Electric Actuated Explosion Proof High Performance Butterfly Valves

Stainless Steel Wafer Body ASME 150#
3" to 4" Pipe– EPS Positioner Explosion Proof

SERIES
5892
5894

Features

- Double offset design reduces seal wear
- High quality, 316SS (CF8M) valve body, disc, and stem
- Reinforced Teflon (RPTFE) seats for expanded temperature range
- Heavy–duty, single piece cast & machined disc with integral mounting sleeve
- Spring loaded seat cover for easier removal and replacement of the valve seat
- Quarter turn (90°) operation with mechanical travel stops
- Visual dial style valve position indicator
- Rugged aluminum Type 4X/IP67 weatherproof enclosure
- Heavy duty motor with overload protection
- Manual override with end of travel mechanical stops
- Actuators CSA Listed per UL429 and CSA C22.2 and Explosion ratings per Approvals section
- Electrical interface: Two 1/2" NPT threaded ports with temporary plugs. Remove and replace with corresponding explosion proof cable connectors, pipe or plugs

Applications

For use in applications where explosive gases may be present. High performance wafer butterfly valves are used to control the flow of waters, oils, air, certain caustics, and other media compatible with the materials of construction for general service and where an expanded temperature range or higher pressure is required. Actuators designed for 70% duty cycle.

Operation

Electric actuated valves 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 (valve disc). 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	316 stainless steel CF8M
Disc	316 stainless steel CF8M
Disc Seat/ Liner	RPTFE
Stem/ Stem Seals	17-4PH/316SS/ V-ring (same material as seat)
Gear Drive	Heavy duty alloy steel/aluminum 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
Auxiliary Limit Switches	2 x SPDT (5A/125VAC), **(on-off actuators only)**

Description

Explosion Proof mount high performance butterfly valves with 316 stainless steel wafer body are designed for commercial and industrial applications. Valve mounts between two standard ANSI/ASME Class 125/ 150 flanges. Disc is precision machined 316SS. Double offset design to reduce seal wear. Rugged corrosion resistant electric actuator includes a manual override, auto calibration positioner module, thermostatically controlled anticondensation 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

Valves– Standards

- ANSI/ASME B16.5 CLASS150
- ANSI/ASME B16.1 CLASS125
- EN1092 PN10, PN16
- JIS B 2239 10K, 16K
- PED 2014/68/UE

Construction Features

Visual Valve
Position Indicator

Pressure Rating

Pressure Rating: 285 PSI (19.7 Bar)

Temperature Rating

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

Valve Temperature Rating: RPTFE seals: -20 to 500° F (-29 to 260°C)

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

(Not included**)**

Specifications (English units)

Stock Number	Pipe Size (inch)	Orifice Diam. (inch)	Cv Flow Factor	Pressure Max. (PSI)	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED HIGH PERFORMANCE WAFER BODY BUTTERFLY VALVE, RPTFE SEALS, EPS POSITIONER 4-20mA INPUT									
589203	3	2.9	165	285	30	110 VAC, 50/60Hz	0.63	70%	E
589204	4	3.8	400	285	30	110 VAC, 50/60Hz	0.63	70%	E
24 VDC ELECTRIC ACTUATED HIGH PERFORMANCE WAFER BODY BUTTERFLY VALVE, RPTFE SEALS, EPS POSITIONER 4-20mA INPUT									
589403	3	2.9	165	285	30	DC24	2.4	70%	GEY
589404	4	3.8	400	285	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

* Consult compatibility chart for other fluid media. Suitable for vacuum up to 29 inHg

* See P/T Chart

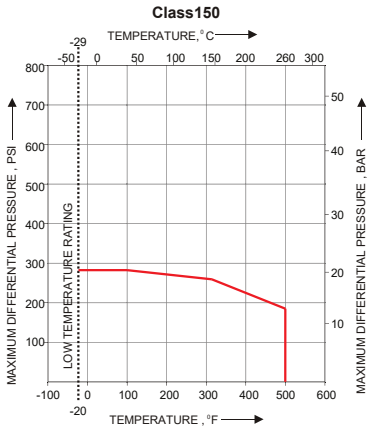
Specifications (Metric units)

Stock Number	Pipe Size (DN)	Orifice Diam. (mm)	Kv Flow Factor	Pressure Max. (Bar)	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED HIGH PERFORMANCE WAFER BODY BUTTERFLY VALVE, RPTFE SEALS, EPS POSITIONER 4-20mA INPUT									
589203	80	73.7	143	19.7	30	110 VAC, 50/60Hz	0.63	70%	E
589204	100	96.5	346	19.7	30	110 VAC, 50/60Hz	0.63	70%	E
24 VDC ELECTRIC ACTUATED HIGH PERFORMANCE WAFER BODY BUTTERFLY VALVE, RPTFE SEALS, EPS POSITIONER 4-20mA INPUT									
589403	80	73.7	143	19.7	30	DC24	2.4	70%	GEY
589404	100	96.5	346	19.7	30	DC24	2.4	70%	GEY

Kv = The number of m³ per hour of 20° C water at 1 bar pressure drop

* Consult compatibility chart for other fluid media. Suitable for vacuum up to 29 inHg

* See P/T Chart



Rated value for 150 Lb body			
Temperature °F	Temperature °C	CF8M (PSI)	CF8M (bar)
-20.2 to 100.4	-29to 38	275.6	19.0
199.4	93	235.0	16.2
300.2	149	214.7	14.8
399.2	204	194.4	13.4
500	260	169.7	11.7

Electrical Wiring– EPS Spitioner

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.

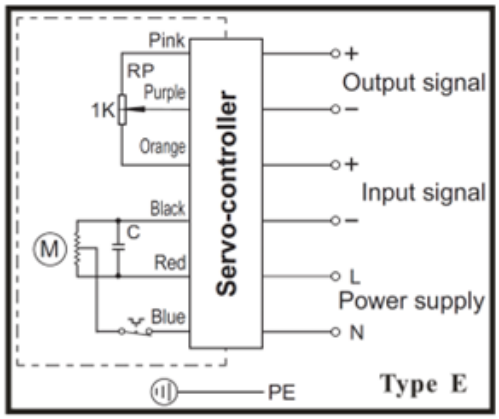
OPERATION (EPS ONLY)

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.

An internal microprocessor on the EPS circuit board continuously monitors the analog input and output signals and compares them to the physical position via

AC Voltage Wiring Diagram

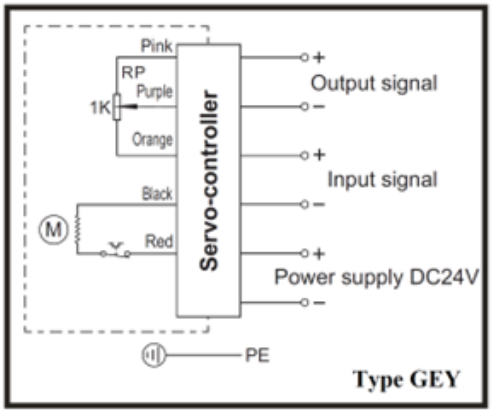


FOR SUPPLY CONNECTIONS, USE WIRES SUITABLE FOR AT LEAST 90°C (194°F) Employer Des Fils D.'alimentation Qui Conviennent Pour Au Moins 90°C

AC Voltage Wiring:

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 (+)

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:

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 (+)

EPS POSITIONER TECHNICAL DATA

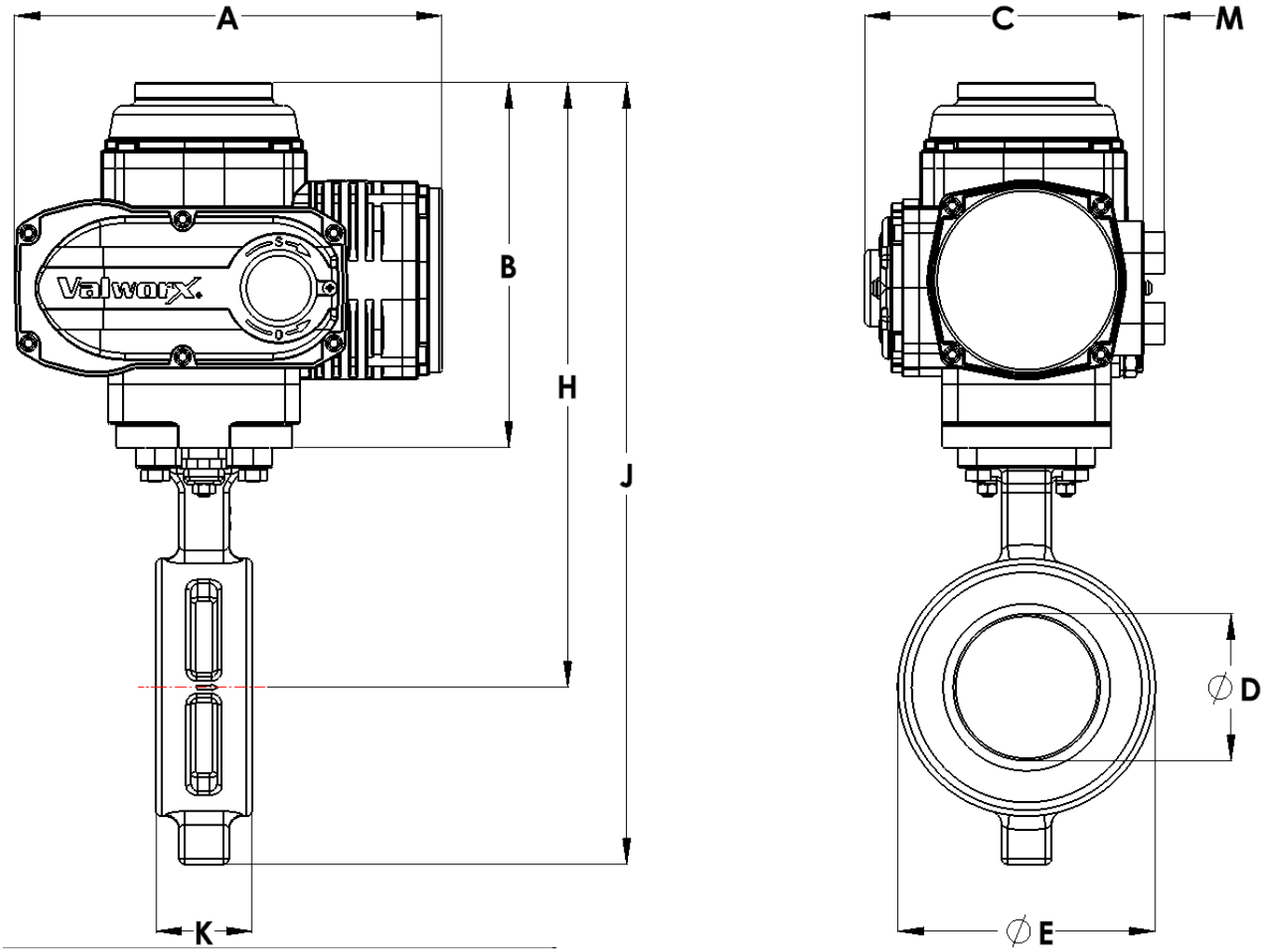
Input Signal: 4-20m A

Output Signal: 4-20m A

Deadband: 0.5% to 5.0%

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

Dimensions:



Suitable between flanges:

- ANSI/ASME B16.5 CLASS150
- ANSI/ASME B16.1 CLASS125
- EN1092 PN10, PN16
- JIS B 2239 10K, 16K
- BS 10 Table D, Table E

Pipe Size		A	B	C	D	E	H	J	K	M	Weight
3	inch	8.6	5.9	5.5	2.8	5.2	10.7	14.2	1.9	0.6	21.9 lb
DN80	mm	217.5	150.0	139.0	72.0	131.0	271.8	360.7	49.0	81.0	9.9 kg
4	inch	8.6	5.9	5.5	3.7	6.1	11.2	15.3	2.1	0.6	25.1 lb
DN100	mm	217.5	150.0	139.0	94.0	155.0	284.5	388.6	54.0	81.0	11.4 kg