Electric Actuated Ball Valves

PVC Body, Teflon/EPDM Seals
1/2 to 4 inch Pipe

SERIES
5612

Features

- Industrial grade PVC ball valve with PTFE/EPDM seals
- External LED light gives continuous status indication
- IP67 weatherproof polyamide enclosure with UV protection
- Multi-voltage capable with auto-voltage sensing
- Long life brushless motor with electronic torque limiter
- Anti-condensation heater
- Manual override and highly visual valve position indicator
- DIN plug type electrical connections
- Auxiliary limit switches to confirm valve position
- Energized PTFE ball seats for lower torque and longer life
- Union nut locking device prevents back-off
- DPS Positioner and BSR Failsafe options available
- Certified safe per NSF61 for potable/drinking water

Applications

Industrial quality full port electric actuated PVC ball valves are typically used for control of water and other media compatible with the materials of construction (not suitable for compressed air or gas). Ideal for industrial applications and where NSF approved construction is required for potable drinking water. Actuator duty cycle is rated 75%.

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 through a flat 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 optional DPS positioner use an analog input signal to control the position of the ball (flow).

Construction

Valve Body	PVC cell class 12454 per ASTM D1784 (dark gray)
Ball and Stem	PVC cell class 12454 per ASTM D1784
Ball Seats	PTFE (Teflon) energized with EPDM
Stem Seals	Dual EPDM seals
Actuator Enclosure	Anti-corrosive polyamide, IP67 weatherproof
Position Indicator/Manual Override	Dome style indicator/manual polyamide knob
Fasteners	Stainless Steel
Auxiliary Limit Switches on-off models	2 x SPST 3A@125/250VAC, 30VDC resistive load

Description

Electric actuated PVC ball valves offer a variety of advanced features in a wide range of 1/2 through 4 inch pipe sizes. Energized PTFE ball seats are used to extended cycle life, compensate for wear and lower the operating torque. Union locking device prevents nuts from backing off due to vibration or thermal cycling. Dual stem seals and adjustable ball seat carrier contribute to a leak free design. Machined ball and stem connection after molding provides a precise fit. Corrosion resistant actuator includes a manual override, valve position confirmation switches, thermostatically controlled anti-condensation heater and over-torque protection. LED diagnostic light.

Approvals

Actuators

- CE mark conforming to:
  - Machinery directive
  - Low voltage directive
  - EMC compatibility directive
- ISO5211 valve mounting

Valves

- NSF International certified to:
  - NSF/ANSI 61 G
  - NSF/ANSI 372 Drinking Water
- ANSI B1.20.1
- ASTM D1784, cell class 12454

Certified to NSF/ANSI/CAN 61 & NSF/ANSI 372

Construction Features

Pressure-Temperature

Valve Pressure Rating*: 232 PSI (16 Bar) at 73°F (23°C)

Vacuum 29inHg

Valve Temperature Rating: 32 to 140° F (0 to 60° C)

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

*See P/T chart:

Optional Functions

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

Pressure/Temperature Chart

P/T Chart (PSI/°F)							
PSI	232	232	232	180	150	100	35
°F	32	50	70	90	110	120	140

P/T Chart (BAR/°C)							
Bar	16	16	16	12	10	7	2.4
°C	0	10	21	32	43	49	60

Specifications (English units)

Stock Number	Pipe Size* (inches)	Pipe O.D. (inch)	Cv Flow Factor	Pressure Max. (PSI)**	Cycle Time/90° (seconds) +/- 10%	Enclosure Rating	Max. Current Draw (Amps)			
							110VAC	240VAC	24VAC	24VDC
24v-240v AC or DC ELECTRIC PVC BALL VALVE, TEFLON/EPDM										
561204E	1/2	0.84	14	232	9	IP67	0.30	0.16	1.28	0.97
561206E	3/4	1.05	27	232	9	IP67	0.30	0.16	1.28	0.97
561208E	1	1.32	54	232	9	IP67	0.30	0.16	1.28	0.97
561210C	1-1/4	1.66	77	232	9	IP67	0.30	0.16	1.28	0.97
561212E	1-1/2	1.90	123	232	9	IP67	0.30	0.16	1.28	0.97
561216E	2	2.38	238	232	9	IP67	0.30	0.16	1.28	0.97
561217C	2-1/2	2.88	368	232	13	IP67	0.43	0.21	1.98	1.63
561224E	3	3.50	497	232	13	IP67	0.43	0.21	1.98	1.63
561232E	4	4.50	665	232	29	IP67	0.33	0.18	1.50	1.22

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

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

*Valve sizes 1/2 to 2 inch include both IPS glue sockets and NPT end connectors, sizes 3 and 4 inch include IPS glue sockets only

** Maximum pressure at 73° F, pressure decreases as temperature increases (see P/T chart)

Specifications (Metric units)

Stock Number	Pipe Size* (inches)	Pipe O.D. (mm)	Kv Flow Factor	Pressure Max. (BAR)**	Cycle Time/90° (seconds) +/- 10%	Enclosure Rating	Max. Current Draw (Amps)			
							110VAC	240VAC	24VAC	24VDC
24v-240v AC or DC ELECTRIC PVC BALL VALVE, TEFLON/EPDM										
561204E	1/2	21.34	12	16	9	IP67	0.30	0.16	1.28	0.97
561206E	3/4	26.67	23	16	9	IP67	0.30	0.16	1.28	0.97
561208E	1	33.53	46	16	9	IP67	0.30	0.16	1.28	0.97
561210C	1-1/4	42.16	66	16	9	IP67	0.30	0.16	1.28	0.97
561212E	1-1/2	48.26	106	16	9	IP67	0.30	0.16	1.28	0.97
561216E	2	60.45	205	16	9	IP67	0.30	0.16	1.28	0.97
561217C	2-1/2	73.15	316	16	13	IP67	0.43	0.21	1.98	1.63
561224E	3	88.90	427	16	13	IP67	0.43	0.21	1.98	1.63
561232E	4	114.3	572	16	29	IP67	0.33	0.18	1.50	1.22

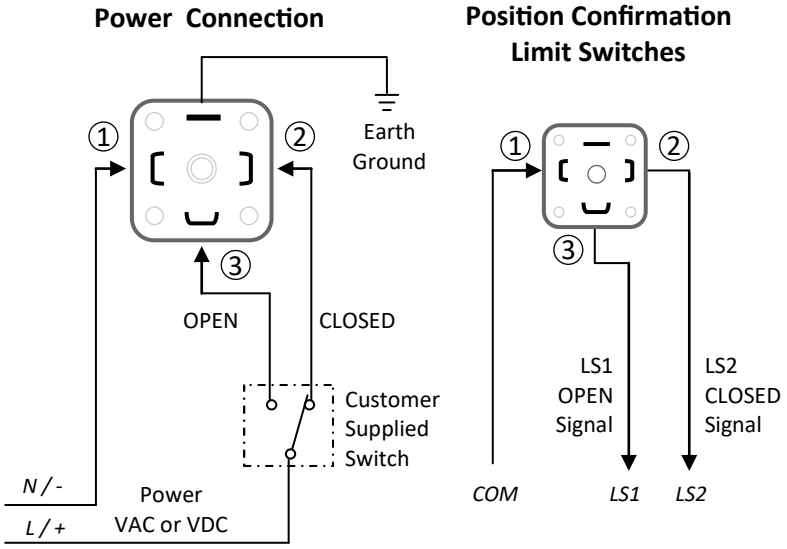
*Valve sizes 1/2 to 2 inch include both IPS glue sockets and NPT end connectors, sizes 3 and 4 inch include IPS glue sockets only

** Maximum pressure at 23° C, pressure decreases as temperature increases (see P/T chart)

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

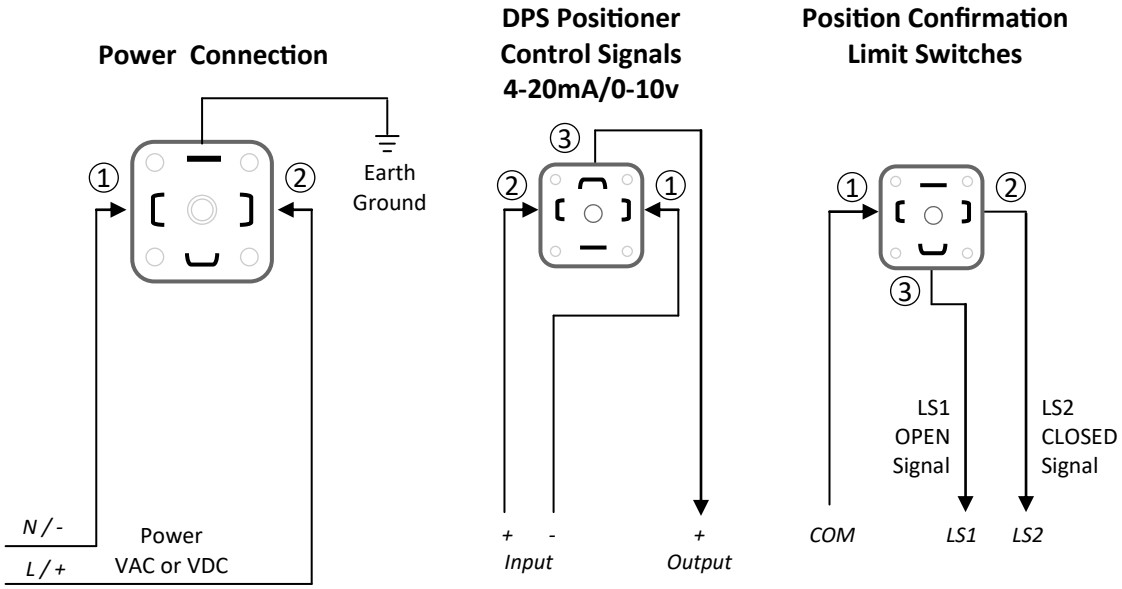
PIN 1 (COM) and 2 to confirm actuator is closed

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

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.

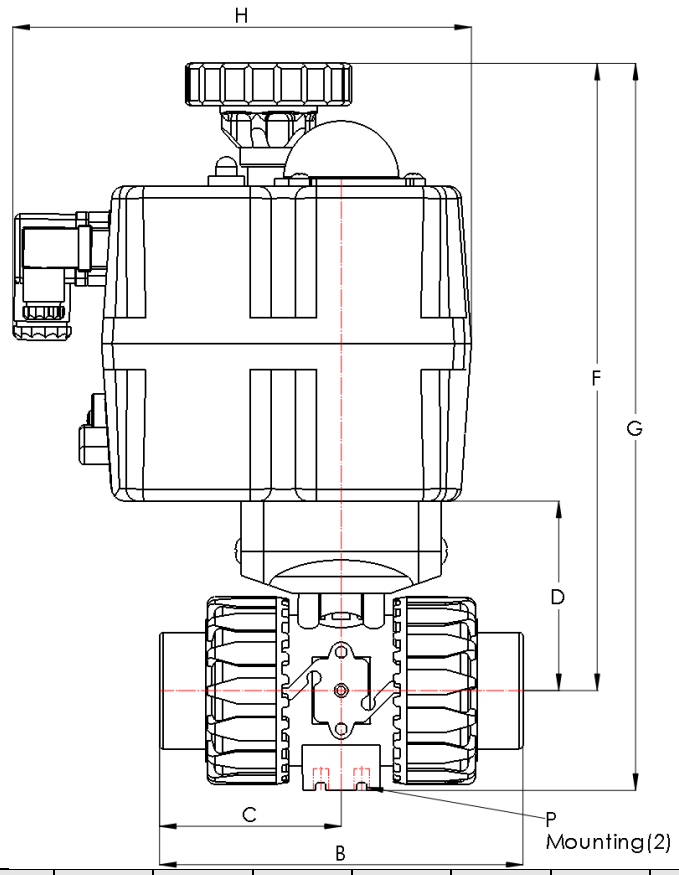
Function: Position confirmation limit switches

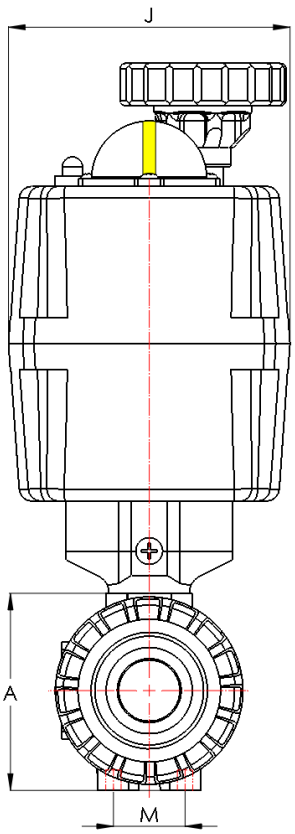
Dry contact 3A @ 125/250 VAC, 30VDC resistive load

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

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

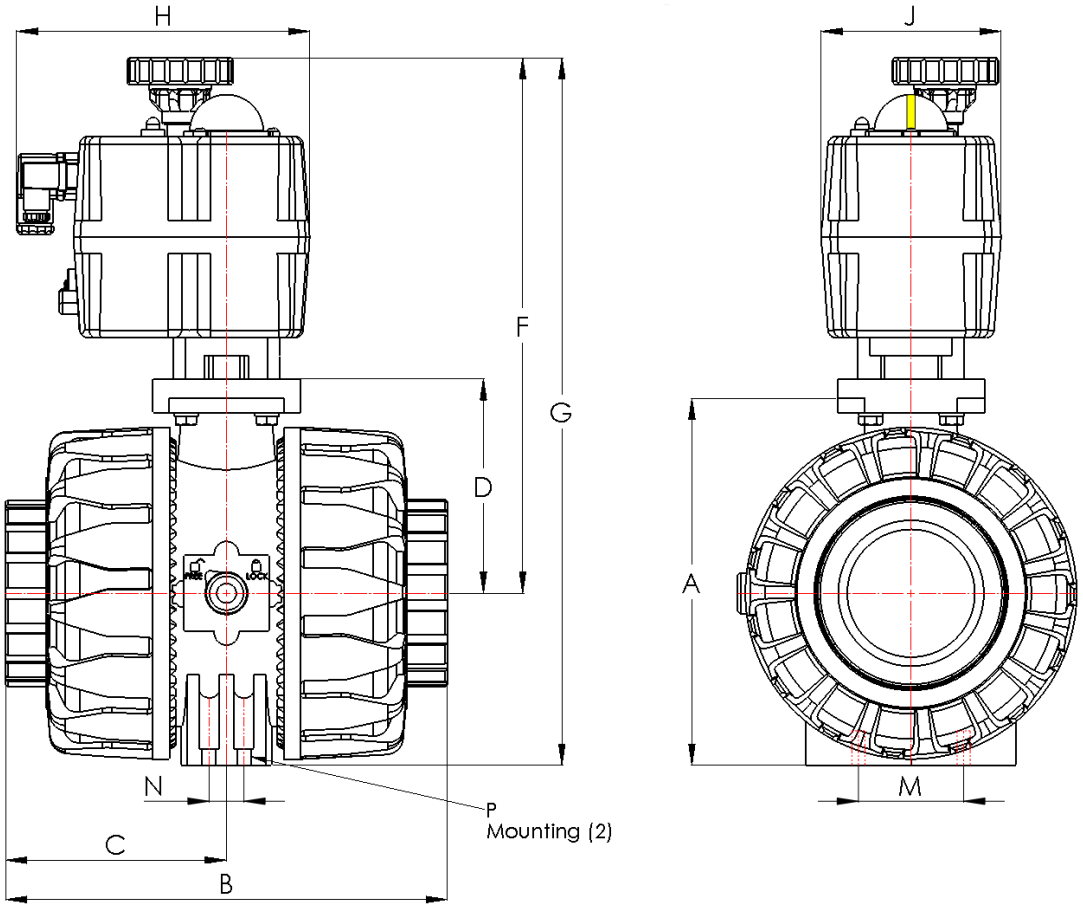
Dimensions: 1/2 to 2 inch Sizes





Pipe Size		A	B	C	D	F	G	H	J	M	P	Weight
1/2	inch	2.4	4.61	2.31	2.28	9.01	10.15	7.00	4.33	0.79	-	4.3 lbs
	mm	56.9	117	59	58	228.9	257.9	178	110	20	6 x 8 depth	2 kg
3/4	inch	2.67	5.08	2.54	2.74	9.47	10.82	7.00	4.33	0.79	-	4.6 lbs
	mm	67.8	129	65	69.5	240.5	274.8	178	110	20	6 x 8 depth	2.1 kg
1	inch	3.03	5.59	2.80	2.91	9.65	11.18	7.00	4.33	0.79	-	4.8 lbs
	mm	77	142	71	74	245	284	178	110	20	6 x 8 depth	2.2 kg
1-1/4	inch	3.54	6.26	3.13	3.58	10.31	12.13	7.00	4.33	1.18	-	6.0 lbs
	mm	90	158.9	79.5	91	262	308	178	110	30	6 x 8 depth	2.7 kg
1-1/2	inch	4.02	6.77	3.29	3.83	10.56	12.61	7.00	4.33	1.18	-	6.0 lbs
	mm	102.2	172	84	97.2	268.2	320.2	178	110	30	8 x 12 depth	2.7 kg
2	inch	4.84	7.83	3.92	4.45	11.19	13.62	7.00	4.33	1.18	-	7.6 lbs
	mm	123	199	100	113.1	284.1	346.1	178	110	30	8 x 12 depth	3.5 kg

Dimensions: 2-1/2 to 4 inch Sizes



Pipe Size		A	B	C	D	F	G	H	J	M	N	P	Weight
2-1/2	inch	7.68	9.25	4.63	4.64	12.35	15.87	7.00	4.33	2	0.67	M8	13.8 lbs
	mm	195	235	117.5	117.8	313.8	403	178	84	52	17	M8	16.2 kg
3	inch	8.82	10.63	5.31	5.16	12.87	17	7.00	4.33	2.48	0.83	M8	20.6 lbs
	mm	224	270	135	131	327	432	178	84	63	21	M8	9.4 kg
4	inch	10.47	12.13	6.06	6.21	13.93	18.66	7.00	5.04	2.64	0.83	M8	28.6 lbs
	mm	266	308	154	157.8	353.8	474	178	128	67	21	M8	13.0 kg