

ASCO offers a wide variety of accessories and optional features to meet your specific application requirements.

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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 | | | 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 | | | 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 Inserted seat has 1/4-32 thread for threading.
 ③ Inserted 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 |

Pull Curves (AC Only)

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.

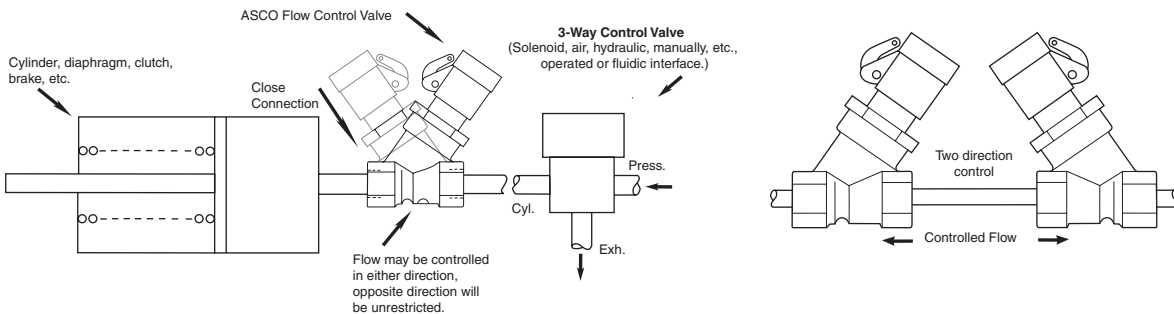
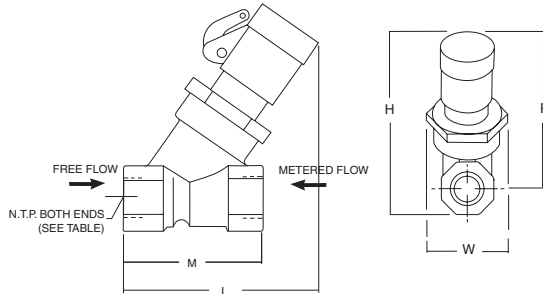
Specifications (Metric units)

| 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

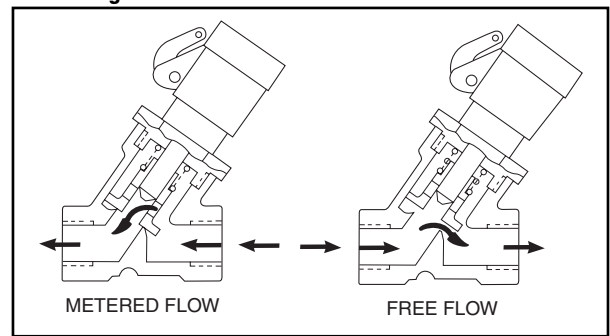


Chart A

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

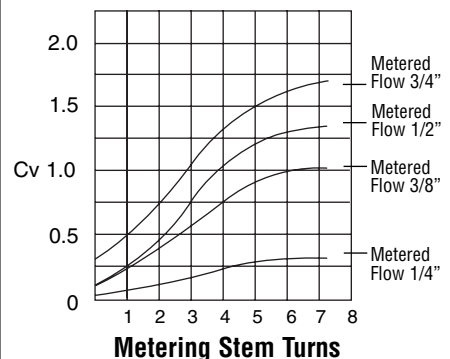
$$WATER \quad Cv = \frac{GPM}{\sqrt{\Delta p}} \quad GPM = Cv \sqrt{\Delta p}$$

$$AIR \quad Cv = \frac{SCFH}{960 \sqrt{\Delta p(P_1 + P_2) / GT}}$$

$$SCFH = Cv \quad 960 \sqrt{\Delta p(P_1 + P_2) / GT}$$

| 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 and Stainless Steel Bodies

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.

Plastic Body (Acetal)

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.

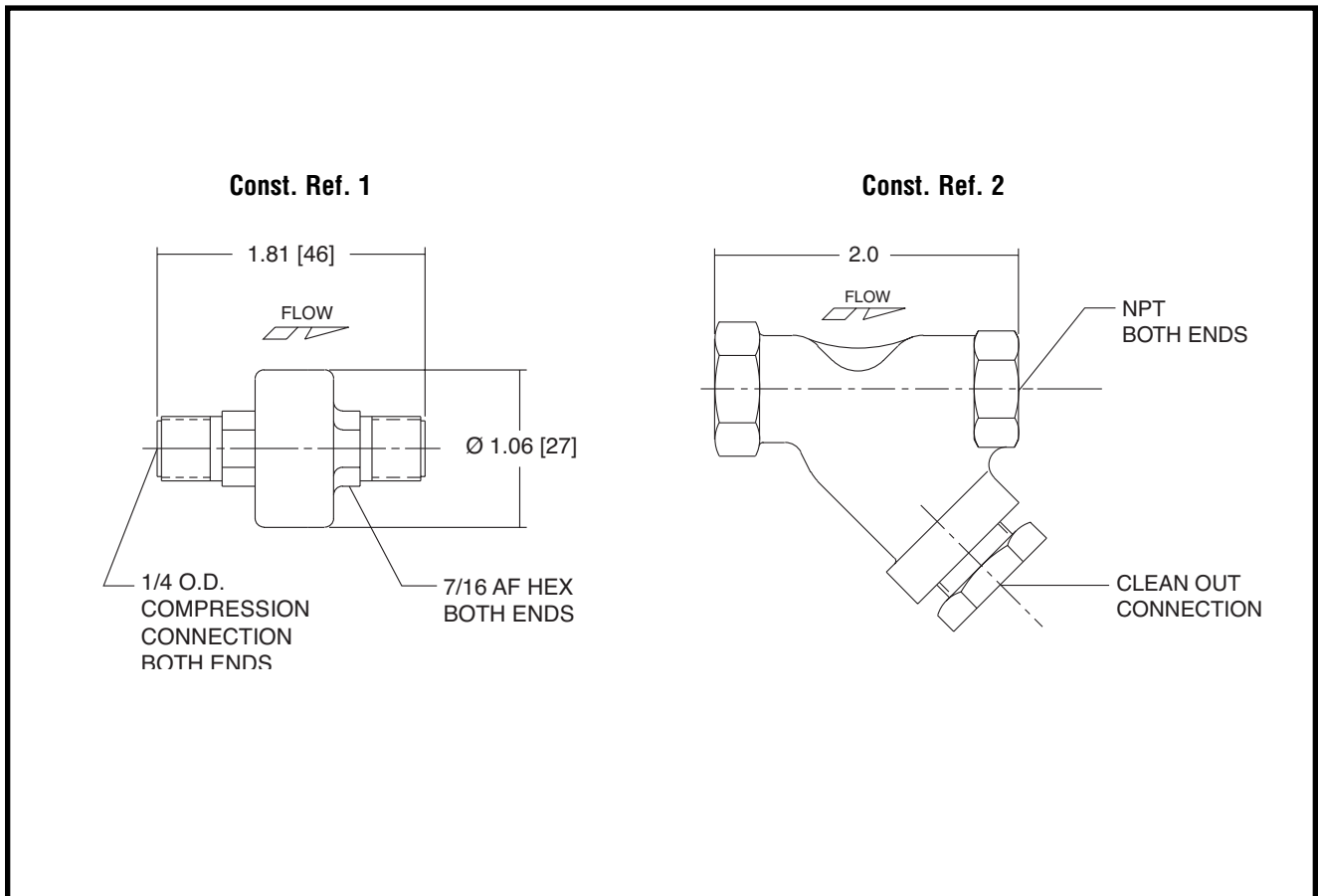
Specifications (English units)

| 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 |
| PLASTIC BODY (CA) 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 |
| 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. | | | | | | | | | | | | |

Specifications (Metric units)

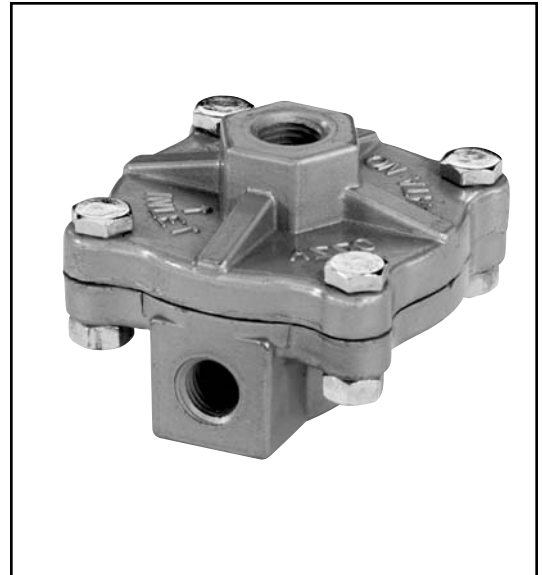
| Pipe Size (ins.) | Kv Flow Factor (m3/h) | Screen Mesh Size ③ | Total Free Hole Area (mm ²) | Particle Retention Size ③ | | Blow-Off Pipe Size (ins.) | Max. Fluid Temp. °C ⑤ | Safe Working Pressure (bar) ⑤ | Catalog Number | Const. Ref. | Dimensions (mm) | |
|--|-----------------------|--------------------|---|---------------------------|--------|---------------------------|--|-------------------------------|----------------|-------------|-----------------|----|
| | | | | Microns | Inches | | | | | | A | B |
| PLASTIC BODY (CA) 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 ⑧ | | | | | | | | | | | | |
| 1/8 | .86 | 60x60 | 210 | 155 | .0061 | - | 204 | 52 | 8600A001 ⑥ ⑦ | 2 | 34 | 51 |
| 1/4 | 1.5 | 60x60 | 210 | 155 | .0061 | - | 204 | 52 | 8600A002 ⑥ ⑦ | 2 | 34 | 51 |
| 3/8 | 1.6 | 100x100 | 226 | 140 | .0055 | - | 204 | 52 | 8600A013 ⑥ | 2 | 41 | 48 |
| 1/2 | 2.2 | 100x100 | 323 | 140 | .0055 | - | 204 | 52 | 8600A014 ⑥ | 2 | 46 | 58 |
| 3/4 | 4.0 | 100x100 | 484 | 140 | .0055 | - | 204 | 52 | 8600A015 ⑥ | 2 | 53 | 70 |
| STAINLESS STEEL BODY with Stainless Steel Strainer Element and PTFE Seals | | | | | | | | | | | | |
| 3/8 | 1.8 | 60x60 | 148 | 250 | .0098 | 1/4 | 232 | 103 | 8601 004 | 2 | 47 | 48 |
| 1/2 | 2.6 | 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. | | | | | | | ⑤ Metal body strainers are rated for steam at 17 bar maximum pressure and 208°C maximum temperature. | | | | | |
| ② See dimensions. | | | | | | | ⑥ UL recognized component. | | | | | |
| ③ Other mesh sizes may be available; <i>consult ASCO</i> . | | | | | | | ⑦ Strainer supplied with FKM seal. | | | | | |
| ④ Where pressure exceeds 3.4 bar, it is advisable to use hose or tubing clamps. | | | | | | | | | | | | |

Dimensions inches (mm)



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)

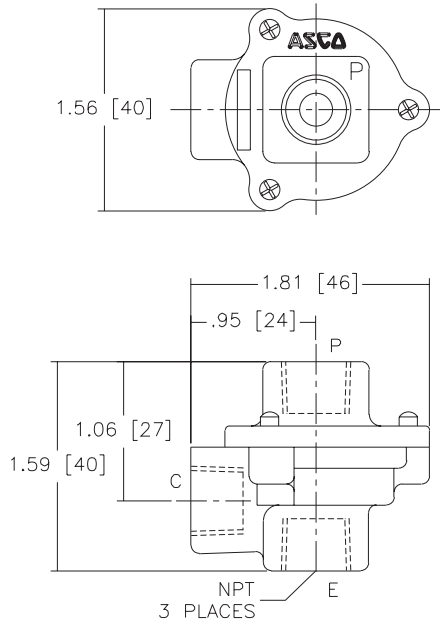
| Pipe Size (ins.) | Cv Flow Factor | | Opening Pressure (psi) | Maximum Operating Pressure Differential (psi) | Max. Air Temp. °F | Quick Exhaust/ Shuttle Valve | Body Material | Const. Ref. |
|------------------|----------------------|---------------------|------------------------|---|-------------------|------------------------------|---------------|-------------|
| | Pressure to Cylinder | Cylinder to Exhaust | | | | Catalog Number | | |
| 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 | Zinc | 2 |
| 3/8 | 3.5 | 4.5 | 5 | 125 | 125 | V043 002 | Zinc | 2 |

Specifications (Metric units)

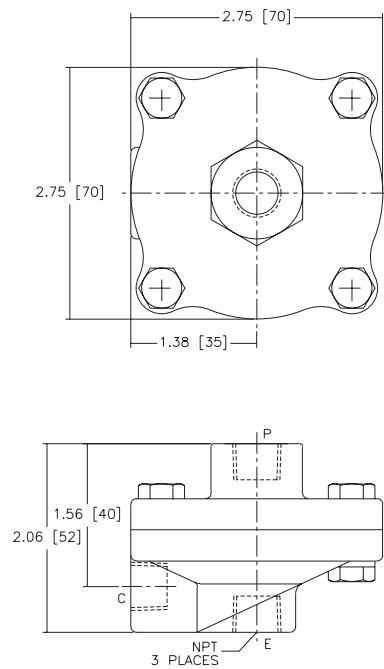
| Pipe Size (ins.) | Kv Flow Factor (m3/h) | | Opening Pressure (bar) | Maximum Operating Pressure Differential (bar) | Max. Air Temp. °C | Quick Exhaust/ Shuttle Valve | Body Material | Const. Ref. |
|------------------|-----------------------|---------------------|------------------------|---|-------------------|------------------------------|---------------|-------------|
| | Pressure to Cylinder | Cylinder to Exhaust | | | | Catalog Number | | |
| 1/4 | .69 | .86 | 0.3 | 8.6 | 52 | V043 006 | Zinc | 1 |
| 1/4 | .69 | 1.2 | 1.0 | 10.3 | 52 | V043 051 | S.S. | 3 |
| 1/4 | 1.7 | 1.7 | 0.3 | 8.6 | 52 | V043 001 | Zinc | 2 |
| 3/8 | 3.0 | 3.9 | 0.3 | 8.6 | 52 | V043 002 | Zinc | 2 |

Dimensions inches (mm)

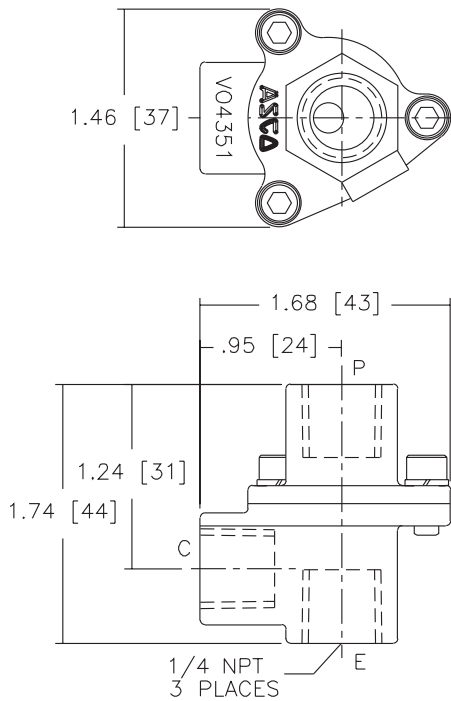
Const. Ref. 1



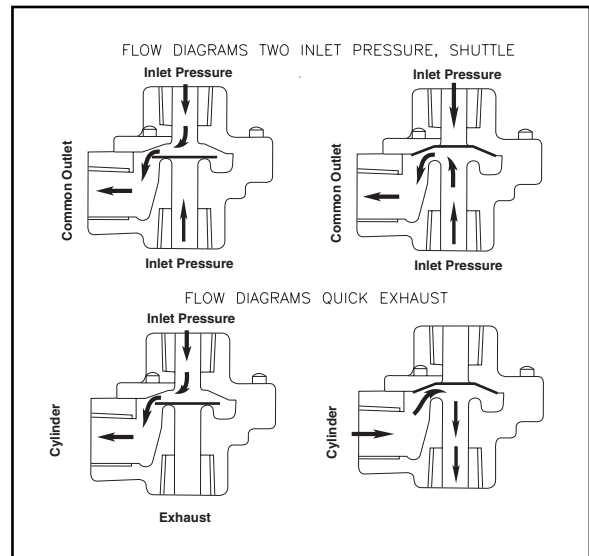
Const. Ref. 2



Const. Ref. 3



Flow Diagrams





Compact • High Flow • Check Valves

Forged Brass and Stainless Steel Bodies
1/4" to 3/4" NPT

Accessories

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 |

ACCESSORIES

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 |

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

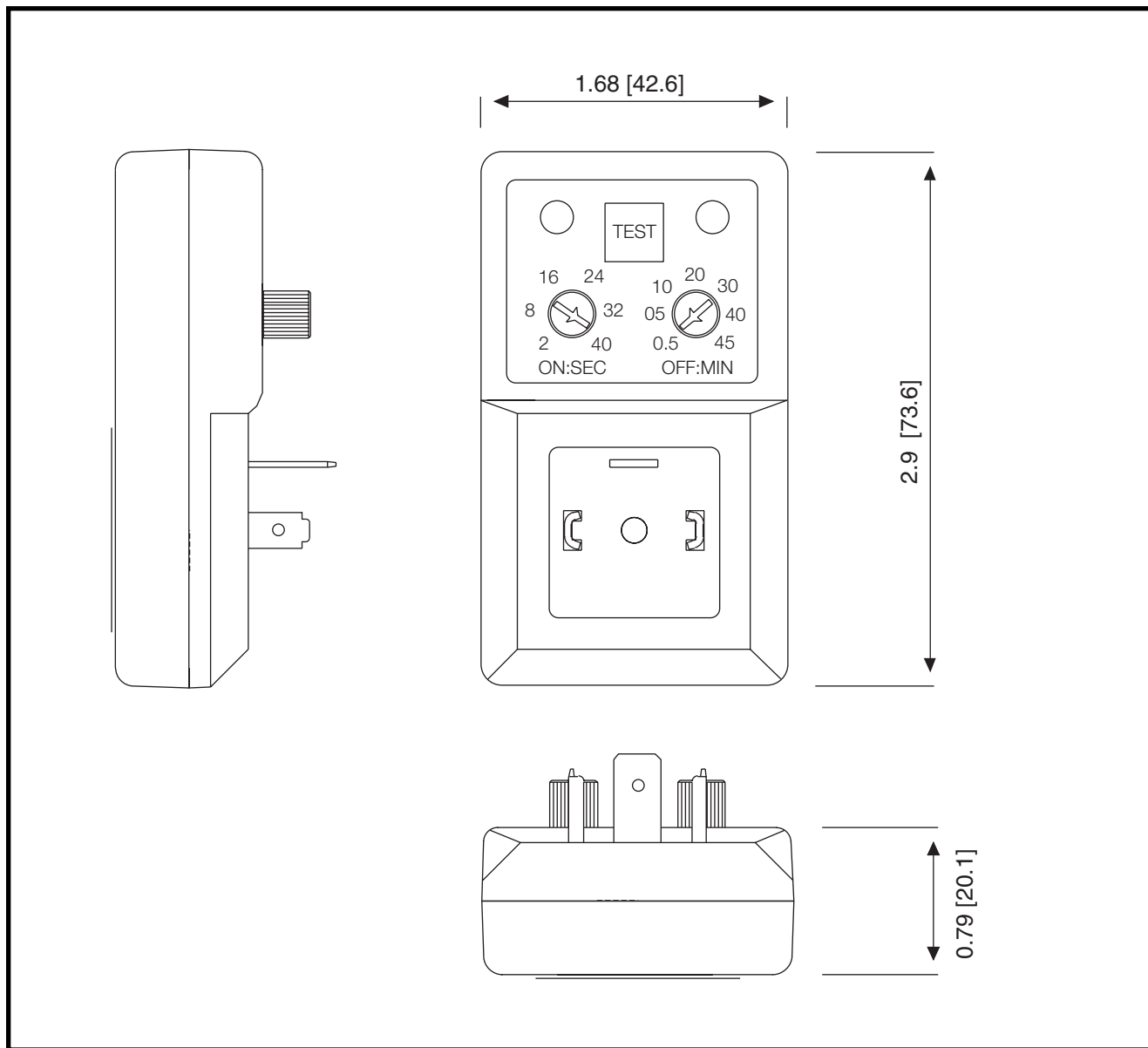
| | |
|--------------------------|-----------------------------------|
| Supply Voltage | 24 - 240V AC/DC 50/60 Hz |
| Current Consumption | 4 mA max. |
| Operating Temperature | 14°F - 122°F |
| Environmental Protection | Type 4 |
| Switch Capacity | 1 Amp |
| Inrush Current Capacity | 10 Amps for 10 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. | |

Dimensions inches (mm)



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 | Rotatable | Figure |
|--------------|---|-----------|--------|
| 290413-001 | 1/2" conduit | 180° | A |
| 289281-001 | 1/2" conduit with LED/VDR | 180° | A |
| 290414-001* | PG 9 cable gland | 180° | B |
| 290415-120 | PG 9 cable gland with LED/VDR 120/AC-DC | 180° | B |
| 290415-240 | PG 9 cable gland with LED/VDR 240/AC-DC | 180° | B |
| 290415-024 | PG 9 cable gland with LED/VDR 24/AC-DC | 180° | B |
| 285483-015** | 4.5' leads with LED 120/AC-DC PVC | No | B |
| 285482-015** | 4.5' leads with LED 24/AC-DC PVC | No | B |
| 285481-018** | 6' leads with stripped ends | 180° | B |

Available in 10 pack; part number 226061-001-

**Also available in 9', 16', and 33' lengths. Consult factory.

Figure A

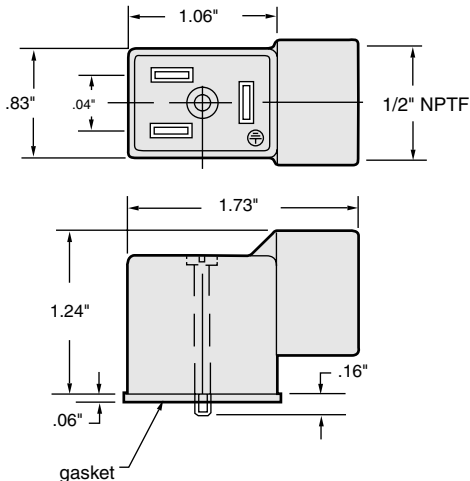
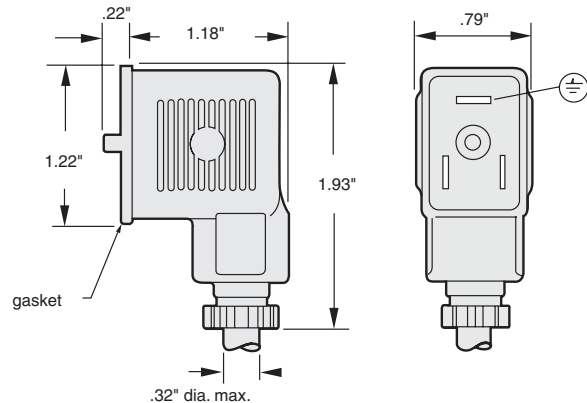


Figure B



Size 18 mm, Form A

| Part Number | Description | Rotatable | Figure |
|--------------|---|-----------|--------|
| 290410-001 | 1/2" conduit | 90° | C |
| 289280-001 | 1/2" conduit with LED | 90° | C |
| 290411-001* | PG 11 cable gland | 90° | D |
| 290412-120 | PG 11 cable gland with LED/VDR 120/AC-DC | 90° | D |
| 290412-240 | PG 11 cable gland with LED/VDR 240/AC-DC | 90° | D |
| 290412-024 | PG 11 cable gland with LED/VDR 24/AC-DC | 90° | D |
| 290412-048 | PG 11 cable gland with LED/VDR 48/AC-DC | 90° | D |
| 285480-015** | 4.5' leads with LED 120/AC-DC PVC | No | D |
| 290409-015** | 4.5' leads with LED 240/AC-DC PVC | No | D |
| 285479-015** | 4.5' leads with LED 24/AC-DC PVC | No | D |
| 272852 | 6' leads with North American outlet plug | No | D |
| 272852-003 | 6' leads with North American outlet plug (rotated 90 degrees) | No | D |
| 285478-015** | 4.5' leads with stripped ends | No | D |

*Available in 50 pack; part number 266615.
 **Also available in 9', 16', and 33' lengths. Consult factory.

Figure C

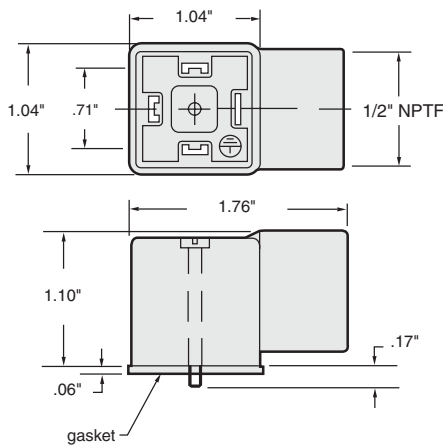
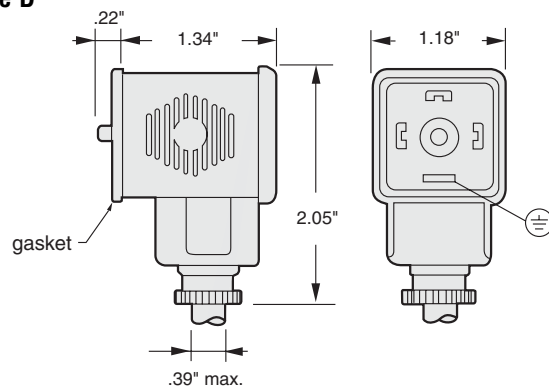


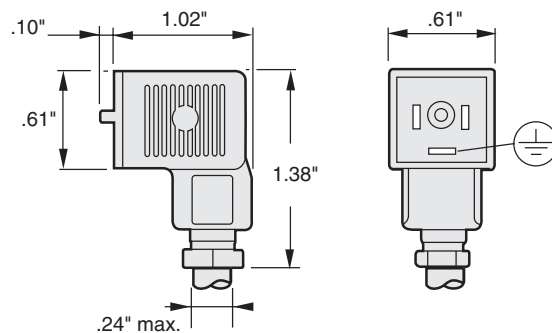
Figure D



Size 9.4 mm, Form C

| Part Number | Description | Rotatable |
|--------------|---|-----------|
| 290417-001 | PG 7 cable gland | 180° |
| 290418-001 | PG 7 cable gland LED/VDR 120-240/AC 50/60 | 180° |
| 289278-001 | PG 7 cable gland LED/VDR 48-120/AC 50/60 | 180° |
| 289282-001 | PG 7 cable gland LED/VDR 48-120/DC | 180° |
| 289277-001 | PG 7 cable gland LED/VDR 6-48/AC-DC | 180° |
| 290416-013** | 4.5' leads with LED 120/AC-DC PVC | No |
| 285485-015** | 4.5' leads with LED 24/AC-DC PVC | No |
| 272852-004** | 6' leads | No |

**Also available in 9', 16', and 33' lengths. Consult factory.



ACCESSORIES