

Features

- Full Port 316SS diverter or selector valve
- Silicone free with RTFE ball seats
- Triple PTFE/Viton live loaded stem seals, adjustable
- Valve anti-static device
- Polyamide IP67 weatherproof enclosure with UV protection
- Multi-voltage capable with auto-voltage sensing
- Long life brushless motor
- Electronic over torque protection
- Anti-condensation heater
- Manual override
- DIN plug style electrical connections
- Highly visual dome style valve position indicator
- Auxiliary limit switches to confirm valve position
- BSR Battery Backup/Failsafe option

Applications

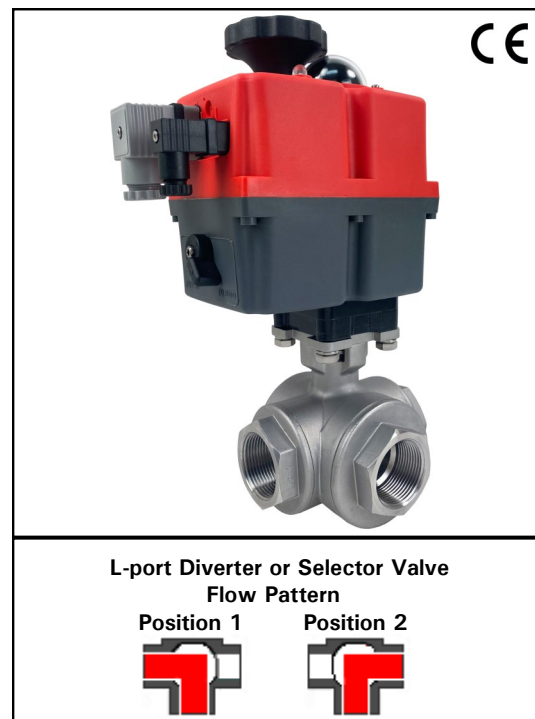
Motorized stainless steel flow diverter or selector valve typically used to control water, air, oil and other media compatible with the materials of construction. Steam service up to 25 PSI with optional high temperature mounting bracket and vacuum service up to 29" Hg. Actuator is designed for 75% duty cycle.

Operation

Electric actuated valve uses power-to-open (Pos. 2) and power-to-close (Pos.1), stays in the last known position with power failure. On receipt of a continuous voltage signal, the motor runs and via a flat gear drive system rotates the ball 90°. The motor is automatically stopped by internal cams striking limit switches. On receipt of a reversing continuous signal, the motor turns in the opposite direction reversing the valve position. DIN style plugs are provided for electrical connections. Standard manual override can be used for setup and power failure situations.

Construction

| | |
|---|---|
| Valve Body | 316 stainless steel ASTM A351 CF8M |
| Ball/Stem | 316 stainless steel |
| Ball Seats | (4) RTFE (Reinforced Teflon) |
| Stem Seals | PTFE (Teflon)/ FKM (Viton) |
| Anti-static Device | Ball to Stem (1/4" - 1-1/2") + Stem to Body (1-1/4" - 2") |
| Actuator Enclosure | Anti-corrosive Polyamide, IP67 weatherproof |
| Position Indicator/Manual Override | Dome style indicator/manual polyamide knob |
| Fasteners | Stainless Steel |
| Auxiliary Limit Switches | 2 x SPST 3A@125/250VAC, 30VDC resistive load |



Description

Electrically operated Full Port 3-way L-type ball valve has four RTFE ball seats, allowing for full pressure at any port. Adjustable live loaded triple stem seal design helps compensate for wear, pressure or temperature fluctuations. Corrosion resistant actuator includes a manual override, position confirm limit switches, thermostatically controlled anti-condensation heater, and over-torque protection. External LED diagnostic light.

Approvals

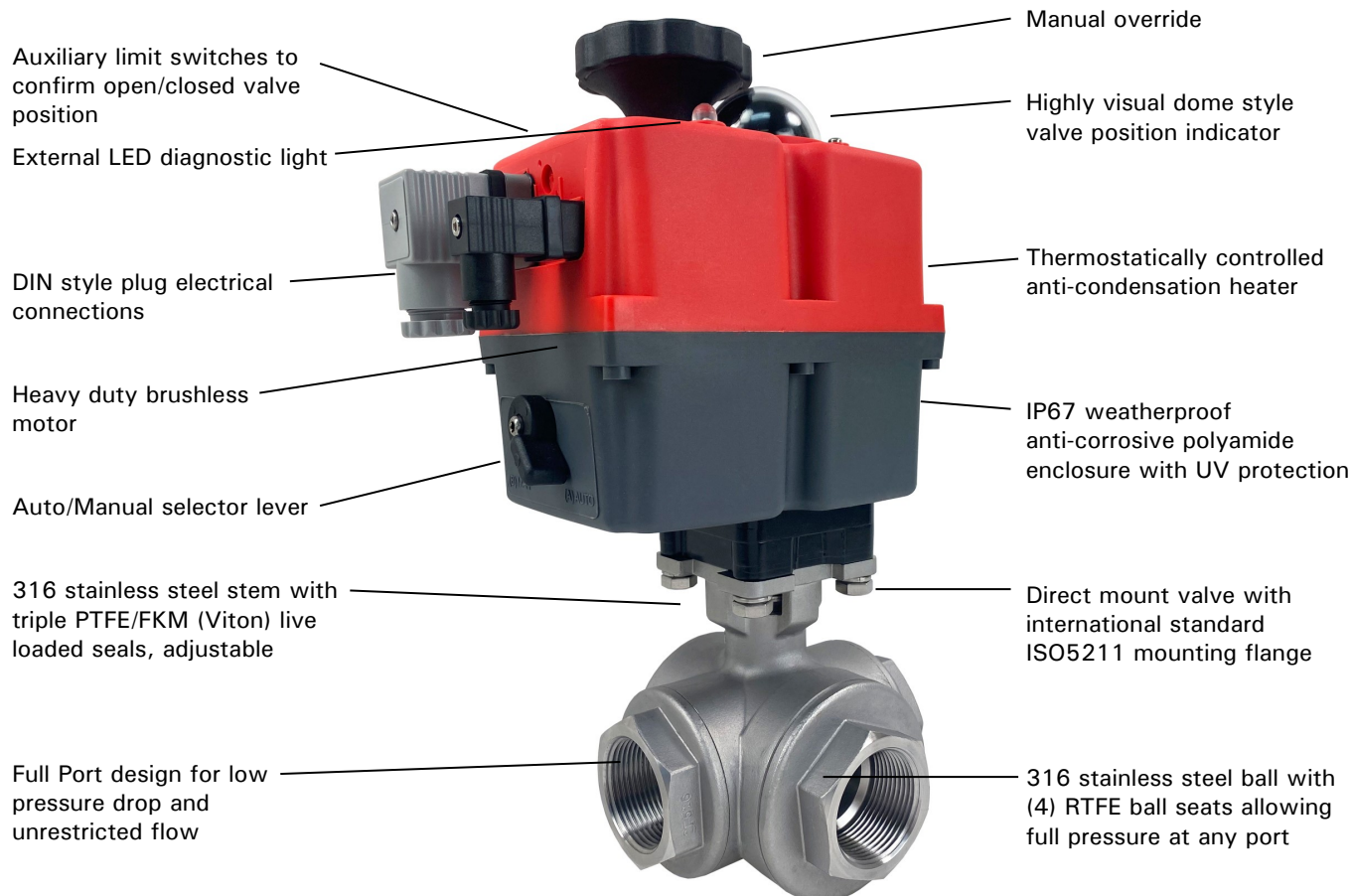
Actuators

- CE Conformance– EN 60204-1:2006
- ISO5211 valve mounting

Valves

- Design: API 608
- Testing: API 598
- Threaded Connection:
ASME B1.20.1 (NPT)/ ISO 228-1/ BS21
- Pressure/Temperature Rating:
ASME B16.34
- Marking: MSS SP-25
- CE Conformance– PED 2014/68/UE

Construction Features



Pressure-Temperature

Ball Valve Pressure Rating: 1000 PSI* (69 Bar),
25 PSI saturated steam with high temp kit
Vacuum 29in Hg

Ball Valve Temperature Rating: -4 to 392° F (-20 to 200° C)

Actuator Temperature Rating: -4 to +158° F (-20 to 70° C)

*See P/T chart

Optional Functions

- **DPS:** Digital Positioner System - valve position (flow) controlled by 4-20mA or 0-10v input signal
- **BSR:** Battery Spring Return - actuator fails to a safe position with loss of external power

Specifications (English units)

| Stock Number | Pipe Size (NPT) | Orifice Size (inch) | Cv Flow Factor | Pressure Max. (PSI) * | Cycle Time /90° (seconds) | Enclosure Rating | Max. Current Draw (Amps) | | | |
|---|-----------------|---------------------|----------------|-----------------------|---------------------------|------------------|--------------------------|--------|-------|-------|
| | | | | | | | 110VAC | 240VAC | 24VAC | 24VDC |
| 24-240V AC or DC ELECTRIC ACTUATED 3-WAY STAINLESS BALL VALVE: L-PORT | | | | | | | | | | |
| 560802J | 1/4 | 0.4 | 5.0 | 1000 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560803J | 3/8 | 0.4 | 7.3 | 1000 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560804J | 1/2 | 0.6 | 8.9 | 1000 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560806J | 3/4 | 0.8 | 18.9 | 1000 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560808J | 1 | 1.0 | 32.0 | 1000 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560810J | 1-1/4 | 1.3 | 41.2 | 1000 | 13 | IP67 | 0.43 | 0.21 | 1.98 | 1.63 |
| 560812J | 1-1/2 | 1.5 | 52.1 | 1000 | 13 | IP67 | 0.43 | 0.21 | 1.98 | 1.63 |
| 560816J | 2 | 2.0 | 79.3 | 1000 | 29 | IP67 | 0.33 | 0.18 | 1.50 | 1.22 |

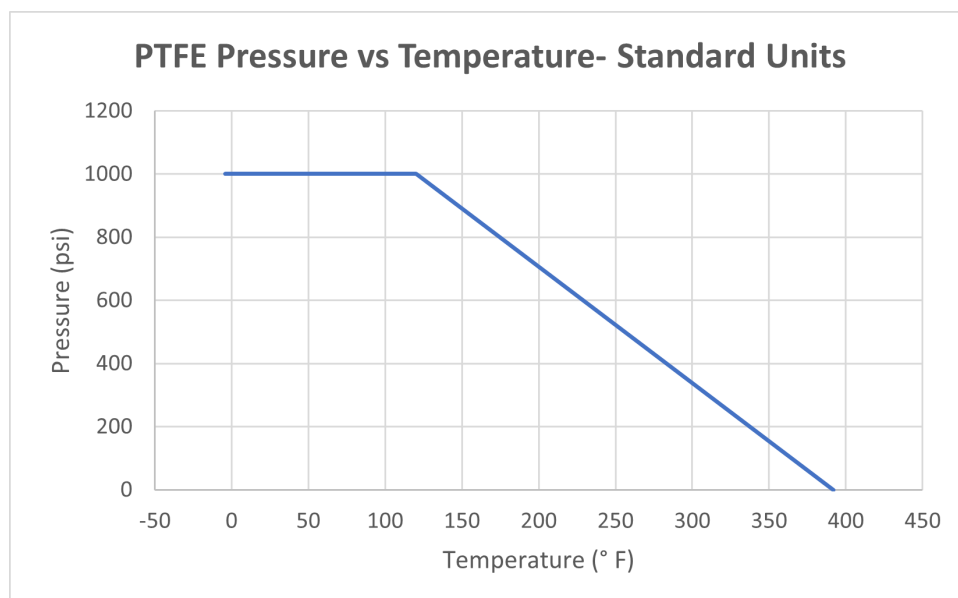
These unique multi-voltage valves will operate within a voltage range of 24 to 240V AC or 24 to 135V DC, 1ph, -0/+ 5%

Cv is the GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

* Pressure at 100° F (reduced pressure at higher temperatures-see P/T chart)

Pressure/Temperature Chart (PSI/°F)

| P/T Chart | | | | | |
|------------|------|------|-----|-----|-----|
| PSI | 1000 | 1000 | 900 | 700 | 0 |
| °F | -4 | 104 | 167 | 212 | 392 |



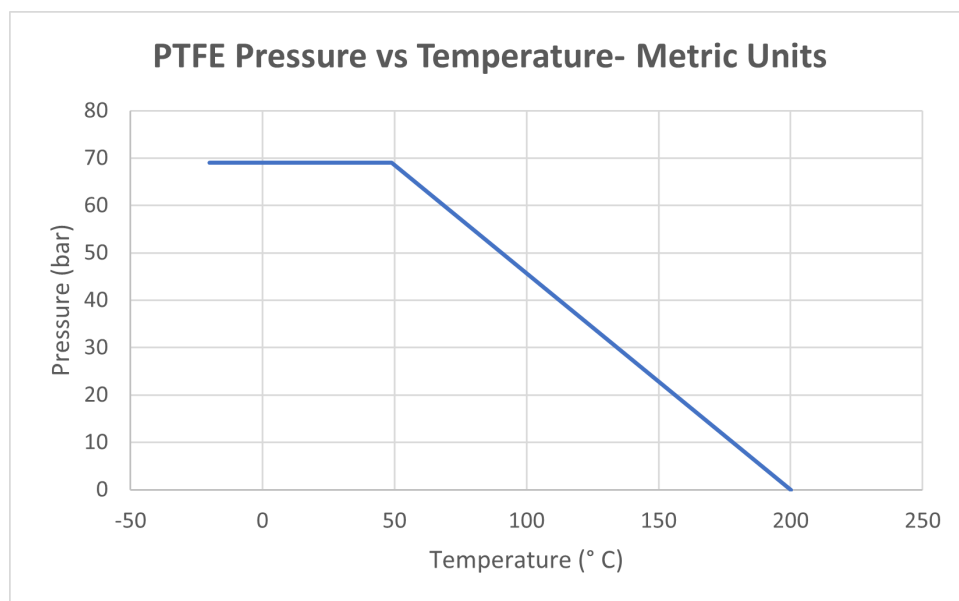
Specifications (Metric units)

| Stock Number | Pipe Size (NPT) | Orifice Size (mm) | Kv Flow Factor | Pressure Max. (Bar) * | Cycle Time /90° (seconds) | Enclosure Rating | Max. Current Draw (Amps) | | | |
|---|-----------------|-------------------|----------------|-----------------------|---------------------------|------------------|--------------------------|--------|-------|-------|
| | | | | | | | 110VAC | 240VAC | 24VAC | 24VDC |
| 24-240V AC or DC ELECTRIC ACTUATED 3-WAY STAINLESS BALL VALVE: L-PORT | | | | | | | | | | |
| 560802J | 1/4 | 11.0 | 4.3 | 69 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560803J | 3/8 | 11.0 | 6.3 | 69 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560804J | 1/2 | 16.0 | 7.7 | 69 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560806J | 3/4 | 20.0 | 16.3 | 69 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560808J | 1 | 25.0 | 27.7 | 69 | 9 | IP67 | 0.30 | 0.16 | 1.28 | 0.97 |
| 560810J | 1-1/4 | 32.0 | 35.6 | 69 | 13 | IP67 | 0.43 | 0.21 | 1.98 | 1.63 |
| 560812J | 1-1/2 | 38.0 | 45.1 | 69 | 13 | IP67 | 0.43 | 0.21 | 1.98 | 1.63 |
| 560816J | 2 | 50.0 | 68.6 | 69 | 29 | IP67 | 0.33 | 0.18 | 1.50 | 1.22 |

* Pressure at 70° C (reduced pressure at higher temperatures-see P/T chart)

Pressure/Temperature Chart (Bar/°C)

| P/T Chart | | | | | |
|-----------|-----|----|----|-----|-----|
| Bar | 69 | 69 | 62 | 48 | 0 |
| °C | -20 | 40 | 75 | 100 | 200 |



Optional DPS - Digital Positioner

The DPS Digital Positioner System is available as a factory installed option for Valworx 5608 series electric actuators. Installing the DPS kit will change a standard On-Off type electric actuator to modulating or proportional control. This will allow positioning of the actuator output drive anywhere between 0 and 90° using either a 4-20mA or 0-10vdc input command signal. When using an electric actuated valve with DPS option, the output flow can be adjusted anywhere between 0-100%.

The DPS kit contains a microprocessor based control board and mounting hardware. The control board continuously monitors the analog input and output signals and compares them to the actual physical position of the output drive. An electric motor/gear drive moves the actuator output drive as required to balance the signals and find the desired position. The digital microprocessor ensures highly sensitive and repeatable control. The DPS is installed inside the actuator, under the red cover.



The DPS system provides an accurate valve positioning function whereby the movement of the actuator is controlled by either a 4-20mA or 0-10vdc control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator (valve).

The DPS positioner has auto-calibration, no need to adjust zero and span settings. An output monitoring signal, in the same format as the input signal is also provided to confirm the output drive position (ex: 4-20mA input, 4-20mA output).

The standard DPS actuator will fail closed with loss of the control signal. Actuator can also be setup reverse-acting (4ma or 0v = open) and fail open with loss of the control signal. These electric actuators will fail in place with loss of external power.

DPS Positioner Kit Ordering

| Kit Stock No. | Input Signal |
|----------------|--------------|
| 561101E | 4-20mA |
| 561102E | 0-10VDC |

• Kits are a factory installed option. The DPS kit is automatically installed and tested when ordered with an actuated valve.

| | |
|-------------------|--|
| Rotation | 0-90° |
| Input Signal | 4-20mA or 0-10vdc |
| Output Signal | 4-20mA or 0-10vdc |
| Accuracy | 3% Full Scale |
| Linearity | 2% Full Scale |
| Hysteresis | 3% Full Scale |
| Steps | 4/20mA: Min. 150 steps, 0-10V: Min. 70 steps/ 90° |
| Impedance 4-20mA | 100 Ohms |
| Impedance 0-10vdc | 25K Ohms |

Optional BSR - Battery Spring Return

The BSR– Battery Spring Return kit is available as a factory installed option for Valworx 5608 series electric actuated valves. The BSR kit will work with both on-off models and actuators with DPS positioners. The battery failsafe system provides an alternative source of power to drive the actuator to a preset failsafe position in the event of an external power failure. The industrial quality battery is constantly trickle charged during normal operation to assure maximum charge when required. The battery kit is installed under the actuator cover. No separate modules or boxes are required.

In many applications, the BSR battery spring return function tends to be a very economical option when compared to the alternate true mechanical spring return actuator. Valworx actuators with the BSR option are much smaller, lighter and less expensive.



The installed BSR kit will provide enough power to move the actuator/valve to a failsafe position with loss of external power. The kit can be ordered as fail closed or fail open as required.

The actuator operates in the normal power open and power close mode while external power is available. Internal circuitry monitors the incoming main power and automatically switches within a few seconds to the battery backup with loss of external power. The battery will then provide enough power to move the actuator to a failsafe position. Under normal operation the external control power will trickle charge the battery and maintain a full charge.

In the normal mode of operation, an LED status light located on top of the actuator cover will be continuously lit. With a loss of power, the LED status light will blink slowly. On resumption of external power, conditional that the actuator control signal remained unchanged, the actuator will reset to the position it saw at the time of the main power failure.

BSR Kit Ordering

| Kit Stock Number | Description |
|------------------|---|
| 561104E | 5610 BSR Battery Spring Return Kit, Fail Closed (pos 1) |
| 561105E | 5610 BSR Battery Spring Return Kit, Fail Open (pos 2) |

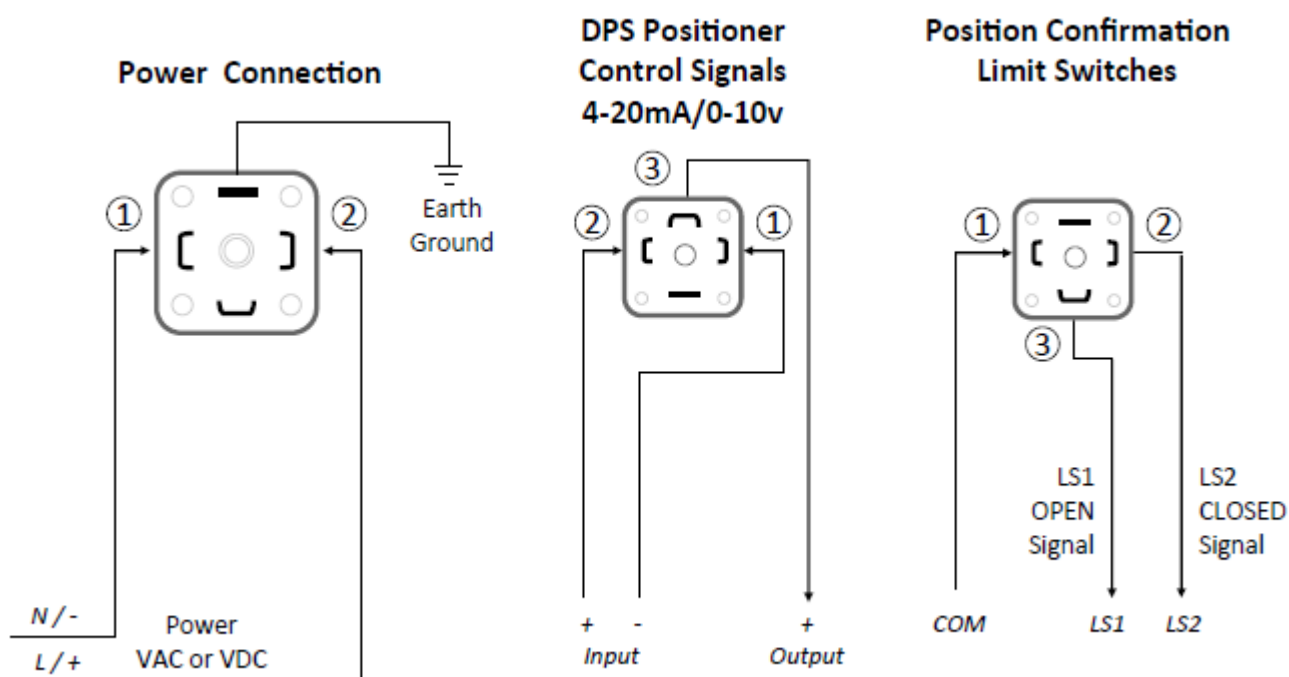
- BSR kits are a factory installed option

| Valworx Actuator with BSR Option | 1/4 to 1" NPT | 1-1/4 to 1-1/2" NPT | 2" NPT |
|---|---------------|---------------------|--------|
| Working operations without recharge, with 100% initial battery charge | 10 | 10 | 10 |
| Recharge time per working operation | 15 min | 48 min | 58 min |
| Full Charge Time 100% | 28 h | 28 h | 28 h |

Electrical Wiring: Actuators with DPS Digital Positioner Option

Voltage: 24-240 Volts AC or DC, 1ph, -0/+ 5% (auto-voltage sensing)

Control Signal: 4-20mA or 0-10 VDC



Function: Actuators with DPS—Digital Positioner Option

Power open, power close - actuator movement controlled by 4-20mA or 0-10VDC input signal.

Standard operation: 4mA or 0V = actuator closed, 20mA or 10V = actuator open (can be set-up reverse acting).

Actuator closes with loss of control signal, stays in last known position with loss of main power.

Output monitoring signal (in same format as supply signal) provided as standard.

Function: Position confirmation limit switches

Dry contact 3A @ 125/250 VAC, 30VDC resistive load

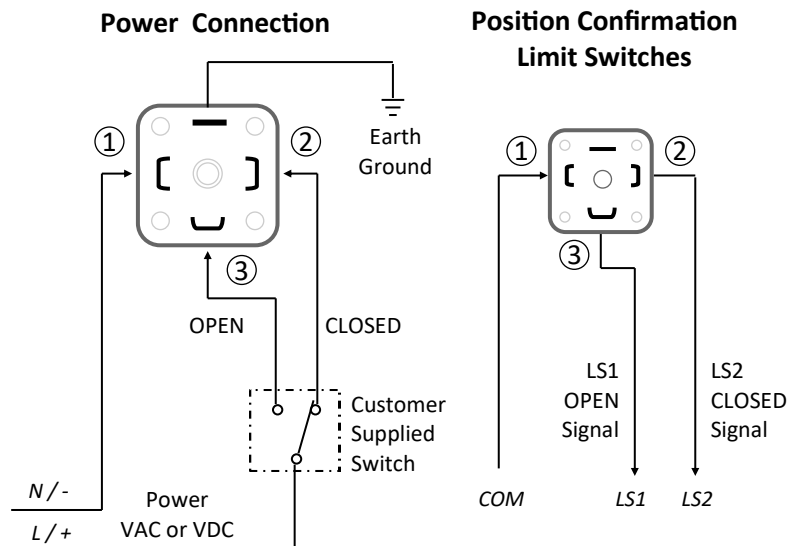
PIN 1 (COM) and 2 to confirm actuator is closed

PIN 1 (COM) and 3 to confirm actuator is open

Electrical Wiring: On/Off and BSR Battery Spring Return Versions

Voltage: 24-240 Volts AC or DC, 1ph, -0/5%

Auto-voltage sensing



Function: ON-OFF version

Power Connections

Power to PIN 1 and 2
- actuator CLOSED

Power to PIN 1 and 3
- actuator OPEN

Stays in last known position
with loss of power.

Function: ON-OFF version with BSR option

Wiring is the same as standard ON-OFF version.

Power to open, power to close - maintain power to trickle
charge the battery system in either open or closed position.

Actuator sent by battery power to failsafe position with power
failure.

Actuator returns to pre-failure position on power resumption.

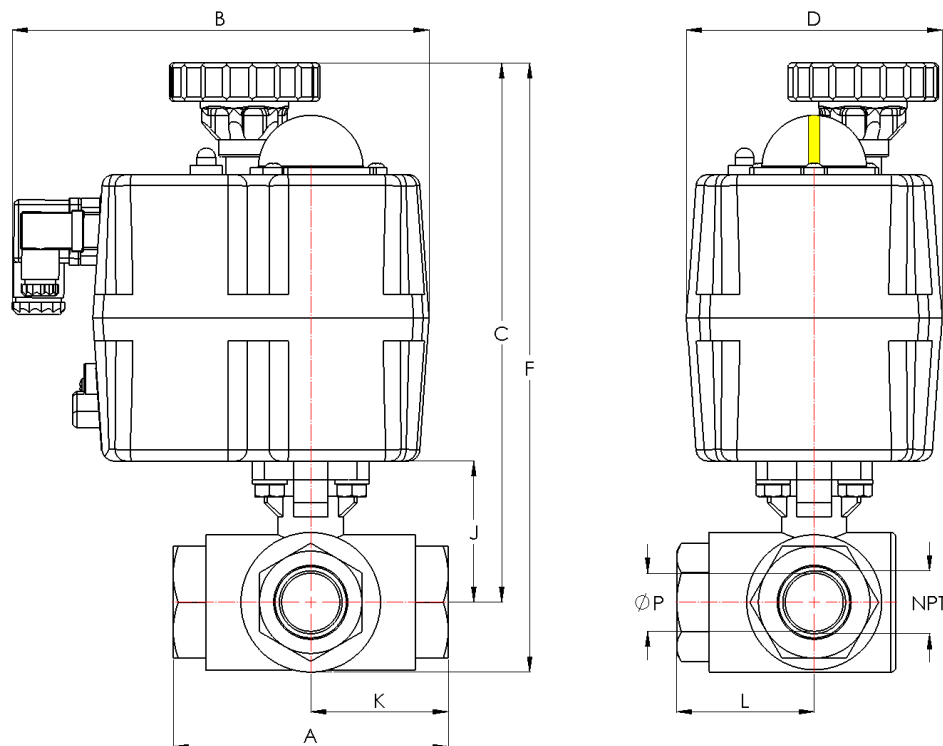
Function: Position confirmation limit switches

Dry contact 3A @ 125/250
VAC, 30VDC resistive load

PIN 1 (COM) and 2 to confirm
actuator is closed

PIN 1 (COM) and 3 to confirm
actuator is open

Dimensions:



| Pipe Size (NPT) | | A | B | C | D | F | J | K | L | P | Weight |
|-----------------|------|-------|-------|-------|-------|-------|-------|------|------|------|---------|
| 1/4 | inch | 2.9 | 7.1 | 8.2 | 4.3 | 9.0 | 1.5 | 1.5 | 1.5 | 0.4 | 5.4 lb |
| | mm | 76.0 | 179.0 | 208.3 | 110.0 | 228.6 | 38.2 | 38.0 | 38.5 | 11.0 | 2.4 kg |
| 3/8 | inch | 2.9 | 7.1 | 8.2 | 4.3 | 9.0 | 1.5 | 1.5 | 1.5 | 0.4 | 5.4 lb |
| | mm | 76.0 | 179.0 | 208.3 | 110.0 | 228.6 | 38.2 | 38.0 | 38.5 | 11.0 | 2.4 kg |
| 1/2 | inch | 3.3 | 7.1 | 8.5 | 4.3 | 9.4 | 1.8 | 1.7 | 1.8 | 0.6 | 6.1 lb |
| | mm | 85.0 | 179.0 | 215.9 | 110.0 | 238.8 | 45.2 | 42.5 | 45.0 | 16.0 | 2.8 kg |
| 3/4 | inch | 3.9 | 7.1 | 8.9 | 4.3 | 10.0 | 2.2 | 1.9 | 2.0 | 0.8 | 7.3 lb |
| | mm | 98.0 | 179.0 | 226.1 | 110.0 | 254.0 | 56.5 | 49.0 | 51.5 | 20.0 | 3.3 kg |
| 1 | inch | 4.4 | 7.1 | 9.1 | 4.3 | 10.5 | 2.4 | 2.2 | 2.3 | 1.0 | 8.9 lb |
| | mm | 112.5 | 179.0 | 231.1 | 110.0 | 266.7 | 61.9 | 56.3 | 58.0 | 25.0 | 4.0 kg |
| 1-1/4 | inch | 4.9 | 7.0 | 10.8 | 4.3 | 12.3 | 3.1 | 2.5 | 2.5 | 1.3 | 12.8 lb |
| | mm | 125.0 | 177.0 | 274.3 | 110.0 | 312.4 | 78.3 | 62.5 | 63.0 | 32.0 | 5.8 kg |
| 1-1/2 | inch | 5.6 | 7.0 | 11.1 | 4.3 | 13.1 | 3.4 | 2.8 | 2.9 | 1.5 | 17.5 lb |
| | mm | 141.0 | 177.0 | 281.9 | 110.0 | 332.7 | 87.4 | 70.5 | 74.5 | 38.0 | 7.9 kg |
| 2 | inch | 6.7 | 7.0 | 11.9 | 4.3 | 14.0 | 4.2 | 3.4 | 3.4 | 2.0 | 24.1 lb |
| | mm | 171.0 | 177.0 | 302.3 | 110.0 | 355.6 | 105.8 | 85.5 | 85.5 | 50.0 | 10.9 kg |