

### Features

- FULL PORT 3-way T flow pattern, functions as diverter, selector, or mixing 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
- 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
- Two auxiliary limit switches included with on-off units
- 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, selector, or mixing valve with a variety of flow path options through the valve. Actuator designed for 70% duty cycle.

### Operation

On-Off 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.

### Construction

<b>Valve Body</b>	ASTM 316 stainless steel
<b>Ball/Stem/End Caps</b>	ASTM 316 stainless steel
<b>Ball Seats</b>	Dyneon® PTFE
<b>Stem Seals</b>	PTFE / Viton®
<b>Gear Drive</b>	Heavy duty alloy steel/aluminium bronze, self locking
<b>Actuator Enclosure</b>	Anti-corrosive durable painted aluminum alloy, Type 4X/ IP67
<b>Visual Valve Position Indicator</b>	High strength glass lens
<b>Fasteners</b>	Stainless Steel
<b>Auxiliary Limit Switches</b>	2 x SPDT (5A/125VAC), on-off actuators only



### Description

Explosion Proof sanitary 3-way T-type 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, valve position confirmation switches (on-off models), 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.

### Standards– Valves

- Construction:
  - ANSI B16/B2/B18
  - FDA 21 CFR 177.1550
  - ANSI B16.34
- Pressure Testing:
  - API 598
- Marking
  - MSS-SP-25

### 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 durable painted  
aluminum Type 4X/ IP67  
weatherproof enclosure.

High strength glass position indi-  
cator

Circular field joints for superior  
explosion-proof reliability

Manual Override with protective  
cover

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

Live -loaded triple PTFE stem  
seal

Encapsulated Dyneon® PTFE  
cavity filler

Internals polished to 8-12 Ra

ASTM 304 stainless steel  
fasteners

Standard Tri-Clamp end caps  
for sanitary connec-  
tions\*

ASTM 316 (CF8M) investment  
grade casting (body & end caps)

Dyneon® PTFE ball seats

Standard Tri-Clamp end caps for  
sanitary connections\*

\* Refer to specifications table for Tri-Clamp size

\* Note: Tri-Clamp size is **NOT** determined by the OD of the end cap



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\*\*)**

## 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.
<b>120 VAC ELECTRIC ACTUATED 3-WAY T-PORT SANITARY STAINLESS BALL VALVE</b>									
582500A	1/2	3/4	4.3	1000	20	110 VAC, 50/60Hz	0.27	70%	B
582501A	3/4	3/4	10.4	1000	20	110 VAC, 50/60Hz	0.27	70%	B
582502A	1	1-1/2	17.3	1000	20	110 VAC, 50/60Hz	0.27	70%	B
582503A	1-1/2	1-1/2	43.3	1000	20	110 VAC, 50/60Hz	0.27	70%	B
582504A	2	2	77.9	1000	20	110 VAC, 50/60Hz	0.27	70%	B
582505A	2-1/2	2-1/2	115.9	600	30	110 VAC, 50/60Hz	0.63	70%	B
<b>24 VDC ELECTRIC ACTUATED 3-WAY T-PORT SANITARY STAINLESS BALL VALVE</b>									
582700A	1/2	3/4	4.3	1000	20	DC24	1.8	70%	G
582701A	3/4	3/4	10.4	1000	20	DC24	1.8	70%	G
582702A	1	1-1/2	17.3	1000	20	DC24	1.8	70%	G
582703A	1-1/2	1-1/2	43.3	1000	20	DC24	1.8	70%	G
582704A	2	2	77.9	1000	20	DC24	1.8	70%	G
582705A	2-1/2	2-1/2	115.9	600	30	DC24	2.4	70%	G

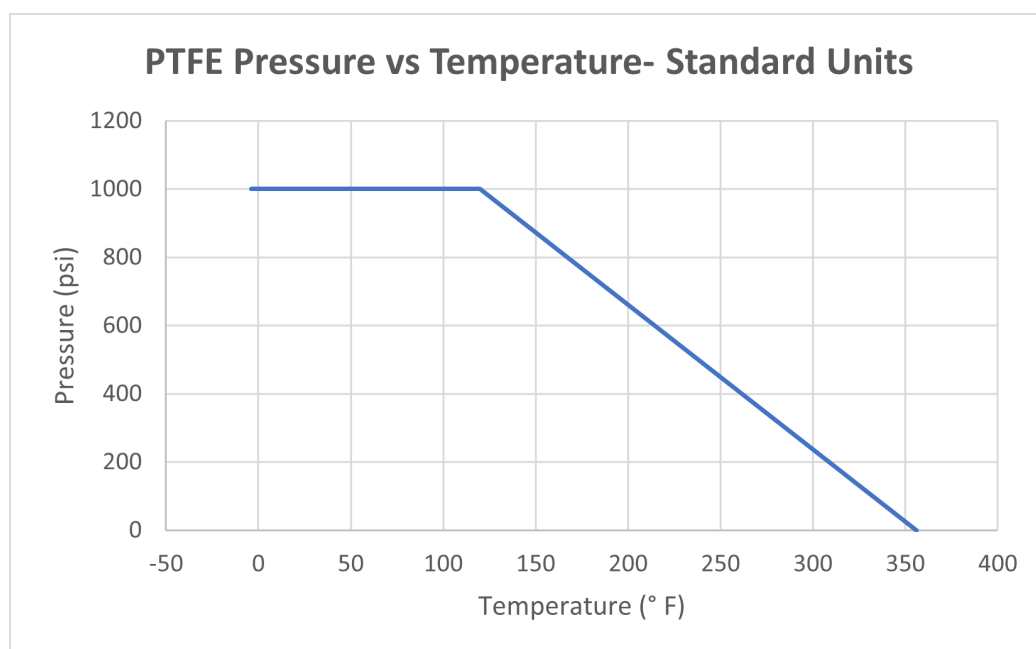
Cv = The GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

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

• Torque at 0 PSI and 75°F

## Pressure/Temperature Chart (PSI/°F)

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



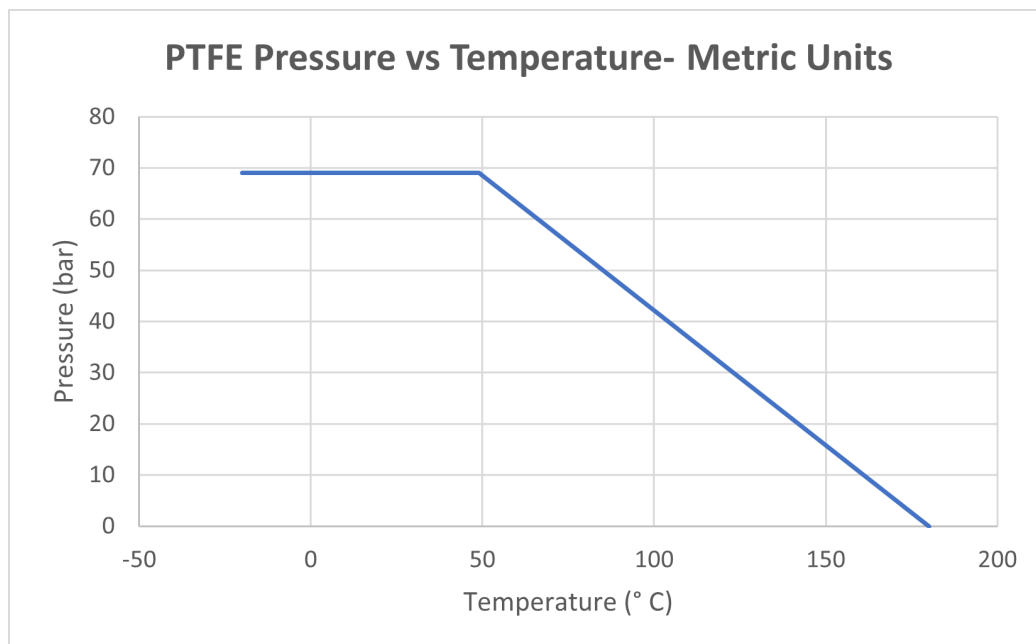
## Specifications (Metric units)

Stock Number	Pipe Size	Tri-Clamp	Kv Flow	Shell Pressure	Cycle Time/90°	Voltage	Current	Duty	Electrical
<b>120 VAC ELECTRIC ACTUATED 3-WAY T-PORT SANITARY STAINLESS BALL VALVE</b>									
582500A	12.7	3/4	5.0	69	20	110 VAC, 50/60Hz	0.27	70%	B
582501A	19.1	3/4	12.0	69	20	110 VAC, 50/60Hz	0.27	70%	B
582502A	25.4	1-1/2	20.0	69	20	110 VAC, 50/60Hz	0.27	70%	B
582503A	38.1	1-1/2	50.0	69	20	110 VAC, 50/60Hz	0.27	70%	B
582504A	50.8	2	90.0	69	20	110 VAC, 50/60Hz	0.27	70%	B
582505A	63.5	2-1/2	134.0	41	30	110 VAC, 50/60Hz	0.63	70%	B
<b>24 VDC ELECTRIC ACTUATED 3-WAY T-PORT SANITARY STAINLESS BALL VALVE</b>									
582700A	12.7	3/4	5.0	69	20	DC24	1.8	70%	G
582701A	19.1	3/4	12.0	69	20	DC24	1.8	70%	G
582702A	25.4	1-1/2	20.0	69	20	DC24	1.8	70%	G
582703A	38.1	1-1/2	50.0	69	20	DC24	1.8	70%	G
582704A	50.8	2	90.0	69	20	DC24	1.8	70%	G
582705A	63.5	2-1/2	134.0	41	30	DC24	2.4	70%	G

\* 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.

For convenience, wiring diagrams for each actuator are attached to the inside of the terminal box cover.

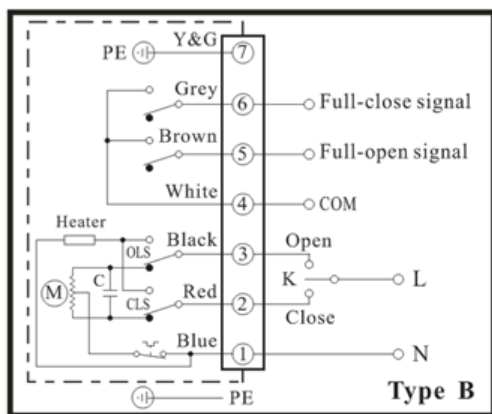
User/installer to supply a three way switch, control relay, PLC outputs, or other suitable switching device to control the actuator position. Actuator should have its own fused and isolated circuit. Do not connect actuators in parallel.

Power should be maintained either in the open or closed position 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.

#### AC Voltage Wiring Diagram



FOR SUPPLY CONNECTIONS, USE WIRES SUITABLE FOR  
AT LEAST 90°C (194°F) Employer Des Fils D'alimentation  
Qui Conviennent Pour Au Moins 90°C

#### AC Voltage Wiring:

[User/Installer to Supply Relay or 3-way Switch (K)]

Terminal 1: Power Neutral (N)

Terminal 2: Power (L) to terminal 2 - Actuator OFF or CLOSED

Terminal 3: Power (L) to terminal 3 - Actuator ON or OPEN

#### Auxiliary Position Confirmation Limit Switches

Terminal 4: Common

Terminal 5: Open status confirmation signal

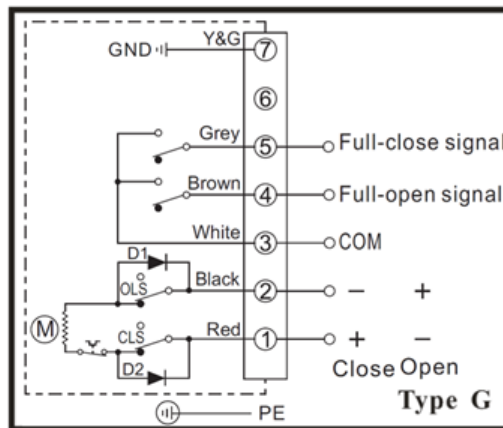
Terminal 6: Closed status confirmation signal

#### Ground PE

Terminal 7: Earth Ground

**NOTES:** 1. Auxiliary limit switches are rated 3A@125/250VAC, 30VDC resistive load. 2. Actuator should have its own fused and isolated circuit. Do not wire actuators in parallel.

#### DC Voltage Wiring Diagram



FOR SUPPLY CONNECTIONS, USE WIRES SUITABLE FOR  
AT LEAST 90°C (194°F) Employer Des Fils D'alimentation  
Qui Conviennent Pour Au Moins 90°C

#### DC Voltage Wiring:

[User/Installer to Supply Reversing Relay or Switch]

Terminal 1: Power Positive (+) to close, power Negative (-) to open

Terminal 2: Power Negative (-) to close, power Positive (+) to open

#### Auxiliary Position Confirmation Limit Switches

Terminal 3: Common

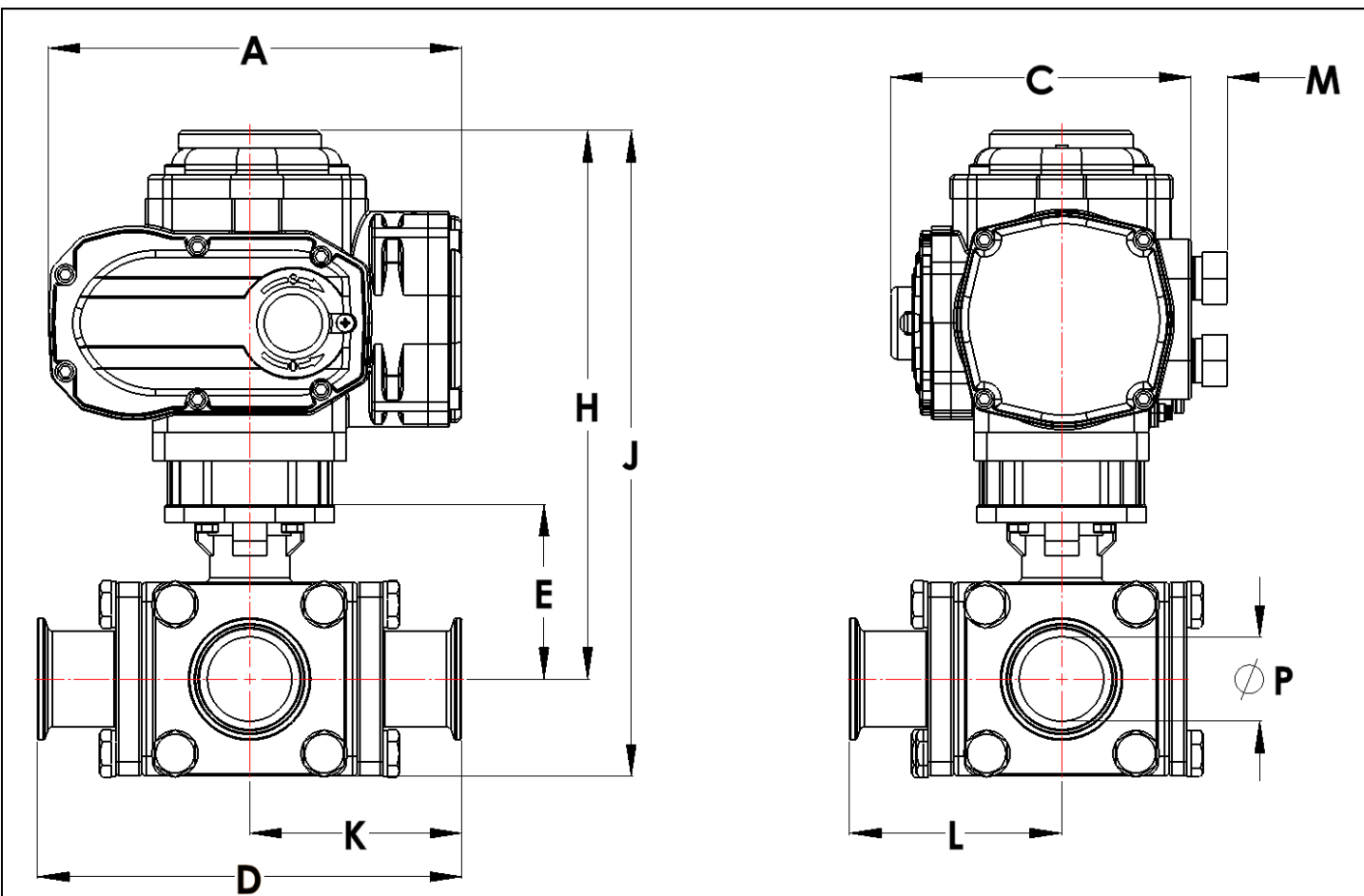
Terminal 4: Open status confirmation signal

Terminal 5: Closed status confirmation signal

#### Ground PE

Terminal 7: Earth Ground

## Dimensions:



Pipe Size		A	C	D	E	H	J	K	L	M	P	Weight
1/2	inch	6.7	3.9	4.6	1.8	6.5	7.5	2.3	2.3	0.6	0.4	10.9 lb
	mm	170.5	99.5	118.0	44.5	165.1	190.5	59.0	59.0	15.0	9.4	24.0 kg
3/4	inch	6.7	3.9	5.0	1.9	6.6	7.6	2.5	2.6	0.6	0.6	11.5 lb
	mm	170.5	99.5	127.0	48.0	167.6	193.0	63.5	64.9	15.0	15.8	25.4 kg
1	inch	6.7	3.9	6.0	2.3	7.0	8.2	3.1	3.0	0.6	0.9	13.8 lb
	mm	170.5	99.5	152.4	59.0	177.8	208.3	77.5	76.2	15.0	22.2	30.4 kg
1 1/2	inch	6.7	3.9	6.9	2.8	7.5	9.1	3.4	3.5	0.6	1.4	19.6 lb
	mm	170.5	99.5	175.0	72.0	190.5	231.1	87.5	88.8	15.0	35.0	43.2 kg
2	inch	6.7	3.9	7.5	3.2	7.9	9.9	3.7	3.8	0.6	1.9	26.8 lb
	mm	170.5	99.5	190.0	82.0	200.7	251.5	95.0	96.3	15.0	47.6	59.1 kg
2 1/2	inch	8.6	4.5	9.0	4.0	9.9	12.3	4.5	4.2	0.6	2.4	36.0 lb
	mm	217.5	114.0	228.0	102.5	251.5	312.4	114.0	107.0	15.0	60.2	79.4 kg