

FE Series Automated Butterfly Valves

Product Data Sheet



introduction

< STANDARDS >



ASTM D1784



ANSI B16.5

IPEX FE Series Automated Butterfly Valves incorporate many features of our industrial FK valve, yet the all PVC construction and EPDM liner make this valve the perfect choice for water and light industrial applications. This versatile valve features double self-lubricating seals, and a special shaped liner and body cavity guaranteeing a bubble tight seal while keeping break-away torque at an absolute minimum. Inserting stainless steel lugs into special molded features in the body allows for end of line installation. FE Series Automated Butterfly Valves are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards.

Valve Availability

Body Material:	PVC
Disc Material:	PVC
Size Range:	1-1/2" through 12"
Pressure:	232psi (1-1/2" to 2"), 150psi (2-1/2" to 8"), 75psi (10" to 12")
Seats:	EPDM
Seals:	EPDM
Body Style:	Wafer
End Connections:	Flanged (ANSI 150)
Actuator Control:	Double Acting Pneumatic, Spring Return Pneumatic, Electric



FE Series Automated Butterfly Valves

Sample Specification



1.0 Butterfly Valves - FE

1.1 Material

- The valve body and disc shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.
- The valve shaft shall be made of zinc plated steel (sizes 1-1/2" to 8").
- The valve shaft shall be made of 420 stainless steel (sizes 10" and 12").

1.2 Seats

- The disc liner shall be made of EPDM

1.3 Seals

- The o-ring seals shall be made of EPDM.

- 1.4 All wetted parts of the valves shall comply with standards that are equivalent to NSF Standard 61 for potable water.

2.0 Connections

2.1 Flanged style

- The ANSI 150 flanged connections shall conform to the dimensional standard ANSI B16.5.

3.0 Design Features

- The valve shall be of wafer design.
- The shaft shall have standard ISO square dimensions for direct mounting of actuators.
- The disc seat shall be a trapezoidal elastomeric liner and provide a bubble tight seal.
- The liner shall completely isolate the valve body from the process flow.
- The liner shall function as a flange gasket on both sides of the valve.
- The body cavity shall feature special channeling to prevent liner slippage and compression.
- The disc, seats, and seals shall be the only wetted parts.
- Teflon® seated o-ring seals shall prevent the shaft from becoming wetted.

FE Series Automated Butterfly Valves

Sample Specification (cont'd)



3.1 Pressure Rating

- All valves sizes 2-1/2" through 8" shall be rated at 150psi at 73°F.
- All valves sizes 10" through 12" shall be rated at 75psi at 73°F.

3.2 Markings

- All valves shall be marked to indicate size, material designation, and manufacturers name or trade mark.

3.3 Color Coding

- All valves shall be color-coded dark gray.

4.0 All valves shall be Xirtec®140 by IPEX or approved equal.

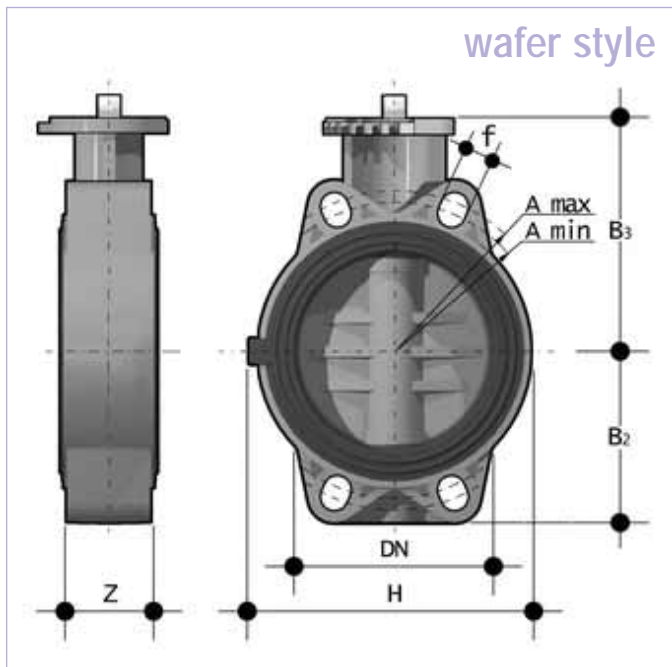
5.0 Actuators

- All actuators shall be factory installed by IPEX.
- Pneumatic actuators shall be dual piston rack and pinion design, sized for 80psi control air pressure.
- Electric actuators shall have 110 VAC reversing motors, torque limiters, thermal protection, and NEMA 4 or equivalent housings.

FE Series Automated Butterfly Valves

Technical Data

dimensions



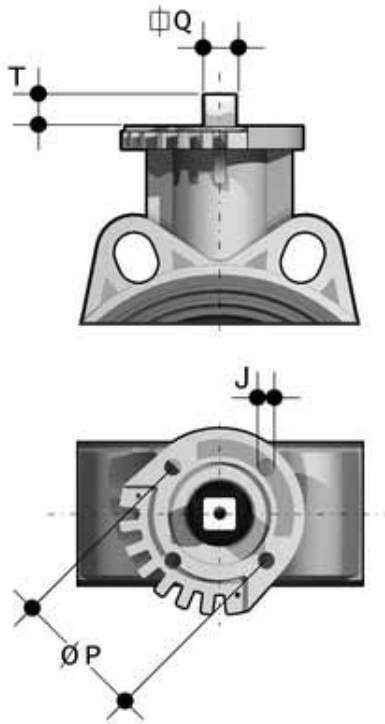
Dimensions (inches)										
Size	DN	Z	B ₂	B ₃	H	A _{min}	A _{max}	f	# holes	Pattern
1-1/2	1.57	1.30	2.36	4.17	5.20	3.68	4.29	0.75	4	square
2	1.97	1.69	2.76	4.45	5.79	4.25	4.88	0.75	4	square
2-1/2	2.56	1.81	3.15	4.84	6.50	5.04	5.67	0.75	4	square
3	3.15	1.93	3.54	5.59	5.12	5.71	6.26	0.75	4	rectangular
4	3.94	2.20	4.13	5.98	5.91	6.50	7.48	0.75	4	rectangular
5	4.92	2.52	4.76	6.93	7.28	8.03	8.46	0.91	4	rectangular
6	5.91	2.76	5.20	7.44	8.27	9.06	9.53	0.91	4	rectangular
8	7.87	2.80	6.34	8.46	12.80	11.02	11.73	0.91	8	square
10	9.84	4.49	8.27	9.76	15.94	14.25	14.25	1.00	12	square
12	11.81	4.49	9.65	12.01	18.70	17.00	17.00	1.00	12	square

FE Series Automated Butterfly Valves

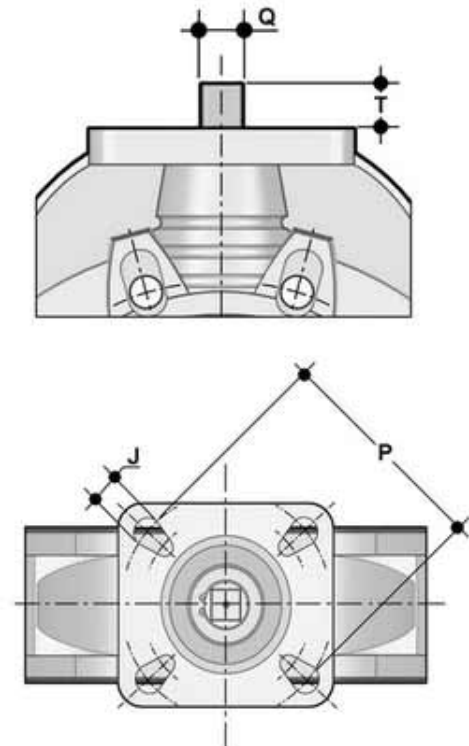
Technical Data (cont'd)

dimensions (cont'd)

sizes 1-1/2" to 8"



sizes 10" and 12"



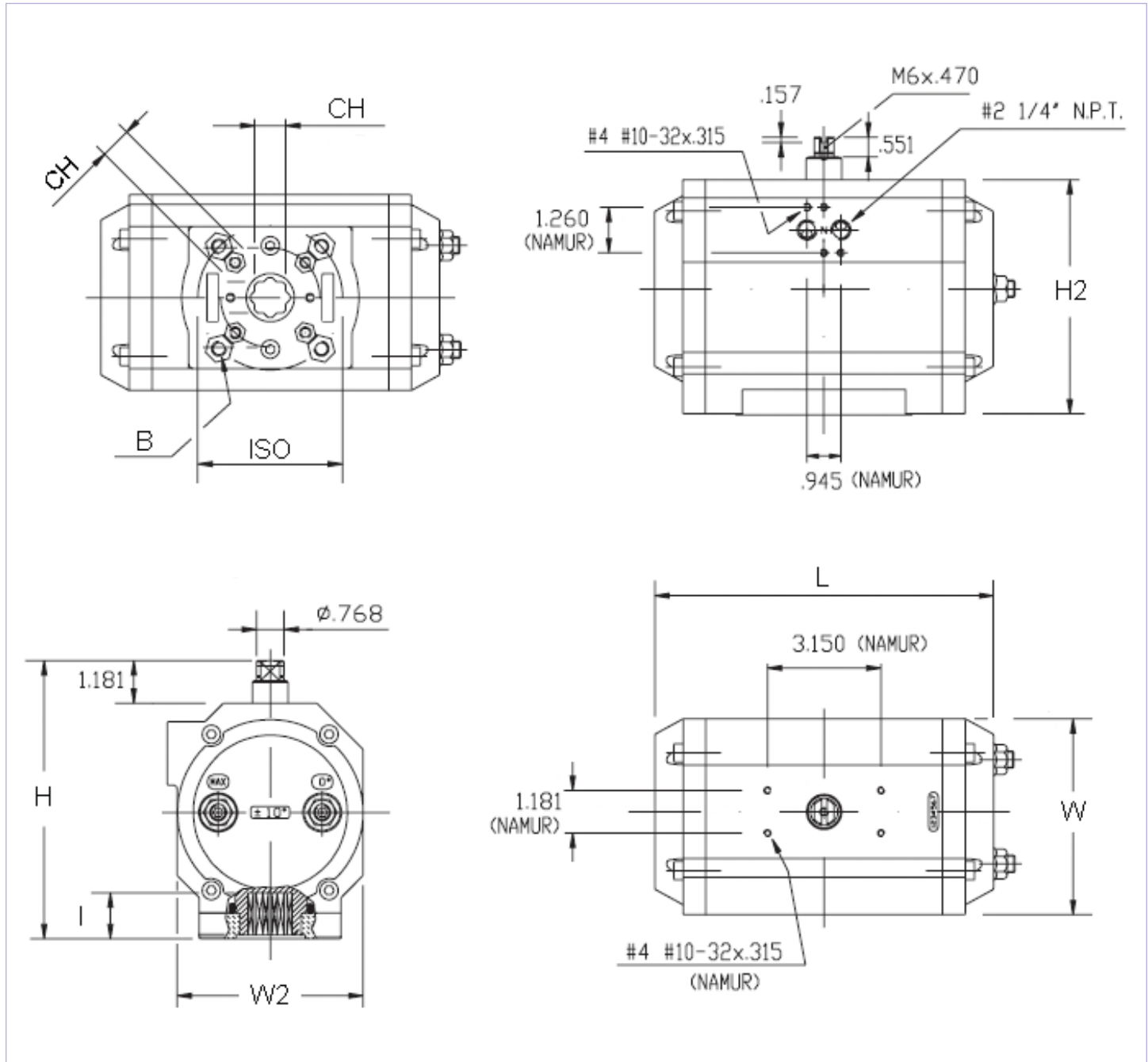
Size	Dimensions (inches)				
	T	Q	ISO	P	J
1-1/2	0.47	0.43	F05	1.97	0.28
2	0.47	0.43	F05	1.97	0.28
2-1/2	0.47	0.43	F05 / F07	1.97 / 2.76	0.28 / 0.35
3	0.63	0.55	F07	2.76	0.35
4	0.63	0.55	F07	2.76	0.35
5	0.75	0.67	F07	2.76	0.35
6	0.75	0.67	F07	2.76	0.35
8	0.94	0.87	F10	4.02	0.43
10	0.94	0.87	F10 / F12 / F14	4.02 / 4.92 / 5.51	0.43 / 0.51 / 0.67
12	0.94	0.87	F10 / F12 / F14	4.02 / 4.92 / 5.51	0.43 / 0.51 / 0.67

FE Series Automated Butterfly Valves

Technical Data (cont'd)

pneumatic actuator dimensions

models UT16, UT21, UT26, UT31, UT36, UT41, UT46, UT51, UT61



FE Series Automated Butterfly Valves

Technical Data (cont'd)

pneumatic actuator dimensions (cont'd)

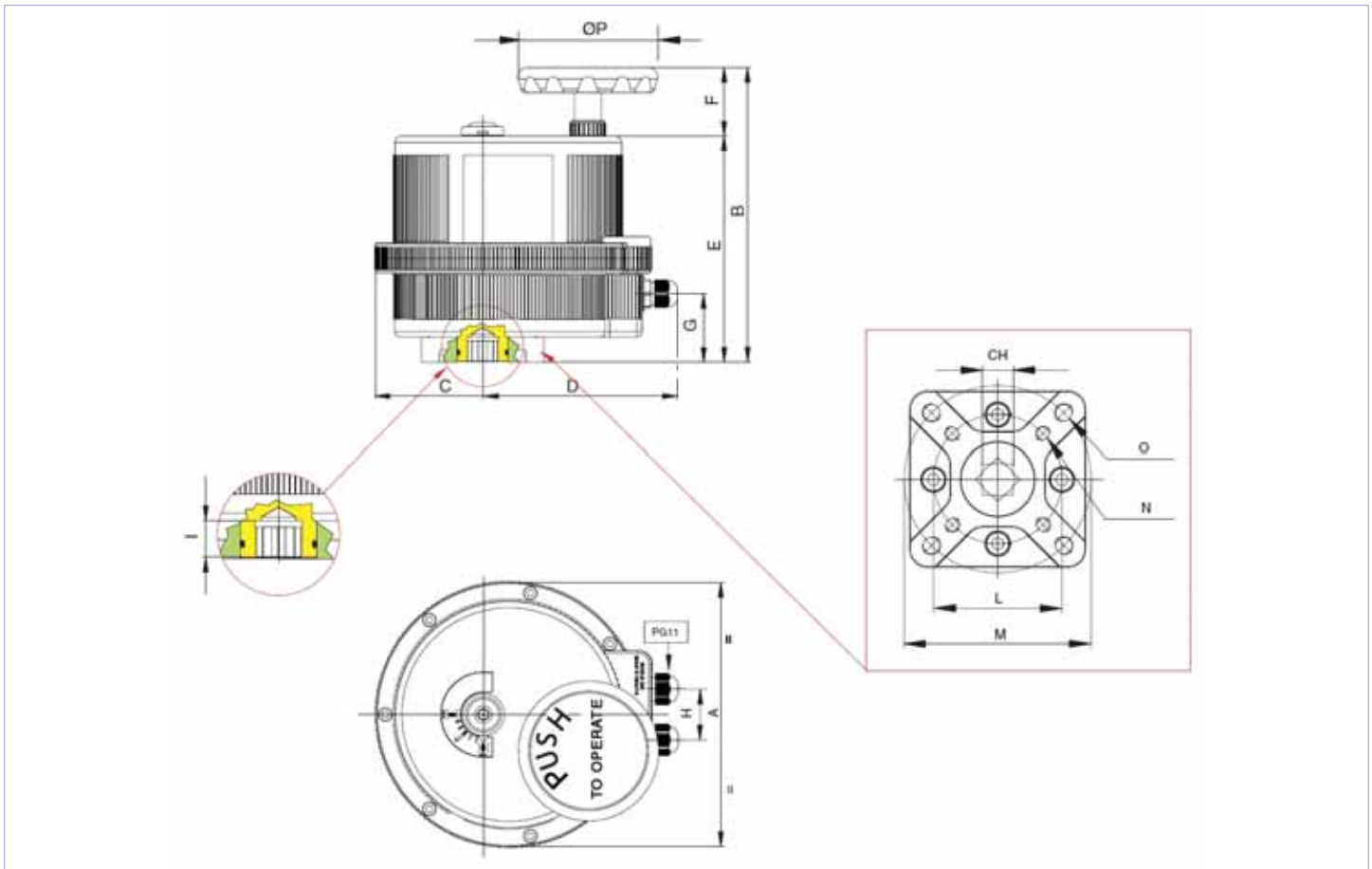
Valve Size	Double Acting Model	ISO	Dimensions (inches)							
			CH	L	W	W ₂	H	H ₂	I	B
1-1/2	UT16DA	F05 / F07	0.55	6.50	3.35	2.76	4.76	3.54	0.75	1/4-20 UNC x 0.51
2	UT16DA	F05 / F07	0.55	6.50	3.35	2.76	4.76	3.54	0.75	1/4-20 UNC x 0.51
2-1/2	UT16DA	F05 / F07	0.55	6.50	3.35	2.76	4.76	3.54	0.75	1/4-20 UNC x 0.51
3	UT21DA	F05 / F07	0.67	6.97	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51
4	UT21DA	F05 / F07	0.67	6.97	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51
5	UT26DA	F05 / F07	0.67	9.41	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51
6	UT31DA	F05 / F07	0.67	9.06	4.45	4.09	6.38	5.16	0.91	5/16-18 UNC x 0.51
8	UT36DA	F07 / F10	0.87	9.69	5.43	5.16	7.72	6.50	1.18	3/8-16 UNC x 0.71
10	UT51DA	F10 / F12	1.06	14.21	7.28	7.17	9.76	8.54	1.46	1/2-13 UNC x 0.79
12	UT51DA	F10 / F12	1.06	14.21	7.28	7.17	9.76	8.54	1.46	1/2-13 UNC x 0.79

Valve Size	Spring Return Model	ISO	Dimensions (inches)							
			CH	L	W	W ₂	H	H ₂	I	B
1-1/2	UT21S5	F05 / F07	0.67	6.97	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51
2	UT26S4	F05 / F07	0.67	9.41	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51
2-1/2	UT26S4	F05 / F07	0.67	9.41	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51
3	UT31S4	F05 / F07	0.67	9.06	4.45	4.09	6.38	5.16	0.91	5/16-18 UNC x 0.51
4	UT36S4	F07 / F10	0.87	9.69	5.43	5.16	7.72	6.50	1.18	3/8-16 UNC x 0.71
5	UT41S4	F07 / F10	0.87	11.42	5.43	5.16	7.72	6.50	1.18	3/8-16 UNC x 0.71
6	UT46S4	F07 / F10	0.87	13.82	5.95	5.75	8.19	6.97	1.18	3/8-16 UNC x 0.71
8	UT51S4	F10 / F12	1.06	14.21	7.28	7.17	9.76	8.54	1.46	1/2-13 UNC x 0.79
10	UT61S5	F14	1.42	17.48	9.25	9.13	12.01	10.79	1.97	5/8-11 UNC x 0.98
12	UT61S5	F14	1.42	17.48	9.25	9.13	12.01	10.79	1.97	5/8-11 UNC x 0.98

FE Series Automated Butterfly Valves

Technical Data (cont'd)

electric actuator dimensions



Valve Size	Actuator Model	ISO	Dimension (Inches)													
			CH	A	B	C	D	E	F	G	H	I	L	M	N	O
1-1/2	VB015	F03 / F05	0.43	4.84	6.28	1.67	4.78	5.67	0.61	4.35	1.26	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
2	VB030	F03 / F05	0.43	6.18	7.39	2.38	5.01	5.75	1.64	1.30	1.42	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
2-1/2	VB030	F03 / F05	0.43	6.18	7.39	2.38	5.01	5.75	1.64	1.30	1.42	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
3	VB060	F05 / F07	0.55	7.28	8.46	2.66	5.77	6.81	1.65	2.01	1.42	0.63	1.97	2.76	1/4-20 UNC x 0.67	5/16-18 UNC x 0.67
4	VB060	F05 / F07	0.55	7.28	8.46	2.66	5.77	6.81	1.65	2.01	1.42	0.63	1.97	2.76	1/4-20 UNC x 0.67	5/16-18 UNC x 0.67
5	VB110	F07 / F10	0.67	8.19	9.14	3.31	6.02	7.01	2.13	2.13	1.57	0.75	2.76	4.02	5/16-18 UNC x 0.79	3/8-16 UNC x 0.79
6	VB110	F07 / F10	0.67	8.19	9.14	3.31	6.02	7.01	2.13	2.13	1.57	0.75	2.76	4.02	5/16-18 UNC x 0.79	3/8-16 UNC x 0.79
8	VB190	F07 / F10	0.87	8.19	9.14	3.31	6.02	7.01	2.13	2.13	1.57	0.75	2.76	4.02	5/16-18 UNC x 0.79	3/8-16 UNC x 0.79

FE Series Automated Butterfly Valves

Technical Data (cont'd)



Note:
Pneumatic actuator performance is based on 80 psi available control air pressure.

actuator technical data

Valve Size (inches)	Dimensions		
	Double Acting Pneumatic	Actuator Model Spring Return Pneumatic	Electric
1-1/2	UT16DA	UT21S5	VB015
2	UT16DA	UT26S4	VB030
2-1/2	UT16DA	UT26S4	VB030
3	UT21DA	UT31S4	VB060
4	UT21DA	UT36S4	VB060
5	UT26DA	UT41S4	VB110
6	UT31DA	UT46S4	VB110
8	UT36DA	UT51S4	VB190
10	UT51DA	UT61S5	-
12	UT51DA	UT61S5	-

pneumatic actuator torque data

Valve Size (inches)	Dimension							
	Double Acting		Spring Return			Air Torque (in-lbs)		
	Model	Torque (in-lbs)	Model	Spring Set (standard)	Spring Torque (in-lbs) Start	Spring Torque (in-lbs) End	Start	End
1-1/2	UT16DA	275	UT21S5	S5	307	230	270	193
2	UT16DA	275	UT26S4	S4	392	247	503	358
2-1/2	UT16DA	275	UT26S4	S4	392	247	503	358
3	UT21DA	500	UT31S4	S4	502	374	626	498
4	UT21DA	500	UT36S4	S4	824	614	986	776
5	UT26DA	750	UT41S4	S4	1011	741	1259	989
6	UT31DA	1000	UT46S4	S4	1779	1120	2005	1346
8	UT36DA	1600	UT51S4	S4	2203	1738	2762	2297
10	UT51DA	4500	UT61S5	S5	5366	4277	4823	3734
12	UT51DA	4500	UT61S5	S5	5366	4277	4823	3734

pneumatic actuator weights and air consumption

Valve Size (inches)	Dimension					
	Model	Double Acting		Spring Return		
		Weight (lbs)	Air Cons. (in ³)	Model	Weight (lbs)	Air Cons. (in ³)
1-1/2	UT16DA	4.03	25.6	UT21S5	7.16	18.1
2	UT16DA	4.03	25.6	UT26S4	9.88	30.0
2-1/2	UT16DA	4.03	25.6	UT26S4	9.88	30.0
3	UT21DA	6.33	44.4	UT31S4	12.28	40.6
4	UT21DA	6.33	44.4	UT36S4	19.88	75.0
5	UT26DA	8.82	68.7	UT41S4	23.61	100.0
6	UT31DA	10.67	88.9	UT46S4	33.11	115.6
8	UT36DA	16.71	153.1	UT51S4	49.89	181.3
10	UT51DA	39.24	425.0	UT61S5	101.19	343.8
12	UT51DA	39.24	425.0	UT61S5	101.19	343.8

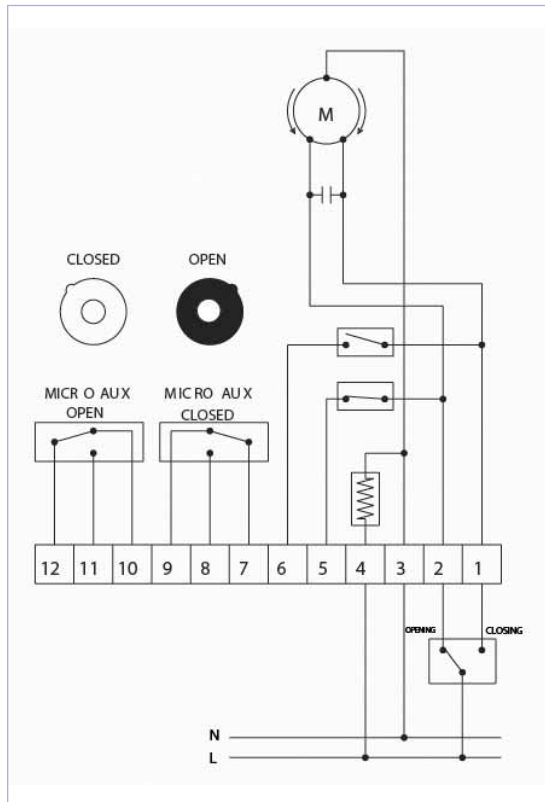


FE Series Automated Butterfly Valves

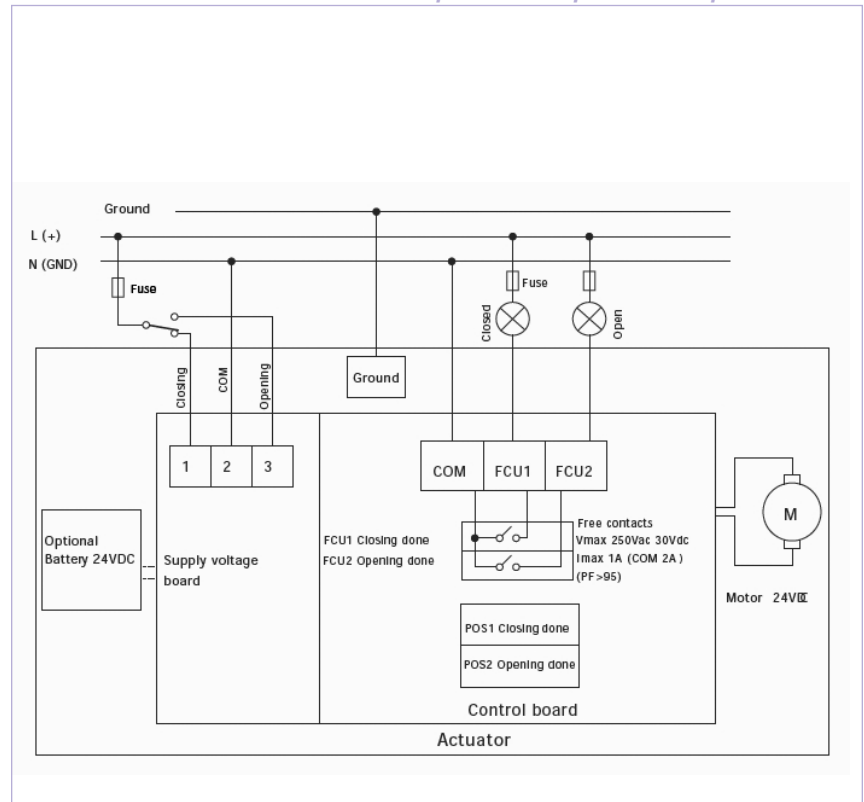
Technical Data (cont'd)

electrical actuator

model VB015



models VB030, VB060, VB110, VB190



Electrical Actuator Data						
Model		VB015	VB030	VB060	VB110	VB190
	Maximum Working Torque (in-lbs)	133	266	530	975	1680
1	Voltage	110 VAC	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC
2	Absorbed Current	50 mA	0.3-0.2 A	0.6-0.3 A	0.6-0.3 A	0.6-0.3 A
3	Absorbed Power	6.6 VA	30-48 VA	60-72 VA	60-72 VA	60-72 VA
4	Working Time	25 sec	8 sec	9 sec	27 sec	27 sec
5	Torque Limiter	STD	STD	STD	STD	STD
6	Duty Rating	50%	75%	75%	75%	75%
7	Protection	IP 65-67	IP 65-67	IP 65-67	IP 65-67	IP 65-67
8	Rotation	90°	90°	90°	90°	90°
9	Manual Override	STD	STD	STD	STD	STD
10	Position Indicator	STD	STD	STD	STD	STD
11	Working Temperature	-4°F / +131°F	-4°F / +131°F	-4°F / +131°F	-4°F / +131°F	-4°F / +131°F
12	Heater	STD	STD	STD	STD	STD
13	Additional Limit Switches	2 STD	2 STD	2 STD	2 STD	2 STD
14	ISO 5211 Mounting	F03 F05	F03 F05	F05 F07	F07 F10	F07-F10
15	Square (in)	0.43	0.43	0.55	0.67	0.87
16	Electrical Connections	PG11	PG11	PG11	PG11	PG11
17	Weight (lbs)	3.09	5.07	7.28	10.80	10.80



FE Series Automated Butterfly Valves

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