

Butterfly Valve

Assemblies



Make the most of your energy

Schneider
Electric

AT A GLANCE

- 2 to 18" two-way assemblies and 2 to 16" three-way assemblies
- Chilled/hot water/glycol applications
- EPDM resilient seats with tongue and groove design and build in O-ring seal
- Stainless steel double D stem, requires no pins or screws to connect the disc and stem
- Extended neck design for temperature isolation and ease of insulation installation
- Nylon 11 coated ductile iron disc
- Wide choice of pneumatic and electric actuators and control signals
- Cast iron lug bodies mate with ANSI class 125/150 flanges
- Bubble tight shut off
- Bidirectional flow
- Series S70 NEMA4 actuators available in 24 or 120 Vac

Schneider Electric's butterfly valve line offers a wide range of two- and three-way sizes, along with low pressure pneumatic spring return, electric non-spring return, and spring return actuator models that operate with on/off, floating, or proportional control signals.

All assemblies include industry leading butterfly valve features, stainless steel double "D" shafts, nylon 11 coated ductile iron disc machined to provide bubble tight shut off, minimum torque, and longer seat life. The tongue and groove resilient seat design with molded in O-ring eliminates the use of flange gaskets and allows for ease of maintenance or replacement of the resilient seat. These features provide years of optimum performance and reliability.

Applications

Typical applications include data centers, cooling towers, central system shutoff and bypass piping control, thermal storage, and chiller and boiler control.

Applicable Documentation

For more technical information, refer to Butterfly Valve Assemblies Selection Guide, F-27440

Valve Body Specifications

Service

Hot and chilled water, up to 60% glycol.

See *EN-205 Water System Guidelines*, F-26080.

Fluid Temperature Limits

-40 to 250 °F (-40 to 120 °C).

Sizes

2 to 18" two-way models.

2 to 16" three-way models.

Neck

2" extended neck.

Flow

Bi-directional.

Leakage

Bubble tight shutoff

Materials

Body

Polyester coated cast Iron ASTM A126 Class B lug. Mates with ANSI Class 125/150 flanges.

Stem

2 to 8": 416 stainless steel double D stem.

10" and 12": 316 stainless steel double D stem.

14" and up: 316 Stainless Steel round shaft woodruff key slot.

Disc

Ductile iron nylon 11 coated disc

Seat

EPDM tongue and groove seat and molded O-ring flange seal.

Part Numbering System – Rubber Lined

V X X X - 6 X X X - X X X X - X - X X

Control Signal Type
 A = 2-Position
 B = Body only
 F = Floating (SPDT, center off)
 K = Pneumatic
 S = Proportional (Vdc, mAdc)

Disc
 F = Full 175 psi close to 12"
 U = Undercut 50 psi close

Accessory
 4 = Positive positioner
 S = Auxiliary switch
 Leave the digit blank for no accessories

Type
 6 = Butterfly

Style
 2 = 2-Way
 3 = 3-Way

Power Loss Action
 0 = NSR
 1 = NO
 2 = NC

Actuator Code
 See Table 1
 If actuator code is only three digits, leave the fourth digit blank.

Body Style
 L = Nylon coated disc and lug body
 M = AlumBronze Disc*
 SS = Stainless Steel Disc*
 *Note: (Consult Factory)

Port Code
 11 = 2"
 12 = 2.5"
 13 = 3"
 14 = 4"
 15 = 5"
 16 = 6"
 17 = 8"
 18 = 10"
 19 = 12"
 20 = 14"
 21 = 16"
 22 = 18"
 * Note:
 Larger Sizes
 (Consult
 Factory)

Flow Pattern^c

Pattern	Main Valve ^a	Main Valve Position ^d	Linked Valve
0 = 2-Way	-	-	-
1 = 3-Way ^b	A	NC	C
2 = 3-Way ^b	B	NC	C
7 = 3-Way ^b	B	NO	C
8 = 3-Way ^b	A	NO	C
9 = Special	-	-	-

a. The letter indicates the main valve and where the actuator is mounted.
 b. Refer to the flow diagram to the right.
 c. The view represented is looking down on the stem side of the valve.
 d. Spring return models position on loss of power

Actuator Codes

Table 1: Actuator Codes and Part Numbers^a

Refer to the part numbering system illustration on the previous page.

Actuator Code^b	On/Off or Floating SR	Actuator Code^b	Modulating (2 to 10 Vdc, 4 to 20mA) SR with the addition of a 500 ohm resistor
556	MA41-7153 (VAx) (On/Off)	556	MS41-7153 (VSx)
556D	2 MA41-7153 (VAx) (On/Off)	556D	2 MS41-7153 (VSx) (Modulating)
556	MF41-7153 (VFx) (Floating)	-	-
556D	2 MF41-7153 (VFx) (Floating)		
Actuator Code^b	On/Off or Floating SR with Two SPDT Auxiliary Switches	Actuator Code^b	Modulating (2 to 10 Vdc, 4 to 20 mA) SR with the addition of a 500 ohm resistor with Two Auxiliary Switches
556	1 MA41-7153-502 (VAxS) (On/Off)	556	MS41-7153-502 (VSxS) (Modulated)
556D	1 MA41-7153 & 1 MA41-7153-502 (VAxS) (On/Off)	556D	1 MS41-7153 & 1 MS41-7153-502 (VSxS) (Modulated)
556	1 MF41-7153-502 (VFxS) (Floating)	-	-
556D	1 MF41-7153 & 1 MF41-7153-502 (VFxS) (Floating)		
Actuator Code^b	On/Off or Floating NSR	Actuator Code^b	Modulating (0 to 10 Vdc, 4 to 20 mA) NSR
E24	NR-2216-521 (VFx)	E24	NR-2216-541 (VSx)
E25	NR-2224-521 (VFx)	E25	NR-2224-541 (VSx)
E25D	2 NR-2224-521 (VFx)	E25D	2 NR-2224-541 (VSx)
Actuator Code^b	On/Off or Floating NSR with Two SPDT Auxiliary Switches	Actuator Code^b	Modulating (0 to 10 Vdc, 4 to 20 mA) NSR with Two SPDT Auxiliary Switches
E24	NR-2216-522 (VFxS)	E24	NR-2216-542 (VSxS)
E25	NR-2224-522 (VFxS)	E25	NR-2224-542 (VSxS)
E25D	1 NR-2224-521 & 1 NR-2224-522 (VFxS)	E25D	1 NR-2224-541 & 1 NR-2224-542 (VSxS)
Actuator Code	On/Off or Floating NSR with One SPDT Auxiliary Switch	Actuator Code	Modulating (0 to 10 Vdc) NSR with One SPDT Auxiliary Switch
907	MP-9810-129 (VAxS)	909	MP-9810-129 with CP-8391-456 (VSxS)
Actuator Code^c	On/Off NSR with Two SPDT Auxiliary Switches and Heater	Actuator Code^c	Modulating (0 to 10 Vdc, 4 to 20 mA) NSR with Two SPDT Auxiliary Switches and Heater
E10	S70-120-0061-H (VAxS)	E12	S70-120-0061-SV (VAxS)
E20	S70-120-0121-H (VAxS)	E22	S70-120-0121-SV (VSxS)
E30	S70-120-0201-H (VAxS)	E32	S70-120-0201-SV (VSxS)
E40	S70-120-0301-H (VAxS)	E42	S70-120-0301-SV (VSxS)
E50	S70-120-0501-H (VAxS)	E52	S70-120-0501-SV (VSxS)
E60 (120 Vac only)	S70-120-0651-H (VAxS)	E62 (120 Vac only)	S70-120-0651-SV (VSxS)
Actuator Code^b	Pneumatic Base Model SR	Actuator Code^b	Pneumatic Modulating (Positive Positioner) SR
221	MK-7121 (VKx)	221	MK4-7121 (VKx4)
251	M556-51 (VKx)	251	M556-14 (VKx4)
251D	2 - M556-51(VKx)	251D	1 - M556-51 & 1- M556-14 (VKx4)

a. See Table 2 to verify the correct actuator application for the valve selected.

b. D = Dual actuators

c. For 24 Vac powered change actuator code E to F (F10 = S70-24-0061-H example)

Table 2: Two-Way and Three-Way Valve Assemblies

Size	Close Off	Two-Way Butterfly Valve Assemblies ^a					Three-Way Butterfly Valve Assemblies ^a				
		SmartX SR ^b	Direct Coupled NSR ^c	High Torque NSR ^c	NEMA 4 with Hand Wheel NSR ^c	20 PSI Pneu. SR ^b	SmartX SR ^b	Direct Coupled NSR ^c	High Torque NSR ^c	NEMA 4 with Hand Wheel NSR ^c	20 PSI Pneu. SR ^b
2"	175	S	S	–	S	S	S	S	–	S	S
2.5"	175	S	S	–	S	S	S	S	–	S	S
3"	175	D	S	–	S	S	D	S	–	S	S
4"	50	D	S	–	–	S	D	S	–	S	–
	175	–	D	–	S	S	–	D	–	S	S
5"	50	–	S	–	S	S	–	D	–	S	S
	175	–	–	–	S	S	–	–	–	S	S
6"	50	–	D	–	–	–	–	D	–	S	S
	175	–	–	S	S	S	–	–	S	S	D
8"	50	–	–	S	S	S	–	–	S	S	D
	175	–	–	S	S	D	–	–	S	S	–
10"	50	–	–	S	S	D	–	–	S	S	–
	175	–	–	S	S	–	–	–	S	S	–
12"	50	–	–	S	S	–	–	–	S	S	–
	175	–	–	S	S	–	–	–	S	S	–
14"	50	–	–	–	S	–	–	–	–	S	–
	150	–	–	–	S	–	–	–	–	–	–
16"	50	–	–	–	S	–	–	–	–	S	–
18"	50	–	–	–	S	–	–	–	–	–	–

a. S = Single actuator, D = Dual actuators, – = Assembly combination not available.

b. SR = Spring return actuator available as configured for normally open and normally closed two-way butterfly valves.

c. NSR = Non spring return actuator.

Table 3: Actuators

Actuator Family	MX41-7153 SmartX SR	NR-22xx Direct Coupled NSR	MP-9810-129 High Torque NSR	S70-xxx-NEMA 4 with Manual Operator with Disconnect NSR	MK-7121/M566 20 PSI Pneumatic
Spring Return	Yes	No	No	No	Yes
Available Input Signals	24 Vac. Two Position, Floating, 2 to 10 Vdc. Proportional, 4 to 20 mA with the addition of a 500 ohm resistor	24 Vac. Three Wire Two Position, Floating, 0 to 10 Vdc Proportional, 4 to 20 mA	120 Vac. Three Wire Two Position, Floating, 0 to 10 Vdc Proportional ^a	120 Vac. or 24 Vac. Three Wire Two Position, Floating, 0 to 10 Vdc, 4 to 20 mA. Proportional	8 to 13 psi Nominal Operating Pressure Range
Available Options	Auxiliary Switch	Auxiliary Switch	Auxiliary Switch (standard)	Auxiliary Switch (standard) and Heater (standard)	Positive Positioner

a. Requires a CP-8391-456 drive for proportional control.

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