Electric Actuated 3-Way Ball Valves

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

SERIES
5658

Features

- Full Port 316SS diverter, selector, or mixing valve
- Silicone free with RTFE ball seats
- Triple PTFE/Viton live loaded stem seals, adjustable
- Valve anti-static device
- Visual valve position indicator
- Rugged aluminum Type 4X weatherproof enclosure
- Heavy duty motors with overload protection
- Thermostatically controlled anti-condensation heater
- Manual override with end of travel mechanical stops
- Two auxiliary position confirmation limit switches
- Actuators CSA Listed per UL429 and CSA C22.2

T-port Diverter Valve
Flow Pattern

Position 1 **Position 2**

Applications

Motorized stainless steel flow diverter, selector, or mixing 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 designed for 70% 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 rugged all metal gear drive 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. Power connections are via included cable connector or optional 1/2" NPT conduit adapters. Manual override is available for setup and power failure situations.

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" - 1-1/2") + Stem to Body (1-1/4" - 2")
Gear Drive	Heavy duty steel and aluminium bronze, self locking
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

Description

Electrically operated full port 3-way T-type flow pattern ball valve has four RTFE 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 corrosion resistant electric actuator includes a manual override, position confirm switches (on-off units), thermostatically controlled anti-condensation heater, and over-torque protection.

Approvals

Actuators

- CSA Listed:
  - UL429 and CSA C22.2 No. 139
  - Type 4X, IP67 weatherproof enclosure
- CE conformance– EN 60204-1:2006

Valves

- Design: API 608
- Testing: API 598/ EN12266-1
- 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

Heavy duty integral motor design significantly reduces physical size of actuator

Rugged polyester powder coated aluminum Type 4X weatherproof enclosure.

Triple PTFE/ FKM(Viton) live loaded stem seals design, adjustable

Full Port 316 stainless steel 3-way ball valve

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

316SS Ball and Stem, RTFE ball seats

Pressure-Temperature

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)

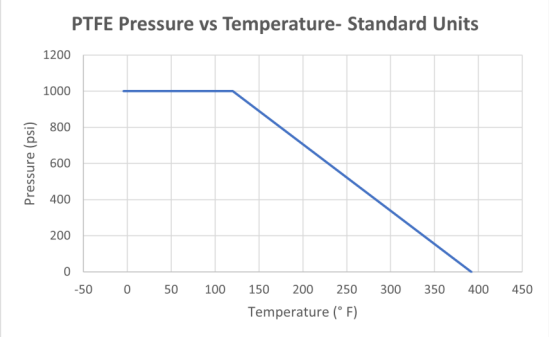
Actuator Temperature Rating: -13 to 131° F (-25 to 55° C)

*See P/T chart

Visual Valve
Position Indicator

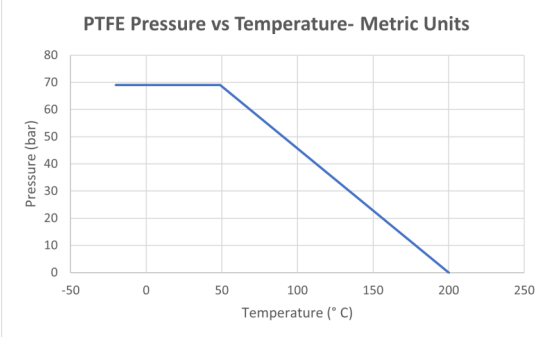
Pressure/Temperature Chart (PSI/°F)

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



Pressure/Temperature Chart (Bar/°C)

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



Specifications (English units)

Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED 3-WAY T-PORT STAINLESS BALL VALVE									
565802F	1/4	0.4	5.0	1000	12/10	110 VAC, 50/60Hz	0.27	70%	B
565803F	3/8	0.4	7.3	1000	12/10	110 VAC, 50/60Hz	0.27	70%	B
565804F	1/2	0.6	8.9	1000	12/10	110 VAC, 50/60Hz	0.27	70%	B
565806F	3/4	0.8	18.9	1000	12/10	110 VAC, 50/60Hz	0.27	70%	B
565808F	1	1.0	32.0	1000	12/10	110 VAC, 50/60Hz	0.27	70%	B
565810F	1-1/4	1.3	41.2	1000	25/21	110 VAC, 50/60Hz	0.27	70%	B
565812F	1-1/2	1.5	52.1	1000	25/21	110 VAC, 50/60Hz	0.27	70%	B
565816E	2	2.0	79.3	1000	30/25	110 VAC, 50/60Hz	0.73	70%	B
24 VDC ELECTRIC ACTUATED 3-WAY T-PORT STAINLESS BALL VALVE									
565844F	1/4	0.4	5.0	1000	20	DC24	1.28	70%	G
565845F	3/8	0.4	7.3	1000	20	DC24	1.28	70%	G
565846F	1/2	0.6	8.9	1000	20	DC24	1.28	70%	G
565847F	3/4	0.8	18.9	1000	20	DC24	1.28	70%	G
565849F	1	1.0	32.0	1000	20	DC24	1.28	70%	G
565850F	1-1/4	1.3	41.2	1000	20	DC24	1.28	70%	G
565851F	1-1/2	1.5	52.1	1000	20	DC24	1.28	70%	G
565852E	2	2.0	79.3	1000	30	DC24	3.57	70%	G

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

Electric Actuated 3-Way T-port Valves

Valworx electric actuated 3-way T-Port valves use power-to-open (pos.2) and power-to-close (pos.1), stays in the last known position with loss of power. The actuator will rotate the output drive 90° to change the position of the ball valve. Limit switches automatically stop the motor/gear drive in either position 1 or position 2 as required.

Two auxiliary limit switches are provided as standard to confirm valve position.

Rugged primary gear drive system is made of heat treated alloy steel for high strength, excellent wear resistance and high torque. Final stage aluminium bronze worm gear drive is self-locking, no motor brake required.

A manual override is provided for use in setup or power failure situations. The override is operated with a standard hex wrench (included).

The standard 4 watt thermostatically controlled anti-condensation heater will help prevent failures due to condensation buildup inside the actuator.

Robust aluminium alloy housing is corrosion-resistant, polyester powder coated, and weatherproof. The housing is rated Type 4X (IP67) and certified by CSA. Heavy duty motors are integral to the actuator housing. The actuator has the smallest physical size to power ratio of most actuators on the market.

Electrical wiring is directly to a terminal strip via cable connectors (included) or optional 1/2" NPT conduit adapters.

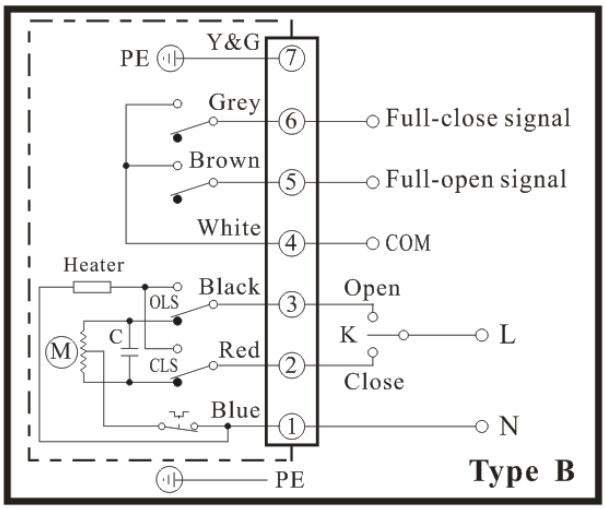
Specifications (Metric units)

Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED 3-WAY T-PORT STAINLESS BALL VALVE									
565802F	1/4	11	4.3	69	12/10	110 VAC, 50/60Hz	0.27	70%	B
565803F	3/8	11	6.3	69	12/10	110 VAC, 50/60Hz	0.27	70%	B
565804F	1/2	16	7.7	69	12/10	110 VAC, 50/60Hz	0.27	70%	B
565806F	3/4	20	16.3	69	12/10	110 VAC, 50/60Hz	0.27	70%	B
565808F	1	25	27.7	69	12/10	110 VAC, 50/60Hz	0.27	70%	B
565810F	1-1/4	32	35.6	69	25/21	110 VAC, 50/60Hz	0.27	70%	B
565812F	1-1/2	38	45.1	69	25/21	110 VAC, 50/60Hz	0.27	70%	B
565816E	2	50	68.6	69	30/25	110 VAC, 50/60Hz	0.73	70%	B
24 VDC ELECTRIC ACTUATED 3-WAY T-PORT STAINLESS BALL VALVE									
565844F	1/4	11	4.3	69	20	DC24	1.28	70%	G
565845F	3/8	11	6.3	69	20	DC24	1.28	70%	G
565846F	1/2	16	7.7	69	20	DC24	1.28	70%	G
565847F	3/4	20	16.3	69	20	DC24	1.28	70%	G
565849F	1	25	27.7	69	20	DC24	1.28	70%	G
565850F	1-1/4	32	35.6	69	20	DC24	1.28	70%	G
565851F	1-1/2	38	45.1	69	20	DC24	1.28	70%	G
565852E	2	50	68.6	69	30	DC24	3.57	70%	G

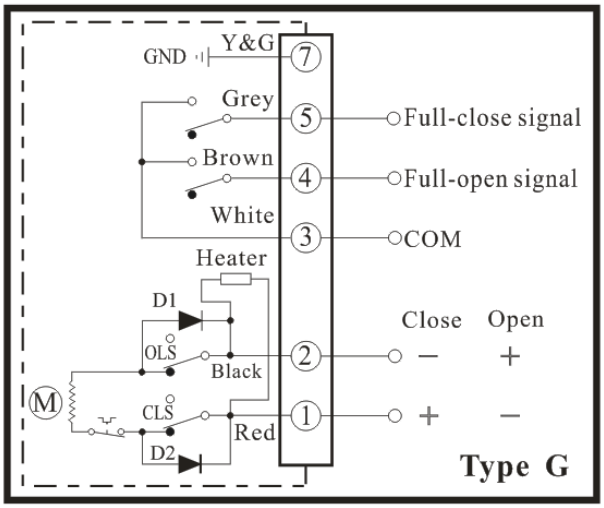
* Pressure @ 38° C (see P/T chart for higher temperatures)

Electrical Wiring

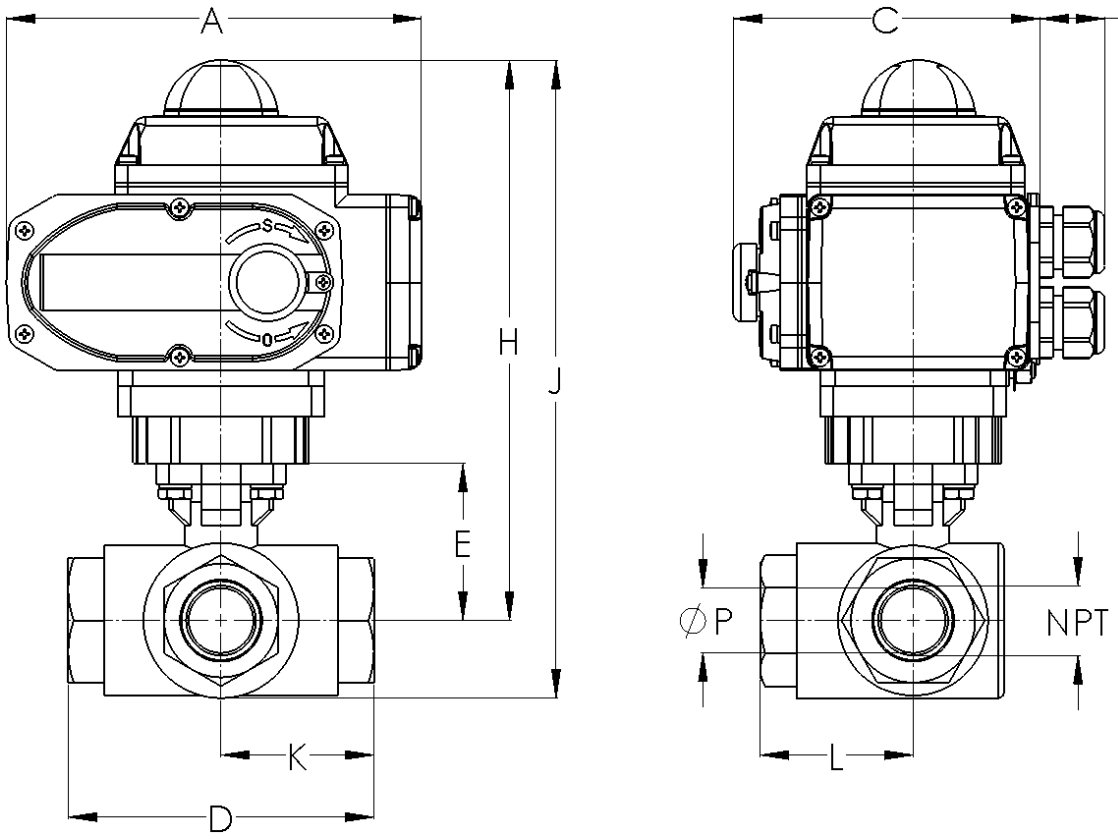
AC Voltages



DC Voltages



Dimensions:



Pipe Size (NPT)		A	C	D	E	H	J	K	L	M	P	Weight (AC/DC)
1/4	inch	6.4	4.7	2.9	1.5	7.7	8.5	1.5	1.5	1.0	0.4	7.6 lbs
	mm	162.0	118.5	76.0	38.2	195.5	215.9	38.0	38.5	25.0	11.0	3.4 kg
3/8	inch	6.4	4.7	2.9	1.5	7.7	8.5	1.5	1.5	1.0	0.4	7.6 lbs
	mm	162.0	118.5	76.0	38.2	195.5	215.9	38.0	38.5	25.0	11.0	3.4 kg
1/2	inch	6.4	4.7	3.3	1.8	8.0	8.9	1.7	1.8	1.0	0.6	8.3 lbs
	mm	162.0	118.5	85.0	45.2	203.2	226.0	42.5	45.0	25.0	16.0	3.8 kg
3/4	inch	6.4	4.7	3.9	2.2	8.4	9.5	1.9	2.0	1.0	0.8	9.4 lbs
	mm	162.0	118.5	98.0	56.5	213.3	241.3	49.0	51.5	25.0	20.0	4.3 kg
1	inch	6.4	4.7	4.4	2.4	8.6	10.0	2.2	2.3	1.0	1.0	11.0 lbs
	mm	162.0	118.5	112.5	61.9	218.4	254.0	56.3	58.0	25.0	25.0	4.9 kg
1-1/4	inch	6.4	4.7	4.9	3.1	9.3	10.8	2.5	2.5	1.0	1.3	13.1 lbs
	mm	162.0	118.5	125.0	78.3	236.2	274.3	63.0	63.0	25.0	32.0	5.9 kg
1-1/2	inch	6.4	4.7	5.6	3.4	9.8	11.6	2.8	2.9	1.0	1.5	17.7 lbs
	mm	162.0	118.5	141.0	87.4	248.9	294.6	70.5	74.5	25.0	38.0	8.0 kg
2	inch	10.1	6.3	6.7	4.2	12.7	14.8	3.4	3.4	1.0	2.0	36.5 lbs
	mm	256.0	160.0	171.0	105.8	322.5	375.9	85.5	85.5	25.0	50.0	16.6 kg