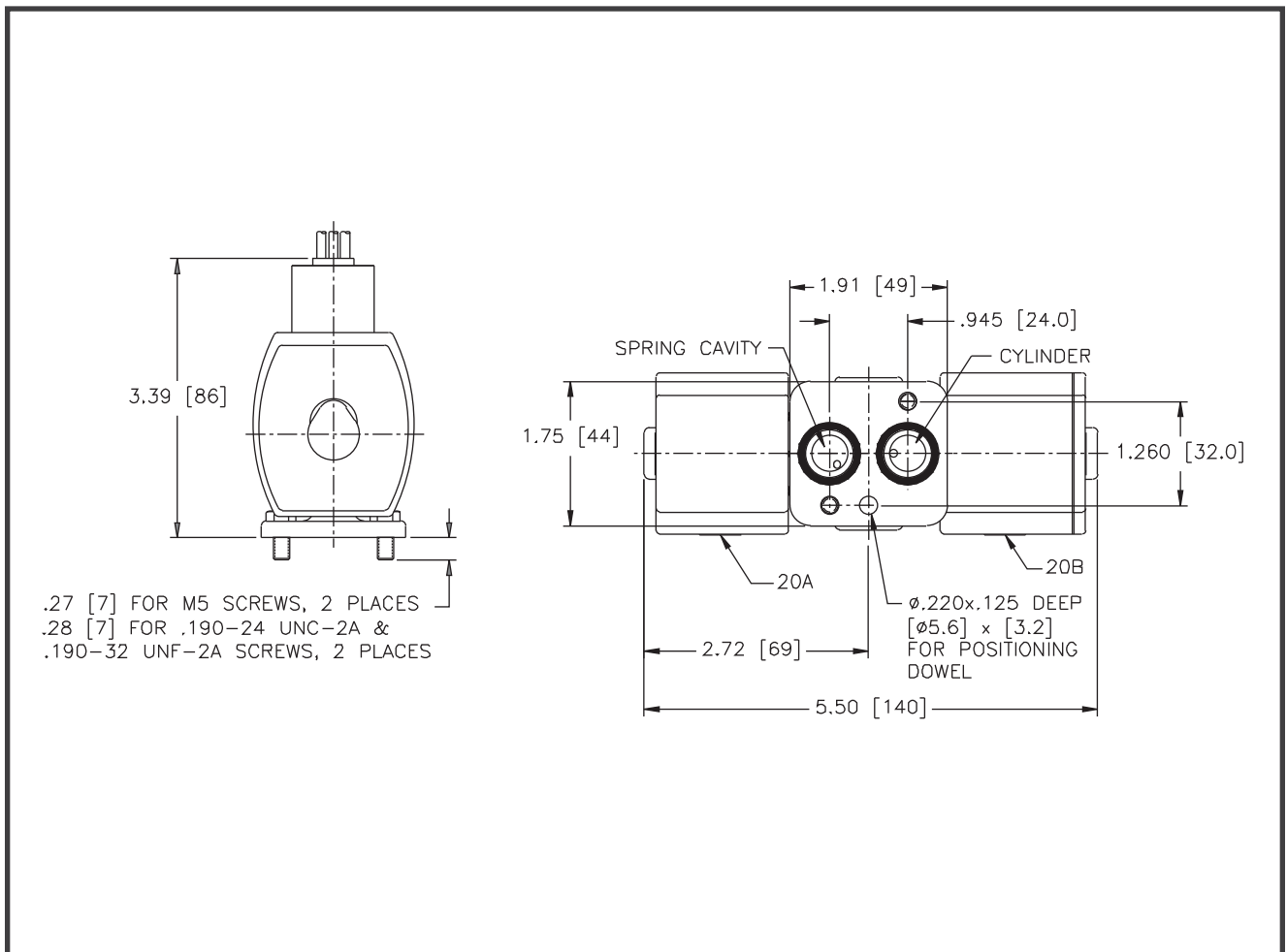
Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | | Brass Body | Stainless Steel Body | Watt Rating/ Class of Coil Insulation | |
|------------------|---------------------|----------------|---------------------------------------|---------|---------------------|-----|------------|----------------------|---------------------------------------|--------|
| | | | Max. AC | Max. DC | AC | DC | | | AC | DC |
| 1/4 | 1/16 | .09 | 150 | 125 | 140 | 120 | 8320G706 | 8320G716 | 10.1/F | 11.6/F |
| 1/4 | 3/32 | .12 | 120 | 100 | 140 | 120 | 8320G707 | 8320G717 | 10.1/F | 11.6/F |
| 1/4 | 1/8 | .25 | 100 | 65 | 140 | 120 | 8320G708 | 8320G718 | 10.1/F | 11.6/F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | | Brass Body | Stainless Steel Body | Watt Rating/ Class of Coil Insulation | |
|------------------|-------------------|-----------------------|---------------------------------------|---------|---------------------|----|------------|----------------------|---------------------------------------|--------|
| | | | Max. AC | Max. DC | AC | DC | | | AC | DC |
| 1/4 | 1.6 | .07 | 10 | 9 | 60 | 50 | 8320G706 | 8320G716 | 10.1/F | 11.6/F |
| 1/4 | 2.4 | .10 | 8 | 6.9 | 60 | 50 | 8320G707 | 8320G717 | 10.1/F | 11.6/F |
| 1/4 | 3.2 | .16 | 6.9 | 4 | 60 | 50 | 8320G708 | 8320G718 | 10.1/F | 11.6/F |

Dimensions inches (mm)



VALVE
AUTOMATION

One of ASCO's many strengths is the breadth of our product line and our ability to provide customers with the best valve for the application. Our Special Service valves are key to meeting these varied requirements. As listed in the index below ASCO has focused product lines which meet special application parameters from steam to vacuum. These Special Service valves are capable of meeting typically harsh applications where more standard solenoid valves are not able to meet the specifications or lifetime requirements.

They also can relate to the media which is being handled, the operating conditions, the application specifications or environment. The valves in this section consist of 2-way valves, 3-way valves, 4-way valves, and air-operated valves.

If you cannot find the valves you need in this section, ASCO has the industry's largest staff of design engineers to possibly create the special valve you might need for your unique application.

Contact the ASCO office nearest you for details.

Index

| Special Service Description | Page |
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| Angle Body (8290 Series) | 207 |
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www.ascovalve.com



The 8290 Series consists of 2-way direct acting valves available in normally closed or normally open constructions. Built for demanding applications, these valves come in a straight-through body design made of bronze or stainless steel. There are many optional features including visual/electrical position indicator or a stroke limiter. The 8290 Series is suitable for the following applications:

- General Service (air, inert gas, water, oil, light slurries)
- Steam and Hot Water

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|----------------------|---------------------|----------------------|
| Part | 32mm | 50mm-125mm | 50mm-125mm ① |
| Body | 316L Stainless Steel | Bronze | 316L Stainless Steel |
| Stem | 316L Stainless Steel | 431 Stainless Steel | 431 Stainless Steel |
| Stuffing Box | 316L Stainless Steel | Brass | 303 Stainless Steel |
| Stuffing Box Seal | PTFE | PTFE Chevron | PTFE Chevron |
| Wiper Seal | FKM | FKM | FKM |
| Disc | 316L Stainless Steel | Brass | 304L Stainless Steel |
| Disc Seal | PTFE | PTFE | PTFE |
| Screw | 316L Stainless Steel | - | - |

① For all optional AISI 316L Stainless Steel constructions, contact ASCO

Specifications

Ambient Temperature Range: 15°F to 140°F (32°F to 122°F for proportional)

Pilot Fluid Temperature Range: 15°F to 140°F

Maximum Viscosity: 2,700 SSU

For higher viscosity applications, please consult ASCO.

Alternate Valve constructions

- Oxygen service, add suffix "N"
- Medium vacuum service up to 7×10^{-3} Torr, add suffix "VM"
- Visual Position Indicator for normally closed valve with 32mm or 50mm operator, add suffix "VI" (note: position indicator standard on 63mm through 125mm operators).
- NET-INOX treatment (stainless steel valve body pickled in nitric/hydrofluoric acid bath), add suffix "NI"
- All 316L Stainless Steel versions (available on request).

See page 214 for the following constructions:

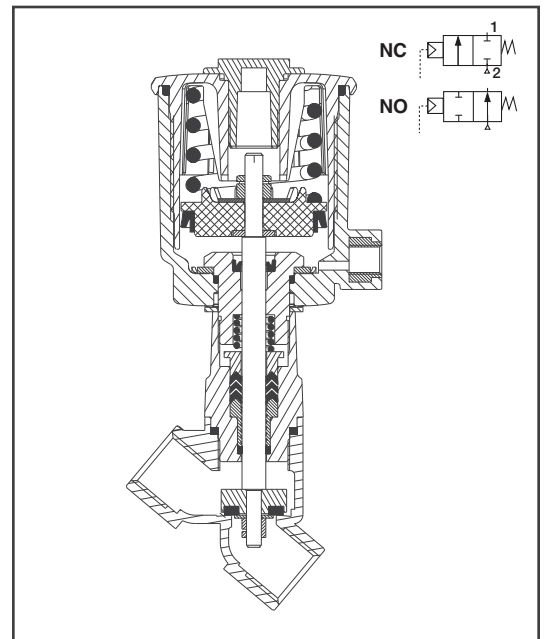
Compact Positioner for proportional control

Compact Signaling Unit

Signaling Box

Linear Position Indicator

Stroke Limiter



SPECIAL SERVICE VALVES

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow | | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Bronze | Stainless Steel ① | Air or Water Pilot Pressure (psi) | | Approx. Shipping Weight (lbs.) |
|--|---------------------|---------|-------|---------------------------------------|-------------|------------|---------------------|----------|-------------------|-----------------------------------|------|--------------------------------|
| | | | | Min. | Max. Fluids | Max. Steam | | | | Min. | Max. | |
| | | On-Off | Prop. | | | | | | | | | |
| 32 mm Operator | | | | | | | | | | | | |
| Normally Closed - Entry Under the Disc ③ | | | | | | | | | | | | |
| 3/8 | 3/8 | 2.3 | - | 0 | 240 | 150 | 366 | - | 8290A791 | 60 | 150 | 1.3 |
| 1/2 | 1/2 | 4.1 | - | 0 | 180 | 150 | 366 | - | 8290A792 | 60 | 150 | 1.4 |
| 3/4 | 3/4 | 7.6 | - | 0 | 90 | 90 | 366 | - | 8290A793 | 60 | 150 | 1.6 |
| Normally Open - Entry Under the Disc | | | | | | | | | | | | |
| 3/8 | 3/8 | 2.3 | - | 0 | 240 | 150 | 366 | - | 8290A794 | I ② | 150 | 1.3 |
| 1/2 | 1/2 | 4.1 | - | 0 | 240 | 150 | 366 | - | 8290A795 | I ② | 150 | 1.4 |
| 3/4 | 3/4 | 7.6 | - | 0 | 200 | 150 | 366 | - | 8290A796 | I ② | 150 | 1.6 |
| Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications | | | | | | | | | | | | |
| 3/8 | 3/8 | 2.3 | - | 0 | - | 150 | 366 | - | 8290A797 | II ② | 150 | 1.6 |
| 1/2 | 1/2 | 4.1 | - | 0 | - | 150 | 366 | - | 8290A798 | II ② | 150 | 1.4 |
| 3/4 | 3/4 | 7.6 | - | 0 | - | 150 | 366 | - | 8290A799 | II ② | 150 | 1.6 |
| 50 mm Operator | | | | | | | | | | | | |
| Normally Closed - Entry Under the Disc ③ | | | | | | | | | | | | |
| 1/2 | 1/2 | 5.7 | 5.3 | 0 | 240 | 150 | 366 | 8290A384 | 8290A393 | 60 | 150 | 2.7 |
| 3/4 | 3/4 | 11 | 8.3 | 0 | 150 | 150 | 366 | 8290A385 | 8290A394 | 60 | 150 | 2.9 |
| 1 | 1 | 15 | - | 0 | 90 | 90 | 366 | 8290A386 | 8290A395 | 60 | 150 | 3.7 |
| Normally Open - Entry Under the Disc | | | | | | | | | | | | |
| 1/2 | 1/2 | 5.7 | - | 0 | 240 | 150 | 366 | 8290A387 | 8290A396 | III ② | 150 | 2.7 |
| 3/4 | 3/4 | 11 | - | 0 | 240 | 150 | 366 | 8290A388 | 8290A397 | III ② | 150 | 2.9 |
| 1 | 1 | 15 | - | 0 | 240 | 150 | 366 | 8290A389 | 8290A398 | III ② | 150 | 3.7 |
| Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications ③ | | | | | | | | | | | | |
| 1/2 | 1/2 | 5.7 | - | 0 | - | 150 | 366 | 8290A390 | 8290A399 | IV ② | 150 | 2.7 |
| 3/4 | 3/4 | 11 | - | 0 | - | 150 | 366 | 8290A391 | 8290A400 | IV ② | 150 | 2.9 |
| 1 | 1 | 15 | - | 0 | - | 150 | 366 | 8290A392 | 8290A401 | IV ② | 150 | 3.7 |
| 63 mm Operator | | | | | | | | | | | | |
| Normally Closed - Entry Under the Disc | | | | | | | | | | | | |
| 1/2 | 1/2 | 5.7 | - | 0 | 240 | 150 | 366 | 8290B002 | 8290B045 | 38 | 150 | 3.6 |
| 3/4 | 3/4 | 11 | 8.3 | 0 | 240 | 150 | 366 | 8290B005 | 8290B048 | 60 | 150 | 3.9 |
| 1 | 1 | 19 | 17 | 0 | 150 | 150 | 366 | 8290B010 | 8290B053 | 60 | 150 | 4.7 |
| 1 1/4 | 1 1/4 | 32 | 24 | 0 | 90 | 90 | 366 | 8290A016 | 8290A059 | 60 | 150 | 6.0 |
| 1 1/2 | 1 1/2 | 52 | 33 | 0 | 60 | 60 | 366 | 8290A020 | 8290A063 | 60 | 150 | 8.0 |
| 2 | 2 | 68 | 46 | 0 | 40 | 40 | 366 | 8290A024 | 8290A067 | 60 | 150 | 10.0 |
| Normally Open - Entry Under the Disc | | | | | | | | | | | | |
| 1/2 | 1/2 | 5.7 | - | 0 | 240 | 150 | 366 | 8290B026 | 8290B069 | V ② | 150 | 3.6 |
| 3/4 | 3/4 | 11 | - | 0 | 240 | 150 | 366 | 8290B027 | 8290B070 | V ② | 150 | 3.9 |
| 1 | 1 | 19 | - | 0 | 240 | 150 | 366 | 8290B028 | 8290B071 | V ② | 150 | 4.7 |
| 1 1/4 | 1 1/4 | 32 | - | 0 | 240 | 150 | 366 | 8290A030 | 8290A073 | V ② | 150 | 6.0 |
| 1 1/2 | 1 1/2 | 52 | - | 0 | 160 | 150 | 366 | 8290A032 | 8290A075 | V ② | 150 | 8.0 |
| 2 | 2 | 68 | - | 0 | 105 | 105 | 366 | 8290A034 | 8290A077 | V ② | 150 | 10.0 |
| Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications | | | | | | | | | | | | |
| 1/2 | 1/2 | 5.7 | - | 0 | - | 150 | 366 | 8290B036 | 8290B079 | VI ② | 150 | 3.6 |
| 3/4 | 3/4 | 11 | - | 0 | - | 150 | 366 | 8290B037 | 8290B080 | VI ② | 150 | 3.9 |
| 1 | 1 | 19 | - | 0 | - | 150 | 366 | 8290B038 | 8290B081 | VI ② | 150 | 4.7 |
| 1 1/4 | 1 1/4 | 32 | - | 0 | - | 150 | 366 | 8290A039 | 8290A082 | VI ② | 150 | 6.0 |
| 1 1/2 | 1 1/2 | 52 | - | 0 | - | 150 | 366 | 8290A040 | 8290A083 | VI ② | 150 | 8.0 |
| 2 | 2 | 68 | - | 0 | - | 135 | 366 | 8290A042 | 8290A085 | VI ② | 150 | 10.0 |

① Available with NET-INOX treatment, add suffix "NI"; ② Minimum pilot pressure varies, see identified graph for appropriate values; ③ For Visual Position Indicator add suffix "VI".

SPECIAL SERVICE VALVES



Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow | | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Bronze | Stainless Steel ① | Air or Water Pilot Pressure (psi) ② | | Approx. Shipping Weight (lbs.) |
|--|---------------------|---------|-------|---------------------------------------|-------|------|---------------------|----------|-------------------|-------------------------------------|-----|--------------------------------|
| | | | | On-Off | Prop. | Min. | | | | Max. | | |
| | | Fluids | Steam | | | | | | | | | |
| 90 mm Operator | | | | | | | | | | | | |
| Normally Closed - Entry Under the Disc | | | | | | | | | | | | |
| 1 | 1 | 19 | 17 | 0 | 240 | 150 | 366 | 8290B011 | 8290B054 | 60 | 150 | 6.5 |
| 1 1/4 | 1 1/4 | 32 | 24 | 0 | 180 | 150 | 366 | 8290A017 | 8290A060 | 60 | 150 | 7.7 |
| 1 1/2 | 1 1/2 | 52 | 33 | 0 | 120 | 120 | 366 | 8290A021 | 8290A064 | 60 | 150 | 9.5 |
| 2 | 2 | 68 | 46 | 0 | 90 | 90 | 366 | 8290A025 | 8290A068 | 60 | 150 | 16.0 |
| Normally Open - Entry Under the Disc | | | | | | | | | | | | |
| 1 | 1 | 19 | - | 0 | 240 | 150 | 366 | 8290B029 | 8290B072 | VII ② | 150 | 6.5 |
| 1 1/4 | 1 1/4 | 32 | - | 0 | 240 | 150 | 366 | 8290A031 | 8290A074 | VII ② | 150 | 7.7 |
| 1 1/2 | 1 1/2 | 52 | - | 0 | 240 | 150 | 366 | 8290A033 | 8290A076 | VII ② | 150 | 9.5 |
| 2 | 2 | 68 | - | 0 | 200 | 150 | 366 | 8290A035 | 8290A078 | VII ② | 150 | 16.0 |
| Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications | | | | | | | | | | | | |
| 1 1/4 | 1 1/4 | 32 | - | 0 | - | 150 | 366 | 8290A136 | 8290A137 | VIII ② | 150 | 7.7 |
| 1 1/2 | 1 1/2 | 52 | - | 0 | - | 150 | 366 | 8290A041 | 8290A084 | VIII ② | 150 | 9.5 |
| 2 | 2 | 68 | - | 0 | - | 150 | 366 | 8290A043 | 8290A086 | VIII ② | 150 | 16.0 |
| 125 mm Operator | | | | | | | | | | | | |
| Normally Closed - Entry Under the Disc | | | | | | | | | | | | |
| 1 1/4 | 1 1/4 | 34 | 34 | 0 | 240 | 150 | 366 | 8290A642 | 8290A646 | 60 | 150 | 13.5 |
| 1 1/2 | 1 1/2 | 56 | 56 | 0 | 240 | 150 | 366 | 8290A482 | 8290A495 | 60 | 150 | 15.0 |
| 2 | 2 | 77 | 77 | 0 | 150 | 150 | 366 | 8290A485 | 8290A498 | 60 | 150 | 17.0 |
| 2 1/2 | 2 1/2 | 130 | 86 | 0 | 90 | 90 | 366 | 8290A488 | 8290A501 | 60 | 150 | 21.5 |
| Normally Open - Entry Under the Disc | | | | | | | | | | | | |
| 1 1/4 | 1 1/4 | 34 | - | 0 | 240 | 150 | 366 | 8290A643 | 8290A647 | IX ② | 150 | 13.5 |
| 1 1/2 | 1 1/2 | 56 | - | 0 | 240 | 150 | 366 | 8290A489 | 8290A502 | IX ② | 150 | 15.0 |
| 2 | 2 | 77 | - | 0 | 240 | 150 | 366 | 8290A490 | 8290A503 | IX ② | 150 | 17.0 |
| 2 1/2 | 2 1/2 | 130 | - | 0 | 240 | 150 | 366 | 8290A492 | 8290A505 | IX ② | 150 | 21.5 |

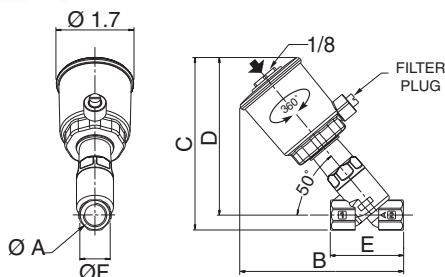
① Available with NET-INOX treatment, add suffix "NI"; ② Minimum pilot pressure varies, see identified graph for appropriate values.

Dimensions inches (mm)

| 32 mm Operator | | | | | | |
|----------------|-----|------|------|------|------|------|
| | ØA | B | C | D | E | ØF |
| Ins. | 3/8 | 3.62 | 3.66 | 3.21 | 2.17 | 0.93 |
| Ins. | 1/2 | 3.90 | 3.82 | 3.29 | 2.56 | 1.10 |
| Ins. | 3/4 | 4.21 | 4.11 | 3.46 | 2.95 | 1.26 |

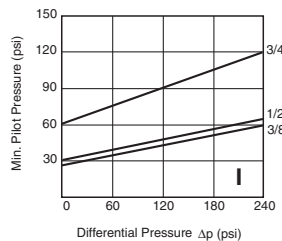


Normally Open

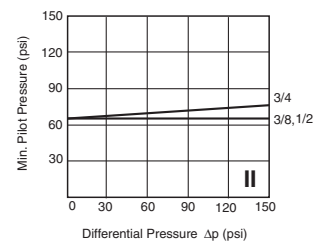


32 mm Operator Graphs for Steam and Fluids

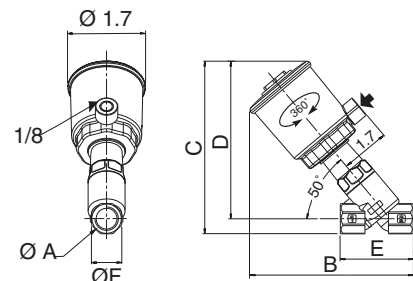
Normally Open Valve - Entry under Disc



Normally Closed Valve - Entry above Disc



Normally Closed

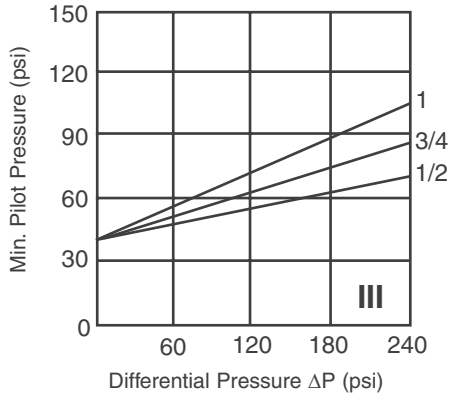


SPECIAL SERVICE VALVES

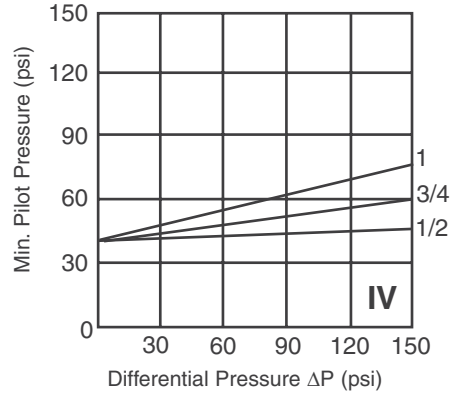
Dimensions inches (mm)

50 mm Operator Graphs for Steam and Fluids

Normally Open Valve - Entry Under Disc



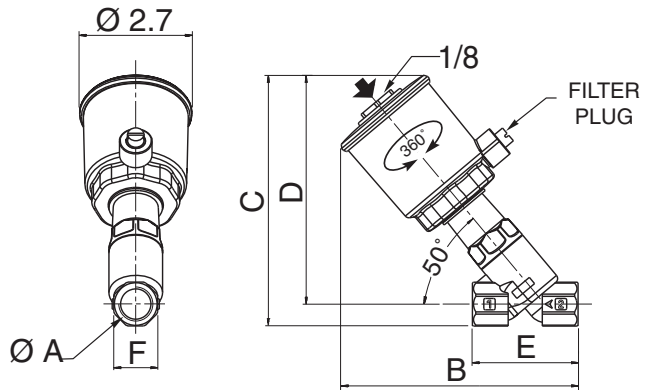
Normally Closed Valve - Entry Above Disc



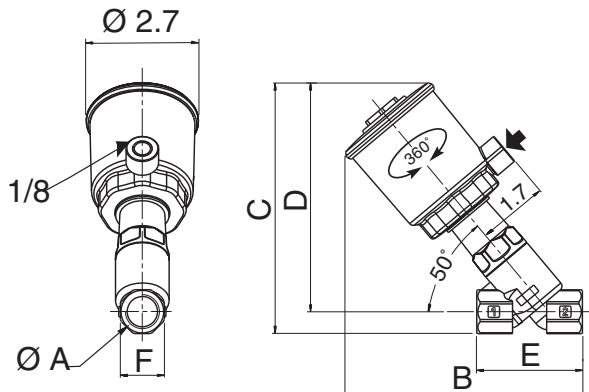
| 50 mm Operator | | | | | | |
|----------------|-----------------|------|------|------|------|------|
| | $\varnothing A$ | B | C | D | E | F |
| Ins. | 1/2 | 5.59 | 6.08 | 5.55 | 2.56 | 1.06 |
| Ins. | 3/4 | 5.92 | 6.26 | 5.63 | 2.95 | 1.26 |
| Ins. | 1 | 6.10 | 6.50 | 5.71 | 3.54 | 1.61 |



Normally Open



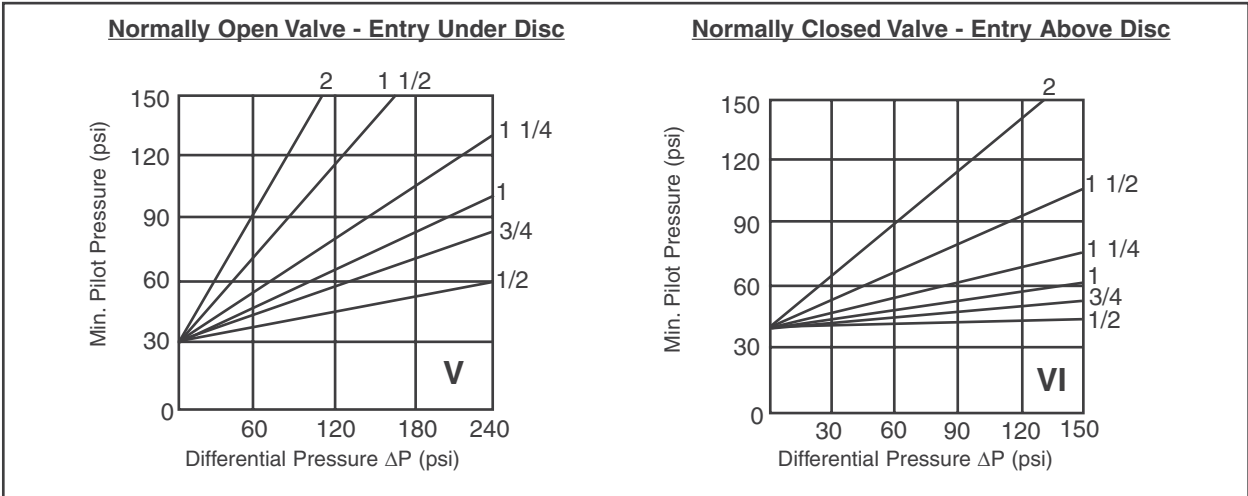
Normally Closed



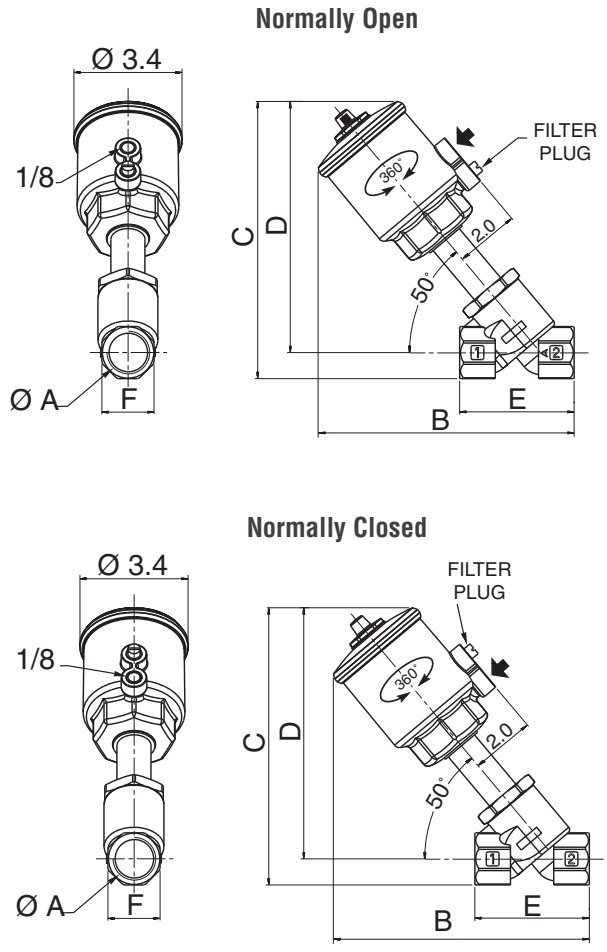
SPECIAL SERVICE VALVES

Dimensions inches (mm)

63 mm Operator Graphs for Steam and Fluids



| 63 mm Operator | | | | | | |
|----------------|-------|------|-------|------|------|------|
| | ØA | B | C | D | E | F |
| Ins. | 1/2 | 6.70 | 7.20 | 6.60 | 2.56 | 1.06 |
| Ins. | 3/4 | 6.80 | 7.30 | 6.70 | 2.95 | 1.26 |
| Ins. | 1 | 7.20 | 7.70 | 6.90 | 3.54 | 1.61 |
| Ins. | 1 1/4 | 8.54 | 9.01 | 8.03 | 4.33 | 1.97 |
| Ins. | 1 1/2 | 8.82 | 9.64 | 8.46 | 4.72 | 2.36 |
| Ins. | 2 | 9.80 | 10.20 | 8.82 | 5.90 | 2.76 |

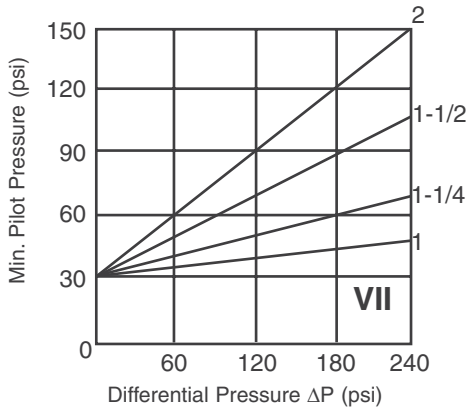


SPECIAL SERVICE VALVES

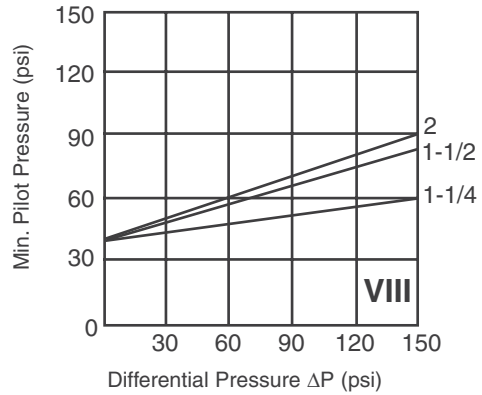
Dimensions inches (mm)

90 mm Operator Graphs for Steam and Fluids

Normally Open Valve - Entry Under Disc

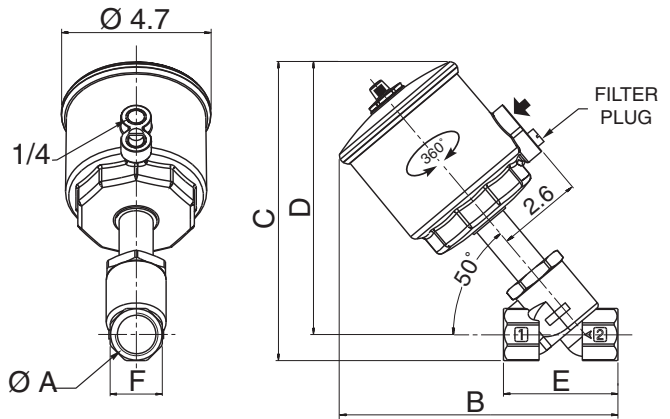


Normally Closed Valve - Entry Above Disc

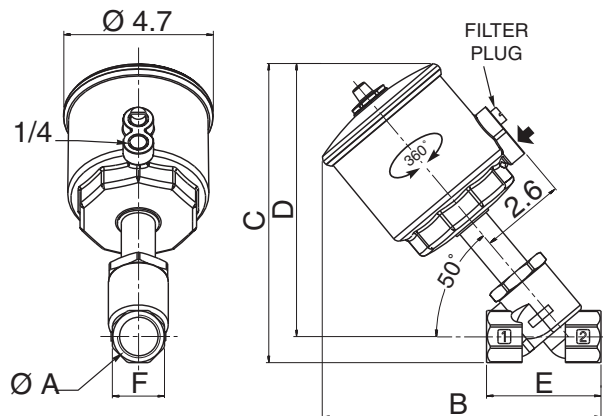


| 90 mm Operator | | | | | | |
|----------------|-------|-------|-------|------|------|------|
| | ØA | B | C | D | E | F |
| Ins. | 1 | 8.00 | 8.50 | 7.70 | 3.54 | 1.61 |
| Ins. | 1 1/4 | 9.29 | 9.69 | 8.70 | 4.33 | 1.97 |
| Ins. | 1 1/2 | 9.57 | 10.31 | 9.13 | 4.72 | 2.36 |
| Ins. | 2 | 10.51 | 10.87 | 9.49 | 5.91 | 2.76 |

Normally Open



Normally Closed

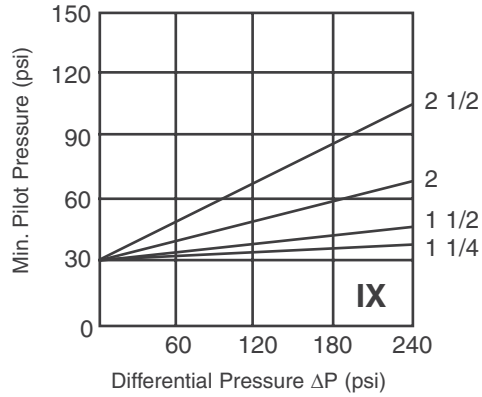


SPECIAL
SERVICE VALVES

Dimensions inches (mm)

125 mm Operator Graphs for Steam and Fluids

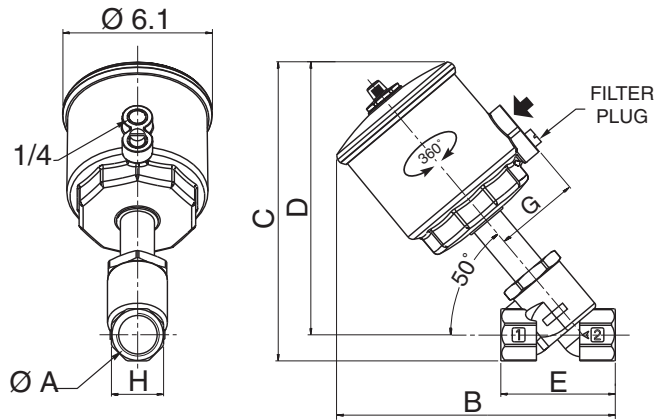
Normally Open Valve - Entry Under Disc



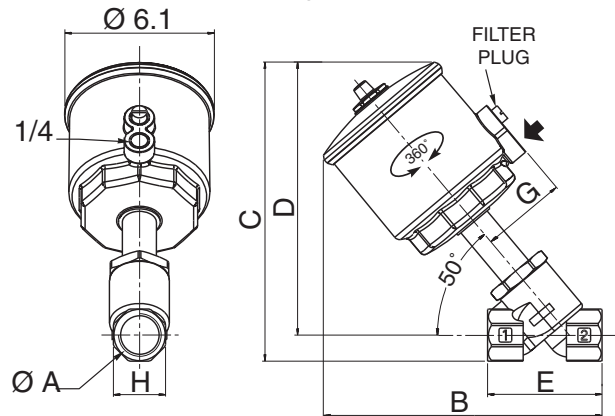
| 125 mm Operator | | | | | | | |
|-----------------|-------|-------|-------|-------|------|------|------|
| | ØA | B | C | D | E | G | H |
| Ins. | 1 1/4 | 11.10 | 11.70 | 10.70 | 4.30 | 3.10 | 2.00 |
| Ins. | 1 1/2 | 11.50 | 12.30 | 11.20 | 4.70 | 3.10 | 2.40 |
| Ins. | 2 | 12.40 | 12.90 | 11.50 | 6.00 | 3.10 | 2.80 |
| Ins. | 2 1/2 | 13.70 | 13.90 | 12.10 | 7.50 | 3.10 | 3.10 |



Normally Open



Normally Closed



SPECIAL SERVICE VALVES

Compact Positioners for Proportional control

Varies flow proportional to a 0-10 VDC, 0-20 mA or 4-20 mA control signal. Feedback of valve stem position via a linear potentiometer. Uses a profiled disc for flow characterization. Assembly available on 50mm through 125mm operators, normally closed with fluid entry under disc. Positioner not suitable for water piloting. (e.g., 8290A384PDB04)

| Control Signal | Add Suffix |
|----------------|------------|
| 0-10 VDC | PDB04 |
| 0-20 mA | PDB05 |
| 4-20 mA | PDB06 |

Compact Signaling Unit

This unit has an extension rod in place of the standard visual indicator, which contains the permanent magnet and field adjustable mini-detectors. Valve stem position is sensed by one or two mini-reed switch detectors with either an integral M8 3-pin connector or a 2 meter cable with leads. Order "Support & Rod" and "Reed Switches". (e.g., 855 29 032 & 881 00 140)

| Support & Rod | | Reed Switch (Each) | |
|---------------|-------------------|--------------------|------------|
| 50mm NC | 63, 90, 125 NC/NO | W/Connector | W/Leads |
| 885 29 032 | 885 29 027 | 881 00 140 | 881 00 142 |

Signaling Box

Supplied with two mechanical or inductive switches with LEDs, and mounts on top of the valve operator in place of the standard visual indicator. As the valve cycles, cams on the signaling box lengthening stem operate the switches to provide electrical signaling of the valve position. The signaling box can rotate 360°.

| Switches | Add Suffix |
|------------------------|------------|
| Two Mechanical | SM2 |
| Two Inductive | SI2 |
| Two Intrinsically Safe | SH2 |

Assembly available on 50mm normally closed and 63mm through 125mm normally open and normally closed. (e.g., 8290A384SM2)

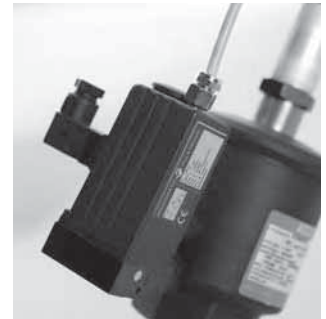
Linear Position Indicator (HS Series)

Supplied with two mechanical or REED switches and mounts on top of the valve operator in place of the standard visual indicator. Provides a wiring box with conduit connections. HS1,2,3 indicators are suitable for hazardous locations while the HS4 indicator is suitable for non-hazardous locations. Optional AS-interface® and DeviceNet® communications available. Consult ASCO for details and ordering.

AS-interface is a registered trademark of ATO. DeviceNet is a registered trademark of ODVA.

Stroke limiter

The stroke limiter allows Cv flow to be adjusted from 0% to 100%, and mounts on top of the 8290 Series valve in place of the position indicator. Assembly available onto 50mm (normally closed) and 63mm through 125mm normally closed valves with fluid entry under the disc. Add suffix M: (e.g., 8290B002M)



SPECIAL SERVICE VALVES

Pilot Valves

ASCO offers a variety of 3-way direct acting normally closed pilot valves to pilot 32mm through 125mm 8290 valves. Available in direct, in-line, and remote mounting. To order, specify catalog number and voltage (24, 120, 240 AC/60Hz or 110, 220 AC/50Hz or 6, 12, 24, 120/DC).



Series 189

- Direct Mount
- Swivel "Banjo" fittings, 1/8" NPT male
- Inlet for 4mm plastic tube
- DIN plug connection



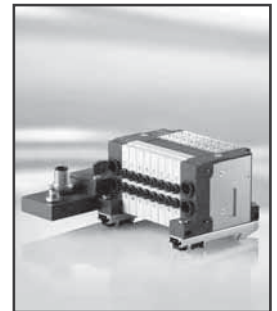
Series 8356

- In-line mount
- 1/8" NPT
- Brass or 316 stainless steel
- DIN plug connection



Series 8320

- In-line mount
- 1/8" or 1/4" NPT
- Brass or stainless steel
- (Explosion Proof optional, add prefix EF)



Compact 8

- Remote mount
- 4 to 16 valves
- Compatible with AS-interface, DeviceNet, Profibus, and others
- Air service only

Specifications (for use on 8290 Series)

| Catalog Number | Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow ③ | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | | Watt Rating/Class of Coil Insulation | | Body Material | Speed Control on Exhaust Port |
|--------------------|------------------|---------------------|-----------|-----|---------------------------------------|-----|---------------------|-----|--------------------------------------|--------|-----------------|-------------------------------|
| | | | P-C | C-E | AC | DC | AC | DC | AC | DC | | |
| SERIES 189 | | | | | | | | | | | | |
| 18900049 ①④ | 1/8 | 1/16 | .04 | .06 | 150 | 150 | 140 | 140 | 2.2/F | 2.5/F | Polyamide | Yes |
| 18900036 ①④ | 1/8 | 1/16 | .04 | .06 | 150 | 150 | 140 | 140 | 2.2/F | 2.5/F | Polyamide | - |
| SERIES 8356 | | | | | | | | | | | | |
| SC8356A001V ① | 1/8 | 3/64 | .06 | .06 | 230 | 230 | 180 | 180 | 6.3/F | 6.9/F | Brass | - |
| SC8356A013V ① | 1/8 | 3/64 | .06 | .06 | 230 | 230 | 180 | 180 | 6.3/F | 6.9/F | Stainless Steel | - |
| SERIES 8320 | | | | | | | | | | | | |
| 8320G130 ① | 1/8 | 3/64 | .06 | .06 | 175 | 125 | 140 | 120 | 9.1/F | 10.6/F | Brass | - |
| 8320G140 ① | 1/8 | 3/64 | .06 | .06 | 175 | 125 | 140 | 120 | 9.1/F | 10.6/F | Stainless Steel | - |
| 8320G174 ② | 1/4 | 3/32 | .12 | .12 | 100 | 60 | 200 | 150 | 17.1/F | 11.6/F | Brass | - |
| 8320G200 ② | 1/4 | 3/32 | .12 | .12 | 100 | 60 | 200 | 150 | 17.1/F | 11.6/F | Stainless Steel | - |

① Use with 32mm, 50mm, and 63mm operators; ② Use with 90mm and 125mm operators; ③ P = Pressure, C = Cylinder, E = Exhaust.
④ Air service only.

SPECIAL SERVICE VALVES

Features

- Unique sealing member isolates pilot air pressure from mainline fluid
- Variations in pilot air pressure do not affect valve operation
- Design provides long life handling of lubricated air
- Handle fluids up to 200°F (92°C)
- Some constructions handle steam up to 353°F (177°C)
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|---------------------------------|-----------------|
| Body | Brass | Stainless Steel |
| Seat | NBR or PTFE (for steam service) | |

Air Operators

Connection Size: 1/8" NPT.

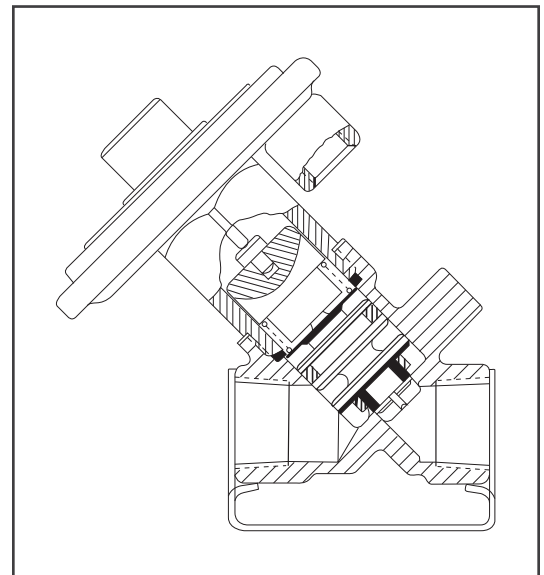
Actuated Displacement Volume: 0.60 cu. ins. for 3-30 psi operators;
 0.25 cu. ins. for 30-125 psi operator.

Media: Air

(For vacuum or other media, consult your local ASCO sales office for details. Refer to Optional Features Section for other available manual operators.)

Important

On 3-way and 4-way valves, except for those with zero minimum operating pressure, a Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and similar components must be installed in the cylinder lines only.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to Engineering Section for details.

Ordering Information

We must have catalog number, operating pressure, and fluid to be handled. Use strainers with air operated valves.

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Main Line Operating Pressure (psi) | | | | | Max. Fluid Temp. °F | Instrument Air Operator 3-30 psi Range ① | | Pneumatic Operator 30-125 psi Range ① | | |
|--|---------------------|----------------|------------------------------------|------------------------------------|---------------|-------------------|-------------------|---------------------|--|--|---------------------------------------|-------------------------------------|--|
| | | | Min. | Maximum | | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | |
| | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Steam | | | | | | |
| 2/2 VALVES | | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | | |
| 1/4 | 5/32 | .50 | 0 | 125 | 125 | 125 | - | 200 | F262B202K | 1 | P262B202 | 1 | |
| 1/4 | 9/32 | .96 | 0 | 40 | 40 | 40 | - | 200 | F262C090K | 1 | P262C090 ② | 1 | |
| 3/8 | 5/8 | 2.8 | 0 | 125 | 125 | 125 | - | 180 | F210C093K | 6 | P210C093 | 6 | |
| 3/8 | 3/8 | 1.5 | 1 ⑥ | 125 | 125 | 125 | - | 200 | F210C073K | 3 | P210C073 | 3 | |
| 1/2 | 7/16 | 2.2 | 1 ⑥ | 125 | 125 | 125 | - | 200 | F210A015K | 4 | P210A015 | 4 | |
| 1/2 | 5/8 | 3.6 | 0 | 125 | 125 | 125 | - | 180 | F210C094K | 6 | P210C094 | 6 | |
| 3/4 | 3/4 | 5.5 | 0 | 125 | 125 | 125 | - | 180 | F210D095K | 7 | P210D095 | 7 | |
| 3/4 | 3/4 | 5.5 | 5 | 125 | 125 | 125 | - | 180 | F210D009K | 8 | P210D009 | 8 | |
| 1 | 1 | 13 | 5 | 125 | 125 | 125 | - | 180 | F210D004K | 10 | P210D004 | 10 | |
| 1 1/4 | 1 1/8 | 15 | 5 | 125 | 125 | 125 | - | 180 | F210D008K | 12 | P210D008 | 12 | |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 125 | 125 | 125 | - | 180 | F210D022K | 14 | P210D022 | 14 | |
| 2 | 1 3/4 | 43 | 5 | 125 | 125 | 125 | - | 180 | F210 100K | 15 | P210 100 | 15 | |
| NORMALLY OPEN (Open when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | | |
| 1/4 | 5/32 | .50 | 0 | 125 | 125 | 125 | - | 200 | F262B106K | 2 | P262B106 | 2 | |
| 3/8 | 5/8 | 2.8 | 0 | 125 | 125 | 125 | - | 180 | F210C033K | 16 | P210C033 | 16 | |
| 1/2 | 5/8 | 3.5 | 0 | 125 | 125 | 125 | - | 180 | F210C034K | 16 | P210C034 | 16 | |
| 3/4 | 3/4 | 5.5 | 0 | 125 | 125 | 125 | - | 180 | F210C035K | 17 | P210C035 | 17 | |
| 1 | 1 | 13 | 5 | 125 | 125 | 125 | - | 180 | F210D014K | 18 | P210D014 | 18 | |
| NORMALLY CLOSED (Closed when operator exhausted), Stainless Steel Body with NBR Seating | | | | | | | | | | | | | |
| 1/4 | 5/32 | .50 | 0 | 125 | 125 | 125 | - | 200 | F262B220K | 22 | - | - | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with PTFE Seating | | | | | | | | | | | | | |
| 1/4 | 3/8 | 1.2 | 1 | - | - | - | 125 | 353 | F222A070K | 4 | P222A070 | 4 | |
| 3/8 | 3/8 | 2.5 | 1 | - | - | - | 125 | 353 | F222A074K | 4 | P222A074 | 4 | |
| 1/2 | 3/8 | 2.5 | 1 | - | - | - | 125 | 353 | F222A076K | 4 | P222A076 | 4 | |
| 3/2 VALVES | | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seats | | | | | | | | | | | | | |
| 1/4 | 9/32 | ③ | 10 | 125 | 125 | 125 | - | 200 | F321A001K | 5 | P321A001 | 5 | |
| 3/8 | 9/32 | ③ | 10 | 125 | 125 | 125 | - | 200 | F321A002K | 5 | P321A002 | 5 | |
| 3/8 | 5/8 | 3 | 10 | 125 | 125 | - | - | 200 | F316D014K | 2 | P316D014 | 2 | |
| 1/2 | 5/8 | 4 | 10 | 125 | 125 | - | - | 200 | F316D024K | 2 | P316D024 | 2 | |
| 3/4 | 11/16 | 5.5 | 10 | 125 | 125 | - | - | 200 | F316E044K | 3 | P316E044 | 3 | |
| 1 | 1 | 13 | 10 | 125 | 125 | - | - | 200 | F316E034K | 4 | P316E034 | 4 | |
| UNIVERSAL (Pressure at any port), Brass Body with NBR Seats | | | | | | | | | | | | | |
| 1/4 | 1/8 | .31 | 0 | 125 | 125 | 125 | - | 200 | F320A009K | 1 | P320A009 | 1 | |
| 4/2 VALVES | | | | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Main Line Operating Pressure (psi) | | | | | Max. Fluid Temp. °F | Instrument Air Operator 3-30 psi Range | | Pneumatic Operator 30-125 psi Range | |
| | | | | Min. | Maximum | | | Catalog Number | | Const. Ref. | Catalog Number | Const. Ref. | |
| | | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | | | | | | |
| | | Press. to Cyl. | Exh. to Cyl. | | | | | | | | | | |
| 2-Position Brass Body with Soft Seating ④ | | | | | | | | | | | | | |
| 1/4 | 3/16 | .70 | .70 | 0 | 125 | 125 | 125 | 160 | - | - | P442C001 | 1 | |
| 1/4 | 1/4 | .80 | 1 | 10 ⑤ | 125 | 125 | 125 | 200 | F444B000K | 2 | P444B000 | 2 | |
| 3/8 | 3/16 | .70 | .70 | 0 | 125 | 125 | 125 | 160 | - | - | P442C003 | 1 | |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 ⑤ | 125 | 125 | 125 | 200 | F444C025K | 3 | P444C025 | 3 | |

① 3-40 psi (.2 - 2.8 bar) and 50-125 psi (3.4 - 8.6 bar) range for steam valves only.
 ② Refers to operator minimum pressure: Catalog Number P262C090 requires 50 psi (3.4 bar) minimum pressure.
 ③ Cv pressure to cylinder = 0.8 (.7 Kv); Cv cylinder to exhaust = 1.2 (1.0 Kv).
 ④ Const. Ref. 1 has soft seating; Const. Ref. 2 and 3 have soft to metal seating.
 ⑤ 25 psi (1.7 bar) required on light oil service.
 ⑥ 5 psi (0.35 bar) required for air service.

SPECIAL SERVICE VALVES

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Main Line Operating Pressure (bar) | | | | | Max. Fluid Temp. °C | Instrument Air Operator 0.2-2 bar Range ① | | Pneumatic Operator 2-8.6 bar Range ① | |
|--|-------------------|-----------------------|------------------------------------|------------------------------------|---------------|-------------------|-------------------|---------------------|---|-------------|--------------------------------------|-------------|
| | | | Min. | Maximum | | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Steam | | | | | |
| 2/2 VALVES | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | |
| 1/4 | 4 | .43 | 0.0 | 9 | 9 | 9 | - | 93 | F262B202K | 1 | P262B202 | 1 |
| 1/4 | 7 | .82 | 0.0 | 3 | 3 | 3 | - | 93 | F262C090K | 1 | P262C090 ② | 1 |
| 3/8 | 16 | 2.40 | 0.0 | 9 | 9 | 9 | - | 82 | F210C093K | 6 | P210C093 | 6 |
| 3/8 | 10 | 1.29 | 0.07 ⑥ | 9 | 9 | 9 | - | 93 | F210C073K | 3 | P210C073 | 3 |
| 1/2 | 11 | 1.89 | 0.07 ⑥ | 9 | 9 | 9 | - | 93 | F210A015K | 4 | P210A015 | 4 |
| 1/2 | 16 | 3.09 | 0.0 | 9 | 9 | 9 | - | 82 | F210C094K | 6 | P210C094 | 6 |
| 3/4 | 19 | 4.71 | 0.0 | 9 | 9 | 9 | - | 82 | F210D095K | 7 | P210D095 | 7 |
| 3/4 | 19 | 4.71 | 0.3 | 9 | 9 | 9 | - | 82 | F210D009K | 8 | P210D009 | 8 |
| 1 | 25 | 11.14 | 0.3 | 9 | 9 | 9 | - | 82 | F210D004K | 10 | P210D004 | 10 |
| 1 1/4 | 29 | 12.86 | 0.3 | 9 | 9 | 9 | - | 82 | F210D008K | 12 | P210D008 | 12 |
| 1 1/2 | 32 | 19.29 | 0.3 | 9 | 9 | 9 | - | 82 | F210D022K | 14 | P210D022 | 14 |
| 2 | 45 | 36.86 | 0.3 | 9 | 9 | 9 | - | 82 | F210 100K | 15 | P210 100 | 15 |
| NORMALLY OPEN (Open when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | |
| 1/4 | 4 | .43 | 0.0 | 9 | 9 | 9 | - | 93 | F262B106K | 2 | P262B106 | 2 |
| 3/8 | 16 | 2.40 | 0.0 | 9 | 9 | 9 | - | 82 | F210C033K | 16 | P210C033 | 16 |
| 1/2 | 16 | 3.00 | 0.0 | 9 | 9 | 9 | - | 82 | F210C034K | 16 | P210C034 | 16 |
| 3/4 | 19 | 4.71 | 0.0 | 9 | 9 | 9 | - | 82 | F210C035K | 17 | P210C035 | 17 |
| 1 | 25 | 11.14 | 0.3 | 9 | 9 | 9 | - | 82 | F210D014K | 18 | P210D014 | 18 |
| NORMALLY CLOSED (Closed when operator exhausted), Stainless Steel Body with NBR Seating | | | | | | | | | | | | |
| 1/4 | 4 | .43 | 0.0 | 9 | 9 | 9 | - | 93 | F262B220K | 22 | - | - |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with PTFE Seating | | | | | | | | | | | | |
| 1/4 | 10 | 1.03 | 0.1 | - | - | - | 24 | 178 | F222A70K | 4 | P222A70 | 4 |
| 3/8 | 10 | 2.14 | 0.1 | - | - | - | 24 | 178 | F222A74K | 4 | P222A74 | 4 |
| 1/2 | 10 | 2.14 | 0.1 | - | - | - | 24 | 178 | F222A76K | 4 | P222A76 | 4 |
| 3/2 VALVES | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seats | | | | | | | | | | | | |
| 1/4 | 7 | ③ | 0.6895 | 9 | 9 | 9 | - | 93 | F321A001K | 5 | P321A001 | 5 |
| 3/8 | 7 | ③ | 0.6895 | 9 | 9 | 9 | - | 93 | F321A002K | 5 | P321A002 | 5 |
| 3/8 | 16 | 2.57 | 0.6895 | 9 | 9 | - | - | 93 | F316D014K | 2 | P316D014 | 2 |
| 1/2 | 16 | 3.43 | 0.6895 | 9 | 9 | - | - | 93 | F316D024K | 2 | P316D024 | 2 |
| 3/4 | 17 | 4.71 | 0.6895 | 9 | 9 | - | - | 93 | F316E044K | 3 | P316E044 | 3 |
| 1 | 25 | 11.14 | 0.6895 | 9 | 9 | - | - | 93 | F316E034K | 4 | P316E034 | 4 |
| UNIVERSAL (Pressure at any port), Brass Body with NBR Seats | | | | | | | | | | | | |
| 1/4 | 3 | .27 | 0 | 9 | 9 | 9 | - | 93 | F320A009K | 1 | P320A009 | 1 |
| 4/2 VALVES | | | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Main Line Operating Pressure (bar) | | | | Max. Fluid Temp. °C | Instrument Air Operator 0.2-2 bar Range | | Pneumatic Operator 2-8.6 bar Range | |
| | | Press. to Cyl. | Exh. to Cyl. | Min. | Maximum | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | | | | | |
| 2-Position Brass Body with Soft Seating ④ | | | | | | | | | | | | |
| 1/4 | 5 | .60 | .60 | 0 | 9 | 9 | 9 | 71 | - | - | P442C001 | 1 |
| 1/4 | 6 | .69 | .86 | 0.7 ⑤ | 9 | 9 | 9 | 93 | F444B000K | 2 | P444B000 | 2 |
| 3/8 | 5 | .60 | .60 | 0 | 9 | 9 | 9 | 71 | - | - | P442C003 | 1 |
| 3/8 | 10 | 1.20 | 1.89 | 0.7 ⑤ | 9 | 9 | 9 | 93 | F444C025K | 3 | P444C025 | 3 |

① 3-40 psi (.2 - 2.8 bar) and 50-125 psi (3.4 - 8.6 bar) range for steam valves only.
 ② Refers to operator minimum pressure: Catalog Number P262C090 requires 50 psi (3.4 bar) minimum pressure.
 ③ Cv pressure to cylinder = 0.8 (.7 Kv); Cv cylinder to exhaust = 1.2 (1.0 Kv).
 ④ Const. Ref. 1 has soft seating; Const. Ref. 2 and 3 have soft to metal seating.
 ⑤ 25 psi (1.7 bar) required on light oil service.
 ⑥ 5 psi (0.35 bar) required for air service.

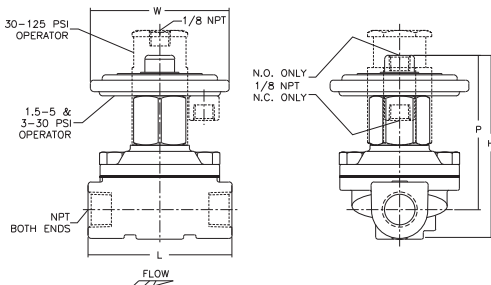
SPECIAL SERVICE VALVES

Dimensions inches (mm)

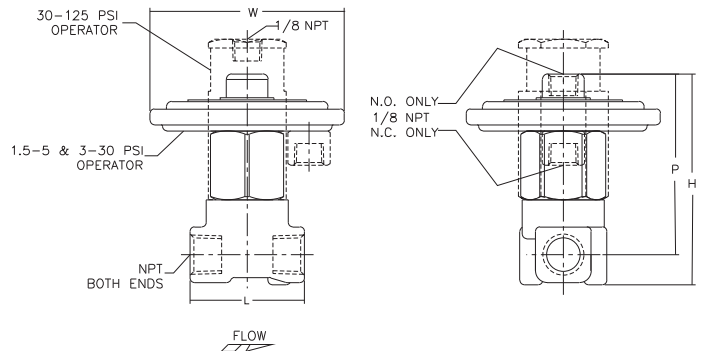
| Const. Ref. | | Instrument Air Operator 2/2 Valves with 3-30 PSI Operator ① | | | | Pneumatic Operator 2/2 Valves with 30-125 PSI Operator ① | | | |
|-------------|------|---|-------|------|--------|--|------|------|------|
| | | H | L | P | W | H | L | P | W ② |
| 1 | ins. | 2.88 | 1.57 | 2.47 | Ø 2.66 | 3.34 | 1.56 | 2.94 | 1.18 |
| | mm | 73 | 40 | 63 | Ø 67 | 85 | 40 | 75 | 30 |
| 2 | ins. | 2.97 | 1.56 | 2.56 | Ø 2.66 | 2.78 | 1.56 | 2.38 | 1.18 |
| | mm | 75 | 40 | 65 | Ø 67 | 71 | 40 | 60 | 30 |
| 3 | ins. | 3.34 | 1.91 | 2.91 | Ø 2.66 | 3.69 | 1.91 | 3.25 | 1.12 |
| | mm | 85 | 49 | 74 | Ø 67 | 94 | 49 | 83 | 28 |
| 4 | ins. | 3.62 | 2.28 | 3.09 | Ø 2.66 | 4.22 | 2.28 | 3.66 | 1.12 |
| | mm | 92 | 58 | 79 | Ø 67 | 107 | 58 | 93 | 28 |
| 6 | ins. | 3.59 | 2.75 | 3.03 | Ø 2.66 | 4.00 | 2.75 | 3.44 | 2.28 |
| | mm | 91 | 70 | 77 | Ø 67 | 102 | 70 | 87 | 58 |
| 7 | ins. | 3.81 | 2.81 | 3.19 | Ø 2.66 | 4.22 | 2.81 | 3.59 | 2.28 |
| | mm | 97 | 71 | 81 | Ø 67 | 107 | 71 | 91 | 58 |
| 8 | ins. | 3.88 | 2.81 | 3.22 | Ø 2.66 | 4.28 | 2.81 | 3.62 | 2.31 |
| | mm | 99 | 71 | 82 | Ø 67 | 109 | 71 | 92 | 59 |
| 10 | ins. | 5.53 | 3.75 | 3.91 | Ø 2.66 | 6.00 | 3.75 | 4.38 | 2.94 |
| | mm | 141 | 95 | 99 | Ø 67 | 152 | 95 | 111 | 75 |
| 12 | ins. | 5.53 | 2.66 | 3.91 | Ø 2.66 | 6.00 | 3.66 | 4.38 | 3.38 |
| | mm | 141 | 68 | 99 | Ø 67 | 152 | 93 | 111 | 86 |
| 14 | ins. | 6.00 | 4.38 | 4.06 | 4.38 | 6.50 | 4.38 | 4.53 | 3.75 |
| | mm | 152 | 111 | 103 | 111 | 165 | 111 | 115 | 95 |
| 15 | ins. | 7.22 | 5.06 | 4.47 | 4.68 | 7.69 | 5.06 | 4.94 | 4.68 |
| | mm | 183 | 129 | 114 | 119 | 195 | 129 | 126 | 119 |
| 16 | ins. | 3.69 | 2.75 | 3.12 | Ø 2.66 | 3.44 | 2.75 | 2.88 | 2.28 |
| | mm | 94 | 70 | 79 | Ø 67 | 87 | 70 | 73 | 58 |
| 17 | ins. | 3.91 | 2.81 | 3.28 | Ø 2.66 | 3.69 | 2.81 | 3.03 | 2.28 |
| | mm | 99 | 71 | 83 | Ø 67 | 94 | 71 | 77 | 58 |
| 18 | ins. | 5.63 | 3.75 | 4.00 | 2.94 | 5.43 | 3.75 | 3.81 | 2.94 |
| | mm | 143 | 95 | 102 | 75 | 138 | 95 | 97 | 75 |
| 22 | ins. | 2.84 | Ø1.62 | 2.47 | Ø 2.66 | X | X | X | X |
| | mm | 72 | Ø 41 | 63 | Ø 67 | X | X | X | X |

① When barbed tubing adapter is used, add 1.19 ins. (30 mm) to "H" and/or "P" (or overall) dimensions.
② Represents overall width of valve.

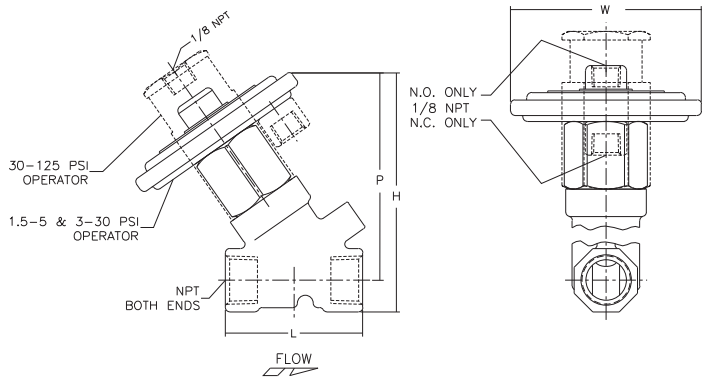
2/2 Valves - Const. Ref. 6 - 18



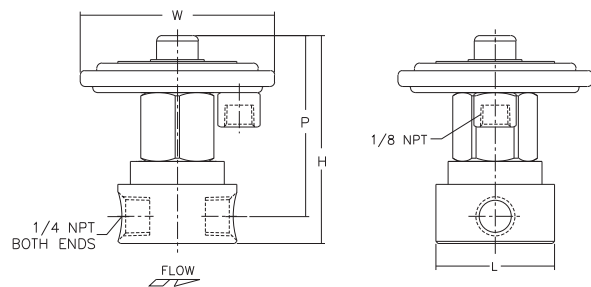
2/2 Valves - Const. Ref. 1, 2



2/2 Valves - Const. Ref. 3, 4

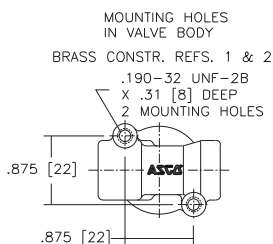


2/2 Valves - Const. Ref. 22

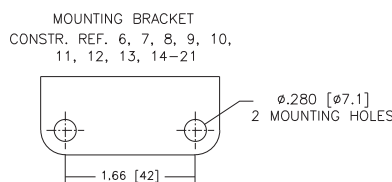


SPECIAL SERVICE VALVES

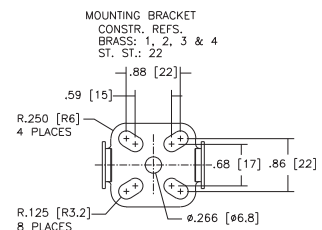
Mounting Bracket Const. Ref. 1, 2



Mounting Bracket Const. Ref. 6 - 18



Mounting Bracket Const. Ref. 1, 2, 3, 4, 22

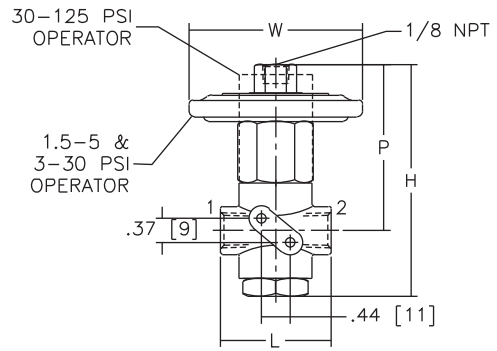


Dimensions inches (mm)

| Const. Ref. | Instrument Air Operator 3/2 Valves with 3-30 psi Operator ① | | | Pneumatic Operator 3/2 Valves with 30-125 psi Operator ① | | | | | | | |
|-------------|---|------|------|--|------|------|------|------|-----|------|-----|
| | H | P | W ② | H | P | W ② | L | N | M | R | |
| 1 | ins. | 3.56 | 2.56 | Ø 2.66 | 3.38 | 2.38 | 1.12 | 1.69 | X | X | X |
| | mm | 90 | 65 | Ø 67 | 86 | 61 | 28 | 43 | X | X | X |
| 2 | ins. | 5.07 | 3.93 | 4.30 | 4.89 | 3.75 | 4.30 | 2.76 | X | X | X |
| | mm | 129 | 100 | 109 | 124 | 95 | 109 | 70 | X | X | X |
| 3 | ins. | 6.00 | 4.31 | 3.31 | 5.82 | 4.13 | 3.31 | 3.38 | .53 | 2.16 | .50 |
| | mm | 152 | 109 | 84 | 148 | 105 | 84 | 86 | 13 | 55 | 13 |
| 4 | ins. | 6.62 | 4.56 | 5.34 | 6.44 | 4.38 | 5.34 | 4.44 | .88 | 2.68 | .88 |
| | mm | 168 | 116 | 136 | 164 | 111 | 136 | 113 | 22 | 68 | 22 |
| 5 | ins. | 3.84 | 2.81 | 3.39 | 3.66 | 2.62 | 2.62 | 3.12 | X | X | X |
| | mm | 98 | 71 | 86 | 93 | 67 | 67 | 79 | X | X | X |

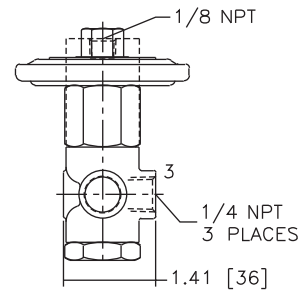
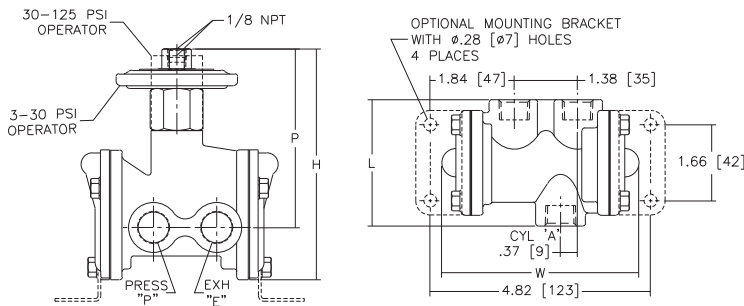
① When barbed tubing adapter is used, add 1.19 ins. (30 mm) to "H" and/or "P" (or overall) dimensions.
② Represents overall width of valve.

3/4 Valves Const. Ref. 1

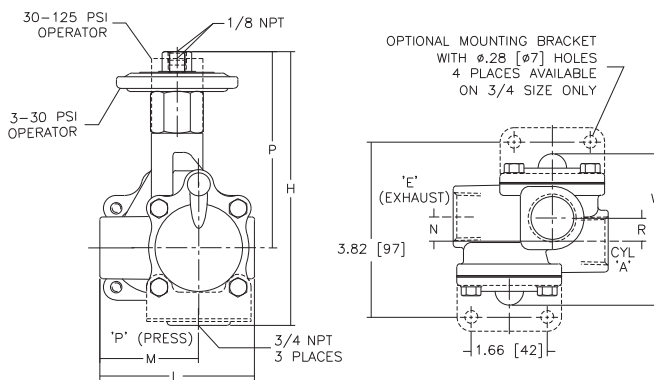


2 Mounting holes 0.28 (0.07 mm) deep for No. 8 thread cutting screw

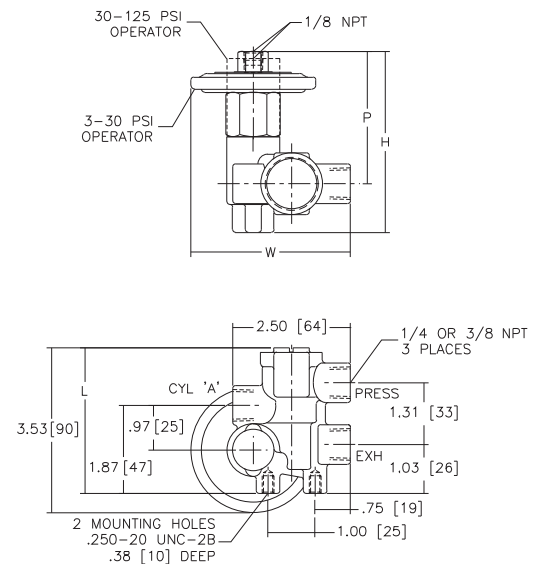
3/4 Valves Const. Ref. 2



3/4 Valves Const. Ref. 3, 4



3/4 Valves Const. Ref. 5

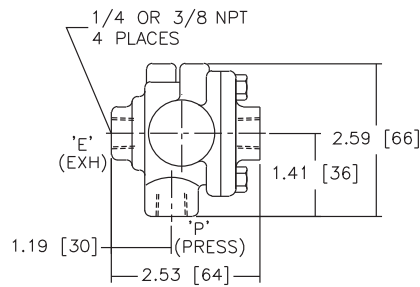
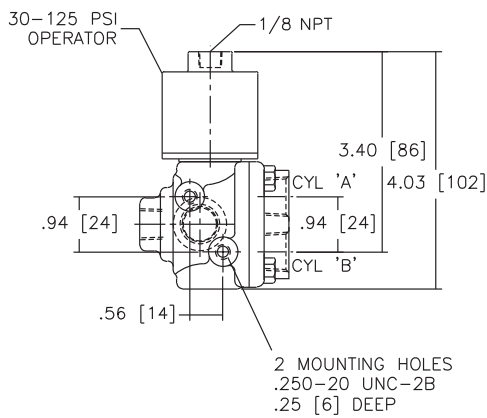


Dimensions inches (mm)

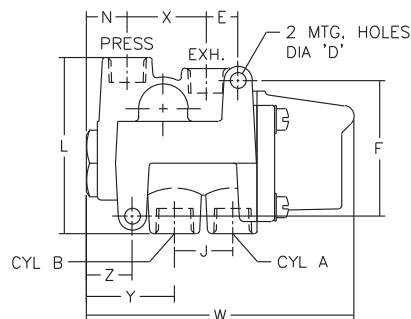
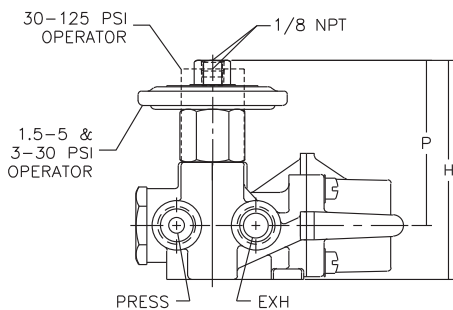
| Const. Ref. | Instrument Air Operator 4/2 Valves with 3-30 psi (.2-2 bar) Operator ① | | | Pneumatic Operator 4/2 Valves with 30-125 psi (2-8.6 bar) Operator ① | | | | | | | | | | | | |
|-------------|--|------|------|--|------|------|------|-----|------|------|------|-----|------|------|-------|-------|
| | H | P | W | H | P | W | E | F | J | L | N | X | Y | Z | DIA D | |
| 2 | ins. | 3.91 | 2.94 | 4.75 | 3.72 | 2.75 | 4.75 | .56 | 2.41 | 1.03 | 3.12 | .72 | 1.41 | 1.56 | .81 | Ø .28 |
| | mm | 99 | 75 | 121 | 94 | 70 | 121 | 14 | 61 | 26 | 79 | 18 | 36 | 40 | 21 | Ø 7 |
| 3 | ins. | 3.88 | 2.75 | 6.06 | 3.69 | 2.56 | 6.06 | .75 | 3.12 | 1.50 | 3.19 | .84 | 1.88 | 1.90 | .84 | Ø .34 |
| | mm | 98 | 70 | 154 | 94 | 65 | 154 | 19 | 79 | 38 | 81 | 21 | 48 | 48 | 21 | Ø 9 |

① When barbed tubing adapter is used, add 1.19 (30 mm) to "H" and/or "P" (or overall) dimensions.
IMPORTANT: Valves can be mounted in any position.

4/2 Valves - Const. Ref. 1

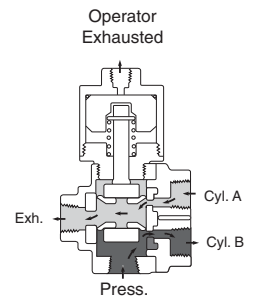


4/2 Valves - Const. Ref. 2, 3

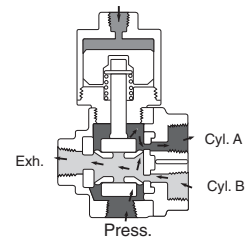


Flow Diagrams

Const. Ref. 1

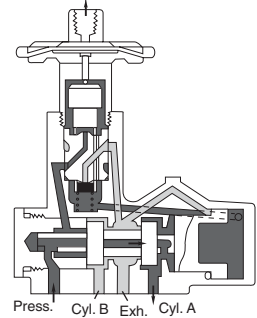


Operator Pressurized

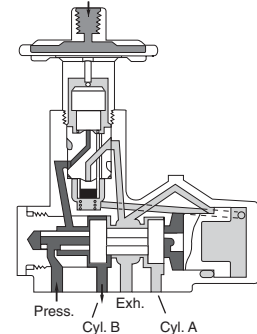


Const. Ref. 2, 3, 4

Operator Exhausted



Operator Pressurized



SPECIAL SERVICE VALVES

Features

- Designed to automatically drain condensate in compressed air systems
- Piloted piston assemblies feature ASCO's 8290 Series with an 8356 Series pilot valve
- Solid state, adjustable timer with LED indicators and Type 4 rating (see *Accessories Section for specs*)
- Brass body, hand turn strainer prevents debris from clogging the valve
- Wide range of voltages with reduced power consumption
- Assemblies can be easily designed using the online configurator (www.ascovalve.com/CDVConfigurator)

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|----------------------|-----------------------------|------------------------|
| Part | Solenoid Drain Valve | Piston Valve Solenoid Pilot | Piston Drain Valve |
| Body | Brass | | 316L Stainless Steel |
| Stem | - | - | 316L Stainless Steel ① |
| Core Tube | Stainless Steel | | - |
| Bonnet | Stainless Steel | Plated Steel | - |
| Core and Plugnut | Stainless Steel | | - |
| Springs | Stainless Steel | | - |
| Disc | NBR | FKM | 316L Stainless Steel ② |
| Disc Seals | NBR | FKM | PTFE |
| Shading Coil | Copper | | - |
| Stuffing Box | - | - | 316L Stainless Steel |
| Stuffing Box Seal | - | - | PTFE |
| Wiper Seal | - | - | FKM |
| Screw | - | - | 316L Stainless Steel ③ |

① 431 Stainless Steel for 50mm. ② Brass for 50mm. ③ No screw for 50mm.

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Ambient Temp. °F | DIN Spare Coil Family AC/DC |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------|--------------------------------|
| | DC Watts | AC | | | | |
| | | Watts | VA Holding | VA Inrush | | |
| F | 6.9 | 6.3 | 8.8 | 12.1 | 15 to 140 | 400125 |
| F | 9.2 | 9.2 | 14 | 23 | 15 to 140 | ZA34A |
| F | 6 | 6 | 10 | 16 | 15 to 140 | Z614A |
| F | 13 | 13 | 24 | 44 | 15 to 140 | Z134A |



Nominal Ambient Temp. Ranges

14°F to 122°F (-10°C to 50°C)

Refer to Engineering Section for details.

Approvals

Solenoid: UL recognized coil. Meets applicable CE directives.

Timer: CSA certified. UL recognized component. Meets applicable CE directives.

Pilot Valve: UL recognized coil. CSA recognized coil. Meets applicable CE directives.

Power Cord: UL recognized component.

Refer to Engineering Section for details.

Specifications (Assembly) (English units)

| Inlet Pipe Size (ins.) | Valve Outlet Pipe Size (ins.) | Valve Orifice Dia. (ins.) | Cv Flow Factor | Condensate Drained (oz/sec.) ① | Operating Pressure Differential (psi) | | Pilot Pressure (psi) | | Assembly Number ② | Featured Assembly Components | |
|---|-------------------------------|---------------------------|----------------|--------------------------------|---------------------------------------|------------|----------------------|------------------------|-------------------|------------------------------|--------------------------|
| | | | | | Min. | Water Max. | Air or Water Range | Electrical Connections | | Mechanical / Maintenance | |
| Solenoid Assembly - Normally Closed - With Timer | | | | | | | | | | | |
| 1/4 F | 1/4 F | 1/8 | 0.35 | 10 | 0 | 175 | - | | CDVA0JPJW5XCMLL | - | - |
| | | | | | | | | | CDVA0JPK1QZBSVN | DIN to 6' cord w/N.A. plug | - |
| 1/2 M | 1/4 F | 1/8 | 0.35 | 10 | 0 | 175 | - | | CDVA0JPL6ND5VR2 | - | Manual Shut off / Filter |
| | | | | | | | | | CDVA0JPLC7F5104 | DIN to 6' cord w/N.A. plug | Manual Shut off / Filter |
| 3/8 F | 3/8 F | 7/16 | 1.99 | 56 | 5 | 175 | - | | CDVA138122AKBA8 | - | - |
| | | | | | | | | | CDVA13817MCJGKA | DIN to 6' cord w/N.A. plug | - |
| 1/2 M | 3/8 F | 7/16 | 1.99 | 56 | 5 | 175 | - | | CDVA1382CJSCKEQ | - | Manual Shut off / Filter |
| | | | | | | | | | CDVA1382J3UBQPS | DIN to 6' cord w/N.A. plug | Manual Shut off / Filter |
| 1/2 F | 1/2 F | 9/16 | 4.45 | 144 | 5 | 230 | - | | CDVA1MSH84LMV4U | - | - |
| | | | | | | | | | CDVA1MSHDPNMODW | DIN to 6' cord w/N.A. plug | - |
| 1/2 M | 1/2 F | 9/16 | 4.45 | 144 | 5 | 230 | - | | CDVA1MSJ2F39A | - | Manual Shut off / Filter |
| | | | | | | | | | CDVA1MSJQ64E8JC | DIN to 6' cord w/N.A. plug | Manual Shut off / Filter |
| Pilot Operated Assembly - Normally Closed - With Pilot Valve and Timer | | | | | | | | | | | |
| 3/8 F | 3/8 F | 3/8 | 2.3 | 76 | 0 | 240 | 60 to 150 | | CDVA5G5JCP39FN | - | N/A |
| | | | | | | | | | CDVA5G5JJ3R2EQQ | DIN to 6' cord w/N.A. plug | |
| 1/2 F | 1/2 F | 1/2 | 4.1 | 117 | 0 | 180 | 60 to 150 | | CDVA60Q0JLZ5L7A | - | |
| | | | | | | | | | CDVA60Q0Q614RGC | DIN to 6' cord w/N.A. plug | |
| 3/4 F | 3/4 F | 3/4 | 7.6 | 154 | 0 | 90 | 60 to 150 | | CDVA6K8GQP97PW0 | - | |
| | | | | | | | | | CDVA6K8GW8B6V52 | DIN to 6' cord w/N.A. plug | |
| 1 F | 1 | 1 | 15 | 304 | 0 | 90 | 60 to 150 | | CDVA73790TM3NV6 ③ | - | |
| | | | | | | | | | CDVA73796CP2U48 ③ | DIN to 6' cord w/N.A. plug | |

① Volume of condensate drained per second at max operating pressure. ② Additional assemblies available through configurator. ③ Also available in bronze.

Specifications (Assembly) (Metric units)

| Inlet Pipe Size (ins.) | Valve Outlet Pipe Size (ins.) | Valve Orifice Dia. (mm) | Kv Flow Factor (m3/h) | Condensate Drained (oz/sec.) ① | Operating Pressure Differential (bar) | | Pilot Pressure (bar) | | Assembly Number ② | Featured Assembly Components | |
|---|-------------------------------|-------------------------|-----------------------|--------------------------------|---------------------------------------|------------|----------------------|------------------------|-------------------|------------------------------|--------------------------|
| | | | | | Min. | Water Max. | Air or Water Range | Electrical Connections | | Mechanical / Maintenance | |
| Solenoid Assembly - Normally Closed - With Timer | | | | | | | | | | | |
| 1/4 F | 1/4 F | 3.2 | 0.3 | 10 | 0 | 12 | - | | CDVA0JPJW5XCMLL | - | - |
| | | | | | | | | | CDVA0JPK1QZBSVN | DIN to 6' cord w/N.A. plug | - |
| 1/2 M | 1/4 F | 3.2 | 0.3 | 10 | 0 | 12 | - | | CDVA0JPL6ND5VR2 | - | Manual Shut off / Filter |
| | | | | | | | | | CDVA0JPLC7F5104 | DIN to 6' cord w/N.A. plug | Manual Shut off / Filter |
| 3/8 F | 3/8 F | 11.1 | 1.72 | 56 | 0.34 | 12 | - | | CDVA138122AKBA8 | - | - |
| | | | | | | | | | CDVA13817MCJGKA | DIN to 6' cord w/N.A. plug | - |
| 1/2 M | 3/8 F | 11.1 | 1.72 | 56 | 0.34 | 12 | - | | CDVA1382CJSCKEQ | - | Manual Shut off / Filter |
| | | | | | | | | | CDVA1382J3UBQPS | DIN to 6' cord w/N.A. plug | Manual Shut off / Filter |
| 1/2 F | 1/2 F | 14.3 | 3.8 | 144 | 0.34 | 15.8 | - | | CDVA1MSH84LMV4U | - | - |
| | | | | | | | | | CDVA1MSHDPNMODW | DIN to 6' cord w/N.A. plug | - |
| 1/2 M | 1/2 F | 14.3 | 3.8 | 144 | 0.34 | 15.8 | - | | CDVA1MSJ2F39A | - | Manual Shut off / Filter |
| | | | | | | | | | CDVA1MSJQ64E8JC | DIN to 6' cord w/N.A. plug | Manual Shut off / Filter |
| Pilot Operated Assembly - Normally Closed - With Pilot Valve and Timer | | | | | | | | | | | |
| 3/8 F | 3/8 F | 9.5 | 2 | 76 | 0 | 16.5 | 60 to 150 | | CDVA5G5JCP39FN | - | N/A |
| | | | | | | | | | CDVA5G5JJ3R2EQQ | DIN to 6' cord w/N.A. plug | |
| 1/2 F | 1/2 F | 12.7 | 3.5 | 117 | 0 | 12.4 | 60 to 150 | | CDVA60Q0JLZ5L7A | - | |
| | | | | | | | | | CDVA60Q0Q614RGC | DIN to 6' cord w/N.A. plug | |
| 3/4 F | 3/4 F | 19 | 6.5 | 154 | 0 | 6.2 | 60 to 150 | | CDVA6K8GQP97PW0 | - | |
| | | | | | | | | | CDVA6K8GW8B6V52 | DIN to 6' cord w/N.A. plug | |
| 1 F | 1 | 25.4 | 13 | 304 | 0 | 6.2 | 60 to 150 | | CDVA73790TM3NV6 ③ | - | |
| | | | | | | | | | CDVA73796CP2U48 ③ | DIN to 6' cord w/N.A. plug | |

① Volume of condensate drained per second at max operating pressure. ② Additional assemblies available through configurator. ③ Also available in bronze.

Specifications (Solenoid Valve) (English units)

| Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow Factor | Volume Drained per Second (oz/sec.) ① | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Brass | Wattage | |
|---|---------------------|----------------|---------------------------------------|---------------------------------------|---------|---------|---------------------|------------|---------|-----|
| | | | | Min. | Max. AC | Max. DC | | | AC | DC |
| | | | | | Water | Water | | | | |
| Solenoid Drain Valve - Normally Closed | | | | | | | | | | |
| 1/4" | 1/16" | 0.11 | 5 | 0 | 435 | 435 | 195 | SC8261S405 | 9.2 | 9.2 |
| 1/4" | 3/32" | 0.18 | 7 | 0 | 290 | 230 | 195 | SC8261S406 | 9.2 | 9.2 |
| 1/4" | 1/8" | 0.35 | 10 | 0 | 175 | 60 | 195 | SC8261S408 | 9.2 | 9.2 |
| 1/4" | 5/16" | 0.93 | 24 | 0 | 145 | 145 | 195 | SC8261S413 | 9.2 | 9.2 |
| 3/8" | 25/64" | 1.75 | 45 | 0 | 145 | 44 | 195 | SC8238S401 | 9.2 | 9.2 |
| 3/8" | 7/16" | 2.89 | 56 | 5 | 175 | 175 | 195 | SC8238T402 | 6 | 6 |
| 1/2" | 1/2" | 2.46 | 63 | 0 | 145 | 43 | 195 | SC8238S404 | 13 | 13 |
| 1/2" | 9/16" | 4.45 | 144 | 5 | 230 | 230 | 195 | SC8238T405 | 6 | 6 |

① Volume of condensate drained per second at max operating pressure (AC).

Specifications (Solenoid Valve) (Metric units)

| Pipe Size (ins.) | Orifice Dia. (mm) | Kv Flow Factor (m3/h) | Volume Drained per Second (oz/sec.) ① | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | Brass | Wattage | |
|---|-------------------|-----------------------|---------------------------------------|---------------------------------------|---------|---------|---------------------|------------|---------|-----|
| | | | | Min. | Max. AC | Max. DC | | | AC | DC |
| | | | | | Water | Water | | | | |
| Solenoid Drain Valve - Normally Closed | | | | | | | | | | |
| 1/4" | 1.6 | 0.09 | 5 | 0 | 30 | 30 | 91 | SC8261S405 | 9.2 | 9.2 |
| 1/4" | 2.4 | 0.15 | 7 | 0 | 20 | 15.8 | 91 | SC8261S406 | 9.2 | 9.2 |
| 1/4" | 3.2 | 0.3 | 10 | 0 | 12 | 4.1 | 91 | SC8261S408 | 9.2 | 9.2 |
| 1/4" | 7.9 | 0.8 | 24 | 0 | 10 | 10 | 91 | SC8261S413 | 9.2 | 9.2 |
| 3/8" | 9.5 | 1.5 | 45 | 0 | 10 | 3.1 | 91 | SC8238S401 | 9.2 | 9.2 |
| 3/8" | 12 | 2.5 | 56 | 0.34 | 12 | 12 | 91 | SC8238T402 | 6 | 6 |
| 1/2" | 12.7 | 2.1 | 63 | 0 | 10 | 3.1 | 91 | SC8238S404 | 13 | 13 |
| 1/2" | 14.3 | 3.8 | 144 | 0.34 | 15.8 | 15.8 | 91 | SC8238T405 | 6 | 6 |

① Volume of condensate drained per second at max operating pressure (AC).

Specifications (Piston Valve) (English units)

| Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow Factor | Volume Drained per Second (oz/sec.) ① | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | 316 Stainless Steel | Air or Water Pilot Pressure (psi) | |
|--|---------------------|----------------|---------------------------------------|---------------------------------------|-------|---------------------|---------------------|-----------------------------------|------|
| | | | | Min. | Max. | | | Min. | Max. |
| | | | | | Water | | | | |
| Pilot Operated Piston Valve - Normally Closed | | | | | | | | | |
| 3/8" | 3/8" | 2.3 | 76 | 0 | 240 | 366 | 8290A791 | 60 | 150 |
| 1/2" | 1/2" | 4.1 | 117 | 0 | 180 | 366 | 8290A792 | 60 | 150 |
| 3/4" | 3/4" | 7.6 | 154 | 0 | 90 | 366 | 8290A793 | 60 | 150 |
| 1" | 1" | 15 | 304 | 0 | 90 | 366 | 8290A395 | 60 | 150 |
| 1" | 1" | 15 | 304 | 0 | 90 | 366 | 8290A386* | 60 | 150 |

① Volume of condensate drained per second at max operating pressure. * Bronze Body.

Specifications (Piston Valve) (Metric units)

| Pipe Size (ins.) | Orifice Dia. (mm) | Kv Flow Factor (m3/h) | Volume Drained per Second (oz/sec.) ① | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | 316 Stainless Steel | Air or Water Pilot Pressure (bar) | |
|--|-------------------|-----------------------|---------------------------------------|---------------------------------------|-------|---------------------|---------------------|-----------------------------------|------|
| | | | | Min. | Max. | | | Min. | Max. |
| | | | | | Water | | | | |
| Pilot Operated Piston Valve - Normally Closed | | | | | | | | | |
| 3/8" | 9.5 | 1.4 | 76 | 0 | 16.5 | 185 | 8290A791 | 4.1 | 10.3 |
| 1/2" | 12.7 | 3.5 | 117 | 0 | 12.4 | 185 | 8290A792 | 4.1 | 10.3 |
| 3/4" | 19 | 6.5 | 154 | 0 | 6.2 | 185 | 8290A793 | 4.1 | 10.3 |
| 1" | 25 | 13 | 304 | 0 | 6.2 | 185 | 8290A395 | 4.1 | 10.3 |
| 1" | 25 | 13 | 304 | 0 | 6.2 | 185 | 8290A386* | 4.1 | 10.3 |

① Volume of condensate drained per second at max operating pressure. * Bronze Body.

CDVR1

Specifications (Pilot Valve) (English units)

| Pipe Size (ins.) | Orifice Dia. (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Brass | Wattage | |
|--|---------------------|----------------|---------------------------------------|--------------|--------------|---------------------|-------------|---------|-----|
| | | | Min. | Max. AC | Max. DC | | | AC | DC |
| | | | | Air or Water | Air or Water | | | | |
| 3-Way Solenoid Pilot Valves - Normally Closed | | | | | | | | | |
| 1/8" | 1/16" | 0.09 | 0 | 140 | 140 | 180 | SC8356A002V | 6.3 | 6.9 |

Specifications (Pilot Valve) (Metric units)

| Pipe Size (ins.) | Orifice Dia. (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | Brass | Wattage | |
|--|-------------------|-----------------------|---------------------------------------|--------------|--------------|---------------------|-------------|---------|-----|
| | | | Min. | Max. AC | Max. DC | | | AC | DC |
| | | | | Air or Water | Air or Water | | | | |
| 3-Way Solenoid Pilot Valves - Normally Closed | | | | | | | | | |
| 1/8" | 1.6 | 0.07 | 0 | 11.3 | 11.3 | 82 | SC8356A002V | 6.3 | 6.9 |

Assembly Components

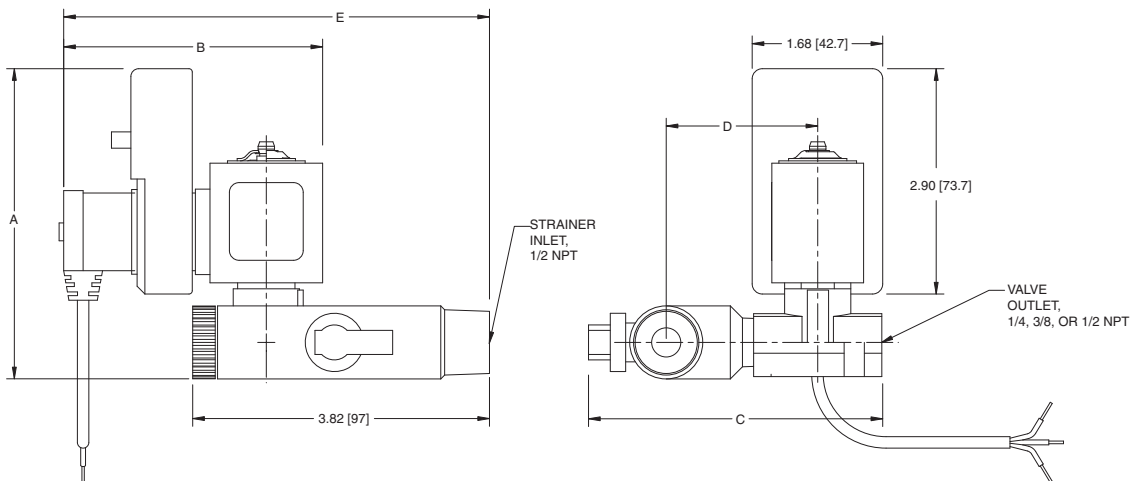
| Assembly Part Numbers | Size | Drain Valve | Pilot Valve | Timer | Power Cord | Ball/Strainer |
|-----------------------|------|-------------------|--------------------|------------|------------|---------------|
| CDVA0JPJW5XCMLL | 1/4" | SC8261S408 120/60 | - | 272839-001 | - | - |
| CDVA0JPK1QZBSVN | 1/4" | SC8261S408 120/60 | - | 272839-001 | 272852 | - |
| CDVA0JPL6ND5VR2 | 1/4" | SC8261S408 120/60 | - | 272839-001 | - | 272851 |
| CDVA0JPLC7F5104 | 1/4" | SC8261S408 120/60 | - | 272839-001 | 272852 | 272851 |
| CDVA138122AKBA8 | 3/8" | SC8238S402 120/60 | - | 272839-009 | - | - |
| CDVA13817MCJGKA | 3/8" | SC8238S402 120/60 | - | 272839-009 | 272852 | - |
| CDVA1382CJSCKEQ | 3/8" | SC8238S402 120/60 | - | 272839-009 | - | 272851-002 |
| CDVA1382J3UBQPS | 3/8" | SC8238S402 120/60 | - | 272839-009 | 272852 | 272851-002 |
| CDVA1MSH84LMV4U | 1/2" | SC8238S405 120/60 | - | 272839-009 | - | - |
| CDVA1MSHDPNM0DW | 1/2" | SC8238S405 120/60 | - | 272839-009 | 272852 | - |
| CDVA1MSJMJM2F39A | 1/2" | SC8238S405 120/60 | - | 272839-009 | - | 272851-003 |
| CDVA1MSJQ64E8JC | 1/2" | SC8238S405 120/60 | - | 272839-009 | 272852 | 272851-003 |
| CDVA5G5JJP39FN | 3/8" | 8290A791 | SC8356A002V 120/60 | 272839-009 | - | N/R |
| CDVA5G5JJ3R2EQQ | 3/8" | 8290A791 | SC8356A002V 120/60 | 272839-009 | 272852 | N/R |
| CDVA60Q0JLZ5L7A | 1/2" | 8290A792 | SC8356A002V 120/60 | 272839-009 | - | N/R |
| CDVA60Q0Q614RGC | 1/2" | 8290A792 | SC8356A002V 120/60 | 272839-009 | 272852 | N/R |
| CDVA6K8GQP97PW0 | 3/4" | 8290A793 | SC8356A002V 120/60 | 272839-009 | - | N/R |
| CDVA6K8GW8B6V52 | 3/4" | 8290A793 | SC8356A002V 120/60 | 272839-009 | 272852 | N/R |
| CDVA73790TM3NV6 | 1" | 8290A386 | SC8356A002V 120/60 | 272839-009 | - | N/R |
| CDVA73796CP2U48 | 1" | 8290A386 | SC8356A002V 120/60 | 272839-009 | 272852 | N/R |

SPECIAL SERVICE VALVES

Dimensions: inches (mm)

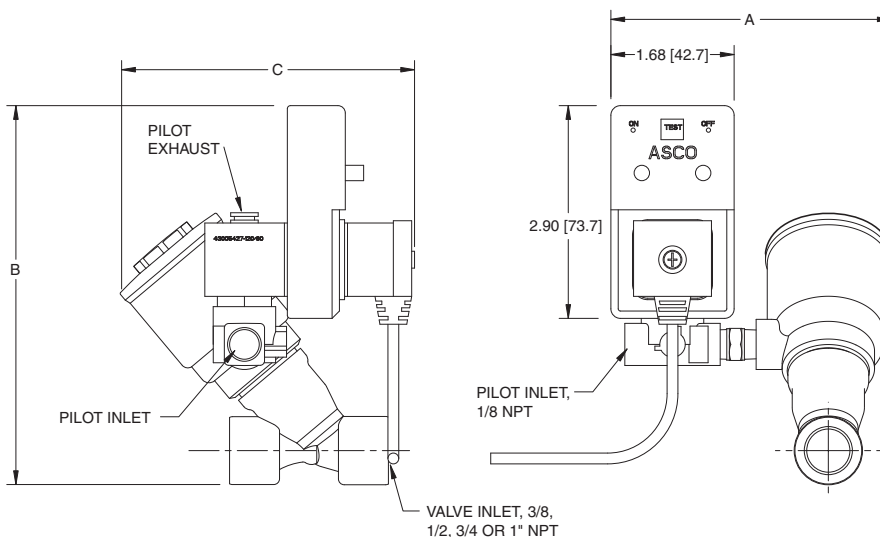
Solenoid Series

| Assembly Number | A | B | C | D | E |
|-----------------|------------|-----------|------------|-----------|------------|
| CDVA0JPLC7F5104 | 3.99 (101) | 3.33 (85) | 3.79 (96) | 1.95 (50) | 5.48 (139) |
| CDVA1382J3UBQPS | 4.93 (125) | 3.29 (84) | 5.39 (137) | 3.35 (85) | 5.40 (137) |
| CDVA1MSJQ64E8JC | 4.93 (125) | 3.29 (84) | 5.39 (137) | 3.35 (85) | 5.40 (137) |



Piloted Piston Series

| Assembly Number | A | B | C |
|-----------------|------------|------------|------------|
| CDVA5G5JJ3R2EQQ | 3.82 (97) | 5.16 (131) | 3.99 (101) |
| CDVA60Q0Q614RGC | 3.82 (97) | 5.16 (131) | 3.99 (101) |
| CDVA6K8GW8B6V52 | 3.82 (97) | 5.16 (131) | 3.99 (101) |
| CDVA73796CP2U48 | 4.70 (119) | 6.56 (167) | 5.43 (138) |



CDVR1

SPECIAL SERVICE VALVES

Features

- "LT" suffix valves are built to control cryogenic fluids, including liquid oxygen (-297°F/-181°C), liquid argon (-303°F/-184°C), and liquid nitrogen (-320°F/-194°C)
- All suffix "LT" valves are degreased, cleaned, tested free of moisture, and black light tested for hydrocarbons
- Liquid CO₂ valves are suitable for remote mounting or for direct mounting to the refrigerated component by using four-hole bracket, provided

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------------------|
| Body: Cryogenic Valves | Brass |
| Body: LCO ₂ Valves | Nickel-Plated Brass |
| Seats | PTFE and/or Clad Copper/UR |
| Disc | PTFE/UR (8264 only) |
| Core and Plugnut | 430F Stainless Steel or 49 FM Alloy |
| Core Spring | 302 Stainless Steel |
| Shading Coil | Copper |
| Seats | Stainless Steel (8264 Series) |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 11.6 | 12.1 | 23 | 47 | 238610 | 238710 | 238614 | 238714 |
| F | 18.6 | 13.8 | 27 | 43 | 238210 | 238310 | 238214 | 238314 |
| F | - | 17.1 | 34 | 64 | 238610 | - | 238614 | - |
| H | 40.6 | 17.1 | 34 | 64 | 238810 | 238910 | 238814 | 238914 |

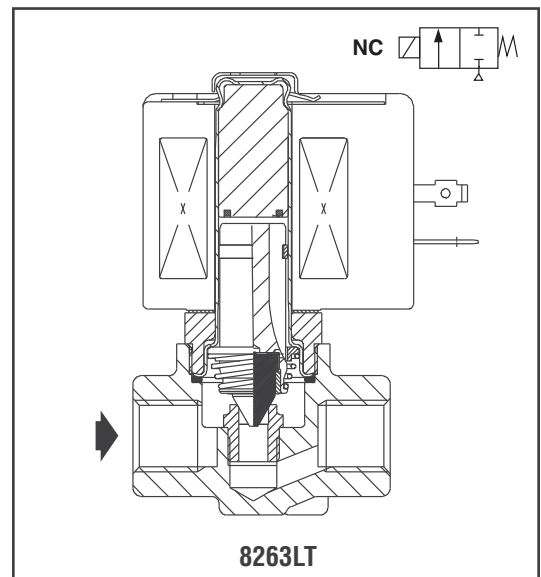
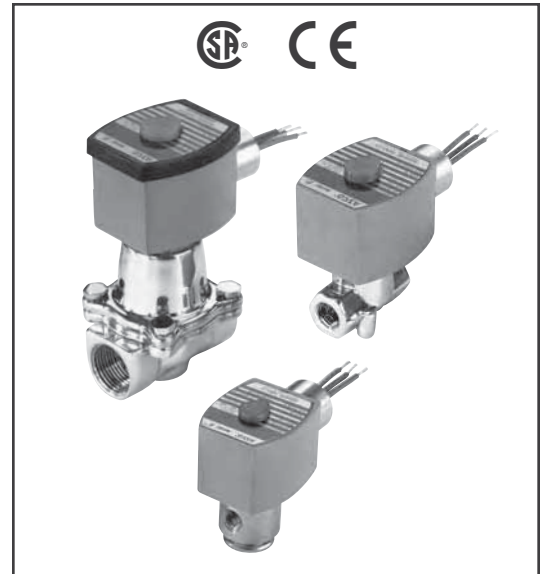
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Fluid Temp. Ranges

AC Cryogenic Valves: -320°F to 150°F (-196°C to 66°C)

DC Cryogenic Valves: -320°F to 120°F (-196°C to 49°C)

All Liquid CO₂ Valves: -75°F to 120°F (-59°C to 49°C)

Refer to *Engineering Section* for details.

Nominal Ambient Temp. Ranges

AC Construction: 32°F to 125°F (0°C to 52°C)

DC Construction: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

SPECIAL SERVICE VALVES

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|---------------------|----------------|---------------------------------------|------|------|----------------|-------------|---------------------------------------|--------|
| | | | Min. | Max. | | | | AC | DC |
| | | | | AC | DC | | | | |
| CRYOGENIC SERVICE - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | |
| 1/8 | 1/8 | .35 | 0 | 130 | 75 | 8263G240LT | 2 | 12.1/F | 11.6/F |
| 1/4 | 1/8 | .35 | 0 | 130 | - | 8262G022LT | 1 | 12.1/F | - |
| 1/4 | 7/32 | .56 | 0 | 100 | 30 | 8263G205LT | 2 | 17.1/F | 11.6/F |
| 1/4 | 9/32 | .70 | 0 | 40 | 18 | 8263G209LT | 2 | 12.1/F | 11.6/F |
| 3/8 | 1/8 | .35 | 0 | 130 | 75 | 8263G232LT | 2 | 12.1/F | 11.6/F |
| 3/8 | 7/32 | .56 | 0 | 100 | 30 | 8263G206LT | 3 | 17.1/F | 11.6/F |
| 3/8 | 9/32 | .70 | 0 | 40 | 18 | 8263G210LT | 3 | 12.1/F | 11.6/F |
| 1/2 | 5/8 | 3.8 | 0 | 90 | 50 | 8222G002LT | 4 | 17.1/H | 40.6/H |
| 3/4 | 3/4 | 5.8 | 0 | 90 | 50 | 8222G003LT | 4 | 17.1/H | 40.6/H |
| 1 | 1 | 13.5 | 5 | 200 | 100 | 8210G078LT | 5 | 17.1/F | 40.6/H |
| 1 1/4 | 1 1/8 | 15 | 5 | 200 | 100 | 8210G080LT | 6 | 17.1/F | 40.6/H |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 200 | 100 | 8210G082LT | 7 | 17.1/F | 40.6/H |
| LIQUID CO₂ SERVICE - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | |
| 1/8 | 3/64 | .06 | 0 | 1000 | 1000 | 8264G009 ① | 8 | 13.8/F | 18.6/F |
| 1/8 | 3/32 | .20 | 0 | 300 | 300 | 8264G010 ① | 8 | 13.8/F | 18.6/F |

① Must use tubing with an I.D. no larger than the outlet port orifice to locate the refrigeration point downstream and to prevent freezing of the CO₂ inside the valve.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|---|-------------------|-----------------------|---------------------------------------|------|----|----------------|-------------|---------------------------------------|--------|
| | | | Min. | Max. | | | | AC | DC |
| | | | | AC | DC | | | | |
| CRYOGENIC SERVICE - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | |
| 1/8 | 3 | .3 | 0 | 9 | 5 | 8263G240LT | 2 | 12.1/F | 11.6/F |
| 1/4 | 3 | .3 | 0 | 9 | - | 8262G022LT | 1 | 12.1/F | - |
| 1/4 | 6 | .5 | 0 | 7 | 2 | 8263G205LT | 2 | 17.1/F | 11.6/F |
| 1/4 | 7 | .6 | 0 | 3 | 1 | 8263G209LT | 2 | 12.1/F | 11.6/F |
| 3/8 | 3 | .3 | 0 | 9 | 5 | 8263G232LT | 2 | 12.1/F | 11.6/F |
| 3/8 | 6 | .5 | 0 | 7 | 2 | 8263G206LT | 3 | 17.1/F | 11.6/F |
| 3/8 | 7 | .6 | 0 | 3 | 1 | 8263G210LT | 3 | 12.1/F | 11.6/F |
| 1/2 | 16 | 3.2 | 0 | 6 | 3 | 8222G002LT | 4 | 17.1/H | 40.6/H |
| 3/4 | 19 | 5 | 0 | 6 | 3 | 8222G003LT | 4 | 17.1/H | 40.6/H |
| 1 | 25 | 11.6 | 5 | 14 | 7 | 8210G078LT | 5 | 17.1/F | 40.6/H |
| 1 1/4 | 29 | 13 | 5 | 14 | 7 | 8210G080LT | 6 | 17.1/F | 40.6/H |
| 1 1/2 | 32 | 19 | 5 | 14 | 7 | 8210G082LT | 7 | 17.1/F | 40.6/H |
| LIQUID CO₂ SERVICE - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | |
| 1/8 | 1 | .05 | 0 | 69 | 69 | 8264G009 ① | 8 | 13.8/F | 18.6/F |
| 1/8 | 2 | .17 | 0 | 21 | 21 | 8264G010 ① | 8 | 13.8/F | 18.6/F |

① Must use tubing with an I.D. no larger than the outlet port orifice to locate the refrigeration point downstream and to prevent freezing of the CO₂ inside the valve.

SPECIAL SERVICE VALVES

Dimensions inches (mm)

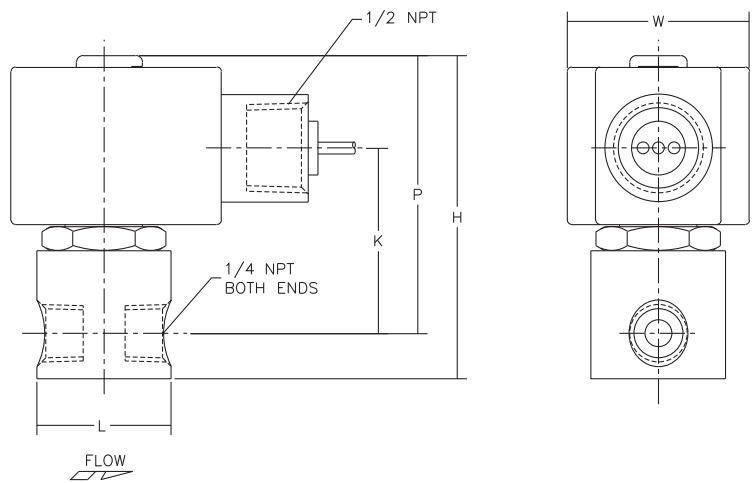
| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|-------|------|------|
| 1 | ins. | 3.19 | 1.80 | Ø1.25 | 2.77 | 1.95 |
| | mm | 81 | 46 | Ø32 | 70 | 50 |
| 2 | ins. | 3.25 | 1.70 | 1.88 | 2.67 | 1.95 |
| | mm | 83 | 43 | 48 | 68 | 50 |
| 3 | ins. | 3.25 | 1.70 | 2.00 | 2.67 | 1.95 |
| | mm | 83 | 43 | 51 | 68 | 50 |
| 4 | ins. | 4.67 | 3.15 | 2.75 | 4.11 | 1.95 |
| | mm | 119 | 80 | 70 | 104 | 50 |
| 5 | ins. | 5.82 | 3.22 | 3.75 | 4.19 | 4.44 |
| | mm | 148 | 82 | 95 | 106 | 113 |
| 6 | ins. | 5.82 | 3.22 | 3.66 | 4.19 | 4.86 |
| | mm | 148 | 82 | 93 | 106 | 123 |
| 7 | ins. | 6.29 | 3.37 | 4.38 | 4.34 | 5.81 |
| | mm | 160 | 86 | 111 | 110 | 148 |
| 8 | ins. | 2.82 | 1.27 | Ø1.12 | 2.13 | 1.69 |
| | mm | 72 | 32 | Ø28 | 54 | 43 |

IMPORTANT: Valves may be mounted in any position.

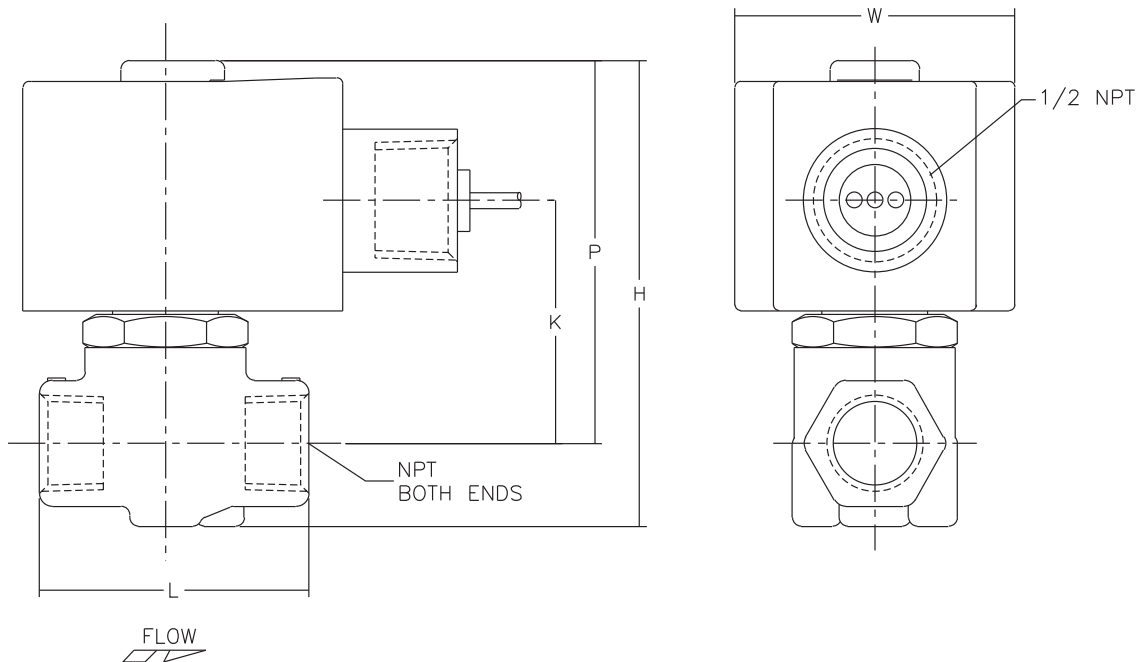
8222G002LT
8222G003LT

Mount vertical and upright.

Const. Ref. 1



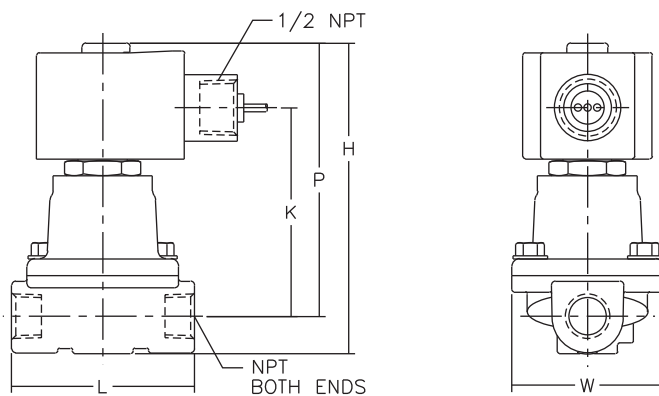
Const. Ref. 2, 3



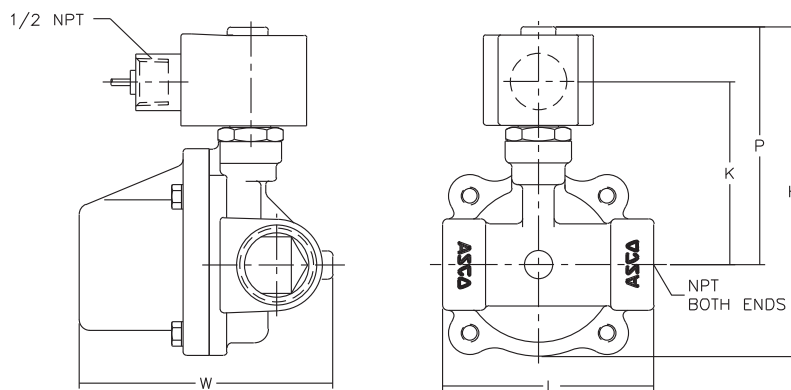
SPECIAL
SERVICE VALVES

Dimensions inches (mm)

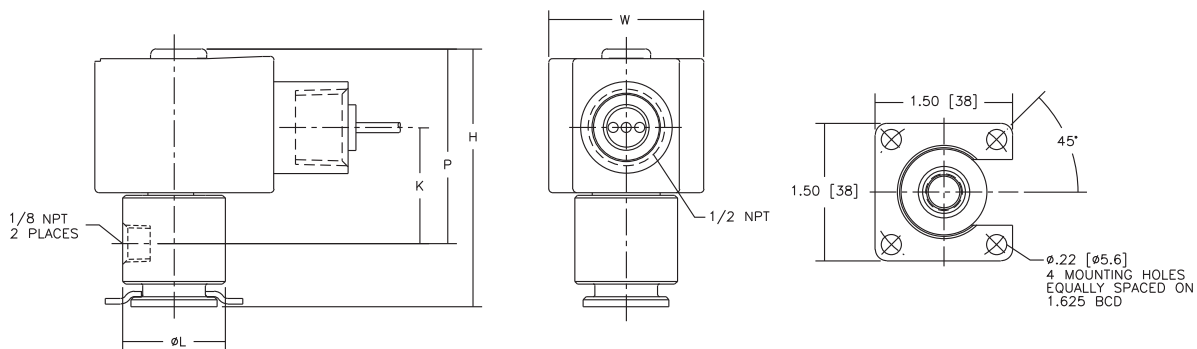
Const. Ref. 4



Const. Ref. 5, 6, 7



Const. Ref. 8



SPECIAL
SERVICE VALVES

Features

- Specially designed for reverse jet-type dust collector systems
- High flow Cv(s) to 140 for effective bag cleaning
- High cycle life
- Fast opening/closing

Construction

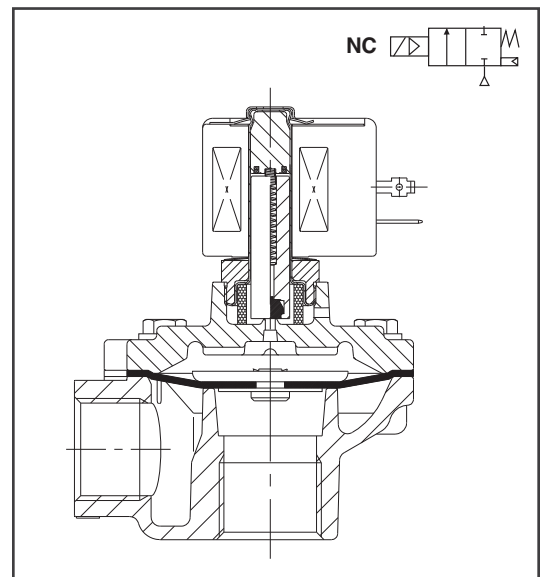
| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------|
| Body | Aluminum |
| Seals | NBR |
| Diaphragm | NBR, HYT or CR as noted |
| Discs | NBR or PA, as noted |



Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------------|----------------|
| | AC | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | AC | AC |
| F | 6.1 | 16 | 30 | 238210 | 238214 |
| F | 10.1 | 25 | 50 | 238610 | 238614 |
| F | 17.1 | 40 | 70 | 238610 | 238614 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz), Consult factory for DC voltage. Other voltages available when required.



Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options. Consult your local ASCO office for details on accessories.

Nominal Temp. Ranges

Ambient: AC constructions: 0°F to 185°F (-18°C to 85°C); 150°F (66°C) for valves with HYT diaphragms. Consult local sales office for DC constructions.

Fluids: 0°F to 185°F (-18°C to 85°C), except as noted. For temperatures to 300°F (149°C), specify FPM, suffix "V" (except where noted).

Refer to *Engineering Section* for details.

SPECIAL SERVICE VALVES

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Min. Operating Pressure Differential (psi) ① | Max. Operating Pressure Differential (psi) ① | Remote Pilot Construction (Minimum Pilot Valve Orifice Size = 1/8") | | Const. Ref. | Watt Rating/ Class of Coil Insulation | Rebuild Kit AC Valves | Diaphragm Only 10 Pack "Zip" Kit |
|------------------|---------------------|----------------|--|--|---|----------------|-------------|---------------------------------------|-----------------------|----------------------------------|
| | | | | | Integral Pilot Catalog Number | Catalog Number | | | | |
| 3/4 | 3/4 | 10.5 | 5 | 125 | - | 8353C033 ③ | 1 | - | 96875 | 238864 |
| 3/4 ① | 3/4 | 10.5 | 5 | 125 | - | 8353C030 ③ | 1 | - | 96875 | 238864 |
| 3/4 ② | 3/4 | 10.5 | 5 | 125 | - | 8353C004 ③ | 1 | - | 96875 | 238864 |
| 1 | 1 1/8 | 20 | 5 | 125 | - | 8353C035 ④ | 1 | - | 200262 | 238866 |
| 1 | 1 1/8 | 20 | 5 | 125 | 8353G041 ④ | - | 4 | 6.1/F | 316563 | 238866 |
| 1 | 1 5/8 | 18 | 15 | 125 | 8353G006 ⑤⑥ | - | 3 | 17.1/F | 300144 | - |
| 1 1/4 | 1 5/8 | 20 | 15 | 125 | 8353G005 ⑤⑥ | - | 3 | 17.1/F | 300144 | - |
| 1 1/2 | 1 1/2 | 35 | 15 | 125 | 8353G001 ⑤⑥ | - | 3 | 17.1/F | 300144 | - |
| 1 1/2 | 2 | 53 | 10 | 125 | - | 8353H038 ④ | 2 | - | 276886 | 238870 |
| 1 1/2 | 2 | 53 | 5 | 125 | 8353J039 ④ | - | 5 | 10.1/F | 322108 | 238870 |
| 1 1/2 | 2 | 48 | 5 | 125 | 8353G061 ⑨ | - | 5 | 10.1/F | 316297 | - |
| 1 1/2 | 2 | 48 | 10 | 125 | - | 8353A062 ⑨ | 2 | - | 276884 | - |
| 2 | 2 | 60 | 15 | 125 | 8353G002 ⑤⑥ | - | 3 | 17.1/F | 300145 | - |
| 2 | 2 | 76 | 5 | 125 | - | 8353 048 ⑥⑦ | 2 | - | 256802 | 256797 |
| 2 | 2 | 76 | 5 | 125 | 8353G050 ⑥ | - | 5 | 10.1/F | 316029 | 256797 |
| 2 1/2 | 2 1/2 | 82 | 5 | 125 | - | 8353 049 ⑥⑦ | 2 | - | 256802 | 256797 |
| 2 1/2 | 2 1/2 | 82 | 5 | 125 | 8353G051 ⑥ | - | 5 | 10.1/F | 316029 | 256797 |
| 2 1/2 | 3 | 82 | 15 | 125 | 8353G007 ⑤ | - | 6 | 10.1/F | 176878 | - |
| 3 | 3 | 140 | 15 | 125 | 8353G008 ⑤ | - | 6 | 10.1/F | 176878 | - |

① Supplied with internal slip fit connection on outlet.
 ② Extended ends for Dresser connections.
 ③ NBR diaphragm.
 ④ HYT diaphragm max. fluid temp. 150°F.
 For higher temperature, consult factory.
 ⑤ CR diaphragm/PA disc.
 ⑥ CR diaphragm.
 ⑦ Minimum pilot orifice size 7/32".
 ⑧ Consult factory for remote piloted construction.
 ⑨ NBR diaphragm, PA disc, long-life construction. Maximum fluid temp. 185°F.
 ⑩ Contact local sales office for DC pressure requirements.

Specifications (Metric units)

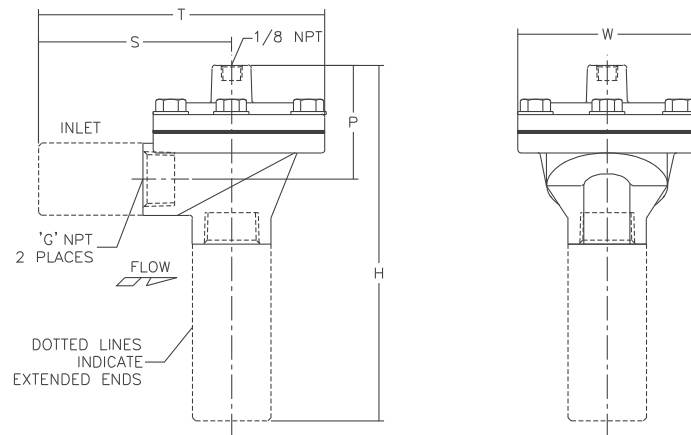
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Min. Operating Pressure Differential (bar) ① | Max. Operating Pressure Differential (bar) ① | Remote Pilot Construction (Minimum Pilot Valve Orifice Size = 1/8") | | Const. Ref. | Watt Rating/ Class of Coil Insulation | Rebuild Kit AC Valves | Diaphragm Only 10 Pack "Zip" Kit |
|------------------|-------------------|-----------------------|--|--|---|----------------|-------------|---------------------------------------|-----------------------|----------------------------------|
| | | | | | Integral Pilot Catalog Number | Catalog Number | | | | |
| 3/4 | 19 | 9.0 | 0.3 | 8.6 | - | 8353C033 ③ | 1 | - | 96875 | 238864 |
| 3/4 ① | 19 | 9.0 | 0.3 | 8.6 | - | 8353C030 ③ | 1 | - | 96875 | 238864 |
| 3/4 ② | 19 | 9.0 | 0.3 | 8.6 | - | 8353C004 ③ | 1 | - | 96875 | 238864 |
| 1 | 29 | 17.1 | 0.3 | 8.6 | - | 8353C035 ④ | 1 | - | 200262 | 238866 |
| 1 | 29 | 17.1 | 0.3 | 8.6 | 8353G041 ④ | - | 4 | 6.1/F | 316563 | 238866 |
| 1 | 41 | 15.4 | 1.0 | 8.6 | 8353G006 ⑤⑥ | - | 3 | 17.1/F | 300144 | - |
| 1 1/4 | 41 | 17.1 | 1.0 | 8.6 | 8353G005 ⑤⑥ | - | 3 | 17.1/F | 300144 | - |
| 1 1/2 | 38 | 30.0 | 1.0 | 8.6 | 8353G001 ⑤⑥ | - | 3 | 17.1/F | 300144 | - |
| 1 1/2 | 51 | 45.4 | 0.7 | 8.6 | - | 8353H038 ④ | 2 | - | 276886 | 238870 |
| 1 1/2 | 51 | 45.4 | 0.3 | 8.6 | 8353J039 ④ | - | 5 | 10.1/F | 322108 | 238870 |
| 1 1/2 | 51 | 41.1 | 0.3 | 8.6 | 8353G061 ⑨ | - | 5 | 10.1/F | 316297 | - |
| 1 1/2 | 51 | 41.1 | 0.7 | 8.6 | - | 8353A062 ⑨ | 2 | - | 276884 | - |
| 2 | 51 | 51.4 | 1.0 | 8.6 | 8353G002 ⑤⑥ | - | 3 | 17.1/F | 300145 | - |
| 2 | 51 | 65.1 | 0.3 | 8.6 | - | 8353 048 ⑥⑦ | 2 | - | 256802 | 256797 |
| 2 | 51 | 65.1 | 0.3 | 8.6 | 8353G050 ⑥ | - | 5 | 10.1/F | 316029 | 256797 |
| 2 1/2 | 64 | 70.3 | 0.3 | 8.6 | - | 8353 049 ⑥⑦ | 2 | - | 256802 | 256797 |
| 2 1/2 | 64 | 70.3 | 0.3 | 8.6 | 8353G051 ⑥ | - | 5 | 10.1/F | 316029 | 256797 |
| 2 1/2 | 76 | 70.3 | 1.0 | 8.6 | 8353G007 ⑤ | - | 6 | 10.1/F | 176878 | - |
| 3 | 76 | 120.0 | 1.0 | 8.6 | 8353G008 ⑤ | - | 6 | 10.1/F | 176878 | - |

SPECIAL SERVICE VALVES

Dimensions inches (mm)

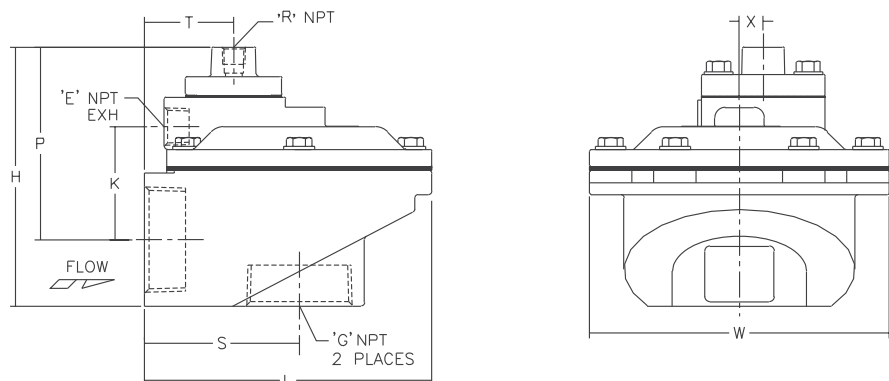
| Cat. No. | "G" | | H | L | P | Bonnet Bolts | T | W |
|----------|---------------------|------|-------|------|------|--------------|-------|------|
| 8353C004 | Extended End | ins. | 7.94 | 3.69 | 2.16 | 5.00 | 5.16 | 3.44 |
| | | mm | 201.6 | 93.7 | 54.8 | 127.0 | 131.0 | 87.3 |
| 8353C030 | 3/4 NPT (Inlet) | ins. | 3.44 | 1.69 | 2.19 | 5.00 | 3.47 | 3.44 |
| | | mm | 87.3 | 42.9 | 55.6 | 127.0 | 88.1 | 87.3 |
| | 3/4 Socket (Outlet) | ins. | 3.44 | 1.69 | 2.19 | 5.00 | 3.47 | 3.44 |
| | | mm | 87.3 | 42.9 | 55.6 | 127.0 | 88.1 | 87.3 |
| 8353C033 | 3/4 NPT | ins. | 3.44 | 1.69 | 2.19 | 5.00 | 3.47 | 3.44 |
| | | mm | 87.3 | 42.9 | 55.6 | 127.0 | 88.1 | 87.3 |
| 8353C035 | 1 NPT | ins. | 2.53 | 2.03 | 1.69 | 4.00 | 3.50 | 2.94 |
| | | mm | 64.3 | 51.6 | 42.9 | 101.6 | 88.9 | 74.6 |

Const. Ref. 1



| Cat. No. | "E" NPT | "G" NPT | | H | L | P | "R" NPT | S | T | W | X |
|----------|---------|---------|------|-------|-------|-------|---------|------|------|-------|------|
| 8353H038 | 3/8 | 1 1/2 | ins. | 4.63 | 5.16 | 3.44 | 1/8 | 2.78 | 1.61 | 5.38 | 0.44 |
| | | | mm | 117.5 | 131.0 | 87.3 | | 70.6 | 40.9 | 136.5 | 11.1 |
| 8353A062 | 3/8 | 1 1/2 | ins. | 5.16 | 5.16 | 3.44 | 1/8 | 2.78 | 1.61 | 5.38 | 0.44 |
| | | | mm | 131.0 | 131.0 | 87.3 | | 70.6 | 40.9 | 136.5 | 11.1 |
| 8353 048 | 3/4 | 2 | ins. | 6.47 | 6.63 | 4.69 | 1/4 | 3.75 | 2.56 | 6.50 | - |
| | | | mm | 164.3 | 168.3 | 119.1 | | 95.3 | 65.1 | 165.1 | - |
| 8353 049 | 3/4 | 2 1/2 | ins. | 6.47 | 6.63 | 4.69 | 1/4 | 3.75 | 2.56 | 6.50 | - |
| | | | mm | 164.3 | 168.3 | 119.1 | | 95.3 | 65.1 | 165.1 | - |

Const. Ref. 2

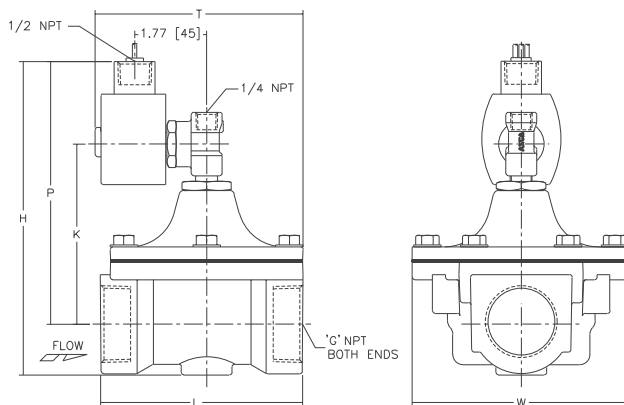


SPECIAL
SERVICE VALVES

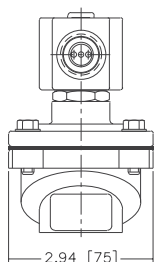
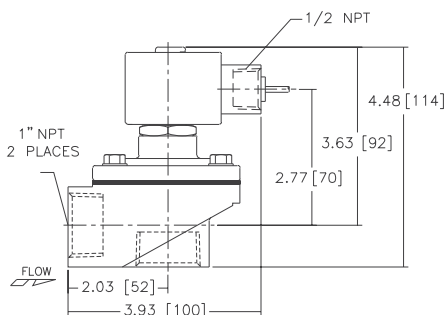
Dimensions inches (mm)

Const. Ref. 3

| Cat. No. | "G" NPT | | H | L | P | S | T | W |
|----------|---------|------|-------|-------|-------|------|-------|-------|
| 8353G001 | 1 1/2 | ins. | 7.72 | 5.00 | 6.47 | 1.78 | 5.13 | 5.38 |
| | | mm | 196.1 | 127.0 | 164.3 | 45.2 | 130.2 | 136.5 |
| 8353G002 | 2 | ins. | 8.34 | 6.09 | 6.84 | 1.78 | 5.56 | 6.34 |
| | | mm | 211.9 | 154.8 | 173.8 | 45.2 | 141.3 | 161.1 |
| 8353G005 | 1 1/4 | ins. | 7.72 | 5.00 | 6.47 | 1.78 | 5.13 | 5.38 |
| | | mm | 196.1 | 127.0 | 164.3 | 45.2 | 130.2 | 136.5 |
| 8353G006 | 1 | ins. | 7.72 | 5.00 | 6.41 | 1.78 | 5.13 | 5.38 |
| | | mm | 196.1 | 127.0 | 162.7 | 45.2 | 130.2 | 136.5 |

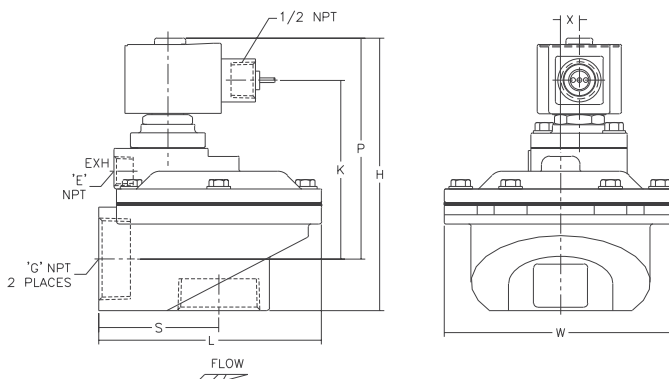


Const. Ref. 4

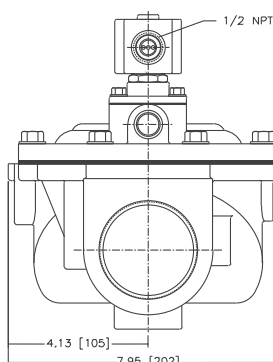
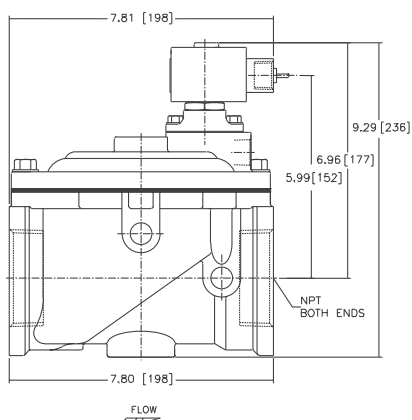


Const. Ref. 5

| Cat. No. | "E" NPT | "G" NPT | | H | L | P | S | T | W | X |
|----------|---------|---------|------|-------|-------|-------|------|------|-------|------|
| 8353J039 | 3/8 | 1 1/2 | ins. | 6.28 | 5.16 | 5.08 | 2.78 | 1.61 | 5.38 | 0.44 |
| | | | mm | 159.5 | 131.0 | 129.0 | 70.6 | 40.9 | 136.5 | 11.1 |
| 8353G061 | 3/8 | 1 1/2 | ins. | 6.28 | 5.16 | 5.08 | 2.78 | 1.61 | 5.38 | 0.44 |
| | | | mm | 159.5 | 131.0 | 129.0 | 70.6 | 40.9 | 136.5 | 11.1 |
| 8353G050 | 3/4 | 2 | ins. | 8.25 | 6.63 | 6.47 | 3.75 | 2.56 | 6.50 | - |
| | | | mm | 209.6 | 168.3 | 164.3 | 95.3 | 65.1 | 165.1 | - |
| 8353G051 | 3/4 | 2 1/2 | ins. | 8.25 | 6.63 | 6.47 | 3.75 | 2.56 | 6.50 | - |
| | | | mm | 209.6 | 168.3 | 164.3 | 95.3 | 65.1 | 165.1 | - |



Const. Ref. 6



SPECIAL SERVICE VALVES

Features

- Die-cast aluminum bodies and diaphragm operation
- Integral compression fittings for fast, easy, secure installation

Construction

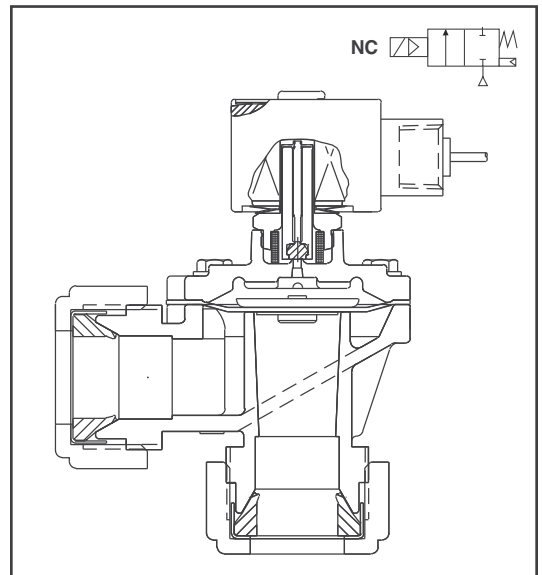
| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals & Gasket | NBR |
| Diaphragms | NBR or HYT, as noted |
| Discs | PA |
| Retainer | Carbon Steel |



Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------------|----------------|
| | AC | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | AC | AC |
| F | 6.1 | 16 | 30 | 238210 | 238214 |
| F | 10.1 | 25 | 50 | 238610 | 238614 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). Consult factory for DC voltage. Other voltages are available when required.



Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

Also available Open Frame Solenoids, Junction Box, DIN connections.

See *Optional Features Section* for other available options.

Nominal Temp. Ranges

Ambient: AC constructions: 0°F to 185°F (-18°C to 85°C); 150°F (66°C) for valves with HYT diaphragms

Fluids: 0°F to 185°F (-18°C to 85°C), except as noted. For temperatures to 300°F (149°C), specify FPM, suffix "V" (except where noted).

Pressure Ranges

AC minimum 5 psi (0.3 bar).

AC maximum 125 psi (8.6 bar).

Consult ASCO for DC pressure ratings.

SPECIAL SERVICE VALVES

Specifications (English, Metric units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Kv Flow Factor (m3/h) | Min. & Max. Operating Pressure Differential (psi) | Min. & Max. Operating Pressure Differential (bar) | Integral Pilot Catalog Number | Remote Pilot Construction (Minimum Pilot Valve Orifice Size = 1/8") | Watt Rating/Class of Coil Insulation AC | Rebuild Kit AC Valves Kit No. | Diaphragm Only 10 Pack "Zip" Kit Kit No. |
|------------------|---------------------|----------------|-----------------------|---|---|-------------------------------|---|---|-------------------------------|--|
| 3/4 | 1 1/8 | 15 | 12.9 | 5 & 125 | 0.3 & 8.6 | 8353G052 ① | - | 6.1/F | K316563 | K238866 |
| 3/4 | 1 1/8 | 15 | 12.9 | 5 & 125 | 0.3 & 8.6 | - | 8353 055 ① | - | K200262 | K238866 |
| 1 | 1 1/8 | 20 | 17.1 | 5 & 125 | 0.3 & 8.6 | 8353G053 ① | - | 6.1/F | K316563 | K238866 |
| 1 | 1 1/8 | 20 | 17.1 | 5 & 125 | 0.3 & 8.6 | - | 8353 056 ① | - | K200262 | K238866 |
| 1 1/2 | 2 | 48 | 41.1 | 5 & 125 | 0.3 & 8.6 | 8353G059 ② | - | 10.1/F | K316297 | - |
| 1 1/2 | 2 | 48 | 41.1 | 10 & 125 | 0.7 & 8.6 | - | 8353A064 ② | - | K276884 | - |
| 1 1/2 | 2 | 50 | 42.9 | 5 & 125 | 0.3 & 8.6 | 8353H054 ① | - | 10.1/F | K322108 | K238870 |
| 1 1/2 | 2 | 50 | 42.9 | 10 & 125 | 0.7 & 8.6 | - | 8353A057 ① | - | K276886 | K238870 |

① HYT diaphragm. Maximum fluid temperature 150°F (66°C). For higher temperature, consult factory.

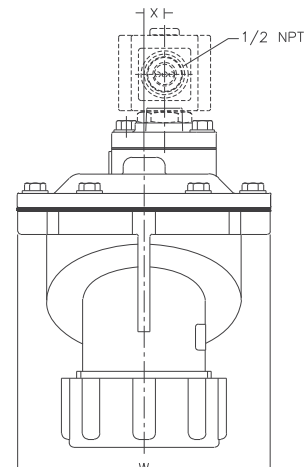
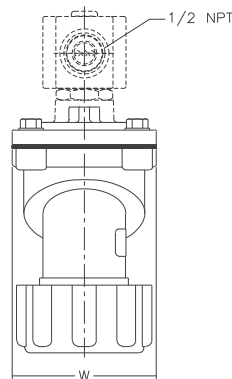
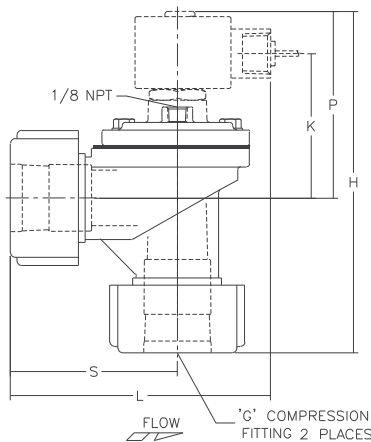
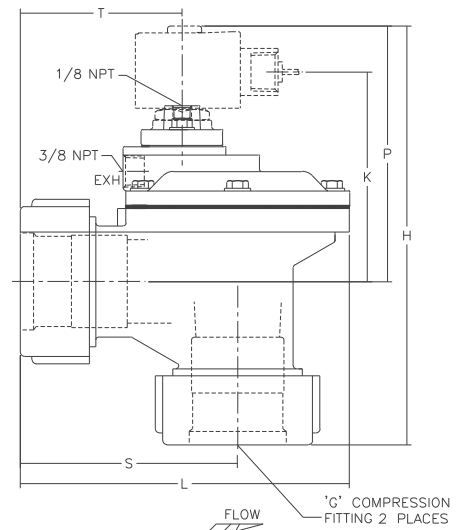
② NBR diaphragm, PA disc, Long-life construction. Maximum fluid temperature 185°F (85°C).

The rubber seal, retainer, and nut provide pressure sealing around the pipes. Inlet and blow pipes must be secured to prevent movement.

Dimensions inches (mm)

| Cat. No. | "G" Compression Fitting | | H | I | P | S | T | W | X |
|----------|-------------------------|------|--------|--------|--------|--------|-------|--------|-------|
| 8353G052 | 3/4 | ins. | 6.03 | 5.06 | 3.75 | 3.16 | - | 2.94 | - |
| | | mm | 153.19 | 128.59 | 95.25 | 80.17 | - | 74.61 | - |
| 8353 055 | 3/4 | ins. | 4.09 | 4.63 | 1.78 | 3.16 | - | 2.94 | - |
| | | mm | 103.98 | 117.48 | 45.24 | 80.17 | - | 74.61 | - |
| 8353G053 | 1 | ins. | 7.03 | 5.34 | 3.81 | 3.47 | - | 2.94 | - |
| | | mm | 178.59 | 135.73 | 96.84 | 88.11 | - | 74.61 | - |
| 8353 056 | 1 | ins. | 5.06 | 4.94 | 1.88 | 3.47 | - | 2.94 | - |
| | | mm | 128.59 | 125.41 | 47.63 | 88.11 | - | 74.61 | - |
| 8353H054 | 1 1/2 | ins. | 8.84 | 6.97 | 5.38 | 4.63 | 3.44 | 5.38 | 0.44 |
| | | mm | 224.63 | 177.01 | 136.53 | 117.48 | 87.31 | 136.53 | 11.11 |
| 8353A057 | 1 1/2 | ins. | 7.19 | 6.97 | 3.75 | 4.63 | 3.44 | 5.38 | 0.44 |
| | | mm | 182.56 | 177.01 | 95.25 | 117.48 | 87.31 | 136.53 | 11.11 |
| 8353G059 | 1 1/2 | ins. | 8.84 | 6.97 | 5.38 | 4.63 | 3.44 | 5.38 | 0.44 |
| | | mm | 224.63 | 177.01 | 136.53 | 117.48 | 87.31 | 136.53 | 11.11 |
| 8353A064 | 1 1/2 | ins. | 7.19 | 6.97 | 3.75 | 4.63 | 3.44 | 5.38 | 0.44 |
| | | mm | 182.56 | 177.01 | 95.25 | 117.48 | 87.31 | 136.53 | 11.11 |

Note: Integral Pilot shown dotted in.



1 1/2" pipe gasket kit for compression, 10 pack - K278426.

Features

- The high quality polyacetal (POM) piston cartridge provides a long operating life and a large temperature range
- Quick mount connection eliminates thread cutting and sealing
- Integral operators have molded epoxy coils, with available options
- Valves may be mounted in any position

Construction

| | |
|--------------------------------------|------------------|
| Body | Aluminum |
| Piston/Cartridge | POM (Polyacetal) |
| Clamps/Bolts | Plated Steel |
| Integral Solenoid | |
| Core Tube/Core & Plugnut/Core Spring | Stainless Steel |
| Seals and Disc | NBR |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part No. | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|---------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Solenoid Enclosures

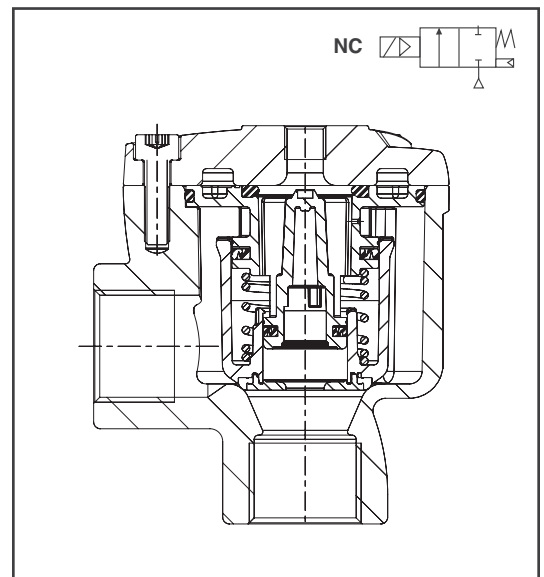
Standard: RedHat II Types 1, 2, 3, 4, and 4X combinatin. General Purpose and Watertight.

Optional: RedHat II Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. Explosionproof and Watertight. (To order, add prefix "EF" to catalog number.) Other electrical and construction options are also available.

Consult your local ASCO office for details on accessories.

Rebuild Kits

| Remote Pilot | | Integral Pilot | | |
|----------------|-------------|----------------|-------------|----------|
| Catalog Number | Rebuild Kit | Catalog Number | Rebuild Kit | |
| | | | AC | DC |
| S353A713 | C117-279 | S353G711 | C133-453 | C133-454 |
| S353A823 | C117-280 | S353G721 | C133-455 | C133-456 |
| 8353A813 | C117-271 | 8353G811 | C133-451 | C133-452 |
| 8353A823 | C117-271 | 8353G821 | C133-451 | C133-452 |



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

Remote: -4°F to 185°F (-20°C to 85°C)

Integral: AC -4°F to 125°F (-20°C to 50°C)
 DC -4°F to 104°F (-20°C to 40°C)

Refer to Engineering Section for details.

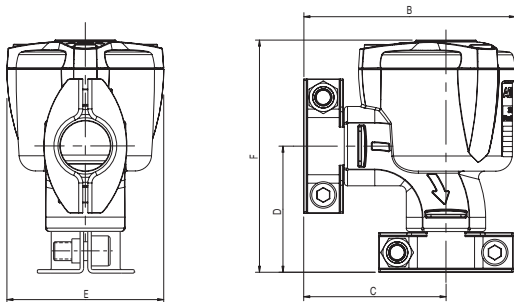
Specifications (English, Metric units)

| Pipe Size (ins.) | Orifice Size ins. (mm) | Remote Pilot Connection ins. | Cv Flow Factor | Kv Flow Factor (m3/h) | Operating Pressure Differential psi (bar) | | Quick Mount Catalog Number | Const. Ref. | NPT Connections Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation | |
|-------------------------------------|------------------------|------------------------------|----------------|-----------------------|---|-----------|----------------------------|-------------|--------------------------------|-------------|---------------------------------------|--------|
| | | | | | Air | | | | | | AC | DC |
| | | | | | Min. | Max. | | | | | | |
| REMOTE PILOT CONSTRUCTIONS | | | | | | | | | | | | |
| 3/4 | 1.1 (28) | 1/8 | 16 | 14 | 5 (0.3) | 125 (8.6) | S353A713 | 1 | 8353A813 | 2 | - | - |
| 1 | 1.1 (28) | 1/8 | 27 | 23 | 5 (0.3) | 125 (8.6) | S353A723 | 1 | 8353A823 | 2 | - | - |
| INTEGRAL PILOT CONSTRUCTIONS | | | | | | | | | | | | |
| 3/4 | 1.1 (28) | - | 16 | 14 | 5 (0.3) | 125 (8.6) | S353G711 | 3 | 8353G811 | 4 | 6.1/F | 10.6/F |
| 1 | 1.1 (28) | - | 27 | 23 | 5 (0.3) | 125 (8.6) | S353G721 | 3 | 8353G821 | 4 | 6.1/F | 10.6/F |

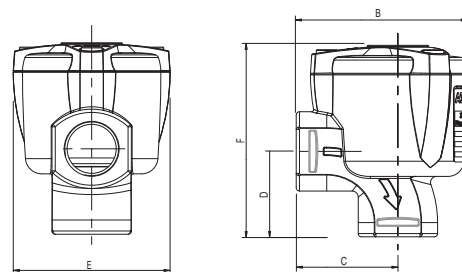
Dimensions inches (mm)

Remote Pilot Constructions

Const. Ref. 1 (Quick Mount)



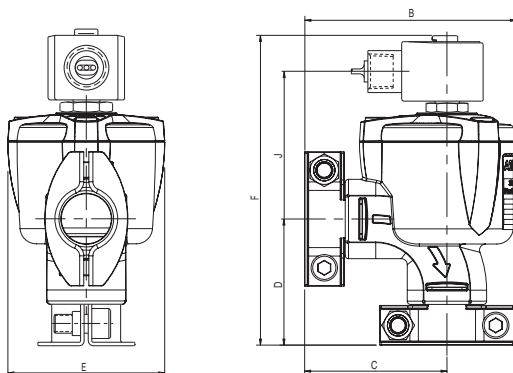
Const. Ref. 2 (NPT)



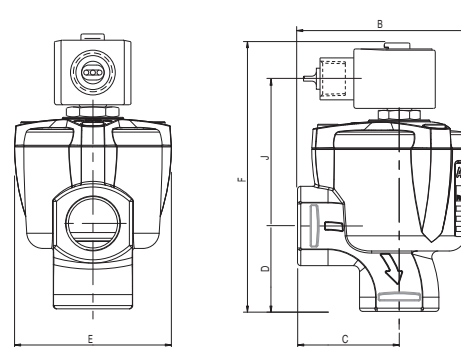
| Pipe Connections | B | C | D | E | F |
|------------------|-----------|----------|----------|----------|-----------|
| 3/4" Quick Mount | 4.1 (105) | 2.8 (71) | 2.4 (62) | 3.0 (77) | 4.5 (114) |
| 1" Quick Mount | 4.5 (117) | 3.3 (85) | 2.8 (71) | 3.0 (77) | 4.8 (121) |
| 3/4" NPT | 3.3 (85) | 2.0 (51) | 1.7 (42) | 3.0 (77) | 3.7 (94) |
| 1" NPT | 3.8 (96) | 2.4 (62) | 2.0 (51) | 3.0 (77) | 4.0 (100) |

Integral Pilot Constructions

Const. Ref. 3 (Quick Mount)



Const. Ref. 4 (NPT)



| Pipe Connections | B | C | D | E | F | J |
|------------------|-----------|----------|----------|----------|-----------|----------|
| 3/4" Quick Mount | 4.1 (105) | 2.8 (71) | 2.4 (62) | 3.0 (77) | 6.5 (166) | 3.2 (81) |
| 1" Quick Mount | 4.5 (114) | 3.3 (85) | 2.8 (71) | 3.0 (77) | 6.8 (173) | 3.1 (79) |
| 3/4" NPT | 3.3 (85) | 2.0 (51) | 1.7 (42) | 3.0 (77) | 5.7 (146) | 3.1 (79) |
| 1" NPT | 3.8 (96) | 2.4 (62) | 2.0 (51) | 3.0 (77) | 6.0 (152) | 3.1 (79) |

SPECIAL SERVICE VALVES

Features

- Designed to pilot large dust collector pulse valves
- For individual installation or mounting in panel enclosure
- Brass bodied valve has threaded exhaust port for optional muffler installation, and screw or leaded terminals
- Plastic body valve designed for plastic or metallic tubing, has spade terminals
- All with bubble-tight seals
- Zero minimum pressure

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|------------------------|
| Body | Brass or PA, as listed |
| Seals and Discs | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Shading Coil | Copper |
| Springs | 302 Stainless Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption AC | | | Spare Coil Part No. AC | |
|---------------------------------------|--------------------------------------|------------|-----------|------------------------|----------------|
| | Watts | VA Holding | VA Inrush | General Purpose | Explosionproof |
| F | 6 | 15.6 | 27.5 | 99216 (spade) | - |
| F | 6 | 15.6 | 27.5 | 125472 (screw) | - |
| F | 6.1 | 16 | 30 | 238210 | 238214 |
| B | 24.9 | 34.8 | 43.2 | 174879 ① | - |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). Consult factory for DC voltage. Other voltages are available when required.

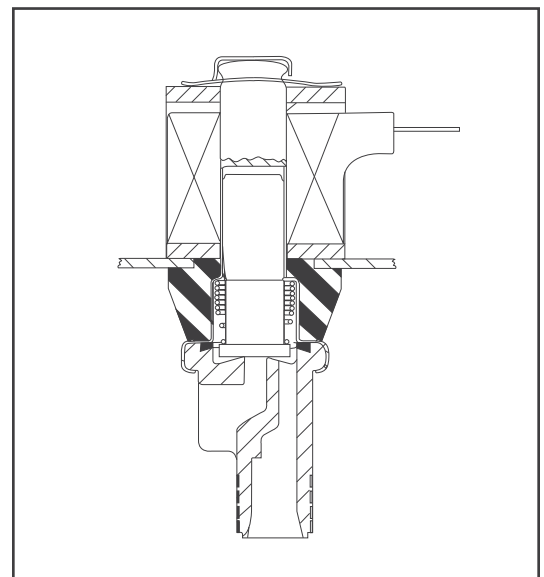
Note: ① Maximum voltage 120/60. Higher voltages use Class F Coil, 186548.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Open Frame.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

Ambient: AC constructions: 32°F to 125°F (0°C to 52°C)

Fluids: 32°F to 180°F (0°C to 82°C)

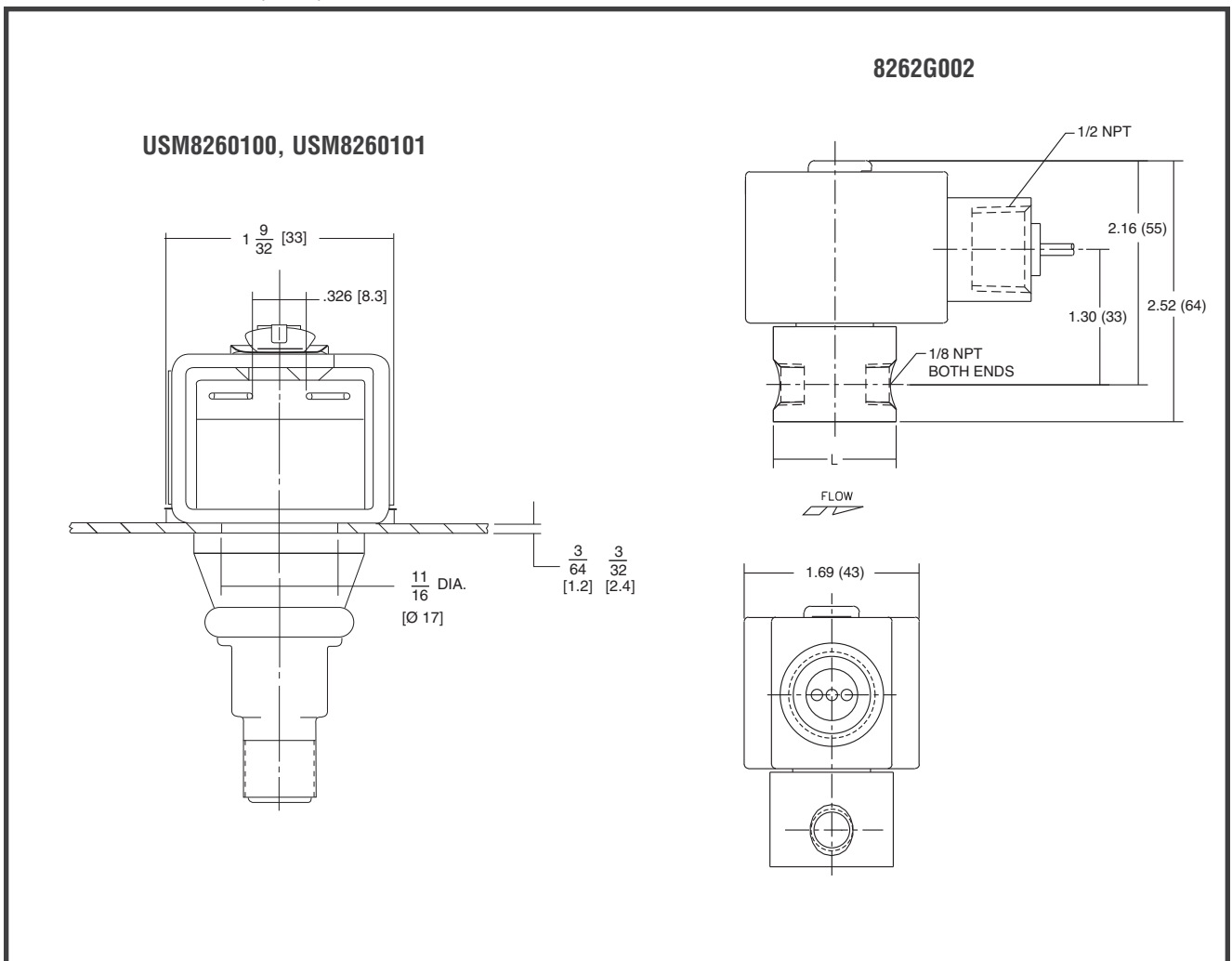
SPECIAL SERVICE VALVES

Specifications (English, Metric units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Kv Flow Factor (m3/h) | Max. Operating Pressure Differential (psi) | Max. Operating Pressure Differential (bar) | RedHat II Catalog Number | RedHat Panel Mount Solenoids with Spade Terminal Coils Standard | RedHat Panel Mount Solenoids with Screw Terminal Coils Standard | Watt Rating/ Class of Coil Insulation |
|---|---------------------|----------------|-----------------------|--|--|--------------------------|---|---|---------------------------------------|
| | | | | | | | Catalog Number | Catalog Number | |
| NORMALLY CLOSED (Closed when de-energized), Brass Body - AC Only | | | | | | | | | |
| 1/8 | 1/8 | .34 | .29 | 125 | 8.6 | 8262G002 | - | - | 6.1/F |
| 1/8 | 1/8 | .34 | .29 | 125 | 8.6 | - | PSF8262C002 ④ | - | 6/F |
| 1/8 | 1/8 | .34 | .29 | 125 | 8.6 | - | - | PSFX8262C002-17523 ③④ | 6/F |
| NORMALLY CLOSED (Closed when de-energized), PA Body - AC Only | | | | | | | | | |
| 1/4 O.D. Comp. ② | 1/8 | .30 | .26 | 125 | 8.6 | - | USM8260100 ① | - | 24.9/B |
| 1/8 External NPT | 1/8 | .30 | .26 | 125 | 8.6 | - | USM8260101 ① | - | 24.9/B |

① Spade terminal coils are standard; leaded coils are optional. Solenoid will withstand a total energized time of 12 seconds within any 60 second period.
 ② Fittings not supplied with valve. To order, refer to List Price Schedule.
 ③ Gasketed panel mount pilot valve used in pilot valve enclosure HV125468, -69, and -70.
 ④ For dimensional drawing contact local sales office.

Dimensions inches (mm)



SPECIAL SERVICE VALVES

Features

- Eliminates welding in through-the-wall installations
- Normally used with ASCO pulse valves having integral Dresser® fittings
- Top loading-type dust collectors require installation and removal of collector bags or cartridges from the top of the housing, above the blow tubes
- Bottom loading types require installation and removal of bags or cartridges for the bottom from the housing, below the blow tubes

Installation

Fittings are installed through the dust collector wall, gasketed in place, and secured with a retaining ring. Compression nut, retainer, and pipe seal are then installed on the pipe, making certain the beveled edge of the seal faces the connector body. The pipe assembly then slides into the connector body and the nut is firmly hand tightened.



Nominal Ambient Temp. Ranges

0°F to 185°F (-18°C to 85°C)

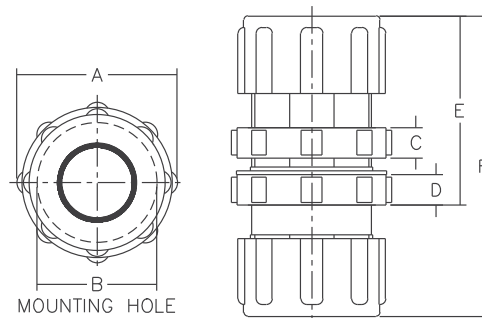
For higher temperatures, specify suffix "V"

Note: The rubber seal, retainer, and nut provide pressure sealing around the pipes. Inlet and blow pipes must be secured to prevent movement.

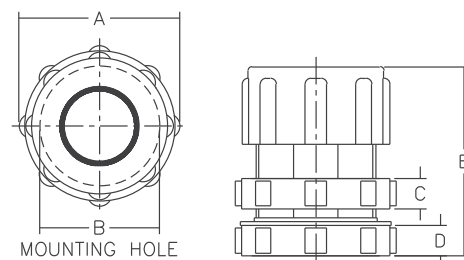
Dimensions inches (mm)

| Connector Size | | 3/4" | 1" | 1-1/2" |
|------------------------|------------------|---------------------------|--------|--------|
| A | ins. | 2.52 | 3.04 | 3.92 |
| | mm | 64.01 | 77.22 | 99.57 |
| B | ins. | 1.92 | 2.20 | 2.92 |
| | mm | 48.77 | 55.88 | 74.17 |
| C | ins. | 0.48 | 0.48 | 0.60 |
| | mm | 12.19 | 12.19 | 15.24 |
| D | ins. | 0.48 | 0.48 | 0.60 |
| | mm | 12.19 | 12.19 | 15.24 |
| E | ins. | 2.92 | 2.88 | 3.68 |
| | mm | 74.17 | 73.15 | 93.47 |
| F | ins. | 4.64 | 4.72 | 5.76 |
| | mm | 117.86 | 119.89 | 146.30 |
| Top Loading Kit Number | Pipe Size (ins.) | Bottom Loading Kit Number | | |
| 266015 | 3/4 | 266014 | | |
| 266017 | 1 | 266016 | | |
| 266019 | 1-1/2 | 266018 | | |

TOP LOADING



BOTTOM LOADING



SPECIAL SERVICE VALVES

Features

- Protection for pre-wired ASCO remote pilot valves
- Corrosion resistant, cast aluminum enclosures available with Type 4 Watertight or Types 7 and 9 Explosionproof protection
- Installer-friendly valve layout
- For Explosionproof enclosure, manual operation possible through exhaust port in base
- Enclosures may be mounted in any position

Pilot Valve Enclosures

Standard: Watertight enclosure: Types 1, 2, 3, 3S, and 4.

Explosionproof enclosure: Types 4, 4X, 6, 7 and 9. Class I, Div 1, Groups C and D. Class II, Div 1, Groups E, F, and G.

Optional: For corrosion resistance, Type 4X on Watertight enclosures, add suffix "A" to catalog number. Type 4X is standard on Explosionproof enclosure.

See *Optional Features Section* for other available options.



Optional Heater Kit

Not available on explosionproof enclosure.
 3-5 valve configuration, Kit #125675-001.
 6-8 valve configuration, Kit #125675-002.
 Not available for 9-12 valve configuration.

Approvals

CSA certified.

Ordering instructions for Pilot Valve Enclosure - 3 to 12 Pilot Valves

| Number of Valves | Catalog Number | | | Catalog Number | | |
|------------------|----------------------|----------|----------|----------------|----------|----------|
| | Watertight/Dusttight | Suffix | | Explosionproof | Suffix | |
| | | 120/60 V | 240/60 V | | 120/60 V | 240/60 V |
| 3 | 125468-003- | -01 | -02 | 125847-003- | -01 | -02 |
| 4 | 125468-004- | -01 | -02 | 125847-004- | -01 | -02 |
| 5 | 125468-005- | -01 | -02 | 125847-005- | -01 | -02 |
| 6 | 125469-006- | -01 | -02 | 125847-006- | -01 | -02 |
| 7 | 125469-007- | -01 | -02 | | | |
| 8 | 125469-008- | -01 | -02 | | | |
| 9 | 125470-009- | -01 | -02 | | | |
| 10 | 125470-010- | -01 | -02 | | | |
| 11 | 125470-011- | -01 | -02 | | | |
| 12 | 125470-012- | -01 | -02 | | | |

To order for different voltages, add suffix to catalog numbers, as shown above: -01" for 120 volt, 60 Hz valves; -02" for 240 volt, 60 Hz valves.
 Example: Specify Catalog Number 125470-009-02 for a Type 4 box, which includes nine 240 volt, 60 Hz PSFX8262C002-17523 pilot valve with screw terminal coils.

SPECIAL SERVICE VALVES

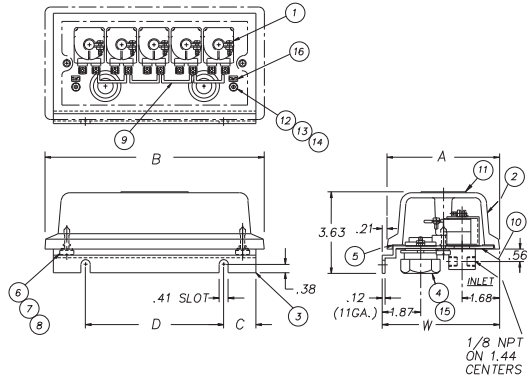
Pilot Valve Specifications (English, Metric units)

| Pipe Size (ins.) | Orifice Size (ins. (mm)) | Cv Flow Factor (Kv Flow Factor m3/h) | Max. Pressure (psi (bar)) | Catalog Number | Watt Rating/ Class of Coil Insulation | Spare Coil |
|---|--------------------------|--------------------------------------|---------------------------|--------------------|---------------------------------------|------------|
| Watertight Enclosure includes these built-in pilot valves: | | | | | | |
| 1/8 | 1/8 (3.2) | 0.34 (0.29) | 150 (10) | PSFX8262C002-17523 | 6/F | 125472 |
| Explosionproof Enclosure includes these built-in pilot valves: | | | | | | |
| 1/8 | 1/8 (3.2) | 0.34 (0.29) | 150 (10) | X8200 001-17579 | 6/F | 125472 |

Dimensions inches (mm)

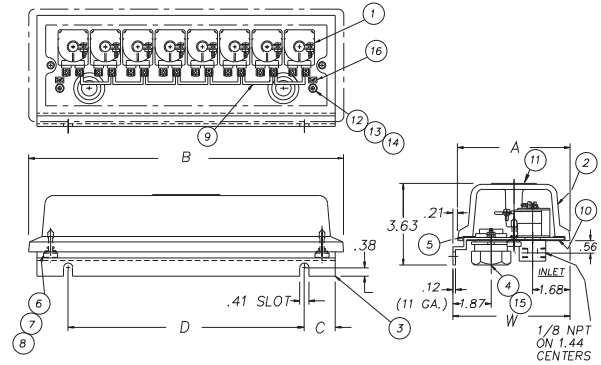
Type 4 Watertight Enclosures

5 Valve Maximum



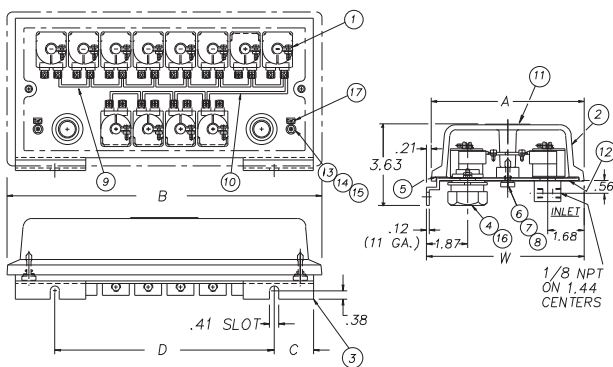
| Catalog No. | | A | B | C | D | W |
|-------------|------|------|------|------|------|------|
| 125-468 | ins. | 5.00 | 9.75 | 1.43 | 6.14 | 5.21 |
| | mm | 127 | 248 | 36 | 156 | 132 |

8 Valve Maximum



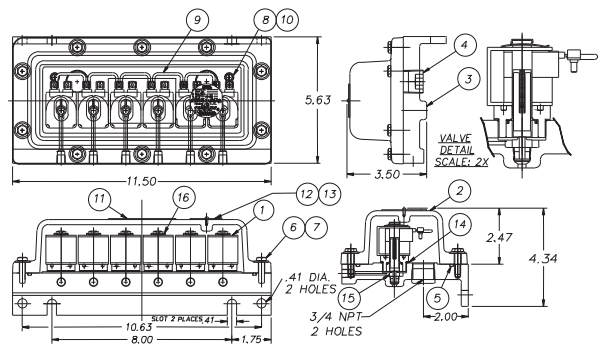
| Catalog No. | | A | B | C | D | W |
|-------------|------|------|-------|------|-------|------|
| 125-469 | ins. | 5.00 | 14.00 | 1.38 | 10.50 | 5.21 |
| | mm | 127 | 356 | 35 | 267 | 132 |

**Type 4 Watertight Enclosure
12 Valve Maximum**



| Catalog No. | | A | B | C | D | W |
|-------------|------|------|-------|------|------|------|
| 125-470 | ins. | 6.81 | 14.00 | 1.75 | 9.75 | 7.02 |
| | mm | 173 | 356 | 44 | 248 | 178 |

**Type 7 and 9 Explosionproof Enclosure
Explosionproof Assembly - 6 Valve Maximum**



SPECIAL SERVICE VALVES

Features

- Handle the challenges of high-temperature fluids
- PTFE and EPDM discs, stainless steel seats, plus high-temperature coils, help provide long, reliable service life
- Wide range of valve constructions, including straight-through and slow-closing, with normally closed and normally open operation
- Specify these valves for the high-temperature applications found in laundries, molding, steam atomization, sterilizers, autoclaves, and many others
 - Series 8263: direct acting miniature valves
 - Series 8267: direct acting straight-through, self-cleaning design
 - Series 8210/8220: pilot operated diaphragm valves
 - Series 8220: heavy-duty, pilot operated piston valves have stainless steel pistons
 - Series 8221: slow-closing, anti-water hammer design
 - Series 8222: pilot operated diaphragm and piston valves. Y-body floating piston design

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|----------------------|-----------------|
| Common Parts | | |
| Body | Brass | Stainless Steel |
| Core Tube | 305 Stainless Steel | |
| Core and Plugnut | 430F Stainless Steel | |
| Springs | 302 Stainless Steel | |
| Shading Coil | Copper | Silver |
| 8210HW Series | | |
| Seals, Discs, and Diaphragms | EPDM | |
| 8263 Series | | |
| Seals | PTFE | |
| Disc | EPDM or PTFE | |
| 8220/8221 Series | | |
| Piston | Stainless Steel | |
| Discs | EPDM or PTFE | |
| Seals | EPDM, PTFE | |
| 8222 Series | | |
| Seals, Discs, and Diaphragms | EPDM and/or PTFE | |
| Piston | Brass or PTFE | |
| 8267 Series | | |
| Seals | FKM, PTFE | |
| Disc | Stainless Steel | |
| Seat | Glass-Filled PTFE | |

Electrical

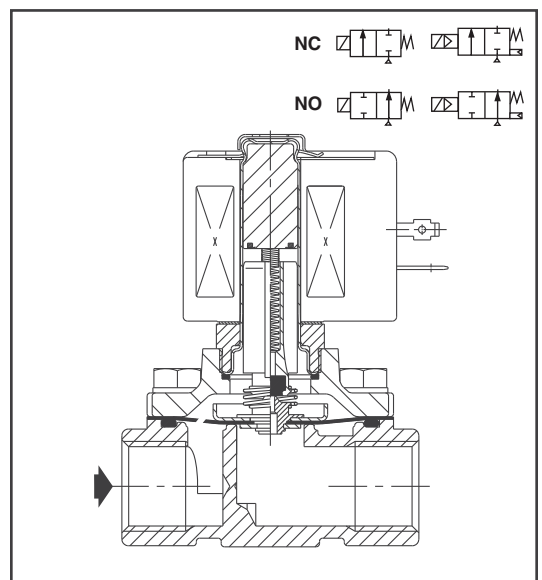
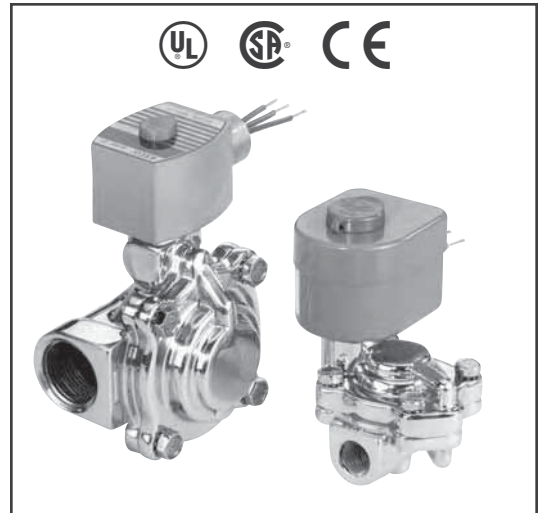
See individual valve series in General Service Section for details.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; Red-Hat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9.
 (To order, add prefix "EF" to catalog number.)

See Optional Features Section for other available options.



Nominal Ambient Temp. Ranges

- RedHat II/
- RedHat AC: 32°F to 125°F (0°C to 52°C)
- RedHat II DC: 32°F to 104°F (0°C to 40°C)
- RedHat DC: 32°F to 77°F (0°C to 25°C)
 (104°F/40°C occasionally)

Refer to Engineering Section for details.

Approvals

Most are UL listed, CSA certified, and meet applicable CE directives. Contact ASCO for details.

Important: Explosionproof Catalog Numbers EF8210HW, EF8220, EF8221, and EF8263 are not UL listed. They are suitable for Types 4, 7 (C and D), and 9 (E and F) only, and have a temperature range code of T3A.

SPECIAL SERVICE VALVES

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Brass Body | | AC Watt Rating/ Class of Coil Insulation | |
|--|---------------------|----------------|---------------------------------------|---------|---------|---------------------|-----|----------------|-------------|--|--------|
| | | | Hot Water | | | Hot Water | | Catalog Number | Const. Ref. | AC | DC |
| | | | Min. ④ | Max. AC | Max. DC | AC | DC | | | | |
| HOT WATER SERVICE ONLY - NORMALLY CLOSED (Closed when de-energized), EPDM Diaphragm | | | | | | | | | | | |
| 3/8 | 5/8 | 3 | 0 ③ | 100 | 40 | 210 | 150 | 8210G093HW | 32 | 10.1/F | 11.6/F |
| 3/8 | 5/8 | 3 | 5 | 125 | 100 | 210 | 150 | 8210G001HW | 33 | 6.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 0 ③ | 100 | 40 | 210 | 150 | 8210G094HW | 32 | 10.1/F | 11.6/F |
| 1/2 | 5/8 | 4 | 5 | 125 | 100 | 210 | 150 | 8210G002HW | 33 | 6.1/F | 11.6/F |
| 3/4 | 3/4 | 5 | 0 ③ | 100 | 40 | 210 | 150 | 8210G095HW | 34 | 10.1/F | 11.6/F |
| 3/4 | 3/4 | 5 | 5 | 125 | 100 | 210 | 150 | 8210G009HW | 35 | 6.1/F | 11.6/F |
| SLOW CLOSING - NORMALLY CLOSED (Closed when de-energized), EPDM Disc | | | | | | | | | | | |
| 3/8 | 9/16 | 3 | 5 ② | 150 | - | 210 | - | 8221G001HW | 36 | 6.1/F | - |
| 1/2 | 9/16 | 3.5 | 5 ② | 150 | - | 210 | - | 8221G003HW | 36 | 6.1/F | - |
| 3/4 | 3/4 | 5.5 | 5 ② | 150 | - | 210 | - | 8221G005HW | 36 | 6.1/F | - |
| 1 | 1 | 11.5 | 5 ② | 150 | - | 210 | - | 8221G007HW | 38 | 6.1/F | - |
| 1 1/4 | 1 1/8 | 13 | 5 ② | 150 | - | 210 | - | 8221G009HW | 39 | 6.1/F | - |
| 1 1/2 | 1 1/4 | 24 | 5 ② | 150 | - | 210 | - | 8221G011HW | 40 | 6.1/F | - |
| 2 | 1 3/4 | 36 | 5 ② | 150 | - | 210 | - | 8221G013HW | 41 | 6.1/F | - |
| 2 1/2 | 1 3/4 | 38 | 5 ② | 150 | - | 210 | - | 8221G015HW | 42 | 6.1/F | - |
| SLOW CLOSING - NORMALLY OPEN (Open when de-energized), EPDM Disc | | | | | | | | | | | |
| 3/8 | 9/16 | 3 | 5 ② | 150 | - | 210 | - | 8221G021HW | 43 | 16.1/F | - |
| 1/2 | 9/16 | 3.5 | 5 ② | 150 | - | 210 | - | 8221G023HW | 43 | 16.1/F | - |
| 3/4 | 3/4 | 5.5 | 5 ② | 150 | - | 210 | - | 8221G025HW | 44 | 16.1/F | - |
| 1 | 1 | 11.5 | 5 ② | 150 | - | 210 | - | 8221G027HW | 45 | 16.1/F | - |
| 1 1/4 | 1 1/8 | 13 | 5 ② | 150 | - | 210 | - | 8221G029HW | 46 | 16.1/F | - |
| 1 1/2 | 1 1/4 | 24 | 5 ② | 150 | - | 210 | - | 8221G031HW | 47 | 16.1/F | - |
| 2 | 1 3/4 | 36 | 5 ② | 150 | - | 210 | - | 8221G033HW | 48 | 16.1/F | - |
| 2 1/2 | 1 3/4 | 38 | 5 ② | 150 | - | 210 | - | 8221G035HW | 49 | 16.1/F | - |

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | AC Watt Rating/ Class of Coil Insulation |
|---|---------------------|----------------|---------------------------------------|-------|-----------|---------------------|-----------|----------------|-------------|----------------------|-------------|--|
| | | | Min. ④ | Max. | | Steam | Hot Water | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | |
| | | | | Steam | Hot Water | | | | | | | |
| DIRECT ACTING - NORMALLY CLOSED (Closed when de-energized), Stainless Steel Seat, EPDM ⑤, or PTFE Disc | | | | | | | | | | | | |
| 1/8 | 1/8 | .34 | 0 | 50 | - | 298 | - | 8263G052 ⑤ | 1 | - | - | 6.1/F |
| 1/8 | 1/8 | .34 | 0 | 90 | - | 331 | - | 8263G058 | 1 | - | - | 6.1/F |
| 1/4 | 1/8 | .34 | 0 | 50 | - | 298 | - | 8263G053 ⑤ | 2 | - | - | 6.1/F |
| 1/4 | 1/8 | .34 | 0 | 90 | - | 331 | - | 8263G059 | 2 | - | - | 6.1/F |
| 1/4 | 5/32 | .52 | 0 | 110 | 110 | 344 | 210 | 8263G300 | 3 | - | - | 10.1/H |
| 1/4 | 7/32 | .72 | 0 | 70 | - | 316 | - | 8263G301 | 3 | - | - | 10.1/H |
| 1/4 | 9/32 | .85 | 0 | 60 | - | 307 | - | 8263G303 | 3 | - | - | 17.1/H |
| 3/8 | 1/8 | .36 | 0 | 125 | 125 | 353 | 210 | 8263G304 | 3 | 8263G318 | 31 | 10.1/H |
| 3/8 | 5/32 | .52 | 0 | 110 | 110 | 344 | 210 | 8263G305 | 3 | 8263G319 | 31 | 10.1/H |
| 3/8 | 7/32 | .72 | 0 | 70 | - | 316 | - | 8263G306 | 3 | 8263G320 | 31 | 10.1/H |
| 3/8 | 9/32 | .85 | 0 | 60 | - | 307 | - | 8263G308 | 3 | 8263G321 | 31 | 17.1/H |
| PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 1/4 | 3/8 | 1.2 | 1 | 80 | - | 324 | - | 8222G068 | 4 | - | - | 6.1/F |
| 1/4 | 3/8 | 1.2 | 1 | 125 | - | 353 | - | 8222G070 | 4 | - | - | 6.1/H |
| 3/8 | 3/8 | 2.5 | 1 | 80 | - | 324 | - | 8222G064 | 4 | - | - | 6.1/F |
| 3/8 | 3/8 | 2.5 | 1 | 125 | - | 353 | - | 8222G074 | 4 | - | - | 6.1/H |
| 3/8 | 5/8 | 3.0 | 5 ① | 50 | 150 | 300 | 210 | 8220G001 | 5 | - | - | 10.1/F |
| 3/8 | 5/8 | 3.0 | 5 ① | 125 | 150 | 353 | 210 | 8220G019 | 5 | - | - | 10.1/H |
| 3/8 | 5/8 | 3.0 | 0 | 125 | - | 353 | - | 8222G001 | 6 | - | - | 17.1/H |
| 3/8 | 5/8 | 3.0 | 0 | 50 | - | 300 | - | 8222G093 | 7 | - | - | 10.1/F |
| 1/2 | 3/8 | 2.5 | 1 | 80 | - | 324 | - | 8222G066 | 4 | - | - | 6.1/F |
| 1/2 | 3/8 | 2.5 | 1 | 125 | - | 353 | - | 8222G076 | 4 | - | - | 6.1/H |
| 1/2 | 1/2 | 3.6 | 2 | 125 | - | 353 | - | 8222G047 | 9 | - | - | 10.1/H |
| 1/2 | 5/8 | 4.0 | 0 | 50 | - | 300 | - | 8222G094 | 7 | 8222G060 | 28 | 10.1/F |
| 1/2 | 5/8 | 4.0 | 0 | 125 | - | 353 | - | 8222G002 | 6 | 8222G087 | 29 | 17.1/H |
| 1/2 | 5/8 | 4.0 | 5 ① | 50 | 150 | 300 | 210 | 8220G003 | 5 | - | - | 10.1/F |
| 1/2 | 5/8 | 4.0 | 5 ① | 125 | 150 | 353 | 210 | 8220G021 | 5 | - | - | 10.1/H |

SPECIAL SERVICE VALVES

Specifications (English units continued)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | | Brass Body | | Stainless Steel Body | | AC Watt Rating/ Class of Coil Insulation |
|--|---------------------|----------------|---------------------------------------|-------|-----------|---------------------|-----------|----------------|-------------|----------------------|-------------|--|
| | | | Min. ④ | Max. | | Steam | Hot Water | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | |
| | | | | Steam | Hot Water | | | | | | | |
| PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 3/4 | 5/8 | 4.5 | 0 | 50 | - | 300 | - | - | - | 8222G062 | 28 | 10.1/F |
| 3/4 | 5/8 | 4.5 | 0 | 125 | - | 353 | - | - | - | 8222G088 | 29 | 17.1/H |
| 3/4 | 3/4 | 5.0 | 0 | 50 | - | 300 | - | 8222G095 | 10 | - | - | 10.1/F |
| 3/4 | 3/4 | 5.0 | 5 ① | 50 | 150 | 300 | 210 | 8222G005 | 8 | - | - | 10.1/F |
| 3/4 | 3/4 | 5.0 | 5 ① | 125 | 150 | 353 | 210 | 8222G023 | 8 | - | - | 10.1/H |
| 3/4 | 3/4 | 5.0 | 0 | 125 | - | 353 | - | 8222G003 | 11 | - | - | 17.1/H |
| 3/4 | 1/2 | 4.6 | 2 | 125 | - | 353 | - | 8222G049 | 9 | - | - | 10.1/H |
| 3/4 | 1/2 | 4.6 | 5 | 200 | - | 388 | - | 8222G005 | 12 | - | - | 10.1/H |
| 1 | 1 | 11.2 | 5 | 125 | - | 353 | - | - | - | 8222G089 | 30 | 10.1/F |
| 1 | 1 | 13.5 | 5 ② | 50 | 150 | 300 | 210 | 8220G007 | 14 | - | - | 10.1/F |
| 1 | 1 | 13.5 | 5 ② | 125 | 150 | 353 | 210 | 8220G025 | 14 | - | - | 10.1/H |
| 1 | 1 | 13.5 | 5 | 125 | - | 353 | - | 8222G004 | 13 | - | - | 10.1/H |
| 1 | 1 | 13.0 | 0 | 200 | - | 388 | - | 8222 099 | 13 | - | - | 28.2/H |
| 1 1/4 | 1 1/8 | 15 | 5 ② | 50 | 150 | 300 | 210 | 8220G009 | 15 | - | - | 10.1/F |
| 1 1/4 | 1 1/8 | 15 | 5 ② | 125 | 150 | 353 | 210 | 8220G027 | 15 | - | - | 10.1/H |
| 1 1/2 | 1 1/4 | 22.5 | 5 ② | 50 | 150 | 300 | 210 | 8220G011 | 16 | - | - | 10.1/F |
| 1 1/2 | 1 1/4 | 22.5 | 5 ② | 125 | 150 | 353 | 210 | 8220G029 | 16 | - | - | 10.1/H |
| 2 | 1 3/4 | 43 | 5 ② | 50 | 150 | 300 | 210 | 8220G013 | 17 | - | - | 10.1/F |
| 2 | 1 3/4 | 43 | 5 ② | 125 | 150 | 353 | 210 | 8220G031 | 17 | - | - | 10.1/H |
| 2 1/2 | 1 3/4 | 45 | 5 ② | 50 | 150 | 300 | 210 | 8220G015 | 18 | - | - | 10.1/F |
| 2 1/2 | 1 3/4 | 45 | 5 ② | 125 | 150 | 353 | 210 | 8220G033 | 18 | - | - | 10.1/H |
| DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 3/8 | 1/4 | 1.5 | 0 | 75 | - | 320 | - | 8267G001 | 19 | - | - | 16.1/H |
| 3/8 | 3/8 | 5.1 | 0 | 30 | - | 280 | - | 8267G003 | 19 | - | - | 16.1/H |
| 1/2 | 1/4 | 1.4 | 0 | 75 | - | 320 | - | 8267G005 | 19 | - | - | 16.1/H |
| 1/2 | 3/8 | 4.5 | 0 | 15 | - | 250 | - | 8267G007 | 19 | - | - | 16.1/H |
| 3/4 | 3/8 | 5.4 | 0 | 30 | - | 280 | - | 8267G017 | 20 | - | - | 16.1/H |
| 3/4 | 1/2 | 9.7 | 0 | 15 | - | 250 | - | 8267G019 | 20 | - | - | 16.1/H |
| DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | |
| 3/8 | 1/4 | 1.5 | 0 | 75 | - | 320 | - | 8267G009 | 19 | - | - | 16.1/H |
| 3/8 | 3/8 | 5.1 | 0 | 30 | - | 280 | - | 8267G011 | 19 | - | - | 16.1/H |
| 1/2 | 1/4 | 1.4 | 0 | 75 | - | 320 | - | 8267G013 | 19 | - | - | 16.1/H |
| 1/2 | 3/8 | 4.5 | 0 | 15 | - | 250 | - | 8267G015 | 19 | - | - | 16.1/H |
| 3/4 | 3/8 | 5.4 | 0 | 25 | - | 267 | - | 8267G021 | 20 | - | - | 16.1/H |
| 3/4 | 1/2 | 9.7 | 0 | 15 | - | 250 | - | 8267G023 | 20 | - | - | 16.1/H |
| PILOT OPERATED - NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | |
| 3/8 | 9/16 | 3 | 5 | 50 | 150 | 300 | 210 | 8220G071 | 21 | - | - | 16.1/F |
| 3/8 | 9/16 | 3 | 5 | 125 | 150 | 353 | 210 | 8220G091 | 21 | - | - | 16.1/H |
| 1/2 | 9/16 | 4 | 5 | 50 | 150 | 300 | 210 | 8220G073 | 21 | - | - | 16.1/F |
| 1/2 | 9/16 | 4 | 5 | 125 | 150 | 353 | 210 | 8220G093 | 21 | - | - | 16.1/H |
| 3/4 | 3/4 | 5 | 5 | 50 | 150 | 300 | 210 | 8220G075 | 22 | - | - | 16.1/F |
| 3/4 | 3/4 | 5 | 5 | 125 | 150 | 353 | 210 | 8220G095 | 22 | - | - | 16.1/H |
| 1 | 1 | 13.5 | 5 | 50 | 150 | 300 | 210 | 8220G077 | 23 | - | - | 16.1/F |
| 1 | 1 | 13.5 | 5 | 125 | 150 | 353 | 210 | 8220G097 | 23 | - | - | 16.1/H |
| 1 1/4 | 1 1/8 | 15 | 5 | 50 | 150 | 300 | 210 | 8220G079 | 24 | - | - | 16.1/F |
| 1 1/4 | 1 1/8 | 15 | 5 | 125 | 150 | 353 | 210 | 8220G099 | 24 | - | - | 16.1/H |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 50 | 150 | 300 | 210 | 8220G081 | 25 | - | - | 16.1/F |
| 1 1/2 | 1 1/4 | 22.5 | 5 | 125 | 150 | 353 | 210 | 8220G101 | 25 | - | - | 16.1/H |
| 2 | 1 3/4 | 43 | 5 | 50 | 150 | 300 | 210 | 8220G083 | 26 | - | - | 16.1/F |
| 2 | 1 3/4 | 43 | 5 | 125 | 150 | 353 | 210 | 8220G103 | 26 | - | - | 16.1/H |
| 2 1/2 | 1 3/4 | 45 | 5 | 50 | 150 | 300 | 210 | 8220G085 | 27 | - | - | 16.1/F |
| 2 1/2 | 1 3/4 | 45 | 5 | 125 | 150 | 353 | 210 | 8220G105 | 27 | - | - | 16.1/F |

- ① Once opened at higher pressure, valve will remain open to 0 psi at inlet.
- ② Once opened at higher pressure, valve will remain open to 3 psi at inlet.
- ③ 0 psi on AC construction, 1/4 psi on DC construction.
- ④ Series 8220 Normally Closed valves through 3/4" will remain open to 0 psi while energized.
Once opened at 5 psi, larger sizes will remain open to 3 psi, as will all Series 8220 Normally Open valves.
- ⑤ EPDM disc.

SPECIAL SERVICE VALVES

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Brass Body | | AC Watt Rating/ Class of Coil Insulation | |
|--|-------------------|-----------------------|---------------------------------------|---------|---------|---------------------|----|----------------|-------------|--|--------|
| | | | Hot Water | | | Hot Water | | Catalog Number | Const. Ref. | AC | DC |
| | | | Min. ④ | Max. AC | Max. DC | AC | DC | | | | |
| HOT WATER SERVICE ONLY - NORMALLY CLOSED (Closed when de-energized), EPDM Diaphragm | | | | | | | | | | | |
| 3/8 | 16 | 2.57 | 0 ③ | 6.9 | 2.8 | 98 | 65 | 8210G093HW | 32 | 10.1/F | 11.6/F |
| 3/8 | 16 | 2.57 | 0.3 | 8.6 | 6.9 | 98 | 65 | 8210G001HW | 33 | 6.1/F | 11.6/F |
| 1/2 | 16 | 3.43 | 0 ③ | 6.9 | 2.8 | 98 | 65 | 8210G094HW | 32 | 10.1/F | 11.6/F |
| 1/2 | 16 | 3.43 | 0.3 | 8.6 | 6.9 | 98 | 65 | 8210G002HW | 33 | 6.1/F | 11.6/F |
| 3/4 | 19 | 4.29 | 0 ③ | 6.9 | 2.8 | 98 | 65 | 8210G095HW | 34 | 10.1/F | 11.6/F |
| 3/4 | 19 | 4.29 | 0.03 | 8.6 | 6.9 | 98 | 65 | 8210G009HW | 35 | 6.1/F | 11.6/F |
| SLOW CLOSING - NORMALLY CLOSED (Closed when de-energized), EPDM Disc | | | | | | | | | | | |
| 3/8 | 14 | 2.57 | 0.3 ② | 10.3 | - | 98 | - | 8221G001HW | 36 | 6.1/F | - |
| 1/2 | 14 | 3.00 | 0.3 ② | 10.3 | - | 98 | - | 8221G003HW | 36 | 6.1/F | - |
| 3/4 | 19 | 4.71 | 0.3 ② | 10.3 | - | 98 | - | 8221G005HW | 36 | 6.1/F | - |
| 1 | 25 | 9.86 | 0.3 ② | 10.3 | - | 98 | - | 8221G007HW | 38 | 6.1/F | - |
| 1 1/4 | 29 | 11.14 | 0.3 ② | 10.3 | - | 98 | - | 8221G009HW | 39 | 6.1/F | - |
| 1 1/2 | 32 | 20.57 | 0.3 ② | 10.3 | - | 98 | - | 8221G011HW | 40 | 6.1/F | - |
| 2 | 44 | 30.86 | 0.3 ② | 10.3 | - | 98 | - | 8221G013HW | 41 | 6.1/F | - |
| 2 1/2 | 44 | 32.57 | 0.3 ② | 10.3 | - | 98 | - | 8221G015HW | 42 | 6.1/F | - |
| SLOW CLOSING - NORMALLY OPEN (Open when de-energized), EPDM Disc | | | | | | | | | | | |
| 3/8 | 14 | 2.57 | 0.3 ② | 10.3 | - | 98 | - | 8221G021HW | 43 | 16.1/F | - |
| 1/2 | 14 | 3.00 | 0.3 ② | 10.3 | - | 98 | - | 8221G023HW | 43 | 16.1/F | - |
| 3/4 | 19 | 4.71 | 0.3 ② | 10.3 | - | 98 | - | 8221G025HW | 44 | 16.1/F | - |
| 1 | 25 | 9.86 | 0.3 ② | 10.3 | - | 98 | - | 8221G027HW | 45 | 16.1/F | - |
| 1 1/4 | 29 | 11.14 | 0.3 ② | 10.3 | - | 98 | - | 8221G029HW | 46 | 16.1/F | - |
| 1 1/2 | 32 | 20.57 | 0.3 ② | 10.3 | - | 98 | - | 8221G031HW | 47 | 16.1/F | - |
| 2 | 44 | 30.86 | 0.3 ② | 10.3 | - | 98 | - | 8221G033HW | 48 | 16.1/F | - |
| 2 1/2 | 44 | 32.57 | 0.3 ② | 10.3 | - | 98 | - | 8221G035HW | 49 | 16.1/F | - |

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | AC Watt Rating/ Class of Coil Insulation |
|---|-------------------|-----------------------|---------------------------------------|-------|-----------|---------------------|-----------|----------------|-------------|----------------------|-------------|--|
| | | | Min. ④ | Max. | | Steam | Hot Water | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | |
| | | | | Steam | Hot Water | | | | | | | |
| DIRECT ACTING - NORMALLY CLOSED (Closed when de-energized), Stainless Steel Seat, EPDM ⑤, or PTFE Disc | | | | | | | | | | | | |
| 1/8 | 3 | .29 | 0 | 3 | - | 146 | - | 8263G052 ⑤ | 1 | - | - | 6.1/F |
| 1/8 | 3 | .29 | 0 | 6 | - | 164 | - | 8263G058 | 1 | - | - | 6.1/F |
| 1/4 | 3 | .29 | 0 | 3 | - | 146 | - | 8263G053 ⑤ | 2 | - | - | 6.1/F |
| 1/4 | 3 | .29 | 0 | 6 | - | 164 | - | 8263G059 | 2 | - | - | 6.1/F |
| 1/4 | 4 | .45 | 0 | 8 | 8 | 172 | 98 | 8263G300 | 3 | - | - | 10.1/H |
| 1/4 | 6 | .62 | 0 | 5 | - | 156 | - | 8263G301 | 3 | - | - | 10.1/H |
| 1/4 | 7 | .73 | 0 | 4 | - | 151 | - | 8263G303 | 3 | - | - | 17.1/H |
| 3/8 | 3 | .31 | 0 | 9 | 9 | 177 | 98 | 8263G304 | 3 | 8263G318 | 31 | 10.1/H |
| 3/8 | 4 | .45 | 0 | 8 | 8 | 172 | 98 | 8263G305 | 3 | 8263G319 | 31 | 10.1/H |
| 3/8 | 6 | .62 | 0 | 5 | - | 156 | - | 8263G306 | 3 | 8263G320 | 31 | 10.1/H |
| 3/8 | 7 | .73 | 0 | 4 | - | 151 | - | 8263G308 | 3 | 8263G321 | 31 | 17.1/H |
| PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 1/4 | 10 | 1.03 | 0.07 | 6 | - | 161 | - | 8222G068 | 4 | - | - | 6.1/F |
| 1/4 | 10 | 1.03 | 0.07 | 9 | - | 177 | - | 8222G070 | 4 | - | - | 6.1/H |
| 3/8 | 10 | 2.14 | 0.07 | 6 | - | 161 | - | 8222G064 | 4 | - | - | 6.1/F |
| 3/8 | 10 | 2.14 | 0.07 | 9 | - | 177 | - | 8222G074 | 4 | - | - | 6.1/H |
| 3/8 | 16 | 2.57 | .3 ① | 3 | 10 | 147 | 98 | 8220G001 | 5 | - | - | 10.1/F |
| 3/8 | 16 | 2.57 | .3 ① | 9 | 10 | 177 | 98 | 8220G019 | 5 | - | - | 10.1/H |
| 3/8 | 16 | 2.57 | 0 | 9 | - | 177 | - | 8222G001 | 6 | - | - | 17.1/H |
| 3/8 | 16 | 2.57 | 0 | 3 | - | 147 | - | 8222G093 | 7 | - | - | 10.1/F |
| 1/2 | 10 | 2.14 | 0.07 | 6 | - | 161 | - | 8222G066 | 4 | - | - | 6.1/F |
| 1/2 | 10 | 2.14 | 0.07 | 9 | - | 177 | - | 8222G076 | 4 | - | - | 6.1/H |
| 1/2 | 13 | 3.09 | 0.1379 | 9 | - | 177 | - | 8222G047 | 9 | - | - | 10.1/H |
| 1/2 | 16 | 3.43 | 0 | 3 | - | 147 | - | 8222G094 | 7 | 8222G060 | 28 | 10.1/F |
| 1/2 | 16 | 3.43 | 0 | 9 | - | 177 | - | 8222G002 | 6 | 8222G087 | 29 | 17.1/H |
| 1/2 | 16 | 3.43 | .3 ① | 3 | 10 | 147 | 98 | 8220G003 | 5 | - | - | 10.1/F |
| 1/2 | 16 | 3.43 | .3 ① | 9 | 10 | 177 | 98 | 8220G021 | 5 | - | - | 10.1/H |

SPECIAL SERVICE VALVES

Specifications (Metric units continued)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | | Brass Body | | Stainless Steel Body | | AC Watt Rating/ Class of Coil Insulation |
|--|-------------------|-----------------------|---------------------------------------|------|----|---------------------|-----------|------------|-----------|----------------------|-------------|--|
| | | | Min. ④ | Max. | | Steam | Hot Water | Steam | Hot Water | Catalog Number | Const. Ref. | |
| PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 3/4 | 16 | 3.86 | 0 | 3 | - | 147 | - | - | - | 8222G062 | 28 | 10.1/F |
| 3/4 | 16 | 3.86 | 0 | 9 | - | 177 | - | - | - | 8222G088 | 29 | 17.1/H |
| 3/4 | 19 | 4.29 | 0 | 3 | - | 147 | - | 8222G095 | 10 | - | - | 10.1/F |
| 3/4 | 19 | 4.29 | .3 ① | 3 | 10 | 147 | 98 | 8220G005 | 8 | - | - | 10.1/F |
| 3/4 | 19 | 4.29 | .3 ① | 9 | 10 | 177 | 98 | 8220G023 | 8 | - | - | 10.1/H |
| 3/4 | 19 | 4.29 | 0 | 9 | - | 177 | - | 8222G003 | 11 | - | - | 17.1/H |
| 3/4 | 13 | 3.94 | 0.14 | 9 | - | 177 | - | 8222G049 | 9 | - | - | 10.1/H |
| 3/4 | 13 | 3.94 | 0.3 | 14 | - | 196 | - | 8222G005 | 12 | - | - | 10.1/H |
| 1 | 25 | 9.60 | 0.3 | 9 | - | 177 | - | - | - | 8222G089 | 30 | 10.1/F |
| 1 | 25 | 11.57 | .3 ② | 3 | 10 | 147 | 98 | 8220G007 | 14 | - | - | 10.1/F |
| 1 | 25 | 11.57 | .3 ② | 9 | 10 | 177 | 98 | 8220G025 | 14 | - | - | 10.1/H |
| 1 | 25 | 11.57 | 0.3 | 9 | - | 177 | - | 8222G004 | 13 | - | - | 10.1/H |
| 1 | 25 | 11.14 | 0 | 14 | - | 196 | - | 8222 099 | 13 | - | - | 28.2/H |
| 1 1/4 | 29 | 12.86 | .3 ② | 3 | 10 | 147 | 98 | 8220G009 | 15 | - | - | 10.1/F |
| 1 1/4 | 29 | 12.86 | .3 ② | 9 | 10 | 177 | 98 | 8220G027 | 15 | - | - | 10.1/H |
| 1 1/2 | 32 | 19.29 | .3 ② | 3 | 10 | 147 | 98 | 8220G011 | 16 | - | - | 10.1/F |
| 1 1/2 | 32 | 19.29 | .3 ② | 9 | 10 | 177 | 98 | 8220G029 | 16 | - | - | 10.1/H |
| 2 | 44 | 36.86 | .3 ② | 3 | 10 | 147 | 98 | 8220G013 | 17 | - | - | 10.1/F |
| 2 | 44 | 36.86 | .3 ② | 9 | 10 | 177 | 98 | 8220G031 | 17 | - | - | 10.1/H |
| 2 1/2 | 44 | 38.57 | .3 ② | 3 | 10 | 147 | 98 | 8220G015 | 18 | - | - | 10.1/F |
| 2 1/2 | 44 | 38.57 | .3 ② | 9 | 10 | 177 | 98 | 8220G033 | 18 | - | - | 10.1/H |
| DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | |
| 3/8 | 6 | 1.29 | 0 | 5 | - | 158 | - | 8267G001 | 19 | - | - | 16.1/H |
| 3/8 | 10 | 4.37 | 0 | 2 | - | 136 | - | 8267G003 | 19 | - | - | 16.1/H |
| 1/2 | 6 | 1.20 | 0 | 5 | - | 158 | - | 8267G005 | 19 | - | - | 16.1/H |
| 1/2 | 10 | 3.86 | 0 | 1 | - | 120 | - | 8267G007 | 19 | - | - | 16.1/H |
| 3/4 | 10 | 4.63 | 0 | 2 | - | 136 | - | 8267G017 | 20 | - | - | 16.1/H |
| 3/4 | 13 | 8.31 | 0 | 1 | - | 120 | - | 8267G019 | 20 | - | - | 16.1/H |
| DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | |
| 3/8 | 6 | 1.29 | 0 | 5 | - | 158 | - | 8267G009 | 19 | - | - | 16.1/H |
| 3/8 | 10 | 4.37 | 0 | 2 | - | 136 | - | 8267G011 | 19 | - | - | 16.1/H |
| 1/2 | 6 | 1.20 | 0 | 5 | - | 158 | - | 8267G013 | 19 | - | - | 16.1/H |
| 1/2 | 10 | 3.86 | 0 | 1 | - | 120 | - | 8267G015 | 19 | - | - | 16.1/H |
| 3/4 | 10 | 4.63 | 0 | 2 | - | 129 | - | 8267G021 | 20 | - | - | 16.1/H |
| 3/4 | 13 | 8.31 | 0 | 1 | - | 120 | - | 8267G023 | 20 | - | - | 16.1/H |
| PILOT OPERATED - NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | |
| 3/8 | 14 | 2.57 | 0.3 | 3 | 10 | 147 | 98 | 8220G071 | 21 | - | - | 16.1/F |
| 3/8 | 14 | 2.57 | 0.3 | 9 | 10 | 177 | 98 | 8220G091 | 21 | - | - | 16.1/H |
| 1/2 | 14 | 3.43 | 0.3 | 3 | 10 | 147 | 98 | 8220G073 | 21 | - | - | 16.1/F |
| 1/2 | 14 | 3.43 | 0.3 | 9 | 10 | 177 | 98 | 8220G093 | 21 | - | - | 16.1/H |
| 3/4 | 19 | 4.29 | 0.3 | 3 | 10 | 147 | 98 | 8220G075 | 22 | - | - | 16.1/F |
| 3/4 | 19 | 4.29 | 0.3 | 9 | 10 | 177 | 98 | 8220G095 | 22 | - | - | 16.1/H |
| 1 | 25 | 11.57 | 0.3 | 3 | 10 | 147 | 98 | 8220G077 | 23 | - | - | 16.1/F |
| 1 | 25 | 11.57 | 0.3 | 9 | 10 | 177 | 98 | 8220G097 | 23 | - | - | 16.1/H |
| 1 1/4 | 29 | 12.86 | 0.3 | 3 | 10 | 147 | 98 | 8220G079 | 24 | - | - | 16.1/F |
| 1 1/4 | 29 | 12.86 | 0.3 | 9 | 10 | 177 | 98 | 8220G099 | 24 | - | - | 16.1/H |
| 1 1/2 | 32 | 19.29 | 0.3 | 3 | 10 | 147 | 98 | 8220G081 | 25 | - | - | 16.1/F |
| 1 1/2 | 32 | 19.29 | 0.3 | 9 | 10 | 177 | 98 | 8220G101 | 25 | - | - | 16.1/H |
| 2 | 44 | 36.86 | 0.3 | 3 | 10 | 147 | 98 | 8220G083 | 26 | - | - | 16.1/F |
| 2 | 44 | 36.86 | 0.3 | 9 | 10 | 177 | 98 | 8220G103 | 26 | - | - | 16.1/H |
| 2 1/2 | 44 | 38.57 | 0.3 | 3 | 10 | 147 | 98 | 8220G085 | 27 | - | - | 16.1/F |
| 2 1/2 | 44 | 38.57 | 0.3 | 9 | 10 | 177 | 98 | 8220G105 | 27 | - | - | 16.1/F |

① Once opened at higher pressure, valve will remain open to 0 bar at inlet.
 ② Once opened at higher pressure, valve will remain open to 0.2 bar at inlet.
 ③ 0 bar on AC construction, 0.02 bar on DC construction.
 ④ Series 8220 Normally Closed valves through 3/4" will remain open to 0 bar while energized.
 Once opened at 0.3 bar, larger sizes will remain open to 0.2 bar, as will all Series 8220 Normally Open valves.
 ⑤ EPDM disc.

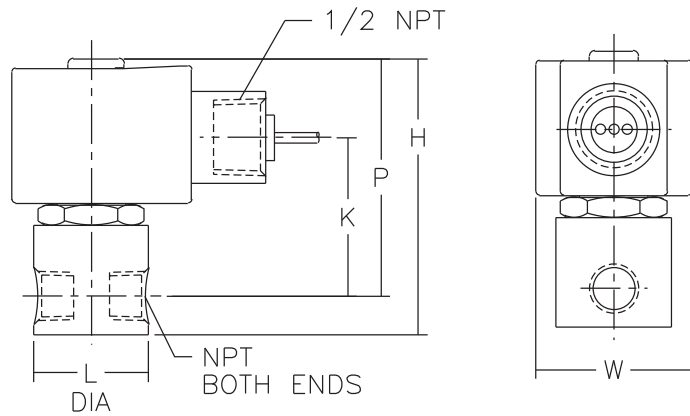
SPECIAL SERVICE VALVES



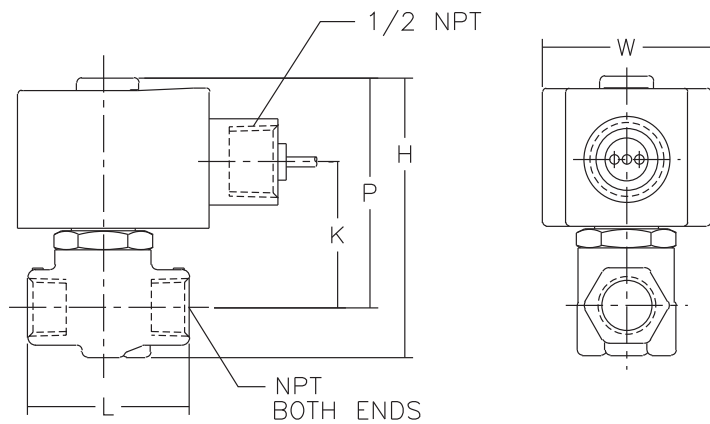
Dimensions inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|--------|------|------|
| 1 | ins. | 2.52 | 1.30 | Ø 1.19 | 2.16 | 1.69 |
| | mm | 64 | 33 | Ø 30 | 55 | 43 |
| 2 | ins. | 3.01 | 1.73 | Ø 1.25 | 2.59 | 1.69 |
| | mm | 76 | 44 | Ø 32 | 66 | 43 |
| 3 | ins. | 3.25 | 1.70 | 1.88 | 2.67 | 1.95 |
| | mm | 83 | 43 | 48 | 68 | 50 |
| 4 | ins. | 4.17 | 3.25 | 2.28 | 3.63 | 1.69 |
| | mm | 106 | 83 | 58 | 92 | 43 |
| 5 | ins. | 4.05 | 2.52 | 2.75 | 3.48 | 2.28 |
| | mm | 103 | 64 | 70 | 88 | 58 |
| 7 | ins. | 3.84 | 2.31 | 2.75 | 3.28 | 2.29 |
| | mm | 98 | 59 | 70 | 83 | 58 |
| 8 | ins. | 4.34 | 2.68 | 2.81 | 3.65 | 2.28 |
| | mm | 110 | 68 | 71 | 93 | 58 |
| 9 | ins. | 4.81 | 3.62 | 2.75 | 4.01 | 1.95 |
| | mm | 122 | 92 | 70 | 102 | 50 |
| 10 | ins. | 4.14 | 2.47 | 2.81 | 3.44 | 2.29 |
| | mm | 105 | 63 | 71 | 87 | 58 |
| 12 | ins. | 4.81 | 3.63 | 2.75 | 4.01 | 1.95 |
| | mm | 122 | 92 | 70 | 102 | 50 |
| 32 | ins. | 3.84 | 2.31 | 2.75 | 3.28 | 2.29 |
| | mm | 98 | 59 | 70 | 83 | 58 |
| 33 | ins. | 3.36 | 1.94 | 2.75 | 2.80 | 2.28 |
| | mm | 85 | 49 | 70 | 71 | 58 |
| 34 | ins. | 4.13 | 2.47 | 2.81 | 3.44 | 2.29 |
| | mm | 105 | 63 | 71 | 87 | 58 |
| 35 | ins. | 3.66 | 2.10 | 2.81 | 2.96 | 2.28 |
| | mm | 93 | 53 | 71 | 75 | 58 |

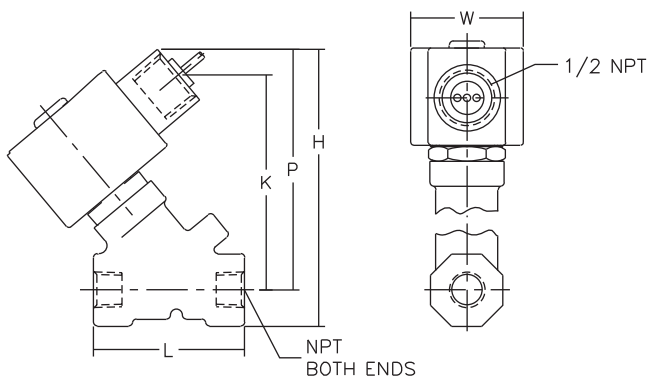
Const. Ref. 1, 2



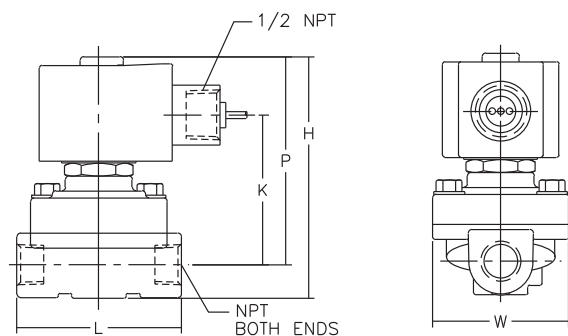
Const. Ref. 3



Const. Ref. 4, 9, 12



Const. Ref. 5, 7, 8, 10, 32-35



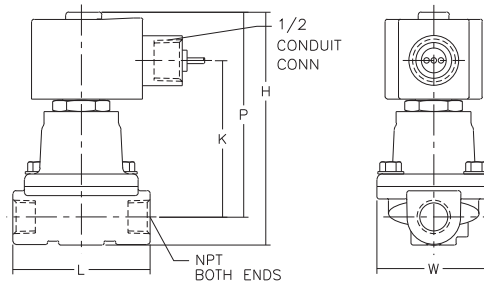
Dimensions inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 6 | ins. | 4.68 | 3.15 | 2.75 | 4.12 | 2.28 |
| | mm | 119 | 80 | 70 | 105 | 58 |
| 11 | ins. | 4.97 | 3.45 | 2.81 | 4.28 | 2.28 |
| | mm | 126 | 88 | 71 | 109 | 58 |
| 13 | ins. | 5.82 | 3.22 | 3.75 | 4.19 | 3.31 |
| | mm | 148 | 82 | 95 | 106 | 84 |
| 14 | ins. | 5.81 | 3.22 | 3.75 | 4.19 | 3.14 |
| | mm | 148 | 82 | 95 | 106 | 80 |
| 15 | ins. | 5.81 | 3.22 | 3.66 | 4.19 | 3.56 |
| | mm | 148 | 82 | 93 | 106 | 90 |
| 16 | ins. | 6.29 | 3.37 | 4.38 | 4.34 | 4.10 |
| | mm | 160 | 86 | 111 | 110 | 104 |
| 17 | ins. | 7.51 | 3.78 | 5.06 | 4.75 | 4.71 |
| | mm | 191 | 96 | 129 | 121 | 120 |
| 18 | ins. | 7.51 | 3.78 | 5.50 | 4.75 | 5.18 |
| | mm | 191 | 96 | 140 | 121 | 132 |
| 23 | ins. | 6.46 | 3.36 | 3.75 | 4.86 | 3.14 |
| | mm | 164 | 85 | 95 | 123 | 80 |
| 24 | ins. | 6.39 | 3.36 | 3.66 | 4.86 | 3.56 |
| | mm | 162 | 85 | 93 | 123 | 90 |
| 25 | ins. | 6.97 | 3.51 | 4.38 | 5.01 | 4.10 |
| | mm | 177 | 89 | 111 | 127 | 104 |
| 26 | ins. | 8.18 | 3.92 | 5.06 | 5.42 | 4.71 |
| | mm | 208 | 100 | 129 | 138 | 120 |
| 27 | ins. | 8.18 | 3.92 | 5.50 | 5.42 | 5.18 |
| | mm | 208 | 100 | 140 | 138 | 132 |
| 29 | ins. | 5.04 | 3.34 | 2.81 | 4.31 | 2.28 |
| | mm | 128 | 85 | 71 | 109 | 58 |
| 38 | ins. | 5.64 | 3.15 | 3.75 | 4.01 | 3.14 |
| | mm | 143 | 80 | 95 | 102 | 80 |
| 39 | ins. | 5.64 | 3.15 | 3.66 | 4.01 | 3.56 |
| | mm | 143 | 80 | 93 | 102 | 90 |
| 40 | ins. | 6.11 | 3.30 | 4.38 | 4.16 | 4.10 |
| | mm | 155 | 84 | 111 | 106 | 104 |
| 41 | ins. | 7.35 | 3.63 | 5.06 | 4.58 | 4.71 |
| | mm | 187 | 92 | 129 | 116 | 120 |
| 42 | ins. | 7.35 | 3.63 | 5.50 | 4.58 | 5.18 |
| | mm | 187 | 92 | 140 | 116 | 132 |
| 45 | ins. | 6.53 | 3.36 | 3.75 | 4.91 | 3.14 |
| | mm | 166 | 85 | 95 | 125 | 80 |
| 46 | ins. | 6.46 | 3.36 | 3.66 | 4.91 | 3.56 |
| | mm | 164 | 85 | 93 | 125 | 90 |
| 47 | ins. | 7.03 | 3.51 | 4.38 | 5.06 | 4.10 |
| | mm | 179 | 89 | 111 | 129 | 104 |
| 48 | ins. | 8.22 | 3.97 | 5.06 | 5.47 | 4.71 |
| | mm | 209 | 101 | 129 | 139 | 120 |
| 49 | ins. | 8.22 | 3.97 | 5.50 | 5.47 | 5.18 |
| | mm | 209 | 101 | 140 | 139 | 132 |

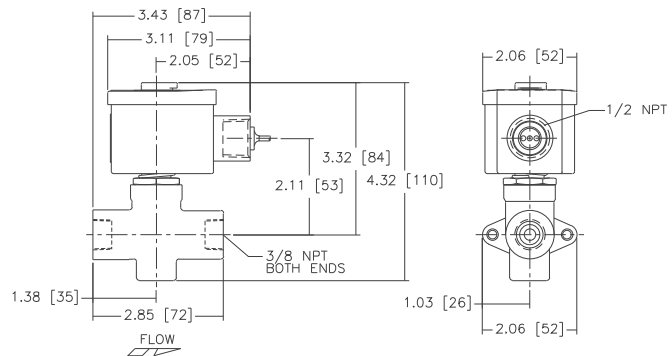
* Valves must be mounted with solenoid vertical and upright.

Const. Ref. 6, 11, 13, 29

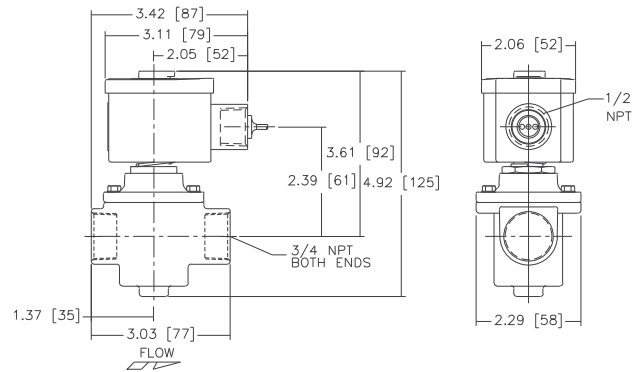
1/2 NPT OR 7/8 DIA HOLE FOR



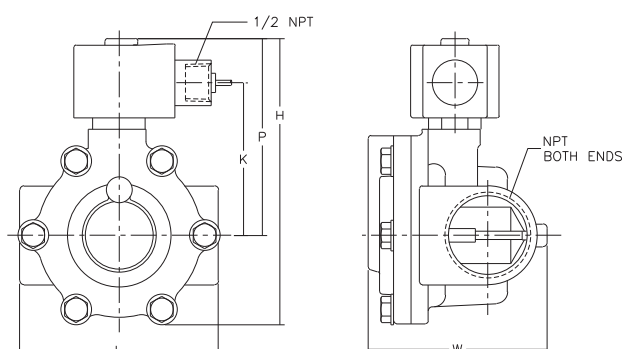
Const. Ref. 19*



Const. Ref. 20*



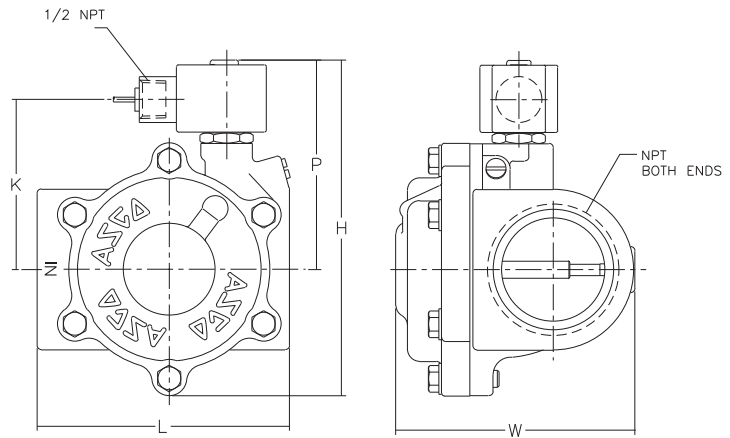
Const. Ref. 14-16, 23-25, 45-49



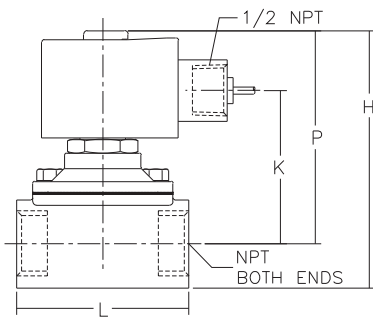
Dimensions inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 21 | ins. | 5.11 | 3.13 | 2.71 | 4.35 | 3.58 |
| | mm | 130 | 80 | 69 | 111 | 91 |
| 22 | ins. | 5.30 | 3.29 | 2.78 | 4.51 | 3.58 |
| | mm | 135 | 84 | 71 | 115 | 91 |
| 28 | ins. | 4.17 | 2.47 | 2.81 | 3.44 | 2.28 |
| | mm | 106 | 63 | 71 | 87 | 58 |
| 30 | ins. | 5.82 | 3.22 | 3.75 | 4.19 | 4.44 |
| | mm | 148 | 82 | 95 | 106 | 113 |
| 31 | ins. | 3.25 | 1.70 | 2.00 | 2.67 | 1.95 |
| | mm | 83 | 43 | 51 | 68 | 50 |
| 36 | ins. | 4.32 | 2.69 | 2.71 | 3.56 | 3.45 |
| | mm | 110 | 68 | 69 | 90 | 88 |
| 43 | ins. | 5.12 | 3.14 | 2.71 | 4.35 | 3.65 |
| | mm | 130 | 80 | 69 | 111 | 93 |
| 44 | ins. | 5.30 | 3.30 | 2.78 | 4.51 | 3.65 |
| | mm | 135 | 84 | 71 | 115 | 93 |

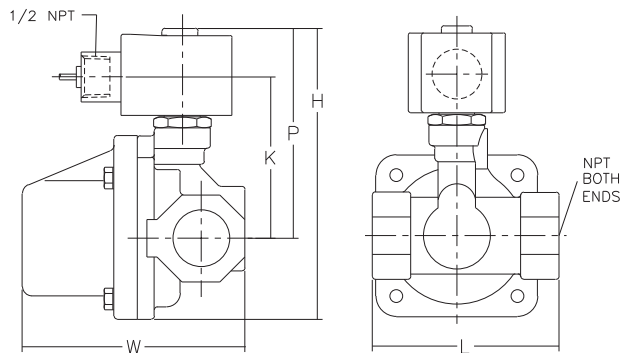
Const. Ref. 17, 18, 26, 27, 38-42



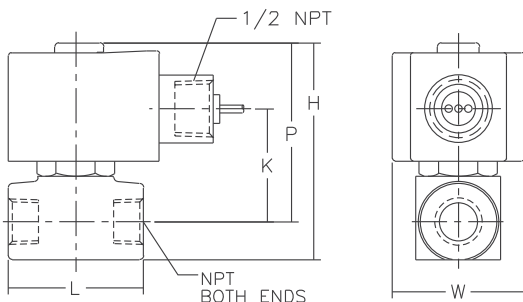
Const. Ref. 28



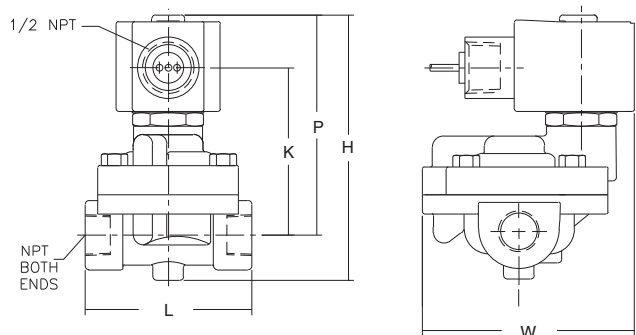
Const. Ref. 30



Const. Ref. 31



Const. Ref. 21, 22, 36, 43, 44



SPECIAL SERVICE VALVES

Features

- Designed for high flow and high pressure service
- Direct acting, requires no minimum operating pressure
- Ideal for power plants and similar applications

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|--|
| Body | Brass |
| Disc | 303 Stainless Steel (Metal) |
| Seats | Phosphor Bronze |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430 F Stainless Steel |
| Springs | 302 Stainless Steel, 17-7PH or Inconel |
| Shading Coil | Copper |
| Gaskets | NBR |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------------|----------------|
| | AC | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | AC | AC |
| H | 16.1 | 35 | 180 | 272810 | 272814 |
| H | 28.2 | 50 | 385 | 224195 | 224195 |

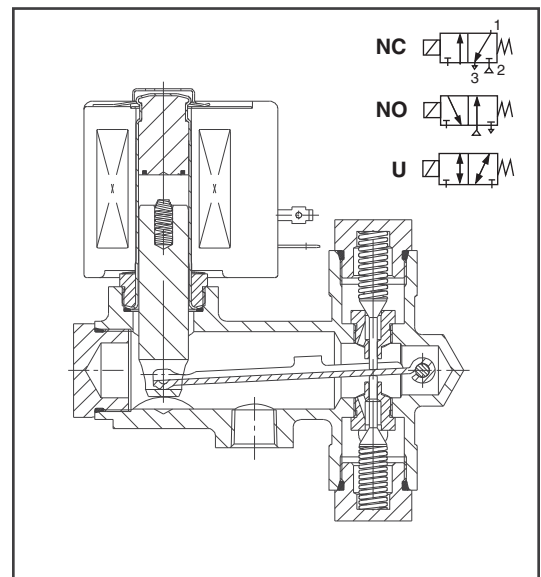
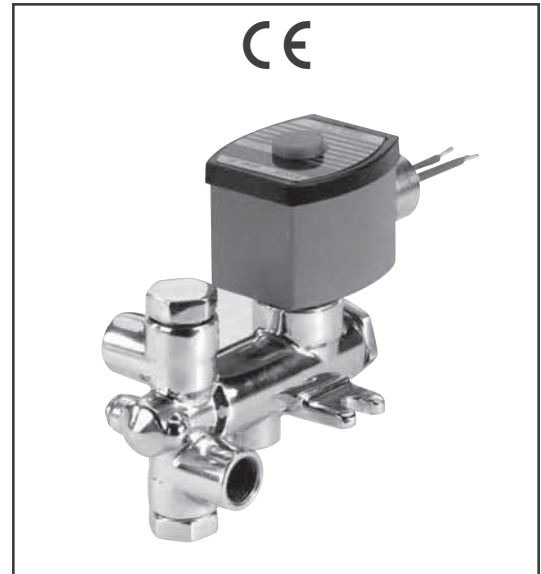
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 Must be specified when ordering.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X;
 RedHat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9;
 (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

Class H Coils AC: 32°F to 140°F (0°C to 60°C)

Refer to *Engineering Section* for details.

Approvals

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Brass Body | | Watt Rating/ Class of Coil Insulation |
|---|---------------------|----------------|---------------------------------------|-------|---------------------|--|-------------|---------------------------------------|
| | | | Max. AC | | | ① Add Suffix "F" for NC, "G" for NO, "U" for Univ. | | |
| | | | NC/NO | Univ. | AC | Catalog Number | Const. Ref. | AC |
| PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY | | | | | | | | |
| 1/4 | 1/4 | .45 | 100 | 55 | 344 | 8315G002 | 1 | 16.1/H |
| 3/8 | 1/4 | .45 | 100 | 50 | 344 | 8315G003 | 1 | 16.1/H |
| 3/8 | 5/16 | .75 | 105 | 50 | 344 | 8315 034 | 4 | 28.2/H |
| 1/2 | 5/16 | .75 | 100 | 50 | 344 | 8315 035 | 4 | 28.2/H |

① NC = Normally Closed: Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port. Refer to Engineering Section for details.

Specifications (Metric units)

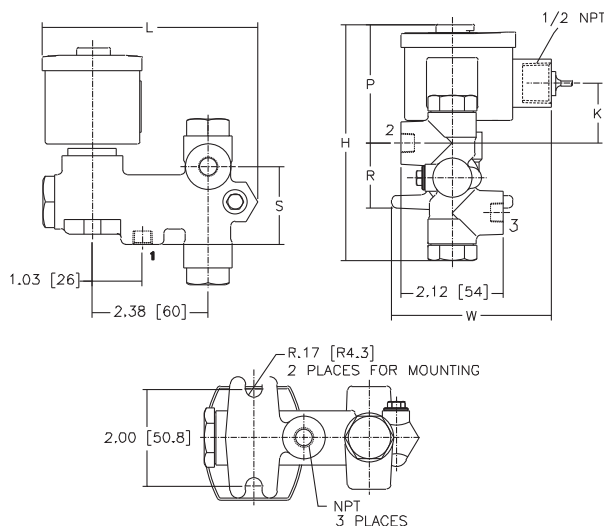
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Brass Body | | Watt Rating/ Class of Coil Insulation |
|---|-------------------|-----------------------|---------------------------------------|-------|---------------------|--|-------------|---------------------------------------|
| | | | Max. AC | | | ① Add Suffix "F" for NC, "G" for NO, "U" for Univ. | | |
| | | | NC/NO | Univ. | AC | Catalog Number | Const. Ref. | AC |
| PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY | | | | | | | | |
| 1/4 | .5 | .39 | 7 | 3.8 | 173 | 8315G002 | 1 | 16.1/H |
| 3/8 | .5 | .39 | 7 | 3.4 | 173 | 8315G003 | 1 | 16.1/H |
| 3/8 | .6 | .64 | 7.2 | 3.4 | 173 | 8315 034 | 4 | 28.2/H |
| 1/2 | .6 | .64 | 7 | 3.4 | 173 | 8315 035 | 4 | 28.2/H |

Dimensions inches (mm)

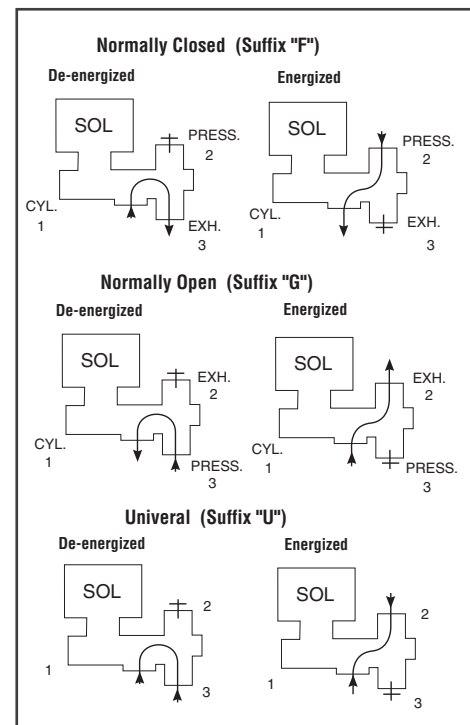
| Const. Ref. | | H | K | L | P | R | S | W |
|-------------|------|------|------|------|------|------|------|------|
| 1 | ins. | 4.89 | 1.44 | 4.44 | 2.46 | 1.34 | 1.60 | 3.30 |
| | mm | 124 | 37 | 113 | 62 | 34 | 40 | 84 |
| 4 | ins. | 4.89 | 1.44 | 4.44 | 2.46 | 1.34 | 1.60 | 3.30 |
| | mm | 124 | 37 | 113 | 62 | 34 | 40 | 84 |

IMPORTANT: Valves must be mounted vertical and upright.

Const. Ref. 1, 4



Flow Diagrams



Features

- Design eliminates metal-to-metal contact to extend life up to 20 million cycles in dry air or gas applications
- Internal AC hum and metallic click at energization are eliminated. Quiet operating
- Easily handles applications involving rapid cycling or continuous energization

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|------|
| Core Bumpers | UR |
| Rider Rings | PTFE |

For more information, see individual Series in General Service Valve Section.

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|----------------|
| | DC Watts | AC | | | General Purpose | Explosionproof |
| | | Watts | VA Holding | VA Inrush | AC | AC |
| F | ① | 15.1 | 22 | 22 | 270110 | 270114 |

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
Must be specified when ordering.

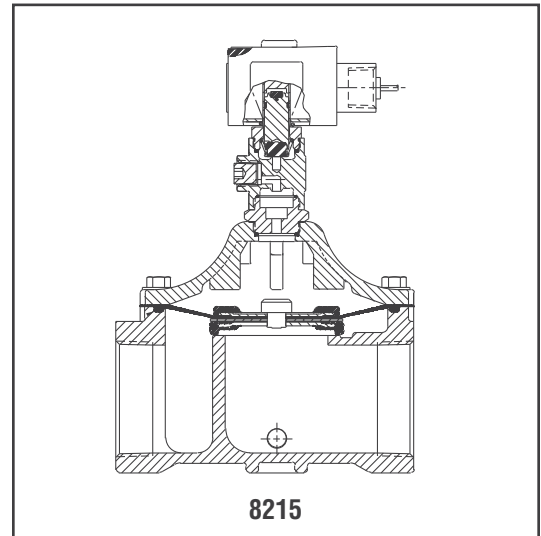
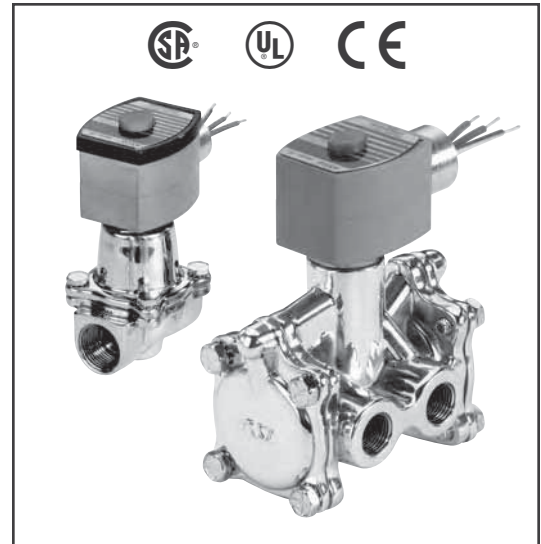
Note: ① Consult your local ASCO sales office for DC voltages.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
(To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves.
Meets applicable CE directives.

Installation

For optimum life, the valve should be installed with the solenoid positioned upright and vertical.

Refer to *Engineering Section* for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Brass Body Catalog Number | Aluminum Body Catalog Number | Watt Rating/Class of Coil Insulation AC |
|---|---------------------|----------------|---------------------------------------|-----------------------|---------------------|---------------------------|------------------------------|---|
| | | | Min. | Max. AC Air-Inert Gas | | | | |
| 2/2 VALVES (5 MILLION CYCLE CAPABILITY) | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 3/8 | 5/8 | 3 | 5 | 125 | 140 | 8210G001Q | - | 15.1/F |
| 1/2 | 5/8 | 4 | 5 | 125 | 140 | 8210G002Q | - | 15.1/F |
| 3/4 | 3/4 | 4.5 | 5 | 125 | 140 | 8210G009Q | - | 15.1/F |
| 1 | 1 5/8 | 13 | 1 | 20 | 140 | - | 8215G095Q | 15.1/F |
| 1 1/4 | 1 5/8 | 15 | 1 | 20 | 140 | - | 8215G096Q | 15.1/F |
| 1 1/2 | 1 5/8 | 20 | 1 | 20 | 140 | - | 8215G097Q | 15.1/F |
| 2 | 2 3/32 | 34 | 1 | 20 | 140 | - | 8215G098Q | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 3/8 | 5/8 | 3 | 5 | 125 | 140 | 8210G011Q | - | 15.1/F |
| 1/2 | 5/8 | 4 | 5 | 125 | 140 | 8210G012Q | - | 15.1/F |
| 3/4 | 3/4 | 4.5 | 5 | 125 | 140 | 8210G013Q | - | 15.1/F |
| 1 | 1 5/8 | 13 | 1 | 20 | 140 | - | 8215G099Q | 15.1/F |
| 1 1/4 | 1 5/8 | 15 | 1 | 20 | 140 | - | 8215G100Q | 15.1/F |
| 1 1/2 | 1 5/8 | 20 | 1 | 20 | 140 | - | 8215G101Q | 15.1/F |
| 2 | 2 3/32 | 34 | 1 | 20 | 140 | - | 8215G102Q | 15.1/F |
| 2/2 VALVES (20 MILLION CYCLE CAPABILITY) | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 1/8 | 1/8 | .35 | 0 | 125 | 140 | 8262G077Q | - | 15.1/F |
| 1/4 | 1/8 | .35 | 0 | 125 | 140 | 8262G232Q | - | 15.1/F |
| 1/4 | 7/32 | .85 | 0 | 50 | 140 | 8262G208Q | - | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 1/8 | 1/16 | .09 | 0 | 125 | 140 | 8262G091Q | - | 15.1/F |
| 1/4 | 1/16 | .09 | 0 | 125 | 140 | 8262G032Q | - | 15.1/F |
| 3/2 VALVES (5 MILLION CYCLE CAPABILITY) | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 3/8 | 5/8 | 3 | 10 | 125 | 140 | 8316G014Q ② | - | 15.1/F |
| 1/2 | 5/8 | 4 | 10 | 125 | 140 | 8316G024Q ② | - | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 3/8 | 5/8 | 3 | 10 | 125 | 140 | 8316G016Q ② | - | 15.1/F |
| 1/2 | 5/8 | 4 | 10 | 125 | 140 | 8316G026Q ② | - | 15.1/F |
| 3/2 VALVES (20 MILLION CYCLE CAPABILITY) | | | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | |
| 1/8 | 1/16 | .09 | 0 | 70 | 140 | 8320G001Q | - | 15.1/F |
| 1/4 | 1/16 | .09 | 0 | 70 | 140 | 8320G172Q | - | 15.1/F |
| 1/4 | 3/32 | .15 | 0 | 40 | 140 | 8320G174Q | - | 15.1/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 1/8 | 1/16 | .09 | 0 | 125 | 140 | 8320G013Q | - | 15.1/F |
| 1/4 | 1/16 | .09 | 0 | 125 | 140 | 8320G182Q | - | 15.1/F |
| 1/4 | 1/8 | .31 | 0 | 35 | 140 | 8320G186Q | - | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 1/8 | 1/16 | .09 | 0 | 125 | 140 | 8320G027Q | - | 15.1/F |
| 1/4 | 1/16 | .09 | 0 | 125 | 140 | 8320G192Q | - | 15.1/F |
| 1/4 | 1/8 | .31 | 0 | 35 | 140 | 8320G196Q | - | 15.1/F |
| 4/2 VALVES (5 MILLION CYCLE CAPABILITY) | | | | | | | | |
| SINGLE SOLENOID | | | | | | | | |
| 1/4 | 1/4 | .53 | 10 | 125 | 140 | 8344G070Q ② | - | 15.1/F |
| 3/8 | 1/4 | .53 | 10 | 125 | 140 | 8344G001Q ② | - | 15.1/F |
| 1/2 | 3/8 | 1.3 | 10 | 125 | 140 | 8344G074Q ② | - | 15.1/F |
| 4/2 VALVES (20 MILLION CYCLE CAPABILITY) | | | | | | | | |
| SINGLE SOLENOID | | | | | | | | |
| 1/4 | 1/16 | ① | 10 | 100 | 140 | 8345G002Q ② | - | 15.1/F |

① Inlet Cv is 0.036; exhaust Cv is 0.092.

② **IMPORTANT:** A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports.

Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

SPECIAL SERVICE VALVES

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m ³ /h) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Brass Body Catalog Number | Aluminum Body Catalog Number | Watt Rating/Class of Coil Insulation AC |
|---|-------------------|------------------------------------|---------------------------------------|-----------------------|---------------------|---------------------------|------------------------------|---|
| | | | Min. | Max. AC Air-Inert Gas | | | | |
| 2/2 VALVES (5 MILLION CYCLE CAPABILITY) | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 3/8 | 16 | 2.57 | 0.3 | 8.6 | 60 | 8210G001Q | - | 15.1/F |
| 1/2 | 16 | 3.43 | 0.3 | 8.6 | 60 | 8210G002Q | - | 15.1/F |
| 3/4 | 19 | 3.86 | 0.3 | 8.6 | 60 | 8210G009Q | - | 15.1/F |
| 1 | 41 | 11.14 | 0.1 | 1.4 | 60 | - | 8215G095Q | 15.1/F |
| 1 1/4 | 41 | 12.86 | 0.1 | 1.4 | 60 | - | 8215G096Q | 15.1/F |
| 1 1/2 | 41 | 17.14 | 0.1 | 1.4 | 60 | - | 8215G097Q | 15.1/F |
| 2 | 53 | 29.14 | 0.1 | 1.4 | 60 | - | 8215G098Q | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 3/8 | 16 | 2.57 | 0.3 | 8.6 | 60 | 8210G011Q | - | 15.1/F |
| 1/2 | 16 | 3.43 | 0.3 | 8.6 | 60 | 8210G012Q | - | 15.1/F |
| 3/4 | 19 | 3.86 | 0.3 | 8.6 | 60 | 8210G013Q | - | 15.1/F |
| 1 | 41 | 11.14 | 0.1 | 1.4 | 60 | - | 8215G099Q | 15.1/F |
| 1 1/4 | 41 | 12.86 | 0.1 | 1.4 | 60 | - | 8215G100Q | 15.1/F |
| 1 1/2 | 41 | 17.14 | 0.1 | 1.4 | 60 | - | 8215G101Q | 15.1/F |
| 2 | 53 | 29.14 | 0.1 | 1.4 | 60 | - | 8215G102Q | 15.1/F |
| 2/2 VALVES (20 MILLION CYCLE CAPABILITY) | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 1/8 | 3 | .30 | 0.0 | 8.6 | 60 | 8262G077Q | - | 15.1/F |
| 1/4 | 3 | .30 | 0.0 | 8.6 | 60 | 8262G232Q | - | 15.1/F |
| 1/4 | 6 | .72 | 0.0 | 3.4 | 60 | 8262G208Q | - | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 1/8 | 2 | .08 | 0.0 | 8.6 | 60 | 8262G091Q | - | 15.1/F |
| 1/4 | 2 | .08 | 0.0 | 8.6 | 60 | 8262G032Q | - | 15.1/F |
| 3/2 VALVES (5 MILLION CYCLE CAPABILITY) | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 3/8 | 16 | 2.57 | 0.7 | 8.6 | 60 | 8316G014Q ② | - | 15.1/F |
| 1/2 | 16 | 3.43 | 0.7 | 8.6 | 60 | 8316G024Q ② | - | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 3/8 | 16 | 2.57 | 0.7 | 8.6 | 60 | 8316G016Q ② | - | 15.1/F |
| 1/2 | 16 | 3.43 | 0.7 | 8.6 | 60 | 8316G026Q ② | - | 15.1/F |
| 3/2 VALVES (20 MILLION CYCLE CAPABILITY) | | | | | | | | |
| UNIVERSAL OPERATION (Pressure at any port) | | | | | | | | |
| 1/8 | 2 | .08 | 0.0 | 4.8 | 60 | 8320G001Q | - | 15.1/F |
| 1/4 | 2 | .08 | 0.0 | 4.8 | 60 | 8320G172Q | - | 15.1/F |
| 1/4 | 2 | .13 | 0.0 | 2.8 | 60 | 8320G174Q | - | 15.1/F |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | |
| 1/8 | 2 | .08 | 0.0 | 8.6 | 60 | 8320G013Q | - | 15.1/F |
| 1/4 | 2 | .08 | 0.0 | 8.6 | 60 | 8320G182Q | - | 15.1/F |
| 1/4 | 3 | .27 | 0.0 | 2.4 | 60 | 8320G186Q | - | 15.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | |
| 1/8 | 2 | .08 | 0.0 | 8.6 | 60 | 8320G027Q | - | 15.1/F |
| 1/4 | 2 | .08 | 0.0 | 8.6 | 60 | 8320G192Q | - | 15.1/F |
| 1/4 | 3 | .27 | 0.0 | 2.4 | 60 | 8320G196Q | - | 15.1/F |
| 4/2 VALVES (5 MILLION CYCLE CAPABILITY) | | | | | | | | |
| SINGLE SOLENOID | | | | | | | | |
| 1/4 | 6 | .45 | 0.7 | 8.6 | 60 | 8344G070Q ② | - | 15.1/F |
| 3/8 | 6 | .45 | 0.7 | 8.6 | 60 | 8344G001Q ② | - | 15.1/F |
| 1/2 | 10 | 1.11 | 0.7 | 8.6 | 60 | 8344G074Q ② | - | 15.1/F |
| 4/2 VALVES (20 MILLION CYCLE CAPABILITY) | | | | | | | | |
| SINGLE SOLENOID | | | | | | | | |
| 1/4 | 2 | ① | 0.7 | 6.9 | 60 | 8345G002Q ② | - | 15.1/F |

① Inlet Kv is 0.031; exhaust Kv is 0.079.

② **IMPORTANT:** A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports.

Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

SPECIAL SERVICE VALVES

Dimensions inches (mm)

Note: Please see General Service Section for applicable 2-way, 3-way, and 4-way valve dimensions.

Features

- Flow rates adjustable between 0% and 100% of rating
- Control achieved by applying straight voltage between 0 and 24 VDC via potentiometer or other variable power supply
- Flow rate can also be regulated by a range of electrical inputs (sensors, transmitters, PLC, etc.) via an ASCO Electronic Control Unit or similar circuit
- Suitable for use in air/gas, low vacuum service, as well as to precisely control flow of water

Construction

| Valve Parts in Contact with Fluids | | | |
|------------------------------------|----------------------|---------------------|-------|
| | 8202 | | 8203 |
| Body | Brass | 303 Stainless Steel | Brass |
| Seals and Disc/Diaphragm* | FKM | | NBR |
| Core Tube | 305 Stainless Steel | | |
| Core and Plugnut | 430F Stainless Steel | | |
| Springs | 302 Stainless Steel | | |
| Rider Rings | PTFE | | |
| Breaker Piece | Brass | 303 Stainless Steel | Brass |

Electrical

Standard voltage: 24 VDC

Coil: Molded Class F

Coil resistance: 25 Ohm at 68°F (20°C)

Operating current: 100 - 500 mA

Electrical coil input: 0 - 24 VDC

Recommended PWM frequency: 300 Hz Air/Gas; 200 Hz Water/Light Oil

Hysteresis: <5% (<7.5% for 8203 Valves) ①

Repeatability: <3% (<1% for 1/8" NPT Valves) ①

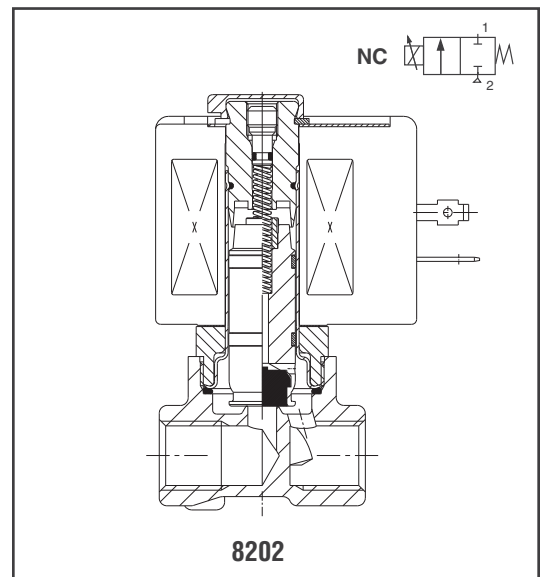
Sensitivity: <2% (<1% for 1/8" NPT Valves) ①

① Percentage of max. value with 24 VDC, PWM, 300 Hz voltage supply at constant differential pressure.

Solenoid Enclosures

Standard: RedHat II Class F coil with DIN connection (meets ISO 4400/DIN 43650A standards). For 22.6 watt solenoids. 8.6 watt "SC" solenoid uses electrical connector per DIN 46244.

Optional: For Class H coil, use prefix "SV" (for use with customer supplied electronics): General Purpose and Watertight, Types 1, 2, 3, 3S, and 4X on 22.6 watt solenoids.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

14°F to 104°F (-10°C to 40°C) for 22.6 watt solenoid.
32°F to 104°F (0°C to 40°C) for 8.6 watt solenoid.

Approvals (8202 1/4" to 3/8" only)

UL Recognized Component with DIN solenoid (prefix SD or SV).

UL Listed with threaded conduit (no prefix)

CSA certified.

Note: The Electronic Control Unit (sold separately) is only compatible with DIN connectors

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Catalog Number | | UL ② Listing | Const. Ref. | Watt Rating/ Class of Coil Insulation ④ |
|------------------|---------------------|----------------|---------------------------------------|--------------------|--------|---------------------|----------------|----------------------|--------------|-------------|---|
| | | | Min. | Max. | | | Brass Body | Stainless Steel Body | | | |
| | | | | Air/Gas/Low Vacuum | Liquid | | | | | | |
| 1/8 | 3/64 | .04 | 0 | 115 | 75 | 180 | SC8202A201V | SC8202A205V | - | 5 | 8.6/F |
| 1/8 | 1/16 | .06 | 0 | 90 | 60 | 180 | SC8202A202V | SC8202A206V | - | 5 | 8.6/F |
| 1/8 | 3/32 | .14 | 0 | 60 | 45 | 180 | SC8202A203V | SC8202A207V | - | 5 | 8.6/F |
| 1/8 | 1/8 | .20 | 0 | 35 | 35 | 180 | SC8202A204V | SC8202A208V | - | 5 | 8.6/F |

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Catalog Number | | UL ② Listing | Const. Ref. | Watt Rating/ Class of Coil Insulation ③ |
|-----------------------------|---------------------|----------------|---------------------------------------|-------------------|-------------------|---------------------|----------------|-----------------|--------------|-------------|---|
| | | | Min. | Max. | | | Air-Inert Gas | Water/Light Oil | | | |
| | | | | Low Vacuum (Hg) ① | Air/Gas/Water/Oil | | | | | | |
| Brass Body | | | | | | | | | | | |
| 1/4 | 3/64 | .06 | 0 | 29 | 230 | 150 | SD8202G001V | SD8202G051V | ● | 1 | 22.6/F |
| 1/4 | 3/62 | .14 | 0 | 29 | 115 | 150 | SD8202G002V | SD8202G052V | ● | 1 | 22.6/F |
| 1/4 | 1/8 | .28 | 0 | 29 | 60 | 150 | SD8202G003V | SD8202G053V | ● | 1 | 22.6/F |
| 1/4 | 5/32 | .50 | 0 | 29 | 35 | 150 | SD8202G004V | SD8202G054V | ● | 1 | 22.6/F |
| 1/4 | 7/32 | .85 | 0 | 29 | 20 | 150 | SD8202G006V | SD8202G056V | ● | 1 | 22.6/F |
| 1/4 | 9/32 | 1.06 | 0 | 29 | 15 | 150 | SD8202G007V | SD8202G057V | ● | 1 | 22.6/F |
| 3/8 | 1/8 | .28 | 0 | 29 | 60 | 150 | SD8202G023V | SD8202G073V | ● | 2 | 22.6/F |
| 3/8 | 5/32 | .50 | 0 | 29 | 35 | 150 | SD8202G024V | SD8202G074V | ● | 2 | 22.6/F |
| 3/8 | 7/32 | .85 | 0 | 29 | 20 | 150 | SD8202G026V | SD8202G076V | ● | 2 | 22.6/F |
| 3/8 | 9/32 | 1.06 | 0 | 29 | 15 | 150 | SD8202G027V | SD8202G077V | ● | 2 | 22.6/F |
| Stainless Steel Body | | | | | | | | | | | |
| 1/4 | 3/64 | .06 | 0 | 29 | 230 | 150 | SD8202G011V | SD8202G061V | ● | 3 | 22.6/F |
| 1/4 | 3/62 | .14 | 0 | 29 | 115 | 150 | SD8202G012V | SD8202G062V | ● | 3 | 22.6/F |
| 1/4 | 1/8 | .28 | 0 | 29 | 60 | 150 | SD8202G013V | SD8202G063V | ● | 3 | 22.6/F |
| 1/4 | 5/32 | .50 | 0 | 29 | 35 | 150 | SD8202G014V | SD8202G064V | ● | 3 | 22.6/F |
| 1/4 | 7/32 | .85 | 0 | 29 | 20 | 150 | SD8202G016V | SD8202G066V | ● | 3 | 22.6/F |
| 1/4 | 9/32 | 1.06 | 0 | 29 | 15 | 150 | SD8202G017V | SD8202G067V | ● | 3 | 22.6/F |
| 3/8 | 1/8 | .28 | 0 | 29 | 60 | 150 | SD8202G033V | SD8202G083V | ● | 4 | 22.6/F |
| 3/8 | 5/32 | .50 | 0 | 29 | 35 | 150 | SD8202G034V | SD8202G084V | ● | 4 | 22.6/F |
| 3/8 | 7/32 | .85 | 0 | 29 | 20 | 150 | SD8202G036V | SD8202G086V | ● | 4 | 22.6/F |
| 3/8 | 9/32 | 1.06 | 0 | 29 | 15 | 150 | SD8202G037V | SD8202G087V | ● | 4 | 22.6/F |

① Applicable to air-Inert gas valves only.
 ② ● General Purpose valve. Refer to Engineering Section (Approvals) for more details.
 ③ Will vary with duty cycle (8.5 watts at 500 mA with ambient temp. = 104°F (40°C)).
 ④ Will vary with duty cycle (Cold = 6.8 watts, hot 9.1 watts at 450 mA with ambient temp. = 69°F (20°C)). (Cold = 6.3 watts, hot 8.6 watts at 450 mA with ambient temp. = 104°F (40°C)).

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | Max. Fluid Temp. °F | Catalog Number | UL ② Listing | Const. Ref. | Watt Rating/ Class of Coil Insulation ③ |
|-------------------|---------------------|----------------|---------------------------------------|-----------------|-----|---------------------|----------------|--------------|-------------|---|
| | | | Min. | Max. | | | | | | |
| | | | | Water/Light Oil | | | | | | |
| Brass Body | | | | | | | | | | |
| 3/8 | 1/2 | 2.43 | 5 | 150 | 150 | SD8203G001 | - | 6 | 22.6/F | |
| 1/2 | 1/2 | 2.43 | 5 | 150 | 150 | SD8203G002 | - | 6 | 22.6/F | |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | Catalog Number | | UL ② Listing | Const. Ref. | Watt Rating/ Class of Coil Insulation ④ |
|------------------|-------------------|-----------------------|---------------------------------------|--------------------|--------|---------------------|----------------|----------------------|--------------|-------------|---|
| | | | Min. | Max. | | | Brass Body | Stainless Steel Body | | | |
| | | | | Air/Gas/Low Vacuum | Liquid | | | | | | |
| 1/8 | 1.2 | .03 | 0 | 8 | 5 | 82 | SC8202A201V | SC8202A205V | - | 5 | 8.6/F |
| 1/8 | 1.6 | .05 | 0 | 6 | 4 | 82 | SC8202A202V | SC8202A206V | - | 5 | 8.6/F |
| 1/8 | 2.4 | .12 | 0 | 4 | 3 | 82 | SC8202A203V | SC8202A207V | - | 5 | 8.6/F |
| 1/8 | 3.2 | .17 | 0 | 2.5 | 2.5 | 82 | SC8202A204V | SC8202A208V | - | 5 | 8.6/F |

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | | Max. Fluid Temp. °C | Catalog Number | | UL ② Listing | Const. Ref. | Watt Rating/ Class of Coil Insulation ③ |
|-----------------------------|-------------------|-----------------------|---------------------------------------|-------------------|-------------------|---------------------|----------------|-----------------|--------------|-------------|---|
| | | | Min. | Max. | | | Air-Inert Gas | Water/Light Oil | | | |
| | | | | Low Vacuum (Hg) ① | Air/Gas/Water/Oil | | | | | | |
| Brass Body | | | | | | | | | | | |
| 1/4 | 1.2 | .05 | 0 | 2 | 16 | 65 | SD8202G001V | SD8202G051V | ● | 1 | 22.6/F |
| 1/4 | 2.4 | .12 | 0 | 2 | 8 | 65 | SD8202G002V | SD8202G052V | ● | 1 | 22.6/F |
| 1/4 | 3.2 | .24 | 0 | 2 | 4 | 65 | SD8202G003V | SD8202G053V | ● | 1 | 22.6/F |
| 1/4 | 4.0 | .42 | 0 | 2 | 2 | 65 | SD8202G004V | SD8202G054V | ● | 1 | 22.6/F |
| 1/4 | 5.6 | .72 | 0 | 2 | 1 | 65 | SD8202G006V | SD8202G056V | ● | 1 | 22.6/F |
| 1/4 | 7.1 | .90 | 0 | 2 | 1 | 65 | SD8202G007V | SD8202G057V | ● | 1 | 22.6/F |
| 3/8 | 3.2 | .24 | 0 | 2 | 4 | 65 | SD8202G023V | SD8202G073V | ● | 2 | 22.6/F |
| 3/8 | 4.0 | .42 | 0 | 2 | 2 | 65 | SD8202G024V | SD8202G074V | ● | 2 | 22.6/F |
| 3/8 | 5.6 | .72 | 0 | 2 | 1 | 65 | SD8202G026V | SD8202G076V | ● | 2 | 22.6/F |
| 3/8 | 7.1 | .90 | 0 | 2 | 1 | 65 | SD8202G027V | SD8202G077V | ● | 2 | 22.6/F |
| Stainless Steel Body | | | | | | | | | | | |
| 1/4 | 1.2 | .05 | 0 | 2 | 16 | 65 | SD8202G011V | SD8202G061V | ● | 3 | 22.6/F |
| 1/4 | 2.4 | .12 | 0 | 2 | 8 | 65 | SD8202G012V | SD8202G062V | ● | 3 | 22.6/F |
| 1/4 | 3.2 | .24 | 0 | 2 | 4 | 65 | SD8202G013V | SD8202G063V | ● | 3 | 22.6/F |
| 1/4 | 4.0 | .42 | 0 | 2 | 2 | 65 | SD8202G014V | SD8202G064V | ● | 3 | 22.6/F |
| 1/4 | 5.6 | .72 | 0 | 2 | 1 | 65 | SD8202G016V | SD8202G066V | ● | 3 | 22.6/F |
| 1/4 | 7.1 | .90 | 0 | 2 | 1 | 65 | SD8202G017V | SD8202G067V | ● | 3 | 22.6/F |
| 3/8 | 3.2 | .24 | 0 | 2 | 4 | 65 | SD8202G033V | SD8202G083V | ● | 4 | 22.6/F |
| 3/8 | 4.0 | .42 | 0 | 2 | 2 | 65 | SD8202G034V | SD8202G084V | ● | 4 | 22.6/F |
| 3/8 | 5.6 | .72 | 0 | 2 | 1 | 65 | SD8202G036V | SD8202G086V | ● | 4 | 22.6/F |
| 3/8 | 7.1 | .90 | 0 | 2 | 1 | 65 | SD8202G037V | SD8202G087V | ● | 4 | 22.6/F |

① Applicable to air-Inert gas valves only.

② ● General Purpose valve. Refer to Engineering Section (Approvals) for more details.

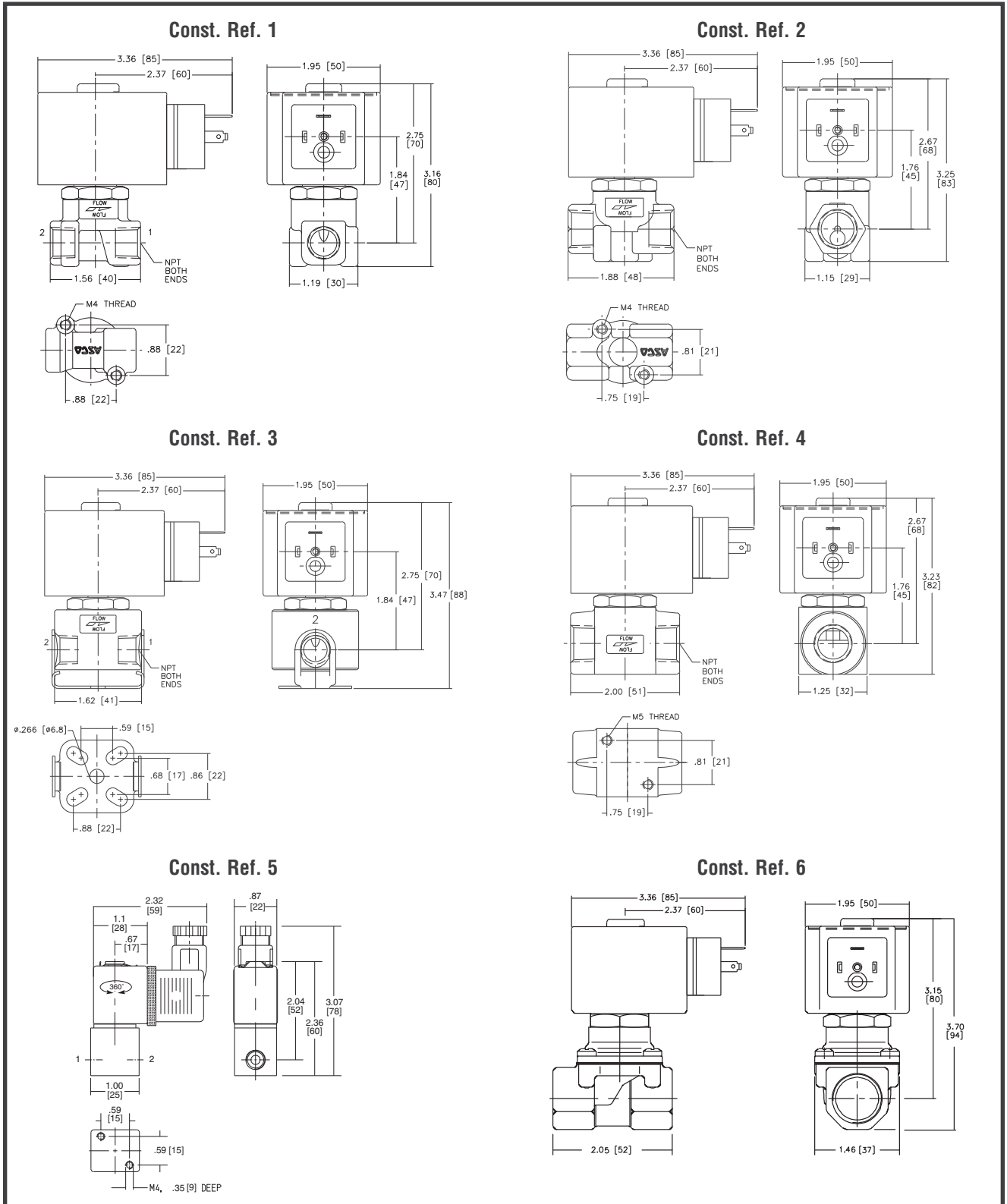
③ Will vary with duty cycle (8.5 watts at 500 mA with ambient temp. = 104°F (40°C)).

④ Will vary with duty cycle (Cold = 6.8 watts, hot 9.1 watts at 450 mA with ambient temp. = 69°F (20°C). (Cold = 6.3 watts, hot 8.6 watts at 450 mA with ambient temp. = 104°F (40°C)).

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | UL ② Listing | Const. Ref. | Watt Rating/ Class of Coil Insulation ③ |
|-------------------|-------------------|-----------------------|---------------------------------------|-----------------|---------------------|----------------|--------------|-------------|---|
| | | | Min. | Max | | | | | |
| | | | | Water/Light Oil | | | | | |
| Brass Body | | | | | | | | | |
| 3/8 | 12.7 | 2.1 | .3 | 10 | 65 | SD8203G001 | - | 6 | 22.6/F |
| 1/2 | 12.7 | 2.1 | .3 | 10 | 65 | SD8203G002 | - | 6 | 22.6/F |

SPECIAL SERVICE VALVES

Dimensions inches (mm)



SPECIAL SERVICE VALVES

Description

One unit, Catalog Number 8908A001, can be used for all 1/4" to 1/2" Posiflow valves with DIN solenoids. Another unit, Catalog Number 8908A003, can be used for all 1/8" Posiflow valves with DIN solenoids.

To maintain a specific flow rate, current through the coil must be kept constant and substantially independent from changes in the coil winding resistance (caused by temperature variation). The Electronic Control Unit will accomplish this quite efficiently via pulse width modulation. Voltage to the coil is cut into rectangular pulses by rapidly switching it on and off. By varying the "on" time (pulse width) percentage to compensate for temperature variations, current through the coil is kept constant.

Construction

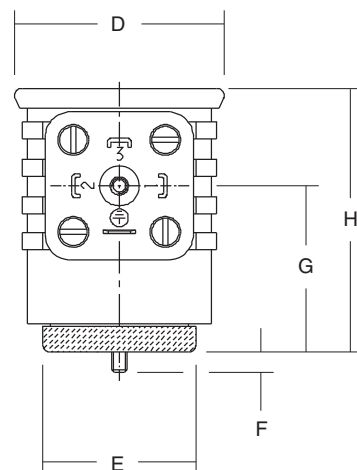
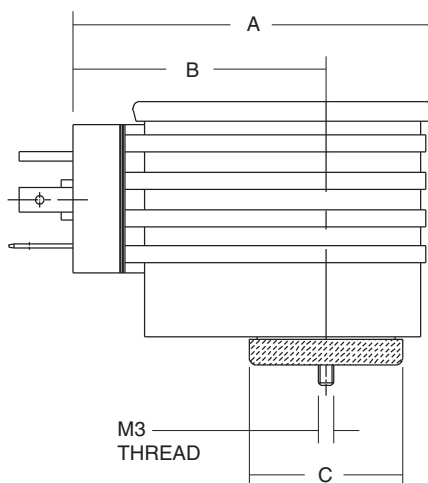
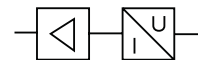
| | |
|-------------------------|---|
| Housing Assembly | PA + FV |
| Cover | PA + FV |
| Screw | Zinc plated steel |
| Gasket | NBR |
| Connector Specification | ISO 4400/DIN 43650 |
| Protection | IP 65 (Dust-tight Protection against water jets from any direction) |

Electrical Characteristics

- Nominal supply voltage:**
24 VDC \pm 10%, maximum ripple 10%
- Maximum full-load current:**
1100 mA (factory set at 500 mA)
- Input control signal (selectable):**
0-10 VDC or 0-20 mA or 4-20 mA
- Switch-off current:**
<2% of max. input control signal
- Adjustable off-set:**
15-50% of pulse width modulation voltage
- Adjustable full-load:**
30-100% of pulse width modulation voltage
- Ramp time:**
Manually activated via on/off switch;
adjustable 0.1-3 seconds
- Adjustable PWM frequency:**
40-700 Hz
- Power consumption:**
0.8 watts

Dimensions inches (mm)

| Catalog No. | A | B | C | D | E | F | G | H |
|-------------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-------------|
| 8908A001 | 2.76 (70) | 1.89 (48) | 1.18 (30) | 1.61 (41) | 1.18 (30) | 0.16 (4) | 1.26 (32) | 2.03 (51.5) |
| 8908A003 | 2.76 (70) | 1.89 (48) | 1.26 (32) | 1.61 (41) | 0.91 (23) | 0.16 (4) | 2.40 (61) | 3.15 (80) |



SPECIAL SERVICE VALVES

Features

- Variable flow proportional to the control signal
- Closed loop control via linear potentiometer
- Fail-close construction: Valve returns to closed position upon loss of power
- Supplied factory-assembled

General

Maximum allowable pressure: 240 psi
Fluid Temperature Ranges: See chart on following page
Ambient Temperature Ranges: 32 to 122°F
Response Time: See chart on following page
Linearity: ± 5%
Hysteresis: < 1%

Compact Positioner

Pilot Fluids: Air or inert gas, filtered 50µm lubricated or not
Pilot Pressure: 60 to 150 psi
Pilot Fluid Temperature: 32 to 140°F
Pilot Connection: 1/8"
Maximum Current: 150mA
Nominal Supply Voltage: 24VDC ± 10%, Max. ripple 10%
Maximum Power: 3.6 W
Connector Size 15: Spade plug CM6, 4 pins
Coil Insulation Class: F
Positioner Body/Enclosure: Aluminum, PA/IP65

Control Signal

| Control Signal | Suffix ① |
|----------------|----------|
| 0 - 10 VDC | PDB04 |
| 0 - 20 mA | PDB05 |
| 4 - 20 mA | PDB06 |

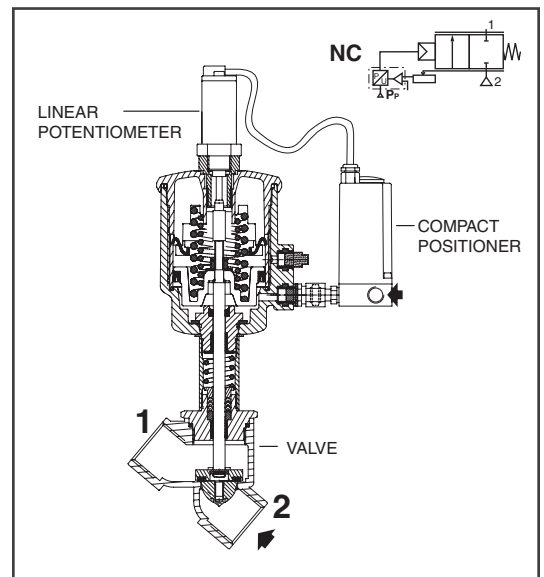
① Add suffix to 8290 catalog number (EG: 8290A384PDB04), see following page for complete product range. Supplied installed on valve and pre-adjusted at the factory. Positioner configured for one, customer-specified, control signal.

Linear Potentiometer

Resistance: 500Ω
Body/Enclosure: Aluminum/IP65

Valve Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|---------------------|----------------------|
| Part | 50mm - 125mm | 50mm - 125mm |
| Body | Bronze | 316L Stainless Steel |
| Stem | 431 Stainless Steel | 431 Stainless Steel |
| Stuffing Box | Brass | 303 Stainless Steel |
| Stuffing Box Seal | PTFE Chevron | PTFE Chevron |
| Wiper Seal | FKM | FKM |
| Profile Disc | Brass | 304L Stainless Steel |
| Disc Seal | PTFE | PTFE |

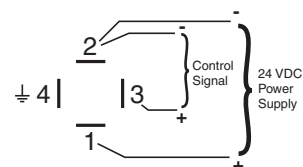


SPECIAL SERVICE VALVES

Electrical Connection

Compact Positioner

- 1: + 24 VDC (power)
- 2: 0 VDC (power)
- 3: Control Signal (0-10 VDC, 0-20mA, 4-20mA)
- 4: (0-10V) Sensor Feedback for calibration (Factory use only, is not an earth ground)



Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | OPD Min (psi.) | OPD Max. Fluids (psi.) | OPD Max. Steam (psi.) | Max. Fluid Temp. °F | Bronze | Stainless Steel | Pilot Pressure Min (psi) | Pilot Pressure Max (psi) | Approx. Shipping Weight (lbs.) | Suffix ① (0 -10 VDC) Fail closed | Suffix ① (0 -20 mA) Fail closed | Suffix ① (4 -20 mA) Fail closed | | | |
|-----------------------|---------------------|----------------|----------------|------------------------|-----------------------|---------------------|----------|-----------------|--------------------------|--------------------------|--------------------------------|----------------------------------|---------------------------------|---------------------------------|--|--|--|
| 50mm Operator | | | | | | | | | | | | | | | | | |
| 1/2 | 1/2 | 5.3 | 0 | 240 | 150 | 366 | 8290A384 | 8290A393 | 60 | 150 | 4.1 | PDB04 | PDB05 | PDB06 | | | |
| 3/4 | 3/4 | 8.3 | 0 | 150 | 150 | 366 | 8290A385 | 8290A394 | 60 | 150 | 4.3 | | | | | | |
| 63mm Operator | | | | | | | | | | | | | | | | | |
| 3/4 | 3/4 | 8.3 | 0 | 240 | 150 | 366 | 8290B005 | 8290B048 | 60 | 150 | 5.3 | | | | | | |
| 1 | 1 | 17 | 0 | 150 | 150 | 366 | 8290B010 | 8290B053 | 60 | 150 | 6.3 | | | | | | |
| 1-1/4 | 1-1/4 | 24 | 0 | 90 | 90 | 366 | 8290A016 | 8290A059 | 60 | 150 | 7.5 | | | | | | |
| 1-1/2 | 1-1/2 | 33 | 0 | 60 | 60 | 366 | 8290A020 | 8290A063 | 60 | 150 | 9.8 | | | | | | |
| 2 | 2 | 46 | 0 | 40 | 40 | 366 | 8290A024 | 8290A067 | 60 | 150 | 12.2 | | | | | | |
| 90mm Operator | | | | | | | | | | | | | | | | | |
| 1 | 1 | 17 | 0 | 240 | 150 | 366 | 8290B011 | 8290B054 | 60 | 150 | 7.9 | | | | | | |
| 1-1/4 | 1-1/4 | 24 | 0 | 180 | 150 | 366 | 8290A017 | 8290A060 | 60 | 150 | 9.3 | | | | | | |
| 1-1/2 | 1-1/2 | 33 | 0 | 120 | 120 | 366 | 8290A021 | 8290A064 | 60 | 150 | 11.1 | | | | | | |
| 2 | 2 | 46 | 0 | 90 | 90 | 366 | 8290A025 | 8290A068 | 60 | 150 | 17.8 | | | | | | |
| 125mm Operator | | | | | | | | | | | | | | | | | |
| 1-1/4 | 1-1/4 | 34 | 0 | 240 | 150 | 366 | 8290A642 | 8290A646 | 60 | 150 | 15.1 | | | | | | |
| 1-1/2 | 1-1/2 | 56 | 0 | 240 | 150 | 366 | 8290A482 | 8290A495 | 60 | 150 | 16.6 | | | | | | |
| 2 | 2 | 77 | 0 | 150 | 120 | 366 | 8290A485 | 8290A498 | 60 | 150 | 18.8 | | | | | | |
| 2-1/2 | 2-1/2 | 86 | 0 | 90 | 90 | 366 | 8290A488 | 8290A501 | 60 | 150 | 23.7 | | | | | | |

① Add suffix to 8290 catalog number (EG: 8290A384PDB04). Fail closed construction: Valve returns to closed position upon loss of power.
Compact Positioner not available on 32mm Operator.

Response time (seconds)

for NC valves - 90 psi air controlled @ max. pilot pressure (150 psi)

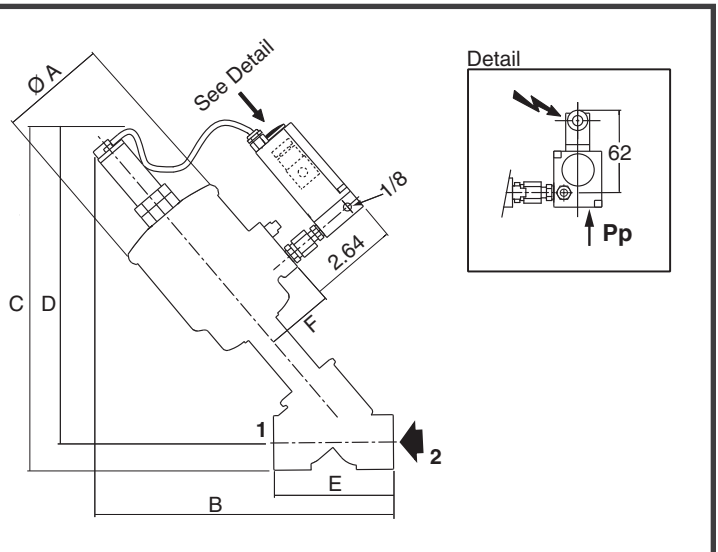
| Pipe Size (ins.) | Operator (mm) | | | | | | | |
|------------------|---------------|-------|------|-------|------|-------|------|-------|
| | 50 | | 63 | | 90 | | 125 | |
| | Open | Close | Open | Close | Open | Close | Open | Close |
| 1/2 | 1.26 | 0.92 | - | - | - | - | - | - |
| 3/4 | 1.30 | 0.93 | 1.7 | 2.25 | - | - | - | - |
| 1 | - | - | 2.7 | 3.18 | 5.23 | 7.26 | - | - |
| 1 1/4 | - | - | 2.7 | 3.18 | 5.23 | 7.26 | 9.34 | 17.8 |
| 1 1/2 | - | - | 2.7 | 3.18 | 5.23 | 7.26 | 13.7 | 18.3 |
| 2 | - | - | 2.7 | 3.18 | 5.23 | 7.26 | 13.7 | 18.3 |
| 2 1/2 | - | - | - | - | - | - | 14.0 | 19.5 |

Installation

- Valves can be mounted in any position
- Installation and maintenance instructions are included with each valve

Dimensions inches (mm)

| Pipe Size | Ø A | B | C | D | E | F |
|-----------------------|-----|-------|-------|-------|------|-----|
| 50mm Operator | | | | | | |
| 1/2 | 2.7 | 6.93 | 8.21 | 7.68 | 2.56 | 1.7 |
| 3/4 | 2.7 | 7.26 | 8.39 | 7.76 | 2.95 | 1.7 |
| 63mm Operator | | | | | | |
| 3/4 | 3.4 | 7.78 | 9.11 | 8.51 | 2.95 | 2.0 |
| 1 | 3.4 | 8.18 | 9.51 | 8.71 | 3.54 | 2.0 |
| 1-1/4 | 3.4 | 9.52 | 10.82 | 9.84 | 4.33 | 2.0 |
| 1-1/2 | 3.4 | 9.80 | 11.45 | 10.27 | 4.72 | 2.0 |
| 2 | 3.4 | 10.78 | 12.01 | 10.63 | 5.90 | 2.0 |
| 90mm Operator | | | | | | |
| 1 | 4.7 | 8.59 | 9.92 | 9.12 | 3.54 | 2.6 |
| 1-1/4 | 4.7 | 9.88 | 11.11 | 10.12 | 4.33 | 2.6 |
| 1-1/2 | 4.7 | 10.16 | 11.73 | 10.55 | 4.72 | 2.6 |
| 2 | 4.7 | 11.10 | 12.29 | 10.91 | 5.91 | 2.6 |
| 125mm Operator | | | | | | |
| 1-1/4 | 6.1 | 11.10 | 13.63 | 12.63 | 4.30 | 3.1 |
| 1-1/2 | 6.1 | 11.50 | 14.23 | 13.13 | 4.70 | 3.1 |
| 2 | 6.1 | 12.40 | 14.83 | 13.43 | 6.00 | 3.1 |
| 2-1/2 | 6.1 | 13.70 | 15.83 | 14.03 | 7.50 | 3.1 |



Features

- Designed to isolate corrosive fluids from solenoid parts
- Only the isolating part, seals, and body are in contact with fluids
- No minimum operating pressure required
- Variety of body materials and process connections
- Many other constructions (not shown here) are available in a wide range of sizes

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|-----------|-----------------------|
| | 8260 | 8030 |
| Body | CA, PP | Brass/Stainless Steel |
| Diaphragm/Disc | EPDM, FKM | PTFE |
| Seals | - | FKM |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption AC | | | | Spare Coil Part No | |
|---------------------------------------|--------------------------------------|-------|------------|-----------|--------------------|--------|
| | DC Watts | AC | | | General Purpose | |
| | | Watts | VA Holding | VA Inrush | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 |
| H | - | 20 | 43 | 135 | 222345 | - |

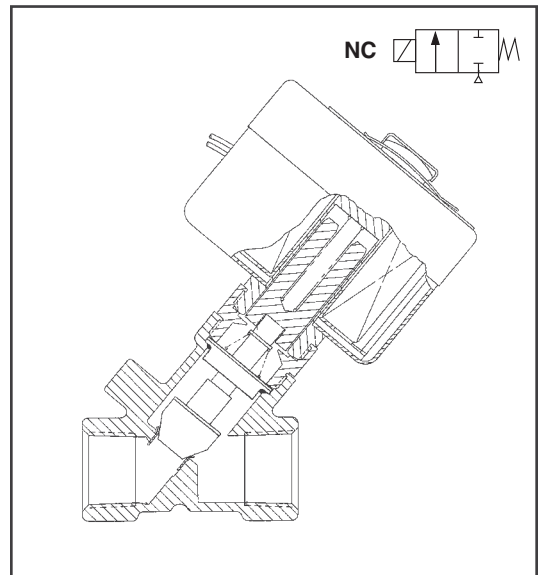
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat Type 1.

Optional: Open Frame Solenoid, Junction Box enclosure, and Panel Mount Constructions.

See *Optional Features Section* for descriptions on these and other available options.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

RedHat II: AC: 32°F to 125°F (0°C to 52°C)
 DC: 32°F to 104°F (0°C to 40°C)

RedHat: AC: 32°F to 77°F (0°C to 25°C)
 (104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed as indicated.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

| Body Material | Diaphragm/Disc | Seals | Typical Applications | Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Max. Operating Pressure (psi) | | Max. Fluid Temp. °F | | Catalog Number | Const. Ref. | UL Listing | Watt Rating/Class of Coil Insulation ④ | |
|---------------------|----------------|-------|--|---|---------------------|----------------|-------------------------------|----|---------------------|-----|----------------|-------------|------------|--|--------|
| | | | | | | | AC | DC | AC | DC | | | | AC | DC |
| CA | EPDM | - | Deminerlized and Distilled Water, Sea Water | Bib for 1/4" I.D. Flexible Tubing or Hose | 9/64 | .35 | 6 | 6 | 130 | 120 | D8260G054E | 4 | - | 6.1/F | 10.6/F |
| | | | | 1/4" O.D. Compression ① | 9/64 | .35 | 6 | 6 | 130 | 120 | D8260G071E | 3 | - | 6.1/F | 10.6/F |
| PP | EPDM | - | Photo Solution, 20% Max. Concentration Hydrochloric Acid | Bib for 1/4" I.D. Flexible Tubing or Hose | 9/64 | .35 | 6 | 6 | 130 | 120 | D8260G053E | 4 | - | 6.1/F | 10.6/F |
| | | | | | 3/16 | .53 | 6 | 6 | 130 | 120 | D8260G056E | 4 | ② | 6.1/F | 10.6/F |
| PP | FKM | - | 95% Max. Concentration Phosphoric Acid 60% Max. Concentration Sulphuric Acid | Bib for 1/4" I.D. Flexible Tubing or Hose | 9/64 | .35 | 6 | 6 | 130 | 120 | D8260G053V | 4 | - | 6.1/F | 10.6/F |
| | | | | | 3/16 | .53 | 6 | 6 | 130 | 120 | D8260G056V | 4 | - | 6.1/F | 10.6/F |
| Brass (w/S.S. Seat) | PTFE | FKM | Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers | 3/8 | 3/8 | 1.8 | 15 ③ | - | 250 | - | D8030 084 | 1 | ⑤ | 20/H | - |
| | | | | 1/2 | 3/8 | 2.2 | 15 ③ | - | 250 | - | D8030 085 | 1 | ⑤ | 20/H | - |
| | | | | 3/4 | 3/8 | 2.2 | 15 ③ | - | 250 | - | D8030 086 | 2 | ⑤ | 20/H | - |
| 18-8 S.S. | PTFE | FKM | Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers | 1/2 | 3/8 | 2.2 | 15 ③ | - | 250 | - | D8030 095 | 1 | ⑤ | 20/H | - |

① Fittings not supplied with valve; refer to List Price Schedule. ② On 50 hz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ② UL recognized component – AC only. ③ General Purpose Valves.
 ③ Valves are suitable for closing at zero pressure differential.

Specifications (Metric units)

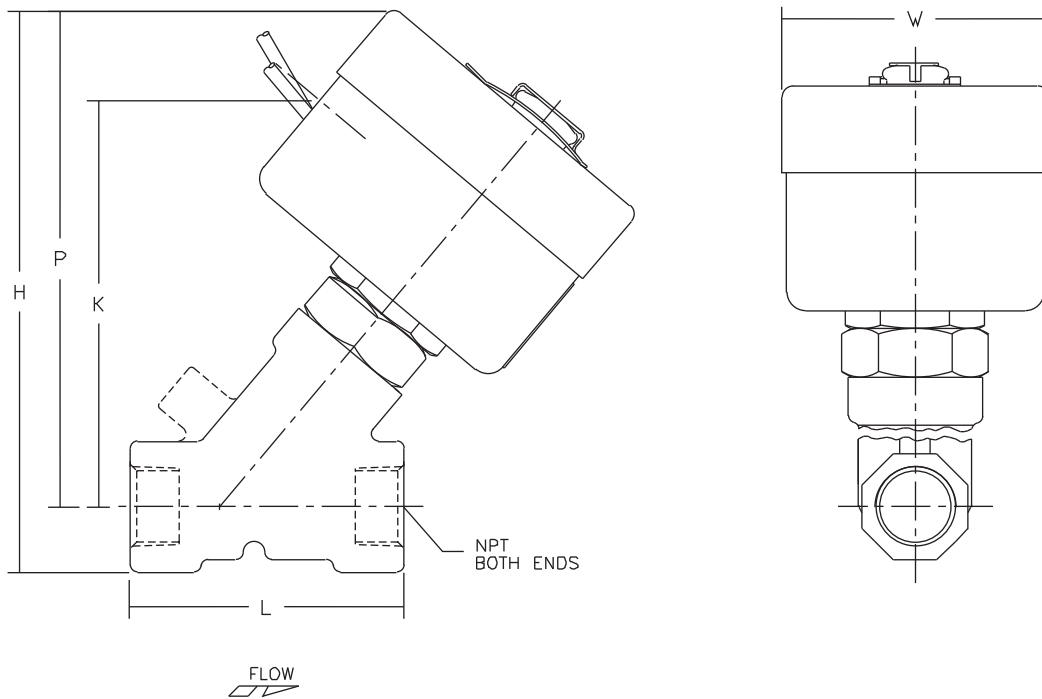
| Body Material | Diaphragm/Disc | Seals | Typical Applications | Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Max. Operating Pressure (bar) | | Max. Fluid Temp. °C | | Catalog Number | Const. Ref. | UL Listing | Watt Rating/Class of Coil Insulation ④ | |
|---------------------|----------------|-------|--|---|-------------------|-----------------------|-------------------------------|-----|---------------------|------|----------------|-------------|------------|--|--------|
| | | | | | | | AC | DC | AC | DC | | | | AC | DC |
| CA | EPDM | - | Deminerlized and Distilled Water, Sea Water | Bib for 1/4" I.D. Flexible Tubing or Hose | 4 | .30 | 0.4 | 0.4 | 54 | 48.8 | D8260G054E | 4 | - | 6.1/F | 10.6/F |
| | | | | 1/4" O.D. Compression ① | 4 | .30 | 0.4 | 0.4 | 54 | 48.8 | D8260G071E | 3 | - | 6.1/F | 10.6/F |
| PP | EPDM | - | Photo Solution, 20% Max. Concentration Hydrochloric Acid | Bib for 1/4" I.D. Flexible Tubing or Hose | 4 | .30 | 0.4 | 0.4 | 54 | 48.8 | D8260G053E | 4 | - | 6.1/F | 10.6/F |
| | | | | | 5 | .45 | 0.4 | 0.4 | 54 | 48.8 | D8260G056E | 4 | ② | 6.1/F | 10.6/F |
| PP | FKM | - | 95% Max. Concentration Phosphoric Acid 60% Max. Concentration Sulphuric Acid | Bib for 1/4" I.D. Flexible Tubing or Hose | 4 | .30 | 0.4 | 0.4 | 54 | 48.8 | D8260G053V | 4 | - | 6.1/F | 10.6/F |
| | | | | | 5 | .45 | 0.4 | 0.4 | 54 | 48.8 | D8260G056V | 4 | - | 6.1/F | 10.6/F |
| Brass (w/S.S. Seat) | PTFE | FKM | Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers | 3/8 | 10 | 1.54 | 1 ③ | - | 120 | - | D8030 084 | 1 | ⑤ | 20/H | - |
| | | | | 1/2 | 10 | 1.89 | 1 ③ | - | 120 | - | D8030 085 | 1 | ⑤ | 20/H | - |
| | | | | 3/4 | 10 | 1.89 | 1 ③ | - | 120 | - | D8030 086 | 2 | ⑤ | 20/H | - |
| 18-8 S.S. | PTFE | FKM | Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers | 1/2 | 10 | 1.89 | 1 ③ | - | 120 | - | D8030 095 | 1 | ⑤ | 20/H | - |

① Fittings not supplied with valve; refer to List Price Schedule. ② On 50 hz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ② UL recognized component – AC only. ③ General Purpose Valves.
 ③ Valves are suitable for closing at zero pressure differential.

Dimensions inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 4.68 | 3.25 | 2.28 | 4.13 | 2.22 |
| | mm | 119 | 83 | 58 | 105 | 56 |
| 2 | ins. | 4.81 | 3.25 | 2.75 | 4.13 | 2.22 |
| | mm | 122 | 83 | 70 | 105 | 56 |
| 3 | ins. | 3.05 | 1.63 | 2.44 | 2.49 | 1.94 |
| | mm | 77 | 41 | 62 | 63 | 49 |
| 4 | ins. | 3.05 | 1.63 | 2.19 | 2.49 | 1.94 |
| | mm | 77 | 41 | 56 | 63 | 49 |

Const. Ref. 1, 2

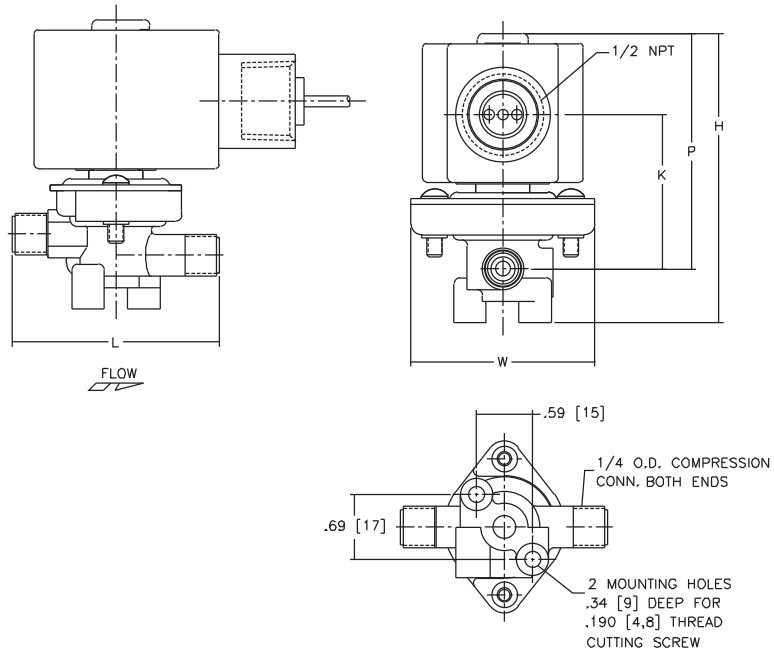


Const. Ref. 1 & 2 must be mounted with solenoid vertical and upright.

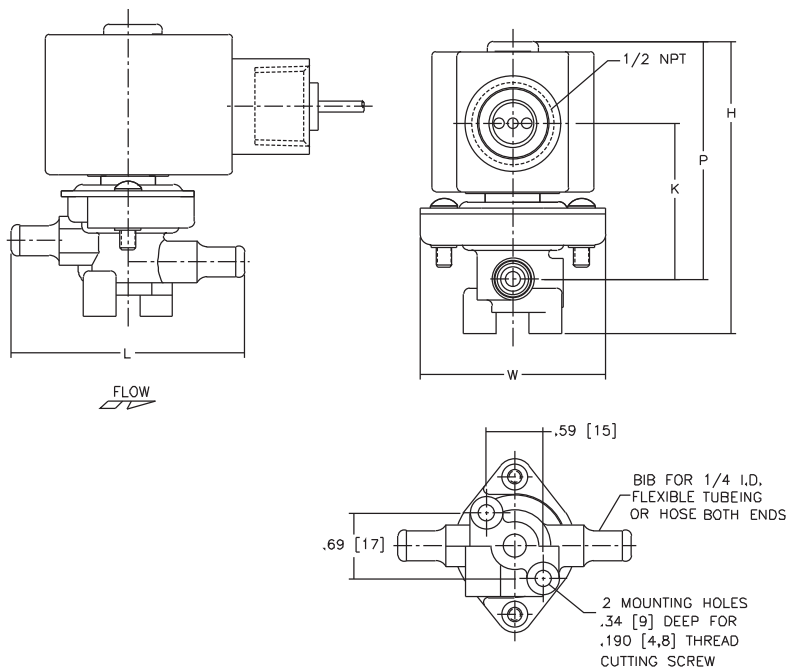
SPECIAL
SERVICE VALVES

Dimensions inches (mm)

Const. Ref. 3



Const. Ref. 4



SPECIAL
SERVICE VALVES

Features

- Range of products for vacuum service applications on vacuum breaking and roughing pumps
- Zero Minimum Operating Pressure Differential
- Elastomers de-gassed and cleaned ("VH" suffix)
- Mountable in any position, except as noted

Application

| Conditions | Pressure |
|-------------------|---|
| Low (and Rough) | 760 to 25 Torr (or 29" Hg) |
| Medium (and Fine) | 25 to 10 ⁻³ Torr |
| High | 10 ⁻³ to 10 ⁻⁶ Torr |
| Very High | 10 ⁻⁶ to 10 ⁻⁹ Torr |
| Ultra High | 10 ⁻⁹ Torr and Below |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Spare Coil Part No. | |
|---------------------------------------|-----------------------------------|------------|-----------|---------------------|----------------|
| | AC | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | AC | AC |
| F | 6.1 | 16 | 30 | 238210 | 238214 |
| F | 10.1 | 25 | 70 | 238610 | 238614 |
| F | 16.1 | 35 | 180 | 272610 | 272614 |
| F | 17.1 | 40 | 93 | 238610 | 238614 |

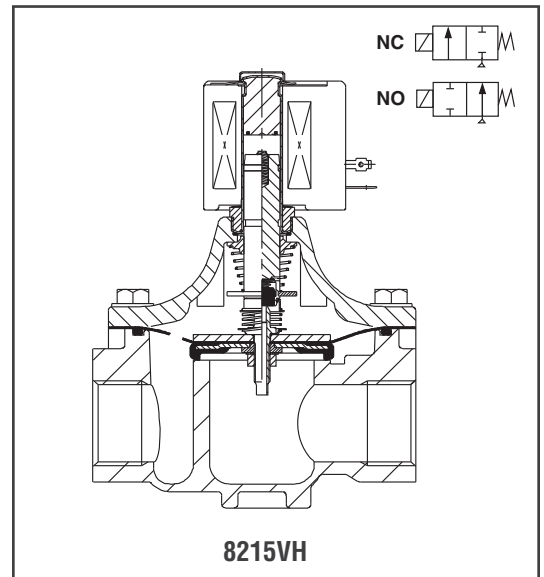
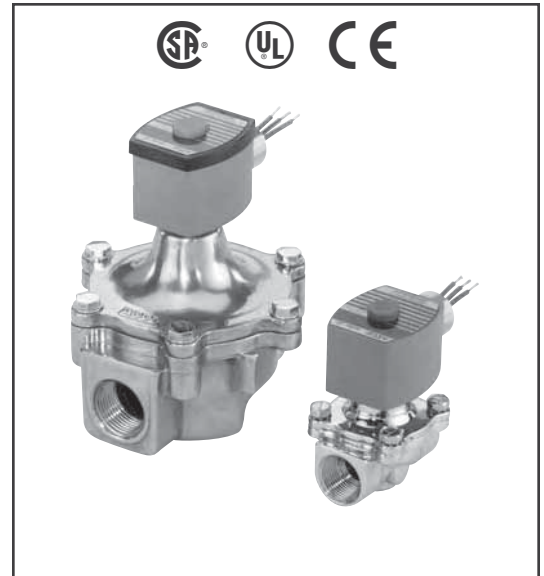
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). Must be specified when ordering. Other voltages, including DC, available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

SPECIAL SERVICE VALVES

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Body Material | Application Guide | | | | | Max. Fluid Temp. °F | Medium Vacuum to 10 ⁻³ Torr ③ | High Vacuum to 10 ⁻⁶ Torr ③ | Const. Ref. | Watt Rating/ Class of Coil Insulation ② |
|---|---------------------|----------------|---------------------------------------|----------------|---------------|-------------------|---------|----------|-------------------------|--------------------|---------------------|--|--|-------------|---|
| | | | Min. | Max. | | Electrical Check | Breaker | Roughing | Foreline or High Vacuum | Suction or Release | | | | | |
| | | | AC | Catalog Number | | Catalog Number | AC | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | |
| 1/4 | 9/32 | 0.96 | 0 | 15 | Brass | ● | ● | ● | ● | ● | 180 | 8262G090VM | 8262G090VH | 1 | 6.1/F |
| 3/8 | 3/8 | 1.8 | 0 | 15 | Brass | ● | ● | ● | ● | ● | 180 | 8030G013VM | 8030G013VH | 2 | 10.1/F |
| 1/2 | 7/16 | 2.8 | 0 | 15 | Brass | ● | ● | ● | ● | ● | 180 | 8030G017VM | 8030G017VH | 3 | 16.1/F |
| 3/4 | 3/4 | 5 | 0 | 4 | Brass | ● | - | - | - | - | 180 | 8030G043VM | 8030G043VH | 4 | 17.1/F |
| 3/4 | 3/4 | 5 | 0 | 15 | Brass | - | ● | - | - | ● | 180 | 8210G095VM | 8210G095VH | 5 | 10.1/F |
| 1 | 1 5/8 | 20.5 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G050VM ① | 8215G050VH ① | 8 | 16.1/F |
| 1 1/4 | 1 5/8 | 31.7 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G060VM ① | 8215G060VH ① | 8 | 16.1/F |
| 1 1/2 | 1 5/8 | 32.7 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G070VM ① | 8215G070VH ① | 9 | 16.1/F |
| 2 | 2 3/32 | 55 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G080VM ① | 8215G080VH ① | 10 | 16.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | |
| 3/8 | 5/8 | 3 | 0 | 15 | Brass | - | ● | - | - | ● | 180 | 8210G033VM | 8210G033VH | 6 | 10.1/F |
| 1/2 | 5/8 | 4 | 0 | 15 | Brass | - | ● | - | - | ● | 180 | 8210G034VM | 8210G034VH | 6 | 10.1/F |
| 3/4 | 3/4 | 5.5 | 0 | 15 | Brass | - | ● | - | - | ● | 180 | 8210G035VM | 8210G035VH | 7 | 10.1/F |
| 1 | 1 5/8 | 20.5 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G053VM ① | 8215G053VH ① | 11 | 16.1/F |
| 1 1/4 | 1 5/8 | 31.7 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G063VM ① | 8215G063VH ① | 11 | 16.1/F |
| 1 1/2 | 1 5/8 | 32.7 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G073VM ① | 8215G073VH ① | 12 | 16.1/F |
| 2 | 2 3/32 | 55 | 0 | 15 | Alum. | - | ● | - | - | ● | 125 | 8215G083VM ① | 8215G083VH ① | 13 | 16.1/F |

① Valves must be mounted with solenoid vertical and upright.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ For low vacuum applications to 29" Hg, use standard catalog valves with 0 psi minimum, 15+ psi maximum OPD (except 2" NPT).

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) | | Body Material | Application Guide | | | | | Max. Fluid Temp. °C | Medium Vacuum to 10 ⁻³ Torr ③ | High Vacuum to 10 ⁻⁶ Torr ③ | Const. Ref. | Watt Rating/ Class of Coil Insulation ② |
|---|-------------------|-----------------------|---------------------------------------|----------------|---------------|-------------------|---------|----------|-------------------------|--------------------|---------------------|--|--|-------------|---|
| | | | Min. | Max. | | Electrical Check | Breaker | Roughing | Foreline or High Vacuum | Suction or Release | | | | | |
| | | | AC | Catalog Number | | Catalog Number | AC | | | | | | | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | | |
| 1/4 | 7 | 0.82 | 0 | 1 | Brass | ● | ● | ● | ● | ● | 82 | 8262G090VM | 8262G090VH | 1 | 6.1/F |
| 3/8 | 10 | 1.54 | 0 | 1 | Brass | ● | ● | ● | ● | ● | 82 | 8030G013VM | 8030G013VH | 2 | 10.1/F |
| 1/2 | 11 | 2.40 | 0 | 1 | Brass | ● | ● | ● | ● | ● | 82 | 8030G017VM | 8030G017VH | 3 | 16.1/F |
| 3/4 | 19 | 4.29 | 0 | 0.3 | Brass | ● | - | - | - | - | 82 | 8030G043VM | 8030G043VH | 4 | 17.1/F |
| 3/4 | 19 | 4.29 | 0 | 1 | Brass | - | ● | - | - | ● | 82 | 8210G095VM | 8210G095VH | 5 | 10.1/F |
| 1 | 41 | 17.57 | 0 | 1 | Alum. | - | ● | - | - | ● | 52 | 8215G050VM ① | 8215G050VH ① | 8 | 16.1/F |
| 1 1/4 | 41 | 27.17 | 0 | 1 | Alum. | - | ● | - | - | ● | 52 | 8215G060VM ① | 8215G060VH ① | 8 | 16.1/F |
| 1 1/2 | 41 | 28.03 | 0 | 1 | Alum. | - | ● | - | - | ● | 52 | 8215G070VM ① | 8215G070VH ① | 9 | 16.1/F |
| 2 | 53 | 47.14 | 0 | 1 | Alum. | - | ● | - | - | ● | 52 | 8215G080VM ① | 8215G080VH ① | 10 | 16.1/F |
| NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | | |
| 3/8 | 16 | 2.57 | 0 | 1 | Brass | - | ● | - | - | ● | 82 | 8210G033VM | 8210G033VH | 6 | 10.1/F |
| 1/2 | 16 | 3.43 | 0 | 1 | Brass | - | ● | - | - | ● | 82 | 8210G034VM | 8210G034VH | 6 | 10.1/F |
| 3/4 | 19 | 4.71 | 0 | 1 | Brass | - | ● | - | - | ● | 82 | 8210G035VM | 8210G035VH | 7 | 10.1/F |
| 1 | 41 | 17.57 | 0 | 1 | Alum. | - | ● | - | - | ● | 82 | 8215G053VM ① | 8215G053VH ① | 11 | 16.1/F |
| 1 1/4 | 41 | 27.17 | 0 | 1 | Alum. | - | ● | - | - | ● | 52 | 8215G063VM ① | 8215G063VH ① | 11 | 16.1/F |
| 1 1/2 | 41 | 28.03 | 0 | 1 | Alum. | - | ● | - | - | ● | 52 | 8215G073VM ① | 8215G073VH ① | 12 | 16.1/F |
| 2 | 53 | 47.14 | 0 | 1 | Alum. | - | ● | - | - | ● | 52 | 8215G083VM ① | 8215G083VH ① | 13 | 16.1/F |

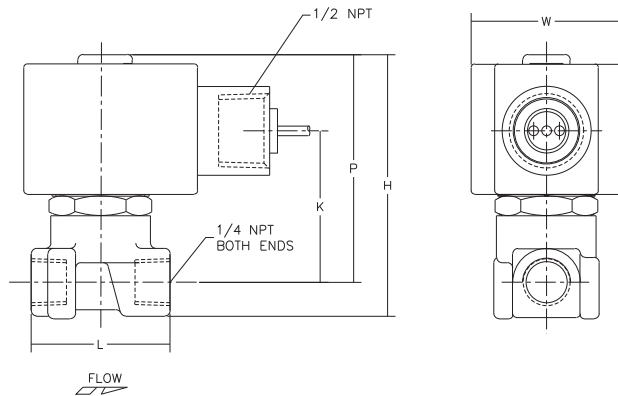
① Valves must be mounted with solenoid vertical and upright.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ For low vacuum applications to 29" Hg, use standard catalog valves with 0 bar minimum, 1+ bar maximum OPD (except 2" NPT).

SPECIAL SERVICE VALVES

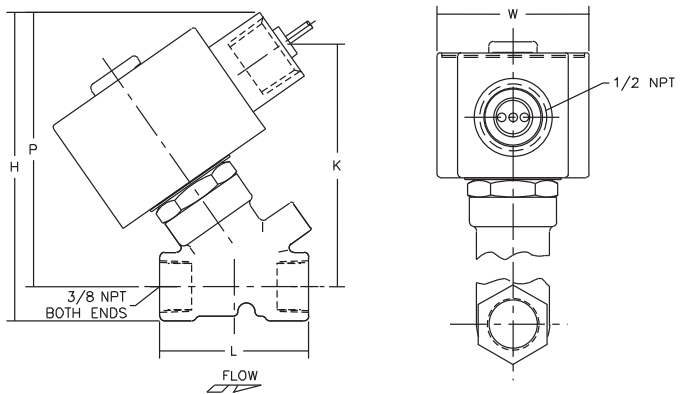
Dimensions inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 2.98 | 1.71 | 1.56 | 2.57 | 1.69 |
| | mm | 76 | 43 | 40 | 65 | 43 |
| 2 | ins. | 4.00 | 3.14 | 1.91 | 3.55 | 1.95 |
| | mm | 102 | 80 | 49 | 90 | 50 |
| 3 | ins. | 4.13 | 2.84 | 2.28 | 3.56 | 2.22 |
| | mm | 105 | 72 | 58 | 90 | 56 |
| 4 | ins. | 4.10 | 2.44 | 2.81 | 3.41 | 2.28 |
| | mm | 104 | 62 | 71 | 87 | 58 |
| 5 | ins. | 4.13 | 2.47 | 2.81 | 3.44 | 2.28 |
| | mm | 105 | 63 | 71 | 87 | 58 |
| 6 | ins. | 4.35 | 2.65 | 2.75 | 3.79 | 2.28 |
| | mm | 110 | 67 | 70 | 96 | 58 |
| 7 | ins. | 4.64 | 2.81 | 2.81 | 3.94 | 2.28 |
| | mm | 118 | 71 | 71 | 100 | 58 |
| 8 | ins. | 6.79 | 4.26 | 5.00 | 5.48 | 5.38 |
| | mm | 174 | 108 | 127 | 139 | 137 |
| 9 | ins. | 6.79 | 4.32 | 5.00 | 5.54 | 5.38 |
| | mm | 174 | 110 | 127 | 141 | 137 |
| 10 | ins. | 7.42 | 4.66 | 6.09 | 5.89 | 6.31 |
| | mm | 188 | 118 | 155 | 150 | 160 |
| 11 | ins. | 6.79 | 2.35 | 5.00 | 3.13 | 5.38 |
| | mm | 172 | 60 | 127 | 79 | 137 |
| 12 | ins. | 6.79 | 2.29 | 5.00 | 3.06 | 5.38 |
| | mm | 172 | 58 | 127 | 78 | 137 |
| 13 | ins. | 6.94 | 2.54 | 6.09 | 3.31 | 6.31 |
| | mm | 176 | 65 | 155 | 84 | 160 |

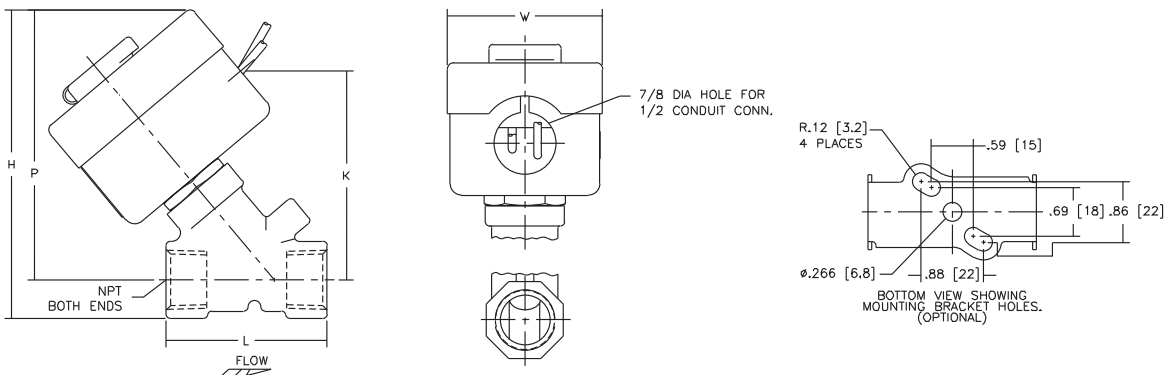
Const. Ref. 1



Const. Ref. 2



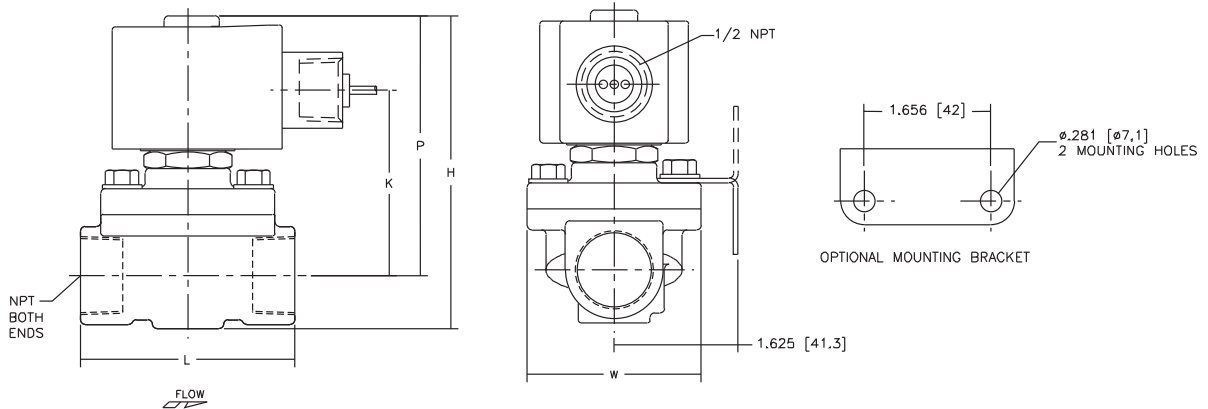
Const. Ref. 3



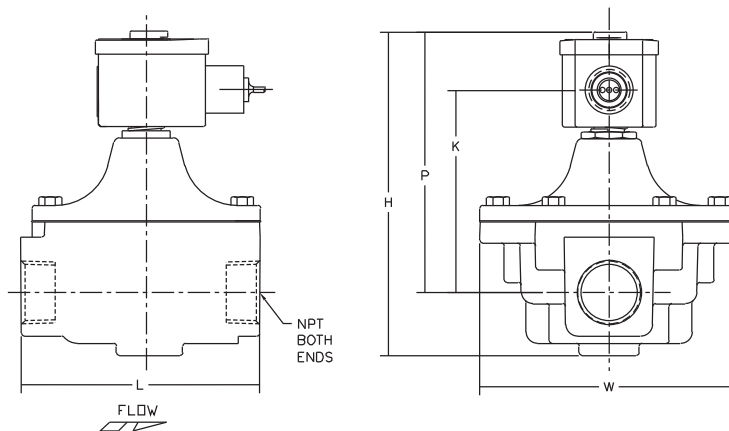
SPECIAL
SERVICE VALVES

Dimensions inches (mm)

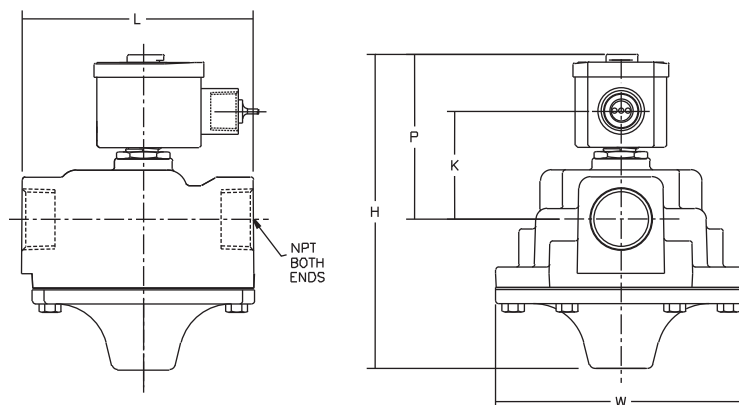
Const. Ref. 4, 5, 6, 7



Const. Ref. 8, 9, 10



Const. Ref. 11, 12, 13



SPECIAL
SERVICE VALVES

The application of valves and accessories for use on combustible media requires careful consideration of the application and use to assure proper and optimal operation. Consideration in valve selection must be given to the function of the valve. This section includes 2-way and 3-way valves for the control of combustible media. Generally a combustion train includes 2 shutoff valves on both the pilot and main media feed lines. The Agency approvals for each product range in this section are included on the individual catalog pages.

Combustible media includes natural gas and oil, and this section is organized into sections for each media.

Additionally special constructions developed for use on combustible media are shown.

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Features

- 2-way normally closed operation
- For control of commercial and industrial gas burners
- Ideal for low pressure applications
- Brass body construction
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Rings | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.1 | 25 | 70 | 32 to 125 | 238610 | 238614 |

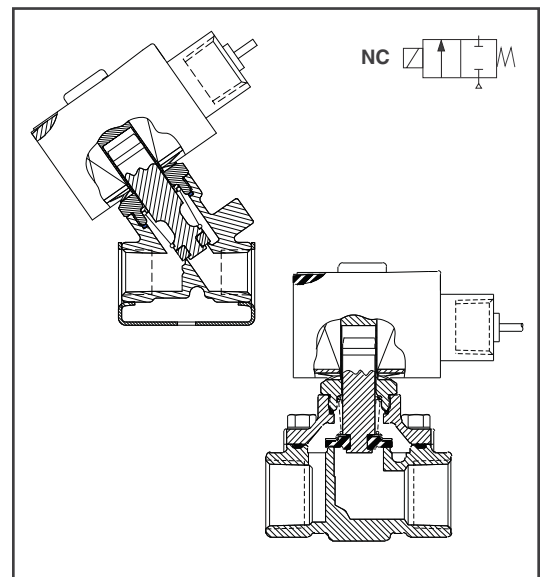
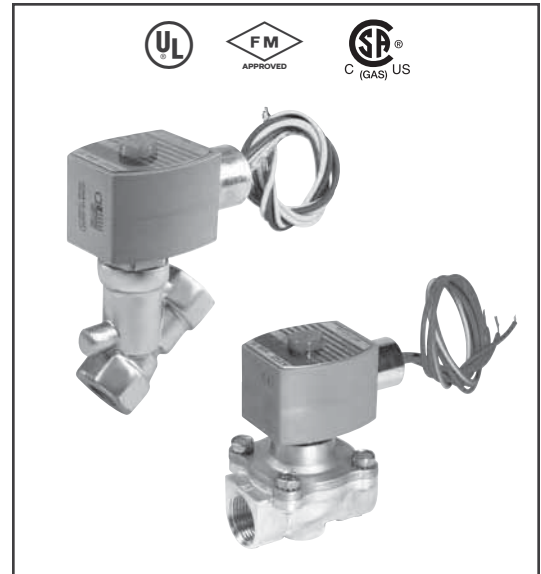
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, Safety Valves.

FM approved to Class No. 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/8 | 3/8 | 1.8 | 97,000 | 0 | 15 | 125 | 8030G068 | 1 | ○ | ○ | ○ | 10.1 | 2.3 |
| 1/2 | 7/16 | 2.8 | 151,000 | 0 | 8 | 125 | 8030G069 | 2 | ○ | ○ | ○ | 10.1 | 2.7 |
| 3/4 | 3/4 | 5.0 | 269,000 | 0 | 2 | 125 | 8030G079 | 3 | ○ | ○ | ○ | 10.1 | 3.4 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/8 | 10 | 1.5 | 97,000 | 0 | 1.0 | 52 | 8030G068 | 1 | ○ | ○ | ○ | 10.1 | 1.0 |
| 1/2 | 11 | 2.4 | 151,000 | 0 | 0.6 | 52 | 8030G069 | 2 | ○ | ○ | ○ | 10.1 | 1.2 |
| 3/4 | 19 | 4.3 | 269,000 | 0 | 0.1 | 52 | 8030G079 | 3 | ○ | ○ | ○ | 10.1 | 1.5 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

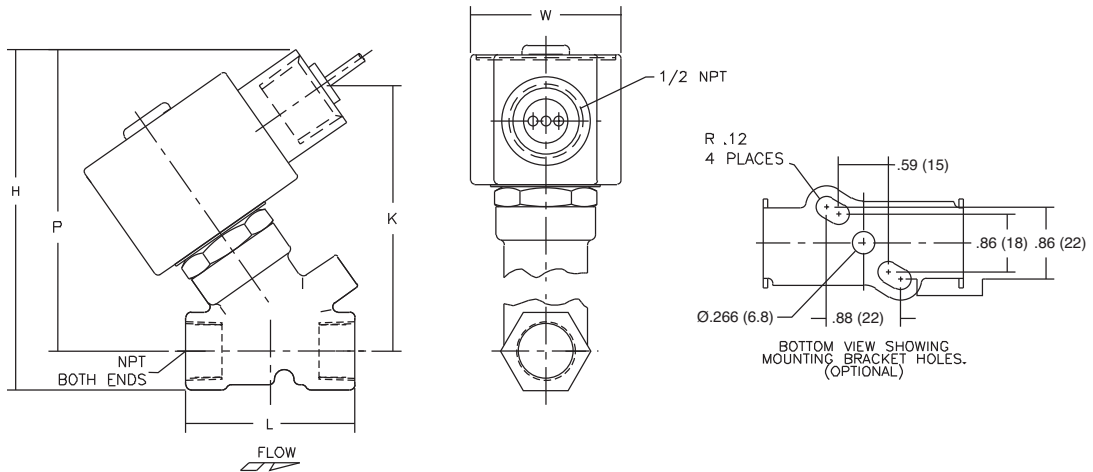
| Solenoid Options | | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|------------|--------------|---------------------------|---------------------|---------------------|----------------------|
| NEMA Type 3-9 | High Temp. | Junction Box | Wiring Box Screw Terminal | Brass | NBR | AC |
| EF | HT | JB | JKF | 8030G068 | ● | 306628 |
| EF | HT | JB | JKF | 8030G069 | ● | 306629 |
| EF | HT | JB | JKF | 8030G079 | ● | 306630 |

● = Standard. Other options may be available. All option combinations may not be available.

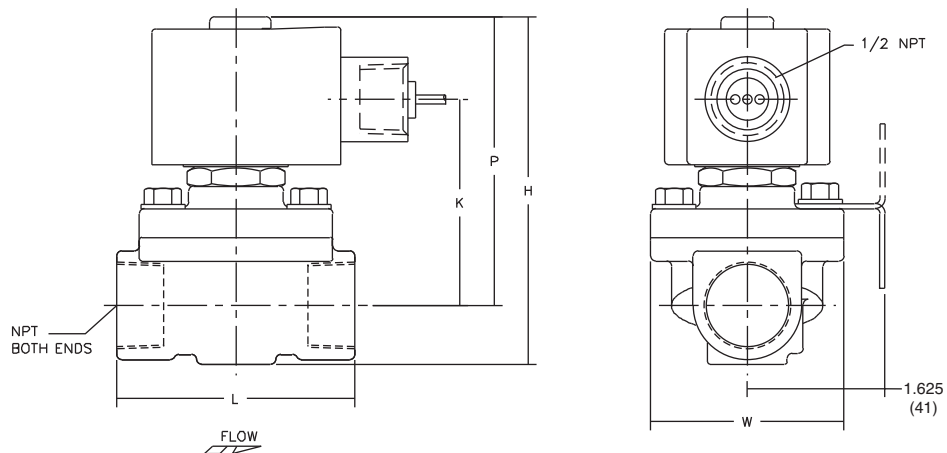
Dimensions inches (mm)

| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 4.00 | 3.14 | 1.91 | 3.55 | 1.95 |
| | mm | 102 | 80 | 49 | 90 | 50 |
| 2 | ins. | 4.32 | 3.39 | 2.28 | 3.77 | 1.95 |
| | mm | 110 | 86 | 58 | 96 | 50 |
| 3 | ins. | 4.21 | 2.54 | 2.81 | 3.52 | 2.28 |
| | mm | 107 | 65 | 71 | 89 | 58 |

Const. Ref. 1, 2



Const. Ref. 3



Features

- 2-way normally open operation
- For control of commercial and industrial gas burners
- Ideal for low pressure applications
- Brass body construction
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Stem | PA |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.1 | 25 | 70 | 32 to 125 | 238610 | 238614 |
| F | 16.1 | 27 | 160 | 32 to 125 | 272610 | 272614 |

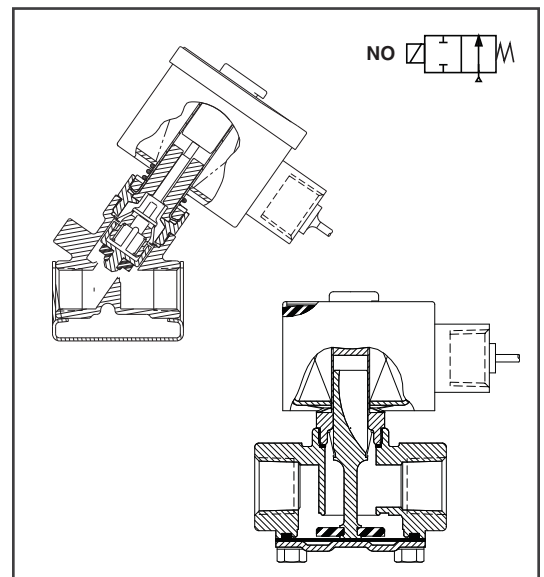
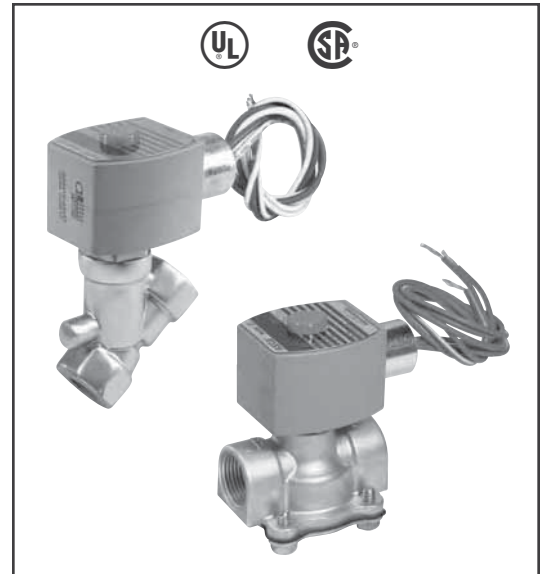
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, General Purpose Valves.

CSA Certified to: Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/8 | 3/8 | 1.6 | 86,000 | 0 | 15 | 200 | 8030G070 | 1 | ● | - | ● | 16.1 | 3.4 |
| 1/2 | 3/4 | 5.0 | 269,000 | 0 | 2 | 180 | 8030G082 | 2 | ● | - | ● | 10.1 | 3.4 |
| 3/4 | 3/4 | 5.5 | 295,000 | 0 | 2 | 180 | 8030G083 | 3 | ● | - | ● | 10.1 | 3.4 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/Cu.Ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/8 | 10 | 1.4 | 86,000 | 0 | 1.0 | 93 | 8030G070 | 1 | ● | - | ● | 16.1 | 1.5 |
| 1/2 | 19 | 4.3 | 269,000 | 0 | 0.1 | 82 | 8030G082 | 2 | ● | - | ● | 10.1 | 1.5 |
| 3/4 | 19 | 4.7 | 295,000 | 0 | 0.1 | 82 | 8030G083 | 3 | ● | - | ● | 10.1 | 1.5 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/Cu.Ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|------------|--------------|---------------------------|---------------------|---------------------|----------------------|
| NEMA Type 3-9 | High Temp. | Junction Box | Wiring Box Screw Terminal | Brass | NBR | AC |
| EF | HT | JB | JKF | 8030G070 | ● | 302797 |
| EF | HT | JB | JKF | 8030G082 | ● | 302799 |
| EF | HT | JB | JKF | 8030G083 | ● | 302799 |

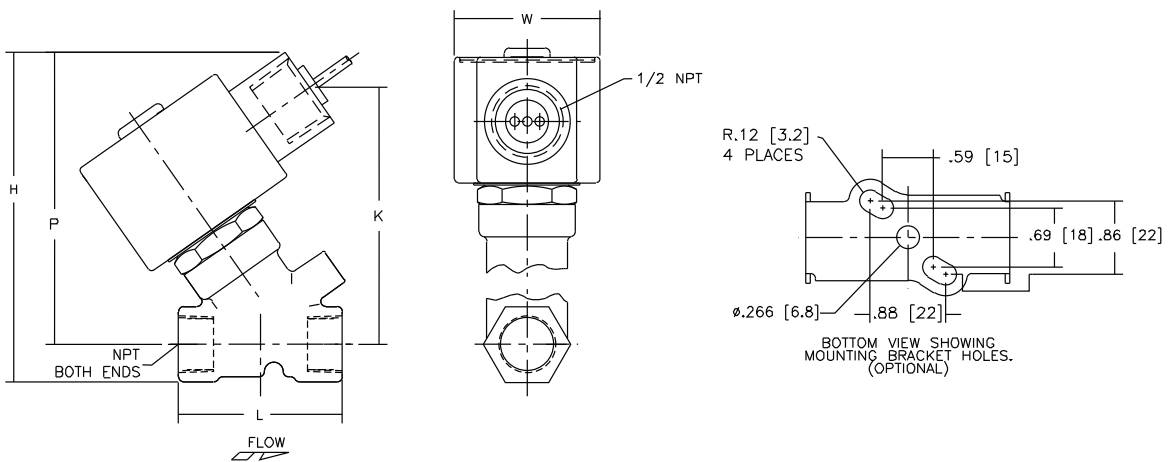
● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

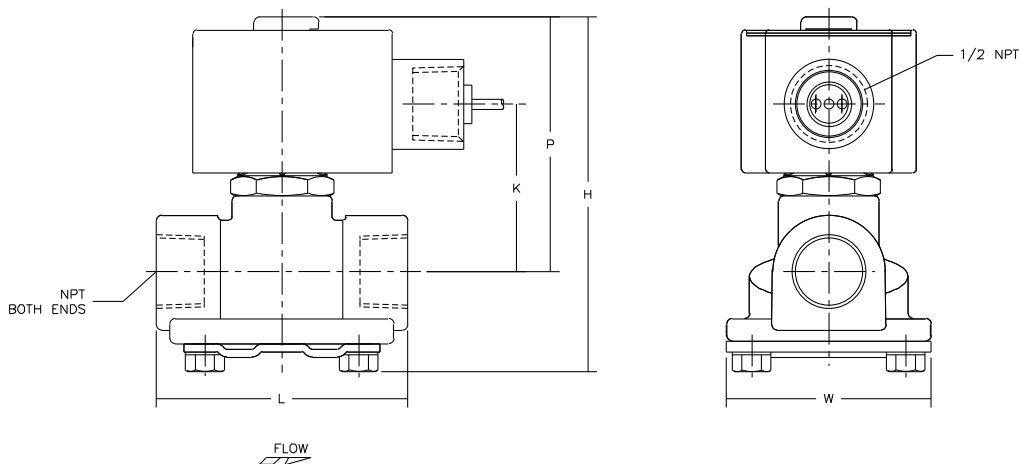
| Const. Ref. | | H | K | L | P | W |
|-------------|------|------|------|------|------|------|
| 1 | ins. | 4.16 | 1.10 | 1.91 | 3.72 | 2.06 |
| | mm | 106 | 28 | 49 | 94 | 52 |
| 2 | ins. | 3.97 | 1.88 | 2.81 | 2.85 | 2.29 |
| | mm | 101 | 48 | 71 | 72 | 58 |
| 3 | ins. | 3.97 | 1.88 | 2.81 | 2.85 | 2.29 |
| | mm | 101 | 48 | 71 | 72 | 58 |

| Vent Valve Requirements | |
|-------------------------|------------|
| Manifold Line | Vent Valve |
| 3/8" through 1 1/2" | 3/4 |
| 2" | 1 |
| 2 1/2" through 3" | 1 1/4 |
| 3 1/2" | 1 1/2 |
| 4" through 5" | 2 |
| 5 1/2" through 6" | 2 1/2 |
| 6 1/2" through 7 1/2" | 3 |

Const. Ref. 1



Const. Ref. 2, 3



Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Direct lift with resilient soft seating for tight shut-off
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 17-7 PH |
| Shading Coil | Copper |
| Pipe Plug | Zinc Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 6.1 | 16 | 40 | -40 to 125 | 238210 | 238214 |

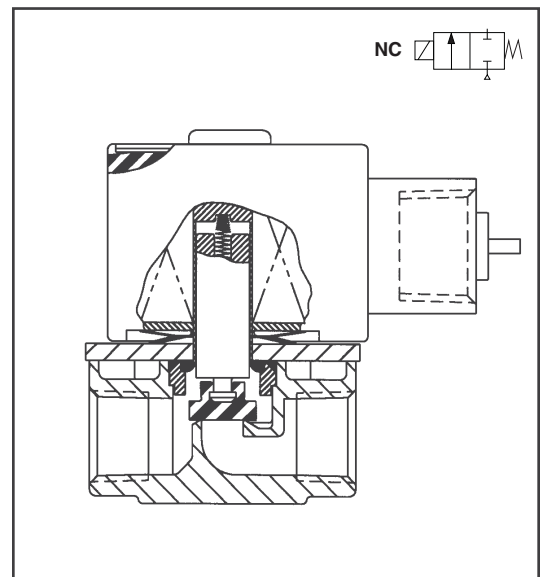
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage ② | Approx. Shipping Weight (lbs) |
|---|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|-----------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas)- NORMALLY CLOSED | | | | | | | | | | | | | |
| 1/8 | 5/16 | 1 | 53,700 | 0 | 15 | 125 | 8040H006 | 1 | ○ | ○ | ○ | 6.1 | 1.8 |
| 1/4 | 5/16 | 1.1 | 59,000 | 0 | 15 | 125 | 8040H007 | 1 | ○ | ○ | ○ | 6.1 | 1.8 |
| 3/8 | 5/16 | 1.2 | 64,400 | 0 | 15 | 125 | 8040H008 | 1 | ○ | ○ | ○ | 6.1 | 1.8 |

○ = Safety Shutoff Valve; ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.
② On 50 Hz service watt rating is 8.1; EF option approved to UL and CSA only.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage ② | Approx. Shipping Weight (kgs) |
|---|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|-----------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas)- NORMALLY CLOSED | | | | | | | | | | | | | |
| 1/8 | 8.000 | 0.9 | 53,700 | 0 | 1 | 52 | 8040H006 | 1 | ○ | ○ | ○ | 6.1 | 0.8 |
| 1/4 | 8.000 | 0.9 | 59,000 | 0 | 1 | 52 | 8040H007 | 1 | ○ | ○ | ○ | 6.1 | 0.8 |
| 3/8 | 8.000 | 1.0 | 64,400 | 0 | 1 | 52 | 8040H008 | 1 | ○ | ○ | ○ | 6.1 | 0.8 |

○ = Safety Shutoff Valve; ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.
② On 50 Hz service watt rating is 8.1; EF option approved to UL and CSA only.

Capabilities Chart

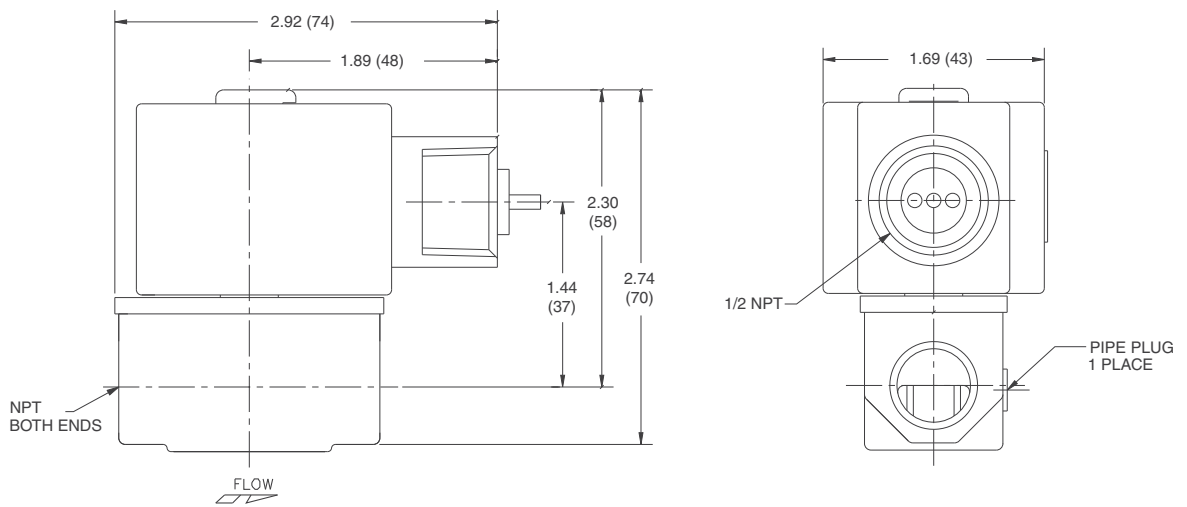
| Solenoid Options | | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|------------|--------------|---------------------------|---------------------|---------------------|----------------------|
| NEMA Type 3-9 | High Temp. | Junction Box | Wiring Box Screw Terminal | Aluminum | NBR | AC |
| EF | HT | - | JKF | 8040H006 | ● | 318247 |
| EF | HT | JB | JKF | 8040H007 | ● | 318247 |
| EF | HT | JB | JKF | 8040H008 | ● | 318247 |

● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

Dimensions inches (mm)

Const. Ref. 1



COMBUSTION

Features

- 2-way normally closed operation
- For gas pilot or main control of commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Ring | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.1 | 25 | 70 | -40 to 125 | 238610 | 238614 |
| F | 15.4 | 27 | 160 | -40 to 125 | 099257 | - |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

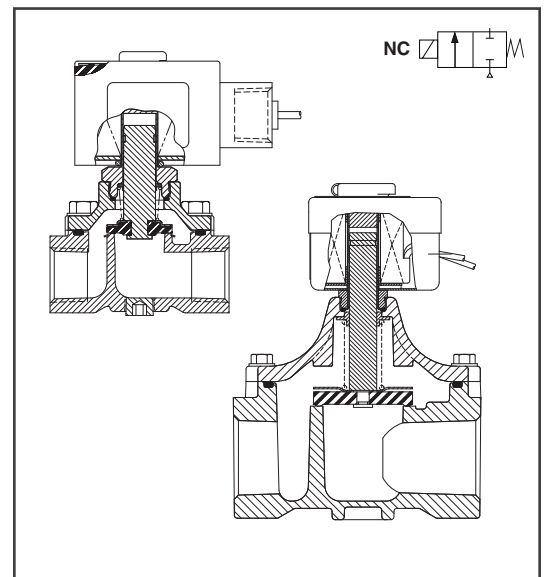
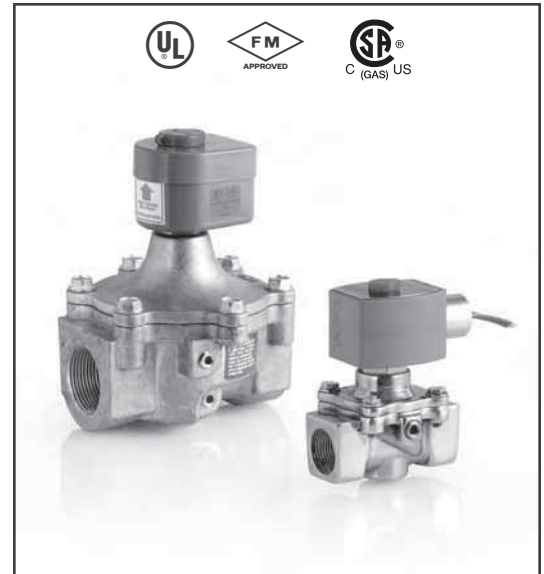
Solenoid Enclosures

Valves with the letter "G" in their catalog numbers, e.g. 8040G021, have RedHat II molded epoxy Types 1, 2, 3, 3S, 4, and 4X combinations General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.

Valves with the letter "C" in their catalog numbers, e.g. 8040C004, have RedHat metal Type 1 General Purpose enclosures with 7/8" hole for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/8" thru 3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/8 | 3/4 | 3.9 | 210,000 | 0 | 2 | 125 | 8040G021 | 1 | ○ | ○ | ○ | 10.1 | 2.8 |
| 1/2 | 3/4 | 5.4 | 291,000 | 0 | 2 | 125 | 8040G022 | 1 | ○ | ○ | ○ | 10.1 | 2.8 |
| 3/4 | 3/4 | 9.5 | 512,000 | 0 | 2 | 125 | 8040G023 | 2 | ○ | ○ | ○ | 10.1 | 2.8 |
| 1 | 1 5/8 | 16.8 | 900,000 | 0 | 0.5 | 125 | 8040C004 | 3 | ○ | - | ○ | 15.4 | 4.3 |
| 1 1/4 | 1 5/8 | 19.6 | 1,100,000 | 0 | 0.5 | 125 | 8040C005 | 3 | ○ | - | ○ | 15.4 | 4.3 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/8 | 19 | 3.3 | 210,000 | 0 | 0.1 | 52 | 8040G021 | 1 | ○ | ○ | ○ | 10.1 | 1.3 |
| 1/2 | 19 | 4.6 | 291,000 | 0 | 0.1 | 52 | 8040G022 | 1 | ○ | ○ | ○ | 10.1 | 1.3 |
| 3/4 | 19 | 8.1 | 512,000 | 0 | 0.1 | 52 | 8040G023 | 2 | ○ | ○ | ○ | 10.1 | 1.3 |
| 1 | 41 | 14.3 | 900,000 | 0 | 0.03 | 52 | 8040C004 | 3 | ○ | - | ○ | 15.4 | 2.0 |
| 1 1/4 | 41 | 16.7 | 1,100,000 | 0 | 0.03 | 52 | 8040C005 | 3 | ○ | - | ○ | 15.4 | 2.0 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|------------|--------------|---------------------------|---------------------|---------------------|----------------------|
| NEMA Type 3-9 | High Temp. | Junction Box | Wiring Box Screw Terminal | Aluminum | NBR | AC |
| EF | HT | - | JKF | 8040G021 | ● | 306633 |
| EF | HT | JB | JKF | 8040G022 | ● | 306633 |
| EF | HT | JB | JKF | 8040G023 | ● | 306633 |
| - | HT | JB | JKF | 8040C004 | ● | 304079 |
| - | HT | JB | JKF | 8040C005 | ● | 304079 |

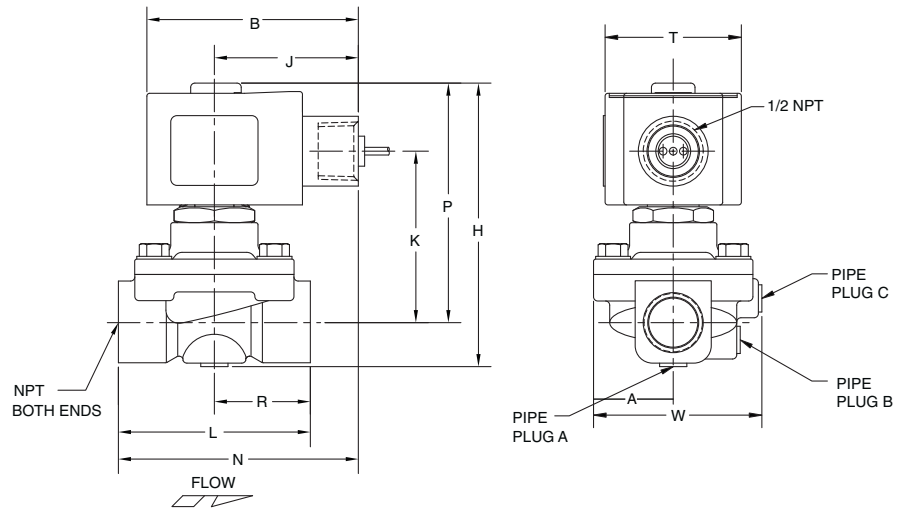
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

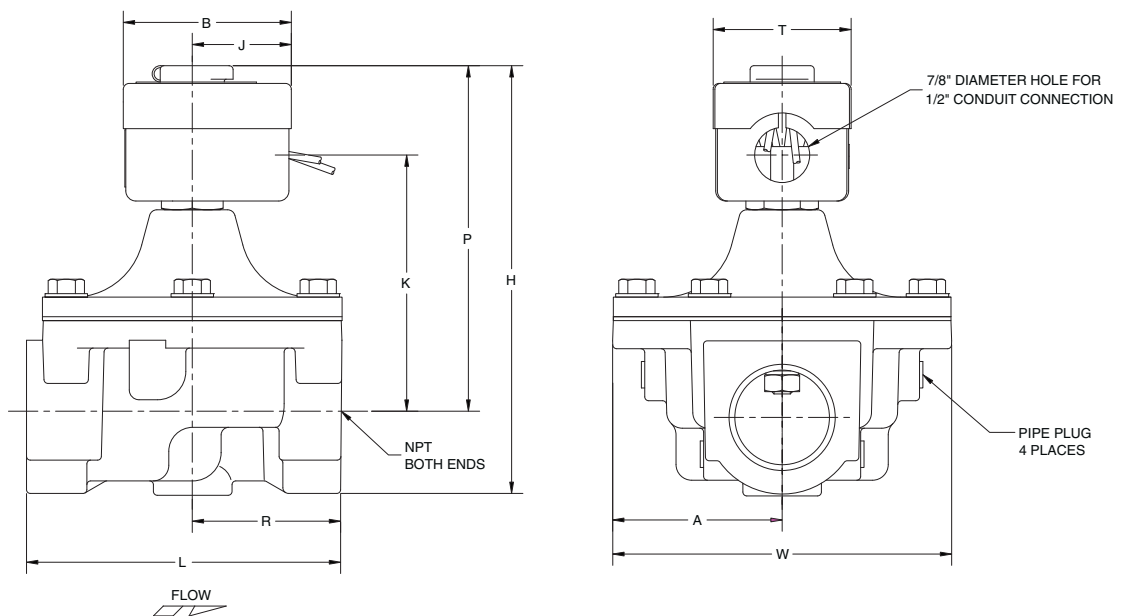
Dimensions inches (mm)

| Const. Ref. | | 1 | 2 | 3 |
|-------------|------|-------|-------|------|
| A | ins. | 1.66 | 1.66 | 2.69 |
| | mm | 42 | 42 | 68 |
| B | ins. | 3.03 | 3.03 | 2.69 |
| | mm | 77 | 77 | 68 |
| H | ins. | 4.05 | 4.49 | 6.81 |
| | mm | 103 | 11405 | 173 |
| J | ins. | 2.04 | 2.04 | 1.59 |
| | mm | 52 | 52 | 40 |
| K | ins. | 2.46 | 2.65 | 4.09 |
| | mm | 62 | 67 | 104 |
| L | ins. | 2.75 | 3.31 | 5.00 |
| | mm | 70 | 84 | 127 |
| N | ins. | 3.42 | 3.70 | - |
| | mm | 87 | 94 | - |
| R | ins. | 1.38 | 1.66 | 2.38 |
| | mm | 35 | 42 | 60 |
| P | ins. | 3.44 | 3.63 | 5.50 |
| | mm | 87 | 92 | 140 |
| T | ins. | 1.95 | 1.95 | 2.22 |
| | mm | 50 | 50 | 56 |
| W | ins. | 2.42 | 2.39 | 5.38 |
| | mm | 61 | 61 | 137 |
| Pipe Plug | | B & C | A & C | - |

Const. Ref. 1, 2



Const. Ref. 3



Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing
- 5 lb. closing spring for high force shut-off

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| H | 59.5 | 122 | 600 | 32 to 104 | 224195 | - |
| H | 66 | 128 | 128 | 32 to 104 | 224195 | - |

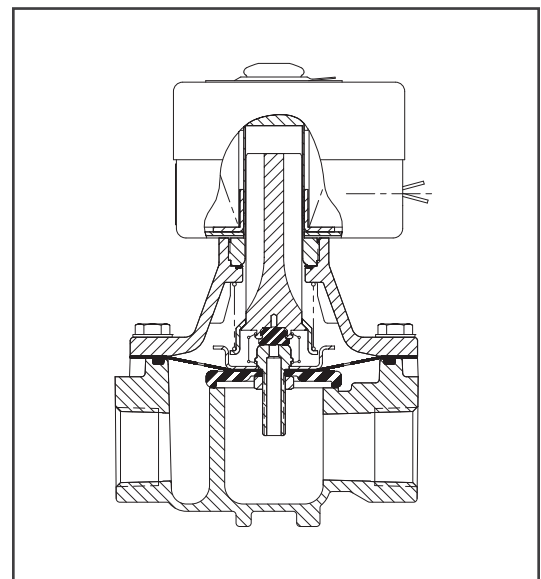
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

RedHat metal Type 1 General Purpose housing with 7/8" knock-out for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves"(3/4" only).

CSA Certified to:

- 1) Standard C22.2 No 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage |
|--|---------------------|----------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|
| | | | Btu/hr. | Min. | Max. | | | | UL | FM | CSA | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 12.2 | 650,000 | 0 | 20 | 104 | 8042D035 | 1 | ○ | ○ | ○ | 59.5 |
| 1 | 1 5/8 | 24 | 1,290,000 | 0 | 20 | 104 | 8042C045 | 2 | ○ | - | ○ | 59.5 |
| 1 1/4 | 1 5/8 | 35 | 1,900,000 | 0 | 20 | 104 | 8042C055 | 2 | ○ | - | ○ | 59.5 |
| 1 1/2 | 1 5/8 | 40 | 2,145,000 | 0 | 20 | 104 | 8042C065 | 2 | ○ | - | ○ | 59.5 |
| 2 | 2 3/32 | 60 | 3,241,000 | 0 | 20 | 104 | 8042C075 | 3 | ○ | - | ○ | 59.5 |
| 2 1/2 | 3 | 120 | 6,467,500 | 0 | 5 | 104 | 8042C085 | 4 | ○ | - | ○ | 66.0 |
| 3 | 3 | 130 | 7,002,500 | 0 | 5 | 104 | 8042C095 | 4 | ○ | - | ○ | 66.0 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage |
|--|-------------------|-----------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|
| | | | Btu/hr. | Min. | Max. | | | | UL | FM | CSA | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | |
| 3/4 | 41 | 10.4 | 650,000 | 0 | 1.4 | 40 | 8042D035 | 1 | ○ | ○ | ○ | 59.5 |
| 1 | 41 | 20.4 | 1,290,000 | 0 | 1.4 | 40 | 8042C045 | 2 | ○ | - | ○ | 59.5 |
| 1 1/4 | 41 | 29.8 | 1,900,000 | 0 | 1.4 | 40 | 8042C055 | 2 | ○ | - | ○ | 59.5 |
| 1 1/2 | 41 | 34.0 | 2,145,000 | 0 | 1.4 | 40 | 8042C065 | 2 | ○ | - | ○ | 59.5 |
| 2 | 53 | 51.0 | 3,241,000 | 0 | 1.4 | 40 | 8042C075 | 3 | ○ | - | ○ | 59.5 |
| 2 1/2 | 76 | 102.0 | 6,467,500 | 0 | 0.3 | 40 | 8042C085 | 4 | ○ | - | ○ | 66.0 |
| 3 | 76 | 110.5 | 7,002,500 | 0 | 0.3 | 40 | 8042C095 | 4 | ○ | - | ○ | 66.0 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

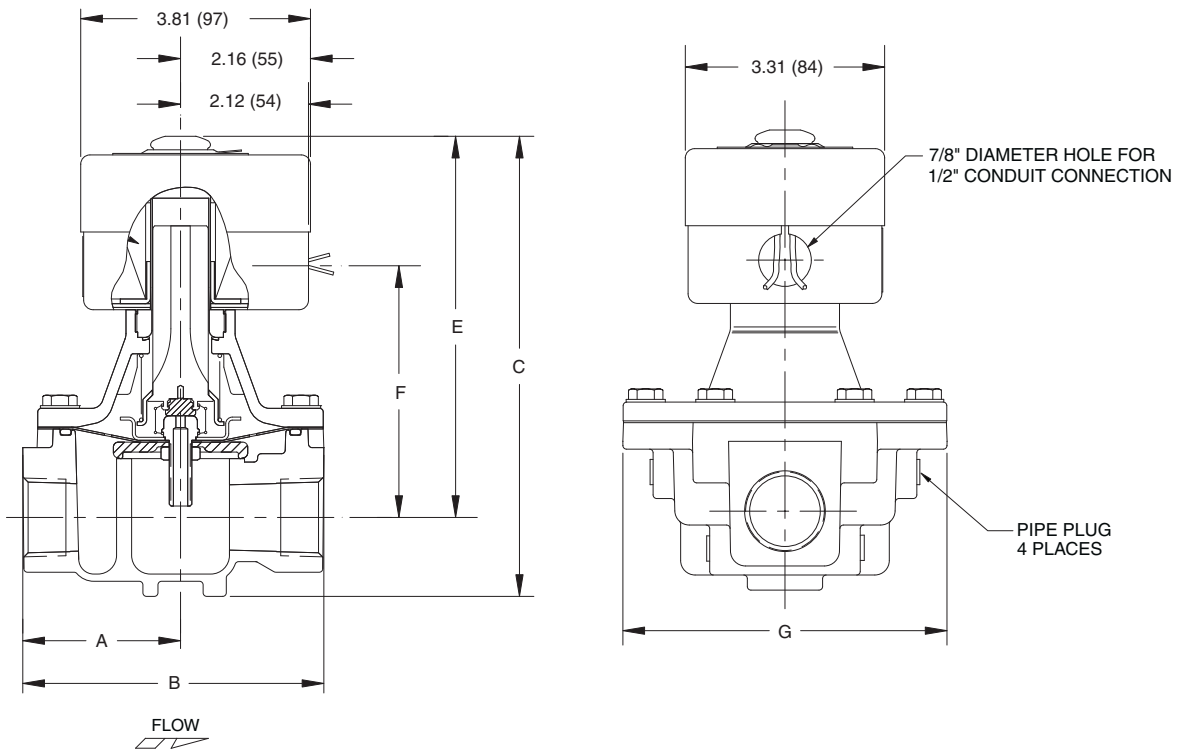
| Solenoid Options | | Resilient Materials | | Base Catalog Number | Standard Rebuild Kit |
|------------------|--------------|---------------------|--|---------------------|----------------------|
| Rainproof | Junction Box | NBR | | Aluminum | AC |
| R | JB | ● | | 8042D035 | 304081 |
| R | JB | ● | | 8042C045 | 304081 |
| R | JB | ● | | 8042C055 | 304081 |
| R | JB | ● | | 8042C065 | 304081 |
| R | JB | ● | | 8042C075 | 304082 |
| R | JB | ● | | 8042C085 | 304083 |
| R | JB | ● | | 8042C095 | 304083 |

● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

Dimensions inches (mm)

| Const. Ref. | | A | B | C | E | F | G |
|-------------|------|------|------|-------|------|------|------|
| 1 | ins. | 2.62 | 5.00 | 7.66 | 6.34 | 4.19 | 5.38 |
| | mm | 67 | 127 | 195 | 161 | 106 | 137 |
| 2 | ins. | 2.62 | 5.00 | 7.66 | 6.39 | 4.25 | 5.38 |
| | mm | 67 | 127 | 195 | 162 | 108 | 137 |
| 3 | ins. | 3.28 | 6.09 | 8.36 | 6.86 | 4.72 | 6.32 |
| | mm | 83 | 155 | 212 | 174 | 120 | 161 |
| 4 | ins. | 3.89 | 7.80 | 10.22 | 7.89 | 5.75 | 7.99 |
| | mm | 99 | 198 | 260 | 200 | 146 | 203 |



Must be mounted with solenoid vertical and upright.

Features

- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open and shut position
- Proof of closure switch 1 amp
- 2-way normally closed operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing
- 5 lb. closing spring for high force shut-off

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Washer | 302 Stainless Steel |
| Core Tube | 304L Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| H | 59.5 | 122 | 600 | 32 to 104 | 224195 | - |
| H | 66 | 128 | 936 | 32 to 104 | 224195 | - |

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: Two SPST

(1st switch closed when valve is in closed position.)

(2nd switch closed when valve is in open position.)

Max. Electricity: 1 amp, 120 volts

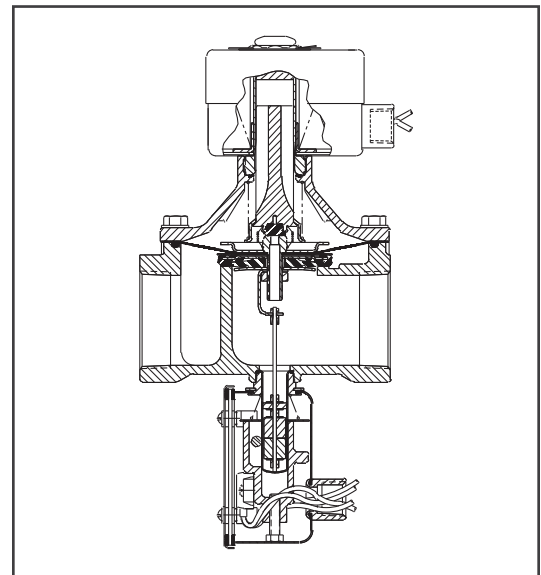
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 1 General Purpose (std), Type 4 Watertight (opt)

Solenoid Enclosures

RedHat metal Type 1 General Purpose housing with 7/8" knock-out for 1/2" conduit connection. Type 4 Watertight housing optional.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No 139 "Electrically Operated Valves," File 010381.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Standard Solenoid Enclosure RedHat - Type 1 | | Optional Solenoid Enclosure RedHat - Type 4 | | Agency | | | Wattage |
|--|---------------------|----------------|----------------|---------------------------------------|------|---------------------|---|-------------|---|-------------|--------|----|-----|---------|
| | | | Btu/hr. | Min. | Max. | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | UL | FM | CSA | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 12.2 | 650,000 | 0 | 20 | 104 | 8043B037 | 1 | 8043B038 | 5 | ○ | ○ | ○ | 59.5 |
| 1 | 1 5/8 | 22 | 1,170,000 | 0 | 20 | 104 | 8043A047 | 1 | 8043A048 | 5 | ○ | ○ | ○ | 59.5 |
| 1 1/4 | 1 5/8 | 31 | 1,657,000 | 0 | 20 | 104 | 8043A057 | 2 | 8043A058 | 6 | ○ | ○ | ○ | 59.5 |
| 1 1/2 | 1 5/8 | 35 | 1,867,500 | 0 | 20 | 104 | 8043A067 | 2 | 8043A068 | 6 | ○ | ○ | ○ | 59.5 |
| 2 | 2 3/32 | 60 | 3,247,500 | 0 | 20 | 104 | 8043A077 | 3 | 8043A078 | 7 | ○ | ○ | ○ | 59.5 |
| 2 1/2 | 3 | 105 | 5,659,500 | 0 | 5 | 104 | 8043A087 | 4 | 8043A088 ② | 8 | ○ | ○ | ○ | 66.0 |
| 3 | 3 | 125 | 6,737,500 | 0 | 5 | 104 | 8043A097 | 4 | 8043A098 ② | 8 | ○ | ○ | ○ | 66.0 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② Are not UL or CSA approved.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Standard Solenoid Enclosure RedHat - Type 1 | | Optional Solenoid Enclosure RedHat - Type 4 | | Agency | | | Wattage |
|--|-------------------|-----------------|----------------|---------------------------------------|------|---------------------|---|-------------|---|-------------|--------|----|-----|---------|
| | | | Btu/hr. | Min. | Max. | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. | UL | FM | CSA | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 3/4 | 41 | 10.4 | 650,000 | 0 | 1.4 | 40 | 8043B037 | 1 | 8043B038 | 5 | ○ | ○ | ○ | 59.5 |
| 1 | 41 | 18.7 | 1,170,000 | 0 | 1.4 | 40 | 8043A047 | 1 | 8043A048 | 5 | ○ | ○ | ○ | 59.5 |
| 1 1/4 | 41 | 26.4 | 1,657,000 | 0 | 1.4 | 40 | 8043A057 | 2 | 8043A058 | 6 | ○ | ○ | ○ | 59.5 |
| 1 1/2 | 41 | 29.8 | 1,867,500 | 0 | 1.4 | 40 | 8043A067 | 2 | 8043A068 | 6 | ○ | ○ | ○ | 59.5 |
| 2 | 53 | 51.0 | 3,247,500 | 0 | 1.4 | 40 | 8043A077 | 3 | 8043A078 | 7 | ○ | ○ | ○ | 59.5 |
| 2 1/2 | 76 | 89.3 | 5,659,500 | 0 | 0.3 | 40 | 8043A087 | 4 | 8043A088 ② | 8 | ○ | ○ | ○ | 66.0 |
| 3 | 76 | 106.3 | 6,737,500 | 0 | 0.3 | 40 | 8043A097 | 4 | 8043A098 ② | 8 | ○ | ○ | ○ | 66.0 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② Are not UL or CSA approved.

Capabilities Chart

| Solenoid Options | | Resilient Materials | Base Catalog Number Type 1 | Standard Rebuild Kit Type 1 | Base Catalog Number Type 4 | Standard Rebuild Kit Type 4 |
|------------------|--------------|---------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|
| Rainproof | Junction Box | NBR | Aluminum | AC | Aluminum | AC |
| R | JB | ● | 8043B037 | Not Available | 8043B038 | Not Available |
| R | JB | ● | 8043A047 | Not Available | 8043A048 | Not Available |
| R | JB | ● | 8043A057 | Not Available | 8043A058 | Not Available |
| R | JB | ● | 8043A067 | Not Available | 8043A068 | Not Available |
| R | JB | ● | 8043A077 | Not Available | 8043A078 | Not Available |
| R | JB | ● | 8043A087 | Not Available | 8043A088 | Not Available |
| R | JB | ● | 8043A097 | Not Available | 8043A098 | Not Available |

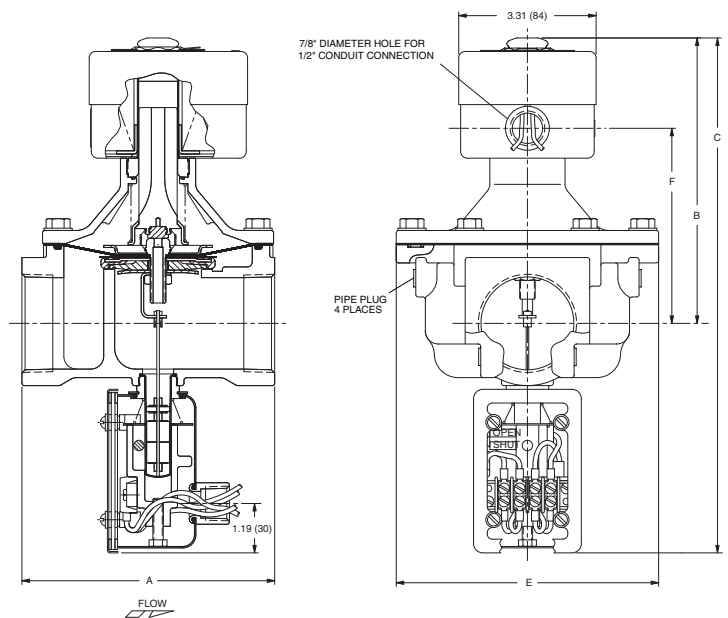
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

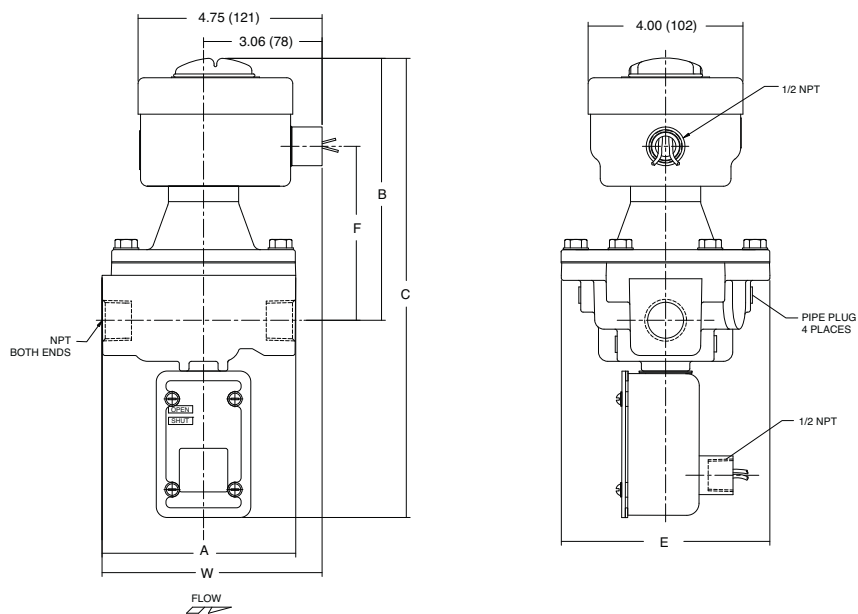
Dimensions inches (mm)

| Const. Ref. | | A | B | C | E | F | W |
|-------------|------|------|------|-------|------|------|------|
| 1 | ins. | 5.00 | 6.34 | 11.69 | 5.38 | 4.19 | - |
| | mm | 127 | 161 | 297 | 137 | 106 | - |
| 2 | ins. | 5.00 | 6.39 | 11.69 | 5.38 | 4.25 | - |
| | mm | 127 | 162 | 297 | 137 | 108 | - |
| 3 | ins. | 6.09 | 6.86 | 12.39 | 6.32 | 4.72 | - |
| | mm | 155 | 174 | 315 | 161 | 120 | - |
| 4 | ins. | 7.80 | 7.89 | 14.47 | 7.95 | 5.75 | - |
| | mm | 198 | 200 | 368 | 202 | 146 | - |
| 5 | ins. | 5.00 | 6.78 | 12.13 | 5.38 | 4.50 | 6.69 |
| | mm | 127 | 172 | 308 | 137 | 114 | 170 |
| 6 | ins. | 5.00 | 6.84 | 12.13 | 5.38 | 4.56 | 6.69 |
| | mm | 127 | 174 | 308 | 137 | 116 | 170 |
| 7 | ins. | 6.09 | 7.31 | 12.84 | 6.32 | 5.03 | 7.35 |
| | mm | 155 | 186 | 326 | 161 | 128 | 187 |
| 8 | ins. | 7.80 | 8.34 | 14.89 | 7.95 | 6.06 | 7.96 |
| | mm | 198 | 212 | 378 | 202 | 154 | 202 |

Const. Ref. 1, 2, 3, 4



Const. Ref. 5, 6, 7, 8



Features

- 2-way normally closed operation
- For control of commercial and industrial gas burners
- Ideal for high pressure applications
- Brass body construction
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.1 | 25 | 70 | 32 to 125 | 238610 | 238614 |

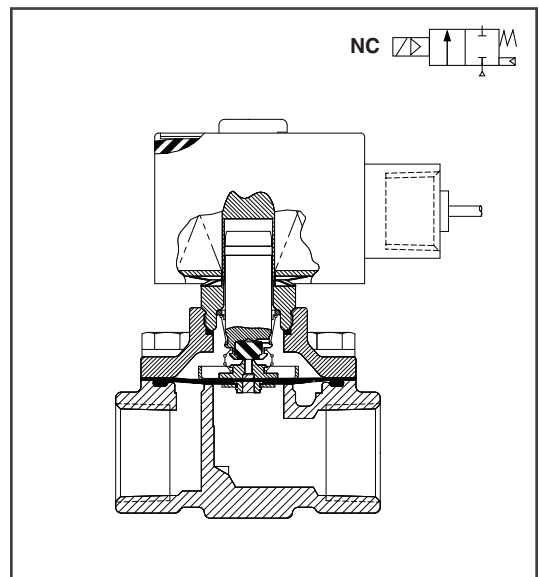
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|------|---------------------------------------|-----|---------------------|----------------|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | UL | | | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 3/8 | 5/8 | 2.8 | 150,000 | 0 | 50 | 125 | 8210G074 | 1 | ○ | ○ | ○ | 10.1 | 3.2 | |
| 1/2 | 5/8 | 3.6 | 193,000 | 0 | 50 | 125 | 8210G075 | 1 | ○ | ○ | ○ | 10.1 | 3.2 | |
| 3/4 | 5/8 | 5.0 | 295,000 | 0 | 50 | 125 | 8210G076 | 2 | ○ | ○ | ○ | 10.1 | 3.4 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|------|---------------------------------------|----|---------------------|----------------|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | UL | | | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 3/8 | 16 | 2.4 | 150,000 | 0 | 3.4 | 52 | 8210G074 | 1 | ○ | ○ | ○ | 10.1 | 1.5 | |
| 1/2 | 16 | 3.1 | 193,000 | 0 | 3.4 | 52 | 8210G075 | 1 | ○ | ○ | ○ | 10.1 | 1.5 | |
| 3/4 | 16 | 4.3 | 295,000 | 0 | 3.4 | 52 | 8210G076 | 2 | ○ | ○ | ○ | 10.1 | 1.5 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

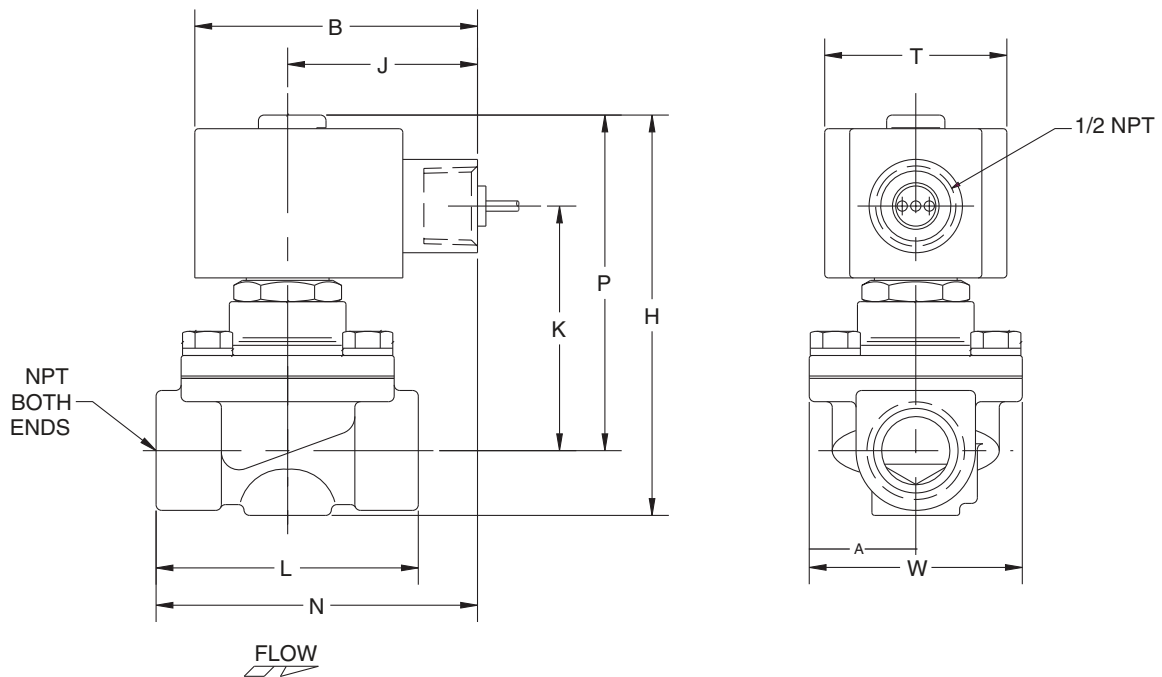
| Solenoid Options | | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|------------|--------------|---------------------------|---------------------|---------------------|----------------------|
| NEMA Type 3-9 | High Temp. | Junction Box | Wiring Box Screw Terminal | Brass | NBR | AC |
| EF | HT | JB | JKF | 8210G074 | ● | 304076 |
| EF | HT | JB | JKF | 8210G075 | ● | 304076 |
| EF | HT | JB | JKF | 8210G076 | ● | 304076 |

● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

| Const. Ref. | | A | B | H | J | K | L | N | P | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 1.66 | 3.03 | 3.95 | 2.04 | 2.42 | 2.75 | 3.42 | 3.39 | 1.95 | 2.28 |
| | mm | 42 | 77 | 100 | 52 | 61 | 70 | 87 | 86 | 50 | 58 |
| 2 | ins. | 1.66 | 3.03 | 4.20 | 2.04 | 2.58 | 2.81 | 3.45 | 3.55 | 1.95 | 2.28 |
| | mm | 42 | 77 | 107 | 52 | 66 | 71 | 88 | 90 | 50 | 58 |

Const. Ref. 1, 2



Mountable in any position.

Features

- 2-way normally open operation
- For control of commercial and industrial gas burners
- Ideal for high pressure applications
- Brass body construction
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.1 | 25 | 70 | 32 to 125 | 238610 | 238614 |

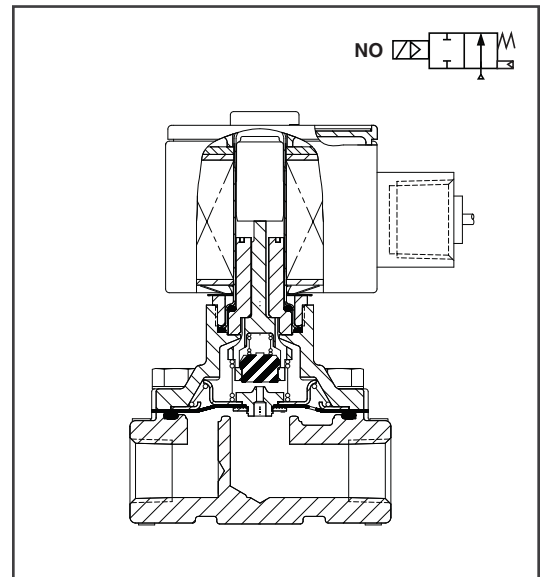
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; Closing Time: Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, General Purpose Valves.

CSA Certified to:

Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/8 | 5/8 | 2.8 | 150,000 | 0 | 125 | 180 | 8210G033 | 1 | ● | - | ● | 10.1 | 3.4 |
| 1/2 | 5/8 | 3.5 | 188,000 | 0 | 125 | 180 | 8210G034 | 1 | ● | - | ● | 10.1 | 3.4 |
| 3/4 | 3/4 | 5.5 | 295,000 | 0 | 125 | 180 | 8210G035 | 2 | ● | - | ● | 10.1 | 3.6 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/8 | 16 | 2.4 | 150,000 | 0 | 8.6 | 82 | 8210G033 | 1 | ● | - | ● | 10.1 | 1.5 |
| 1/2 | 16 | 3.0 | 188,000 | 0 | 8.6 | 82 | 8210G034 | 1 | ● | - | ● | 10.1 | 1.5 |
| 3/4 | 19 | 4.7 | 295,000 | 0 | 8.6 | 82 | 8210G035 | 2 | ● | - | ● | 10.1 | 1.6 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

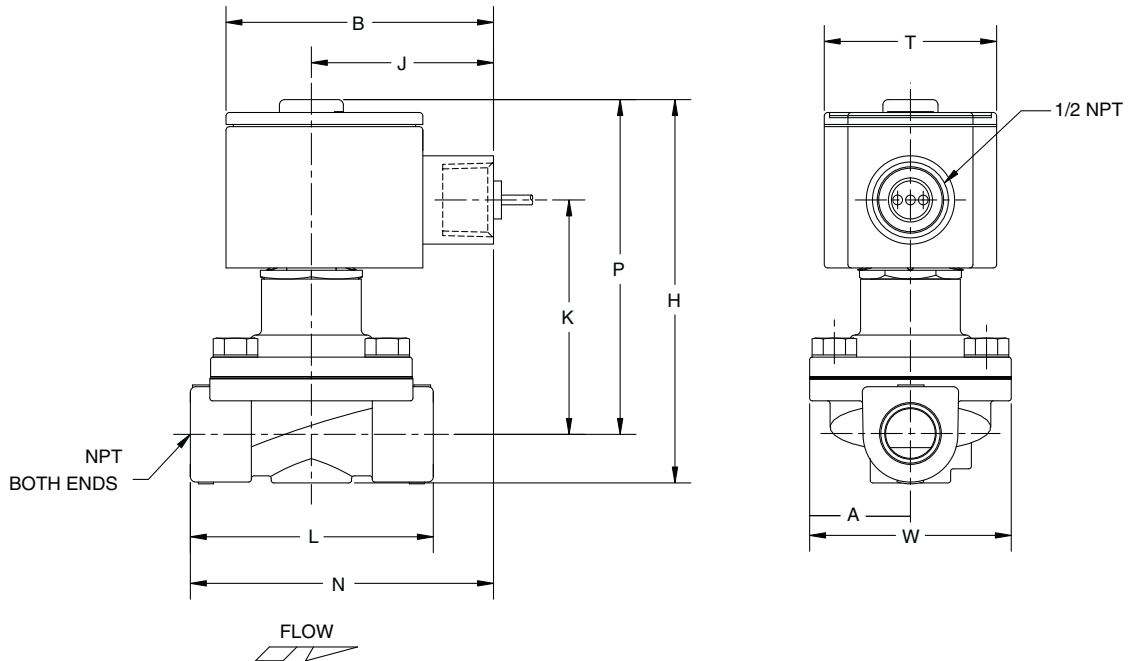
| Solenoid Options | | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|------------|--------------|---------------------------|---------------------|---------------------|----------------------|
| NEMA Type 3-9 | High Temp. | Junction Box | Wiring Box Screw Terminal | Brass | NBR | AC |
| EF | HT | JB | JKF | 8210G033 | ● | 302334 |
| EF | HT | JB | JKF | 8210G034 | ● | 302334 |
| EF | HT | JB | JKF | 8210G035 | ● | 302335 |

● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

| Const. Ref. | | A | B | H | J | K | L | N | P | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 1.66 | 3.03 | 4.35 | 2.04 | 2.65 | 2.75 | 3.42 | 3.79 | 1.95 | 2.28 |
| | mm | 42 | 77 | 110 | 52 | 67 | 70 | 87 | 96 | 50 | 58 |
| 2 | ins. | 1.66 | 3.03 | 4.64 | 2.04 | 2.81 | 2.81 | 3.45 | 3.94 | 1.95 | 2.28 |
| | mm | 42 | 77 | 118 | 52 | 71 | 71 | 88 | 100 | 50 | 58 |

Const. Ref. 1, 2



Mountable in any position.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal (20.1 watt only) |
| Rider Ring | PTFE (20.1 watt only) |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Ambient Temp. °F | Spare Coil Family | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------|-------------------|--------|----------------|----|
| | DC Watts | AC | | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | | AC | DC | AC | DC |
| F | - | 17.1 | 40 | 93 | -40 to 125 | 238610 | - | - | - |
| F | - | 20.1 | 48 | 240 | -40 to 125 | 272610 | - | - | - |
| F | 22.6 | - | - | - | -40 to 104 | - | 238710 | - | - |

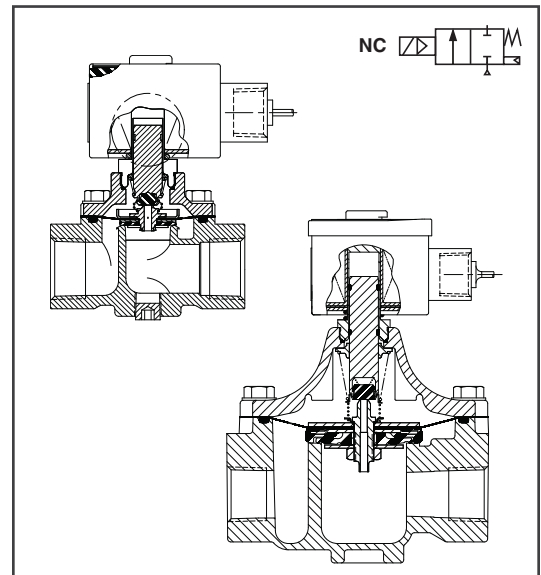
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (238610); 120, 240 volts AC, 60 Hz (272610); 12, 24 volts DC.

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | | Catalog Number | Const. Ref. | Agency | | | Wattage | | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|---------------------------------------|------|---------------------|-----|----------------|-------------|--------|----|----|---------|------|-------------------------------|
| | | | | Btu/hr. | Min. | Max. | AC | | | DC | UL | FM | CSA | AC | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 3/8 | 3/4 | 3.4 | 183,000 | 0 | 5 | 125 | 104 | 8214G010 | 1 | ○ | ○ | ○ | 17.1 | 22.6 | 2 |
| 1/2 | 3/4 | 4.4 | 238,500 | 0 | 5 | 125 | 104 | 8214G020 | 1 | ○ | ○ | ○ | 17.1 | 22.6 | 2 |
| 3/4 | 3/4 | 5.1 | 247,500 | 0 | 5 | 125 | 104 | 8214G030 | 2 | ○ | ○ | ○ | 17.1 | 22.6 | 2 |
| 3/4 | 1 5/8 | 11 | 580,000 | 0 | 5 | 125 | - | 8214G036 | 3 | ○ | ○ | ○ | 20.1 | - | 4.3 |
| 1 | 1 5/8 | 21 | 1,119,000 | 0 | 5 | 125 | - | 8214G051 | 3 | ○ | ○ | ○ | 20.1 | - | 4.3 |
| 1 1/4 | 1 5/8 | 32 | 1,730,000 | 0 | 5 | 125 | - | 8214G061 | 4 | ○ | ○ | ○ | 20.1 | - | 4.3 |
| 1 1/2 | 1 5/8 | 35 | 1,900,000 | 0 | 5 | 125 | - | 8214G071 | 4 | ○ | ○ | ○ | 20.1 | - | 4.3 |
| 2 | 2 3/32 | 60 | 2,800,000 | 0 | 5 | 125 | - | 8214G081 | 5 | ○ | ○ | ○ | 20.1 | - | 6.3 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | | Catalog Number | Const. Ref. | Agency | | | Wattage | | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|---------------------------------------|------|---------------------|----|----------------|-------------|--------|----|----|---------|------|-------------------------------|
| | | | | Btu/hr. | Min. | Max. | AC | | | DC | UL | FM | CSA | AC | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 3/8 | 19 | 2.9 | 183,000 | 0 | 0.3 | 52 | 40 | 8214G010 | 1 | ○ | ○ | ○ | 17.1 | 22.6 | 0.9 |
| 1/2 | 19 | 3.7 | 238,500 | 0 | 0.3 | 52 | 40 | 8214G020 | 1 | ○ | ○ | ○ | 17.1 | 22.6 | 0.9 |
| 3/4 | 19 | 4.3 | 247,500 | 0 | 0.3 | 52 | 40 | 8214G030 | 2 | ○ | ○ | ○ | 17.1 | 22.6 | 0.9 |
| 3/4 | 41 | 9.4 | 580,000 | 0 | 0.3 | 52 | - | 8214G036 | 3 | ○ | ○ | ○ | 20.1 | - | 2.0 |
| 1 | 41 | 17.9 | 1,119,000 | 0 | 0.3 | 52 | - | 8214G051 | 3 | ○ | ○ | ○ | 20.1 | - | 2.0 |
| 1 1/4 | 41 | 27.2 | 1,730,000 | 0 | 0.3 | 52 | - | 8214G061 | 4 | ○ | ○ | ○ | 20.1 | - | 2.0 |
| 1 1/2 | 41 | 29.8 | 1,900,000 | 0 | 0.3 | 52 | - | 8214G071 | 4 | ○ | ○ | ○ | 20.1 | - | 2.0 |
| 2 | 53 | 51.0 | 2,800,000 | 0 | 0.3 | 52 | - | 8214G081 | 5 | ○ | ○ | ○ | 20.1 | - | 2.9 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

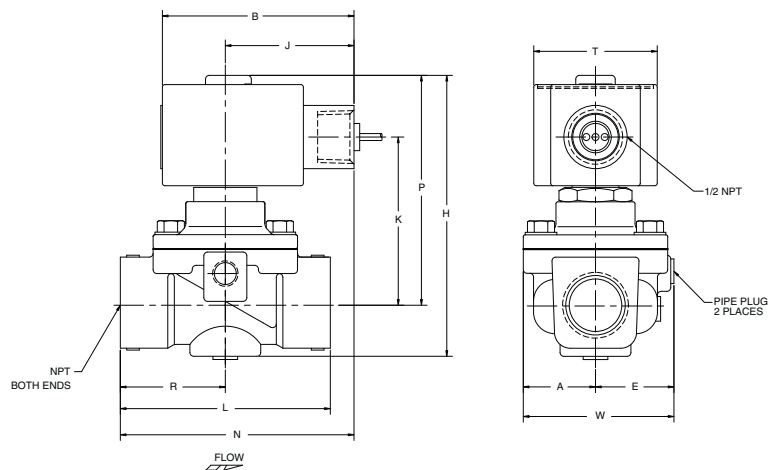
| COMBUSTION | Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit | |
|------------|------------------|--------------|---------------------|---------------------|----------------------|--------|
| | High Temp. | Junction Box | Aluminum | NBR | AC | DC |
| | HB | JB | 8214G010 | ● | 316233 | 316790 |
| | HB | JB | 8214G020 | ● | 316233 | 316790 |
| | HB | JB | 8214G030 | ● | 316233 | 316790 |
| | HB | JB | 8214G036 | ● | 322374 | - |
| | HB | JB | 8214G051 | ● | 322374 | - |
| | HB | JB | 8214G061 | ● | 322374 | - |
| | HB | JB | 8214G071 | ● | 322374 | - |
| | HB | JB | 8214G081 | ● | 322376 | - |

● = Standard. Other options may be available. All option combinations may not be available. Solenoid options are for AC only.

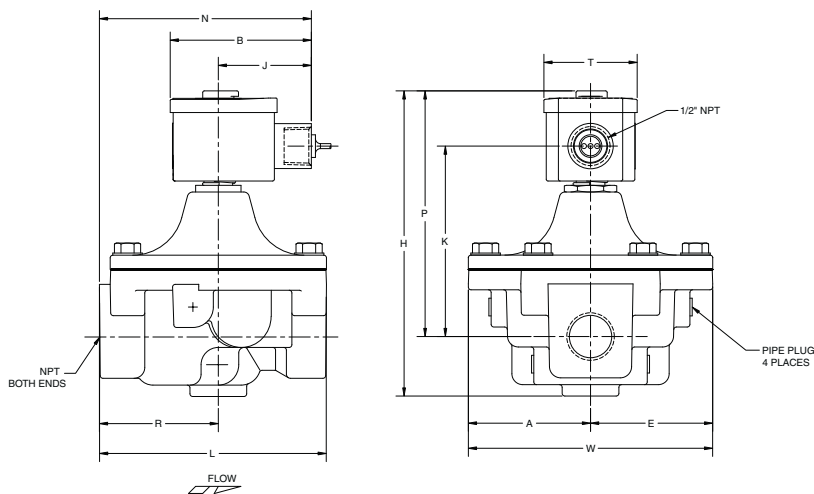
Dimensions inches (mm)

| Const. Ref. | | A | B | E | H | J | K | L | N | P | R | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 1.14 | 3.03 | 1.36 | 4.08 | 2.04 | 2.47 | 2.75 | 3.42 | 3.46 | 1.38 | 1.95 | 2.50 |
| | mm | 29 | 77 | 35 | 104 | 52 | 63 | 70 | 87 | 88 | 35 | 50 | 64 |
| 2 | ins. | 1.14 | 3.03 | 1.25 | 4.52 | 2.04 | 2.66 | 3.31 | 3.70 | 3.64 | 1.66 | 1.95 | 2.39 |
| | mm | 29 | 77 | 32 | 115 | 52 | 68 | 84 | 94 | 92 | 42 | 50 | 61 |
| 3 | ins. | 2.69 | 3.11 | 2.69 | 6.73 | 2.05 | 4.20 | 5.00 | 4.67 | 5.41 | 2.62 | 2.06 | 5.39 |
| | mm | 68 | 79 | 68 | 171 | 52 | 107 | 127 | 119 | 137 | 67 | 52 | 137 |
| 4 | ins. | 2.69 | 3.11 | 2.69 | 6.73 | 2.05 | 4.27 | 5.00 | 4.67 | 5.48 | 2.62 | 2.06 | 5.39 |
| | mm | 68 | 79 | 68 | 171 | 52 | 108 | 127 | 119 | 139 | 37 | 52 | 137 |
| 5 | ins. | 3.16 | 3.11 | 3.16 | 7.34 | 2.05 | 4.63 | 6.09 | 5.33 | 5.48 | 3.28 | 2.06 | 6.32 |
| | mm | 80 | 79 | 80 | 186 | 52 | 118 | 155 | 135 | 139 | 83 | 52 | 161 |

Const. Ref. 1, 2,



Const. Ref. 3, 4, 5



Must be mounted with solenoid vertical and upright with 20.1 watt coil.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Ring | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20.1 | 48 | 240 | -40 to 125 | 272610 | - |

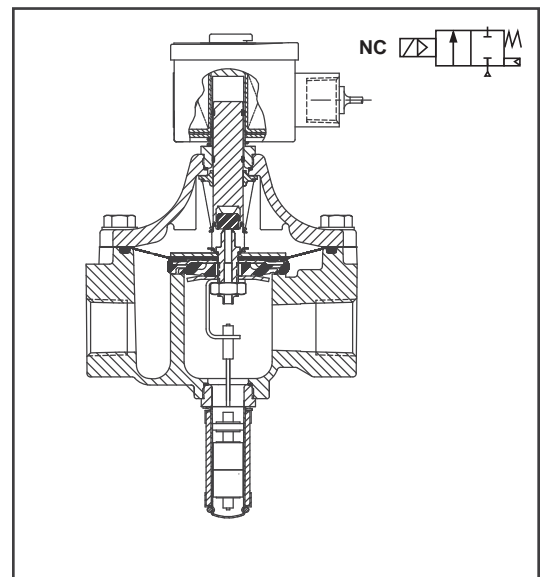
Standard Voltages: 120, 240 volts AC, 60 Hz

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and watertight solenoid enclosures with 1/2" conduit hub as standard.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves".

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 580,000 | 0 | 5 | 125 | 8214G036VI | 1 | ○ | ○ | ○ | 20.1 | 4.5 |
| 1 | 1 5/8 | 21 | 1,119,000 | 0 | 5 | 125 | 8214G051VI | 1 | ○ | ○ | ○ | 20.1 | 4.5 |
| 1 1/4 | 1 5/8 | 32 | 1,730,000 | 0 | 5 | 125 | 8214G061VI | 2 | ○ | ○ | ○ | 20.1 | 4.5 |
| 1 1/2 | 1 5/8 | 35 | 1,900,000 | 0 | 5 | 125 | 8214G071VI | 2 | ○ | ○ | ○ | 20.1 | 4.5 |
| 2 | 2 3/32 | 60 | 2,800,000 | 0 | 5 | 125 | 8214G081VI | 3 | ○ | ○ | ○ | 20.1 | 6.5 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 580,000 | 0 | 0.3 | 52 | 8214G036VI | 1 | ○ | ○ | ○ | 20.1 | 2 |
| 1 | 41 | 17.9 | 1,119,000 | 0 | 0.3 | 52 | 8214G051VI | 1 | ○ | ○ | ○ | 20.1 | 2 |
| 1 1/4 | 41 | 27.2 | 1,730,000 | 0 | 0.3 | 52 | 8214G061VI | 2 | ○ | ○ | ○ | 20.1 | 2 |
| 1 1/2 | 41 | 29.8 | 1,900,000 | 0 | 0.3 | 52 | 8214G071VI | 2 | ○ | ○ | ○ | 20.1 | 2 |
| 2 | 53 | 51.0 | 2,800,000 | 0 | 0.3 | 52 | 8214G081VI | 3 | ○ | ○ | ○ | 20.1 | 3 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|--------------|---------------------|---------------------|----------------------|
| High Temp. | Junction Box | Aluminum | NBR | AC |
| HB | JB | 8214G036VI | ● | 322375 |
| HB | JB | 8214G051VI | ● | 322375 |
| HB | JB | 8214G061VI | ● | 322375 |
| HB | JB | 8214G071VI | ● | 322375 |
| HB | JB | 8214G081VI | ● | 322377 |

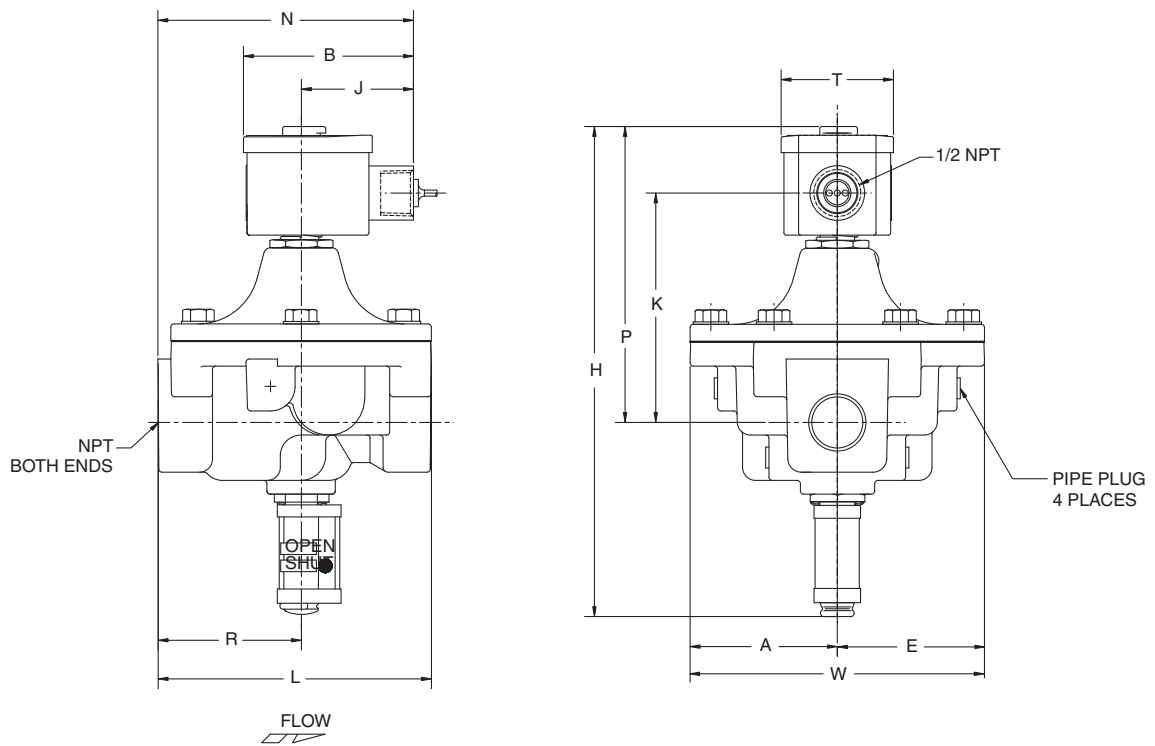
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

Dimensions inches (mm)

| Const. Ref. | | A | B | E | H | J | K | L | N | P | R | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 3.11 | 2.69 | 8.93 | 2.05 | 4.20 | 5.00 | 4.67 | 5.41 | 2.62 | 2.06 | 5.39 |
| | mm | 68 | 79 | 68 | 227 | 52 | 107 | 127 | 119 | 137 | 67 | 52 | 137 |
| 2 | ins. | 2.69 | 3.11 | 2.69 | 8.93 | 2.05 | 4.27 | 5.00 | 4.67 | 5.48 | 2.62 | 2.06 | 5.39 |
| | mm | 68 | 79 | 68 | 227 | 52 | 108 | 127 | 119 | 139 | 67 | 52 | 137 |
| 3 | ins. | 3.16 | 3.11 | 3.16 | 9.53 | 2.05 | 4.63 | 6.09 | 5.33 | 5.84 | 3.28 | 2.06 | 6.32 |
| | mm | 80 | 79 | 80 | 242 | 52 | 118 | 155 | 135 | 148 | 83 | 52 | 161 |

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Proof of closure switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Ring | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20.1 | 48 | 240 | -40 to 125 | 272610 | - |
| Standard Voltages: 120, 240 volts AC, 60 Hz | | | | | | |

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

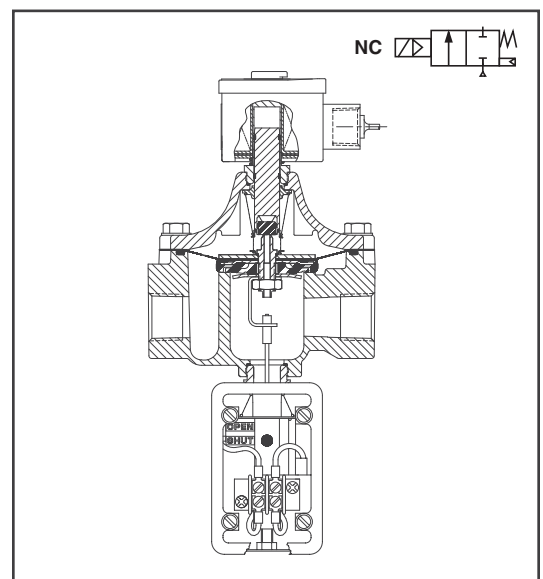
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 4 watertight

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 580,000 | 0 | 5 | 125 | 8214G036C | 1 | ○ | ○ | ○ | 20.1 | 4.8 |
| 1 | 1 5/8 | 21 | 1,119,000 | 0 | 5 | 125 | 8214G051C | 1 | ○ | ○ | ○ | 20.1 | 4.8 |
| 1 1/4 | 1 5/8 | 32 | 1,730,000 | 0 | 5 | 125 | 8214G061C | 2 | ○ | ○ | ○ | 20.1 | 4.8 |
| 1 1/2 | 1 5/8 | 35 | 1,900,000 | 0 | 5 | 125 | 8214G071C | 2 | ○ | ○ | ○ | 20.1 | 4.8 |
| 2 | 2 3/32 | 60 | 2,800,000 | 0 | 5 | 125 | 8214G081C | 3 | ○ | ○ | ○ | 20.1 | 6.8 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 580,000 | 0 | 0.3 | 52 | 8214G036C | 1 | ○ | ○ | ○ | 20.1 | 2.2 |
| 1 | 41 | 17.9 | 1,119,000 | 0 | 0.3 | 52 | 8214G051C | 1 | ○ | ○ | ○ | 20.1 | 2.2 |
| 1 1/4 | 41 | 27.2 | 1,730,000 | 0 | 0.3 | 52 | 8214G061C | 2 | ○ | ○ | ○ | 20.1 | 2.2 |
| 1 1/2 | 41 | 29.8 | 1,900,000 | 0 | 0.3 | 52 | 8214G071C | 2 | ○ | ○ | ○ | 20.1 | 2.2 |
| 2 | 53 | 51.0 | 2,800,000 | 0 | 0.3 | 52 | 8214G081C | 3 | ○ | ○ | ○ | 20.1 | 3.1 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|--------------|---------------------|---------------------|----------------------|
| High Temp. | Junction Box | Aluminum | NBR | AC |
| HB | JB | 8214G036C | ● | Not Available |
| HB | JB | 8214G051C | ● | Not Available |
| HB | JB | 8214G061C | ● | Not Available |
| HB | JB | 8214G071C | ● | Not Available |
| HB | JB | 8214G081C | ● | Not Available |

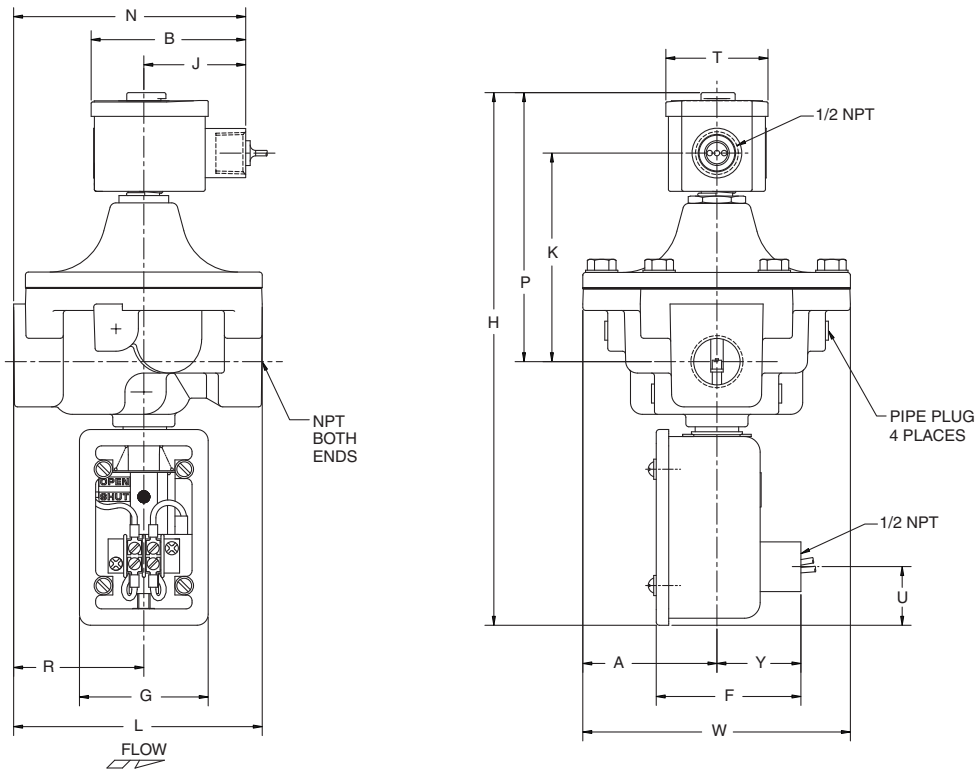
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

Dimensions inches (mm)

| Const. Ref. | | A | B | F | G | H | J | K | L | N | P | R | T | U | W | Y |
|-------------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 3.11 | 2.91 | 2.44 | 10.72 | 2.05 | 4.20 | 5.00 | 4.67 | 5.41 | 2.62 | 2.06 | 1.18 | 5.39 | 1.69 |
| | mm | 68 | 79 | 74 | 62 | 272 | 52 | 107 | 127 | 119 | 137 | 67 | 52 | 30 | 137 | 43 |
| 2 | ins. | 2.69 | 3.11 | 2.91 | 2.44 | 10.72 | 2.05 | 4.27 | 5.00 | 4.67 | 5.48 | 2.62 | 2.06 | 1.18 | 5.39 | 1.69 |
| | mm | 68 | 79 | 74 | 62 | 272 | 52 | 108 | 127 | 119 | 139 | 67 | 52 | 30 | 137 | 43 |
| 3 | ins. | 3.16 | 3.11 | 2.91 | 2.44 | 11.33 | 2.05 | 4.63 | 6.09 | 5.33 | 5.84 | 3.28 | 2.06 | 1.18 | 6.32 | 1.69 |
| | mm | 80 | 79 | 74 | 62 | 288 | 52 | 118 | 155 | 135 | 148 | 83 | 52 | 30 | 161 | 43 |

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal (20 watt only) |
| Rider Ring | PTFE (20 watt only) |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | *Ambient Temp. °F | Spare Coil Family | | | |
|---------------------------------------|-----------------------------------|-------|------------|-----------|-------------------|-------------------|--------|----------------|----|
| | DC Watts | AC | | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush | | AC | DC | AC | DC |
| F | - | 20 | 43 | 240 | -40 to 125 | 099257 | - | - | - |
| F | - | 28.2 | 50 | 385 | -40 to 125 | 206409 | - | - | - |
| B | 14.9 | - | - | - | -40 to 77 | - | 062691 | - | - |

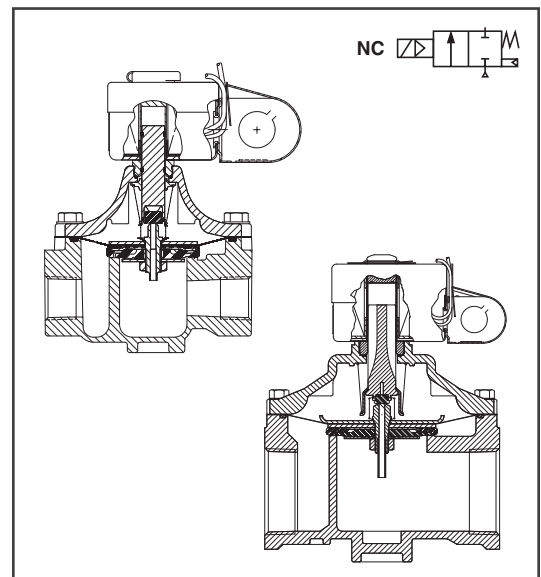
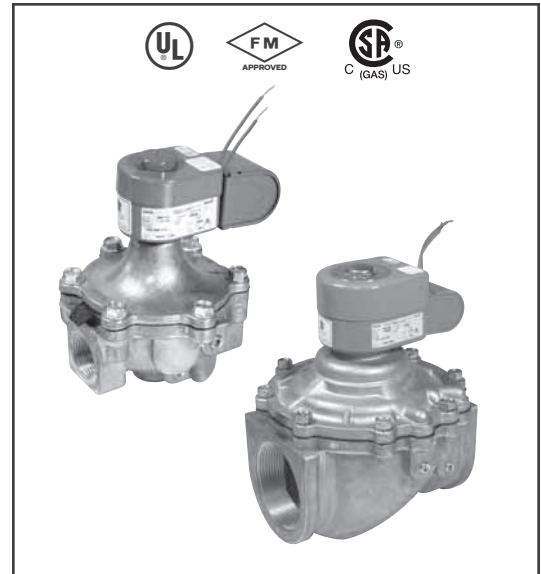
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz)
 12, 24 volts DC.

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved "Process Control Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | | Catalog Number | Const. Ref. | Agency | | | Wattage | | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|------|---------------------------------------|-----|---------------------|----------|----------------|-------------|--------|-----|------|---------|------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | AC | DC | UL | | | FM | CSA | AC | DC | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 580,000 | 0 | 5 | 125 | 77 | 8214 035 | 1 | ○ | ② | ○ | 20 | 14.9 | 4.3 | |
| 1 | 1 5/8 | 21 | 1,119,000 | 0 | 5 | 125 | 77 | 8214 050 | 1 | ○ | ② | ○ | 20 | 14.9 | 4.3 | |
| 1 1/4 | 1 5/8 | 32 | 1,730,000 | 0 | 5 | 125 | 77 | 8214 060 | 2 | ○ | ② | ○ | 20 | 14.9 | 4.3 | |
| 1 1/2 | 1 5/8 | 35 | 1,900,000 | 0 | 5 | 125 | 77 | 8214 070 | 2 | ○ | ② | ○ | 20 | 14.9 | 4.3 | |
| 2 | 2 3/32 | 60 | 2,800,000 | 0 | 5 | 125 | 77 | 8214 080 | 3 | ○ | ② | ○ | 20 | 14.9 | 6.3 | |
| 2 1/2 | 3 | 104 | 5,765,500 | 0 | 5 | 125 | - | 8214 090 | 4 | ○ | ② | ○ | 28.2 | - | 13.0 | |
| 3 | 3 | 105 | 5,796,000 | 0 | 5 | 125 | - | 8214 040 | 4 | ○ | ② | ○ | 28.2 | - | 14.0 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② FM approved "Process Control Valves".

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m²/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | | Catalog Number | Const. Ref. | Agency | | | Wattage | | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|------|---------------------------------------|----|---------------------|----------|----------------|-------------|--------|-----|------|---------|-----|-------------------------------|
| | | | Btu/hr. | Min. | Max. | AC | DC | UL | | | FM | CSA | AC | DC | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 580,000 | 0 | 0.3 | 52 | 25 | 8214 035 | 1 | ○ | ② | ○ | 20 | 14.9 | 2.0 | |
| 1 | 41 | 17.9 | 1,119,000 | 0 | 0.3 | 52 | 25 | 8214 050 | 1 | ○ | ② | ○ | 20 | 14.9 | 2.0 | |
| 1 1/4 | 41 | 27.2 | 1,730,000 | 0 | 0.3 | 52 | 25 | 8214 060 | 2 | ○ | ② | ○ | 20 | 14.9 | 2.0 | |
| 1 1/2 | 41 | 29.8 | 1,900,000 | 0 | 0.3 | 52 | 25 | 8214 070 | 2 | ○ | ② | ○ | 20 | 14.9 | 2.0 | |
| 2 | 53 | 51.0 | 2,800,000 | 0 | 0.3 | 52 | 25 | 8214 080 | 3 | ○ | ② | ○ | 20 | 14.9 | 2.9 | |
| 2 1/2 | 76 | 88.4 | 5,765,500 | 0 | 0.3 | 52 | - | 8214 090 | 4 | ○ | ② | ○ | 28.2 | - | 5.9 | |
| 3 | 76 | 89.3 | 5,796,000 | 0 | 0.3 | 52 | - | 8214 040 | 4 | ○ | ② | ○ | 28.2 | - | 6.4 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② FM approved "Process Control Valves".

Capabilities Chart

| Solenoid Options | | Base Catalog Number | | Resilient Materials | | Standard Rebuild Kit | |
|------------------|--------------|---------------------|--|---------------------|--|----------------------|--------|
| High Temp. | Junction Box | Aluminum | | NBR | | AC | DC |
| HB | JB | 8214 035 | | ● | | 316429 | 316777 |
| HB | JB | 8214 050 | | ● | | 316429 | 316777 |
| HB | JB | 8214 060 | | ● | | 316429 | 316777 |
| HB | JB | 8214 070 | | ● | | 316429 | 316777 |
| HB | JB | 8214 080 | | ● | | 316430 | 316778 |
| HT | JB | 8214 090 | | ● | | 316828 | - |
| HT | JB | 8214 040 | | ● | | 316828 | - |

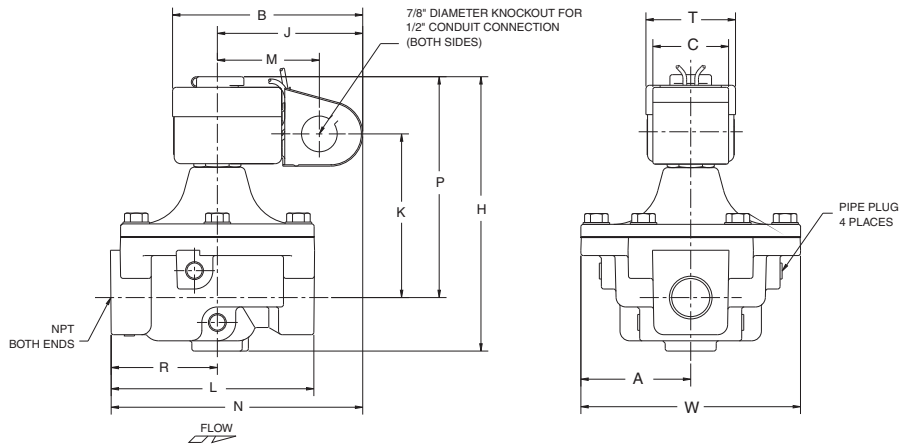
● = Standard. Other options may be available. All option combinations may not be available. Solenoid options are for AC only.

COMBUSTION

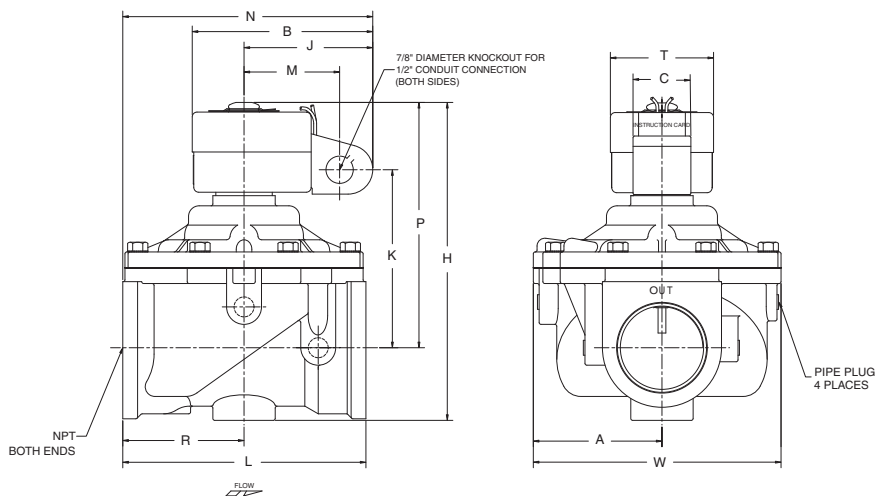
Dimensions inches (mm) Shown with Optional Junction Box

| Const. Ref. | | A | B | C | H | J | K | L | M | N | P | R | T | W |
|-------------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 4.59 | 1.88 | 6.78 | 3.53 | 4.06 | 5.00 | 2.50 | 6.15 | 5.46 | 2.62 | 2.20 | 5.39 |
| | mm | 68 | 117 | 48 | 1620 | 90 | 103 | 127 | 64 | 156 | 139 | 67 | 56 | 137 |
| 2 | ins. | 2.69 | 4.59 | 1.88 | 6.78 | 3.53 | 4.13 | 5.00 | 2.50 | 6.15 | 5.53 | 2.62 | 2.20 | 5.39 |
| | mm | 68 | 117 | 48 | 172 | 90 | 105 | 127 | 64 | 156 | 140 | 67 | 56 | 137 |
| 3 | ins. | 3.16 | 4.59 | 1.88 | 7.39 | 3.53 | 4.49 | 6.09 | 2.50 | 6.81 | 5.89 | 3.28 | 2.20 | 6.32 |
| | mm | 80 | 117 | 48 | 188 | 90 | 114 | 155 | 64 | 173 | 150 | 83 | 56 | 161 |
| 4 | ins. | 4.13 | 5.72 | 1.88 | 10.20 | 4.07 | 5.71 | 7.80 | 3.07 | 7.96 | 7.87 | 3.89 | 3.31 | 7.95 |
| | mm | 105 | 145 | 48 | 259 | 103 | 145 | 198 | 78 | 202 | 200 | 99 | 84 | 202 |

Const. Ref. 1, 2, 3



Const. Ref. 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal (20 watt only) |
| Rider Ring | PTFE (20 watt only) |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20 | 43 | 240 | -40 to 125 | 99257 | - |
| F | 28.2 | 50 | 385 | -40 to 125 | 206409 | - |

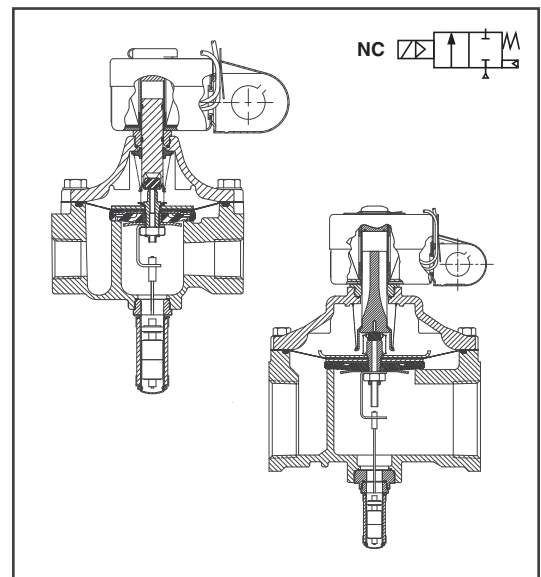
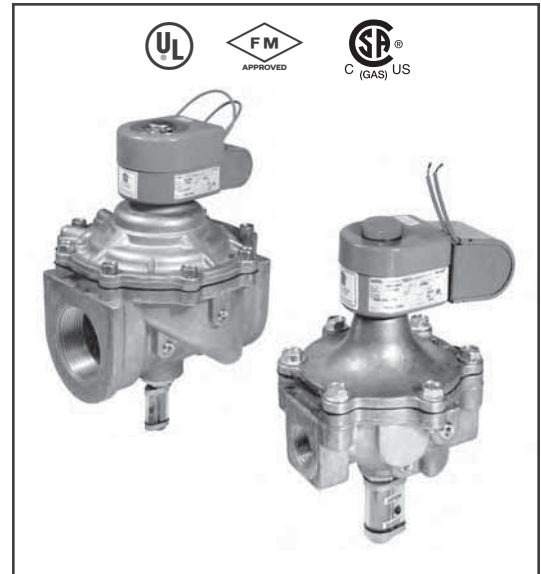
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257); 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (206409).

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard G22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 580,000 | 0 | 5 | 125 | 8214 035VI | 1 | ○ | ○ | ○ | 20 | 4.5 |
| 1 | 1 5/8 | 21 | 1,119,000 | 0 | 5 | 125 | 8214 050VI | 1 | ○ | ○ | ○ | 20 | 4.5 |
| 1 1/4 | 1 5/8 | 32 | 1,730,000 | 0 | 5 | 125 | 8214 060VI | 2 | ○ | ○ | ○ | 20 | 4.5 |
| 1 1/2 | 1 5/8 | 35 | 1,900,000 | 0 | 5 | 125 | 8214 070VI | 2 | ○ | ○ | ○ | 20 | 4.5 |
| 2 | 2 3/32 | 60 | 2,800,000 | 0 | 5 | 125 | 8214 080VI | 3 | ○ | ○ | ○ | 20 | 6.5 |
| 2 1/2 | 3 | 104 | 5,765,500 | 0 | 5 | 125 | 8214 090VI | 4 | ○ | ○ | ○ | 28.2 | 13.2 |
| 3 | 3 | 105 | 5,796,000 | 0 | 5 | 125 | 8214 040VI | 4 | ○ | ○ | ○ | 28.2 | 14.2 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 580,000 | 0 | 0.3 | 52 | 8214 035VI | 1 | ○ | ○ | ○ | 20 | 2.0 |
| 1 | 41 | 17.9 | 1,119,000 | 0 | 0.3 | 52 | 8214 050VI | 1 | ○ | ○ | ○ | 20 | 2.0 |
| 1 1/4 | 41 | 27.2 | 1,730,000 | 0 | 0.3 | 52 | 8214 060VI | 2 | ○ | ○ | ○ | 20 | 2.0 |
| 1 1/2 | 41 | 29.8 | 1,900,000 | 0 | 0.3 | 52 | 8214 070VI | 2 | ○ | ○ | ○ | 20 | 2.0 |
| 2 | 53 | 51.0 | 2,800,000 | 0 | 0.3 | 52 | 8214 080VI | 3 | ○ | ○ | ○ | 20 | 3.0 |
| 2 1/2 | 76 | 88.4 | 5,765,500 | 0 | 0.3 | 52 | 8214 090VI | 4 | ○ | ○ | ○ | 28.2 | 6.0 |
| 3 | 76 | 89.3 | 5,796,000 | 0 | 0.3 | 52 | 8214 040VI | 4 | ○ | ○ | ○ | 28.2 | 6.5 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | | Resilient Materials | | Standard Rebuild Kit | |
|------------------|--------------|---------------------|--|---------------------|--|----------------------|--|
| High Temp. | Junction Box | Aluminum | | NBR | | AC | |
| HB | JB | 8214 035VI | | ● | | 318303 | |
| HB | JB | 8214 050VI | | ● | | 318303 | |
| HB | JB | 8214 060VI | | ● | | 318303 | |
| HB | JB | 8214 070VI | | ● | | 318303 | |
| HB | JB | 8214 080VI | | ● | | 318328 | |
| HT | JB | 8214 090VI | | ● | | 318331 | |
| HT | JB | 8214 040VI | | ● | | 318331 | |

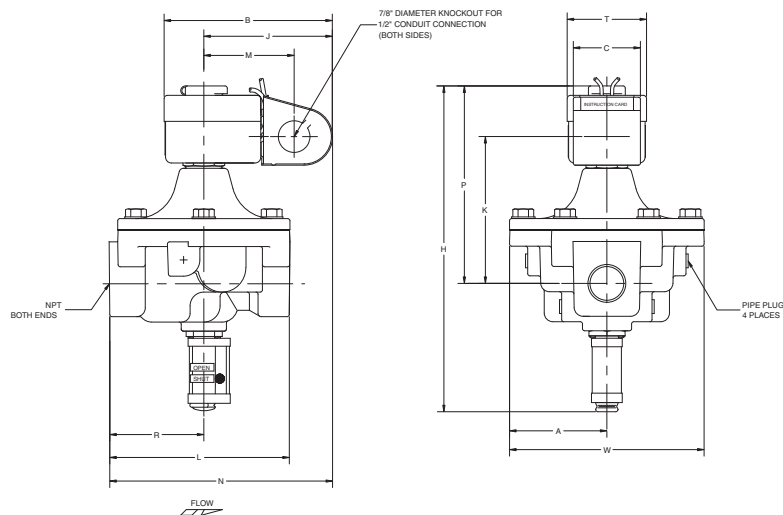
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

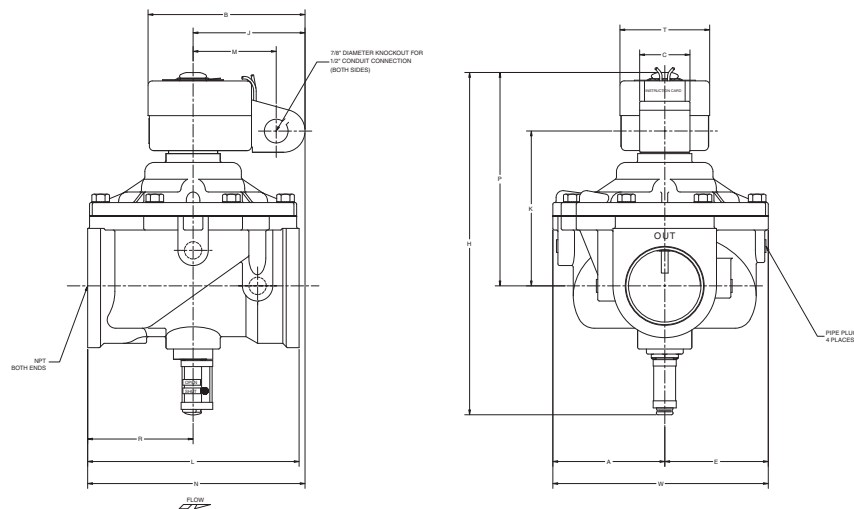
Dimensions inches (mm)

| Const. Ref. | | A | B | C | H | J | K | L | M | N | P | R | T | W |
|-------------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 4.59 | 1.88 | 8.97 | 3.53 | 4.06 | 5.24 | 2.50 | 6.15 | 5.46 | 2.62 | 2.20 | 5.39 |
| | mm | 68 | 117 | 48 | 228 | 90 | 103 | 133 | 64 | 156 | 139 | 67 | 56 | 137 |
| 2 | ins. | 2.69 | 4.59 | 1.88 | 8.97 | 3.53 | 4.13 | 5.24 | 2.50 | 6.15 | 5.53 | 2.62 | 2.20 | 5.39 |
| | mm | 68 | 117 | 48 | 228 | 90 | 105 | 133 | 64 | 156 | 140 | 67 | 56 | 137 |
| 3 | ins. | 3.16 | 4.59 | 1.88 | 9.57 | 3.53 | 4.49 | 6.56 | 2.50 | 6.81 | 5.89 | 3.28 | 2.20 | 6.32 |
| | mm | 80 | 117 | 48 | 243 | 90 | 114 | 167 | 64 | 173 | 150 | 83 | 56 | 161 |
| 4 | ins. | 4.13 | 5.72 | 1.88 | 12.59 | 4.07 | 5.71 | 7.80 | 3.07 | 7.96 | 7.87 | 3.89 | 3.31 | 7.95 |
| | mm | 105 | 145 | 48 | 320 | 103 | 145 | 200 | 78 | 202 | 200 | 99 | 84 | 202 |

Const. Ref. 1, 2, 3



Const. Ref. 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Proof of closure switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal (20 watt only) |
| Rider Ring | PTFE (20 watt only) |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20 | 43 | 240 | -40 to 125 | 99257 | - |
| F | 28.2 | 50 | 385 | -40 to 125 | 206409 | - |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257); 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (206409).

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

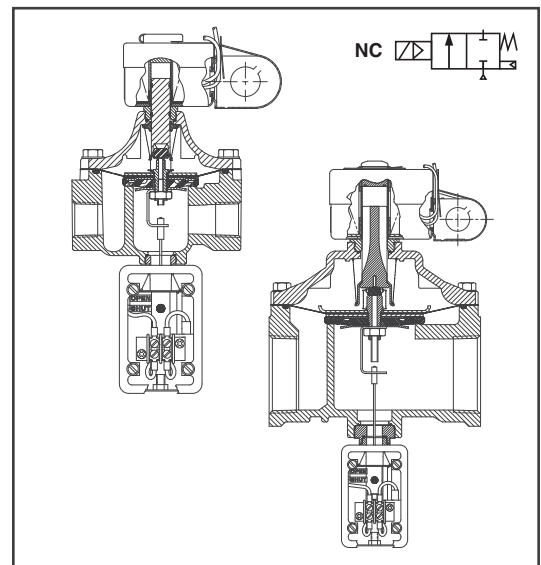
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type I General Purpose

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① (Btu/hr.) | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|--------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 580,000 | 0 | 5 | 125 | 8214 035C | 1 | ○ | ○ | ○ | 20 | 4.8 |
| 1 | 1 5/8 | 21 | 1,119,000 | 0 | 5 | 125 | 8214 050C | 1 | ○ | ○ | ○ | 20 | 4.8 |
| 1 1/4 | 1 5/8 | 32 | 1,730,000 | 0 | 5 | 125 | 8214 060C | 2 | ○ | ○ | ○ | 20 | 4.8 |
| 1 1/2 | 1 5/8 | 35 | 1,900,000 | 0 | 5 | 125 | 8214 070C | 2 | ○ | ○ | ○ | 20 | 4.8 |
| 2 | 2 3/32 | 60 | 2,800,000 | 0 | 5 | 125 | 8214 080C | 3 | ○ | ○ | ○ | 20 | 6.8 |
| 2 1/2 | 3 | 104 | 5,765,500 | 0 | 5 | 125 | 8214 090C | 4 | ○ | ○ | ○ | 28.2 | 13.5 |
| 3 | 3 | 105 | 5,796,000 | 0 | 5 | 125 | 8214 040C | 4 | ○ | ○ | ○ | 28.2 | 14.5 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① (Btu/hr.) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|--------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 580,000 | 0 | 0.3 | 52 | 8214 035C | 1 | ○ | ○ | ○ | 20 | 2.2 |
| 1 | 41 | 17.9 | 1,119,000 | 0 | 0.3 | 52 | 8214 050C | 1 | ○ | ○ | ○ | 20 | 2.2 |
| 1 1/4 | 41 | 27.2 | 1,730,000 | 0 | 0.3 | 52 | 8214 060C | 2 | ○ | ○ | ○ | 20 | 2.2 |
| 1 1/2 | 41 | 29.8 | 1,900,000 | 0 | 0.3 | 52 | 8214 070C | 2 | ○ | ○ | ○ | 20 | 2.2 |
| 2 | 53 | 51.0 | 2,800,000 | 0 | 0.3 | 52 | 8214 080C | 3 | ○ | ○ | ○ | 20 | 3.1 |
| 2 1/2 | 76 | 88.4 | 5,765,500 | 0 | 0.3 | 52 | 8214 090C | 4 | ○ | ○ | ○ | 28.2 | 6.1 |
| 3 | 76 | 89.3 | 5,796,000 | 0 | 0.3 | 52 | 8214 040C | 4 | ○ | ○ | ○ | 28.2 | 6.6 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|--------------|---------------------|---------------------|----------------------|
| High Temp. | Junction Box | Aluminum | NBR | AC |
| HB | JB | 8214 035C | ● | Not Available |
| HB | JB | 8214 050C | ● | Not Available |
| HB | JB | 8214 060C | ● | Not Available |
| HB | JB | 8214 070C | ● | Not Available |
| HB | JB | 8214 080C | ● | Not Available |
| HT | JB | 8214 090C | ● | Not Available |
| HT | JB | 8214 040C | ● | Not Available |

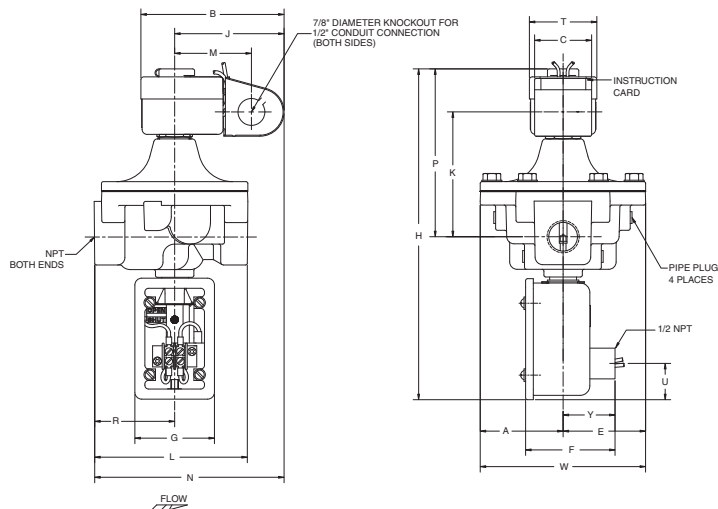
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

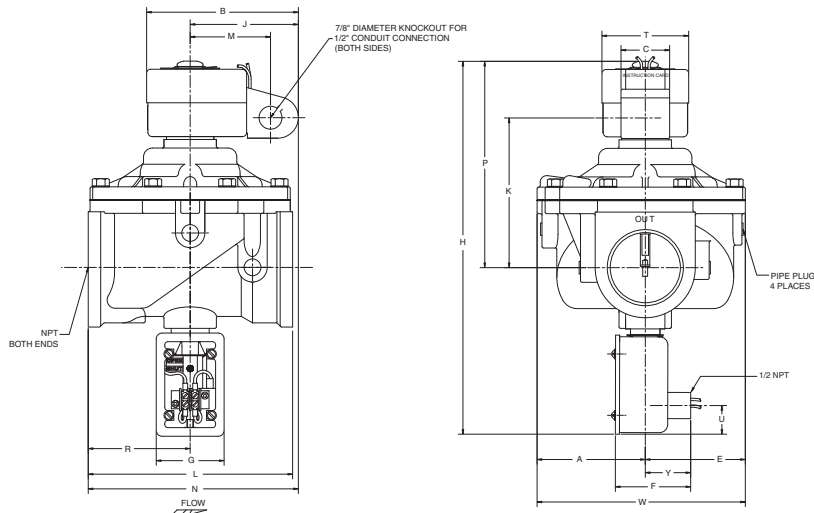
Dimensions inches (mm) Shown with Optional Junction Box

| Const. Ref. | | A | B | C | E | F | G | H | J | K | L | M | N | P | R | T | U | W | Y |
|-------------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 4.59 | 1.88 | 2.69 | 2.75 | 2.44 | 10.54 | 3.53 | 4.06 | 5.00 | 2.50 | 6.15 | 5.46 | 2.62 | 2.20 | 1.12 | 5.39 | 1.63 |
| | mm | 68 | 117 | 48 | 68 | 70 | 62 | 268 | 90 | 103 | 127 | 64 | 156 | 139 | 67 | 56 | 28 | 137 | 41 |
| 2 | ins. | 2.69 | 4.59 | 1.88 | 2.69 | 2.75 | 2.44 | 10.54 | 3.53 | 4.13 | 5.00 | 2.50 | 6.15 | 5.53 | 2.62 | 2.20 | 1.12 | 5.39 | 1.63 |
| | mm | 68 | 117 | 48 | 68 | 70 | 62 | 268 | 90 | 105 | 127 | 64 | 156 | 140 | 67 | 56 | 28 | 137 | 41 |
| 3 | ins. | 3.16 | 4.59 | 1.88 | 3.16 | 2.75 | 2.44 | 11.15 | 3.53 | 4.49 | 6.09 | 2.50 | 6.81 | 5.89 | 3.28 | 2.20 | 1.12 | 6.32 | 1.63 |
| | mm | 80 | 117 | 48 | 80 | 70 | 62 | 283 | 90 | 114 | 155 | 64 | 173 | 150 | 83 | 56 | 28 | 161 | 41 |
| 4 | ins. | 4.13 | 5.72 | 1.88 | 3.82 | 2.75 | 2.44 | 14.25 | 4.07 | 5.71 | 7.80 | 3.07 | 7.96 | 7.87 | 3.89 | 3.31 | 1.12 | 7.95 | 1.63 |
| | mm | 105 | 145 | 48 | 97 | 70 | 62 | 362 | 103 | 145 | 198 | 78 | 202 | 200 | 99 | 84 | 28 | 202 | 41 |

Const. Ref. 1, 2, 3



Const. Ref. 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal (20.1 watt only) |
| Rider Ring | PTFE (20.1 watt only) |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | Watts | VA Holding | VA Inrush | | General Purpose | Explosionproof |
| | | | | | AC | AC |
| F | 17.1 | 40 | 93 | -40 to 125 | 238610 | - |
| F | 20.1 | 43 | 240 | -40 to 125 | 272610 | - |

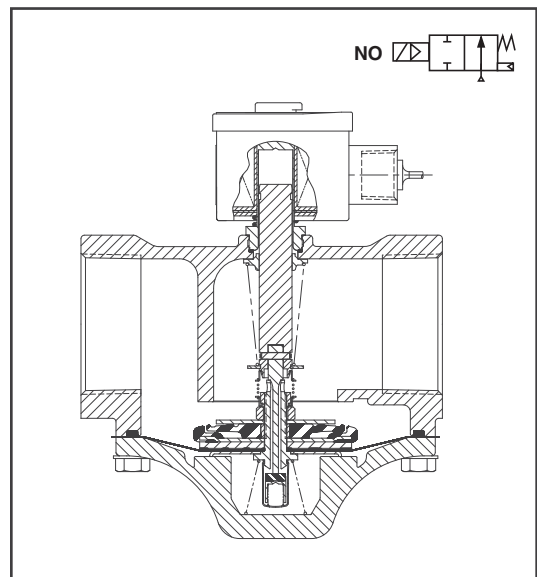
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (238610); 120, 240 volts AC, 60 Hz (272610).

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/8 | 3/4 | 3.4 | 172,500 | 0 | 5 | 125 | 8214G013 | 1 | ● | - | ● | 17.1 | 2.3 |
| 1/2 | 3/4 | 4.4 | 206,250 | 0 | 5 | 125 | 8214G023 | 1 | ● | - | ● | 17.1 | 2.3 |
| 3/4 | 3/4 | 5.1 | 247,500 | 0 | 5 | 125 | 8214G033 | 2 | ● | - | ● | 17.1 | 2.5 |
| 3/4 | 1 5/8 | 11 | 659,000 | 0 | 5 | 125 | 8214G038 | 3 | ● | - | ● | 20.1 | 4.3 |
| 1 | 1 5/8 | 21 | 1,179,000 | 0 | 5 | 125 | 8214G054 | 3 | ● | - | ● | 20.1 | 4.3 |
| 1 1/4 | 1 5/8 | 32 | 1,538,750 | 0 | 5 | 125 | 8214G064 | 4 | ● | - | ● | 20.1 | 4.3 |
| 1 1/2 | 1 5/8 | 35 | 1,615,250 | 0 | 5 | 125 | 8214G074 | 4 | ● | - | ● | 20.1 | 4.3 |
| 2 | 2 3/32 | 60 | 2,924,500 | 0 | 5 | 125 | 8214G084 | 5 | ● | - | ● | 20.1 | 6.3 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/8 | 19 | 2.9 | 172,500 | 0 | 0.3 | 52 | 8214G013 | 1 | ● | - | ● | 17.1 | 1.0 |
| 1/2 | 19 | 3.7 | 206,250 | 0 | 0.3 | 52 | 8214G023 | 1 | ● | - | ● | 17.1 | 1.0 |
| 3/4 | 19 | 4.3 | 247,500 | 0 | 0.3 | 52 | 8214G033 | 2 | ● | - | ● | 17.1 | 1.1 |
| 3/4 | 41 | 9.4 | 659,000 | 0 | 0.3 | 52 | 8214G038 | 3 | ● | - | ● | 20.1 | 2.0 |
| 1 | 41 | 17.9 | 1,179,000 | 0 | 0.3 | 52 | 8214G054 | 3 | ● | - | ● | 20.1 | 2.0 |
| 1 1/4 | 41 | 27.2 | 1,538,750 | 0 | 0.3 | 52 | 8214G064 | 4 | ● | - | ● | 20.1 | 2.0 |
| 1 1/2 | 41 | 29.8 | 1,615,250 | 0 | 0.3 | 52 | 8214G074 | 4 | ● | - | ● | 20.1 | 2.0 |
| 2 | 53 | 51.0 | 2,924,500 | 0 | 0.3 | 52 | 8214G084 | 5 | ● | - | ● | 20.1 | 2.9 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|--------------|---------------------|---------------------|----------------------|
| High Temp. | Junction Box | Aluminum | NBR | AC |
| HB | JB | 8214G013 | ● | 316234 |
| HB | JB | 8214G023 | ● | 316234 |
| HB | JB | 8214G033 | ● | 316234 |
| HB | JB | 8214G038 | ● | 322467 |
| HB | JB | 8214G054 | ● | 322467 |
| HB | JB | 8214G064 | ● | 322467 |
| HB | JB | 8214G074 | ● | 322467 |
| HB | JB | 8214G084 | ● | 322468 |

● = Standard. Other options may be available. All option combinations may not be available.

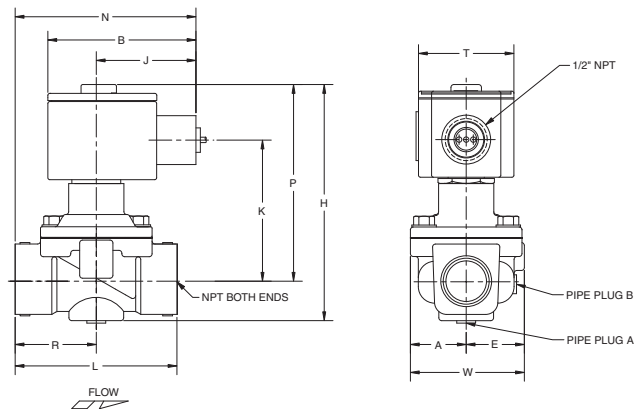
COMBUSTION

Dimensions inches (mm)

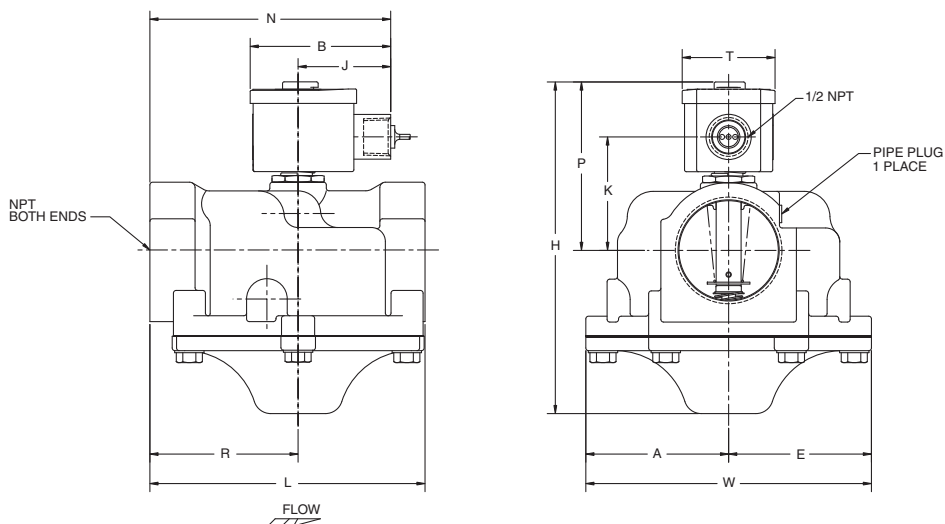
| Const. Ref. | | A | B | E | H | J | K | L | N | P | R | T | W | Pipe Plug |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|
| 1 | ins. | 1.14 | 3.03 | 1.36 | 4.48 | 2.04 | 2.72 | 2.75 | 3.42 | 3.86 | 1.38 | 1.95 | 2.50 | B |
| | mm | 29 | 77 | 35 | 114 | 52 | 69 | 70 | 87 | 98 | 35 | 50 | 64 | B |
| 2 | ins. | 1.14 | 3.03 | 1.25 | 5.92 | 2.04 | 2.90 | 3.31 | 3.70 | 4.04 | 1.66 | 1.95 | 2.39 | A |
| | mm | 29 | 77 | 32 | 150 | 52 | 74 | 84 | 94 | 103 | 42 | 50 | 61 | A |
| 3 | ins. | 2.69 | 3.11 | 2.69 | 6.74 | 2.05 | 2.33 | 5.00 | 4.67 | 3.54 | 2.62 | 2.06 | 5.39 | - |
| | mm | 68 | 79 | 68 | 171 | 52 | 59 | 127 | 119 | 90 | 67 | 52 | 137 | - |
| 4 | ins. | 2.69 | 3.11 | 2.69 | 6.74 | 2.05 | 2.27 | 5.00 | 4.67 | 3.48 | 2.62 | 2.06 | 5.39 | - |
| | mm | 68 | 79 | 68 | 171 | 52 | 58 | 127 | 119 | 88 | 67 | 52 | 137 | - |
| 5 | ins. | 3.16 | 3.11 | 3.16 | 7.34 | 2.05 | 2.52 | 6.09 | 4.67 | 3.73 | 3.28 | 2.06 | 6.32 | - |
| | mm | 80 | 79 | 80 | 186 | 52 | 64 | 155 | 119 | 95 | 83 | 52 | 161 | - |

| Vent Valve Requirements | |
|-------------------------|------------|
| Manifold Line | Vent Valve |
| 3/8" through 1 1/2" | 3/4 |
| 2" | 1 |
| 2 1/2" through 3" | 1 1/4 |
| 3 1/2" | 1 1/2 |
| 4" through 5" | 2 |
| 5 1/2" through 6" | 2 1/2 |
| 6 1/2" through 7 1/2" | 3 |

Const. Ref. 1, 2
Can be mounted in any position.



Const. Ref. 3, 4, 5
Must be mounted with solenoid vertical and upright.



Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Visual indication of open & shut position
- Proof of Closure Switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Ring | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | Watts | VA Holding | VA Inrush | | General Purpose | Explosionproof |
| | | | | | AC | AC |
| F | 20.1 | 43 | 240 | -40 to 125 | 272610 | - |

Standard Voltages: 120, 240 volts AC, 60 Hz

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

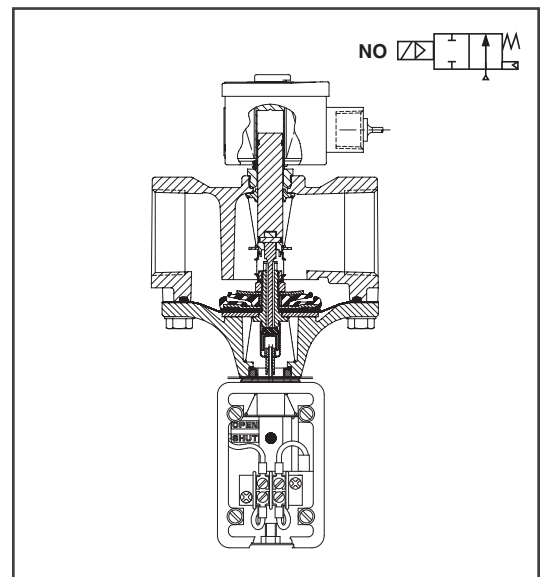
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 4 Watertight

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 659,000 | 0 | 5 | 125 | 8214G038C | 1 | ● | - | ● | 20.1 | 4.8 |
| 1 | 1 5/8 | 21 | 1,179,000 | 0 | 5 | 125 | 8214G054C | 1 | ● | - | ● | 20.1 | 4.8 |
| 1 1/4 | 1 5/8 | 32 | 1,538,750 | 0 | 5 | 125 | 8214G064C | 2 | ● | - | ● | 20.1 | 4.8 |
| 1 1/2 | 1 5/8 | 35 | 1,615,250 | 0 | 5 | 125 | 8214G074C | 2 | ● | - | ● | 20.1 | 4.8 |
| 2 | 2 3/32 | 60 | 2,924,500 | 0 | 5 | 125 | 8214G084C | 3 | ● | - | ● | 20.1 | 6.8 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 659,000 | 0 | 0.3 | 52 | 8214G038C | 1 | ● | - | ● | 20.1 | 4.8 |
| 1 | 41 | 17.9 | 1,179,000 | 0 | 0.3 | 52 | 8214G054C | 1 | ● | - | ● | 20.1 | 4.8 |
| 1 1/4 | 41 | 27.2 | 1,538,750 | 0 | 0.3 | 52 | 8214G064C | 2 | ● | - | ● | 20.1 | 4.8 |
| 1 1/2 | 41 | 29.8 | 1,615,250 | 0 | 0.3 | 52 | 8214G074C | 2 | ● | - | ● | 20.1 | 4.8 |
| 2 | 53 | 51.0 | 2,924,500 | 0 | 0.3 | 52 | 8214G084C | 3 | ● | - | ● | 20.1 | 6.8 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|--------------|---------------------|---------------------|----------------------|
| High Temp. | Junction Box | Aluminum | NBR | AC |
| HB | JB | 8214G038C | ● | Not Available |
| HB | JB | 8214G054C | ● | Not Available |
| HB | JB | 8214G064C | ● | Not Available |
| HB | JB | 8214G074C | ● | Not Available |
| HB | JB | 8214G084C | ● | Not Available |

● = Standard. Other options may be available. All option combinations may not be available.

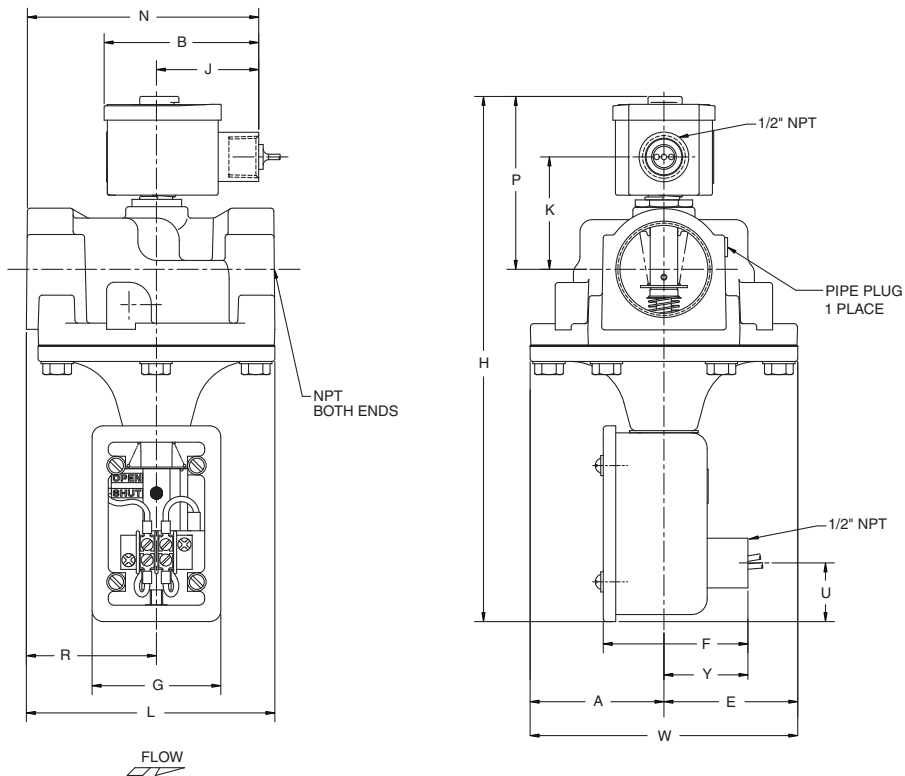
COMBUSTION

Dimensions inches (mm)

| Const. Ref. | | A | B | F | G | H | J | K | L | N | P | R | U | W | Y |
|-------------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 3.11 | 3.07 | 2.32 | 10.54 | 2.05 | 4.06 | 5.00 | 4.67 | 5.46 | 2.62 | 1.18 | 5.39 | 1.69 |
| | mm | 68 | 79 | 78 | 59 | 268 | 52 | 103 | 127 | 119 | 139 | 67 | 30 | 137 | 43 |
| 2 | ins. | 2.69 | 3.11 | 3.07 | 2.32 | 10.54 | 2.05 | 4.13 | 5.00 | 4.67 | 5.53 | 2.62 | 1.18 | 5.39 | 1.69 |
| | mm | 68 | 79 | 78 | 59 | 268 | 52 | 105 | 127 | 119 | 140 | 67 | 30 | 137 | 43 |
| 3 | ins. | 3.16 | 3.11 | 3.07 | 2.32 | 11.33 | 2.05 | 4.62 | 6.09 | 5.33 | 5.84 | 3.28 | 1.18 | 6.32 | 1.69 |
| | mm | 80 | 79 | 78 | 59 | 288 | 52 | 117 | 155 | 135 | 148 | 83 | 30 | 161 | 43 |

| Vent Valve Requirements | |
|-------------------------|------------|
| Manifold Line | Vent Valve |
| 3/8" through 1 1/2" | 3/4 |
| 2" | 1 |
| 2 1/2" through 3" | 1 1/4 |
| 3 1/2" | 1 1/2 |
| 4" through 5" | 2 |
| 5 1/2" through 6" | 2 1/2 |
| 6 1/2" through 7 1/2" | 3 |

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal (20 watt only) |
| Rider Ring | PTFE (20 watt only) |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20 | 43 | 240 | -40 to 125 | 99257 | - |
| F | 28.2 | 50 | 385 | -40 to 125 | 206409 | - |

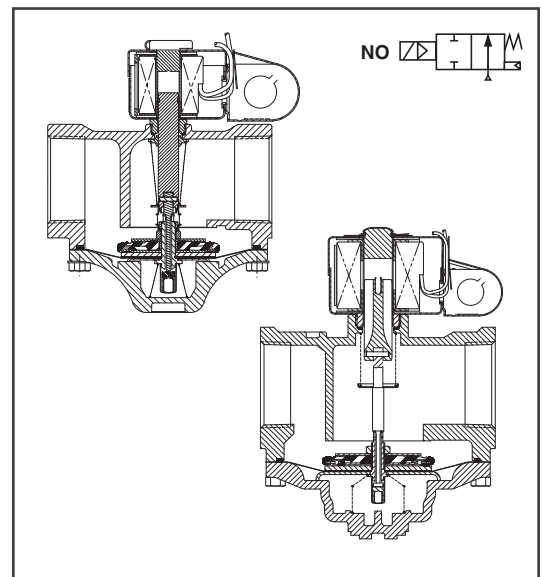
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257); 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (206409).

Solenoid Enclosures

RedHat Metal Type 1 General Purpose Junction Box housing with two 7/8" knockouts for conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 659,000 | 0 | 5 | 125 | 8214 037 | 1 | ● | - | ● | 20 | 4.3 |
| 1 | 1 5/8 | 21 | 1,179,000 | 0 | 5 | 125 | 8214 053 | 1 | ● | - | ● | 20 | 4.3 |
| 1 1/4 | 1 5/8 | 32 | 1,538,750 | 0 | 5 | 125 | 8214 063 | 2 | ● | - | ● | 20 | 4.3 |
| 1 1/2 | 1 5/8 | 35 | 1,615,250 | 0 | 5 | 125 | 8214 073 | 2 | ● | - | ● | 20 | 4.3 |
| 2 | 2 3/32 | 60 | 2,924,500 | 0 | 5 | 125 | 8214 083 | 3 | ● | - | ● | 20 | 6.3 |
| 2 1/2 | 3 | 109 | 6,022,750 | 0 | 5 | 125 | 8214 093 | 4 | ● | - | ● | 28.2 | 13.0 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 659,000 | 0 | 0.3 | 52 | 8214 037 | 1 | ● | - | ● | 20 | 2.0 |
| 1 | 41 | 17.9 | 1,179,000 | 0 | 0.3 | 52 | 8214 053 | 1 | ● | - | ● | 20 | 2.0 |
| 1 1/4 | 41 | 27.2 | 1,538,750 | 0 | 0.3 | 52 | 8214 063 | 2 | ● | - | ● | 20 | 2.0 |
| 1 1/2 | 41 | 29.8 | 1,615,250 | 0 | 0.3 | 52 | 8214 073 | 2 | ● | - | ● | 20 | 2.0 |
| 2 | 53 | 51.0 | 2,924,500 | 0 | 0.3 | 52 | 8214 083 | 3 | ● | - | ● | 20 | 2.9 |
| 2 1/2 | 76 | 92.7 | 6,022,750 | 0 | 0.3 | 52 | 8214 093 | 4 | ● | - | ● | 28.2 | 5.9 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|--------------|---------------------|---------------------|----------------------|
| High Temp. | Junction Box | Aluminum | NBR | AC |
| HB | JB | 8214 037 | ● | 316728 |
| HB | JB | 8214 053 | ● | 316728 |
| HB | JB | 8214 063 | ● | 316728 |
| HB | JB | 8214 073 | ● | 316728 |
| HB | JB | 8214 083 | ● | 316727 |
| HT | JB | 8214 093 | ● | 316776 |

● = Standard. Other options may be available. All option combinations may not be available.

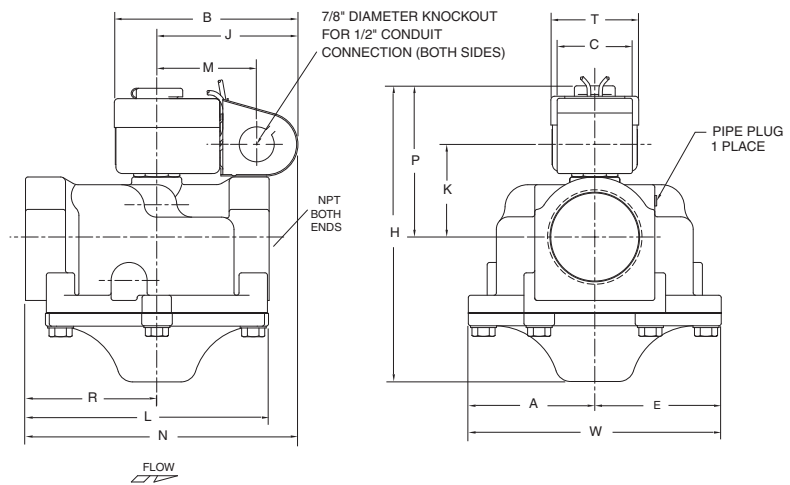
COMBUSTION

Dimensions inches (mm) Shown with Optional Junction Box

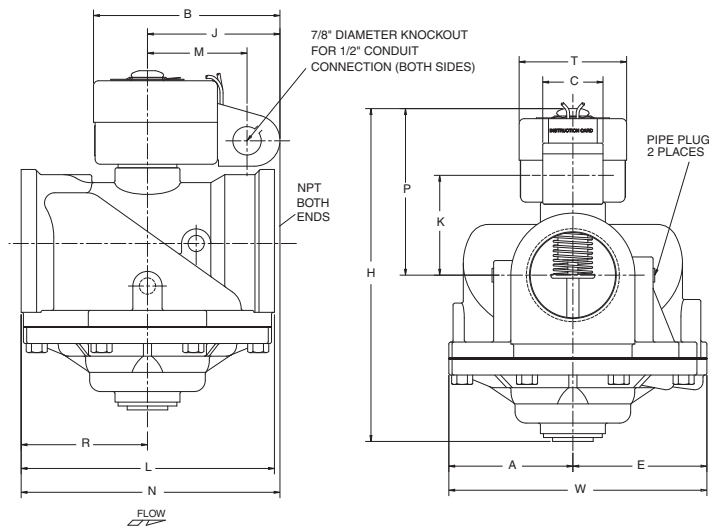
| Const. Ref. | | A | B | C | E | H | J | K | L | M | N | P | R | T | W |
|-------------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 4.59 | 1.88 | 2.69 | 6.79 | 3.53 | 2.19 | 5.00 | 2.50 | 6.16 | 3.59 | 2.62 | 2.20 | 5.39 |
| | mm | 68 | 117 | 48 | 68 | 172 | 90 | 56 | 127 | 64 | 156 | 91 | 67 | 56 | 137 |
| 2 | ins. | 2.69 | 4.59 | 1.88 | 2.69 | 6.79 | 3.53 | 2.13 | 5.00 | 2.50 | 6.16 | 3.53 | 2.62 | 2.20 | 5.39 |
| | mm | 68 | 117 | 48 | 68 | 172 | 90 | 54 | 127 | 64 | 156 | 90 | 67 | 56 | 137 |
| 3 | ins. | 3.16 | 4.59 | 1.88 | 3.16 | 7.39 | 3.53 | 2.38 | 6.09 | 2.50 | 6.34 | 3.78 | 2.81 | 2.20 | 6.32 |
| | mm | 80 | 117 | 48 | 80 | 188 | 90 | 60 | 155 | 64 | 161 | 96 | 71 | 56 | 161 |
| 4 | ins. | 3.82 | 5.72 | 1.88 | 4.13 | 10.33 | 4.07 | 3.07 | 7.80 | 3.07 | 7.97 | 5.13 | 3.89 | 3.31 | 3.95 |
| | mm | 97 | 145 | 48 | 105 | 262 | 103 | 78 | 198 | 78 | 202 | 130 | 99 | 84 | 100 |

| Vent Valve Requirements | |
|-------------------------|------------|
| Manifold Line | Vent Valve |
| 3/8" through 1 1/2" | 3/4 |
| 2" | 1 |
| 2 1/2" through 3" | 1 1/4 |
| 3 1/2" | 1 1/2 |
| 4" through 5" | 2 |
| 5 1/2" through 6" | 2 1/2 |
| 6 1/2" through 7 1/2" | 3 |

Const. Ref. 1, 2



Const. Ref. 3, 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Visual indication of open & shut position
- Proof of Closure Switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Ring | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | Watts | VA Holding | VA Inrush | | General Purpose | Explosionproof |
| | | | | | AC | AC |
| F | 20 | 43 | 240 | -40 to 125 | 99257 | - |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257).

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

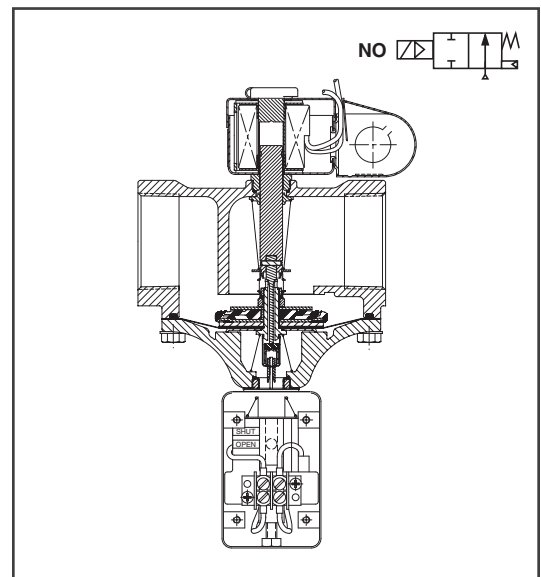
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 1 General Purpose

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 11 | 659,000 | 0 | 5 | 125 | 8214 037C | 1 | ● | - | ● | 20 | 4.8 |
| 1 | 1 5/8 | 21 | 1,179,000 | 0 | 5 | 125 | 8214 053C | 1 | ● | - | ● | 20 | 4.8 |
| 1 1/4 | 1 5/8 | 32 | 1,538,750 | 0 | 5 | 125 | 8214 063C | 2 | ● | - | ● | 20 | 4.8 |
| 1 1/2 | 1 5/8 | 35 | 1,615,250 | 0 | 5 | 125 | 8214 073C | 2 | ● | - | ● | 20 | 4.8 |
| 2 | 2 3/32 | 60 | 2,924,500 | 0 | 5 | 125 | 8214 083C | 3 | ● | - | ● | 20 | 6.8 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | |
| 3/4 | 41 | 9.4 | 659,000 | 0 | 0.3 | 52 | 8214 037C | 1 | ● | - | ● | 20 | 2.2 |
| 1 | 41 | 17.9 | 1,179,000 | 0 | 0.3 | 52 | 8214 053C | 1 | ● | - | ● | 20 | 2.2 |
| 1 1/4 | 41 | 27.2 | 1,538,750 | 0 | 0.3 | 52 | 8214 063C | 2 | ● | - | ● | 20 | 2.2 |
| 1 1/2 | 41 | 29.8 | 1,615,250 | 0 | 0.3 | 52 | 8214 073C | 2 | ● | - | ● | 20 | 2.2 |
| 2 | 53 | 51.0 | 2,924,500 | 0 | 0.3 | 52 | 8214 083C | 3 | ● | - | ● | 20 | 3.1 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

| Solenoid Options | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|--------------|---------------------|---------------------|----------------------|
| High Temp. | Junction Box | Aluminum | NBR | AC |
| HB | JB | 8214 037C | ● | Not Available |
| HB | JB | 8214 053C | ● | Not Available |
| HB | JB | 8214 063C | ● | Not Available |
| HB | JB | 8214 073C | ● | Not Available |
| HB | JB | 8214 083C | ● | Not Available |

● = Standard. Other options may be available. All option combinations may not be available.

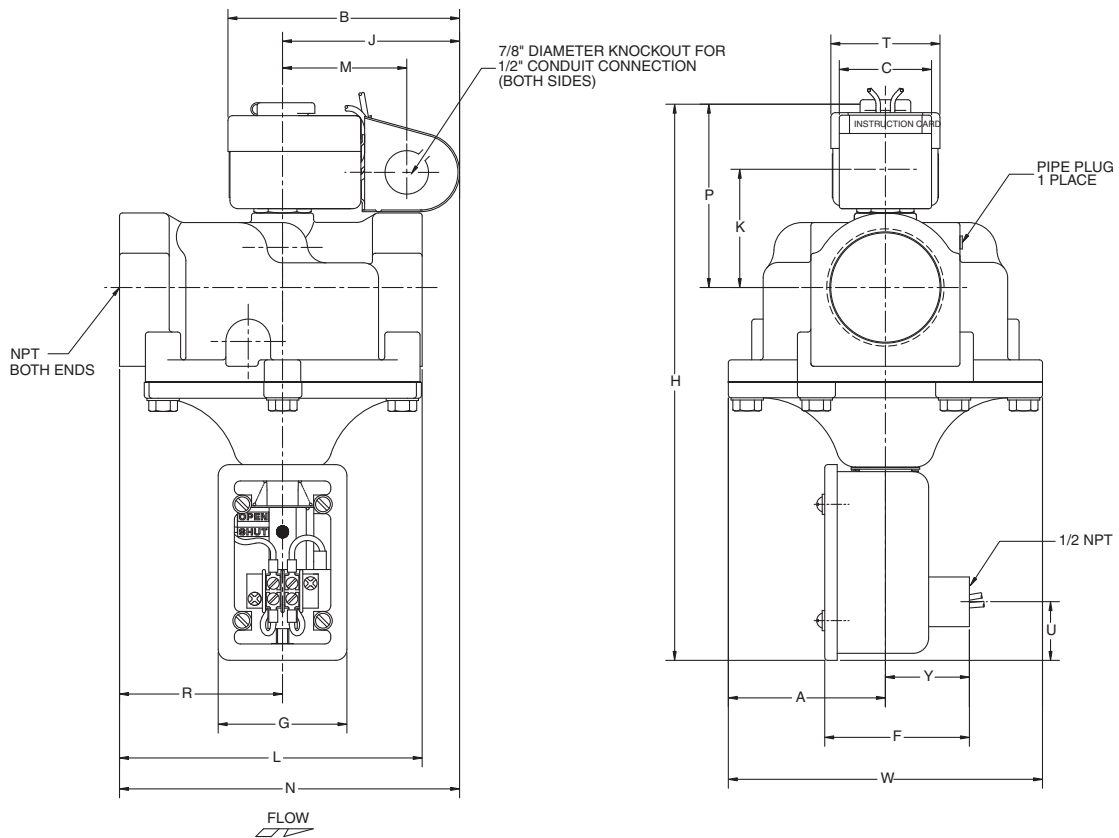
COMBUSTION

Dimensions inches (mm) Shown with Optional Junction Box

| Const. Ref. | | A | B | C | F | G | H | J | K | L | M | N | P | R | T | U | W | Y |
|-------------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.69 | 4.59 | 1.88 | 2.82 | 2.44 | 10.57 | 3.53 | 2.19 | 5.00 | 2.50 | 6.16 | 3.59 | 2.62 | 2.20 | 1.10 | 5.39 | 1.69 |
| | mm | 68 | 117 | 48 | 72 | 62 | 268 | 90 | 56 | 127 | 64 | 156 | 91 | 67 | 56 | 28 | 137 | 43 |
| 2 | ins. | 2.69 | 4.59 | 1.88 | 2.82 | 2.44 | 10.57 | 3.53 | 2.13 | 5.00 | 2.50 | 6.16 | 3.53 | 2.62 | 2.20 | 1.10 | 5.39 | 1.69 |
| | mm | 68 | 117 | 48 | 72 | 62 | 268 | 90 | 54 | 127 | 64 | 156 | 90 | 67 | 56 | 28 | 137 | 43 |
| 3 | ins. | 3.16 | 4.59 | 1.88 | 2.82 | 2.44 | 11.33 | 3.53 | 2.38 | 6.09 | 2.50 | 6.82 | 3.78 | 3.28 | 2.20 | 1.10 | 6.32 | 1.69 |
| | mm | 80 | 117 | 48 | 72 | 62 | 288 | 90 | 60 | 155 | 64 | 173 | 96 | 83 | 56 | 28 | 161 | 43 |

| Vent Valve Requirements | |
|-------------------------|------------|
| Manifold Line | Vent Valve |
| 3/8" through 1 1/2" | 3/4 |
| 2" | 1 |
| 2 1/2" through 3" | 1 1/4 |
| 3 1/2" | 1 1/2 |
| 4" through 5" | 2 |
| 5 1/2" through 6" | 2 1/2 |
| 6 1/2" through 7 1/2" | 3 |

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

COMBUSTION

Features

- 2-way normally closed operation
- For control of commercial and industrial gas pilot controls
- Brass body construction
- Mountable in any position
- Direct lift with resilient soft sealing for tight shutoff

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|--------------------------------|
| Body | Brass |
| Core Tube/ Bonnet | Stainless Steel / Plated Steel |
| Core and Plugnut | Stainless Steel |
| Springs | Stainless Steel |
| Seals and Disc | NBR / FKM |
| Shading Coil | Copper |

Fluid

Fuel Gas - natural or propane

Electrical

| Prefix | Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Ambient Temp. °F | Spare Coil Family | |
|--------|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------|-------------------|--------|
| | | DC Watts | AC | | | | AC | DC |
| | | | Watts | VA Holding | VA Inrush | | | |
| U | F | 6.9 | 6.3 | 8.8 | 12.1 | -22 to 140 | 400115 | 400115 |
| SC | F | 6.9 | 6.3 | 8.8 | 12.1 | -22 to 140 | 400125 | 400125 |

Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

Solenoid Enclosures

Standard: Open frame (Prefix U) 18" leads

Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

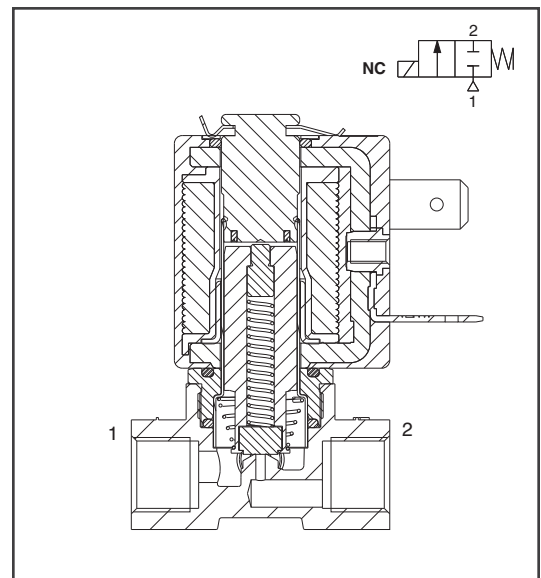
Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second

Kits

1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs. of each: threaded hub, gasket and attaching screw.)

DIN connector kit for SC coils 226061-001-*
 (Kit contains 10 pcs of each: connector, gasket, and attaching screw.)



COMBUSTION

Approvals

UL recognized component to standard 429 "Electrically Operated Valves," Guide Y10Z2, File MP618 Safety Shutoff Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 235078.
- 2) Automatic Gas Valves Z21.21 (6.5), File 235078.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 235078.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity Btu/hr. | Operating Pressure Differential (psi) | | | Min. Fluid Temp. °F | Max. Fluid Temp. °F | | Brass | Wattage | | Approx. Shipping Weight (lbs.) |
|---|---------------------|----------------|----------------------|---------------------------------------|----------|----------|---------------------|---------------------|-----|------------|---------|-----|--------------------------------|
| | | | | Min. | Max. AC | Max. DC | | AC | DC | | | | |
| | | | | | Fuel Gas | Fuel Gas | | | | | | | |
| Fuel Gas Shutoff - Normally Closed | | | | | | | | | | | | | |
| 1/8 | 7/64 | 0.16 | 54,150 | 0 | 200 | 65 | -22 | 180 | 180 | U8256A091V | 6.3 | 6.9 | 0.5 |

Specifications (Metric units)

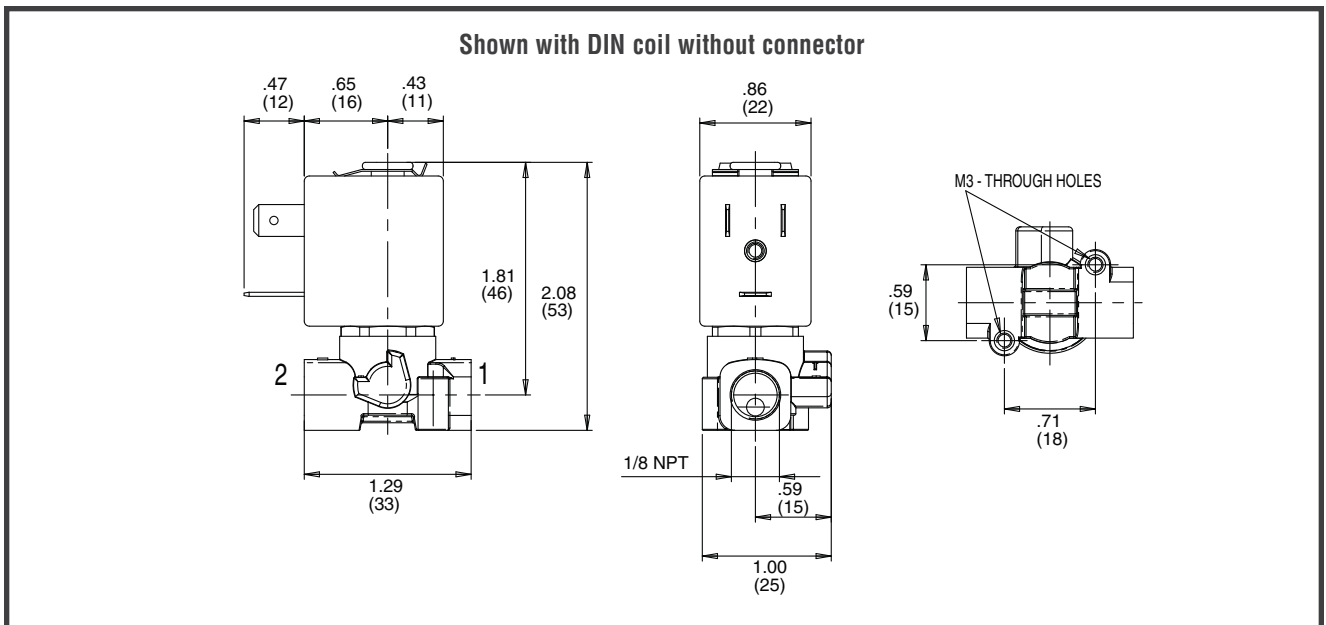
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m³/hr) | Gas Capacity Btu/hr. | Operating Pressure Differential (bar) | | | Min. Fluid Temp. °C | Max. Fluid Temp. °C | | Brass | Wattage | | Approx. Shipping Weight (kgs.) |
|---|-------------------|------------------------|----------------------|---------------------------------------|----------|----------|---------------------|---------------------|----|------------|---------|-----|--------------------------------|
| | | | | Min. | Max. AC | Max. DC | | AC | DC | | | | |
| | | | | | Fuel Gas | Fuel Gas | | | | | | | |
| Fuel Gas Shutoff - Normally Closed | | | | | | | | | | | | | |
| 1/8 | 2.8 | 0.14 | 54,150 | 0 | 21300 | 4 | -30 | 82 | 82 | U8256A091V | 6.3 | 6.9 | 0.22 |

Capabilities Chart

| Solenoid Options ① | | | | | | | Base Catalog Number | Resilient Materials | | | | | | | Other | Standard Rebuild Kit | | |
|--------------------|----------------|---------------------------|----------|-----|-------|-----------------------|---------------------|---------------------|-----|------|------|----------------|------|----------|--------|----------------------|------------------|-------------|
| NEMA Type 3-9 | High Temp. DIN | Wiring Box Screw Terminal | Multipin | DIN | Spade | Open Frame with Leads | Brass | NBR | FKM | EPDM | RUBY | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass AC/DC |
| - | - | - | - | SC | - | ● | | U8256A091V | - | ● | - | - | - | - | - | - | - | |

● = Standard. ① Replace U prefix with SC prefix.

Dimensions: inches (mm)



COMBUSTION

Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Direct lift with resilient soft seating for tight shutoff
- Brass body construction
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Ring | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | Inconel 600 |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.1 | 25 | 70 | -20 to 125 | 238610 | 238614 |

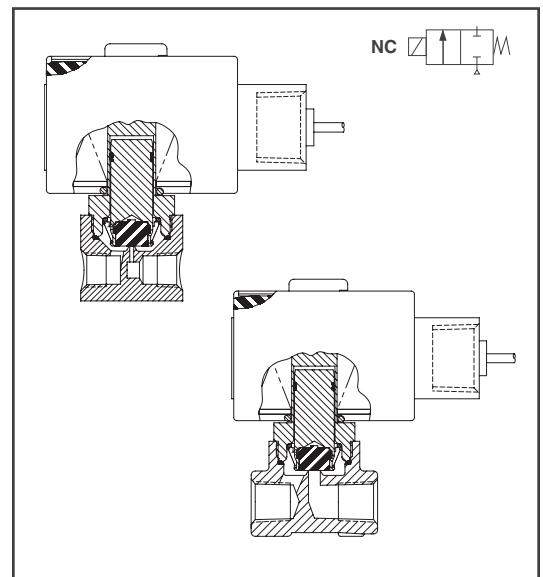
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight; Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; Closing Time: Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|---|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | |
| 1/8 | 1/8 | .35 | 15,000 | 0 | 190 | 125 | 8262G077 | 1 | ○ | ○ | ○ | 10.1 | 2.3 |
| 1/4 | 9/32 | .96 | 51,700 | 0 | 40 | 125 | 8262G078 | 2 | ○ | ○ | ○ | 10.1 | 2.4 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|---|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | |
| 1/8 | 3 | 0.3 | 15,000 | 0 | 13.1 | 52 | 8262G077 | 1 | ○ | ○ | ○ | 10.1 | 2.3 |
| 1/4 | 7 | 0.8 | 51,700 | 0 | 2.8 | 52 | 8262G078 | 2 | ○ | ○ | ○ | 10.1 | 2.4 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

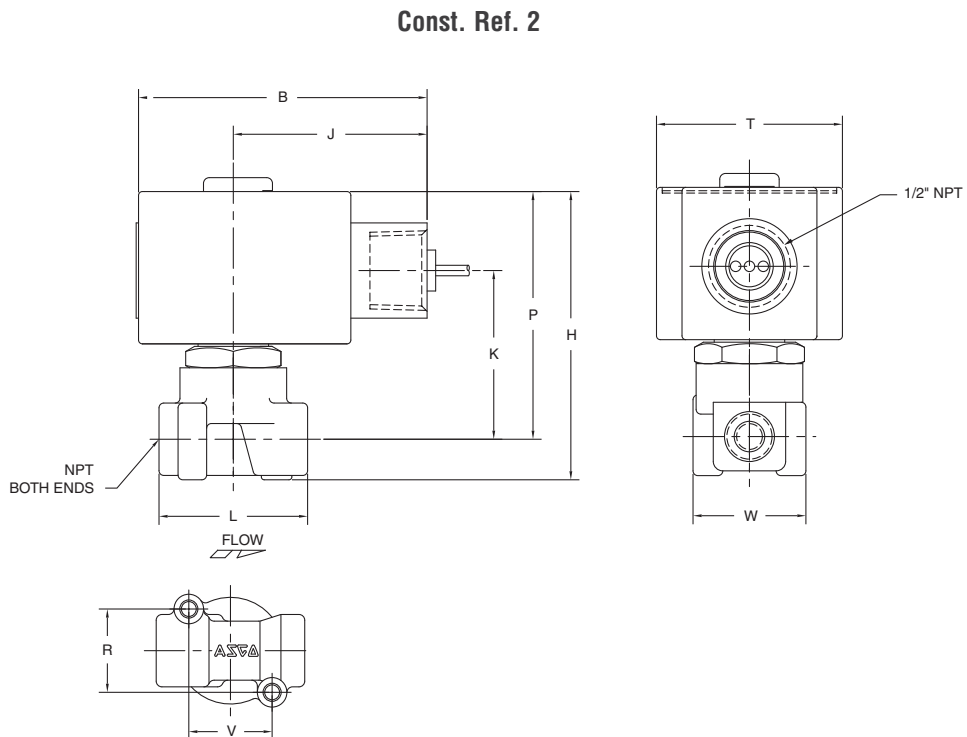
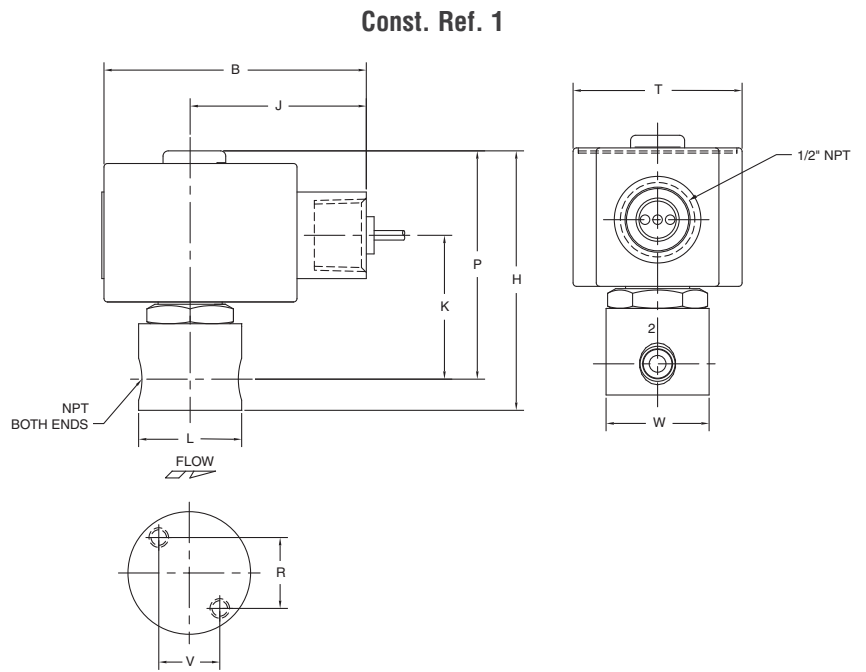
Capabilities Chart

| Solenoid Options | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------------|------------|---------------------------|---------------------|---------------------|----------------------|
| NEMA Type 3-9 | High Temp. | Wiring Box Screw Terminal | Brass | NBR | AC |
| EF | HT | JKF | 8262G077 | ● | 306631 |
| EF | HT | JKF | 8262G078 | ● | 306631 |

● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

| Const. Ref. | 1 | | 2 | |
|-------------|------|----|------|----|
| | ins. | mm | ins. | mm |
| B | 3.03 | 77 | 3.03 | 77 |
| H | 3.00 | 76 | 3.16 | 80 |
| J | 2.04 | 52 | 2.04 | 52 |
| K | 1.67 | 42 | 1.78 | 45 |
| L | 1.19 | 30 | 1.56 | 40 |
| P | 2.64 | 67 | 2.75 | 70 |
| R | 0.69 | 18 | 0.87 | 22 |
| T | 1.95 | 50 | 1.95 | 50 |
| V | 0.59 | 15 | 0.87 | 22 |
| W | 1.19 | 30 | 1.18 | 30 |



General Description

The AH2 Hydramotors are push-type, self-contained, electrohydraulic linear actuators which extend when powered and retract by spring force upon power interruption.

AH2 Hydramotors provide a fast spring return shutoff time of one second or less. When the actuator is mounted to a V710 gas valve, position indicators on both sides of the actuator show the open or closed position of the valve.

The AH2 Hydramotor/V710 gas valve combination provides reliable main line gas control for a wide range of applications, including boilers, furnaces, ovens and all types of industrial and commercial burners. It is available in either a slow or fast opening construction.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Fast Opening: 14 seconds max.

Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient. Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

Standard voltages:

24, 120, 240 volts, AC, 60 Hz

Proof of Closure Switch: (optional)

A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

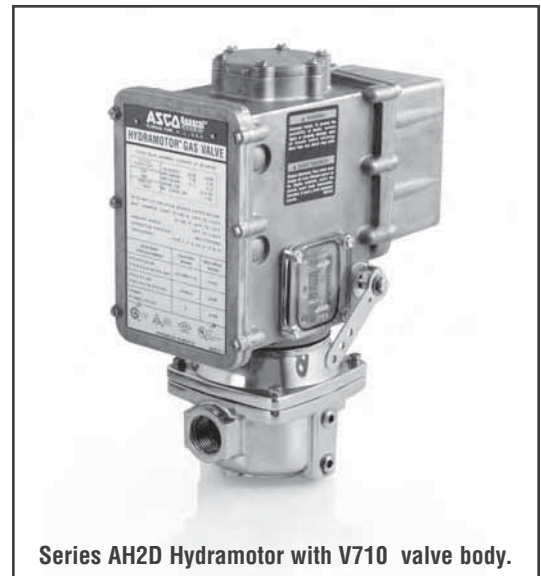
Auxiliary Switches: (optional)

One or two integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Electrical Characteristics

| Voltage | Amperes | | |
|---------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 24V | 28 | 8.00 | 0.73 |
| 120V | 5.6 | 1.85 | 0.11 |
| 240V | 2.8 | 0.92 | 0.05 |

AH2DR1



Series AH2D Hydramotor with V710 valve body.

Installation

AH2 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.




Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH2 Hydramotor with V710 valve.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.

2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH2D112A5

Specifications

| Applications | Catalog Number | | |
|---|----------------|----------|----------|
| | 24 V | 120 V | 240 V |
| On-Off Slow Opening (14 to 26 seconds) | | | |
| Standard on-off | AH2D101A | AH2D102A | AH2D104A |
| Proof of closure | AH2D101S | AH2D102S | AH2D104S |
| On-Off Fast Opening (6 to 14 seconds) | | | |
| Standard on-off | AH2D111A | AH2D112A | AH2D114A |
| Proof of closure | AH2D111S | AH2D112S | AH2D114S |

Optional Features

(add appropriate suffix number to catalog number)

One Auxiliary Switch (add suffix 2)

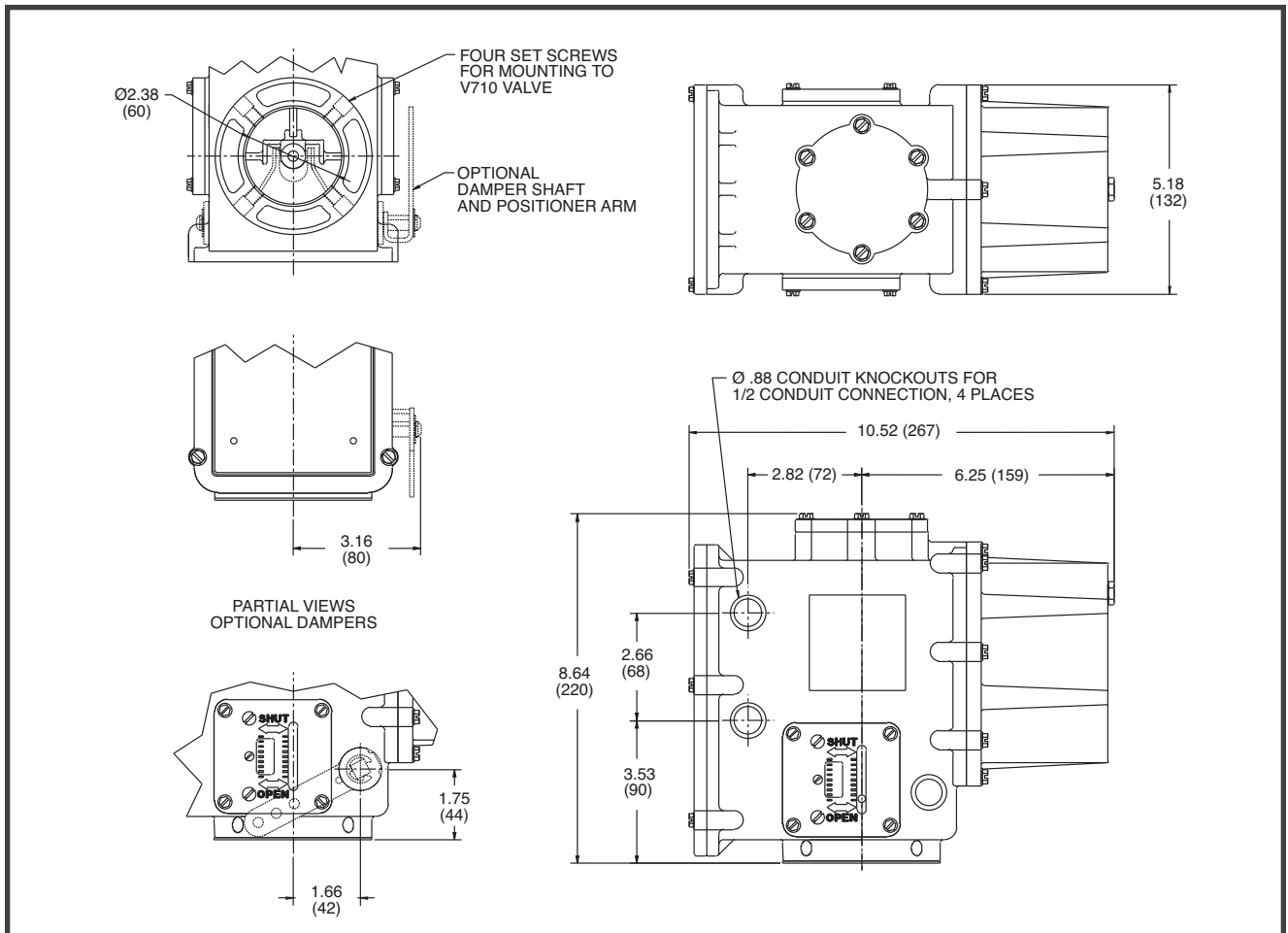
Spring Return Damper Arm (add suffix 3)

Damper Shaft & Arm (add suffix 4)

Damper Shaft, Arm & one Auxiliary Switch, (add suffix 5)

Manual Reset (add suffix R)

Dimensions inches (mm)



COMBUSTION

General Description

The AH4 Hydramotors are three-position push-type, self-contained, electrohydraulic linear actuators featuring an electronic controller for accurate positioning. The low-fire position is factory set at the stroke midpoint, but can be field adjustable to any position up to 100% of stroke.

When power is applied, the actuator shaft travels to the low-fire position. After an external switch completes the low-fire controller circuit, the shaft continues on to the high-fire setting. Opening the external switch returns the shaft to the low-fire setting, and power interruption fully closes the valve in one second or less from any position.

The AH4 Hydramotor/V710 gas valve combination provides reliable main line gas control for a wide range of applications, including boilers, furnaces, ovens and all types of industrial and commercial burners.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Fast Opening: 14 seconds max.

Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient.

Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

Standard voltages:

120, 240 volts, AC, 60 Hz

Proof of Closure Switch: (optional)

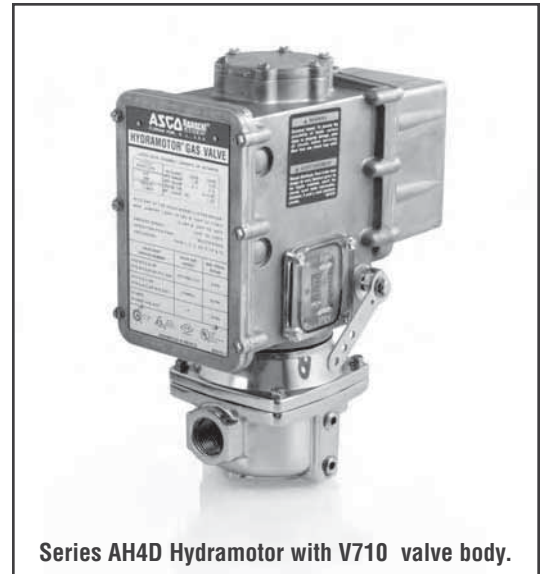
A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Auxiliary Switches: (optional)

One integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Relay Contacts:

One SPST relay; field adjustable to actuate at any position of stroke is standard. Max. load is 2.5A@120V or 1.25A@240V is standard.



Series AH4D Hydramotor with V710 valve body.

Electrical Characteristics

| Voltage | Amperes | | |
|---------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 120V | 5.6 | 1.85 | 0.11 |
| 240V | 2.8 | 0.92 | 0.05 |

Installation

AH4 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.




Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH4 Hydramotor with V710 valve.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.

2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH4D112A5

Specifications

| Applications | Catalog Number | |
|---|----------------|----------|
| | 120 V | 240V |
| Low-High-Off Slow Opening (14 to 26 seconds) | | |
| Standard | AH4D102A | AH4D104A |
| Proof of closure | AH4D102S | AH4D104S |
| Low-High-Off Fast Opening (6 to 14 seconds) | | |
| Standard | AH4D112A | AH4D114A |
| Proof of closure | AH4D112S | AH4D114S |

Optional Features

(add appropriate suffix number to catalog number)

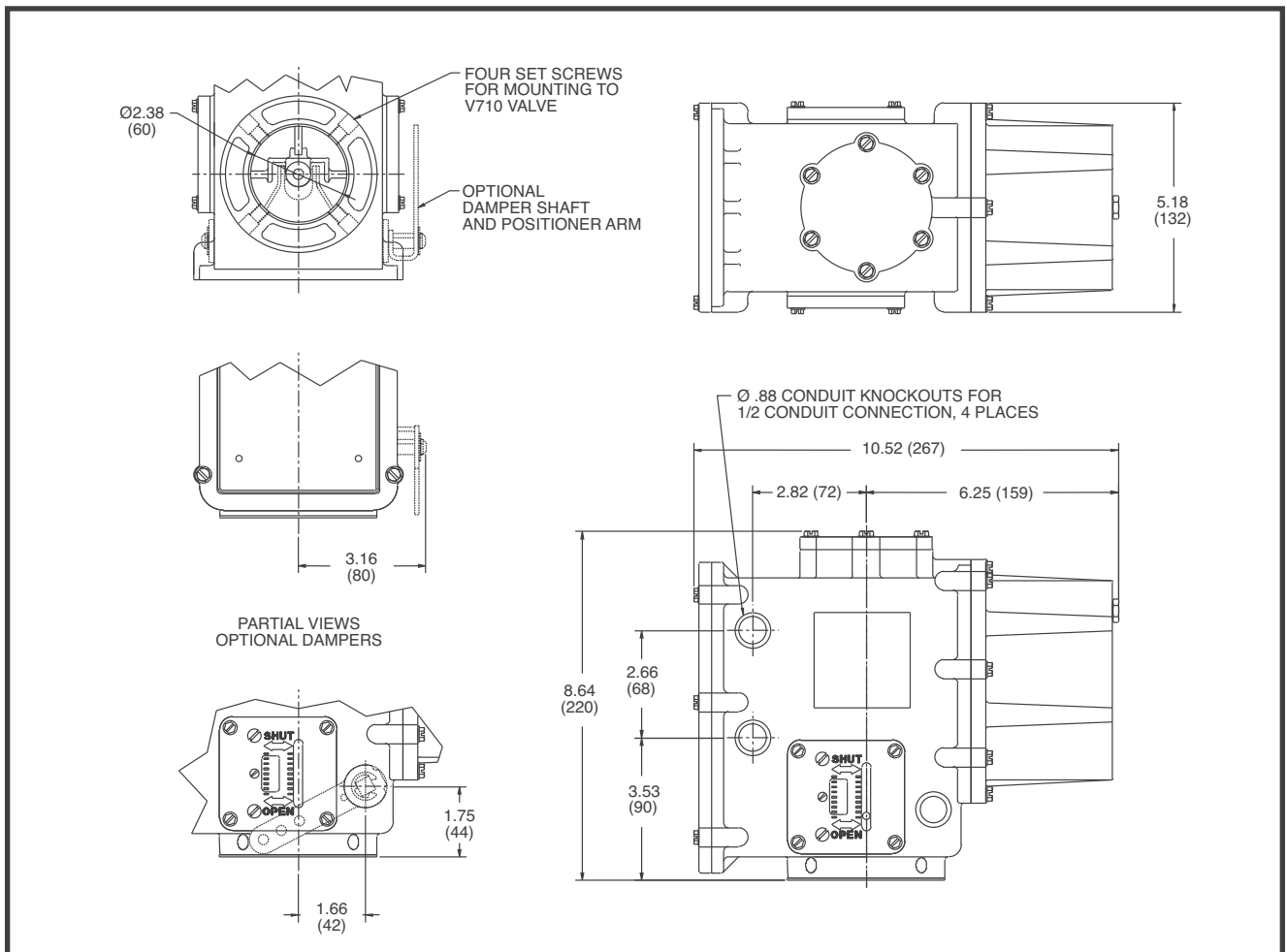
One Auxiliary Switch (add suffix 2)

Spring Return Damper Arm (add suffix 3)

Damper Shaft & Arm (add suffix 4)

Damper Shaft, Arm & one Auxiliary Switch, (add suffix 5)

Dimensions inches (mm)



COMBUSTION

General Description

The AH8 Hydramotors are modulating, push-type, self-contained, electrohydraulic linear actuators featuring an electronic controller for accurate positioning. The AH8 Hydramotor has a low-fire adjustment and responds to remote control signals from either a 135 ohm potentiometer, a 4-20 mA, 1-5 VDC or a 1-10 VDC signal to provide accurate shaft position between low-fire and high-fire (full open) positions. The low-fire position is factory set at the stroke midpoint, but can be field adjustable to any position up to 100% of stroke.

When power with no control signal is applied, the actuator shaft travels to the low-fire position. An external signal then controls the shaft position to any point between low-fire and high-fire positions. Power interruption fully closes the valve in one second or less from any position.

The AH8 Hydramotor/V710 gas valve combination provides reliable main line gas control for a wide range of applications, including boilers, furnaces, ovens and all types of industrial and commercial burners.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Fast Opening: 14 seconds max.

Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient. Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

Standard voltages:

120, 240 volts AC, 60 Hz

Input Signal:

Actuator accepts a 4-20mA, 1-5VDC, 1-10VDC or 135 ohm potentiometer signal to provide proportional control of actuator stem position between low fire & high fire mode.

Proof of Closure Switch: (optional)

A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Auxiliary Switches: (optional)

One integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Relay Contacts:

One SPST relay; field adjustable to actuate at any position of stroke is standard. Max. load is 2.5A@120V or 1.25A@240V is standard.



Series AH8D Hydramotor with V710 valve body.

Electrical Characteristics

| Voltage | Amperes | | |
|---------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 120V | 5.6 | 1.85 | 0.11 |
| 240V | 2.8 | 0.92 | 0.05 |

Installation

AH8 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.




Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH8 Hydramotor with V710 valve.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

- 1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606
Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH8D112A2

AH8DR1

Specifications

| Applications | Catalog Number | |
|---|----------------|----------|
| | 120 V | 240V |
| Modulating Slow Opening (14 to 26 seconds) | | |
| Standard | AH8D102A | AH8D104A |
| Proof of closure | AH8D102S | AH8D104S |
| Modulating Fast Opening (6 to 14 seconds) | | |
| Standard | AH8D112A | AH8D114A |
| Proof of closure | AH8D112S | AH8D114S |

Optional Features

(add appropriate suffix number to catalog number)

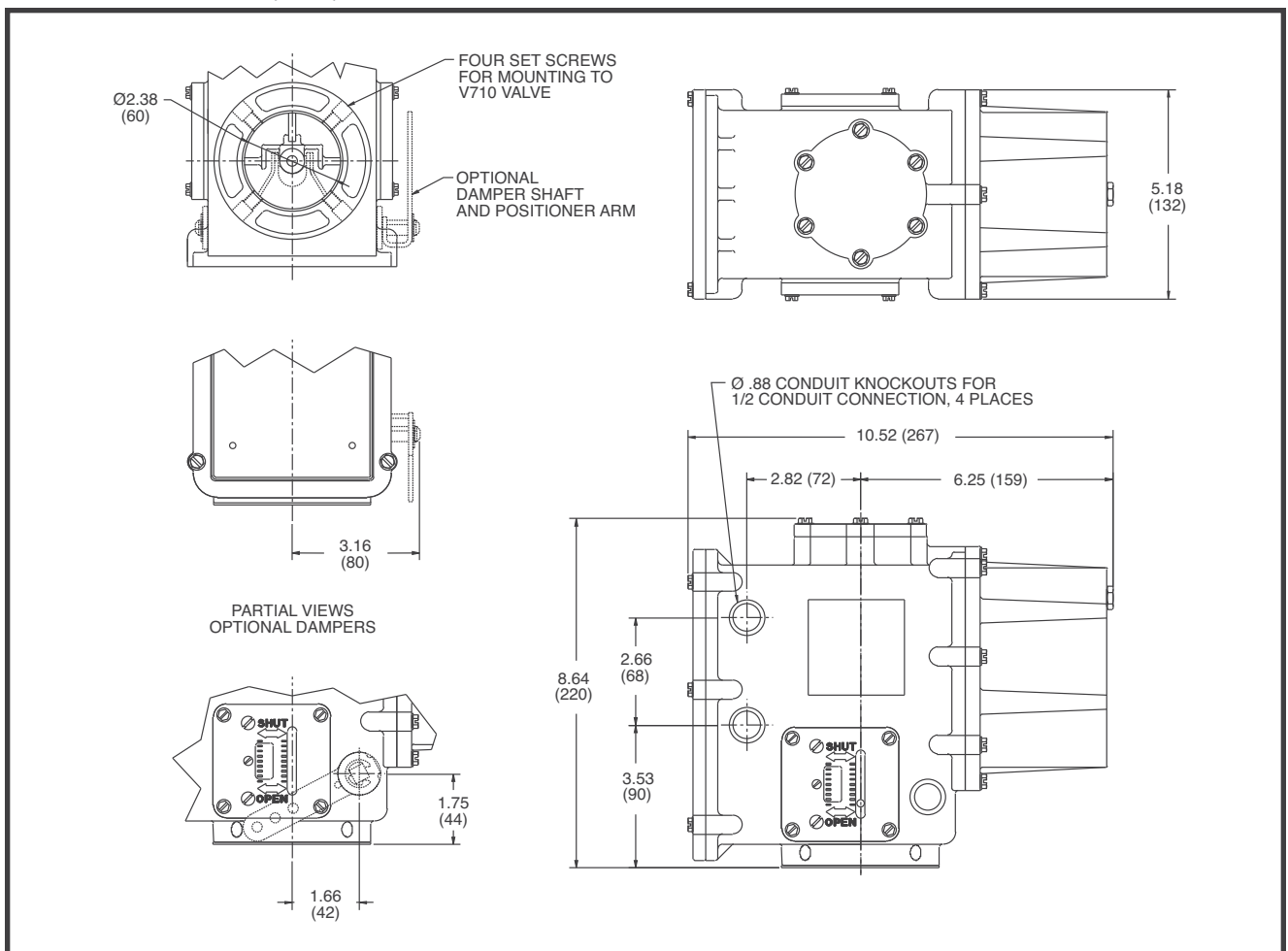
One Auxiliary Switch (add suffix 2)

Spring Return Damper Arm (add suffix 3)

Damper Shaft & Arm (add suffix 4)

Damper Shaft, Arm & one Auxiliary Switch, (add suffix 5)

Dimensions inches (mm)



COMBUSTION

General Description

These 2-way normally closed globe type valve bodies are designed for on/off or proportional control of commercial or industrial gas burners. The V710 is designed exclusively for use with the AH Hydramotor actuator. The AH Hydramotor valve consists of two assemblies; the valve body and the AH Hydramotor actuator.

The V710 is a push-to-open valve which opens when the valve stem is depressed by an AH Hydramotor actuator. An internal return spring closes the valve when the Hydramotor actuator is de-energized.

Model Types

Quick Opening Trim: (Standard)

For applications where metered flow control is not required.

Quick Opening w/Valve Seal Overtravel Trim: (Suffix V22)

For any "on-off" application where the user, code or approval agency requires a valve seal overtravel arrangement.

Liner Trim: (Suffix V15)

For applications that require flow control, such as slow opening, low fire turn down, or proportional control.

Liner w/Valve Seal Overtravel Trim: (Suffix V25)

For applications where both valve seal overtravel and flow control are required. (Not available in 4" flange size).

Specifications

Pressure Taps: Two 1/4" NPT downstream, two 1/4" NPT upstream.

Fluid: Fuel Gas

Valve Parts in Contact with Fluid:

Body: 3/4" to 3" NPT, Die-cast aluminum, 4" Flange - cast iron

Bonnet: Die-Cast aluminum

Seals: Nitrile

Springs: Zinc-plated music wire

Stem Bushing: Delrin

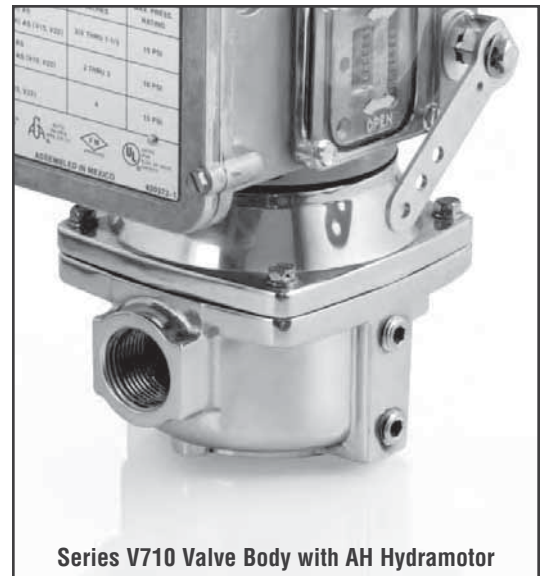
Valve Stem: 303 s.s.

Retaining Ring: 17-7 s.s.

Pipe Plugs: Zinc-plated steel

Seal Ring: Teflon (models with overtravel)

Closeoff Pressure: 25 psi (1.7 bar) maximum



Series V710 Valve Body with AH Hydramotor


Installation

V710 valve body mounts in any position directly to AH2, AH4, AH8 Hydramotor Actuator.



Approvals

V710 valve with AH Hydramotor.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.

2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number. e.g. V710EASV22

Specifications (English units)

| Pipe Size (ins.) | Cv Flow Factor | Gas Capacity ① | | | Operating Pressure Differential (psi) | | Fluid & Ambient Temp. °F | | Catalog Numbers | | | | Const. Ref. | Approx. Shipping Weight (lbs) |
|--|----------------|----------------|------|------|---------------------------------------|------|--------------------------|--|-----------------|-------------------------------------|---|-------|-------------|-------------------------------|
| | | Btu/hr. | Min. | Max. | Min. | Max. | Quick Opening Trim | Quick Opening w/Valve Seal Overtravel Trim | Linear Trim | Linear w/Valve Seal Overtravel Trim | | | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | | |
| 3/4 | 12 | 665,000 | 0 | 15 | -40 | 150 | V710EAS | V710EASV22 | V710EASV15 | V710EASV25 | 1 | 4.0 | | |
| 1 | 17 | 960,000 | 0 | 15 | -40 | 150 | V710FAS | V710FASV22 | V710FASV15 | V710FASV25 | 1 | 4.0 | | |
| 1 1/4 | 25 | 1,406,000 | 0 | 15 | -40 | 150 | V710GAS | V710GASV22 | V710GASV15 | V710GASV25 | 2 | 4.2 | | |
| 1 1/2 | 30 | 1,717,000 | 0 | 15 | -40 | 150 | V710HAS | V710HASV22 | V710HASV15 | V710HASV25 | 2 | 4.2 | | |
| 2 | 64 | 3,620,000 | 0 | 10 | -40 | 150 | V710JAS | V710JASV22 | V710JASV15 | V710JASV25 | 3 | 9.5 | | |
| 2 1/2 | 75 | 4,250,000 | 0 | 10 | -40 | 150 | V710KAS | V710KASV22 | V710KASV15 | V710KASV25 | 4 | 13.0 | | |
| 3 | 92 | 5,230,000 | 0 | 10 | -40 | 150 | V710LAS | V710LASV22 | V710LASV15 | V710LASV25 | 4 | 12.0 | | |
| 4 (Flange) | 180 | 10,200,000 | 0 | 15 | -40 | 150 | V710NCF | V710NCFV22 | V710NCFV15 | - | 5 | 100.0 | | |

* 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

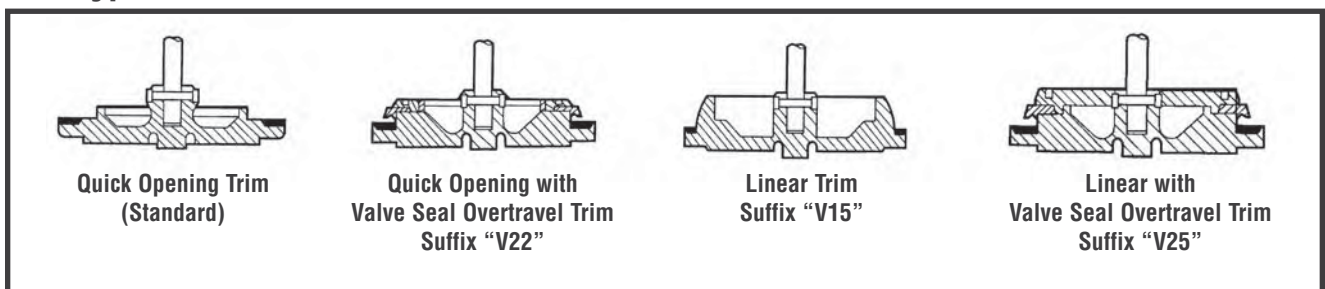
Specifications (Metric units)

| Pipe Size (ins.) | Kv Flow (m³/hr) | Gas Capacity ① | | | Operating Pressure Differential (bar) | | Fluid & Ambient Temp. °C | | Catalog Numbers | | | | Const. Ref. | Approx. Shipping Weight (kgs) |
|--|-----------------|----------------|------|------|---------------------------------------|------|--------------------------|--|-----------------|-------------------------------------|---|------|-------------|-------------------------------|
| | | Btu/hr. | Min. | Max. | Min. | Max. | Quick Opening Trim | Quick Opening w/Valve Seal Overtravel Trim | Linear Trim | Linear w/Valve Seal Overtravel Trim | | | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | | |
| 3/4 | 10.2 | 665,000 | 0 | 1 | -40 | 66 | V710EAS | V710EASV22 | V710EASV15 | V710EASV25 | 1 | 1.8 | | |
| 1 | 14.5 | 960,000 | 0 | 1 | -40 | 66 | V710FAS | V710FASV22 | V710FASV15 | V710FASV25 | 1 | 1.8 | | |
| 1 1/4 | 21.3 | 1,406,000 | 0 | 1 | -40 | 66 | V710GAS | V710GASV22 | V710GASV15 | V710GASV25 | 2 | 1.9 | | |
| 1 1/2 | 25.5 | 1,717,000 | 0 | 1 | -40 | 66 | V710HAS | V710HASV22 | V710HASV15 | V710HASV25 | 2 | 1.9 | | |
| 2 | 54.4 | 3,620,000 | 0 | 0.7 | -40 | 66 | V710JAS | V710JASV22 | V710JASV15 | V710JASV25 | 3 | 4.3 | | |
| 2 1/2 | 63.8 | 4,250,000 | 0 | 0.7 | -40 | 66 | V710KAS | V710KASV22 | V710KASV15 | V710KASV25 | 4 | 5.9 | | |
| 3 | 78.2 | 5,230,000 | 0 | 0.7 | -40 | 66 | V710LAS | V710LASV22 | V710LASV15 | V710LASV25 | 4 | 5.5 | | |
| 4 (Flange) | 153 | 10,200,000 | 0 | 1 | -40 | 66 | V710NCF | V710NCFV22 | V710NCFV15 | - | 5 | 45.5 | | |

* 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

COMBUSTION

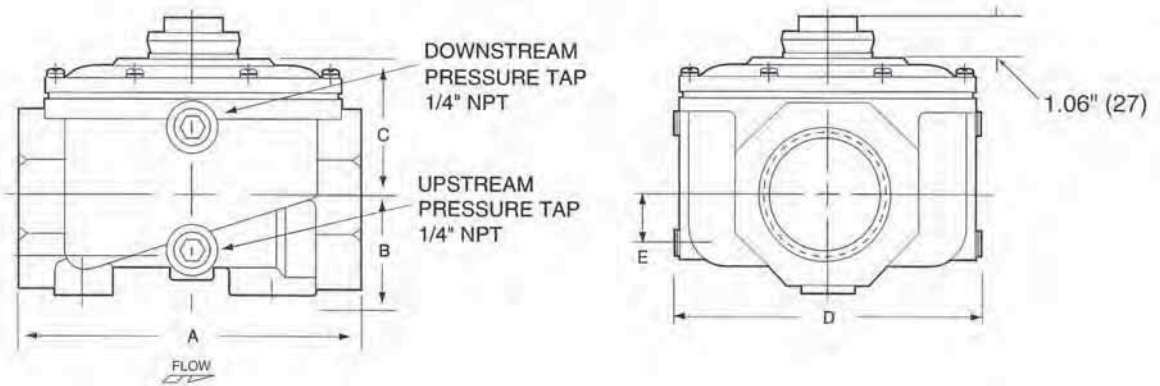
Trim Types



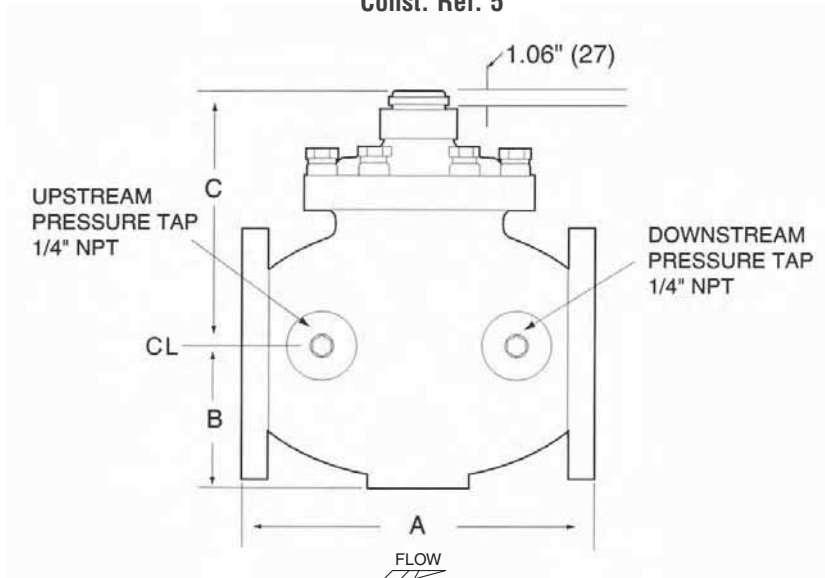
Dimensions inches (mm)

| Const. Ref. | | A | B | C | D | E |
|-------------|------|-------|------|------|------|------|
| 1 | ins. | 5.78 | 1.95 | 2.64 | 5.19 | 1.16 |
| | mm | 147 | 50 | 67 | 132 | 29 |
| 2 | ins. | 5.78 | 2.01 | 2.94 | 5.19 | 0.70 |
| | mm | 147 | 51 | 75 | 132 | 18 |
| 3 | ins. | 8.12 | 2.66 | 3.05 | 8.01 | 0.96 |
| | mm | 206 | 68 | 77 | 203 | 24 |
| 4 | ins. | 9.00 | 2.96 | 3.87 | 8.01 | 0.70 |
| | mm | 229 | 75 | 98 | 203 | 18 |
| 5 | ins. | 13.88 | 5.00 | 7.40 | 9.00 | 0.00 |
| | mm | 353 | 127 | 188 | 229 | 0 |

Const. Ref. 1 - 4



Const. Ref. 5



General Description

The normally closed H117 is a combination Hydramotor actuator and safety shutoff/control gas valve. It is used for commercial and industrial burners in applications such as furnaces, dryers, dehydrators, conversion burners and heaters.

The cast iron valve body provides high flow and self cleaning operation. Its soft synthetic seat and integral, heavy-duty return spring closes the valve tightly upon current interruption, in one second or less.

The self-contained, hermetically sealed, pull-type electrohydraulic actuator consists of a motor/pump unit immersed in oil, reducing wear and providing highly reliable operation.

Specifications

Fluid: Fuel gas

Opening Time: 20 second max.

Closing Time: 1 second max.

Note: Opening time increased 20% with 50Hz.

Enclosure: Type 1 General Purpose standard
 Type 4/7 Watertight/Explosion proof optional

Ambient Temperature: -40°F to 150°F (-40°C to 66°C)

Body Class: Cast Iron, 1" to 3" - 250# screw, 4" - 125# flange

Pipe Taps: 1/4" upstream & downstream taps for routine leak testing

Electrical

Power Requirement: 158 VA max

Standard Voltage: 120V/60Hz
 240V/60Hz (Optional)

| Operating Voltage | Amperes | | |
|-------------------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 120V/60Hz | 13.2 | 1.32 | 0.14 |
| 240V/60Hz | 6.6 | 0.66 | 0.07 |

Auxiliary Switches:

One integral SPDT switch, 15A@120V, 7.5A@240V, (1800VA max). Actuates at full open position of actuator stroke (not adjustable). Up to 6 adjustable yoke mounted switches may be added.

Proof of Closure Switch:

Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

Multi-poise, may be mounted in any position.

Approvals

UL listed

FM Approved

CSA Certified to:

1) Automatic Gas Safety Shutoff Valves C/I (3.9),
 File 113070.

Specifications (English units)

| Pipe Size (ins.) | Cv Flow Factor | Gas Capacity ① Cu. Ft/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number ② ③ | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (lbs) |
|--|----------------|------------------------------|---------------------------------------|------|---------------------|--------------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | | |
| 2 | 151 | 8,000 | 0 | 20 | 150 | H117AJ112F1 | 1 | ○ | ○ | ○ | 12-18 | 75 |
| 2 1/2 | 244 | 12,900 | 0 | 8 | 150 | H117AK112F1 | 2 | ○ | ○ | ○ | 12-18 | 105 |
| 3 | 320 | 17,000 | 0 | 8 | 150 | H117AL112F1 | 3 | ○ | ○ | ○ | 12-18 | 105 |
| 4 (Flange) | 510 | 27,000 | 0 | 4 | 150 | H117AN112F1 | 4 | ○ | ○ | ○ | 12-20 | 140 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | | |
| 2 | 124 | 6,600 | 0 | 20 | 150 | H117AJ112F1F26V16 | 1 | ○ | ○ | ○ | 12-18 | 80 |
| 2 1/2 | 171 | 9,100 | 0 | 8 | 150 | H117AK112F1F26V16 | 2 | ○ | ○ | ○ | 12-18 | 110 |
| 3 | 320 | 17,000 | 0 | 8 | 150 | H117AL112F1F26V16 | 3 | ○ | ○ | ○ | 12-18 | 110 |
| 4 (Flange) | 444 | 24,000 | 0 | 4 | 150 | H117AN112F1F26V16 | 4 | ○ | ○ | ○ | 12-20 | 145 |

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof change 5th digit to "B" (EX: H117BJ112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H117AJ114F1).

Specifications (Metric units)

| Pipe Size (ins.) | Kv Flow (m³/hr) | Gas Capacity ① Cu. Ft/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number ② ③ | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (kgs) |
|--|-----------------|------------------------------|---------------------------------------|------|---------------------|--------------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | | |
| 2 | 128 | 8,000 | 0 | 1.4 | 66 | H117AJ112F1 | 1 | ○ | ○ | ○ | 12-18 | 34.1 |
| 2 1/2 | 207 | 12,900 | 0 | 0.6 | 66 | H117AK112F1 | 2 | ○ | ○ | ○ | 12-18 | 47.7 |
| 3 | 272 | 17,000 | 0 | 0.6 | 66 | H117AL112F1 | 3 | ○ | ○ | ○ | 12-18 | 47.7 |
| 4 (Flange) | 434 | 27,000 | 0 | 0.3 | 66 | H117AN112F1 | 4 | ○ | ○ | ○ | 12-20 | 63.6 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | | |
| 2 | 105 | 6,600 | 0 | 1.4 | 66 | H117AJ112F1F26V16 | 1 | ○ | ○ | ○ | 12-18 | 36.4 |
| 2 1/2 | 145 | 9,100 | 0 | 0.6 | 66 | H117AK112F1F26V16 | 2 | ○ | ○ | ○ | 12-18 | 50 |
| 3 | 272 | 17,000 | 0 | 0.6 | 66 | H117AL112F1F26V16 | 3 | ○ | ○ | ○ | 12-18 | 50 |
| 4 (Flange) | 377 | 24,000 | 0 | 0.3 | 66 | H117AN112F1F26V16 | 4 | ○ | ○ | ○ | 12-20 | 65.9 |

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof change 5th digit to "B" (EX: H117BJ112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H117AJ114F1).

COMBUSTION

Replacement Switches:

| Kits | Switches* | Type |
|-------------|-----------|------------------------|
| S104772EA1 | 1 | Auxiliary (Adjustable) |
| S104772EA2 | 2 | |
| S104772EA3 | 3 | |
| S104772EAX1 | 1 | Proof of Closure |

* Yoke Mounted

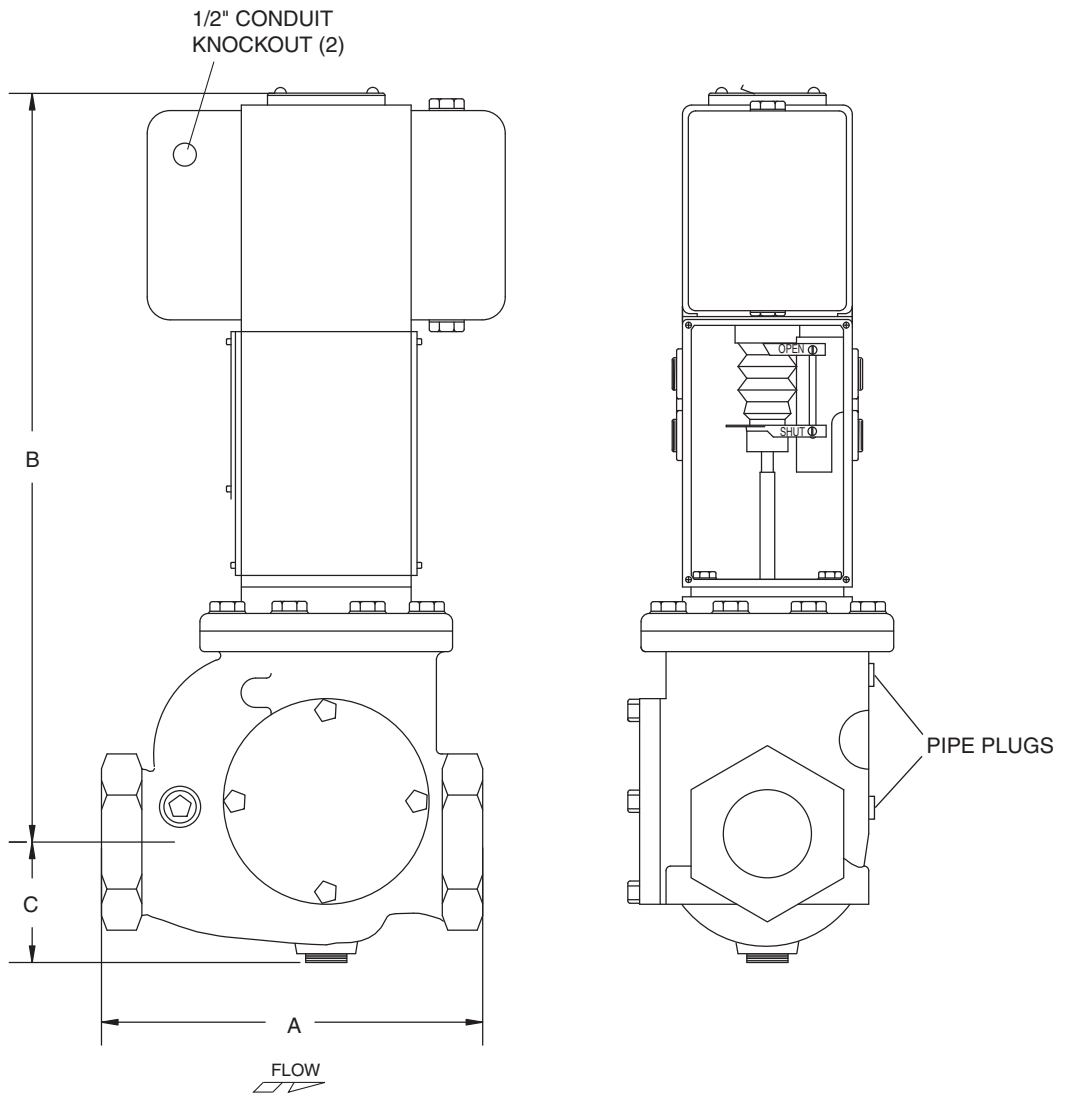
Replacement Actuators:

| Catalog Number | Voltage |
|----------------|-----------|
| H10A620B5F1 | 120V/60Hz |
| H10A640B5F1 | 240V/60Hz |

For FM Proof of Closure add F26 to Cat. No.

Dimensions inches (mm)

| Const Ref. | | A | B | C |
|------------|------|-------|-------|------|
| 1 | ins. | 8.13 | 18.13 | 2.50 |
| | mm | 207 | 461 | 64 |
| 2 | ins. | 10.88 | 18.63 | 2.88 |
| | mm | 276 | 473 | 73 |
| 3 | ins. | 10.88 | 18.63 | 3.88 |
| | mm | 276 | 473 | 99 |
| 4 | ins. | 13.88 | 20.00 | 4.06 |
| | mm | 353 | 508 | 103 |



COMBUSTION

General Description

The normally closed H118 is a combination Hydramotor actuator and safety shutoff/control gas valve. It is used for commercial and industrial burners in applications such as furnaces, dryers, dehydrators, conversion burners and heaters.

The cast iron, globe-type valve body features a soft synthetic seat and integral heavy-duty return spring for tight and certain closure in one second or less upon current interruption.

The self contained, hermetically sealed, pull-type electro-hydraulic actuator consists of a motor/pump unit immersed in oil, reducing wear and provides highly reliable operation.

Specifications

Fluid: Fuel gas

Opening Time: 28 second max.

Closing Time: 1 second max.

Enclosure: Type 1 General Purpose standard
 Type 4/7 Watertight/Explosion proof optional

Ambient Temperature: -40°F to 150°F (-40°C to 66°C)

Body Class: Cast Iron, 1" to 3" - 250# screw, 4" - 125# flange

Pipe Taps: 1/4" upstream & downstream taps for routine leak testing

Electrical

Power Requirement: 158 VA max (1-3"), 288 VA max. (4")

Standard Voltage: 120V/60Hz
 240V/60Hz (Optional)

| Operating Voltage | Amperes | | |
|----------------------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 1" Through 3" | | | |
| 120V/60Hz | 13.2 | 1.32 | 0.14 |
| 240V/60Hz | 6.6 | 0.66 | 0.07 |
| 4" Only | | | |
| 120V/60Hz | 24.0 | 2.40 | 0.18 |

Auxiliary Switch:

One integral SPDT switch, 15A@120V, 7.5A@240V, (1800VA max). Actuates at full open position of actuator stroke (not adjustable). Up to 6 adjustable yoke mounted switches may be added.

Proof of Closure Switch:

Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

Multi-poise, may be mounted in any position.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

| Pipe Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number ② ③ | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (lbs) |
|--|----------------|----------------|--|---------------------------------------|------|---------------------|--------------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Cu. Ft/hr. | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | | | |
| 1 | 17 | 915 | | 0 | 35 | 150 | H118AF122F1 | 1 | ○ | ○ | ○ | 7-18 | 22 |
| 1 1/4 | 25 | 1,155 | | 0 | 35 | 150 | H118AG122F1 | 1 | ○ | ○ | ○ | 7-18 | 23 |
| 1 1/2 | 35 | 1,525 | | 0 | 25 | 150 | H118AH122F1 | 2 | ○ | ○ | ○ | 8-20 | 28 |
| 2 | 67 | 3,300 | | 0 | 15 | 150 | H118AJ122F1 | 3 | ○ | ○ | ○ | 10-24 | 32 |
| 2 1/2 | 86 | 3,730 | | 0 | 15 | 150 | H118AK122F1 | 4 | ○ | ○ | ○ | 11-28 | 52 |
| 3 | 125 | 6,095 | | 0 | 15 | 150 | H118AL122F1 | 5 | ○ | ○ | ○ | 12-18 | 54 |
| 4 (Flange) | 168 | 9,710 | | 0 | 15 | 150 | H118AN132F1 | 6 | ○ | ○ | ○ | 15-24 | 148 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | | | |
| 2 | 67 | 3,300 | | 0 | 15 | 150 | H118AJ122F1F26V16 | 3 | ○ | ○ | ○ | 9-17 | 37 |
| 2 1/2 | 86 | 3,730 | | 0 | 15 | 150 | H118AK122F1F26V16 | 4 | ○ | ○ | ○ | 11-20 | 57 |
| 3 | 125 | 6,095 | | 0 | 15 | 150 | H118AL122F1F26V16 | 5 | ○ | ○ | ○ | 13-23 | 59 |
| 4 (Flange) | 168 | 9,710 | | 0 | 15 | 150 | H118AN132F1F26V16 | 6 | ○ | ○ | ○ | 15-24 | 153 |

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof chage 5th digit to "B" (EX: H118BF112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H118AF124F1) - 1" through 3" only.

Specifications (Metric units)

| Pipe Size (ins.) | Kv Flow (m³/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number ② ③ | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (kgs) |
|--|-----------------|----------------|--|---------------------------------------|------|---------------------|--------------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Cu. Ft/hr. | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | | | |
| 1 | 14 | 915 | | 0 | 2.4 | 66 | H118AF122F1 | 1 | ○ | ○ | ○ | 7-18 | 10 |
| 1 1/4 | 21 | 1,155 | | 0 | 2.4 | 66 | H118AG122F1 | 1 | ○ | ○ | ○ | 7-18 | 10.5 |
| 1 1/2 | 30 | 1,525 | | 0 | 1.7 | 66 | H118AH122F1 | 2 | ○ | ○ | ○ | 8-20 | 12.7 |
| 2 | 57 | 3,300 | | 0 | 1 | 66 | H118AJ122F1 | 3 | ○ | ○ | ○ | 10-24 | 14.5 |
| 2 1/2 | 73 | 3,730 | | 0 | 1 | 66 | H118AK122F1 | 4 | ○ | ○ | ○ | 11-28 | 23.6 |
| 3 | 106 | 6,095 | | 0 | 1 | 66 | H118AL122F1 | 5 | ○ | ○ | ○ | 12-18 | 24.5 |
| 4 (Flange) | 143 | 9,710 | | 0 | 1 | 66 | H118AN132F1 | 6 | ○ | ○ | ○ | 15-24 | 67.3 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | | | |
| 2 | 57 | 3,300 | | 0 | 1 | 66 | H118AJ122F1F26V16 | 3 | ○ | ○ | ○ | 9-17 | 16.8 |
| 2 1/2 | 73 | 3,730 | | 0 | 1 | 66 | H118AK122F1F26V16 | 4 | ○ | ○ | ○ | 11-20 | 25.9 |
| 3 | 106 | 6,095 | | 0 | 1 | 66 | H118AL122F1F26V16 | 5 | ○ | ○ | ○ | 13-23 | 26.8 |
| 4 (Flange) | 143 | 9,710 | | 0 | 1 | 66 | H118AN132F1F26V16 | 6 | ○ | ○ | ○ | 15-24 | 69.5 |

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof chage 5th digit to "B" (EX: H118BF112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H118AF124F1) - 1" through 3" only.

Replacement Actuators:

| Catalog Number ① | Voltage |
|------------------|-----------|
| H10A620B5F1 | 120V/60Hz |
| H10A640B5F1 | 240V/60Hz |
| H30A2220B20F1 ② | 120V/60Hz |

① For FM Proof of Closure ad F26 to Cat. No.
 ② 4" size only

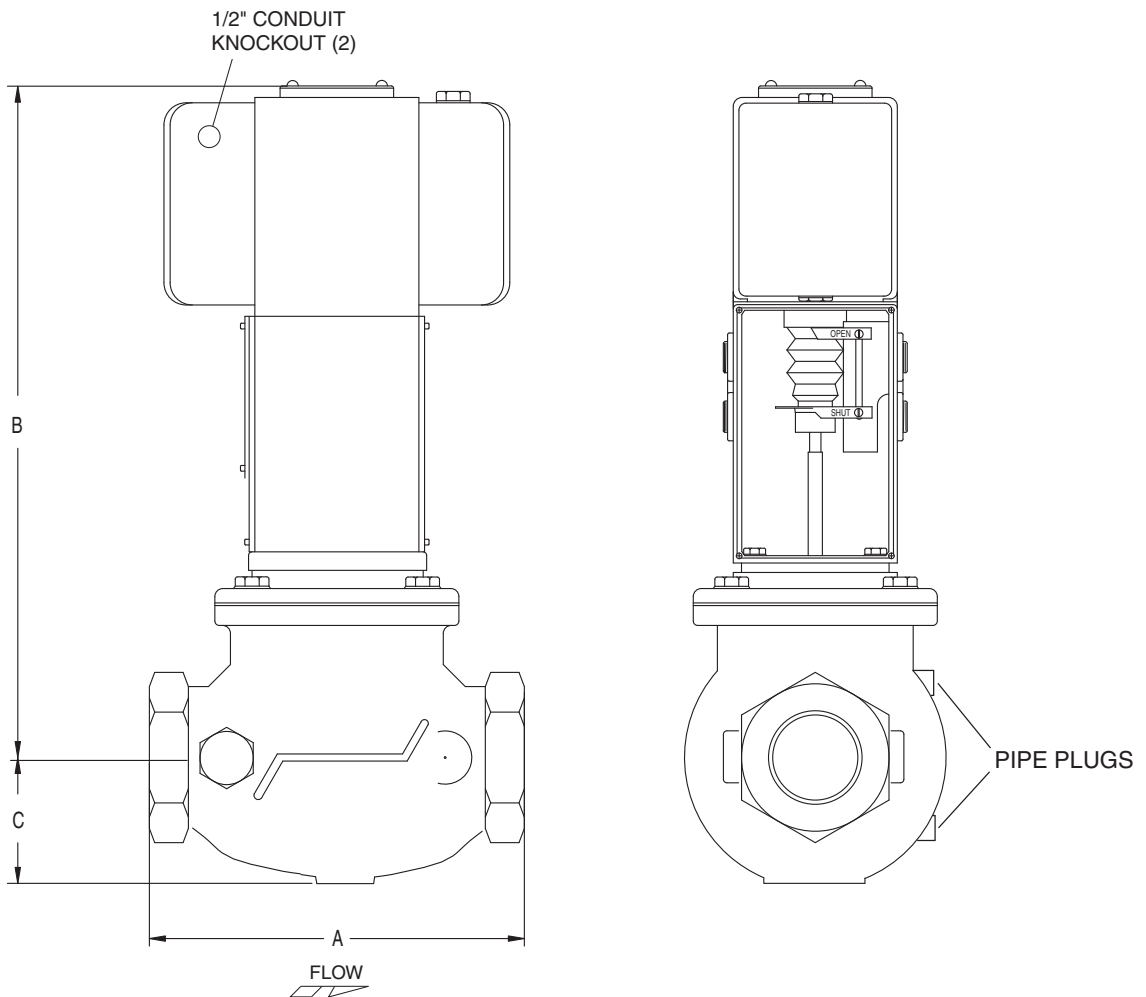
Replacement Switches:

| Kits | Switches* | Type |
|----------------------|-----------|------------------------|
| 1" Through 3" | | |
| S104772EA1 | 1 | Auxiliary (Adjustable) |
| S104772EA2 | 2 | |
| S104772EA3 | 3 | |
| S104772EAX1 | 1 | Proof of Closure |
| 4" Only | | |
| S104772FA1 | 1 | Auxiliary (Adjustable) |
| S104772FA2 | 2 | |
| S104772FA3 | 3 | |
| S104772FAX1 | 1 | Proof of Closure |

* Yoke Mounted

Dimensions inches (mm)

| Const Ref. | | A | B | C |
|------------|------|-------|-------|------|
| 1 | ins. | 5.13 | 14.65 | 1.93 |
| | mm | 130 | 372 | 49 |
| 2 | ins. | 6.50 | 15.15 | 2.56 |
| | mm | 165 | 385 | 65 |
| 3 | ins. | 8.13 | 15.00 | 2.70 |
| | mm | 207 | 381 | 69 |
| 4 | ins. | 9.50 | 15.38 | 3.28 |
| | mm | 241 | 391 | 83 |
| 5 | ins. | 10.88 | 15.81 | 3.75 |
| | mm | 276 | 402 | 95 |
| 6 | ins. | 13.88 | 23.88 | 5.00 |
| | mm | 353 | 607 | 127 |



H118R2

373

COMBUSTION

General Description

The H137 is a 2-way, normally closed, safety shutoff valve providing trouble free, electrohydraulic on-off control of combustion gas for boilers, industrial furnaces, dryers, dehydrators, large conversion burners, air heaters and similar applications.

The self-contained Hydramotor actuator is a powerful, pull-type hydraulic ram providing output force of 1,400 pounds to fully open the valve. Upon current interruption, dual redundant relief valves dump hydraulic pressure, closing the valve in one second. The Hydramotor consists of a motor/pump unit immersed in oil, reducing wear and provides highly reliable operation.

The H137 is a cast iron-bodied valve with Nitrile seat and aluminum trim. Pulling force from the Hydramotor actuator moves a lever (providing mechanical advantage) against spring and gas pressure to open the soft-seated flap, allowing straight-through gas flow.

A simple, two-wire circuit controls the motorized valve. Each H137 is equipped with one standard SPDT switch which actuates at the fully-open (energized) position. Each is equipped with a valve seal overtravel interlock switch which can be wired into the startup or pre-ignition interlock circuit to permit supervision of the valve's closed position (FM proof of closure).

Specifications

Fluid: Fuel gas

Opening Time: 27 second max.

Closing Time: 1 second max.

Enclosure: Type 4 Watertight standard
 Type 7 Explosion proof optional

Ambient Temperature: -40°F to 150°F (-40°C to 66°C)

Body Class: Cast Iron, 2" to 3": 250# screw, 4" - 6": 125# flanges

Pipe Taps: 1/4" upstream & downstream taps for routine leak testing

Electrical

Power Requirement: 324 VA

Standard Voltage: 120V/60Hz

| Operating Voltage | Amperes | | |
|-------------------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 120V/60Hz | 270 | 2.7 | 0.18 |

Auxiliary Switch: Integral SPDT switch, 15A@120V Actuates at full open position of actuator stroke (not adjustable). Up to 2 adjustable yoke mounted switches may be added.

Proof of Closure Switch: Integral factory set, non-field adjustable SPDT switch, 1/4 HP@120V.



Installation

Multi-poise, may be mounted in any position.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

| Pipe Size (ins.) | Cv Flow Factor | Gas Capacity ① | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number ② | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (lbs) |
|--|----------------|----------------|---------------------------------------|------|---------------------|------------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Cu. Ft./hr. | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | | |
| 2 | 151 | 8,000 | 0 | 60 | 150 | H137CJ12F1F26V16 | 1 | ○ | ○ | ○ | 22 | 130 |
| 2 1/2 | 244 | 12,900 | 0 | 50 | 150 | H137CK12F1F26V16 | 2 | ○ | ○ | ○ | 22 | 135 |
| 3 | 320 | 17,000 | 0 | 50 | 150 | H137CL12F1F26V16 | 2 | ○ | ○ | ○ | 22 | 135 |
| 4 (Flange) | 510 | 27,000 | 0 | 30 | 150 | H137CN32F1F26V16 | 3 | ○ | ○ | ○ | 27 | 143 |
| 6 (Flange) | 1020 | 50,000 | 0 | 20 | 150 | H137CQ32F1F26V16 | 4 | ○ | ○ | ○ | 27 | 150 |

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
② Type 7 Explosionproof change 5th digit to "B" (EX: H137BJ12F1F26V16)

Specifications (Metric units)

| Pipe Size (ins.) | Kv Flow (m³/hr) | Gas Capacity ① | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number ② | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (kgs) |
|--|-----------------|----------------|---------------------------------------|------|---------------------|------------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Cu. Ft./hr. | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | | |
| 2 | 128 | 8,000 | 0 | 4.1 | 66 | H137CJ12F1F26V16 | 1 | ○ | ○ | ○ | 22 | 59 |
| 2 1/2 | 207 | 12,900 | 0 | 3.4 | 66 | H137CK12F1F26V16 | 2 | ○ | ○ | ○ | 22 | 61 |
| 3 | 272 | 17,000 | 0 | 3.4 | 66 | H137CL12F1F26V16 | 2 | ○ | ○ | ○ | 22 | 61 |
| 4 (Flange) | 434 | 27,000 | 0 | 2.1 | 66 | H137CN32F1F26V16 | 3 | ○ | ○ | ○ | 27 | 65 |
| 6 (Flange) | 867 | 50,000 | 0 | 1.4 | 66 | H137CQ32F1F26V16 | 4 | ○ | ○ | ○ | 27 | 68 |

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
② Type 7 Explosionproof change 5th digit to "B" (EX: H137BJ12F1F26V16)

Replacement Actuators:

| Catalog Number | Voltage |
|--------------------|-----------|
| H30A4820B20C1F1F26 | 120V/60Hz |

Replacement Switches:

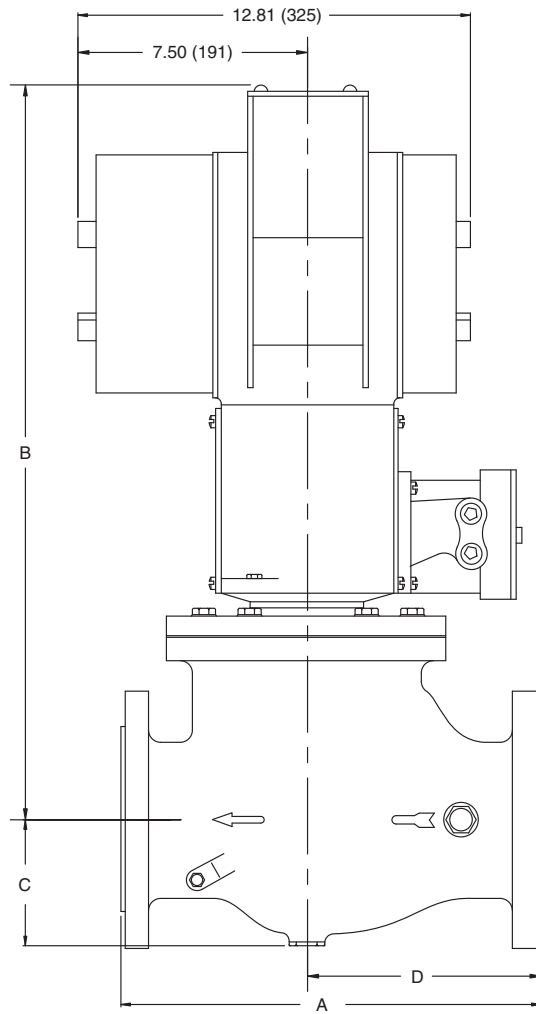
| Kits | Switches* | Type |
|-------------|-----------|------------------------------------|
| S104772FAX1 | 1 | Proof of Closure |
| S104772FAX2 | 2 | 1 Proof of Closure and 1 Auxiliary |
| S104772FAX3 | 3 | 1 Proof of Closure and 2 Auxiliary |

* Yoke Mounted

COMBUSTION

Dimensions inches (mm)

| Const Ref. | | A | B | C | D |
|------------|------|-------|-------|------|-------|
| 1 | ins. | 8.12 | 25.25 | 2.50 | 4.95 |
| | mm | 206 | 641 | 64 | 126 |
| 2 | ins. | 11.00 | 26.09 | 2.88 | 6.50 |
| | mm | 279 | 663 | 73 | 165 |
| 3 | ins. | 13.87 | 28.69 | 4.06 | 7.75 |
| | mm | 352 | 729 | 103 | 197 |
| 4 | ins. | 17.81 | 29.75 | 5.13 | 10.35 |
| | mm | 452 | 756 | 130 | 263 |



Features

- 2-way normally closed operation
- For control of commercial and industrial gas burners
- Ideal for high pressure applications
- Stainless steel body construction
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|------------------------------|
| Body | Stainless Steel (300 Series) |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Silver |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 17.1 | 40 | 90 | 32 to 125 | 238610 | 238614 |
| F | 15.4 | 27 | 160 | 32 to 125 | 99257 | - |
| F | 16.1 | 35 | 180 | 32 to 125 | 272610 | 272614 |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

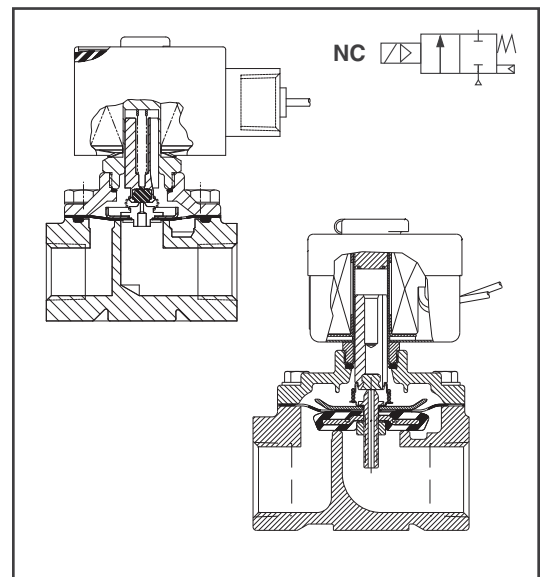
General Purpose, Type 1 metal enclosure with 7/8" hole for 1/2" conduit connector (HV266343-1).

Watertight, Types 1, 2, 3, 3S, 4 & 4X molded epoxy enclosure with 1/2" conduit hub (HV266342-1, HV266342-2, HV266343-2).

Explosion & Watertight, Types 1, 2, 3, 3S, 4X, 7 & 9 molded epoxy enclosure with 1/2" conduit hub (HV266342-3, HV266342-4, HV266343-3).

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to:

- 1) Standard 429 "Electrically Operated Valves," Guide YIOZ, File MP618 Safety Valves.
- 2) Standard 429 "Electrically Operated Valves for use in Hazardous Locations" Guide YTSX, File E25549 Safety Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381. (HV266342-1, HV266342-2, HV266343-2)
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9) File 112872. (HV266342-3, HV266342-4, HV266343-3)

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|------|---------------------------------------|-----|---------------------|----------------|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | UL | | | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 1/2 | 5/8 | 4.0 | 203,000 | 0 | 150 | 175 | HV266342-1 | 1 | ○ | - | ○ | 17.1 | 3.5 | |
| 1/2 | 5/8 | 4.0 | 203,000 | 0 | 150 | 175 | HV266342-3 | 1 | ○ | - | ○ | 17.1 | 3.5 | |
| 3/4 | 5/8 | 4.5 | 203,000 | 0 | 150 | 175 | HV266342-2 | 1 | ○ | - | ○ | 17.1 | 3.5 | |
| 3/4 | 5/8 | 4.5 | 203,000 | 0 | 150 | 175 | HV266342-4 | 1 | ○ | - | ○ | 17.1 | 3.5 | |
| 1 | 1 | 11.2 | 505,000 | 0 | 150 | 175 | HV266343-1 | 2 | ○ | - | ○ | 15.4 | 8.8 | |
| 1 | 1 | 11.2 | 505,000 | 0 | 150 | 175 | HV266343-2 | 3 | ○ | - | ○ | 16.1 | 8.8 | |
| 1 | 1 | 11.2 | 505,000 | 0 | 150 | 175 | HV266343-3 | 3 | ○ | - | ○ | 16.1 | 8.8 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

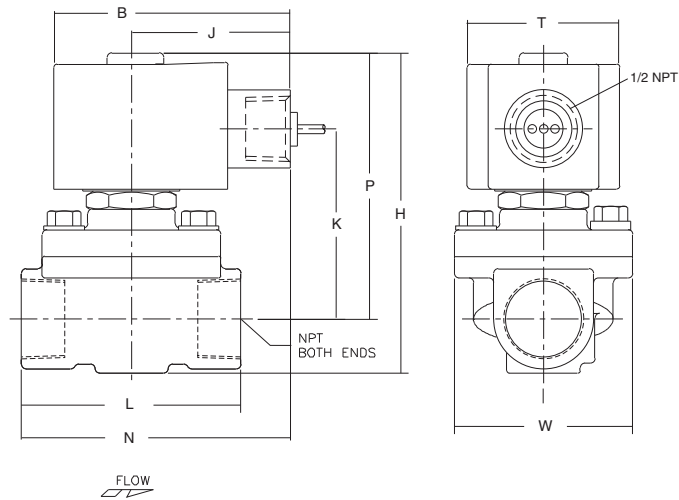
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|------|---------------------------------------|----|---------------------|----------------|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | UL | | | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 1/2 | 16 | 3.4 | 203,000 | 0 | 10.3 | 79 | HV266342-1 | 1 | ○ | - | ○ | 17.1 | 1.6 | |
| 1/2 | 16 | 3.4 | 203,000 | 0 | 10.3 | 79 | HV266342-3 | 1 | ○ | - | ○ | 17.1 | 1.6 | |
| 3/4 | 16 | 3.4 | 203,000 | 0 | 10.3 | 79 | HV266342-2 | 1 | ○ | - | ○ | 17.1 | 1.6 | |
| 3/4 | 16 | 3.4 | 203,000 | 0 | 10.3 | 79 | HV266342-4 | 1 | ○ | - | ○ | 17.1 | 1.6 | |
| 1 | 25 | 9.5 | 505,000 | 0 | 10.3 | 79 | HV266343-1 | 2 | ○ | - | ○ | 15.4 | 4.0 | |
| 1 | 25 | 9.5 | 505,000 | 0 | 10.3 | 79 | HV266343-2 | 3 | ○ | - | ○ | 16.1 | 4.0 | |
| 1 | 25 | 9.5 | 505,000 | 0 | 10.3 | 79 | HV266343-3 | 3 | ○ | - | ○ | 16.1 | 4.0 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

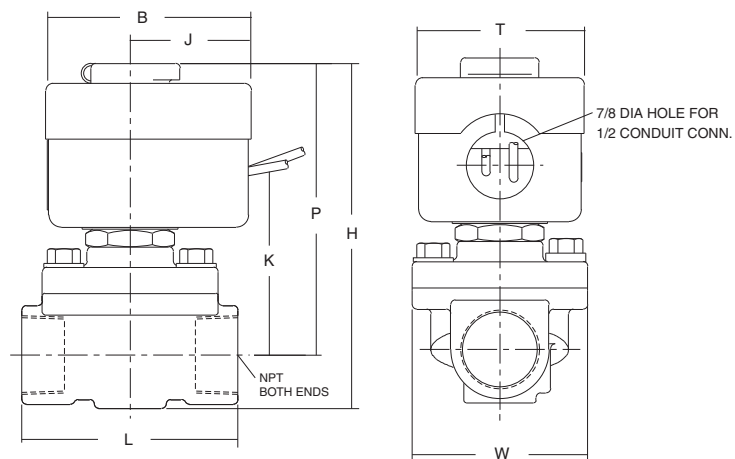
Dimensions inches (mm)

| Const. Ref. | | B | H | J | K | L | N | P | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 3.03 | 4.19 | 2.05 | 2.50 | 2.81 | 3.45 | 3.47 | 1.95 | 2.39 |
| | mm | 77 | 106 | 52 | 64 | 71 | 88 | 88 | 50 | 61 |
| 2 | ins. | 2.67 | 5.31 | 1.58 | 3.03 | 3.75 | - | 4.43 | 2.20 | 3.84 |
| | mm | 68 | 135 | 40 | 77 | 95 | - | 113 | 56 | 98 |
| 3 | ins. | 3.11 | 5.26 | 2.05 | 3.17 | 3.75 | 4.10 | 4.38 | 2.06 | 3.84 |
| | mm | 79 | 134 | 52 | 81 | 95 | 104 | 111 | 52 | 98 |

Const. Ref. 1, 3



Const. Ref. 2



Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For positive shutoff on pilot or main gas lines of commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Washer | 302 Stainless Steel |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Guide | CA |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Body Gasket | Cork |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.5 | 23 | 55 | -40 to 175 | 064982 | - |

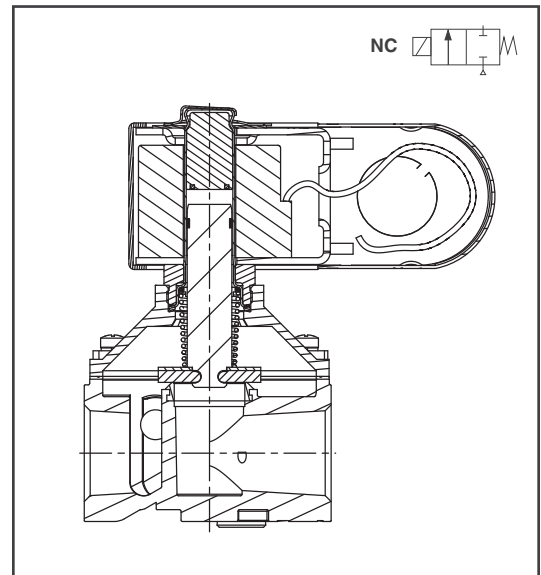
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box Housing with two 7/8" knock-outs.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/8" thru 3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|---------------------------------------|------|---------------------|----------------|-------------------|-------------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | | 24V 60 Hz | 110-120V 50-60 Hz | 220-240V 50-60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 3/8 | 0.456 | 4 | 215,000 | 0 | 0.5 | 77 | K3A431U | K3A432U | K3A434U | 1 | ○ | ○ | ○ | 10.5 | 1.4 |
| 1/2 | 0.687 | 6 | 350,000 | 0 | 0.5 | 77 | K3A441U | K3A442U | K3A444U | 1 | ○ | ○ | ○ | 10.5 | 1.4 |
| 3/4 | 0.812 | 9 | 520,000 | 0 | 0.5 | 77 | K3A451U | K3A452U | K3A454U | 2 | ○ | ○ | ○ | 10.5 | 1.5 |
| 1 | 1.000 | 14 | 755,000 | 0 | 0.5 | 77 | K3A461U | K3A462U | K3A464U | 3 | ○ | - | ○ | 10.5 | 1.7 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

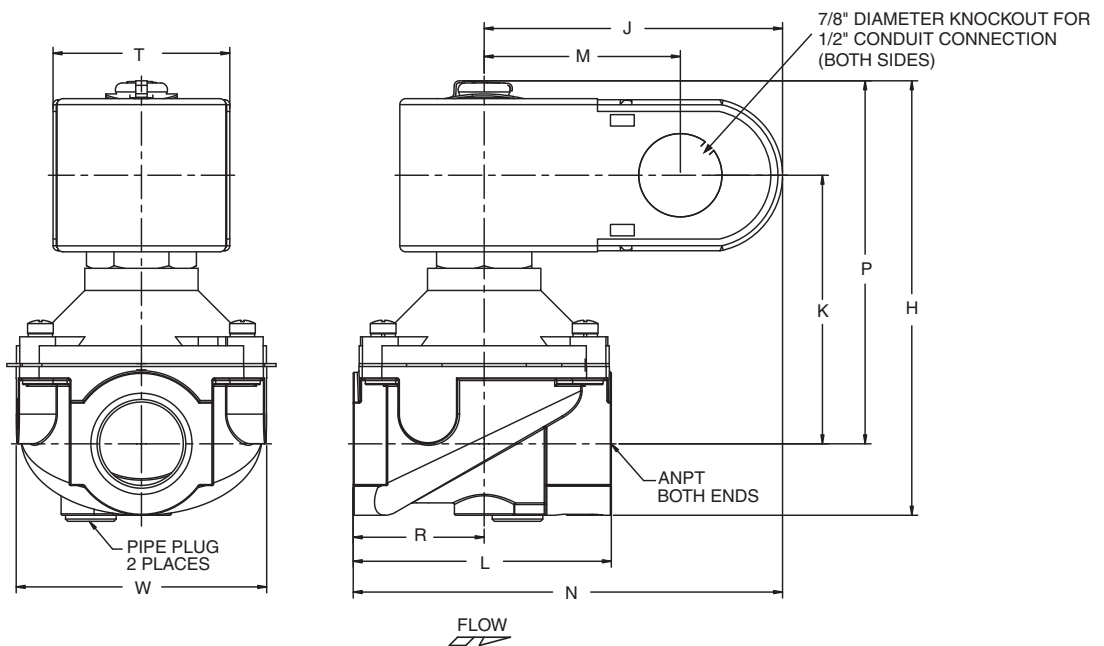
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|---------------------------------------|------|---------------------|----------------|-------------------|-------------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | | 24V 60 Hz | 110-120V 50-60 Hz | 220-240V 50-60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 3/8 | 12 | 3.4 | 215,000 | 0 | 0.03 | 25 | K3A431U | K3A432U | K3A434U | 1 | ○ | ○ | ○ | 10.5 | 0.6 |
| 1/2 | 17 | 5.1 | 350,000 | 0 | 0.03 | 25 | K3A441U | K3A442U | K3A444U | 1 | ○ | ○ | ○ | 10.5 | 0.6 |
| 3/4 | 21 | 7.7 | 520,000 | 0 | 0.03 | 25 | K3A451U | K3A452U | K3A454U | 2 | ○ | ○ | ○ | 10.5 | 0.7 |
| 1 | 25 | 11.9 | 755,000 | 0 | 0.03 | 25 | K3A461U | K3A462U | K3A464U | 3 | ○ | - | ○ | 10.5 | 0.8 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

| Const. Ref. | | H | J | K | L | M | N | P | R | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 4.25 | 3.11 | 2.70 | 2.75 | 2.04 | 4.52 | 3.69 | 1.41 | 1.86 | 2.63 |
| | mm | 108 | 79 | 69 | 70 | 52 | 115 | 94 | 36 | 47 | 67 |
| 2 | ins. | 4.56 | 3.11 | 2.82 | 2.75 | 2.04 | 4.49 | 3.81 | 1.37 | 1.86 | 2.63 |
| | mm | 116 | 79 | 72 | 70 | 52 | 114 | 97 | 35 | 47 | 67 |
| 3 | ins. | 4.88 | 3.11 | 3.01 | 4.00 | 2.04 | 5.11 | 4.00 | 2.00 | 1.86 | 3.25 |
| | mm | 124 | 79 | 76 | 102 | 52 | 130 | 102 | 51 | 47 | 83 |

Const. Ref. 1, 2, 3



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For positive shutoff on pilot or main gas lines of commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Washer | 302 Stainless Steel |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Guide | CA |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Body Gasket | Cork |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| N | 16.7 | 35 | 78 | -40 to 175 | 216758 | - |

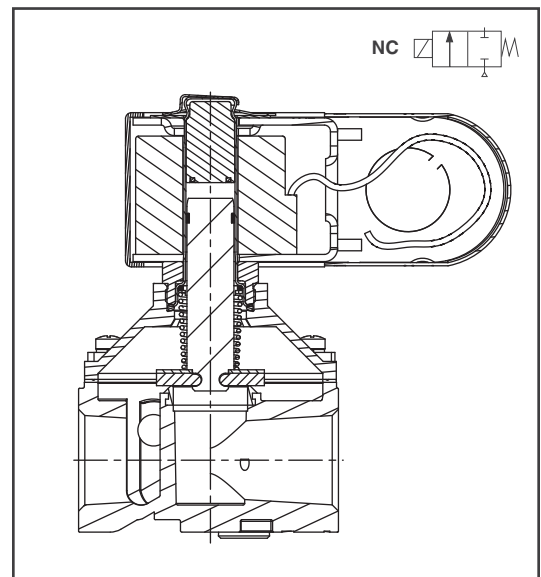
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/8" thru 3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|------|---------------------------------------|-----------|---------------------|-------------------|-------------------|----|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 110-120V 50-60 Hz | 220-240V 50-60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/8 | 0.456 | 4 | 215,000 | 0 | 10 | 77 | K3A531U | K3A532U | K3A534U | 1 | ○ | ○ | ○ | 16.7 | 1.4 | |
| 1/2 | 0.687 | 6 | 350,000 | 0 | 6 | 77 | K3A541U | K3A542U | K3A544U | 1 | ○ | ○ | ○ | 16.7 | 1.4 | |
| 3/4 | 0.812 | 9 | 520,000 | 0 | 3 | 77 | K3A551U | K3A552U | K3A554U | 2 | ○ | ○ | ○ | 16.7 | 1.5 | |
| 1 | 1.000 | 14 | 755,000 | 0 | 1.5 | 77 | K3A561U | K3A562U | K3A564U | 3 | ○ | - | ○ | 16.7 | 1.7 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

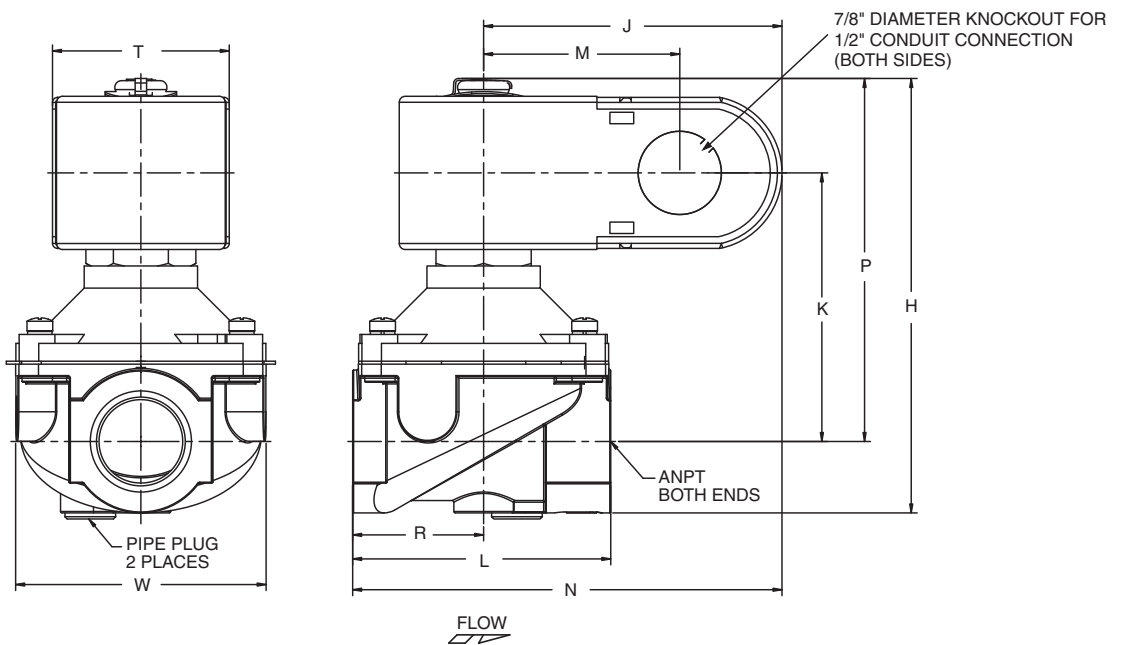
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|------|---------------------------------------|-----------|---------------------|-------------------|-------------------|----|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 110-120V 50-60 Hz | 220-240V 50-60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/8 | 12 | 3.4 | 215,000 | 0 | 0.7 | 25 | K3A531U | K3A532U | K3A534U | 1 | ○ | ○ | ○ | 16.7 | 0.6 | |
| 1/2 | 17 | 5.1 | 350,000 | 0 | 0.4 | 25 | K3A541U | K3A542U | K3A544U | 1 | ○ | ○ | ○ | 16.7 | 0.6 | |
| 3/4 | 21 | 7.7 | 520,000 | 0 | 0.2 | 25 | K3A551U | K3A552U | K3A554U | 2 | ○ | ○ | ○ | 16.7 | 0.7 | |
| 1 | 25 | 11.9 | 755,000 | 0 | 0.1 | 25 | K3A561U | K3A562U | K3A564U | 3 | ○ | - | ○ | 16.7 | 0.8 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

| Const. Ref. | | H | J | K | L | M | N | P | R | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 4.25 | 3.11 | 2.70 | 2.75 | 2.04 | 4.52 | 3.69 | 1.41 | 1.86 | 2.63 |
| | mm | 108 | 79 | 69 | 70 | 52 | 115 | 94 | 36 | 47 | 67 |
| 2 | ins. | 4.56 | 3.11 | 2.82 | 2.75 | 2.04 | 4.49 | 3.81 | 1.37 | 1.86 | 2.63 |
| | mm | 116 | 79 | 72 | 70 | 52 | 114 | 97 | 35 | 47 | 67 |
| 3 | ins. | 4.88 | 3.11 | 3.01 | 4.00 | 2.04 | 5.11 | 4.00 | 2.00 | 1.86 | 3.25 |
| | mm | 124 | 79 | 76 | 102 | 52 | 130 | 102 | 51 | 47 | 83 |

Const. Ref. 1, 2, 3



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For positive shutoff on pilot or main gas lines of commercial and industrial gas burners.
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Washer | 302 Stainless Steel |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Guide | CA |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20 | 43 | 240 | -40 to 175 | 222345 | - |

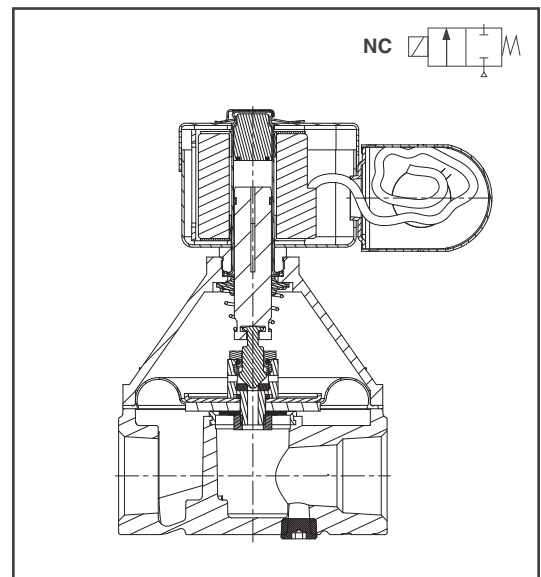
Standard Voltages: 24, 120, 240 volts AC, 60 Hz.
 K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|------------|------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | 24V 60 Hz | 120V 60 Hz | 240V 60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 3/4 | 1.25 | 12 | 667,000 | 0 | 5 | 77 | K3A651U | K3A652U | K3A654U | 1 | ○ | ○ | ○ | 20 | 4.5 |
| 1 | 1.25 | 17 | 960,000 | 0 | 5 | 77 | K3A661U | K3A662U | K3A664U | 1 | ○ | - | ○ | 20 | 4.7 |
| 1 1/4 | 1.75 | 23 | 1,290,000 | 0 | 5 | 77 | K3A671U | K3A672U | K3A674U | 2 | ○ | - | ○ | 20 | 4.5 |
| 1 1/2 | 1.75 | 27 | 1,509,000 | 0 | 5 | 77 | K3A681U | K3A682U | K3A684U | 2 | ○ | - | ○ | 20 | 4.7 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

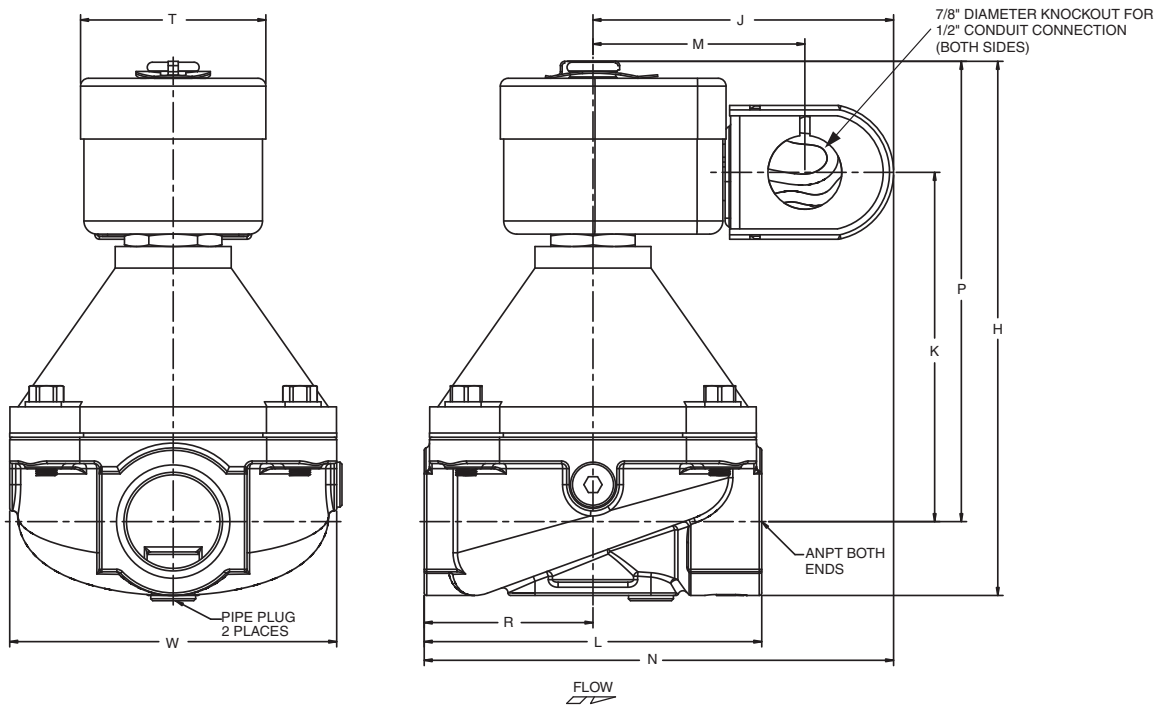
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|------------|------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | 24V 60 Hz | 120V 60 Hz | 240V 60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 3/4 | 32 | 12 | 667,000 | 0 | 0.3 | 25 | K3A651U | K3A652U | K3A654U | 1 | ○ | ○ | ○ | 20 | 2.0 |
| 1 | 32 | 17 | 960,000 | 0 | 0.3 | 25 | K3A661U | K3A662U | K3A664U | 1 | ○ | - | ○ | 20 | 2.1 |
| 1 1/4 | 44 | 23 | 1,290,000 | 0 | 0.3 | 25 | K3A671U | K3A672U | K3A674U | 2 | ○ | - | ○ | 20 | 2.0 |
| 1 1/2 | 44 | 27 | 1,509,000 | 0 | 0.3 | 25 | K3A681U | K3A682U | K3A684U | 2 | ○ | - | ○ | 20 | 2.1 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

| Const. Ref. | | H | J | K | L | M | N | P | R | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 6.33 | 3.53 | 4.14 | 4.00 | 2.50 | 5.53 | 5.46 | 2.00 | 2.19 | 3.87 |
| | mm | 161 | 90 | 105 | 102 | 64 | 140 | 139 | 51 | 56 | 98 |
| 2 | ins. | 7.03 | 3.53 | 4.47 | 5.19 | 2.50 | 6.15 | 5.78 | 2.62 | 2.19 | 3.87 |
| | mm | 179 | 90 | 114 | 132 | 64 | 156 | 147 | 67 | 56 | 98 |

Const. Ref. 1, 2



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Washer | 302 Stainless Steel |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Guide | CA |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20 | 43 | 240 | -40 to 175 | 222345 | - |

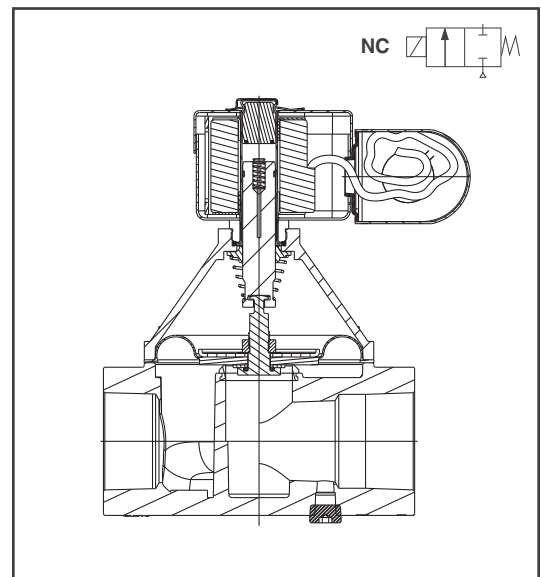
Standard Voltages: 24, 120, 240 volts AC, 60 Hz.
 K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|------|---------------------------------------|-----------|---------------------|----------------|------------|----|-------------|--------|-----|----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 120V 60 Hz | 240V 60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 1 1/4 | 1.25 | 18 | 1,028,000 | 0 | 1.5 | 77 | K3A771U | K3A772U | K3A774U | 1 | ○ | - | ○ | 20 | 4.5 | |
| 1 1/2 | 1.25 | 20 | 1,159,000 | 0 | 1.5 | 77 | K3A781U | K3A782U | K3A784U | 1 | ○ | - | ○ | 20 | 4.5 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

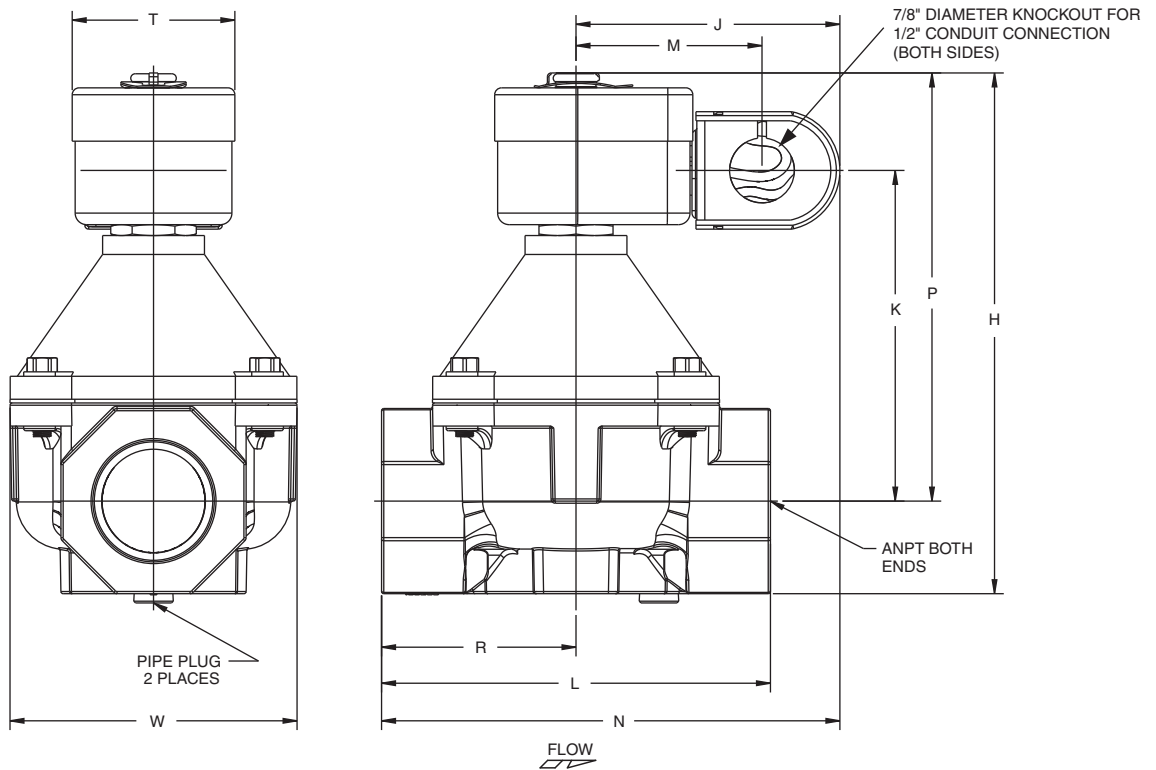
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|------|---------------------------------------|-----------|---------------------|----------------|------------|----|-------------|--------|-----|----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 120V 60 Hz | 240V 60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 1 1/4 | 32 | 15.3 | 1,028,000 | 0 | 0.1 | 25 | K3A771U | K3A772U | K3A774U | 1 | ○ | - | ○ | 20 | 2 | |
| 1 1/2 | 32 | 17.0 | 1,159,000 | 0 | 0.1 | 25 | K3A781U | K3A782U | K3A784U | 1 | ○ | - | ○ | 20 | 2 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

| Const. Ref. | | H | J | K | L | M | N | P | R | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 7.03 | 3.53 | 4.47 | 5.25 | 2.50 | 6.15 | 5.78 | 2.62 | 2.19 | 3.87 |
| | mm | 179 | 90 | 114 | 133 | 64 | 156 | 147 | 67 | 56 | 98 |

Const. Ref. 1



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with pipe tap(s) with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Washer | 302 Stainless Steel |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Guide | CA |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Body Gasket | Cork |
| Pipe Plug | Zinc-Plated Steel |

Electrical

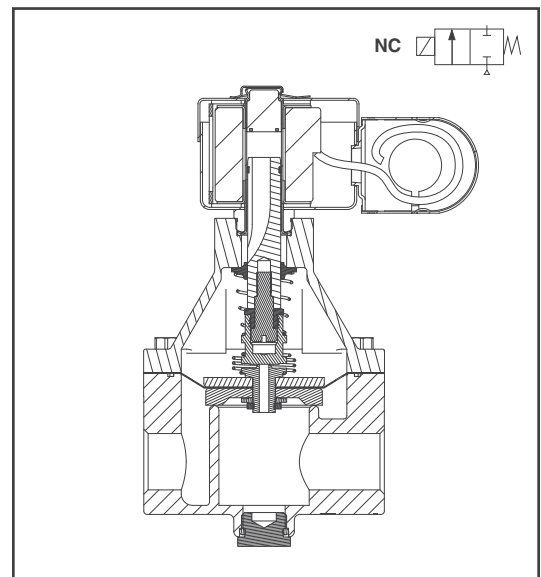
| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| N | 20 | 43 | 240 | -20 to 175 | 222345 | - |

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/8" thru 3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|------|---------------------------------------|-----------|---------------------|----------------|---------------|----|-------------|--------|-----|----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 120V 60 Hz | 240V 60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/8 | 3/4 | 5.3 | 217,000 | 0 | 30 | 77 | S261SG01N3CG5 | S261SG02N3CG5 | S261SG04N3CG5 | 1 | ○ | ○ | ○ | 20 | 3.0 | |
| 1/2 | 3/4 | 6.2 | 322,000 | 0 | 30 | 77 | S261SG01N3DG5 | S261SG02N3DG5 | S261SG04N3DG5 | 1 | ○ | ○ | ○ | 20 | 3.2 | |
| 3/4 | 3/4 | 8 | 370,000 | 0 | 30 | 77 | S261SG01N3EG5 | S261SG02N3EG5 | S261SG04N3EG5 | 1 | ○ | ○ | ○ | 20 | 3.3 | |
| 1 | 1 1/2 | 18 | 1,120,000 | 0 | 25 | 77 | S261SG01N3FJ5 | S261SG02N3FJ5 | S261SG04N3FJ5 | 2 | ○ | - | ○ | 20 | 4.4 | |
| 1 1/4 | 2 | 34 | 1,710,000 | 0 | 25 | 77 | S261SG01N3GJ7 | S261SG02N3GJ7 | S261SG04N3GJ7 | 3 | ○ | - | ○ | 20 | 4.4 | |
| 1 1/2 | 2 | 37 | 1,790,000 | 0 | 25 | 77 | S261SG01N3HJ7 | S261SG02N3HJ7 | S261SG04N3HJ7 | 3 | ○ | - | ○ | 20 | 12.5 | |
| 2 | 4 1/2 | 80 | 4,180,000 | 0 | 25 | 77 | S261SG01N3JK4 | S261SG02N3JK4 | S261SG04N3JK4 | 4 | ○ | - | ○ | 20 | 12.5 | |
| 2 1/2 | 4 1/2 | 110 | 5,700,000 | 0 | 25 | 77 | S261SG01N3KK4 | S261SG02N3KK4 | S261SG04N3KK4 | 5 | ○ | - | ○ | 20 | 14.2 | |
| 3 | 4 1/2 | 135 | 7,100,000 | 0 | 25 | 77 | S261SG01N3LK4 | S261SG02N3LK4 | S261SG04N3LK4 | 5 | ○ | - | ○ | 20 | 14.2 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|------|---------------------------------------|-----------|---------------------|----------------|---------------|----|-------------|--------|-----|----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 120V 60 Hz | 240V 60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/8 | 19 | 4.5 | 217,000 | 0 | 2.1 | 25 | S261SG01N3CG5 | S261SG02N3CG5 | S261SG04N3CG5 | 1 | ○ | ○ | ○ | 20 | 1.4 | |
| 1/2 | 19 | 5.3 | 322,000 | 0 | 2.1 | 25 | S261SG01N3DG5 | S261SG02N3DG5 | S261SG04N3DG5 | 1 | ○ | ○ | ○ | 20 | 1.5 | |
| 3/4 | 19 | 6.8 | 370,000 | 0 | 2.1 | 25 | S261SG01N3EG5 | S261SG02N3EG5 | S261SG04N3EG5 | 1 | ○ | ○ | ○ | 20 | 1.5 | |
| 1 | 38 | 15.3 | 1,120,000 | 0 | 1.7 | 25 | S261SG01N3FJ5 | S261SG02N3FJ5 | S261SG04N3FJ5 | 2 | ○ | - | ○ | 20 | 2.0 | |
| 1 1/4 | 51 | 28.9 | 1,710,000 | 0 | 1.7 | 25 | S261SG01N3GJ7 | S261SG02N3GJ7 | S261SG04N3GJ7 | 3 | ○ | - | ○ | 20 | 2.0 | |
| 1 1/2 | 51 | 31.5 | 1,790,000 | 0 | 1.7 | 25 | S261SG01N3HJ7 | S261SG02N3HJ7 | S261SG04N3HJ7 | 3 | ○ | - | ○ | 20 | 5.7 | |
| 2 | 114 | 68.0 | 4,180,000 | 0 | 1.7 | 25 | S261SG01N3JK4 | S261SG02N3JK4 | S261SG04N3JK4 | 4 | ○ | - | ○ | 20 | 5.7 | |
| 2 1/2 | 114 | 93.5 | 5,700,000 | 0 | 1.7 | 25 | S261SG01N3KK4 | S261SG02N3KK4 | S261SG04N3KK4 | 5 | ○ | - | ○ | 20 | 6.5 | |
| 3 | 114 | 114.5 | 7,100,000 | 0 | 1.7 | 25 | S261SG01N3LK4 | S261SG02N3LK4 | S261SG04N3LK4 | 5 | ○ | - | ○ | 20 | 6.5 | |

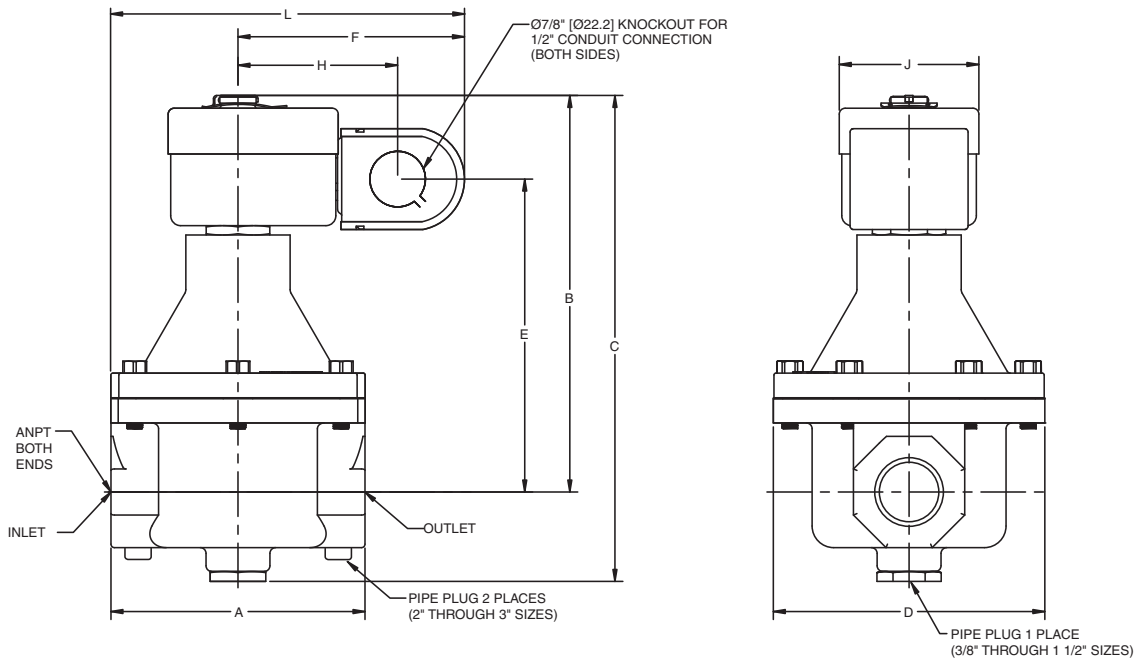
○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

COMBUSTION

Dimensions inches (mm)

| Const. Ref. | | A | B | C | D | E | F | H | J | L |
|-------------|------|------|------|-------|------|------|------|------|------|------|
| 1 | ins. | 2.75 | 5.48 | 6.54 | 2.31 | 4.07 | 3.53 | 2.50 | 2.19 | 4.90 |
| | mm | 70 | 139 | 166 | 59 | 103 | 90 | 64 | 56 | 124 |
| 2 | ins. | 4.00 | 6.35 | 7.60 | 4.27 | 4.94 | 3.53 | 2.50 | 2.19 | 5.53 |
| | mm | 102 | 161 | 193 | 108 | 125 | 90 | 64 | 56 | 140 |
| 3 | ins. | 4.76 | 6.73 | 8.35 | 4.77 | 5.32 | 3.53 | 2.50 | 2.19 | 5.91 |
| | mm | 121 | 171 | 212 | 121 | 135 | 90 | 64 | 56 | 150 |
| 4 | ins. | 8.12 | 7.20 | 9.57 | 7.69 | 5.85 | 3.53 | 2.50 | 2.19 | 7.59 |
| | mm | 206 | 183 | 243 | 195 | 149 | 90 | 64 | 56 | 193 |
| 5 | ins. | 9.00 | 8.06 | 10.62 | 7.69 | 6.65 | 3.53 | 2.50 | 2.19 | 8.03 |
| | mm | 229 | 205 | 270 | 195 | 169 | 90 | 64 | 56 | 204 |

Const. Ref. 1 - 5



Must be mounted with solenoid upright or horizontal on 3/8" to 1 1/2" pipe sizes.
For 2" to 3", must be mounted with solenoid vertical only.

Features

- 2-way normally open operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with pipe tap(s) with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Washer | 302 Stainless Steel |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Core Guide | CA |
| Springs | 302F Stainless Steel |
| Shading Coil | Copper |
| Body Gasket | Cork |
| Sleeve and Pin | 416 Stainless Steel |
| Pipe Plug | Zinc-Plated Steel |

Electrical

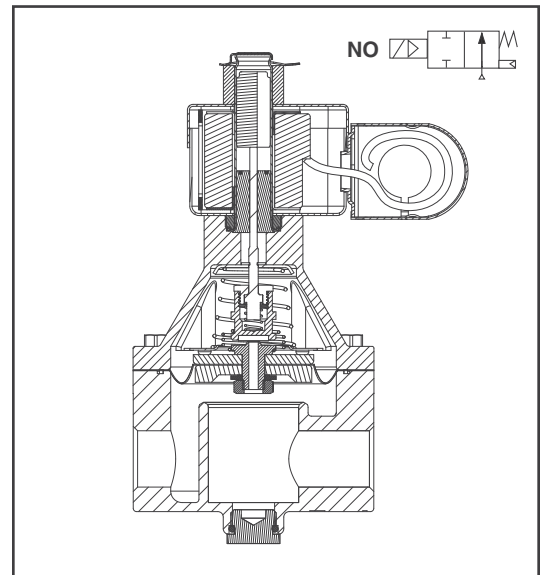
| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| N | 20 | 43 | 240 | -20 to 175 | 222345 | - |

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|---------------|---------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | 24V 60 Hz | 120V 60 Hz | 240V 60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | | | |
| 3/8 | 3/4 | 5.3 | 217,000 | 0 | 30 | 77 | S262SG01N3CG5 | S262SG02N3CG5 | S262SG04N3CG5 | 1 | ● | - | ● | 20 | 3.0 |
| 1/2 | 3/4 | 6.2 | 322,000 | 0 | 30 | 77 | S262SG01N3DG5 | S262SG02N3DG5 | S262SG04N3DG5 | 1 | ● | - | ● | 20 | 3.2 |
| 3/4 | 3/4 | 8 | 370,000 | 0 | 30 | 77 | S262SG01N3EG5 | S262SG02N3EG5 | S262SG04N3EG5 | 1 | ● | - | ● | 20 | 3.3 |
| 1 | 1 1/2 | 18 | 1,120,000 | 0 | 25 | 77 | S262SG01N3FJ5 | S262SG02N3FJ5 | S262SG04N3FJ5 | 2 | ● | - | ● | 20 | 4.4 |
| 1 1/4 | 2 | 34 | 1,710,000 | 0 | 25 | 77 | S262SG01N3GJ7 | S262SG02N3GJ7 | S262SG04N3GJ7 | 3 | ● | - | ● | 20 | 4.4 |
| 1 1/2 | 2 | 37 | 1,790,000 | 0 | 25 | 77 | S262SG01N3HJ7 | S262SG02N3HJ7 | S262SG04N3HJ7 | 3 | ● | - | ● | 20 | 12.5 |
| 2 | 4 1/2 | 75 | 3,840,000 | 0 | 15 | 77 | S262SG01N3JK4 | S262SG02N3JK4 | S262SG04N3JK4 | 4 | ● | - | ● | 20 | 12.5 |
| 2 1/2 | 4 1/2 | 90 | 4,750,000 | 0 | 15 | 77 | S262SG01N3KK4 | S262SG02N3KK4 | S262SG04N3KK4 | 5 | ● | - | ● | 20 | 14.2 |
| 3 | 4 1/2 | 110 | 5,440,000 | 0 | 15 | 77 | S262SG01N3LK4 | S262SG02N3LK4 | S262SG04N3LK4 | 5 | ● | - | ● | 20 | 14.2 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|---------------|---------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | 24V 60 Hz | 120V 60 Hz | 240V 60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY OPEN | | | | | | | | | | | | | | | |
| 3/8 | 19 | 4.5 | 217,000 | 0 | 2.1 | 25 | S262SG01N3CG5 | S262SG02N3CG5 | S262SG04N3CG5 | 1 | ● | - | ● | 20 | 1.4 |
| 1/2 | 19 | 5.3 | 322,000 | 0 | 2.1 | 25 | S262SG01N3DG5 | S262SG02N3DG5 | S262SG04N3DG5 | 1 | ● | - | ● | 20 | 1.5 |
| 3/4 | 19 | 6.8 | 370,000 | 0 | 2.1 | 25 | S262SG01N3EG5 | S262SG02N3EG5 | S262SG04N3EG5 | 1 | ● | - | ● | 20 | 1.5 |
| 1 | 38 | 15.3 | 1,120,000 | 0 | 1.7 | 25 | S262SG01N3FJ5 | S262SG02N3FJ5 | S262SG04N3FJ5 | 2 | ● | - | ● | 20 | 2.0 |
| 1 1/4 | 51 | 28.9 | 1,710,000 | 0 | 1.7 | 25 | S262SG01N3GJ7 | S262SG02N3GJ7 | S262SG04N3GJ7 | 3 | ● | - | ● | 20 | 2.0 |
| 1 1/2 | 51 | 31.5 | 1,790,000 | 0 | 1.7 | 25 | S262SG01N3HJ7 | S262SG02N3HJ7 | S262SG04N3HJ7 | 3 | ● | - | ● | 20 | 5.7 |
| 2 | 114 | 63.8 | 3,840,000 | 0 | 1.0 | 25 | S262SG01N3JK4 | S262SG02N3JK4 | S262SG04N3JK4 | 4 | ● | - | ● | 20 | 5.7 |
| 2 1/2 | 114 | 76.5 | 4,750,000 | 0 | 1.0 | 25 | S262SG01N3KK4 | S262SG02N3KK4 | S262SG04N3KK4 | 5 | ● | - | ● | 20 | 6.5 |
| 3 | 114 | 93.5 | 5,440,000 | 0 | 1.0 | 25 | S262SG01N3LK4 | S262SG02N3LK4 | S262SG04N3LK4 | 5 | ● | - | ● | 20 | 6.5 |

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

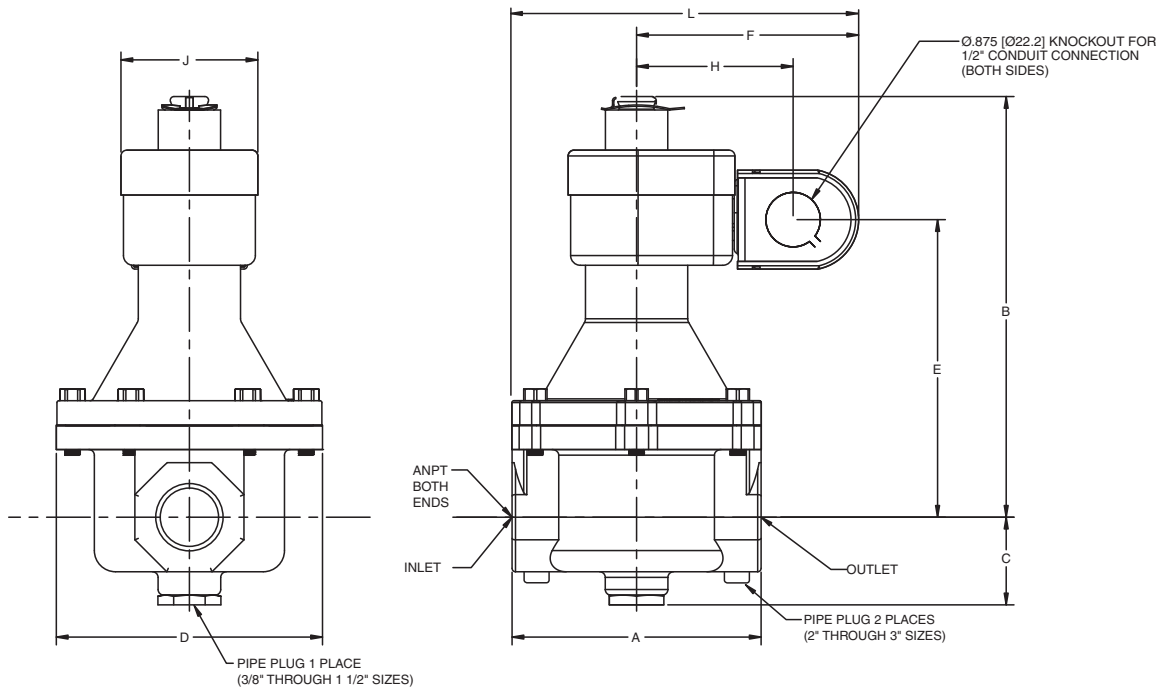
COMBUSTION

Dimensions inches (mm)

| Const. Ref. | | A | B | C | D | E | F | H | J | L |
|-------------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | 2.75 | 5.48 | 1.06 | 2.31 | 3.90 | 3.53 | 2.50 | 2.19 | 4.90 |
| | mm | 70 | 138 | 27 | 59 | 99 | 90 | 64 | 56 | 124 |
| 2 | ins. | 4.00 | 6.33 | 1.41 | 4.27 | 4.78 | 3.53 | 2.50 | 2.19 | 5.53 |
| | mm | 102 | 161 | 36 | 108 | 121 | 90 | 64 | 56 | 140 |
| 3 | ins. | 4.76 | 6.70 | 1.79 | 4.77 | 5.15 | 3.53 | 2.50 | 2.19 | 5.91 |
| | mm | 121 | 170 | 45 | 121 | 131 | 90 | 64 | 56 | 150 |
| 4 | ins. | 8.12 | 7.23 | 2.16 | 7.69 | 5.68 | 3.53 | 2.50 | 2.19 | 7.59 |
| | mm | 206 | 184 | 55 | 195 | 144 | 90 | 64 | 56 | 193 |
| 5 | ins. | 9.00 | 8.04 | 2.27 | 7.69 | 6.49 | 3.53 | 2.50 | 2.19 | 8.03 |
| | mm | 229 | 204 | 58 | 195 | 165 | 90 | 64 | 56 | 204 |

| Vent Valve Requirements | |
|-------------------------|------------|
| Manifold Line | Vent Valve |
| 3/8" through 1 1/2" | 3/4 |
| 2" | 1 |
| 2 1/2" through 3" | 1 1/4 |
| 3 1/2" | 1 1/2 |
| 4" through 5" | 2 |
| 5 1/2" through 6" | 2 1/2 |
| 6 1/2" through 7 1/2" | 3 |

Const. Ref. 1 - 5



Must be mounted with solenoid upright or horizontal (3/8" through 1 1/2").
Must be mounted with solenoid vertical and upright (2" through 3").

Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Direct lift with resilient soft seating for tight shutoff
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 17-7PH |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | DC |
| | F | 6.1 | 16 | | 40 | -40 to 175 |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

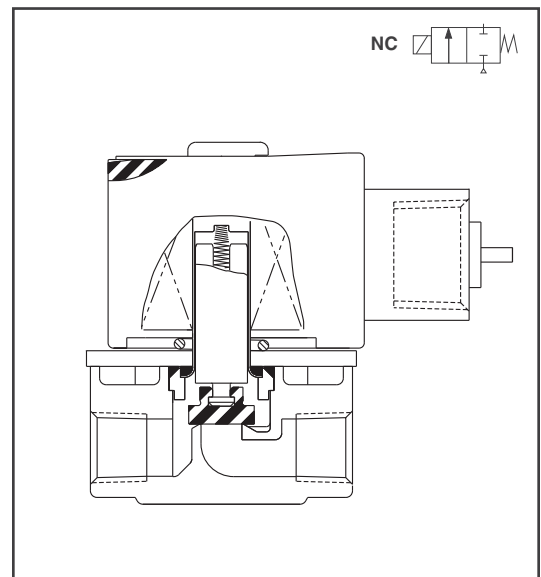
Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second

Options

Extended lead length (Suffix "K");

Provides 72" lead length vs. 18" lead length (EX: SV311A02N6AF5K).



Approvals

UL listed to standard 429 "Electrically Operated Valves."

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage ② | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------------|-------------------|-------------|--------|----|-----|-----------|-------------------------------|
| | | | | Min. | Max. | | 24V 60 Hz | 110-120V 50-60 Hz | 220-240V 50-60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 1/8 | 5/16 | 1.0 | 53,700 | 0 | 15 | 125 | SV311A01N6AF5 | SV311A02N6AF5 | SV311A04N6AF5 | 1 | ○ | ○ | ○ | 6.1 | 1.8 |
| 1/4 | 5/16 | 1.1 | 59,000 | 0 | 15 | 125 | SV311A01N6BF5 | SV311A02N6BF5 | SV311A04N6BF5 | 1 | ○ | ○ | ○ | 6.1 | 1.8 |
| 3/8 | 5/16 | 1.2 | 64,000 | 0 | 15 | 125 | SV311A01N6CF5 | SV311A02N6CF5 | SV311A04N6CF5 | 1 | ○ | ○ | ○ | 6.1 | 1.8 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas; ② On 50 Hz service watt rating is 8.1.

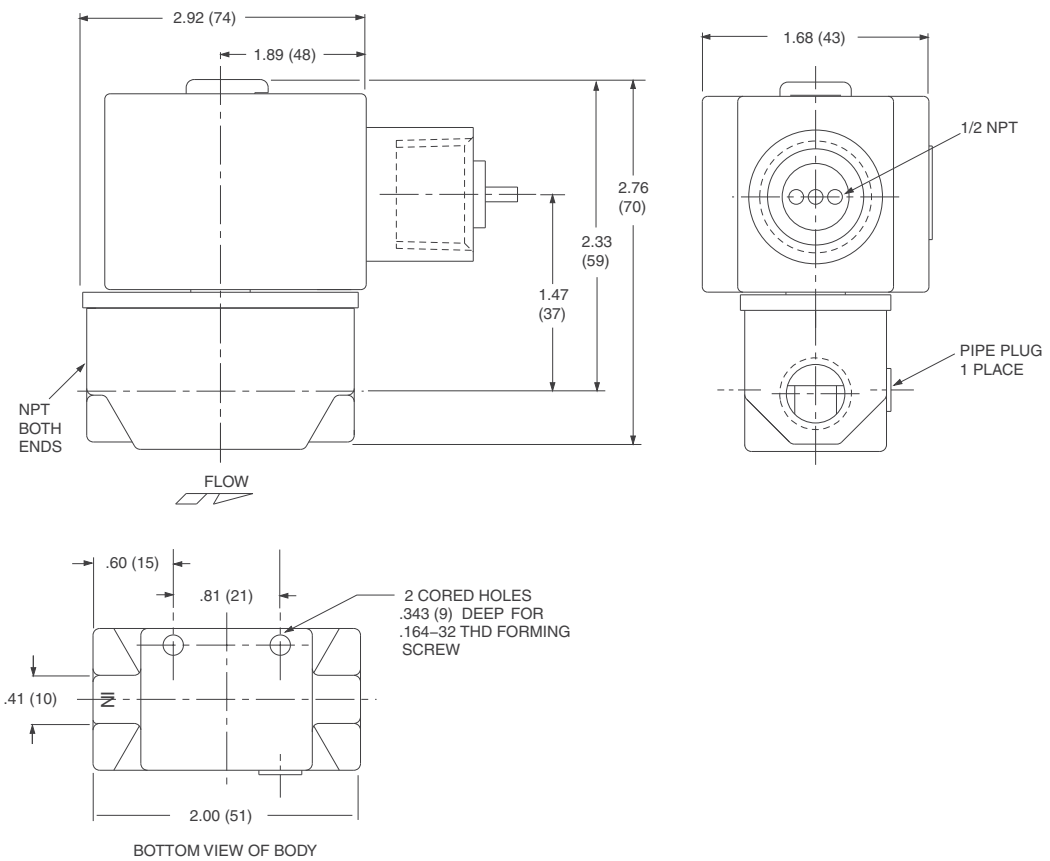
Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage ② | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------------|-------------------|-------------|--------|----|-----|-----------|-------------------------------|
| | | | | Min. | Max. | | 24V 60 Hz | 110-120V 50-60 Hz | 220-240V 50-60 Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | |
| 1/8 | 8 | 0.9 | 53,700 | 0 | 1 | 52 | SV311A01N6AF5 | SV311A02N6AF5 | SV311A04N6AF5 | 1 | ○ | ○ | ○ | 6.1 | 0.8 |
| 1/4 | 8 | 0.9 | 59,000 | 0 | 1 | 52 | SV311A01N6BF5 | SV311A02N6BF5 | SV311A04N6BF5 | 1 | ○ | ○ | ○ | 6.1 | 0.8 |
| 3/8 | 8 | 1.0 | 64,000 | 0 | 1 | 52 | SV311A01N6CF5 | SV311A02N6CF5 | SV311A04N6CF5 | 1 | ○ | ○ | ○ | 6.1 | 0.8 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas; ② On 50 Hz service watt rating is 8.1.

Dimensions inches (mm)

Const. Ref. 1



Mountable in any position.

COMBUSTION

Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F
- Visual position indicator option for 3/8" and 1/2" sizes

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Rider Ring | PTFE |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | DC |
| F | 10.1 | 25 | 70 | -40 to 175 | 238610 | 238614 |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X, with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second

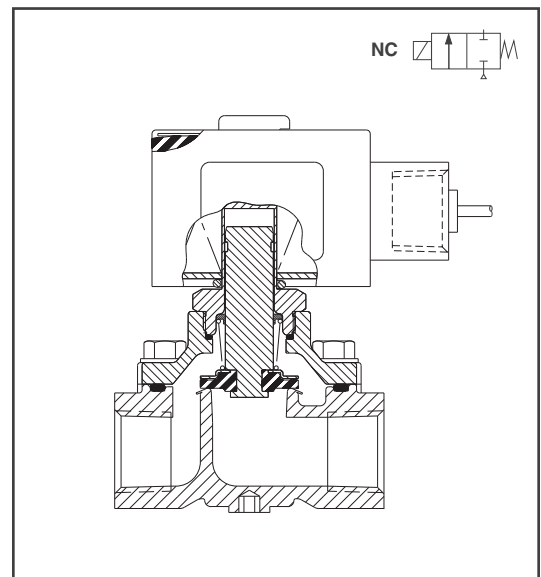
Options

Visual Indicator (Suffix "V"):

Provides visual indication of the valve's open and shut position. Meets NFPA requirements. Available on 3/8" and 1/2" sizes.

Extended lead length (Suffix "K"):

Provides 72" lead length vs. 18" lead length (EX: SV311A02N6CG5K).



Approvals

UL listed to standard 429 "Electrically Operated Valves."

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① | | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|----------------|------|---------------------------------------|-----------|---------------------|-------------------|-------------------|----|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 110-120V 50-60 Hz | 220-240V 50-60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/8 | 3/4 | 3.9 | 210,000 | 0 | 2 | 125 | SV311A01N6CG5 | SV311A02N6CG5 | SV311A04N6CG5 | 1 | ○ | ○ | ○ | 10.1 | 2.8 | |
| 1/2 | 3/4 | 5.4 | 291,000 | 0 | 2 | 125 | SV311A01N6DG5 | SV311A02N6DG5 | SV311A04N6DG5 | 1 | ○ | ○ | ○ | 10.1 | 2.8 | |
| 3/4 | 3/4 | 9.5 | 512,000 | 0 | 2 | 125 | SV311A01N6EG5 | SV311A02N6EG5 | SV311A04N6EG5 | 2 | ○ | ○ | ○ | 10.1 | 2.8 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

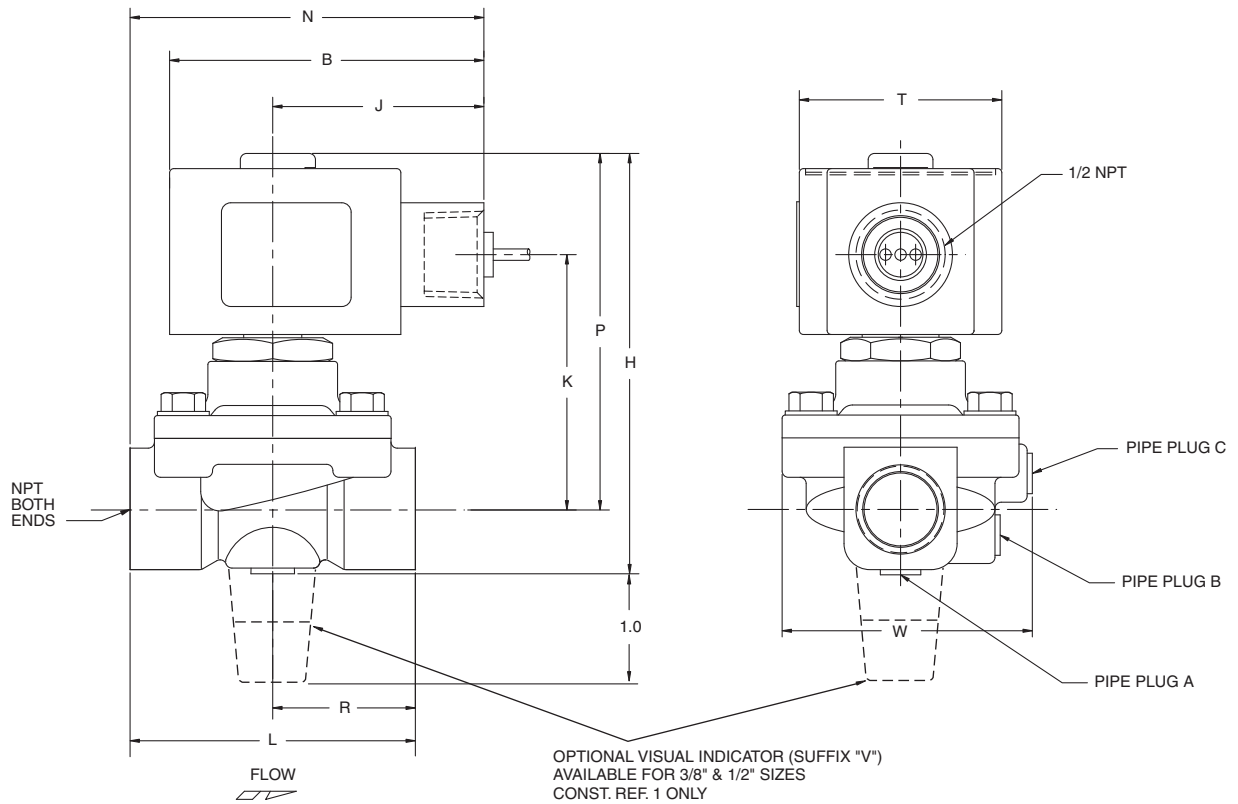
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|------|---------------------------------------|-----------|---------------------|-------------------|-------------------|----|-------------|--------|-----|------|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | 24V 60 Hz | | 110-120V 50-60 Hz | 220-240V 50-60 Hz | UL | | FM | CSA | | | |
| COMBUSTION (Fuel Gas) - NORMALLY CLOSED | | | | | | | | | | | | | | | | |
| 3/8 | 19 | 3.3 | 210,000 | 0 | 0.1 | 52 | SV311A01N6CG5 | SV311A02N6CG5 | SV311A04N6CG5 | 1 | ○ | ○ | ○ | 10.1 | 1.3 | |
| 1/2 | 19 | 4.6 | 291,000 | 0 | 0.1 | 52 | SV311A01N6DG5 | SV311A02N6DG5 | SV311A04N6DG5 | 1 | ○ | ○ | ○ | 10.1 | 1.3 | |
| 3/4 | 19 | 8.1 | 512,000 | 0 | 0.1 | 52 | SV311A01N6EG5 | SV311A02N6EG5 | SV311A04N6EG5 | 2 | ○ | ○ | ○ | 10.1 | 1.3 | |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

| Const. Ref. | | B | H | J | K | L | N | P | R | T | W | Pipe Plug |
|-------------|------|------|------|------|-------|------|------|------|------|------|------|-----------|
| 1 | ins. | 3.03 | 4.05 | 2.04 | 2.346 | 2.75 | 3.31 | 3.44 | 1.37 | 1.37 | 2.42 | B & C |
| | mm | 77 | 103 | 52 | 60 | 70 | 84 | 87 | 35 | 35 | 61 | |
| 2 | ins. | 3.03 | 4.49 | 2.04 | 2.65 | 3.31 | 3.70 | 3.63 | 1.65 | 1.65 | 2.39 | A & C |
| | mm | 77 | 114 | 52 | 67 | 84 | 94 | 92 | 42 | 42 | 61 | |

Const. Ref. 1, 2



Mountable in any position.

Features

- 2-way normally closed operation
- For control of commercial and industrial oil burners
- Brass body construction
- Mountable in any position
- Direct lift with resilient soft sealing for tight shutoff

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|--------------------------------|
| Body | Brass |
| Core Tube/ Bonnet | Stainless Steel / Plated Steel |
| Core and Plugnut | Stainless Steel |
| Springs | Stainless Steel |
| Seals and Disc | NBR / FKM |
| Shading Coil | Copper |

Fluid

No. 2 Fuel Oil at 60 SSU
 No. 4 Fuel Oil at 300 SSU

Electrical

| Prefix | Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Ambient Temp. °F | Spare Coil Family | |
|--------|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------|-------------------|--------|
| | | DC Watts | AC | | | | AC | DC |
| | | | Watts | VA Holding | VA Inrush | | | |
| U | F | 6.9 | 6.3 | 8.8 | 12.1 | -22 to 140 | 400115 | 400115 |
| SC | F | 6.9 | 6.3 | 8.8 | 12.1 | -22 to 140 | 400125 | 400125 |

Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

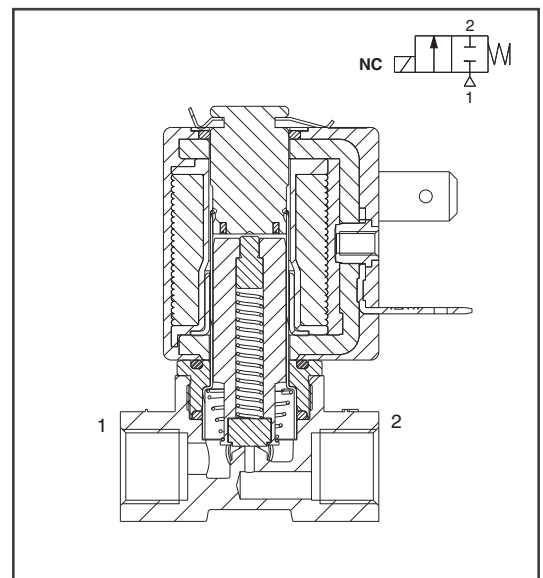
Solenoid Enclosures

Standard: Open frame (Prefix U) 18" leads

Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

Kits

1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs. of each: threaded hub, gasket and attaching screw.)
 DIN connector kit for SC coils 226061-001-*
 (Kit contains 10 pcs of each: connector, gasket, and attaching screw.)



COMBUSTION

Approvals

UL recognized component to standard 429 "Electrically Operated Valves," Guide Y10Z2, File MP618 Safety Shutoff Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 235078.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | | | Min. Fluid Temp. °F | Max. Fluid Temp. °F | | Brass | Wattage | | Approx. Shipping Weight (lbs.) | |
|--|---------------------|----------------|---------------------------------------|------------------------|-----------------------|------------------------|---------------------|---------------------|-----|-------|------------|-----|--------------------------------|-----|
| | | | Max. AC | | Max. DC | | | AC | DC | | AC | DC | | |
| | | | #2 Fuel Oil at 60 SSU | #4 Fuel Oil at 300 SSU | #2 Fuel Oil at 60 SSU | #4 Fuel Oil at 300 SSU | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | |
| 1/8 | 3/64 | 0.06 | 0 | 500 | 500 | 330 | 330 | 5 | 180 | 180 | U8256A089V | 6.3 | 6.9 | 0.5 |
| 1/8 | 1/16 | 0.09 | 0 | 430 | 430 | 250 | 250 | 5 | 180 | 180 | U8256A090V | 6.3 | 6.9 | 0.5 |

Specifications (Metric units)

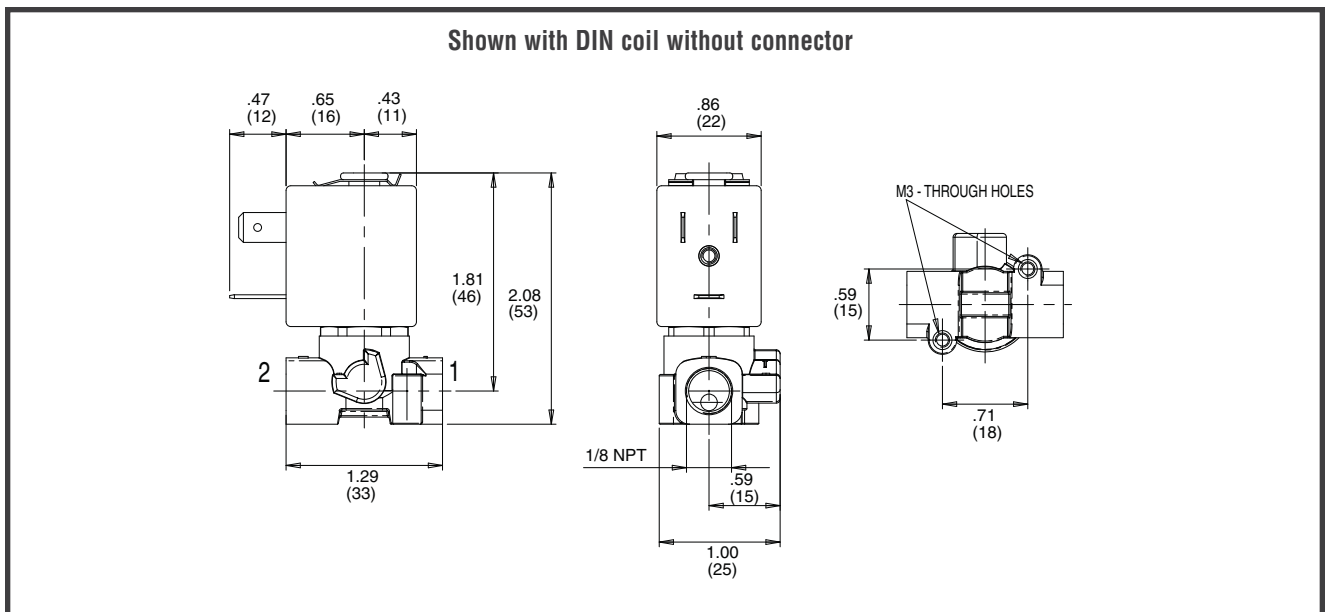
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m³/hr) | Operating Pressure Differential (bar) | | | | Min. Fluid Temp. °C | Max. Fluid Temp. °C | | Brass | Wattage | | Approx. Shipping Weight (kgs.) | |
|--|-------------------|------------------------|---------------------------------------|------------------------|-----------------------|------------------------|---------------------|---------------------|----|-------|------------|-----|--------------------------------|------|
| | | | Max. AC | | Max. DC | | | AC | DC | | AC | DC | | |
| | | | #2 Fuel Oil at 60 SSU | #4 Fuel Oil at 300 SSU | #2 Fuel Oil at 60 SSU | #4 Fuel Oil at 300 SSU | | | | | | | | |
| General Service - Normally Closed | | | | | | | | | | | | | | |
| 1/8 | 1.2 | 0.05 | 0 | 34 | 34 | 22 | 22 | -15 | 82 | 82 | U8256A089V | 6.3 | 6.9 | 0.22 |
| 1/8 | 1.6 | 0.08 | 0 | 29 | 29 | 17 | 17 | -15 | 82 | 82 | U8256A090V | 6.3 | 6.9 | 0.22 |

Capabilities Chart

| Solenoid Options ① | | | | | | | Base Catalog Number | Resilient Materials | | | | | | | Other | Standard Rebuild Kit | | |
|--------------------|----------------|---------------------------|----------|-----|-------|-----------------------|---------------------|---------------------|-----|------|------|----------------|------|----------|--------|----------------------|------------------|-------------|
| NEMA Type 3-9 | High Temp. DIN | Wiring Box Screw Terminal | Multipin | DIN | Spade | Open Frame with Leads | Brass | NBR | FKM | EPDM | RUBY | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass AC/DC |
| - | - | - | - | SC | - | ● | | U8256A089V | - | ● | - | - | - | - | - | - | - | |
| - | - | - | - | SC | - | ● | U8256A090V | - | ● | - | - | - | - | - | - | - | - | - |

● = Standard. ① Replace U prefix with SC prefix.

Dimensions: inches (mm)



Features

- 2-way normally closed operation
- For control of commercial and industrial oil burners
- Direct lift with resilient soft seating for tight shutoff
- Brass body construction
- Mountable in any position

Fluid

No. 2 Fuel Oil at 60 SSU
 No. 4 Fuel Oil at 300 SSU

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | FKM |
| Core Tube | 305 Stainless Steel |
| Core Guide | Acetal |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 6.1 | 16 | 30 | 32 to 125 | 238210 | 238214 |
| F | 9.1 | 25 | 40 | 32 to 125 | 238210 | 238214 |
| F | 10.1 | 25 | 50 | 32 to 125 | 238610 | 238614 |
| F | 17.1 | 40 | 70 | 32 to 125 | 238610 | 238614 |

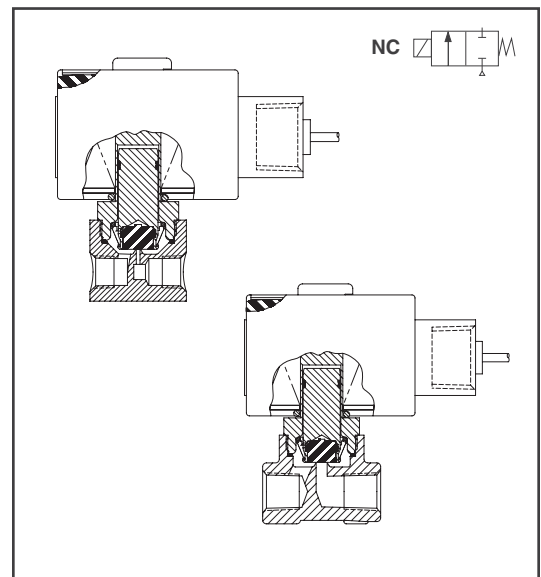
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; Closing Time: Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves." Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves," & "Oil Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Minimum Operating Pressure Differential (psi) | Maximum Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---|---|------------------------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | #2 Fuel Oil at 60 SSU | #6 Fuel Oil at 300 SSU | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Oil) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 1/8 | 3/64 | 0.06 | 0 | 750 | 530 | 180 | 8262G001V | 1 | ○ | ○ | ○ | 6.1 | 2.3 |
| 1/8 | 3/32 | 0.20 | 0 | 360 | 300 | 180 | 8262G011V | 1 | ○ | ○ | ○ | 9.1 | 2.3 |
| 1/8 | 1/8 | 0.34 | 0 | 190 | 140 | 180 | 8262G002V | 1 | ○ | ○ | ○ | 6.1 | 2.3 |
| 1/4 | 3/32 | 0.17 | 0 | 450 | 280 | 180 | 8262G021V | 2 | ○ | ○ | ○ | 9.1 | 2.4 |
| 1/4 | 1/8 | 0.35 | 0 | 205 | 160 | 180 | 8262G023V | 2 | ○ | ○ | ○ | 10.1 | 2.4 |
| 1/4 | 7/32 | 0.85 | 0 | 100 | 100 | 200 | 8262G208V | 3 | ○ | ○ | ○ | 9.1 | 2.4 |
| 3/8 | 1/8 | 0.35 | 0 | 200 | 150 | 180 | 8263G003V | 4 | ○ | ○ | ○ | 10.1 | 2.5 |
| 3/8 | 7/32 | 0.72 | 0 | 100 | 100 | 200 | 8263G206V | 5 | ○ | ○ | ○ | 17.1 | 2.5 |

○ = Safety Shutoff Valve.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Minimum Operating Pressure Differential (bar) | Maximum Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---|---|------------------------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | #2 Fuel Oil at 60 SSU | #6 Fuel Oil at 300 SSU | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Oil) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 1/8 | 1 | 0.1 | 0 | 51.7 | 36.6 | 82 | 8262G001V | 1 | ○ | ○ | ○ | 6.1 | 1.0 |
| 1/8 | 2 | 0.2 | 0 | 24.8 | 20.7 | 82 | 8262G011V | 1 | ○ | ○ | ○ | 9.1 | 1.0 |
| 1/8 | 3 | 0.3 | 0 | 13.1 | 9.7 | 82 | 8262G002V | 1 | ○ | ○ | ○ | 6.1 | 1.0 |
| 1/4 | 2 | 0.1 | 0 | 31.0 | 19.3 | 82 | 8262G021V | 2 | ○ | ○ | ○ | 9.1 | 1.1 |
| 1/4 | 3 | 0.3 | 0 | 14.1 | 11.0 | 82 | 8262G023V | 2 | ○ | ○ | ○ | 10.1 | 1.1 |
| 1/4 | 6 | 0.7 | 0 | 6.9 | 6.9 | 93 | 8262G208V | 3 | ○ | ○ | ○ | 9.1 | 1.1 |
| 3/8 | 3 | 0.3 | 0 | 13.8 | 10.3 | 82 | 8263G003V | 4 | ○ | ○ | ○ | 10.1 | 1.1 |
| 3/8 | 6 | 0.6 | 0 | 6.9 | 6.9 | 93 | 8263G206V | 5 | ○ | ○ | ○ | 17.1 | 1.1 |

○ = Safety Shutoff Valve.

Capabilities Chart

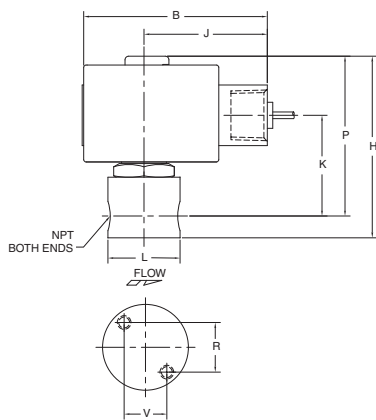
| COMBUSTION | Solenoid Options | | | Base Catalog Number | Resilient Materials | Standard Rebuild Kit |
|------------|------------------|------------|---------------------------|---------------------|---------------------|----------------------|
| | NEMA Type 3-9 | High Temp. | Wiring Box Screw Terminal | Brass | FKM | AC |
| | EF | HT | JKF | 8262G001V | ● | 302006-V |
| EF | HB | JKP | 8262G011V | ● | 302014-V | |
| EF | HT | JKF | 8262G002V | ● | 302014-V | |
| EF | HB | JKP | 8262G021V | ● | 302018-V | |
| EF | HB | JKP | 8262G023V | ● | 302018-V | |
| EF | HT | JKF | 8262G208V | ● | 304354-V | |
| EF | HB | JKP | 8263G003V | ● | 302018-V | |
| EF | HB | JKP | 8263G206V | ● | 302001-V | |

● = Standard. Other options may be available. All option combinations may not be available.

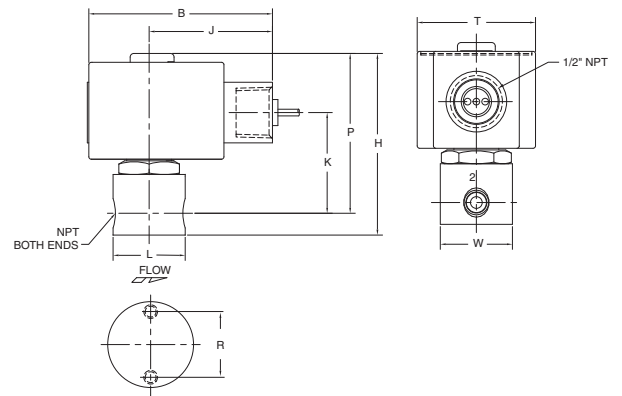
Dimensions inches (mm)

| Const. Ref. | 1 | | 2 | | 3 | | 4 | | 5 | |
|-------------|------|----|------|----|------|----|------|----|------|----|
| | ins. | mm | ins. | mm | ins. | mm | ins. | mm | ins. | mm |
| B | 2.76 | 70 | 2.76 | 70 | 3.03 | 77 | 2.76 | 70 | 3.03 | 77 |
| H | 2.52 | 64 | 3.01 | 76 | 3.16 | 80 | 3.07 | 78 | 3.25 | 83 |
| J | 1.89 | 48 | 1.89 | 48 | 2.04 | 52 | 1.89 | 48 | 2.04 | 52 |
| K | 1.30 | 33 | 1.73 | 44 | 1.78 | 45 | 1.63 | 41 | 1.70 | 43 |
| L | 1.18 | 30 | 1.25 | 32 | 1.56 | 40 | 1.88 | 48 | 1.88 | 48 |
| P | 2.16 | 55 | 2.59 | 66 | 2.75 | 70 | 2.49 | 63 | 2.67 | 68 |
| R | 0.69 | 18 | 0.67 | 17 | 0.88 | 22 | 0.81 | 21 | 0.81 | 21 |
| T | 1.69 | 43 | 1.69 | 43 | 1.95 | 50 | 1.69 | 43 | 1.95 | 50 |
| V | 0.59 | 15 | - | - | 0.88 | 22 | 0.75 | 19 | 0.75 | 19 |
| W | 1.88 | 48 | 1.25 | 32 | 1.19 | 30 | 1.15 | 29 | 1.15 | 29 |

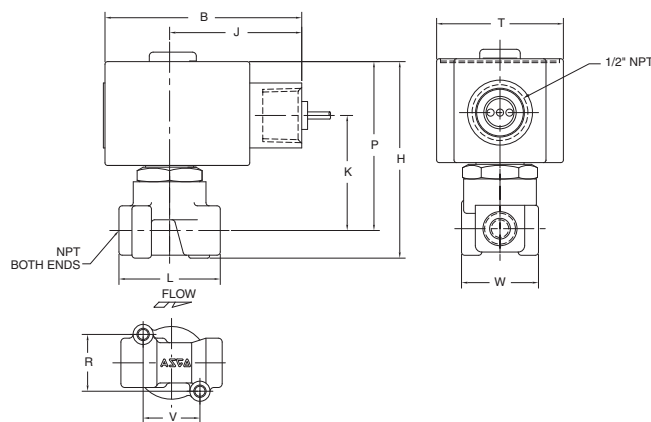
Const. Ref. 1



Const. Ref. 2



Const. Ref. 3, 4, 5



COMBUSTION

Features

- General Purpose Enclosure
- 2-way normally closed or normally open operation
- Zero differential lever actuated
- For on-off control of fuel oil in commercial and industrial oil burners
- Suitable for light and heavy fuel oils

Fluid

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------------|
| Body | Brass |
| Seals and Disc | FKM (Suffix V), SS (Suffix L) |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Spare Coil Family | | |
|---------------------------------------|-----------------------------------|------------|-----------|-------------------|------------------|------------------|
| | AC | | | General Purpose | | |
| | Watts | VA Holding | VA Inrush | 24/60 | 120/60 110/50 | 240/60 220/50 |
| F | 15.4 | 27 | 160 | 099257 | 099257 | 099257 |
| F | 20 | 43 | 240 | 099257 | 099257 | 099257 |

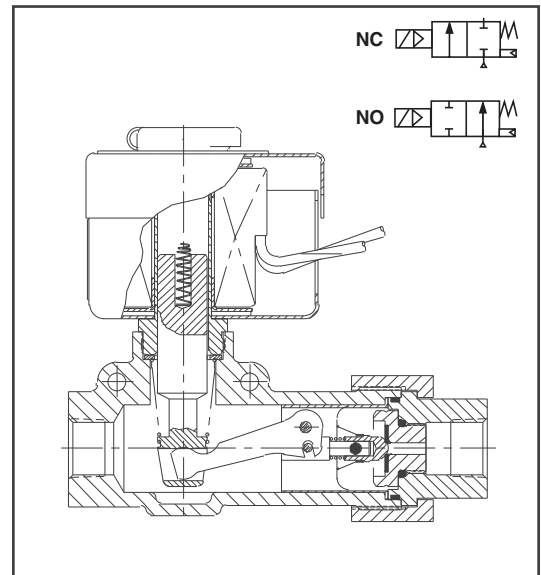
Standard lead length 18" (72" leads optional - change suffix "D" to "K").

Solenoid Enclosures

- Standard:** RedHat Type 1 General Purpose.
- Optional:** RedHat Type 3R Rainproof (prefix "R").

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

(Normally Closed Valves)

- UL listed Shutoff Valves.
- FM Approved Oil Safety Shutoff Valves
- CSA Safety Valves

(Normally Open Valves)

- UL listed General Purpose Valves.
- CSA Electrically Operated Valves

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Minimum Operating Pressure Differential (psi) | Maximum Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | | Const. Ref. | Agency | | | Wattage |
|---|---------------------|----------------|---|---|------------------------------------|---------------------|----------------|-------------------------|-------------|--------|----|-----|---------|
| | | | | #2 Fuel Oil at 60 SSU, #4 Fuel Oil @ 300 SSU | #5 or Heated #6 Oil up to 5000 SSU | | FKM Seating | Stainless Steel Seating | | UL | FM | CSA | |
| COMBUSTION (Fuel Oil) - Normally Closed without Bypass | | | | | | | | | | | | | |
| 3/8 | 1/8 | 0.34 | 0 | 400 | 350 | See Table Below | 8266D001V | 8266D001L | 1 | ○ | ○ | ○ | 15.4/F |
| 3/8 | 3/16 | 0.68 | 0 | 200 | 175 | | 8266D007V | 8266D007L | 1 | ○ | ○ | ○ | 15.4/F |
| 3/8 | 3/16 | 0.68 | 0 | 300 | 250 | | 8266D011V | 8266D011L | 1 | ○ | ○ | ○ | 15.4/F |
| 3/8 | 1/4 | 1.20 | 0 | 110 | 100 | | 8266D023V | 8266D023L | 1 | ○ | ○ | ○ | 15.4/F |
| 1/2 | 1/8 | 0.34 | 0 | 400 | 350 | | 8266D047V | 8266D047L | 1 | ○ | ○ | ○ | 15.4/F |
| 1/2 | 3/16 | 0.68 | 0 | 200 | 175 | | 8266D053V | 8266D053L | 1 | ○ | ○ | ○ | 15.4/F |
| 1/2 | 3/16 | 0.68 | 0 | 300 | 250 | | 8266D057V | 8266D057L | 1 | ○ | ○ | ○ | 20/F |
| 1/2 | 13/64 | 0.78 | 0 | 170 | 140 | | 8266D061V | 8266D061L | 1 | ○ | ○ | ○ | 15.4/F |
| 1/2 | 1/4 | 1.20 | 0 | 110 | 100 | | 8266D069V | 8266D069L | 1 | ○ | ○ | ○ | 15.4/F |
| 1/2 | 5/16 | 1.80 | 0 | 70 | 70 | | 8266D077V | 8266D077L | 1 | ○ | ○ | ○ | 15.4/F |
| 1/2 | 3/8 | 2.50 | 0 | 40 | 35 | | 8266D085V | 8266D085L | 1 | ○ | ○ | ○ | 15.4/F |
| COMBUSTION (Fuel Oil) - Normally Closed with 1/2" NPT Bypass | | | | | | | | | | | | | |
| 1/2 | 1/8 | 0.34 | 0 | 650 | 600 | See Table Below | 8266C203V | 8266C203L | 1 | ○ | ○ | ○ | 20/F |
| 1/2 | 1/4 | 1.20 | 0 | 180 | 160 | | 8266C215V | 8266C215L | 1 | ○ | ○ | ○ | 20/F |
| 1/2 | 5/16 | 1.80 | 0 | 110 | 100 | | 8266C219V | 8266C219L | 1 | ○ | ○ | ○ | 20/F |
| 1/2 | 3/8 | 2.50 | 0 | 75 | 70 | | 8266C223V | 8266C223L | 1 | ○ | ○ | ○ | 20/F |
| 3/4 | 1/4 | 1.20 | 0 | 180 | 160 | | 8266C239V | 8266C239L | 1 | ○ | ○ | ○ | 20/F |
| 3/4 | 5/16 | 1.80 | 0 | 110 | 100 | | 8266C243V | 8266C243L | 1 | ○ | ○ | ○ | 20/F |
| 3/4 | 3/8 | 2.50 | 0 | 75 | 70 | | 8266C247V | 8266C247L | 1 | ○ | ○ | ○ | 20/F |
| COMBUSTION (Fuel Oil) - Normally Open without Bypass | | | | | | | | | | | | | |
| 3/8 | 1/8 | 0.34 | 0 | 425 | 400 | See Table Below | 8266D101V | 8266D101L | 1 | ○ | - | ○ | 15.4/F |
| 3/8 | 3/16 | 0.68 | 0 | 160 | 150 | | 8266D107V | 8266D107L | 1 | ○ | - | ○ | 15.4/F |
| 3/8 | 1/4 | 1.20 | 0 | 90 | 75 | | 8266D123V | 8266D123L | 1 | ○ | - | ○ | 15.4/F |
| 1/2 | 3/16 | 0.68 | 0 | 160 | 150 | | 8266D153V | 8266D153L | 1 | ○ | - | ○ | 15.4/F |
| 1/2 | 13/64 | 0.78 | 0 | 130 | 125 | | 8266D161V | 8266D161L | 1 | ○ | - | ○ | 15.4/F |
| 1/2 | 1/4 | 1.20 | 0 | 90 | 75 | | 8266D169V | 8266D169L | 1 | ○ | - | ○ | 15.4/F |

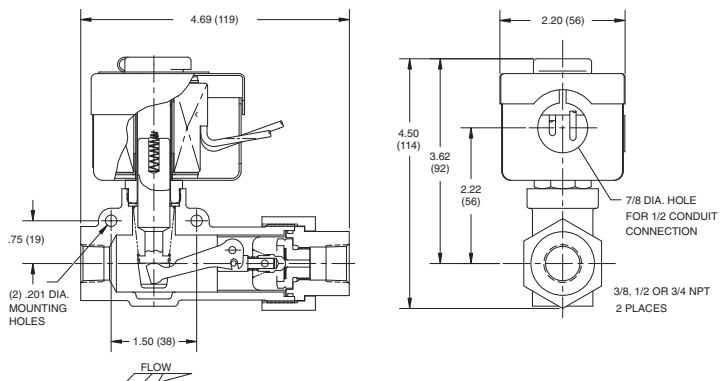
○ = Safety Shutoff Valve.

Dimensions inches (mm)

COMBUSTION

| Coil | Watt Rating | Class of Coil Insulation | Fluid Temp. °F | Ambient Temp. °F | Catalog No. Prefix |
|---|-------------|--------------------------|----------------|------------------|--------------------|
| Standard | 15.4 | F | 250 | 95 | None Required |
| | | F | 225 | 104 | |
| | 20 | F | 225 | 77 | |
| | | F | 200 | 95 | |
| For Higher Fluid and/or Ambient Temp. Use | 15.4 | H | 250 | 122 | HT |
| | 20 | H | 250 | 122 | HB |

Const. Ref. 1



Must be mounted with solenoid vertical and upright.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Minimum Operating Pressure Differential (bar) | Maximum Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | | Const. Ref. | Agency | | | Wattage | |
|---|-------------------|-----------------|---|---|------------------------------------|---------------------|-----------------|-------------------------|-------------|--------|----|-----|---------|------|
| | | | | #2 Fuel Oil at 60 SSU, #4 Fuel Oil @ 300 SSU | #5 or Heated #6 Oil up to 5000 SSU | | FKM Seating | Stainless Steel Seating | | UL | FM | CSA | | |
| COMBUSTION (Fuel Oil) - Normally Closed without Bypass | | | | | | | | | | | | | | |
| 3/8 | 3 | 0.3 | 0 | 27.6 | 24.1 | See Table Below | 8266D001V | 8266D001L | 1 | ○ | ○ | ○ | 15.4/F | |
| 3/8 | 5 | 0.6 | 0 | 13.8 | 12.1 | | 8266D007V | 8266D007L | 1 | ○ | ○ | ○ | 15.4/F | |
| 3/8 | 5 | 0.6 | 0 | 20.7 | 17.2 | | 8266D011V | 8266D011L | 1 | ○ | ○ | ○ | 15.4/F | |
| 3/8 | 6 | 1.0 | 0 | 7.6 | 6.9 | | 8266D023V | 8266D023L | 1 | ○ | ○ | ○ | 15.4/F | |
| 1/2 | 3 | 0.3 | 0 | 27.6 | 24.1 | | 8266D047V | 8266D047L | 1 | ○ | ○ | ○ | 15.4/F | |
| 1/2 | 5 | 0.6 | 0 | 13.8 | 12.1 | | 8266D053V | 8266D053L | 1 | ○ | ○ | ○ | 15.4/F | |
| 1/2 | 5 | 0.6 | 0 | 20.7 | 17.2 | | 8266D057V | 8266D057L | 1 | ○ | ○ | ○ | 20/F | |
| 1/2 | 5 | 0.7 | 0 | 11.7 | 9.7 | | 8266D061V | 8266D061L | 1 | ○ | ○ | ○ | 15.4/F | |
| 1/2 | 6 | 1.0 | 0 | 7.6 | 6.9 | | 8266D069V | 8266D069L | 1 | ○ | ○ | ○ | 15.4/F | |
| 1/2 | 8 | 1.5 | 0 | 4.8 | 4.8 | | 8266D077V | 8266D077L | 1 | ○ | ○ | ○ | 15.4/F | |
| 1/2 | 10 | 2.1 | 0 | 2.8 | 2.4 | | 8266D085V | 8266D085L | 1 | ○ | ○ | ○ | 15.4/F | |
| COMBUSTION (Fuel Oil) - Normally Closed with 1/2" NPT Bypass | | | | | | | | | | | | | | |
| 1/2 | 3 | 0.3 | 0 | 44.8 | 41.4 | | See Table Below | 8266C203V | 8266C203L | 1 | ○ | ○ | ○ | 20/F |
| 1/2 | 6 | 1.0 | 0 | 12.4 | 11.0 | | | 8266C215V | 8266C215L | 1 | ○ | ○ | ○ | 20/F |
| 1/2 | 8 | 1.5 | 0 | 7.6 | 6.9 | 8266C219V | | 8266C219L | 1 | ○ | ○ | ○ | 20/F | |
| 1/2 | 10 | 2.1 | 0 | 5.2 | 4.8 | 8266C223V | | 8266C223L | 1 | ○ | ○ | ○ | 20/F | |
| 3/4 | 6 | 1.0 | 0 | 12.4 | 11.0 | 8266C239V | | 8266C239L | 1 | ○ | ○ | ○ | 20/F | |
| 3/4 | 8 | 1.5 | 0 | 7.6 | 6.9 | 8266C243V | | 8266C243L | 1 | ○ | ○ | ○ | 20/F | |
| 3/4 | 10 | 2.1 | 0 | 5.2 | 4.8 | 8266C247V | | 8266C247L | 1 | ○ | ○ | ○ | 20/F | |
| COMBUSTION (Fuel Oil) - Normally Open without Bypass | | | | | | | | | | | | | | |
| 3/8 | 3 | 0.3 | 0 | 29.3 | 27.6 | See Table Below | 8266D101V | 8266D101L | 1 | ○ | - | ○ | 15.4/F | |
| 3/8 | 5 | 0.6 | 0 | 11.0 | 10.3 | | 8266D107V | 8266D107L | 1 | ○ | - | ○ | 15.4/F | |
| 3/8 | 6 | 1.0 | 0 | 6.2 | 5.2 | | 8266D123V | 8266D123L | 1 | ○ | - | ○ | 15.4/F | |
| 1/2 | 5 | 0.6 | 0 | 11.0 | 10.3 | | 8266D153V | 8266D153L | 1 | ○ | - | ○ | 15.4/F | |
| 1/2 | 5 | 0.7 | 0 | 9.0 | 8.6 | | 8266D161V | 8266D161L | 1 | ○ | - | ○ | 15.4/F | |
| 1/2 | 6 | 1.0 | 0 | 6.2 | 5.2 | | 8266D169V | 8266D169L | 1 | ○ | - | ○ | 15.4/F | |

○ = Safety Shutoff Valve.

| Coil | Watt Rating | Class of Coil Insulation | Fluid Temp. °F (°C) | Ambient Temp. °F (°C) | Catalog No. Prefix |
|---|-------------|--------------------------|---------------------|-----------------------|--------------------|
| Standard | 15.4 | F | 250 (121) | 95 (35) | None Required |
| | | F | 225 (107) | 104 (40) | |
| | 20 | F | 225 (107) | 77 (25) | |
| | | F | 200 (93) | 95 (35) | |
| For Higher Fluid and/or Ambient Temp. Use | 15.4 | H | 250 (121) | 122 (50) | HT |
| | 20 | H | 250 (121) | 122 (50) | HB |

General Description

The HOV1 is an underported, globe-type, fuel oil valve with a single, quick-opening, stem-guided seat. This 2-way normally closed, bronze safety shutoff valve features a spring-loaded stem which, upon power interruption, drives the teflon seat firmly closed within one second. The HOV1 is available with or without valve seal overtravel interlock (FM proof of closure).

The electrohydraulic actuator consists of a pump applying pressure to a diaphragm attached to the valve stem. Its power unit is immersed in oil and hermetically sealed. The HOV requires no adjustment or service. Stroke is controlled by a travel limit switch and electromagnetic relief valve. The unit rotates 360° for ease of installation. Two-wire connection via 1/2 inch threaded conduit terminal box is standard, and all units are equipped with an auxiliary switch and dust shields.

Specifications

Fluid: Fuel Oil

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Opening Time: 7-9 seconds

Closing Time: 1 second max.

Note: Opening time increased 20% with 50Hz.

Enclosure: Type 1 General Purpose

Ambient Temperature: -10°F to 125°F (-23°C to 52°C)

Fluid Temperature: 267° max.

Body/Trim: Bronze, 300# screw

Seal Material: PTFE

Port Size: 9/16"

Electrical

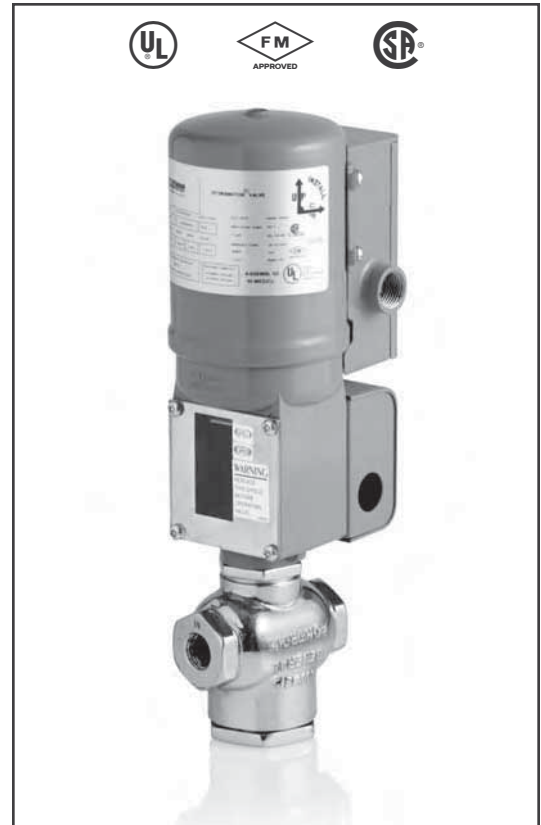
Power Requirement: 158 VA

Standard Voltage: 120V/60Hz

| Operating Voltage | Amperes | | |
|-------------------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 120V/60Hz | 12.5 | 1.25 | 0.09 |

Auxiliary Switch: One integral SPDT switch, 7.5A@120V, 3.75A@240V, (900VA max). Switch actuates at energized end of stroke (not adjustable).

Proof of Closure Switch: (Valve Seal Overtravel Interlock): Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

May be mounted with actuator upright or horizontal with switches uppermost.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Standard G22.2 No. 139 "Electrically Operated Valves, File 113070.

Specifications (English units)

| Pipe Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (lbs) |
|--|----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Oil) - Normally Closed | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | |
| 1/2 | 4 | 0 | 300 | 267 | HOV1A302T15 | 1 | ○ | ○ | ○ | 7-9 | 12 |
| 3/4 | 5 | 0 | 300 | 267 | HOV1A307T15 | 1 | ○ | ○ | ○ | 7-9 | 12 |
| 1 | 6 | 0 | 300 | 267 | HOV1A312T15 | 2 | ○ | ○ | ○ | 7-9 | 13 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | |
| 1/2 | 4 | 0 | 300 | 267 | HOV1A302T171 | 1 | ○ | ○ | ○ | 7-9 | 12 |
| 3/4 | 5 | 0 | 300 | 267 | HOV1A307T171 | 1 | ○ | ○ | ○ | 7-9 | 12 |
| 1 | 6 | 0 | 300 | 267 | HOV1A312T171 | 2 | ○ | ○ | ○ | 7-9 | 13 |

Specifications (Metric units)

| Pipe Size (ins.) | Kv Flow (m³/hr) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (kgs) |
|--|-----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Oil) - Normally Closed | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | |
| 1/2 | 3.4 | 0 | 20.7 | 131 | HOV1A302T15 | 1 | ○ | ○ | ○ | 7-9 | 5.5 |
| 3/4 | 4.3 | 0 | 20.7 | 131 | HOV1A307T15 | 1 | ○ | ○ | ○ | 7-9 | 5.5 |
| 1 | 5.1 | 0 | 20.7 | 131 | HOV1A312T15 | 2 | ○ | ○ | ○ | 7-9 | 5.9 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | |
| 1/2 | 3.4 | 0 | 20.7 | 131 | HOV1A302T171 | 1 | ○ | ○ | ○ | 7-9 | 5.5 |
| 3/4 | 4.3 | 0 | 20.7 | 131 | HOV1A307T171 | 1 | ○ | ○ | ○ | 7-9 | 5.5 |
| 1 | 5.1 | 0 | 20.7 | 131 | HOV1A312T171 | 2 | ○ | ○ | ○ | 7-9 | 5.9 |

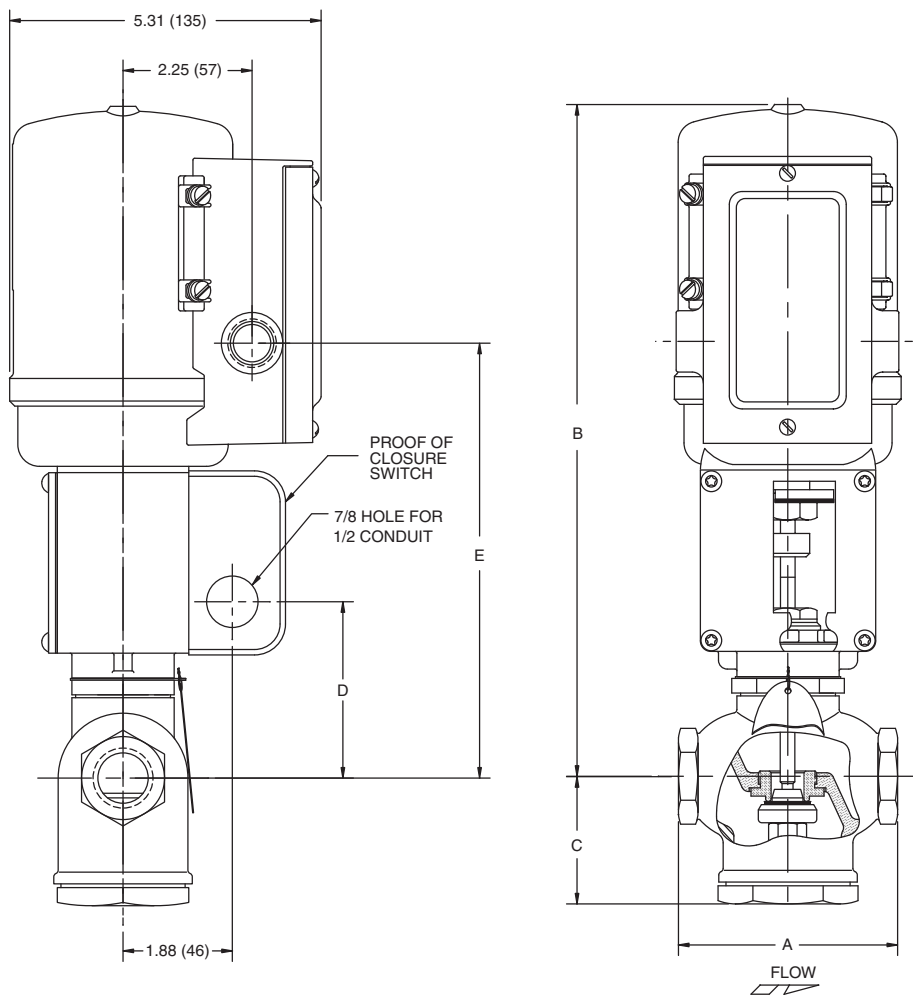
Dimensions inches (mm)

| Const. Ref. | | A | B | C | D | E |
|-------------|------|------|-------|------|------|------|
| 1 | ins. | 3.75 | 11.56 | 2.21 | 3.11 | 7.55 |
| | mm | 95 | 294 | 56 | 79 | 192 |
| 2 | ins. | 4.25 | 11.87 | 2.37 | 3.42 | 7.86 |
| | mm | 108 | 301 | 60 | 87 | 200 |

Replacement Actuators:

Standard
H01A252A15

Models with FM Proof of Closure Valve Seal Overtravel Switch
H01A252A171



Features

- 2-way normally closed operation
- Zero minimum
- For control of commercial and industrial oil burners
- Ideal for high pressure applications
- Brass body construction
- Mountable with solenoid upright and vertical

Fluid

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | FKM |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Piston | Brass |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|
| | AC | | | | General Purpose |
| | Watts | VA Holding | VA Inrush | | AC |
| H | 17.1 | 40 | 93 | 32 to 150 | 238810 |

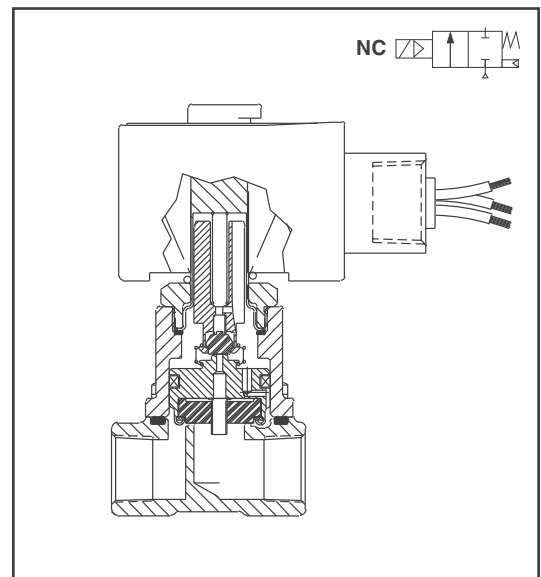
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed File MO-932 Safety Valves.

FM Approved "Oil Safety Shutoff Valves."

File JIOD9A5.AF

CSA Certified to:

1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

2) Safety Valves File LR702258.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow | Operating Pressure Differential (psi) | | Nominal Fluid Temp. °F | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|---------|---------------------------------------|------|------------------------|----------------|------------------|------------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | Min. | Max. | | 24V 60Hz | 110-120V 50-60Hz | 220-240V 50-60Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Oil) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 1/4 | 1/2 | 1.1 | 0 | 300 | 250 | SV401A01V9BF7 | SV401A02V9BF7 | SV401A04V9BF7 | 1 | ○ | ○ | ○ | 17.1 | 3.2 |
| 3/8 | 1/2 | 1.5 | 0 | 300 | 250 | SV401A01V9CF7 | SV401A02V9CF7 | SV401A04V9CF7 | 1 | ○ | ○ | ○ | 17.1 | 3.2 |

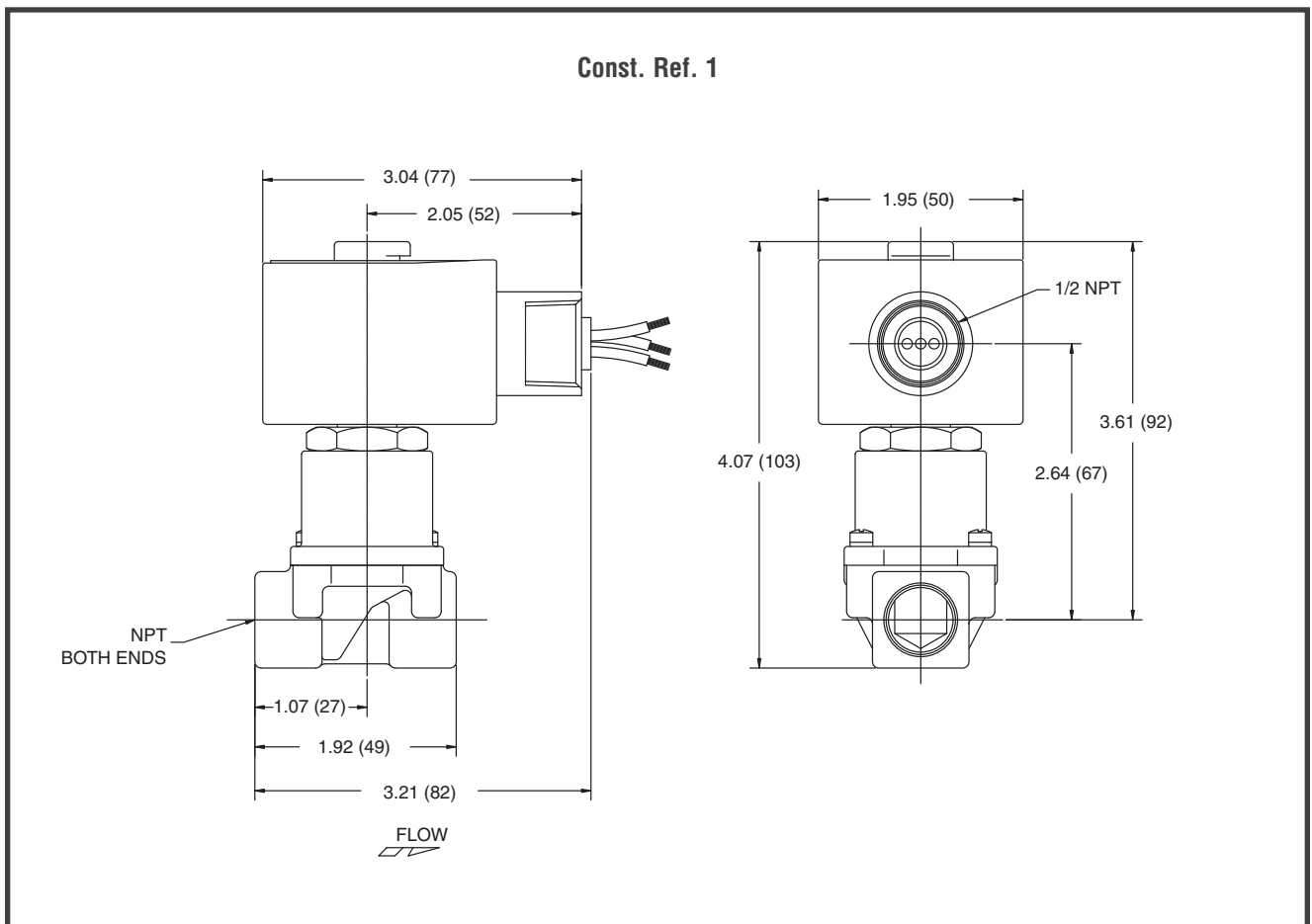
○ = Safety Shutoff Valve.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Operating Pressure Differential (bar) | | Nominal Fluid Temp. °C | Catalog Number | | | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------------------|------|------------------------|----------------|------------------|------------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | Min. | Max. | | 24V 60Hz | 110-120V 50-60Hz | 220-240V 50-60Hz | | UL | FM | CSA | | |
| COMBUSTION (Fuel Oil) - NORMALLY CLOSED | | | | | | | | | | | | | | |
| 1/4 | 13 | 0.9 | 0 | 20.7 | 121 | SV401A01V9BF7 | SV401A02V9BF7 | SV401A04V9BF7 | 1 | ○ | ○ | ○ | 17.1 | 1.5 |
| 3/8 | 13 | 1.3 | 0 | 20.7 | 121 | SV401A01V9CF7 | SV401A02V9CF7 | SV401A04V9CF7 | 1 | ○ | ○ | ○ | 17.1 | 1.5 |

○ = Safety Shutoff Valve.

Dimensions inches (mm)



COMBUSTION

Features

- General Purpose Enclosure
- 3-way operation allows diversion of flow from commercial/industrial oil burners to recirculatory system
- Zero differential

Fluid Handled

Fuel Oil up to 1500 SSU

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Brass |
| Seals and Disc | FKM |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|--|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 15.4 | 27 | 160 | 32 to 115 | 099257 | - |
| Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). | | | | | | |

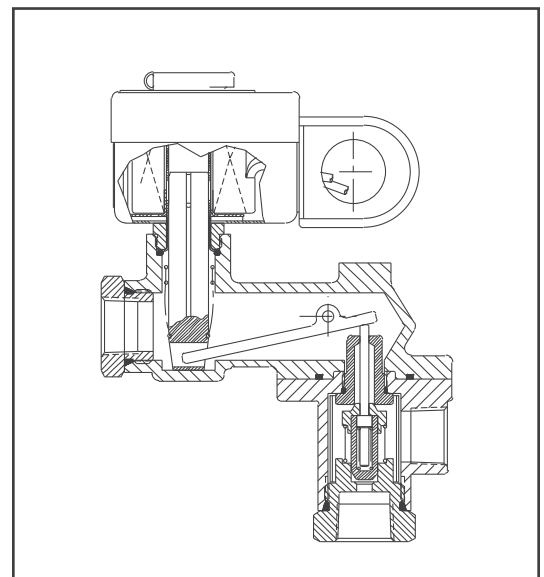
Solenoid Enclosures

Standard: RedHat Type 1 General Purpose.

Optional: RedHat Type 3R Rainproof (prefix "R").

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed Shutoff Valve.

FM Approved Oil Safety Shutoff Valves

CSA Electrically Operated Valves

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) Fuel Oil up to 1500 SSU ② | | Max. Fluid Temp. °F | | Inlet Position ① | Catalog Number | Const. Ref. | Agency | | | Wattage AC |
|--|---------------------|----------------|--|------|---------------------|---------|------------------|----------------|-------------|--------|----|-----|------------|
| | | | Min. | Max. | Fluid | Ambient | | | | UL | FM | CSA | |
| COMBUSTION (Fuel Oil) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/8 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | A | 8377 001 | 1 | ○ | ○ | ○ | 15.4 |
| 3/8 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | B | 8377 003 | 1 | ○ | ○ | ○ | 15.4 |
| 3/8 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | C | 8377 005 | 1 | ○ | ○ | ○ | 15.4 |
| 3/8 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | D | 8377 013 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | A | 8377 007 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | B | 8377 009 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | C | 8377 011 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 1/4 | 1.0 | 0 | 100 | 265 | 115 | D | 8377 015 | 1 | ○ | ○ | ○ | 15.4 |

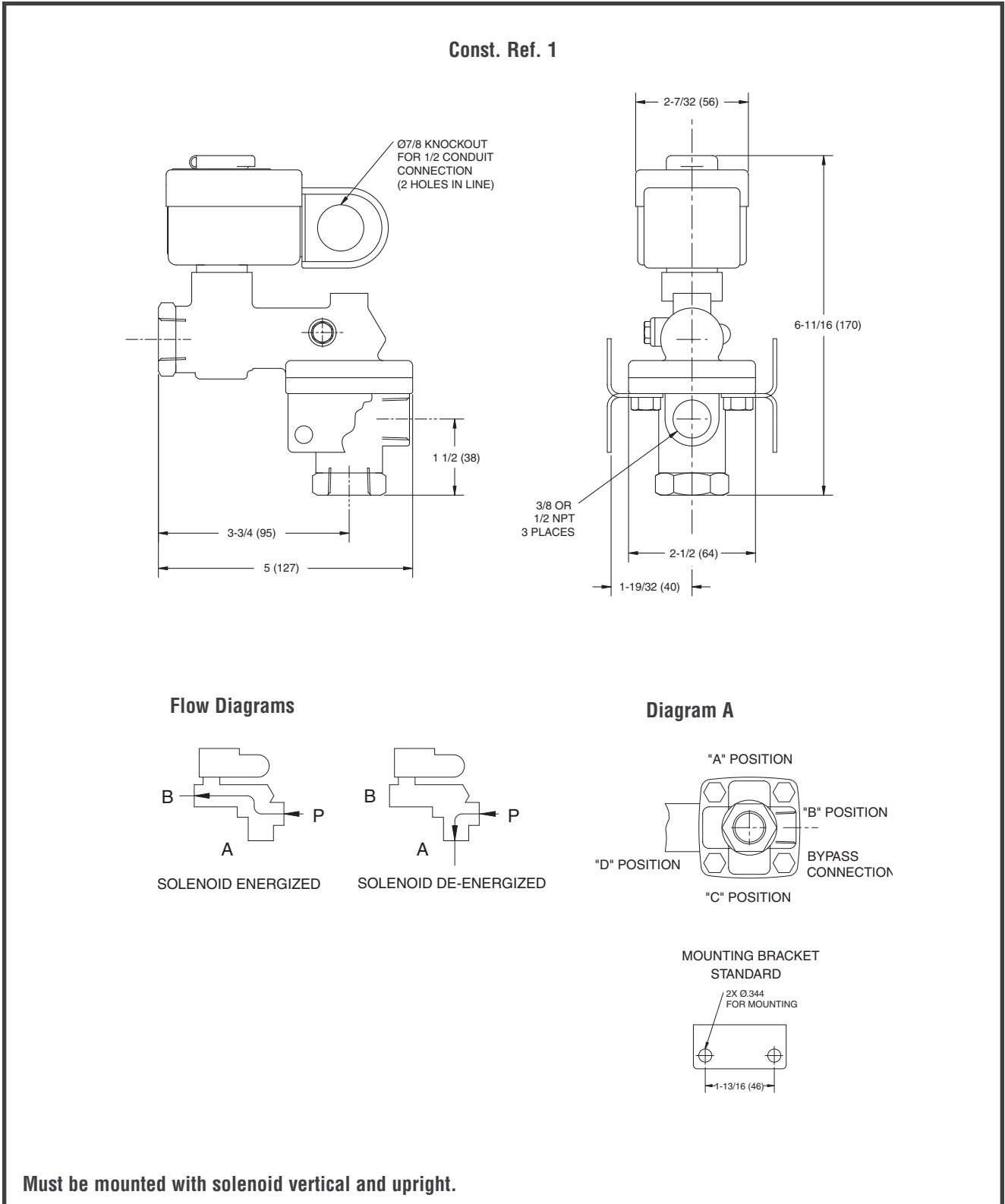
○ = Safety Shutoff Valve. ① Before ordering, refer to Diagram A below for description of inlet positions.
 ② Valve intended for burner control with low pressure drop when energized. For other applications, be sure pressure drop when energized does not exceed 65 psi.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Operating Pressure Differential (bar) Fuel Oil up to 1500 SSU ② | | Max. Fluid Temp. °C | | Inlet Position ① | Catalog Number | Const. Ref. | Agency | | | Wattage AC |
|--|-------------------|-----------------|--|------|---------------------|---------|------------------|----------------|-------------|--------|----|-----|------------|
| | | | Min. | Max. | Fluid | Ambient | | | | UL | FM | CSA | |
| COMBUSTION (Fuel Oil) - NORMALLY CLOSED | | | | | | | | | | | | | |
| 3/8 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | A | 8377 001 | 1 | ○ | ○ | ○ | 15.4 |
| 3/8 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | B | 8377 003 | 1 | ○ | ○ | ○ | 15.4 |
| 3/8 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | C | 8377 005 | 1 | ○ | ○ | ○ | 15.4 |
| 3/8 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | D | 8377 013 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | A | 8377 007 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | B | 8377 009 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | C | 8377 011 | 1 | ○ | ○ | ○ | 15.4 |
| 1/2 | 6 | 0.9 | 0 | 6.9 | 129 | 46 | D | 8377 015 | 1 | ○ | ○ | ○ | 15.4 |

○ = Safety Shutoff Valve. ① Before ordering, refer to Diagram A below for description of inlet positions.
 ② Valve intended for burner control with low pressure drop when energized. For other applications, be sure pressure drop when energized does not exceed 4.5 bar.

Dimensions inches (mm)



8377R1

General Description

The HOV13 is an underported, poppet-type, bronze-bodied safety valve, electrohydraulically operated to provide reliable ON-OFF control of fuel oil. The spring-loaded stem-guided teflon seat opens within seven seconds of power application and firmly closes within one second of power interruption.

The valve is agency approved for fuel oil safety shutoff service on the N.C. port. The N.O. port typically provides return to the oil preheater during the off cycle. The HOV13 is available with or without valve seal overtravel interlock (FM Proof of Closure). All valves are furnished with dust shields.

The electrohydraulic actuator consists of a pump applying pressure to a diaphragm attached to the valve stem. Its power unit is immersed in oil and hermetically sealed, requiring no adjustment or service. Stroke is controlled by a travel limit switch and electromagnetic relief valve. The unit rotates for ease of installation. Two-wire connection via 1/2" threaded conduit terminal box is standard, and all units are equipped with an auxiliary switch.

Specifications

Fluid: Fuel Oil

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Opening Time: 7-9 seconds

Closing Time: 1 second max.

Note: Opening time increased 20% with 50Hz.

Enclosure: Type 1 General Purpose

Ambient Temperature: -10°F to 125°F (-23°C to 52°C)

Fluid Temperature: 267° max.

Body/Trim: Bronze, 300# screw

Seal Material: PTFE

Port Size: 13/32"

Electrical

Power Requirement: 150 VA

Standard Voltage: 120V/60Hz

| Operating Voltage | Amperes | | |
|-------------------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 120V/60Hz | 12.5 | 1.25 | 0.09 |

Auxiliary Switch: One integral SPDT switch, 7.5A@120V, 3.75A@240V, (900VA max). Switch actuates at energized end of stroke (not adjustable).

Proof of Closure Switch: (Valve Seal Overtravel Interlock): Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

May be mounted with actuator upright or horizontal with switches uppermost.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Standard G22.2 No. 139 "Electrically Operated Valves", File 113070.

Specifications (English units)

| Pipe Size (ins.) | Cv Flow Factor | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (lbs) |
|--|----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | |
| 1/2 | 2.5 | 0 | 300 | 267 | HOV13A162T15 | 1 | ○ | ○ | ○ | 7-9 | 13 |
| 3/4 | 3 | 0 | 300 | 267 | HOV13A167T15 | 1 | ○ | ○ | ○ | 7-9 | 13 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | |
| 1/2 | 2.5 | 0 | 300 | 267 | HOV13A162T171 | 1 | ○ | ○ | ○ | 7-9 | 13 |
| 3/4 | 3 | 0 | 300 | 267 | HOV13A167T171 | 1 | ○ | ○ | ○ | 7-9 | 13 |

Specifications (Metric units)

| Pipe Size (ins.) | Kv Flow (m³/hr) | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Opening Time (Sec.) | Approx. Shipping Weight (kgs) |
|--|-----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------------------|-------------------------------|
| | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | |
| Standard Trim | | | | | | | | | | | |
| 1/2 | 2.1 | 0 | 20.7 | 131 | HOV13A162T15 | 1 | ○ | ○ | ○ | 7-9 | 5.9 |
| 3/4 | 2.6 | 0 | 20.7 | 131 | HOV13A167T171 | 1 | ○ | ○ | ○ | 7-9 | 5.9 |
| Valve Seal Overtravel Trim (Proof of Closure) | | | | | | | | | | | |
| 1/2 | 2.1 | 0 | 20.7 | 131 | HOV13A162T15 | 1 | ○ | ○ | ○ | 7-9 | 5.9 |
| 3/4 | 2.6 | 0 | 20.7 | 131 | HOV13A167T171 | 1 | ○ | ○ | ○ | 7-9 | 5.9 |

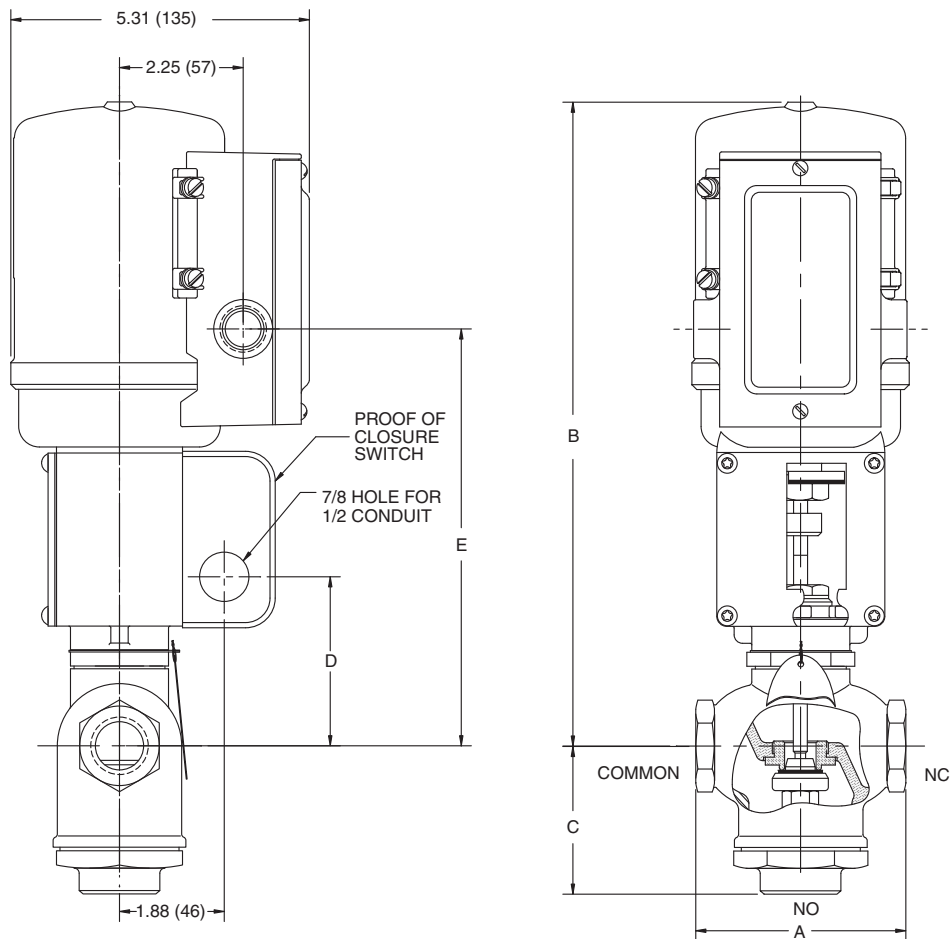
Dimensions inches (mm)

| Const. Ref. | | A | B | C | D | E |
|-------------|----|------|------|-------|------|------|
| | 1 | ins. | 3.75 | 11.56 | 3.00 | 3.11 |
| | mm | 95 | 294 | 76 | 79 | 192 |

Replacement Actuators:

Standard
H01A552A15

Models with FM Proof of Closure Valve Seal Overtravel Switch
H01A552A171



COMBUSTION

Features

- Free handle will not open valve until solenoid is energized
- Valve trips closed instantly when solenoid is de-energized
- Highly visible position indicator
- Aluminum body construction

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |
| Shading Coil | Copper |
| Pipe Plug | Zinc-Plated Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|---------------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 20 | 43 | 96 | -20 to 125 | 99257 | 99257 |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: RedHat metal Type 1 General Purpose enclosures with 7/8" conduit hole for 1/2" conduit connection.

Options

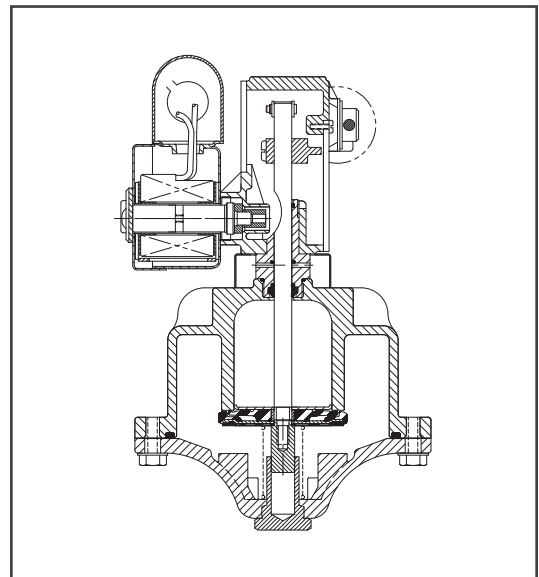
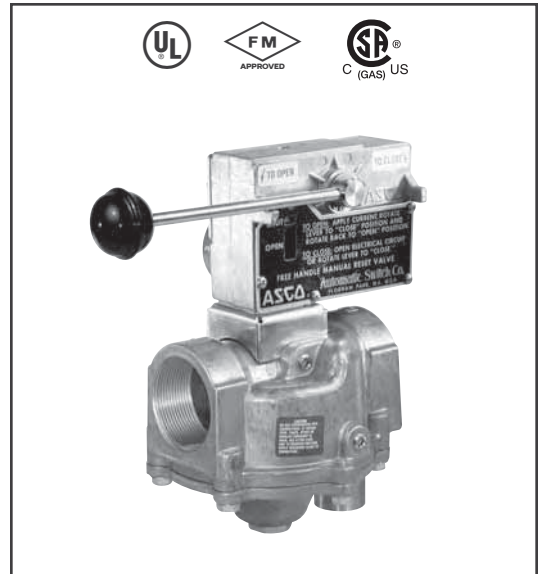
Electrical Position Indicator: Suffix "SW"

Indicator is furnished with two reed switches (1amp, 120V AC/DC, 15 watts max. resistive load).

One switch closes when the valve is in the "open" position and one switch closes when the valve is in the "closed" position.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Valves. FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves", File 010381.
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Gas Capacity ① Btu/hr. | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | |
| 3/4 | 1 5/8 | 13 | 717,000 | 0 | 25 | 125 | 8044B001 | 1 | ○ | ○ | ○ | 20 | 8.3 |
| 1 | 1 5/8 | 22 | 1,170,000 | 0 | 25 | 125 | 8044A002 | 2 | ○ | ○ | ○ | 20 | 8.3 |
| 1 1/4 | 1 5/8 | 30 | 1,580,000 | 0 | 25 | 125 | 8044A003 | 2 | ○ | ○ | ○ | 20 | 8.3 |
| 1 1/2 | 1 5/8 | 33 | 1,760,000 | 0 | 25 | 125 | 8044A004 | 3 | ○ | ○ | ○ | 20 | 8.3 |
| 2 | 2 3/32 | 55 | 2,960,000 | 0 | 20 | 125 | 8044A005 | 4 | ○ | ○ | ○ | 20 | 10.3 |
| 2 1/2 | 3 | 108 | 5,810,000 | 0 | 10 | 125 | 8044A006 | 5 | ○ | ○ | ○ | 20 | 17 |
| 3 | 3 | 135 | 7,260,000 | 0 | 10 | 125 | 8044A007 | 5 | ○ | ○ | ○ | 20 | 18 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① Btu/hr. | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|---------------------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | |
| 3/4 | 41 | 11.1 | 717,000 | 0 | 1.7 | 52 | 8044B001 | 1 | ○ | ○ | ○ | 20 | 3.8 |
| 1 | 41 | 18.7 | 1,170,000 | 0 | 1.7 | 52 | 8044A002 | 2 | ○ | ○ | ○ | 20 | 3.8 |
| 1 1/4 | 41 | 25.5 | 1,580,000 | 0 | 1.7 | 52 | 8044A003 | 2 | ○ | ○ | ○ | 20 | 3.8 |
| 1 1/2 | 41 | 28.1 | 1,760,000 | 0 | 1.7 | 52 | 8044A004 | 3 | ○ | ○ | ○ | 20 | 3.8 |
| 2 | 53 | 46.8 | 2,960,000 | 0 | 1.4 | 52 | 8044A005 | 4 | ○ | ○ | ○ | 20 | 4.7 |
| 2 1/2 | 76 | 91.8 | 5,810,000 | 0 | 0.7 | 52 | 8044A006 | 5 | ○ | ○ | ○ | 20 | 7.7 |
| 3 | 76 | 114.8 | 7,260,000 | 0 | 0.7 | 52 | 8044A007 | 5 | ○ | ○ | ○ | 20 | 8.2 |

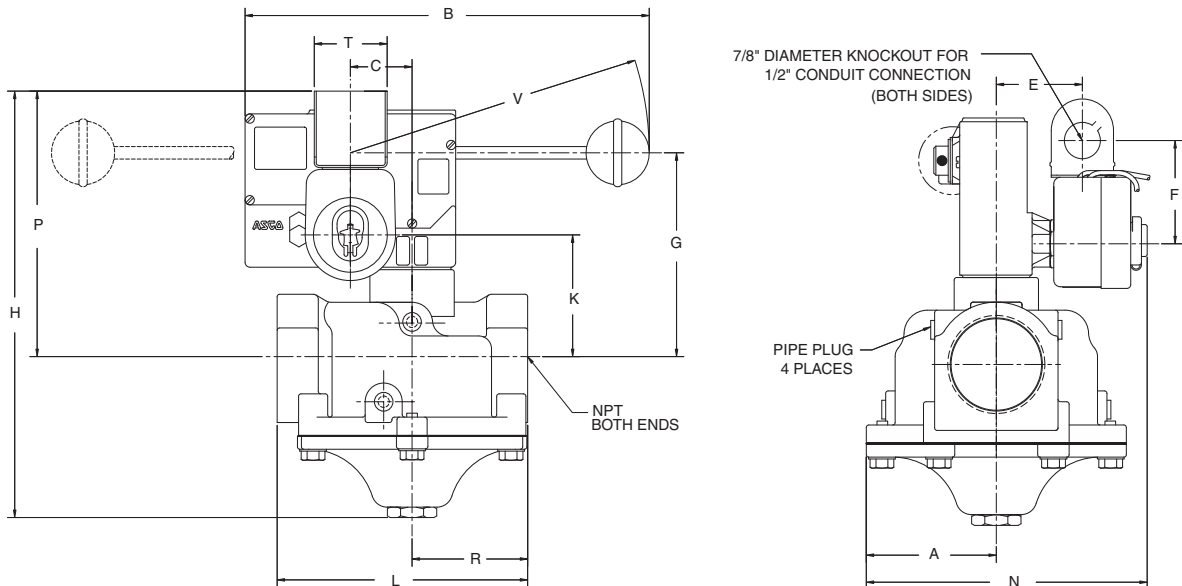
○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

| Const. Ref. | 1 | | 2 | | 3 | | 4 | | 5 | |
|---------------|------|-----|------|-----|------|-----|-------|-----|-------|-----|
| | ins. | mm | ins. | mm | ins. | mm | ins. | mm | ins. | mm |
| A | 2.28 | 58 | 2.69 | 68 | 2.69 | 68 | 3.16 | 80 | 4.12 | 105 |
| B | 9.88 | 251 | 9.88 | 251 | 9.88 | 251 | 9.88 | 251 | 9.88 | 251 |
| C | 1.50 | 38 | 1.50 | 38 | 1.50 | 38 | 1.50 | 38 | 1.50 | 38 |
| E | 2.16 | 55 | 2.16 | 55 | 2.16 | 55 | 2.16 | 55 | 2.16 | 55 |
| F | 2.50 | 64 | 2.50 | 64 | 2.50 | 64 | 2.50 | 64 | 2.50 | 64 |
| G | 4.22 | 107 | 4.66 | 118 | 4.59 | 117 | 4.84 | 123 | 5.69 | 145 |
| H | 8.94 | 227 | 9.62 | 244 | 9.62 | 244 | 10.25 | 260 | 12.44 | 316 |
| K | 2.22 | 56 | 2.66 | 68 | 2.59 | 66 | 2.84 | 72 | 3.69 | 94 |
| L | 4.50 | 114 | 5.00 | 127 | 5.00 | 127 | 6.09 | 155 | 7.81 | 198 |
| N | 5.91 | 150 | 6.31 | 160 | 6.31 | 160 | 6.78 | 172 | 7.75 | 197 |
| P | 5.75 | 146 | 6.19 | 157 | 6.12 | 155 | 6.37 | 162 | 7.22 | 183 |
| R | 2.25 | 57 | 2.37 | 60 | 2.37 | 60 | 2.81 | 71 | 3.91 | 99 |
| T | 1.81 | 46 | 1.81 | 46 | 1.81 | 46 | 1.81 | 46 | 1.81 | 46 |
| Radius | 5.31 | 135 | 5.31 | 135 | 5.31 | 135 | 5.31 | 135 | 5.31 | 135 |

| Standard Rebuild Kit | |
|----------------------|--------|
| 8044B001 | 304093 |
| 8044A002 | 304093 |
| 8044A003 | 304093 |
| 8044A004 | 304093 |
| 8044A005 | 304094 |
| 8044A006 | 304095 |
| 8044A007 | 304095 |

Const. Ref. 1 - 5



Must be mounted with operator vertical and upright.

General Description

The AH2 Hydramotors are self-contained linear, push-type actuators which are mounted to V710 Series Gas Valve assemblies and used to control gas fired heating equipment. The AH2D (Suffix R) Manual Reset Hydramotor provides a watertight enclosure, manual reset switch and **Ready to Open** indicator light. With electrical power applied to the actuator, the **Ready to Open** indicator light will be **ON**. To operate the actuator (open the valve), the reset switch must be turned clockwise to the **Open Valve** position and held. The light will remain **ON** until the V710 Series Gas Valve is fully open, then it will go **OFF**. The reset switch may now be released to the center maintained position. It should be noted that if the reset switch is released before the valve is fully open and before the light is **OFF**, the actuator will trip immediately closing the valve. The actuator will trip, closing the V710 Series Gas Valve immediately upon power failure or by turning the reset switch counterclockwise to the **Close Valve** position. Closing time is one second or less. Valve cannot be opened until electrical power is restored to the actuator (**Ready to Open** indicator light **On**) and reset switch is turned clockwise to the **Open Valve** position and held until light goes **OFF**. Visual indication of actual valve stem location is provided by position indicators on both sides of the actuator.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Manual Reset Fast Opening: 14 seconds max.

Manual Reset Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient. Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

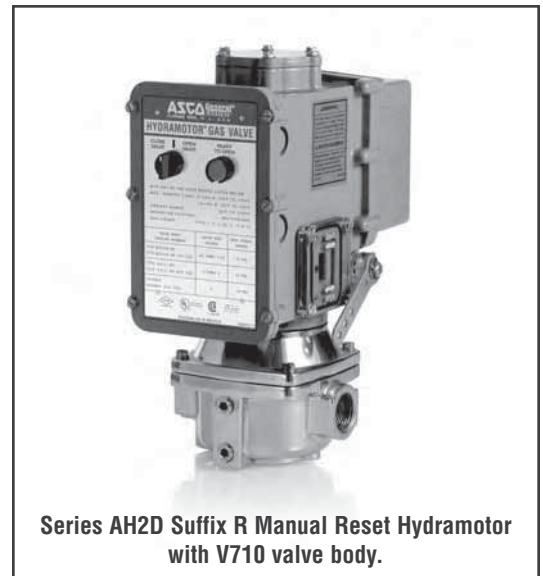
Standard voltages: 120 volts, 60 Hz

Proof of Closure Switch: (optional)

A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Auxiliary Switches: (optional)

One or two integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V).



Series AH2D Suffix R Manual Reset Hydramotor with V710 valve body.

Electrical Characteristics

| Voltage | Amperes | | |
|---------|---------|---------|---------|
| | Inrush | Opening | Holding |
| 120V | 5.6 | 1.85 | 0.11 |

Installation

AH2 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.




Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH2 Hydramotor with V710 valve.

 File # MP19318 Safety Valves

 CSA Certified to:
 1) Automatic Gas Valves Z21.21 (6.5),
 File 109157.

 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH2D112A5R

Specifications (English units)

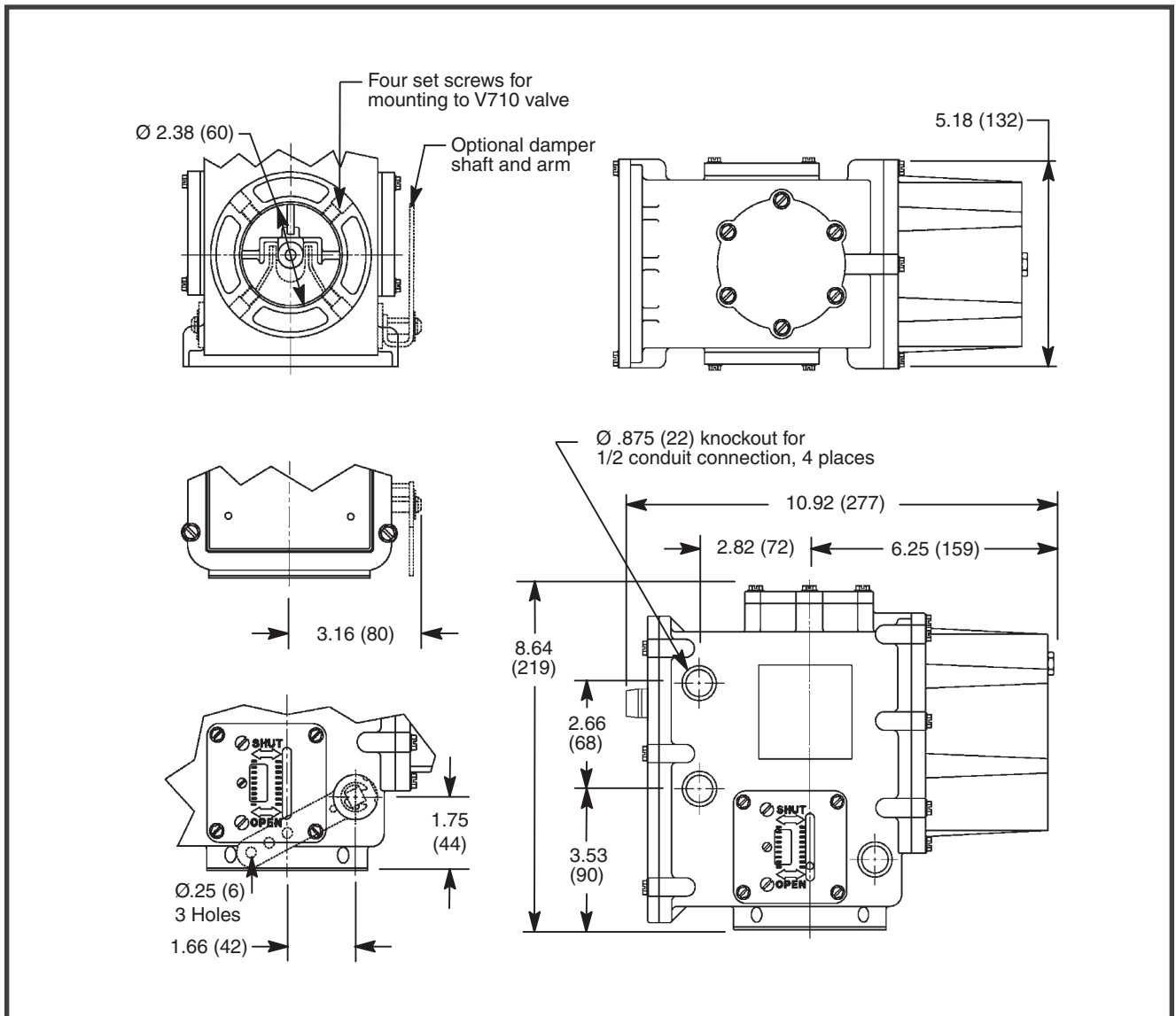
| Applications | Catalog Number |
|---|----------------|
| | 120 V |
| Manual Reset Slow Opening (14 to 26 seconds) | |
| Standard on-off | AH2D102AR |
| Proof of closure | AH2D102SR |
| Manual Reset Fast Opening (6 to 14 seconds) | |
| Standard on-off | AH2D112AR |
| Proof of closure | AH2D112SR |

Optional Features

(add appropriate suffix number to catalog number)

- One Auxiliary Switch (add suffix 2)
- Spring Return Damper Arm (add suffix 3)
- Damper Shaft & Arm (add suffix 4)
- Damper Shaft, Arm & one Auxiliary Switch, (add Suffix 5)
- Manual Reset (add suffix R) shown in catalog number)

Dimensions inches (mm)



COMBUSTION

General Description

These 2-way aluminum body valves meet the safety standards for commercial industrial and institutional kitchens set by the National Fire protection Association.

Paragraph 1023 in booklet NFPA #96 - "Ventilation of Cooking Equipment" states, "The operation of an extinguishing system shall automatically shut off all sources of fuel and heat to gas pilots. A manual operation shall be required to reestablish the fuel supply or heat supply."

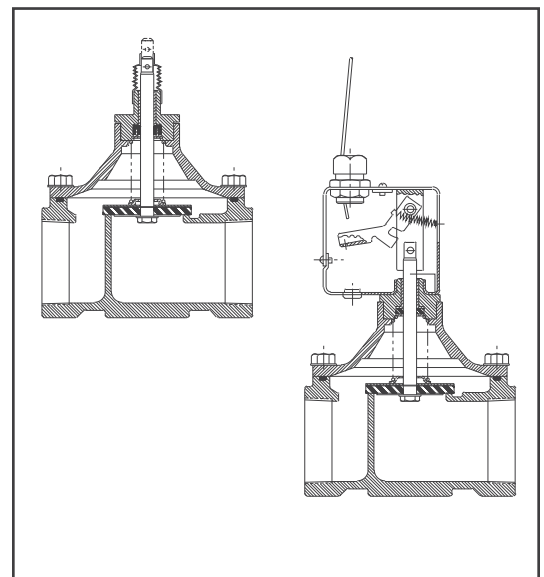
Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|----------------------|
| Body | Aluminum |
| Seals and Disc | NBR |
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Springs | 302 Stainless Steel |

Types of Operation

Series HV216-585 closes to shut off gas flow when the cable holding it in the open position is released. Catalog No. HV216-585 replaces HV160-265.

Series JV216-587 closes to shut off gas flow when the cable is pulled. Catalog No. JV216-587 replaces JV182-648



Approvals

UL Component listed, File No. MH-8849, Guide No. YRPV2; UL of Canada, File MH27283, Guide No. 167E49.

COMBUSTION

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Fluid & Ambient Temp. °F | | Operating Pressure Differential (psi) | | Catalog Numbers Cable Operation | | Agency UL |
|--|---------------------|----------------|--------------------------|------|---------------------------------------|------|---------------------------------|---------------|-----------|
| | | | Min | Max. | Min | Max. | Release to Close | Pull to Close | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | |
| 1/2 | 3/4 | 5.2 | 32 | 132 | 0 | 5 | HV216-585-8 | JV216-587-1 | ○ |
| 3/4 | 3/4 | 6.5 | 32 | 132 | 0 | 5 | HV216-585-1 | JV216-587-2 | ○ |
| 1 | 1 5/8 | 23 | 32 | 132 | 0 | 5 | HV216-585-2 | JV216-587-3 | ○ |
| 1 1/4 | 1 5/8 | 34 | 32 | 132 | 0 | 5 | HV216-585-3 | JV216-587-4 | ○ |
| 1 1/2 | 1 5/8 | 38 | 32 | 132 | 0 | 5 | HV216-585-4 | JV216-587-5 | ○ |
| 2 | 2 3/32 | 54 | 32 | 132 | 0 | 5 | HV216-585-5 | JV216-587-6 | ○ |
| 2 1/2 | 3 | 110 | 32 | 132 | 0 | 5 | HV216-585-6 | JV216-587-7 | ○ |
| 3 | 3 | 138 | 32 | 132 | 0 | 5 | HV216-585-7 | JV216-587-8 | ○ |

○ = Safety Shutoff Valve. Safe working pressure 50 psi.

Specifications (Metric units)

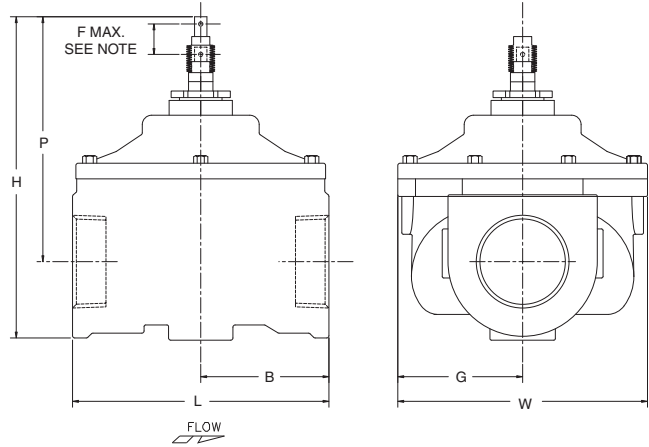
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Fluid & Ambient Temp. °C | | Operating Pressure Differential (bar) | | Catalog Numbers Cable Operation | | Agency UL |
|--|-------------------|-----------------|--------------------------|------|---------------------------------------|------|---------------------------------|---------------|-----------|
| | | | Min | Max. | Min | Max. | Release to Close | Pull to Close | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | |
| 1/2 | 19 | 4.5 | 0 | 56 | 0 | 0.3 | HV216-585-8 | JV216-587-1 | ○ |
| 3/4 | 19 | 5.6 | 0 | 56 | 0 | 0.3 | HV216-585-1 | JV216-587-2 | ○ |
| 1 | 41 | 21 | 0 | 56 | 0 | 0.3 | HV216-585-2 | JV216-587-3 | ○ |
| 1 1/4 | 41 | 29 | 0 | 56 | 0 | 0.3 | HV216-585-3 | JV216-587-4 | ○ |
| 1 1/2 | 41 | 33 | 0 | 56 | 0 | 0.3 | HV216-585-4 | JV216-587-5 | ○ |
| 2 | 53 | 46 | 0 | 56 | 0 | 0.3 | HV216-585-5 | JV216-587-6 | ○ |
| 2 1/2 | 76 | 96 | 0 | 56 | 0 | 0.3 | HV216-585-6 | JV216-587-7 | ○ |
| 3 | 76 | 119 | 0 | 56 | 0 | 0.3 | HV216-585-7 | JV216-587-8 | ○ |

○ = Safety Shutoff Valve. Safe working pressure 3.4 bar.

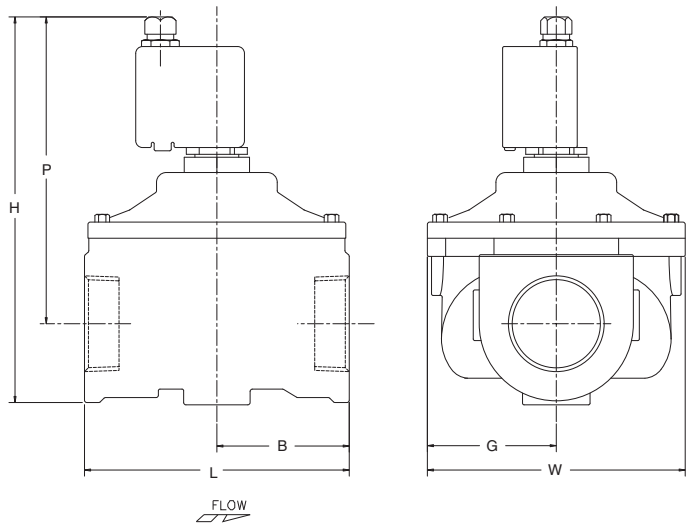
Dimensions inches (mm)

| Catalog No. | | B | F | G | H | L | P | W |
|-------------|------|------|------|------|------|------|------|------|
| HV216-585-8 | ins. | 1.37 | 0.19 | 1.14 | 4.37 | 2.75 | 3.81 | 2.45 |
| | mm | 35 | 5 | 29 | 111 | 70 | 97 | 62 |
| HV216-585-1 | ins. | 1.66 | 0.19 | 1.14 | 4.81 | 3.31 | 4 | 2.45 |
| | mm | 42 | 5 | 29 | 122 | 84 | 102 | 62 |
| HV216-585-2 | ins. | 2.37 | 0.53 | 2.69 | 7.16 | 5 | 5.84 | 5.38 |
| | mm | 60 | 13 | 68 | 182 | 127 | 148 | 137 |
| HV216-585-3 | ins. | 2.37 | 0.53 | 2.69 | 7.16 | 5 | 5.84 | 5.38 |
| | mm | 60 | 13 | 68 | 182 | 127 | 148 | 137 |
| HV216-585-4 | ins. | 2.37 | 0.53 | 2.69 | 7.16 | 5 | 5.8 | 5.38 |
| | mm | 60 | 13 | 68 | 182 | 127 | 147 | 137 |
| HV216-585-5 | ins. | 2.81 | 0.61 | 3.16 | 7.75 | 6.1 | 6.25 | 6.31 |
| | mm | 71 | 15 | 80 | 197 | 155 | 159 | 160 |
| HV216-585-6 | ins. | 3.9 | 0.9 | 4.12 | 9.95 | 7.8 | 7.62 | 7.95 |
| | mm | 99 | 23 | 105 | 253 | 198 | 194 | 202 |
| HV216-585-7 | ins. | 3.89 | 0.9 | 4.12 | 9.95 | 7.78 | 7.62 | 7.95 |
| | mm | 99 | 23 | 105 | 253 | 198 | 194 | 202 |

Note: Max. is the full open position. Do not exceed as distortion of internal parts may result.



| Catalog No. | | B | G | H | L | P | W |
|-------------|------|------|------|------|------|------|------|
| JV216-587-1 | ins. | 1.37 | 1.14 | 6.56 | 2.75 | 6 | 2.36 |
| | mm | 35 | 29 | 167 | 70 | 152 | 60 |
| JV216-587-2 | ins. | 1.66 | 1.16 | 7 | 3.31 | 6.19 | 2.34 |
| | mm | 42 | 29 | 178 | 84 | 157 | 59 |
| JV216-587-3 | ins. | 2.38 | 2.69 | 8.81 | 5 | 7.5 | 5.38 |
| | mm | 60 | 68 | 224 | 127 | 191 | 137 |
| JV216-587-4 | ins. | 2.38 | 2.69 | 8.81 | 5 | 7.5 | 5.38 |
| | mm | 60 | 68 | 224 | 127 | 191 | 137 |
| JV216-587-5 | ins. | 2.38 | 2.69 | 8.81 | 5 | 7.56 | 5.38 |
| | mm | 60 | 68 | 224 | 127 | 192 | 137 |
| JV216-587-6 | ins. | 2.81 | 3.16 | 9.53 | 6.1 | 8.03 | 6.31 |
| | mm | 72 | 80 | 242 | 155 | 204 | 160 |
| JV216-587-7 | ins. | 3.9 | 4.13 | 11.4 | 7.8 | 9.06 | 7.9 |
| | mm | 99 | 105 | 290 | 198 | 230 | 201 |
| JV216-587-8 | ins. | 3.9 | 4.13 | 11.4 | 7.8 | 9.06 | 7.9 |
| | mm | 99 | 105 | 290 | 198 | 230 | 201 |



Panel Applications

ASCO relay control panels were originally designed to New York City Board of Education specifications to operate ASCO DC solenoid valves controlling gas flow to school kitchens, domestic cooking classes, ceramic and metal shops. Because of its many features and silent operation, the ASCO relay panel has also been used in many other similar institutions and schools outside New York City. Vandalism and malicious mischief have caused some city governments to make it mandatory that the gas supply be locked off during closed hours. Other governmental bodies and consulting engineers have recognized the need and specifying the ASCO relay panel although not mandated by code.

ASCO relay panels are also used in industrial and commercial installations to control various gases and fluids.

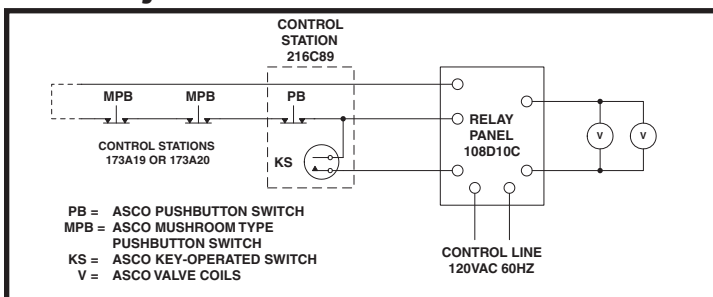
Operations

Operating the key switch on the control station energizes the relay to open a normally closed ASCO DC solenoid valve which turns on the gas flow.

Panel Features

- ASCO's reputation and long experience in control are assurances of highly dependable systems with complete ASCO coordination.
- If the control voltage is lost completely, or reduces to approximately 50% of normal value, the relay de-energizes the normally closed valve to shut off gas flow.
- The valve will not open at restoration of voltage until an authorized person operates the key switch on the control station. This eliminates the danger of gas unknowingly escaping. The gas may also be shut off by depressing the normally closed pushbutton switch located on the control station.
- For convenience, auxiliary push-buttons, such as the ASCO Catalog numbers 173A19 and 173A20 may be located at various accessible points throughout the building.
- Utilization of DC control provided by the relay panel eliminates annoying AC hum.
- Shallow-depth NEMA Type 1 flush-mounted enclosure permits installation directly into the wall for convenience and elimination of obstructions in corridors or high traffic areas.
- ASCO dust-tight industrial relay and solid-state rectifier are designed to provide long life.
- Clearly marked terminals and installation drawings are located on inside of door.
- Approved by New York City Board of Education for use in public schools.

Control System Schematic



ASCO RELAY PANEL

Catalog Number: 108D10C

Input Voltage: 120 volts, 60 Hz

Output Voltage: 80 volts DC

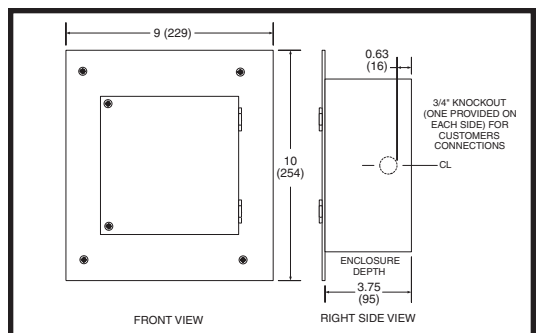
Output Current: 0.8 amp maximum

AC Relay Control Panel

Catalog No. 108D90C (replaces AEP 7200) provides the same features as the DC panels described above except for its 120/60 AC voltage output. Features a key-operated switch with manual "on" and "off" buttons on the cover.

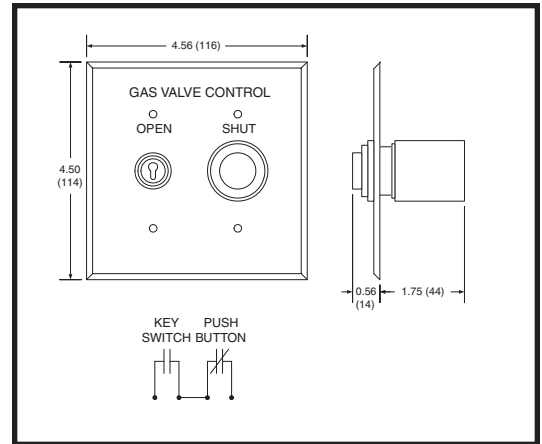
(Has not been submitted for N.Y.C. Board of Education approvals.)

Panel 108D10C Dimensions



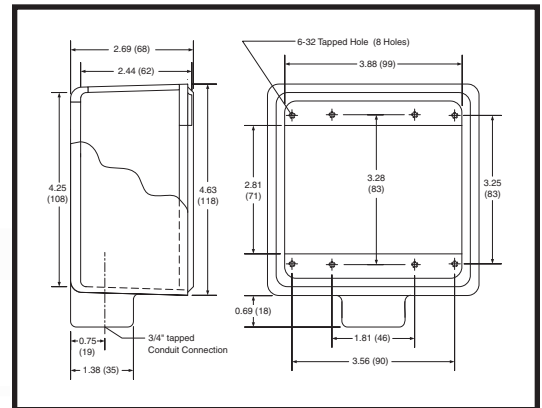
MASTER CONTROL STATION

Catalog No. 216C89 consists of a key-operated, normally open switch and a normally closed pushbutton mounted in a stainless steel faceplate for flush installation. "Gas Valve Control" is inscribed on the faceplate, and the switches are labeled "Open" over the key switch and "Shut" over the pushbutton. Four inch square wall box is not included.



CONTROL STATIONS

Catalog No. 173A19 (flush mounted) and Catalog No. 173A20 (surface mounted) consist of a momentary mushroom pushbutton labeled "Emergency Stop." When button is hit, power to valves is shut off and they close in 0.1 second.



SOLENOID VALVES

Series 8215 Solenoid Valves feature 2-way normally closed operation for gas service. They are explosionproof and designed to handle low pressure city gas. Control voltage is 80 to 90 volts DC or 120/60 volts AC.



DC Valves for use with Panel 108D10C

| Pipe Size (ins.) | Catalog Number | Max. Pressure psi (bar) | Cv (Kv) Flow Factor | Holding Watts |
|------------------|----------------|-------------------------|---------------------|---------------|
| 1/2 | EF8215G020 | 25 (1.7) | 4.4 (3.8) | 11.6 |
| 3/4 | EF8215G030 | 25 (1.7) | 5.1 (4.4) | 11.6 |
| 1 | EF8215B050 | 25 (1.7) | 21 (18.2) | 14.9 |
| 1 1/4 | EF8215B060 | 25 (1.7) | 32 (27.7) | 14.9 |
| 1 1/2 | EF8215B070 | 25 (1.7) | 35 (30.3) | 14.9 |
| 2 | EF8215B080 | 15 (1) | 60 (51.9) | 14.9 |

AC Valves for use with Panel 108D90C (replaces AEP7200)

| Pipe Size (ins.) | Catalog Number | Max. Pressure psi (bar) | Cv (Kv) Flow Factor | Holding Watts |
|------------------|----------------|-------------------------|---------------------|---------------|
| 1/2 | EF8215G020 | 50 (3.4) | 4.4 (3.8) | 10.1 |
| 3/4 | EF8215G030 | 50 (3.4) | 5.1 (4.4) | 10.1 |
| 1 | EF8215B050 | 25 (1.7) | 21 (18.2) | 15.4 |
| 1 1/4 | EF8215B060 | 25 (1.7) | 32 (27.7) | 15.4 |
| 1 1/2 | EF8215B070 | 25 (1.7) | 35 (30.3) | 15.4 |
| 2 | EF8215B080 | 25 (1.7) | 60 (51.9) | 15.4 |

Solenoid Valves

Order by Catalog Number and Voltage (Ex. EF8215G020 80-90VDC)

Contact ASCO Valve, Inc. at 800-972-2726 www.ascovalve.com

Gas Panels, Master Stations, and Control Stations

Order by Catalog Number (Ex. 108D10C)

Contact ASCO Power Technologies at 800-800-2726 www.ascopower.com

Features

- 2-way normally closed operation
- For liquid petroleum gases (propane) in both liquified and gaseous states
- Applications such as grain dryers, incinerators, space heaters, etc
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | | | | |
|------------------------------------|---------|-----------|-------------------|------------|
| Series | 8262 | 8210 | 8214 | HV226787-1 |
| Body | Brass | Brass | Aluminum | Brass |
| Seals and Disc | NBR | | | |
| Core Tube | 305 SS | 305 SS | 305 SS | 305 SS |
| Core Guide | Brass | | | |
| Core and Plugnut | 430F SS | 430F SS | 430F SS | 430F SS |
| Springs | 302 SS | 17-7PH SS | 17-7PH SS | 302 SS |
| Shading Coil | Copper | | | |
| Pipe Plug | - | - | Zinc Plated Steel | - |

Electrical

| Standard Coil Class of Insulation | Watt Rating and Power Consumption | | | Ambient Temp. °F | Spare Coil Family | |
|-----------------------------------|-----------------------------------|------------|-----------|------------------|-------------------|----------------|
| | AC | | | | General Purpose | Explosionproof |
| | Watts | VA Holding | VA Inrush | | AC | AC |
| F | 10.1 | 25 | 70 | -20 to 125 | 238610 | 238614 |
| F | 17.1 | 40 | 93 | -20 to 125 | 238610 | 238614 |
| F | 15.05 | 28 | 55 | 32 to 125 | - | 064982 |

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

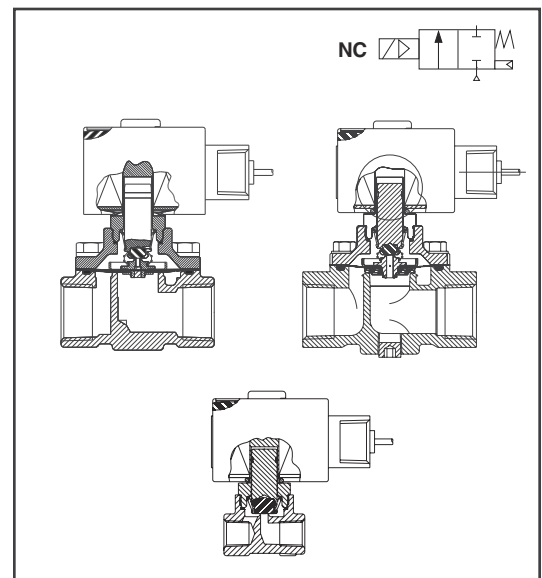
Solenoid Enclosures

(8210, 8214, 8262)

RedHat II Molded Epoxy, Watertight, Types 1, 2, 3, 3S, 4 and 4X with 1/2" conduit hub.

(HV226787-1)

RedHat Metal, Explosion Proof, Types 3, 7C, 7D, 9E, F&G with 1/2" conduit hub.



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872. (8210 & 8214)
- 3) Valves for Hazardous Locations, File 013976. (HV226787-1)

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow | Gas Capacity ① | Operating Pressure Differential (psi) | | Max. Fluid Temp. °F | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (lbs) |
|--|---------------------|---------|----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | |
| 1/4 | 1/8 | 0.35 | 27,250 | 0 | 250 | 125 | 8262G232B | 1 | ○ | - | ○ | 17.1 | 2.3 |
| 1/4 | 9/32 | 0.96 | 74,700 | 0 | 45 | 125 | 8262G210B | 1 | ○ | ○ | ○ | 10.1 | 2.4 |
| 3/8 | 5/8 | 2.8 | 218,000 | 5 | 250 | 125 | 8210H105B | 2 | ○ | ○ | ○ | 17.1 | 3.2 |
| 3/8 | 3/4 | 3.4 | 226,000 | 0 | 50 | 125 | 8214G010B | 3 | ○ | ○ | ○ | 17.1 | 2.0 |
| 1/2 | 5/8 | 3.6 | 280,000 | 5 | 250 | 125 | 8210G106B | 2 | ○ | ○ | ○ | 17.1 | 3.2 |
| 1/2 | 3/4 | 4.4 | 374,000 | 0 | 50 | 125 | 8214G020B | 3 | ○ | ○ | ○ | 17.1 | 2.0 |
| 3/4 | 3/4 | 5.1 | 397,000 | 0 | 50 | 125 | 8214G030B | 4 | ○ | ○ | ○ | 17.1 | 2.0 |
| 3/4 | 3/4 | 6.5 | 506,000 | 5 | 250 | 125 | HV226787-1 | 5 | ○ | - | ○ | 15.05 | 3.5 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 2,300 Btu/cu.ft. or more, 1.6 Specific Gravity Gas.

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow (m³/hr) | Gas Capacity ① | Operating Pressure Differential (bar) | | Max. Fluid Temp. °C | Catalog Number | Const. Ref. | Agency | | | Wattage | Approx. Shipping Weight (kgs) |
|--|-------------------|-----------------|----------------|---------------------------------------|------|---------------------|----------------|-------------|--------|----|-----|---------|-------------------------------|
| | | | Btu/hr. | Min. | Max. | | | | UL | FM | CSA | | |
| COMBUSTION (Fuel Gas) - Normally Closed | | | | | | | | | | | | | |
| 1/4 | 3 | 0.3 | 27,250 | 0 | 17.2 | 52 | 8262G232B | 1 | ○ | - | ○ | 17.1 | 1.0 |
| 1/4 | 7 | 0.8 | 74,700 | 0 | 3.1 | 52 | 8262G210B | 1 | ○ | ○ | ○ | 10.1 | 1.1 |
| 3/8 | 16 | 2.4 | 218,000 | 5 | 17.2 | 52 | 8210H105B | 2 | ○ | ○ | ○ | 17.1 | 1.5 |
| 3/8 | 19 | 2.9 | 226,000 | 0 | 3.4 | 52 | 8214G010B | 3 | ○ | ○ | ○ | 17.1 | 0.9 |
| 1/2 | 16 | 3.1 | 280,000 | 5 | 17.2 | 52 | 8210G106B | 2 | ○ | ○ | ○ | 17.1 | 1.5 |
| 1/2 | 19 | 3.7 | 374,000 | 0 | 3.4 | 52 | 8214G020B | 3 | ○ | ○ | ○ | 17.1 | 0.9 |
| 3/4 | 19 | 4.3 | 397,000 | 0 | 3.4 | 52 | 8214G030B | 4 | ○ | ○ | ○ | 17.1 | 0.9 |
| 3/4 | 19 | 5.5 | 506,000 | 5 | 17.2 | 52 | HV226787-1 | 5 | ○ | - | ○ | 15.05 | 1.6 |

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 2,300 Btu/cu.ft. or more, 1.6 Specific Gravity Gas.

Capabilities Chart

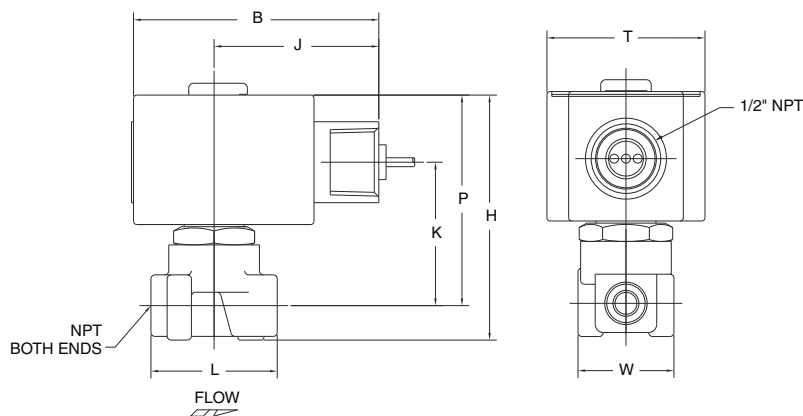
| COMBUSTION | Solenoid Options | | | | Base Catalog Number | | Resilient Materials | Standard Rebuild Kit |
|------------|------------------|-----------|------------|---------------------------|---------------------|----------|---------------------|----------------------|
| | NEMA Type 3-9 | 72" Leads | High Temp. | Wiring Box Screw Terminal | Brass | Aluminum | NBR | AC |
| | EF | L | HB | JKP | 8262G232B | - | ● | 304088 |
| EF | L | HT | JKF | 8262G210B | - | ● | 304088 | |
| EF | L | HB | JKP | 8210H105B | - | ● | 316669 | |
| - | L | HB | JKP | - | 8214G010B | ● | 316667 | |
| EF | L | HB | JKP | 8210H106B | - | ● | 316669 | |
| - | L | HB | JKP | - | 8214G020B | ● | 316667 | |
| - | L | HB | JKP | - | 8214G030B | ● | 316667 | |
| - | L | - | - | HV226787-1 | - | ● | 310038 | |

● = Standard. Other options may be available. All option combinations may not be available.

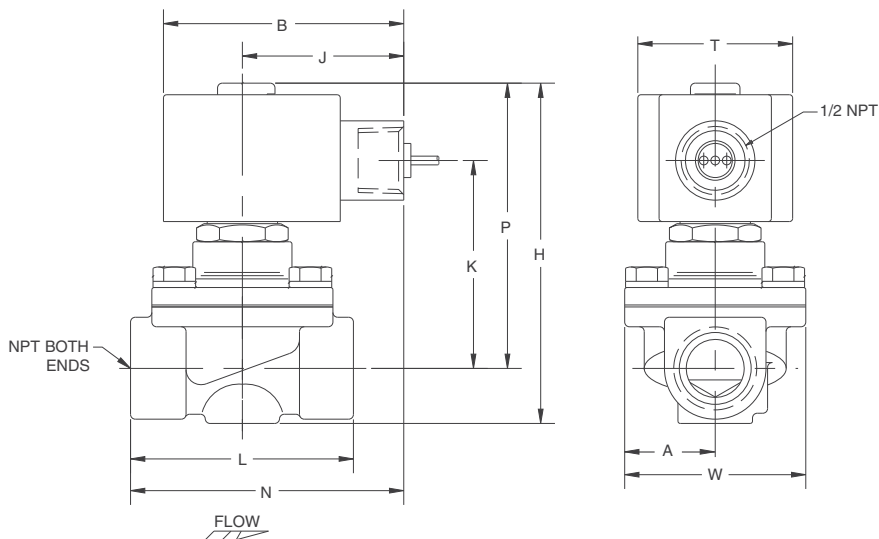
Dimensions inches (mm)

| Const. Ref. | | A | B | E | H | J | K | L | N | P | R | T | W |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | ins. | - | 3.03 | - | 3.16 | 2.04 | 1.78 | 1.56 | - | 2.75 | - | 1.95 | 1.18 |
| | mm | - | 77 | - | 80 | 52 | 45 | 40 | - | 70 | - | 50 | 30 |
| 2 | ins. | 1.66 | 3.03 | - | 3.95 | 2.04 | 2.42 | 2.75 | 3.42 | 3.39 | - | 1.95 | 2.28 |
| | mm | 42 | 77 | - | 100 | 52 | 61 | 70 | 87 | 86 | - | 50 | 58 |
| 3 | ins. | 1.14 | 3.03 | 1.36 | 4.08 | 2.04 | 2.47 | 2.75 | 3.42 | 3.46 | 1.36 | 1.95 | 2.50 |
| | mm | 29 | 77 | 35 | 104 | 52 | 63 | 70 | 87 | 88 | 35 | 50 | 64 |
| 4 | ins. | 1.14 | 3.03 | 1.25 | 4.52 | 2.04 | 2.66 | 3.31 | 3.70 | 3.64 | 1.66 | 1.95 | 2.39 |
| | mm | 29 | 77 | 32 | 115 | 52 | 68 | 84 | 94 | 92 | 42 | 50 | 61 |
| 5 | ins. | - | 3.25 | - | 4.63 | 2.76 | 2.44 | 3.78 | 4.38 | 4.00 | 1.62 | 2.50 | 2.75 |
| | mm | - | 83 | - | 118 | 70 | 62 | 96 | 111 | 102 | 41 | 64 | 70 |

Const. Ref. 1

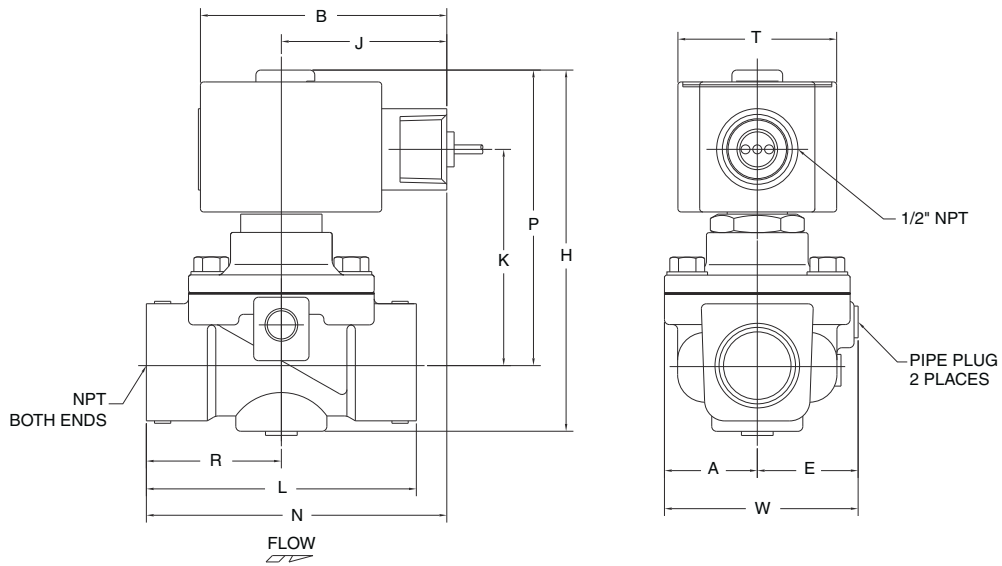


Const. Ref. 2

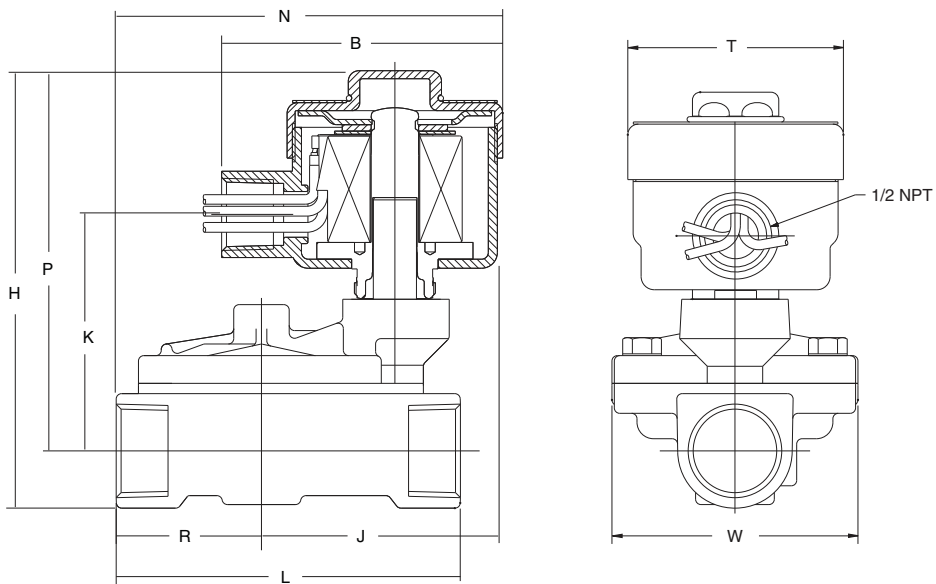


Dimensions inches (mm)

Const. Ref. 3, 4



Const. Ref. 5



COMBUSTION

ASCO offers a wide variety of accessories and optional features to meet your specific application requirements.

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- Solenoid Valves • FRLs • Micro-miniature Valves • Valve Monitoring Systems • Pressure Switches

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Features

- Same RedHat II molded epoxy solenoid operators used on General Purpose ASCO valves
- Available in 4 standard wattages, AC or DC
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|-------------------------------|
| Core Tube | 305 Stainless Steel |
| Core and Plugnut | 430F Stainless Steel |
| Seal | NBR |
| Shading Coil | Copper (AC only) |
| Additional Parts | |
| Disc | NBR and PA (3-way upper disc) |
| Spring | 302 Stainless Steel |

Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption | | | | Spare Coil Part Number | | | |
|---------------------------------------|-----------------------------------|-------|------------|-------------|------------------------|--------|----------------|--------|
| | DC Watts | AC | | | General Purpose | | Explosionproof | |
| | | Watts | VA Holding | VA Inrush ① | AC | DC | AC | DC |
| F | 10.6 | 6.1 | 16 | 30 | 238210 | 238310 | 238214 | 238314 |
| F | - | 9.1 | 25 | 40 | 238210 | - | 238214 | - |
| F | 11.6 | 10.1 | 25 | 50 | 238610 | 238710 | 238614 | 238714 |
| F | - | 17.1 | 40 | 70 | 238610 | - | 238614 | - |
| F | - | 15.4 | 27 | 70 | 99257 | - | 99257 | - |
| F | - | 20 | 43 | 90 | 99257 | - | 99257 | - |

Standard Voltages: 24, 120, 240, 480 volts AC 60 Hz (or 110, 220 volts AC 50 Hz).
6, 12, 24, 120, 240 volts, DC. Must be specified when ordering.
Other voltages available when required.

Note: ① Core Stroke 1/16".

Specifications (English units)

| Orifice Size (ins.) | Cv Flow Factor ④ | Operating Pressure Differential (psi) | | | | | | Max. Fluid Temp. °F | | Catalog Number | Const. Ref. | Watt Rating/Class of Coil Insulation ⑥ | | Optional Inserted Seat Part Number |
|---|------------------|---------------------------------------|-------|---------------------|---------------|-------|---------------------|---------------------|-----|----------------|-------------|--|--------|------------------------------------|
| | | Maximum AC | | | Maximum DC | | | | | | | AC | DC | |
| | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU ⑤ | Air-Inert Gas | Water | Lt. Oil @ 300 SSU ⑤ | AC | DC | | | | | |
| 2-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | |
| 3/64 | .06 | 750 | 600 | 400 | 325 | 225 | 300 | 180 | 120 | 8200G001 | 4 | 6.1/F | 10.6/F | 096-429-4 ② |
| 3/32 | .17 | 275 | 200 | 130 | 110 | 100 | 100 | 180 | 120 | 8200G001 | 4 | 6.1/F | 10.6/F | 180-222-5D ③ |
| 1/8 | .35 | 135 | 115 | 90 | 50 | 50 | 50 | 180 | 120 | 8200G001 | 4 | 6.1/F | 10.6/F | 180-222-1D ③ |
| 3-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | |
| 3/64 | .04 | 230 | 230 | 230 | 120 | 140 | 125 | 200 | 150 | 8329G001 | 5 | 10.1/F | 11.6/F | 096-429-4 ② |
| 3/32 | .15 | 125 | 100 | 100 | 60 | 70 | 30 | 200 | 150 | 8329G002 | 5 | 10.1/F | 11.6/F | 096-429-3 ② |
| 1/8 | .25 | 75 | 60 | 60 | 30 | 40 | 25 | 200 | 150 | 8329G003 | 5 | 10.1/F | 11.6/F | 180-222-1D ③ |
| 3-WAY SOLENOID OPERATORS, ① NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | |
| 3/64 | .04 | 300 | 300 | 300 | 200 | 300 | 120 | 200 | 150 | 8329G007 | 5 | 10.1/F | 11.6/F | 096-429-4 ② |
| 3/32 | .15 | 175 | 175 | 175 | 70 | 90 | 45 | 200 | 150 | 8329G008 | 5 | 10.1/F | 11.6/F | 096-429-3 ② |
| 1/8 | .25 | 90 | 90 | 90 | 40 | 40 | 25 | 200 | 150 | 8329G009 | 5 | 10.1/F | 11.6/F | 180-222-1D ③ |

① Larger operators, orifice sizes, and higher pressure ratings are available. Consult your local ASCO sales office.
② Inserted seat has 1/4-32 thread for threading.
③ Inserted seat has 3/8-32 thread for threading.
④ Cv will depend upon size and location of connecting passages.
⑤ Maximum viscosity for 3-way solenoid operator is 45 SSU.
⑥ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.



Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X. RedHat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for further details on *Open Frame Solenoids, Junction Box Enclosures, and Panel Mount Constructions.*

Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)
DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified.

Refer to *Engineering Section* for details.

Specifications (Metric units)

| Orifice Size (mm) | Kv Flow Factor (m3/h) ④ | Operating Pressure Differential (bar) | | | | | | Max. Fluid Temp. °C | | Catalog Number | Const. Ref. | Watt Rating/ Class of Coil Insulation ⑥ | | Optional Inserted Seat Part Number |
|---|-------------------------|---------------------------------------|-------|---------------------|---------------|-------|---------------------|---------------------|----|----------------|-------------|---|--------|------------------------------------|
| | | Maximum AC | | | Maximum DC | | | | | | | AC | DC | |
| | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU ⑤ | Air-Inert Gas | Water | Lt. Oil @ 300 SSU ⑤ | | | | | | | |
| 2-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | |
| 1.2 | .05 | 52 | 41.4 | 34.5 | 22.4 | 15.5 | 20.7 | 82 | 49 | 8200G001 | 4 | 6.1/F | 10.6/F | 096-429-4 ② |
| 2.4 | .15 | 19 | 13.8 | 9.0 | 7.6 | 6.9 | 6.9 | 82 | 49 | 8200G001 | 4 | 6.1/F | 10.6/F | 180-222-5D ③ |
| 3.2 | .30 | 9 | 7.9 | 6.2 | 3.4 | 3.4 | 3.4 | 82 | 49 | 8200G001 | 4 | 6.1/F | 10.6/F | 180-222-1D ③ |
| 3-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized) | | | | | | | | | | | | | | |
| 1.2 | .03 | 16 | 15.9 | 15.9 | 8.3 | 9.7 | 8.6 | 93 | 66 | 8329G001 | 5 | 10.1/F | 11.6/F | 096-429-4 ② |
| 2.4 | .13 | 9 | 6.9 | 6.9 | 4.1 | 4.8 | 2.1 | 93 | 66 | 8329G002 | 5 | 10.1/F | 11.6/F | 096-429-3 ② |
| 3.2 | .21 | 5 | 4.1 | 4.1 | 2.1 | 2.8 | 1.7 | 93 | 66 | 8329G003 | 5 | 10.1/F | 11.6/F | 180-222-1D ③ |
| 3-WAY SOLENOID OPERATORS, ① NORMALLY OPEN (Open when de-energized) | | | | | | | | | | | | | | |
| 1.2 | .03 | 21 | 20.7 | 20.7 | 13.8 | 20.7 | 8.3 | 93 | 66 | 8329G007 | 5 | 10.1/F | 11.6/F | 096-429-4 ② |
| 2.4 | .13 | 12 | 12.1 | 12.1 | 4.8 | 6.2 | 3.1 | 93 | 66 | 8329G008 | 5 | 10.1/F | 11.6/F | 096-429-3 ② |
| 3.2 | .21 | 6 | 6.2 | 6.2 | 2.8 | 2.8 | 1.7 | 93 | 66 | 8329G009 | 5 | 10.1/F | 11.6/F | 180-222-1D ③ |

① Larger operators, orifice sizes, and higher pressure ratings are available. Consult your local ASCO sales office.
 ② Inverted seat has 1/4-32 thread for threading.
 ③ Inverted seat has 3/8-32 thread for threading.
 ④ Kv will depend upon size and location of connecting passages.
 ⑤ Maximum viscosity for 3-way solenoid operator is 45 SSU.
 ⑥ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Solenoids)

| Catalog Number | 8016G001 | 8016G002 | 8003G001 | 8003G002 | 8017 001 | 8017 002 |
|--|----------|----------|----------|----------|----------|----------|
| Const. Ref. and Fig. No. | 1A | 1B | 2A | 2B | 3A | 3B |
| Watt Rating/ ③ Class of Coil Insulation | 6.1/F | 9.1/F | 10.1/F | 17.1/F | 15.4/F | 20/F |
| VA Holding | 16 | 25 | 25 | 40 | 27 | 43 |
| VA Inrush ① | 30 | 40 | 50 | 70 | 70 | 90 |
| Min. Return Spring Force or Load Value ② | 11 oz. | 11 oz. | 1.3 lb. | 1.3 lb. | 1.75 lb. | 1.75 lb. |

① Core Stroke 1/16". ② Customer to supply return spring, required in solenoid sealed position for proper operation, in accordance with value given.
 ③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.

Dimensions inches (mm)

| Const. Ref. | A | B | C |
|-------------|-----------|------|------|
| 1A & 1B | ins. 2.76 | 1.82 | 0.30 |
| | mm 70 | 46 | 8 |
| 2A & 2B | ins. 3.03 | 2.00 | 1.13 |
| | mm 77 | 51 | 29 |
| 3A & 3B | ins. 2.67 | 2.28 | 0.23 |
| | mm 68 | 58 | 6 |
| 4 | ins. 2.76 | 1.82 | 0.32 |
| | mm 70 | 46 | 8 |
| 5 | ins. 3.03 | 3.03 | 0.30 |
| | mm 77 | 77 | 8 |

Figs 1 (A and B)

Figs 2 (A and B)

Figs 3 (A and B)

Const. Ref. 1A, 1B, 2A, 2B

Const. Ref. 3A, 3B

Const. Ref. 4

Const. Ref. 5

Features

- Adjustable flow control design provides greater capacity than most constructions
- Spring-loaded disc allows free flow in one direction and an adjustable flow in the other
- Tapered brass stem controls flow through the cross-hole in the disc
- Unique locking device in adjusting knob
- Scribed graduations provide position indication for the stem
- Mountable in any position



Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|------------------------|
| Body and Stem | Brass |
| Seals | NBR |
| Disc | CA |
| Spring | 302 Stainless Steel |
| Retainer | 17-7PH Stainless Steel |

Nominal Ambient Temp. Ranges

125°F (52°C) maximum.

Refer to Engineering Section for details.

Operation

When the pawl is in the up position, it creates a friction lock on the knurled bonnet and the knob cannot rotate. When the pawl is at 90° to the knob, the knob can be rotated.

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor ① | | Opening Pressure (psi) | Maximum Operating Pressure Differential (psi) | Max. Fluid Temp. °F | Catalog Number |
|---|---------------------|------------------|-----------|------------------------|---|---------------------|----------------|
| | | Meter Flow | Free Flow | | Air-Inert Gas, Water, and Light Oil | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | |
| 1/4 | 3/8 | .22 | 1.2 | 1 | 300 | 180 | V022A001 |
| 3/8 | 3/8 | .90 | 1.4 | 1 | 300 | 180 | V022 002 |
| 1/2 | 7/16 | 1.2 | 2.6 | 1 | 300 | 180 | V022 003 |
| 3/4 | 17/32 | 1.6 | 4.0 | 2.5 | 300 | 180 | V022 004 |

① Refer to Chart A for Cv vs. Metering Stem Turns.

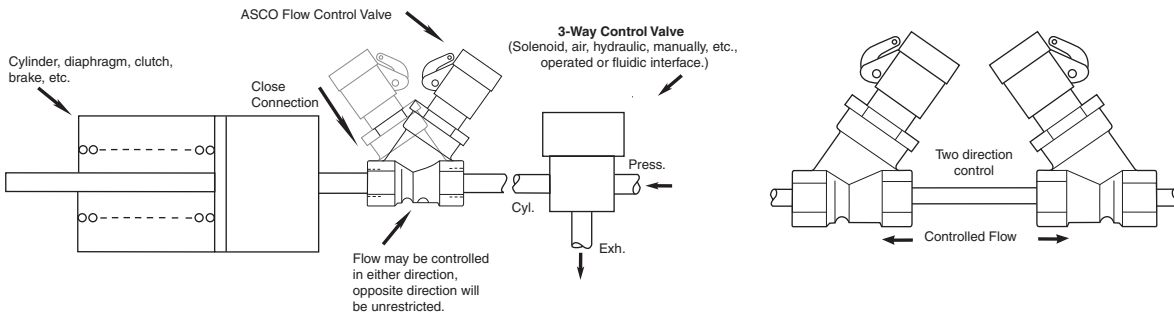
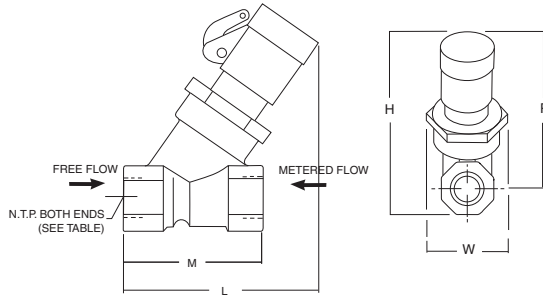
Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) ① | | Opening Pressure (bar) | Maximum Operating Pressure Differential (bar) | Max. Fluid Temp. °C | Catalog Number |
|---|-------------------|-------------------------|-----------|------------------------|---|---------------------|----------------|
| | | Meter Flow | Free Flow | | Air-Inert Gas, Water, and Light Oil | | |
| NORMALLY CLOSED (Closed when de-energized) | | | | | | | |
| 1/4 | 10 | .2 | 1.0 | 0.07 | 21 | 82 | V022A001 |
| 3/8 | 10 | .8 | 1.2 | 0.07 | 21 | 82 | V022 002 |
| 1/2 | 11 | 1.0 | 2.2 | 0.07 | 21 | 82 | V022 003 |
| 3/4 | 13 | 1.4 | 3.4 | 0.17 | 21 | 82 | V022 004 |

① Refer to Chart A for Cv vs. Metering Stem Turns.

Dimensions inches (mm)

| Catalog Number | | H | L | M | P | W |
|----------------|------|------|------|------|------|------|
| V022A001 | ins. | 3.12 | 2.69 | 1.91 | 2.62 | 1.31 |
| | mm | 79 | 68 | 49 | 67 | 33 |
| V022 002 | ins. | 3.12 | 2.69 | 1.91 | 2.69 | 1.31 |
| | mm | 79 | 68 | 49 | 68 | 33 |
| V022 003 | ins. | 3.34 | 3.22 | 2.28 | 2.81 | 1.31 |
| | mm | 85 | 82 | 58 | 71 | 33 |
| V022 004 | ins. | 3.75 | 3.69 | 2.75 | 3.09 | 1.47 |
| | mm | 95 | 94 | 70 | 79 | 37 |



Flow Diagrams

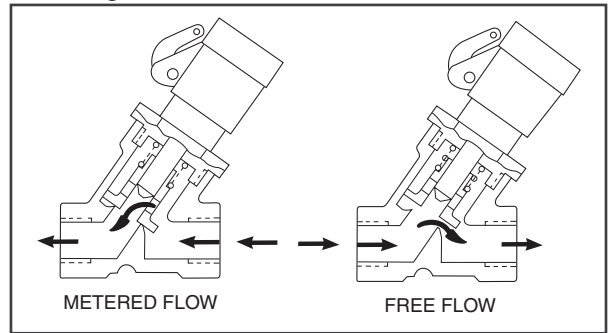


Chart A

Example I: A 1/2" N.P.T. flow control valve is required to pass 3 GPM of water at a Δp of 16 psi. Determine the position of the metering stem.

$$Cv = \frac{GPM}{\sqrt{\Delta p}} \quad Cv = \frac{3}{\sqrt{16}} = 0.75$$

From the graph for the 1/2" N.P.T. flow control valve with a Cv of .75, the stem should be positioned three turns out from fully closed.

Example II: To determine the flow using the same data of 16 psi, Δp and METERED Cv of .75, the solution will be:

$$GPM = Cv \sqrt{\Delta p} = .75 \sqrt{16} = 3$$

Example III: The flow through this valve in the FREE FLOW position is:

$$GPM = Cv \sqrt{\Delta p} = 2.6 \sqrt{16} = 10.4$$

*Cv is obtained from free flow data table.

- P₁ - Inlet Pressure (PSIA)
- P₂ - Outlet Pressure (PSIA)
- Δp - Pressure Drop (P₁ - P₂) psi
- G - Specific Gravity of Gas @ 14.7 PSIA and 60°F.
- T - Absolute Temperature of Flowing Medium (°F + 460)

SIZING EQUATIONS

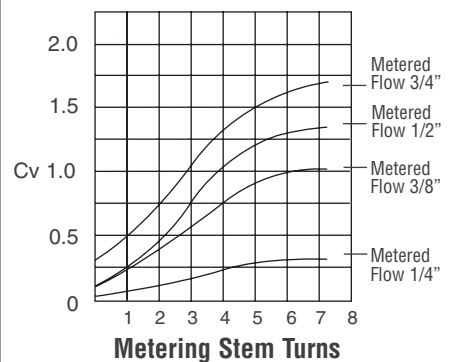
$$\text{WATER } Cv = \frac{GPM}{\sqrt{\Delta p}} \quad GPM = Cv \sqrt{\Delta p}$$

$$\text{AIR } Cv = \frac{SCFH}{960 \sqrt{\Delta p(P_1 + P_2)}} \frac{GT}{GT}$$

$$SCFH = Cv \cdot 960 \sqrt{\Delta p(P_1 + P_2)} \frac{GT}{GT}$$

| Free Flow Data | |
|----------------|-----|
| Pipe Size | Cv |
| 1/4 | 1.2 |
| 3/8 | 1.4 |
| 1/2 | 2.6 |
| 3/4 | 4.0 |

Flow Characteristics for ASCO Flow Control Valves



Features

- Should be used whenever it is essential that fluid be free of foreign solid matter
- Assure proper flow and prevent damage to valves, controls, and other equipment

Construction

Forged Brass, Bronze, Cast Iron, and Stainless Steel Body

Rugged, self-cleaning "Y body" strainers have easily removed strainer of perforated stainless steel or wire mesh. Free hole area shown in table is total of all openings. Suitable for air, water, oil, and steam.

Acetal Body

Straight-through flow with large area orifice. Strainers can be easily removed and back flushed. Suitable for air and water.

Installation

May be mounted in any position, but should be located on the inlet side of the valve, as close to it as possible.



Specifications (English units)

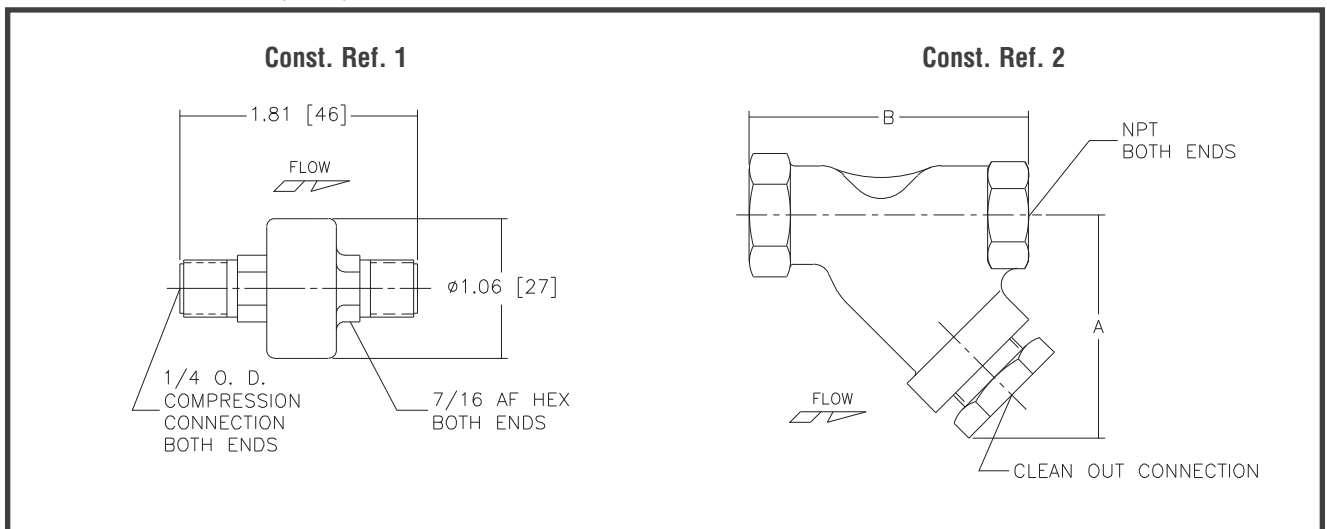
| Pipe Size (ins.) | Cv Flow Factor | Screen Mesh Size ③ | Total Free Hole Area (in. ²) | Particle Retention Size ③ | | Blow-Off Pipe Size (ins.) | Max. Fluid Temp. °F ⑤ | Safe Working Pressure (psi) ⑤ | Catalog Number | Const. Ref. | Dimensions (ins.) | |
|--|----------------|--------------------|--|---------------------------|--------|---------------------------|---|-------------------------------|----------------|-------------|-------------------|---------|
| | | | | Microns | Inches | | | | | | A | B |
| CA BODY with Stainless Steel Strainer Element and NBR Seals | | | | | | | | | | | | |
| ① | .50 | 80x80 | .116 | 178 | .007 | -- | 130 | 50 | 8604 004 | 1 | ② | ② |
| ① ④ | .50 | 80x80 | .116 | 178 | .007 | -- | 130 | 175 | 8604 002 | 1 | ② | ② |
| FORGED BRASS BODY with Stainless Steel Strainer Element and PTFE or FPM Seals ⑧ | | | | | | | | | | | | |
| 1/8 | 1 | 60x60 | .325 | 155 | .0061 | -- | 400 | 750 | 8600A001 ⑥ ⑦ | 2 | 1 11/32 | 2 |
| 1/4 | 1.7 | 60x60 | .325 | 155 | .0061 | -- | 400 | 750 | 8600A002 ⑥ ⑦ | 2 | 1 11/32 | 2 |
| 3/8 | 1.9 | 100x100 | .35 | 140 | .0055 | -- | 400 | 750 | 8600A013 ⑥ | 2 | 1 5/8 | 1 29/32 |
| 1/2 | 2.6 | 100x100 | .50 | 140 | .0055 | -- | 400 | 750 | 8600A014 ⑥ | 2 | 1 13/16 | 2 9/32 |
| 3/4 | 4.7 | 100x100 | .75 | 140 | .0055 | -- | 400 | 750 | 8600A015 ⑥ | 2 | 2 3/32 | 2 3/4 |
| BRONZE BODY with Stainless Steel Strainer Element | | | | | | | | | | | | |
| 1 | 18 | 60x60 | 3.52 | 155 | .0061 | 3/4 | 150 | 500 | 8600B006 | 2 | 3 1/2 | 4 7/8 |
| 1 1/4 | 24 | 60x60 | 4.48 | 155 | .0061 | 3/4 | 150 | 500 | 8600B007 | 2 | 4 3/16 | 5 3/8 |
| 1 1/2 | 36 | 60x60 | 6.39 | 155 | .0061 | 3/4 | 150 | 500 | 8600B008 | 2 | 4 3/4 | 6 3/8 |
| 2 | 63 | 60x60 | 6.49 | 155 | .0061 | 1 | 150 | 500 | 8600B009 | 2 | 5 11/16 | 7 1/2 |
| CAST IRON BODY with Stainless Steel Strainer Element | | | | | | | | | | | | |
| 1/4 | 1.8 | 60x60 | 0.93 | 155 | .0061 | 1/4 | 150 | 300 | 8602B012 | 2 | 2 3/16 | 2 7/8 |
| 3/8 | 3.2 | 60x60 | 0.93 | 155 | .0061 | 1/4 | 150 | 300 | 8602B013 | 2 | 2 3/16 | 2 7/8 |
| 1/2 | 5.9 | 60x60 | 1.49 | 155 | .0061 | 3/8 | 150 | 300 | 8602B014 | 2 | 2 11/16 | 3 7/16 |
| 3/4 | 11 | 60x60 | 2.70 | 155 | .0061 | 1/2 | 150 | 300 | 8602B015 | 2 | 3/38 | 4 3/8 |
| 1 | 18 | 60x60 | 3.52 | 155 | .0061 | 3/4 | 150 | 300 | 8602B016 | 2 | 3 1/2 | 4 7/8 |
| 1 1/4 | 24 | 60x60 | 4.58 | 155 | .0061 | 1 | 150 | 300 | 8602B017 | 2 | 4 1/8 | 5 3/8 |
| 1 1/2 | 36 | 60x60 | 6.39 | 155 | .0061 | 1-1/4 | 150 | 300 | 8602B018 | 2 | 4 11/16 | 6 3/8 |
| 2 | 68 | 60x60 | 6.49 | 155 | .0061 | 1-1/2 | 150 | 300 | 8602B019 | 2 | 5 7/16 | 7 1/2 |
| 2 1/2 | 81 | 60x60 | 10.01 | 155 | .0061 | 1-1/4 | 150 | 300 | 8602B020 | 2 | 6 7/16 | 9 |
| STAINLESS STEEL BODY with Stainless Steel Strainer Element and PTFE Seals | | | | | | | | | | | | |
| 3/8 | 2.1 | 60x60 | .23 | 250 | .0098 | 1/4 | 450 | 1500 | 8601 004 | 2 | 1 27/32 | 1 29/32 |
| 1/2 | 3 | 60x60 | .35 | 250 | .0098 | 1/4 | 450 | 1500 | 8601 005 | 2 | 2 | 2 9/32 |
| ① 1/4" O.D. compression connection. Fittings are not supplied. To order, refer to List Price Schedule. | | | | | | | ⑤ Metal body strainers are rated for steam at 250 psi maximum pressure and 406°F maximum temperature. | | | | | |
| ② See dimensions. | | | | | | | ⑥ UL recognized component. | | | | | |
| ③ Other mesh sizes may be available; consult ASCO. | | | | | | | ⑦ Strainer supplied with FKM seal. | | | | | |
| ④ Where pressure exceeds 50 psi, it is advisable to use hose or tubing clamps. | | | | | | | | | | | | |

ACCESSORIES

Specifications (Metric units)

| Pipe Size (ins.) | Kv Flow Factor (m3/h) | Screen Mesh Size ③ | Total Free Hole Area (mm²) | Particle Retention Size ③ | | Blow-Off Pipe Size (ins.) | Max. Fluid Temp. °C ⑤ | Safe Working Pressure (bar) ⑤ | Catalog Number | Const. Ref. | Dimensions (mm) | |
|--|-----------------------|--------------------|----------------------------|---------------------------|--------|--|-----------------------|-------------------------------|----------------|-------------|-----------------|-----|
| | | | | Microns | Inches | | | | | | A | B |
| CA BODY with Stainless Steel Strainer Element and NBR Seals | | | | | | | | | | | | |
| ① | .43 | 80x80 | 75 | 178 | .007 | - | 54 | 3 | 8604 004 | 1 | ② | ② |
| ① ④ | .43 | 80x80 | 75 | 178 | .007 | - | 54 | 12 | 8604 002 | 1 | ② | ② |
| FORGED BRASS BODY with Stainless Steel Strainer Element and PTFE or FPM Seals ⑥ | | | | | | | | | | | | |
| 1/8 | .86 | 60x60 | 210 | 155 | .0061 | - | 204 | 52 | 8600A001 ⑥ ⑦ | 2 | 34 | 51 |
| 1/4 | 1.46 | 60x60 | 210 | 155 | .0061 | - | 204 | 52 | 8600A002 ⑥ ⑦ | 2 | 34 | 51 |
| 3/8 | 1.63 | 100x100 | 226 | 140 | .0055 | - | 204 | 52 | 8600A013 ⑥ | 2 | 41 | 48 |
| 1/2 | 2.23 | 100x100 | 323 | 140 | .0055 | - | 204 | 52 | 8600A014 ⑥ | 2 | 46 | 58 |
| 3/4 | 4.03 | 100x100 | 484 | 140 | .0055 | - | 204 | 52 | 8600A015 ⑥ | 2 | 53 | 70 |
| BRONZE BODY with Stainless Steel Strainer Element | | | | | | | | | | | | |
| 1 | 15.43 | 60x60 | 2270 | 155 | .0061 | 3/4 | 66 | 34 | 8600B006 | 2 | 89 | 124 |
| 1 1/4 | 20.57 | 60x60 | 2890 | 155 | .0061 | 3/4 | 66 | 34 | 8600B007 | 2 | 106 | 137 |
| 1 1/2 | 30.86 | 60x60 | 4122 | 155 | .0061 | 3/4 | 66 | 34 | 8600B008 | 2 | 121 | 162 |
| 2 | 54.00 | 60x60 | 4186 | 155 | .0061 | 1 | 66 | 34 | 8600B009 | 2 | 144 | 191 |
| CAST IRON BODY with Stainless Steel Strainer Element | | | | | | | | | | | | |
| 1/4 | 1.54 | 60x60 | 600 | 155 | .0061 | 1/4 | 66 | 21 | 8602B012 | 2 | 56 | 73 |
| 3/8 | 2.74 | 60x60 | 600 | 155 | .0061 | 1/4 | 66 | 21 | 8602B013 | 2 | 56 | 73 |
| 1/2 | 5.06 | 60x60 | 961 | 155 | .0061 | 3/8 | 150 | 21 | 8602B014 | 2 | 68 | 87 |
| 3/4 | 9.43 | 60x60 | 1742 | 155 | .0061 | 1/2 | 151 | 21 | 8602B015 | 2 | 2 | 111 |
| 1 | 101.14 | 60x60 | 2270 | 155 | .0061 | 3/4 | 152 | 21 | 8602B016 | 2 | 89 | 124 |
| 1 1/4 | 20.57 | 60x60 | 2954 | 155 | .0061 | 1 | 153 | 21 | 8602B017 | 2 | 105 | 137 |
| 1 1/2 | 30.86 | 60x60 | 4122 | 155 | .0061 | 1-1/4 | 154 | 21 | 8602B018 | 2 | 119 | 162 |
| 2 | 58.28 | 60x60 | 4186 | 155 | .0061 | 1-1/2 | 155 | 21 | 8602B019 | 2 | 138 | 191 |
| 2 1/2 | 69.43 | 60x60 | 6456 | 155 | .0061 | 1-1/4 | 156 | 21 | 8602B020 | 2 | 164 | 229 |
| STAINLESS STEEL BODY with Stainless Steel Strainer Element and PTFE Seals | | | | | | | | | | | | |
| 3/8 | 1.80 | 60x60 | 148 | 250 | .0098 | 1/4 | 232 | 103 | 8601 004 | 2 | 47 | 48 |
| 1/2 | 2.57 | 60x60 | 226 | 250 | .0098 | 1/4 | 232 | 103 | 8601 005 | 2 | 51 | 58 |
| ① 1/4" O.D. compression connection. Fittings are not supplied. To order, refer to List Price Schedule. ② See dimensions. ③ Other mesh sizes may be available; <i>consult ASCO</i> . ④ Where pressure exceeds 3.4 bar, it is advisable to use hose or tubing clamps. | | | | | | ⑤ Metal body strainers are rated for steam at 17 bar maximum pressure and 208°C maximum temperature. ⑥ UL recognized component. ⑦ Strainer supplied with FKM seal. | | | | | | |

Dimensions inches (mm)



ACCESSORIES

Features

- Compact, 3-ported valves have oversized orifice for quick exhaust of cylinders, brakes, actuators, clutches, etc.
- Allow use of smaller pipe lines and control components
- When used as a shuttle valve, high pressure from the two inlets exits through the common outlet
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|---------------------|
| V043 051 | |
| Body and Bonnet | 316 Stainless Steel |
| Seat | HYT |
| All Others | |
| Body and Bonnet | Die-Cast Zinc |
| Seat | NBR |



Nominal Ambient Temp. Ranges

V043 051: -40°F to 125°F (-40°C to 52°C)

All Others: -4°F to 125°F (-20°C to 52°C)

Refer to Engineering Section for details.

Specifications (English units)

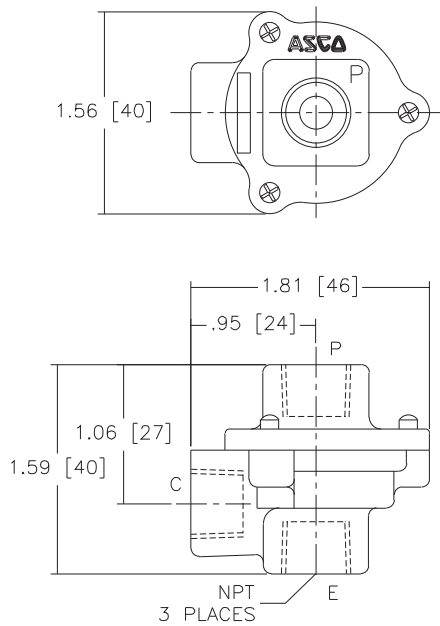
| Pipe Size (ins.) | Cv Flow Factor | | Opening Pressure (psi) | Maximum Operating Pressure Differential (psi) | Max. Air Temp. °F | Quick Exhaust/ Shuttle Valve | Shutoff Valve | Body Material | Const. Ref. |
|------------------|----------------------|---------------------|------------------------|---|-------------------|------------------------------|----------------|---------------|-------------|
| | Pressure to Cylinder | Cylinder to Exhaust | | | | Catalog Number | Catalog Number | | |
| 1/8 | .7 | .8 | 5 | 125 | 125 | V043 005 | - | Zinc | 1 |
| 1/4 | .8 | 1.0 | 5 | 125 | 125 | V043 006 | - | Zinc | 1 |
| 1/4 | .8 | 1.4 | 15 | 150 | 125 | V043 051 | - | S.S. | 3 |
| 1/4 | 2.0 | 2.0 | 5 | 125 | 125 | V043 001 | V043 011 | Zinc | 2 |
| 3/8 | 3.5 | 4.5 | 5 | 125 | 125 | V043 002 | V043 021 | Zinc | 2 |

Specifications (Metric units)

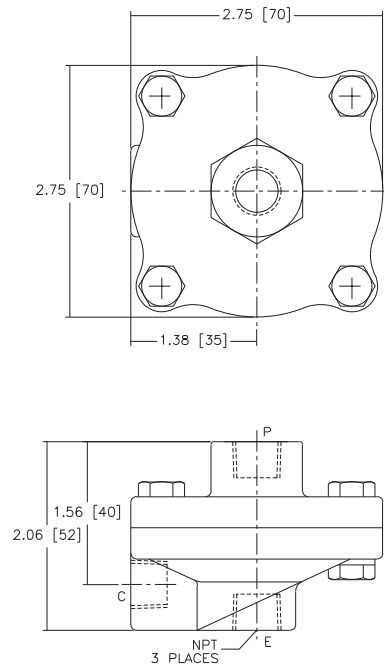
| Pipe Size (ins.) | Kv Flow Factor (m3/h) | | Opening Pressure (bar) | Maximum Operating Pressure Differential (bar) | Max. Air Temp. °C | Quick Exhaust/ Shuttle Valve | Shutoff Valve | Body Material | Const. Ref. |
|------------------|-----------------------|---------------------|------------------------|---|-------------------|------------------------------|----------------|---------------|-------------|
| | Pressure to Cylinder | Cylinder to Exhaust | | | | Catalog Number | Catalog Number | | |
| 1/8 | .60 | .69 | 0.3 | 8.6 | 52 | V043 005 | - | Zinc | 1 |
| 1/4 | .69 | .86 | 0.3 | 8.6 | 52 | V043 006 | - | Zinc | 1 |
| 1/4 | .69 | 1.20 | 1.0 | 10.3 | 52 | V043 051 | - | S.S. | 3 |
| 1/4 | 1.71 | 1.71 | 0.3 | 8.6 | 52 | V043 001 | V043 011 | Zinc | 2 |
| 3/8 | 3.00 | 3.86 | 0.3 | 8.6 | 52 | V043 002 | V043 021 | Zinc | 2 |

Dimensions inches (mm)

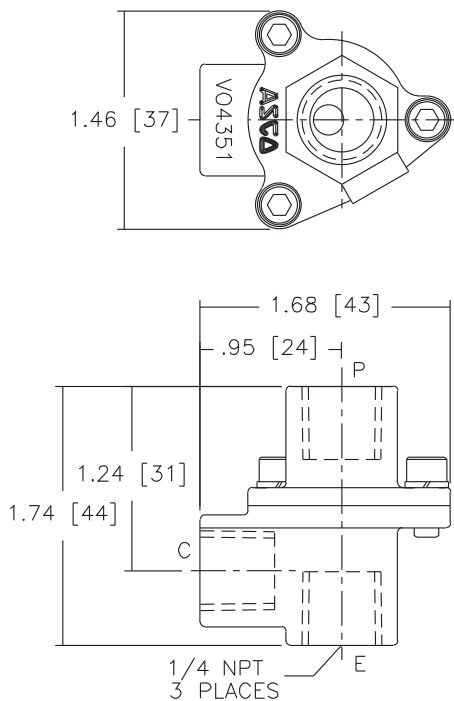
Const. Ref. 1



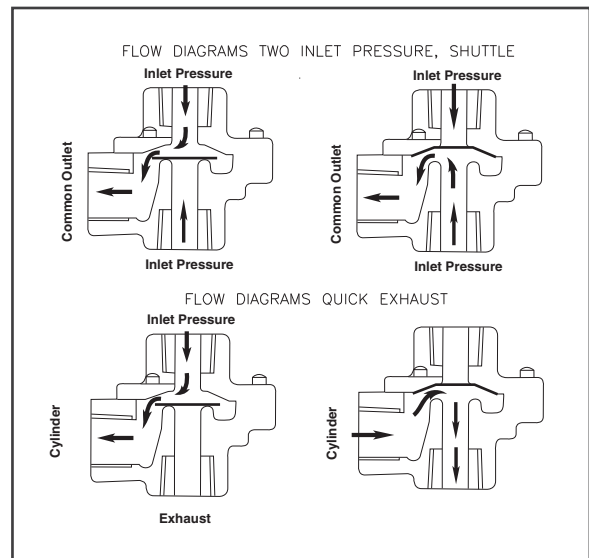
Const. Ref. 2



Const. Ref. 3



Flow Diagrams



Features

- Compact design
- In-line mounted
- Quiet operation
- Instantaneous shutoff against reverse flow, low forward pressure opening
- Disc seats before reverse flow to avoid fluid shock on reverse pressure differential

Construction

| Valve Parts in Contact with Fluids | | |
|------------------------------------|---|---------------------|
| Body | Brass | 300 Stainless Steel |
| Valve Seat | NBR and EPDM seat at zero pressure in spring-loaded valves. | |
| | Metal seated - leakage on air up to 65 SCFH. | |



Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Operating Pressure (psi) | Maximum Operating Pressure Differential (psi) Air-Inert Gas, Water, and Light Oil | Max. Fluid Temp. °F | Catalog Number | Const. Ref. |
|---|---------------------|----------------|--------------------------|--|---------------------|----------------|-------------|
| FORGED BRASS BODY with NBR Disc | | | | | | | |
| 1/4 | 9/32 | .70 | 1 | 150 | 200 | V012 001 | 1 |
| 3/8 | 3/8 | 1.2 | 1 | 150 | 200 | V012 002 | 2B |
| 1/2 | 7/16 | 2.5 | 1 | 150 | 200 | V012 003 | 2C |
| 3/4 | 1/2 | 3.6 | 1 | 150 | 200 | V012 004 | 2D |
| STAINLESS STEEL BODY with NBR Disc | | | | | | | |
| 1/4 | 9/32 | .70 | 1 | 150 | 200 | V012 005 | 3 |
| 3/8 | 3/8 | 1.2 | 1 | 150 | 200 | V012 006 | 2B |
| 1/2 | 7/16 | 2.5 | 1 | 150 | 200 | V012 007 | 2C |
| FORGED BRASS BODY with EPDM Disc for Low-Pressure Steam | | | | | | | |
| 1/4 | 3/8 | 1.2 | 1 | 50 | 300 | V012 010 | 2A |
| 3/8 | 3/8 | 1.2 | 1 | 50 | 300 | V012 011 | 2B |
| 1/2 | 7/16 | 2.5 | 1 | 50 | 300 | V012 012 | 2C |
| 3/4 | 1/2 | 3.6 | 1 | 50 | 300 | V012 013 | 2D |
| FORGED BRASS BODY with Metal Seating for High-Pressure Steam | | | | | | | |
| 1/4 | 3/8 | .70 | 8 | 200 | 388 | V012 014 | 2E |
| 3/8 | 3/8 | .70 | 8 | 200 | 388 | V012 015 | 2E |
| 1/2 | 1/2 | 3.4 | 4 | 200 | 388 | V012 016 | 2F |
| 3/4 | 1/2 | 5.1 | 4 | 200 | 388 | V012 017 | 2F |

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm.) | Kv Flow Factor (m3/h) | Operating Pressure (bar) | Maximum Operating Pressure Differential (bar) Air-Inert Gas, Water, and Light Oil | Max. Fluid Temp. °C | Catalog Number | Const. Ref. |
|---|--------------------|-----------------------|--------------------------|--|---------------------|----------------|-------------|
| FORGED BRASS BODY with NBR Disc | | | | | | | |
| 1/4 | 7 | .60 | 0.07 | 10 | 92 | V012 001 | 1 |
| 3/8 | 10 | 1.03 | 0.07 | 10 | 92 | V012 002 | 2B |
| 1/2 | 11 | 2.14 | 0.07 | 10 | 92 | V012 003 | 2C |
| 3/4 | 13 | 3.09 | 0.07 | 10 | 92 | V012 004 | 2D |
| STAINLESS STEEL BODY with NBR Disc | | | | | | | |
| 1/4 | 7 | .60 | 0.07 | 10 | 92 | V012 005 | 3 |
| 3/8 | 10 | 1.03 | 0.07 | 10 | 92 | V012 006 | 2B |
| 1/2 | 11 | 2.14 | 0.07 | 10 | 92 | V012 007 | 2C |
| FORGED BRASS BODY with EPDM Disc for Low-Pressure Steam | | | | | | | |
| 1/4 | 10 | 1.03 | 0.07 | 3 | 147 | V012 010 | 2A |
| 3/8 | 10 | 1.03 | 0.07 | 3 | 147 | V012 011 | 2B |
| 1/2 | 11 | 2.14 | 0.07 | 3 | 147 | V012 012 | 2C |
| 3/4 | 13 | 3.09 | 0.07 | 3 | 147 | V012 013 | 2D |
| FORGED BRASS BODY with Metal Seating for High-Pressure Steam | | | | | | | |
| 1/4 | 10 | .60 | 0.55 | 14 | 196 | V012 014 | 2E |
| 3/8 | 10 | .60 | 0.55 | 14 | 196 | V012 015 | 2E |
| 1/2 | 13 | 2.91 | 0.28 | 14 | 196 | V012 016 | 2F |
| 3/4 | 13 | 4.37 | 0.28 | 14 | 196 | V012 017 | 2F |

Dimensions inches (mm)

Const. Ref. 1

Const. Ref. 2

Const. Ref. 3

Flow Diagrams

| Const. Ref. | E | H | L | P | W | |
|-------------|------|------|------|------|------|------|
| 2A | ins. | 1.16 | 2.03 | 1.91 | 1.56 | 0.88 |
| | mm | 30 | 52 | 49 | 40 | 22 |
| 2B | ins. | 1.16 | 2.09 | 1.91 | 1.66 | 0.88 |
| | mm | 30 | 53 | 49 | 42 | 22 |
| 2C | ins. | 1.16 | 2.38 | 2.28 | 1.84 | 1.09 |
| | mm | 30 | 61 | 58 | 47 | 28 |
| 2D | ins. | 1.31 | 2.62 | 2.75 | 1.84 | 1.31 |
| | mm | 33 | 67 | 70 | 47 | 33 |
| 2E | ins. | 1.16 | 2.38 | 2.28 | 1.84 | 1.09 |
| | mm | 30 | 61 | 58 | 47 | 28 |
| 2F | ins. | 1.38 | 2.94 | 2.75 | 2.16 | 1.31 |
| | mm | 35 | 75 | 70 | 55 | 33 |

ACCESSORIES

Features

- Solid state electronic timer used to automatically control ASCO solenoid valves
- Typically used with ASCO Solenoid Valves for automatic draining of condensate in compressed air systems (See *Special Service Section for CDV assemblies*)
- Selectable timing ranges (2-40 seconds "on"; 30 seconds to 45 minutes "off")
- Manual override for test/reset
- LED lights to indicate timing phase

Technical Specifications

| | |
|--------------------------|-----------------------------------|
| Supply Voltage | 24 - 240V AC/DC 50/60 Hz |
| Current Consumption | 4 mA max. |
| Operating Temperature | 14°F - 122°F |
| Environmental Protection | Type 4 |
| Switch Capacity | 1 Amp |
| Inrush Current Capacity | 10 Amps for 10 mSec |
| Duty Cycle | 100% |
| Repeat Accuracy | ± 0.1% |
| Scale Accuracy | ± 10% |
| Reset/Test | Manual Touch Switch |
| Printed Circuit Board | UL 94V0 |
| Connection | DIN 43650 ISO-4400/6952 |
| Indicators | LEDs to indicate phases |
| On Time | Adjustable from 2 to 40 sec. |
| Off Time | Adjustable from 30 sec to 45 min. |



Timer and Accessories Kit Numbers

| | |
|---------------------------|----------------------------|
| Timer Catalog Number: | 272839-001 272839-009** |
| Power Cord* Kit Number: | 272852 |
| DIN Connector Kit Number: | 272873 |

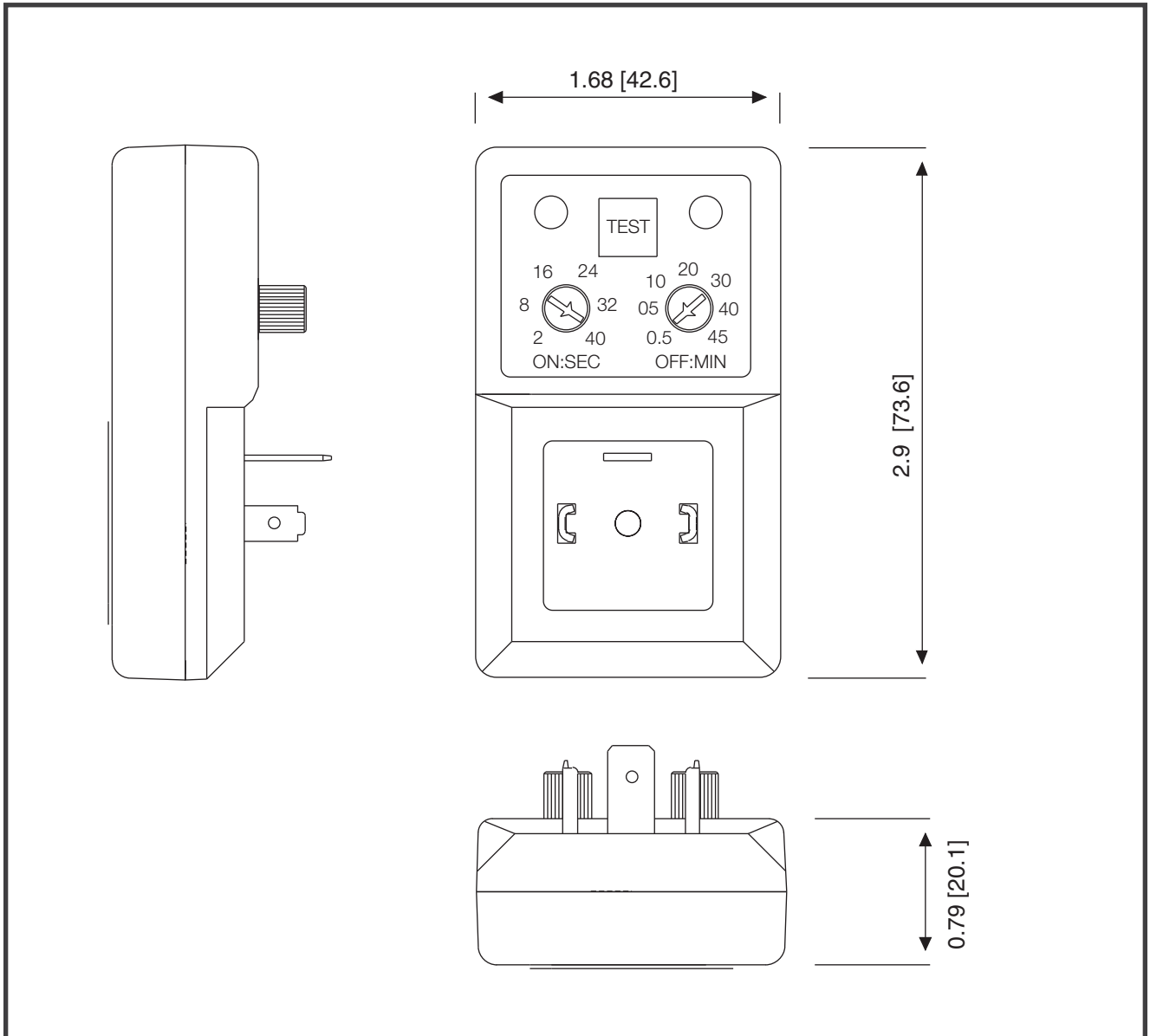
* 6' power cord has DIN connector and 3-prong plug for wall outlet.
** For use with DIN 11 CDV Assemblies.

Approvals

CSA certified. UL recognized components. Meets applicable CE directives.

Refer to Engineering Section for details.

Dimensions inches (mm)



Air Preparation Equipment

ASCO's Modulair 100 Series offers all the control, flexibility and performance you need from your air preparation equipment. Components of the Modulair Series consist of filters, regulators and lubricators (FRLs). These components can be installed separately or can be assembled into a complete unit, as you require.

What are FRLs and why should they be used?

Pneumatic actuators and controls perform more reliably and efficiently, and have a longer life, when the air is prepared for your specific application. These easy-to-use FRLs are specifically engineered to give you increased airflow from a modular system.

Filters

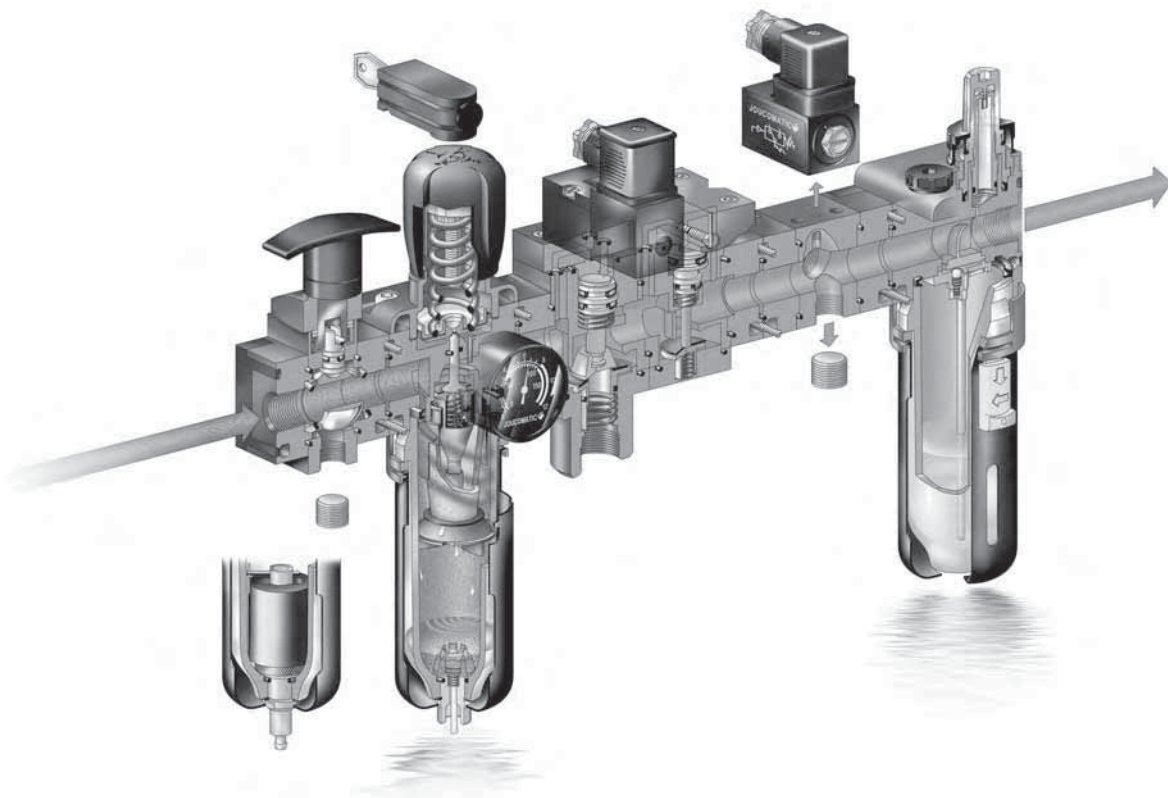
Condensation during the compression of air and water vapor can cause particles of pipe scale and other contaminants in the pipes. These particles need to be removed before they reach the pneumatic equipment, such as valves and cylinders. Particles can damage and clog small orifices in the equipment unless they are filtered out. Filters separate the water droplets and particles from the air before they reach your pneumatic equipment.

Regulators

Compressed air must be kept at a constant pressure regardless of network fluctuations, variations in air consumption, or distance from the compressor. The regulator is used to maintain consistent downstream pressure.

Lubricators

All moving parts must be kept lubricated for a longer life. The lubricator stores droplets of oil in the bowl, releasing the oil into the high velocity air stream and spreading the oil throughout the piping system to the components.



ASCO offers a complete line of air handling equipment. Filters, regulators, and lubricators are essential whenever pneumatic equipment is used. Filters come in a variety of micron ratings to clean the air of moisture and particulate coming out of your compressor. Regulators are located at specific locations to isolate areas of a pipe train that require unique pressures. Lubricators are used on pneumatic air components to give them the required lubrication for extended life. These components can be ordered separately for individual locations, or assembled for a central location.



Construction

| Modular Series | Pipe Size | Filters | Regulators | Water Reg. | Joinable Reg. | Lubricators | Monobloc F/L |
|-----------------------|-------------------------|--------------------------------------|--------------------|------------|--------------------|--------------------------------------|--------------------|
| 105 | 1/8", 1/4" | 25um, 5um | | | | | |
| Body | | Polyamide (PA) | Polyamide | Polyamide | N/A | N/A | Polyamide (PA) |
| Bowl | | Polycarbonate (PC) | - | - | N/A | N/A | Polycarbonate (PC) |
| Bowl Protector | | Polyamide (PA) | - | - | N/A | N/A | Polyamide (PA) |
| Filter Element | | Polyethylene (PE) | - | - | N/A | N/A | Polyethylene (PE) |
| Seals | | Nitrile (NBR) | Nitrile (NBR) | NBR | N/A | N/A | Nitrile (NBR) |
| 107 | 1/8", 1/4" | 25um, 5um | | | | | |
| Body | | Painted Zinc Alloy | Painted Zinc Alloy | N/A | N/A | Painted Zinc Alloy | N/A |
| Bowl | | PC or PA | - | N/A | N/A | PC or PA | N/A |
| Bowl Protector | | Painted Steel | - | N/A | N/A | Painted Steel | N/A |
| Internal Parts | | - | - | N/A | N/A | - | N/A |
| Filter Element | | Polyethylene (PE) | - | N/A | N/A | - | N/A |
| Seals | | Nitrile (NBR) | Nitrile (NBR) | N/A | N/A | Nitrile (NBR) | N/A |
| 112 | 1/4", 3/8", 1/2" | 25um, 5um | | | | | |
| Body | | Painted Zinc Alloy | Painted Zinc Alloy | N/A | Painted Zinc Alloy | Painted Zinc Alloy | N/A |
| Bowl | | Metal or PC | - | N/A | - | Metal or PC | N/A |
| Bowl Protector | | Painted Steel | - | N/A | - | Painted Steel | N/A |
| Internal Parts | | - | - | N/A | - | - | N/A |
| Filter Element | | Polyethylene (PE) | - | N/A | - | - | N/A |
| Seals | | Nitrile (NBR) | Nitrile (NBR) | N/A | Nitrile (NBR) | Nitrile (NBR) | N/A |
| 160 | 3/4", 1" | 30um, 5um | | | | | |
| Body | | Aluminum | Aluminum | N/A | N/A | Aluminum | N/A |
| Bowl | | Metal with Polypropylene View Window | - | N/A | N/A | Metal with Polypropylene View Window | N/A |
| Bowl Protector | | - | - | N/A | N/A | - | N/A |
| Internal Parts | | - | - | N/A | N/A | - | N/A |
| Filter Element | | Sintered Plastic | - | N/A | N/A | - | N/A |
| Seals | | Nitrile (NBR) | Nitrile (NBR) | N/A | N/A | Nitrile (NBR) | N/A |
| Page Number | | 472, 473 | 474, 475 | 474, 475 | 474, 475 | 476, 477 | 476, 477 |

ACCESSORIES



| F/R | FRL | Coalescing Filters | Combination Coalescing Filters | Shut-Off Valves | Soft-Start Devices | 3/2 Isolation Valves | Bypass Modules |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------|---------------------|----------------------|--------------------|
| Polyamide (PA) | Polyamide (PA) | N/A | N/A | N/A | N/A | N/A | N/A |
| Polycarbonate (PC) | Polycarbonate (PC) | N/A | N/A | N/A | N/A | N/A | N/A |
| Polyamide (PA) | Polyamide (PA) | N/A | N/A | N/A | N/A | N/A | N/A |
| Polyethylene (PE) | Polyethylene (PE) | N/A | N/A | N/A | N/A | N/A | N/A |
| Nitrile (NBR) | Nitrile (NBR) | N/A | N/A | N/A | N/A | N/A | N/A |
| | | .01um | 5um pre filter -.01um | | | | |
| Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy |
| PC or PA | PC or PA | PC or PA | PC or PA | - | - | - | - |
| Painted Steel | Painted Steel | Painted Steel | Painted Steel | - | - | - | - |
| - | - | - | - | Brass, Acetal Resin | Brass, Acetal Resin | - | - |
| Polyethylene (PE) | Polyethylene (PE) | Polyethylene (PE) | Polyethylene (PE) | - | - | - | - |
| Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) |
| | | .01um | 5um pre filter -.01um | | | | |
| Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy | Painted Zinc Alloy |
| PC | PC | PC | PC | - | - | - | - |
| Painted Steel | Painted Steel | Painted Steel | Painted Steel | - | - | - | - |
| - | - | - | - | Brass, Acetal Resin | Brass, Acetal Resin | - | - |
| Polyethylene (PE) | Polyethylene (PE) | Polyethylene (PE) | Polyethylene (PE) | - | - | - | - |
| Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) |
| | | .01um | 5um pre filter -.01um | | | | |
| Aluminum | Aluminum | Aluminum | Aluminum | Aluminum | Aluminum | Aluminum | Aluminum |
| Metal with Polypropylene View Window | Metal with Polypropylene View Window | Metal with Polypropylene View Window | Metal with Polypropylene View Window | - | - | - | - |
| - | - | - | - | - | - | - | - |
| - | - | - | - | Aluminum, Brass | Aluminum, Brass | - | - |
| Sintered Plastic | Sintered Plastic | Sintered Plastic | Sintered Plastic | - | - | - | - |
| Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) | Nitrile (NBR) |
| 478, 479 | 480, 481 | 482 | 482 | 484 | 484 | 483 | 483 |

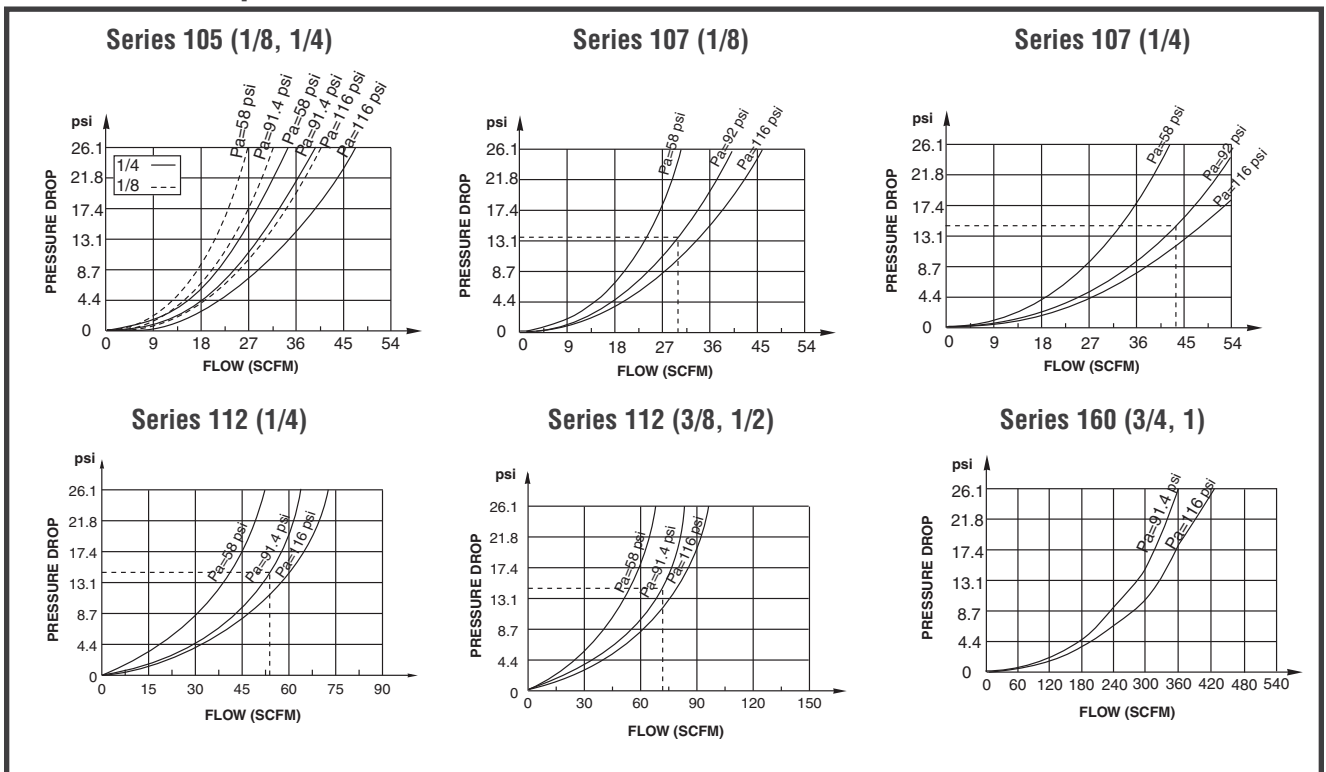
ACCESSORIES

Filter - Specifications

| Series | Pipe Size (ins.) | Bowl Capacity (oz.) | | Max. Flow @ 90 psi and 1 psi Drop (SCFM) | Max. Inlet Pressure (psi) @ 125°F | Filter Capacity (microns) | Min. Ambient Temp. °F | Max. Ambient Temp. °F | Semi Automatic Drain | | Automatic Drain | |
|---|------------------|---------------------|--------|--|-----------------------------------|---------------------------|-----------------------|-----------------------|----------------------|-------------------------|----------------------|-------------------------|
| | | Total | Useful | | | | | | With Bowl Protection | Without Bowl Protection | With Bowl Protection | Without Bowl Protection |
| Filter - 5 Micron Polycarbonate (PC) Bowl | | | | | | | | | | | | |
| 105 | 1/8 | 0.90 | 0.32 | 26.7 | 150 ① | 5 | 32 | 125 | 342 25 255 | 342 25 175 | - | - |
| 107 | 1/8 | 1.61 | 0.39 | 30.9 | 150 ② | 5 | 32 | 125 | 342 04 017 | 342 04 029 | - | - |
| 105 | 1/4 | 0.90 | 0.32 | 31.5 | 150 ① | 5 | 32 | 125 | 342 25 256 | 342 25 176 | - | - |
| 107 | 1/4 | 1.61 | 0.39 | 43.5 | 150 ② | 5 | 32 | 125 | 342 04 018 | 342 04 030 | - | - |
| 112 | 1/4 | 3.65 | 1.28 | 54.0 | 150 ② | 5 | 32 | 125 | 342 03 010 | - | 342 03 022 | - |
| 112 | 3/8 | 3.65 | 1.28 | 72.0 | 150 ② | 5 | 32 | 125 | 342 03 011 | - | 342 03 023 | - |
| 112 | 1/2 | 3.65 | 1.28 | 72.0 | 150 ② | 5 | 32 | 125 | 342 03 012 | - | 342 03 024 | - |
| 160 | 3/4 | 16 | 4.16 | 270 | 254 | 5 | 15 | 125 | 342 07 390 ④ | - | 342 07 396 ④ | - |
| 160 | 1 | 16 | 4.16 | 294 | 254 | 5 | 15 | 125 | 342 07 391 ④ | - | 342 07 397 ④ | - |
| Filter - 25 Micron Polycarbonate (PC) Bowl | | | | | | | | | | | | |
| 105 | 1/8 | 0.90 | 0.32 | 31.4 | 150 ① | 25 | 32 | 125 | 342 25 215 | 342 25 135 | - | - |
| 107 | 1/8 | 1.61 | 0.39 | 36.4 | 150 ② | 25 | 32 | 125 | 342 04 013 | 342 04 025 | - | - |
| 105 | 1/4 | 0.90 | 0.32 | 37.1 | 150 ① | 25 | 32 | 125 | 342 25 216 | 342 25 136 | - | - |
| 107 | 1/4 | 1.61 | 0.39 | 51.2 | 150 ② | 25 | 32 | 125 | 342 04 014 | 342 04 026 | - | - |
| 112 | 1/4 | 3.65 | 1.28 | 63.5 | 150 ② | 25 | 32 | 125 | 342 03 004 | 342 03 041 | 342 03 016 | 342 03 453 |
| 112 | 3/8 | 3.65 | 1.28 | 84.7 | 150 ② | 25 | 32 | 125 | 342 03 005 | 342 03 042 | 342 03 017 | 342 03 454 |
| 112 | 1/2 | 3.65 | 1.28 | 84.7 | 150 ② | 25 | 32 | 125 | 342 03 006 | 342 03 043 | 342 03 018 | 342 03 455 |
| 160 | 3/4 | 16 | 4.16 | 317.5 | 254 | 30 | 15 | 125 | 342 07 381 ③④ | - | 342 07 387 ③④ | - |
| 160 | 1 | 16 | 4.16 | 346 | 254 | 30 | 15 | 125 | 342 07 382 ③④ | - | 342 07 388 ③④ | - |

① 175 psi @ 75°F Max. Ambient & Fluid Temperature. ② 230 psi @ 75°F Max. Ambient & Fluid Temperature. ③ 30 micron filter. ④ Metal bowl with Polypropylene viewing window. Consult ASCO for manual drains on 160 Series.

Filter - Flow Graphs

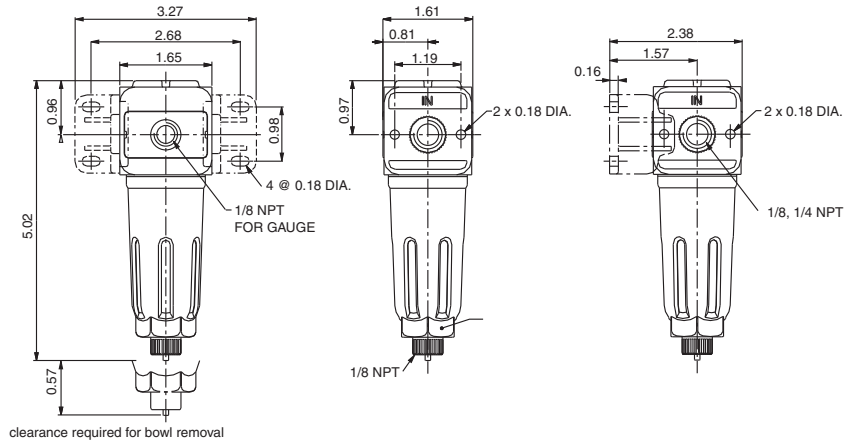


ACCESSORIES

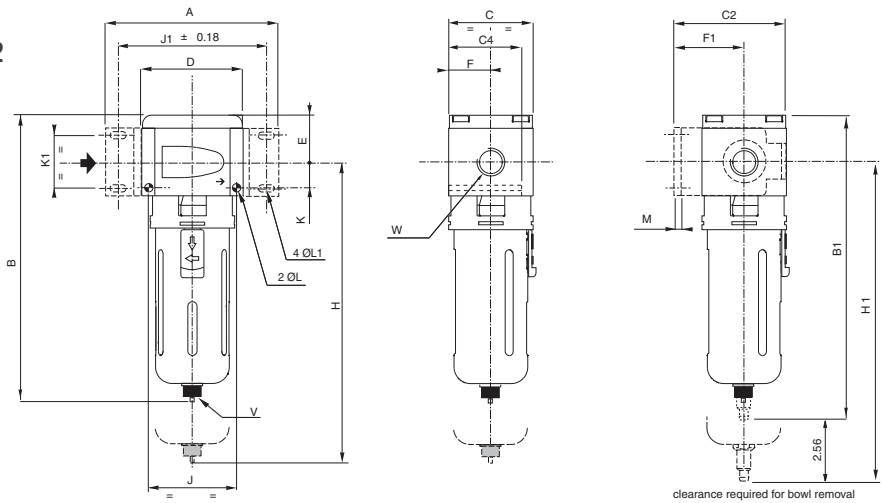
Filter - Dimensions inches

| Series | A | B | B1 | C | C2 | C4 | D | E | F | F1 | H | H1 | J | J1 | K | K1 | L (Dia.) | L1 (Dia.) | M | V | W |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|-----------|------|-----|----------------------|
| 107 | 3.27 | 6.28 | - | 1.65 | 2.40 | 1.50 | 1.65 | 1.00 | 0.83 | 1.57 | 7.48 | - | 1.26 | 2.70 | 0.39 | 1.10 | 0.16 | 0.18 | 0.12 | 1/8 | 1/8", 1/4" NPT |
| 112 | 4.41 | 7.36 | 7.80 | 2.17 | 2.89 | 1.87 | 2.60 | 1.20 | 1.08 | 1.81 | 8.72 | 9.15 | 2.24 | 3.78 | 0.67 | 1.32 | 0.22 | 0.22 | 0.16 | 1/8 | 1/4", 3/8", 1/2" NPT |

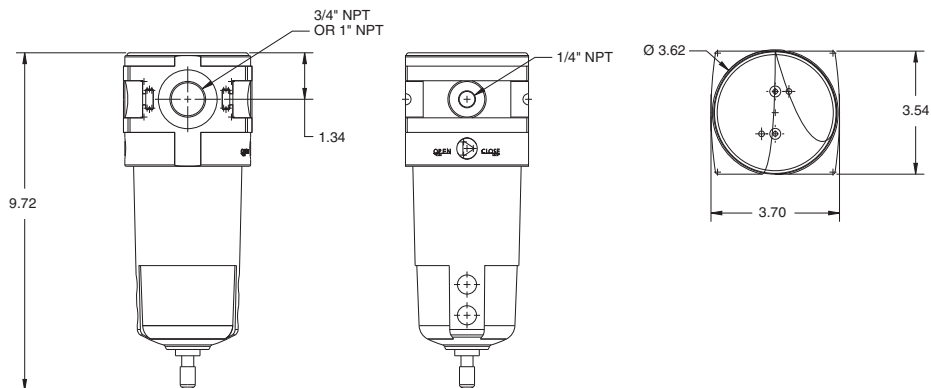
Series 105



Series 107, 112



Series 160

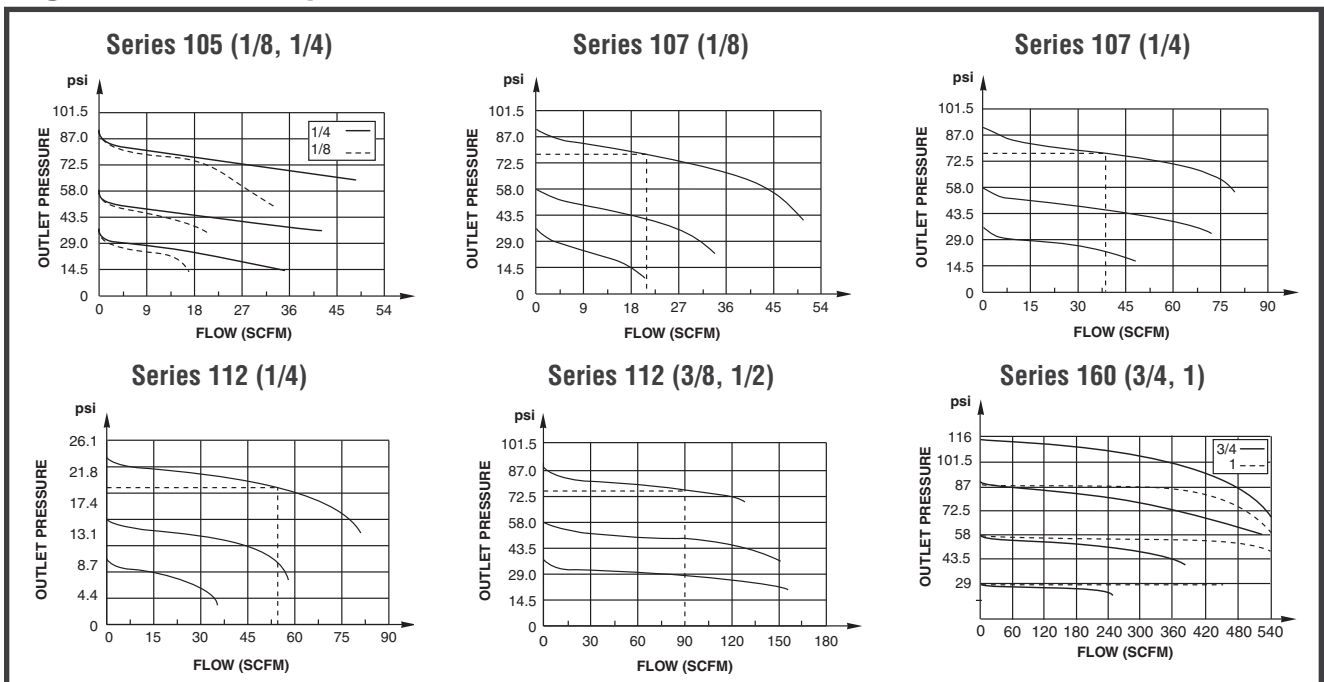


Regulator - Specifications

| Series | Pipe Size (ins.) | Max. Flow @ 90 psi (SCFM) | Max. Inlet Pressure (psi) | Pressure Control Range (psi) | Min. Ambient Temp. °F | Max. Ambient Temp. °F | With Pressure Gauge | Without Pressure Gauge |
|---|------------------|---------------------------|---------------------------|------------------------------|-----------------------|-----------------------|---------------------|------------------------|
| Regulator - Self-Relieving Air Service | | | | | | | | |
| 105 | 1/8 | 19.4 | 175 | 7 - 120 | 32 | 125 | 342 25 027 | 342 25 019 |
| 105 | 1/8 | 19.4 | 175 | 3 - 44 | 32 | 125 | 342 25 265 | 342 25 263 |
| 107 | 1/8 | 24.7 | 230 | 7 - 145 | 15 | 140 | 342 04 200 | 342 04 035 |
| 107 | 1/8 | 24.7 | 230 | 3 - 44 | 15 | 140 | 342 04 198 | 342 04 041 |
| 105 | 1/4 | 22.9 | 175 | 7 - 120 | 32 | 125 | 342 25 028 | 342 25 020 |
| 105 | 1/4 | 22.9 | 175 | 3 - 44 | 32 | 125 | 342 25 266 | 342 25 264 |
| 107 | 1/4 | 45.9 | 230 | 7 - 145 | 15 | 140 | 342 04 201 | 342 04 036 |
| 107 | 1/4 | 45.9 | 230 | 3 - 44 | 15 | 140 | 342 04 199 | 342 04 042 |
| 112 | 1/4 | 63.5 | 230 | 7 - 145 | 15 | 140 | 342 03 061 | 342 03 055 |
| 112 | 1/4 | 63.5 | 230 | 3 - 44 | 15 | 140 | 342 03 073 | 342 03 067 |
| 112 | 3/8 | 105.9 | 230 | 7 - 145 | 15 | 140 | 342 03 062 | 342 03 056 |
| 112 | 3/8 | 105.9 | 230 | 3 - 44 | 15 | 140 | 342 03 074 | 342 03 068 |
| 112 | 1/2 | 105.9 | 230 | 7 - 145 | 15 | 140 | 342 03 063 | 342 03 057 |
| 112 | 1/2 | 105.9 | 230 | 3 - 44 | 15 | 140 | 342 03 075 | 342 03 069 |
| 160 | 3/4 | 423.3 | 254 | 7 - 175 | 15 | 140 | 342 07 438 | 342 07 435 |
| 160 | 1 | 582.1 | 254 | 7 - 175 | 15 | 140 | 342 07 439 | 342 07 436 |
| Regulator - Non Self-Relieving Water Service (max. flow in GPM) | | | | | | | | |
| 105 | 1/8 | 2.6 | 175 | 3 - 44 | 40 | 125 | 342 25 277 | 342 25 275 |
| 105 | 1/8 | 2.6 | 175 | 7 - 87 | 40 | 125 | 342 25 281 | 342 25 279 |
| 105 | 1/4 | 4.0 | 175 | 3 - 44 | 40 | 125 | 342 25 278 | 342 25 276 |
| 105 | 1/4 | 4.0 | 175 | 7 - 87 | 40 | 125 | 342 25 282 | 342 25 280 |
| Joinable Regulator - Self-Relieving Air Service (Common inlet size 1/2" NPT) ① | | | | | | | | |
| 112 | 3/8 | 105.9 | 230 | 3 - 44 | 15 | 140 | 342 03 770 | 342 03 768 |
| 112 | 3/8 | 105.9 | 230 | 7 - 145 | 15 | 140 | 342 03 774 | 342 03 772 |
| 112 | 1/2 | 105.9 | 230 | 3 - 44 | 15 | 140 | 342 03 771 | 342 03 769 |
| 112 | 1/2 | 105.9 | 230 | 7 - 145 | 15 | 140 | 342 03 775 | 342 03 773 |

① To supply different circuits with different pressures from a common supply.

Regulator - Flow Graphs

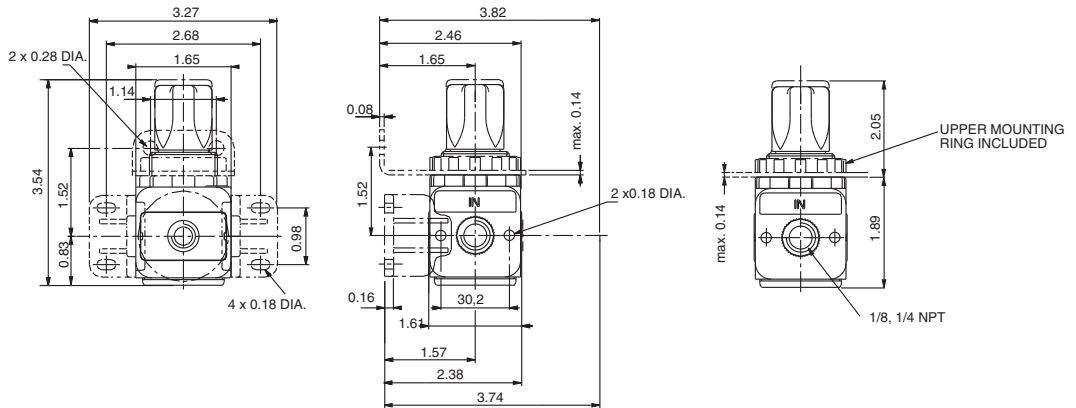


ACCESSORIES

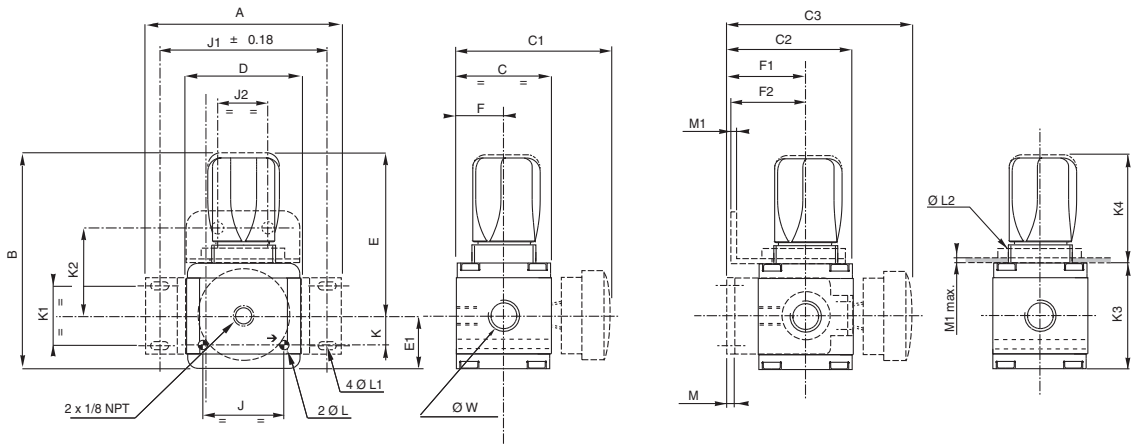
Regulator - Dimensions inches

| Series | A | B | C | C1 | C2 | C3 | D | E | E1 | F | F1 | F2 | J | J1 | J2 | K | K1 | K2 | K3 | K4 | L (Dia.) | L1 (Dia.) | L2 (Dia.) | M | M1 | W |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|-----------|-----------|------|------|----------------------|
| 107 | 3.27 | 4.09 | 1.65 | 2.99 | 2.40 | 3.74 | 1.65 | 3.09 | 1.00 | 0.83 | 1.57 | 1.65 | 1.26 | 2.70 | 1.14 | 0.39 | 1.10 | 1.48 | 2.01 | 2.09 | 0.16 | 0.18 | M30 x 2 | 0.12 | 0.08 | 1/8", 1/4" NPT |
| 112 | 4.41 | 4.92 | 2.17 | 3.43 | 2.89 | 4.13 | 2.60 | 3.72 | 1.20 | 1.08 | 1.81 | 1.65 | 1.77 | 3.78 | 1.14 | 0.67 | 1.32 | 1.67 | 2.40 | 2.52 | 0.22 | 0.22 | M37 x 2 | 0.16 | 0.08 | 1/4", 3/8", 1/2" NPT |

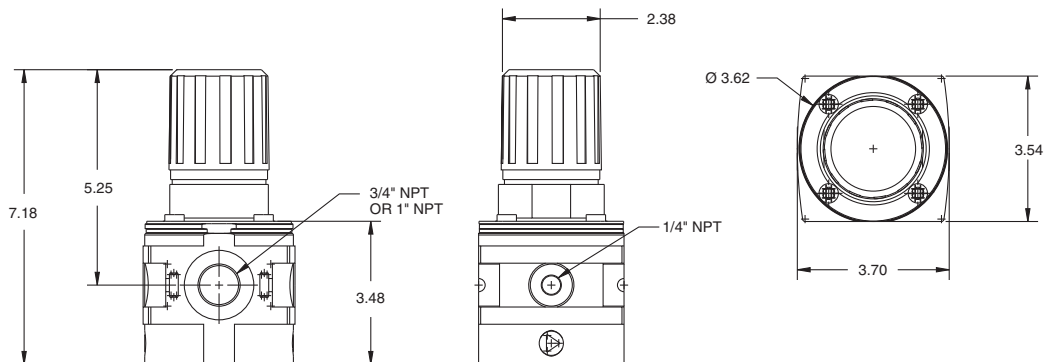
Series 105



Series 107, 112



Series 160

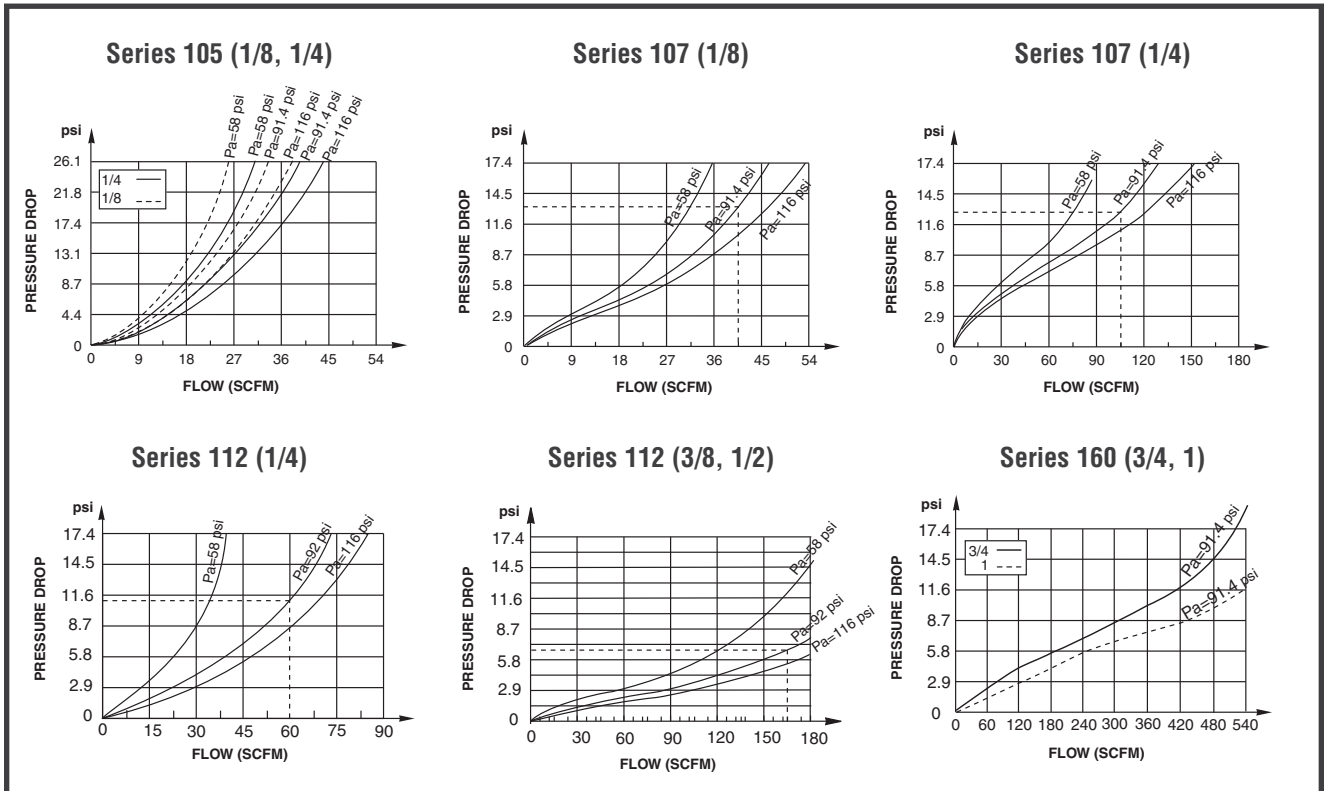


Lubricator - Specifications

| Series | Pipe Size (ins.) | Bowl Capacity (oz.) | Max. Oil Capacity (oz.) | Min. Flow @ 90 psi (SCFM) | Max. Flow @ 90 psi (SCFM) | Max. Inlet Pressure (psi) @ 125°F | Min. Ambient Temp. °F | Max. Ambient Temp. °F | With Bowl Guard | Without Bowl Guard |
|---------------------------------------|------------------|---------------------|-------------------------|---------------------------|---------------------------|-----------------------------------|-----------------------|-----------------------|-----------------|--------------------|
| Lubricator - Selective Oil Fog | | | | | | | | | | |
| 105 | 1/8 | 0.9 | 0.74 | 0.71 | 29.3 | 150 | 32 | 125 | 342 25 195 ②③ | 342 25 115 ②③ |
| 107 | 1/8 | 1.6 | 0.96 | 0.71 | 47.7 | 150 ① | 32 | 125 | 342 04 003 | 342 04 007 |
| 105 | 1/4 | 0.9 | 0.74 | 0.71 | 33.5 | 150 | 32 | 125 | 342 25 196 ②③ | 342 25 116 ②③ |
| 107 | 1/4 | 1.6 | 0.96 | 0.71 | 123.6 | 150 ① | 32 | 125 | 342 04 004 | 342 04 008 |
| 112 | 1/4 | 3.6 | 2.3 | 0.71 | 70.6 | 150 ① | 32 | 125 | 342 03 273 | 342 03 279 |
| 112 | 3/8 | 3.6 | 2.3 | 0.71 | 194.2 | 150 ① | 32 | 125 | 342 03 274 | 342 03 280 |
| 112 | 1/2 | 3.6 | 2.3 | 0.71 | 194.2 | 150 ① | 32 | 125 | 342 03 275 | 342 03 281 |
| 160 | 3/4 | 16.6 | 16.0 | 3.17 | 564.5 | 254 | 15 | 125 | 342 07 555 | - |
| 160 | 1 | 16.6 | 16.0 | 3.17 | 624.5 | 254 | 15 | 125 | 342 07 556 | - |

① 175 psi @ 75°F Max. Ambient & Fluid Temperature. ② Includes 25 micron filter (see filter section for specifications).
 ③ Combination Filter-Lubricator only.

Lubricator - Flow Graphs

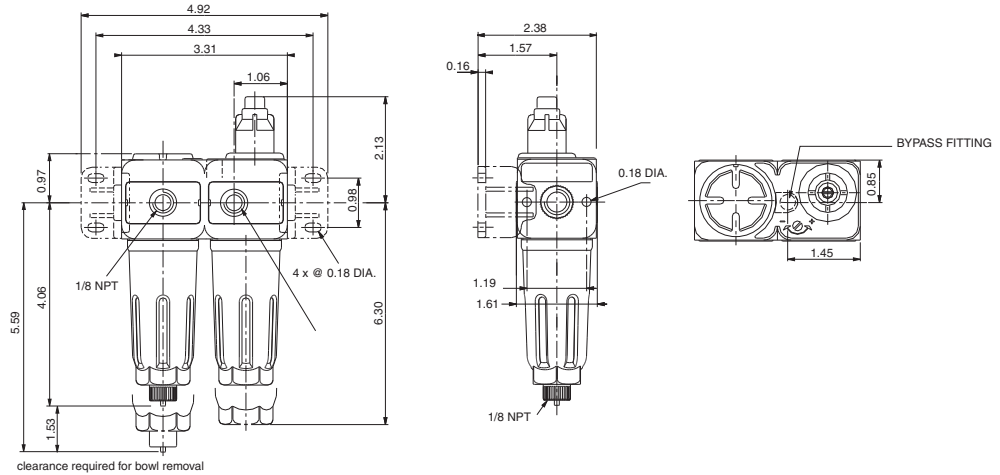


ACCESSORIES

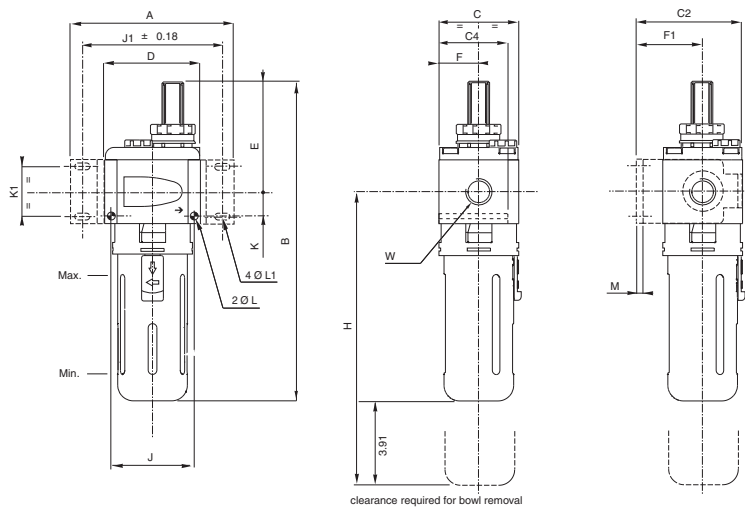
Lubricator - Dimensions inches

| Series | A | B | C | C2 | C4 | D | E | F | F1 | H | J | J1 | K | K1 | L (Dia.) | L1 (Dia.) | M | W |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|-----------|------|----------------------|
| 107 | 3.27 | 7.36 | 1.65 | 2.40 | 1.50 | 1.65 | 2.56 | 0.83 | 1.57 | 8.46 | 1.26 | 2.70 | 0.39 | 1.10 | 0.16 | 0.18 | 0.16 | 1/8", 1/4" NPT |
| 112 | 4.41 | 8.46 | 2.17 | 2.89 | 1.87 | 2.60 | 2.80 | 1.08 | 1.81 | 9.57 | 2.24 | 3.78 | 0.67 | 1.32 | 0.22 | 0.22 | 0.16 | 1/4", 3/8", 1/2" NPT |

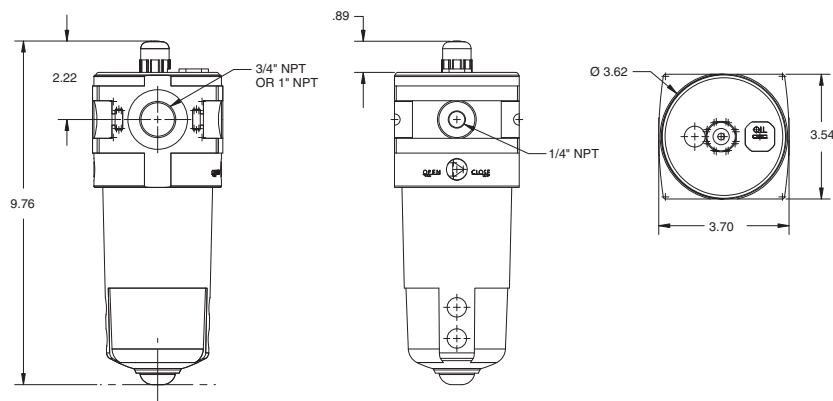
Series 105



Series 107, 112



Series 160

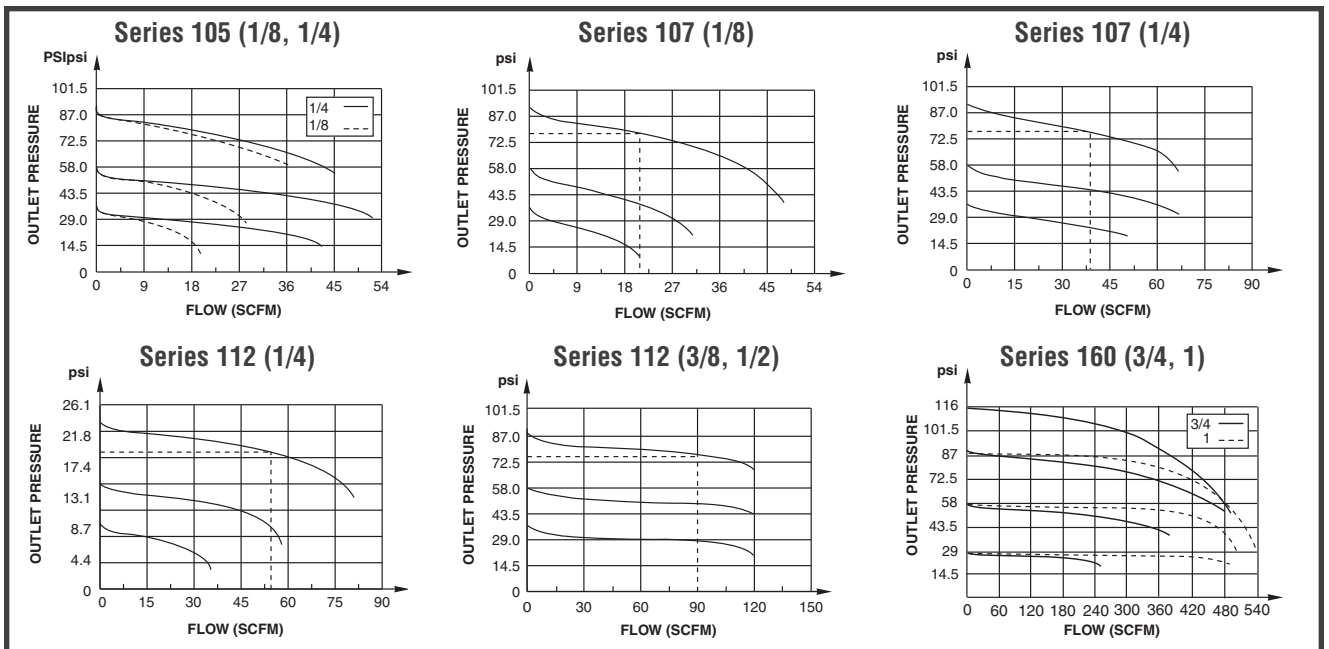


Filter/Regulator - Specifications

| Series | Pipe Size (ins.) | Bowl Capacity (oz.) | | Max. Flow @ 90 psi (SCFM) | Max. Inlet Pressure (psi) @ 125°F | Pressure Control Range (psi) | Min. Ambient Temp. °F | Max. Ambient Temp. °F | Semi Automatic Drain | | Automatic Drain | |
|--|------------------|---------------------|--------|---------------------------|-----------------------------------|------------------------------|-----------------------|-----------------------|----------------------|------------------------|---------------------|------------------------|
| | | Total | Useful | | | | | | With Pressure Gauge | Without Pressure Gauge | With Pressure Gauge | Without Pressure Gauge |
| Filter/Regulator Combined - 5 Micron Filtration with Bowl Protector | | | | | | | | | | | | |
| 105 | 1/8 | .90 | 0.32 | 15.9 | 150 ② | 7 - 120 | 32 | 125 | 342 25 251 | 342 25 249 | - | - |
| 107 | 1/8 | 1.61 | 0.39 | 21.2 | 150 ① | 7 - 145 | 32 | 125 | 342 04 170 | 342 04 053 | - | - |
| 105 | 1/4 | .90 | 0.32 | 15.8 | 150 ② | 7 - 120 | 32 | 125 | 342 25 252 | 342 25 250 | - | - |
| 107 | 1/4 | 1.61 | 0.39 | 38.8 | 150 ① | 7 - 145 | 32 | 125 | 342 04 171 | 342 04 054 | - | - |
| 112 | 1/4 | 3.65 | 1.28 | 53.0 | 150 ① | 7 - 145 | 32 | 125 | 342 03 101 | 342 03 095 | 342 03 150 | 342 03 144 |
| 112 | 3/8 | 3.65 | 1.28 | 88.3 | 150 ① | 7 - 145 | 32 | 125 | 342 03 102 | 342 03 096 | 342 03 151 | 342 03 145 |
| 112 | 1/2 | 3.65 | 1.28 | 88.3 | 150 ① | 7 - 145 | 32 | 125 | 342 03 103 | 342 03 097 | 342 03 152 | 342 03 146 |
| 160 | 3/4 | 16 | 4.16 | 328 | 254 | 7 - 175 | 15 | 125 | 342 07 468 ④ | 342 07 465 ④ | 342 07 480 ④ | 342 07 477 ④ |
| 160 | 1 | 16 | 4.16 | 469.2 | 254 | 7 - 175 | 15 | 125 | 342 07 469 ④ | 342 07 466 ④ | 342 07 481 ④ | 342 07 478 ④ |
| Filter/Regulator Combined - 25 Micron Filtration with Bowl Protector | | | | | | | | | | | | |
| 105 | 1/8 | 0.90 | 0.32 | 19.4 | 150 ② | 7 - 120 | 32 | 125 | 342 25 211 | 342 25 209 | - | - |
| 107 | 1/8 | 1.61 | 0.39 | 24.7 | 150 ① | 7 - 145 | 32 | 125 | 342 04 178 | 342 04 047 | - | - |
| 105 | 1/4 | 0.90 | 0.32 | 22.9 | 150 ② | 7 - 120 | 32 | 125 | 342 25 212 | 342 25 210 | - | - |
| 107 | 1/4 | 1.61 | 0.39 | 45.9 | 150 ① | 7 - 145 | 32 | 125 | 342 04 179 | 342 04 048 | - | - |
| 112 | 1/4 | 3.65 | 1.28 | 63.5 | 150 ① | 7 - 145 | 32 | 125 | 342 03 089 | 342 03 083 | 342 03 138 | 342 03 132 |
| 112 | 3/8 | 3.65 | 1.28 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 090 | 342 03 084 | 342 03 139 | 342 03 133 |
| 112 | 1/2 | 3.65 | 1.28 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 091 | 342 03 085 | 342 03 140 | 342 03 134 |
| 160 | 3/4 | 16 | 4.16 | 388 | 254 | 7 - 175 | 15 | 125 | 342 07 450 ③④ | 342 07 447 ③④ | 342 07 462 ③④ | 342 07 459 ③④ |
| 160 | 1 | 16 | 4.16 | 554 | 254 | 7 - 175 | 15 | 125 | 342 07 451 ③④ | 342 07 448 ③④ | 342 07 463 ③④ | 342 07 460 ③④ |
| Filter/Regulator Combined - 25 Micron Filtration without Bowl Protector | | | | | | | | | | | | |
| 105 | 1/8 | 0.90 | 0.32 | 19.4 | 150 ② | 7 - 120 | 32 | 125 | 342 25 131 | 342 25 129 | - | - |
| 107 | 1/8 | 1.61 | 0.39 | 24.7 | 150 ① | 7 - 145 | 32 | 125 | 342 04 182 | 342 04 071 | - | - |
| 105 | 1/4 | 0.90 | 0.32 | 22.9 | 150 ② | 7 - 120 | 32 | 125 | 342 25 132 | 342 25 130 | - | - |
| 107 | 1/4 | 1.61 | 0.39 | 45.9 | 150 ① | 7 - 145 | 32 | 125 | 342 04 183 | 342 04 072 | - | - |
| 112 | 1/4 | 3.65 | 1.28 | 63.5 | 150 ① | 7 - 145 | 32 | 125 | 342 03 465 | 342 03 343 | 342 03 462 | 342 03 459 |
| 112 | 3/8 | 3.65 | 1.28 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 466 | 342 03 344 | 342 03 463 | 342 03 460 |
| 112 | 1/2 | 3.65 | 1.28 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 467 | 342 03 345 | 342 03 464 | 342 03 461 |

① 230 psi @ 75°F Max. Ambient & Fluid Temperature. ② 175 psi @ 75°F Max. Ambient & Fluid Temperature. ③ 30 micron filtration. ④ Metal bowl with Polypropylene viewing window. Consult ASCO for metal bowls or Polyamide bowls on 112 Series, and manual drains for 160 Series.

Filter/Regulator - Flow Graphs

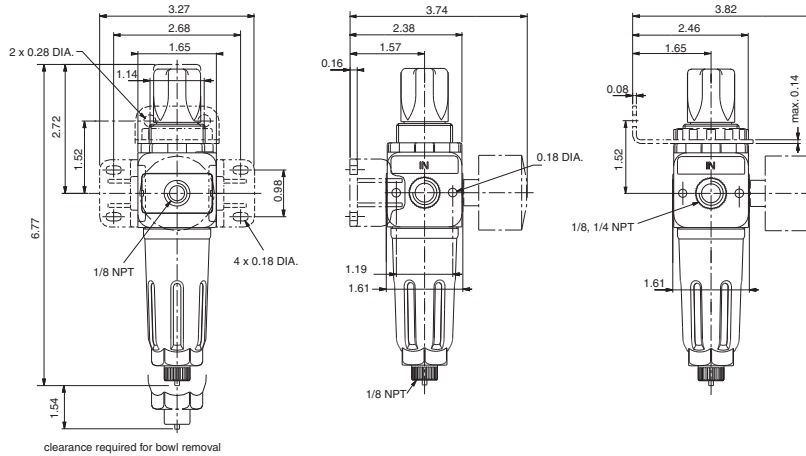


ACCESSORIES

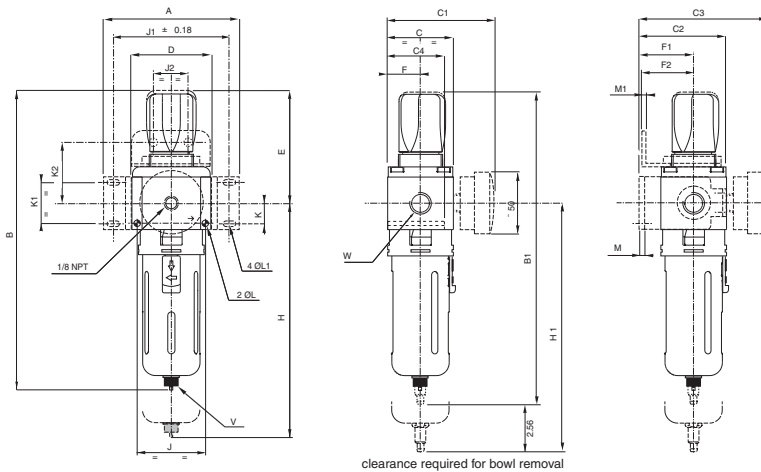
Filter/Regulator - Dimensions inches

| Series | A | B | B1 | C | C1 | C2 | C3 | C4 | D | E | F | F1 | F2 | H | H1 | J | J1 | J2 | K | K1 | K2 | L (Dia.) | L1 (Dia.) | M | M1 | V | W |
|--------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|-----------|------|------|-----|----------------------|
| 107 | 3.27 | 8.38 | - | 1.65 | 2.99 | 2.40 | 3.74 | 1.50 | 1.65 | 3.11 | 0.83 | 1.57 | 1.65 | 7.48 | - | 1.26 | 2.70 | 1.14 | 0.39 | 1.10 | 1.48 | 0.16 | 0.18 | 0.12 | 0.08 | 1/8 | 1/8", 1/4" NPT |
| 112 | 4.41 | 9.88 | 10.31 | 2.17 | 3.42 | 2.89 | 4.13 | 1.87 | 2.60 | 3.72 | 1.08 | 1.81 | 1.65 | 8.72 | 9.15 | 2.24 | 3.78 | 1.14 | 0.67 | 1.32 | 1.67 | 0.22 | 0.22 | 0.16 | 0.08 | 1/8 | 1/4", 3/8", 1/2" NPT |

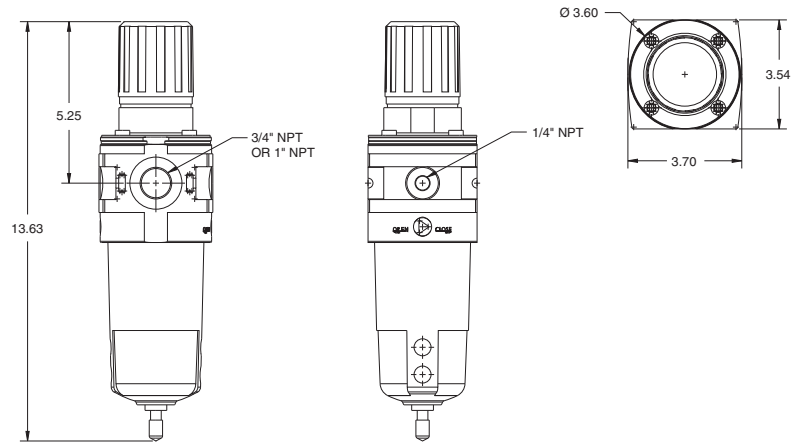
Series 105



Series 107, 112



Series 160



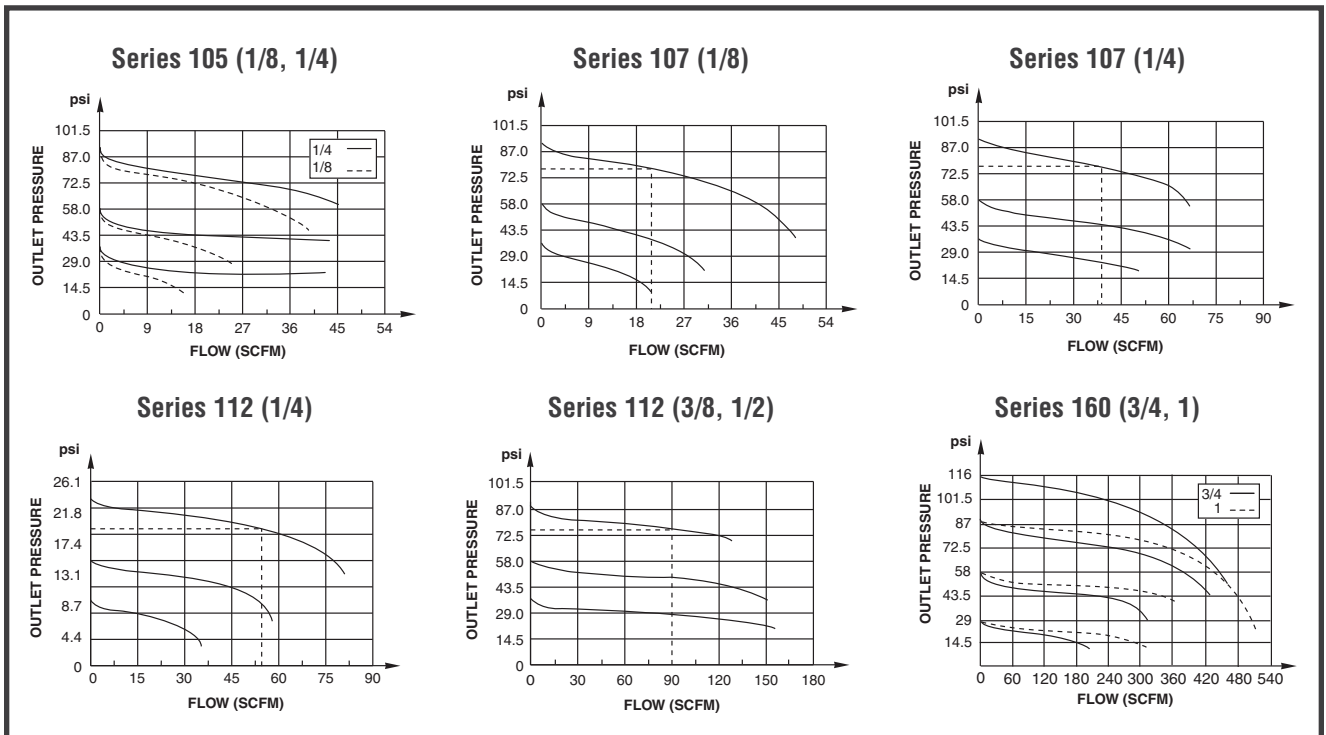
ACCESSORIES

Filter/Regulator/Lubricator - Specifications

| Series | Pipe Size (ins.) | Bowl Capacity (oz.) | | Max. Oil Capacity (oz.) | Min. Flow @ 90 psi (SCFM) | Max. Flow @ 90 psi (SCFM) | Max. Inlet Pressure (psi) | Pressure Control Range (psi) | Min. Ambient Temp. °F | Max. Ambient Temp. °F | Semi Automatic Drain | | Automatic Drain | |
|---|------------------|---------------------|--------|-------------------------|---------------------------|---------------------------|---------------------------|------------------------------|-----------------------|-----------------------|----------------------|------------------------|---------------------|------------------------|
| | | Total | Useful | | | | | | | | With Pressure Gauge | Without Pressure Gauge | With Pressure Gauge | Without Pressure Gauge |
| Filter/Regulator/Lubricator Combined - 25 Micron Filtration with Bowl Protector | | | | | | | | | | | | | | |
| 105 | 1/8 | 0.90 | 0.32 | 0.74 | 1.1 | 14.1 | 150 ② | 7 - 120 | 32 | 125 | 342 25 191 | 342 25 189 | - | - |
| 107 | 1/8 | 1.61 | 0.39 | 0.96 | 1.1 | 24.7 | 150 ① | 7 - 145 | 32 | 125 | 342 04 204 | 342 04 129 | - | - |
| 105 | 1/4 | 0.90 | 0.32 | 0.74 | 1.1 | 19.4 | 150 ② | 7 - 120 | 32 | 125 | 342 25 192 | 342 25 190 | - | - |
| 107 | 1/4 | 1.61 | 0.39 | 0.96 | 1.1 | 45.9 | 150 ① | 7 - 145 | 32 | 125 | 342 04 205 | 342 04 130 | - | - |
| 112 | 1/4 | 3.65 | 1.28 | 2.34 | 1.1 | 63.5 | 150 ① | 7 - 145 | 32 | 125 | 342 03 293 | 342 03 305 | 342 03 441 | 342 03 438 |
| 112 | 3/8 | 3.65 | 1.28 | 2.34 | 1.1 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 294 | 342 03 306 | 342 03 442 | 342 03 439 |
| 112 | 1/2 | 3.65 | 1.28 | 2.34 | 1.1 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 295 | 342 03 307 | 342 03 443 | 342 03 440 |
| 160 | 3/4 | 16 | 4.16 | 16 | 3.2 | 388 | 254 | 7 - 175 | 15 | 125 | 342 07 561 ③ | 342 07 558 ③ | 342 07 573 ③ | 342 07 570 ③ |
| 160 | 1 | 17.6 | 4.16 | 16 | 3.2 | 476 | 254 | 7 - 175 | 15 | 125 | 342 07 562 ③ | 342 07 559 ③ | 342 07 574 ③ | 342 07 571 ③ |
| Filter/Regulator/Lubricator Combined - 25 Micron Filtration without Bowl Protector | | | | | | | | | | | | | | |
| 105 | 1/8 | 0.90 | 0.32 | 0.74 | 1.1 | 14.1 | 150 ② | 7 - 120 | 32 | 125 | 342 25 111 | 342 25 109 | - | - |
| 107 | 1/8 | 1.61 | 0.39 | 0.96 | 1.1 | 24.7 | 150 ① | 7 - 145 | 32 | 125 | 342 04 206 | 342 04 135 | - | - |
| 105 | 1/4 | 0.90 | 0.32 | 0.74 | 1.1 | 19.4 | 150 ② | 7 - 120 | 32 | 125 | 342 25 112 | 342 25 110 | - | - |
| 107 | 1/4 | 1.61 | 0.39 | 0.96 | 1.1 | 45.9 | 150 ① | 7 - 145 | 32 | 125 | 342 04 207 | 342 04 136 | - | - |
| 112 | 1/4 | 3.65 | 1.28 | 2.34 | 1.1 | 63.5 | 150 ① | 7 - 145 | 32 | 125 | 342 03 317 | 342 03 329 | 342 03 447 | 342 03 444 |
| 112 | 3/8 | 3.65 | 1.28 | 2.34 | 1.1 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 318 | 342 03 330 | 342 03 448 | 342 03 445 |
| 112 | 1/2 | 3.65 | 1.28 | 2.34 | 1.1 | 105.9 | 150 ① | 7 - 145 | 32 | 125 | 342 03 319 | 342 03 331 | 342 03 449 | 342 03 446 |
| Filter/Regulator/Lubricator Combined - 5 Micron Filtration with Bowl Protector ④ | | | | | | | | | | | | | | |
| 105 | 1/8 | 0.90 | 0.32 | 0.74 | .94 | 12 | 150 ② | 7 - 120 | 32 | 125 | 342 25 231 | 342 25 229 | - | - |
| 105 | 1/4 | 0.90 | 0.32 | 0.74 | .94 | 16.5 | 150 ② | 7 - 120 | 32 | 125 | 342 25 232 | 342 25 230 | - | - |
| 160 | 3/4 | 16 | 4.16 | 16 | 3.2 | 363.4 | 254 | 7 - 175 | 15 | 125 | 342 07 579 ⑤ | 342 07 576 ⑤ | 342 07 591 ⑤ | 342 07 588 ⑤ |
| 160 | 1 | 16 | 4.16 | 16 | 3.2 | 388 | 254 | 7 - 175 | 15 | 125 | 342 07 580 ⑤ | 342 07 577 ⑤ | 342 07 592 ⑤ | 342 07 589 ⑤ |

① 230 psi @ 75°F Max. Ambient & Fluid Temperature. ② 175 psi @ 75°F Max. Ambient & Fluid Temperature. ③ 30 micron filtration and metal bowl. ④ Approx. 15% flow reduction with 5 micron filter element. ⑤ Metal bowl with polypropylene viewing window. Consult ASCO for manual drain on 160 Series.

Filter/Regulator/Lubricator - Flow Graphs

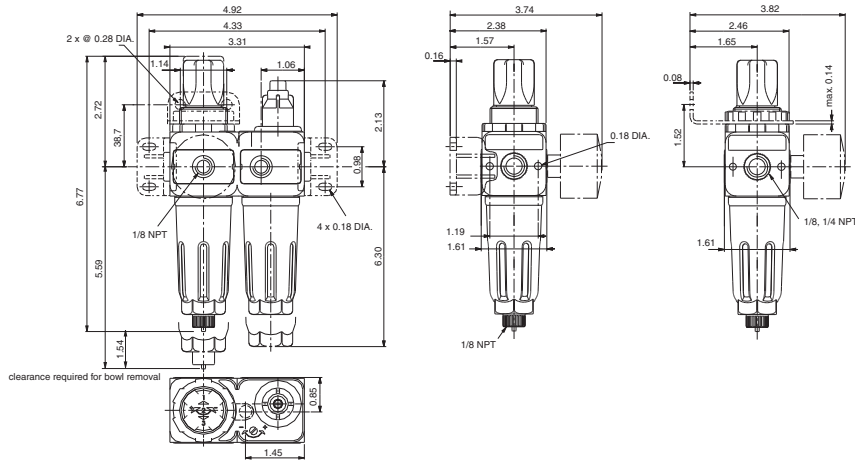


ACCESSORIES

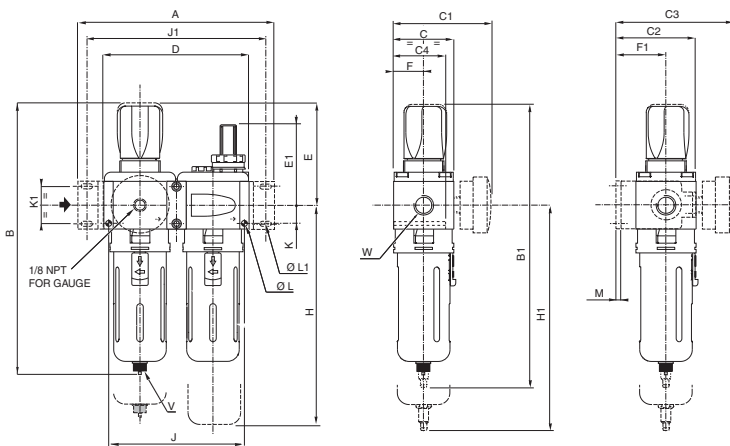
Filter/Regulator/Lubricator - Dimensions inches

| Series | A | B | B1 | C | C1 | C2 | C3 | C4 | D | D1 | E | E1 | F | F1 | H | H1 | J | J1 | K | K1 | L (Dia.) | L1 (Dia.) | M | V | W |
|--------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|-----------|------|-----|----------------------|
| 107 | 4.92 | 8.38 | - | 1.65 | 3.00 | 2.40 | 3.74 | 1.50 | 3.30 | 1.65 | 3.11 | 2.55 | 0.83 | 1.57 | 8.46 | - | 2.91 | 4.35 | 0.39 | 1.10 | 0.16 | 0.18 | 0.12 | 1/8 | 1/8", 1/4" NPT |
| 112 | 7.01 | 9.84 | 10.33 | 2.17 | 3.43 | 2.89 | 4.13 | 1.87 | 5.20 | 2.60 | 3.72 | 2.80 | 1.08 | 1.81 | 9.57 | 9.15 | 4.48 | 6.38 | 0.67 | 1.32 | 0.22 | 0.22 | 0.16 | 1/8 | 1/4", 3/8", 1/2" NPT |

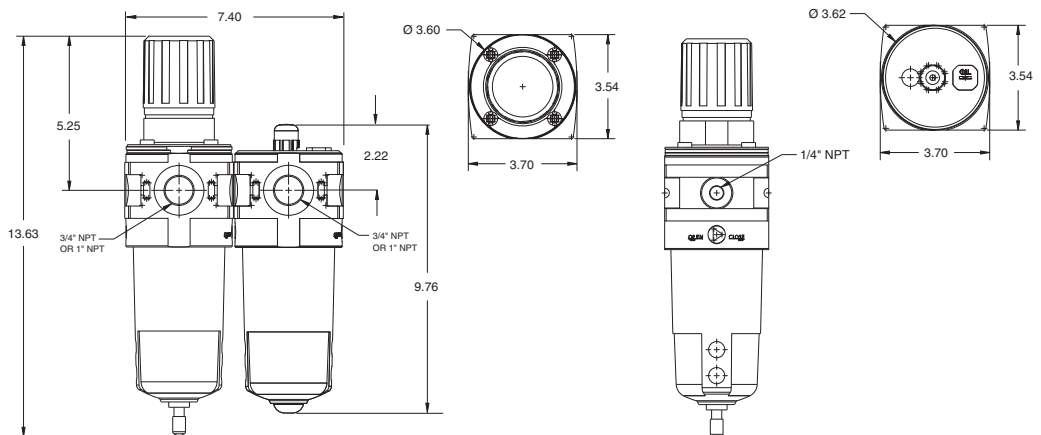
Series 105



Series 107, 112



Series 160

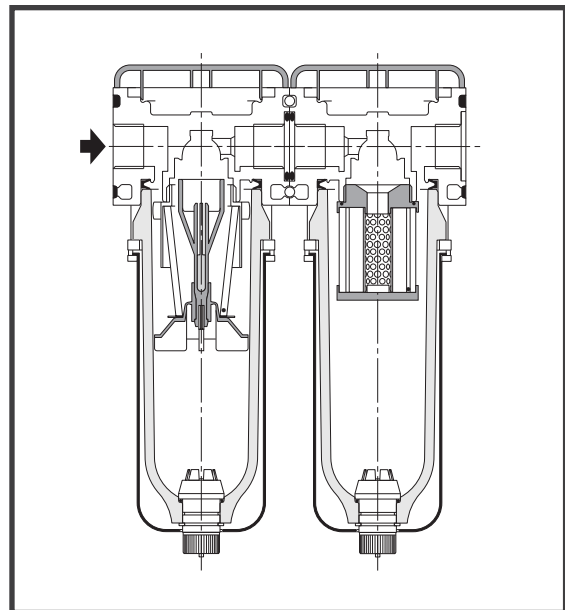


ACCESSORIES

Coalescing Filters - Specifications

| Series | Pipe Size (ins.) | Bowl Capacity (oz.) | | Max. Flow @ 90 psi and 1 psi Drop (SCFM) | Max. Inlet Pressure (psi) @ 125°F | Min. Ambient Temp. °F | Max. Ambient Temp. °F | Semi Automatic Drain | | Automatic Drain | |
|---|------------------|---------------------|--------|--|-----------------------------------|-----------------------|-----------------------|----------------------|-------------------------|----------------------|-------------------------|
| | | Total | Useful | | | | | With Bowl Protection | Without Bowl Protection | With Bowl Protection | Without Bowl Protection |
| Coalescing Filter - .01 Micron Polycarbonate (PC) Bowl ① | | | | | | | | | | | |
| 107 | 1/8 | 2.4 | 0.39 | 25 | 150 | 35 | 125 | 342 04 141 | - | - | - |
| 107 | 1/4 | 2.4 | 0.39 | 25 | 150 | 35 | 125 | 342 04 142 | - | - | - |
| 112 | 1/4 | 4.0 | 1.28 | 37 | 150 | 35 | 125 | 342 03 468 | - | 342 03 477 | - |
| 112 | 3/8 | 4.0 | 1.28 | 37 | 150 | 35 | 125 | 342 03 469 | - | 342 03 478 | - |
| 112 | 1/2 | 4.0 | 1.28 | 37 | 150 | 35 | 125 | 342 03 470 | - | 342 03 479 | - |
| 160 | 3/4 | 16 | 4.16 | 115.5 | 254 | 15 | 125 | 342 07 399 | - | 342 07 405 | - |
| 160 | 1 | 16 | 4.16 | 115.5 | 254 | 15 | 125 | 342 07 400 | - | 342 07 406 | - |
| Pre-Filter (5 Micron) and Coalescing Filter (.01 Micron) Polycarbonate (PC) Bowl ① | | | | | | | | | | | |
| 107 | 1/8 | 2.4 | 0.39 | 25 | 150 | 35 | 125 | 342 04 145 | - | - | - |
| 107 | 1/4 | 2.4 | 0.39 | 25 | 150 | 35 | 125 | 342 04 146 | - | - | - |
| 112 | 1/4 | 4.0 | 1.28 | 37 | 150 | 35 | 125 | 342 03 489 | - | 342 03 501 | - |
| 112 | 3/8 | 4.0 | 1.28 | 37 | 150 | 35 | 125 | 342 03 490 | - | 342 03 502 | - |
| 112 | 1/2 | 4.0 | 1.28 | 37 | 150 | 35 | 125 | 342 03 491 | - | 342 03 503 | - |
| 160 | 3/4 | 16 | 4.16 | 115.5 | 254 | 15 | 125 | 342 07 669 | - | 342 07 675 | - |
| 160 | 1 | 16 | 4.16 | 115.5 | 254 | 15 | 125 | 342 07 670 | - | 342 07 676 | - |
| Pre-Filter/Regulator (5 Micron) and Coalescing Filter (.01 Micron) Polycarbonate (PC) Bowl without gauge ① ② | | | | | | | | | | | |
| 107 | 1/8 | 2.4 | 0.39 | 25 | 150 ③ | 35 | 125 | 342 04 153 | - | - | - |
| 107 | 1/4 | 2.4 | 0.39 | 25 | 150 ③ | 35 | 125 | 342 04 154 | - | - | - |
| 112 | 1/4 | 4.0 | 1.28 | 37 | 150 ③ | 35 | 125 | 342 03 513 | - | 342 03 525 | - |
| 112 | 3/8 | 4.0 | 1.28 | 37 | 150 ③ | 35 | 125 | 342 03 514 | - | 342 03 526 | - |
| 112 | 1/2 | 4.0 | 1.28 | 37 | 150 ③ | 35 | 125 | 342 03 515 | - | 342 03 527 | - |

① See Filter section for dimensions. ② See filter/regulator section for dimensions. ③ 7-145 psi pressure control range.



ACCESSORIES

ADDITIONAL COMPONENTS

Bypass Module

Installed between two components in the air preparation set and allows the user to tap off for high pressure filtered air or non-lubricated air, depending on where it is located in the air preparation assembly.

| Series | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
|--------|------------|------------|------------|------------|------------|
| 112 | 343 03 026 | 343 03 027 | 343 03 028 | - | - |
| 160 | - | - | - | 343 07 032 | 343 07 032 |

A pressure switch can be fitted to some bypass modules to monitor and control the pressure at the end of the air preparation assembly.

Adjustable Pressure Switch

| Series | 1/4" |
|----------|-------------------------------|
| 112, 160 | 349 00 030 |
| 112, 160 | 349 00 031 (Led + protection) |



Manually Operated Isolation Valve

An isolation valve allows the user to safely turn off the air flow through the air preparation assembly for maintenance or service of the air preparation assembly, or the downstream equipment and machinery.

| Series | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
|--------|-------------|------------|------------|------------|------------|------------|
| 107 | Standard | - | - | | | |
| | Padlockable | 343 04 019 | 343 04 020 | | | |
| 112 | Standard | | 343 03 035 | 343 03 036 | 343 03 037 | |
| | Padlockable | | 343 03 055 | 343 03 056 | 343 03 057 | |
| 160 | Standard | | | | - | - |
| | Padlockable | | | | 343 07 023 | 343 07 024 |

Key Lock for Regulator Adjustment Knob

This accessory is used to lock the adjusting knob to prevent inadvertent adjustment or tampering with the operating pressure settings. Can be fitted to stand alone regulators or when regulators are combined with other components.

| Series | Unit Supplied with Key Lock Installed | Key Lock Supplied Separately |
|------------------------|---------------------------------------|------------------------------|
| 107, 112, 160 | Specify S05 Suffix | 343 03 050 |
| Example: 342 03 071S05 | | |



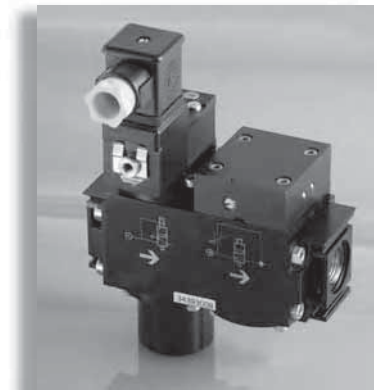
ADDITIONAL COMPONENTS

Emergency Shut-Off Valve and Soft-Start Devices

A 3/2 shut-off valve is controlled by a CNOMO pad-mounted solenoid valve, and vents the air system by de-energizing the solenoid valve when an unsafe condition is sensed.

| | Series | 1/8" NPT | 1/4" NPT | 3/8" NPT | 1/2" NPT |
|------------------------|--------|------------|------------|------------|------------|
| Size 30 Shut-off Valve | 107 | 343 94 003 | 343 94 004 | - | - |
| Size 30 Shut-off Valve | 112 | - | 343 93 126 | 343 93 127 | 343 93 128 |

A soft-start device allows for gradual pressurization of the downstream equipment. An adjustable air flow causes the actuators to move slowly, and prevents damage from machinery being started at full speed. It can also return machinery to a safe, end-of-cycle position before re-starting.



There are two types of control for this system to switch to the normal speed mode:

Automatic Soft-Start will switch to full flow and normal operating speed when the downstream pressure reaches 60-70% of the supply (upstream) pressure. As long as supply pressure is maintained, it is in the full flow position. When the air supply is cut off, the soft-start returns to the low flow position.

| | Series | 1/8" NPT | 1/4" NPT | 3/8" NPT | 1/2" NPT |
|----------------------------|--------|------------|------------|------------|------------|
| Automatic Soft-Start Valve | 107 | 343 04 023 | 343 04 024 | - | - |
| Automatic Soft-Start Valve | 112 | - | 343 03 044 | 343 03 045 | 343 03 046 |

Solenoid/Air Controlled Soft-Start allows the user to specify when the device switches to the full flow position. Position sensors on the machinery trigger the energization of the solenoid pilot valve. The solenoid pilot valve is energized under normal operating conditions, and upon de-energization the device switches to the low flow position.

| | Series | 1/8" NPT | 1/4" NPT | 3/8" NPT | 1/2" NPT |
|-------------------------------|--------|----------|------------|------------|------------|
| Sol/Air Controlled Soft-Start | 112 | - | 343 93 017 | 343 93 018 | 343 93 019 |

The shut-off and soft-start units must be installed after the filter and before the lubricator.

Emergency Shut-Off Valve and Soft-Start Devices as a System

| | Series | 1/8" NPT | 1/4" NPT | 3/8" NPT | 1/2" NPT | 3/4" NPT | 1" NPT | Valves Required |
|--|--------|------------|------------|------------|------------|------------|------------|-----------------|
| Emergency Shut-off/Automatic Soft-Start | 107 | 343 94 007 | 343 94 008 | - | - | - | - | 1X |
| Emergency Shut-off/Automatic Soft-Start | 112 | - | 343 93 120 | 343 93 121 | 343 93 122 | - | - | 1X |
| Emergency Shut-off/Sol/Air Soft-Start | 112 | - | 343 93 123 | 343 93 124 | 343 93 125 | - | - | 2X |
| Emergency Shut-off/Air-Op/Automatic Soft-Start | 160 | - | - | - | - | 343 07 027 | 343 07 028 | - |
| Emergency Shut-off/Sol/Air Soft-Start | 160 | - | - | - | - | 343 97 027 | 343 97 028 | 1X |

Solenoid Valves

| ① | Without Manual Operator | Impulse (Non-Locking) Manual Operator |
|-------------------------|-------------------------|---------------------------------------|
| Size 30 Solenoid Valves | 189 00 007 | - |
| Size 30 Solenoid Valves | 190 00 005 | 190 00 017 |
| Size 30 Solenoid Valves | 192 00 007 | 192 00 009 |

① Solenoids must be ordered with voltage. (ex. 189 00 007 - 120/60)

Shut-Off Valve Silencers

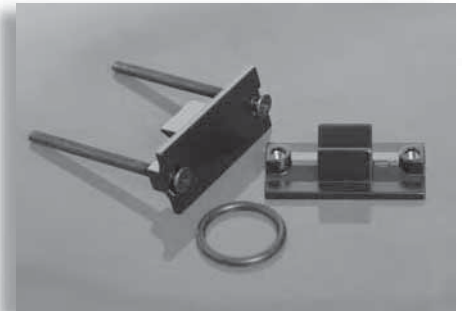
| Shut-off Valve Silencers | Sintered Bronze | Porous Plastic |
|--------------------------|-----------------|----------------|
| 107 (G 1/4) | 346 00 002 | 346 00 407 |
| 112 (G 1/2) | 346 00 004 | 346 00 409 |

ACCESSORIES

Two Part Assembly Kit

This kit enables assembly of two components of the same series

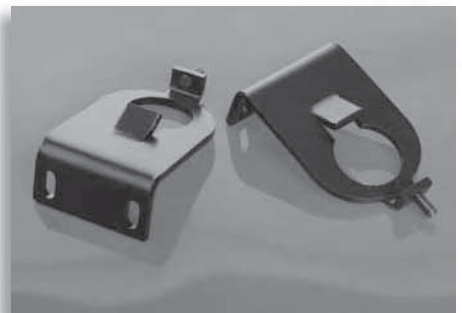
| | Series | Kit Number |
|--|--------|------------|
| 2 assembly screws/nuts 1 component joining seal (not shown) | 105 | 343 05 001 |
| 1 each front and rear assembly yokes, 2 screws 1 component joining seal | 107 | 343 04 001 |
| | 112 | 343 03 001 |
| 2 assembly yokes, screws/nuts 1 component joining seal (not shown) | 160 | 343 07 005 |



Side Mounting Brackets

For surface mounting of any component in the series.
1 set of 2 mounting brackets.

| | Series | Kit Number |
|--|--------|------------|
| 2 brackets of glass-fiber reinforced polyamide 6/6 | 105 | 343 25 005 |
| 2 black painted steel brackets with steel retaining screws | 107 | 343 04 003 |
| | 112 | 343 03 003 |
| | 160 | 343 07 017 |



Top Mounting Ring And Brackets

For top mounting regulators and filter/regulator combinations.
The mounting ring can also be used for panel mounting the regulator.

| Mounting Ring | Material | Series | Kit Number |
|------------------------|--|--------|------------|
| 1 mounting ring | Glass-fiber reinforced polyamide | 105 | 343 00 011 |
| | | 107 | 343 00 011 |
| | | 112 | 343 00 004 |
| | Aluminum alloy | 160 | 343 07 015 |
| Mounting Bracket | | | |
| 1 top mounting bracket | Black zinc plating or epoxy coated steel | 105 | 343 00 016 |
| | | 107 | 343 00 016 |
| | | 112 | 343 00 017 |
| | Aluminum alloy | 160 | 343 07 016 |



Gauges For Regulators/Assemblies

| | NPT | All Series |
|-----------------------|------|------------|
| 1 1/2" dia. 0-60 psi | 1/8" | 343 00 015 |
| 1 1/2" dia. 0-160 psi | 1/8" | 343 00 014 |
| 2" dia. 0-60 psi | 1/8" | 343 00 064 |
| 2" dia. 0-200 psi | 1/8" | 343 00 062 |
| 2" dia. 0-235 psi | 1/4" | 287093-001 |



ASCO's electrical connection devices are designed using the DIN 43650/ISO 4400 or DIN 46244 (Pg 9P) form standards consistent with our solenoid valve coil designs and permitting industry interchangeability. Each size is available for user wiring or factory prewired installations. Other options include 1/2" conduits, and LED/VDR models.

Features

- Glass fiber reinforced polyamide housing and lid
- IP65 protection against moisture entry and washdown when properly installed with gaskets
- **LED:** Light Emitting Diode. A solid-state diode that emits light to indicate power to the connector
- **VDR:** Varistor absorbing the self-inductance of the coil. The VDR is there to protect the coil or controller against supply over-voltage or peak
- Maximum voltage 240 Volts



Size 11 mm, Form B

| Part Number | Description | Orientation | Rotatable | Figure |
|--------------|---|-------------|-----------|--------|
| 290413-001 | 1/2" conduit | Ground Down | 180° | A |
| 289281-001 | 1/2" conduit with LED/VDR | Ground Down | 180° | A |
| 290414-001* | PG 9 cable gland | Ground Down | 180° | B |
| 290415-120 | PG 9 cable gland with LED/VDR 120/AC-DC | Ground Down | 180° | B |
| 290415-240 | PG 9 cable gland with LED/VDR 240/AC-DC | Ground Down | 180° | B |
| 290415-024 | PG 9 cable gland with LED/VDR 24/AC-DC | Ground Down | 180° | B |
| 285483-015** | 4.5' leads with LED 120/AC-DC PVC | Ground Up | No | B |
| 285482-015** | 4.5' leads with LED 24/AC-DC PVC | Ground Up | No | B |
| 285481-018** | 6' leads with stripped ends | Ground Down | 180° | B |

Available in 10 pack; part number 226061-001-

**Also available in 9', 16', and 33' lengths. Consult factory.

Figure A

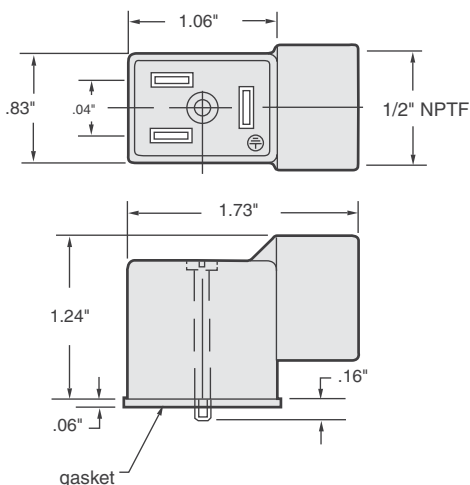
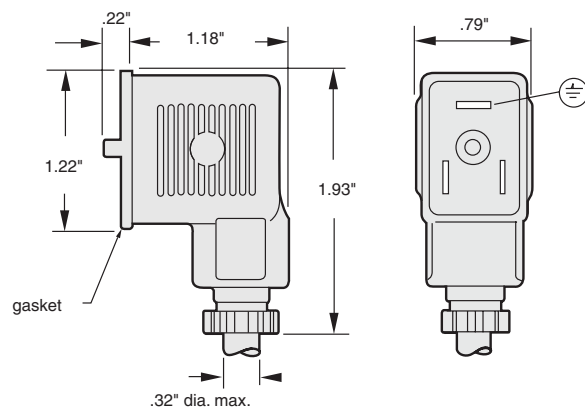


Figure B



Size 18 mm, Form A

| Part Number | Description | Orientation | Rotatable | Figure |
|--------------|---|-------------|-----------|--------|
| 290410-001 | 1/2" conduit | Ground Up | 90° | C |
| 289280-001 | 1/2" conduit with LED | Ground Up | 90° | C |
| 290411-001* | PG 9 cable gland | Ground Up | 90° | D |
| 290412-120 | PG 11 cable gland with LED/VDR 120/AC-DC | Ground Up | 90° | D |
| 290412-240 | PG 11 cable gland with LED/VDR 240/AC-DC | Ground Up | 90° | D |
| 290412-024 | PG 11 cable gland with LED/VDR 24/AC-DC | Ground Up | 90° | D |
| 290412-048 | PG 11 cable gland with LED/VDR 48/AC-DC | Ground Up | 90° | D |
| 285480-015** | 4.5' leads with LED 120/AC-DC PVC | Ground Up | No | D |
| 290409-015** | 4.5' leads with LED 240/AC-DC PVC | Ground Up | No | D |
| 285479-015** | 4.5' leads with LED 24/AC-DC PVC | Ground Up | No | D |
| 272852 | 6' leads with North American outlet plug | Ground Up | No | D |
| 272852-003 | 6' leads with North American outlet plug (rotated 90 degrees) | Ground Up | No | D |
| 285478-015** | 4.5' leads with stripped ends | Ground Up | No | D |

*Available in 50 pack; part number 266615.
 **Also available in 9', 16', and 33' lengths. Consult factory.

Figure C

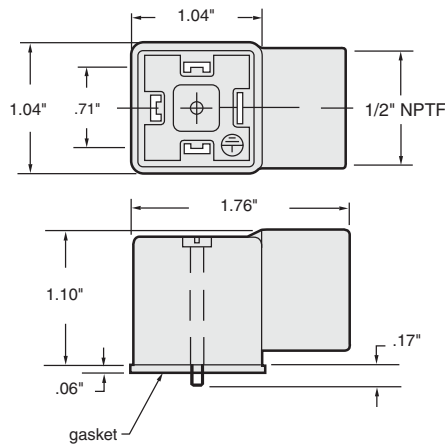
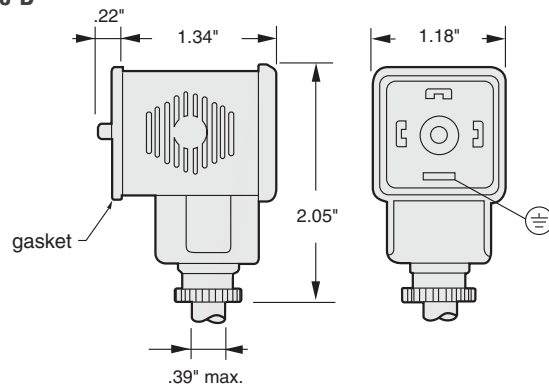


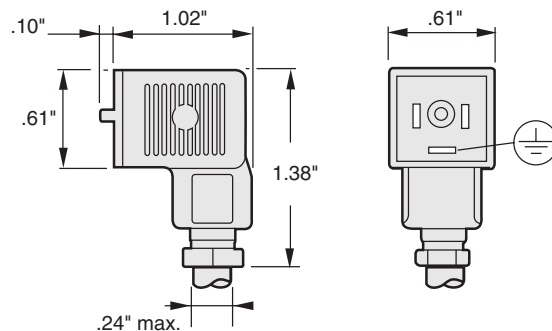
Figure D



Size 9.4 mm, Form C

| Part Number | Description | Orientation | Rotatable |
|--------------|---|-------------|-----------|
| 290417-001 | PG 7 cable gland | Ground Up | 180° |
| 290418-001 | PG 7 cable gland LED/VDR 120-240/AC 50/60 | Ground Up | 180° |
| 289278-001 | PG 7 cable gland LED/VDR 48-120/AC 50/60 | Ground Up | 180° |
| 289282-001 | PG 7 cable gland LED/VDR 48-120/DC | Ground Up | 180° |
| 289277-001 | PG 7 cable gland LED/VDR 6-48/AC-DC | Ground Up | 180° |
| 290416-013** | 4.5' leads with LED 120/AC-DC PVC | Ground Up | No |
| 285485-015** | 4.5' leads with LED 24/AC-DC PVC | Ground Up | No |
| 272852-004** | 6' leads | Ground Up | No |

**Also available in 9', 16', and 33' lengths. Consult factory.



Standard ASCO solenoid valves will meet the needs of most applications. However, there are times when fluids must be handled at higher temperatures, in less than ideal ambient locations, when the fluids themselves are hostile, etc.

For this reason, ASCO offers a wide range of options which can help tailor new valves to your precise applications. Specifying these options when you order is easy. Simply attach the proper prefix (electrical options) or suffix (construction options) to the basic catalog number.

Optional Electrical Features

- Coils for high-temperature applications
- Spade and screw terminations in place of leads
- Battery service coils
- Open frame solenoids
- Variety of solenoid enclosures, from Rainproof to Explosionproof, for hydrogen atmospheres

Optional Construction Features

- Special materials for handling a wide variety of fluids
- Manual operators
- Metering devices
- Special cleaning procedures

Index

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| Optional Electrical Features | 492 |
| Explosionproof Junction Box | 497 |
| Optional Construction Features | 499 |

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How to Select and Specify

Not all optional features are appropriate or available for all valves.

Table 1 lists the optional electrical feature prefixes available for each RedHat II solenoid and coil. Specify these features by adding the indicated prefixes to the valve catalog number.

For those prefixes marked with a “●” or for optional RedHat electrical features not covered here, contact your local ASCO sales office.

Table 2 lists the suffixes for optional construction features available for each valve Series. Specify these features by adding the indicated suffixes to the valve catalog number.

Table 1: Optional RedHat II Electrical Feature Prefixes (For RedHat optional electrical features, contact your local sales office.)

| Code | Solenoid |
|------|--|
| EF | Class I, Division 1 Explosionproof |
| EV | Class I, Division 1 Explosionproof with 316 Stainless Steel Hub and Stainless Steel Base Plate |
| EE | Class I, Division 2 General Purpose |
| GP | Panel Mount Type 1 General Purpose Solenoid |
| J | Junction Box |
| JP | Panel Mount Junction Box |
| OF | Open Frame Spade and Screw Terminal Solenoids |
| OP | Panel Mount Spade, Screw and DIN Terminal Solenoids |
| Code | Coil |
| HB | Class H - Intermediate Power |
| ● HC | Class H - Battery Charging Coil |
| HT | Class H - High Temperature |
| KB | Class H - Intermediate Power - Screw Terminals |
| ● KC | Class H - Battery Charging Circuit - Screw Terminals |
| KF | Class F - High Temperature - Screw Terminals |
| KH | Class H - High Temperature - Screw Terminals |
| KP | Class F - Intermediate Power - Screw Terminals |
| SC | Class F - High Temperature - DIN Connection |
| SD | Class F - Intermediate Power - DIN Connection |
| SF | Class F - High Temperature - Spade Terminals |
| SP | Class F - Intermediate Power - Spade Terminals |
| SS | Class H - Intermediate Power - Spade Terminals |
| ST | Class H - High Temperature - Spade Terminals |
| SU | Class H - High Temperature - DIN Connection |
| SV | Class H - Intermediate Power - DIN Connection |
| ● SW | Class H - Battery Charging Circuit - Spade Terminals |
| Code | Feature |
| ● L | 72" continuous leads |
| ● X | Other special constructions |

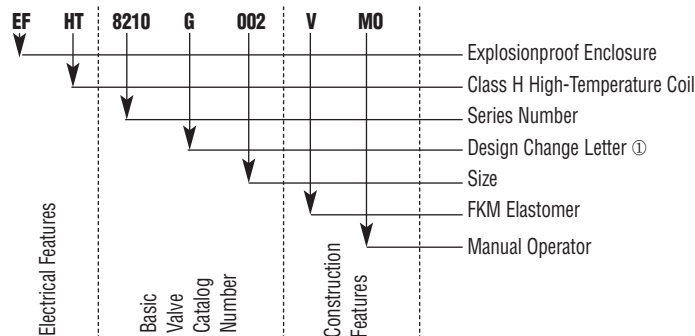
Note: See chart on next page for specific power and temperature ratings.

Table 2: Suffixes for Optional Construction Features

| SUFFIX I | | SUFFIX II | | SUFFIX III | |
|----------|---------------------------|-----------|-----------------|------------|----------------------------|
| Code | Seat/Disc/Etc. Material | Code | Form of Flow | Code | Feature |
| E | EPDM (Ethylene Propylene) | F ① | Normally Closed | HW ① | Hot Water Construction |
| J | CR (Neoprene) | G ① | Normally Open | LT ① | Low Temperature |
| K ① | Air Operated, 3-30 psi | U ① | Universal | M | Metering Device |
| N | Oxygen | | | MB ① | Mounting Bracket |
| Q ① | Long-Life Construction | | | MO | Manual Operator |
| R ① | Resilient | | | MS | Screw Type Manual Operator |
| T | PTFE (Teflon®) | | | VH ① | High Vacuum |
| V | FPM (Viton®) | | | VM ① | Medium Vacuum |

① Covered on the pages of the Series in which it is used.
Teflon and Viton are registered Trademarks of Dupont Co.

An example of an ASCO valve catalog number with prefixes and suffixes:



① The Design Change Letter indicates a major design change affecting spare parts kits, rebuild kits, and coils. The correct replacement parts for each change letter are shown in ASCO's Rebuild Kits and Coils Catalog.

Optional Electrical Features

Most optional electrical features shown here can be included on ASCO valves approved by UL, FM, and CSA.

Identify the options you want by adding the appropriate prefix to the catalog number of the valve you are specifying.

To determine the proper prefix, use the Valve Series Specification Table for the valve you are ordering to determine its watt rating/class of coil insulation.

RedHat II Solenoid Options

Using Table 3, find the desired solenoid option in the left column and the watt rating/class of coil insulation in the next column. The choice of prefixes is shown in the next two columns on that line. The first column indicates the prefix if Class F temperature protection is sufficient for your requirements. The second column provides the desired solenoid option, plus the higher temperature protection of a Class H coil.

For example, to select an 8262G002 valve with a Class H Open Frame Spade Terminal Solenoid, assuming the voltage to be 120 volts AC, 60 Hz:

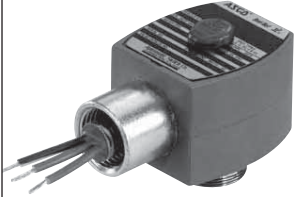


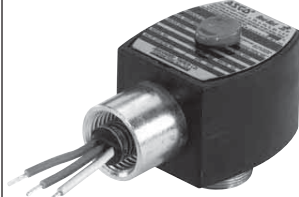
- In the Specification Table for Series 8262, the Watt Rating/Class of Coil Insulation is 6.1/F for Catalog Number 8262G002.
- Using Table 3, find the listing for "Open Frame Solenoid with Spade Terminal Coil" in the left column. Then, find 6.1/F under AC coils in the next column. Reading across the column headed "Class H Coil," you'll find the prefix "OFST." To order, specify Catalog Number OFST8262G002, 120/60.

(Note: Always include the voltage and frequency.)

Table 3: Solenoid Options for RedHat II Valves

| Solenoid Option Required | Watt Rating/ Class of Insulation | | Class F Coil Prefix | Class H Coil Prefix |
|--|-------------------------------------|--------|---------------------------|---------------------------|
| | AC | DC | | |
| General Purpose Solenoid (Standard Valve Construction) | 6.1/F | 1.4/F | - | - |
| | 10.1/F | 10.6/F | | HT |
| | 16.1/F | 11.6/F | | HT |
| Panel Mount Type 1 General Purpose Solenoid | 9.1/F | 22.6/F | - | HB |
| | 17.1/F | | | |
| | 20.1/F | | | |
| Type 7 Explosionproof Solenoid | 6.1/F | 10.6/F | EF | EFHT |
| | 10.1/F | 11.6/F | | |
| | 16.1/F | | | |
| Open Frame Solenoid with Spade Terminal Coil | 6.1/F | 10.6/F | OFSP | OFST |
| | 10.1/F | 11.6/F | | |
| | 17.1/F | 22.6/F | | OFSS |
| Panel Mount Solenoid with Spade Terminal Coil | 6.1/F | 10.6/F | OPSP | OPST |
| | 10.1/F | 11.6/F | | |
| | 16.1/F | 22.6/F | | OPSS |
| Open Frame Solenoid with Screw Terminal Coil | 6.1/F | 10.6/F | OFKF | OFKH |
| | 10.1/F | 11.6/F | | |
| | 17.1/F | 22.6/F | | OFKB |
| Panel Mount Solenoid with Screw Terminal Coil | 6.1/F | 10.6/F | OPKF | OPKH |
| | 10.1/F | 11.6/F | | |
| | 17.1/F | 22.6/F | | OPKH |
| Junction Box with Spade Terminal Coil | 6.1/F | 10.6/F | JSF | JST |
| | 10.1/F | 11.6/F | | |
| | 17.1/F | 22.6/F | | JSS |
| Panel Mount Junction Box with Spade Terminal Coil | 6.1/F | 10.6/F | JPSF | JPST |
| | 10.1/F | 11.6/F | | |
| | 17.1/F | 22.6/F | | JPSS |
| Junction Box with Screw Terminal Coil | 6.1/F | 10.6/F | JKF | JKH |
| | 10.1/F | 11.6/F | | |
| | 16.1/F | 22.6/F | | JKB |
| Panel Mount Junction Box with Screw Terminal Coil | 6.1/F | 10.6/F | JPKF | JPKH |
| | 10.1/F | 11.6/F | | |
| | 17.1/F | 22.6/F | | JPKB |
| DIN Connection Solenoid | 6.1/F | 10.6/F | SC | SU |
| | 10.1/F | 11.6/F | | |
| | 16.1/F | 22.6/F | | SV |
| Panel Mount DIN Connection Solenoid | 6.1/F | 10.6/F | OPSC | OPSU |
| | 10.1/F | 11.6/F | | |
| | 17.1/F | 22.6/F | | OPSV |

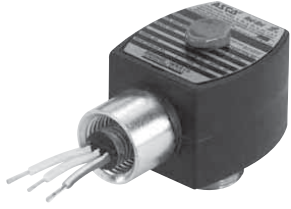
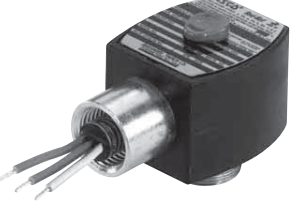
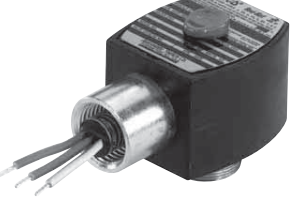


Important Note: One-piece molded epoxy RedHat II solenoids are a unique combination of coil and enclosure. When ordering some RedHat II options, it may be necessary to specify the appropriate catalog number prefixes for both the enclosure and the coil.

| | | | |
|--|--|---|---|
| <p>Type 1 General Purpose Solenoids with Class F High-Temperature Coils</p> | <p>Enclosures:</p> <ul style="list-style-type: none"> Also meet Type 2 Dripproof, Types 3 and 3S Raintight, and Types 4 and 4X Watertight requirements. Supplied standard with 1/2" threaded conduit hub and built-in strain relief for leads. <p>Coils:</p> <ul style="list-style-type: none"> Insulation system for coil temperatures up to 311°F (155°C). ① For ambient temperature requirement, refer to specific Series and charts in Engineering Information Section. Suitable for 50 and 60 Hz. ② | <p>Ordering Information: Supplied standard on all RedHat II valves.</p> |  |
| <p>Type 1 General Purpose Solenoids with Class H High-Temperature Coils</p> | <p>Enclosures:</p> <ul style="list-style-type: none"> Same as Class F. <p>Coils:</p> <ul style="list-style-type: none"> Insulation system suitable for coil temperatures up to 356°F (180°C).① For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section. Suitable for 50 and 60 Hz. ② | <p>Ordering Information: Depending on wattage, use catalog number prefix "HT" or "HB" (e.g., HT8210G002).</p> |  |
| <p>Panel Mount Type 1 General Purpose Solenoids with Class F or H High-Temperature Coils</p> | <p>Enclosures:</p> <ul style="list-style-type: none"> Same as above, but with provision for mounting on a panel (panel not included). <p>Coils:</p> <ul style="list-style-type: none"> Same as Class F or H above. | <p>Ordering Information: For Class F coil, use catalog number prefix "GP" (e.g., GP8210G2) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "GPHT" or "GPHB" (e.g., GPHT8210G002) and specify voltage.</p> |  |
| <p>Type 7 (A, B, C, and D) Explosionproof Solenoids with Class F High-Temperature Coils</p> | <p>Enclosures:</p> <ul style="list-style-type: none"> Also meets Types 3 and 3S Raintight, Types 4 and 4X Watertight, Types 6 and 6P Submersible, and Type 9 (E, F, and G) Dust Ignitionproof requirements. Refer to Engineering Information Section. <p>Coils:</p> <ul style="list-style-type: none"> Insulation systems suitable for coil temperatures up to 311°F (155°C). ① For ambient temperature requirements, refer to specific Series charts in Engineering Information Section. Suitable for 50 and 60 Hz. ② | <p>Approvals: UL listed; CSA certified.</p> <p>Ordering Information: Use catalog number prefix "EF" (e.g., EF8210G002) and specify voltage.</p> |  |
| <p>① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems. ② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.</p> | | | |

Optional Features

Electrical







| | | | |
|---|--|--|---|
| <p>Type 7 (A, B, C, and D) Explosionproof Solenoids with Class H High-Temperature Coils</p> | <p>Enclosure:</p> <ul style="list-style-type: none"> Same as Class F Explosionproof Coil: Insulation system suitable for coil temperatures up to 356°F (180°C). ① For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section. Suitable for 50 and 60 Hz. ② | <p>Approvals: UL listed; CSA certified. Ordering</p> <p>Information: Depending on wattage, use catalog number prefix "EFHT" or "EFHB" (e.g., EFHT8210G002) and specify voltage.</p> |  |
| <p>Type 7 (A, B, C, and D) Explosionproof Solenoids with Class F or H High-Temperature Coils</p> | <p>Enclosure:</p> <ul style="list-style-type: none"> Same as above, but with 316 stainless steel conduit hub and stainless steel base plate. <p>Coils:</p> <ul style="list-style-type: none"> Same as Class F or H Coil. | <p>Ordering Information: For Class F Coil, use catalog number prefix "EV" (e.g., EV8262G220) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "EVHT" or "EVHB" (e.g., EVHT8327G002) and specify voltage.</p> |  |
| <p>Type 7 (A, B, C, and D) Low Power Solenoids with Class F DC Surge Suppression Coils</p> | <p>Enclosure:</p> <ul style="list-style-type: none"> Same as Class F Explosionproof coil. <p>Coils:</p> <ul style="list-style-type: none"> Built-in surge suppression diodes. Low power – 1.7 Watts. Class F insulation only. | <p>Ordering Information: For Surge Suppression coils, use catalog number prefix "EFMF" or "EVMF" (e.g., EFMF8314G300), and specify voltage.</p> <p>Note: Surge Suppression coils are only available for Explosionproof Low Power coils.</p> |  |
| <p>Open Frame Solenoids with Class F or H High-Temperature Spade Terminal Coils</p> | <ul style="list-style-type: none"> Valves with Open Frame solenoid construction are intended for use when a solenoid enclosure is not needed; e.g., mounting in a control cabinet. Same as Class F or H above, but with 1/4" spade terminals. Suitable for 50 and 60 Hz. ② | <p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "OFSP" or "OFSP" (e.g., OFSF8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OFSS" or "OFST" (e.g., OFST8210G002) and specify voltage.</p> <p>Note: Spade Terminal Coils are not available above 250 volts AC or DC.</p> |  |
| <p>Panel Mount Solenoids with Class F or H High-Temperature Spade Terminal Coils</p> | <p>Same as above, but with provision for mounting on a panel (panel not included).</p> | <p>Ordering Information: For Class F coil, use catalog number prefix "OPSF" or "OPSP" (e.g., OPSF8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OPSS" or "OPST" (e.g., OPST8210G002) and specify voltage.</p> <p>Note: Spade Terminal Coils are not available above 250 volts AC or DC.</p> |  |

① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems.

② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.




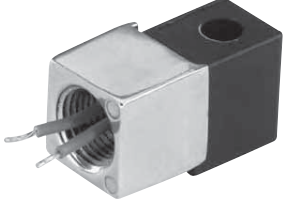


| | | | |
|--|---|---|---|
| <p>Open Frame Solenoids with Class F or H High-Temperature Screw Terminal Coils</p> | <ul style="list-style-type: none"> Valves with Open Frame solenoid construction are intended for use when a solenoid enclosure is not needed; e.g., mounting in a control cabinet. ① Same as Class F or H above, but with #8 screws terminals. Suitable for 50 and 60 Hz. ② | <p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "OFKF" or "OFKP" (e.g., OFKF8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OFKH" or "OFKB" (e.g., OFKH8210G002) and specify voltage. Note: Screw Terminal Coils are not available above 250 volts AC or DC.</p> |  |
| <p>Panel Mount Solenoids with Class F or H High-Temperature Screw Terminal Coils</p> | <p>Coils:</p> <ul style="list-style-type: none"> Same as above, but with provision for mounting on a panel (panel not included). | <p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "OPKF" or "OPKP" (e.g., OPKP8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OPKH" or "OPKB" (e.g., OPKH8210G002) and specify voltage. Note: Screw Terminal Coils are not available above 250 volts AC or DC. For replacement coil, order coil and kit number 276982.</p> |  |
| <p>Junction Box Solenoids with Class F or H High-Temperature Spade or Screw Terminal Coils</p> | <ul style="list-style-type: none"> Enclosures meet Type 1 General Purpose, Type 2 Dripproof, Types 3 and 3S Raintight, and Types 4 and 4X Watertight requirements. Supplied standard with 1/2" threaded conduit hub and grounding provision. Must be ordered with spade or screw terminals. | <p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "JSF," "JSP," "JKF," or "JKP" (e.g., JSF8210G2) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "JSS," "JST," "JKH," or "JKB" (e.g., JKH8210G002) and specify voltage. Note: Junction Box Options are not available above 250 volts AC or DC.</p> |  |
| <p>Class F General Purpose Only with Quick Disconnect Pin Connectors</p> | <ul style="list-style-type: none"> Available for wattages 10.1, 17.1, 11.6, and 22.6. Materials: aluminum, 3 & 4 pin in popular sizes. Electrical Connection Size: 1/2 - 20 unf. ZT 3 pin epoxy coated zinc electrical termination. VT 4 pin - anodized aluminum electrical termination. | <p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "VT" or "VB" and specify voltage.</p> |  |
| <p>① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems. ② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.</p> | | | |

Optional Features

Electrical



| | | | |
|--|--|---|--|
| <p>Class F or H High-Temperature Coils with DIN Connections</p> | <ul style="list-style-type: none"> • Meets ISO 4400/DIN 43650 requirements. • Class F insulation system suitable for coil temperatures up to 311°F (155°C). ① <i>For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section.</i> • Class H insulation system suitable for coil temperatures up to 356°F (180°C). ① <i>For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section.</i> • Enclosure protection with DIN connector equivalent to Types 1 and 4. • Suitable for 50 and 60 Hz. ② | <p>Ordering Information: For Class F Coil, depending on wattage, use catalog number prefix "SC" or "SD" (e.g., SC8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "SU" or "SV" (e.g., SU8210G002) and specify voltage.</p> <p>Note: Optional DIN-type strain-relief connector kit includes a gasket and mounting screw. Outlet accommodates cable with O.D. of 0.310" to 0.400".</p> <p>Note: DIN Connection Coils are not available above 250 volts AC or DC. Must be ordered separately as Kit No. K236034. For replacement coil, order coil and Kit No. 258631.</p> |  |
| <p>Junction Box for Class F or H Coils</p> | <p>Junction box (shown installed on RedHat II solenoid) is a zinc coated steel housing with two 7/8" knock-outs for through wiring. UL listed when ordered factory assembled. Also available, without UL listing, as a kit with grounding screw for field installation.</p> | <p>Ordering Information: For factory assembly, add prefix "JB" to Valve Catalog Number. For kit, use number 272140-001*.</p> |  |
| <p>Sub-Miniature Coils for Series 8256, 8356, 8380, 8401, and 8551 Class F High-Temperature Molded Coils with DIN Connection</p> | <p>These sub-miniature coils meet 3 x DIN 46244 requirements.</p> <ul style="list-style-type: none"> • Insulation system suitable for coil temperatures up to 311°F (155°C). ① <i>For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section.</i> • Suitable for 50 and 60 Hz. ② • "Enclosure Protection" with DIN connector equivalent to Types 1 and 4. | <p>Ordering Information: Use catalog prefix "SC" (e.g., SC8256A001V) and specify voltage.</p> <p>Note: Optional DIN-type strain-relief connector kit includes a gasket and mounting screw. Outlet accommodates cables with O.D. of 0.310" to 0.400". Must be ordered separately as Kit No. 226061-001*.</p> |  |
| <p>1/2" Threaded Conduit Hubs for Series 8256, 8356, 8380, 8401, and 8551</p> | <p>These conventional threaded hubs allow connection with 1/2" BX cable. Can be supplied with leaded coil only. Kit includes gasket and attaching screw.</p> | <p>Ordering Information: Order separate Kit No. 224735-001*.</p> |  |
| <p>① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems. ② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.</p> | | | |



Features

- Junction Box Enclosures for the wiring of ASCO solenoids are Raintight Type 3 and 3S, Watertight Type 4 and 4X, Submersible Type 6 and 6P, Explosion-proof Type 7, Class I, Groups B, C, and D Dust-Ignition proof Type 9, Class II, Div. 1, Groups E, F and G, Nonincendive Class I, Div. 2 (1.4 watts only)
- Approvals: UL, CSA
- Electrostatic powder paint, stainless steel screws, and molded epoxy coils provide excellent protection in corrosion environments
- Factory pre-wired and assembled to any explosionproof ASCO RedHat II solenoid valve
- Reduces installation costs by eliminating the need to use a separate explosionproof splice box to terminate the solenoid valve's wiring

Materials of Construction

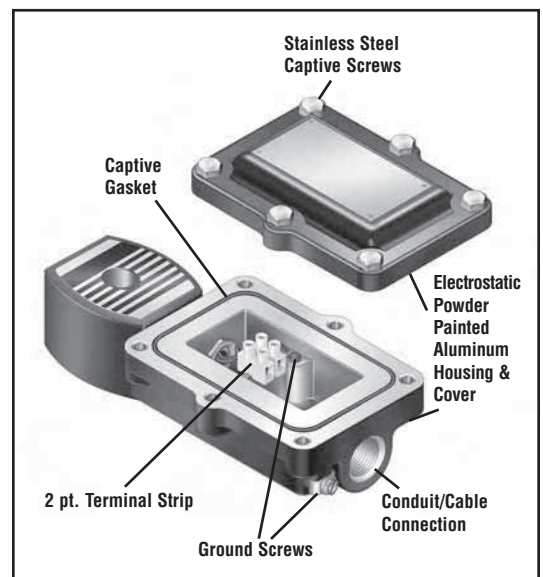
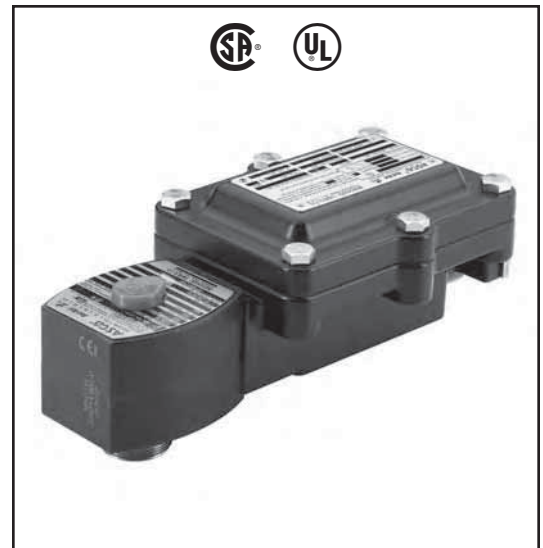
| | |
|-------------------|---------------------------------|
| Housing and Cover | Epoxy painted die-cast aluminum |
| Gasket | NBR |
| Cover Screws | Stainless Steel |
| Coil | Epoxy Molded |
| Ground Screws | Steel |
| Terminal Block | Plastic |
| Lock Nut | Zinc |

Electrical

Standard AC: 24, 120, 240, 480 volts, 60 Hz
Voltages or (110, 220 volts, 50 Hz)
DC: 6, 12, 24, 120, 240

Note: Valves with JBEF housing maintain wattage and current ratings as shown on individual catalog sheets.

Conduit Sizes 1/2" NPT JBEF Prefix (Standard)
 3/4" NPT JCEF Prefix (Optional)
 M20 JDEF Prefix (Optional)



Ordering Information

Add prefix corresponding to specific conduit size required to any RedHat II valve catalog numbers & specify the voltage.
 Example: JBEF8210G095, 120/60.

Approvals

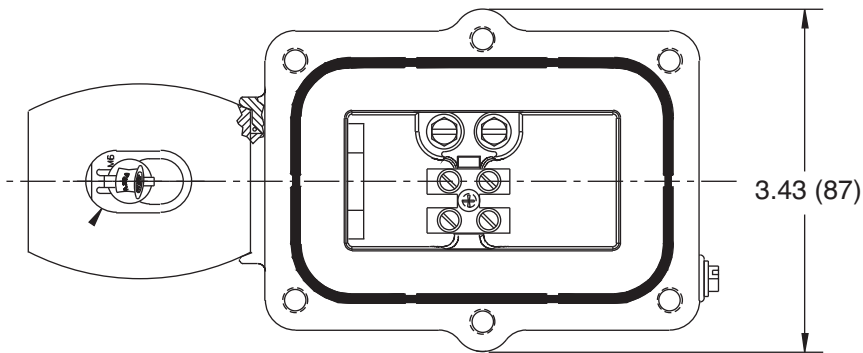
UL & CSA

Optional Features

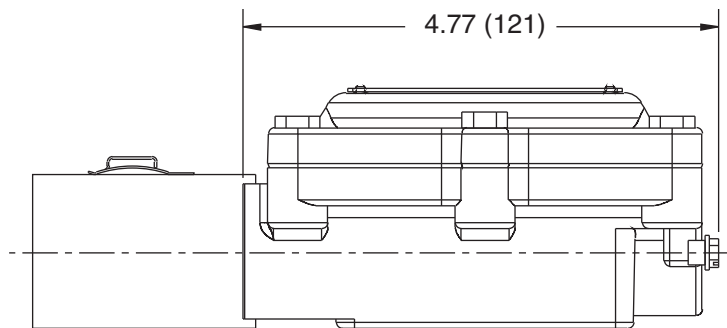
Explosionproof Junction Box for Hazardous Locations



Dimensions: inches (mm)

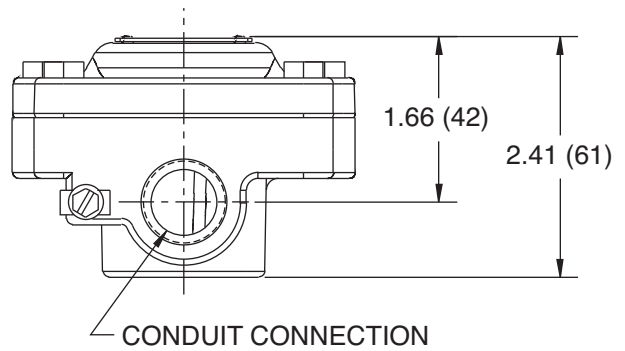


SHOWN WITH SCREWS AND COVER REMOVED



Replacement Coil Kits

| Kit Number | Size (watts) | Voltage | Prefix |
|------------|--------------|-----------|--------|
| 278000-032 | 6.1 | 120/60 | JBEF |
| 278000-132 | 9.1 | 120/60 | |
| 278001-006 | 10.6 | 24DC | |
| 278012-032 | 10.1 | 120/60 | |
| 278012-132 | 17.1 | 120/60 | |
| 278013-006 | 11.6 | 24DC | |
| 278024-032 | 16.1 | 120/60 | |
| 278024-132 | 20.1 | 120/60 | |
| 278013-903 | 1.4 | 12DC | |
| 278013-902 | 1.4 | 24DC | |
| 292106-058 | 12.0 | 240/50-60 | JDEF |



Optional Construction Features

Standard valve construction materials for standard valves are shown on the Series pages. If handling fluids other than those listed in the Specifications section, you may require special constructions, however. The most frequently used elastomers are listed in Table 4 along with the Valve Series in which they are available. Other considerations for a variety of liquids and gases are included in the Valve Material Selection Guide located in the Engineering Section. A solenoid valve must use certain construction material for proper electrical function. *If you cannot find the specific fluid in the guide, please consult your local ASCO office.*

Certain fluids may also require that we change the solenoid shading coil. The standard valves use a copper shading coil. Aluminum and silver are also available and, due to their different magnetic properties, additional electrical changes may be necessary. *When a change in shading coil material is indicated in the guide, please consult your local ASCO office.*

Table 4: Optional Construction Features for ASCO Solenoid Valves Handling Liquids and Gases other than Air, Inert Gas, Water, and Light Oil. Orders entered using this table MUST state actual fluid and pressure of application.

| Pipe Size (ins.) | Series Number or Valve Type | Valve Construction Number | Special Construction Features ③ ELASTOMERS | | | | |
|---------------------------------|-----------------------------|--|--|--------------------------------|------------------|--------------------------------|--------------------------------|
| | | | EPDM | Oxygen Service | PTFE | FKM | CR |
| | | | Use Suffix "E" | Use Suffix "N" ① | Use Suffix "T" ② | Use Suffix "V" | Use Suffix "J" |
| Solenoid Operated Valves | | | | | | | |
| 3/8 - 3/4 | 8030, 8040 | 1-10, 13 | Available on all constructions | Available on all constructions | Not Available | Available | Available on all constructions |
| 3/8 - 1 1/2 | 8210 | 1, 2, 5, 6, 7, 8, 9, 11, 12, 16, 18, 23, 24, 25, 26, 28, 29, 31-51 | | | Not Available | Available | |
| 3/4 - 2 1/2 | 8210 | 10, 20, 21, 27, 30 | | | Available | Available | |
| 3/8 - 3 | 8215 | All | | | Not Available | Available | |
| All | 8260 | 1, 2, 3 | | | Not Available | Available | |
| All | 8260 | 4, 5, 6 | | | Not Available | Not Available | |
| 1/8 - 3/8 | 8262, 8263 | 1 - 7, 11, 12, 13, 16, 17 | | | Available | Available | |
| 1/8 & 1/4 | 8262 | 8, 9, 14 | | | Available | Available | |
| 3/8 & 1/2 | 8316 | 1, 2 | | | Not Available | Available | |
| 3/4 & 1 | 8316 | 3, 4, 5 | | | Not Available | Available | |
| All | 8320, 8360 | All | | | Available | Available | |
| Air Operated Valves | | | | | | | |
| 1/4 | 2 Ports | 1, 2, 22 | Available on all constructions | Available on all constructions | Available | Available on all constructions | Available on all constructions |
| 3/8 - 3/4 | 2 Ports | 8 | | | Not Available | | |
| 3/8 - 3/4 | 2 Ports | 3, 4 | | | Not Available | | |
| 3/8 - 3/4 | 2 Ports | 6, 7, 16, 17 | | | Not Available | | |
| 1 & 1 1/4 | 2 Ports | 10, 12, 18, 19 | | | Not Available | | |
| 1 1/2 | 2 Ports | 14, 20 | | | Not Available | | |
| 1/4 | 3 Ports | 1 | | | Available | | |
| 3/8 & 1/2 | 3 Ports | 2 | | | Not Available | | |
| 3/4 & 1 | 3 Ports | 3, 4 | | | Not Available | | |

① For valves requiring special cleaning and/or testing procedures, such as for oxygen, freon, & sanitary service, refer to Table 6.
 ② Pressure ratings must be reduced by 25%.
 ③ Unless otherwise indicated in the Series Specification Tables, all soft seating valves are supplied with NBR discs, diaphragms, or gaskets.

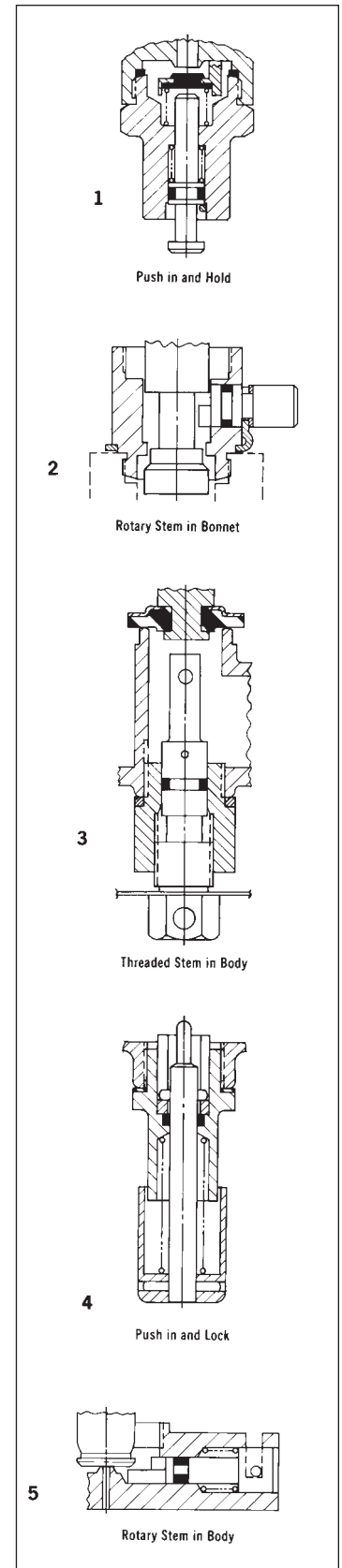
Manual Operators

Manual operators are provided to operate the valve manually when electric power is off. There are basically two types of manual operators: momentary and maintained. Series 8320, 8321, and 8342 can be fitted with either type.

To determine which type is available for your valves, check the Construction Reference Numbers in their Series Specification Tables against the Table below. Schematics of the manual operators and how they are fitted to the valves are shown on the right. *If no manual operator is listed or a different type is required, consult your local ASCO office. Add suffix "MO" or "MS" to the catalog number.*

Table 5: Manual Operators

| MANUAL OPERATORS ④ FOR 2-WAY SOLENOID VALVES | | | | | | |
|---|------------------|---------------------------------------|----------------------|------------------------|-------------------------|---------------------|
| Series Number | Pipe Size (ins.) | Valve Construction Reference Number | Valve Body Materials | Manual Operator Suffix | Type of Manual Operator | Illustration Number |
| 8030 | 3/8, 1/2 | 1, 2, 3, 11 | Brass | MO | Maintained | 5 |
| 8030 | 3/4 | 9 | Brass | MO | Maintained | 3 |
| 8030 | 3/8, 1/2 | 1, 2, 3, 11 | Stainless Steel | MO | Maintained | 5 |
| 8030 | 3/4 | 10 | Stainless Steel | MO | Maintained | 3 |
| 8210 | 3/8, 1/2 | 1, 2 | Stainless Steel | MO | Maintained | 5 |
| 8210 | 3/8, 1/2 | 1, 2 | Brass | MO | Maintained | 5 |
| 8210 | 3/8 to 2 1/2 | 3, 5, 6, 8, 9, 11, 12, 16, 18, 20, 21 | Brass | MO | Maintained | 2 |
| 8210 | 3/4 to 1 1/2 | 10, 31, 32, 33 | Brass | MO | Maintained | 3 |
| 8210 | 1 | 42 | Brass | MO | Maintained | 4 |
| 8210 | 3/4 | 7 | Stainless Steel | MO | Maintained | 2 |
| 8221 | 3/8 to 2 1/2 | 1, 2, 5, 6, 7, 11, 12 | Brass | MO | Maintained | 2 |
| 8262 | 1/8 | 1 | Brass | MO | Maintained | 3 |
| 8262 | 1/8 | 1 | Stainless Steel | MO | Maintained | 3 |
| 8262 | 1/8 | 8 | Brass | MS MO | Maintained Momentary | 3 1 |
| 8262 | 1/8 | 8 | Stainless Steel | MS MO | Maintained Momentary | 3 1 |
| 8262 | 1/4 | 2, 4, 6, 16, 17 | Brass | MO | Maintained | 2 |
| 8262 | 1/4 | 11, 12, 13 | Stainless Steel | MO ⑥ | Maintained | 2 |
| 8263 | 3/8 | 3, 5, 7 | Brass | MO | Maintained | 2 |
| MANUAL OPERATORS ④ FOR 3-WAY SOLENOID VALVES | | | | | | |
| 8300 | All | All | Brass | MO | Maintained | 4 |
| 8300 | All | All | Stainless Steel | MO | Maintained | 4 |
| 8316 | All | All | Brass | MO | Maintained | 2 |
| 8320 | 1/8, 1/4 | All | Brass/SS | MS ⑤ MO ① | Maintained Momentary | 3 1 |
| 8321 | All | All | Brass | MS MO | Maintained Momentary | 3 1 |
| MANUAL OPERATORS ④ FOR 4-WAY SOLENOID VALVES | | | | | | |
| 8340 | 1/4 | 8340A001, A003, A004 | Aluminum | MO | Momentary | 1 |
| 8342 | 1/4, 3/8 | Single Solenoid Only | Brass/SS | MS MO | Maintained Momentary | 4 1 |
| 8344 ③ | All | All | Brass | MO | Maintained | 2 |
| 8345 | 1/4 | 1 | Brass | MO | Maintained | 5 |
| 8401 | 1/8, 1/4 | All | Aluminum | ② | Momentary Maintained | - - |
| MANUAL OPERATORS ARE ALSO AVAILABLE FOR ALL LOW POWER AND INTRINSICALLY SAFE VALVES (MANUAL OR MOMENTARY). USE SUFFIX "MO." | | | | | | |
| ① Limited to 100 psi (7 bar) maximum on Normally Open and Universal operation. | | | | | | |
| ② Supplied as standard, no suffix required. | | | | | | |
| ③ Two manual operators required for Dual Solenoid construction. | | | | | | |
| ④ Limited to 250 psi (17 bar) pressure, except where noted otherwise. | | | | | | |
| ⑤ Valves with MS suffix maintain full catalog ratings. | | | | | | |
| ⑥ Manual operator not available for this series with steam application. | | | | | | |



Metering Devices

Metering Devices are used for obtaining an exact flow from solenoid valves for dispensing or for moving an air operator in a given time period. Valves which can be fitted with metering devices are Series 8262 (1/8" NPT size only), 8260, 8401, 8402, and 8342. Add suffix "M" to catalog numbers.

Special Cleaning and Testing Procedures:

If special cleaning and testing procedures are required, they must be specified when ordered. *These procedures cannot be done after the valve is built.*

Table 6: ASCO Special Cleaning and Testing Procedures

| Fluid | Description of Cleaning or Testing Procedure | Order by Specifying |
|--|---|---|
| Freon | All valve parts inspected for oil, grease, metal dust, and other foreign matter and degreased, if necessary. Assembled in clean, dry area and helium mass spectrometer tested for external leakage. Pipe connections sealed with plugs. | Clean and test per ASCO AP-1-005 Procedure. |
| Oxygen | All valve parts degreased and blacklight inspected for cleanliness. Assembled and tested in clean area using oil-free air or nitrogen. Helium mass spectrometer tested for external leakage. Pipe connections sealed with plugs. Each valve tagged covering certification of tests and put in a sealed bag. | Clean and test per ASCO AP-1-004 Procedure. Add Suffix "N" to catalog Number. |
| Sanitary distilled water and other clean systems | All valve parts inspected for oil, grease, metal dust, and other foreign matter and degreased, if necessary. Valves assembled in clean area and tested with clean, dry air or nitrogen. Pipe connections sealed with plugs. | Clean and test per ASCO AP-1-008 Procedure. |



ASCO Engineering has always been a significant contributor to the growth and success of our company. Today, we are better equipped than ever before to meet the challenges of our customers. Whether your specific product needs are routine or exotic, we have the best tools, talent, and experience to design and produce the exact product you need to control, move, and monitor your fluid.

Our engineering teams have the most advanced computers and computer programs at their disposal to aid in new product design. These include the latest 2D and 3D computer modeling programs to assist in development of a design concept, specialized magnetic and flow analysis programs to help optimize the magnetic efficiency of our solenoids and fluid flow-through in our valves. Other computer programs assist us in structural analysis, motion analysis, and the design of molds for thermoplastic parts.

Our Engineering Department has the latest rapid prototyping and computer controlled machining equipment. This allows us to quickly turn our computer designs into functional models. We also have a modern Valve Laboratory to development test and verify the performance of our new products and a Pilot Plant to simulate the production environment and to ensure a smooth transition from Engineering to Manufacturing.

However, the most important elements of our Engineering Department are the many highly educated, creative, experienced, and talented people who comprise it. They not only know how to make the best new products, but they also are there, whenever needed, to help make sure all of our products continue to perform to the standards that have made ASCO the world leader in fluid control.

This section provides additional information which may be necessary to determine the exact ASCO solenoid or air operated valve for your requirements.

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Solenoid Valves

Principles of Operation

A solenoid valve is a combination of two basic functional units:

- A solenoid (electromagnet) with its core
- A valve body containing one or more orifices

Flow through an orifice is shut off or allowed by the movement of the core when the solenoid is energized or de-energized. ASCO valves have a solenoid mounted directly on the valve body. The core is enclosed in a sealed tube, providing a compact, leaktight assembly.

Direct Acting Valves (Figures 1A, 1B)

When the solenoid is energized in a direct acting valve, the core directly opens the orifice of a Normally Closed valve or closes the orifice of a Normally Open valve. When de-energized, a spring returns the valve to its original position. The valve will operate at pressures from 0 psi to its rated maximum.

The force needed to open the valve is proportional to the orifice size and fluid pressure. As the orifice size increases, so does the force required. To open large orifices while keeping solenoid size small, a Pilot Operated construction is used.

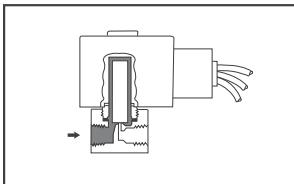


Figure 1A:
Direct Acting,
Normally Closed Valve,
De-Energized

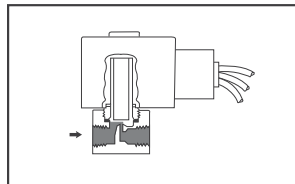


Figure 1B:
Direct Acting,
Normally Closed Valve,
Energized

Internal Pilot Operated Valves (Figures 2A, 2B)

Normally, these valves have a pilot and bleed orifice which enable them to use line pressure for operation.

When the solenoid is de-energized, the pilot orifice is closed and full line pressure is applied to the top of the piston or diaphragm through the bleed orifice, providing seating force for tight closure.

When the solenoid is energized, the core opens the pilot orifice, relieving pressure from the top of the piston or diaphragm via the outlet side of the valve. The line pressure then opens the valve by lifting the diaphragm or piston off the main orifice.

Two constructions are available for 2-way valves:

- Floating diaphragm or piston which requires a minimum pressure drop across the valve to remain in the open position (Figures 2A, 2B).
- Hung-type diaphragm or piston held open mechanically by the solenoid core. The valve opens and remains open with zero pressure drop (Figures 3A, 3B).

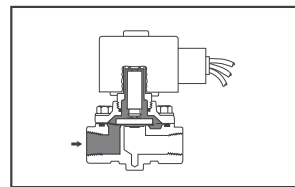


Figure 2A:
Pilot Operated, Normally
Closed Valve,
De-Energized

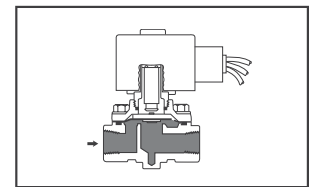


Figure 2B:
Pilot Operated,
Normally Closed Valve,
Energized

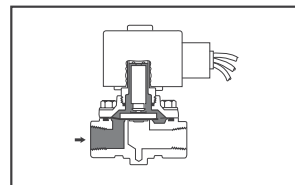


Figure 3A:
Pilot Operated, Normally
Closed Valve,
De-Energized

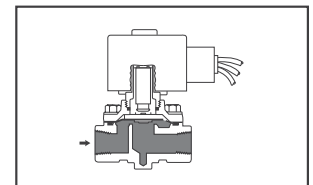


Figure 3B:
Pilot Operated,
Normally Closed Valve,
Energized

Manual Reset Valves (Figures 4A, 4B)

Manual reset valves must be manually latched into position and will return to their original position only when the solenoid has been energized or de-energized, depending on construction

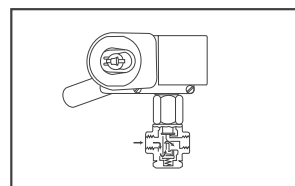


Figure 4A:
No Voltage Release
Manual Reset Valve,
Un-Latched, De-Energized

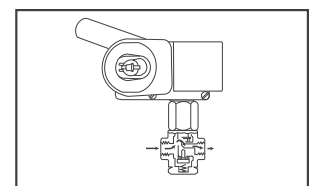


Figure 4B:
No Voltage Release
Manual Reset Valve,
Latched, Energized

Types of Solenoid Valves

2-Way Valves (Figures 1A, 1B, 2A, 2B, 3A, 3B)

Two-way valves have one inlet and one outlet pipe connection. They are used to allow or shut off fluid flow, and are available in either:

Normally Closed – closed when de-energized and open when energized.

Normally Open – open when de-energized and closed when energized.

3-Way Valves (Figures 5A, 5B)

Three-way valves have three pipe connections and two orifices (when one is open, the other is closed, and vice versa). They are commonly used to alternately apply pressure to and exhaust pressure from the diaphragm operator of a control valve, single-acting cylinder, or rotary actuator.

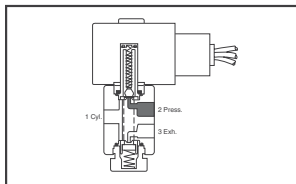


Figure 5A:
Three-Way
Normally Closed Valve,
De-Energized

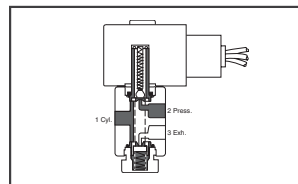


Figure 5B:
Three-Way
Normally Closed Valve,
Energized

Three modes of operation are available:

Normally Closed – when the valve is de-energized, the pressure port is closed and the cylinder port is connected to the exhaust port. When the valve is energized, the pressure port is connected to the cylinder port and the exhaust port is closed.

Normally Open – when the valve is de-energized, the pressure port is connected to the cylinder port and the exhaust port is closed. When the valve is energized, the pressure port is closed and the cylinder port is connected to the exhaust port.

Universal – allows the valve to be connected in either the Normally Closed or Normally Open position to select one of two fluids or to divert flow from one port to another.

4-Way Valves (Figures 6A, 6B)

Four-way valves are generally used to operate double-acting cylinders or actuators. They have four or five pipe connections: one pressure, two cylinder, and one or two exhausts. In Position A, pressure is connected to one cylinder port, the other is connected to exhaust. In Position B, pressure and exhaust are reversed at the cylinder ports.

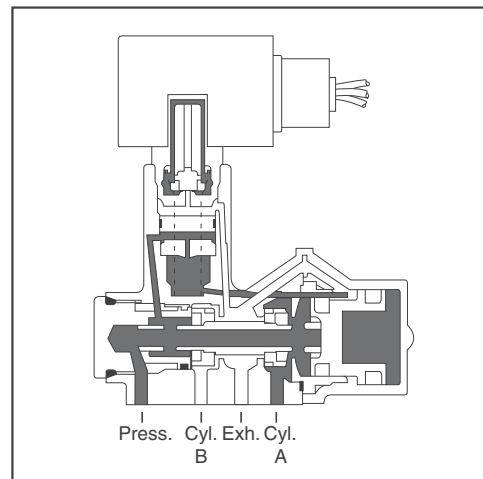


Figure 6A:
Four-Way Valve, De-Energized

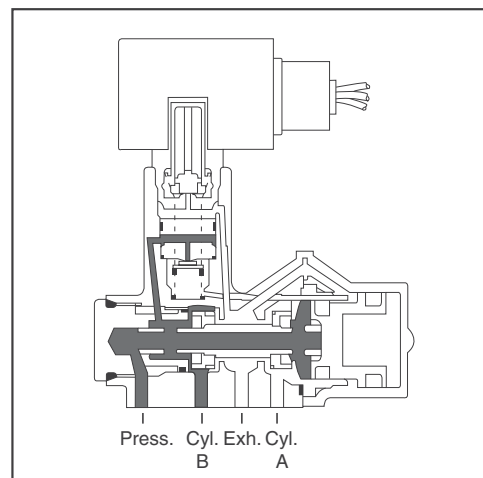


Figure 6B:
Four-Way Valve, Energized

Solenoid

Solenoid Coils (Non-Electronic*)

Except where noted, all ASCO valves are equipped with coils which can be energized continuously without danger of overheating or failure. Standard coils have 18" leads which can be connected to any controlling device. Spade, screw terminal, and DIN-type spade connector coils are also available. For three phase power systems, the two leads can be connected to any two of the three phases.

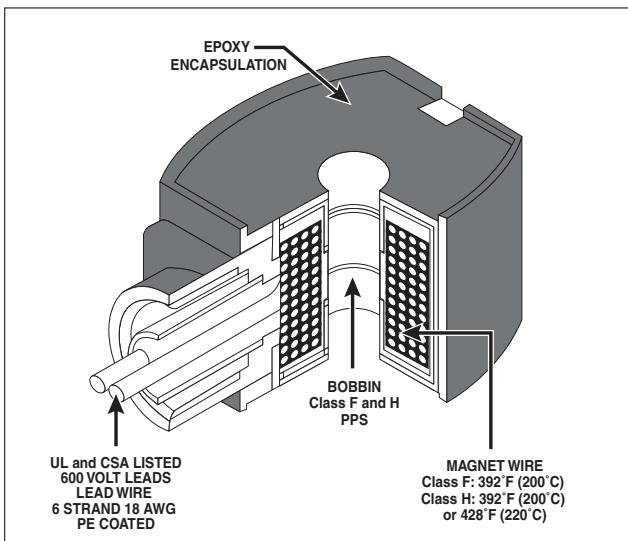
All coils are constructed in accordance with Underwriters Laboratories Inc., NEMA, IEEE, and other industrial standards ASCO Class B, F, and H insulation systems are UL listed in the Recognized Component Index (yellow book) under Guide No. OBJ2.

For AC ambient capabilities, see chart to the right. DC ambient capabilities are 104°F (40°C) for RedHat II. These ambients are based on a minimum available voltage of 85% of nominal. If minimum available voltage is greater, a higher ambient limitation may be possible. Consult factory for details.

* See Pages 527-530 for RedHat Next Generation Electronic coils.

Coil Insulation Systems and Temperature Limitations

RedHat II Solenoid Class F 311°F (155°C) and Class H 356°F (180°C)



AC Ambient Capabilities

Industrial Temperature Limitations ① ⑤ and Thermal Characteristics of ASCO RedHat II Solenoids and Coils

The typical watt ratings given show the relationship between different classes of coil insulation and the watt ratings to achieve higher temperature capabilities. The information contained in these tables applies only to Non-Explosionproof, AC constructions.④

- ② Excess margin for higher fluid or ambient temperature
- Temperature rise due to power input
- Listed ambient

Notes:

- ① As measured by the "Resistance Method."
- ② Ambient temperatures are directly additive to coil rise — fluid temperature is not.
- ③ For M-6, 50 Hz wattage values, add 2 watts to the indicated values.
- ④ Because of explosionproof codes and surface temperature limitations, the maximum listed ambients for specific valves should not be exceeded. Consult factory concerning explosionproof applications where higher-than-listed ambients are encountered.
- ⑤ Maximum temperatures shown are industrial limits. For UL limits, subtract 27°F (15°C) for Class F coils and 36°F (20°C) for Class H coils.

Final Temperature °C (°F)

| | | | | | |
|----------------------------------|-----------------------------------|-----------|-----------|-----------|------|
| 200 (356°F) | Class "H" Limit | | | | |
| 180 (311°F) | Class "F" Limit | | | | |
| 160 (311°F) | Temperature Rise from Power Input | | | | |
| 155 (284°F) | Ambient | | | | |
| 140 (266°F) | Ambient | | | | |
| 130 (212°F) | | | | | |
| 120 (194°F) | | | | | |
| 100 (140°F) | | | | | |
| 90 (125°F) | | | | | |
| 80 | | | | | |
| 60 | | | | | |
| 51.6 (125°F) | | | | | |
| 40 | | | | | |
| 20 | | | | | |
| 0 | | | | | |
| Coil Class | FT | FB | HT | HB | |
| Typical AC Wattage Rating | M6 ③ | 6.1 | 9.1 | 6.1 | 9.1 |
| | MXX | 10.1 | 17.1 | 10.1 | 17.1 |
| | M12 | 16.1 | 20.1 | 16.1 | 20.1 |

Coil Operating Voltage Ranges

All coils are designed for industrial operating voltages and can be used on the following voltage ranges:

| AC | | DC | |
|------------------------|------------------------|------------------------|------------------------|
| Nominal Voltage Rating | Normal Operating Range | Nominal Voltage Rating | Normal Operating Range |
| 24 | 20-24 | 6 | 5.1-6.3 |
| 120 | 102-120 | 12 | 10.2-12.6 |
| — | — | 24 | 20-25 |
| 240 | 204-240 | 120 | 102-126 |
| 480 | 408-480 | 240 | 204-252 |

Note: Special coils are required for battery charging circuits where wider voltage ranges are typically encountered. For these applications, special continuous duty Class H coils are available that will accommodate a voltage range equivalent to 12% over nominal, 28% under nominal, and a 140°F (60°C) ambient. Standard nominal voltages are 125 and 250 DC, which translate to a voltage range of 90-140 and 180-280, respectively. Add prefix "HC" to the catalog number. "HC" prefix is only applicable to valves with coil classes FT and HT. *Consult factory or other constructions.*

Most ASCO valves, depending upon construction, will operate at 15% under nominal voltage and maximum operating pressure differential, and are capable of operating for short periods at 10% over nominal voltage. For coil classes other than FT and HT, over voltage is not recommended. *For wider voltage ranges than shown here or for operating voltage ranges for specific catalog numbers, please consult your local ASCO sales office.*

Power Consumption

Power consumption can be determined from the ratings shown on individual Series pages. For AC valves, the watts, volt-ampere "inrush" (the high momentary surge occurring at coil energization), and volt-ampere "holding" (the continuous draw following inrush) are given.

The current rating for inrush and holding may be determined by dividing the voltage into the volt-amp rating:

$$\text{Inrush Amps} = \frac{\text{volt-amp inrush}}{\text{voltage}}$$

$$\text{Holding Amps} = \frac{\text{volt-amp holding}}{\text{voltage}}$$

DC valves have no inrush current. The amp rating can be determined by dividing the voltage into the DC watt rating:

$$\text{Amps} = \frac{\text{watts (DC)}}{\text{voltage}}$$

Notes:

1. When a valve has been energized for a long period, the solenoid becomes hot and can be touched by hand for only an instant. This is a perfectly safe operating temperature. Any excessive heating will be indicated by smoke and the odor of burning coil insulation.
2. Valves for AC service can be converted to other AC voltages simply by changing the coil. Similarly, DC valves can be converted to other DC voltages. *When converting from AC to DC, or vice versa, consult your local ASCO sales office for instructions.*

Solenoid Constructions

Internal parts in contact with fluids are of non-magnetic 300 and magnetic 400 series stainless steel. In AC constructions, the shading coil is normally copper, except that silver is mostly used in valves with stainless steel bodies. Other materials are available, when required. In DC constructions, no shading coil is required. Typically, the core tubes are of 300 series stainless steel and are formed by deep drawings, eliminating the need for silver brazed or welded joints.

Solenoid Enclosures

ASCO offers two types of enclosures, each for a variety of applications: a one-piece molded epoxy construction called the RedHat II solenoid and a conventional RedHat metallic construction. Both meet ICS-6 ANSI/NEMA, and UL Standards 429, 508, and/or 1002. These standards define enclosure protection levels and the tests passed to earn each Type designation. (See Page 527 for RedHat Next Generation Solenoid Enclosures).

RedHat II

RedHat II solenoid enclosures are of one-piece molded epoxy construction, with an integral 1/2" NPT conduit hub. This epoxy encapsulation serves as the enclosure. The magnetic frame is molded into the coil.

RedHat II solenoids are offered as Type 1 General Purpose or Type 7 (A, B, C, and D) Explosionproof.

Type 1 – Solenoids are green and come equipped with three 18" long leads (the green lead is a ground wire). Also available as options are 1/4" spade connectors, screw terminals, and DIN-type terminals meeting ISO 4400 and DIN Standard 43650.

An optional junction box/terminal coil construction is also available for use with spade and screw terminal constructions. Refer to the "Optional Features" Section for details.

Type 7 – Solenoids are black and are available only in the leaded construction.

All RedHat II solenoids also meet the requirements for Types 2 Dripproof, 3 and 3S Raintight, and 4 and 4X Watertight-Corrosion Resistant.

The Following wattages carry Type 7 and Type 9 approvals as shown; for

| Wattage | Type 7 Class I, Div. 1 & 2 Gas Groups | Type 9 Class II, Div. 1 Dust Groups |
|-----------------|---|---|
| 6.1, 10.1, 17.1 | A, B, C, D | E, F, G |
| 16.1, 20.1 | A, B, C, D | E, F |
| 10.6, 11.6 | A, B, C, D | E, F, G |

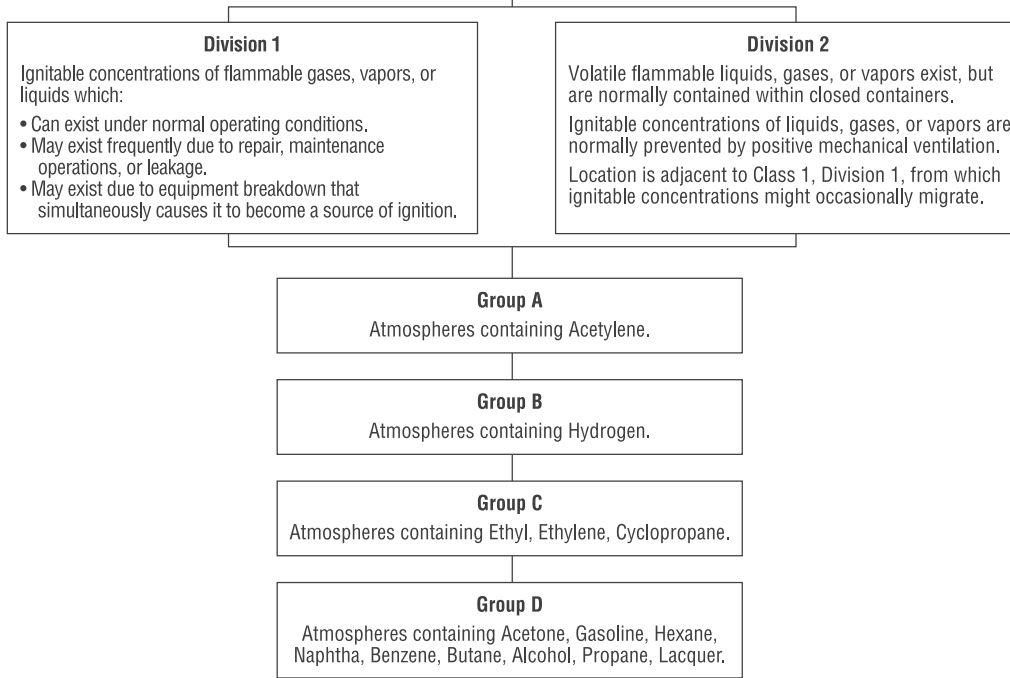
Enclosure Classifications and Types

| | | |
|----------------------------|---|--|
| Type 1 | General Purpose | Intended for indoor use, primarily to provide protection for enclosed parts in locations without unusual service conditions. |
| Type 2 | Dripproof | Intended for indoor use, primarily to provide protection against limited amounts of falling water or dirt. |
| Type 3 | Raintight, Dusttight, and Sleet (Ice) Resistant | Intended for outdoor use, primarily to provide protection against wind-blown dust, rain, and sleet; undamaged by the formation of ice on the enclosure. |
| Type 3S | Raintight, Dusttight, and Sleet (Ice) Resistant | Intended for outdoor use, primarily to provide protection against wind-blown dust, rain, and sleet; external mechanism remains operable when ice laden. |
| Type 3R | Rainproof, Sleet (Ice) Resistant | Intended for outdoor use, primarily to provide protection against falling rain and sleet; undamaged by the formation of ice on the enclosure. |
| Type 4 | Watertight and Dusttight | Intended for indoor or outdoor use to provide protection against splashing water, water seepage, falling or hose-directed water, and severe external condensation; undamaged by the formation of ice on the enclosure. |
| Type 4X | Watertight, Dusttight, and Corrosion Resistant | Same as Type 4, but provides additional protection to resist corrosion. |
| Type 6 | Submersible | Intended for indoor or outdoor use to provide protection against entry of water during submersion at a limited depth. (Tested to 6' for 30 minutes.) |
| Type 6P | Submersible | Same as Type 6 Enclosure, but provides prolonged submersion protection at a limited depth. (Tested to 6' for 24 hours.) |
| Type 7 & Type 9 | Refer to charts on next page. | |

Type 7 (A, B, C, and D)

Explosionproof enclosures are designed to contain an internal explosion, without causing an external hazard, when installed in the following atmospheres or locations:

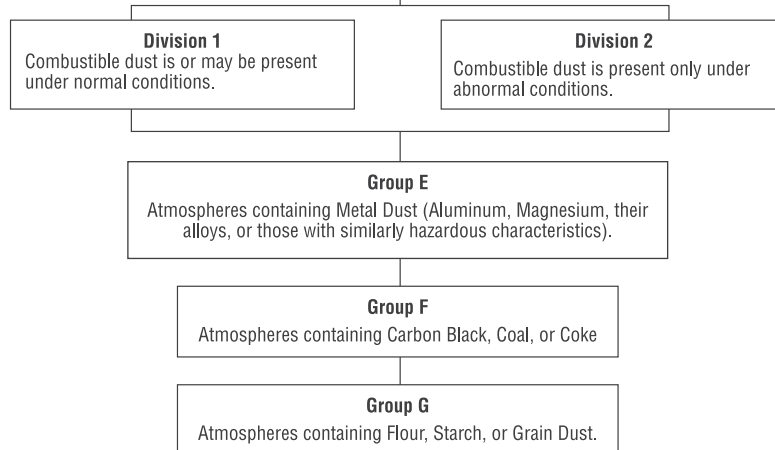
**Class 1
Gasses or Vapors**



Type 9 (E, F, and G)

Dust-ignitionproof enclosures are designed to prevent the entrance of dust, and the enclosed devices do not produce sufficient heat to cause external surface temperatures capable of igniting dust on the enclosure or in the surrounding atmosphere.

**Class II
Dust**



RedHat Metallic Enclosures

Conventional metallic enclosures are offered to meet Type I General Purpose enclosure applications and Type 7 (C and D) Explosionproof enclosure applications.

Type 1 — General Purpose metallic enclosures are epoxy-painted, zinc-coated steel with a 7/8" diameter hole to accept standard conduit hubs or connectors.

Type 7 (C and D) — Explosionproof metallic enclosures are epoxy-painted, zinc-plated steel or die-cast aluminum with a 1/2" threaded conduit hub.

Type 7 enclosures also meet Type 3 (Raintight) requirements as well as some also meet Type 7 (C and D) Explosionproof and Type 9 (E, F, and G) Dust-Ignitionproof requirements for Class I, Division 1, Groups C and D; Class I, Division 2, Groups C and D; and Class II, Division 1, Groups E, F, and G. *Please contact your local ASCO sales office for details.*

Also available as options are: Type 3R (Rainproof), Type 4 and 4X (Watertight), Type 6 (Submersible), Type 7B (Explosionproof for Hydrogen Atmospheres, Class I, Division 1, Group B), as well as Splice Box enclosures. *Please contact your local ASCO sales office for details on these options.*

Note: Metallic solenoid enclosures provide part of the magnetic circuit for the solenoid. Removal will affect valve operation.

Hazardous Location Solenoid Temperature Range Codes

Hazardous location solenoids are marked to indicate the maximum exposed surface temperature or temperature indicating code. This temperature is based on the maximum obtained in the temperature or burnout (blocked core) tests, whichever is higher, at a minimum ambient of 104°F (40°C) or at the rated maximum ambient temperature.

To prevent ignition of hazardous atmospheres, do not install in areas where vapors or gases having ignition temperatures lower than the marked temperatures are present.

The operating temperatures for each indicating code are shown in the following chart:

Operating Temp. Range Indicating Code No.

| Maximum Temperature | | Code Number |
|---------------------|--------------|-------------|
| Degrees in C | Degrees in F | |
| 450 | 842 | T1 |
| 300 | 572 | T2 |
| 280 | 536 | T2A |
| 260 | 500 | T2B |
| 230 | 446 | T2C |
| 215 | 419 | T2D |
| 200 | 392 | T3 |
| 180 | 356 | T3A |
| 165 | 329 | T3B |
| 160 | 320 | T3C |
| 135 | 275 | T4 |
| 120 | 248 | T4A |
| 100 | 212 | T5 |
| 85 | 185 | T6 |

Note: Except where otherwise noted in specific Series, all RedHat metallic enclosure solenoids have temperature range Code T3C.

Most RedHat II solenoids and/or solenoid valves are marked:

"To prevent fire or explosion, do not install where ignition temperature of hazardous atmosphere is less than 329°F (165°C). Open circuit before disassembly."
This corresponds to code number T3B.

Valves with Class H solenoids and valves used on steam service are marked:

"To prevent fire or explosion, do not install where ignition temperature of hazardous atmosphere is less than 356°F (180°C). Open circuit before disassembly."
This corresponds to code number T3A.

The Class II, Group F, Dust Location designation is not applicable for solenoids and/or solenoid valves used for steam service, or when a Class H solenoid is used.

RedHat II Explosionproof solenoids include an internal, non-resettable thermal fuse to limit solenoid temperature in the event that extraordinary conditions occur which could cause excessive temperatures. These conditions include high input voltage, a jammed valve, excessive ambient temperature, shorted coil, etc. This unique feature is standard only in RedHat II solenoids.

When used on valves having fluid temperature ratings exceeding 248°F (120°C), consult ASCO for applicable enclosure class, groups and temperature range codes. For temperature range codes of optional solenoids and features, or if a better temperature range code is desired, consult your local ASCO sales office.

Operating Pressures

Maximum Operating Pressure Differential (M.O.P.D.)

The maximum operating pressure differential refers to the maximum difference in pressure between the inlet and outlet, against which the solenoid can safely operate the valve. If the pressure at the valve outlet is not known, it is safest to regard supply pressure as the M.O.P.D.

Minimum Operating Pressure Differential

The minimum operating pressure differential is that which is required to open the valve and keep it open. For 2-way valves with a floating piston or diaphragm, the valve will start to close below the minimum operating differential pressure. For 3 and 4-way pilot valves, the minimum operating pressure is measured between the pressure and exhaust ports, and must be maintained throughout the operating cycle to ensure complete transfer from one position to the other.

Note: Direct acting, hung diaphragm or hung piston valves do not require a minimum pressure, but may not yield maximum flow on low pressure differentials.

Safe Working Pressure

Safe working pressure is the line or system pressure to which the valve may be subjected without being damaged.

Proof Pressure

Proof pressure is five times the safe working pressure. *Contact the factory or your local ASCO sales office if you require this value.*

Ambient Temperatures*

Minimum Ambient Temperature

The nominal limitation of 32°F (0°C) is advisable for any valve that might contain moisture (water vapor). Where freezing water is not a factor, minimum ambience as low as 0°F (-18°C) can be tolerated. In addition, special constructions are available for ambient temperatures down to -40°F (-40°C). *Consult your local sales office with your specific needs.*

Maximum Ambient Temperature

The nominal maximum ambient temperatures listed are based primarily on test conditions used by Underwriters Laboratories, Inc. for setting safe limits for coil insulation. They are determined under continuously energized conditions and with maximum fluid temperatures in the valves. Actual conditions, in many applications, will permit use at considerably higher ambient temperatures. In addition, modifications to standard constructions are available to extend maximum ambient temperature limitations. *Consult your local ASCO sales office with your specific needs.*

Response Times*

Response time from fully closed to fully open or vice versa depends on the valve size and operating mode, electrical service, fluids, temperature, inlet pressure, and pressure drop. The response time for AC valves on air service, under average conditions, can be generalized as follows:

- Small direct acting valves: 5 to 10 milliseconds.
- Large direct acting valves: 20 to 40 milliseconds.
- Internal pilot operated valves:
 1. Small diaphragm types: 15 to 50 milliseconds.
 2. Large diaphragm types: 50 to 75 milliseconds.
 3. Small piston types: 75 to 100 milliseconds.
 4. Large piston types: 100 to 150 milliseconds

Generally speaking, operation on liquids has relatively little effect on small direct acting valves; however, response time of large direct acting and internally piloted valves will slow by 50% to 100%.

Response time of DC valves will be 50% slower than equivalent AC valves. For specific response time on any critical-timing applications, response time can be reduced to meet specific requirements.

**See Page 529 for RedHat Next Generation Solenoid Valves).*

Air Operated Valves

Principles of Operation

An air operated valve has two basic functional units:

- An operator with a diaphragm or piston assembly which, when pressurized, develops a force to operate
- A valve containing an orifice in which a disc or plug is positioned via air pressure to stop or allow flow

Operators

Two operators are offered in this catalog, each having a pressure range to suit various industrial requirements: instrument air range 3 to 30 psi (0.2 to 2.1 bar) and pneumatic range 30 to 125 psi (2.1 to 8.6 bar).

Control air for the operator is completely isolated from the main line fluid by a unique seal arrangement (see Figure 7). This permits a wide range of main line fluids to be handled.

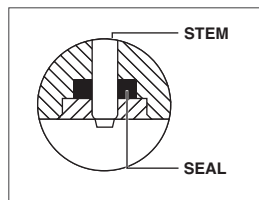


Figure 7

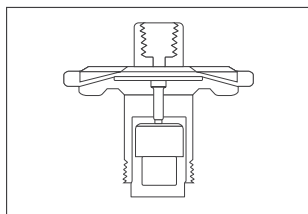


Figure 8A: Instrument Air Pressure Range Operator

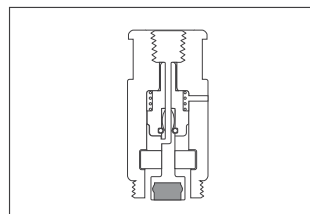


Figure 8B: Pneumatic Range Operator

When a particular valve is selected, any pressure within its pressure range will operate the valve, regardless of variations in the main line pressure.

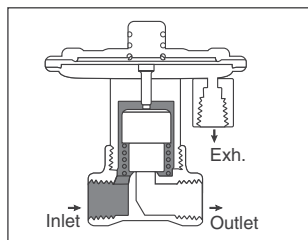


Figure 9A: Normally Closed, Direct Acting, Air Operated Valve with Operator Exhausted

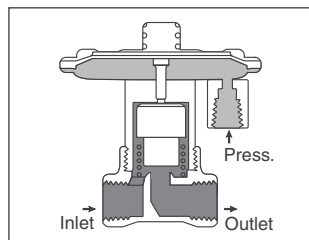


Figure 9B: Normally Closed, Direct Acting, Air Operated Valve with Operator Pressurized

The instrument air pressure range operator utilizes a diaphragm (see Figure 8A) for operation, while the pneumatic range operator has a piston (see Figure 8B). By applying pressure to and exhausting pressure from the operator, the main valve will open or close.

Direct Acting Valves (Figures 9A, 9B)

In a direct acting valve, the operator stem is moved by the diaphragm or piston and directly opens or closes the orifice, depending on whether the operator is pressurized or exhausted. The valve will operate from zero psi to its maximum rated pressure.

Internal Pilot Operated Valves (Figure 10A, 10B)

This valve is equipped with a pilot and bleed orifice and uses the line pressure for operation. When the operator is pressurized, it opens the pilot orifice and releases pressure from the top of the valve piston or diaphragm to the outlet side of the valve. This results in unbalanced pressure, which causes the line pressure to lift the piston or diaphragm off the main orifice, thereby opening the valve. When the operator is exhausted, the pilot orifice is closed and full line pressure is applied to the top of the valve piston or diaphragm through the bleed orifice, providing a seating force for tight closure.

Two types of construction are available:

- Floating diaphragm or piston, which requires a minimum pressure drop to hold it in the open position.
- Hung type diaphragm or piston, which is mechanically held open and operates from zero to the maximum pressure rating.

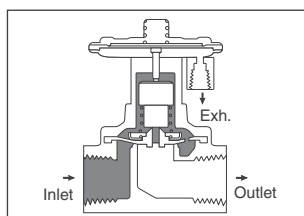


Figure 10A: Normally Closed, Internal, Pilot Operated Valve with Operator Exhausted

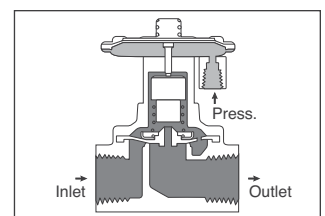


Figure 10B: Normally Closed, Internal, Pilot Operated Valve with Operator Pressurized

Types of Air Operated Valves

2-Way Valves:

Normally closed and normally open operation. Figures 9A, 9B, 10A, 10B, 11A, 11B.

3-Way Valves:

Normally closed, normally open and universal operation. Figures 12A-D, 13A-D.

4-Way Valves:

Figures 14A-D

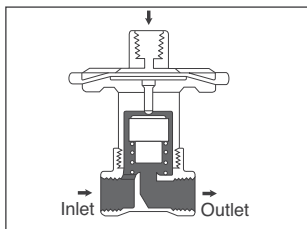


Figure 11A: Normally Open, Operator Exhausted

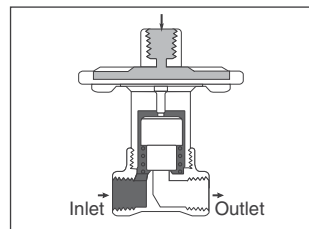


Figure 11B: Normally Open, Operator Pressurized

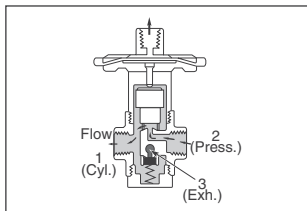


Figure 12A: Normally Open, Operator Exhausted

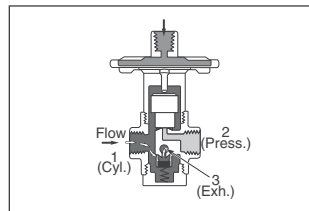


Figure 12B: Normally Open, Operator Pressurized

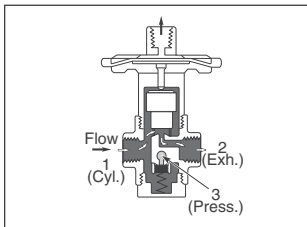


Figure 12C: Normally Closed, Operator Exhausted

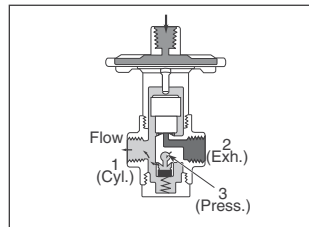


Figure 12D: Normally Closed, Operator Pressurized

Operating Pressures

Minimum Operating Pressure Differential

The minimum operating pressure differential is that which is required to open the valve and to keep it open. Two way valves with floating piston or diaphragm will start to close below the minimum differential pressure. Three and four way pilot valves must maintain the minimum operating pressure throughout the operating cycle to ensure complete transfer from one position to the other.

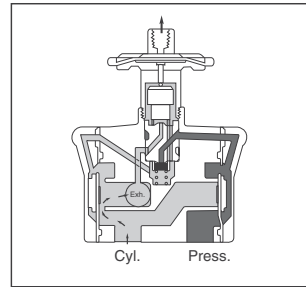


Figure 13A: Normally Closed, Operator Exhausted

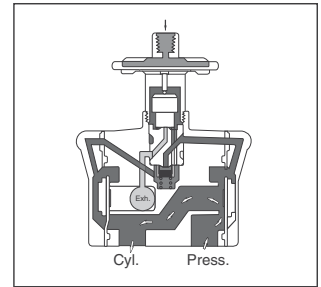


Figure 13B: Normally Closed, Operator Pressurized

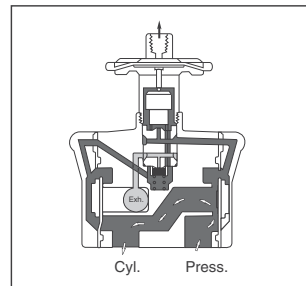


Figure 13C: Normally Open, Operator Exhausted

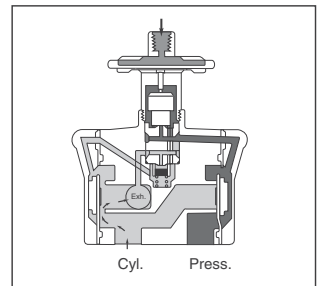


Figure 13D: Normally Open, Operator Pressurized

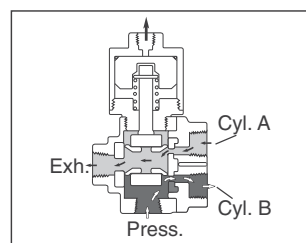


Figure 14A: Operator Exhausted

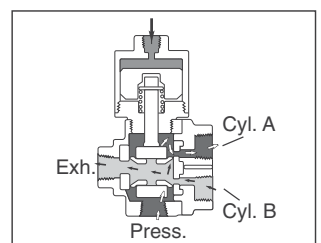


Figure 14B: Operator Pressurized

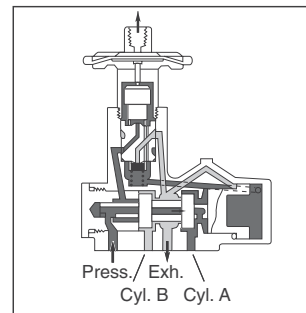


Figure 14C: Operator Exhausted

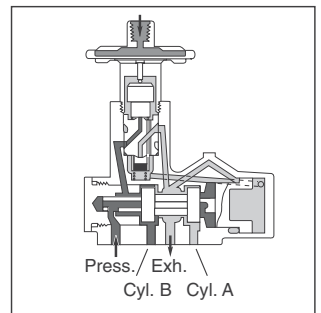


Figure 14D: Operator Pressurized

Maximum Operating Pressure

Maximum operating pressure is the highest pressure at the inlet side of the valve, against which the operator can operate the valve. This pressure may be much less than the maximum safety rating of the valve body.

Note: Direct acting valves do not require a minimum pressure.

Approvals

Approval Listing Code and Information

UL, FM, CSA listings and compliance to applicable CE directives have been indicated for each Series in this catalog. Listing codes and other information follow in this section.

In addition to approvals with the standard features and for the standard voltages listed in each Series, many valves with optional features and other voltages have also been approved. *Consult your local ASCO sales office for details.*

Agency Valve Classifications and Code Reference

General Purpose Valve – a Normally Open or Normally Closed valve intended to control the fluid flow, but not to be depended upon to act as a safety valve. This is a UL and CSA classification, and is not intended to indicate valve service or application.

Safety Shutoff Valve – a Normally Closed valve of the “on” and “off” type, intended to be actuated by a safety control or emergency device, to prevent unsafe fluid delivery. It may also be used as a General Purpose valve. A multiple port valve may be designated as a Safety Shutoff valve only with respect to its Normally Closed port. This is a UL, FM, and CSA valve classification. Safety shutoff valves are listed in UL index under Guide YIOZ or YIOZ2 for ordinary locations and YTSX or YTSX2 for hazardous locations.

Process Control Valve – an FM approved valve to control flammable gases, not to be relied upon as a Safety Shutoff valve. Refer to note under individual valve listing. Unless otherwise stated under the individual Series numbers, valves are listed as General Purpose valves.

Underwriters Laboratories, Inc.

UL standards governing solenoid valves are:

UL429, “Electrically Operated Valves,”

UL1002, “Electrically Operated Valves for Use in Hazardous Locations.”

UL1604, “Electrical Equipment for use in Class I and II, Division 2 and Class III Hazardous Classified Locations.”

UL provides two “Listing” categories for solenoid valves:

General Use. Valves authorized for general use are complete in their requirements; therefore, they may be installed in the field. They are identified by the UL symbol, followed by the word “Listed” and the valve

classification. UL Listings for ASCO “General Use” valves and solenoids can be found in the “UL Gas and Oil Equipment Directory” (gray book) under Electrically Operated Valves, Guide No. YIOZ or YIOZ2 (File MP-618), and in the “UL Hazardous Location Equipment List” (red book) under Electric Valves, Guide No. YTSX or YTSX2 (File E25549) or under Solenoids, Guide No. VAPT (File E12264).

Component. Valves in this category are intended for use as factory-installed components of equipment where final acceptability must be determined by UL. They are not intended for installation in the field.

Component valves are termed “UL Recognized” and use UL’s special Recognized Component mark. UL Listings of ASCO Component Valves can be found in the “UL Recognized Component Index” (yellow book) under Electrically Operated Valves, Guide No. YIOZ2 and YSY12 (File MP-618).

Canadian Standards Association

Standard C22.2 No. 139, “Electrically Operated Valves,” covers the standards governing solenoid valves.

Standard C22.2 No. 213, “Electrical equipment for use in Class I, Division 2 hazardous locations.”

CSA certified valves and solenoids are listed in the “CSA Certified Electrical Equipment Book” under Valves, Guide No. 440-A-0 (File 10381) and Guide No. 440-A-0.8 (File 13976).

CSA valves require special handling, testing, and marking. They are supplied only when specified on an order.

Factory Mutual Research Corporation

FM “approves” and lists in the “Factory Mutual Approval Guide” fuel oil and fuel gas safety shutoff valves, process control valves, explosionproof/dust-ignitionproof, and intrinsically safe valves for hazardous locations. Valves designated for other fluids and operational characteristics, although not subject to FM approval, are usually “accepted” by FM on specific equipment installations.



Industrial Risk Insurers (Formerly FIA)

Industrial Risk Insurers does not approve equipment. It established "recommended good practices" in such areas as combustion safeguards on single-burner boiler-furnaces, and safeguarding Class B and Class C furnaces and ovens. Conforming to these practices results in either insurability for fire protection or in more advantageous rates for their protection.

To meet the standards of good practice, safety controls must be either listed by Underwriters Laboratories, accepted by Industrial Risk Insurers or other nationally recognized testing laboratories (NRTL). The National Fire Protection Association (NFPA) maintains similar requirements and recommendations for safety shutoff and vent valves in oil and gas burner boiler systems.

European Directives – CE



The Council of the European Communities, under the treaty establishing the European Economic Community (EEC), adopted into law a series of directives to harmonize technical standards. Solenoid valves are controlled by:

Machinery 89/392/EEC Annex II B

EMC 89/336/EEC Art 10.2
(Electromagnetic Capability)

Low Voltage 72/23/EEC

PED 97/23/EC
(Pressure Equipment Directive)

ASCO valves complying to these directives, through third-party or self-certification, display the CE mark on the nameplate or coil and on the Instruction and Maintenance sheet packaged with each valve. On request, ASCO will issue a Declaration of Incorporation and/or Declaration of Conformity for the valve supplied.

Agency Approvals – Worldwide

ASCO's Quality Assurance Program meets all the requirements of ISO-9001-94. We are also certified to IQ Net, providing customers with the products from 17 ISO-certified facilities around the world. The US, Canada, UK, France, the Netherlands, Germany, and Japan are included.

When desired, ASCO solenoid valves can be supplied to meet the additional requirements of a variety of approval agencies around the world. The following can be requested. *Consult your local ASCO sales office for details.*

United States of America

| | |
|--------|---|
| AGA | American Gas Association |
| ANSI | American National Standards Institute, Inc. |
| EIA | Electronic Industries Association |
| ETL | Electronic Testing Laboratory |
| FM | Factory Mutual Research Corporation |
| IEEE | Institute of Electrical and Electronics Engineers, Inc. |
| IRI | Industrial Risk Insurers (formerly Factory Insurance Association) |
| JIC | Joint Industrial Council |
| MIL | Military Standards |
| MSHA | Mine Safety and Health Administration |
| NACE | National Association of Corrosion Engineers |
| NAVSEA | Naval Sea Systems Command |
| NEC | National Electric Code |
| NEMA | National Electrical Manufacturers Association |
| NFPA | National Fire Protection Association |
| NFPA | National Fluid Power Association, Inc. |
| NSF | National Sanitation Foundation |
| UL | Underwriters Laboratories, Inc. |
| USCG | United States Coast Guard |

European Economic Community

| | |
|------|---|
| CE | European Directives |
| CEE | International Commission on Rules for the Approval of Electrical Equipment |
| ATEX | Directive 94/9/EC Apparatus for Potentially Explosive Atmospheres (ATmospheres EXplosibles) |
| IEC | International Electrotechnical Commission |
| ISO | International Organization for Standardization |

Austria

| | |
|-------|--|
| TÜV-A | Technischer Überwachungs-Verein Österreich |
| BVFA | Bunderversuchs-und Forschungsanstalt Arsenal |
| ETI | Elektrotechnisches Institut |

Australia

| | |
|-----|------------------------------------|
| AGA | Australian Gas Association |
| SAA | Standards Association of Australia |

Belgium

| | |
|----------|--|
| CEB | Comite Electrotechnique Belge |
| IBN | Institut Belge de Normalisation |
| ISSEP | Institut Scientifique de Service Public (anciennement INIEX) |
| K.V.B.G. | Koninklijke Vereniging der Belgische Gasvakiëden |
| VERGAS | Technische Vereniging van de Gasindustrie in Belgie V.Z.W.D. |

Brazil

| | |
|---------|----------------------------------|
| INMETRO | Instituto Nacional de Metrologia |
|---------|----------------------------------|

Canada

| | |
|-------|---|
| CGA | Canadian Gas Association |
| CSA | Canadian Standards Association |
| EEMAC | Electrical and Electronic Manufacturers Association of Canada |
| ULC | Underwriters Laboratories of Canada |

China

| | |
|-------|---|
| NEPSI | National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation |
| CCC | China Compulsory Certification |

Denmark

| | |
|-------|-------------------------------------|
| DEMKO | Danmarks Elektriske Materielkontrol |
|-------|-------------------------------------|

Finland

| | |
|-----|--------------------------------------|
| SL | Sähkötarkastuslaitos Laboratoria |
| VTT | Technical Research Centre of Finland |

France

| | |
|----------------|---|
| AFNOR | Association Française de Normalisation |
| INERIS | Institut National de l'Environnement Industriel et des Risques (anciennement CERCHAR) |
| Bureau Veritas | |
| LCIE | Laboratoire Central des Industries Electriques |
| MDIS | Ministère du Développement Industriel et Scientifique |

Germany

| | |
|--------------------|--|
| BVS | Bergbau-Versuchsstrecke |
| DIN | Deutsches Institut für Normung |
| DVGW | Deutscher Verein des Gas – Und Wasserfaches e.V. |
| Germanischer Lloyd | |
| PTB | Physikalisch – Technische Bundesanstalt |
| VDE | Verband Deutscher Electrotechniker |

Italy

| | |
|-----|----------------------------------|
| CEI | Comitato Elettrotecnico Italiano |
|-----|----------------------------------|

Japan

| | |
|------|--|
| JEM | Japan Electrical Manufacturers Association |
| JIS | Japanese Industrial Standards |
| MIL | Ministry of Labor |
| NK | Japan Maritime Association |
| RIIS | Research Institute of Industrial Safety, Department of Labor |

Korea

| | |
|-------|-------------------------------|
| KISCO | Korea Industrial Safety Corp. |
| KGSG | Korea Gas Safety Corp. |

Luxembourg

| | |
|--------------------------------|--|
| Service de l'énergie de l'état | |
|--------------------------------|--|

Northern Ireland

| | |
|---|--|
| Industrial Science Centre, Department of Economic Development | |
|---|--|

Norway

| | |
|--------------------|------------------------------------|
| Det Norske Veritas | |
| NEMKO | Norges Elektriske Materielkontroll |

Russia

| | |
|------|----------------------|
| USSR | Register of Shipping |
|------|----------------------|

South Africa

| | |
|------|-----------------------------------|
| SABS | South African Bureau of Standards |
|------|-----------------------------------|

Spain

| | |
|------|---|
| CESI | Centro Elettrotecnico Sperimentale Italiano |
| LOM | Laboratorio Oficial José Maria Madariaga |

Sweden

| | |
|-------|---|
| SEMKO | Svenska Elektriska Material Kontrollanstalen |
| SP | Swedish National Testing and Research Institute |

Switzerland

| | |
|-----|---|
| ASE | Association Suisse des Electriciens |
| SEV | Schweizerischer Electrotechnischer Verein |

The Netherlands

| | |
|------|--|
| DGA | Direktoraat – Generaal van de Arbeid |
| KEMA | Koninklijk Instituut voor het Testen van Elektrische Materialen N.V. |
| NEC | Nederlands Elektrotechnisch Comité |
| NNI | Nederlands Normalisatie – Instituut |
| REGO | Richtlijnen Voor de Samenstelling van Elektrisch Material In Verband Met Gasontploffingsgevaar |
| VEG | VEG-Gasstituut N.V. |
| VGN | Vereniging van Gasfabrikanten In Nederland |

United Kingdom

| | |
|---------|---|
| BASEEFA | British Approvals Service for Electrical Equipment in Flammable Atmospheres |
| BGC | British Gas Corporation |
| BSI | British Standard Institution |
| EECS | Electrical Equipment Certification Service (BASEEFA) |
| Lloyds | Register of Shipping |
| MRS | Midlands Research Station |
| NWC | National Water Council |
| SCS | Sira Certification Service |
| SFA | Special Flammable Atmospheres |
| WH | Watson House |

Flow Data

Importance of Valve Sizing

Improper sizing of a solenoid valve results in below-standard performance and can involve unnecessary cost.

The basic factors in valve sizing include:

- Maximum and minimum flows to be controlled
- Maximum and minimum pressure differential across the valve
- Specific gravity, temperature, and viscosity of fluids being controlled

The Cv method of valve sizing reduces all variables to a common denominator called the Flow Coefficient. After existing or projected conditions have been converted to this coefficient (the Cv), the proper valve size can be found in the catalog pages.

This section provides the complete procedure and reference data for accurate sizing of ASCO solenoid valves in liquid, gas services, and steam. The graphs provide the simplest means of finding the required Cv factor, and are based on the formula:

$$Cv = \frac{\text{Flow Required}}{\text{Graph Factor}}$$

The graph factor can be determined by aligning known pressure conditions on the graphs.

Estimating Cv or Orifice Size:

The table below can be used to estimate a Cv if the orifice size is known or, conversely, to relate the approximate orifice size if the Cv is known. The chart is based on the ASCO designs of inline globe type valves.

The flow charts must be used for precise sizing and converting Cv factors to actual flow terms, and the catalog must be consulted for the actual Cv of a particular valve.

| Approximate Orifice Size (ins.) | Approximate Cv | Approximate Orifice Size (ins.) | Approximate Cv |
|---------------------------------|----------------|---------------------------------|----------------|
| 1/32 | .02 | 1/2 | 3.5 |
| 3/64 | .06 | 5/8 | 4.5 |
| 1/16 | .09 | 11/16 | 5 |
| 3/32 | .20 | 3/4 | 7.5 |
| 1/8 | .30 | 1 | 13 |
| 9/64 | .36 | 1 1/4 | 17 |
| 3/16 | .53 | 1 1/2 | 25 |
| 1/4 | .70 | 2 | 48 |
| 5/16 | 1.7 | 2 1/2 | 60 |
| 3/8 | 2 | 3 | 100 |

Sample Problems

Liquids: ①

To find Cv: What Cv is required to pass 20 GPM of oil, with a specific gravity of 0.9 and a pressure drop of 25 psi? The viscosity is less than 300 SSUs.②

Solution: Formula is:

$$Cv = \frac{GPM}{Fg \times Fsg}$$

To find Fg (Graph Factor), use Liquid Flow Graph on page 11.16. The Fg factor is that corresponding to 25 psi pressure drop and equals 5. The Fsg factor (Specific Gravity Factor) can be obtained from the Fsg Chart, and is that corresponding to .9 specific gravity and equals 1.05.

Therefore:

$$Cv = \frac{20}{5 \times 1.05} = 3.81$$

Air and Gases:

To find Cv: A valve is required to pass 500 SCFH at an inlet pressure of 60 psig and a Δp③ of 10 psi. Find Cv if the fluid is carbon dioxide at room temperature.

Solution: Refer to 10-100 psig graph on page 11.17. The formula to be used is:

$$Cv = \frac{SCFH}{Fg \times Fsg \times Ft}$$

Locate Fg at the intersection of 60 psig inlet pressure and 10 psi Δp③ (curved lines). Read down to Fg. Fg=1560.

Locate Fsg corresponding to specific gravity of carbon dioxide (S.G.=1.5). Fsg=0.81. (Refer to next page.) Since the gas is at room temperature, the Ft factor can be ignored.

Insert values into formula:

Steam:

To find Cv: A valve is required to pass 25 lb/hr of saturated steam at an inlet pressure of 7 psig and a Δp③ of 3 psi. What is the Cv?

Solution: Refer to the Steam Graph on page 11.18. Use formula:

$$Cv = \frac{lb/hr}{Fg}$$

Locate Fg on graph corresponding to 7 psig inlet pressure and 3 psi Δp③ (curved lines). Fg = 23.5.

Insert values into formula:

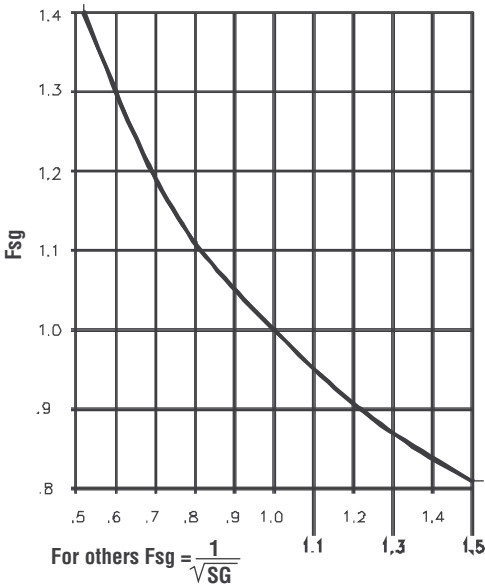
$$Cv = \frac{25}{23.5} = 1.06$$

For further information, consult your local ASCO sales office.

Notes:

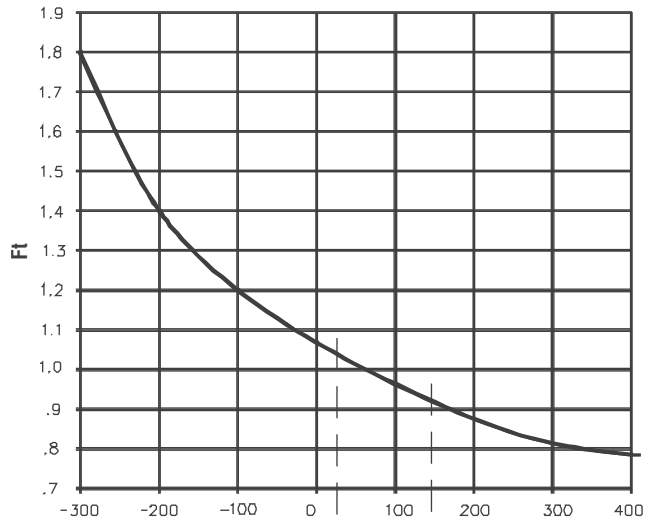
- ① Liquid formulas and flow graphs are based on US gallons.
- ② If viscosity is less than 300 SSU, correction factors are not necessary.
- ③ Δp stands for pressure drop.

Fsg Chart



Specific Gravity @ 14.7 PSIA and 60°F.

Ft Chart



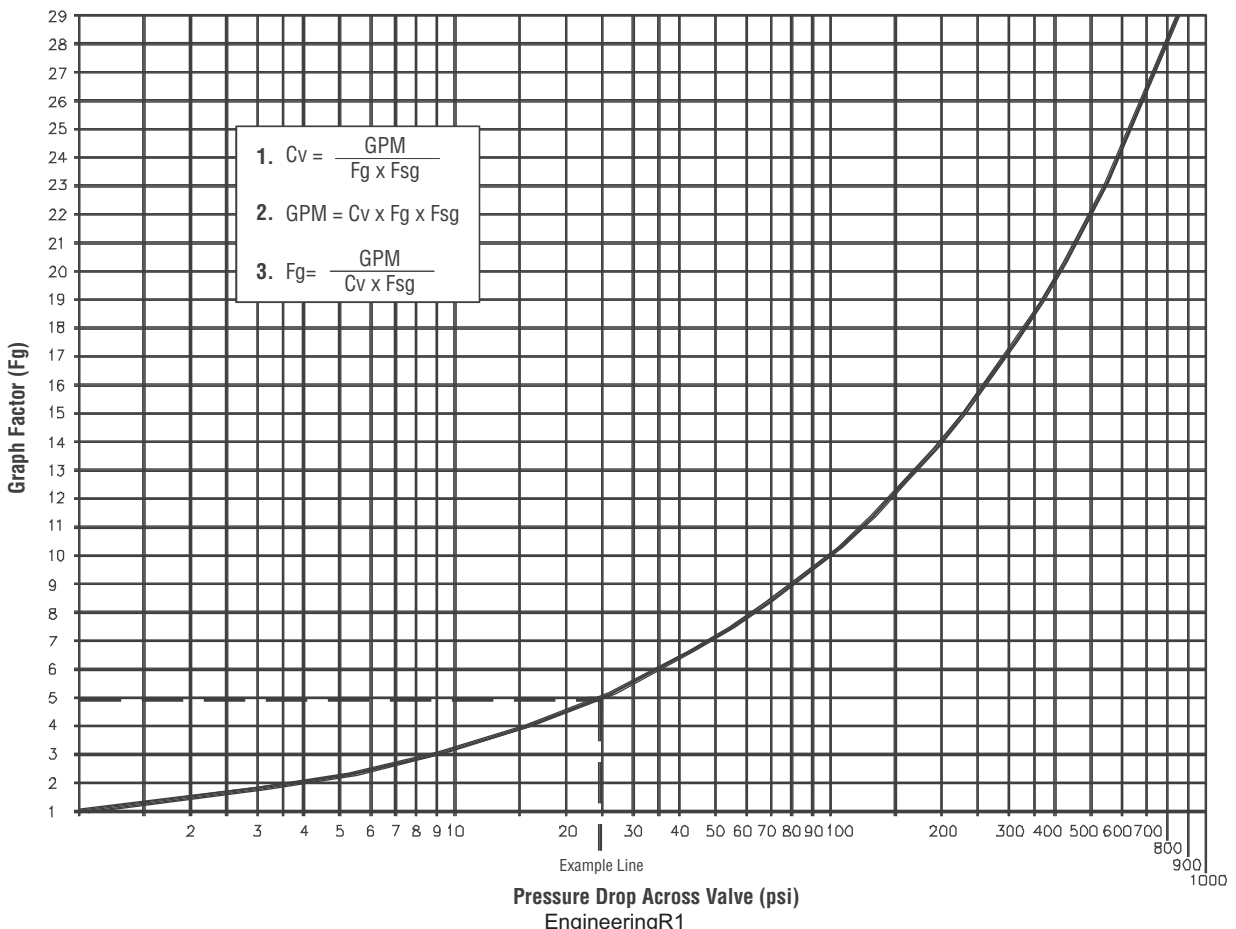
For others

$$Ft = \sqrt{\frac{530}{(460 + ^\circ F)}}$$

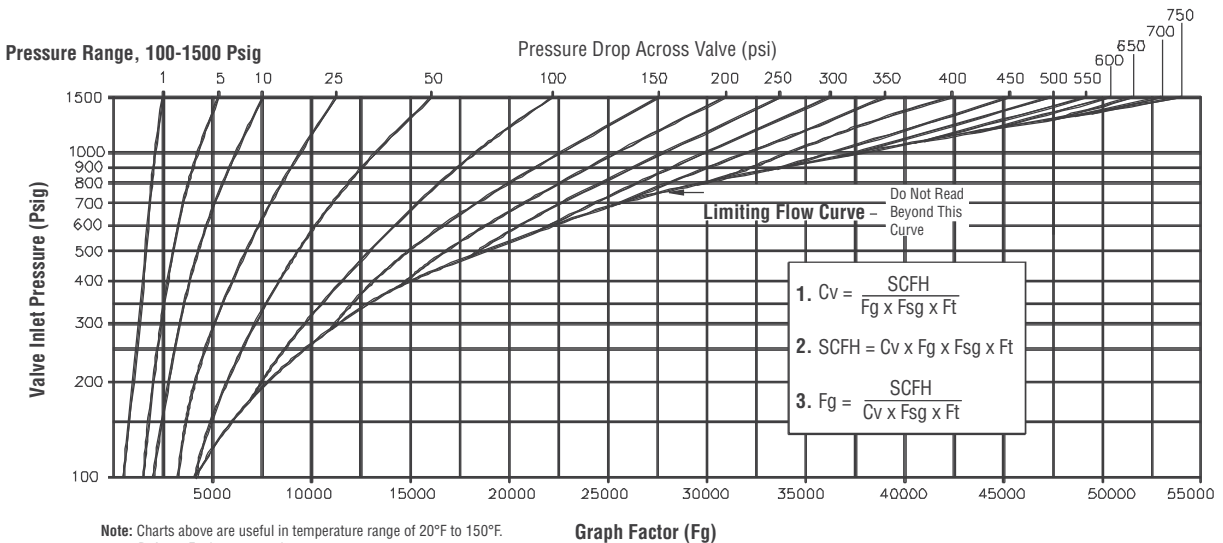
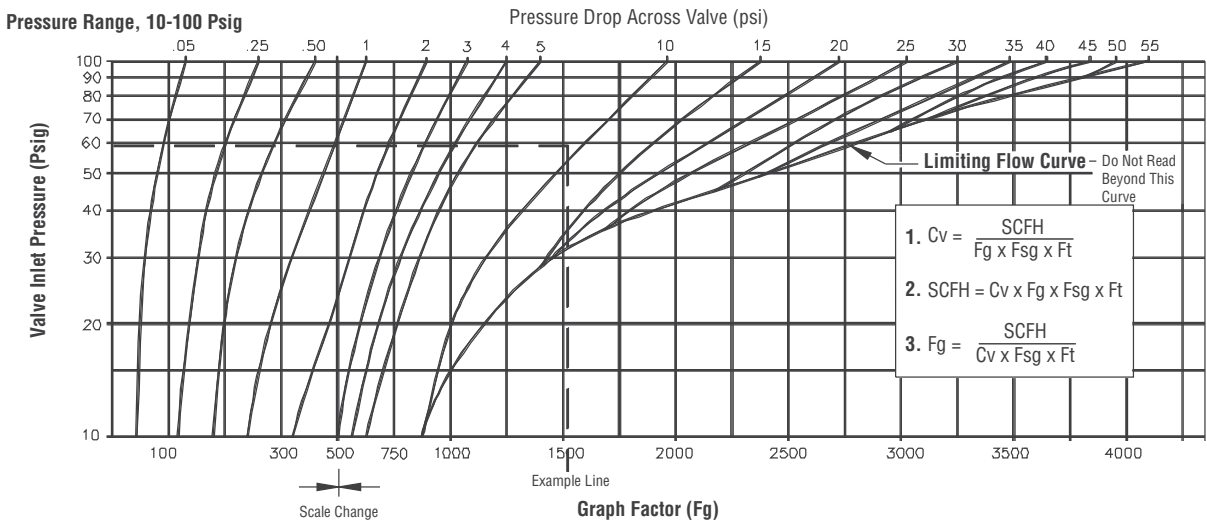
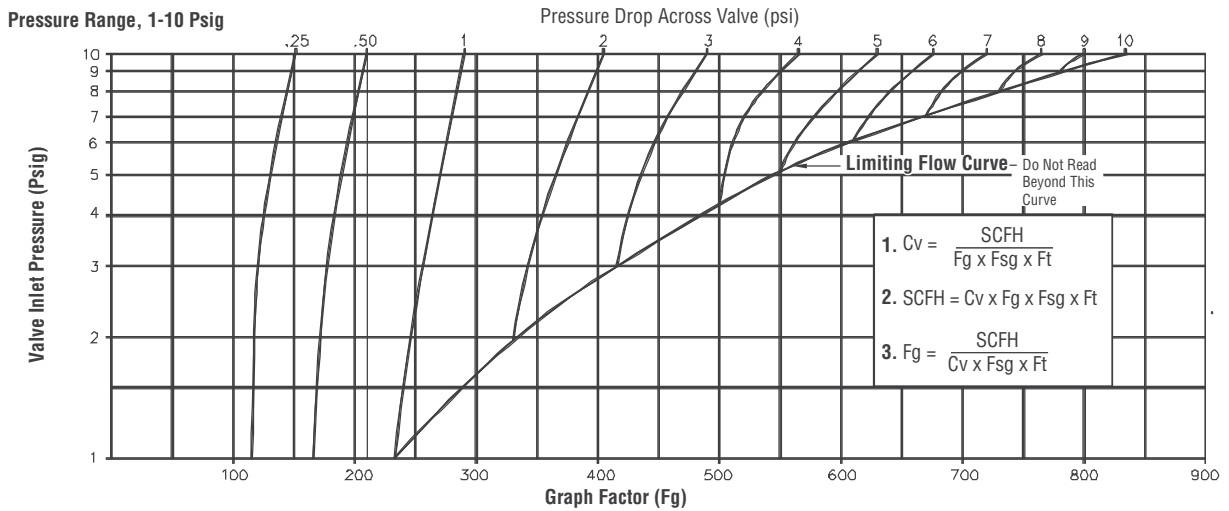
Temperature (° F)

The correction for temperature in the range of 20°F to 150°F is very small and, therefore, can be ignored in ordinary applications.

Liquid Flow Graph



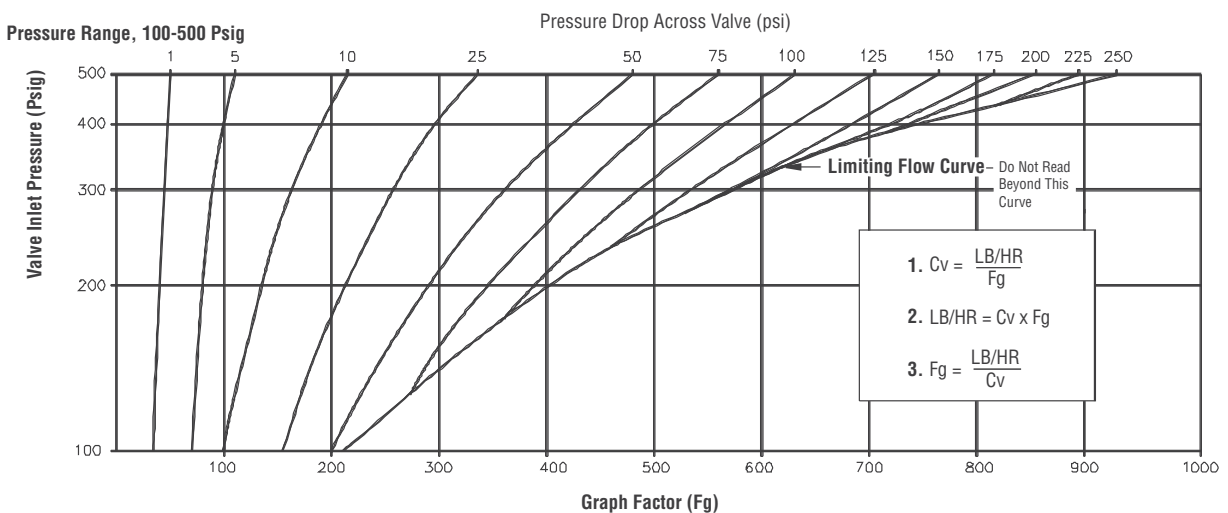
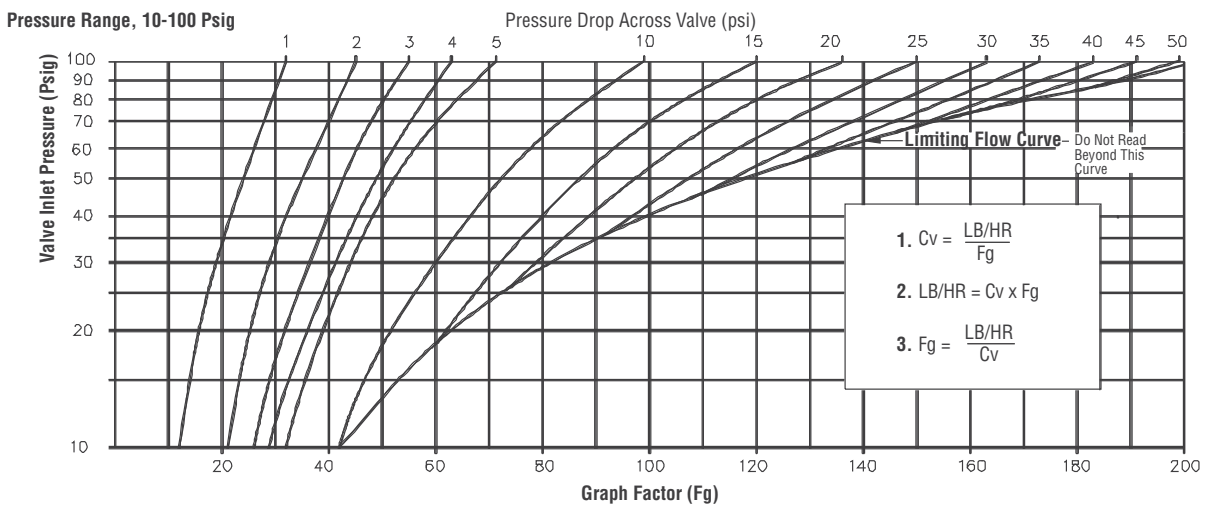
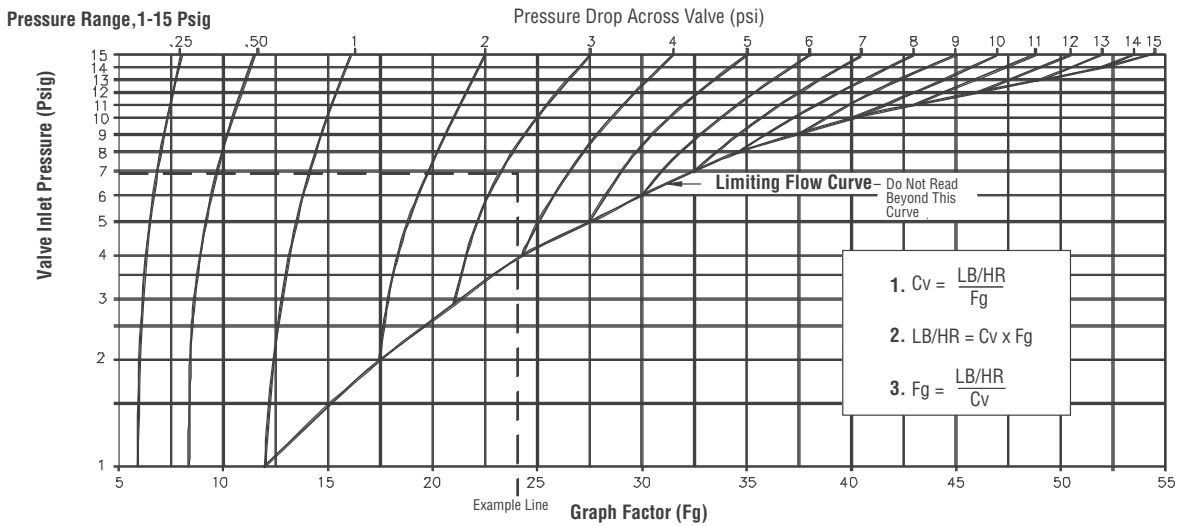
Air and Gas Flow Graphs



Note: Charts above are useful in temperature range of 20°F to 150°F. Refer to Ft chart on previous page.

EngineeringR1

Steam Flow Graphs



Material Selection Guide for Commonly Used Fluids

All orders entered using this guide must state actual fluid, fluid pressure, fluid concentration, and fluid temperature of the application. Actual fluid is extremely important when elastomer options are specified because other substitutions may be required.

ASCO valves are available to control many acids, alcohols, bases, solvents, and corrosive gases and liquids. Modified or special designs are sometimes required, depending upon the application.

Corrosion occurs either as a chemical or electro-chemical reaction. Therefore, consideration must be given to both the galvanic and electromotive force series, as well as to pressure, temperature, and other factors that might be involved in the application.

This guide provides information on types of valves that are available for most common corrosive and non-corrosive gases and liquids. *For applications in which abnormal conditions exist and for other fluids, consult your local ASCO office, giving full details on operating conditions.*

This guide is not intended as a specific recommendation; factors beyond our control could affect valve operation or materials.

General Information on Elastomer Materials Frequently Used in ASCO Valves

NBR (Buna 'N', Nitrile)

NBR is commonly referred to as a nitrile rubber and is the standard synthetic elastomer for accomplishing resilient-type seating or sealing in ASCO valves. It has excellent compatibility for most air, water, and light oil applications. It has a useful temperature range of 0°F to 180°F (-18°C to 82°C).

CR (Neoprene)

CR is principally used as an external seal in refrigeration applications. It is also utilized for oxygen service. It has a useful temperature range of 0°F to 180°F (-18°C to 82°C).

EPDM (Ethylene Propylene)

EPDM is selected for applications above the NBR temperature range, such as handling hot water and steam. Ethylene propylene has an extremely wide range of fluid compatibility, but has the distinct disadvantage that it cannot be used with petroleum-based fluids or contaminated fluids (such as lubricated air). It has a useful temperature range of -10°F to 300°F (-23°C to 149°C).

FKM (Viton®/Fluorel®, etc.)

FKM is a fluorocarbon elastomer primarily developed for handling such hydrocarbons as jet fuels, gasolines, solvents, etc., which normally cause detrimental swelling to NBR. FKM has a high temperature range similar to EPDM, but with the advantage of being

somewhat more resistant to "dry heat." FKM has a wide range of chemical compatibility. It has a useful temperature range of 0°F to 350°F (-18°C to 177°C).

PTFE (Teflon®, Rulon)

PTFE and PTFE with fillers are considered more a plastic than a resilient-type material. They are virtually unattacked by any fluid. Their temperature usage has ranged from discs for cryogenic valves to discs for steam valves. They are not easily fabricated and are known to have "cold flow" characteristics which may contribute to objectionable leakage, particularly on gases.

Other materials referred to in this catalog

| | |
|---------|--------------------------------|
| CA | (Acetal, Celcon, Delrin) |
| FFKM | (Perfluoroelastomers) |
| FMQ | (Fluorosilicone) |
| HYT | (Hytrel) |
| MTBE | (Methyl tertiary-butyl ether) |
| PA | (Nylon, Zytel) |
| PA + FV | (Polyamide) |
| PE | (Polyethylene) |
| PP | (Polypropylene) |
| PPS | (Polyphenylene Sulfide, Ryton) |
| PUR | (Polyurethane) |
| UR | (Urethane) |
| VMQ | (Silicone) |

Viton and Teflon are registered Trademarks of DuPont Co. Fluorel is a registered Trademark of 3M.

Material Selection Guide for Commonly Used Fluids

| Fluids | Qualifying Service Information | Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features) |
|------------------------------------|---|---|
| Acetic Acid | Standard strengths of water solution are: 28, 56, 70, 80, 85, 98%. | For solutions of 40% or less, use stainless steel Type 316 Normally Closed valve with EPDM elastomers. Add suffix "E" to catalog number. |
| Acetic Acid, Glacial | 99.9% solid. | Use appropriate ball valve with ASCO 3 or 4-way auxiliary air pilot valve. |
| Acetone | Colorless, flammable liquid with mint-like odor. Soluble in water and ether. | Standard catalog valves with EPDM elastomers. Add suffix "E" to catalog number. PTFE or metal seated valves also used. |
| Acetylene | A colorless, highly flammable gas used for welding and flame cutting of metals, and for producing other chemicals. If moisture is present, copper, silver, and alloys containing more than 66% copper are not suitable. | Standard catalog aluminum, brass, or stainless steel valves. Specify aluminum shading coil. Do not use bar stock brass valves. |
| Air, Lubricated (Shop Air) | Most sources of air carry lubrication from pumps and other equipment. Others are directly lubricated in lines. | Standard resilient seated catalog valves. For synthetic diester lubricating oils, FKM seals may be required. <i>Consult local ASCO office.</i> |
| Air (or Gas), Dry, Unlubricated | Used in instrument air applications and telephone lines where moisture and oil cannot be tolerated. | Special constructions required. Refer to Long-Life Solenoid Valve Constructions. |
| Alcohol, Ethyl (Denatured Alcohol) | A grain alcohol commonly used as solvent. Also used as a radiator antifreeze and rocket fuel. | Standard resilient seated catalog valves |
| Alcohol, Methyl (Methanol) | A flammable wood alcohol used in automotive antifreeze, general solvent, aviation, and rocket fuel. | Standard catalog constructions; however, where high purity of liquid is essential, use stainless steel designs. |
| Ammonia (Anhydrous or Dissociated) | Used in refrigeration. Other uses include: for cleaning and bleaching, for etching aluminum, and in chemical processing. Presence of slight trace of water moisture can be harmful to brass. | Stainless Steel construction with aluminum shading coil and CR elastomers are required. Specify aluminum shading coil. Add prefix "X" and suffix "J" to catalog number. |
| Argon | The valves must be free of contaminants when filling incandescent lamps, luminescent tubes, gas thermometers, etc. Also used as an inert shielding gas in welding equipment. | Standard catalog aluminum and brass valves used in connection with welding equipment. Most other applications require stainless steel valves, specially cleaned to avoid contamination. Specify AP-1-005. |
| Benzene, (Benzol) | Solvent used for waxes, resins, rubber, and other organic materials. Also employed as a fuel or for blending with gasoline or other fuels. | Standard catalog valves with FKM, or PTFE disc and gasket. |
| Butane | One of the principal LP gases. Used as fuel for household and other industrial purposes. Also a refrigerant and a propellant in aerosol cans. | Special construction required. Refer to Combustion Section. |

| Fluids | Qualifying Service Information | Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features) |
|---|---|---|
| Carbon Dioxide (Gas or Liquid) (CO ₂) | Also known as carbonic anhydride. Used in industrial refrigeration and refrigeration of foods and carbonated beverages. Also, as a fire extinguisher and inert atmosphere in welding equipment. | For gas pressures below 100 psi, use standard valves with NBR discs. Above 100 psi, use Series 8264, especially designed for this service. |
| Carbon Tetrachloride ("Carbona") | Also known as tetrachloromethane. Mainly used as a metal degreasing agent. Also used in fire extinguishers. It is a general solvent and dry-cleaning medium. Its fumes are highly toxic and should be handled in well-ventilated areas. | Standard catalog brass valves with PTFE or FKM discs. Add suffix "T" or "V" to catalog number. Diaphragm valves must be equipped with FKM parts. Add suffix "V" to catalog number. Metal seated valves also used. |
| Caustic Soda | See "Sodium Hydroxide." | |
| Cellulube | One of the phosphate ester lubricating fluids which are fire resistant. | Standard catalog designs with EPDM elastomers. Add suffix "E" to catalog number. PTFE or metal seated valves also used. |
| Chlorine | Chlorine has a powerful suffocating odor and is strongly corrosive to organic tissues and to metals. Uses include: for bleaching textiles and paper pulp, but it is also used for the manufacture of many chemicals. | Use appropriate ball valve with ASCO 3 or 4 way auxiliary air pilot valve. |
| City Gas | See "Natural" and "Manufactured Gas." | |
| Coffee | Automatic or semiautomatic dispensing equipment. | Stainless steel or plastic valves. For FDA approved elastomers, consult your local ASCO office. |
| Coke Oven Gas (Bench Gas; Coal Gas) | Flammable gas used in domestic and industrial heating. | Standard steel or stainless steel valves with FKM elastomers. |
| Coolant Oil | Oil used in automatic screw machines and related equipment as cutting oils or coolants. Usually contain suspended solids. | Consult your local ASCO office. |
| Diesel Fuel | Petroleum oil used as fuel for diesel engines. | Standard resilient seated catalog valves with FKM seating. |
| Ethylene Glycol (Ethylene Alcohol) "Prestone" | Also known as glycol. Used in permanent antifreeze solutions, brake fluids, and as a dye solvent. | Standard resilient seated catalog valves. |
| "Freon [®] " Solvents "MF," "TF," and "BF" | Trademark for a solvent which is commonly used in ultrasonic degreasers for removing oil, common grease, and dirt on metal or plastic parts. | Standard catalog items with metal-to-metal seating, or NBR elastomers only. |

| Fluids | Qualifying Service Information | Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features) |
|--|--|---|
| Fuel Oil (Light) Nos. 1, 2, 3 | "Distillate" petroleum oil used in combustion applications without preheating. | Refer to Combustion Section. |
| Fuel Oil (Heavy) Nos. 4, 5, 6 | Heavy "Bunker" fuel oil. Usually preheated to 135°F or more for combustion. | Refer to Combustion Section. |
| Gasoline | Special or high-test gasolines have additives or aromatics that affect synthetic rubber by excessive swell, or extraction of plasticizers. | Standard catalog valve constructions with FKM elastomers. Add suffix "V" to catalog number. If MTBE additive is present in gasoline, then use FFKM elastomers. Metal seated valves also used. |
| Helium | An inert gas used in heat treating, purging, and welding. | Standard resilient seated catalog valves. |
| Hydraulic Oil | Petroleum base only — viscosity usually 50 SSU or 300 SSU. For fire-resistant hydraulic oils, see "Cellulube," "Pydraul," and "Skydrol." | Standard resilient seated catalog valves. |
| Hydrochloric Acid | Also known as muriatic acid. Corrosive chemical. | Use an appropriate ball valve with ASCO 3 or 4 way auxiliary air pilot valve. For low pressure, small flow, and a maximum concentration of 20%, refer to Shielded Core valves. |
| Hydrogen | A highly flammable gas when exposed to air. | Standard resilient seated catalog valves with soft seats. |
| Jet Fuels (JP1 through 8). For others, consult your local ASCO office. | These fuels are used in jet engines and are petroleum products, similar to kerosene. Some jet fuels contain substantial quantities of aromatics which affect most synthetic rubbers. | Standard catalog valves with FKM elastomers. Add suffix "V" to catalog number. PTFE and metal seated valves also used. |
| Kerosene | Generally used as a solvent for cleaning purpose and as a heating fuel. | Standard catalog valve with FKM elastomers. Add suffix "V" to catalog number. |
| LP Gas | See "Propane." | Refer to Combustion Section. |
| Liquid Natural Gas, Nitrogen, and Oxygen | | Refer to Cryogenic Valves. |
| Manufactured Gas | Refine coke oven gas used in city applications. | Refer to Combustion Section. |
| Mercury | Uses: mercury cells and other electrical apparatus; mercury vapor boilers, lamps, barometers, thermometers, etc. | Use stainless steel body. Valve must be mounted upside down. Special construction required. Consult your local ASCO office with application details. |
| Methyl Ethyl Ketone (MEK) | Used in lacquers, paint removers, cements and adhesives. It is a flammable liquid. | Standard catalog valves with EPDM elastomers. Add suffix "E" to catalog number. PTFE or metal seated valves also used. |
| Naphtha | A coal-tar solvent. | Use NBR or FKM elastomers. For FKM elastomer, add suffix "V" to catalog number. |
| Natural Gas | Common heating fuel. | Refer to Combustion Section. |

| Fluids | Qualifying Service Information | Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features) |
|--|--|---|
| Nitric Acid (aqua fortis or azotic acid) | Normally, concentrations are 60% nitric and 40% water. | Stainless steel valves with aluminum shading coil and PTFE disc. Add suffix "T" to catalog number. Metal seated valves also used. Maximum temperature at which we can offer valve is 100°F. |
| Nitric Acid-Red Fuming | Red fuming is more than 86% nitric acid. These can be handled with all stainless steel valves. | |
| Nitric Acid-White Fuming | White fuming, which is pure to 97.5% acid, and nitric acid vapors are very difficult to handle. | For white fuming acid, use appropriate ball valve with ASCO pilot. |
| Nitrogen | An inert gas used in heat treating, purging, and welding. | Standard resilient seated catalog valves. |
| Oils, Lubricating or Motor | Common motor oils known as SAE oils and synthetic lube oils, etc. | Standard catalog valves for 300 SSU maximum. For higher SSU, consult your local ASCO office. For compressor service involving refrigerants, consult your local ASCO office for elastomer selection. |
| Oxygen, Gas | Used in conjunction with various fuels in furnaces, ovens, cutting torches, welding, and heat treating. A nonflammable gas. Contact with hydrocarbons will result in spontaneous combustion. | Metal body valves with FKM or CR elastomers, specially cleaned to avoid contamination with hydrocarbons. Add suffix "N" to catalog number. |
| Perchloroethylene (Tetrachloroethylene) "Perk" | Used as a dry-cleaning solvent and in vapor degreasing equipment. | Standard catalog items with FKM elastomers. Add suffix "V" to catalog number. Special piston valves available. Do not use diaphragm valves. Consult your local ASCO office. |
| Phosphoric Acid | Also known as orthophosphoric acid. Used in pickling and rust-proofing metals, soft drinks and flavoring syrups, as well as pharmaceuticals. | For concentration of up to 20% and temperatures of 100°F, use 300 series stainless steel with ethylene propylene, FKM, or NBR elastomers. |
| Photographic Solutions | Also known as sodium thiosulfate or hypo. Most metals corrode sufficiently to cause solution contamination. | For low pressure, small flow, and low concentrations (20% max.), refer to Shielded Core Valves. |
| Potassium Sulfate | Used in fertilizers. Also in aluminum and glass manufacturing. | Standard stainless steel catalog valves. |
| Propane Gas | One of the principal LP gases commonly used in grain dryer applications, and a bottled gas for heating and cooking. | Special construction required. Refer to Combustion Section. |

| Fluids | Qualifying Service Information | Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features) |
|---|---|---|
| "Pydraul" (Monsanto) | A trademark for a series of fire-resistant hydraulic fluids. Used in automatic welding machines, hydraulic presses, and air compressors. Also used in die-casting machines, forging, and extrusion presses. | Standard catalog items with FKM elastomers. Add suffix "V" to catalog number. PTFE or metal seated valves also used. |
| Refrigerants, CFC (chlorofluorocarbon) "Freon®" | CFCs are used as refrigerants; as blowing agents in the manufacture of insulation, packaging, and cushioning foams; as cleaning agents for metal and electronic components; and in many other applications. CFCs contain chlorine and have been targeted by the EPA to be phased out. | Refrigerants require special selection of elastomers. Consult your local ASCO office. |
| Refrigerants, HFC (hydrofluorocarbon) "Suva®" | Environmentally acceptable alternative to CFC. Contains no chlorine. | Refrigerants require special selection of elastomers. Consult your local ASCO office. |
| "Skydrol" | Trademark for fire-resistant jet aircraft hydraulic fluid. | Standard catalog items with EPDM elastomer. Add suffix "E" to catalog number. PTFE or metal seated valves also used. |
| Sodium Hydroxide (Caustic Soda) | Used in pulp and paper industry. Included in detergents and soap, also in textile processing. Solutions range between 50% and 73% commercial. | Stainless steel valves with EPDM elastomers. Add suffix "E" to catalog number. Stainless steel or PTFE seated valves also used. |
| Sour Gas | See "Coke Oven Gas." | |
| Steam Condensate | This is return condensate from steam boilers, which has various degrees of dissolved carbon dioxide or oxygen. Temperature is normally high to boiling point. | Brass valves suitable with EPDM elastomers. See Series 8210 and 8222 Hot Water Service Listings. Use suffix "E" on all others. |
| Stoddard Solvent | This is a dry-cleaning solvent of usually high-purity naphtha, clear and free of undissolved water. A coal-tar solvent. | Standard catalog items. |
| Sulfuric Acid | An oily, highly corrosive liquid oxidizing organic materials and most metals. It is used for pickling and cleaning metals in electric batteries and in plating baths, for making explosives and fertilizers. | Use an appropriate ball valves with ASCO 3 or 4 way auxiliary air pilot valve. For low pressure, small flow, and a concentration of up to 60%, refer to Shielded Core Valves. |
| Toluene (Toluol) | Also called methyl benzene or methyl benzol. One of the coal-tar solvents. Used in aviation and high octane gasolines. Also a solvent for paints, coatings, resins, etc. It is a flammable liquid. | Standard catalog valves with FKM disc and gasket. Add suffix "V" to catalog number. |

| Fluids | Qualifying Service Information | Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features) |
|--|--|--|
| Trichloroethylene ("Carbona" or "TRIAD") | Common degreasing solvent, noncombustible, but very toxic. Adequate ventilation required. | Standard brass catalog valves, if dry, use FKM elastomers (add suffix "V" to catalog number). If moisture is present, use stainless steel. Metal and PTFE seated valves also used. |
| Turpentine | Solvent or thinner for paints, varnishes, and lacquers. Also, a rubber solvent and reclaiming agent. The liquid is volatile. | Standard catalog valves with FKM elastomers. Add suffix "V" to catalog number. |
| Vacuum | | Refer to Vacuum Valves. |
| Vegetable Oils | Edible oils extracted from seeds, fruits, or plants, such as peanut oils, cottonseed oils, etc. | Standard resilient seated catalog valves. For FDA approved elastomers, consult your local ASCO office. |
| Vinegar | A diluted impure solution of acetic acid. | Stainless steel valves with EPDM elastomers (FKM elastomers may also be used). Add suffix "E" to catalog number. For FDA approved elastomers, consult your local ASCO office. |
| Water, Boiler Feed | Commonly treated water with inhibitors to avoid corrosion of boiler tubes. | Standard stainless steel catalog valves with FKM elastomers. Add suffix "V" to catalog number. |
| Water, Distilled or Deionized | A purified water, sometimes called deionized water, neutral and free from contaminants. | Stainless steel valves with EPDM elastomers. Add suffix "E" to catalog number. Stainless steel or PTFE seated valves also used. |
| Water, Fresh | | Standard resilient seated catalog valves. Aerated water, which is slightly acidic, will cause seat erosion by process known as dezincification. Stainless steel or plastic valves should then be selected. |
| Water, High Pressure | When handling water above 500 psi, erosion and water hammer must be considered. | Special designs for car wash applications, etc. Consult your local ASCO office. |
| Water, Hot | Water above 200°F: Often flashes to steam due to regulators or other line restrictions. Below 200°F, this change of state is unlikely. | Standard catalog designs suitable to temperatures listed in catalog. Also see Series 8210 and 8222 Hot Water Service listings. For temperatures exceeding those listed, consult your local ASCO office. |
| Water, Sea, Brine, Brackish | Difficult to handle due to galvanic corrosion. | Use appropriate ball valve with ASCO air pilot valve. |

Electronically Enhanced Solenoids (Next Generation)

All RedHat Next Generation solenoid valves are rated for continuous duty under the operating conditions outlined within this section.

Coil Operating Voltage Ranges

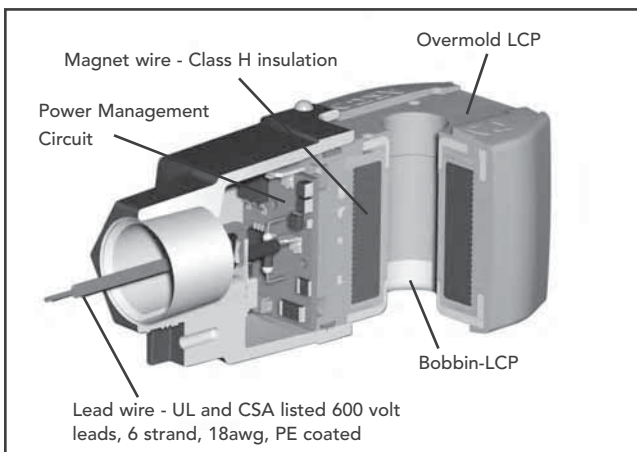
All coils are designed for industrial operating voltages and can be used on the following voltage ranges:

| Voltage Range | Minimum Voltage | Maximum Voltage |
|------------------------|-----------------|-----------------|
| 100-240V/50 or 60Hz/DC | 85 | 264 |
| 24-99V/50 or 60Hz/DC | 20.4 | 109 |
| 12-24/DC only | 10.4 | 26.4 |

The coils with voltage ranges of 100-240 and 24-99 have three lead wires, 24 inches long (2 red for power input, and one green lead for grounding where necessary). These two versions are not polarity sensitive.

The coil with a voltage range of 12-24/DC has 3 lead wires, one red, one black, and one green. This coil is polarity sensitive. The red lead is the positive, black is the negative, and green is the ground wire. This solenoid is also polarity protected. Reversing the polarity will not damage the coil, but the coil will not function until the correct polarity is applied.

Note: The 100-240 voltage range is also suitable for battery charging circuits designed around a 125/DC nominal voltage range.



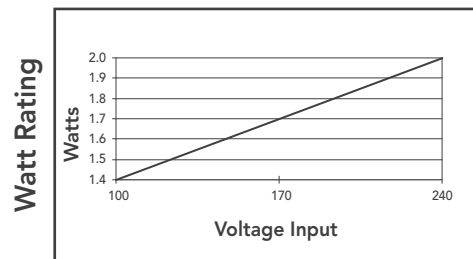
Electrical Specifications

| 2 Watt Electronic Coils | Type |
|-----------------------------------|---------------------|
| Maximum Ambient Temperature | 140°F |
| Maximum Cycle Rate | 1 Operation/ Second |
| Standard Coil Class of Insulation | H |

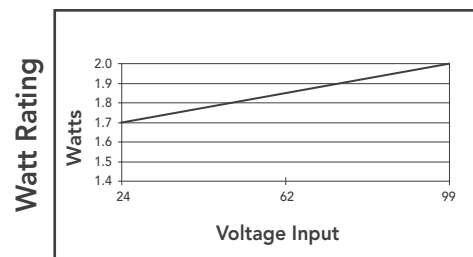
Power Consumption

The Next Generation solenoid nominal power rating is 2 watts. Depending on the input voltage applied, the actual power rating may vary. Please use the charts below to determine your actual power rating.

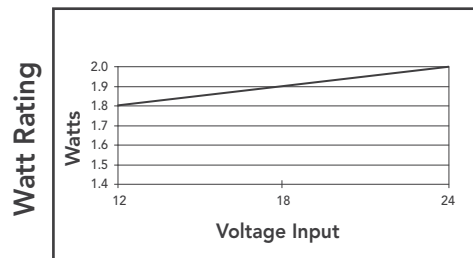
Version
100-240/50-60Hz



Version
24-99/50-60Hz



Version
12-24/DC



The advanced technology used in the Next Generation coil includes electronic circuitry which may limit the compatibility with certain control system components. The following issues need to be considered when specifying an output card or device to operate the Next Generation coil. An initial inrush current spike is drawn by the Next Generation coil. This inrush spike is 72 msec in duration, which is sufficient time for the core to reach the plugnut. The electrical requirement then drops to the holding value.

Inrush Current: The power source, wiring, and output device used need to have surge ratings equal to or greater than the inrush current value (appropriate to the voltage range) specified in the table below.

| Inrush Current Rating | |
|--------------------------|----------------------------|
| Coil Version | Peak Inrush Current (Amps) |
| 12-24/DC | 3.2 |
| 24-99/50-60Hz/DC | 1.4 |
| 100-240/50-60Hz/DC | 0.32 |
| Maximum Duration = 72 ms | |

Holding Current: The power source, wiring, and output device used need to have continuous current ratings equal to or greater than the holding current value (appropriate to the voltage range) specified in the table below.

| Holding Current Rating | | | |
|------------------------|---------------|--------------------------------|--------------------------------|
| Coil Version | Input Voltage | Average Holding Current (Amps) | Average Holding Volt-Amps (VA) |
| 12-24/DC | 12 | 0.340 | 4.0 |
| | 24 | 0.250 | 6.0 |
| 24-99/50-60Hz/DC | 24 | 0.170 | 4.0 |
| | 99 | 0.100 | 10.0 |
| 100-240/50-60Hz/DC | 100 | 0.040 | 4.0 |
| | 240 | 0.032 | 7.5 |

Leakage Currents: The leakage current is defined as a current that is supplied from an output device when the device is in its off or de-activated state. Operation of Next Generation coil in a system that utilizes supervisory currents is not recommended.

| | |
|-------------------------|------|
| Maximum Leakage Current | 3 mA |
|-------------------------|------|

Solenoid Enclosures

The Next Generation solenoid coil is fully encapsulated using Dupont™ Zenite® Liquid Crystal Polymer resin (LCP). Zenite (LCP) is a thermoplastic polyester resin which exhibits several advantages over other thermoplastics. The advantages include excellent resistance to a wide range of organic solvents and automotive fluids*, resistance to impact, and long term retention of properties at continuous-use temperatures.

*Chemical resistance of Zenite LCP may not be suitable for all applications. Zenite LCP is not suitable for caustic solution. *Please consult ASCO for appropriate product solutions.*

Zenite is a registered Trademark of Dupont Co.



RedHat Next Generation Solenoids are available as:

General Purpose/Watertight – Intended for indoor and outdoor use and provides protection classifications from NEMA Types 1 through 4X.

Class I, Division 2 for Hazardous Locations/Watertight – Meets Types 1 through 4X and is UL listed and CSA certified for Class I, Division 2, Groups A, B, C, and D and Class II, Division 2, Groups F and G. Operating temperature code T4A (120°C).

Valve Specifications

Maximum Ambient Temperature

The maximum ambient temperature is 140°F (60°C). This limit is based on continuous energization with the maximum fluid temperatures as shown on each catalog page.

Response Time

Response time from fully closed to fully open or vice versa depends on valve size, operating mode, fluids, temperature, inlet pressure, and pressure drop. The response times for Next Generation are defined as:

- Small direct acting valves – 10 to 60 msec
- Large direct acting valves – 25 to 90 msec

Internally pilot operated valves:

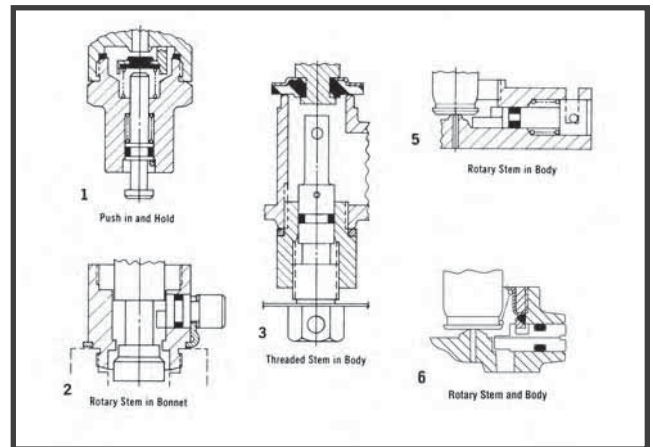
- Small diaphragm types – 20 to 100 msec
- Large diaphragm types – 80 to 150 msec
- Small piston types – 80 to 150 msec
- Large piston types – 105 to 200 msec

Operation on liquids has relatively little effect on small direct acting valves, however, response times of large direct acting and internally piloted valves may be lengthened by 50% to 100%.

Manual Operators

Manual operators are provided to operate the valves manually when electric actuation is not provided. There are two basic types of manual operators, momentary and maintained. To determine which type of manual operator is available for your valves, please see the Optional Features Chart on the relevant valve catalog page. Once it is determined that the subject valve can accommodate a manual operator, the chart below will tell you the type of manual operator. The chart also references the relevant cutaway illustration.

| Series Number | Const. Ref. | Manual Operator Suffix | Manual Operator Type | Illustration Number |
|---------------|------------------|------------------------|----------------------|---------------------|
| 8030 | 8 | MO | Maintained | 3 |
| 8210 | 4, 7, 10, 11, 12 | MO | Maintained | 2 |
| 8262 | 1 | MS | Maintained | 6 |
| 8314 | 1 | MS | Maintained | 6 |
| 8316 | 5, 6 | MO | Maintained | 2 |
| 8320 | 2 | MO | Momentary | 1 |
| 8320 | 2 | MS | Maintained | 6 |
| 8321 | 4 | MO | Momentary | 1 |
| 8321 | 4 | MS | Maintained | 3 |
| 8344 | 1, 3, 4 | MO | Maintained | 2 |
| 8345 | 2 | MO | Maintained | 5 |



| Valve Parts in Contact with Fluids | | | | | | | |
|------------------------------------|---------------------|-----------------|-------------|------------|------------------------------|--------------|------|
| Catalog Number | Body | Seals and Discs | Disc Holder | Core Guide | Springs | Shading Coil | Stem |
| 8030P003 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8030P083 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P004 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P007 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P008 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P022 | Brass | NBR | PA | - | 302 Stainless Steel | - | - |
| 8210P033 | Brass | NBR | PA | - | 302 Stainless Steel | - | - |
| 8210P034 | Brass | NBR | PA | - | 302 Stainless Steel | - | - |
| 8210P035 | Brass | NBR | PA | - | 302 Stainless Steel | - | - |
| 8210P087 | 304 Stainless Steel | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P088 | 304 Stainless Steel | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P093 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P094 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P095 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8210P100 | Brass | NBR | - | - | 302 Stainless Steel | - | - |
| 8223P003 | Brass | NBR, PA, PTFE | - | - | 302 Stainless Steel | Copper | - |
| 8223P005 | Brass | NBR, PA, PTFE | - | - | 302 Stainless Steel | Copper | - |
| 8223P010 | 304 Stainless Steel | PTFE, NBR | - | - | 302 Stainless Steel | Silver | - |
| 8223P025 | Brass | NBR, PA, PTFE | - | - | 302 Stainless Steel | Copper | - |
| 8223P027 | Brass | NBR, PA, PTFE | - | - | 302 Stainless Steel | Copper | - |
| 8262P202 | Brass | NBR | - | - | 302 Stainless Steel | Copper | - |
| 8262P208 | Brass | NBR | - | - | 302 Stainless Steel | Copper | - |
| 8262P212 | Brass | NBR | - | - | 302 Stainless Steel | Copper | - |
| 8262P220 | 304 Stainless Steel | NBR | - | - | 302 Stainless Steel | Silver | - |
| 8262P226 | 304 Stainless Steel | NBR | - | - | 302 Stainless Steel | Silver | - |
| 8262P230 | 304 Stainless Steel | NBR | - | - | 302 Stainless Steel | Silver | - |
| 8262P232 | Brass | NBR | - | - | 302 Stainless Steel | Copper | - |
| 8262P261 | Brass | UR | - | - | 302 Stainless Steel | Copper | PA |
| 8262P262 | Brass | NBR | - | - | 302 Stainless Steel | Copper | PA |
| 8262P263 | Brass | NBR | - | - | 302 Stainless Steel | Copper | PA |
| 8262P265 | Brass | NBR | - | - | 302 Stainless Steel | Copper | PA |
| 8314P035 | Brass | NBR, FKM | - | CA | 302 Stainless Steel | Copper | - |
| 8314P036 | Brass | NBR, FKM | - | CA | 302 Stainless Steel | Copper | - |
| 8314P121 | 303 Stainless Steel | NBR, FKM | - | CA | 302 Stainless Steel | Silver | - |
| 8316P054 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8316P064 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8316P074 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8317P035 | Brass | NBR, FKM, CR | - | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P172 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P174 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P176 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P182 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P184 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P186 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P192 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8320P194 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8321P001 | Brass | NBR | CA | CA | 302 Stainless Steel | Copper | - |
| 8321P002 | Brass | NBR | CA | CA | 302 Stainless Steel | Copper | - |
| 8344P070 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8344P072 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8344P074 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8344P076 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8344P078 | Brass | NBR | CA | CA | 302, 17-7PH Stainless Steels | Copper | - |
| 8345P001 | Brass | NBR, FKM | - | CA | 302, 17-7PH Stainless Steels | Copper | - |

Note: All core tubes are 305 Stainless Steel and all cores and plugnuts are 430F Stainless Steel.



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