Electric Actuated Ball Valves

2-way Stainless Steel, Full Port
1/4" to 4" NPT

SERIES
5652

Features

- Direct mount ISO5211 Full Port 316 stainless steel ball valve
- RTFE (reinforced Teflon) ball seats
- Triple PTFE/Viton live loaded stem seals, adjustable
- Highly visual dome style valve position indicator
- Rugged aluminum Type 4X weatherproof enclosure
- Heavy duty motors with overload protection
- Anti-condensation heater, thermostatically controlled
- Manual override with end of travel mechanical stops
- Two auxiliary limit switches included (on-off models)
- EPS - Electronic Positioner System models available
- Actuator CSA listed per UL429 and CSA C22.2

Description

Electric actuated 2-piece stainless steel full port ball valves are investment cast with un-restricted flow and minimum pressure loss. Adjustable live loaded stem seal packing helps compensate for wear, pressure and/or temperature fluctuations, extending the cycle life of the valve. Rugged corrosion resistant electric actuator includes a manual override, valve position confirmation switches (on-off), thermostatically controlled anti-condensation heater, and over-torque protection.

Applications

On-off control of water, air, oil and other media compatible with the materials of construction. Steam service up to 25 PSI with optional high temperature mounting kit. Suitable for vacuum service up to 29"Hg. Actuator designed for 70% duty cycle.

Operation

Electric actuated valve uses power-to-open and power-to-close, stays in the last known position with loss of power. On receipt of a continuous voltage signal, the motor runs and via a rugged all metal gear 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. Valves with EPS positioner use an analog input signal to control the position of the ball (flow). Wire directly to terminal strip via supplied cable connector, or use optional 1/2" NPT adapter.

Construction

Valve Body	316 stainless steel ASTM A351 CF8M
Ball/Stem	316 stainless steel
Ball Seats	RTFE (reinforced Teflon)
Stem Seals	PTFE/ Viton
Anti-static Device	Ball to Stem (1/4" - 2") + Stem to Body (1-1/2" - 2")
Gear Drive	Heavy duty alloy steel and aluminium bronze
Actuator Enclosure	Aluminum, polyester powder painted, Type 4X, IP67
Visual Valve Position Indicator	Clear polycarbonate cover, red/yellow open-closed
Fasteners	Stainless Steel
Auxiliary Limit Switches	2 x SPDT 3A@125/250VAC, 30VDC resistive load on-off

Approvals

Actuators

- CSA listed:
  - UL429
  - CSA C22.2 No. 139
  - Type 4X weatherproof enclosure
- CE conformance: EN 60204-1:2006
  - ISO5211 mounting
  - IP67 weatherproof enclosure

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

Auxiliary Limit Switches(2) for confirming valve position, on-off versions

Heavy duty integral motor design significantly reduces physical size of actuator

Rugged polyester powder coated aluminum corrosion resistant Type 4X weather-proof enclosure.

Triple PTFE/Viton live loaded stem seal design, adjustable

316SS Ball and Stem, RTFE ball seats

Anti-Condensation Heater

Terminal Box, wire directly to terminal strip via included cable connector or optional 1/2" NPT conduit adapters.

Manual Override with protective cover

Self-locking all metal gear drive, no additional brake required

Direct mount ISO5211 flange, no brackets required

Full Port 316 stainless steel ball valve

Visual Valve Position Indicator

Pressure-Temperature*

Pressure Rating: 1000 PSI (69 Bar) (1/4"-2")
800 PSI (55 Bar) (2-1/2"-4") CWP non-shock, 25 PSI saturated steam with high temp kit, Vacuum 29inHg

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

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

*See P/T chart

Specifications: On-Off Valves (English units)

Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Electrical Drawing
120 VAC ELECTRIC ACTUATED STAINLESS BALL VALVES, ON-OFF version								
565202E	1/4	0.5	6.9	1000	12/10	110 VAC, 50/60Hz	0.27	B
565203E	3/8	0.5	6.9	1000	12/10	110 VAC, 50/60Hz	0.27	B
565204E	1/2	0.6	9.7	1000	12/10	110 VAC, 50/60Hz	0.27	B
565206E	3/4	0.8	18.4	1000	12/10	110 VAC, 50/60Hz	0.27	B
565208E	1	1.0	55.4	1000	12/10	110 VAC, 50/60Hz	0.27	B
565210E	1-1/4	1.3	89.7	1000	12/10	110 VAC, 50/60Hz	0.27	B
565212E	1-1/2	1.5	144.2	1000	25/21	110 VAC, 50/60Hz	0.27	B
565216F	2	2.0	226.0	1000	30/25	110 VAC, 50/60Hz	0.64	B
565220E	2-1/2	2.6	289.0	800	30/25	110 VAC, 50/60Hz	0.73	B
565224E	3	3.1	454.0	800	30/25	110 VAC, 50/60Hz	0.73	B
565232E	4	3.9	710.0	800	30/25	110 VAC, 50/60Hz	0.73	B
24 VDC ELECTRIC ACTUATED STAINLESS BALL VALVES, ON-OFF version								
565244E	1/4	0.5	6.9	1000	20	DC24	1.28	G
565245E	3/8	0.5	6.9	1000	20	DC24	1.28	G
565246E	1/2	0.6	9.7	1000	20	DC24	1.28	G
565247E	3/4	0.8	18.4	1000	20	DC24	1.28	G
565249E	1	1.0	55.4	1000	20	DC24	1.28	G
565250E	1-1/4	1.3	89.7	1000	20	DC24	1.28	G
565251E	1-1/2	1.5	144.2	1000	20	DC24	1.28	G
565252F	2	2.0	226.0	1000	30	DC24	2.03	G
565241E	2-1/2	2.6	289.0	800	30	DC24	3.57	G
565242E	3	3.1	454.0	800	30	DC24	3.57	G
565243E	4	3.9	710.0	800	30	DC24	3.57	G

* Pressure @ 100° F (see P/T chart for maximum pressure at higher temperatures)

Specifications: Valves with EPS Positioners (English units)

Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Electrical Drawing
120 VAC ELECTRIC ACTUATED STAINLESS BALL VALVES with EPS POSITIONER 4-20mA input								
565255E	1/4	0.5	6.9	1000	20/17	110 VAC, 50/60Hz	0.27	E
565256E	3/8	0.5	6.9	1000	20/17	110 VAC, 50/60Hz	0.27	E
565257E	1/2	0.6	9.7	1000	20/17	110 VAC, 50/60Hz	0.27	E
565258E	3/4	0.8	18.4	1000	20/17	110 VAC, 50/60Hz	0.27	E
565259E	1	1.0	55.4	1000	20/17	110 VAC, 50/60Hz	0.27	E
565260E	1-1/4	1.3	89.7	1000	20/17	110 VAC, 50/60Hz	0.27	E
565261E	1-1/2	1.5	144.2	1000	20/17	110 VAC, 50/60Hz	0.27	E
565262F	2	2.0	226.0	1000	30/25	110 VAC, 50/60Hz	0.64	E
565263E	2-1/2	2.6	289.0	800	30/25	110 VAC, 50/60Hz	0.73	E
565264E	3	3.1	454.0	800	30/25	110 VAC, 50/60Hz	0.73	E
565276E	4	3.9	710.0	800	30/25	110 VAC, 50/60Hz	0.73	E
24 VDC ELECTRIC ACTUATED STAINLESS BALL VALVES with EPS POSITIONER 4-20mA input								
565265E	1/4	0.5	6.9	1000	20	DC24	1.00	GEY
565266E	3/8	0.5	6.9	1000	20	DC24	1.00	GEY
565267E	1/2	0.6	9.7	1000	20	DC24	1.00	GEY
565268E	3/4	0.8	18.4	1000	20	DC24	1.00	GEY
565269E	1	1.0	55.4	1000	20	DC24	1.00	GEY
565270E	1-1/4	1.3	89.7	1000	20	DC24	1.00	GEY
565271E	1-1/2	1.5	144.2	1000	20	DC24	1.00	GEY
565272F	2	2.0	226.0	1000	30	DC24	2.03	GEY
565273E	2-1/2	2.6	289.0	800	30	DC24	3.57	GEY
565274E	3	3.1	454.0	800	30	DC24	3.57	GEY
565275E	4	3.9	710.0	800	30	DC24	3.57	GEY

* Pressure @ 100° F (see P/T chart for maximum pressure at higher temperatures)

Specifications: On-Off Valves (Metric units)

Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Electrical Drawing
120 VAC ELECTRIC ACTUATED STAINLESS BALL VALVE, ON-OFF Version								
565202E	1/4	11.5	5.9	69	12/10	110 VAC, 50/60Hz	0.27	B
565203E	3/8	12.5	5.9	69	12/10	110 VAC, 50/60Hz	0.27	B
565204E	1/2	15.0	8.4	69	12/10	110 VAC, 50/60Hz	0.27	B
565206E	3/4	20.0	15.9	69	12/10	110 VAC, 50/60Hz	0.27	B
565208E	1	25.0	47.9	69	12/10	110 VAC, 50/60Hz	0.27	B
565210E	1-1/4	32.0	77.6	69	12/10	110 VAC, 50/60Hz	0.27	B
565212E	1-1/2	38.0	124.7	69	25/21	110 VAC, 50/60Hz	0.27	B
565216F	2	50.0	195.5	69	30/25	110 VAC, 50/60Hz	0.64	B
565220E	2-1/2	65.0	250.0	55	30/25	110 VAC, 50/60Hz	0.73	B
565224E	3	80.0	392.7	55	30/25	110 VAC, 50/60Hz	0.73	B
565232E	4	100.0	614.2	55	30/25	110 VAC, 50/60Hz	0.73	B
24 VDC ELECTRIC ACTUATED STAINLESS BALL VALVE, ON-OFF Version								
565244E	1/4	11.5	5.9	69	20	DC24	1.28	G
565245E	3/8	12.5	5.9	69	20	DC24	1.28	G
565246E	1/2	15.0	8.4	69	20	DC24	1.28	G
565247E	3/4	20.0	15.9	69	20	DC24	1.28	G
565249E	1	25.0	47.9	69	20	DC24	1.28	G
565250E	1-1/4	32.0	77.6	69	20	DC24	1.28	G
565251E	1-1/2	38.0	124.7	69	20	DC24	1.28	G
565252F	2	50.0	195.5	69	30	DC24	2.04	G
565241E	2-1/2	65.0	250.0	55	30	DC24	3.57	G
565242E	3	80.0	392.7	55	30	DC24	3.57	G
565243E	4	100.0	614.2	55	30	DC24	3.57	G

* Pressure @ 38° C (see P/T chart for maximum pressure at higher temperatures)

Specifications: Valves with EPS Positioners (Metric units)

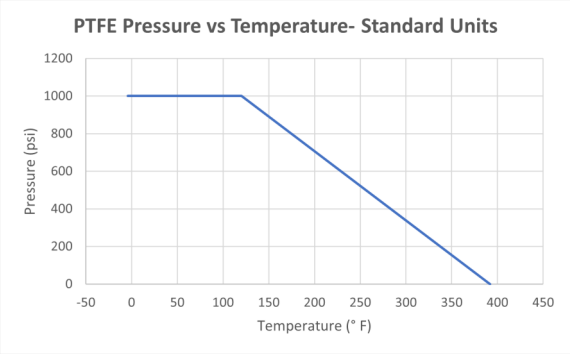
Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Electrical Drawing
120 VAC ELECTRIC ACTUATED STAINLESS BALL VALVES with EPS POSITIONER 4-20mA input								
565255E	1/4	11.5	5.9	69	20/17	110 VAC, 50/60Hz	0.27	E
565256E	3/8	12.5	5.9	69	20/17	110 VAC, 50/60Hz	0.27	E
565257E	1/2	15.0	8.4	69	20/17	110 VAC, 50/60Hz	0.27	E
565258E	3/4	20.0	15.9	69	20/17	110 VAC, 50/60Hz	0.27	E
565259E	1	25.0	47.9	69	20/17	110 VAC, 50/60Hz	0.27	E
565260E	1-1/4	32.0	77.6	69	20/17	110 VAC, 50/60Hz	0.27	E
565261E	1-1/2	38.0	124.7	69	20/17	110 VAC, 50/60Hz	0.27	E
565262F	2	50.0	195.5	69	30/25	110 VAC, 50/60Hz	0.64	E
565263E	2-1/2	65.0	250.0	55	30/25	110 VAC, 50/60Hz	0.73	E
565264E	3	80.0	392.7	55	30/25	110 VAC, 50/60Hz	0.73	E
565276E	4	100.0	614.2	55	30/25	110 VAC, 50/60Hz	0.73	E
24 VDC ELECTRIC ACTUATED STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input								
565265E	1/4	11.5	5.9	69	20	DC24	1.00	GEY
565266E	3/8	12.5	5.9	69	20	DC24	1.00	GEY
565267E	1/2	15.0	8.4	69	20	DC24	1.00	GEY
565268E	3/4	20.0	15.9	69	20	DC24	1.00	GEY
565269E	1	25.0	47.9	69	20	DC24	1.00	GEY
565270E	1-1/4	32.0	77.6	69	20	DC24	1.00	GEY
565271E	1-1/2	38.0	124.7	69	20	DC24	1.00	GEY
565272F	2	50.0	195.5	69	30	DC24	2.04	GEY
565273E	2-1/2	65.0	250.0	55	30	DC24	3.57	GEY
565274E	3	80.0	392.7	55	30	DC24	3.57	GEY
565275E	4	100.0	614.2	55	30	DC24	3.57	GEY

* Pressure @ 38° C (see P/T chart for maximum pressure at higher temperatures)

Pressure/Temperature Chart:

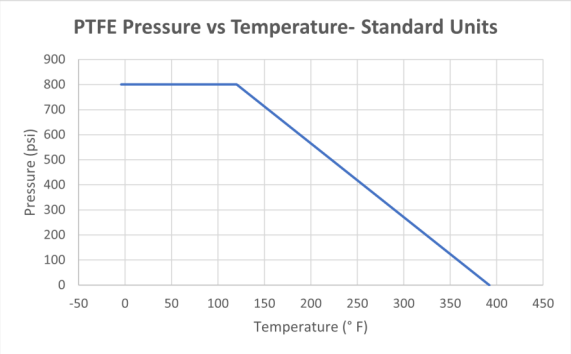
Pressure/Temp. Chart - 1000 PSI (69 Bar)

P/T Chart (PSI/°F)				
PSI	1000	1000	100	0
°F	-4	50	330	392



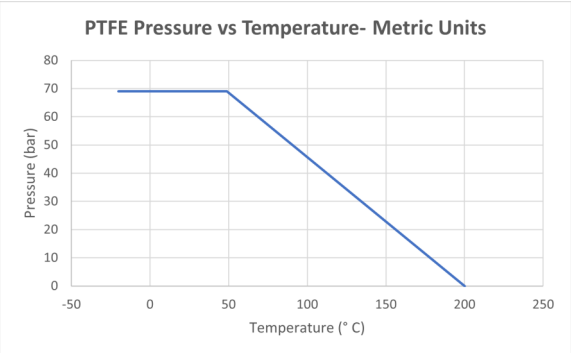
Pressure/Temp. Chart - 800 PSI (55 Bar)

P/T Chart (PSI/°F)				
PSI	800	800	100	0
°F	-4	50	330	392



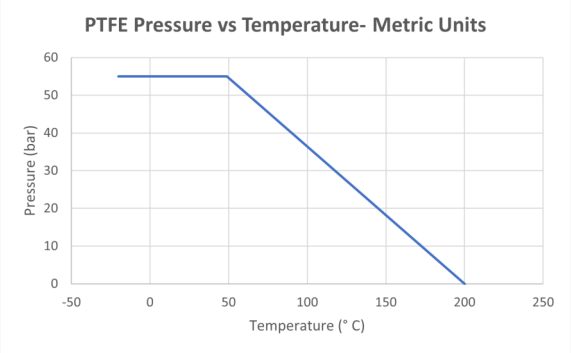
Pressure/Temp. Chart - 69 Bar (1000 PSI)

P/T Chart (BAR/°C)				
Bar	69	69	7	0
°C	-20	10	166	200



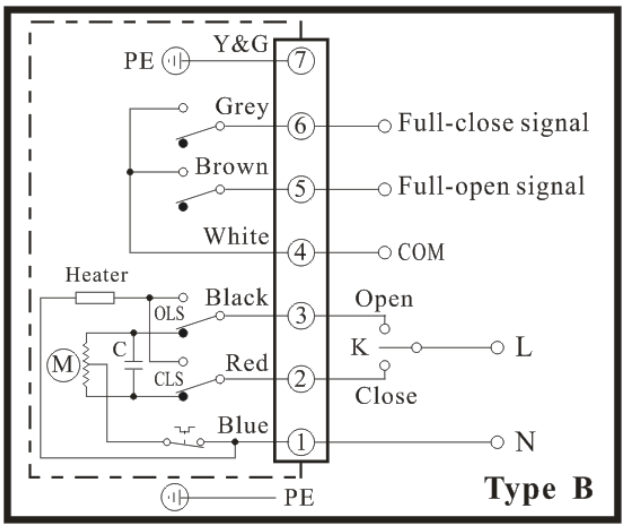
Pressure/Temp. Chart - 55 Bar (800 PSI)

P/T Chart (BAR/°C)				
Bar	55	55	7	0
°C	-20	10	166	200

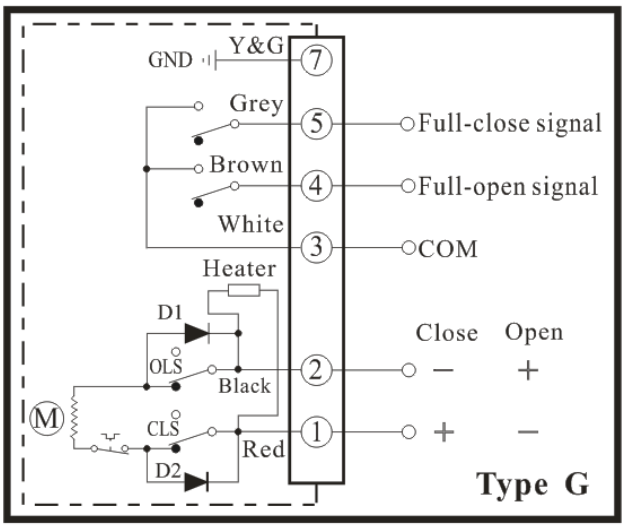


Electrical Wiring

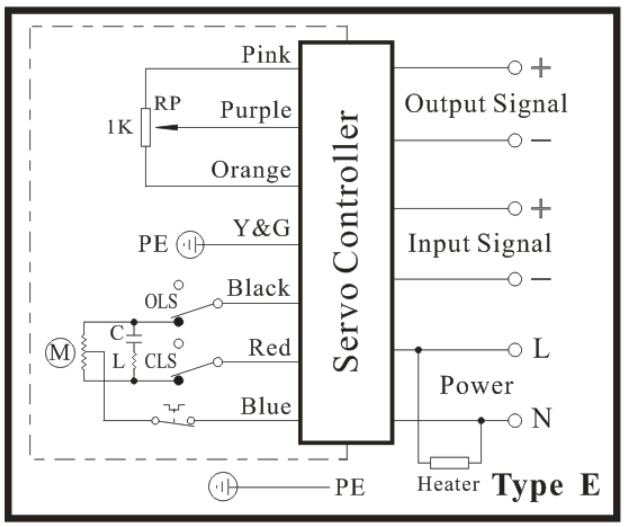
ON-OFF Valves
AC Voltages



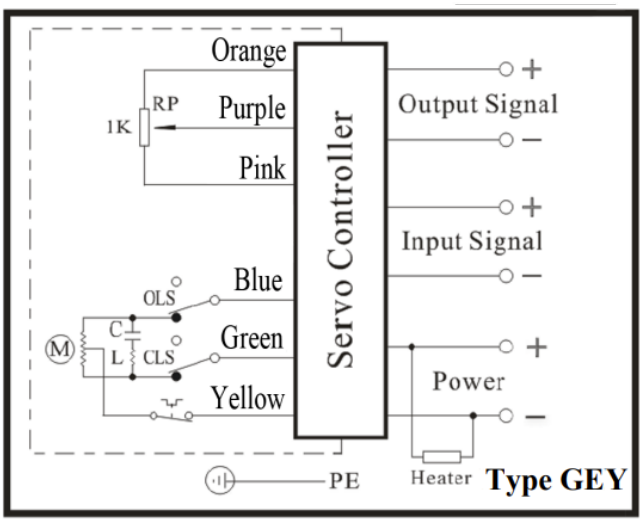
ON-OFF Valves
DC Voltages



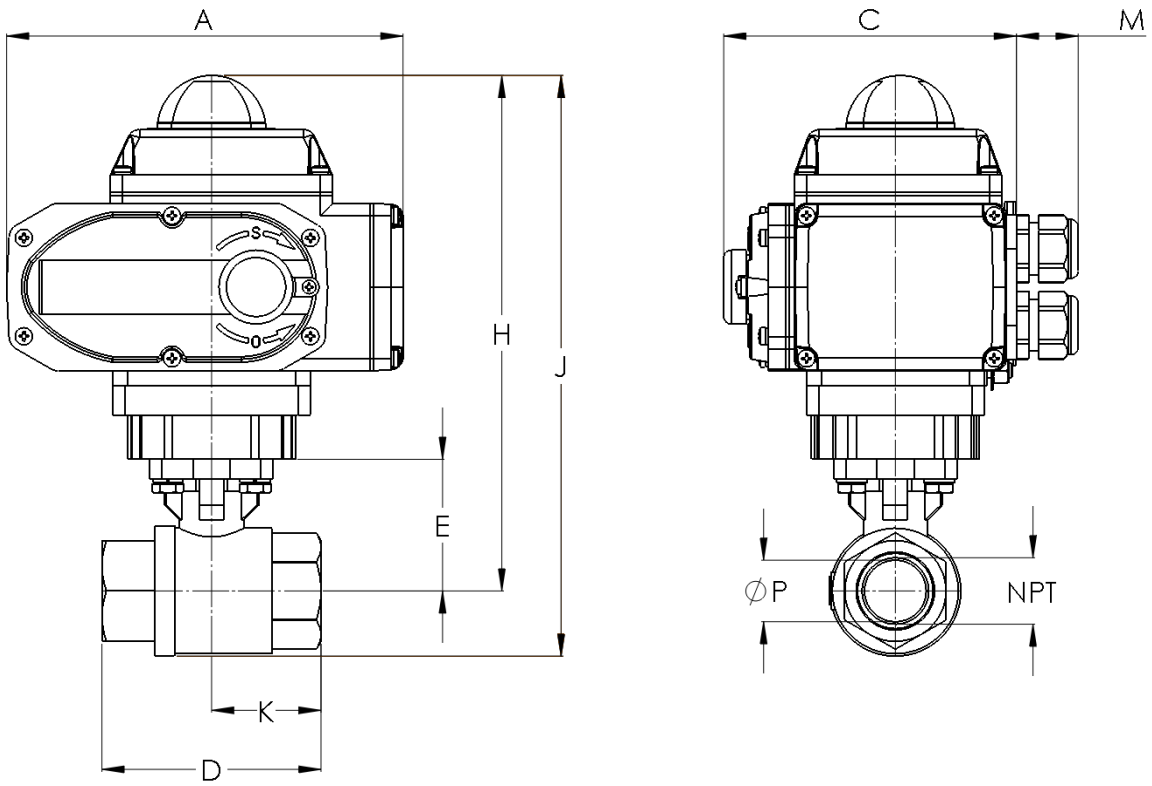
Valves with EPS Positioners
AC Voltages



Valves with EPS Positioners
DC Voltages

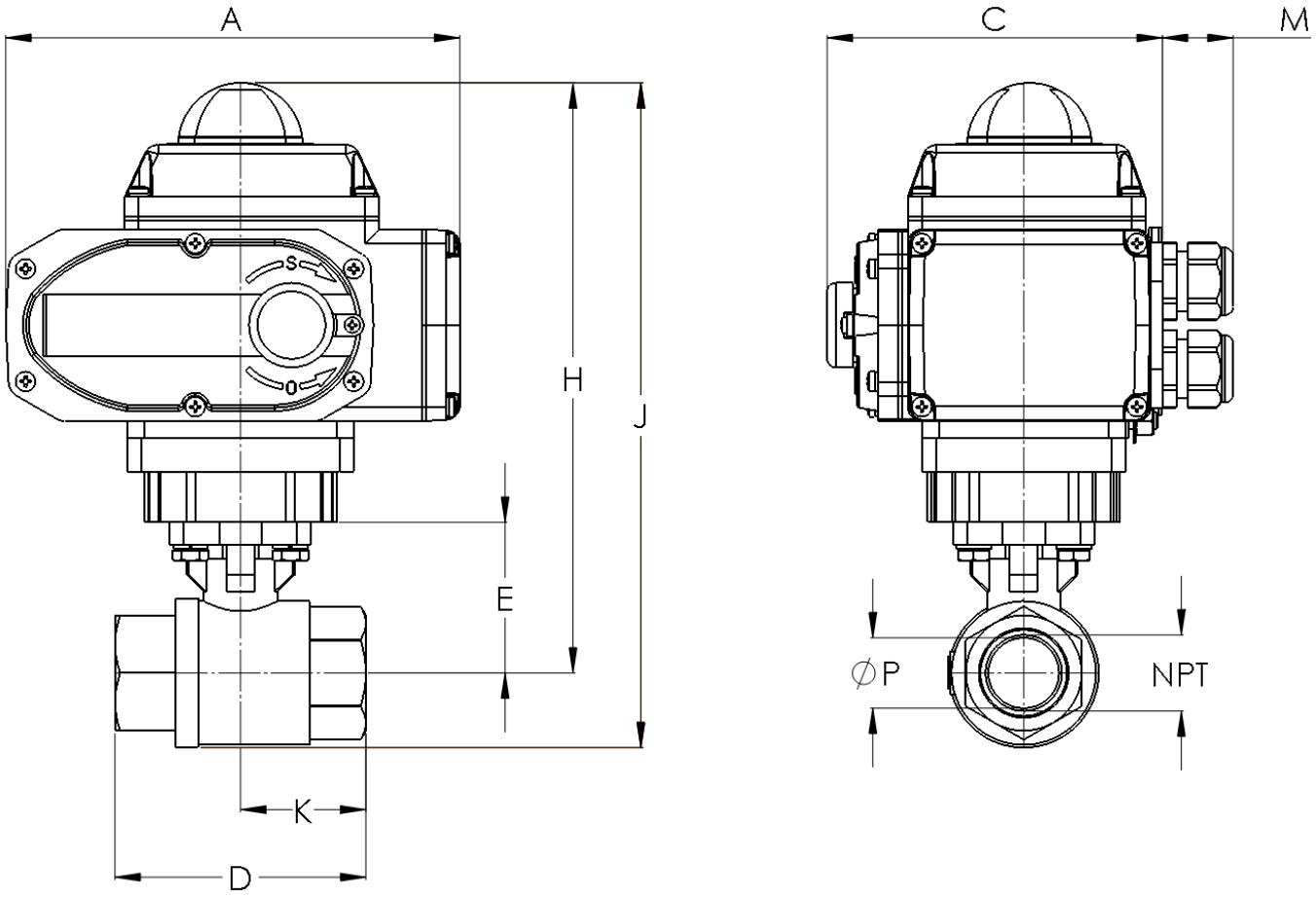


Dimensions: 1/4"-2"



Pipe Size (NPT)		A	C	D	E	H	J	K	M	P	Weight (AC/DC)
1/4	inch	6.4	4.7	2.6	1.5	7.7	8.3	1.2	1.0	0.5	7.0 lb
	mm	162.0	118.5	65.3	37.0	195.6	210.8	31.0	25.0	11.5	3.2 kg
3/8	inch	6.4	4.7	2.6	1.5	7.7	8.3	1.2	1.0	0.5	6.9 lb
	mm	162.0	118.5	65.3	37.0	195.6	210.8	31.0	25.0	12.5	3.1 kg
1/2	inch	6.4	4.7	2.6	1.5	7.7	8.3	1.2	1.0	0.6	6.8 lb
	mm	162.0	118.5	65.3	37.0	195.6	210.8	31.0	25.0	15.0	3.0 kg
3/4	inch	6.4	4.7	3.0	1.8	8.0	8.8	1.5	1.0	0.8	7.2 lb
	mm	162.0	118.5	77.3	45.0	203.2	223.5	38.7	25.0	20.0	3.3 kg
1	inch	6.4	4.7	3.5	2.1	8.3	9.3	1.7	1.0	1.0	7.8 lb
	mm	162.0	118.5	88.7	53.5	210.8	236.2	43.8	25.0	25.0	3.5 kg
1-1/4	inch	6.4	4.7	4.0	2.3	8.5	9.8	2.0	1.0	1.3	8.9 lb
	mm	162.0	118.5	102.0	59.0	215.9	248.9	50.7	25.0	32.0	4.0 kg
1-1/2	inch	6.4	4.7	4.3	2.9	9.1	10.6	2.2	1.0	1.5	10.5 lb
	mm	162.0	118.5	109.0	74.8	231.1	269.2	55.0	25.0	38.0	4.8 kg
2	inch	7.7	5.0	4.9	3.3	10.4	12.2	2.4	1.0	2.0	16.3 lb
	mm	196.5	126.0	125.0	83.5	264.2	309.9	61.3	25.0	50.0	7.4 kg

Dimensions: 2-1/2"- 4"



Pipe Size (NPT)		A	C	D	E	H	J	K	M	P	Weight (AC/DC)
2-1/2	inch	10.1	6.4	6.5	4.3	12.8	14.8	6.1	1.0	2.6	35.7 lb
	mm	255.5	161.5	165.0	108.8	325.1	375.9	155.0	25.0	65.0	16.2 kg
3	inch	10.1	6.4	7.5	4.7	13.2	15.8	6.5	1.0	3.1	42.3 lb
	mm	255.5	161.5	189.5	118.3	335.3	401.3	164.5	25.0	80.0	19.2 kg
4	inch	10.1	6.4	9.4	6.1	14.6	17.8	8.5	1.0	3.9	57.5 lb
	mm	255.5	161.5	238.0	153.8	370.8	452.1	217.0	25.0	100.0	26.1 kg