

Features

- Epoxy coated ductile iron body with 316 SS disc
- Direct mount lug butterfly valve with ISO5211 mount
- Unique wave line seat reduces torque and extends seal life
- 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
- 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 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. Multi-standard alignment holes, suitable for flanges: ANSI/ASME Class 125/150, EN1092 PN10,PN16, BS10 Table D, E and JIS B2239 10K,16K. Actuators 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

Valve Body	Epoxy coated ductile iron
Disc	316 stainless steel CF8M
Disc Seat/Liner	EPDM or NBR (Buna-N) or FPM (Viton)
Stem/Stem Seals	420 stainless steel / (2) v-rings 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

Electric Explosion Proof direct mount butterfly valves with epoxy-coated ductile iron lug body are designed for commercial and industrial applications. Valve mounts between two standard ANSI/ASME Class 150 flanges and includes integral molded flange gaskets. Disc is precision machined 316SS. Two piece stem and disc design enhances the flow capacity and reduces turbulence. Rugged corrosion resistant electric actuator includes a manual override, valve position confirmation switches thermostatically controlled anti-condensation 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- EN 60204-1:2006

Valves

- Design complies with API-609, MSS SP-67
- Tests per API-598, AWWA C502-87
- CE according to PED 2014/68/EU

Construction Features



Installation Requires-Two 1/2" NPT threaded explosion-proof connectors or pipe for electrical interface
(Not included**)**

Pressure Rating

Pressure Rating: 230 PSI (16 Bar), Vacuum 29in Hg

Temperature Rating

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

Valve Temperature Rating: EPDM seals 0 to 248° F (-18 to 120°C)

NBR seals 5 to 185° F (-15 to 85°C)

FPM (Viton) seals 5 to 338° F (-15 to 170°C)



Visual Valve
Position Indicator

Specifications (English units)

Stock Number	Pipe Size (inch)	Orifice Size (inch)	Cv Flow Factor	Pressure Max. (PSI)	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, EPDM SEALS									
587002	2	2.0	124	230	20	110 VAC, 50/60Hz	0.27	70%	B
587003	2-1/2	2.6	247	230	20	110 VAC, 50/60Hz	0.27	70%	B
587004	3	3.9	470	230	20	110 VAC, 50/60Hz	0.27	70%	B
587005	4	3.9	929	230	20	110 VAC, 50/60Hz	0.27	70%	B
587007	6	5.9	2243	230	30	110 VAC, 50/60Hz	0.63	70%	B
24 VDC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, EPDM SEALS									
587022	2	2.0	124	230	20	DC24	1.8	70%	G
587023	2-1/2	2.6	247	230	20	DC24	1.8	70%	G
587024	3	3.9	470	230	20	DC24	1.8	70%	G
587025	4	3.9	929	230	20	DC24	1.8	70%	G
587027	6	5.9	2243	230	30	DC24	2.4	70%	G
120 VAC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, NBR (BUNA-N) SEALS									
587202	2	2.0	124	230	20	110 VAC, 50/60Hz	0.27	70%	B
587203	2-1/2	2.6	247	230	20	110 VAC, 50/60Hz	0.27	70%	B
587204	3	3.9	470	230	20	110 VAC, 50/60Hz	0.27	70%	B
587205	4	3.9	929	230	20	110 VAC, 50/60Hz	0.27	70%	B
587207	6	5.9	2243	230	30	110 VAC, 50/60Hz	0.63	70%	B
24 VDC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, NBR (BUNA-N) SEALS									
587222	2	2.0	124	230	20	DC24	1.8	70%	G
587223	2-1/2	2.6	247	230	20	DC24	1.8	70%	G
587224	3	3.9	470	230	20	DC24	1.8	70%	G
587225	4	3.9	929	230	20	DC24	1.8	70%	G
587227	6	5.9	2243	230	30	DC24	2.4	70%	G
120 VAC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, VITON SEALS									
587402	2	2.0	124	230	20	110 VAC, 50/60Hz	0.27	70%	B
587403	2-1/2	2.6	247	230	20	110 VAC, 50/60Hz	0.27	70%	B
587404	3	3.9	470	230	20	110 VAC, 50/60Hz	0.27	70%	B
587405	4	3.9	929	230	20	110 VAC, 50/60Hz	0.27	70%	B
587407	6	5.9	2243	230	30	110 VAC, 50/60Hz	0.63	70%	B
24 VDC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, VITON SEALS									
587422	2	2.0	124	230	20	DC24	1.8	70%	G
587423	2-1/2	2.6	247	230	20	DC24	1.8	70%	G
587424	3	3.9	470	230	20	DC24	1.8	70%	G
587425	4	3.9	929	230	20	DC24	1.8	70%	G
587427	6	5.9	2243	230	30	DC24	2.4	70%	G

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

Specifications (Metric units)

Stock Number	Pipe Size (inch)	Orifice Size (mm)	Kv Flow Factor	Pressure Max. (Bar)	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, EPDM SEALS									
587002	2	50	107	16	20	110 VAC, 50/60Hz	0.27	70%	B
587003	2-1/2	65	212	16	20	110 VAC, 50/60Hz	0.27	70%	B
587004	3	80	404	16	20	110 VAC, 50/60Hz	0.27	70%	B
587005	4	100	799	16	20	110 VAC, 50/60Hz	0.27	70%	B
587007	6	150	1929	16	30	110 VAC, 50/60Hz	0.63	70%	B
24 VDC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, EPDM SEALS									
587022	2	50	107	16	20	DC24	1.8	70%	G
587023	2-1/2	65	212	16	20	DC24	1.8	70%	G
587024	3	80	404	16	20	DC24	1.8	70%	G
587025	4	100	799	16	20	DC24	1.8	70%	G
587027	6	150	1929	16	30	DC24	2.4	70%	G
120 VAC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, NBR (BUNA-N) SEALS									
587202	2	50	107	16	20	110 VAC, 50/60Hz	0.27	70%	B
587203	2-1/2	65	212	16	20	110 VAC, 50/60Hz	0.27	70%	B
587204	3	80	404	16	20	110 VAC, 50/60Hz	0.27	70%	B
587205	4	100	799	16	20	110 VAC, 50/60Hz	0.27	70%	B
587207	6	150	1929	16	30	110 VAC, 50/60Hz	0.63	70%	B
24 VDC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, NBR BUNA-N) SEALS									
587222	2	50	107	16	20	DC24	1.8	70%	G
587223	2-1/2	65	212	16	20	DC24	1.8	70%	G
587224	3	80	404	16	20	DC24	1.8	70%	G
587225	4	100	799	16	20	DC24	1.8	70%	G
587227	6	150	1929	16	30	DC24	2.4	70%	G
120 VAC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, VITON SEALS									
587402	2	2.0	107	16	20	110 VAC, 50/60Hz	0.27	70%	B
587403	2-1/2	2.5	212	16	20	110 VAC, 50/60Hz	0.27	70%	B
587404	3	3.0	404	16	20	110 VAC, 50/60Hz	0.27	70%	B
587405	4	4.0	799	16	20	110 VAC, 50/60Hz	0.27	70%	B
587407	6	6.0	1929	16	30	110 VAC, 50/60Hz	0.63	70%	B
24 VDC ELECTRIC ACTUATED LUG BODY BUTTERFLY VALVE, VITON SEALS									
587422	2	2.0	107	16	20	DC24	1.8	70%	G
587423	2-1/2	2.5	212	16	20	DC24	1.8	70%	G
587424	3	3.0	404	16	20	DC24	1.8	70%	G
587425	4	4.0	799	16	20	DC24	1.8	70%	G
587427	6	6.0	1929	16	30	DC24	2.4	70%	G

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

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.

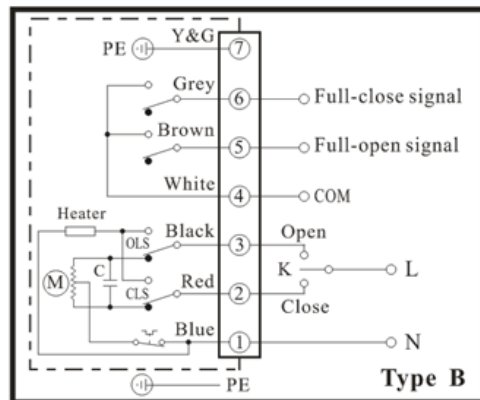
Wiring diagrams for each actuator are attached to the inside of the terminal box cover.

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.

AC Voltage Wiring Diagram



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

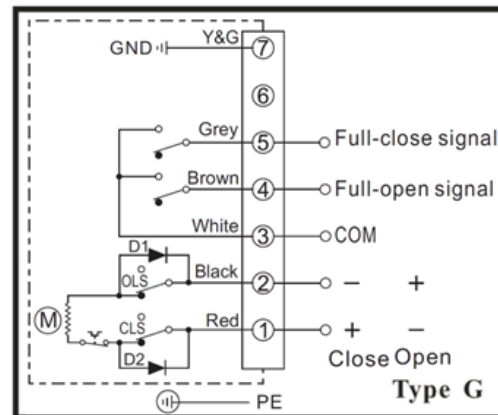
Terminal 6: Closed status confirmation signal

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 Convient 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

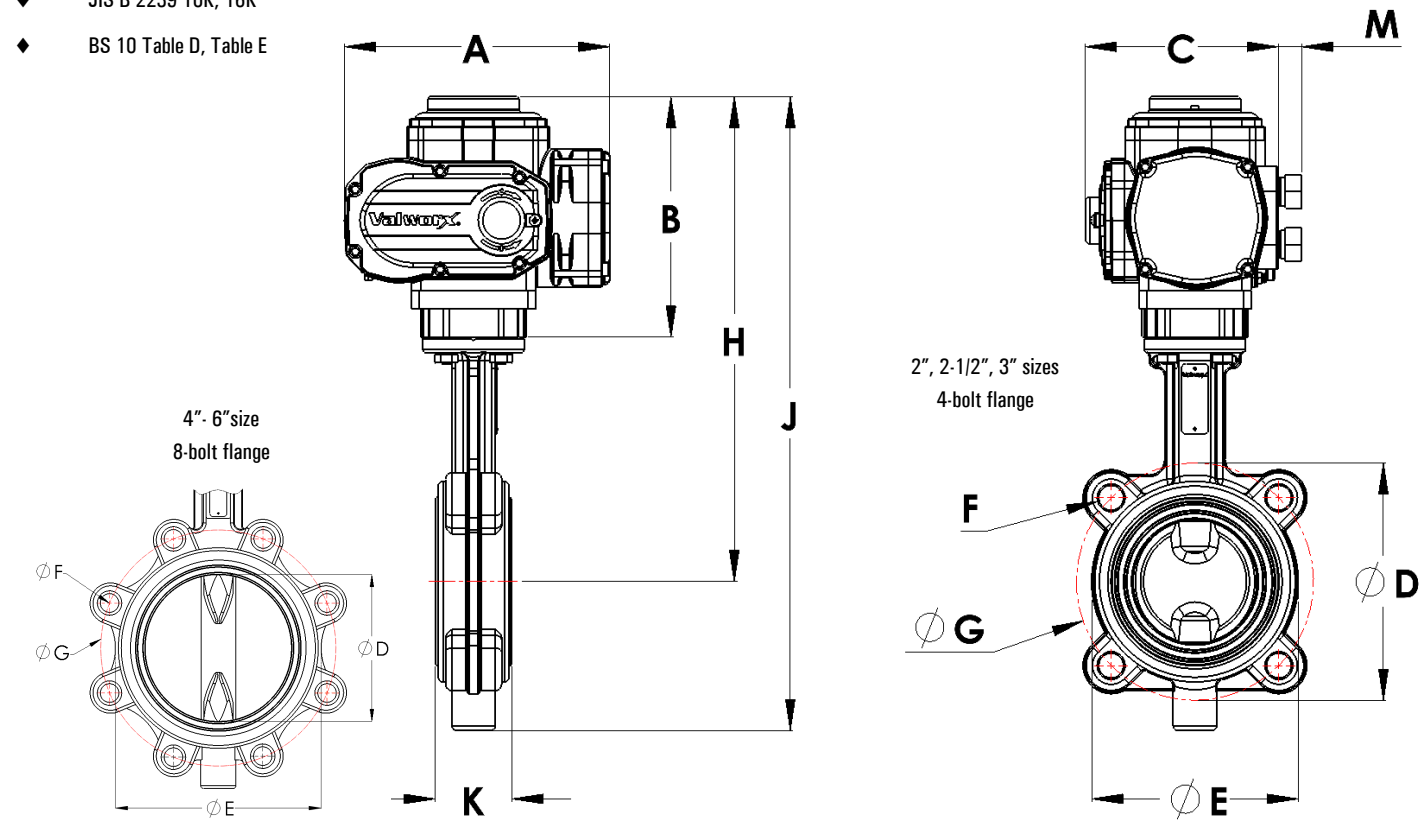
Ground PE

Terminal 7: Earth Ground

Dimensions:

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	F	G	H	J	K	M	Weight
2	inch	6.7	4.7	4.7	2.0	3.9	4) 5/8-11	4.7	12.4	15.4	1.8	0.6	12.9 lb
	mm	170.5	120.0	120.5	50.0	99.0	-	120.5	316.0	392.0	46.0	15.0	5.9 kg
2-1/2	inch	6.7	4.7	4.7	2.6	4.5	4) 5/8-11	5.5	12.8	16.0	1.9	0.6	14.0 lb
	mm	170.5	120.0	120.5	65.0	113.0	-	139.7	324.0	406.0	49.0	15.0	6.4 kg
3	inch	6.7	4.7	4.7	3.2	5.1	4) 5/8-11	6.0	13.7	17.4	1.9	0.6	14.9 lb
	mm	170.5	120.0	120.5	80.0	129.0	-	152.4	347.0	442.0	49.0	15.0	6.8 kg
4	inch	6.7	4.7	4.7	3.9	6.2	8) 5/8-11	7.5	13.9	18.4	2.2	0.6	20.7 lb
	mm	170.5	120.0	120.5	100.0	157.0	-	190.5	354.0	467.0	56.0	15.0	9.4 kg
6	inch	8.6	5..5	4.5	5.9	8.4	8) 5/8-11	9.5	16.6	22.2	2.3	0.6	32.1 lb
	mm	217.5	139.0	114.0	150.0	213.0	-	241.3	421.0	564.0	59.0	15.0	14.6 kg