



TECHNICAL BULLETIN

Valtek® MaxFlo 4

Eccentric Rotary Plug Control Valve

FCD VLENTB0064-03-A4 – 9/16



Experience in Motion

Flowserve® – Solutions to keep you flowing

Flowserve is one of the world's leading providers of control valves. Our engineers work with customers to understand even the most challenging applications. This way, Flowserve partners with customers to develop industry leading technical solutions that help customers keep their process flowing.

Flowserve Valtek MaxFlo 4

The MaxFlo 4 is a high-performance eccentric rotary plug control valve. The flow-path is unobstructed by the shaft, allowing higher capacity for a given valve size. This non-crossover shaft design also eliminates shaft damage from erosive process fluids. The shaft is also designed per ASME B16.34 to prevent the stem from being removed while the valve is under pressure for increased safety.

- Highest flow rates
- 160:1 rangeability
- Low breakout torque for smoother control and longer life
- Safest shaft blowout protection available
- Strong, precision, polygon stem-plug connection
- Tight bi-directional shut-off, Class IV or VI
- Fugitive emission stem packing available for ISO 15848
- Sealed bearings available



Figure 1: MaxFlo 4

MaxFlo 4 Features & Advantages

Features	Advantages
Non-Crossover Shaft	1. Unobstructed flow when fully open. 2. Up to 70% greater capacity than other ERP control valves. 3. Not eroded by process-borne particles. 4. Pocketless flow-path tolerates slurries, even up to 3% paper stock.
Eccentric Rotary Plug	1. Plug does not rub seat ring. Less wear, less friction, more precision. 2. Stable throttling, low dynamic torque. 3. Stable throttling in either flow direction. 4. Inherently Linear characteristic. 5. Flow direction assists movement to safety position on air-failure. 6. Robust, rigid seat and plug give increased durability. 7. Tight Shut-off, Class IV (Metal Seat), Class VI (Soft Seat), even after prolonged usage.
High Rangeability	Rangeability 160:1. The valve throttles repeatably all the way to shutoff.
Separate Bonnet and Integral Shaft Collar	A positive anti-blowout as a standard feature, in full compliance with ASME B16.34 Section 6.5.1, ensures that the shaft cannot blow out, even if the actuator is removed.
Heavy-Duty End Post	Robust design for ultimate safety and reliability.
Multiple Body Options	Flanged, Flangeless, and Globe Face-to-Face.
Trim Choices	Full-area, 75%/70%, 40%. Flow capacity can be closely matched to the application. Economical and convenient when optimizing flow capacity or changing service conditions.
Rugged Plug Design	Hardened plug as a standard feature gives high performance and long service life.
Multiple Packing Options	Configurations/materials available for most applications. Fugitive emission options meet EPA, TA-Luft, and ISO requirements.
Optional Noise Reduction Plate	Noise reduction of up to 15dB in compressible services.
Certifications	SIL 3 capable, NACE

Table 1: Specifications

OPTIONS	DIN	ASME
Sizes	DN 25, 40, 50, 80, 100, 150, 200, 250 and 300	NPS 1, 1.5, 2, 3, 4, 6, 8, 10 and 12
Pressure Classes	PN 10, 16, 25, 40 and 63	Class 150, 300 and 600
End Connection	EN 1092-1 (Form B1, D, F, B2)—Flanged & Wafer	B16.5 (Raised Face, RTJ)—Flanged & Wafer
Body Materials	Carbon steel: 1.0619	Carbon Steel: A216-WCC
	Stainless Steel: 1.4408	Stainless steel: A351-CF8M
Face to Face	EN 558: 2012-03 series 36 (short)	ISA 75.08.02 (short)
	EN 558: 2012-03 series 1 (globe)	ISA 75.08.01 (globe)
Packing	PTFE V-Ring, Braided PTFE, Graphite, Sureguard XT, Garlock SVS, LATTYflon 3265 LM and LATTYgraf 6995 NG (meeting requirements for TA-Luft, ISO 15848-1 and EPA)	
Packing Type	Single, Twin, Vacuum, Live Loaded, Fire Safe and O-Ring	
Temperature	-100°C to 400 °C (-148°F to 750°F)	
Plug and Seat	Standard, Hardened and Soft Seat	
Shut-Off	ANSI/FCI 70-2-2006: Class IV (metal seat) and VI (soft seat)	
Rangeability	Up to 160:1	
Trim	Trim NPS 1–6 (DN 25–150): 100%, 70%, 40%; NPS 8–12 (DN 200–300): 100%, 75%	
Actuator	NR Diaphragm, VR Piston and SuperNova Rack & Pinion (optional: manual, electric)	
Positioner	Logix 420, Logix 500 Series, Logix 3000 Series	

Table 2: Parts List

Item	Part	Material	Temperature Range
1	Body	A216-WCC / 1.0619	-20°F to 750°F (-29°C to 400°C)
		A351-CF8M / 1.4408	-148°F to 750°F (-100°C to 400°C)
20	Seat Ring	316L SS	-148°F to 750°F (-100°C to 400°C)
		316L w/ Alloy 6	-148°F to 750°F (-100°C to 400°C)
		416 SS HT	-148°F to 750°F (-100°C to 400°C)
		316L/PTFE	-148°F to 400°F (-100°C to 204°C)
30	Seat Retainer	Stainless Steel	-148°F to 750°F (-100°C to 400°C)
40	Bonnet	Carbon Steel	-20°F to 750°F (-29°C to 400°C)
		Stainless Steel	-148°F to 750°F (-100°C to 400°C)
50	Plug	1.4418	-20°F to 750°F (-29°C to 400°C)
		1.4405 (6"/DN 150 and larger)	-20°F to 750°F (-29°C to 400°C)
		316L w/ Alloy 6	-148°F to 750°F (-100°C to 400°C)
		CF3M w/ Alloy 6 (6"/DN 150 and larger)	-148°F to 750°F (-100°C to 400°C)
51/122	Shaft/End Post	1.4418	-148°F to 750°F (-100°C to 400°C)
		17-4PH	-148°F to 750°F (-100°C to 400°C)
		17-4PH H1150D	-148°F to 750°F (-100°C to 400°C)
		A638 Gr 660	-148°F to 750°F (-100°C to 400°C)
46/83/84	Bearings	MBT ¹	-148°F to 400°F (-100°C to 204°C)
		440C SS HT	-20°F to 750°F (-29°C to 400°C)
		Ultimet	-148°F to 750°F (-100°C to 400°C)
		UNS S31803	-148°F to 750°F (-100°C to 400°C)
		Alloy 6	-148°F to 750°F (-100°C to 400°C)
58/61	Gaskets	PTFE	-148°F to 400°F (-100°C to 204°C)
		Graphite	-148°F to 750°F (-100°C to 400°C)
80	Gland flange	Stainless Steel	-148°F to 750°F (-100°C to 400°C)
87	Packing follower	Stainless Steel	-148°F to 750°F (-100°C to 400°C)
88	Packing	PTFE V-ring	-148°F to 400°F (-100°C to 204°C)
		Braided PTFE	-148°F to 400°F (-100°C to 204°C)
		LATTYflon 3265 LM	-148°F to 400°F (-100°C to 204°C)
		LATTYgraf 6995 NG	-148°F to 750°F (-100°C to 400°C)
		Graphite Braid	-148°F to 750°F (-100°C to 400°C)
93/99	Packing Spacers & Stops	Stainless Steel	-148°F to 750°F (-100°C to 400°C)
108/114	Bonnet bolting	Carbon Steel	-20°F to 750°F (-29°C to 400°C)
		Stainless Steel	-148°F to 750°F (-100°C to 400°C)
109/117	Gland Bolting	Stainless Steel	-148°F to 750°F (-100°C to 400°C)
115/119	End post bolting	Carbon Steel	-20°F to 750°F (-29°C to 400°C)
		Stainless Steel	-148°F to 750°F (-100°C to 400°C)

Note: 1. MBT, 10% carbon filled TFE, lined metal shell

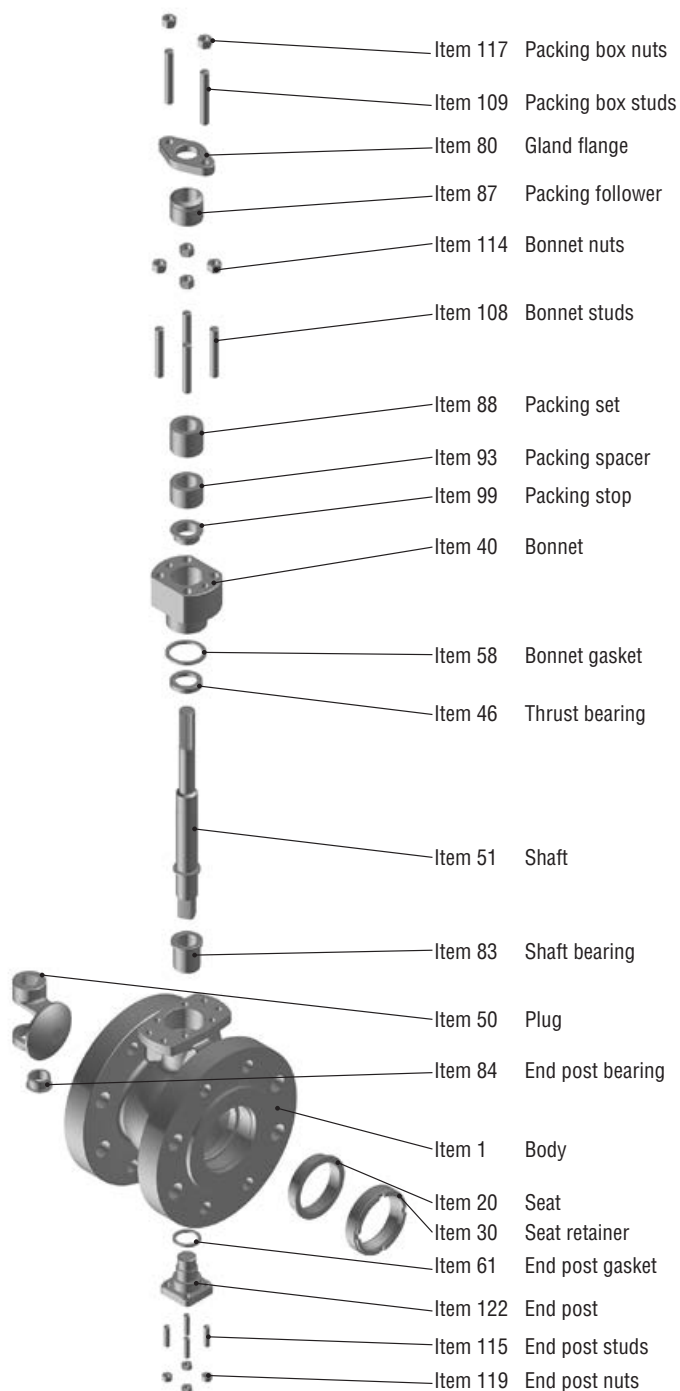


Figure 2: Exploded View

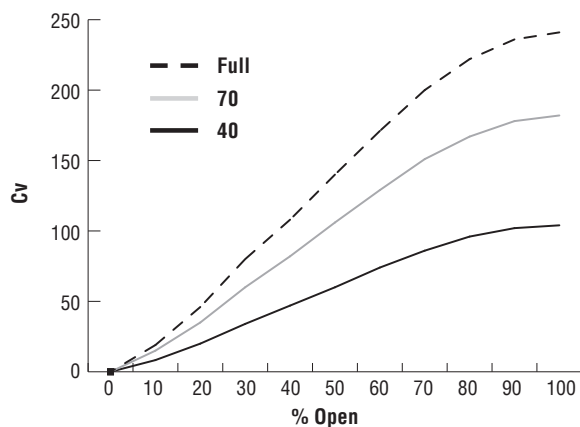
Table 3: Maximum Rated Flow Coefficients

Valve Size	Trim Size	Flow to Open (shaft downstream)				Flow to close (shaft upstream)			
		60deg		90deg		60deg		90deg	
		Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv
1/25	40%	7.2	6.2	9.7	8.4	7.2	6.2	7.5	6.5
	70%	9.7	8.4	13	11	9.7	8.4	12	10
	100%	14	12	18	16	14	12	18	16
	Noise Plate	8.5	7.4	9.4	8.1				
1.5/40	40%	16	14	22	19	16	14	17	15
	70%	23	20	31	27	23	20	28	24
	100%	32	28	43	37	32	28	43	37
	Noise Plate	19	16	21	18				
2/50	40%	24	21	33	29	24	21	25	22
	70%	38	33	59	51	38	33	46	40
	100%	57	49	88	76	57	49	77	67
	Noise Plate	30	26	33	29				
3/80	40%	72	62	97	84	72	62	75	65
	70%	109	94	172	149	109	94	132	114
	100%	143	124	227	196	143	124	192	166
	Noise Plate	72	62	79	68				
4/100	40%	114	99	143	124	114	99	120	104
	70%	171	148	272	235	171	148	208	180
	100%	256	221	407	352	256	221	343	297
	Noise Plate	122	106	131	113				
6/150	40%	228	197	253	219	228	197	239	207
	70%	406	351	644	557	406	351	492	426
	100%	543	470	905	783	543	470	728	630
	Noise Plate	266	230	289	250				
8/200	75%	605	523	1009	873	605	523	734	635
	100%	914	791	1523	1317	914	791	1227	1061
	Noise Plate	464	401	507	439				
10/250	75%	971	840	1618	1400	971	840	1282	1109
	100%	1428	1235	2462	2130	1428	1235	1917	1658
	Noise Plate	742	642	820	709				
12/300	75%	1280	1107	2132	1844	1280	1107	1789	1548
	100%	2056	1779	3426	2964	2056	1779	2760	2388
	Noise Plate	1050	908	1150	995				

Note 1: For complete Cv curves refer to the Performance! sizing software.

Note 2: For ASME globe style valve bodies (ISA 75.08.01, EN 558 37-38) use the same Cv, except for the 8 and above use the Cv of one valve smaller.

Figure 3: Sample Cv Curve



Pressure Drop Tables

Table 4: MaxFlo 4 Maximum Allowable Shutoff Pressure Drops (psi/bar)

Valve Size	Component	Material	Flow Direction	Temperature Range (°F/°C)							
				-148 to 100/ -100 to 38	200/93	300/149	400/204	500/260	600/316	700/371	750/400
1/25	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D or A638 Gr. 660	SU or SD	1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
	Plug	1.4418 or 1.4405		1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
		A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
	Seat	A182 316L / PTFE		754/52	450/31	247/17	145/10				
		A182 316L or 410/416 or A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
	Bearings	A182 316 / PTFE or sealed bearings		1479/102	1189/82	943/65	754/52				
		440C SS HT or Ultimet or Alloy 6		1479/102	1438/99	1415/98	1391/96	1374/95	1357/94	1323/91	1289/89
		UNS S31803		1479/102	1356/94	1262/87	1186/82	1130/78	1073/74	1017/70	942/65
	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D or A638 Gr. 660	SU or SD	1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
1.5/40	Plug	1.4418 or 1.4405		1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
		A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
	Seat	A182 316L / PTFE		754/52	450/31	247/17	145/10				
		A182 316L or 410/416 or A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
	Bearings	A182 316 / PTFE or sealed bearings		1479/102	1189/82	943/65	754/52				
		440C SS HT or Ultimet or Alloy 6		1479/102	1438/99	1415/98	1391/96	1374/95	1357/94	1323/91	1289/89
		UNS S31803		1479/102	1356/94	1262/87	1186/82	1130/78	1073/74	1017/70	942/65
	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D or A638 Gr. 660	SU or SD	1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
	Plug	1.4418 or 1.4405		1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
2/50	Plug	A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
		A182 316L / PTFE		754/52	450/31	247/17	145/10				
	Seat	A182 316L or 410/416 or A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
		A182 316 / PTFE or sealed bearings		1160/80	928/64	740/51	595/41				
	Bearings	440C SS HT or Ultimet or Alloy 6		1479/102	1438/99	1415/98	1391/96	1374/95	1357/94	1323/91	1289/89
		UNS S31803		1479/102	1356/94	1262/87	1186/82	1130/78	1073/74	1017/70	942/65
	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D or A638 Gr. 660	SU or SD	1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
	Plug	1.4418 or 1.4405		1479/102	1479/102	1406/97	1362/94	1318/91	1274/88	1230/85	1186/82
3/80	Plug	A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
		A182 316L / PTFE		754/52	450/31	247/17	145/10				
	Seat	A182 316L or 410/416 or A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
		A182 316 / PTFE or sealed bearings		1160/80	928/64	740/51	595/41				
	Bearings	440C SS HT or Ultimet or Alloy 6		1479/102	1438/99	1415/98	1391/96	1374/95	1357/94	1323/91	1289/89
		UNS S31803		1479/102	1356/94	1262/87	1186/82	1130/78	1073/74	1017/70	942/65
	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D or A638 Gr. 660	SU or SD	1305/90	1305/90	1265/87	1226/85	1186/82	1147/79	1107/76	1068/74
	Plug	1.4418 or 1.4405		1305/90	1305/90	1265/87	1226/85	1186/82	1147/79	1107/76	1068/74
4/100	Plug	A182 316L / Alloy 6		754/52	642/44	574/40	528/36	495/34	470/32	452/31	443/31
		A182 316L / PTFE		754/52	450/31	247/17	145/10				
	Seat	A182 316L or 410/416 or A182 316L / Alloy 6		1479/102	1235/85	1102/76	1015/70	951/66	905/62	870/60	853/59
		A182 316 / PTFE or sealed bearings		754/52	595/41	464/32	377/26				
	Bearings	440C SS HT or Ultimet or Alloy 6		1305/90	1295/89	1273/88	1252/86	1237/85	1221/84	1191/82	1160/80
		UNS S31803		1305/90	1220/84	1136/78	1068/74	1017/70	966/67	915/63	847/58
	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D or A638 Gr. 660	SU or SD	1305/90	1305/90	1265/87	1226/85	1186/82	1147/79	1107/76	1068/74
	Plug	1.4418 or 1.4405		1305/90	1305/90	1265/87	1226/85	1186/82	1147/79	1107/76	1068/74

Pressure Drop Tables (continued)

Valve Size	Component	Material	Flow Direction	Temperature Range (°F/°C)							
				-148 to 100/ -100 to 38	200/93	300/149	400/204	500/260	600/316	700/371	750/400
6/150	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D	SU	1131/78	1131/78	1097/76	1062/73	1028/71	994/69	960/66	925/64
			SD	1131/78	1088/75	1055/73	1022/70	989/68	956/66	923/64	890/61
		A638 Gr. 660	SU	1005/69	984/68	969/67	954/66	938/65	921/63	903/62	895/62
			SD	850/59	833/57	820/57	807/56	794/55	779/54	764/53	757/52
	Plug	1.4418 or 1.4405		1131/78	11131/78	1097/76	1062/73	1028/71	994/69	960/66	925/64
		A182 316L / Alloy 6		609/42	519/36	463/32	426/29	400/28	380/26	365/25	358/25
	Seat	A182 316L / PTFE		754/52	450/31	247/17	145/10				
		A182 316L or 410/416 or A182 316L / Alloy 6		1363/94	1161/80	1036/71	954/66	894/62	851/59	818/56	801/55
	Bearings	A182 316 / PTFE or sealed bearings		754/52	595/41	464/32	377/26				
		440C SS HT or Ultimet or Alloy 6		1131/78	1122/77	1103/76	1085/75	1072/74	1058/73	1032/71	1006/69
		UNS S31803		1001/69	936/65	871/60	819/56	780/54	754/52	754/52	754/52
8/200	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D	SU	667/46	667/46	647/45	627/43	606/42	586/40	566/39	546/38
			SD	544/38	544/38	528/36	511/35	495/34	478/33	462/32	445/31
		A638 Gr. 660	SU	592/41	584/0	572/39	562/39	553/38	543/37	532/37	528/36
			SD	497/34	487/34	479/33	472/33	464/32	455/31	447/31	443/31
	Plug	1.4418 or 1.4405		667/46	667/46	647/45	627/43	606/42	586/40	566/39	546/38
		A182 316L / Alloy 6		348/24	296/20	264/18	244/17	228/16	217/15	209/14	205/14
	Seat	A182 316L / PTFE		754/52	450/31	247/17	145/10				
		A182 316L or 410/416 or A182 316L / Alloy 6		1247/86	1062/73	948/65	873/60	818/56	778/54	748/52	733/51
	Bearings	A182 316 / PTFE or sealed bearings		464/32	363/25	363/25	232/16				
		440C SS HT or Ultimet or Alloy 6		754/52	754/52	754/52	754/52	754/52	754/52	754/52	754/52
		UNS S31803		754/52	754/52	754/52	754/52	754/52	754/52	754/52	754/52
10/250	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D	SU	450/31	450/31	436/30	422/29	409/28	395/27	38½6	368/25
			SD	337/23	337/23	327/23	317/22	306/21	296/20	286/20	276/19
		A638 Gr. 660	SU	399/28	39½7	385/27	379/26	373/26	366/25	359/25	356/25
			SD	333/23	326/22	32½2	316/22	31½1	305/21	299/21	296/20
	Plug	1.4418 or 1.4405		450/31	450/31	436/30	422/29	409/28	395/27	38½6	368/25
		A182 316L / Alloy 6		348/24	296/20	264/18	244/17	228/16	217/15	209/14	205/14
	Seat	A182 316L / PTFE		754/52	450/31	247/17	145/10				
		A182 316L or 410/416 or A182 316L / Alloy 6		928/64	791/55	705/49	650/45	609/42	579/40	557/38	546/38
	Bearings	A182 316 / PTFE or sealed bearings		464/32	363/25	363/25	232/16				
		440C SS HT or Ultimet or Alloy 6		754/52	754/52	754/52	754/52	754/52	754/52	754/52	754/52
		UNS S31803		754/52	754/52	754/52	754/52	754/52	754/52	754/52	754/52
12/300	Shaft and Post	1.4418 or 17-4PH or 17-4PH H1150D	SU	450/31	450/31	436/30	422/29	409/28	395/27	38½6	368/25
			SD	289/20	289/20	280/19	271/19	263/18	254/18	245/17	236/16
		A638 Gr. 660	SU	399/28	39½7	385/27	379/26	373/26	366/25	359/25	356/25
			SD	233/16	228/16	225/15	221/15	218/15	213/15	209/14	207/14
	Plug	1.4418 or 1.4405		450/31	450/31	436/30	422/29	409/28	395/27	38½6	368/25
		A182 316L / Alloy 6		276/19	235/16	209/14	193/13	181/12	172/12	165/11	162/11
	Seat	A182 316L / PTFE		754/52	450/31	247/17	145/10				
		A182 316L or 410/416 or A316L / Alloy 6		1044/72	889/61	793/55	731/50	685/47	65¼5	626/43	614/42
	Bearings	A182 316 / PTFE or sealed bearings		464/32	363/25	363/25	232/16				
		440C SS HT or Ultimet or Alloy 6		754/52	754/52	754/52	754/52	754/52	754/52	754/52	754/52
		UNS S31803		754/52	754/52	754/52	754/52	754/52	754/52	754/52	754/52

1. If higher pressure drops are required, contact your Flowserve sales office.

2. Additional seat and bearing materials are available. Contact your Flowserve sales office for pressure drops.

3. SU = Shaft Upstream; SD = Shaft Downstream

Note: Values are for components shown only. Pressures/temperatures may exceed limits per ANSI B16.34 for body materials.

Dimensions and Weights

Table 5: MaxFlo 4 Face-to-face Dimensions

Figure 4: MaxFlo 4 Face-to-face Options

Valve Size	ANSI/ISA 75.08.02, EN 558 Series 36				ANSI/ISA 75.08.01, EN 558 Series 37-38				ANSI/ISA 75.08.01, EN 558 Series 37-38				DIN 3202 F1, EN 558 Series 1			
	CL 150-600/PN 10-63				CL 150				CL 300				PN 10-40			
	A		B		A		B		A		B		A		B	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/25	4.02	102	2.01	51	7.25	184	4.76	121	7.75	197	5.16	131	6.30	160	3.74	95
1.5/40	4.49	114	2.24	57	8.75	222	5.83	148	9.25	235	6.22	158	7.87	200	4.96	126
2/50	4.88	124	2.44	62	10.00	254	6.89	175	10.50	267	7.28	185	9.06	230	5.98	152
3/80	6.50	165	3.25	83	11.75	298	7.48	190	12.50	318	8.11	206	12.21	310	8.03	204
4/100	7.64	194	3.82	97	13.88	353	9.17	233	14.50	368	9.49	241	13.78	350	9.17	233
6/150	9.02	229	4.65	118	17.75	451	11.57	294	18.62	473	12.01	305	18.90	480	12.64	321
8/200	9.57	243	5.35	136	21.38	543	15.28	388	22.38	568	15.75	400	23.62	600	16.61	422
10/250	11.69	297	6.22	158	26.50	673	19.88	505	27.88	708	20.55	522	28.74	730	20.98	533
12/300	13.31	338	6.77	172	29.00	737	21.57	548	30.50	775	22.32	567	33.47	850	25.12	638

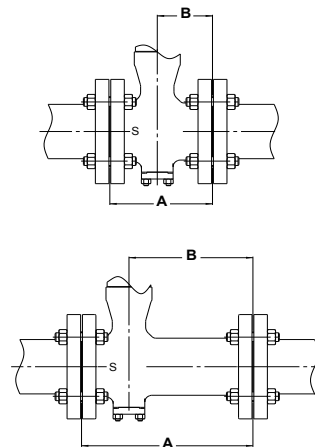


Table 6: Shipping Weights for Body Sub-Assembly (Weights for All Class Ratings)

Valve Size	ANSI/ISA 75.08.02, EN 558 Series 36												ANSI/ISA 75.08.01, EN 558 Series 37-38			
	Flanged						Flangeless						Flanged			
	CL 150/PN 10 Thru PN 40		CL 300		CL 600/PN 63		CL 150/PN 10 Thru PN 40		CL 300/PN 40		CL 600/PN 63		CL 150		CL 300	
	Kg	Lbs	Kg	Lbs	Kg	Lbs	Kg	Lbs	Kg	Lbs	Kg	Lbs	Kg	Lbs	Kg	Lbs
1"	5	12	6	14	7	16	5	10	5	10	5	10	6	14	8	17
1.50"	7	16	10	21	11	24	6	13	6	14	6	13	9	19	11	24
2"	9	19	11	23	12	27	7	15	8	17	9	21	11	24	12	27
3"	17	38	21	45	23	51	12	27	15	33	19	41	20	45	24	53
4"	19	42	26	58	37	82	14	31	17	37	24	54	24	53	32	71
6"	36	79	50	110	74	163	28	62	39	86	50	110	48	106	65	142
8"	52	115	71	157	109	240	37	82	52	115	68	151	70	155	92	204
10"	105	231	134	295	206	454	86	191	107	235	139	306	136	300	172	380
12"	151	333	187	411	252	555	119	262	142	314	177	389	195	429	243	537

Dimensions and Weights (continued)

Table 7: NR Diaphragm Actuator Specifications

Type	Single-acting, high-performance
Sizes	1S, 2S, 3S
Action	Air-to-open, Air-to-close, Fail-in-place
Supply Pressure	80 psig/6 barg (maximum)
Auxiliary	Push-type handwheel
Stroke	60°
Spring Ranges	0.2 to 1, 0.7 to 1.9, 1.4 to 2.8 bar, and 1.9 to 3.8 bar

Table 8: NR Diaphragm Actuator Shipping Weights

Size	Kg	Lbs
1S	16	35
2S	38	85
3S	88	195

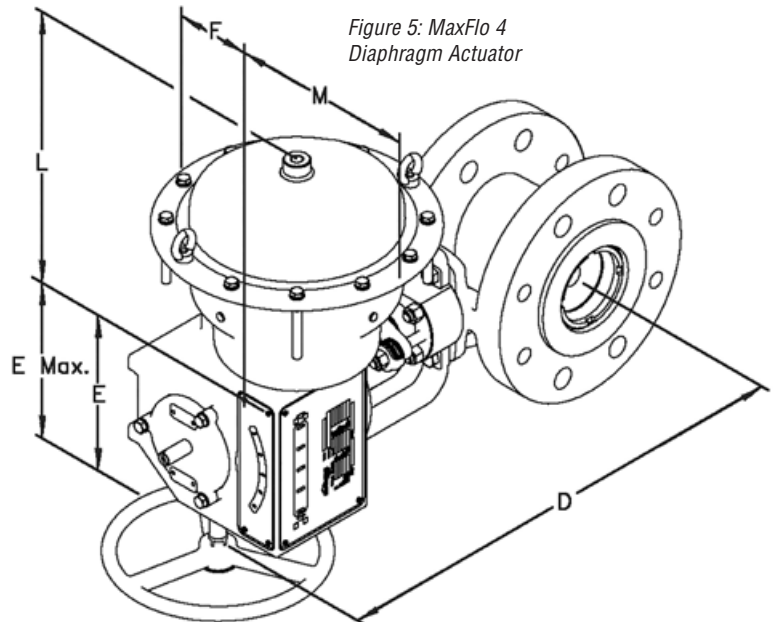


Table 9: MaxFlo 4 Dimensions with NR Diaphragm Actuator

Valve Size	Actuator Size	D		E		E(Max)		F		L		M	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/25	1S	12.80	325	3.46	88	8.66	220	2.13	54	9.72	247	5.43	138
1.5/40	1S	13.78	350	3.46	88	8.66	220	2.13	54	9.80	249	5.43	138
2/50	1S	13.86	352	3.46	88	8.66	220	2.13	54	9.80	249	5.43	138
3/80	2S	20.31	516	4.92	125	12.20	310	3.54	90	14.09	358	8.58	218
4/100	2S	20.51	521	4.92	125	12.20	310	3.54	90	14.09	358	8.58	218
6/150	3S	25.71	653	6.42	163	17.72	450	4.25	108	19.53	496	12.28	312
8/200	3S	26.14	664	6.42	163	17.72	450	4.25	108	19.53	496	12.28	312
10/250	3S	28.86	733	6.42	163	17.72	450	4.25	108	19.72	501	12.28	312
12/300	3S	29.84	758	6.42	163	17.72	450	4.25	108	19.72	501	12.28	312

All dimensions are to be used for estimation only. Certified drawings will be supplied upon request.

Dimensions and Weights (continued)

Table 10: VR Cylinder Actuator Specifications

Type	Double-acting, cylinder with fail-safe spring action
Sizes	25, 50, 100, 200
Action	Air-to-open, Air-to-close, Fail-in-place
Supply Pressure	150 psig/10.3 barg (maximum)
Auxiliary	Declutchable side-mounted; manual gear operated; handlever
Stroke	90°
Springs	Standard, extended (sizes 25 & 50), dual sizes (100 & 200)

Table 11: VR Actuator Shipping Weights

Size	Kg	Lbs
25 STD	16	35
25 EXTD	18	39
50 STD	33	73
50 EXTD	39	86
100 STD	73	161
100 DUAL	80	176
200 STD	120	265
200 DUAL	127	280

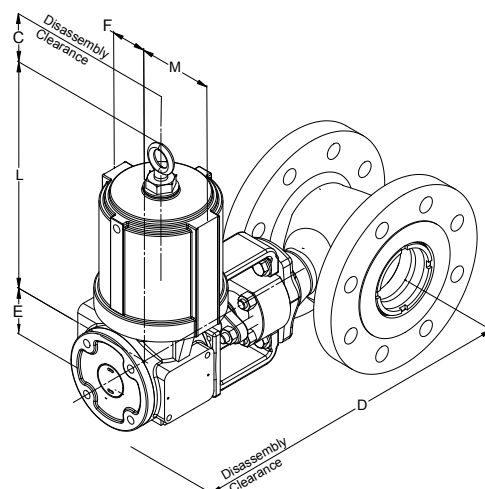


Figure 6: MaxFlo 4 Spring Cylinder Actuator

Table 12: MaxFlo 4 Dimensions with VR Actuator

Valve Size	Actuator Size	C		D		E		F		L		M	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/25	25 STD	5.3	135	20.0	508	4.5	114	2.2	56	13.3	338	4.3	109
	25 EXTD	5.3	135	20.0	508	4.5	114	2.2	56	17.3	439	4.3	109
1.5/40	25 STD	5.3	135	21.0	533	4.5	114	2.2	56	13.3	338	4.3	109
	25 EXTD	5.3	135	21.0	533	4.5	114	2.2	56	17.3	439	4.3	109
2/50	25 STD	5.3	135	21.0	533	4.5	114	2.2	56	13.3	338	4.3	109
	25 EXTD	5.3	135	21.0	533	4.5	114	2.2	56	17.3	439	4.3	109
3/80	25 STD	5.3	135	25.0	635	4.5	114	2.2	56	13.3	338	4.3	109
	25 EXTD	5.3	135	25.0	635	4.5	114	2.2	56	17.3	439	4.3	109
	50 STD	7.5	191	25.0	635	5.8	147	2.5	64	18.3	465	6.6	168
	50 EXTD	7.5	191	25.0	635	5.8	147	2.5	64	23.8	605	6.6	168
4/100	25 STD	5.3	135	26.0	660	4.5	114	2.2	56	13.3	338	4.3	109
	25 EXTD	5.3	135	26.0	660	4.5	114	2.2	56	17.3	439	4.3	109
	50 STD	7.5	191	26.0	660	5.8	147	2.5	64	18.3	465	6.6	168
	50 EXTD	7.5	191	26.0	660	5.8	147	2.5	64	23.8	605	6.6	168
6/150	50 STD	7.5	191	27.0	686	5.8	147	2.5	64	18.3	465	6.6	168
	50 EXTD	7.5	191	27.0	686	5.8	147	2.5	64	23.8	605	6.6	168
	100 STD or DUAL	8.5	216	29.0	737	7.5	191	3.9	99	22.9	582	8.7	221
	200 STD or DUAL	8.5	216	29.0	737	8.2	208	6.3	160	24.0	610	11.1	282
8/200	50 STD	7.5	191	27.0	686	5.8	147	2.5	64	18.3	465	6.6	168
	50 EXTD	7.5	191	27.0	686	5.8	147	2.5	64	23.8	605	6.6	168
	100 STD or DUAL	8.5	216	29.0	737	7.5	191	3.9	99	22.9	582	8.7	221
	200 STD or DUAL	8.5	216	29.0	737	8.2	208	6.3	160	24.0	610	11.1	282
10/250	50 STD	7.5	191	30.0	762	5.8	147	2.5	64	18.3	465	6.6	168
	50 EXTD	7.5	191	30.0	762	5.8	147	2.5	64	23.8	605	6.6	168
	100 STD or DUAL	8.5	216	32.0	813	7.5	191	3.9	99	22.9	582	8.7	221
	200 STD or DUAL	8.5	216	32.0	813	8.2	208	6.3	160	24.0	610	11.1	282
12/300	100 STD or DUAL	8.5	216	33.0	838	7.5	191	3.9	99	22.9	582	8.7	221
	200 STD or DUAL	8.5	216	32.0	813	8.2	208	6.3	160	24.0	610	11.1	282

All dimensions are to be used for estimation only. Certified drawings will be supplied upon request.

Dimensions and Weights (continued)

Table 13: SuperNova Actuator Specifications

Type	Single-acting spring-return, double-acting
Sizes	B063, B085, B100, B115, B125, B150, B175, B200
Action	Air-to-open, air-to-close, fail-in-place
Supply Pressure	100 psig/6.9 barg (maximum) single-acting 150 psig/10.34 barg (maximum) double-acting
Auxiliary	Declutchable handwheel
Stroke	90°
Springs	5 to 12 springs available

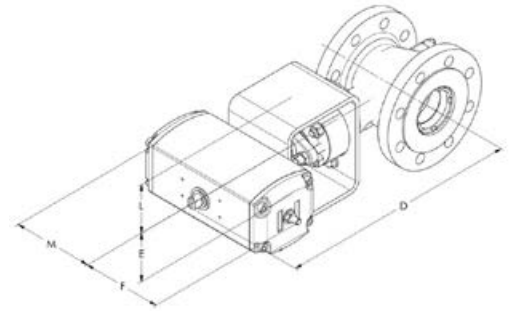


Figure 7: MaxFlo 4 with SuperNova Actuator

Table 14: SuperNova Actuator Shipping Weights

Size	1 /25	
	Kg	Lbs
B063	2.0	4.4
B085	4.2	9.3
B100	6.8	15
B115	10	23
B125	14	30
B150	23	51
B175	35	77
B200	54	118

Table 15: MaxFlo 4 Dimensions with SuperNova Actuator

Actuator Size	Valve Size	D		E		F		L		M	
		in.	mm	in.	mm	in.	mm.	in.	mm.	in.	mm
B063	1/25	12.0	304	3.5	89	4.0	101	3.5	89	4.0	101
	1.5/40	12.6	320	3.5	89	4.0	101	3.5	89	4.0	101
	2/50	12.7	322	3.5	89	4.0	101	3.5	89	4.0	101
B085	1/25	12.9	328	3.5	89	4.9	125	3.5	89	4.9	125
	2/50	13.6	346	3.5	89	4.9	125	3.5	89	4.9	125
	3/80	16.6	423	4	102	4.9	125	4	102	4.9	125
	4/100	16.8	428	4	102	4.9	125	4	102	4.9	125
B100	1.5/40	14.5	361	3.5	89	11.7	296	3.5	89	11.7	296
	2/50	14.3	363	3.5	89	11.7	296	3.5	89	11.7	296
	3/80	17.3	439	4	102	11.7	296	4	102	11.7	296
	4/100	17.5	444	4	102	11.7	296	4	102	11.7	296
B115	2/50	15.2	386	3.5	89	6.7	171	3.5	89	6.7	171
	3/80	20.2	513	4	102	6.7	171	4	102	6.7	171
	4/100	20.4	518	4	102	6.7	171	4	102	6.7	171
	6/150	24.4	620	5	127	6.7	171	5	127	6.7	171
B125	2/50	15.7	398	3.5	89	7.9	201	3.5	89	7.9	201
	3/80	20.7	525	4	102	7.9	201	4	102	7.9	201
	4/100	20.9	530	4	102	7.9	201	4	102	7.9	201
	6/150	24.9	632	5	127	7.9	201	5	127	7.9	201
B150	6/150	24.6	626	4.3	110	9.6	243	4.3	110	9.6	243
	8/200	26.4	670	5	127	9.6	243	5	127	9.6	243
	10/250	28.2	717	5	127	9.6	243	5	127	9.6	243
	12/300	29.2	742	5	127	9.6	243	5	127	9.6	243
B175	6/150	27.3	694	5	127	10.7	271	5	127	10.7	271
	8/200	27.7	705	5	127	10.7	271	5	127	10.7	271
	10/250	29.6	752	5	127	10.7	271	5	127	10.7	271
	12/300	30.6	777	5	127	10.7	271	5	127	10.7	271
B200	6/150	28.5	723	5	127	12.2	310	5	127	12.2	310
	8/200	28.9	734	5	127	12.2	310	5	127	12.2	310
	10/250	30.8	781	5	127	12.2	310	5	127	12.2	310
	12/300	31.8	806	5	127	12.2	310	5	127	12.2	310

All dimensions are to be used for estimation only. Certified drawings will be supplied upon request.

Table 16: MaxFlo 4 Pipe Mounting Orientation Codes

3 - Air Action		4 - Pipe Configuration		5 - Actuator Orientation		6 - Shaft Direction	
O	Air-to-open - ATO	L	Left Hand Mounting	T	Top (Default)	D	Shaft Downstream (Default)
C	Air-to-close - ATC	R	Right Hand Mounting	R	Right	U	Shaft Upstream
		D	Flow Down	L	Left		
		U	Flow Up	B	Bottom*		
				P	Supernova: Parallel		
				X	Supernova: Cross-Pipe		

AT

3

4

5

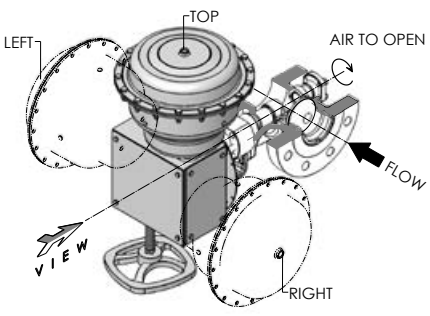
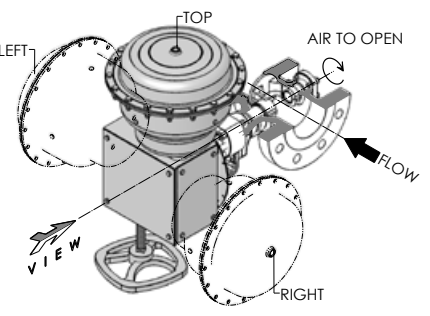
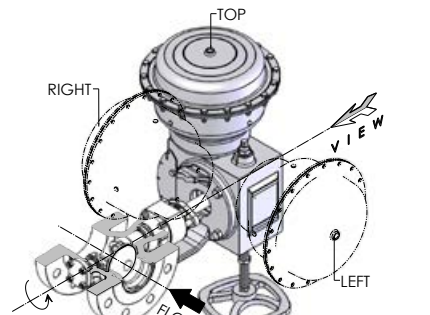
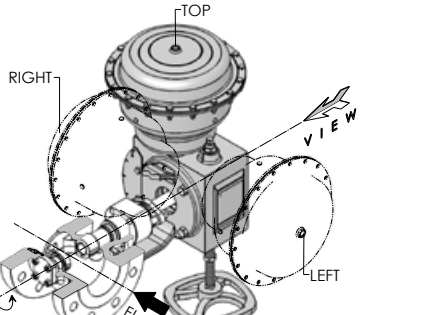
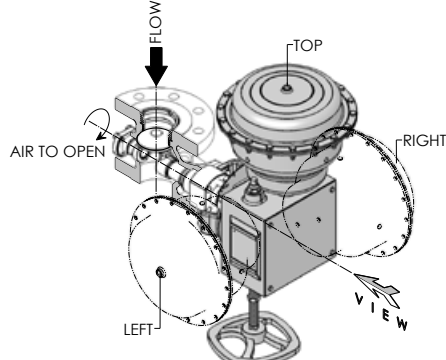
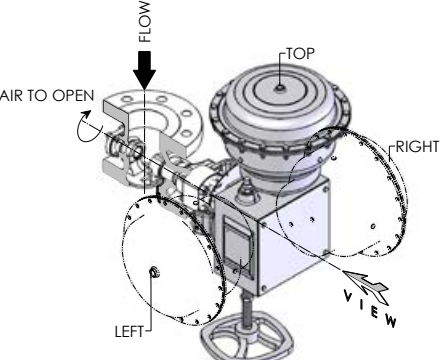
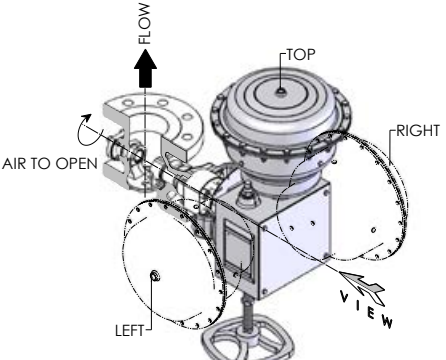
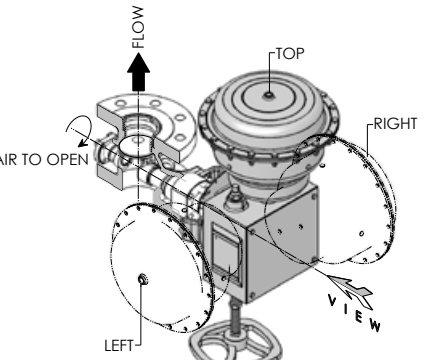
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* Not available on diaphragm actuators

Table 17: MaxFlo 4 Mounting Orientations

AIR-TO-CLOSE, FAIL OPEN CONFIGURATION			
Flow-to-Open (Shaft Downstream)		Flow-to-Close (Shaft Upstream)	
HORIZONTAL FLOW			LEFT HAND PIPE MOUNTING
			RIGHT HAND PIPE MOUNTING
VERTICAL FLOW			FLOW DOWN
			FLOW UP

Table 18: MaxFlo 4 Mounting Orientations

AIR-TO-OPEN, FAIL CLOSE CONFIGURATION				
Flow-to-Open (Shaft Downstream)		Flow-to-Close (Shaft Upstream)		
HORIZONTAL FLOW			LEFT HAND PIPE MOUNTING	
			RIGHT HAND PIPE MOUNTING	
VERTICAL FLOW			FLOW DOWN	
			FLOW UP	

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SPECIFICATIONS

- Operating Pressure: 150 psi
- Temperature Range: -52°C to 85°C; -61°F to 185°F
- Certifications: FM/CSA/IECEX/ATEX, KOSHA, InMetro, GOST R explosion-proof, Non-incendive, Intrinsically Safe
- Input Signal: 4-20 mA, HART communications versions 5 and 6, and FOUNDATION™ Fieldbus

SOLUTIONS

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For more information see document number LGENIM0059, LGENIM3404

Logix 520MD+

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FEATURES

- Exceptional control with dual-stage piezo technology
- Multiple mounting options are suitable for use with both linear and rotary actuators
- Increased C_v allow quicker response without the need for flow boosters
- Single push-button calibration allows commissioning in a matter of minutes

SPECIFICATIONS

- Operating Pressure: Single Acting 87 psi, Double Acting 150 psi
- Temperature Range: -52°C to 85°C; -61°F to 185°F
- Certifications: FM/CSA/IECEX/ATEX Non-incendive, Intrinsically Safe
- Input Signal: 4-20 mA, HART communications versions 5, 6, and 7

SOLUTIONS

Suitable for most applications that require precise, accurate control of valve packages. Designed for use in non-incendive and intrinsically safe markets. Linear and rotary applications for chemical, refining, food and beverage, and power industries.

For more information see document number LGENIM0105

Logix 420

The Logix 420 is the latest addition to the digital positioner family from Flowserve. When mounted to the Valtek GS control valves, Logix 420 provides the user with a cost competitive solution for the general service, explosion-proof market.



FEATURES

- Exceptional control with dual-stage piezo technology
- Integral FlowTop mounting eliminates the need for tubing
- Suitable for use with both linear and rotary single-acting actuators
- Increased C_v allow quicker response without the need for flow boosters
- Single push-button calibration allows commissioning in a matter of seconds
- Optional backlit LCD

SPECIFICATIONS

- Operating Pressure: 87 psi
- Temperature Range: -52°C to 85°C; -61°F to 185°F
- Certifications: FM/IECEX/ATEX
- Explosion proof, Non-incendive, Intrinsically Safe
- Input Signal: 4-20 mA, HART communications versions 6, and 7

SOLUTIONS

Suitable for most single-acting applications that require cost competitive, precise and accurate control of valve packages. Designed for use in explosion proof, non-incendive and intrinsically safe markets. Linear and rotary applications for chemical, petro chemical, refining, food and beverage, and power industries.

For more information see document number LGENIM0106



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