

Features

- Full port 3-way L flow pattern, functions as diverter or selector valve
- All valve materials comply with FDA and USDA requirements
- Tri-Clamp ends for hygienic connections
- Dyneon® TF-1641 (PTFE) FDA approved ball seats and cavity fillers
- Triple PTFE/Viton® high cycle live loaded stem seal packing
- Highly polished internals and end caps with 8-12 Ra finish
- EPS– Electronic Positioning System with 4-20mA input
- Actuators CSA Listed per UL429 and CSA C22.2 and Explosion ratings per Approvals section
- Rugged aluminum Type 4X weatherproof enclosure
- Heavy duty motor with overload protection
- Manual override with end of travel mechanical stops
- Electrical interface: Two 1/2" NPT threaded ports with temporary plugs. Remove and replace with corresponding explosion proof cable connectors, pipe or plugs (Not Included)

Applications

Sanitary 3-way ball valves are typically used for food, beverage, pharmaceutical, personal care, and pet care applications where sanitary construction is required, as well as for utility, process, and hazardous environment applications where quick clamp connections are beneficial. Often used as a diverter or selector valve with a variety of flow path options through the valve. Actuator designed for 70% duty cycle. Flow pattern is highly non-linear. Refer to page 3 for flow vs position.

Operation

Explosion proof electric actuated valves with EPS- Electronic Positioning System provide an accurate valve positioning function whereby the movement of the actuator is controlled by 4-20mA input control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator. Flow is adjustable anywhere between 0-100%. Unique electronic positioning module is fully potted to help protect the electronics from vibration/moisture resistance.

Construction


| | |
|---------------------------------|--|
| Valve Body | ASTM 316 stainless steel |
| Ball/Stem/End Caps | ASTM 316 stainless steel |
| Ball Seats | Dyneon® PTFE |
| Stem Seals | PTFE / Viton® |
| Gear Drive | Heavy duty alloy steel/aluminium bronze, self locking |
| Actuator Enclosure | Anti-corrosive durable painted aluminum alloy, Type 4X/ IP67 |
| Visual Valve Position Indicator | High strength glass lens |
| Fasteners | Stainless Steel |



Description

Explosion Proof sanitary 3-way L-port flow pattern ball valve has four Dyneon® PTFE ball seats, allowing for full pressure at any port. Adjustable live loaded stem seal packing helps compensate for wear, pressure and temperature fluctuations, extending the cycle life of the valve. Rugged Type 4X explosion proof electric actuator includes a manual override, 4-20mA servo controller, thermostatically controlled anti-condensation heater, and over-torque protection.

Approvals– Actuators

ANTI EXPLOSION GRADE 
The anti-explosion grade of these actuators is
♦ Class 1, Division 1, Groups C & D
T5
♦ Ex db IIC T5 Gb Class 1 Zone 1
♦ AEx db IIC T5 Gb

Where:

Class I – Hazard Class
Division I/ Zone 1 – Area Classification
db – Explosion Proof Type
II – Electrical Equipment design for explosive atmospheres (except colliery)
C – Magnitude of the explosion
T5 - Highest allowed surface temperature of the actuator (+ 55C)
Gb – Protection Grade
The grades of combustible gas, steam and temperature group are listed in CSA 22.2 No 60079-0-2019, CSA 22.2 No 60079-1-2016, CSA 22.2 No 30-M1986(R2016), CSA 22.2 No 145-11(R2015), ANSI/UL 60079-2:2020, ANSI/UL 1203-2013, ANSI/UL 674 Fifth Edition. It is the user's responsibility to ensure compatibility with the applicable regulations.
• CE Conformance– EN 60204-1:2006

Standards– Valves

- Construction:
 - ANSI B16/B2/B18
 - FDA 21 CFR 177.1550
 - ANSI B16.34
- Pressure Testing:
 - API 598
- Marking
 - MSS-SP-25
- CE Conformance– PED 2014/68/UE

Construction Features



Visual Valve
Position Indicator

Pressure Rating

Shell Pressure Rating (Max)*: 1000 PSI @ 120°F (1/2" to 2"),
600 PSI (2 1/2")

* See P/T chart (pages 3 & 4)

Temperature Rating

Actuator Temperature Rating: -13 to 131° F (-25 to 55° C)

Valve Temperature Rating: -4° to 356° F (-20 to 180°C)

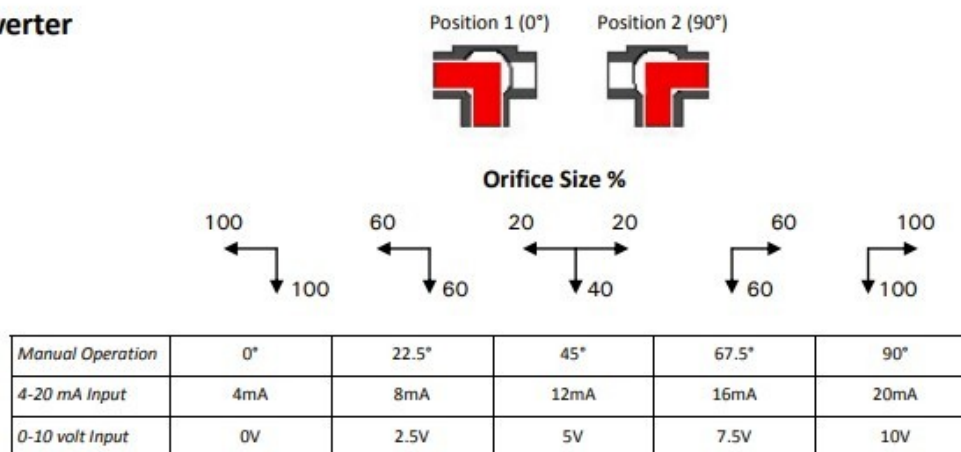
* See P/T chart (pages 3 & 4)

Installation Requires-Two 1/2" NPT threaded explosion-proof connectors or pipe for electrical interface

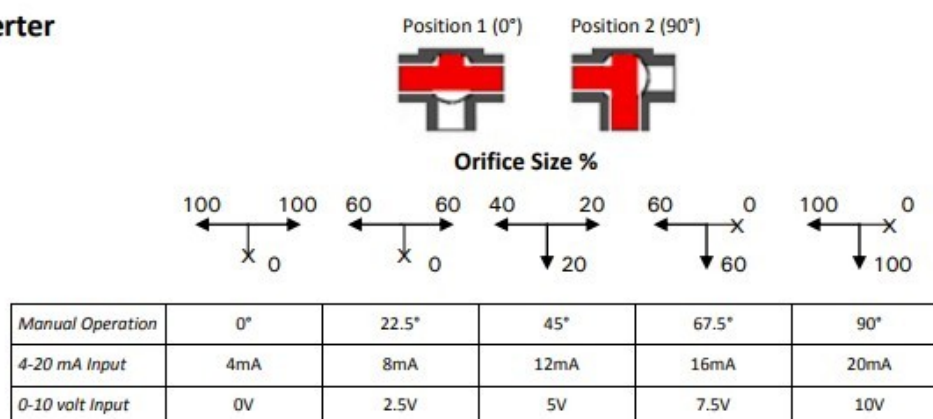
(Not included**)**

Flow Path Features

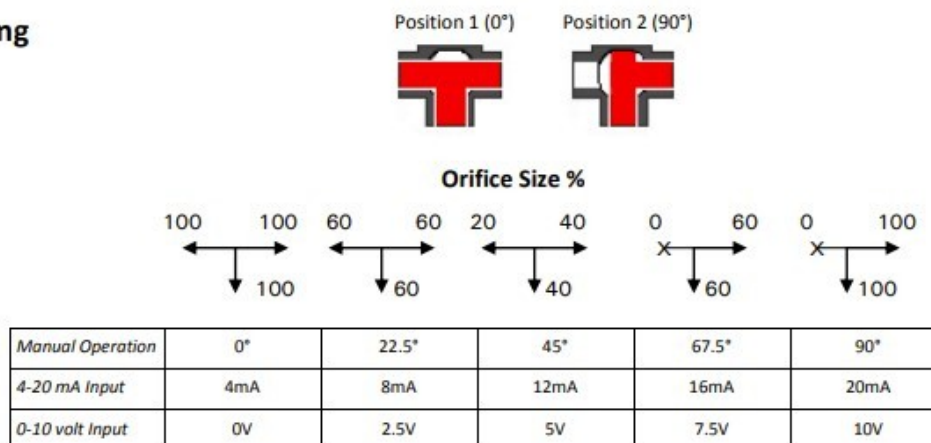
L-Port Diverter



T-Port Diverter



T-Port Mixing



Note: A) Orifice Size % is the approximate orifice size of each port shown as a percent of full open. B) Examples shown are 3-way quarter turn (90°) ball valves with full port design. Actuator at 0° is considered position 1 and 90° position 2.

Specifications (English units)

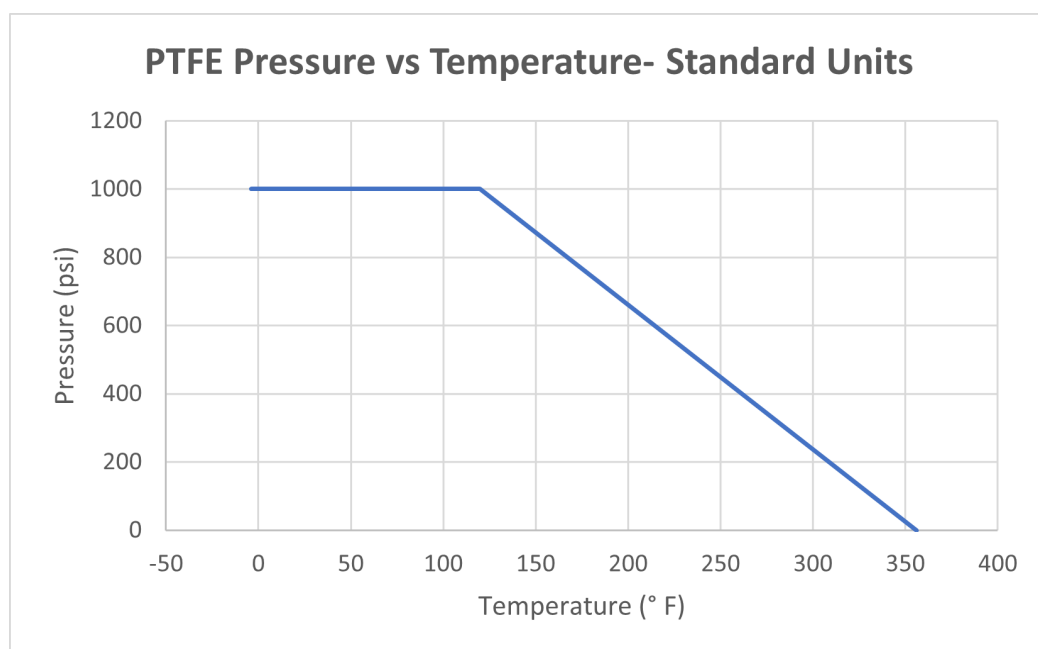
| Stock Number | Pipe Size (NPT) | Tri-Clamp Size (inch) | Cv Flow Factor* | Shell Pressure Max.(PSI) * | Cycle Time/ 90° (seconds) | Voltage | Current (amps) | Duty Cycle | Electrical Dwg. |
|--|-----------------|-----------------------|-----------------|----------------------------|---------------------------|------------------|----------------|------------|-----------------|
| 120 VAC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 582800A | 1/2 | 3/4 | 4.3 | 1000 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582801A | 3/4 | 3/4 | 10.4 | 1000 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582802A | 1 | 1-1/2 | 17.3 | 1000 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582803A | 1-1/2 | 1-1/2 | 43.3 | 1000 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582804A | 2 | 2 | 77.9 | 1000 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582805A | 2-1/2 | 2-1/2 | 115.9 | 600 | 30 | 110 VAC, 50/60Hz | 0.63 | 70% | E |
| 24 VDC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 582900A | 1/2 | 3/4 | 4.3 | 1000 | 20 | DC24 | 1.8 | 70% | GEY |
| 582901A | 3/4 | 3/4 | 10.4 | 1000 | 20 | DC24 | 1.8 | 70% | GEY |
| 582902A | 1 | 1-1/2 | 17.3 | 1000 | 20 | DC24 | 1.8 | 70% | GEY |
| 582903A | 1-1/2 | 1-1/2 | 43.3 | 1000 | 20 | DC24 | 1.8 | 70% | GEY |
| 582904A | 2 | 2 | 77.9 | 1000 | 20 | DC24 | 1.8 | 70% | GEY |
| 582905A | 2-1/2 | 2-1/2 | 115.9 | 600 | 30 | DC24 | 2.4 | 70% | GEY |

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

* Pressure @ 0-100° F (reduced pressure at higher temperatures—see P/T chart)

Pressure/Temperature Chart (PSI/°F)

| P/T Chart (PSI/°F) | | | |
|--------------------|------|------|-----|
| PSI | 1000 | 1000 | 356 |
| °F | -4 | 120 | 0 |



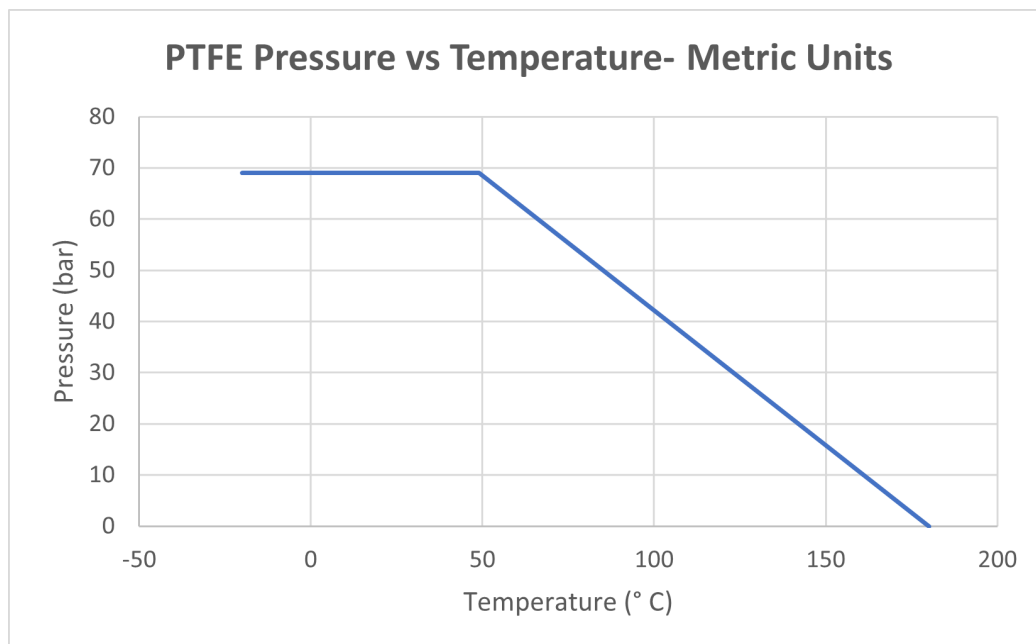
Specifications (Metric units)

| Stock Number | Pipe Size (NPT) | Tri-Clamp Size (inch) | Kv Flow Factor | Shell Pressure Max.(Bar) * | Cycle Time/90° (seconds) | Voltage | Current (amps) | Duty Cycle | Electrical Dwg. |
|--|-----------------|-----------------------|----------------|----------------------------|--------------------------|------------------|----------------|------------|-----------------|
| 120 VAC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 582800A | 12.7 | 3/4 | 5.0 | 69 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582801A | 19.1 | 3/4 | 12.0 | 69 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582802A | 25.4 | 1-1/2 | 20.0 | 69 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582803A | 38.1 | 1-1/2 | 50.0 | 69 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582804A | 50.8 | 2 | 90.0 | 69 | 20 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 582805A | 63.5 | 2-1/2 | 134.0 | 41 | 30 | 110 VAC, 50/60Hz | 0.63 | 70% | E |
| 24 VDC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 582900A | 12.7 | 3/4 | 5.0 | 69 | 20 | DC24 | 1.8 | 70% | GEY |
| 582901A | 19.1 | 3/4 | 12.0 | 69 | 20 | DC24 | 1.8 | 70% | GEY |
| 582902A | 25.4 | 1-1/2 | 20.0 | 69 | 20 | DC24 | 1.8 | 70% | GEY |
| 582903A | 38.1 | 1-1/2 | 50.0 | 69 | 20 | DC24 | 1.8 | 70% | GEY |
| 582904A | 50.8 | 2 | 90.0 | 69 | 20 | DC24 | 1.8 | 70% | GEY |
| 582905A | 63.5 | 2-1/2 | 134.0 | 41 | 30 | DC24 | 2.4 | 70% | GEY |

* Pressure range @ -18 to 38° C (reduced pressure for higher temperatures—see P/T chart)

Pressure/Temperature Chart (Bar/°C)

| P/T Chart (BAR/°C) | | | |
|--------------------|-----|----|-----|
| Bar | 69 | 69 | 0 |
| °C | -20 | 49 | 180 |



Electrical Wiring– On/Off

ELECTRICAL WIRING

Confirm the actuator VOLTAGE is correct, then remove the terminal box cover and connect wiring to terminal strip according to appropriate wiring diagram.

Wiring diagrams for each actuator are attached to the inside of the terminal box cover.

Input control signal type is 4-20mA. Actuator should have its own fused and isolated circuit. Do not connect actuators in parallel. Power to actuator should be maintained to activate the internal heater. This heater will help prevent condensation build-up inside the actuator.



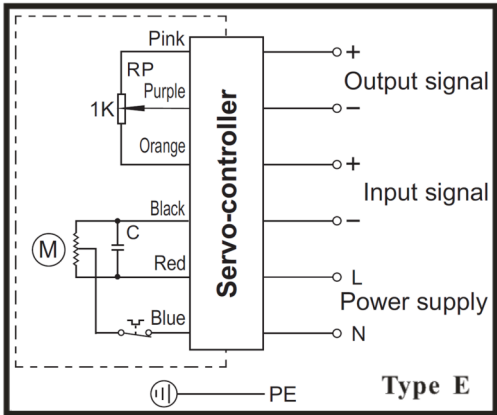
Before connecting power, confirm correct VOLTAGE is being applied. Incorrect voltage may damage actuator and void the warranty.

OPERATION (EPS ONLY)

Valworx 5818 series electric actuators with EPS- Electronic Positioning System provide an accurate valve positioning function whereby the movement of the actuator is controlled by a 4-20mA input control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator drive output.

This is achieved with a unique built in electronic positioning module. The module is fully potted to help protect the electronics from vibration and moisture.

AC Voltage Wiring Diagram



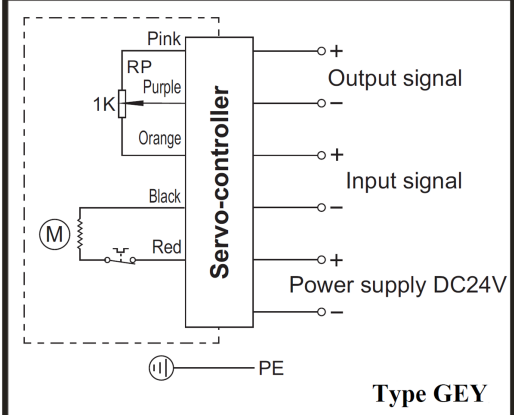
AC Voltage Wiring:

1. AC power - Neutral
2. AC power - Line/Hot
3. Input control signal - Negative (-)
4. Input control signal - Positive (+)
5. Output monitoring signal - Negative (-)
6. Output monitoring signal - Positive (+)

EPS POSITIONER TECHNICAL DATA

Input Signal: 4-20mA
Output Signal: 4-20mA
Deadband: 0.5% to 5.0%

DC Voltage Wiring Diagram

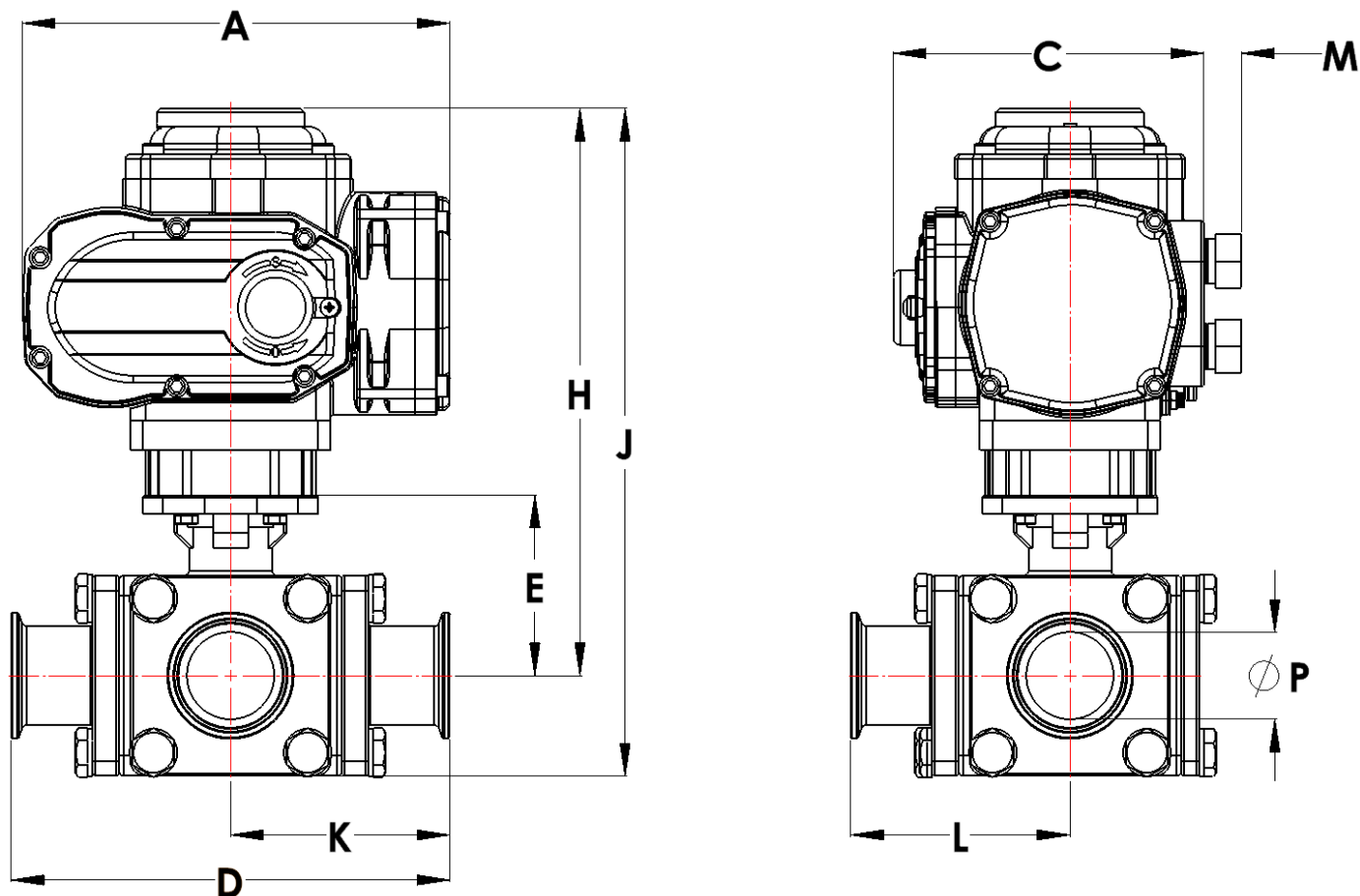


DC Voltage Wiring:

1. DC power - Negative (-)
2. DC power - Positive (+)
3. Input control signal - Negative (-)
4. Input control signal - Positive (+)
5. Output monitoring signal - Negative (-)
6. Output monitoring signal - Positive (+)

NOTES: 1. Actuator should have its own fused and isolated circuit. 2. Do not wire actuators in parallel. 3. Output signal is 4-20mA. Use of the output is optional.

Dimensions:



| Pipe Size | | A | C | D | E | H | J | K | L | M | P | Weight |
|-----------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|---------|
| 1/2 | inch | 6.7 | 4.7 | 4.6 | 1.8 | 7.9 | 8.9 | 2.3 | 2.3 | 0.6 | 0.4 | 10.9 lb |
| | mm | 170.5 | 120.5 | 118.0 | 44.5 | 200.1 | 225.5 | 59.0 | 59.0 | 15.0 | 9.4 | 24.0 kg |
| 3/4 | inch | 6.7 | 4.7 | 5.0 | 1.9 | 8.0 | 9.0 | 2.5 | 2.6 | 0.6 | 0.6 | 11.5 lb |
| | mm | 170.5 | 120.5 | 127.0 | 48.0 | 202.6 | 228.0 | 63.5 | 64.9 | 15.0 | 15.8 | 25.4 kg |
| 1 | inch | 6.7 | 4.7 | 6.0 | 2.3 | 8.4 | 9.6 | 3.1 | 3.0 | 0.6 | 0.9 | 13.8 lb |
| | mm | 170.5 | 120.5 | 152.4 | 59.0 | 212.8 | 243.3 | 77.5 | 76.2 | 15.0 | 22.2 | 30.4 kg |
| 1-1/2 | inch | 6.7 | 4.7 | 6.9 | 2.8 | 8.9 | 10.5 | 3.4 | 3.5 | 0.6 | 1.4 | 19.6 lb |
| | mm | 170.5 | 120.5 | 175.0 | 72.0 | 225.5 | 266.1 | 87.5 | 88.8 | 15.0 | 35.0 | 43.2 kg |
| 2 | inch | 6.7 | 4.7 | 7.5 | 3.2 | 9.3 | 11.3 | 3.7 | 3.8 | 0.6 | 1.9 | 26.8 lb |
| | mm | 170.5 | 120.5 | 190.0 | 82.0 | 235.7 | 286.5 | 95.0 | 96.3 | 15.0 | 47.6 | 59.1 kg |
| 2-1/2 | inch | 8.6 | 5.5 | 9.0 | 4.0 | 11.2 | 13.6 | 4.5 | 4.2 | 0.6 | 2.4 | 36.0 lb |
| | mm | 217.5 | 139.0 | 228.0 | 102.5 | 283.5 | 344.4 | 114.0 | 107.0 | 15.0 | 60.2 | 79.4 kg |