

Features

- Industrial grade PVC butterfly valve
- External LED power on and diagnostic light
- IP67 polyamide weatherproof enclosure with UV protection
- Multi-voltage brushless motor with auto-voltage sensing
- Electronic torque limiter - protects against valve jams
- Wafer butterfly valve with ISO5211 direct mount actuator
- Polypropylene (PP) disc with 316 Stainless Steel shaft
- EPDM Primary Liner
- Anti-condensation heater
- Manual override with dome style visual valve position indicator
- Electrical connections via external DIN plugs
- Auxiliary limit switches to confirm open/closed valve position

Applications

PVC butterfly valves with EPDM seals are typically used for on-off control of water and other media compatible with the materials of construction. NSF approved material for use in conditions requiring potable water. Actuator designed for 75% duty cycle. Valve has multi-standard alignment holes, suitable for ISO or ANSI flanges.

PVC butterfly valves should never be used for compressed gas applications.

Operation

Electric actuated valve uses power-to-open and power-to-close, stays in the last known position with power failure (accessory failsafe battery backup option available). On receipt of a continuous voltage signal, the motor runs and via a flat gear system rotates the disc 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	PVC (dark gray)
Disc	PP (Polypropylene)
Primary Liner	EPDM
Stem/Stem Seals	316 SS Stem / EPDM Stem Seals
Shaft O-Rings/Anti Friction Rings	EPDM Shaft O-Rings / PTFE Anti Friction Rings
Actuator Enclosure	Anti-corrosive Polyamide, UV protection
Manual Override/Position Indicator	Glass-filled Polyamide / Clear Polyamide Dome
Auxiliary Limit Switches	2 x SPST 3A@125/250VAC, 30VDC resistive load
Fasteners	Stainless Steel



Description

Electric operated direct mount butterfly valves with PVC wafer body are designed for commercial and industrial applications. Valve mounts between two standard ISO or ANSI Class 150 flanges, and includes integral molded EPDM flange gaskets (seat to flange seal). Disc is Polypropylene. Rugged long life brushless electric actuator includes a manual override, thermostatically controlled anti-condensation heater, and over-torque protection.

Approvals

Actuators

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

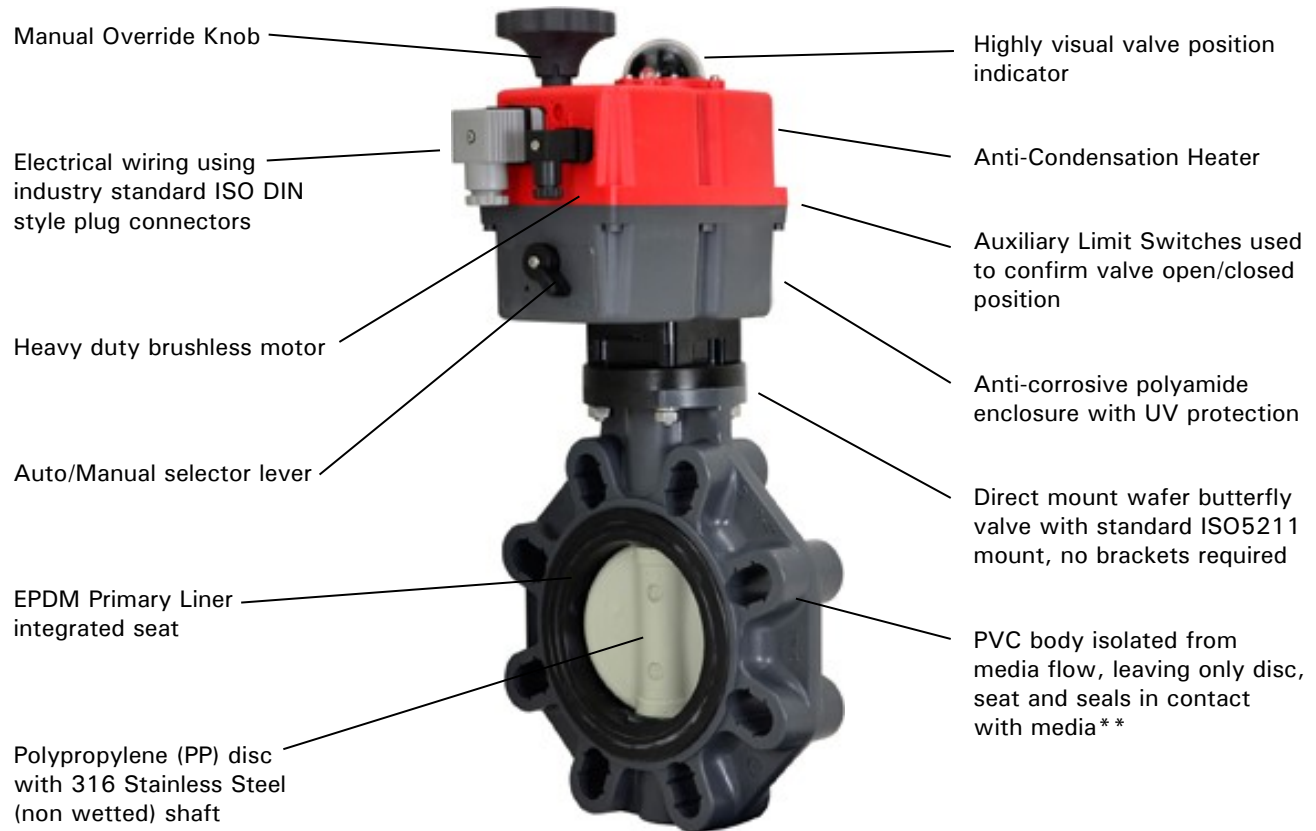


Valves

- NSF International certified to:
 - NSF/ANSI 372 Drinking Water
 - NSF/ANSI 61 G
 - ANSI B16.5
 - Disc PP Type 1 homopolymer per ASTM 4101



Construction Features



Pressure Rating

Pressure Rating: *232 PSI (16 Bar, 2" valves), 150 PSI (10 Bar, 3-8" valves) ~ at 73° F (23° C)

* See P/T chart (page 3)

** Not for use in end of line service.

Temperature Rating

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

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

Optional Functions

BSR: Battery Spring Return Kit

- actuator fails to a safe position with loss of power

DPS: Digital Positioning System

- valve disc position controlled by 4-20mA or 0-10V control signal

Specifications (English units)

Stock Number	Pipe Size (inch)	Disc Diameter (inch)	Cv Flow Factor*	Pressure Max. (PSI)**	Cycle Time /90° (sec) + /-10%	Max. Current Draw (Amps)			
						110VAC	240VAC	24VAC	24VDC
Wafer Body EPDM Seals: 24-240V AC or DC									
540502	2	2.0	90	232	9	0.30	0.16	1.28	0.97
540504	3	3.2	249	150	13	0.43	0.21	1.98	1.63
540506	4	3.9	413	150	29	0.33	0.18	1.50	1.22
540508	6	5.9	1309	150	58	0.77	0.47	3.30	2.70
540510	8	7.9	2135	150	58	0.77	0.47	3.30	2.70

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

** See P/T Chart below for more detail

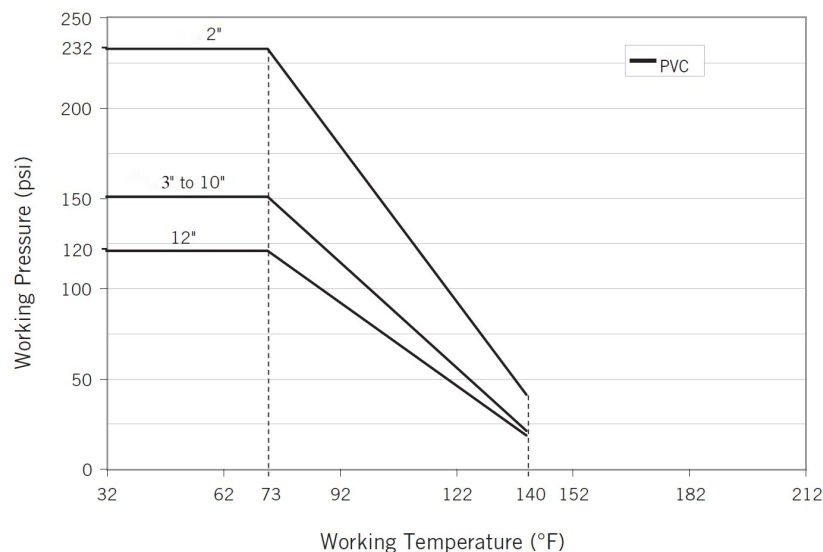
Specifications (Metric units)

Stock Number	Pipe Size (DN)	Orifice Diameter (mm)	Kv Flow Factor*	Pressure Max. (Bar)**	Cycle Time /90° (sec) + /-10%	Max. Current Draw (Amps)			
						110VAC	240VAC	24VAC	24VDC
Wafer Body EPDM Seals: 24-240V AC or DC									
540502	50	50	78	16	9	0.30	0.16	1.28	0.97
540504	80	80	215	10	13	0.43	0.21	1.98	1.63
540506	100	100	357	10	29	0.33	0.18	1.50	1.22
540508	150	150	1132	10	58	0.77	0.47	3.30	2.70
540510	200	200	1847	10	58	0.77	0.47	3.30	2.70

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

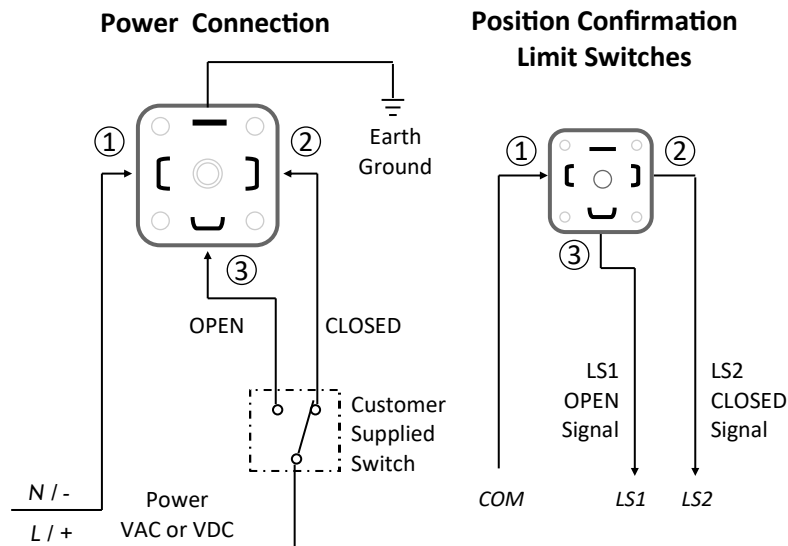
** See P/T Chart below for more detail

Pressure Temperature Chart



Electrical Wiring: On/Off and BSR Battery Spring Return Versions

Voltage: 24-240 Volts AC or 24-135 Volts DC, 1ph, -0/+ 5% (Auto-voltage sensing)



Function: ON-OFF version

Power Connections

Power to PIN 1 and 2
- actuator CLOSED (pos 1)

Power to PIN 1 and 3
- actuator OPEN (pos 2)

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

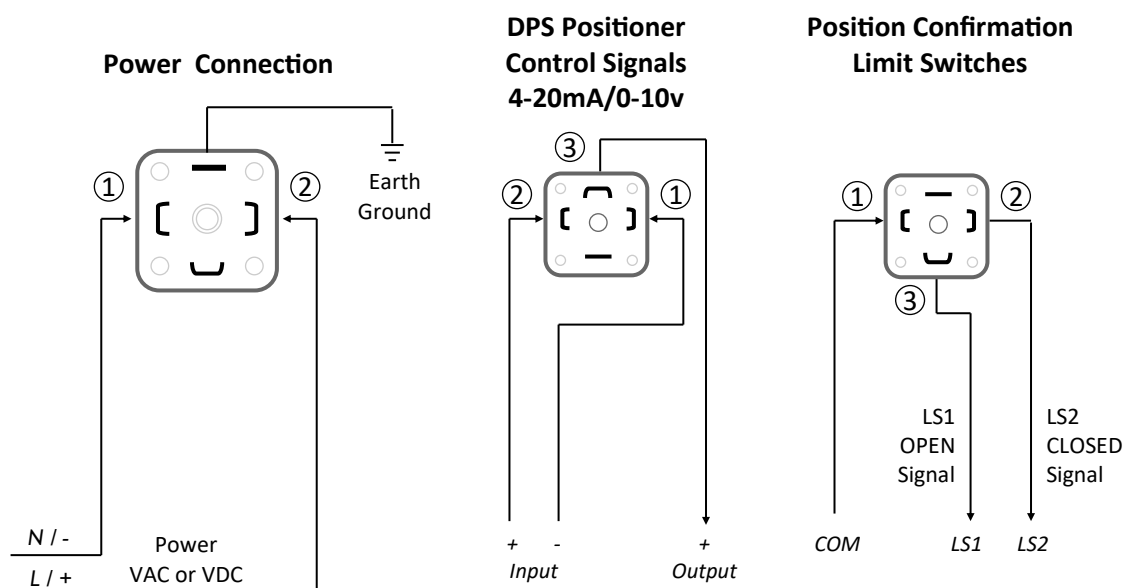
PIN 1 (COM) and 2 to confirm actuator is closed

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

Electrical Wiring: Actuators with DPS Digital Positioner Option

Voltage: 24-240 Volts AC or 24-135 Volts DC, 1 ph, -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.

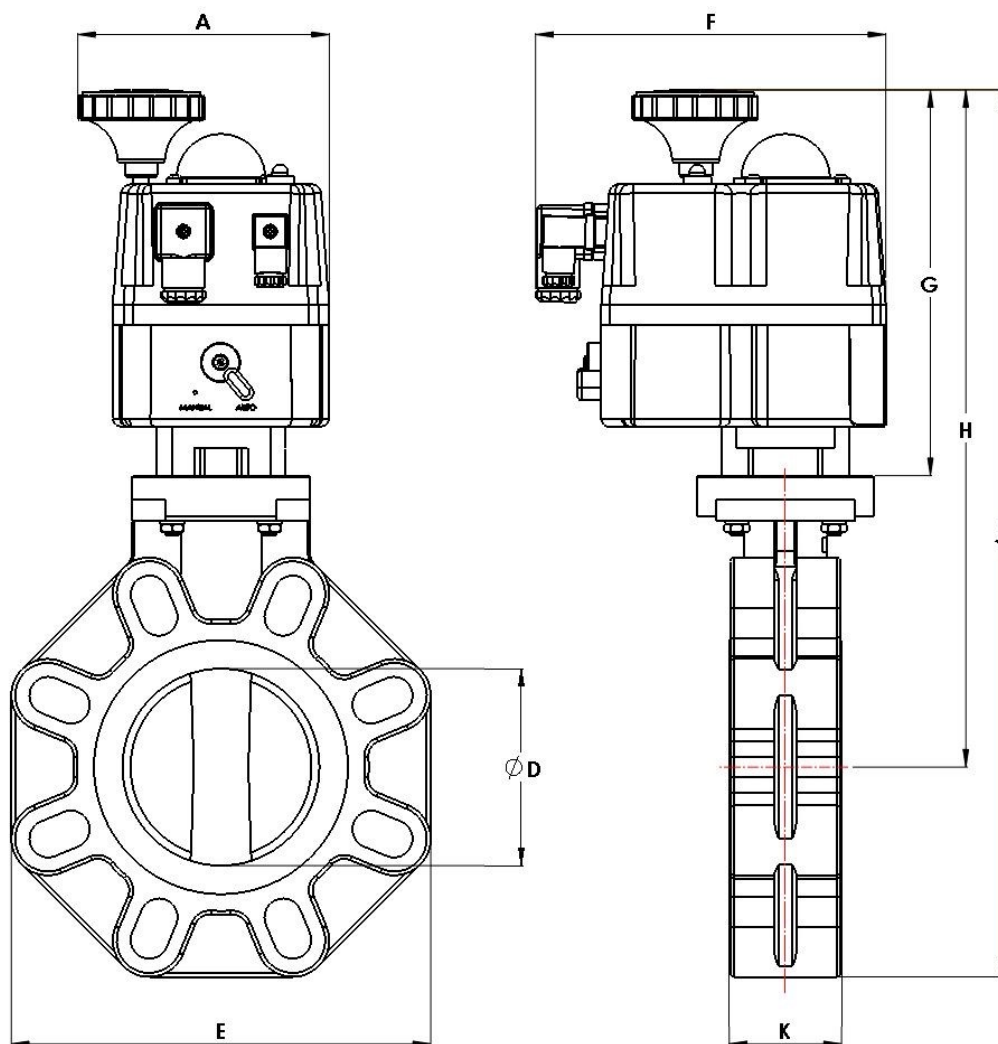
Function: Position confirmation limit switches

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

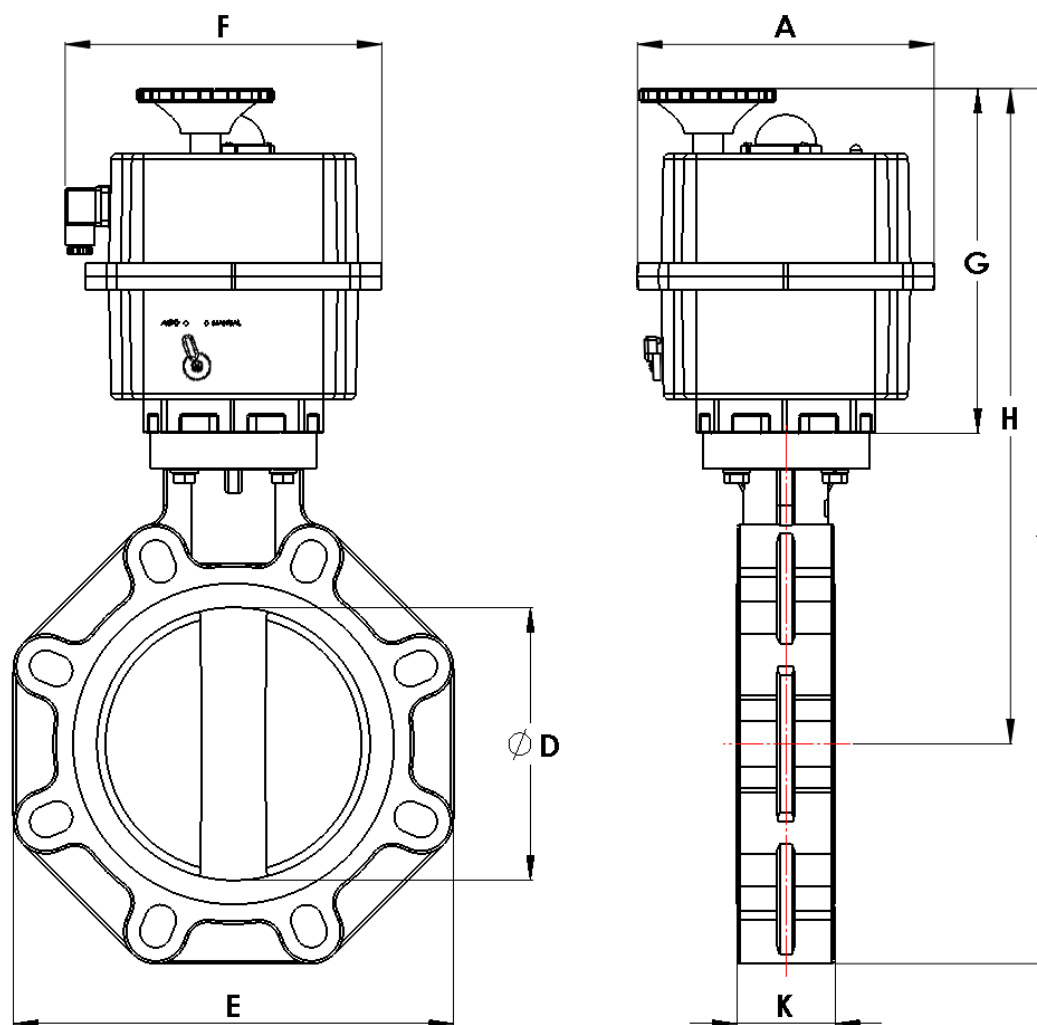
Dimensions:



Pipe Size		A	D	E	F	G	H	J	K	Valve ISO	Weight
2	inch	5.0	2.0	5.8	7.0	7.7	11.2	14.0	1.7	F05	5.7 lb
DN50	mm	128.0	50.0	147.0	178.0	196.0	286.0	356.0	44.0		2.6 kg
3	inch	5.0	3.1	7.3	7.0	7.7	13.0	16.6	2.0	F07	8.8 lb
DN80	mm	128.0	80.0	185.0	178.0	196.0	329.0	422.0	50.0		4.0 kg
4	inch	5.0	3.9	8.3	7.0	7.7	13.5	17.8	2.2	F07	10.5 lb
DN100	mm	128.0	100.0	211.0	178.0	196.0	344.0	451.0	56.0		4.8 kg

Dimensions remain unchanged for all versions (On-Off, BSR failsafe & DPS positioning)

Dimensions:



Pipe Size		A	D	E	F	G	H	J	K	Valve ISO	Weight
6 DN150	inch	8.9	5.9	10.6	9.1	10.0	17.0	22.3	2.8	F07	19.8 lb
	mm	218.0	150.0	268.0	232.0	253.0	433.0	566.0	71.0		9.0 kg
8 DN200	inch	8.9	7.9	12.7	9.1	10.0	19.0	25.2	2.8	F10	26.0 lb
	mm	218.0	200.0	323.0	232.0	253.0	480.0	641.0	72		11.8 kg

Dimensions remain unchanged for all versions (On-Off, BSR failsafe & DPS positioning)