

Table of Contents

PRODUCT	TECHNICAL INSTRUCTIONS	PAGE #
Overview		
Application Matrix		D-5
Reference		
Water Capacity, Zone Valves		D-6
Close-off Pressure, Zone Valves		D-7
Water Capacity, Globe Valves		D-8
Maximum Steam Capacity, Globe Valves		D-10
Temperature Pressure Ratings, Globe Valves		D-11
Close-off Pressures, Globe Valves		D-12
Flow Coefficients, Ball Valves		D-15
Selection Tables		
Zone Valves—1/2 to 1-inch		D-16
MZ/MT Globe—1/2 to 1-inch		D-18 — D-22
Flowrite Globe Valves—1/2 to 2-inch		D-23 — D-31
Flowrite Globe Valves—2-1/2 to 6-inch		D-32 — D-49
High Pressure Close-off—2-1/2 to 6-inch		D-40 — D-41
Ball Valves—1/2 to 2-inch 		D-50 — D-56
Magnetic Valves		D-57
Service Valves		D-58 — D-59
Butterfly Valves—2 to 12-inch		D-60 — D-67
Zone Valves		
Introduction		D-69
Two-Way and Three-Way Zone Valves—1/2 to 1-inch	155-320	D-71
SFA/SFP Series Electronic Valve Actuator	155-321	D-75
SSA/SSP Series Electronic Valve Actuator	155-710	D-79
Thermic Valve Actuator	155-109	D-83

(Continued on next page)

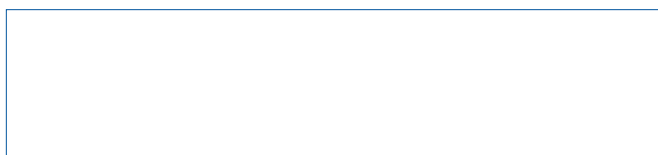


Table of Contents *(Continued)*




PRODUCT	TECHNICAL INSTRUCTIONS	PAGE #
Powermite Globe Valves		
Introduction		D-87
MZ Series		
Two-Way Valves—1/2 to 1-inch	155-198P25	D-89
Three-Way Valves—1/2 to 1-inch	155-199P25	D-93
SSB Valve Actuator/Proportional Control	155-192P25	D-95
SSB Valve Actuator/Floating Control	155-195P25	D-97
MT Series		
Two-Way Valves—1/2 to 1-1/2 inch	155-196P25	D-99
Three-Way Valves—1/2 to 1 inch	155-197P25	D-105
Two-inch Pneumatic Valve Actuator	155-189P25	D-109
SSC Valve Actuator/Floating Control	155-314P25	D-111
SSC Valve Actuator/Proportional Control	155-313P25	D-113
SQS Valve Actuator/Proportional Control	155-190P25	D-115
SQS Valve Actuator/Floating Control	155-308P25	D-117
Flowrite Globe Valves		
Introduction		D-119
Two-Way Bronze Valves—1/2 to 2-inch	155-184P25	D-121
Three-Way Bronze Valves—1/2 to 2-inch	155-185P25	D-127
Two-Way Flanged Iron Valves—2-1/2 to 6-inch	155-159P25	D-131
High Close-off Two-Way Flanged Iron Valves— 2-1/2 to 6-inch	154-067	D-135
Three-Way Flanged Iron Valves—2-1/2 to 6-inch	155-160P25	D-139
4-inch Pneumatic Valve Actuator	155-183P25	D-143
8-inch Pneumatic Valve Actuator	155-161P25	D-145
12-inch Pneumatic Valve Actuator	155-162P25	D-147
SAX Valve Actuator/Proportional Control 	155-182P25	D-149
SAX Valve Actuator/Floating Control 	155-186P25	D-151

Table of Contents *(Continued)*

PRODUCT	TECHNICAL INSTRUCTIONS	PAGE #
Flowrite Globe Valves continued		
SKD Valve Actuator/Proportional Control	155-180P25	D-153
SKD Valve Actuator/Floating Control	155-181P25	D-155
SKB/SKC Valve Actuator/Proportional Control	155-163P25	D-157
SKB/SKC Valve Actuator/Floating Control	155-171P25	D-159
599 Series Ball Valves		
Introduction		D-161
Two-Way and Three-Way Ball Valves 	155-704P25	D-163
Magnetic Valves		
Introduction		D-173
MX.. Control Valves for Hot and Chilled Water	CA1N4455E-P25	D-175
M3P..FY Control Valves for Hot and Chilled Water with ZM Signal Module	CA1N4454E-P25	D-179
MVF461H Modulating Control Valves for Hot Water and Steam	125-4361	D-183
MXG461B Modulating Control Valves for Domestic Water	125-4461	D-187
ZM, ZM..JA Terminal Housing for Magnetic Valves	—	D-191
Angle/Flared/Sequence/Changeover Service Valves		
Introduction		D-193
Powermite 656 Series Two-Way Valves	155-311P25	D-195
Powermite 656 Series Three-Way Water Mixing Valves	—	D-197
Powermite 656 Series Two-Way Angle Union Valves	155-086P25	D-199
Powertop 658 Series Two-Way Valves	155-310P25	D-201
Powertop 658 Series Sequence and Changeover Valves	155-092P25	D-203
Resilient Seat Butterfly Valves		
Introduction		D-205
Two- and Three-Way Butterfly Valve Assemblies—2 to 20-inch	—	D-207
Accessories & Service Kits		D-217

Overview

Designed for precise regulation and control of water, steam and other media, Siemens valves and actuators are highly dependable. They include:

- Zone Valves for economical control of baseboard, fan coil and radiant heat applications
- Powermite Globe Valves for reliable control of terminal unit and zone equipment.
- Flowrite Globe Valves for dependable control of small to medium coils and larger HVAC systems.
- Ball Valves control hot or chilled water in a variety of applications.
- Magnetic Valves are quick response, high performance valves for demanding critical applications.
- Service Valves are excellent for replacing hard to find valves for baseboard, terminal unit and radiant heat applications
- Resilient Seat Butterfly Valves are excellent for isolation and distribution applications.

Zone			
Powermite Globe			
	Flowrite Globe		
	Ball		
	Magnetic		
Service			
		Butterfly	
Terminal	AHU/Unitary	Distribution	Central Equipment

D-5

Valves

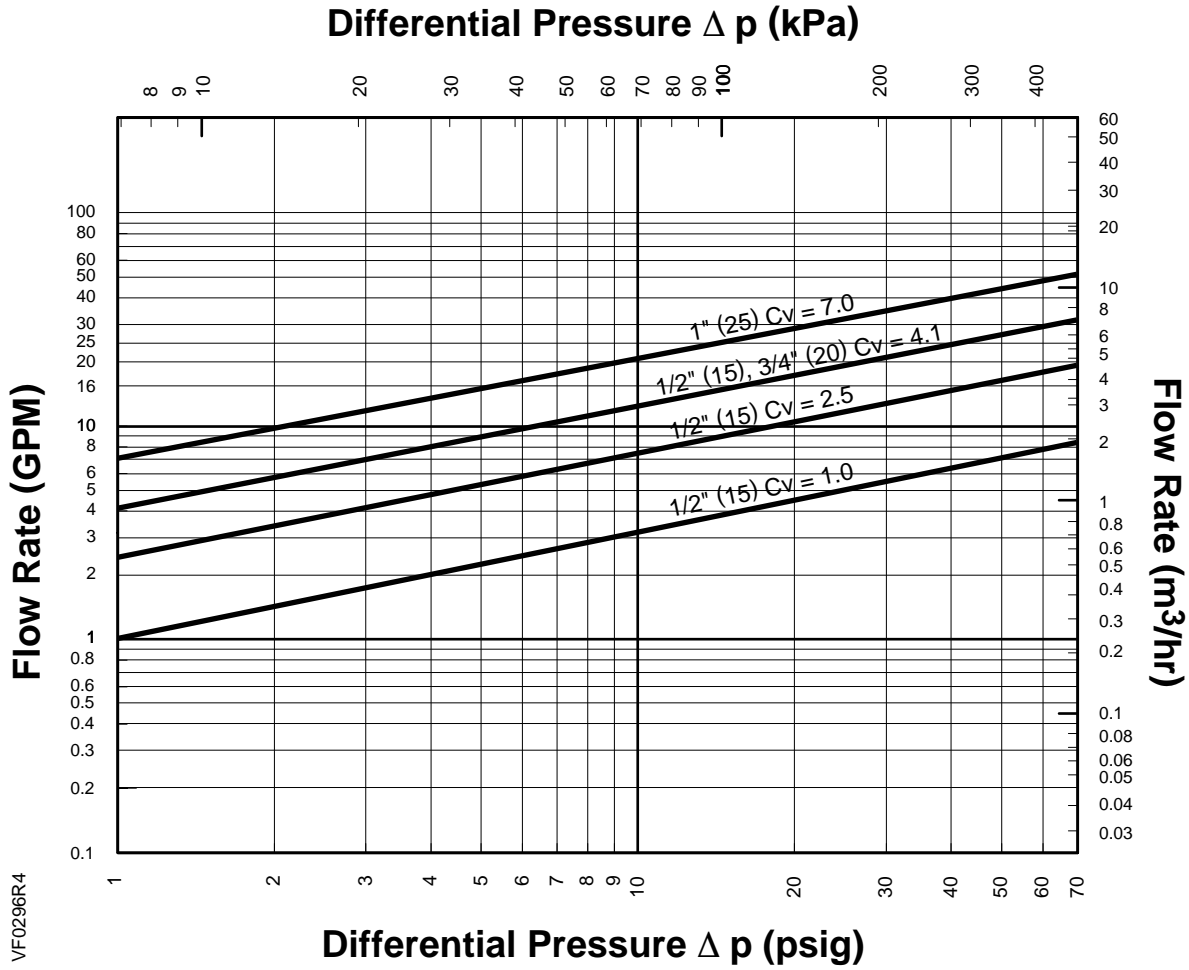
Valve Selection Matrix by Application

Application	Controlled Medium	Valve Size	Type of Valve	Refer to Page
Baseboard/Fan Coil/Radiant Heat	Water	1/2 to 1"	Zone	D-69
Baseboard/Terminal Unit	Water	1/2 to 1"	Powermite MZ Series	D-89
Terminal Unit	Water and Low Pressure steam ¹	1/2 to 1"	Powermite MT Series	D-99
Unitary/Fan Coil	Water and Low Pressure steam ¹	1/2 to 1"	Powermite MT Series	D-99
Unitary/Fan Coil	Water (Equal Percentage) and High Pressure steam (Linear)	1/2 to 2"	Flowrite Globe	D-119
Air Handling Unit	Water (Equal Percentage) and High Pressure steam (Linear)	1/2 to 2"	Flowrite Globe	D-119
Central Plant	Water (Equal Percentage) and High Pressure steam (Linear)	2-1/2 to 6"	Flowrite Globe	D-131
Fan Coil/VAV/Isolation and Control/AHU	Water	1/2 to 2"	Ball	D-161
High performance Control and Domestic Water	Water (including Domestic), Low Pressure Steam and High Pressure Steam	1/2 to 4"	Magnetic	D-173
Baseboard/Terminal Unit/Radiant (Replacement)	Water and Low Pressure Steam	1/2 to 1-1/4"	Service	D-193
Central Plant Isolation and Distribution	Water	2 to 20"	Butterfly	D-205

Table Note:

1. Low pressure steam = 15 psi or less

Zone Valves Water Capacity Graph



D-6

Zone Valves Water Capacity Tables and Close-off Pressure

Water Capacity Tables

Valve Size Inches	Pressure Differential — psi English (AB→A)															
	Cv1	2	3	4	5	6	8	10	15	20	25	30	40	50	60	75
1/2	1.0	1.4	1.7	2.0	2.2	2.4	2.8	3.2	3.9	4.4	5.0	5.5	6.3	7.1	7.7	8.7
1/2	2.5	3.5	4.3	5.0	5.6	6.1	7.1	7.9	9.7	11.2	12.5	13.7	15.8	17.7	19.4	22.0
1/2 / 3/4	4.1	5.7	7.1	8.2	9.2	10.0	11.6	13.0	15.9	18.3	20.5	22.4	25.9	29.0	31.8	35.5
1	7.0	9.9	12.1	14.0	15.6	17.1	19.8	22.1	27.1	31.3	35.0	38.3	44.3	49.5	54.2	60.6

Table is expressed in U.S. Gallons per minute (GPM).

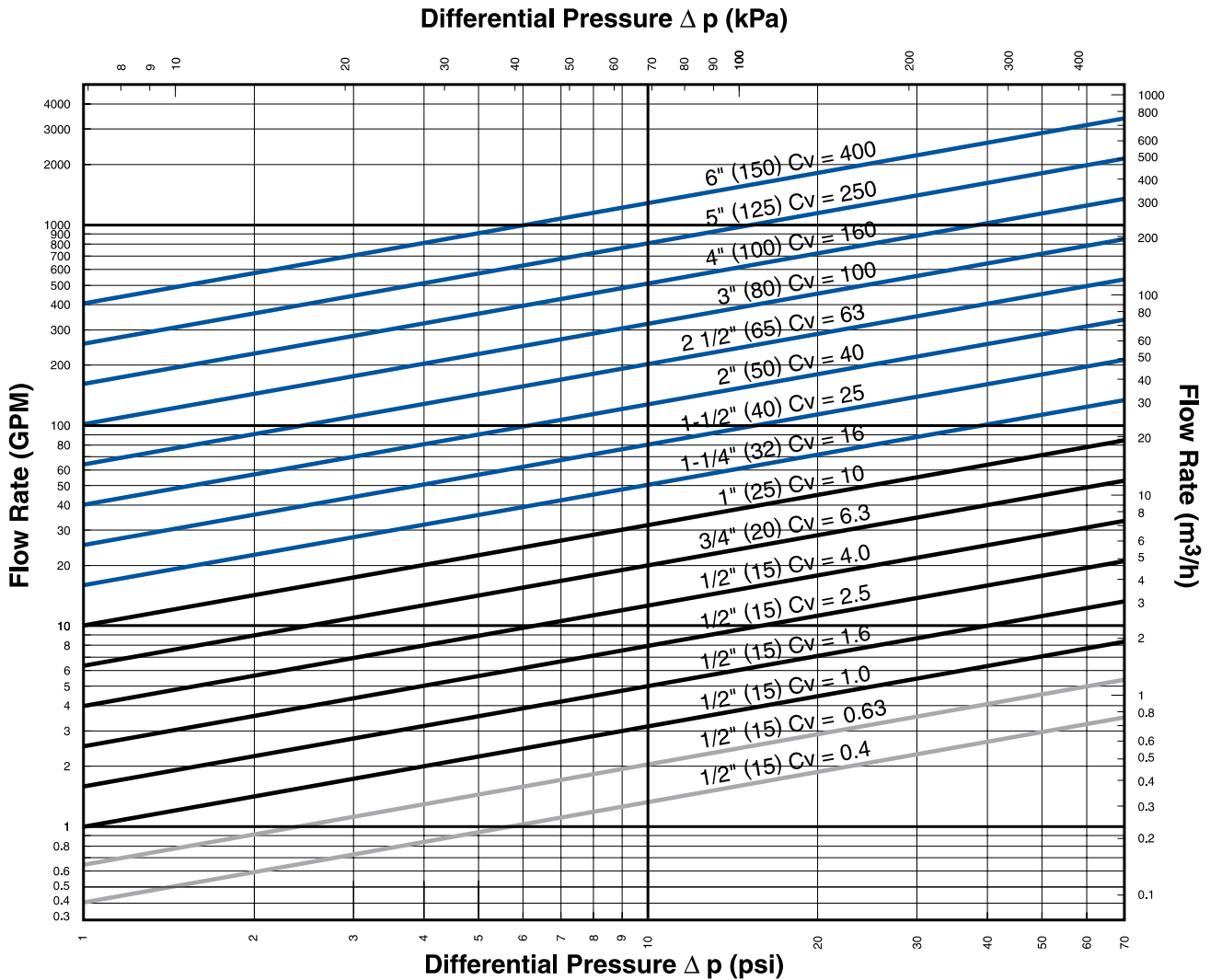
Valve Size mm	Pressure Differential — psi Metric (AB→A)													
	1	10	20	30	40	50	60	80	100 (Kvs)	150	200	300	400	500
15	0.09	0.27	0.38	0.47	0.54	0.60	0.66	0.76	0.85	1.04	1.20	1.47	1.70	1.90
15	0.22	0.68	0.96	1.18	1.36	1.52	1.67	1.92	2.15	2.63	3.04	3.72	4.30	4.81
15/20	0.35	1.11	1.57	1.92	2.21	2.47	2.71	3.13	3.50	4.29	4.95	6.06	7.00	7.83
25	0.60	1.90	2.68	3.29	3.79	4.24	4.65	5.37	6.00	7.35	8.49	10.39	12.00	13.42

Table expressed in Cubic Meters per Hour (m³/hr).

Close-off Pressures

Bronze			
Valve Size		Pressure	
Inch	(mm)	psi	(KPa)
1/2	(15)	44	(303)
3/4	(20)	44	(303)
1	(25)	22	(152)

Powermite/Flowrite **Globe** Water Capacity Graph



Key

- Flowrite 599 Series
- Powermite or Flowrite 599 Series
- Powermite 599 Series



For more precise Valve Sizing, use the Water Capacity tables on the next page.

D-8

Valves

Powermite/Flowrite **Globe** Water Capacity Tables

Valve Size Inches	English Pressure Differential															
	Cv1	2 psi	3 psi	4 psi	5 psi	6 psi	8 psi	10 psi	15 psi	20 psi	25 psi	30 psi	40 psi	50 psi	60 psi	75 psi
1/2"	0.4	0.6	0.7	0.8	0.9	1.0	1.1	1.3	1.5	1.8	2.0	2.2	2.5	2.8	3.1	3.5
1/2"	0.63	0.9	1.1	1.3	1.4	1.5	1.8	2.0	2.4	2.8	3.2	3.5	4.0	4.5	4.9	5.5
1/2"	1.0	1.4	1.7	2.0	2.2	2.5	2.8	3.2	3.9	4.5	5.0	5.5	6.3	7.1	7.8	8.7
1/2"	1.6	2.3	2.8	3.2	3.6	3.9	4.5	5.1	6.2	7.2	8.0	8.8	10.1	11.3	12.4	13.9
1/2"	2.5	3.5	4.3	5.0	5.6	6.1	7.1	7.9	9.7	11.2	12.5	13.7	15.8	17.7	19.4	22
1/2"	4	5.7	7	8.0	8.9	10	11.3	12.6	15.5	17.9	20.0	21.9	25	28	31	35
3/4"	6.3	8.9	10.9	12.6	14.1	15.4	17.8	20	24	28	32	35	40	45	49	55
1"	10	14.1	17.3	20	22	24	28	32	39	45	50	55	63	71	77	87
1-1/4"	16	23	28	32	36	39	45	51	62	72	80	88	101	113	124	139
1-1/2"	25	35	43	50	56	61	71	79	97	112	125	137	158	177	194	217
2"	40	57	69	80	89	98	113	126	155	179	200	219	253	283	310	346
2-1/2"	63	89	109	126	141	154	178	199	244	282	315	345	398	445	488	546
3"	100	141	173	200	224	245	283	316	387	447	500	548	632	707	775	866
4"	160	226	277	320	358	392	453	506	620	716	800	876	1012	1131	1239	1386
5"	250	354	433	500	559	612	707	791	968	1118	1250	1369	1581	1768	1936	2165
6"	400	566	693	800	894	980	1131	1265	1549	1789	2000	2191	2530	2828	3098	3464

Table is expressed in U.S. gallons per minute (GPM).

Valve Size mm	Metric Pressure Differential													
	1 kPa	10 kPa	20 kPa	30 kPa	40 kPa	50 kPa	60 kPa	80 kPa	100 (Kvs)	150 kPa	200 kPa	300 kPa	400 kPa	500 kPa
15	0.03	0.11	0.15	0.19	0.22	0.24	0.26	0.30	0.34	0.42	0.48	0.59	0.68	0.76
15	0.05	0.17	0.24	0.30	0.34	0.38	0.42	0.48	0.54	0.66	0.76	0.94	1.08	1.21
15	0.09	0.27	0.38	0.47	0.54	0.60	0.66	0.76	0.85	1.0	1.2	1.5	1.7	1.9
15	0.14	0.43	0.61	0.75	0.87	0.97	1.06	1.23	1.37	1.7	1.9	2.4	2.7	3.1
15	0.21	0.68	0.96	1.17	1.35	1.51	1.66	1.91	2.15	2.6	3.0	3.7	4.3	4.8
15	0.34	1.1	1.5	1.9	2.2	2.4	2.7	3.1	3.4	4.2	4.9	6.0	6.9	7.7
20	0.54	1.7	2.4	3.0	3.4	3.8	4.2	4.9	5.4	6.7	7.7	9.4	10.9	12.1
25	0.86	2.7	3.8	4.7	5.4	6.1	6.7	7.7	8.6	10.5	12.2	14.9	17.2	19.2
32	1.4	4.4	6.2	7.6	8.7	9.8	10.7	12.3	13.8	16.9	19.5	23.9	27.6	30.9
40	2.2	6.8	9.6	11.8	13.6	15.2	16.7	19.2	22	26	30	37	43	48
50	3.4	10.9	15.4	18.8	22	24	27	31	34	42	49	60	69	77
65	5.4	17.1	24	30	34	38	42	48	54	66	76	94	108	121
80	8.5	27	38	47	54	60	66	76	85	104	120	147	170	190
100	14	43	61	75	87	97	106	123	137	168	194	237	274	306
125	21	68	96	117	135	151	166	191	214	262	303	371	428	479
150	34	108	153	187	216	242	265	306	342	419	484	592	684	765

Table expressed in Cubic Meters per Hour (m³/hr).

Table Note:

Cv values of 0.4 to 10 are Powermite globe valves; Cv values of 1.0 to 400 are Flowrite globe valves.

Powermite/Flowrite **Globe** Maximum Steam Capacity at Various Pressure Differentials

Valve Size Inches	English Inlet Pressure								
	2 psi			5 psi			10 psi		
	Cv	Pressure Differential							
	1 psi	2 psi	3 psi	4 psi	5 psi	6 psi	8 psi	10 psi	
1/2"	0.4	4.78	6.66	8.78	10	11	14	15	17
1/2"	0.63	7.53	11	14	16	17	21	24	26
1/2"	1	12	17	22	25	28	34	38	42
1/2"	1.6	19	27	35	40	44	54	61	67
1/2"	2.5	30	42	55	62	69	85	96	104
1/2"	4	48	67	88	100	110	136	153	167
3/4"	6.3	75	105	138	157	174	214	241	263
1"	10	120	166	219	250	275	339	382	417
1-1/4"	16	191	266	351	400	441	542	611	667
1-1/2"	25	299	416	549	625	689	847	955	1042
2"	40	478	666	878	1000	1102	1356	1529	1667
2-1/2"	63	753	1048	1383	1574	1735	2135	2408	2626
3"	100	1195	1664	2194	2499	2754	3389	3822	4168
4"	160	1913	2663	3511	3998	4407	5422	6115	6669
5"	250	2988	4160	5486	6247	6885	8472	9554	10421
6"	400	4781	6657	8778	9996	11017	13555	15287	16674

Table is expressed in pounds per hour (lbs./hr.).

Valve Size mm.	Kvs	Metric Inlet Pressure														
		100 kPa			150 kPa			200 kPa			500 kPa			1000 kPa		
		Pressure Differential														
		10 kPa	20 kPa	50 kPa	15 kPa	30 kPa	75 kPa	20 kPa	40 kPa	100 kPa	50 kPa	100 kPa	250 kPa	100 kPa	200 kPa	500 kPa
15 mm	0.34	2.42	3.42	5.40	3.63	5.13	8.12	4.84	6.85	11	12	17	27	24	34	54
15 mm	0.54	3.80	5.38	8.51	5.72	8.08	13	7.63	11	17	19	27	43	38	54	85
15 mm	0.86	6.04	8.54	14	9.07	13	20	12	17	27	30	43	68	61	86	136
15 mm	1.37	10	14	22	15	21	32	19	27	43	49	69	108	97	137	217
15 mm	2.14	15	21	34	23	32	51	30	43	68	76	107	169	152	214	339
15 mm	3.43	24	34	54	36	51	81	48	69	108	121	172	271	243	343	543
20 mm	5.40	38	54	85	57	81	128	76	108	171	191	270	427	382	541	855
25 mm	9	60	85	135	91	128	203	121	171	271	303	429	678	607	858	1357
32 mm	14	97	137	216	145	205	325	194	274	433	485	686	1085	971	1373	2171
40 mm	21	151	214	338	227	321	507	303	428	677	758	1072	1695	1517	2145	3391
50 mm	34	242	342	540	363	513	812	484	685	1083	1213	1715	2712	2427	3432	5426
65 mm	54	380	538	851	572	808	1278	763	1079	1706	1910	2701	4271	3822	5405	8546
80 mm	86	604	854	1350	907	1283	2029	1211	1713	2708	3032	4288	6779	6067	8580	13566
100 mm	137	966	1367	2161	1452	2053	3247	1938	2740	4332	4851	6860	10847	9707	13728	21705
125 mm	214	1510	2135	3376	2269	3208	5073	3027	4281	6769	7580	10719	16949	15167	21449	33914
150 mm	343	2416	3416	5402	3630	5133	8116	4844	6850	10831	12128	17151	27118	24267	34319	54263

Table is expressed in kilograms per hour (kg/hr).

D-10

Valves

Powermite/Flowrite **Globe** Temperature Pressure Ratings

Powermite Valve Bodies

Temperature Range		Pressure	
		ANSI Class 250	
Bronze/Brass 1/2 to 1"			
-20 to 150°F	-30 to 66°C	400 psi (2758 kPa)	
200°F	93°C	385 psi (2655 kPa)	
250°F	121°C	365 psi (2586 kPa)	
300°F	149°C	335 psi (2300 kPa)	
350°F	177°C	300 psi (2068 kPa)	

Flowrite Valve Bodies

Temperature Range		Pressure	
		ANSI Class 250	
Bronze 1/2 to 2"			
-20 to 150°F	-30 to 66°C	400 psi (2758 kPa)	
200°F	93°C	385 psi (2655 kPa)	
250°F	121°C	365 psi (2586 kPa)	
300°F	149°C	335 psi (2300 kPa)	
350°F	177°C	300 psi (2068 kPa)	
Temperature Range		Pressure	
		ANSI Class 125	ANSI Class 250
Flanged Iron 2-1/2 to 6"			
-20 to 150°F	-30 to 66°C	200 psi (1387 kPa)	500 psi (3447 kPa)
200°F	93°C	190 psi (1310 kPa)	460 psi (3171 kPa)
250°F	121°C	175 psi (1206 kPa)	415 psi (2861 kPa)
300°F	149°C	165 psi (1137 kPa)	375 psi (2585 kPa)
400°F	204°C	140 psi (965 kPa)	290 psi (1999 kPa)
450°F	232°C	125 psi (861 kPa)	250 psi (1723 kPa)

Powermite **Globe** Close-off Pressures

MZ Series

Valve Size	Electronic	
	2-Way	3-Way
	Normally Open	
1/2", Cv ≤ 1.6	60 psi (414 kPa)	25 psi (172 kPa)
1/2", Cv ≤ 4	35 psi (241 kPa)	15 psi (103 kPa)
3/4 to 1", Cv ≤ 10	30 psi (207 kPa)	10 psi (69 kPa)
	Normally Closed	
1/2", Cv ≤ 1.6	70 psi (482 kPa)	70 psi (482 kPa)
1/2", Cv ≤ 4	40 psi (276 kPa)	40 psi (276 kPa)
3/4 to 1", Cv ≤ 10	30 psi (207 kPa)	30 psi (207 kPa)

Table Note:

For 3-Way valve close-offs, use this chart to determine upper port (NC) and bottom port (NO).

D-12

MT Series

2-Way Valve Size	Pneumatic			Electronic	
	599-01088			SQS	SSC
	3-8 psi	8-13 psi	10-15 psi		
	Normally Open				
1/2", Cv ≤ 1.6	95 psi (655 kPa)	45 psi (310 kPa)	20 psi (138 kPa)	160 psi (1103 kPa)	120 psi (868 kPa)
1/2", Cv ≤ 4	45 psi (310 kPa)	25 psi (172 kPa)	15 psi (103 kPa)	85 psi (586 kPa)	65 psi (448 kPa)
3/4 to 1", Cv ≤ 10	35 psi (241 kPa)	10 psi (69 kPa)	—	70 psi (482 kPa)	55 psi (379 kPa)
	Normally Closed				
1/2", Cv ≤ 1.6	40 psi (276 kPa)	95 psi (655 kPa)	95 psi (655 kPa)	95 psi (655 kPa)	95 psi (655 kPa)
1/2", Cv ≤ 4	28 psi (193 kPa)	50 psi (345 kPa)	50 psi (345 kPa)	50 psi (345 kPa)	50 psi (345 kPa)
3/4 to 1", Cv ≤ 10	18 psi (124 kPa)	40 psi (276 kPa)	40 psi (276 kPa)	40 psi (276 kPa)	40 psi (276 kPa)

3-Way Valve Size	Pneumatic			Electronic	
	599-01088			SQS	SSC
	3-8 psi	8-13 psi	10-15 psi		
	Normally Open				
1/2", Cv ≤ 1.6	95 psi (655 kPa)	45 psi (310 kPa)	20 psi (138 kPa)	160 psi (1103 kPa)	95 psi (655 kPa)
1/2", Cv ≤ 4	45 psi (310 kPa)	25 psi (172 kPa)	15 psi (103 kPa)	85 psi (586 kPa)	50 psi (379 kPa)
3/4 to 1", Cv ≤ 10	35 psi (241 kPa)	10 psi (69 kPa)	—	70 psi (482 kPa)	40 psi (276 kPa)
	Normally Closed				
1/2", Cv ≤ 1.6	40 psi (276 kPa)	95 psi (655 kPa)	120 psi (827 kPa)	95 psi (655 kPa)	95 psi (655 kPa)
1/2", Cv ≤ 4	28 psi (193 kPa)	50 psi (345 kPa)	65 psi (448 kPa)	50 psi (345 kPa)	50 psi (345 kPa)
3/4 to 1", Cv ≤ 10	18 psi (124 kPa)	40 psi (276 kPa)	50 psi (345 kPa)	40 psi (276 kPa)	40 psi (276 kPa)

Table Notes:

For 3-Way valve close-offs, use this chart to determine upper (NC) and bottom port (NO).

Normally open close-off pressures are at 20 psi actuator pressure.

Normally closed close-off pressures are at 0 psi actuator pressure.

Flowrite **Globe** Close-off Pressures

Pneumatic

Valve Size in. (mm)	Spring Range							
	3 to 8 psi (21 to 55 kPa)					10 to 15 psi (69 to 103 kPa)		
	4" Actuator	8" Actuator		12" Actuator		4" Actuator	8" Actuator	12" Actuator
	15 psi (103 kPa)	15 psi (103 kPa)	30 psi (207 kPa)	15 psi (103 kPa)	30 psi (207 kPa)	0 psi (0 kPa)	0 psi (0 kPa)	0 psi (0 kPa)
	Normally Open					Normally Closed		
1/2 (15)	142 (979)	250 (1724)	250 (1724)	—	—	236 (1627)	250 (1724)	—
3/4 (20)	80 (552)	231 (1593)	250 (1724)	—	—	155 (1069)	250 (1724)	—
1 (25)	52 (359)	150 (1034)	250 (1724)	250 (1724)	250 (1724)	91 (627)	250 (1724)	250 (1724)
1-1/4 (32)	32 (221)	93 (641)	250 (1724)	250 (1724)	250 (1724)	52 (359)	148 (1020)	250 (1724)
1-1/2 (40)	20 (138)	60 (414)	198 (1365)	205 (1413)	250 (1724)	32 (331)	92 (634)	250 (1724)
2 (50)	12 (83)	37 (255)	123 (848)	130 (896)	250 (1724)	20 (138)	55 (379)	185 (1275)
2-1/2 (65)	—	31 (213)	100 (689)	95 (655)	250 (1724)	—	36 (248)	114 (786)
3 (80)	—	20 (138)	66 (444)	63 (434)	200 (1378)	—	23 (158)	74 (610)
4 (100)	—	—	—	40 (275)	129 (889)	—	—	46 (317)
5 (125)	—	—	—	26 (179)	82 (565)	—	—	29 (199)
6 (150)	—	—	—	18 (124)	57 (393)	—	—	20 (137)

Table Notes:

All values within table are in psi (kPa) unless otherwise indicated.

For 3-Way valve close-offs, use this chart to determine upper port (NC) and bottom port (NO).

Normally open close-off pressures are at 15 psi actuator pressure.

Normally closed close-off pressures are at 0 psi actuator pressure.

D-13

Valves

Pneumatic High Pressure Close-off

Valve Size in. (mm)	Spring Range			
	3 to 8 psi (21 to 55 kPa)		10 to 15 psi (69 to 103 kPa)	
	8" Actuator	12" Actuator	8" Actuator	12" Actuator
	Normally Open		Normally Closed	
2-1/2 (65)	200 (1378)	—	200 (1378)	—
3 (80)	200 (1378)	—	200 (1378)	—
4 (100)	—	200 (1378)	—	200 (1378)
5 (125)	—	200 (1378)	—	200 (1378)
6 (150)	—	200 (1378)	—	200 (1378)

Table Notes:

All values within table are in psi (kPa) unless otherwise indicated.

Flowrite **Globe** Close-off Pressures

Electronic

Valve Size in. (mm)		SAX SR APC 370/372	SAX NSR APC 371/373	SKD APC 274-276	SKB APC 289-291	SKC APC 292-294
Normally Open						
1/2	(15)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	—
3/4	(20)	182 (1255)	211 (1456)	250 (1724)	250 (1724)	—
1	(25)	119 (821)	137 (945)	201 (1386)	250 (1724)	—
1-1/4	(32)	73 (503)	85 (586)	124 (855)	250 (1724)	—
1-1/2	(40)	47 (324)	55 (379)	80 (552)	250 (1724)	—
2	(50)	29 (200)	34 (235)	49 (338)	201 (1386)	—
2-1/2	(65)	23 (159)	26 (179)	38 (262)	153 (518)	—
3	(80)	15 (103)	17 (117)	25 (172)	101 (342)	—
4	(100)	—	—	—	—	65 (448)
5	(125)	—	—	—	—	42 (289)
6	(150)	—	—	—	—	29 (199)
Normally Closed						
1/2	(15)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	—
3/4	(20)	234 (1614)	250 (1724)	250 (1724)	250 (1724)	—
1	(25)	137 (945)	159 (1097)	203 (1400)	250 (1724)	—
1-1/4	(32)	80 (552)	92 (634)	117 (807)	250 (1724)	—
1-1/2	(40)	50 (345)	57 (393)	73 (503)	208 (1434)	—
2	(50)	30 (207)	35 (241)	44 (303)	126 (869)	—
2-1/2	(65)	23 (159)	26 (179)	34 (234)	97 (668)	—
3	(80)	15 (103)	17 (117)	22 (152)	63 (434)	—
4	(100)	—	—	—	—	39 (268)
5	(125)	—	—	—	—	25 (172)
6	(150)	—	—	—	—	17 (117)

D-14

Valves

Electronic High Pressure Close-off

Valve Size in. (mm)		Electro-Hydraulic 24 VAC	
		SKD	SKC
Normally Open			
2-1/2	(65)	200 (1378)	—
3	(80)	200 (1378)	—
4	(100)	—	200 (1378)
5	(125)	—	200 (1378)
6	(150)	—	200 (1378)
Normally Closed			
2-1/2	(65)	200 (1378)	—
3	(80)	200 (1378)	—
4	(100)	—	200 (1378)
5	(125)	—	200 (1378)
6	(150)	—	200 (1378)

Table Notes:

All values within table are in psi (kPa) unless otherwise indicated.

Ball Valve Flow Coefficients

✂ 2-Way, Full-Port (no flow optimizer) Ball Valve Part Nos. and Flow Coefficients

Valve Size in. (mm)	Valve Part No.	Effective (Installed) Cv (Kvs)							
		Supply Line Size in Inches (mm)							
		1/2 (13)	3/4 (20)	1 (25)	1-1/4 (32)	1-1/2 (38)	2 (51)	2-1/2 (63)	3 (76)
1/2 (15)	599-10307 or 599-10307S	10.0 (8.62)	6.94 (5.93)	6.19 (5.29)					
3/4 (20)	599-10311 or 599-10311S		25.00 (21.55)	18.66 (15.99)	15.35 (13.12)				
1 (25)	599-10316 or 599-10316S			63.00 (54.31)	39.78 (34.00)	33.56 (28.69)			
1-1/4 (30)	599-10321 or 599-10321S				100.00 (86.21)	69.19 (5.13)	51.45 (43.98)		
1-1/2 (40)	599-10326 or 599-10326S					160.00 (137.93)	93.80 (80.17)	76.34 (65.25)	
2 (50)	599-10329 or 599-10329S						100.00 (86.21)	94.30 (80.60)	86.12 (73.61)

D-15

Valves

✂ 3-Way, Full-Port (no flow optimizer) Ball Valve Part Nos. and Flow Coefficients

Valve Size in. (mm)	Ball Size in. (mm)	Valve Part No.	Effective (Installed) Cv (Kvs)							
			Supply Line Size in Inches (mm)							
			1/2 (13)	3/4 (20)	1 (25)	1-1/4 (32)	1-1/2 (38)	2 (51)	2-1/2 (63)	3 (76)
1/2 (15)	3/4 (20)	599-10255	10.0 (8.62)	6.94 (5.93)	6.19 (5.29)					
3/4 (20)	3/4 (20)	599-10256		16.00 (13.79)	13.9 (11.98)	12.4 (10.69)				
1 (25)	1-1/4 (30)	599-10259			25.00 (21.55)	22.5 (19.4)	21.2 (18.27)			
1-1/4 (30)	1-1/4 (30)	599-10261				40.00 (34.48)	36.9 (31.81)	33.3 (28.70)		
1-1/2 (40)	1-1/2 (40)	599-10264					63.00 (54.31)	55.3 (47.67)	51.00 (43.96)	
2 (50)	2 (50)	599-10267						100 (86.21)	94.3 (81.29)	86.1 (74.23)

For more information on selecting ball valves, refer to the Engineering Section, Section I.

Key Valve may be oversized Optimal valve size Valve may be undersized

Two- & Three-Way **Zone** Valve Assemblies

ANSI Class 125

Electronic Spring Return or Non-Spring Return Actuators

- Normally Open or Normally Closed
- Brass Trim
- NPT and Sweat Connections



NO/NC 1/2 to 1"				Spring Return Actuator				Non-Spring Return Actuator				
				NO		NC		NO		NC	NO	NC
				2P 120 Vac		2P 24 Vac		Floating 24 Vac	0-10 Vdc 24 Vac	0-10 Vdc 24 Vac		
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi									
NPT Connection												
	1/2	1.0	44	241-00210	240-00210	243-00210	242-00210	244-00210	248-00210	245-00210		
599-00211		2.5	44	241-00211	240-00211	243-00211	242-00211	244-00211	248-00211	245-00211		
599-00214		4.0	44	241-00214	240-00214	243-00214	242-00214	244-00214	248-00214	245-00214		
599-00212	3/4	4.1	44	241-00212	240-00212	243-00212	242-00212	244-00212	248-00212	245-00212		
599-00213	1	7.0	22	241-00213	240-00213	243-00213	242-00213	244-00213	248-00213	245-00213		
Sweat Connection												
	1/2	1.0	44	241-00510	240-00510	243-00510	242-00510	244-00510	248-00510	245-00510		
599-00511		2.5	44	241-00511	240-00511	243-00511	242-00511	244-00511	248-00511	245-00511		
599-00514		4.0	44	241-00514	240-00514	243-00514	242-00514	244-00514	248-00514	245-00514		
599-00512	3/4	4.1	44	241-00512	240-00512	243-00512	242-00512	244-00512	248-00512	245-00512		
599-00513	1	7.0	22	241-00513	240-00513	243-00513	242-00513	244-00513	248-00513	245-00513		

Table Notes:

Part numbers in red indicate complete assemblies.



D-16

Valves

Diverting 1/2 to 1"				Spring Return Actuator				Non-Spring Return Actuator		
				AB→A NO	AB→A NC	AB→A NO	AB→A NC	AB→A NC	AB→A NO	AB→A NC
				2P 120 Vac		2P 24 Vac		Floating 24 Vac	0-10 Vdc 24 Vac	0-10 Vdc 24 Vac
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi							
NPT Connection										
	1/2	1.0	44	241-00230	240-00230	243-00230	242-00230	244-00230	248-00230	245-00230
599-00231		2.5	44	241-00231	240-00231	243-00231	242-00231	244-00231	248-00231	245-00231
599-00234		4.0	44	241-00234	240-00234	243-00234	242-00234	244-00234	248-00234	245-00234
599-00232	3/4	4.1	44	241-00232	240-00232	243-00232	242-00232	244-00232	248-00232	245-00232
599-00233	1	7.0	22	241-00233	240-00233	243-00233	242-00233	244-00233	248-00233	245-00233
Sweat Connection										
	1/2	1.0	44	241-00530	240-00530	243-00530	242-00530	244-00530	248-00530	245-00530
599-00531		2.5	44	241-00531	240-00531	243-00531	242-00531	244-00531	248-00531	245-00531
599-00534		4.0	44	241-00534	240-00534	243-00534	242-00534	244-00534	248-00534	245-00534
599-00532	3/4	4.1	44	241-00532	240-00532	243-00532	242-00532	244-00532	248-00532	245-00532
599-00533	1	7.0	22	241-00533	240-00533	243-00533	242-00533	244-00533	248-00533	245-00533

Table Notes:

Part numbers in red indicate complete assemblies. *Flow rate is for AB→A.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.



SIEMENS

Two- & Three-Way **Zone** Valve Assemblies

ANSI Class 125

Thermic Spring Return Actuators

- Normally Open or Normally Closed
- Brass Trim
- NPT and Sweat Connections







NO/NC 1/2 to 1"				Spring Return Actuator	
				NO	NC
				2P 24 Vac	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 STP71	 STA71
NPT Connection					
	1/2	1.0	44	247-00210	246-00210
		2.5	44	247-00211	246-00211
		4.0	44	247-00214	246-00214
	3/4	4.1	44	247-00212	246-00212
	1	7.0	22	247-00213	246-00213
Sweat Connection					
	1/2	1.0	44	247-00510	246-00510
		2.5	44	247-00511	246-00511
		4.0	44	247-00514	246-00514
	3/4	4.1	44	247-00512	246-00512
	1	7.0	22	247-00513	246-00513

Table Notes:

Part numbers in red indicate complete assemblies.





Diverting 1/2 to 1"				Spring Return Actuator	
				AB→A NO	AB→A NC
				2P 24 Vac	
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 STP71	 STA71
NPT Connection					
	1/2	1.0	44	247-00230	246-00230
		2.5	44	247-00231	246-00231
		4.0	44	247-00234	246-00234
	3/4	4.1	44	247-00232	246-00232
	1	7.0	22	247-00233	246-00233
Sweat Connection					
	1/2	1.0	44	247-00530	246-00530
		2.5	44	247-00531	246-00531
		4.0	44	247-00534	246-00534
	3/4	4.1	44	247-00532	246-00532
	1	7.0	22	247-00533	246-00533

Table Notes:

Part numbers in red indicate complete assemblies.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.

Two- & Three-Way **Globe** Valve Assemblies — MZ Series

ANSI Class 250

Electronic Non-Spring Return Actuators

- Normally Open or Normally Closed
- Brass Trim



D-18

Valves

NO/NC 1/2 to 1"				Non-Spring Return Actuator	
				Floating 3P	0-10 V
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	SSB81U	SSB61U
Normally Open					
	1/2	0.4	60	254-01115	255-01115
		0.63	60	254-01117	255-01117
		1	60	254-01119	255-01119
		1.6	60	254-01121	255-01121
	3/4	2.5	35	254-01123	255-01123
		4	35	254-01126	255-01126
		6.3	30	254-01129	255-01129
		10	30	254-01131	255-01131
Normally Closed					
	1/2	0.4	70	254-01100	255-01100
		0.63	70	254-01102	255-01102
		1	70	254-01104	255-01104
		1.6	70	254-01106	255-01106
	3/4	2.5	40	254-01108	255-01108
		4	40	254-01110	255-01110
		6.3	30	254-01112	255-01112
		10	30	254-01114	255-01114

Table Notes:

Part numbers in red indicate complete assemblies.



Water Mixing 1/2 to 1"				Non-Spring Return Actuator	
				Floating 3P	0-10 V
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	SSB81U	SSB61U
	1/2	0.4	70	254-01132	255-01132
		0.63	70	254-01133	255-01133
		1	70	254-01134	255-01134
		1.6	70	254-01135	255-01135
		2.5	40	254-01136	255-01136
		4	40	254-01137	255-01137
	3/4	6.3	30	254-01138	255-01138
	1	10	30	254-01139	255-01139

Table Notes:

Part numbers in red indicate complete assemblies.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.



Two-Way **Globe** Valve Assemblies — MT Series

ANSI Class 250

Pneumatic Spring Return Actuators

- Normally Open or Normally Closed
- Brass and Stainless Steel Trim










NO/NC 1/2 to 1"			Spring Return Actuator			
			3-8 psi (21-55 kPa)	8-13 psi (55-90 kPa)	10-15 psi (69-103 kPa)	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv				
			599-01088	599-01088	599-01088	
Normally Open						
Close-off psi — Brass Trim						
	1/2	0.4	95 257-02030	45 258-02030C	20 256-02030A	
		0.63	95 257-02032	45 258-02032C	20 256-02032A	
		1	95 257-02034	45 258-02034C	20 256-02034A	
		1.6	95 257-02036	45 258-02036C	20 256-02036A	
		2.5	45 257-02038	25 258-02038C	15 256-02038A	
		4	45 257-02041	25 258-02041C	15 256-02041A	
	3/4	6.3	35 257-02044	10 258-02044C	—	
	1	10	35 257-02046	10 258-02046C	—	
	Close-off psi — Stainless Steel Trim					
		1/2	0.4	95 257-02047	45 258-02047C	20 256-02047A
0.63			95 257-02049	45 258-02049C	20 256-02049A	
1			95 257-02051	45 258-02051C	20 256-02051A	
1.6			95 257-02053	45 258-02053C	20 256-02053A	
2.5			45 257-02055	25 258-02055C	15 256-02055A	
4			45 257-02058	25 258-02058C	15 256-02058A	
3/4		6.3	35 257-02061	10 258-02061C	—	
1		10	35 257-02063	10 258-02063C	—	
Normally Closed						
Close-off psi — Brass Trim						
	1/2	0.4	40 257-02000B	95 258-02000C	95 256-02000	
		0.63	40 257-02002B	95 258-02002C	95 256-02002	
		1	40 257-02004B	95 258-02004C	95 256-02004	
		1.6	40 257-02006B	95 258-02006C	95 256-02006	
		2.5	28 257-02008B	50 258-02008C	50 256-02008	
		4	28 257-02010B	50 258-02010C	50 256-02010	
	3/4	6.3	18 257-02012B	40 258-02012C	40 256-02012	
	1	10	18 257-02014B	40 258-02014C	40 256-02014	
	Close-off psi — Stainless Steel Trim					
		1/2	0.4	40 257-02015B	95 258-02015C	95 256-02015
0.63			40 257-02017B	95 258-02017C	95 256-02017	
1			40 257-02019B	95 258-02019C	95 256-02019	
1.6			40 257-02021B	95 258-02021C	95 256-02021	
2.5			28 257-02023B	50 258-02023C	50 256-02023	
4			28 257-02025B	50 258-02025C	50 256-02025	
3/4		6.3	18 257-02027B	40 258-02027C	40 256-02027	
1		10	18 257-02029B	40 258-02029C	40 256-02029	

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Normally Open Values in chart are for 20 psi supplied to the actuator.

Normally Closed Values in chart are for 0 psi supplied to the actuator.

Two-Way **Globe** Valve Assemblies — MT Series

ANSI Class 250

Electronic Spring Return or Non-Spring Return Actuators

- Normally Open or Normally Closed
- Brass and Stainless Steel Trim



NO/NC 1/2 to 1"			Spring Return Actuator				Non-Spring Return Actuator			
			Floating		0-10 V		Floating		0-10 V	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv								
			SSC81.5U	SOS85.53U	SSC61.5U	SOS65.5U	SSC81U	SSC61U	SOS65U	
Normally Open										
Close-off psi — Brass Trim										
599-02030	1/2	0.4	120 260-02030	160 266-02030	120 262-02030	160 265-02030	120 259-02030	120 261-02030	160 264-02030	
599-02032		0.63	120 260-02032	160 266-02032	120 262-02032	160 265-02032	120 259-02032	120 261-02032	160 264-02032	
599-02034		1	120 260-02034	160 266-02034	120 262-02034	160 265-02034	120 259-02034	120 261-02034	160 264-02034	
599-02036		1.6	120 260-02036	160 266-02036	120 262-02036	160 265-02036	120 259-02036	120 261-02036	160 264-02036	
599-02038		2.5	65 260-02038	85 266-02038	65 262-02038	85 265-02038	65 259-02038	65 261-02038	85 264-02038	
599-02041		4	65 260-02041	85 266-02041	65 262-02041	85 265-02041	65 259-02041	65 261-02041	85 264-02041	
599-02044	3/4	6.3	55 260-02044	70 266-02044	55 262-02044	70 265-02044	55 259-02044	55 261-02044	70 264-02044	
599-02046	1	10	55 260-02046	70 266-02046	55 262-02046	70 265-02046	55 259-02046	55 261-02046	70 264-02046	
Close-off psi — Stainless Steel Trim										
599-02047	1/2	0.4	120 260-02047	160 266-02047	120 262-02047	160 265-02047	120 259-02047	120 261-02047	160 264-02047	
599-02049		0.63	120 260-02049	160 266-02049	120 262-02049	160 265-02049	120 259-02049	120 261-02049	160 264-02049	
599-02051		1	120 260-02051	160 266-02051	120 262-02051	160 265-02051	120 259-02051	120 261-02051	160 264-02051	
599-02053		1.6	120 260-02053	160 266-02053	120 262-02053	160 265-02053	120 259-02053	120 261-02053	160 264-02053	
599-02055		2.5	65 260-02055	85 266-02055	65 262-02055	85 265-02055	65 259-02055	65 261-02055	85 264-02055	
599-02058		4	65 260-02058	85 266-02058	65 262-02058	85 265-02058	65 259-02058	65 261-02058	85 264-02058	
599-02061	3/4	6.3	55 260-02061	70 266-02061	55 262-02061	70 265-02061	55 259-02061	55 261-02061	70 264-02061	
599-02063	1	10	55 260-02063	70 266-02063	55 262-02063	70 265-02063	55 259-02063	55 261-02063	70 264-02063	
Normally Closed										
Close-off psi — Brass Trim										
599-02000	1/2	0.4	95 260-02000	95 266-02000	95 262-02000	95 265-02000	95 259-02000	95 261-02000	95 264-02000	
599-02002		0.63	95 260-02002	95 266-02002	95 262-02002	95 265-02002	95 259-02002	95 261-02002	95 264-02002	
599-02004		1	95 260-02004	95 266-02004	95 262-02004	95 265-02004	95 259-02004	95 261-02004	95 264-02004	
599-02006		1.6	95 260-02006	95 266-02006	95 262-02006	95 265-02006	95 259-02006	95 261-02006	95 264-02006	
599-02008		2.5	50 260-02008	50 266-02008	50 262-02008	50 265-02008	50 259-02008	50 261-02008	50 264-02008	
599-02010		4	50 260-02010	50 266-02010	50 262-02010	50 265-02010	50 259-02010	50 261-02010	50 264-02010	
599-02012	3/4	6.3	40 260-02012	40 266-02012	40 262-02012	40 265-02012	40 259-02012	40 261-02012	40 264-02012	
599-02014	1	10	40 260-02014	40 266-02014	40 262-02014	40 265-02014	40 259-02014	40 261-02014	40 264-02014	
Close-off psi — Stainless Steel Trim										
599-02015	1/2	0.4	95 260-02015	95 266-02015	95 262-02015	95 265-02015	95 259-02015	95 261-02015	95 264-02015	
599-02017		0.63	95 260-02017	95 266-02017	95 262-02017	95 265-02017	95 259-02017	95 261-02017	95 264-02017	
599-02019		1	95 260-02019	95 266-02019	95 262-02019	95 265-02019	95 259-02019	95 261-02019	95 264-02019	
599-02021		1.6	95 260-02021	95 266-02021	95 262-02021	95 265-02021	95 259-02021	95 261-02021	95 264-02021	
599-02023		2.5	50 260-02023	50 266-02023	50 262-02023	50 265-02023	50 259-02023	50 261-02023	50 264-02023	
599-02025		4	50 260-02025	50 266-02025	50 262-02025	50 265-02025	50 259-02025	50 261-02025	50 264-02025	
599-02027	3/4	6.3	40 260-02027	40 266-02027	40 262-02027	40 265-02027	40 259-02027	40 261-02027	40 264-02027	
599-02029	1	10	40 260-02029	40 266-02029	40 262-02029	40 265-02029	40 259-02029	40 261-02029	40 264-02029	

Table Notes:

Part numbers in red indicate complete assemblies.
Black numbers indicate close-off psi.



Three-Way **Globe** Valve Assemblies — MT Series

ANSI Class 250
Pneumatic Spring Return Actuators



- Brass and Stainless Steel Trim




Water Mixing 1/2 to 1"			Spring Return Actuator		
			3-8 psi (21-55 kPa)	8-13 psi (55-90 kPa)	10-15 psi (69-103 kPa)
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv			
			599-01088	599-01088	599-01088
Close-off psi — Brass Trim					
599-02064	1/2	0.4	40 257-02064B	95 258-02064	120 256-02064A
599-02065		0.63	40 257-02065B	95 258-02065	120 256-02065A
599-02066		1	40 257-02066B	95 258-02066	120 256-02066A
599-02067		1.6	40 257-02067B	95 258-02067	120 256-02067A
599-02068		2.5	28 257-02068B	50 258-02068	65 256-02068A
599-02069	4	28 257-02069B	50 258-02069	65 256-02069A	
599-02070	3/4	6.3	18 257-02070B	40 258-02070	50 256-02070A
599-02071	1	10	18 257-02071B	40 258-02071	50 256-02071A
Close-off psi — Stainless Steel Trim					
599-02072	1/2	0.4	40 257-02072B	95 258-02072	120 256-02072A
599-02073		0.63	40 257-02073B	95 258-02073	120 256-02073A
599-02074		1	40 257-02074B	95 258-02074	120 256-02074A
599-02075		1.6	40 257-02075B	95 258-02075	120 256-02075A
599-02076		2.5	28 257-02076B	50 258-02076	65 256-02076A
599-02077		4	28 257-02077B	50 258-02077	65 256-02077A
599-02078	3/4	6.3	18 257-02078B	40 258-02078	50 256-02078A
599-02079	1	10	18 257-02079B	40 258-02079	50 256-02079A

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Values in chart are for 0 psi supplied to the actuator.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section, I.

Three-Way **Globe** Valve Assemblies — MT Series

ANSI Class 250

Electronic Spring Return or Non-Spring Return Actuators

- Brass and Stainless Steel Trim



Water Mixing 1/2 to 1"				Spring Return Actuator				Non-Spring Return Actuator		
				Floating		0-10 V		Floating	0-10 V	
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi							
				Brass Trim						
599-02064	1/2	0.4	95	260-02064	266-02064	262-02064	265-02064	259-02064	261-02064	264-02064
599-02065		0.63	95	260-02065	266-02065	262-02065	265-02065	259-02065	261-02065	264-02065
599-02066		1	95	260-02066	266-02066	262-02066	265-02066	259-02066	261-02066	264-02066
599-02067		1.6	95	260-02067	266-02067	262-02067	265-02067	259-02067	261-02067	264-02067
599-02068		2.5	50	260-02068	266-02068	262-02068	265-02068	259-02068	261-02068	264-02068
599-02069		4	50	260-02069	266-02069	262-02069	265-02069	259-02069	261-02069	264-02069
599-02070	3/4	6.3	40	260-02070	266-02070	262-02070	265-02070	259-02070	261-02070	264-02070
599-02071	1	10	40	260-02071	266-02071	262-02071	265-02071	259-02071	261-02071	264-02071
				Stainless Steel Trim						
599-02072	1/2	0.4	95	260-02072	266-02072	262-02072	265-02072	259-02072	261-02072	264-02072
599-02073		0.63	95	260-02073	266-02073	262-02073	265-02073	259-02073	261-02073	264-02073
599-02074		1	95	260-02074	266-02074	262-02074	265-02074	259-02074	261-02074	264-02074
599-02075		1.6	95	260-02075	266-02075	262-02075	265-02075	259-02075	261-02075	264-02075
599-02076		2.5	50	260-02076	266-02076	262-02076	265-02076	259-02076	261-02076	264-02076
599-02077		4	50	260-02077	266-02077	262-02077	265-02077	259-02077	261-02077	264-02077
599-02078	3/4	6.3	40	260-02078	266-02078	262-02078	265-02078	259-02078	261-02078	264-02078
599-02079	1	10	40	260-02079	266-02079	262-02079	265-02079	259-02079	261-02079	264-02079

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section, I.



D-22

Valves



Powermite & Flowrite Selection Tables

Two-Way **Globe** Valve Assemblies

ANSI Class 250
Pneumatic Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Brass and Stainless Steel Trim



NO/NC Equal Percentage 1/2 to 2"			Spring Return Actuator					
			NO 4" 3-8 psi NC 4" 10-15 psi	8"	8" with Positioner			
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv						
			599-01081 – NO 599-01083 – NC	599-01050	599-01050 + 599-00426			
Normally Open								
Close-off psi — Brass Trim								
	1/2	1	142	268-03162	250	277-03162	250	283-03162
		1.6	142	268-03163	250	277-03163	250	283-03163
		2.5	142	268-03164	250	277-03164	250	283-03164
		4	142	268-03165	250	277-03165	250	283-03165
	3/4	6.3	80	268-03166	231	277-03166	231	283-03166
	1	10	52	268-03167	150	277-03167	150	283-03167
	1-1/4	16	32	268-03168	93	277-03168	93	283-03168
	1-1/2	25	20	268-03169	60	277-03169	60	283-03169
	2	40	12	268-03170	37	277-03170	37	283-03170
	Close-off psi — Stainless Steel Trim							
	1/2	1	142	268-03108	250	277-03108	250	283-03108
		1.6	142	268-03109	250	277-03109	250	283-03109
		2.5	142	268-03110	250	277-03110	250	283-03110
		4	142	268-03111	250	277-03111	250	283-03111
	3/4	6.3	80	268-03112	231	277-03112	231	283-03112
	1	10	52	268-03113	150	277-03113	150	283-03113
	1-1/4	16	32	268-03114	93	277-03114	93	283-03114
	1-1/2	25	20	268-03115	60	277-03115	60	283-03115
	2	40	12	268-03116	37	277-03116	37	283-03116
	Normally Closed							
Close-off psi — Brass Trim								
	1/2	1	236	270-03180	250	277-03180	250	283-03180
		1.6	236	270-03181	250	277-03181	250	283-03181
		2.5	236	270-03182	250	277-03182	250	283-03182
		4	236	270-03183	250	277-03183	250	283-03183
	3/4	6.3	155	270-03184	250	277-03184	250	283-03184
	1	10	91	270-03185	250	277-03185	250	283-03185
	1-1/4	16	52	270-03186	148	277-03186	148	283-03186
	1-1/2	25	32	270-03187	92	277-03187	92	283-03187
	2	40	20	270-03188	55	277-03188	55	283-03188
	Close-off psi — Stainless Steel Trim							
	1/2	1	236	270-03126	250	277-03126	250	283-03126
		1.6	236	270-03127	250	277-03127	250	283-03127
		2.5	236	270-03128	250	277-03128	250	283-03128
		4	236	270-03129	250	277-03129	250	283-03129
	3/4	6.3	155	270-03130	250	277-03130	250	283-03130
	1	10	91	270-03131	250	277-03131	250	283-03131
	1-1/4	16	52	270-03132	148	277-03132	148	283-03132
	1-1/2	25	32	270-03133	92	277-03133	92	283-03133
	2	40	20	270-03134	55	277-03134	55	283-03134

Table Notes:

Part numbers in red indicate complete assemblies.

Black numbers indicate close-off psi.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

Two-Way **Globe** Valve Assemblies

ANSI Class 250
Electronic Spring Return Actuators



- Normally Open or Normally Closed
- Equal Percentage
- Brass and Stainless Steel Trim










NO/NC Equal Percentage 1/2 to 2"			Spring Return Actuator									
			Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA					
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv										
			SAX81.36U	SKD82.51U	SAX61.36U	SKD62U	SKB62U					
Normally Open												
Close-off psi — Brass Trim												
	1/2	1	250	372-03162	250	276-03162	250	370-03162	250	274-03162	—	
		1.6	250	372-03163	250	276-03163	250	370-03163	250	274-03163	—	
		2.5	250	372-03164	250	276-03164	250	370-03164	250	274-03164	—	
		4	250	372-03165	250	276-03165	250	370-03165	250	274-03165	—	
	3/4	6.3	182	372-03166	250	276-03166	182	370-03166	250	274-03166	—	
	1	10	119	372-03167	201	276-03167	119	370-03167	201	274-03167	250	291-03167
	1-1/4	16	73	372-03168	124	276-03168	73	370-03168	124	274-03168	250	291-03168
	1-1/2	25	47	372-03169	80	276-03169	47	370-03169	80	274-03169	250	291-03169
	2	40	29	372-03170	49	276-03170	29	370-03170	49	274-03170	201	291-03170
	Close-off psi — Stainless Steel Trim											
	1/2	1	250	372-03108	250	276-03108	250	370-03108	250	274-03108	—	
		1.6	250	372-03109	250	276-03109	250	370-03109	250	274-03109	—	
		2.5	250	372-03110	250	276-03110	250	370-03110	250	274-03110	—	
		4	250	372-03111	250	276-03111	250	370-03111	250	274-03111	—	
	3/4	6.3	182	372-03112	250	276-03112	182	370-03112	250	274-03112	—	
	1	10	119	372-03113	201	276-03113	119	370-03113	201	274-03113	250	291-03113
	1-1/4	16	73	372-03114	124	276-03114	73	370-03114	124	274-03114	250	291-03114
	1-1/2	25	47	372-03115	80	276-03115	47	370-03115	80	274-03115	250	291-03115
	2	40	29	372-03116	49	276-03116	29	370-03116	49	274-03116	201	291-03116
	Normally Closed											
Close-off psi — Brass Trim												
	1/2	1	250	372-03180	250	276-03180	250	370-03180	250	274-03180	—	
		1.6	250	372-03181	250	276-03181	250	370-03181	250	274-03181	—	
		2.5	250	372-03182	250	276-03182	250	370-03182	250	274-03182	—	
		4	250	372-03183	250	276-03183	250	370-03183	250	274-03183	—	
	3/4	6.3	234	372-03184	250	276-03184	234	370-03184	250	274-03184	—	
	1	10	137	372-03185	203	276-03185	137	370-03185	203	274-03185	250	291-03185
	1-1/4	16	80	372-03186	117	276-03186	80	370-03186	117	274-03186	250	291-03186
	1-1/2	25	50	372-03187	73	276-03187	50	370-03187	73	274-03187	208	291-03187
	2	40	30	372-03188	44	276-03188	30	370-03188	44	274-03188	126	291-03188
	Close-off psi — Stainless Steel Trim											
	1/2	1	250	372-03126	250	276-03126	250	370-03126	250	274-03126	—	
		1.6	250	372-03127	250	276-03127	250	370-03127	250	274-03127	—	
		2.5	250	372-03128	250	276-03128	250	370-03128	250	274-03128	—	
		4	250	372-03129	250	276-03129	250	370-03129	250	274-03129	—	
	3/4	6.3	234	372-03130	250	276-03130	234	370-03130	250	274-03130	—	
	1	10	137	372-03131	203	276-03131	137	370-03131	203	274-03131	250	291-03131
	1-1/4	16	80	372-03132	117	276-03132	80	370-03132	117	274-03132	250	291-03132
	1-1/2	25	50	372-03133	73	276-03133	50	370-03133	73	274-03133	208	291-03133
	2	40	30	372-03134	44	276-03134	30	370-03134	44	274-03134	126	291-03134

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.



SIEMENS

D-24

Valves

Two-Way **Globe** Valve Assemblies

ANSI Class 250
Electronic Non-Spring Return Actuators



- Normally Open or Normally Closed
- Equal Percentage
- Brass and Stainless Steel Trim








NO/NC Equal Percentage 1/2 to 2"			Non-Spring Return Actuator					
			Floating 3P	Floating 3P	0-10 Vdc 4-20 mA			
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SAX81.03U	 SKD82.50U	 SAX61.03U			
Normally Open								
			Close-off psi — Brass Trim					
	1/2	1	250	373-03162	250	275-03162	250	371-03162
		1.6	250	373-03163	250	275-03163	250	371-03163
		2.5	250	373-03164	250	275-03164	250	371-03164
		4	250	373-03165	250	275-03165	250	371-03165
	3/4	6.3	211	373-03166	250	275-03166	211	371-03166
	1	10	137	373-03167	201	275-03167	137	371-03167
	1-1/4	16	85	373-03168	124	275-03168	85	371-03168
	1-1/2	25	55	373-03169	80	275-03169	55	371-03169
	2	40	34	373-03170	49	275-03170	34	371-03170
				Close-off psi — Stainless Steel Trim				
	1/2	1	250	373-03108	250	275-03108	250	371-03108
		1.6	250	373-03109	250	275-03109	250	371-03109
		2.5	250	373-03110	250	275-03110	250	371-03110
		4	250	373-03111	250	275-03111	250	371-03111
	3/4	6.3	211	373-03112	250	275-03112	211	371-03112
	1	10	137	373-03113	201	275-03113	137	371-03113
	1-1/4	16	85	373-03114	124	275-03114	85	371-03114
	1-1/2	25	55	373-03115	80	275-03115	55	371-03115
	2	40	34	373-03116	49	275-03116	34	371-03116
	Normally Closed							
			Close-off psi — Brass Trim					
	1/2	1	250	373-03180	250	275-03180	250	371-03180
		1.6	250	373-03181	250	275-03181	250	371-03181
		2.5	250	373-03182	250	275-03182	250	371-03182
		4	250	373-03183	250	275-03183	250	371-03183
	3/4	6.3	250	373-03184	250	275-03184	250	371-03184
	1	10	159	373-03185	203	275-03185	159	371-03185
	1-1/4	16	92	373-03186	117	275-03186	92	371-03186
	1-1/2	25	57	373-03187	73	275-03187	57	371-03187
	2	40	35	373-03188	44	275-03188	35	371-03188
				Close-off psi — Stainless Steel Trim				
	1/2	1	250	373-03126	250	275-03126	250	371-03126
		1.6	250	373-03127	250	275-03127	250	371-03127
		2.5	250	373-03128	250	275-03128	250	371-03128
		4	250	373-03129	250	275-03129	250	371-03129
	3/4	6.3	250	373-03130	250	275-03130	250	371-03130
	1	10	159	373-03131	203	275-03131	159	371-03131
	1-1/4	16	92	373-03132	117	275-03132	92	371-03132
	1-1/2	25	57	373-03133	73	275-03133	57	371-03133
	2	40	35	373-03134	44	275-03134	35	371-03134

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Two-Way **Globe** Valve Assemblies

ANSI Class 250

Pneumatic Spring Return Actuators



- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim








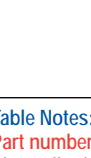

NO/NC Linear 1/2 to 2"			Spring Return Actuator									
			NO 4" 3-8 psi NC 4" 10-15 psi	8"	8" High Temp.	8" with Positioner	8" High Temp. with Positioner					
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv										
			599-01081 – NO 599-01083 – NC	599-01050	599-01051	599-01050 + 599-00426	599-01051 + 599-00426					
Normally Open												
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)												
	1/2	1	142	268-03000	250	277-03000	—	250	283-03000	—		
		1.6	142	268-03001	250	277-03001	—	250	283-03001	—		
		2.5	142	268-03002	250	277-03002	—	250	283-03002	—		
		4	142	268-03003	250	277-03003	—	250	283-03003	—		
	3/4	6.3	80	268-03004	231	277-03004	—	231	283-03004	—		
	1	10	52	268-03005	150	277-03005	—	150	283-03005	—		
	1-1/4	16	32	268-03006	93	277-03006	—	93	283-03006	—		
	1-1/2	25	20	268-03007	60	277-03007	—	60	283-03007	—		
2	40	12	268-03008	37	277-03008	—	37	283-03008	—			
Close-off psi — High-temperature Range is 337° F max. (170° C)												
	1/2	1	142	268-03054	250	277-03054	250	278-03054	250	283-03054	250	284-03054
		1.6	142	268-03055	250	277-03055	250	278-03055	250	283-03055	250	284-03055
		2.5	142	268-03056	250	277-03056	250	278-03056	250	283-03056	250	284-03056
		4	142	268-03057	250	277-03057	250	278-03057	250	283-03057	250	284-03057
	3/4	6.3	80	268-03058	231	277-03058	231	278-03058	231	283-03058	231	284-03058
	1	10	52	268-03059	150	277-03059	150	278-03059	150	283-03059	150	284-03059
	1-1/4	16	32	268-03060	93	277-03060	93	278-03060	93	283-03060	93	284-03060
	1-1/2	25	20	268-03061	60	277-03061	60	278-03061	60	283-03061	60	284-03061
2	40	12	268-03062	37	277-03062	37	278-03062	37	283-03062	37	284-03062	
Normally Closed												
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)												
	1/2	1	236	270-03018	250	277-03018	—	250	283-03018	—		
		1.6	236	270-03019	250	277-03019	—	250	283-03019	—		
		2.5	236	270-03020	250	277-03020	—	250	283-03020	—		
		4	236	270-03021	250	277-03021	—	250	283-03021	—		
	3/4	6.3	155	270-03022	250	277-03022	—	250	283-03022	—		
	1	10	91	270-03023	250	277-03023	—	250	283-03023	—		
	1-1/4	16	52	270-03024	148	277-03024	—	148	283-03024	—		
	1-1/2	25	32	270-03025	92	277-03025	—	92	283-03025	—		
2	40	20	270-03026	55	277-03026	—	55	283-03026	—			
Close-off psi — High-temperature Range is 337° F max. (170° C)												
	1/2	1	236	270-03072	250	277-03072	250	278-03072	250	283-03072	250	284-03072
		1.6	236	270-03073	250	277-03073	250	278-03073	250	283-03073	250	284-03073
		2.5	236	270-03074	250	277-03074	250	278-03074	250	283-03074	250	284-03074
		4	236	270-03075	250	277-03075	250	278-03075	250	283-03075	250	284-03075
	3/4	6.3	155	270-03076	250	277-03076	250	278-03076	250	283-03076	250	284-03076
	1	10	91	270-03077	250	277-03077	250	278-03077	250	283-03077	250	284-03077
	1-1/4	16	52	270-03078	148	277-03078	148	278-03078	148	283-03078	148	284-03078
	1-1/2	25	32	270-03079	92	277-03079	92	278-03079	92	283-03079	92	284-03079
2	40	20	270-03080	55	277-03080	55	278-03080	55	283-03080	55	284-03080	

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi. Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed. Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

Two-Way **Globe** Valve Assemblies

ANSI Class 250
Electronic Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim



NO/NC Linear 1/2 to 2"			Spring Return Actuator				
			Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv					
			SAX81.36U	SKD82.51U	SAX61.36U	SKD62U	SKB62U
Normally Open							
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)							
599-03000	1/2	1	250	250	250	250	—
599-03001		1.6	250	250	250	250	—
599-03002		2.5	250	250	250	250	—
599-03003		4	250	250	250	250	—
599-03004	3/4	6.3	182	250	182	250	—
599-03005	1	10	119	201	119	201	250 291-03005
599-03006	1-1/4	16	73	124	73	124	250 291-03006
599-03007	1-1/2	25	47	80	47	80	250 291-03007
599-03008	2	40	29	49	29	49	201 291-03008
Close-off psi — High-temperature Range is 337° F max. (170° C)							
599-03054	1/2	1	250	250	250	250	—
599-03055		1.6	250	250	250	250	—
599-03056		2.5	250	250	250	250	—
599-03057		4	250	250	250	250	—
599-03058	3/4	6.3	182	250	182	250	—
599-03059	1	10	119	201	119	201	250 291-03059
599-03060	1-1/4	16	73	124	73	124	250 291-03060
599-03061	1-1/2	25	47	80	47	80	250 291-03061
599-03062	2	40	29	49	29	49	201 291-03062
Normally Closed							
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)							
599-03018	1/2	1	250	250	250	250	—
599-03019		1.6	250	250	250	250	—
599-03020		2.5	250	250	250	250	—
599-03021		4	250	250	250	250	—
599-03022	3/4	6.3	234	250	234	250	—
599-03023	1	10	137	203	137	203	250 291-03023
599-03024	1-1/4	16	80	117	80	117	250 291-03024
599-03025	1-1/2	25	50	73	50	73	208 291-03025
599-03026	2	40	30	44	30	44	126 291-03026
Close-off psi — High-temperature Range is 337° F max. (170° C)							
599-03072	1/2	1	250	250	250	250	—
599-03073		1.6	250	250	250	250	—
599-03074		2.5	250	250	250	250	—
599-03075		4	250	250	250	250	—
599-03076	3/4	6.3	234	250	234	250	—
599-03077	1	10	137	203	137	203	250 291-03077
599-03078	1-1/4	16	80	117	80	117	250 291-03078
599-03079	1-1/2	25	50	73	50	73	208 291-03079
599-03080	2	40	30	44	30	44	126 291-03080

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Two-Way **Globe** Valve Assemblies

ANSI Class 250

Electronic Non-Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim






NO/NC Linear 1/2 to 2"			Non-Spring Return Actuator					
			Floating 3P	Floating 3P	0-10 Vdc 4-20 mA			
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SAX81.03U	 SKD82.50U	 SAX61.03U			
Normally Open								
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)								
599-03000	1/2	1	250	373-03000	250	275-03000	250	371-03000
599-03001		1.6	250	373-03001	250	275-03001	250	371-03001
599-03002		2.5	250	373-03002	250	275-03002	250	371-03002
599-03003		4	250	373-03003	250	275-03003	250	371-03003
599-03004	3/4	6.3	211	373-03004	250	275-03004	211	371-03004
599-03005	1	10	137	373-03005	201	275-03005	137	371-03005
599-03006	1-1/4	16	85	373-03006	124	275-03006	85	371-03006
599-03007	1-1/2	25	55	373-03007	80	275-03007	55	371-03007
599-03008	2	40	34	373-03008	49	275-03008	34	371-03008
Close-off psi — High-temperature Range is 337° F max. (170° C)								
599-03054	1/2	1	250	373-03054	250	275-03054	250	371-03054
599-03055		1.6	250	373-03055	250	275-03055	250	371-03055
599-03056		2.5	250	373-03056	250	275-03056	250	371-03056
599-03057		4	250	373-03057	250	275-03057	250	371-03057
599-03058	3/4	6.3	211	373-03058	250	275-03058	211	371-03058
599-03059	1	10	137	373-03059	201	275-03059	137	371-03059
599-03060	1-1/4	16	85	373-03060	124	275-03060	85	371-03060
599-03061	1-1/2	25	55	373-03061	80	275-03061	55	371-03061
599-03062	2	40	34	373-03062	49	275-03062	34	371-03062
Normally Closed								
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)								
599-03018	1/2	1	250	373-03018	250	275-03018	250	371-03018
599-03019		1.6	250	373-03019	250	275-03019	250	371-03019
599-03020		2.5	250	373-03020	250	275-03020	250	371-03020
599-03021		4	250	373-03021	250	275-03021	250	371-03021
599-03022	3/4	6.3	250	373-03022	250	275-03022	250	371-03022
599-03023	1	10	159	373-03023	203	275-03023	159	371-03023
599-03024	1-1/4	16	92	373-03024	117	275-03024	92	371-03024
599-03025	1-1/2	25	57	373-03025	73	275-03025	57	371-03025
599-03026	2	40	35	373-03026	44	275-03026	35	371-03026
Close-off psi — High-temperature Range is 337° F max. (170° C)								
599-03072	1/2	1	250	373-03072	250	275-03072	250	371-03072
599-03073		1.6	250	373-03073	250	275-03073	250	371-03073
599-03074		2.5	250	373-03074	250	275-03074	250	371-03074
599-03075		4	250	373-03075	250	275-03075	250	371-03075
599-03076	3/4	6.3	250	373-03076	250	275-03076	250	371-03076
599-03077	1	10	159	373-03077	203	275-03077	159	371-03077
599-03078	1-1/4	16	92	373-03078	117	275-03078	92	371-03078
599-03079	1-1/2	25	57	373-03079	73	275-03079	57	371-03079
599-03080	2	40	35	373-03080	44	275-03080	35	371-03080

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Three-Way **Globe** Valve Assemblies

ANSI Class 250
Pneumatic Spring Return Actuators

- Brass and Stainless Steel Trim








Mixing 1/2 to 2"			Spring Return Actuator				
			4" 3-8 psi	4" 5-10 psi	4" 10-15 psi	8"	8" with Positioner
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 599-01081	 599-01082	 599-01083	 599-01050	 599-01050 + 599-00426
			Close-off psi — Brass Trim				
599-03198	1/2	1	236 268-03198	236 269-03198	236 270-03198	250 277-03198	250 283-03198
599-03199		1.6	236 268-03199	236 269-03199	236 270-03199	250 277-03199	250 283-03199
599-03200		2.5	236 268-03200	236 269-03200	236 270-03200	250 277-03200	250 283-03200
599-03201		4	236 268-03201	236 269-03201	236 270-03201	250 277-03201	250 283-03201
599-03202	3/4	6.3	155 268-03202	155 269-03202	155 270-03202	250 277-03202	250 283-03202
599-03203	1	10	91 268-03203	91 269-03203	91 270-03203	250 277-03203	250 283-03203
599-03204	1-1/4	16	52 268-03204	52 269-03204	52 270-03204	148 277-03204	148 283-03204
599-03205	1-1/2	25	32 268-03205	32 269-03205	32 270-03205	92 277-03205	92 283-03205
599-03206	2	40	20 268-03206	20 269-03206	20 270-03206	55 277-03206	55 283-03206
			Close-off psi — Stainless Steel Trim				
599-03144	1/2	1	236 268-03144	236 269-03144	236 270-03144	250 277-03144	250 283-03144
599-03145		1.6	236 268-03145	236 269-03145	236 270-03145	250 277-03145	250 283-03145
599-03146		2.5	236 268-03146	236 269-03146	236 270-03146	250 277-03146	250 283-03146
599-03147		4	236 268-03147	236 269-03147	236 270-03147	250 277-03147	250 283-03147
599-03148	3/4	6.3	155 268-03148	155 269-03148	155 270-03148	250 277-03148	250 283-03148
599-03149	1	10	91 268-03149	91 269-03149	91 270-03149	250 277-03149	250 283-03149
599-03150	1-1/4	16	52 268-03150	52 269-03150	52 270-03150	148 277-03150	148 283-03150
599-03151	1-1/2	25	32 268-03151	32 269-03151	32 270-03151	92 277-03151	92 283-03151
599-03152	2	40	20 268-03152	20 269-03152	20 270-03152	55 277-03152	55 283-03152

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Values in chart are for 0 psi supplied to the actuator.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

Three-Way **Globe** Valve Assemblies

ANSI Class 250

Electronic Spring Return Actuators



- Brass and Stainless Steel Trim






Mixing 1/2 to 2"			Spring Return Actuator				
			Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SAX81.36U	 SKD82.51U	 SAX61.36U	 SKD62U	 SKB62U
			Close-off psi — Brass Trim				
599-03198	1/2	1	250 372-03198	250 276-03198	250 370-03198	250 274-03198	—
599-03199		1.6	250 372-03199	250 276-03199	250 370-03199	250 274-03199	—
599-03200		2.5	250 372-03200	250 276-03200	250 370-03200	250 274-03200	—
599-03201		4	250 372-03201	250 276-03201	250 370-03201	250 274-03201	—
599-03202	3/4	6.3	234 372-03202	250 276-03202	234 370-03202	250 274-03202	—
599-03203	1	10	137 372-03203	203 276-03203	137 370-03203	203 274-03203	250 291-03203
599-03204	1-1/4	16	80 372-03204	117 276-03204	80 370-03204	117 274-03204	250 291-03204
599-03205	1-1/2	25	50 372-03205	73 276-03205	50 370-03205	73 274-03205	208 291-03205
599-03206	2	40	30 372-03206	44 276-03206	30 370-03206	44 274-03206	126 291-03206
			Close-off psi — Stainless Steel Trim				
599-03144	1/2	1	250 372-03144	250 276-03144	250 370-03144	250 274-03144	—
599-03145		1.6	250 372-03145	250 276-03145	250 370-03145	250 274-03145	—
599-03146		2.5	250 372-03146	250 276-03146	250 370-03146	250 274-03146	—
599-03147		4	250 372-03147	250 276-03147	250 370-03147	250 274-03147	—
599-03148	3/4	6.3	234 372-03148	250 276-03148	234 370-03148	250 274-03148	—
599-03149	1	10	137 372-03149	203 276-03149	137 370-03149	203 274-03149	250 291-03149
599-03150	1-1/4	16	80 372-03150	117 276-03150	80 370-03150	117 274-03150	250 291-03150
599-03151	1-1/2	25	50 372-03151	73 276-03151	50 370-03151	73 274-03151	208 291-03151
599-03152	2	40	30 372-03152	44 276-03152	30 370-03152	44 274-03152	126 291-03152

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Values in chart are for 0 psi supplied to the actuator.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.



D-30

Valves



SIEMENS

Three-Way **Globe** Valve Assemblies

ANSI Class 250
Electronic Non-Spring Return Actuators

- Stainless Steel Trim




Mixing 1/2 to 2"			Non-Spring Return Actuator					
			Floating 3P		Floating 3P		0-10 Vdc 4-20 mA	
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	SAX81.03U		SKD82.50U		SAX61.03U	
								
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)								
599-03198	1/2	1	250	373-03198	250	275-03198	250	371-03198
599-03199		1.6	250	373-03199	250	275-03199	250	371-03199
599-03200		2.5	250	373-03200	250	275-03200	250	371-03200
599-03201		4	250	373-03201	250	275-03201	250	371-03201
599-03202	3/4	6.3	250	373-03202	250	275-03202	250	371-03202
599-03203	1	10	159	373-03203	203	275-03203	159	371-03203
599-03204	1-1/4	16	92	373-03204	117	275-03204	92	371-03204
599-03205	1-1/2	25	57	373-03205	73	275-03205	57	371-03205
599-03206	2	40	35	373-03206	44	275-03206	35	371-03206
Close-off psi — High-temperature Range is 337° F max. (170° C)								
599-03144	1/2	1	250	373-03144	250	275-03144	250	371-03144
599-03145		1.6	250	373-03145	250	275-03145	250	371-03145
599-03146		2.5	250	373-03146	250	275-03146	250	371-03146
599-03147		4	250	373-03147	250	275-03147	250	371-03147
599-03148	3/4	6.3	250	373-03148	250	275-03148	250	371-03148
599-03149	1	10	159	373-03149	203	275-03149	159	371-03149
599-03150	1-1/4	16	92	373-03150	117	275-03150	92	371-03150
599-03151	1-1/2	25	57	373-03151	73	275-03151	57	371-03151
599-03152	2	40	35	373-03152	44	275-03152	35	371-03152

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.

D-31

Valves

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 125
Pneumatic Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Brass, Stainless Steel, and Bronze Trim



D-32

Valves







NO/NC Equal Percentage Flanged 2-1/2 to 6"			Spring Return Actuator					
			8" 20 mm Stroke	12" 20 mm Stroke	12" 40 mm Stroke	8" w/Positioner 20 mm Stroke	12" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 599-01050	 599-01010	 599-01000	 599-01050 + 599-00426	 599-01010 + 599-00423	 599-01000 + 599-00423
Normally Open			Close-off psi — Brass Trim					
599-05980	2-1/2	63	31 277-05980	95 279-05980	—	31 283-05980	95 285-05980	—
599-05981	3	100	20 277-05981	63 279-05981	—	20 283-05981	63 285-05981	—
599-05982	4	160	—	—	40 281-05982	—	—	40 287-05982
599-05983	5	250	—	—	26 281-05983	—	—	26 287-05983
599-05984	6	400	—	—	18 281-05984	—	—	18 287-05984
			Close-off psi — Stainless Steel Trim					
599-05960	2-1/2	63	31 277-05960	95 279-05960	—	31 283-05960	95 285-05960	—
599-05961	3	100	20 277-05961	63 279-05961	—	20 283-05961	63 285-05961	—
599-05962	4	160	—	—	40 281-05962	—	—	40 287-05962
599-05963	5	250	—	—	26 281-05963	—	—	26 287-05963
599-05964	6	400	—	—	18 281-05964	—	—	18 287-05964
Normally Closed			Close-off psi — Bronze Trim					
599-05990	2-1/2	63	36 277-05990	114 279-05990	—	36 283-05990	114 285-05990	—
599-05991	3	100	23 277-05991	74 279-05991	—	23 283-05991	74 285-05991	—
599-05992	4	160	—	—	46 281-05992	—	—	46 287-05992
599-05993	5	250	—	—	29 281-05993	—	—	29 287-05993
599-05994	6	400	—	—	20 281-05994	—	—	20 287-05994
			Close-off psi — Stainless Steel Trim					
599-05970	2-1/2	63	36 277-05970	114 279-05970	—	36 283-05970	114 285-05970	—
599-05971	3	100	23 277-05971	74 279-05971	—	23 283-05971	74 285-05971	—
599-05972	4	160	—	—	46 281-05972	—	—	46 287-05972
599-05973	5	250	—	—	29 281-05973	—	—	29 287-05973
599-05974	6	400	—	—	20 281-05974	—	—	20 287-05974

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 125
Electronic Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Brass, Stainless Steel, and Bronze Trim











NO/NC Equal Percentage Flanged 2-1/2 to 6"			Spring Return Actuator											
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA						
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv												
			SKD82.51U	SKB82.51U	SKC82.61U	SKD62U	SKB62U	SKC62U						
Normally Open			Close-off psi — Brass Trim											
	599-05980	2-1/2	63	38	276-05980	153	289-05980	—	38	274-05980	153	291-05980	—	
	599-05981	3	100	25	276-05981	101	289-05981	—	25	274-05981	101	291-05981	—	
	599-05982	4	160	—	—	—	—	65	292-05982	—	—	—	65	294-05982
	599-05983	5	250	—	—	—	—	42	292-05983	—	—	—	42	294-05983
	599-05984	6	400	—	—	—	—	29	292-05984	—	—	—	29	294-05984
				Close-off psi — Stainless Steel Trim										
599-05960	2-1/2	63	38	276-05960	153	289-05960	—	38	274-05960	153	291-05960	—		
599-05961	3	100	25	276-05961	101	289-05961	—	25	274-05961	101	291-05961	—		
599-05962	4	160	—	—	—	—	65	292-05962	—	—	—	65	294-05962	
599-05963	5	250	—	—	—	—	42	292-05963	—	—	—	42	294-05963	
599-05964	6	400	—	—	—	—	29	292-05964	—	—	—	29	294-05964	
Normally Closed			Close-off psi — Bronze Trim											
	599-05990	2-1/2	63	34	276-05990	97	289-05990	—	34	274-05990	97	291-05990	—	
	599-05991	3	100	22	276-05991	63	289-05991	—	22	274-05991	63	291-05991	—	
	599-05992	4	160	—	—	—	—	39	292-05992	—	—	—	39	294-05992
	599-05993	5	250	—	—	—	—	25	292-05993	—	—	—	25	294-05993
	599-05994	6	400	—	—	—	—	17	292-05994	—	—	—	17	294-05994
				Close-off psi — Stainless Steel Trim										
599-05970	2-1/2	63	34	276-05970	97	289-05970	—	34	274-05970	97	291-05970	—		
599-05971	3	100	22	276-05971	63	289-05971	—	22	274-05971	63	291-05971	—		
599-05972	4	160	—	—	—	—	39	292-05972	—	—	—	39	294-05972	
599-05973	5	250	—	—	—	—	25	292-05973	—	—	—	25	294-05973	
599-05974	6	400	—	—	—	—	17	292-05974	—	—	—	17	294-05974	

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.



D-33

Valves



Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 125
Electronic Non-Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Brass, Stainless Steel, and Bronze Trim



D-34

Valves




NO/NC Equal Percentage Flanged 2-1/2 to 6"			Non-Spring Return Actuator		
			Floating 3P	Floating 3P	Floating 3P
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SKD82.50U	 SKB82.50U	 SKC82.60U
Normally Open					
Close-off psi — Brass Trim					
599-05980	2-1/2	63	38 275-05980	153 290-05980	—
599-05981	3	100	25 275-05981	101 290-05981	—
599-05982	4	160	—	—	65 293-05982
599-05983	5	250	—	—	42 293-05983
599-05984	6	400	—	—	29 293-05984
Close-off psi — Stainless Steel Trim					
599-05960	2-1/2	63	38 275-05960	153 290-05960	—
599-05961	3	100	25 275-05961	101 290-05961	—
599-05962	4	160	—	—	65 293-05962
599-05963	5	250	—	—	42 293-05963
599-05964	6	400	—	—	29 293-05964
Normally Closed					
Close-off psi — Bronze Trim					
599-05990	2-1/2	63	34 275-05990	97 290-05990	—
599-05991	3	100	22 275-05991	63 290-05991	—
599-05992	4	160	—	—	39 293-05992
599-05993	5	250	—	—	25 293-05993
599-05994	6	400	—	—	17 293-05994
Close-off psi — Stainless Steel Trim					
599-05970	2-1/2	63	34 275-05970	97 290-05970	—
599-05971	3	100	22 275-05971	63 290-05971	—
599-05972	4	160	—	—	39 293-05972
599-05973	5	250	—	—	25 293-05973
599-05974	6	400	—	—	17 293-05974

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 125
Pneumatic Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim



NO/NC Linear Flanged 2-1/2 to 6"			Spring Return Actuator								
			8" 20 mm Stroke	8" High-Temp. 20 mm Stroke	12" 20 mm Stroke	12" 40 mm Stroke	8" w/Positioner 20 mm Stroke	8" High-Temp. w/Positioner 20 mm Stroke	12" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv									
			599-01050	599-01051	599-01010	599-01000	599-01050 + 599-00426	599-01051 + 599-00426	599-01010 + 599-00423	599-01000 + 599-00423	
Normally Open											
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)											
	599-06060	2-1/2	63	31 277-06060	—	95 279-06060	—	31 283-06060	—	95 285-06060	—
	599-06061	3	100	20 277-06061	—	63 279-06061	—	20 283-06061	—	63 285-06061	—
	599-06062	4	160	—	—	—	40 281-06062	—	—	—	40 287-06062
	599-06063	5	250	—	—	—	26 281-06063	—	—	—	26 287-06063
	599-06064	6	400	—	—	—	18 281-06064	—	—	—	18 287-06064
Close-off psi — High-temperature Range is 337° F max. (170° C)											
	599-06040	2-1/2	63	31 277-06040	31 278-06040	95 279-06040	—	31 283-06040	31 284-06040	95 285-06040	—
	599-06041	3	100	20 277-06041	20 278-06041	63 279-06041	—	20 283-06041	20 284-06041	63 285-06041	—
	599-06042	4	160	—	—	—	40 281-06042	—	—	—	40 287-06042
	599-06043	5	250	—	—	—	26 281-06043	—	—	—	26 287-06043
	599-06044	6	400	—	—	—	18 281-06044	—	—	—	18 287-06044
Normally Closed											
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)											
	599-06070	2-1/2	63	36 277-06070	—	114 279-06070	—	36 283-06070	—	114 285-06070	—
	599-06071	3	100	23 277-06071	—	74 279-06071	—	23 283-06071	—	74 285-06071	—
	599-06072	4	160	—	—	—	46 281-06072	—	—	—	46 287-06072
	599-06073	5	250	—	—	—	29 281-06073	—	—	—	29 287-06073
	599-06074	6	400	—	—	—	20 281-06074	—	—	—	20 287-06074
Close-off psi — High-temperature Range is 337° F max. (170° C)											
	599-06050	2-1/2	63	36 277-06050	36 278-06050	114 279-06050	—	36 283-06050	36 284-06050	114 285-06050	—
	599-06051	3	100	23 277-06051	23 278-06051	74 279-06051	—	23 283-06051	23 284-06051	74 285-06051	—
	599-06052	4	160	—	—	—	46 281-06052	—	—	—	46 287-06052
	599-06053	5	250	—	—	—	29 281-06053	—	—	—	29 287-06053
	599-06054	6	400	—	—	—	20 281-06054	—	—	—	20 287-06054

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 125
Electronic Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim



D-36

Valves




NO/NC Linear Flanged 2-1/2 to 6"			Spring Return Actuator					
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SKD82.51U	 SKB82.51U	 SKC82.61U	 SKD62U	 SKB62U	 SKC62U
Normally Open			Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)					
599-06060	2-1/2	63	38 276-06060	153 289-06060	—	38 274-06060	153 291-06060	—
599-06061	3	100	25 276-06061	101 289-06061	—	25 274-06061	101 291-06061	—
599-06062	4	160	—	—	65 292-06062	—	—	65 294-06062
599-06063	5	250	—	—	42 292-06063	—	—	42 294-06063
599-06064	6	400	—	—	29 292-06064	—	—	29 294-06064
Normally Closed			Close-off psi — High-temperature Range is 337° F max. (170° C)					
599-06040	2-1/2	63	38 276-06040	153 289-06040	—	38 274-06040	153 291-06040	—
599-06041	3	100	25 276-06041	101 289-06041	—	25 274-06041	101 291-06041	—
599-06042	4	160	—	—	65 292-06042	—	—	65 294-06042
599-06043	5	250	—	—	42 292-06043	—	—	42 294-06043
599-06044	6	400	—	—	29 292-06044	—	—	29 294-06044
Normally Open			Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)					
599-06070	2-1/2	63	34 276-06070	97 289-06070	—	34 274-06070	97 291-06070	—
599-06071	3	100	22 276-06071	63 289-06071	—	22 274-06071	63 291-06071	—
599-06072	4	160	—	—	39 292-06072	—	—	39 294-06072
599-06073	5	250	—	—	25 292-06073	—	—	25 294-06073
599-06074	6	400	—	—	17 292-06074	—	—	17 294-06074
Normally Closed			Close-off psi — High-temperature Range is 337° F max. (170° C)					
599-06050	2-1/2	63	34 276-06050	97 289-06050	—	34 274-06050	97 291-06050	—
599-06051	3	100	22 276-06051	63 289-06051	—	22 274-06051	63 291-06051	—
599-06052	4	160	—	—	39 292-06052	—	—	39 294-06052
599-06053	5	250	—	—	25 292-06053	—	—	25 294-06053
599-06054	6	400	—	—	17 292-06054	—	—	17 294-06054

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 125
Electronic Non-Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim



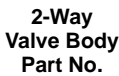





NO/NC Linear Flanged 2-1/2 to 6"			Non-Spring Return Actuator			
			Floating 3P	Floating 3P	Floating 3P	
	Valve Size in.	Flow Rate Cv	 SKD82.50U	 SKB82.50U	 SKC82.60U	
Normally Open						
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)						
	599-06060	2-1/2	63	38 275-06060	153 290-06060	—
	599-06061	3	100	25 275-06061	101 290-06061	—
	599-06062	4	160	—	—	65 293-06062
	599-06063	5	250	—	—	42 293-06063
	599-06064	6	400	—	—	29 293-06064
Close-off psi — High-temperature Range is 337° F max. (170° C)						
	599-06040	2-1/2	63	38 275-06040	153 290-06040	—
	599-06041	3	100	25 275-06041	101 290-06041	—
	599-06042	4	160	—	—	65 293-06042
	599-06043	5	250	—	—	42 293-06043
	599-06044	6	400	—	—	29 293-06044
Normally Closed						
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)						
	599-06070	2-1/2	63	34 275-06070	97 290-06070	—
	599-06071	3	100	22 275-06071	63 290-06071	—
	599-06072	4	160	—	—	39 293-06072
	599-06073	5	250	—	—	25 293-06073
	599-06074	6	400	—	—	17 293-06074
Close-off psi — High-temperature Range is 337° F max. (170° C)						
	599-06050	2-1/2	63	34 275-06050	97 290-06050	—
	599-06051	3	100	22 275-06051	63 290-06051	—
	599-06052	4	160	—	—	39 293-06052
	599-06053	5	250	—	—	25 293-06053
	599-06054	6	400	—	—	17 293-06054

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Three-Way Flanged **Globe** Valve Assemblies

ANSI Class 125

Pneumatic Spring Return Actuators

- Brass and Stainless Steel Trim










Mixing Flanged 2-1/2 to 6" 			Spring Return Actuator					
			8" 20 mm Stroke	12" 20 mm Stroke	12" 40 mm Stroke	8" w/Positioner 20 mm Stroke	12" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 599-01050	 599-01010	 599-01000	 599-01050 + 599-00426	 599-01010 + 599-00423	 599-01000 + 599-00423
			Close-off psi — Brass Trim					
599-06160	2-1/2	63	36 277-06160	114 279-06160	—	36 283-06160	114 285-06160	—
599-06161	3	100	23 277-06161	74 279-06161	—	23 283-06161	74 285-06161	—
599-06162	4	160	—	—	46 281-06162	—	—	46 287-06162
599-06163	5	250	—	—	29 281-06163	—	—	29 287-06163
599-06164	6	400	—	—	20 281-06164	—	—	20 287-06164
			Close-off psi — Stainless Steel Trim					
599-06165	2-1/2	63	36 277-06165	114 279-06165	—	36 283-06165	114 285-06165	—
599-06166	3	100	23 277-06166	74 279-06166	—	23 283-06166	74 285-06166	—
599-06167	4	160	—	—	46 281-06167	—	—	46 287-06167
599-06168	5	250	—	—	29 281-06168	—	—	29 287-06168
599-06169	6	400	—	—	20 281-06169	—	—	20 287-06169

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

D-38

Valves

Three-Way Flanged **Globe** Valve Assemblies

ANSI Class 125

Electronic Spring Return or Non-Spring Return Actuators

- Mixing
- Bronze and Stainless Steel Trim










Mixing Flanged 2-1/2 to 6" 			Spring Return Actuator					
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv						
			SKD82.51U	SKB82.51U	SKC82.61U	SKD62U	SKB62U	SKC62U
Close-off psi — Bronze Trim								
599-06160	2-1/2	63	34 276-06160	97 289-06160	—	34 274-06160	97 291-06160	—
599-06161	3	100	22 276-06161	63 289-06161	—	22 274-06161	63 291-06161	—
599-06162	4	160	—	—	39 292-06162	—	—	39 294-06162
599-06163	5	250	—	—	25 292-06163	—	—	25 294-06163
599-06164	6	400	—	—	17 292-06164	—	—	17 294-06164
Close-off psi — Stainless Steel Trim								
599-06165	2-1/2	63	34 276-06165	97 289-06165	—	34 274-06165	97 291-06165	—
599-06166	3	100	22 276-06166	63 289-06166	—	22 274-06166	63 291-06166	—
599-06167	4	160	—	—	39 292-06167	—	—	39 294-06167
599-06168	5	250	—	—	25 292-06168	—	—	25 294-06168
599-06169	6	400	—	—	17 292-06169	—	—	17 294-06169

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.







Mixing Flanged 2-1/2 to 6" 			Non-Spring Return Actuator		
			Floating 3P	Floating 3P	Floating 3P
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv			
			SKD82.50U	SKB82.50U	SKC82.60U
Close-off psi — Bronze Trim					
599-06160	2-1/2	63	34 275-06160	97 290-06160	—
599-06161	3	100	22 275-06161	63 290-06161	—
599-06162	4	160	—	—	39 293-06162
599-06163	5	250	—	—	25 293-06163
599-06164	6	400	—	—	17 293-06164
Close-off psi — Stainless Steel Trim					
599-06165	2-1/2	63	34 275-06165	97 290-06165	—
599-06166	3	100	22 275-06166	63 290-06166	—
599-06167	4	160	—	—	39 293-06167
599-06168	5	250	—	—	25 293-06168
599-06169	6	400	—	—	17 293-06169

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.



Two-Way Flanged **Globe** High Pressure Close-off Valve Assemblies

ANSI Class 125

Pneumatic and Electro-Hydraulic Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Stainless Steel Trim
- Pressure Balanced Plug
- 200 psi Close-off









NO/NC Equal Percentage Flanged 2-1/2 to 6"				Spring Return Actuator				
				8" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 599-01050 + 599-00426	 599-01000 + 599-00423	 SKD62U	 SKC62U	
Normally Open				Stainless Steel Trim				
	599-06610	2-1/2	63	200	283-06610	—	274-06610	—
	599-06611	3	100	200	283-06611	—	274-06611	—
	599-06612	4	160	200	—	287-06612	—	294-06612
	599-06613	5	250	200	—	287-06613	—	294-06613
	599-06614	6	400	200	—	287-06614	—	294-06614
Normally Closed				Stainless Steel Trim				
	599-06615	2-1/2	63	200	283-06615	—	274-06615	—
	599-06616	3	100	200	283-06616	—	274-06616	—
	599-06617	4	160	200	—	287-06617	—	294-06617
	599-06618	5	250	200	—	287-06618	—	294-06618
	599-06619	6	400	200	—	287-06619	—	294-06619

Table Notes:

Part numbers in red indicate complete assemblies.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

D-40

Valves



SIEMENS

Two-Way Flanged **Globe** High Pressure Close-off Valve Assemblies

ANSI Class 250

Pneumatic and Electro-Hydraulic Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Stainless Steel Trim
- Pressure Balanced Plug
- 200 psi Close-off



NO/NC Equal Percentage <i>Flanged 2-1/2 to 6"</i>				Spring Return Actuator				
				8" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	
	2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi				
					599-01050 + 599-00426	599-01000 + 599-00423	SKD62U	SKC62U
Normally Open				Stainless Steel Trim				
	599-06620	2-1/2	63	200	283-06620	—	274-06620	—
	599-06621	3	100	200	283-06621	—	274-06621	—
	599-06622	4	160	200	—	287-06622	—	294-06622
	599-06623	5	250	200	—	287-06623	—	294-06623
	599-06624	6	400	200	—	287-06624	—	294-06624
Normally Closed				Stainless Steel Trim				
	599-06625	2-1/2	63	200	283-06625	—	274-06625	—
	599-06626	3	100	200	283-06626	—	274-06626	—
	599-06627	4	160	200	—	287-06627	—	294-06627
	599-06628	5	250	200	—	287-06628	—	294-06628
	599-06629	6	400	200	—	287-06629	—	294-06629

Table Notes:

Part numbers in red indicate complete assemblies.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

D-41

Valves

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 250
Pneumatic Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Bronze and Stainless Steel Trim



D-42

Valves







NO/NC Equal Percentage Flanged 2-1/2 to 6"			Spring Return Actuator					
			8" 20 mm Stroke	12" 20 mm Stroke	12" 40 mm Stroke	8" w/Positioner 20 mm Stroke	12" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv						
			599-01050	599-01010	599-01000	599-01050 + 599-00426	599-01010 + 599-00423	599-01000 + 599-00423
Normally Open			Close-off psi — Bronze Trim					
599-05940	2-1/2	63	31 277-05940	95 279-05940	—	31 283-05940	95 285-05940	—
599-05941	3	100	20 277-05941	63 279-05941	—	20 283-05941	63 285-05941	—
599-05942	4	160	—	—	40 281-05942	—	—	40 287-05942
599-05943	5	250	—	—	26 281-05943	—	—	26 287-05943
599-05944	6	400	—	—	18 281-05944	—	—	18 287-05944
			Close-off psi — Stainless Steel Trim					
599-05920	2-1/2	63	31 277-05920	95 279-05920	—	31 283-05920	95 285-05920	—
599-05921	3	100	20 277-05921	63 279-05921	—	20 283-05921	63 285-05921	—
599-05922	4	160	—	—	40 281-05922	—	—	40 287-05922
599-05923	5	250	—	—	26 281-05923	—	—	26 287-05923
599-05924	6	400	—	—	18 281-05924	—	—	18 287-05924
Normally Closed			Close-off psi — Bronze Trim					
599-05950	2-1/2	63	36 277-05950	114 279-05950	—	36 283-05950	114 285-05950	—
599-05951	3	100	23 277-05951	74 279-05951	—	23 283-05951	74 285-05951	—
599-05952	4	160	—	—	46 281-05952	—	—	46 287-05952
599-05953	5	250	—	—	29 281-05953	—	—	29 287-05953
599-05954	6	400	—	—	20 281-05954	—	—	20 287-05954
			Close-off psi — Stainless Steel Trim					
599-05930	2-1/2	63	36 277-05930	114 279-05930	—	36 283-05930	114 285-05930	—
599-05931	3	100	23 277-05931	74 279-05931	—	23 283-05931	74 285-05931	—
599-05932	4	160	—	—	46 281-05932	—	—	46 287-05932
599-05933	5	250	—	—	29 281-05933	—	—	29 287-05933
599-05934	6	400	—	—	20 281-05934	—	—	20 287-05934

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 250
Electronic Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Bronze and Stainless Steel Trim











NO/NC Equal Percentage Flanged 2-1/2 to 6"			Spring Return Actuator					
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv						
			SKD82.51U	SKB82.51U	SKC82.61U	SKD62U	SKB62U	SKC62U
Normally Open			Close-off psi — Bronze Trim					
	599-05940	2-1/2 63	38 276-05940	153 289-05940	—	38 274-05940	153 291-05940	—
	599-05941	3 100	25 276-05941	101 289-05941	—	25 274-05941	101 291-05941	—
	599-05942	4 160	—	—	65 292-05942	—	—	65 294-05942
	599-05943	5 250	—	—	42 292-05943	—	—	42 294-05943
	599-05944	6 400	—	—	29 292-05944	—	—	29 294-05944
			Close-off psi — Stainless Steel Trim					
	599-05920	2-1/2 63	38 276-05920	153 289-05920	—	38 274-05920	153 291-05920	—
	599-05921	3 100	25 276-05921	101 289-05921	—	25 274-05921	101 291-05921	—
	599-05922	4 160	—	—	65 292-05922	—	—	65 294-05922
	599-05923	5 250	—	—	42 292-05923	—	—	42 294-05923
	599-05924	6 400	—	—	29 292-05924	—	—	29 294-05924
Normally Closed			Close-off psi — Bronze Trim					
	599-05950	2-1/2 63	34 276-05950	97 289-05950	—	34 274-05950	97 291-05950	—
	599-05951	3 100	22 276-05951	63 289-05951	—	22 274-05951	63 291-05951	—
	599-05952	4 160	—	—	39 292-05952	—	—	39 294-05952
	599-05953	5 250	—	—	25 292-05953	—	—	25 294-05953
	599-05954	6 400	—	—	17 292-05954	—	—	17 294-05954
			Close-off psi — Stainless Steel Trim					
	599-05930	2-1/2 63	34 276-05930	97 289-05930	—	34 274-05930	97 291-05930	—
	599-05931	3 100	22 276-05931	63 289-05931	—	22 274-05931	63 291-05931	—
	599-05932	4 160	—	—	39 292-05932	—	—	39 294-05932
	599-05933	5 250	—	—	25 292-05933	—	—	25 294-05933
	599-05934	6 400	—	—	17 292-05934	—	—	17 294-05934

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

D-43

Valves

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 250
Electronic Non-Spring Return Actuators

- Normally Open or Normally Closed
- Equal Percentage
- Bronze and Stainless Steel Trim



D-44

Valves




NO/NC Equal Percentage Flanged 2-1/2 to 6"			Non-Spring Return Actuator		
			Floating 3P	Floating 3P	Floating 3P
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SKD82.50U	 SKB82.50U	 SKC82.60U
Normally Open					
Close-off psi — Bronze Trim					
599-05940	2-1/2	63	38	275-05940	153 290-05940 —
599-05941	3	100	25	275-05941	101 290-05941 —
599-05942	4	160	—	—	65 293-05942
599-05943	5	250	—	—	42 293-05943
599-05944	6	400	—	—	29 293-05944
Close-off psi — Stainless Steel Trim					
599-05920	2-1/2	63	38	275-05920	153 290-05920 —
599-05921	3	100	25	275-05921	101 290-05921 —
599-05922	4	160	—	—	65 293-05922
599-05923	5	250	—	—	42 293-05923
599-05924	6	400	—	—	29 293-05924
Normally Closed					
Close-off psi — Bronze Trim					
599-05950	2-1/2	63	34	275-05950	97 290-05950 —
599-05951	3	100	22	275-05951	63 290-05951 —
599-05952	4	160	—	—	39 293-05952
599-05953	5	250	—	—	25 293-05953
599-05954	6	400	—	—	17 293-05954
Close-off psi — Stainless Steel Trim					
599-05930	2-1/2	63	34	275-05930	97 290-05930 —
599-05931	3	100	22	275-05931	63 290-05931 —
599-05932	4	160	—	—	39 293-05932
599-05933	5	250	—	—	25 293-05933
599-05934	6	400	—	—	17 293-05934

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Flowrite Selection Tables

Two-Way Flanged Globe Valve Assemblies

ANSI Class 250
Pneumatic Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim



NO/NC Linear Flanged 2-1/2 to 6"			Spring Return Actuator								
			8" 20 mm Stroke	8" High-Temp. 20 mm Stroke	12" 20 mm Stroke	12" 40 mm Stroke	8" w/Positioner 20 mm Stroke	8" High-Temp. w/Positioner 20 mm Stroke	12" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv									
			599-01050	599-01051	599-01010	599-01000	599-01050 + 599-00426	599-01051 + 599-00426	599-01010 + 599-00423	599-01000 + 599-00423	
Normally Open											
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)											
	599-06140	2-1/2	63	31 277-06140	—	95 279-06140	—	31 283-06140	—	95 285-06140	—
	599-06141	3	100	20 277-06141	—	63 279-06141	—	20 283-06141	—	63 285-06141	—
	599-06142	4	160	—	—	—	40 281-06142	—	—	—	40 287-06142
	599-06143	5	250	—	—	—	26 281-06143	—	—	—	26 287-06143
	599-06144	6	400	—	—	—	18 281-06144	—	—	—	18 287-06144
Close-off psi — High-temperature Range is 337° F max. (170° C)											
	599-06120	2-1/2	63	31 277-06120	31 278-06120	95 279-06120	—	31 283-06120	31 284-06120	95 285-06120	—
	599-06121	3	100	20 277-06121	20 278-06121	63 279-06121	—	20 283-06121	20 284-06121	63 285-06121	—
	599-06122	4	160	—	—	—	40 281-06122	—	—	—	40 287-06122
	599-06123	5	250	—	—	—	26 281-06123	—	—	—	26 287-06123
	599-06124	6	400	—	—	—	18 281-06124	—	—	—	18 287-06124
Normally Closed											
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)											
	599-06150	2-1/2	63	36 277-06150	—	114 279-06150	—	36 283-06150	—	114 285-06150	—
	599-06151	3	100	23 277-06151	—	74 279-06151	—	23 283-06151	—	74 285-06151	—
	599-06152	4	160	—	—	—	46 281-06152	—	—	—	46 287-06152
	599-06153	5	250	—	—	—	29 281-06153	—	—	—	29 287-06153
	599-06154	6	400	—	—	—	20 281-06154	—	—	—	20 287-06154
Close-off psi — High-temperature Range is 337° F max. (170° C)											
	599-06130	2-1/2	63	36 277-06130	36 278-06130	114 279-06130	—	36 283-06130	36 284-06130	114 285-06130	—
	599-06131	3	100	23 277-06131	23 278-06131	74 279-06131	—	23 283-06131	23 284-06131	74 285-06131	—
	599-06132	4	160	—	—	—	46 281-06132	—	—	—	46 287-06132
	599-06133	5	250	—	—	—	29 281-06133	—	—	—	29 287-06133
	599-06134	6	400	—	—	—	20 281-06134	—	—	—	20 287-06134

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Close-off values are for 15 psi signal for Normally Open and 0 psi signal for Normally Closed.

Close-off values for Normally Open valves with positioner may be substantially higher based on line supply pressure.

D-45

Valves

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 250
Electronic Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim



D-46

Valves


NO/NC Linear Flanged 2-1/2 to 6"			Spring Return Actuator					
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv						
			SKD82.51U	SKB82.51U	SKC82.61U	SKD62U	SKB62U	SKC62U
Normally Open			Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)					
	599-06140	2-1/2 63	38 276-06140	153 289-06140	—	38 274-06140	153 291-06140	—
	599-06141	3 100	25 276-06141	101 289-06141	—	25 274-06141	101 291-06141	—
	599-06142	4 160	—	—	65 292-06142	—	—	65 294-06142
	599-06143	5 250	—	—	42 292-06143	—	—	42 294-06143
	599-06144	6 400	—	—	29 292-06144	—	—	29 294-06144
			Close-off psi — High-temperature Range is 337° F max. (170° C)					
	599-06120	2-1/2 63	38 276-06120	153 289-06120	—	38 274-06120	153 291-06120	—
	599-06121	3 100	25 276-06121	101 289-06121	—	25 274-06121	101 291-06121	—
	599-06122	4 160	—	—	65 292-06122	—	—	65 294-06122
	599-06123	5 250	—	—	42 292-06123	—	—	42 294-06123
	599-06124	6 400	—	—	29 292-06124	—	—	29 294-06124
Normally Closed			Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)					
	599-06150	2-1/2 63	34 276-06150	97 289-06150	—	34 274-06150	97 291-06150	—
	599-06151	3 100	22 276-06151	63 289-06151	—	22 274-06151	63 291-06151	—
	599-06152	4 160	—	—	39 292-06152	—	—	39 294-06152
	599-06153	5 250	—	—	25 292-06153	—	—	25 294-06153
	599-06154	6 400	—	—	17 292-06154	—	—	17 294-06154
			Close-off psi — High-temperature Range is 337° F max. (170° C)					
	599-06130	2-1/2 63	34 276-06130	97 289-06130	—	34 274-06130	97 291-06130	—
	599-06131	3 100	22 276-06131	63 289-06131	—	22 274-06131	63 291-06131	—
	599-06132	4 160	—	—	39 292-06132	—	—	39 294-06132
	599-06133	5 250	—	—	25 292-06133	—	—	25 294-06133
	599-06134	6 400	—	—	17 292-06134	—	—	17 294-06134

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Two-Way Flanged **Globe** Valve Assemblies

ANSI Class 250
Electronic Non-Spring Return Actuators

- Normally Open or Normally Closed
- Linear
- Stainless Steel Trim








NO/NC Linear Flanged 2-1/2 to 6"			Non-Spring Return Actuator			
			Floating 3P	Floating 3P	Floating 3P	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SKD82.50U	 SKB82.50U	 SKC82.60U	
Normally Open						
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)						
	599-06140	2-1/2	63	38 275-06140	153 290-06140	—
	599-06141	3	100	25 275-06141	101 290-06141	—
	599-06142	4	160	—	—	65 293-06142
	599-06143	5	250	—	—	42 293-06143
	599-06144	6	400	—	—	29 293-06144
Close-off psi — High-temperature Range is 337° F max. (170° C)						
	599-06120	2-1/2	63	38 275-06120	153 290-06120	—
	599-06121	3	100	25 275-06121	101 290-06121	—
	599-06122	4	160	—	—	65 293-06122
	599-06123	5	250	—	—	42 293-06123
	599-06124	6	400	—	—	29 293-06124
Normally Closed						
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)						
	599-06150	2-1/2	63	34 275-06150	97 290-06150	—
	599-06151	3	100	22 275-06151	63 290-06151	—
	599-06152	4	160	—	—	39 293-06152
	599-06153	5	250	—	—	25 293-06153
	599-06154	6	400	—	—	17 293-06154
Close-off psi — High-temperature Range is 337° F max. (170° C)						
	599-06130	2-1/2	63	34 275-06130	97 290-06130	—
	599-06131	3	100	22 275-06131	63 290-06131	—
	599-06132	4	160	—	—	39 293-06132
	599-06133	5	250	—	—	25 293-06133
	599-06134	6	400	—	—	17 293-06134

Table Notes:
Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Three-Way Flanged **Globe** Valve Assemblies

ANSI Class 250

Pneumatic Spring Return Actuators

- Mixing
- Bronze and Stainless Steel Trim










Mixing Flanged 2-1/2 to 6" 			Spring Return Actuator					
			8" 20 mm Stroke	12" 20 mm Stroke	12" 40 mm Stroke	8" w/Positioner 20 mm Stroke	12" w/Positioner 20 mm Stroke	12" w/Positioner 40 mm Stroke
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 599-01050	 599-01010	 599-01000	 599-01050 + 599-00426	 599-01010 + 599-00423	 599-01000 + 599-00423
			Close-off psi — Bronze Trim					
599-06170	2-1/2	63	36 277-06170	114 279-06170	—	36 283-06170	114 285-06170	—
599-06171	3	100	23 277-06171	74 279-06171	—	23 283-06171	74 285-06171	—
599-06172	4	160	—	—	46 281-06172	—	—	46 287-06172
599-06173	5	250	—	—	29 281-06173	—	—	29 287-06173
599-06174	6	400	—	—	20 281-06174	—	—	20 287-06174
			Close-off psi — Stainless Steel Trim					
599-06175	2-1/2	63	36 277-06175	114 279-06175	—	36 283-06175	114 285-06175	—
599-06176	3	100	23 277-06176	74 279-06176	—	23 283-06176	74 285-06176	—
599-06177	4	160	—	—	46 281-06177	—	—	46 287-06177
599-06178	5	250	—	—	29 281-06178	—	—	29 287-06178
599-06179	6	400	—	—	20 281-06179	—	—	20 287-06179

Table Notes:

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Close-off valves are for 15 psi signal to NO and 0 psi NC.

Close-off valves for NO valves with positioner may be substantially higher based on line supply pressure.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.

D-48

Valves

Three-Way Flanged Globe Valve Assemblies

ANSI Class 250

Electronic Spring Return or Non-Spring Return Actuators

- Mixing
- Bronze and Stainless Steel Trim



Mixing Flanged 2-1/2 to 6"			Spring Return Actuator					
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv						
			SKD82.51U	SKB82.51U	SKC82.61U	SKD62U	SKB62U	SKC62U
Close-off psi — Bronze Trim								
599-06170	2-1/2	63	34 276-06170	97 289-06170	—	34 274-06170	97 291-06170	—
599-06171	3	100	22 276-06171	63 289-06171	—	22 274-06171	63 291-06171	—
599-06172	4	160	—	—	39 292-06172	—	—	39 294-06172
599-06173	5	250	—	—	25 292-06173	—	—	25 294-06173
599-06174	6	400	—	—	17 292-06174	—	—	17 294-06174
Close-off psi — Stainless Steel Trim								
599-06175	2-1/2	63	34 276-06175	97 289-06175	—	34 274-06175	97 291-06175	—
599-06176	3	100	22 276-06176	63 289-06176	—	22 274-06176	63 291-06176	—
599-06177	4	160	—	—	39 292-06177	—	—	39 294-06177
599-06178	5	250	—	—	25 292-06178	—	—	25 294-06178
599-06179	6	400	—	—	17 292-06179	—	—	17 294-06179

Table Notes:
 Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.

Mixing Flanged 2-1/2 to 6"			Non-Spring Return Actuator		
			Floating 3P	Floating 3P	Floating 3P
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv			
			SKD82.50U	SKB82.50U	SKC82.60U
Close-off psi — Bronze Trim					
599-06170	2-1/2	63	34 275-06170	97 290-06170	—
599-06171	3	100	22 275-06171	63 290-06171	—
599-06172	4	160	—	—	39 293-06172
599-06173	5	250	—	—	25 293-06173
599-06174	6	400	—	—	17 293-06174
Close-off psi — Stainless Steel Trim					
599-06175	2-1/2	63	34 275-06175	97 290-06175	—
599-06176	3	100	22 275-06176	63 290-06176	—
599-06177	4	160	—	—	39 293-06177
599-06178	5	250	—	—	25 293-06178
599-06179	6	400	—	—	17 293-06179

Table Notes:
 Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi.
 Values are for the NC upper port. For NO lower port valves, refer to the Engineering Section I.

Two-Way Ball Valve Assemblies

Electronic Spring Return Actuators

- Normally Open or Normally Closed
- GQD Damper Actuator Series
- Part Nos. with * denote a full-port valve with no flow optimizer insert
- Chrome-plated brass ball and brass stem or stainless steel ball and stem









NO/NC 1/2 to 3/4"				Spring Return Actuator					
				Normally Open			Normally Closed		
				2P	Floating	2-10 Vdc	2P	Floating	2-10 Vdc
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 GQD121.1P	 GQD131.1P	 GQD151.1P	 GQD121.1P	 GQD131.1P	 GQD151.1P
Chrome-Plated Brass Ball and Brass Stem									
599-10300	1/2	0.4	200	171H-10300	171J-10300	171K-10300	172H-10300	172J-10300	172K-10300
599-10301		0.63	200	171H-10301	171J-10301	171K-10301	172H-10301	172J-10301	172K-10301
599-10302		1.0	200	171H-10302	171J-10302	171K-10302	172H-10302	172J-10302	172K-10302
599-10303		1.6	200	171H-10303	171J-10303	171K-10303	172H-10303	172J-10303	172K-10303
599-10304		2.5	200	171H-10304	171J-10304	171K-10304	172H-10304	172J-10304	172K-10304
599-10305		4.0	200	171H-10305	171J-10305	171K-10305	172H-10305	172J-10305	172K-10305
599-10306		6.3	200	171H-10306	171J-10306	171K-10306	172H-10306	172J-10306	172K-10306
599-10307*	10	200	171H-10307*	171J-10307*	171K-10307*	172H-10307*	172J-10307*	172K-10307*	
599-10308	3/4	6.3	200	171H-10308	171J-10308	171K-10308	172H-10308	172J-10308	172K-10308
599-10309		10	200	171H-10309	171J-10309	171K-10309	172H-10309	172J-10309	172K-10309
599-10310		16	200	171H-10310	171J-10310	171K-10310	172H-10310	172J-10310	172K-10310
599-10311*		25	200	171H-10311*	171J-10311*	171K-10311*	172H-10311*	172J-10311*	172K-10311*
Stainless Steel Ball and Stem									
599-10300S	1/2	0.4	200	171H-10300S	171J-10300S	171K-10300S	172H-10300S	172J-10300S	172K-10300S
599-10301S		0.63	200	171H-10301S	171J-10301S	171K-10301S	172H-10301S	172J-10301S	172K-10301S
599-10302S		1.0	200	171H-10302S	171J-10302S	171K-10302S	172H-10302S	172J-10302S	172K-10302S
599-10303S		1.6	200	171H-10303S	171J-10303S	171K-10303S	172H-10303S	172J-10303S	172K-10303S
599-10304S		2.5	200	171H-10304S	171J-10304S	171K-10304S	172H-10304S	172J-10304S	172K-10304S
599-10305S		4.0	200	171H-10305S	171J-10305S	171K-10305S	172H-10305S	172J-10305S	172K-10305S
599-10306S		6.3	200	171H-10306S	171J-10306S	171K-10306S	172H-10306S	172J-10306S	172K-10306S
599-10307S*	10	200	171H-10307S*	171J-10307S*	171K-10307S*	172H-10307S*	172J-10307S*	172K-10307S*	
599-10308S	3/4	6.3	200	171H-10308S	171J-10308S	171K-10308S	172H-10308S	172J-10308S	172K-10308S
599-10309S		10	200	171H-10309S	171J-10309S	171K-10309S	172H-10309S	172J-10309S	172K-10309S
599-10310S		16	200	171H-10310S	171J-10310S	171K-10310S	172H-10310S	172J-10310S	172K-10310S
599-10311S*		25	200	171H-10311S*	171J-10311S*	171K-10311S*	172H-10311S*	172J-10311S*	172K-10311S*

Table Notes:

Part numbers in red indicate complete assemblies.

*Denotes a full-port valve with no flow optimizer insert.

D-50

Valves



Ball Selection Tables

Two-Way Ball Valve Assemblies

Electronic Spring Return Actuators

- Normally Open or Normally Closed
- GMA Damper Actuator Series
- Part Nos. with * denote a full-port valve with no flow optimizer insert
- Chrome-plated brass ball and brass stem or stainless steel ball and stem









NO/NC 1 to 2"				Spring Return Actuator					
				Normally Open			Normally Closed		
				2P	Floating	0-10 Vdc	2P	Floating	0-10 Vdc
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi						
				GMA121.1P	GMA131.1P	GMA161.1P	GMA121.1P	GMA131.1P	GMA161.1P
Chrome-Plated Brass Ball and Brass Stem									
599-10312	1	10	200	171E-10312	171F-10312	171G-10312	172E-10312	172F-10312	172G-10312
599-10313		16	200	171E-10313	171F-10313	171G-10313	172E-10313	172F-10313	172G-10313
599-10314		25	200	171E-10314	171F-10314	171G-10314	172E-10314	172F-10314	172G-10314
599-10315		40	200	171E-10315	171F-10315	171G-10315	172E-10315	172F-10315	172G-10315
599-10316*		63	200	171E-10316*	171F-10316*	171G-10316*	172E-10316*	172F-10316*	172G-10316*
599-10317	1-1/4	16	200	171E-10317	171F-10317	171G-10317	172E-10317	172F-10317	172G-10317
599-10318		25	200	171E-10318	171F-10318	171G-10318	172E-10318	172F-10318	172G-10318
599-10319		40	200	171E-10319	171F-10319	171G-10319	172E-10319	172F-10319	172G-10319
599-10320		63	200	171E-10320	171F-10320	171G-10320	172E-10320	172F-10320	172G-10320
599-10321*	100	200	171E-10321*	171F-10321*	171G-10321*	172E-10321*	172F-10321*	172G-10321*	
599-10322	1-1/2	25	200	171E-10322	171F-10322	171G-10322	172E-10322	172F-10322	172G-10322
599-10323		40	200	171E-10323	171F-10323	171G-10323	172E-10323	172F-10323	172G-10323
599-10324		63	200	171E-10324	171F-10324	171G-10324	172E-10324	172F-10324	172G-10324
599-10325		100	200	171E-10325	171F-10325	171G-10325	172E-10325	172F-10325	172G-10325
599-10326*	160	200	171E-10326*	171F-10326*	171G-10326*	172E-10326*	172F-10326*	172G-10326*	
599-10327	2	40	200	171E-10327	171F-10327	171G-10327	172E-10327	172F-10327	172G-10327
599-10328		63	200	171E-10328	171F-10328	171G-10328	172E-10328	172F-10328	172G-10328
599-10329*		100	200	171E-10329*	171F-10329*	171G-10329*	172E-10329*	172F-10329*	172G-10329*
599-10330		160	200	171E-10330	171F-10330	171G-10330	172E-10330	172F-10330	172G-10330
Stainless Steel Ball and Stem									
599-10312S	1	10	200	171E-10312S	171F-10312S	171G-10312S	172E-10312S	172F-10312S	172G-10312S
599-10313S		16	200	171E-10313S	171F-10313S	171G-10313S	172E-10313S	172F-10313S	172G-10313S
599-10314S		25	200	171E-10314S	171F-10314S	171G-10314S	172E-10314S	172F-10314S	172G-10314S
599-10315S		40	200	171E-10315S	171F-10315S	171G-10315S	172E-10315S	172F-10315S	172G-10315S
599-10316S*		63	200	171E-10316S*	171F-10316S*	171G-10316S*	172E-10316S*	172F-10316S*	172G-10316S*
599-10317S	1-1/4	16	200	171E-10317S	171F-10317S	171G-10317S	172E-10317S	172F-10317S	172G-10317S
599-10318S		25	200	171E-10318S	171F-10318S	171G-10318S	172E-10318S	172F-10318S	172G-10318S
599-10319S		40	200	171E-10319S	171F-10319S	171G-10319S	172E-10319S	172F-10319S	172G-10319S
599-10320S		63	200	171E-10320S	171F-10320S	171G-10320S	172E-10320S	172F-10320S	172G-10320S
599-10321S*	100	200	171E-10321S*	171F-10321S*	171G-10321S*	172E-10321S*	172F-10321S*	172G-10321S*	
599-10322S	1-1/2	25	200	171E-10322S	171F-10322S	171G-10322S	172E-10322S	172F-10322S	172G-10322S
599-10323S		40	200	171E-10323S	171F-10323S	171G-10323S	172E-10323S	172F-10323S	172G-10323S
599-10324S		63	200	171E-10324S	171F-10324S	171G-10324S	172E-10324S	172F-10324S	172G-10324S
599-10325S		100	200	171E-10325S	171F-10325S	171G-10325S	172E-10325S	172F-10325S	172G-10325S
599-10326S*	160	200	171E-10326S*	171F-10326S*	171G-10326S*	172E-10326S*	172F-10326S*	172G-10326S*	
599-10327S	2	40	200	171E-10327S	171F-10327S	171G-10327S	172E-10327S	172F-10327S	172G-10327S
599-10328S		63	200	171E-10328S	171F-10328S	171G-10328S	172E-10328S	172F-10328S	172G-10328S
599-10329S*		100	200	171E-10329S*	171F-10329S*	171G-10329S*	172E-10329S*	172F-10329S*	172G-10329S*
599-10330S		160	200	171E-10330S	171F-10330S	171G-10330S	172E-10330S	172F-10330S	172G-10330S

Table Notes:

Part numbers in red indicate complete assemblies.

*Denotes a full-port valve with no flow optimizer insert.

Two-Way Ball Valve Assemblies

Electronic Non-Spring Return Actuators

- Normally Open
- GDE Damper Actuator Series
- Part Nos. with * denote a full-port valve with no flow optimizer insert
- Chrome-plated ball and brass stem



D-52

Valves





NO 1/2 to 1-1/4"				Non-Spring Return Actuator			
				Normally Open			
				Floating		0-10 Vdc	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 GDE131.1P 3-foot (.9m) Wires	 GDE131.1Q Conduit Adapter & 6-foot (1.8m) Wires	 GDE161.1P 3-foot (.9m) Wires	 GDE161.1Q Conduit Adapter & 6-foot (1.8m) Wires
Chrome-Plated Brass Ball and Brass Stem							
599-10300	1/2	0.4	200	171A-10300	173A-10300	171C-10300	173C-10300
599-10301		0.63	200	171A-10301	173A-10301	171C-10301	173C-10301
599-10302		1.0	200	171A-10302	173A-10302	171C-10302	173C-10302
599-10303		1.6	200	171A-10303	173A-10303	171C-10303	173C-10303
599-10304		2.5	200	171A-10304	173A-10304	171C-10304	173C-10304
599-10305		4.0	200	171A-10305	173A-10305	171C-10305	173C-10305
599-10306		6.3	200	171A-10306	173A-10306	171C-10306	173C-10306
599-10307*	10	200	171A-10307*	173A-10307*	171C-10307*	173C-10307*	
599-10308	3/4	6.3	200	171A-10308	173A-10308	171C-10308	173C-10308
599-10309		10	200	171A-10309	173A-10309	171C-10309	173C-10309
599-10310		16	200	171A-10310	173A-10310	171C-10310	173C-10310
599-10311*		25	200	171A-10311*	173A-10311*	171C-10311*	173C-10311*
599-10312	1	10	200	171A-10312	173A-10312	171C-10312	173C-10312
599-10313		16	200	171A-10313	173A-10313	171C-10313	173C-10313
599-10314		25	200	171A-10314	173A-10314	171C-10314	173C-10314
599-10315		40	200	171A-10315	173A-10315	171C-10315	173C-10315
599-10316*		63	200	171A-10316*	173A-10316*	171C-10316*	173C-10316*
599-10317	1-1/4	16	200	171A-10317	173A-10317	171C-10317	173C-10317
599-10318		25	200	171A-10318	173A-10318	171C-10318	173C-10318
599-10319		40	200	171A-10319	173A-10319	171C-10319	173C-10319
599-10320		63	200	171A-10320	173A-10320	171C-10320	173C-10320
599-10321*		100	200	171A-10321*	173A-10321*	171C-10321*	173C-10321*

Table Notes:

Part numbers in red indicate complete assemblies.

*Denotes a full-port valve with no flow optimizer insert.

Ball Selection Tables

Two-Way Ball Valve Assemblies

Electronic Non-Spring Return Actuators

- Normally Open
- GDE Damper Actuator Series
- Part Nos. with * denote a full-port valve with no flow optimizer insert
- Stainless steel ball and stem








NO 1/2 to 1-1/4"				Non-Spring Return Actuator			
				Normally Open			
				Floating		0-10 Vdc	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 GDE131.1P 3-foot (.9m) Wires	 GDE131.1Q Conduit Adapter & 6-foot (1.8m) Wires	 GDE161.1P 3-foot (.9m) Wires	 GDE161.1Q Conduit Adapter & 6-foot (1.8m) Wires
Stainless Steel Ball and Stem							
	1/2	0.4	200	171A-10300S	173A-10300S	171C-10300S	173C-10300S
		0.63	200	171A-10301S	173A-10301S	171C-10301S	173C-10301S
		1.0	200	171A-10302S	173A-10302S	171C-10302S	173C-10302S
		1.6	200	171A-10303S	173A-10303S	171C-10303S	173C-10303S
		2.5	200	171A-10304S	173A-10304S	171C-10304S	173C-10304S
		4.0	200	171A-10305S	173A-10305S	171C-10305S	173C-10305S
		6.3	200	171A-10306S	173A-10306S	171C-10306S	173C-10306S
		10	200	171A-10307S*	173A-10307S*	171C-10307S*	173C-10307S*
	3/4	6.3	200	171A-10308S	173A-10308S	171C-10308S	173C-10308S
		10	200	171A-10309S	173A-10309S	171C-10309S	173C-10309S
		16	200	171A-10310S	173A-10310S	171C-10310S	173C-10310S
		25	200	171A-10311S*	173A-10311S*	171C-10311S*	173C-10311S*
	1	10	200	171A-10312S	173A-10312S	171C-10312S	173C-10312S
		16	200	171A-10313S	173A-10313S	171C-10313S	173C-10313S
		25	200	171A-10314S	173A-10314S	171C-10314S	173C-10314S
		40	200	171A-10315S	173A-10315S	171C-10315S	173C-10315S
	1-1/4	63	200	171A-10316S*	173A-10316S*	171C-10316S*	173C-10316S*
		16	200	171A-10317S	173A-10317S	171C-10317S	173C-10317S
25		200	171A-10318S	173A-10318S	171C-10318S	173C-10318S	
40		200	171A-10319S	173A-10319S	171C-10319S	173C-10319S	
63		200	171A-10320S	173A-10320S	171C-10320S	173C-10320S	
100		200	171A-10321S*	173A-10321S*	171C-10321S*	173C-10321S*	

Table Notes:

Part numbers in red indicate complete assemblies.

*Denotes a full-port valve with no flow optimizer insert.

D-53

Valves

Two-Way Ball Valve Assemblies

Electronic Non-Spring Return Actuators

- GLB Damper Actuator Series
- Part Nos. with * denote a full-port valve with no flow optimizer insert
- Chrome-plated brass ball and brass stem or stainless steel ball and stem



D-54

Valves





NO 1-1/2 to 2"				Non-Spring Return Actuator			
				Normally Open			
				Floating		0-10 Vdc	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 GLB131.1P 3-foot (.9m) Wires	 GLB131.1Q Conduit Adapter & 6-foot (1.8m) Wires	 GLB161.1P 3-foot (.9m) Wires	 GLB161.1Q Conduit Adapter & 6-foot (1.8m) Wires
Chrome-Plated Brass Ball and Brass Stem							
599-10322	1-1/2	25	200	171B-10322	173B-10322	171D-10322	173D-10322
599-10323		40	200	171B-10323	173B-10323	171D-10323	173D-10323
599-10324		63	200	171B-10324	173B-10324	171D-10324	173D-10324
599-10325		100	200	171B-10325	173B-10325	171D-10325	173D-10325
599-10326*		160	200	171B-10326*	173B-10326*	171D-10326*	173D-10326*
599-10327	2	40	200	171B-10327	173B-10327	171D-10327	173D-10327
599-10328		63	200	171B-10328	173B-10328	171D-10328	173D-10328
599-10329*		100	200	171B-10329*	173B-10329*	171D-10329*	173D-10329*
599-10330		160	200	171B-10330	173B-10330	171D-10330	173D-10330
Stainless Steel Ball and Stem							
599-10322S	1-1/2	25	200	171B-10322S	173B-10322S	171D-10322S	173D-10322S
599-10323S		40	200	171B-10323S	173B-10323S	171D-10323S	173D-10323S
599-10324S		63	200	171B-10324S	173B-10324S	171D-10324S	173D-10324S
599-10325S		100	200	171B-10325S	173B-10325S	171D-10325S	173D-10325S
599-10326S*		160	200	171B-10326S*	173B-10326S*	171D-10326S*	173D-10326S*
599-10327S	2	40	200	171B-10327S	173B-10327S	171D-10327S	173D-10327S
599-10328S		63	200	171B-10328S	173B-10328S	171D-10328S	173D-10328S
599-10329S*		100	200	171B-10329S*	173B-10329S*	171D-10329S*	173D-10329S*
599-10330S		160	200	171B-10330S	173B-10330S	171D-10330S	173D-10330S

Table Notes:

Part numbers in red indicate complete assemblies.

*Denotes a full-port valve with no flow optimizer insert.

Three-Way Ball Valve Assemblies

Electronic Spring Return Actuators

- GMA Damper Actuator Series
- A → AB Normally Open
- Part Nos. with * denote a full-port valve with no flow optimizer insert
- Chrome-plated brass ball and brass stem






Water Mixing 1/2 to 2"				Spring Return Actuator		
				GMA Series		
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P	Floating	0-10 Vdc
				 GMA121.1P Assembly w/3 ft. wires	 GMA131.1P Assembly w/3 ft. wires	 GMA161.1P Assembly w/3 ft. wires
Chrome-Plated Brass Ball and Brass Stem						
599-10250	1/2	0.4	50	171E-10250	171F-10250	171G-10250
599-10251		0.63	50	171E-10251	171F-10251	171G-10251
599-10252		1.0	50	171E-10252	171F-10252	171G-10252
599-10253		2.5	50	171E-10253	171F-10253	171G-10253
599-10254		4	50	171E-10254	171F-10254	171G-10254
599-10255*		10	50	171E-10255*	171F-10255*	171G-10255*
599-10256*	3/4	16	50	171E-10256*	171F-10256*	171G-10256*
599-10257	1	10	50	171E-10257	171F-10257	171G-10257
599-10258		16	50	171E-10258	171F-10258	171G-10258
599-10259*		25	50	171E-10259*	171F-10259*	171G-10259*
599-10260	1-1/4	16	40	171E-10260	171F-10260	171G-10260
599-10261*		40	40	171E-10261*	171F-10261*	171G-10261*
599-10262	1-1/2	16	40	171E-10262	171F-10262	171G-10262
599-10263		25	40	171E-10263	171F-10263	171G-10263
599-10264*		63	40	171E-10264*	171F-10264*	171G-10264*
599-10265	2	25	40	171E-10265	171F-10265	171G-10265
599-10266		40	40	171E-10266	171F-10266	171G-10266
599-10267*		100	40	171E-10267*	171F-10267*	171G-10267*

Table Notes:

Part numbers in red indicate complete assemblies.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I.

*Denotes a full-port valve with no flow optimizer insert.

Three-Way Ball Valve Assemblies

Electronic Non-Spring Return Actuators

- GDE/GLB Damper Actuator Series
- Part Nos. with * denote a full-port valve with no flow optimizer insert
- Chrome-plated brass ball and brass stem








Water Mixing 1/2 to 1-1/4"				Non-Spring Return Actuator				
				GDE Series				
				Floating		0-10 Vdc		
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 GDE131.1P Assembly with 3 ft. wires	 GDE131.1Q Assembly with 6 ft. wires and conduit adapter	 GDE161.1P Assembly with 3 ft. wires	 GDE161.1Q Assembly with 6 ft. wires and conduit adapter	
Chrome-Plated Brass Ball and Brass Stem								
	599-10250	1/2	0.4	50	171A-10250	173A-10250	171C-10250	173C-10250
	599-10251		0.63	50	171A-10251	173A-10251	171C-10251	173C-10251
	599-10252		1.0	50	171A-10252	173A-10252	171C-10252	173C-10252
	599-10253		2.5	50	171A-10253	173A-10253	171C-10253	173C-10253
	599-10254		4	50	171A-10254	173A-10254	171C-10254	173C-10254
	599-10255*		10	50	171A-10255*	173A-10255*	171C-10255*	173C-10255*
	599-10256*	3/4	16	50	171A-10256*	173A-10256*	171C-10256*	173C-10256*
	599-10257		10	50	171A-10257	173A-10257	171C-10257	173C-10257
	599-10258	1	16	50	171A-10258	173A-10258	171C-10258	173C-10258
	599-10259*		25	50	171A-10259*	173A-10259*	171C-10259*	173C-10259*
	599-10260	1-1/4	16	50	171A-10260	173A-10260	171C-10260	173C-10260
	599-10261*		40	50	171A-10261*	173A-10261*	171C-10261*	173C-10261*

Table Notes:

Part numbers in red indicate complete assemblies.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I. *Denotes a full-port valve with no flow optimizer insert.






Water Mixing 1-1/2 to 2"				Non-Spring Return Actuator				
				GLB Series				
				Floating		0-10 Vdc		
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 GLB131.1P Assembly with 3 ft. wires	 GLB131.1Q Assembly with 6 ft. wires and conduit adapter	 GLB161.1P Assembly with 3 ft. wires	 GLB161.1Q Assembly with 6 ft. wires and conduit adapter	
Chrome-Plated Brass Ball and Brass Stem								
	599-10262	1-1/2	16	40	171B-10262	173B-10262	171D-10262	173D-10262
	599-10263		25	40	171B-10263	173B-10263	171D-10263	173D-10263
	599-10264*		63	40	171B-10264*	173B-10264*	171D-10264*	173D-10264*
	599-10265	2	25	40	171B-10265	173B-10265	171D-10265	173D-10265
	599-10266		40	40	171B-10266	173B-10266	171D-10266	173D-10266
	599-10267*		100	40	171B-10267*	173B-10267*	171D-10267*	173D-10267*

Table Notes:

Part numbers in red indicate complete assemblies.

Values are for the NC upper port. For NO lower port values, refer to the Engineering Section I. *Denotes a full-port valve with no flow optimizer insert.

D-56

Valves

Ball and Magnetic Selection Tables

Two- & Three-Way Magnetic Valve Assemblies



MX... Control Valves for Hot and Chilled Water — 2-Way (with blanking disc/flange) or 3-Way

Valve Size (in.)	Cv	Close-off psi	Part No.
NPT Unions			
1/2"	0.7	44	MXG461.15-0.6U
1/2"	1.8	44	MXG461.15-1.5U
1/2"	3.5	44	MXG461.15-3.0U
3/4"	5.9	44	MXG461.20-5.0U
1"	9.4	44	MXG461.25-8.0U
1-1/4"	14.0	44	MXG461.32-12U
1-1/2"	23.4	44	MXG461.40-20U
2"	35.1	44	MXG461.50-30U
Flanged			
2-1/2"	58.2	44	MXF461.65-50U*

Table Note:

*No blanking flange.



M3P... FY Control Valves for Hot and Chilled Water with ZM Module — 2-Way or 3-Way

Description	Cv	Close-off psi	Part No.
Without Flanged Kits			
3" 3-Way Pilot Position	93	44	M3P80FY
4" 3-Way Pilot Position	152	29	M3P100FY
With Flanged Kits			
3" 2-Way, Pilot Position	93	44	M3P80FY/2BN
4" 2-Way, Pilot Position	152	29	M3P100FY/2BN
3" 3-Way, Pilot Position	93	44	M3P80FY/3BN
4" 3-Way, Pilot Position	152	29	M3P100FY/3BN

Ordering Note:

Order with flanges for new installations and without flanges for replacement.

Overall Ordering Note:

The valve body and magnetic actuator assemblies cannot be separated.

MVF461H Modulating Control Valves for Hot Water and Steam — 2-Way

Valve Size (in.)	Cv	Close-off psi	Part No.
Without Flange Kits			
1/2	0.7	145	MVF461H15-0.6
1/2	1.8	145	MVF461H15-1.5
1/2	3.5	145	MVF461H15-3
3/4	5.9	145	MVF461H20-5
1	9.4	145	MVF461H25-8
1-1/4	14.0	145	MVF461H32-12
1-1/2	23.3	145	MVF461H40-20
2	35.0	145	MVF461H50-30
With NPT Flange Kits			
1/2	0.7	145	MVF461H15-0.6-N
1/2	1.8	145	MVF461H15-1.5-N
1/2	3.5	145	MVF461H15-3-N
3/4	5.9	145	MVF461H20-5-N
1	9.4	145	MVF461H25-8-N
1-1/4	14.0	145	MVF461H32-12-N
1-1/2	23.3	145	MVF461H40-20-N
2	35.0	145	MVF461H50-30-N
With Weld Flange Kits			
1/2	0.7	145	MVF461H15-0.6-W
1/2	1.8	145	MVF461H15-1.5-W
1/2	3.5	145	MVF461H15-3-W
3/4	5.9	145	MVF461H20-5-W
1	9.4	145	MVF461H25-8-W
1-1/4	14.0	145	MVF461H32-12-W
1-1/2	23.3	145	MVF461H40-20-W
2	35.0	145	MVF461H50-30-W

MXG461B Modulating Control Valves for Domestic Water — 3-Way

Valve Size (in.)	Cv	Close-off psi	Part No.
1/2	0.7	145	MXG461B15-0.6
1/2	1.8	145	MXG461B15-1.5
1/2	3.5	145	MXG461B15-3
3/4	5.8	116	MXG461B20-5
1	9.3	102	MXG461B25-8
1-1/4	14	87	MXG461B32-12
1-1/2	23	87	MXG461B40-20
2	35	87	MXG461B50-30

D-57

Valves

Two- & Three-Way 656 Series **Service** Valves

2-Way Valves





	Valve Size	Cv	Close-off	Spring Range	Part No.
	Normally Open				
	1/2" (15 mm)	0.9	95 psi (655 kPa)	3 to 8 psi (21 to 55 kPa)	656-0004
	1/2" (15 mm)	2.1	95 psi (655 kPa)	3 to 8 psi (21 to 55 kPa)	656-0002
Normally Closed					
	1/2" (15 mm)	2.1	140 psi (965 kPa)	10 to 15 psi (69 to 103 kPa)	656-0012

Table Note: End connections are S.A.E. Flared.

D-58

2-Way Angle Union Valves




	Valve Size	Cv	Close-off	Spring Range	Part No.
	Normally Open				
	1/2" (15 mm)	2.1	95 psi (655 kPa)	3 to 8 psi (21 to 55 kPa)	656-0017
	1/2" (15 mm)	2.1	95 psi (655 kPa)	5 to 10 psi (34 to 69 kPa)	656-0019
	3/4" (20 mm)	4.6	95 psi (655 kPa)	3 to 8 psi (21 to 55 kPa)	656-0018
	3/4" (20 mm)	4.6	95 psi (655 kPa)	5 to 10 psi (34 to 69 kPa)	656-0021

Table Note: End connections are AFxUM.

3-Way Water Mixing Valves




	Valve Size	Cv	Close-off	Spring Range	Part No.
	1/2" (15 mm)	2.5	95 psi (655 kPa)	10 to 15 lb. (69 to 103 kPa)	656-0009
	1/2" (15 mm)	2.5	95 psi (655 kPa)	3 to 8 lb. (21 to 55 kPa)	656-0010
	1/2" (15 mm)	1.5	95 psi (655 kPa)	3 to 8 lb. (21 to 55 kPa)	656-0011

Table Note: End connections are S.A.E. Flared.

Valves

Two- & Three-Way 658 Series **Service** Valves

2-Way Angle Union Valves




	Valve Size	Cv	Close-off	Spring Range	Part No.
	Normally Open				
	1" (25 mm)	10	100 psi (689 kPa)	2 to 6 psi (14 to 41 kPa)	658-0012
	1-1/4" (32 mm)	16	60 psi (413 kPa)	2 to 6 psi (14 to 41 kPa)	658-0014

Table Note: End connections are AFxUM.

3-Way Sequence and Changeover Valves






	Valve Size	Cv	Close-off	Part No.
	Sequence			
	1/2" (15 mm)	1.5	50 psi (344 kPa)	658-0050
	1/2" (15 mm)	2.5	50 psi (344 kPa)	658-0051
Changeover				
	1/2" (15 mm)	2.5	10 psi (68 kPa)	658-0052

Table Note: End connections are S.A.E. Flared.

Two-Way Butterfly Valves

Pneumatic Spring Return Actuators

2 to 12" 		Normally Open (Fail Open)		Normally Closed (Fail Closed)	
Valve Size in.	Flow Rate Cv	150 psi Close-off	100 psi Close-off — 4-6 50 psi Close-off — 8-12	150 psi Close-off	100 psi Close-off — 4-6 50 psi Close-off — 8-12
		Part No.	Part No.	Part No.	Part No.
Base Model					
2	60	BV2W02FS2LOXXXX	N/A	BV2W02FS2LCXXXX	N/A
2-1/2	151	BV2W25FS2LOXXXX	N/A	BV2W25FS2LCXXXX	N/A
3	262	BV2W03FS2LOXXXX	N/A	BV2W03FS2LCXXXX	N/A
4	647	BV2W04FS2LOXXXX	BV2W04US2LOXXXX	BV2W04FS2LCXXXX	BV2W04US2LCXXXX
5	1141	BV2W05FS2LOXXXX	BV2W05US2LOXXXX	BV2W05FS2LCXXXX	BV2W05US2LCXXXX
6	1580	BV2W06FS2LOXXXX	BV2W06US2LOXXXX	BV2W06FS2LCXXXX	BV2W06US2LCXXXX
8	1754*	N/A	BV2W08US2LOXXXX	N/A	BV2W08US2LCXXXX
10	2524*	N/A	BV2W10US2LOXXXX	N/A	BV2W10US2LCXXXX
12	3470*	N/A	BV2W12US2LOXXXX	N/A	BV2W12US2LCXXXX
Positioner					
2	60	BV2W02FS2LOPXXX	N/A	BV2W02FS2LCPXXX	N/A
2-1/2	151	BV2W25FS2LOPXXX	N/A	BV2W25FS2LCPXXX	N/A
3	262	BV2W03FS2LOPXXX	N/A	BV2W03FS2LCPXXX	N/A
4	647	BV2W04FS2LOPXXX	BV2W04US2LOPXXX	BV2W04FS2LCPXXX	BV2W04US2LCPXXX
5	1141	BV2W05FS2LOPXXX	BV2W05US2LOPXXX	BV2W05FS2LCPXXX	BV2W05US2LCPXXX
6	1160*/1580	BV2W06FS2LOPXXX	BV2W06US2LOPXXX	BV2W06FS2LCPXXX	BV2W06US2LCPXXX
8	1754*	N/A	BV2W08US2LOPXXX	N/A	BV2W08US2LCPXXX
10	2524*	N/A	BV2W10US2LOPXXX	N/A	BV2W10US2LCPXXX
12	3470*	N/A	BV2W12US2LOPXXX	N/A	BV2W12US2LCPXXX
120 V E/P Valve					
2	60	BV2W02FS2LOTXXX	N/A	BV2W02FS2LCTXXX	N/A
2-1/2	151	BV2W25FS2LOTXXX	N/A	BV2W25FS2LCTXXX	N/A
3	262	BV2W03FS2LOTXXX	N/A	BV2W03FS2LCTXXX	N/A
4	647	BV2W04FS2LOTXXX	BV2W04US2LOTXXX	BV2W04FS2LCTXXX	BV2W04US2LCTXXX
5	1141	BV2W05FS2LOTXXX	BV2W05US2LOTXXX	BV2W05FS2LCTXXX	BV2W05US2LCTXXX
6	1160*/1580	BV2W06FS2LOTXXX	BV2W06US2LOTXXX	BV2W06FS2LCTXXX	BV2W06US2LCTXXX
8	1754*	N/A	BV2W08US2LOTXXX	N/A	BV2W08US2LCTXXX
10	2524*	N/A	BV2W10US2LOTXXX	N/A	BV2W10US2LCTXXX
12	3470*	N/A	BV2W12US2LOTXXX	N/A	BV2W12US2LCTXXX
24 V E/P Valve					
2	60	BV2W02FS2LOUXXX	N/A	BV2W02FS2LCUXXX	N/A
2-1/2	151	BV2W25FS2LOUXXX	N/A	BV2W25FS2LCUXXX	N/A
3	262	BV2W03FS2LOUXXX	N/A	BV2W03FS2LCUXXX	N/A
4	647	BV2W04FS2LOUXXX	BV2W04US2LOUXXX	BV2W04FS2LCUXXX	BV2W04US2LCUXXX
5	1141	BV2W05FS2LOUXXX	BV2W05US2LOUXXX	BV2W05FS2LCUXXX	BV2W05US2LCUXXX
6	1580	BV2W06FS2LOUXXX	BV2W06US2LOUXXX	BV2W06FS2LCUXXX	BV2W06US2LCUXXX
8	1754*	N/A	BV2W08US2LOUXXX	N/A	BV2W08US2LCUXXX
10	2524*	N/A	BV2W10US2LOUXXX	N/A	BV2W10US2LCUXXX
12	3470*	N/A	BV2W12US2LOUXXX	N/A	BV2W12US2LCUXXX

D-60

Valves

*6-inch 150 psi and 8-, 10- and 12-inch only rotate to 70° max.

S6 actuator option also available. Contact customer support for part numbers.

High performance valves are special order. Contact customer support for parts and pricing.

Three-Way Butterfly Valves

Pneumatic Spring Return Actuators

2 to 12"			Normally Open (Fail Open to Port B)		Normally Closed (Fail Closed to Port B)	
			150 psi Close-off	100 psi Close-off — 4-6 50 psi Close-off — 8-12	150 psi Close-off	100 psi Close-off — 4-6 50 psi Close-off — 8-12
Valve Size in.	Cv		Part No.	Part No.	Part No.	Part No.
	Run	Branch				
Base Model						
			Assembly A	Assembly A	Assembly B	Assembly B
2	58	54	BV3W02FS2LAXXXX	N/A	BV3W02FS2LBXXXX	N/A
2-1/2	135	114	BV3W25FS2LAXXXX	N/A	BV3W25FS2LBXXXX	N/A
3	165	148*	BV3W03FS2LAXXXX	N/A	BV3W03FS2LBXXXX	N/A
4	419	348*	BV3W04FS2LAXXXX	BV3W04US2LAXXXX	BV3W04FS2LBXXXX	BV3W04US2LBXXXX
5	740	600*	BV3W05FS2LAXXXX	BV3W05US2LAXXXX	BV3W05FS2LBXXXX	BV3W05US2LBXXXX
6	1051	867*	BV3W06FS2LAXXXX	BV3W06US2LAXXXX	BV3W06FS2LBXXXX	BV3W06US2LBXXXX
8	1661	1424*	N/A	BV3W08US2LAXXXX	N/A	BV3W08US2LBXXXX
10	2439	2132*	N/A	BV3W10US2LAXXXX	N/A	BV3W10US2LBXXXX
12	3401	3019*	N/A	BV3W12US2LAXXXX	N/A	BV3W12US2LBXXXX
Positioner						
			Assembly A	Assembly A	Assembly B	Assembly B
2	58	54	BV3W02FS2LCPXXX	N/A	BV3W02FS2LDPXXX	N/A
2-1/2	135	114	BV3W25FS2LCPXXX	N/A	BV3W25FS2LDPXXX	N/A
3	165	148*	BV3W03FS2LCPXXX	N/A	BV3W03FS2LDPXXX	N/A
4	419	348*	BV3W04FS2LCPXXX	BV3W04US2LCPXXX	BV3W04FS2LDPXXX	BV3W04US2LDPXXX
5	740	600*	BV3W05FS2LCPXXX	BV3W05US2LCPXXX	BV3W05FS2LDPXXX	BV3W05US2LDPXXX
6	1051	867*	BV3W06FS2LCPXXX	BV3W06US2LCPXXX	BV3W06FS2LDPXXX	BV3W06US2LDPXXX
8	1661	1424*	N/A	BV3W08US2LCPXXX	N/A	BV3W08US2LDPXXX
10	2439	2132*	N/A	BV3W10US2LCPXXX	N/A	BV3W10US2LDPXXX
12	3401	3019*	N/A	BV3W12US2LCPXXX	N/A	BV3W12US2LDPXXX
			Assembly C	Assembly C	Assembly D	Assembly D
2	58	54	BV3W02FS2LCPXXX	N/A	BV3W02FS2LDPXXX	N/A
2-1/2	135	114	BV3W25FS2LCPXXX	N/A	BV3W25FS2LDPXXX	N/A
3	165	148*	BV3W03FS2LCPXXX	N/A	BV3W03FS2LDPXXX	N/A
4	419	348*	BV3W04FS2LCPXXX	BV3W04US2LCPXXX	BV3W04FS2LDPXXX	BV3W04US2LDPXXX
5	740	600*	BV3W05FS2LCPXXX	BV3W05US2LCPXXX	BV3W05FS2LDPXXX	BV3W05US2LDPXXX
6	1051	867*	BV3W06FS2LCPXXX	BV3W06US2LCPXXX	BV3W06FS2LDPXXX	BV3W06US2LDPXXX
8	1661	1424*	N/A	BV3W08US2LCPXXX	N/A	BV3W08US2LDPXXX
10	2439	2132*	N/A	BV3W10US2LCPXXX	N/A	BV3W10US2LDPXXX
12	3401	3019*	N/A	BV3W12US2LCPXXX	N/A	BV3W12US2LDPXXX

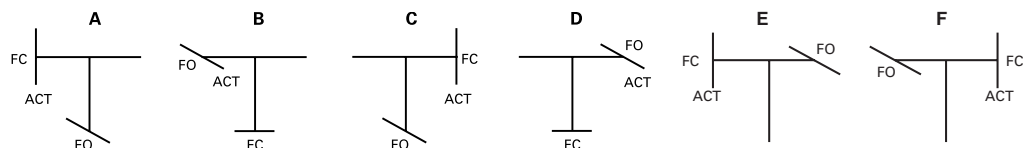
D-61

Valves

*3- through 12-inch valves only rotate 70° max.

S6 actuator option also available. Assemblies E and F also available. Contact customer support for part numbers.

Three-Way Assembly Configurations



Key: FC Fail Closed FO Fail Open ACT Actuator Location

Three-Way Butterfly Valves

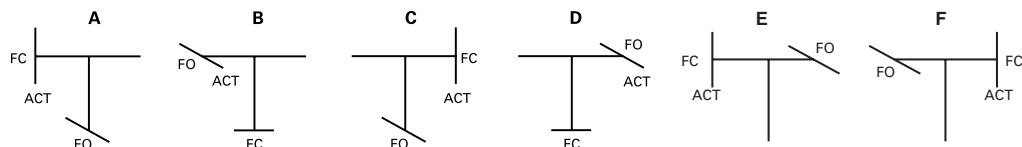
Pneumatic Spring Return Actuators

2 to 12"			Normally Open (Fail Open to Port B)		Normally Closed (Fail Closed to Port B)	
			150 psi Close-off	100 psi Close-off — 4-6 50 psi Close-off — 8-12	150 psi Close-off	100 psi Close-off — 4-6 50 psi Close-off — 8-12
Valve Size in.	Cv		Part No.	Part No.	Part No.	Part No.
	Run	Branch				
120 V E/P Valve						
			Assembly A	Assembly A	Assembly B	Assembly B
2	58	54	BV3W02FS2LATXXX	N/A	BV3W02FS2LBTXXX	N/A
2-1/2	135	114	BV3W25FS2LATXXX	N/A	BV3W25FS2LBTXXX	N/A
3	165	148*	BV3W03FS2LATXXX	N/A	BV3W03FS2LBTXXX	N/A
4	419	348*	BV3W04FS2LATXXX	BV3W04US2LATXXX	BV3W04FS2LBTXXX	BV3W04US2LBTXXX
5	740	600*	BV3W05FS2LATXXX	BV3W05US2LATXXX	BV3W05FS2LBTXXX	BV3W05US2LBTXXX
6	1051	867*	BV3W06FS2LATXXX	BV3W06US2LATXXX	BV3W06FS2LBTXXX	BV3W06US2LBTXXX
8	1661	1424*	N/A	BV3W08US2LATXXX	N/A	BV3W08US2LBTXXX
10	2439	2132*	N/A	BV3W10US2LATXXX	N/A	BV3W10US2LBTXXX
12	3401	3019*	N/A	BV3W12US2LATXXX	N/A	BV3W12US2LBTXXX
			Assembly C	Assembly C	Assembly D	Assembly D
2	58	54	BV3W02FS2LCTXXX	N/A	BV3W02FS2LDTXXX	N/A
2-1/2	135	114	BV3W25FS2LCTXXX	N/A	BV3W25FS2LDTXXX	N/A
3	165	148*	BV3W03FS2LCTXXX	N/A	BV3W03FS2LDTXXX	N/A
4	419	348*	BV3W04FS2LCTXXX	BV3W04US2LCTXXX	BV3W04FS2LDTXXX	BV3W04US2LDTXXX
5	740	600*	BV3W05FS2LCTXXX	BV3W05US2LCTXXX	BV3W05FS2LDTXXX	BV3W05US2LDTXXX
6	1051	867*	BV3W06FS2LCTXXX	BV3W06US2LCTXXX	BV3W06FS2LDTXXX	BV3W06US2LDTXXX
8	1661	1424*	N/A	BV3W08US2LCTXXX	N/A	BV3W08US2LDTXXX
10	2439	2132*	N/A	BV3W10US2LCTXXX	N/A	BV3W10US2LDTXXX
12	3401	3019*	N/A	BV3W12US2LCTXXX	N/A	BV3W12US2LDTXXX
24 V E/P Valve						
			Assembly A	Assembly A	Assembly B	Assembly B
2	58	54	BV3W02FS2LAUXXX	N/A	BV3W02FS2LBUXXX	N/A
2-1/2	135	114	BV3W25FS2LAUXXX	N/A	BV3W25FS2LBUXXX	N/A
3	165	148*	BV3W03FS2LAUXXX	N/A	BV3W03FS2LBUXXX	N/A
4	419	348*	BV3W04FS2LAUXXX	BV3W04US2LAUXXX	BV3W04FS2LBUXXX	BV3W04US2LBUXXX
5	740	600*	BV3W05FS2LAUXXX	BV3W05US2LAUXXX	BV3W05FS2LBUXXX	BV3W05US2LBUXXX
6	1051	867*	BV3W06FS2LAUXXX	BV3W06US2LAUXXX	BV3W06FS2LBUXXX	BV3W06US2LBUXXX
8	1661	1424*	N/A	BV3W08US2LAUXXX	N/A	BV3W08US2LBUXXX
10	2439	2132*	N/A	BV3W10US2LAUXXX	N/A	BV3W10US2LBUXXX
12	3401	3019*	N/A	BV3W12US2LAUXXX	N/A	BV3W12US2LBUXXX
			Assembly C	Assembly C	Assembly D	Assembly D
2	58	54	BV3W02FS2LCUXXX	N/A	BV3W02FS2LDUXXX	N/A
2-1/2	135	114	BV3W25FS2LCUXXX	N/A	BV3W25FS2LDUXXX	N/A
3	165	148*	BV3W03FS2LCUXXX	N/A	BV3W03FS2LDUXXX	N/A
4	419	348*	BV3W04FS2LCUXXX	BV3W04US2LCUXXX	BV3W04FS2LDUXXX	BV3W04US2LDUXXX
5	740	600*	BV3W05FS2LCUXXX	BV3W05US2LCUXXX	BV3W05FS2LDUXXX	BV3W05US2LDUXXX
6	1051	867*	BV3W06FS2LCUXXX	BV3W06US2LCUXXX	BV3W06FS2LDUXXX	BV3W06US2LDUXXX
8	1661	1424*	N/A	BV3W08US2LCUXXX	N/A	BV3W08US2LDUXXX
10	2439	2132*	N/A	BV3W10US2LCUXXX	N/A	BV3W10US2LDUXXX
12	3401	3019*	N/A	BV3W12US2LCUXXX	N/A	BV3W12US2LDUXXX

*3- through 12-inch valves only rotate 70° max.

Assemblies E and F also available. Contact customer support for part numbers.


Three-Way Assembly Configurations



Key: FC Fail Closed FO Fail Open ACT Actuator Location

Two-Way Butterfly Valves

Electronic Spring Return Actuators

2 to 4" 		Normally Open	Normally Closed
		100 psi Close-off	100 psi Close-off
Valve Size in.	Flow Rate Cv	Part No.	Part No.
120 Vac On/Off			
2	60	BV2W02UG1LOXXX	BV2W02UG1LCXXX
2-1/2	151	BV2W25UG1LOXXX	BV2W25UG1LCXXX
3	262	BV2W03UG1LOXXX	BV2W03UG1LCXXX
4	647	BV2W04UG1LOXXX	BV2W04UG1LCXXX
24 Vac On/Off			
2	60	BV2W02UG2LOXXX	BV2W02UG2LCXXX
2-1/2	151	BV2W25UG2LOXXX	BV2W25UG2LCXXX
3	262	BV2W03UG2LOXXX	BV2W03UG2LCXXX
4	647	BV2W04UG2LOXXX	BV2W04UG2LCXXX
24 Vac Floating			
2	60	BV2W02UG3LOXXX	BV2W02UG3LCXXX
2-1/2	151	BV2W25UG3LOXXX	BV2W25UG3LCXXX
3	262	BV2W03UG3LOXXX	BV2W03UG3LCXXX
4	647	BV2W04UG3LOXXX	BV2W04UG3LCXXX
24 Vac Modulating 0-10 V			
2	60	BV2W02UG4LOXXX	BV2W02UG4LCXXX
2-1/2	151	BV2W25UG4LOXXX	BV2W25UG4LCXXX
3	262	BV2W03UG4LOXXX	BV2W03UG4LCXXX
4	647	BV2W04UG4LOXXX	BV2W04UG4LCXXX
24 Vac Modulating 4-20 mA			
2	60	BV2W02UG5LOXXX	BV2W02UG5LCXXX
2-1/2	151	BV2W25UG5LOXXX	BV2W25UG5LCXXX
3	262	BV2W03UG5LOXXX	BV2W03UG5LCXXX
4	647	BV2W04UG5LOXXX	BV2W04UG5LCXXX

Three-Way Butterfly Valves

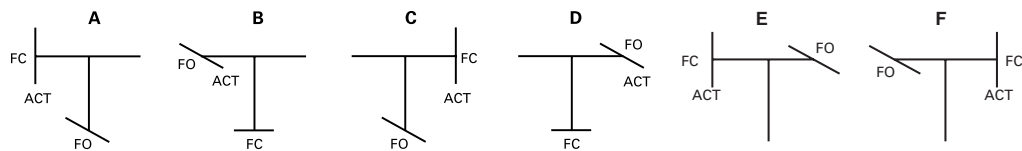
Electronic Spring Return Actuators

2 to 4"			Normally Open (Fail Open to Port B)		Normally Closed (Fail Closed to Port B)	
Valve Size in.	Cv		100 psi Close-off	100 psi Close-off	100 psi Close-off	100 psi Close-off
	Run	Branch	Part No.	Part No.	Part No.	Part No.
120 Vac On/Off						
			Assembly A	Assembly C	Assembly B	Assembly D
2	58	54	BV3W02UG1LAXXXX	BV3W02UG1LCXXX	BV3W02UG1LBXXX	BV3W02UG1LDXXX
2-1/2	135	114	BV3W25UG1LAXXXX	BV3W25UG1LCXXX	BV3W25UG1LBXXX	BV3W25UG1LDXXX
3	229	188	BV3W03UG1LAXXXX	BV3W03UG1LCXXX	BV3W03UG1LBXXX	BV3W03UG1LDXXX
4	511	385	BV3W04UG1LAXXXX	BV3W04UG1LCXXX	BV3W04UG1LBXXX	BV3W04UG1LDXXX
24 Vac On/Off						
			Assembly A	Assembly C	Assembly B	Assembly D
2	58	54	BV3W02UG2LAXXXX	BV3W02UG2LCXXX	BV3W02UG2LBXXX	BV3W02UG2LDXXX
2-1/2	135	114	BV3W25UG2LAXXXX	BV3W25UG2LCXXX	BV3W25UG2LBXXX	BV3W25UG2LDXXX
3	229	188	BV3W03UG2LAXXXX	BV3W03UG2LCXXX	BV3W03UG2LBXXX	BV3W03UG2LDXXX
4	511	385	BV3W04UG2LAXXXX	BV3W04UG2LCXXX	BV3W04UG2LBXXX	BV3W04UG2LDXXX
24 Vac Floating						
			Assembly A	Assembly C	Assembly B	Assembly D
2	58	54	BV3W02UG3LAXXXX	BV3W02UG3LCXXX	BV3W02UG3LBXXX	BV3W02UG3LDXXX
2-1/2	135	114	BV3W25UG3LAXXXX	BV3W25UG3LCXXX	BV3W25UG3LBXXX	BV3W25UG3LDXXX
3	229	188	BV3W03UG3LAXXXX	BV3W03UG3LCXXX	BV3W03UG3LBXXX	BV3W03UG3LDXXX
4	511	385	BV3W04UG3LAXXXX	BV3W04UG3LCXXX	BV3W04UG3LBXXX	BV3W04UG3LDXXX
24 Vac Modulating 0-10 V						
			Assembly A	Assembly C	Assembly B	Assembly D
2	58	54	BV3W02UG4LAXXXX	BV3W02UG4LCXXX	BV3W02UG4LBXXX	BV3W02UG4LDXXX
2-1/2	135	114	BV3W25UG4LAXXXX	BV3W25UG4LCXXX	BV3W25UG4LBXXX	BV3W25UG4LDXXX
3	229	188	BV3W03UG4LAXXXX	BV3W03UG4LCXXX	BV3W03UG4LBXXX	BV3W03UG4LDXXX
4	511	385	BV3W04UG4LAXXXX	BV3W04UG4LCXXX	BV3W04UG4LBXXX	BV3W04UG4LDXXX
24 Vac Modulating 4-20 mA						
			Assembly A	Assembly C	Assembly B	Assembly D
2	58	54	BV3W02UG5LAXXXX	BV3W02UG5LCXXX	BV3W02UG5LBXXX	BV3W02UG5LDXXX
2-1/2	135	114	BV3W25UG5LAXXXX	BV3W25UG5LCXXX	BV3W25UG5LBXXX	BV3W25UG5LDXXX
3	229	188	BV3W03UG5LAXXXX	BV3W03UG5LCXXX	BV3W03UG5LBXXX	BV3W03UG5LDXXX
4	511	385	BV3W04UG5LAXXXX	BV3W04UG5LCXXX	BV3W04UG5LBXXX	BV3W04UG5LDXXX

D-64

Valves


Three-Way Assembly Configurations



Key: FC Fail Closed FO Fail Open ACT Actuator Location

Two-Way Butterfly Valves

Electronic Non-Spring Return Actuators

2 to 12" 		Non-Spring Return Actuator		
Valve Size in.	Flow Rate Cv	150 psi Close-off	100 psi Close-off	50 psi Close-off, 4-6" 100 psi Close-off, 8-12"
		Part No.	Part No.	Part No.
Floating / 2-position				
2	60	BV2W02FE2LNXXXX	BV2W02UG6LNXXXX	—
2-1/2	151	BV2W25FE2LNXXXX	BV2W25UG6LNXXXX	—
3	262	BV2W03FE2LNXXXX	BV2W03UG6LNXXXX	—
4	647	BV2W04FE2LNXXXX	BV2W04UG6LNXXXX	BV2W04UE2LNXXXX
5	1141	BV2W05FE2LNXXXX	BV2W05UG6LNXXXX	BV2W05UE2LNXXXX
6	1580	BV2W06FE2LNXXXX	BV2W06UG6LNXXXX	BV2W06UE2LNXXXX
8	2892	BV2W08FE2LNXXXX	—	BV2W08UE2LNXXXX
10	4593	BV2W10FE2LNXXXX	—	BV2W10UE2LNXXXX
12	6682	BV2W12FE2LNXXXX	—	BV2W12UE2LNXXXX
Modulating 0-10 V				
2	60	BV2W02FEMLNXXHX	BV2W02UG7LNXXXX	—
2-1/2	151	BV2W25FEMLNXXHX	BV2W25UG7LNXXXX	—
3	262	BV2W03FEMLNXXHX	BV2W03UG7LNXXXX	—
4	647	BV2W04FEMLNXXHX	BV2W04UG7LNXXXX	BV2W04UEMLNXXHX
5	1141	BV2W05FEMLNXXHX	BV2W05UG7LNXXXX	BV2W05UEMLNXXHX
6	1580	BV2W06FEMLNXXHX	BV2W06UG7LNXXXX	BV2W06UEMLNXXHX
8	2892	BV2W08FEMLNXXHX	—	BV2W08UEMLNXXHX
10	4593	BV2W10FEMLNXXHX	—	BV2W10UEMLNXXHX
12	6682	BV2W12FEMLNXXHX	—	BV2W12UEMLNXXHX
Modulating 4-20 mA				
2	60	BV2W02FEPLNXXHX	BV2W02UG8LNXXXX	—
2-1/2	151	BV2W25FEPLNXXHX	BV2W25UG8LNXXXX	—
3	262	BV2W03FEPLNXXHX	BV2W03UG8LNXXXX	—
4	647	BV2W04FEPLNXXHX	BV2W04UG8LNXXXX	BV2W04UEPLNXXHX
5	1141	BV2W05FEPLNXXHX	BV2W05UG8LNXXXX	BV2W05UEPLNXXHX
6	1580	BV2W06FEPLNXXHX	BV2W06UG8LNXXXX	BV2W06UEPLNXXHX
8	2892	BV2W08FEPLNXXHX	—	BV2W08UEPLNXXHX
10	4593	BV2W10FEPLNXXHX	—	BV2W10UEPLNXXHX
12	6682	BV2W12FEPLNXXHX	—	BV2W12UEPLNXXHX

*6-inch 150 psi and 8-, 10- and 12-inch only rotate to 70° max.

D-65

Valves

Three-Way Butterfly Valves

Electronic Non-Spring Return Actuators

2 to 12"			Normally Open		Normally Closed	
Valve Size in.	Cv		150 psi Close-off	100 psi Close-off, 2-6" 50 psi Close-off, 8-12"	150 psi Close-off	100 psi Close-off, 2-6" 50 psi Close-off, 8-12"
	Run	Branch	Part No.	Part No.	Part No.	Part No.
Floating 2-position						
			Assembly A	Assembly A	Assembly B	Assembly B
2	58	54	BV3W02FE2LAXXXX	BV3W02UG6LAXXXX	BV3W02FE2LBXXXX	BV3W02UG6LBXXXX
2-1/2	135	114	BV3W25FE2LAXXXX	BV3W25UG6LAXXXX	BV3W25FE2LBXXXX	BV3W25UG6LBXXXX
3	229	188	BV3W03FE2LAXXXX	BV3W03UG6LAXXXX	BV3W03FE2LBXXXX	BV3W03UG6LBXXXX
4	511	385	BV3W04FE2LAXXXX	BV3W04UG6LAXXXX	BV3W04FE2LBXXXX	BV3W04UG6LBXXXX
5	870	642	BV3W05FE2LAXXXX	BV3W05UG6LAXXXX	BV3W05FE2LBXXXX	BV3W05UG6LBXXXX
6	1242	935	BV3W06FE2LAXXXX	BV3W06UG6LAXXXX	BV3W06FE2LBXXXX	BV3W06UG6LBXXXX
8	2254	1688	BV3W08FE2LAXXXX	BV3W08UE2LAXXXX	BV3W08FE2LBXXXX	BV3W08UE2LBXXXX
10	3570	2667	BV3W10FE2LAXXXX	BV3W10UE2LAXXXX	BV3W10FE2LBXXXX	BV3W10UE2LBXXXX
12	5240	3938	BV3W12FE2LAXXXX	BV3W12UE2LAXXXX	BV3W12FE2LBXXXX	BV3W12UE2LBXXXX
			Assembly C	Assembly C	Assembly D	Assembly D
2	58	54	BV3W02FE2LCXXXX	BV3W02UG6LCXXXX	BV3W02FE2LDXXXX	BV3W02UG6LDXXXX
2-1/2	135	114	BV3W25FE2LCXXXX	BV3W25UG6LCXXXX	BV3W25FE2LDXXXX	BV3W25UG6LDXXXX
3	229	188	BV3W03FE2LCXXXX	BV3W03UG6LCXXXX	BV3W03FE2LDXXXX	BV3W03UG6LDXXXX
4	511	385	BV3W04FE2LCXXXX	BV3W04UG6LCXXXX	BV3W04FE2LDXXXX	BV3W04UG6LDXXXX
5	870	642	BV3W05FE2LCXXXX	BV3W05UG6LCXXXX	BV3W05FE2LDXXXX	BV3W05UG6LDXXXX
6	1242	935	BV3W06FE2LCXXXX	BV3W06UG6LCXXXX	BV3W06FE2LDXXXX	BV3W06UG6LDXXXX
8	2254	1688	BV3W08FE2LCXXXX	BV3W08UE2LCXXXX	BV3W08FE2LDXXXX	BV3W08UE2LDXXXX
10	3570	2667	BV3W10FE2LCXXXX	BV3W10UE2LCXXXX	BV3W10FE2LDXXXX	BV3W10UE2LDXXXX
12	5240	3938	BV3W12FE2LCXXXX	BV3W12UE2LCXXXX	BV3W12FE2LDXXXX	BV3W12UE2LDXXXX

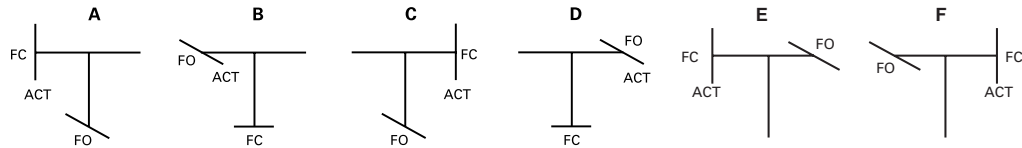
4, 5, and 6" undercut with E2 actuators also available.

Assemblies E and F also available. Contact customer support for part numbers.

D-66

Valves

Three-Way Assembly Configurations



Key: FC Fail Closed FO Fail Open ACT Actuator Location

Three-Way Butterfly Valves

Electronic Non-Spring Return Actuators

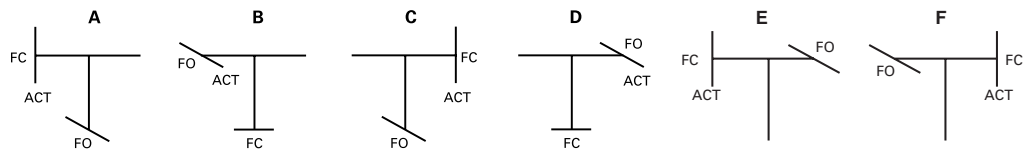
2 to 12"			Normally Open		Normally Closed	
			150 psi Close-off	100 psi Close-off, 2-6" 50 psi Close-off, 8-12"	150 psi Close-off	100 psi Close-off, 2-6" 50 psi Close-off, 8-12"
Valve Size in.	Cv		Part No.	Part No.	Part No.	Part No.
	Run	Branch				
Modulating 0-10 V						
			Assembly A	Assembly A	Assembly B	Assembly B
2	58	54	BV3W02FEMLAXXH	BV3W02UG7LAXXX	BV3W02FEMLBXXH	BV3W02UG7LBXXX
2-1/2	135	114	BV3W25FEMLAXXH	BV3W25UG7LAXXX	BV3W25FEMLBXXH	BV3W25UG7LBXXX
3	229	188	BV3W03FEMLAXXH	BV3W03UG7LAXXX	BV3W03FEMLBXXH	BV3W03UG7LBXXX
4	511	385	BV3W04FEMLAXXH	BV3W04UG7LAXXX	BV3W04FEMLBXXH	BV3W04UG7LBXXX
5	870	642	BV3W05FEMLAXXH	BV3W05UG7LAXXX	BV3W05FEMLBXXH	BV3W05UG7LBXXX
6	1242	935	BV3W06FEMLAXXH	BV3W06UG7LAXXX	BV3W06FEMLBXXH	BV3W06UG7LBXXX
8	2254	1688	BV3W08FEMLAXXH	BV3W08UEMLAXXH	BV3W08FEMLBXXH	BV3W08UEMLBXXH
10	3570	2667	BV3W10FEMLAXXH	BV3W10UEMLAXXH	BV3W10FEMLBXXH	BV3W10UEMLBXXH
12	5240	3938	BV3W12FEMLAXXH	BV3W12UEMLAXXH	BV3W12FEMLBXXH	BV3W12UEMLBXXH
			Assembly C	Assembly C	Assembly D	Assembly D
2	58	54	BV3W02FEMLCXXH	BV3W02UG7LCXXX	BV3W02FEMLDXXH	BV3W02UG7LDXXX
2-1/2	135	114	BV3W25FEMLCXXH	BV3W25UG7LCXXX	BV3W25FEMLDXXH	BV3W25UG7LDXXX
3	229	188	BV3W03FEMLCXXH	BV3W03UG7LCXXX	BV3W03FEMLDXXH	BV3W03UG7LDXXX
4	511	385	BV3W04FEMLCXXH	BV3W04UG7LCXXX	BV3W04FEMLDXXH	BV3W04UG7LDXXX
5	870	642	BV3W05FEMLCXXH	BV3W05UG7LCXXX	BV3W05FEMLDXXH	BV3W05UG7LDXXX
6	1242	935	BV3W06FEMLCXXH	BV3W06UG7LCXXX	BV3W06FEMLDXXH	BV3W06UG7LDXXX
8	2254	1688	BV3W08FEMLCXXH	BV3W08UEMLCXXH	BV3W08FEMLDXXH	BV3W08UEMLDXXH
10	3570	2667	BV3W10FEMLCXXH	BV3W10UEMLCXXH	BV3W10FEMLDXXH	BV3W10UEMLDXXH
12	5240	3938	BV3W12FEMLCXXH	BV3W12UEMLCXXH	BV3W12FEMLDXXH	BV3W12UEMLDXXH
Modulating 4-20 mA						
			Assembly A	Assembly A	Assembly B	Assembly B
2	58	54	BV3W02FEPLAXXH	BV3W02UG8LAXXX	BV3W02FEPLBXXH	BV3W02UG8LBXXX
2-1/2	135	114	BV3W25FEPLAXXH	BV3W25UG8LAXXX	BV3W25FEPLBXXH	BV3W25UG8LBXXX
3	229	188	BV3W03FEPLAXXH	BV3W03UG8LAXXX	BV3W03FEPLBXXH	BV3W03UG8LBXXX
4	511	385	BV3W04FEPLAXXH	BV3W04UG8LAXXX	BV3W04FEPLBXXH	BV3W04UG8LBXXX
5	870	642	BV3W05FEPLAXXH	N/A	BV3W05FEPLBXXH	N/A
6	1242	935	BV3W06FEPLAXXH	N/A	BV3W06FEPLBXXH	N/A
8	2254	1688	BV3W08FEPLAXXH	BV3W08UEPLAXXH	BV3W08FEPLBXXH	BV3W08UEPLBXXH
10	3570	2667	BV3W10FEPLAXXH	BV3W10UEPLAXXH	BV3W10FEPLBXXH	BV3W10UEPLBXXH
12	5240	3938	BV3W12FEPLAXXH	BV3W12UEPLAXXH	BV3W12FEPLBXXH	BV3W12UEPLBXXH
			Assembly C	Assembly C	Assembly D	Assembly D
2	58	54	BV3W02FEPLCXXH	BV3W02UG8LCXXX	BV3W02FEPLDXXH	BV3W02UG8LDXXX
2-1/2	135	114	BV3W25FEPLCXXH	BV3W25UG8LCXXX	BV3W25FEPLDXXH	BV3W25UG8LDXXX
3	229	188	BV3W03FEPLCXXH	BV3W03UG8LCXXX	BV3W03FEPLDXXH	BV3W03UG8LDXXX
4	511	385	BV3W04FEPLCXXH	BV3W04UG8LCXXX	BV3W04FEPLDXXH	BV3W04UG8LDXXX
5	870	642	BV3W05FEPLCXXH	N/A	BV3W05FEPLDXXH	N/A
6	1242	935	BV3W06FEPLCXXH	N/A	BV3W06FEPLDXXH	N/A
8	2254	1688	BV3W08FEPLCXXH	BV3W08UEPLCXXH	BV3W08FEPLDXXH	BV3W08UEPLDXXH
10	3570	2667	BV3W10FEPLCXXH	BV3W10UEPLCXXH	BV3W10FEPLDXXH	BV3W10UEPLDXXH
12	5240	3938	BV3W12FEPLCXXH	BV3W12UEPLCXXH	BV3W12FEPLDXXH	BV3W12UEPLDXXH

D-67

Valves

4, 5, and 6" undercut with E2 actuators also available.
Assemblies E and F also available. Contact customer support for part numbers.

Three-Way Assembly Configurations



Key: FC Fail Closed FO Fail Open ACT Actuator Location

Zone Valves



D-69

Valves

Ranging from 1/2 to 1-inch (15 to 25 mm), the Zone Valves provide excellent control of fan coils, unit ventilators and other applications where on/off, floating or modulating control is required. Featuring direct-coupled technology for quick connection of the valve body and actuator without tools, the Zone Valves and Actuators use all-metal plugs and seat to deliver superior control of water and glycol solutions with NPT or sweat connections.

Features

- Metal-to-metal seat/plug design
- Direct coupled installation of actuator to valve without tools
- Low ANSI Class III Leakage
- Choice of interchangeable on/off (2P), floating (3P), and 0-10V modulating actuators
- On/off actuators available in 24V and 120V supply voltages
- Manual override
- Visual position indication

SIEMENS

Two- and Three-Way Zone Valves

1/2 to 1" Brass Body

Normally Open/Normally Closed/Diverting



Indoor
Environmental
Quality



Two-Way NPT Zone Valve.



Three-Way Sweat Zone Valve.

Description

Two- and Three-Way Zone Valves have a 1/10-inch (2.5 mm) stroke. The Zone Valves work with any SFA/SFP Series, SSA/SSP Series electric actuator, or with the STA/STP Series Thermic actuator. The actuators accept one of either 24 Vac or 120 Vac power supply signal to provide on/off, floating or 0 to 10 Vdc control.

Features

- All metal plug and seat for superior control
- Direct-coupled universal bonnet — install actuators without tools
- Sweat or NPT end connections
- Order separately or with an actuator as a complete assembly

Applications

Typical applications for Two- and Three-Way Zone Valves are hot or chilled water for zones with radiators; floor heating via manifolds; fan coil units; cooling ceilings; wall-mounted boilers; and VAV applications.

Recommendation:

Use only with Zone Valve Actuators.

D-71

Valves

Two- Three-Way Zone Valve Specifications

Line Size1/2-inch to 1-inch (15 mm to 25 mm)
Body StyleGlobe
Action
 2-way..... NO/NC Determined by Actuator
 3-way.....Diverting/Mixing (Limited Application)
Valve Body Rating ANSI Class 125
Stem Travel (Stroke)..... 1/10-inch (2.5 mm)
Materials
 Body Brass
 Trim Brass
 Stem Stainless Steel ASTM A582 Type 303
 Packing..... EPDM O-rings

Controlled Medium Water, Glycol Solutions to 50%
Medium Temperature Range34 to 230°F (1 to 110°C)
Maximum Inlet Pressure125 psig
Leakage Rate ANSI Class III
Close-off Ratings..... According to ANSI/FCI 70-2
Flow CharacteristicLinear

Zone Valve Body Product Ordering

Nominal Valve Size		Flow Rate		Part No.	
Inch	Mm	Cv	(Kvs)	NPT	Sweat
Two-Way Valve Bodies					
0.5	15	1.0	(0.85)	599-00210	599-00510
0.5	15	2.5	(2.15)	599-00211	599-00511
0.5	15	4.0	(3.4)	599-00214	599-00514
0.75	20	4.1	(3.5)	599-00212	599-00512
1.00	25	7.0	(6.0)	599-00213	599-00513
Three-Way Valve Bodies					
0.5	15	1.0	(0.85)	599-00230	599-00530
0.5	15	2.5	(2.15)	599-00231	599-00531
0.5	15	4.0	(3.4)	599-00234	599-00534
0.75	20	4.1	(3.5)	599-00232	599-00532
1.00	25	7.0	(6.0)	599-00233	599-00533

D-72

Valves



Zone Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code
Two-Way Valves	Three-Way Valves		
Normally Open			
24 Vac, 0 to 10 Vdc, Modulating	24 Vac, 0-10 Vdc, Modulating	SSP61U	248
24 Vac/dc, 2-Position, Spring Return	24 Vac/dc, 2-Position, Fail AB→A	STP71	247
24 Vac, 2-Position, Spring Return	24 Vac, 2-Position, Fail AB→A	SFP71U	243
120 Vac, 2-Position, Spring Return	120 Vac, 2-Position, Fail AB→A	SFP11U	241
208 Vac, 2-Position, Spring Return	208 Vac, 2-Position, Fail AB→A	SFP208U/25*	**
277 Vac, 2-Position, Spring Return	277 Vac, 2-Position, Fail AB→A	SFP277U/25*	**
Normally Closed			
24 Vac, Floating	24 Vac, Floating	SSA81U	244
24 Vac, 0 to 10 Vdc, Modulating	24 Vac, 0-10 Vdc, Modulating	SSA61U	245
24 Vac/dc, 2-Position, Spring Return	24 Vac/dc, 2-Position, Fail AB→B	STA71	246
24 Vac, 2-Position, Spring Return	24 Vac, 2-Position, Fail AB→B	SFA71U	242
120 Vac, 2-Position, Spring Return	120 Vac, 2-Position, Fail AB→B	SFA11U	240
208 Vac, 2-Position, Spring Return	208 Vac, 2-Position, Fail AB→B	SFA208U/25*	**
277 Vac, 2-Position, Spring Return	277 Vac, 2-Position, Fail AB→B	SFA277U/25*	**

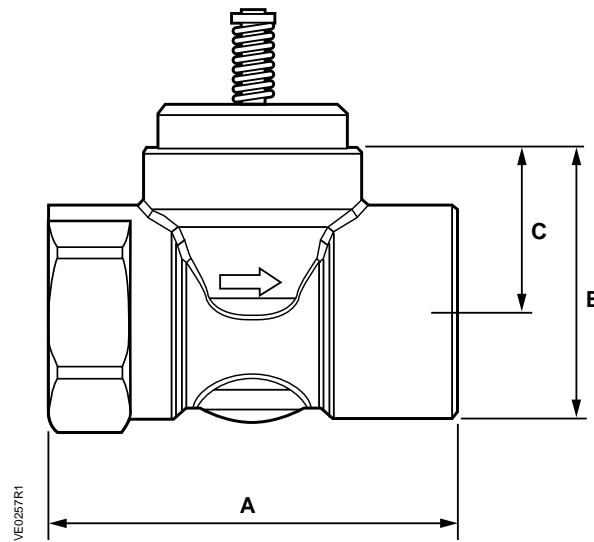
*Part numbers with /25 come with 8.2 ft. (2.5m) leads.

**Actuator only; not available as an assembly.

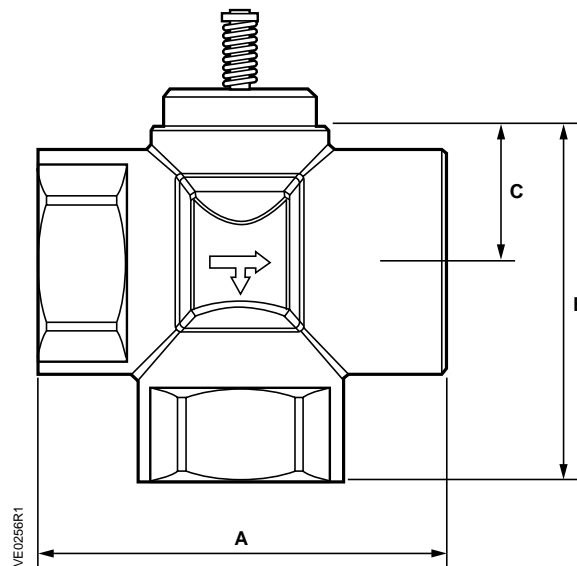


Dimensions

Two-Way Zone Valve Body



Three-Way Zone Valve Body



D-73

Valves

Valve Size in. (mm)	2-Way Valve				3-Way Valve				
	A	B	C	Weight lb. (kg)	A	B	C	Weight lb. (kg)	
NPT									
0.5 (15)	2.76 (70)	1.63 (41.5)	1.00 (25.4)	0.82 (0.37)	2.76 (70)	2.34 (59.5)	1.00 (25.4)	1.08 (0.49)	
0.75 (20)	2.76 (70)	1.77 (45)	1.00 (25.4)	0.99 (0.45)	2.76 (70)	2.34 (59.5)	1.00 (25.4)	1.26 (0.57)	
1.0 (25)	3.50 (89)	2.10 (54)	1.00 (25.4)	1.68 (0.76)	3.50 (89)	2.85 (67.3)	1.00 (25.4)	2.14 (0.97)	
Sweat									
0.5 (15)	2.66 (66)	1.48 (38)	1.00 (25.4)	0.60 (0.27)	2.66 (68)	2.26 (57.5)	1.00 (25.4)	0.71 (0.32)	
0.75 (20)	2.76 (70)	1.63 (41.5)	1.00 (25.4)	0.71 (0.32)	2.76 (70)	2.34 (59.5)	1.00 (25.4)	0.86 (0.39)	
1.00 (25)	3.50 (89)	1.77 (45)	1.00 (25.4)	1.06 (0.48)	3.50 (89)	2.65 (67)	1.00 (25.4)	1.24 (0.56)	

Table expressed in inches (mm).

D-74

Valves

Maximize energy-savings. Optimize performance.

Our HVAC products help drive down energy costs and improve indoor air quality. Look for these icons throughout this catalog for products that can help contribute to achieving LEED credits.

Sustainable Sites (SS)

Water Efficiency (WE)

Energy & Atmosphere (EA)

Materials & Resources (MR)

Indoor Environmental Quality (IEQ)

Innovation in Design/Operations (EB)

Regional Priority (RP)

Find more information on LEED beginning on pg. 3



Sustainable Sites



Water Efficiency



Energy & Atmosphere



Materials & Resources



Indoor Environmental Quality



Innovation in Design/Operations



Regional Priority

SFA/SFP Series Electronic Valve Actuator

24, 120, 208, or 277 Vac, Two-Position Control



Indoor
Environmental
Quality



SFA/SFP Series Electronic Valve Actuator.

Description

The SFA/SFP Series of Electronic Valve Actuators accepts 24, 120, 208, or 277 Vac power supply signal to provide two-position control. This actuator works with Zone Valves with 1/10-inch (2.5 mm) stroke.

Features

- UL listed for plenum installations
- Direct coupled installation without tools
- Manual override with auto unlock
- Visual position indication

Applications

The SFA/SFP Series of Electronic Valve Actuators is for use in heating and cooling HVAC applications with Zone Valves.

D-75

Valves

SFA/SFP Zone Valve Specifications

Power Supply

Operating Voltage24 Vac ±20%, 120 Vac ±20%,
208 Vac, 277 Vac

Frequency
24 Vac..... 50/60 Hz
120 Vac..... 60 Hz

Power Consumption
24/120 Vac..... 9.8 VA

Function

Running Time10 Seconds
Nominal Stroke..... 1/10-in. (2.5 mm)
Nominal Force24 lb. (105N)

Agency Certifications.....UL Listed to UL873
cUL Certified to Canadian Standard
C22.2 No. 24-93

Ambient Temperature

Operation..... 41 to 122°F (5 to 50°C)
Transport and Storage-13 to 158°F (-25 to 70°C)

Mounting Location NEMA 1 (Interior Only)

Noise <35 db

Medium Temperature34 to 230°F (1 to 110°C)

Dimensions 3.4" H x 4.4" W x 2.3" D
(85.2 mm H x 111 mm W x 58 mm D)

Shipping Weight1.18 lb. (0.54 kg)

Two-Position SFA/SFP Series Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
Normally Open		
24 Vac	SFP71U	243
120 Vac	SFP11U	241
208 Vac	SFP208U/25*	**
277 Vac	SFP277U/25*	**
Normally Closed		
24 Vac	SFA71U	242
120 Vac	SFA11U	240
208 Vac	SFA208U/25*	**
277 Vac	SFA277U/25*	**

*Part numbers with /25 come with 8.2 ft. (2.5m) leads.

**Actuator only; not available as an assembly.



Accessories & Service Kits

D-217

D-76

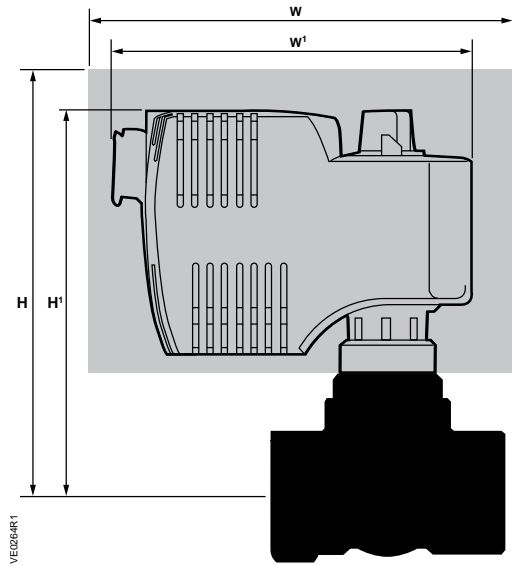
Valves



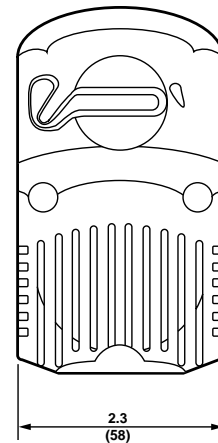
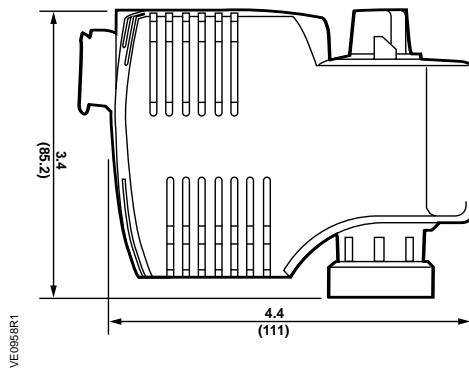
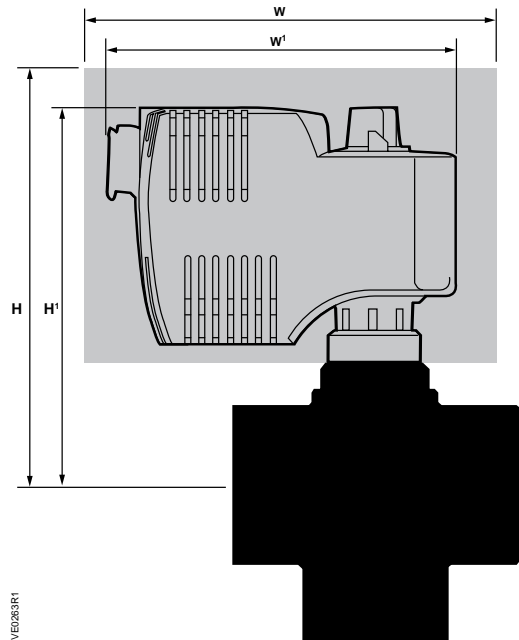
SIEMENS

Dimensions

**SFA/SFP Series Actuator:
Service Envelope for 2-Way Valve Assembly**



**SFA/SFP Series Actuator:
Service Envelope for 3-Way Valve Assembly**



Dimensions shown in inches (mm).

Valve Size in. (mm)	Valve Center Line to Top of Actuator H'		Service Height H		Width or Diameter of Actuator W'		Service Width W	
	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way
0.5 (15)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)
0.75 (20)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)
1.00 (25)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)

Table expressed in inches (mm).

Service height and width are the recommended dimensions to allow access to the product.

SSA/SSP Series Electronic Valve Actuator

24 Vac, Floating or 0-10V Control Non-Spring Return



Indoor
Environmental
Quality



SSA/SSP Series Electronic Valve Actuator.

Description

The SSA/SSP Electronic Valve Actuator requires a 24 Vac power supply and receives a 0 to 10 Vdc signal or a floating control signal to control a valve. This actuator is designed to work with Zone Control Valves with a 1/10-inch (2.5 mm) stroke and a threaded valve bonnet that fits the actuator.

Features

- UL listed for plenum installations
- Direct-coupled installation without tools
- Manual Override with hex wrench
- Visual position indication

Applications

The SSA/SSP Electronic Valve Actuators are for use with heating and cooling HVAC applications with Zone Valves.

D-79

Valves

SSA/SSP Actuator Valve Specifications

Power Supply

Operating Voltage 24 Vac ±20%
 Frequency 50/60 Hz

Power Consumption

SSA81 0.8 VA
 SSA/P61 2.5 VA

Agency Certifications

CE Conformance
 EMC Directive 89/336/EEC
 Low Voltage Directive 73/23/EEC
 UL listed UL873
 cUL Certified to Canadian Standard
 C22.2 No. 24-93

Function

Running Time
 SSA/P61 34 sec.
 SSA81 150 sec.
 Nominal Stroke 1/10-inch (2.5 mm)
 Nominal Force 24 lb. (105N)

Ambient Temperature

Operation 41 to 122°F (5 to 50°C)
 Transport and Storage -13 to 158°F (-25 to 70°C)

Medium Temperature

..... 34 to 230°F (1 to 110°C)

Dimensions

..... 3.26" H x 3.26" W x 1.9" D
 (82 mm H x 83 mm W x 48 mm D)

Shipping Weight

..... 9 oz. (0.25 kg)

SSA/SSP Series Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
24 Vac, Floating, Normally Closed	SSA81U	244
24 Vac, 0-10 Vdc, Modulating, AB-A NC	SSA61U	245
24 Vac, 0-10 Vdc, Modulating, AB-A NO	SSP61U	248



D-80

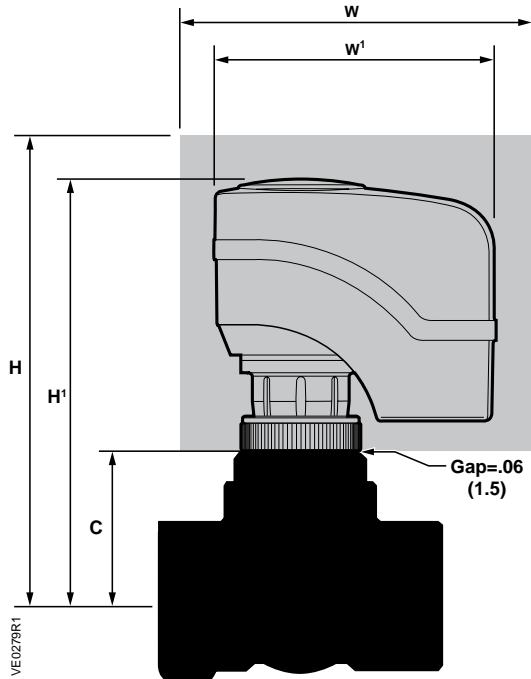
Valves

Accessories & Service Kits D-217

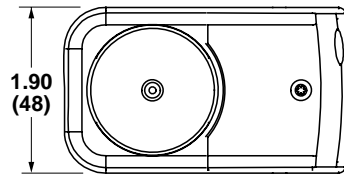
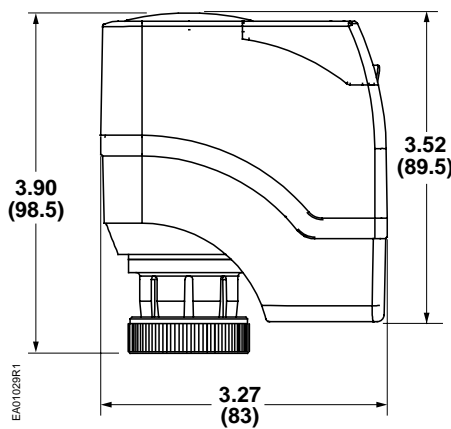
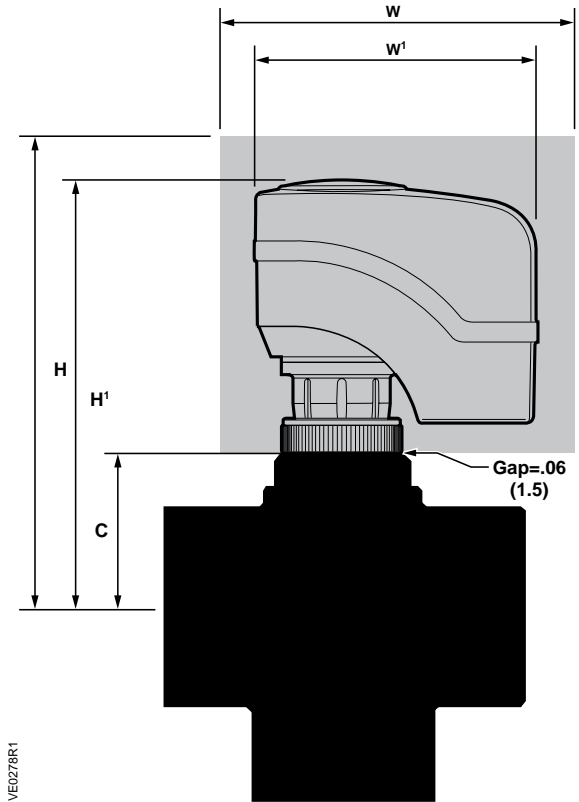


Dimensions

**SSA/SSP Series Actuator:
Service Envelope for 2-Way Valve Assembly**



**SSA/SSP Series Actuator:
Service Envelope for 3-Way Valve Assembly**



Dimensions shown in inches (mm).

Valve Size in. (mm)	Valve Center Line to Top of Actuator H'		Service Height H		Valve Center Line to Actuator Coupling C		Width or Diameter of Actuator W'		Service Width W	
	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way
0.5 (15)	4.26 (108.2)	4.26 (108.2)	12.26 (311.4)	12.26 (311.4)	1.00 (25.4)	1.00 (25.4)	3.26 (82.8)	3.26 (82.8)	11.26 (286.0)	11.26 (286.0)
0.75 (20)	4.26 (108.2)	4.26 (108.2)	12.26 (311.4)	12.26 (311.4)	1.00 (25.4)	1.00 (25.4)	3.26 (82.8)	3.26 (82.8)	11.26 (286.0)	11.26 (286.0)
1.00 (25)	4.26 (108.2)	4.26 (108.2)	12.26 (311.4)	12.26 (311.4)	1.00 (25.4)	1.00 (25.4)	3.26 (82.8)	3.26 (82.8)	11.26 (286.0)	11.26 (286.0)

Table expressed in inches (mm).

Service height and width are the recommended dimensions to allow access to the product.

Thermic Actuator

24 Vac/Vdc, Two-Position control



Indoor
Environmental
Quality



Thermic Electronic Valve Actuator.

Description

Thermic Actuators require a 24 Vac/Vdc control signal to provide two-position, NO or NC control. This actuator is designed to work with Zone Valves with a 1/10-inch (2.5 mm) stroke.

Features

- Direct-coupled — install without tools
- Movement and position indication
- Robust, no maintenance required
- Friction-free
- Two-wire connection
- Standard versions with 3.9 foot connecting cable
- PWM control
- AC/DC two-position control

Applications

Thermic Actuators are for use with 1/10-inch (2.5 mm) stroke Zone Valves.

D-83

Valves

Thermic Actuator Specifications

Power Supply

Supply Voltage24 Vac, 50 to 60 Hz or 24 Vdc
 Power Consumption Normal Operation 2.5W; Power on 6 VA
 Switch-on Current (Transient) 250 mA

Stroke 1/10-in. (2.5 mm)

Nominal Force24 lb. (105N)

Operation

Temperature 41 to 122°F (5 to 50°C)
 Humidity 5 to 85% RH

Storage

Temperature 41 to 122°F (5 to 50°C)
 Humidity 5 to 95% RH

Transport

Temperature -4 to 140°F (-20 to 60°C)
 Humidity 5 to 95% RH

Agency ApprovalsConforms to CE Requirements

Dimensions (H x W).....2.44" H x 1.71" W (62 mm H x 43.5 mm W)

Shipping Weight0.33 lb. (0.15 kg)

Thermic Actuators Product Ordering

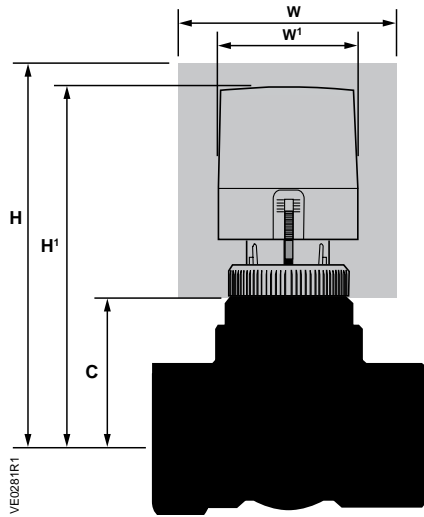
D-84

Description	Part No.	Actuator Prefix Code
24 Vac/Vdc, Normally Closed	STA71	246
24 Vac/Vdc, Normally Open	STP71	247

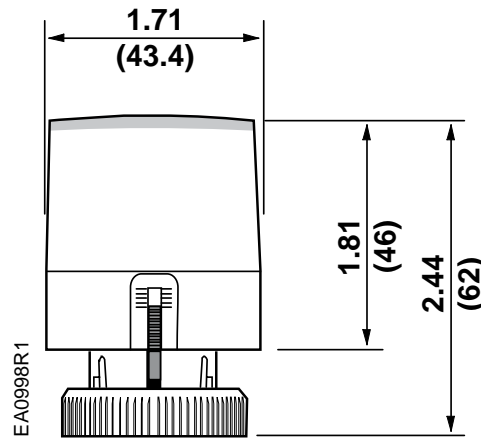
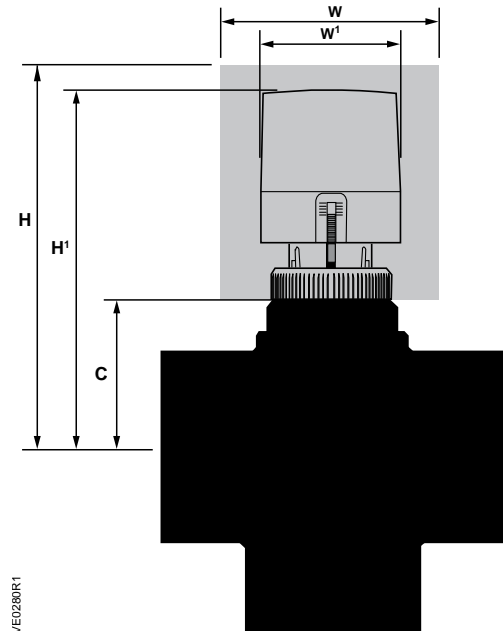
Valves

Dimensions

**Thermic Actuator:
2-Way Valve Assembly Service Envelope**



**Thermic Actuator:
3-Way Valve Assembly Service Envelope**



Dimensions shown in inches (mm).

Valve Size in. (mm)	Valve Center Line to Top of Actuator H'		Service Height H		Valve Center Line to Actuator Coupling C		Width or Diameter of Actuator W'		Service Width W	
	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way
0.5 (15)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)
0.5 (15)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)
0.75 (20)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)
1.00 (25)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)

Table expressed in inches (mm)

Service height and width are the recommended dimensions to allow access to the product.

D-86

Valves

A Winning Combination!

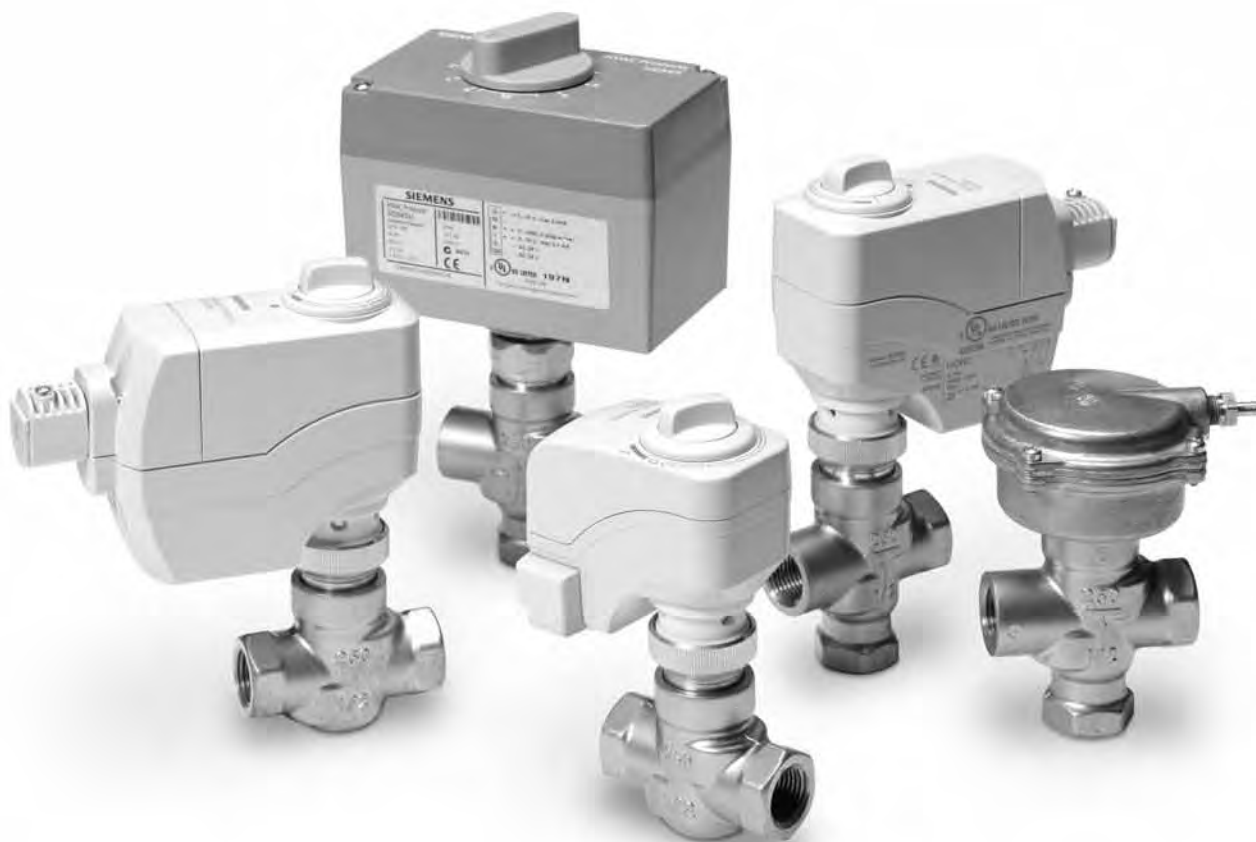
Our 2-Way Ball Valves with Stainless Steel or Chrome Trim and OpenAir™ actuators team up to offer tight flow control and the ability to close-off against very high differential pressure.

- 0.4 to 160 Cv range enables better sizing of valves to the job requirements
- 200 psi close-off for all line sizes and actuators

With better sizing, superior long-life reliability, and economical pricing these valve assemblies are ready to meet specifications for more applications.

**SIEMENS**

Powermite Globe Valves



D-87

Valves

Ranging from 1/2 to 1 inch (Cv range of 0.4 to 10), Powermite Globe Valves provide more choices for applications, featuring direct-coupled technology for connection of valve body and actuator without tools—other features include a compact housing design, actuators capable of handling a variety of media, and a wide variety of options and end connections. For ease of product selection and ordering, the Powermite valves and actuators follow the same sizing and selection process as the Flowrite.

The Powermite Globe Valve line features:

MZ Series

- Close-off up to 70 psi
- Electronic actuator only
 - 0 to 10 V Non-Spring Return
 - Floating control
- Low leakage rate (ANSI Class IV)

MT Series for Terminal Unit Control

- Close-off up to 160 psi
- Pneumatic and Electronic actuators
 - 3 to 8 psig spring range
 - 8 to 13 psig spring range
 - 10 to 15 psig spring range
 - Floating Spring Return or Non-Spring Return electronic actuators
 - 0 to 10 V Spring Return or Non-Spring Return electronic actuators
 - Low leakage rate (ANSI Class IV)

Powermite MZ Series Globe

Two-way Valves

1/2 to 1-inch, Normally Open or Normally Closed



Powermite MZ Series
Two-way Globe Valve.

Description

The Powermite MZ Series Two-way Globe Valves are designed to work with the SSB MZ Series Actuator with a 7/32-inch (5.5 mm) stroke.

Features

- Direct-coupled universal bonnet/no tools required for installation
- ANSI Leakage Class IV (0.01% of Cv)
- ANSI Class 250 body
- Variety of actuators available
 - 0 to 10 V non-spring return
 - Floating control non-spring return
- Choice of end connections
- Greater than 100:1 rangeability for $C_v \geq 1$
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

The Powermite MZ Series Two-way Globe Valves are used for control of hot or chilled water for convectors, fan coil units, unit conditioners, radiation, reheat coils, and similar terminal units requiring an actuator that delivers a minimum of 45 lbf. (200 N) of force.

Recommendation:

Use only with the MZ Series SSB Valve Actuators.

D-89

Valves

Two-way MZ Series Valve Body Specifications

Valve Size 1/2 to 1" (15 to 25 mm)
 Body Style Globe
 Seat Style Metal to Metal
 Action NO/NC
 Valve Body Rating ANSI Class 250
 Stem Travel (Stroke) 7/32" (5.5 mm)
Materials
 Body Forged Brass C37700 or UNS CA 844 Bronze
 Trim Brass
 Stem Stainless Steel ASTM A 582 Type 303
 Packing EPDM O-rings
 Controlled Medium Water, Glycol Solutions up to 50%
 Medium Temperature Range 35 to 250°F (2 to 120°C)

Max. Recommended Differential Pressure for Modulating Service 25 psig (173 kPa)
Rangeability
 Cv < 1 >50:1
 Cv ≥ 1 >100:1
Close-off Ratings According to ANSI/FCI 70-2
Leakage Rate Class IV (0.01% of Cv)
Flow Characteristics Modified Equal Percentage
Mounting Location NEMA 1 (Interior Only)

Refer back to the Selection Charts at the beginning of this section to make sure the configuration is valid.

Two-way MZ Series Valve Body Product Ordering

Normally Open/Normally Closed, Brass Trim



Connection	Valve Size		Flow Rate		Normally Open Part No.	Normally Closed Part No.
	in.	(mm)	Cv	(Kvs)		
Female x Female	1/2	(15)	0.4	(0.34)	599-01115	599-01100
	1/2	(15)	0.63	(0.54)	599-01117	599-01102
	1/2	(15)	1	(0.85)	599-01119	599-01104
	1/2	(15)	1.6	(1.37)	599-01121	599-01106
	1/2	(15)	2.5	(2.14)	599-01123	599-01108
	1/2	(15)	4	(3.42)	599-01126	599-01110
	3/4	(20)	6.3	(5.38)	599-01129	599-01112
	1	(25)	10	(8.55)	599-01131	599-01114
Female x Union Male	1/2	(15)	0.4	(0.34)	599-01116	599-01101
	1/2	(15)	0.63	(0.54)	599-01118	599-01103
	1/2	(15)	1	(0.85)	599-01120	599-01105
	1/2	(15)	1.6	(1.37)	599-01122	599-01107
	1/2	(15)	2.5	(2.14)	599-01124	599-01109
	1/2	(15)	4	(3.42)	599-01127	599-01111
	3/4	(20)	6.3	(5.38)	599-01130	599-01113
Angle Female x Union Male	1/2	(15)	2.5	(2.14)	599-01125	—
	1/2	(15)	4	(3.42)	599-01128	—

There are no repair parts for this product. Replace the entire valve body if inoperative.

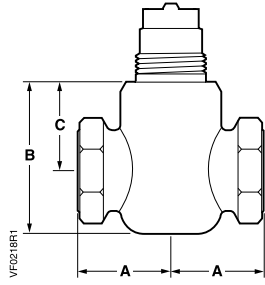
Two-way MZ Series Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code
	24 V, floating Non-Spring Return	SSB81U	254
	24 V, 0-10 V Non-Spring Return	SSB61U	255

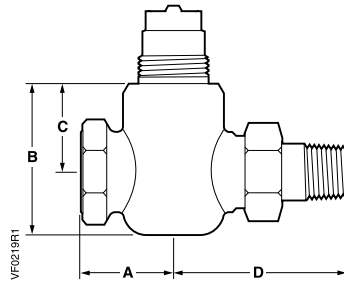


D-90 Valves

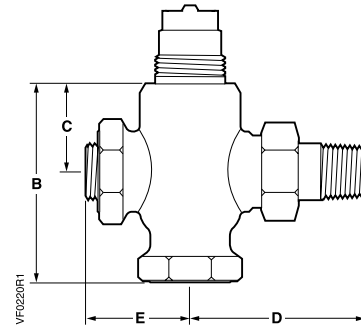
Dimensions and Weights



Female NPT by Female NPT
(FxF)



Female NPT by Union Male
(FxUM)



Angle Female by Union Male
(AFxUM)

Valve Size in.	Dimensions						Weight		
	A	B		C	D	E			
		FxF & FxUM	AFxUM (NO Only)			(NO Only)	FxF	FxUM	AFxUM
1/2" (15 mm)	1-3/8" (35 mm)	2-1/4" (57 mm)	2-15/16" (74 mm)	1-5/16" (33 mm)	2-5/8" (67 mm)	1-1/2" (38 mm)	1.3 lb. (0.6 kg)	1.5 lb. (0.7 kg)	1.8 lb. (0.8 kg)
3/4" (20 mm)	1-5/8" (41 mm)	2-3/8" (59 mm)	—	1-5/16" (33 mm)	3-1/8" (79 mm)	—	1.8 lb. (0.8 kg)	2.2 lb. (1 kg)	—
1" (25 mm)	1-15/16" (49 mm)	2-3/4" (69 mm)	—	1-9/16" (39 mm)	—	—	2.6 lb. (1.2 kg)	—	—

D-91

Valves

Powermite MZ Series Globe

Three-way Mixing Valves

1/2 to 1-inch



Powermite MZ Series
Three-way Globe Valve.

Description

The Powermite MZ Series Three-way Globe Valves are designed to work the SSB MZ Series Actuator with a 7/32-inch (5.5 mm) stroke.

Features

- Direct-coupled universal bonnet/no tools required for installation
- ANSI Leakage Class IV (0.01% of Cv)
- ANSI Class 250 body
- Variety of actuators available
 - 0 to 10 V non-spring return
 - Floating control non-spring return
- Choice of end connections
- Greater than 100:1 rangeability for $C_v \geq 1$
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

The Powermite MZ Series Three-way Globe Valves are used for mixing of hot or chilled water for convectors, fan coil units, unit conditioners, radiation, reheat coils, and similar terminal units requiring an actuator that delivers a minimum of 45 lbf. (200 N) force.

Recommendation:

Use only with the MZ Series SSB Valve Actuators.

D-93

Valves

Three-way MZ Series Valve Specifications

Valve Size 1/2 to 1" (15 to 25 mm)
 Body Style Globe
 Seat Style Metal to Metal
 Action Three-way Mixing
 Valve Body Rating ANSI Class 250
 Stem Travel (Stroke) 7/32" (5.5 mm)
Materials
 Body Forged Brass C37700 or UNS CA 844 Bronze
 Trim Brass
 Stem Stainless Steel ASTM A582 Type 303
 Packing EPDM O-rings
Controlled Medium Water, Glycol Solutions up to 50%
Medium Temperature Range 35 to 250°F (2 to 120°C)

Max. Recommended Differential Pressure for Modulating Service 25 psig (173 kPa)
Rangeability
 Cv < 1 > 50:1
 Cv ≥ 1 > 100:1
Close-off Ratings According to ANSI/FCI 70-2
Leakage Rate Class IV (0.01% of Cv)
Flow Characteristics
 A → AB Modified Equal Percentage
 B → AB Linear
Mounting Location NEMA 1 (Interior Only)

Refer back to the Selection Charts at the beginning of this section to make sure the configuration is valid.

Three-way MZ Series Valve Body Product Ordering

Water Mixing, Brass Trim




Valve Size		Flow Rate		Part No.
in.	(mm)	Cv	(Kvs)	
1/2	(15)	0.4	(0.34)	599-01132
1/2	(15)	0.63	(0.54)	599-01133
1/2	(15)	1	(0.85)	599-01134
1/2	(15)	1.6	(1.37)	599-01135
1/2	(15)	2.5	(2.14)	599-01136
1/2	(15)	4	(3.42)	599-01137
3/4	(20)	6.3	(5.38)	599-01138
1	(25)	10	(8.55)	599-01139

There are no repair parts for this product. Replace the entire valve body if inoperative.

D-94

Valves

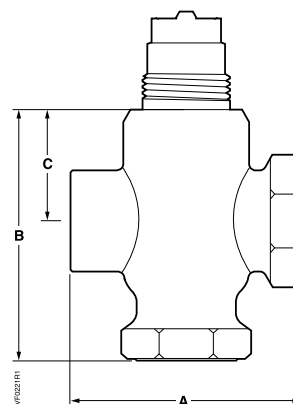
Three-way MZ Series Valve Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
 Electro-Mechanical	24 V, Floating Non-Spring Return	SSB81U
	24 V, 0-10 V Non-Spring Return	SSB61U



Dimensions and Weights

Valve Size in.	Dimensions			Weight
	A	B	C	
1/2" (15 mm)	2-3/4" (70 mm)	2-15/16" (74 mm)	1-5/16" (33 mm)	1.5 lb. (0.7 kg)
3/4" (20 mm)	3-1/4" (83 mm)	2-3/8" (59 mm)	1-5/16" (33 mm)	2.3 lb. (1.05 kg)
1" (25 mm)	3-7/8" (98 mm)	3-15/16" (99 mm)	1-9/16" (39 mm)	3.3 lb. (1.5 kg)



Powermite MZ Series Globe

SSB Valve Actuator

24 Vac, 0-10V Control, Non-Spring Return



Powermite MZ Series
SSB61U Electronic Valve Actuator.

Description

The Powermite SSB61U Electronic Valve Actuator requires a 24 Vac supply and receives a 0 to 10 Vdc control signal to proportionally control a valve. This actuator is designed to work with Powermite MZ Series Valves with a 7/32-inch (5.5 mm) stroke and a threaded valve bonnet that fits the actuator.

Features

- UL-listed for plenum installations
- Direct-coupled for installation without tools
- Close-off up to 70 psi on 1/2-inch valve
- Non-spring return
- Manual override
- Visual position indication
- Orderable as an actuator only or as a complete valve/actuator assembly

Applications

The Powermite SSB61U Electronic Valve Actuator is for use in heating and cooling HVAC applications with Powermite Valves that need 45 lbf. (200 N) of nominal force.

Recommendation:

Use only with the MZ Series valve bodies.

D-95

Valves

SSB61U Specifications

Operating Voltage24 Vac ±20% or 24 Vdc ±25%
Frequency50/60 Hz
Power Supply Earth Ground Isolating, Class 2, 24 Vac Transformer
Power Consumption2.0 VA
Control Signal (Y)
 Voltage.....0 to 10 Vdc
 Current.....0.1 mA
Running Time.....75 sec.
Nominal Stroke.....7/32" (5.5 mm)
Nominal Force.....45 lbf. (200 N)
Agency ApprovalsUL/cUL, UL873
 CSA C22.2 No. 24-93

Ambient Temperature
 Operation.....34 to 122°F (1 to 50°C)
 Transport and Storage-13 to 158°F (-25 to 70°C)
Ambient Humidity.....0 to 90% RH, Non-condensing
Wiring Connection..... Terminal Block for Plenum Cable
 (Accessory Available for 3/8-inch Flex Conduit)
Mounting Location NEMA 1 (Interior Only)

SSB61U Product Ordering

Description	Part No.	Actuator Prefix Code
0 to 10 V	SSB61U	255

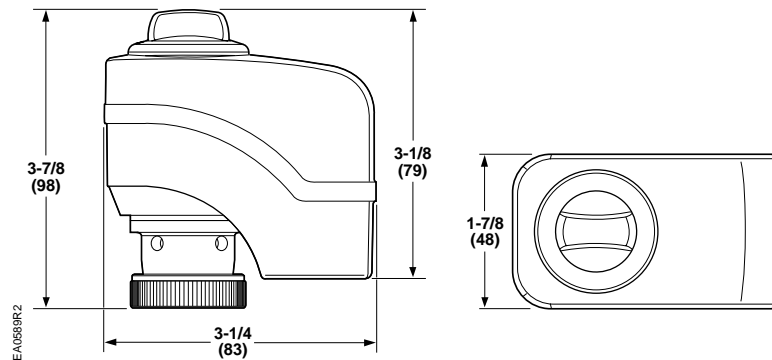
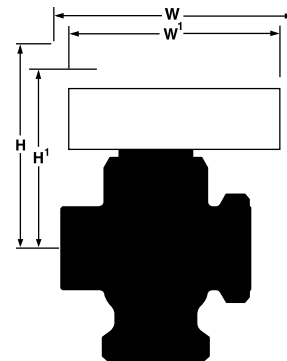
**There are no repair parts for this product.
 Replace the entire actuator if inoperative.**



Dimensions

Valve Size in.	Center Line to Top of Actuator	Service Height	Actual Width	Service Width
	H'	H	W'	W
1/2" (15 mm)	5-1/8" (130 mm)	13-1/8" (330 mm)	3-1/4" (83 mm)	11-1/4" (282 mm)
3/4" (20 mm)	5-1/8" (130 mm)	13-1/8" (330 mm)	3-1/4" (83 mm)	11-1/4" (282 mm)
1" (25 mm)	5-3/8" (136 mm)	13-3/8" (335 mm)	3-1/4" (83 mm)	11-1/4" (282 mm)

Service height and width are the recommended dimensions to allow access to the product.



Dimensions shown in inches (mm).

D-96

Valves



Powermite MZ Series Globe

SSB Valve Actuator

24 Vac, Floating Control, Non-Spring Return



Powermite SSB81U MZ Series
Electronic Valve Actuator.

Description

The Powermite SSB81U Electronic Valve Actuator requires a 24 Vac supply floating control signal to provide three-position control. This actuator is designed to work with Powermite MZ Series Valves with a 7/32-inch (5.5 mm) stroke and a threaded valve bonnet that fits the actuator.

Features

- UL-listed for plenum installations
- Direct-coupled installation without tools
- Close-off up to 70 psi on 1/2-inch valve
- Non-Spring Return
- Manual override
- Visual position indication
- Orderable as an actuator only or as a complete valve/actuator assembly

Applications

The Powermite SSB81U Electronic Valve Actuator is for use in heating and cooling HVAC applications with Powermite valves that need 45 lbf. (200 N) of nominal force.

D-97

Valves

SSB81U Specifications

SSB81U Product Ordering

Operating Voltage 24 Vac ±20%
 Frequency 50/60 Hz
 Power Supply Earth Ground Isolating, Class 2, 24 Vac Transformer
 Power Consumption 0.8 VA
 Running Time (60 Hz) 150 sec.
 Nominal Stroke 7/32" (5.5 mm)
 Nominal Force 45 lbf. (200 N)
 Agency Approvals UL/cUL, UL873
 CSA C22.2 No. 24-93

Ambient Temperature
 Operation 34 to 122°F (1 to 50°C)
 Transport and Storage -13 to 158°F (-25 to 70°C)

Ambient Humidity 0 to 90% RH, Non-condensing

Wiring Connection Terminal Block for Plenum Cable
 (Accessory Available for 3/8-inch Flex Conduit)

Mounting Location NEMA 1 (Interior Only)

Description	Part No.	Actuator Prefix Code
Floating	SSB81U	254

**There are no repair parts for this product.
 Replace the entire actuator if inoperative.**



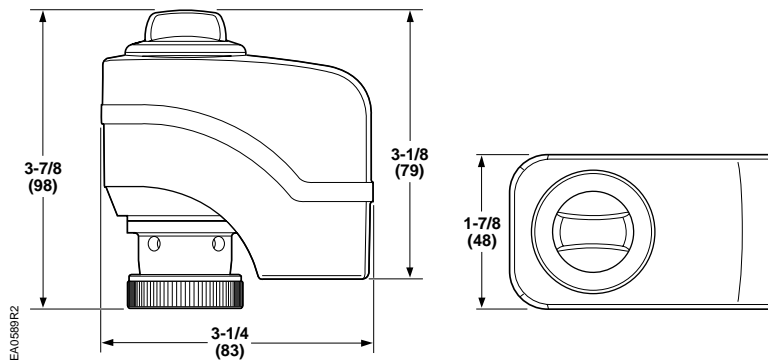
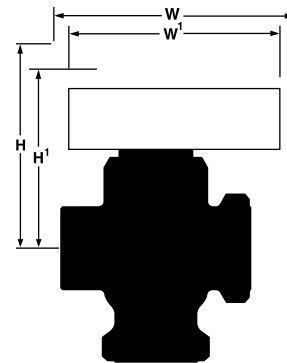
D-98

Valves

Dimensions

Valve Size in.	Center Line to Top of Actuator	Service Height	Actual Width	Service Width
	H'	H	W'	W
1/2" (15 mm)	5-1/8" (130 mm)	13-1/8" (330 mm)	3-1/4" (83 mm)	11-1/4" (282 mm)
3/4" (20 mm)	5-1/8" (130 mm)	13-1/8" (330 mm)	3-1/4" (83 mm)	11-1/4" (282 mm)
1" (25 mm)	5-3/8" (136 mm)	13-3/8" (335 mm)	3-1/4" (83 mm)	11-1/4" (282 mm)

Service height and width are the recommended dimensions to allow access to the product.



Dimensions shown in inches (mm).



Powermite MT Series Globe

Two-way Valves

1/2 to 1-inch, Normally Open or Normally Closed



Powermite MT Series
Two-way Globe Valve.

Description

The Powermite MT Series Two-way Globe Valves are designed to work with either a pneumatic or electronic actuator with a 7/32-inch (5.5 mm) stroke. Compatible actuators deliver a minimum of 67 lbf. (300 N) of force.

Features

- Direct-coupled universal bonnet/No tools required for installation
- Choice of brass or stainless steel trim
- ANSI Leakage Class IV (0.01% of Cv)
- ANSI Class 250 body
- Available in 3 to 8 psig, 8 to 13 psig or 10 to 15 psig spring ranges with pneumatic actuation
- Rated for 15 psig steam with stainless steel trim
- Interchangeable pneumatic or electronic actuators
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

The Powermite MT Series Globe Valves are used for hot or chilled water or low pressure steam (<15 psig with stainless steel trim only) control on convectors, fan coil units, unit conditioners, radiation, reheat coils, and similar terminal units.

Recommendation:

Only use the MT Series Valve Actuators. When using this valve with a pneumatic actuator, note that MT valve bodies have the spring in the body, rather than the actuator. To order the correct valve body, select the proper spring range.

Alternate spring ranges for pneumatic sequencing are available as valve and actuator factory assemblies only.

D-99

Valves

Two-way MT Series Valve Specifications

Valve Size	1/2 to 1" (15 to 25 mm)
Body Style	Globe
Seat Style	Metal to Metal
Action	NO/NC
Valve Body Rating	ANSI Class 250
Stem Travel (Stroke)	7/32" (5.5 mm)
Materials	
Body	Forged Brass C37700 or UNS CA 844 Bronze
Trim	Stainless Steel or Brass
Stem	Stainless Steel ASTM A582 Type 303
Packing	EPDM O-rings
Controlled Medium	Water, Steam, Glycol Solutions up to 50%
Spring Range	
Standard	
Normally Closed	10 to 15 psig (69 to 103 kPa)
Normally Open	3 to 8 psig (21 to 55 kPa)
Optional	
Normally Closed	3 to 8 psig (21 to 55 kPa)
.....	8 to 13 psig (55 to 90 kPa)
Normally Open	8 to 13 psig (55 to 90 kPa)
.....	10 to 15 psig (69 to 103 kPa)

Medium Temperature Range	35 to 250°F (2 to 120°C)
Max. Recommended Differential Pressure for Liquid Modulating Service	
Brass Trim	25 psi (173 kPa)
Stainless Steel Trim	50 psi (345 kPa)
Steam Stainless Steel Trim	15 psi (103 kPa)
Rangeability	
Cv<1	>50:1
Cv≥1	>100:1
Close-off Ratings	According to ANSI/FCI 70-2
Leakage Rate	Class IV (0.01% of Cv)
Flow Characteristics	Modified Equal Percentage
Mounting Location	NEMA 1 (Interior Only)



Refer back to the Selection Charts at the beginning of this section to make sure the configuration is valid.

Two-way MT Series Valve Body Product Ordering

Normally Open/Normally Closed, Modified Equal Percentage, Brass Trim



Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Normally Open Part No.	Normally Closed Part No.
Standard Temperature Packing — 20 to 250°F (-7 to 120°C)					
Female x Female	1/2 (15)	0.4 (0.34)	7/32	599-02030	599-02000
	1/2 (15)	0.63 (0.54)	7/32	599-02032	599-02002
	1/2 (15)	1 (0.85)	7/32	599-02034	599-02004
	1/2 (15)	1.6 (1.37)	7/32	599-02036	599-02006
	1/2 (15)	2.5 (2.14)	7/32	599-02038	599-02008
	1/2 (15)	4 (3.42)	7/32	599-02041	599-02010
	3/4 (20)	6.3 (5.38)	7/32	599-02044	599-02012
	1 (25)	10 (8.55)	7/32	599-02046	599-02014
Female x Union Male	1/2 (15)	0.4 (0.34)	7/32	599-02031	599-02001
	1/2 (15)	0.63 (0.54)	7/32	599-02033	599-02003
	1/2 (15)	1 (0.85)	7/32	599-02035	599-02005
	1/2 (15)	1.6 (1.37)	7/32	599-02037	599-02007
	1/2 (15)	2.5 (2.14)	7/32	599-02039	599-02009
	1/2 (15)	4 (3.42)	7/32	599-02042	599-02011
	3/4 (20)	6.3 (5.38)	7/32	599-02045	599-02013
Angle Female x Union Male	1/2 (15)	2.5 (2.15)	7/32	599-02040	—
	1/2 (15)	4 (3.44)	7/32	599-02043	—

There are no repair parts for this product. Replace the entire valve body if inoperative.

D-101

Valves

Two-way MT Series Valve Body Product Ordering




Normally Open/Normally Closed, Modified Equal Percentage, Stainless Steel Trim



Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Normally Open Part No.	Normally Closed Part No.
Standard Temperature Packing — 20 to 250°F (-7 to 120°C)					
Female x Female	1/2 (15)	0.4 (0.34)	7/32	599-02047	599-02015
	1/2 (15)	0.63 (0.54)	7/32	599-02049	599-02017
	1/2 (15)	1 (0.85)	7/32	599-02051	599-02019
	1/2 (15)	1.6 (1.37)	7/32	599-02053	599-02021
	1/2 (15)	2.5 (2.14)	7/32	599-02055	599-02023
	1/2 (15)	4 (3.42)	7/32	599-02058	599-02025
	3/4 (20)	6.3 (5.38)	7/32	599-02061	599-02027
	1 (25)	10 (8.55)	7/32	599-02063	599-02029
Female x Union Male	1/2 (15)	0.4 (0.34)	7/32	599-02048	599-02016
	1/2 (15)	0.63 (0.54)	7/32	599-02050	599-02018
	1/2 (15)	1 (0.85)	7/32	599-02052	599-02020
	1/2 (15)	1.6 (1.37)	7/32	599-02054	599-02022
	1/2 (15)	2.5 (2.14)	7/32	599-02056	599-02024
	1/2 (15)	4 (3.42)	7/32	599-02059	599-02026
	3/4 (20)	6.3 (5.38)	7/32	599-02062	599-02028
Angle Female x Union Male	1/2 (15)	2.5 (2.15)	7/32	599-02057	—
	1/2 (15)	4 (3.44)	7/32	599-02060	—

There are no repair parts for this product. Replace the entire valve body if inoperative.

Two-way MT Series Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code	
 2"	Pneumatic*	3-8 psi (21-55 kPa)	599-01088	257
		8-13 psi (55-90 kPa)	599-01088	258
		10-15 psi (69-103 kPa)	599-01088	256
	Electro-Mechanical	24 V, Floating, Spring Return	SSC81.5U	260
		24 V, Floating, Non-Spring Return	SSC81U	259
		24 V, 0-10 V, Spring Return	SSC61.5U	262
		24 V, 0-10 V, Non-Spring Return	SSC61U	261
	Electro-Mechanical	24 V, Floating, Spring Return	SQS85.53U	266
		24 V, 0-10 V, Spring Return	SQS65.5U	265
		24 V, 0-10 V, Non-Spring Return	SQS65U	264

*Powermite MT Series valve bodies have the spring in the body, rather than in the pneumatic actuator. There are different valve part numbers for the different spring ranges.

D-102

Refer back to the Selection Chart at the beginning of this section to make sure the configuration is valid.

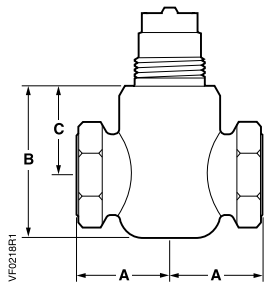


Valves

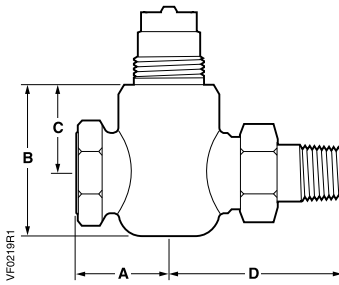


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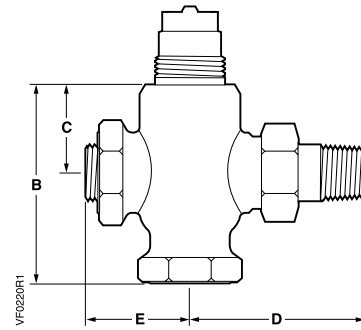
Dimensions and Weights



Female NPT by Female NPT (FxF)



Female NPT by Union Male (FxUM)



Angle Female by Union Male (AFxUM)

Valve Size In.	Dimensions						Weight				
	A	B		AFxUM	C		D	E	FxF	FxUM	AFxUM
		NO	NC		NO	NC					
1/2" (15 mm)	1-3/8" (35 mm)	2-1/4" (57 mm)		2-15/16" (74 mm)	1-5/16" (33 mm)		2-5/8" (67 mm)	1-1/2" (38 mm)	1.3 lb. (0.6 kg)	1.5 lb. (0.7 kg)	1.8 lb. (0.8 kg)
3/4" (20 mm)	1-5/8" (41 mm)	2-3/8" (59 mm)		—	1-5/16" (33 mm)		3-1/8" (79 mm)	—	1.8 lb. (0.8 kg)	2.2 lb. (1 kg)	—
1" (25 mm)	1-15/16" (49 mm)	2-3/4" (69 mm)		—	1-9/16" (39 mm)		—	—	2.6 lb. (1.2 kg)	—	—
1-1/4" (32 mm)	2-1/2" (63.5 mm)	4-1/4" (108 mm)	3-7/8" (98.4 mm)	—	2-3/16" (55.6 mm)	1-11/16" (42.9 mm)	—	—	4 lb. (1.8 kg)	—	—
1-1/2" (40 mm)	2-9/16" (65 mm)	4-1/4" (108 mm)	3-7/8" (98.4 mm)	—	2-1/4" (57.2 mm)	1-5/8" (41.3 mm)	—	—	5 lb. (2.3 kg)	—	—

D-103

Valves

Powermite MT Series Globe

Three-way Mixing Valves

1/2 to 1-inch



Powermite MT Series
Three-way Globe Valve.

Description

The Powermite MT Series Three-way Globe Valves are designed to work with either a pneumatic or electronic actuator with a 7/32-inch (5.5 mm) stroke.

Features

- Direct-coupled universal bonnet/No tools required for installation
- Choice of brass or stainless steel trim
- ANSI Leakage Class IV (0.01% of Cv)
- ANSI Class 250 body
- Available in 3 to 8 psig, 8 to 13 psig or 10 to 15 psig spring ranges with pneumatic actuation
- Rated for 15 psig steam with stainless steel trim
- Interchangeable pneumatic or electronic actuators
- Orderable as valve only or complete valve/actuator assembly

Applications

The Powermite MT Series Three-way Globe Valves are used for mixing of hot or chilled water for convectors, fan coil units, unit conditioners, radiation, reheat coils, and similar terminal units requiring water mixing.

Recommendation:




Only use the MT Series Valve Actuators. When using this valve with a pneumatic actuator, note that MT valve bodies have the spring in the body, rather than the actuator. To order the correct valve body, select the proper spring range.

Alternate spring ranges for pneumatic sequencing are available as valve and actuator factory assemblies only.

D-105

Valves

Three-way Mixing MT Series Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code	
 2"	Pneumatic*	3-8 psi (21-55 kPa)	599-01088	257
		8-13 psi (55-90 kPa)	599-01088	258
		10-15 psi (69-103 kPa)	599-01088	256
	Electro-Mechanical	24 V, Floating, Spring Return	SSC81.5U	260
		24 V, Floating, Non-Spring Return	SSC81U	259
		24 V, 0-10 V, Spring Return	SSC61.5U	262
		24 V, 0-10 V, Non-Spring Return	SSC61U	261
	Electro-Mechanical	24 V, Floating, Spring Return	SQS85.53U	266
		24 V, 0-10 V, Spring Return	SQS65.5U	265
		24 V, 0-10 V, Non-Spring Return	SQS65U	264

*Powermite MT Series valve bodies have the spring in the body, rather than in the pneumatic actuator. There are different valve part numbers for the different spring ranges.

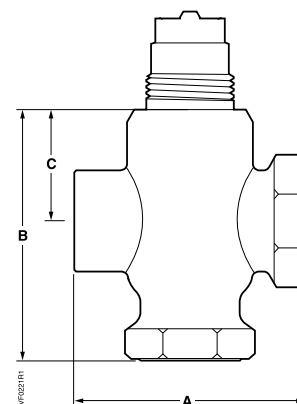


D-107

Valves

Dimensions and Weights

Valve Size in.	Dimensions			Weight
	A	B	C	
1/2" (15 mm)	2-3/4" (70 mm)	2-15/16" (74 mm)	1-5/16" (33 mm)	1.5 lb. (0.7 kg)
3/4" (20 mm)	3-1/4" (83 mm)	2-3/8" (59 mm)	1-5/16" (33 mm)	2.3 lb. (1.05 kg)
1" (25 mm)	3-7/8" (98 mm)	3-15/16" (99 mm)	1-9/16" (39 mm)	3.3 lb. (1.5 kg)



Powermite MT Series Globe

Two-inch Pneumatic Valve Actuator



Powermite MT Series
Two-inch Pneumatic Valve Actuator.

Description

The Powermite Two-inch Pneumatic Valve Actuator is designed for use with the 1/2 to 1-inch Powermite MT Series Terminal Unit Valves with a 7/32-inch (5.5 mm) stroke.

Features

- Low profile
- Freely rotates to aid tubing installation
- Easy installation and removal
- All metal housing
- Orderable as an actuator only or as a complete valve/actuator assembly

Applications

The Powermite Two-inch Pneumatic Valve Actuator is designed to be used on 1/2 to 1-inch Powermite Terminal Unit Valves in liquid and steam service applications.

The pneumatic actuator relies on the spring inside the bonnet assembly of the MT Series valve bodies to return to the “normal” position.

Recommendation:

Use only for MT Series valve bodies, 1/2 to 1-inch only.

D-109

Valves

2" Pneumatic Actuator Specifications

Effective Diaphragm Area3.4 in.² (22 cm²)
 Diaphragm MaterialSilicone
 Nominal Spring Range Valve Dependent
 Span 5 psi (34 kPa)
 Nominal Stroke7/32" (5.5 mm)
 Max. Diaphragm Pressure 35 psig (241 kPa)
 Air Connection1/8" NPT Barbed Fitting
 for 1/4" (6 mm) OD Polyethylene Tubing

Ambient Temperature
 Transportation-40 to +180°F (-40 to +82°C)
 Mounting Location NEMA 1 (Interior Only)

2" Pneumatic Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
3-8 psig (21-55 kPa)	599-01088	257
8-13 psig (55-90 kPa)	599-01088	258
10-15 psig (69-103 kPa)	599-01088	256

Ordering Note:

Spring is inside bonnet assembly of valve body. Use the Valve Selection Charts at the front of this section on pages D-12 and D-13 to determine spring range.



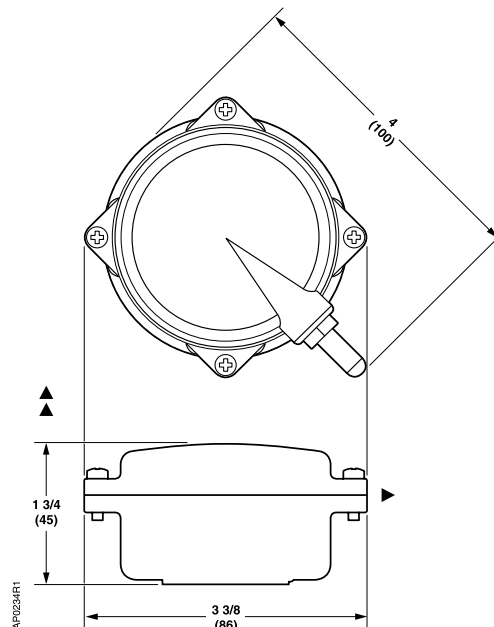
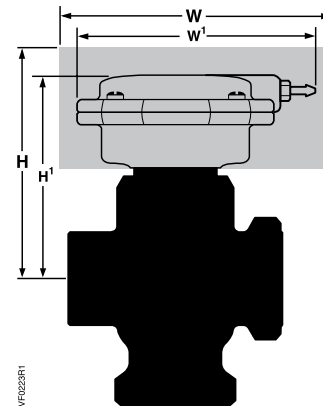
Dimensions

D-110

Valves

Valve Size in.	Center Line to Top of Actuator	Service Height	Actual Width	Service Width
	H ¹	H	W ¹	W
1/2" (15 mm)	3-1/16" (78 mm)	11" (280 mm)	4" (100 mm)	10" (250 mm)
3/4" (20 mm)	3-1/16" (78 mm)	11" (280 mm)	4" (100 mm)	10" (250 mm)
1" (25 mm)	3-5/16" (84 mm)	11-1/4" (285 mm)	4" (100 mm)	10" (250 mm)

Service height and width are the recommended dimensions to allow access to the product.



Dimensions shown in inches (mm).



Powermite MT Series Globe

SSC Electronic Valve Actuator

24 Vac, Floating Control, Spring Return or Non-Spring Return



SSC81U Electronic Valve Actuator.

Description

The Powermite SSC81U and SSC81.5U Electronic Valve Actuators require a 24 Vac supply and receive a floating control signal. These actuators control Powermite MT Series Valves with a 7/32-inch (5.5 mm) stroke.

Features

- UL listed for plenum installations
- Direct coupled, one step installation without special tools
- Close off up to 120 psi
- Manual override
- Visual position indication
- Spring return or non-spring return
- Orderable as an actuator only or as a complete valve/actuator assembly

Applications

The Powermite SSC81... Electronic Actuators and MT Series Valves are used in heating and cooling applications in liquid and steam applications requiring a minimum of 67 lbs. (300 N) nominal force. The SSC81... accepts plenum cable or 3/8-inch flex conduit connection.

D-111

Valves

SSC81 Actuator Specifications

Operating Voltage 24 Vac \pm 20%
Frequency 50/60 Hz \pm 2 Hz
Power Supply Earth Ground Isolating, Class 2, 24 Vac Transformer
Power Consumption
 SSC81U 0.8 VA
 SSC81.5U 2 VA
Control Signal
 Y2 24 Vac Retracts Actuator Shaft
 Y1 24 Vac Extends Actuator Shaft
Running Time
 SSC81U 125 sec. \pm 2% at 60 Hz
 SSC81.5U 125 sec. \pm 2% at 50/60 Hz
 Spring Return (SSC81.5U only) ~30 sec.

Nominal Stroke 7/32-inch (5.5 mm)
Nominal Force 67 lbs. (300N)
Spring Return (SSC81.5U only) Non-mechanical, Electronic Return
 Fails to Stem up (0 Position)
Agency Approvals UL/cUL, UL873 Listed, Certified to
 Canadian Standard C22.2 No. 24-93
Ambient Temperature
 Operation 41 to 122°F (5 to 50°C)
 Transport and Storage -13 to 158°F (-25 to 70°C)
Ambient Humidity 0 to 90% RH, Non-condensing
Wiring Connection Plenum Cable or 3/8-inch Flex Conduit
Mounting Location NEMA 1 (Interior Only)

SSC81 Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
Spring Return	SSC81.5U	260
Non-Spring Return	SSC81U	259



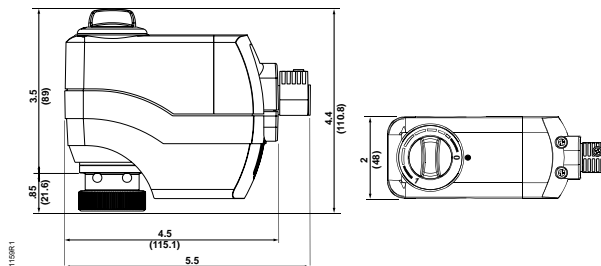
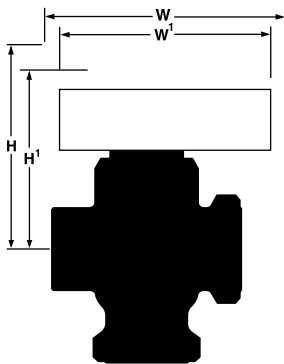
D-112

Valves

Dimensions

Valve Size in.	Center Line to Top of Actuator		Service Height		Actual Width of Actuator	Service Width
	H ¹		H		W ¹	W
	NO	NC	NO	NC		
1/2" (15 mm)	5-1/2" (140 mm)		13-1/2" (343 mm)		5-1/2" (140 mm)	13-1/2" (343 mm)
3/4" (20 mm)	5-1/2" (140 mm)		13-1/2" (343 mm)		5-1/2" (140 mm)	13-1/2" (343 mm)
1" (25 mm)	5-3/4" (146 mm)		13-3/4" (349 mm)		5-1/2" (140 mm)	13-1/2" (343 mm)

Service height and width are the recommended dimensions to allow access to the product.



Dimensions shown in inches (mm).



Powermite MT Series Globe

SSC Electronic Valve Actuator

24 Vac, Proportional Control, Spring Return or Non-Spring Return



SSC61U Electronic Valve Actuator.

Description

The Powermite SSC61U and SSC61.5U Electronic Valve Actuators require a 24 Vac supply and receive a 0 to 10 Vdc control signal to control Powermite MT series valves with a 7/32-inch (5.5 mm) stroke and a threaded valve bonnet that fits the actuators.

Features

- UL listed for plenum installations
- Direct coupled, one step installation without special tools
- Close off up to 120 psi
- Manual override
- Visual position indication
- Spring return or non-spring return
- Orderable as an actuator only or as a complete valve/actuator assembly

Applications

The Powermite SSC61... electronic actuators and MT Series Valves are used in heating and cooling applications to control hot or chilled water or steam for convectors, fan coil units, unit conditioners, radiation, reheat coils and similar terminal units requiring a minimum of 67 lbs. (300 N) nominal force. The SSC61... accepts plenum cable or 3/8-inch flex conduit connection.

D-113

Valves

SSC61 Actuator Specifications

Operating Voltage 24 Vac \pm 20%
Frequency 50/60 Hz \pm 2 Hz
Power Supply Earth Ground Isolating Class 2, 24 Vac Transformer
Power Consumption 2 VA
Control Signal (Y)
 Voltage 0 to 10 Vdc (default) or 0 to 40 mA
 with External 500 ohm, 0.2W Resistor
 Current 0.1 mA
Running Time
 at 50/60 Hz 30 s \pm 10%
 Fail-safe (SSC61.5U only) \sim 25 sec.
Nominal Stroke 7/32" (5.5 mm)
Nominal Force 67 lbs. (300 N)
Stroke/Signal Relationship Linear
Spring Return (SSC61.5U only) Non-mechanical, Electronic
 Return Fails to Stem up (0 Position)

Agency Approvals UL873 Listed, Certified to
 Canadian Standard C22.2 No. 24-93
Ambient Temperature
 Operation 41 to 122°F (5 to 50°C)
 Transport and Storage -13 to 158°F (-25 to 70°C)
Ambient Humidity 0 to 90% RH, Non-condensing
Wiring Connection Plenum Cable or 3/8-inch Flex Conduit
Mounting Location NEMA 1 (Interior Only)

SSC61 Actuator Ordering

Description	Part No.	Actuator Prefix Code
Spring Return	SSC61.5U	262
Non-Spring Return	SSC61U	261



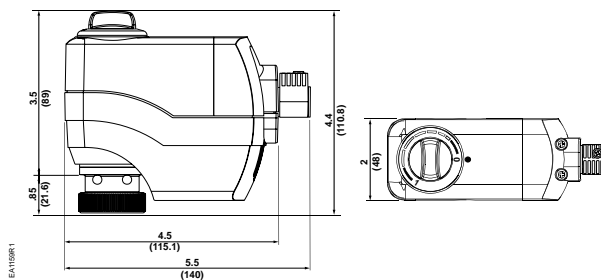
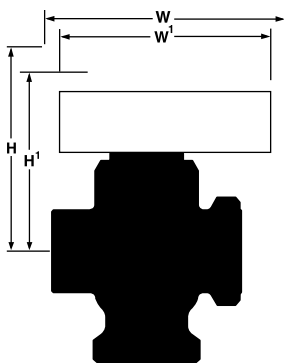
D-114

Valves

Dimensions

Valve Size in.	Center Line to Top of Actuator		Service Height		Actual Width of Actuator	Service Width
	H ¹		H		W ¹	W
	NO	NC	NO	NC		
1/2" (15 mm)	5-1/2" (140 mm)		13-1/2" (343 mm)		5-1/2" (140 mm)	13-1/2" (343 mm)
3/4" (20 mm)	5-1/2" (140 mm)		13-1/2" (343 mm)		5-1/2" (140 mm)	13-1/2" (343 mm)
1" (25 mm)	5-3/4" (146 mm)		13-3/4" (349 mm)		5-1/2" (140 mm)	13-1/2" (343 mm)

Service height and width are the recommended dimensions to allow access to the product.



Dimensions shown in inches (mm).



Powermite MT Series Globe

SQS Electronic Valve Actuator

24 Vac, Proportional Control, Spring Return or Non-Spring Return



Powermite MT Series SQS65U/SQS65.5U
Electronic Valve Actuator.

Description

The Powermite SQS65 and SQS65.5 Electronic Valve Actuators require a 24 Vac supply and receive a 0 to 10 Vdc or a 0 to 1000 Ohm control signal to proportionally control a valve. This actuator is designed to work with Powermite MT Series Valves with a 7/32-inch (5.5 mm) stroke.

Features

- Maintenance-free with reversible motor
- Voltage or resistance signal input
- Close off up to 160 psi
- Position output signal 0 to 10 Vdc
- Non-Spring Return or Spring Return
- Small, compact design
- Manual adjustment knob with indication of stroke allows for repositioning in power-off condition (SQS65U actuator only)
- Mechanical spring allows the valve to return to normal position in power off condition (SQS65.5 actuator only)
- Orderable as actuator only or complete valve/actuator assembly
- Suitable for low pressure (15 psi) steam applications
- Orderable as an actuator only or as a complete valve/actuator assembly

Applications

For use in small to medium HVAC installations with Powermite valves with a 7/32-inch (5.5 mm) stroke requiring a minimum of 90 pounds force (400 N). These valves can be used in liquid and low pressure steam service applications.

Recommendation:

Use only with the MT Series valve bodies. This actuator is not recommended for 2-position or pulse applications.

D-115

Valves

SQS65/65.5 Actuator Specifications

Operating Voltage
 Hz...60..... 24 Vac, ±20%

Frequency 60 Hz

Power Supply Earth Ground Isolating, Class 2,
 24 Vac Transformer
Do not power more than 10 actuators with one transformer.

Power Consumption
 SQS65U 4.5 VA
 SQS65.5U 7 VA

Control Signal (Y)
 Voltage 0 to 10 Vdc

Control Signal (R)
 Resistance 0 to 1000 Ohms

Position Output (U)
 Voltage 0 to 10 Vdc

Running Time
 at 60 Hz 30 sec.
 Spring Return (SQS65.5U only) 8 sec.

Nominal Stroke 7/32" (5.5 mm)

Nominal Force 90 lbf. (400 N)

Agency Approvals UL/cUL, UL873
 CSA C22.2 No. 24-93

Ambient Temperature
 Operation 23 to 122°F (-5 to 50°C)
 Transport and Storage -13 to 149°F (-25 to 65°C)

Ambient Humidity 0 to 90% RH, Non-condensing

Wiring Connection Plenum Cable or Conduit via a 1/2" Knockout

Mounting Location NEMA 1 (Interior Only)

SQS65/65.5 Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
Spring Return	SQS65.5U	265
Non-Spring Return	SQS65U	264

There are no repair parts for this product. Replace the entire actuator if inoperative.

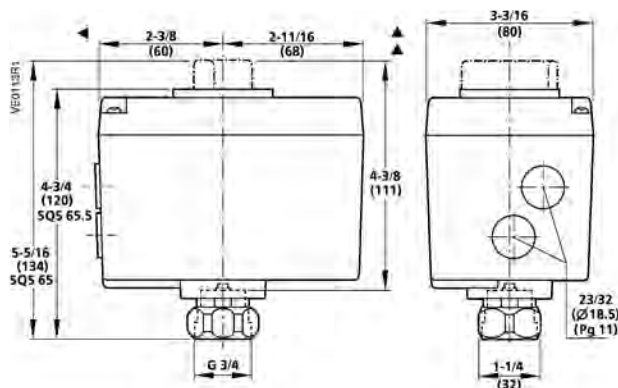
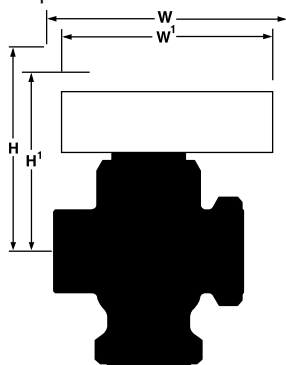


D-116

Dimensions

Valve Size in.	Center Line to Top of Actuator		Service Height		Actual Width of Actuator	Service Width
	H ¹		H		W ¹	W
	NO	NC	NO	NC		
SQS65						
1/2" (15 mm)	6-5/8" (167 mm)		14-1/2" (370 mm)		5-1/16" (128 mm)	9" (225 mm)
3/4" (20 mm)	6-5/8" (167 mm)		14-1/2" (370 mm)		5-1/16" (128 mm)	9" (225 mm)
1" (25 mm)	6-7/8" (173 mm)		15" (380 mm)		5-1/16" (128 mm)	9" (225 mm)
SQS65.5						
1/2" (15 mm)	6-1/16" (153 mm)		14" (355 mm)		5-1/16" (128 mm)	9" (225 mm)
3/4" (20 mm)	6-1/16" (153 mm)		14" (355 mm)		5-1/16" (128 mm)	9" (225 mm)
1" (25 mm)	6-5/16" (159 mm)		14-1/2" (370 mm)		5-1/16" (128 mm)	9" (225 mm)

Service height and width are the recommended dimensions to allow access to the product.



Dimensions shown in inches (mm).

Accessories & Service Kits D-217



Part No. in black box



SIEMENS

SQS Electronic Valve Actuator

24 Vac, Floating Control Spring Return



Powermite MT Series SQS85.53U
Electronic Valve Actuator

Description

The Powermite SQS85.53 electronic valve actuator requires a 24 Vac supply and receives a floating control signal to provide floating control. This actuator works with Powermite MT Series terminal unit valves with a 7/32-inch (5.5 mm) stroke.

Features

- Maintenance-free with reversible motor
- UL listed for plenum installations
- Close off up to 160 psi
- Floating control signal input
- Mechanical spring returns the valve to its normal (spring return) position in power off condition.
- Suitable for liquid and low pressure (15 psi) steam applications
- Orderable as an actuator only or as a complete valve/actuator assembly

Applications

For use in small to medium HVAC installations with Powermite valves with a 7/32-inch (5.5 mm) stroke requiring a minimum of 90 pounds force (400 N). These valves can be used in liquid and low pressure steam service applications.

Recommendation:

Use only with the MT Series valve bodies. This actuator is not recommended for 2-position or pulse applications.

D-117

Valves

SQS85.53U Actuator Specifications

Operating Voltage
 60 Hz.....24 Vac, + 20%, -15%

Frequency60 Hz

Power Supply..... Earth Ground Isolating, Class 2, 24 Vac Transformer

Power Consumption 5 VA

Control SignalFloating

Y1..... 24 Vac, Power Extends Actuator Shaft (0 to 1)

Y2..... 24 Vac, Power Retracts Actuator Shaft (1 to 0)

Running Time at 60 Hz.....30 sec.

Nominal Stroke7/32" (5.5 mm)

Nominal Force90 lbf. (400 N)

Spring Return Time 8 sec.

Agency Approvals UL/cUL, UL873
 CSA C22.2 No. 2A-93

Ambient Temperature
 Operation..... 23 to 122°F (-5 to 50°C)
 Transport and Storage-13 to 149°F (-25 to 65°C)

Ambient Humidity0 to 90% RH, Non-condensing

Wiring ConnectionPlenum Cable or Conduit via a 1/2" Knockout

Mounting Location NEMA 1 (Interior Only)

SQS85.53U Actuator Product Ordering

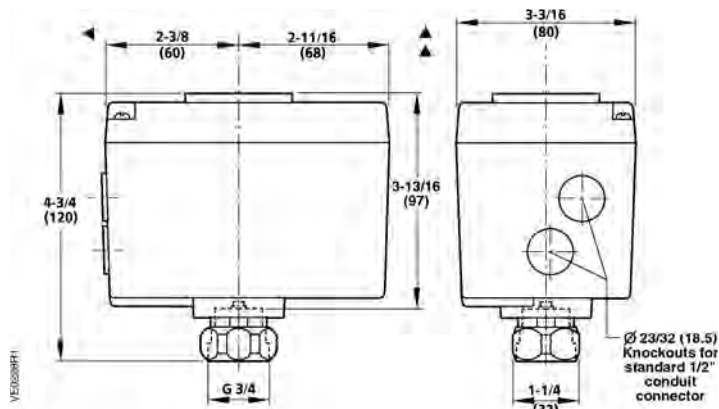
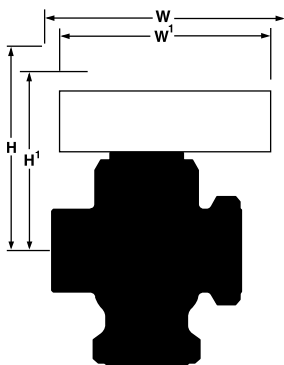
Description	Part No.	Actuator Prefix Code
Floating 3P Spring Return	SQS85.53U	266
There are no repair parts for this product. Replace the entire actuator if inoperative.		

D-118

Dimensions

Valve Size in.	Center Line to Top of Actuator		Service Height		Actual Width of Actuator	Service Width
	H'		H		W'	W
	NO	NC	NO	NC		
1/2" (15 mm)	6-1/16" (153 mm)		14" (355 mm)		5-1/16" (128 mm)	9" (225 mm)
3/4" (20 mm)	6-1/16" (153 mm)		14" (355 mm)		5-1/16" (128 mm)	9" (225 mm)
1" (25 mm)	6-5/16" (159 mm)		14-1/2" (370 mm)		5-1/16" (128 mm)	9" (225 mm)

Service height and width are the recommended dimensions to allow access to the product.



Dimensions shown in inches (mm).

Flowrite Globe Valves



D-119

Valves

Compatible with piping line sizes ranging from 1/2 to 6-inch (Cv range 1.0 to 400), the Flowrite Globe Valves offer electronic and pneumatic valve actuators. Flowrite valves bodies and actuators feature a unique, direct-coupled design that requires no additional parts to connect the valve and the actuator for time and labor savings.

Over 50 Years of Legendary Performance

Since 1934, Flowrite has been recognized as the best globe valve in the HVAC control market. The Flowrite Globe Valve is an excellent choice for small to large air handling units and for central plant applications.

Simple to Specify and Order

The direct-coupled connection provides flexibility and ease of installation. Specify the valve and actuator configuration to meet your specific requirements. In addition, you can select how you would like the components shipped — either as separate components or factory-assembled and tagged at no additional cost.

Save Time

Installation is simple. There is no linkage to assemble or adjust—simply snap on the actuator and twist with a hex wrench.

Flowrite Features

- Unique hole-plug design improves controllability and reduces noise
- Highest close off pressures in the industry — up to 250 psi
- Low leakage 0.01% (ANSI Class IV)
- Greater than 100:1 rangeability
- Industry leading simplicity in serviceability

D-120

Valves

2-Way Ball Valves with Stainless Steel or Chrome Trim

Available with chrome-plated brass ball and brass stem or stainless steel ball and stem valves. And a 200 psi close-off for 1/2-inch to 2-inch line sizes makes these ball valves ready to meet specifications for more applications – even harsh environments.

- 0.4 to 160 Cv range enables better sizing of valves to the job requirements
- 200 psi close-off for all line sizes and actuators
- Low ANSI Class IV leakage (0.01% of Cv) at rated close-off pressure reduces energy consumption
- 600 WOG/ANSI 250 pressure rating meets the specifications of more applications

**SIEMENS**

Two-way Globe Valves

1/2 to 2-inch Bronze Body

Normally Open or Normally Closed



Flowrite Two-way Globe Valve.

Description

Designed to work with either a pneumatic or electronic actuator with a 3/4-inch (20 mm) stroke, the Flowrite Two-way Globe Valves are available in ANSI Class 250 for Normally Closed or Normally Open action.

Features

- Direct-coupled bonnet
- Equal percentage or linear flow characteristics
- Brass or stainless steel trim
- Standard- or high-temperature packing
- Close-off up to 250 psi
- Fully serviceable
- Greater than 100:1 rangeability
- Accepts any 3/4-inch stroke Flowrite pneumatic or electronic actuator
- ANSI Leakage Class IV (0.01% of Cv)
- Cartridge-type packing for easy service
- Multiple end connections available
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

The Flowrite Two-way Globe Valves are recommended for water, low and high pressure steam, and glycol solutions up to 50 percent.

D-121

Valves

Two-way Globe Valve Specifications

Valve Size 1/2 to 2" (15 to 50 mm)
Body Style Globe Style Control Valve with Four Connection Options
Seat Style Single Seat, Metal to Metal
Action Normally Closed (NC), Normally Open (NO)
Stem Travel (Stroke) 3/4" (20 mm)
Valve Body ANSI Class 250
Materials
 Body UNS CA 844 Bronze
 Trim Brass or Stainless Steel
 Stem Stainless Steel ASTM A582 Type 303
Packing
 Normal Duty EPDM O-rings
 Steam PTFE V-rings and EPDM O-ring
Operating
 Controlled Medium Saturated Steam, Water, Glycol Solutions up to 50%
 Medium Temperature Range
 Normal Duty Packing 20 to 250°F (-7 to 120°C)
 Steam Packing 337°F (170°C) Max.

Max. Recommended Differential Pressure for Modulating Service

Brass Trim
 Liquid 25 psi (173 kPa)
 Steam 15 psi (103 kPa)
Stainless Steel Trim
 Liquid 50 psi (345 kPa)
 Steam 50 psi (345 kPa)

Max. Inlet Pressure

Water Refer to Flowrite Reference Section.
 Steam 100 psig (690 kPa)

Rangeability >100:1
Close-off Ratings According to ANSI/FCI 70-2
Leakage Rate Class IV (0.01% of Cv)
Flow Characteristics Equal Percentage or Linear

D-122

Two-way Globe Valve Body Product Ordering

Normally Open/Normally Closed, Equal Percentage, Brass Trim



Valves

Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Normally Open Part No.	Normally Closed Part No.
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)					
Female x Female	1/2 (15)	1 (0.9)	3/4	599-03162	599-03180
	1/2 (15)	1.6 (1.4)	3/4	599-03163	599-03181
	1/2 (15)	2.5 (2.2)	3/4	599-03164	599-03182
	1/2 (15)	4 (3.4)	3/4	599-03165	599-03183
	3/4 (20)	6.3 (5.4)	3/4	599-03166	599-03184
	1 (25)	10 (8.6)	3/4	599-03167	599-03185
	1-1/4 (32)	16 (14)	3/4	599-03168	599-03186
	1-1/2 (40)	25 (22)	3/4	599-03169	599-03187
Female x Union Female	2 (50)	40 (34)	3/4	599-03170	599-03188
	1/2 (15)	1 (0.9)	3/4	599-03171	599-03189
	1/2 (15)	1.6 (1.4)	3/4	599-03172	599-03190
	1/2 (15)	2.5 (2.2)	3/4	599-03173	599-03191
	1/2 (15)	4 (3.4)	3/4	599-03174	599-03192
Female x Union Male	3/4 (20)	6.3 (5.4)	3/4	599-03175	599-03193
	1 (25)	10 (8.6)	3/4	599-03176	599-03194
	1/2 (15)	1 (0.9)	3/4	599-03270	599-03279
	1/2 (15)	1.6 (1.4)	3/4	599-03271	599-03280
	1/2 (15)	2.5 (2.2)	3/4	599-03272	599-03281
	1/2 (15)	4 (3.4)	3/4	599-03273	599-03282
	3/4 (20)	6.3 (5.4)	3/4	599-03274	599-03283
1 (25)	10 (8.6)	3/4	599-03275	599-03284	
Union Female x Union Female	1-1/4 (32)	16 (14)	3/4	599-03276	—
	1-1/4 (32)	16 (14)	3/4	599-03177	599-03195
	1-1/2 (40)	25 (22)	3/4	599-03178	599-03196
	2 (50)	40 (34)	3/4	599-03179	599-03197

Two-way Globe Valve Body Product Ordering

Normally Open/Normally Closed, Equal Percentage, Stainless Steel Trim



Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Normally Open Part No.	Normally Closed Part No.
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)					
Female x Female	1/2 (15)	1 (0.9)	3/4	599-03108	599-03126
	1/2 (15)	1.6 (1.4)	3/4	599-03109	599-03127
	1/2 (15)	2.5 (2.2)	3/4	599-03110	599-03128
	1/2 (15)	4 (3.4)	3/4	599-03111	599-03129
	3/4 (20)	6.3 (5.4)	3/4	599-03112	599-03130
	1 (25)	10 (8.6)	3/4	599-03113	599-03131
	1-1/4 (32)	16 (14)	3/4	599-03114	599-03132
	1-1/2 (40)	25 (22)	3/4	599-03115	599-03133
Female x Union Female	2 (50)	40 (34)	3/4	599-03116	599-03134
	1/2 (15)	1 (0.9)	3/4	599-03117	599-03135
	1/2 (15)	1.6 (1.4)	3/4	599-03118	599-03136
	1/2 (15)	2.5 (2.2)	3/4	599-03119	599-03137
	1/2 (15)	4 (3.4)	3/4	599-03120	599-03138
	3/4 (20)	6.3 (5.4)	3/4	599-03121	599-03139
Female x Union Male	1 (25)	10 (8.6)	3/4	599-03122	599-03140
	1/2 (15)	1 (0.9)	3/4	599-03252	599-03261
	1/2 (15)	1.6 (1.4)	3/4	599-03253	599-03262
	1/2 (15)	2.5 (2.2)	3/4	599-03254	599-03263
	1/2 (15)	4 (3.4)	3/4	599-03255	599-03264
	3/4 (20)	6.3 (5.4)	3/4	599-03256	599-03265
Union Female x Union Female	1 (25)	10 (8.6)	3/4	599-03257	599-03266
	1-1/4 (32)	16 (14)	3/4	599-03123	599-03141
	1-1/2 (40)	25 (22)	3/4	599-03124	599-03142
	2 (50)	40 (34)	3/4	599-03125	599-03143

D-123

Valves

Two-way Globe Valve Body Product Ordering

Normally Open/Normally Closed, Linear, Stainless Steel Trim



Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Normally Open Part No.	Normally Closed Part No.
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)					
Female x Female	1/2 (15)	1 (0.9)	3/4	599-03000	599-03018
	1/2 (15)	1.6 (1.4)	3/4	599-03001	599-03019
	1/2 (15)	2.5 (2.2)	3/4	599-03002	599-03020
	1/2 (15)	4 (3.4)	3/4	599-03003	599-03021
	3/4 (20)	6.3 (5.4)	3/4	599-03004	599-03022
	1 (25)	10 (8.6)	3/4	599-03005	599-03023
	1-1/4 (32)	16 (14)	3/4	599-03006	599-03024
	1-1/2 (40)	25 (22)	3/4	599-03007	599-03025
Female x Union Female	2 (50)	40 (34)	3/4	599-03008	599-03026
	1/2 (15)	1 (0.9)	3/4	599-03009	599-03027
	1/2 (15)	1.6 (1.4)	3/4	599-03010	599-03028
	1/2 (15)	2.5 (2.2)	3/4	599-03011	599-03029
	1/2 (15)	4 (3.4)	3/4	599-03012	599-03030
	3/4 (20)	6.3 (5.4)	3/4	599-03013	599-03031
Female x Union Male	1 (25)	10 (8.6)	3/4	599-03014	599-03032
	1/2 (15)	1 (0.9)	3/4	599-03216	599-03225
	1/2 (15)	1.6 (1.4)	3/4	599-03217	599-03226
	1/2 (15)	2.5 (2.2)	3/4	599-03218	599-03227
	1/2 (15)	4 (3.4)	3/4	599-03219	599-03228
	3/4 (20)	6.3 (5.4)	3/4	599-03220	599-03229
Union Female x Union Female	1 (25)	10 (8.6)	3/4	599-03221	599-03230
	1-1/4 (32)	16 (14)	3/4	599-03015	599-03033
	1-1/2 (40)	25 (22)	3/4	599-03016	599-03034
	2 (50)	40 (34)	3/4	599-03017	599-03035

Two-way Globe Valve Body Product Ordering

Normally Open/Normally Closed, Linear, Stainless Steel Trim








Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Normally Open Part No.	Normally Closed Part No.
High-Temperature Packing — 337°F (-170°C)					
Female x Female	1/2 (15)	1 (0.9)	3/4	599-03054	599-03072
	1/2 (15)	1.6 (1.4)	3/4	599-03055	599-03073
	1/2 (15)	2.5 (2.2)	3/4	599-03056	599-03074
	1/2 (15)	4 (3.4)	3/4	599-03057	599-03075
	3/4 (20)	6.3 (5.4)	3/4	599-03058	599-03076
	1 (25)	10 (8.6)	3/4	599-03059	599-03077
	1-1/4 (32)	16 (14)	3/4	599-03060	599-03078
	1-1/2 (40)	25 (22)	3/4	599-03061	599-03079
Female x Union Female	2 (50)	40 (34)	3/4	599-03062	599-03080
	1/2 (15)	1 (0.9)	3/4	599-03063	599-03081
	1/2 (15)	1.6 (1.4)	3/4	599-03064	599-03082
	1/2 (15)	2.5 (2.2)	3/4	599-03065	599-03083
	1/2 (15)	4 (3.4)	3/4	599-03066	599-03084
	3/4 (20)	6.3 (5.4)	3/4	599-03067	599-03085
Female x Union Male	1 (25)	10 (8.6)	3/4	599-03068	599-03086
	1/2 (15)	1 (0.9)	3/4	599-03234	599-03243
	1/2 (15)	1.6 (1.4)	3/4	599-03235	599-03244
	1/2 (15)	2.5 (2.2)	3/4	599-03236	599-03245
	1/2 (15)	4 (3.4)	3/4	599-03237	599-03246
	3/4 (20)	6.3 (5.4)	3/4	599-03238	599-03247
Union Female x Union Female	1 (25)	10 (8.6)	3/4	599-03239	599-03248
	1-1/4 (32)	16 (14)	3/4	599-03069	599-03087
	1-1/2 (40)	25 (22)	3/4	599-03070	599-03088
	2 (50)	40 (34)	3/4	599-03071	599-03089

D-124

Valves

Flowrite Globe Valve Actuators Product Ordering

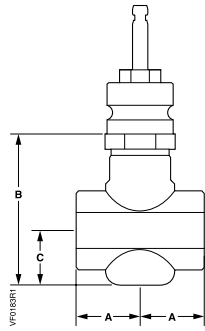
Description			Part No.	Actuator Prefix Code
 4"	Pneumatic	3-8 psi (21-55 kPa)	599-01081	268
		5-10 psi (34-69 kPa)	599-01082	269
		10-15 psi (69 -103 kPa)	599-01083	270
 8"	Pneumatic	Normal Temp.	599-01050	277
		High-Temp.	599-01051	278
 8"	Pneumatic w/Positioner	Normal Temp. w/Positioner	599-01050 + 599-00426	283
		High-Temp. w/Positioner	599-01051 + 599-00426	284
	Electro-Mechanical	24 V, Floating 3P, Spring Return	SAX81.36U	372
		24 V, Floating 3P, Non-Spring Return	SAX81.03U	373
		24 V, 0-10 V, 4-20 mA, Spring Return	SAX61.36U	370
		24 V, 0-10 V, 4-20 mA, Non-Spring Return	SAX61.03U	371
	Electro-Hydraulic	24 V, Floating 3P, Spring Return	SKD82.51U	276
		24 V, Floating 3P, Non-Spring Return	SKD82.50U	275
		24 V, 0-10 V, 4-20 mA, Spring Return	SKD62U	274
		24 V, 0-10 V, 4-20 mA, Spring Return	SKB62U	291

D-125

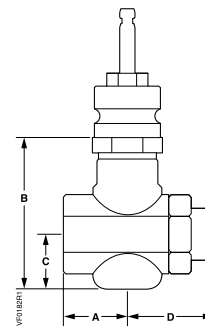
Valves



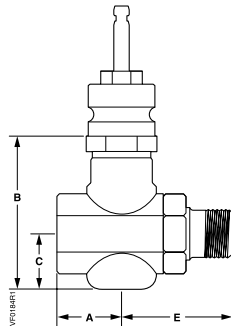
Two-way Globe Valve Body Dimensions and Weights



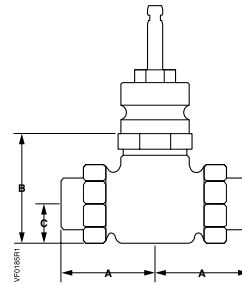
Female NPT by Female NPT (FxF)



Female NPT by Union Female (FxUF)



Female NPT by Union Male (FxUM)



Union Female by Union Female (UFxUF)

D-126

Valves

Valve Size	Dimensions						Weight			
	A	B	C	D	E	F	FxF	FxUF	FxUM	UFxUF
Normally Open										
1/2" (15 mm)	1-1/6" (36 mm)	—	2-15/16" (74 mm)	1-1/4" (31 mm)	2-5/16" (59 mm)	2-7/8" (73 mm)	3 lb. (1.4 kg)	3 lb. (1.4 kg)	3 lb. (1.4 kg)	—
3/4" (20 mm)	1-11/16" (43 mm)	—	3-15/16" (99 mm)	1-7/16" (36 mm)	2-5/8" (67 mm)	3-3/16" (81 mm)	4 lb. (1.8 kg)	4 lb. (1.8 kg)	5 lb. (2.3 kg)	—
1" (25 mm)	2" (50 mm)	—	3-3/4" (96 mm)	1-1/4" (32 mm)	3" (76 mm)	3-1/2" (89 mm)	5 lb. (2.3 kg)	6 lb. (2.7 kg)	6 lb. (2.7 kg)	—
1-1/4" (32 mm)	2-1/2" (62 mm)	3-3/4" (95 mm)	4-1/8" ¹ (104 mm)	1-5/8" ¹ (40 mm)	—	4-3/8" (111 mm)	7 lb. (3.2 kg)	—	—	9 lb. (4.1 kg)
1-1/2" (40 mm)	2-9/16" (65 mm)	3-15/16" (99 mm)	4-1/4" ¹ (109 mm) ¹	1-3/4" ¹ (44 mm) ¹	—	—	9 lb. (4.1 kg)	—	—	11 lb. (5 kg)
2" (50 mm)	3-1/8" (79 mm)	4-9/16" (115 mm)	4-9/16" ¹ (115 mm) ¹	2" ¹ (51 mm) ¹	—	—	13 lb. (5.9 kg)	—	—	16 lb. (7.3 kg)
Normally Closed										
1/2" (15 mm)	1-7/16" (36 mm)	—	3-13/16" (97 mm)	2-13/16" (55 mm)	2-5/16" (59 mm)	2-7/8" (73 mm)	3 lb. (1.4 kg)	4 lb. (1.8 kg)	4 lb. (1.8 kg)	—
3/4" (20 mm)	1-11/16" (43 mm)	—	3-13/16" (97 mm)	2-3/16" (55 mm)	2-5/8" (67 mm)	3-3/16" (81 mm)	4 lb. (1.8 kg)	4 lb. (1.8 kg)	5 lb. (2.3 kg)	—
1" (25 mm)	2" (50 mm)	—	3-13/16" (97 mm)	2-3/16" (55 mm)	3" (76 mm)	3-1/2" (89 mm)	5 lb. (2.3 kg)	5 lb. (2.3 kg)	5 lb. (2.3 kg)	—
1-1/4" (32 mm)	2-1/2" (62 mm)	3-3/4" (95 mm)	3-13/16" (97 mm)	2-3/16" (55 mm)	—	—	7 lb. (3.2 kg)	—	—	9 lb. (4.1 kg)
1-1/2" (40 mm)	2-9/16" (65 mm)	3-15/16" (99 mm)	3-7/8" (99 mm)	2-1/4" (58 mm)	—	—	8 lb. (3.6 kg)	—	—	11 lb. (5 kg)
2" (50 mm)	3-1/8" (79 mm)	4-9/16" (115 mm)	4-3/16" (106 mm)	2-9/16" (65 mm)	—	—	16 lb. (7.3 kg)	—	—	16 lb. (7.3 kg)

Table Note

1. This dimension is determined by the union nut.

Three-way Globe Valves

1/2 to 2-inch Bronze Body



Flowrite Three-way Globe Valve.

Description

Designed to work with either pneumatic or electronic actuators with a 3/4-inch (20 mm) stroke, the Flowrite Three-way Globe Valves are available in ANSI Class 250.

Features

- Direct-coupled, universal bonnet
- Equal percentage (NC port) or linear flow (NO port) characteristics
- Brass or stainless steel trim
- Accepts any 3/4-inch Flowrite pneumatic or electronic actuator
- Greater than 100:1 rangeability
- ANSI Leakage Class IV (0.01% of Cv)
- Cartridge-type packing for easy service
- FxF or UFxUF end connections available
- Orderable as a valve only or as a complete valve/actuator assembly

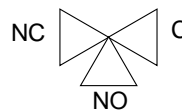
Applications

Flowrite Three-way Globe Valves are recommended for mixing applications. The upper port is closed in the normal stem up, failed position. The lower port is open in the stem up position.

This valve can also be used for throttling or bypass coil control application. However, a pump is recommended on the coil circuit to improve the heat transfer characteristic of the coil and for freeze protection.

To use this valve as a diverting valve, contact your local representative for more information.

Flow Characteristics



Equal percentage for NC/Linear for NO

D-127

Valves

Three-way Globe Valve Specifications

Valve Size 1/2 to 2" (15 to 50 mm)
Body Style Globe Style Control Valve with two Connection Options
Seat Style Metal to Metal
Action Three-way Mixing
Stem Travel (Stroke) 3/4" (20 mm)
Valve Body Rating ANSI Class 250
Material
 Body UNS CA 844 Bronze
 Trim Brass or Stainless Steel
 Stem Stainless Steel ASTM A582 Type 303
 Packing EPDM O-rings

Operating
 Controlled Medium Water, Glycol Solutions up to 50%
 Medium Temperature Range 20 to 250°F (-7 to 120°C)
Max. Recommended Differential Pressure for Modulating Service
 Brass Trim 25 psi (173 kPa)
 Stainless Steel Trim 50 psi (345 kPa)
Max. Inlet Pressure Refer to the Flowrite Reference Section
Rangeability >100:1
Close-off Ratings According to ANSI/FCI 70-2
Leakage Rate Class IV (0.01% of Cv)

Three-way Mixing Globe Valve Body Product Ordering Brass and Stainless Steel Trim








Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Brass Trim Part No.	Stainless Steel Trim Part No.
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)					
Female x Female	1/2 (15)	1 (0.9)	3/4	599-03198	599-03144
	1/2 (15)	1.6 (1.4)	3/4	599-03199	599-03145
	1/2 (15)	2.5 (2.2)	3/4	599-03200	599-03146
	1/2 (15)	4 (3.4)	3/4	599-03201	599-03147
	3/4 (20)	6.3 (5.4)	3/4	599-03202	599-03148
	1 (25)	10 (8.6)	3/4	599-03203	599-03149
	1-1/4 (32)	16 (14)	3/4	599-03204	599-03150
	1-1/2 (40)	25 (22)	3/4	599-03205	599-03151
Union Female x Union Female	2 (50)	40 (34)	3/4	599-03206	599-03152
	1/2 (15)	1 (0.9)	3/4	599-03207	599-03153
	1/2 (15)	1.6 (1.4)	3/4	599-03208	599-03154
	1/2 (15)	2.5 (2.2)	3/4	599-03209	599-03155
	1/2 (15)	4 (3.4)	3/4	599-03210	599-03156
	3/4 (20)	6.3 (5.4)	3/4	599-03211	599-03157
	1 (25)	10 (8.6)	3/4	599-03212	599-03158
	1-1/4 (32)	16 (14)	3/4	599-03213	599-03159
1-1/2 (40)	25 (22)	3/4	599-03214	599-03160	
	2 (50)	40 (34)	3/4	599-03215	599-03161

D-128

Valves

Flowrite Globe Valve Actuators Product Ordering

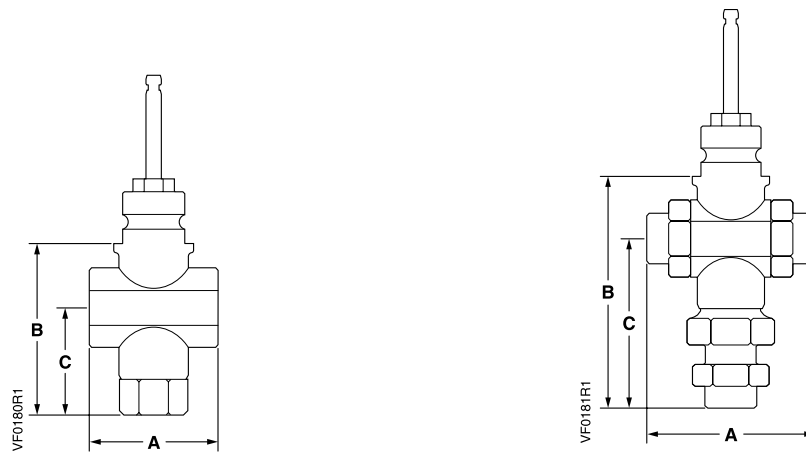
Description			Part No.	Actuator Prefix Code
 4"	Pneumatic	3-8 psi (21-55 kPa)	599-01081	268
		5-10 psi (34-69 kPa)	599-01082	269
		10-15 psi (69 -103 kPa)	599-01083	270
 8"	Pneumatic	Normal Temp.	599-01050	277
		High-Temp.	599-01051	278
 8"	Pneumatic w/Positioner	Normal Temp. w/Positioner	599-01050 + 599-00426	283
		High-Temp. w/Positioner	599-01051 + 599-00426	284
	Electro-Mechanical	24 V, Floating 3P, Spring Return	SAX81.36U	372
		24 V, Floating 3P, Non-Spring Return	SAX81.03U	373
		24 V, 0-10 V, 4-20 mA, Spring Return	SAX61.36U	370
		24 V, 0-10 V, 4-20 mA, Non-Spring Return	SAX61.03U	371
	Electro-Hydraulic	24 V, Floating 3P, Spring Return	SKD82.51U	276
		24 V, Floating 3P, Non-Spring Return	SKD82.50U	275
		24 V, 0-10 V, 4-20 mA, Spring Return	SKD62U	274
		24 V, 0-10 V, 4-20 mA, Spring Return	SKB62U	291

D-129

Valves



Three-way Globe Valve Body Dimensions and Weights



Female NPT x Female NPT x Female NPT
(FxFxF)

Union Female x Union Female x Union Female
(UFxUFxUF)

D-130

Valves

Valve Size	Dimensions						Weight	
	A	B	C	A	B	C	FxFxF	UFxUFxUF
	FxFxF			UFxUFxUF				
1/2" (15 mm)	2-7/8" (72 mm)	4-5/16" (110 mm)	2-11/16" (68 mm)	4-11/16" (119 mm)	6-1/4" (159 mm)	4-5/8" (117 mm)	3.0 lb. (1.4 kg)	4.0 lb. (1.8 kg)
3/4" (20 mm)	3-3/8" (85 mm)	4-5/16" (110 mm)	2-3/4" (69 mm)	6-3/8" (163 mm)	6-15/16" (176 mm)	5-1/4" (134 mm)	4.0 lb. (1.8 kg)	6.0 lb. (2.7 kg)
1" (25 mm)	3-15/16" (100 mm)	4-1/2" (114 mm)	2-7/8" (72 mm)	7-1/16" (180 mm)	7" (178 mm)	5-3/8" (136 mm)	5.0 lb. (2.3 kg)	7.0 lb. (3.2 kg)
1-1/4" (32 mm)	4-15/16" (125 mm)	4-5/8" (116 mm)	2-15/16" (74 mm)	7-1/2" (190 mm)	6-3/4" (170 mm)	5-1/16" (129 mm)	7.0 lb. (3.2 kg)	11.0 lb. (5 kg)
1-1/2" (40 mm)	5-1/8" (130 mm)	4-5/8" (117 mm)	3" (76 mm)	7-13/16" (199 mm)	6-15/16" (176 mm)	5-5/16" (135 mm)	9.0 lb. (4.1 kg)	13.0 lb. (5.9 kg)
2" (50 mm)	6-1/4" (158 mm)	5-1/8" (130 mm)	3-3/16" (81 mm)	9-1/16" (231 mm)	7-3/16" (182 mm)	5-9/16" (141 mm)	13.0 lb. (5.9 kg)	19.0 lb. (8.6 kg)



Two-way Flanged Iron Globe Valves

2-1/2 to 6-inch

Normally Open or Normally Closed



Flowrite Two-Way Flanged Iron Valve.

Description

Designed to work with either pneumatic or electronic actuators, the Flowrite Two-way Valves are available in both ANSI Class 125 and 250 for normally closed or normally open action.

Features

- Valve flange face-to-face dimensions meet ISA 75.03 standards
- Direct-coupled, universal bonnet
- Bronze or stainless steel trim
- Standard- or high-temperature packing
- Close-off up to 250 psi
- Fully serviceable
- Greater than 100:1 rangeability
- Equal percentage or linear flow characteristics
- 2-1/2 and 3-inch sizes available with 3/4-inch stroke only
- 4-, 5-, 6-inch are available with a 1-1/2-inch stroke
- ANSI Leakage Class IV (0.01% of Cv)
- Cartridge-type packing for easy service
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

The Flowrite Two-way valves are recommended for water, steam, and glycol solutions up to 50 percent. Additional specifications include the following:

- Water inlet pressures up to ANSI 125 and ANSI 250 cast iron body rating
- Water modulating differential pressure up to 25 psi (172 kPa) for bronze trim and 50 psi (345 kPa) for stainless steel trim
- Steam inlet to 100 psi with modulating differential pressure up to 50 psi (345 kPa)

D-131

Valves

Two-way Flanged Iron Globe Valve Specifications

Valve Size2-1/2 to 6" (65 to 150 mm)
Body StyleFlanged
Seat StyleSingle seat
ActionNormally Closed (NC); Normally Open (NO)
Valve Body RatingANSI Class 125 or 250
Stem Travel (Stroke)
 2-1/2 and 3"3/4" (20 mm)
 4, 5 and 6"1-1/2" (40 mm)
Materials
 BodyCast Iron ASTM A126 Class B
 TrimBronze or Stainless Steel
 StemStainless Steel ASTM A582 Type 303
Packing
 Normal Duty Packing..... EPDM O-rings
 Steam Packing.....PTFE V-rings and EPDM O-ring
Operating
 Controlled Medium..... Saturated Steam, Water,
 Glycol Solutions up to 50%
Medium Temperature Range
 Normal Duty Packing..... 20 to 250°F (-7 to 120°C)
 Steam Packing.....337°F (170°C) max.

Max. Inlet Pressure
 Water.....Refer to Flowrite Reference Section.
 Steam.....100 psig (690 kPa)
Max. Recommended Differential Pressure for Modulating Service
 Bronze Trim
 Liquid25 psi (173 kPa)
 Steam15 psi (103 kPa)
 Stainless Steel Trim
 Liquid50 psi (345 kPa)
 Steam50 psi (345 kPa)
Rangeability >100:1
Close-off Ratings According to ANSI/FCI 70-2
Close-off PressureRefer to the Flowrite Reference Section.
Leakage Rate Class IV (0.01% of Cv)
Flow CharacteristicsEqual Percentage or Linear
Dimensions
 Face-to-faceANSI/ISA 75.03

D-132

Valves

Two-way Flanged Iron Globe Valve Body Product Ordering

Normally Open/Normally Closed, Equal Percentage



Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	ANSI Class 125		ANSI Class 250		
			Normally Open Part No.	Normally Closed Part No.	Normally Open Part No.	Normally Closed Part No.	
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)							
Bronze							
2-1/2 (65)	63 (54)	3/4	599-05980	599-05990	599-05940	599-05950	
3 (80)	100 (86)	3/4	599-05981	599-05991	599-05941	599-05951	
4 (100)	160 (140)	1-1/2	599-05982	599-05992	599-05942	599-05952	
5 (125)	250 (215)	1-1/2	599-05983	599-05993	599-05943	599-05953	
6 (150)	400 (340)	1-1/2	599-05984	599-05994	599-05944	599-05954	
Stainless Steel							
2-1/2 (65)	63 (54)	3/4	599-05960	599-05970	599-05920	599-05930	
3 (80)	100 (86)	3/4	599-05961	599-05971	599-05921	599-05931	
4 (100)	160 (140)	1-1/2	599-05962	599-05972	599-05922	599-05932	
5 (125)	250 (215)	1-1/2	599-05963	599-05973	599-05923	599-05933	
6 (150)	400 (340)	1-1/2	599-05964	599-05974	599-05924	599-05934	

Two-way Flanged Iron Globe Valve Body Product Ordering






Normally Open/Normally Closed, Linear, Stainless Steel



Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	ANSI Class 125		ANSI Class 250		
			Normally Open Part No.	Normally Closed Part No.	Normally Open Part No.	Normally Closed Part No.	
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)							
2-1/2 (65)	63 (54)	3/4	599-06060	599-06070	599-06140	599-06150	
3 (80)	100 (86)	3/4	599-06061	599-06071	599-06141	599-06151	
4 (100)	160 (140)	1-1/2	599-06062	599-06072	599-06142	599-06152	
5 (125)	250 (215)	1-1/2	599-06063	599-06073	599-06143	599-06153	
6 (150)	400 (340)	1-1/2	599-06064	599-06074	599-06144	599-06154	
High-Temperature Packing — 337°F (-170°C)							
2-1/2 (65)	63 (54)	3/4	599-06040	599-06050	599-06120	599-06130	
3 (80)	100 (86)	3/4	599-06041	599-06051	599-06121	599-06131	
4 (100)	160 (140)	1-1/2	599-06042	599-06052	599-06122	599-06132	
5 (125)	250 (215)	1-1/2	599-06043	599-06053	599-06123	599-06133	
6 (150)	400 (340)	1-1/2	599-06044	599-06054	599-06124	599-06134	

D-133

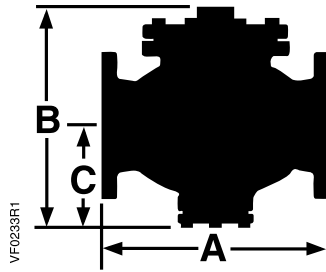
Flowrite Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code	
 8"	Pneumatic	20 mm Stroke/Normal Temp.	599-01050	277
		20 mm Stroke/Hi-Temp.	599-01051	278
 12"	Pneumatic	20 mm Stroke	599-01010	279
		40 mm Stroke	599-01000	281
 8"	Pneumatic w/Positioner	20 mm Stroke/Normal Temp.	599-01050 + 599-00426	283
		20 mm Stroke/Hi-Temp.	599-01051 + 599-00426	284
 12"	Pneumatic w/Positioner	20 mm Stroke	599-01010 + 599-00423	285
		40 mm Stroke	599-01000 + 599-00423	287
	Electro-Hydraulic	24 V, Floating 3P, Spring Return	SKD82.51U	276
		24 V, Floating 3P, Non-Spring Return	SKD82.50U	275
		24 V, 0-10 V, 4-20 mA, Spring Return	SKD62U	274
		24 V, Floating 3P, Spring Return	SKB82.51U	289
		24 V, Floating 3P, Non-Spring Return	SKB82.50U	290
		24 V, 0-10 V, 4-20 mA, Spring Return	SKB62U	291
		24 V, Floating 3P, Spring Return	SKC82.61U	292
		24 V, Floating 3P, Non-Spring Return	SKC82.60U	293
24 V, 0-10 V, 4-20 mA, Spring Return	SKC62U	294		

Valves



Two-way Flanged Iron Globe Valve Body Dimensions and Weights



D-134

Valves

Valve Size	ANSI Class 125				ANSI Class 250			
	Dimensions			Weight	Dimensions			Weight
	A	B	C		A	B	C	
Normally Open								
2-1/2" (65 mm)	10-7/8" (276 mm)	11" (281 mm)	4-7/8" (123 mm)	60 lb. (27 kg)	11-1/2" (292 mm)	11" (281 mm)	4-7/8" (123 mm)	76 lb. (34 kg)
3" (80 mm)	11-3/4" (299 mm)	12-1/4" (312 mm)	5-5/16" (135 mm)	76 lb. (34 kg)	12-1/2" (318 mm)	12-1/4" (312 mm)	5-5/16" (135 mm)	99 lb. (45 kg)
4" (100 mm)	13-7/8" (352 mm)	13-9/16" (345 mm)	6-5/16" (160 mm)	124 lb. (56 kg)	14-1/2" (368 mm)	13-5/8" (344.7 mm)	6-5/16" (160 mm)	160 lb. (73 kg)
5" (125 mm)	15-3/4" (400 mm)	15-3/16" (385 mm)	7" (177 mm)	155 lb. (70 kg)	16-5/8" (422 mm)	15-3/16" (385 mm)	7" (177 mm)	208 lb. (94 kg)
6" (150 mm)	17-3/4" (451 mm)	16-3/4" (426 mm)	7-7/8" (200 mm)	212 lb. (96 kg)	18-5/8" (473 mm)	16-3/4" (426 mm)	7-7/8" (200 mm)	302 lb. (137 kg)
Normally Closed								
2-1/2" (65 mm)	10-7/8" (276 mm)	10-5/8" (269 mm)	4-7/8" (125 mm)	58 lb. (26 kg)	11-1/2" (292 mm)	11" (279 mm)	5-3/8" (135 mm)	74 lb. (34 kg)
3" (80 mm)	11-3/4" (299 mm)	11-15/16" (303 mm)	5-5/8" (142 mm)	75 lb. (34 kg)	12-1/2" (318 mm)	12-7/16" (315 mm)	6" (154 mm)	98 lb. (44 kg)
4" (100 mm)	13-7/8" (352 mm)	13-15/16" (354 mm)	6-5/8" (168 mm)	123 lb. (56 kg)	14-1/2" (368 mm)	14-3/8" (364 mm)	7" (178 mm)	159 lb. (72 kg)
5" (125 mm)	15-3/4" (400 mm)	15-1/4" (338 mm)	7-1/2" (185 mm)	153 lb. (69 kg)	16-5/8" (422 mm)	15-3/4" (399 mm)	7-3/4" (196 mm)	207 lb. (94 kg)
6" (150 mm)	17-3/4" (451 mm)	17-1/16" (433 mm)	8-3/16" (207 mm)	209 lb. (95 kg)	18-5/8" (473 mm)	17-1/2" (444 mm)	8-5/8" (218 mm)	299 lb. (136 kg)

High Pressure Close-off Two-Way Flanged Iron Globe Valves

2-1/2 to 6-inch

Normally Open or Normally Closed



Flowrite Two-Way Flanged Iron High Pressure Close-off.

Description

The Flowrite 599 Series high pressure close-off, two-way flanged iron body globe valves, are designed to work with either pneumatic or electronic actuators with 3/4-inch (20 mm) or 1-1/2-inch (40 mm) stroke. They are available in both ANSI Class 125 and 250 for normally open or normally closed action.

Features

- Universal bonnet, for direct-coupled actuators
- Equal percentage flow characteristic
- Stainless steel trim and stems
- Metal-to-metal seats
- 200 psi close-off for all line sizes
- ANSI Class IV leakage ($\leq 0.01\%$ of Cv)
- Greater than 100:1 rangeability
- EPDM O-ring packing
- Cartridge-type packing for easy service
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

Typical applications include control of hot or chilled water; or water-glycol solutions up to 50%.

D-135

Valves

High Pressure Close-off, Two-way Flanged Iron Globe Valve Specifications

Valve Size2-1/2 to 6" (65 to 150 mm)
Body StyleCast Iron ASTM A126 Class B
Seat StyleMetal to Metal
ActionNormally Open (NO) or Normally Closed (NC)
Valve Body RatingANSI Class 125 or 250
Stem Travel
 2-1/2 and 3" 3/4" (20 mm) Stroke
 4, 5 and 6" 1-1/2" (40 mm) Stroke
Materials
 BodyCast Iron ASTM A126 Class B
 TrimStainless Steel
 StemStainless Steel ASTM A582 Type 303
Packing
 Normal Duty Packing EPDM O-ring
Operating
 Controlled Medium Water, Glycol Solutions to 50%

Medium Temperature Range20°F to 250°F (-7 to 120°C)
Max. Inlet Pressure
 Water.....Refer to Flowrite Reference Section
Max. Recommended Differential Pressure for Modulating Service
 Stainless Steel Trim
 Liquid..... 50 psig (345 kPa)
Rangeability >100:1
Close-off Ratings According to ANSI/FCI 70-2
Close-off Pressure 200 psig
Leakage Rate Class IV (≤ 0.01% of Cv)
Dimensions
 Face-to-Face.....ANSI/ISA 575.03

High Pressure Close-off, Two-way Flanged Iron Globe Valve Body Product Ordering




Normally Open/Normally Closed, Equal Percentage 

D-136

Valves

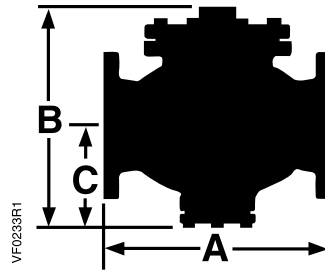
Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	ANSI Class 125		ANSI Class 250		
			Normally Open Part No.	Normally Closed Part No.	Normally Open Part No.	Normally Closed Part No.	
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)							
2-1/2 (65)	63 (54)	3/4	599-06610	599-06615	599-06620	599-06625	
3 (80)	100 (86)	3/4	599-06611	599-06616	599-06621	599-06626	
4 (100)	160 (140)	1-1/2	599-06612	599-06617	599-06622	599-06627	
5 (125)	250 (215)	1-1/2	599-06613	599-06618	599-06623	599-06628	
6 (150)	400 (340)	1-1/2	599-06614	599-06619	599-06624	599-06629	

Flowrite Valve Actuator Product Ordering

Description			Part No.	Actuator Prefix Code
 8"	Pneumatic w/Positioner	20 mm Stroke	599-01050 + 599-00426	283
 12"	Pneumatic w/Positioner	40 mm Stroke	599-01000 + 599-00423	287
	Electro-Hydraulic	24 V, 0-10 V, 4-20 mA, 3/4" Stroke Spring Return	SKB62U	291
		24 V, 0-10 V, 4-20 mA, 1-1/2" Stroke Spring Return	SKC62U	294



Dimensions and Weights



Valve Size	ANSI Class 125				ANSI Class 250			
	Dimensions			Weight	Dimensions			Weight
	A	B	C		A	B	C	
Normally Open								
2-1/2" (65 mm)	10-7/8" (276 mm)	11" (281 mm)	4-7/8" (123 mm)	62 lb. (28 kg)	11-1/2" (292 mm)	11" (281 mm)	4-7/8" (123 mm)	78 lb. (36 kg)
3" (80 mm)	11-3/4" (299 mm)	12-1/4" (312 mm)	5-5/16" (135 mm)	79 lb. (36 kg)	12-1/2" (318 mm)	12-1/4" (312 mm)	5-5/16" (135 mm)	102 lb. (46 kg)
4" (100 mm)	13-7/8" (352 mm)	13-9/16" (345 mm)	6-5/16" (160 mm)	129 lb. (58 kg)	14-1/2" (368 mm)	13-5/8" (344.7 mm)	6-5/16" (160 mm)	165 lb. (75 kg)
5" (125 mm)	15-3/4" (400 mm)	15-3/16" (385 mm)	7" (177 mm)	172 lb. (73 kg)	16-5/8" (422 mm)	15-3/16" (385 mm)	7" (177 mm)	215 lb. (97 kg)
6" (150 mm)	17-3/4" (451 mm)	16-3/4" (426 mm)	7-7/8" (200 mm)	222 lb. (111 kg)	18-5/8" (473 mm)	16-3/4" (426 mm)	7-7/8" (200 mm)	312 lb. (142 kg)
Normally Closed								
2-1/2" (65 mm)	10-7/8" (276 mm)	10-5/8" (269 mm)	4-7/8" (125 mm)	60 lb. (27 kg)	11-1/2" (292 mm)	11" (279 mm)	5-3/8" (135 mm)	76 lb. (35 kg)
3" (80 mm)	11-3/4" (299 mm)	11-15/16" (303 mm)	5-5/8" (142 mm)	78 lb. (36 kg)	12-1/2" (318 mm)	12-7/16" (315 mm)	6" (154 mm)	101 lb. (46 kg)
4" (100 mm)	13-7/8" (352 mm)	13-15/16" (354 mm)	6-5/8" (168 mm)	128 lb. (58 kg)	14-1/2" (368 mm)	14-3/8" (364 mm)	7" (178 mm)	164 lb. (74 kg)
5" (125 mm)	15-3/4" (400 mm)	15-1/4" (338 mm)	7-1/2" (185 mm)	160 lb. (72 kg)	16-5/8" (422 mm)	15-3/4" (399 mm)	7-3/4" (196 mm)	214 lb. (97 kg)
6" (150 mm)	17-3/4" (451 mm)	17-1/16" (433 mm)	8-3/16" (207 mm)	219 lb. (100 kg)	18-5/8" (473 mm)	17-1/2" (444 mm)	8-5/8" (218 mm)	309 lb. (141 kg)

D-137

Valves

Three-way Flanged Iron Globe Valves

2-1/2 to 6-inch



Flowrite Three-way Flanged Iron Globe Valve.

Description

Designed to work with either a pneumatic or electronic Flowrite actuator, the Flowrite Three-way Globe Valves are available in both ANSI Class 125 and 250.

Features

- Valve flange face-to-face dimensions meet ISA 75.03 standards
- Direct-coupled, universal bonnet
- Equal percentage (NC port) and linear (NO port) flow characteristics
- Bronze or stainless steel trim
- Greater than 100:1 rangeability
- 2-1/2 to 3-inch are available with a 3/4-inch stroke
- 4-, 5-, and 6-inch are available with a 1-1/2-inch stroke
- ANSI Leakage Class IV (0.01% of Cv)
- Cartridge-type packing for easy service

Option

- Service flange for easy removal of stem and plug through bottom port

Applications

The Flowrite Three-way Globe Valves are recommended for water and glycol solutions up to 50 percent. Additional specifications include the following:

- Water inlet pressures up to ANSI 125 and ANSI 250 cast-iron body rating
- Water modulating differential pressure up to 25 psi (172 kPa) for bronze trim and 50 psi (345 kPa) for stainless steel trim

D-139

Valves

Three-way Flanged Iron Globe Valve Specifications

Valve Size 2-1/2 to 6"
Body Style Flanged
Action Three-way Water Mix
Stem Travel
 2-1/2 and 3" 3/4" (20 mm)
 4, 5 and 6" 1-1/2" (40 mm)
Valve Body Rating ANSI Class 125 or 250
Materials
 Body Cast Iron, ASTM A 126 Class B
 Trim Bronze or Stainless Steel
 Stem Stainless Steel, ASTM A582 Type 303
Packing
 Liquid Service to 250°F (120°C) EPDM O-rings

Operating
 Controlled Medium Water, Glycol Solutions up to 50%
 Medium Temperature Range 20 to 250°F (-7 to 120°C)
Max. Recommended Differential Pressure for Modulating Service
 Bronze Trim 25 psig (173 kPa)
 Stainless Steel Trim 50 psig (345 kPa)
Flow Characteristics
 Upper Port Mod. Equal Percentage
 Lower Port Linear
Rangeability >100:1

Mixing Flanged Iron Globe Valve Body Product Ordering Bronze Trim

Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke	Valve Body		Service Flange	
			ANSI Class 125	ANSI Class 250	ANSI Class 125	ANSI Class 250
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)						
2-1/2 (65)	63 (54)	3/4	599-06160	599-06170	599-05011	599-05016
3 (80)	100 (86)	3/4	599-06161	599-06171	599-05012	599-05017
4 (100)	160 (140)	1-1/2	599-06162	599-06172	599-05013	599-05018
5 (125)	250 (215)	1-1/2	599-06163	599-06173	599-05014	599-05019
6 (150)	400 (340)	1-1/2	599-06164	599-06174	599-05015	599-05020

Ordering Note:
 Service Flange is sold separately.

Mixing Flanged Iron Globe Valve Body Product Ordering Stainless Steel Trim






Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke	Valve Body		Service Flange	
			ANSI Class 125	ANSI Class 250	ANSI Class 125	ANSI Class 250
Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)						
2-1/2 (65)	63 (54)	3/4	599-06165	599-06175	599-05011	599-05016
3 (80)	100 (86)	3/4	599-06166	599-06176	599-05012	599-05017
4 (100)	160 (140)	1-1/2	599-06167	599-06177	599-05013	599-05018
5 (125)	250 (215)	1-1/2	599-06168	599-06178	599-05014	599-05019
6 (150)	400 (340)	1-1/2	599-06169	599-06179	599-05015	599-05020

Ordering Note:
 Service Flange is sold separately.

D-140

Valves

Flowrite Valve Actuator Product Ordering

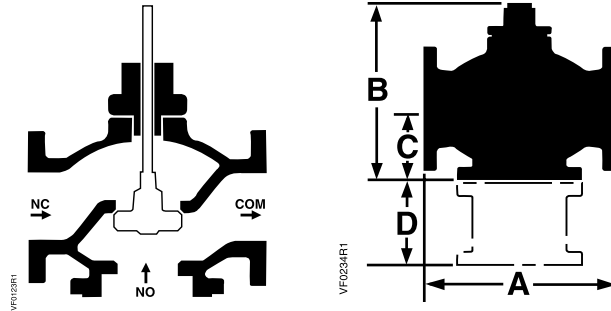
Description		Part No.	Actuator Prefix Code	
 8"	Pneumatic	20 mm Stroke	599-01050	277
		20 mm Stroke/Hi-Temp.	599-01051	278
 12"	Pneumatic	20 mm Stroke	599-01010	279
		40 mm Stroke	599-01000	281
 8"	Pneumatic w/Positioner	20 mm Stroke	599-01050 + 599-00426	283
		20 mm Stroke/Hi-Temp.	599-01051 + 599-00426	284
 12"	Pneumatic w/Positioner	20 mm Stroke	599-01010 + 599-00423	285
		40 mm Stroke	599-01000 + 599-00423	287
	Electro-Hydraulic	24 V, Floating 3P, Spring Return	SKD82.51U	276
		24 V, Floating 3P, Non-Spring Return	SKD82.50U	275
		24 V, 0-10 V, 4-20 mA, Spring Return	SKD62U	274
		24 V, Floating 3P, Spring Return	SKB82.51U	289
		24 V, Floating 3P, Non-Spring Return	SKB82.50U	290
		24 V, 0-10 V, 4-20 mA, Spring Return	SKB62U	291
		24 V, Floating 3P, Spring Return	SKC82.61U	292
		24 V, Floating 3P, Non-Spring Return	SKC82.60U	293
24 V, 0-10 V, 4-20 mA, Spring Return	SKC62U	294		



D-141

Valves

Dimensions and Weights



Valve Size	Dimensions					Weight	
	A		B	C	D		
	ANSI Class 125	ANSI Class 250			Service Flange	ANSI Class 125	ANSI Class 250
2-1/2" (65 mm)	10-7/8" (276.4 mm)	11-1/2" (292 mm)	9-3/8" (239.2 mm)	3-3/4" (95 mm)	6.5" (165 mm)	50 lb. (23 kg)	63 lb. (29 kg)
3" (80 mm)	11-3/4" (298.5 mm)	12-1/2" (318 mm)	10-3/4" (272 mm)	4-3/8" (111 mm)	7" (178 mm)	65 lb. (30 kg)	82 lb. (37 kg)
4" (100 mm)	13-7/8" (352.4 mm)	14-1/2" (368 mm)	12-1/2" (317.8 mm)	5-1/8" (131.6 mm)	7.5" (191 mm)	110 lb. (50 kg)	134 lb. (61 kg)
5" (125 mm)	15-3/4" (400 mm)	16-5/8" (422 mm)	13-3/4" (349.2 mm)	5-3/4" (146.2 mm)	8.5" (216 mm)	136 lb. (62 kg)	176 lb. (80 kg)
6" (150 mm)	17-3/4" (451 mm)	18-5/8" (473 mm)	15-1/2" (393 mm)	6-5/8" (167 mm)	9.5" (241 mm)	141 lb. (64 kg)	258 lb. (117 kg)

D-142

Valves

Pneumatic 4-inch Valve Actuator



Flowrite 4-inch Pneumatic Valve Actuator.

Description

Designed for use with the Flowrite valves, the Flowrite 4-inch Pneumatic Valve Actuator has a 3/4-inch (20 mm) stroke and is available in three spring ranges.

Features

- Three spring ranges
 - 3 to 8 psi
 - 5 to 10 psi
 - 10 to 15 psi
- Visual position indication
- 3/4-inch (20 mm) stroke
- Large diaphragm area for control accuracy
- Easy installation and removal
- Rugged, all-metal housing

Applications

The Flowrite 4-inch Pneumatic Valve Actuator is designed to be used with the Flowrite valves in liquid and steam service applications.

D-143

Valves

4-inch Pneumatic Actuator Specifications

Effective Diaphragm Area 11 in.² (71 cm²)
 Diaphragm Material Silicone
 Nominal Stroke 3/4" (20 mm)
 Max. Diaphragm Pressure 35 psig (241 kPa)

Air Connection 1/8" NPT
 Ambient Operating and Storage Temperature 0 to 225°F (-18 to 107°C)
 Mounting Location NEMA 1 (Interior Only)

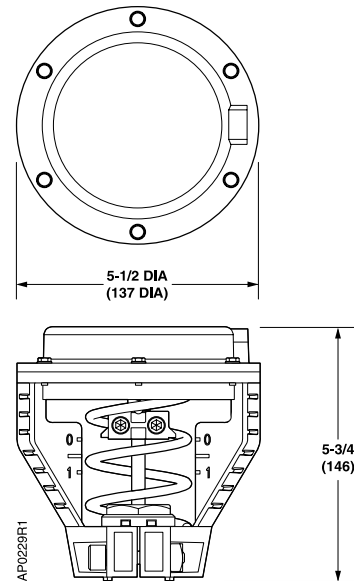
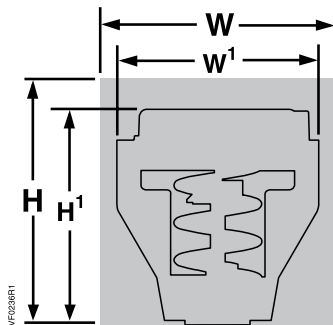
4-inch Pneumatic Actuator Product Ordering

Nominal Spring Range	Part No.	Actuator Prefix Code
3 to 8 psi (21 to 55 kPa)	599-01081	268
5 to 10 psi (34 to 69 kPa)	599-01082	269
10 to 15 psi (69 to 103 kPa)	599-01083	270

Dimensions

D-144

Valves



Dimensions shown in inches (mm).

Actuator	Height of Actuator H ¹	Service Height H	Width/Diameter of Actuator W ¹	Service Width W
4" (100 mm)	5-3/4" (146 mm)	14" (350 mm)	5-1/2" (134 mm) Dia.	18" (450 mm)

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

Pneumatic 8-inch Valve Actuator



Flowrite 8-inch Pneumatic Valve Actuator.

Description

Designed for use with Flowrite valves, the Flowrite 8-inch Pneumatic Valve Actuator has a 3/4-inch (20 mm) stroke and is available with two diaphragm options for normal duty and high-temperature service.

Features

- Completely enclosed actuator housing protects the diaphragm, spring, and start point adjuster
- A positioning relay is available factory-mounted on valve and actuator assemblies or as an accessory
- Field-adjustable start point for sequencing and calibration
- Easy-to-install
- Legendary Flowrite performance

Option

- High-temperature model

Applications

The Flowrite 8-inch Pneumatic Valve Actuator is designed to be used with the Flowrite valves in liquid and steam service applications.

D-145

Valves

8-inch Pneumatic Actuator Specifications

Effective Diaphragm Area 28 in.² (180 cm²)

Diaphragm Material
 Standard..... Buna-N
 High Temp Silicone

Temperature Range
 Normal Duty Service 25 to 300°F (-4 to 149°C)
 High-Temperature Service..... 25 to 366°F (-4 to 186°C)

Nominal Spring Range
 Fixed Span Standard..... 5 psig (34 kPa)
 Fixed Span High Temp 10 psig (69 kPa)
 Adjustable Start Point..... 3 to 10 psig (21 to 69 kPa)
 Factory Setting Standard..... 3 to 8 psig (21 to 55 kPa)
 Factory Setting High Temp..... 10 to 20 psig (69 to 138 kPa)

Nominal Stroke 3/4" (20 mm)
Max. Diaphragm Pressure 35 psig (241 kPa)
Air Connection 1/8" NPT
Ambient Operating and Storage Temperature 35 to 180°F (2 to 85°C)
Mounting Location NEMA 1 (Interior Only)

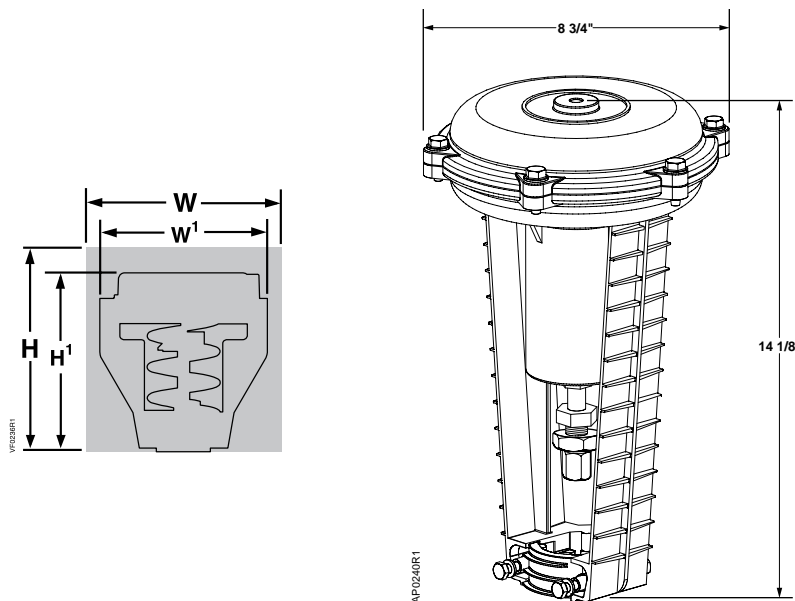
8-inch Pneumatic Actuator Product Ordering

Description	Span	Part No.	Actuator Prefix Code
Normal Duty			
Actuator	5 psi	599-01050	277
Actuator and positioner		599-01050 + 599-00426	283
High-Temperature			
Actuator	10 psi	599-01051	278
Actuator and positioner		599-01051 + 599-00426	284

D-146

Valves

Dimensions



Actuator	Height of Actuator H ¹	Service Height H	Width/Diameter of Actuator W ¹	Service Width W
8" (171 mm)	14-1/8" (359 mm)	26" (660 mm)	8-3/4" (222 mm) Dia.	21" (450 mm)

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

Pneumatic 12-inch Valve Actuator



Flowrite 12-inch Pneumatic Valve Actuator.

Description

Designed for use with Flowrite valves, the Flowrite 12-inch Pneumatic Valve Actuator is available with two stem strokes, 3/4-inch (20 mm) stroke and 1-1/2-inch (40 mm).

Features

- Completely enclosed actuator housing protects the diaphragm, springs, and start point adjuster
- A positioning relay is available factory-mounted on valve and actuator assemblies or as an accessory
- Field-adjustable start point for sequencing and calibration
- Easy-to-install

Applications

The Flowrite 12-inch Pneumatic Valve Actuator is designed to be used with Flowrite valves in liquid and steam service applications.

D-147

Valves

12-inch Pneumatic Actuator Specifications

Effective Diaphragm Area 90 in.² (580 cm²)
 Diaphragm Material Buna-N
 Nominal Spring Range
 Fixed Span 5 psig (34 kPa)
 Adjustable Start Point 3 to 10 psig (21 to 69 kPa)
 Factory Setting 3 to 8 psig (21 to 55 kPa)
 Nominal Stroke 3/4 or 1-1/2" (20 or 40 mm)

Max. Diaphragm Pressure 35 psig (241 kPa)
 Air Connection 1/4" NPT
 Medium Temperature 25 to 366°F (-4 to 186°C)
 Ambient Operating and Storage Temperature 35 to 180°F (2 to 85°C)
 Mounting Location NEMA 1 (Interior Only)

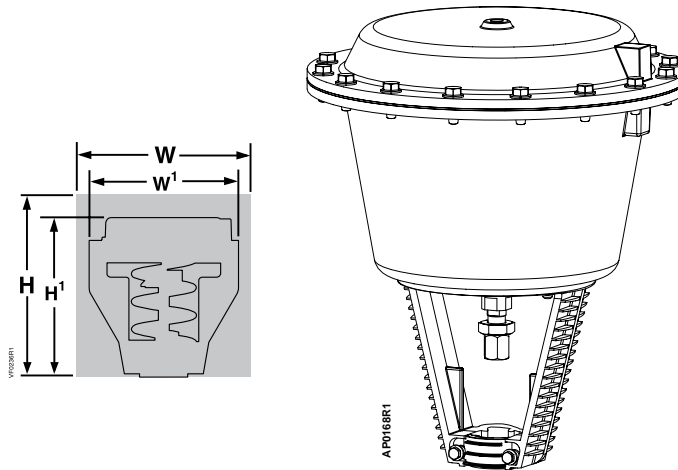
12-inch Pneumatic Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
3/4" Stroke		
Actuator	599-01010	279
Actuator and positioner	599-01010 + 599-00423	285
1-1/2" Stroke		
Actuator	599-01000	281
Actuator and positioner	599-01000 + 599-00423	287

D-148

Valves

Dimensions



Actuator	Height of Actuator H'	Service Height H	Width/Diameter of Actuator W'	Service Width W
12" (305 mm)	17-7/8" (454 mm)	30" (762 mm)	15-1/8" (384 mm) Dia.	27" (686 mm)

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

SAX Valve Actuator



24 Vac, Proportional Control
0 to 10 Vdc or 4 to 20 mA
Spring Return or Non-Spring Return



Flowrite SAX Valve Actuator.

Description

Designed for use with Flowrite valves with a 3/4-inch (20 mm) stroke, the Flowrite SAX Electronic Actuator requires a 24 Vac supply, and receives a 0 to 10 Vdc or 4 to 20 mA control signal to proportionally control the valve; available as spring return or non-spring return.

Features

- Direct-coupled installation requires no special tools or adjustments
- Visual and electronic stroke indication
- Manual override
- Spring return or non-spring return
- 180 lb. (800 N) nominal force (non-spring return model)
- 160 lb. (700 N) nominal force (spring return model)
- Automatic calibration
- Electromechanical switches protect components from overload and stall condition
- Maintenance-free
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

The Flowrite SAX Electronic Valve Actuator is designed to be used with the Flowrite and other valves in liquid and steam service applications. They are ideal for installations requiring quick response and excellent resolution.

D-149

Valves

SAX Actuator Specifications

Operating Voltage 24 Vac ±20%, 24 Vdc +20%/-15%

Frequency 45-65 Hz

Power Consumption

SAX61.03U 8 VA

SAX61.36U 12 VA

Control Signals

Control Input (Y)

Voltage 0 to 10 Vdc

Current 4-20 mA

Control Input (Z)

Resistance 0-1000 Ohm

Position Feedback Output (U) 0 to 10 Vdc

Function

Nominal Stroke 3/4" (20 mm)

Run Time

SAX61.03U 30 sec.

SAX61.36U 60 sec.

Nominal Force

SAX61.03U 180 lb. (800 N)

SAX61.36U 160 lb. (700 N)

Agency Approvals UL873
CSA C22.2 No. 24-93

Operating and Storage Temperature

Operating Temperature 23 to 131°F (-5 to 55°C)

Storage Temperature 5 to 131°F (-15 to 55°C)

Transport Temperature -13 to 158°F (-25 to 70°C)

Ambient Humidity 5 to 90% RH, Non-condensing

Media Temperature Up to 300°F (150°C)

Conduit Opening 1/2" NPSM

Mounting Location NEMA 1 (Interior Only)

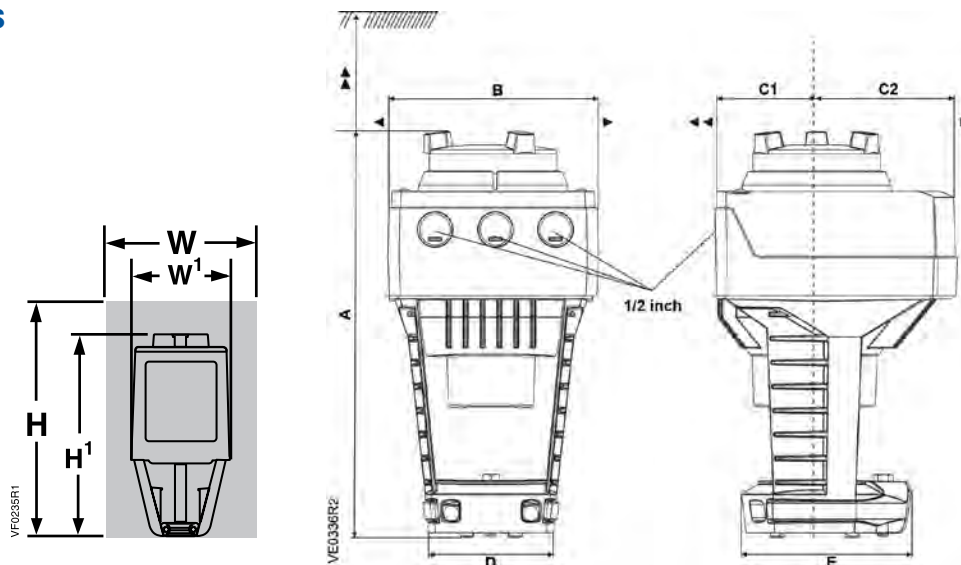
SAX Actuator Product Ordering

D-150

Description	Part No.	Actuator Prefix Code
24 Vac Proportional, Spring Return	SAX61.36U	370
24 Vac Proportional, Non-Spring Return	SAX61.03U	371

Valves

Dimensions



Dimensions shown in inches (mm).

Actuator	Height of Actuator H ¹	Service Height H	Width/Diameter of Actuator W ¹	Service Width W
SAX Spring Return	10-11/16" (242 mm)	17-1/2" (442 mm)	5-29/32" (150 mm) Width x 4-7/8" (124 mm) Depth	9-27/32 (250) Width x 8-13/16" (224 mm) Depth
SAX Non-spring Return	9-1/2" (242 mm)	17-1/2" (442 mm)	5-29/32" (150 mm) Width x 4-7/8" (124 mm) Depth	9-27/32 (250) Width x 8-13/16" (224 mm) Depth

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

SAX Valve Actuator

NEW!

*24 Vac, Floating (3 Position) Control
Spring Return or Non-Spring Return*



Flowrite SAX Valve Actuator.

Description

Designed for use with Flowrite and other standard valves with a 3/4-inch (20 mm) stroke, the Flowrite SAX Electronic Valve Actuator receives a floating control signal to provide floating control of the valve; available as spring return or non-spring return.

Features

- Direct-coupled installation requires no special tools or adjustments
- Visual and electronic stroke indication
- Manual override
- Spring return or non-spring return
- 180 lb. (800 N) nominal force (non-spring return model)
- 160 lb. (700 N) nominal force (spring return model)
- Automatic calibration
- Electro-mechanical switches protect components from overload and stall condition
- Maintenance-free
- Orderable as a valve only or as a complete valve/actuator assembly

Applications

The Flowrite SAX Electronic Valve Actuator with 24 Vac floating control is designed to be used with Flowrite and other valves in liquid and steam service applications. They are ideal for installations requiring quick response and excellent resolution.

D-151**Valves**

SAX Actuator Specifications

Operating Voltage 24 Vac ±20%, 24 Vdc +20%/-15%
Frequency 45-65 Hz
Power Consumption
 SAX81.03U 5 VA
 SAX81.36U 12 VA
Control Signal 3-Position (Floating)
Function
 Nominal Stroke 3/4" (20 mm)
 Run Time
 SAX81.03U 30 sec.
 SAX81.36U 60 sec.
 Nominal Force
 SAX81.03U 180 lb. (800 N)
 SAX81.36U 160 lb. (700 N)

Agency Approvals UL873 CSA C22.2 No. 24-93
Operating and Storage Temperature
 Operating Temperature 23 to 131°F (-5 to 55°C)
 Storage Temperature 5 to 131°F (-15 to 55°C)
 Transport Temperature -13 to 158°F (-25 to 70°C)
 Ambient Humidity 5 to 90% RH, Non-condensing
 Media Temperature Up to 300°F (150°C)
Conduit Opening 1/2" NPSM
Mounting Location NEMA 1 (Interior Only)

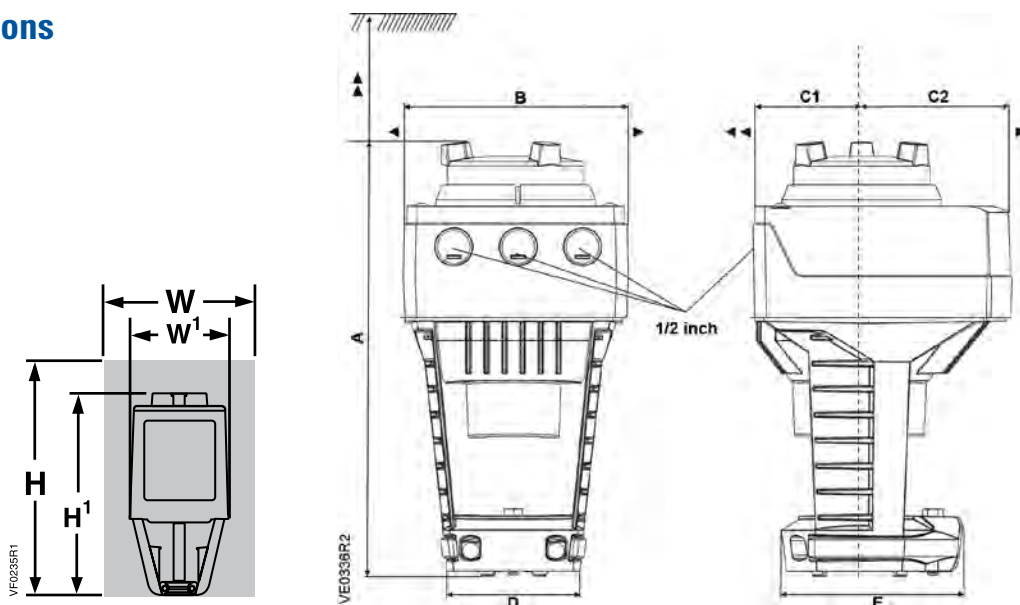
SAX Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
Floating 3P, Spring Return	SAX81.36U	372
Floating 3P, Non-Spring Return	SAX81.03U	373

D-152

Valves

Dimensions



Dimensions shown in inches (mm).

Actuator	Height of Actuator H ¹	Service Height H	Width/Diameter of Actuator W ¹	Service Width W
SAX Spring Return	10-11/16" (242 mm)	17-1/2" (442 mm)	5-29/32" (150 mm) Width x 4-7/8" (124 mm) Depth	9-27/32 (250) Width x 8-13/16" (224 mm) Depth
SAX Non-spring Return	9-1/2" (242 mm)	17-1/2" (442 mm)	5-29/32" (150 mm) Width x 4-7/8" (124 mm) Depth	9-27/32 (250) Width x 8-13/16" (224 mm) Depth

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

SKD Valve Actuator

24 Vac, Proportional Control
0 to 10 Vdc or 4 to 20 mA
Spring Return



Flowrite SKD Valve Actuator.

Description

Designed for use with the Flowrite and other standard valves with a 3/4" (20 mm) stroke, the Flowrite SKD Electronic Valve Actuator receives a 0 to 10 Vdc or 4 to 20 mA control signal to proportionally control the valve. The actuators are available with standard or advanced functionality.

Features

Standard Features

Part nos. with U suffix have these standard features:

- Direct-coupled installation requires no special tools or adjustments
- Visual and electronic stroke indication
- Die-cast aluminum housing
- 250 lb. (1150 N) nominal force
- 0 to 10 Vdc or 4 to 20 mA
- Integral position feedback
- Manual override
- Spring return to fail-safe position
- Maintenance-free

Advanced Features

Part nos. with UA suffix have standard features, plus these advanced features:

- Adjustable start and span
- Stroke limit control
- Selectable operation direction (direct or reverse acting)
- Choice of linear or equal percentage flow characteristics
- Designed to be used with other manufacturer's valves with the appropriate Universal Valve Retrofit Kit

Applications

The Flowrite SKD Electronic Valve Actuator requires a 24 Vac supply and is designed to be used with Flowrite and other standard valves in liquid and steam service applications.

D-153

Valves

SKD Actuator Specifications

Operating Voltage	24 Vac ±20%
Frequency	50/60 Hz
Power Consumption	
SKD62U/UA	18 VA (12 W)
Control Signals	
Control Input (Y)	
Voltage.....	0 to 10 Vdc
Current.....	4 to 20 mA
Control Input (R)	
Resistance.....	0 to 1000 Ohms
Voltage.....	0 to 1.6 V
Position Feedback Output (U)	
Voltage.....	0 to 10 Vdc
Max. Current.....	0.5 mA max.
Position Feedback Output (U)	
Current.....	4 to 20 mA
Max. Impedance.....	250 Ohms

Function	
Nominal Stroke	3/4" (20 mm)
Run Time with Control Operation (Full Stroke)	
Power Stroke, 0 to 100%.....	30 sec.
Return Stroke, 100 to 0%.....	15 sec.
Nominal Force	
NC and 3-way Upper	
Stroke.....	0%
Force.....	225 lbs. (1000 N)
NO and 3-way By Pass	
Stroke.....	100%
Force.....	258 lbs. (1150 N)
Agency Approvals	UL873, cUL, CSA C22.2 No. 24-93, CE N474
Operating	
Ambient Temperature	5 to 130°F (-15 to 55°C)
Media Temperature	14 to 300°F (-10 to 150°C)
Conduit Opening	1/2" NPSM
Housing	NEMA 1 (Interior Only)

D-154

SKD Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
24 Vac, Proportional Control	SKD62U	274
24 Vac, Proportional Control with Advanced Features	SKD62UA	—

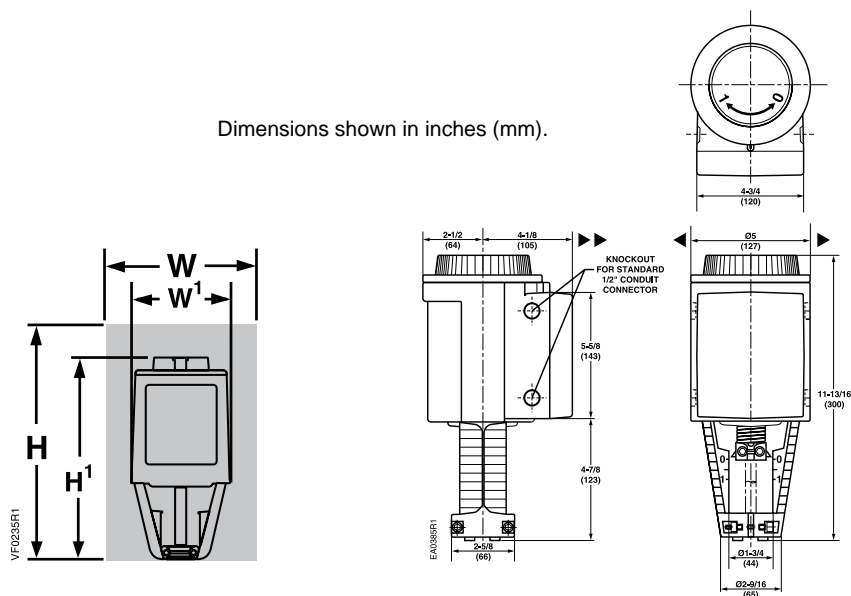
Ordering Note:

The SKD62UA can be used with other manufacturer's valves with the appropriate Universal Valve Linkage Kit.

Valves

Dimensions

Dimensions shown in inches (mm).



Height of Actuator H ¹	Service Height H	Width/Diameter of Actuator W ¹	Service Width W
11-13/16" (300 mm)	19-3/4" (430 mm)	6-5/8" (170 mm) Width	14-1/2" (360 mm)

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

SKD Valve Actuator

*24 Vac, Floating (3 Position) Control
Spring Return or Non-Spring Return*



Flowrite SKD Valve Actuator.

Description

Designed for use with Flowrite and other standard valves with a 3/4-inch (20 mm) stroke, the Flowrite SKD Electronic Valve Actuator requires 24 Vac supply to provide floating control of a valve.

Features

- Direct-coupled installation requires no special tools or adjustments
- Visual and electronic stroke indication
- Die-cast aluminum housing
- 250 lb. (1150 N) nominal force
- Integral position feedback
- Manual override
- Spring return available for fail-safe position
- Maintenance-free

Applications

The Flowrite SKD Electronic Valve Actuator with 24 Vac, floating control is designed to be used with Flowrite and other standard valves in liquid and steam service applications.

D-155

Valves

SKD Actuator Specifications

Operating Voltage 24 Vac ±20%

Frequency 50/60 Hz

Power Consumption

SKD82.50U 10 VA

SKD82.51U 15 VA

Control Signal 3 Position (Floating)

Function

Nominal Stroke 3/4" (20 mm)

Run Time with Control Operation (Full Stroke)

Power Stroke, 0 to 100% @ 60 Hz 90 sec.

Return Stroke, 100 to 0% @ 60 Hz 90 sec.

Spring Return (SKD 82.51U Only) 8 sec.

Nominal Force

NC and 3-way Upper

Stroke 0%

Force 225 lbs. (1000 N)

NO and 3-way By Pass

Stroke 100%

Force 258 lbs. (1150 N)

Agency Approvals UL873, CSA C22.2 No. 24-93

Operating

Ambient Temperature 5 to 130°F (-15 to 55°C)

Media Temperature 14 to 300°F (-10 to 150°C)

Conduit Opening 1/2" NPSM

Mounting Location NEMA 1 (Interior Only)

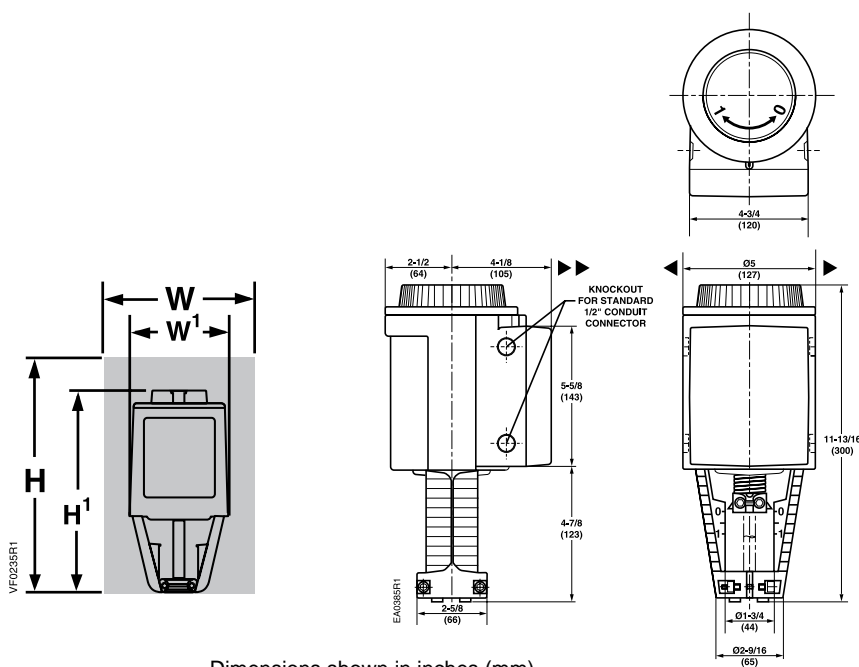
SKD Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
Spring Return	SKD82.51U	276
Non-Spring Return	SKD82.50U	275

D-156

Valves

Dimensions



Dimensions shown in inches (mm).

Height of Actuator H¹	Service Height H	Width/Diameter of Actuator W¹	Service Width W
11-13/16" (300 mm)	19-3/4" (430 mm)	6-5/8" (170 mm) Width	14-1/2" (360 mm)

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

SKB/SKC Valve Actuator

24 Vac, Proportional Control
0 to 10 Vdc or 4 to 20 mA
Spring Return



Flowrite SKB/SKC Valve Actuator.

Description

Designed for use with Flowrite and other standard valves with a 3/4-inch and 1-1/2-inch (20 and 40 mm) strokes, the Flowrite SKB/SKC Electronic Valve Actuator receives a 0 to 10 Vdc or 4 to 20 mA control signal to proportionally control the valve. The actuators are available with standard or advanced functionality.

Features

Standard Models

Part nos. with U suffix have these standard features:

- Direct-coupled installation requires no special tools or adjustments
- Visual and electronic stroke indication
- Die-cast aluminum housing
- Highest close-off in the industry
- 3/4-inch stroke (SKB)
- 1-1/2-inch stroke (SKC)
- 1000 lb. (4400 N) nominal force
- Manual override
- Spring return to fail safe position
- Maintenance-free

Advanced Feature Models

Part nos. with UA suffix have standard features, plus these advanced features:

- Adjustable start and span
- Stroke limit control
- Selectable operation direction (direct or reverse acting)
- Choice of linear or equal percentage flow characteristics
- Designed to be used with other manufacturer's valves with the appropriate Universal Valve Retrofit Kit

Applications

The Flowrite SKB/SKC Electronic Valve Actuator with proportional control is designed to be used with Flowrite and other standard valves with a 3/4-inch and 1-1/2-inch (20 and 40 mm) strokes in liquid and steam service applications.

D-157

Valves

SKB/SKC Specifications

Nominal Stroke	
SKB62U/UA.....	3/4" (20 mm)
SKC62U/UA.....	1-1/2" (40 mm)
Operating Voltage 24 Vac ±20%	
Frequency 50/60 Hz	
Power Consumption	
SKB62U/UA.....	18 VA (12 W)
SKC62U/UA.....	28 VA (20 W)
Control Signals	
Control Input (Y)	
Signal.....	0 to 10 Vdc or 4-20 mA
Max Impedance	
0 to 10 Vdc.....	100K Ohm
4 to 20 mA.....	250 Ohm
Control Input (Z)	
Resistance.....	0 to 1000 Ohms
Voltage.....	0 to 1.6 V

Feedback Output (U)	
Signal.....	0 to 10 Vdc or 4 to 20 mA
Local Impedance	
0 to 10 Vdc.....	>500K Ohm
4 to 20 mA.....	<500 Ohm
Run Time with Control Operation (full stroke)	
Opening.....	2 min.
Closing with Spring	
SKB62U.....	15 sec.
SKC62U.....	20 sec.
Conduit Opening 1/2" NPSM	
Nominal Force	
NC and 3-way Upper	
Stroke.....	0%
Force.....	640 lbs. (2800 N)
NO and 3-way By Pass	
Stroke.....	100%
Force.....	1000 lbs. (4400 N)

Agency Approvals UL873, cUL, CSA C22.2 No. 24-93, CE N474

Enclosure NEMA 1 (Interior Only)

Operating

Ambient Temperature 5 to 130°F (-15 to 55°C)

Media Temperature 14 to 428°F (-10 to 220°C)

Mounting Location NEMA 1 (Interior Only)

SKB/SKC Product Ordering

Description	Part No.	Actuator Prefix Code
3/4" Stroke		
Standard Features	SKB62U	291
Advanced Features	SKB62UA	—
1-1/2" Stroke		
Standard Features	SKC62U	294
Advanced Features	SKC62UA	—

Ordering Note:

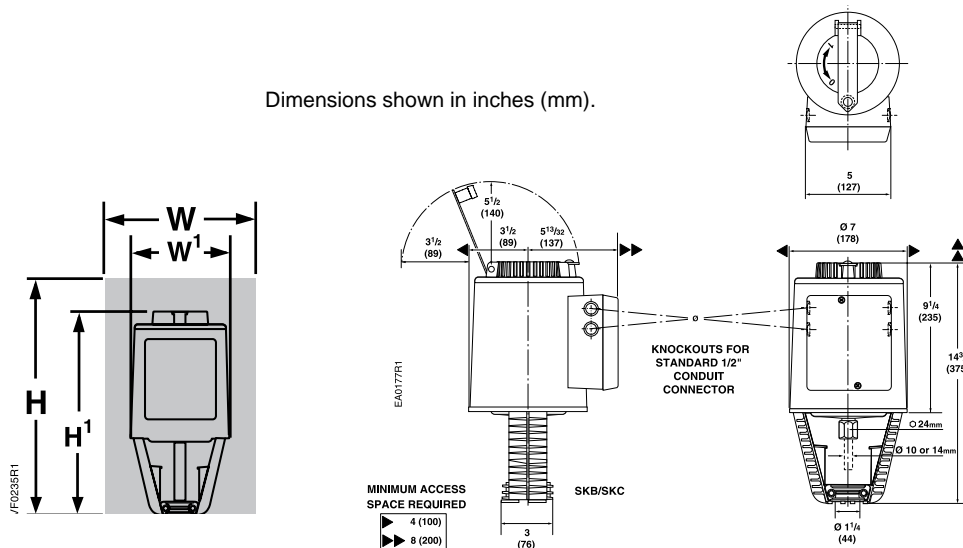
The SKB/UA can be used with other manufacturer's valves with the appropriate Universal Valve Linkage Kit.

D-158

Valves

Dimensions

Dimensions shown in inches (mm).



Height of Actuator H ¹	Service Height H	Width/Diameter of Actuator W ¹	Service Width W
14-3/4" (375 mm)	22-3/4" (578 mm)	7" (178 mm) Width x 8-15/16" (226 mm) Depth	25" (635 mm)

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

SKB/SKC Valve Actuator

*24 Vac, Floating Control
Spring Return or Non-Spring Return*



Flowrite SKB/SKC Valve Actuator.

Description

Designed for use with Flowrite and other standard valves with 3/4-inch and 1-1/2-inch (20 mm and 40 mm) strokes, the Flowrite SKB/C Electronic Valve Actuator requires a 24 Vac supply to control the valve.

Features

- Direct-coupled installation requires no special tools or adjustments
- Visual and electronic stroke indication
- Die-cast aluminum housing
- Manual override
- Spring return to fail-safe position available
- Maintenance-free
- 1000 lb. (4400 N) nominal force

Applications

The Flowrite SKB/SKC Electronic Valve Actuator with floating control is to be used with Flowrite and other standard valves with a 3/4-inch and 1-1/2-inch (20 mm and 40 mm) strokes in liquid and steam service applications.

D-159

Valves

SKB/SKC Specifications

Operating Voltage 24 Vac ±20%

Frequency 50/60 Hz

Power Consumption

SKB82.50U 10 VA

SKB82.51U 15 VA

SKC82.60U 19 VA

SKC82.61U 20 VA

Control Signal Floating

Nominal Stroke

SKB 3/4" (20 mm)

SKC 1-1/2" (40 mm)

Run Time with Control Operation (full stroke) 90 sec. Opening and Closing

Spring Return Time (on power failure)

SKB82.51U 10 sec.

SKB82.61U 18 sec.

Nominal Force

NC and 3-way Upper

Stroke 0%

Force 610 lbs. (2684 N)

NO and 3-way By Pass

Stroke 100%

Force 1000 lbs. (4400 N)

Agency Approvals UL873, CSA C22.2 No. 24-93

Enclosure NEMA 1 (Interior Only)

Operating

Ambient Temperature 5 to 130°F (-15 to 55°C)

Media Temperature 14 to 300°F (-10 to 150°C)

Mounting Location NEMA 1 (Interior Only)

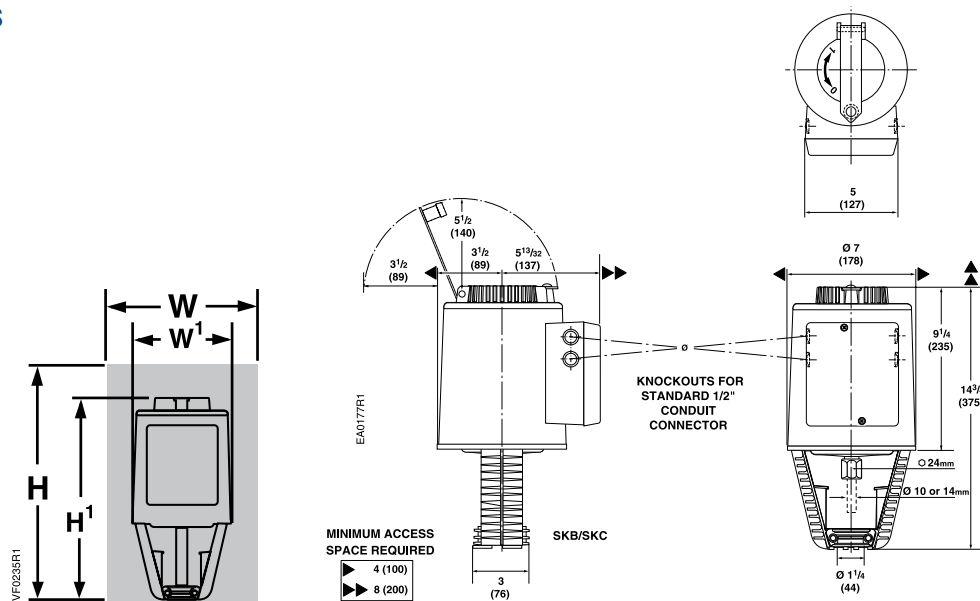
SKB/SKC Product Ordering

Stroke	Part No.	Actuator Prefix Code
Spring Return		
3/4" (20 mm)	SKB82.51U	289
1-1/2" (40 mm)	SKC82.61U	292
Non-Spring Return		
3/4" (20 mm)	SKB82.50U	290
1-1/2" (40 mm)	SKC82.60U	293

D-160

Valves

Dimensions



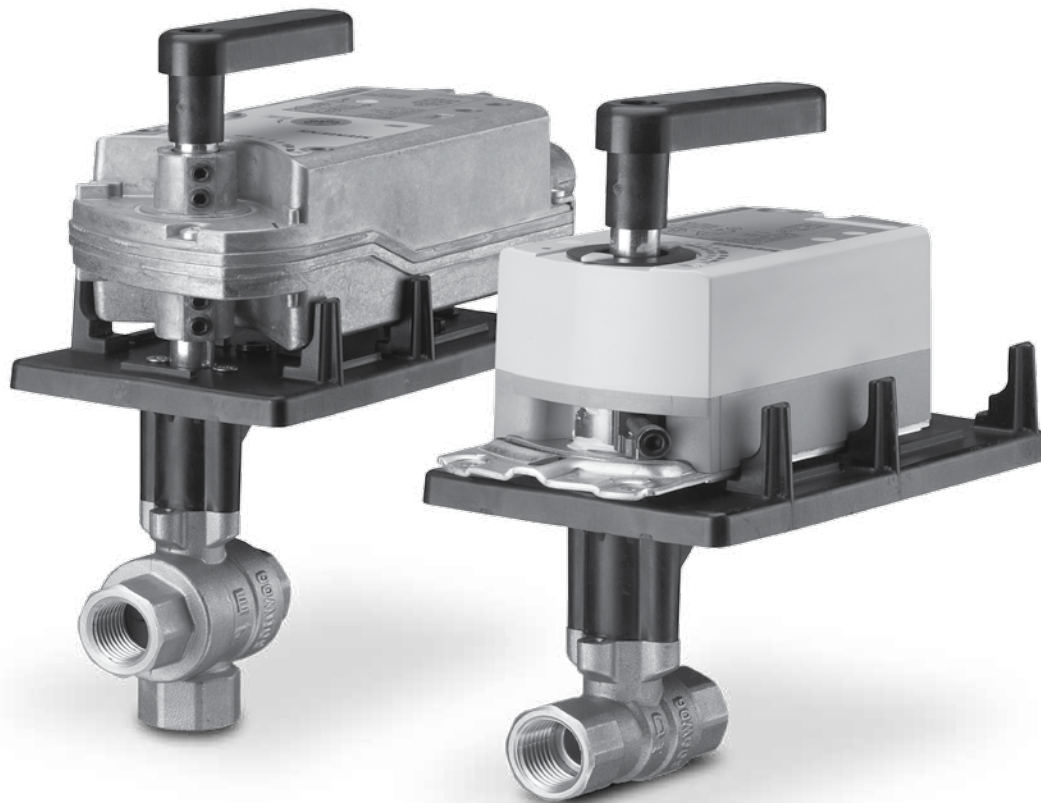
Dimensions shown in inches (mm).

Height of Actuator H ¹	Service Height H	Width/Diameter of Actuator W ¹	Service Width W
14-3/4" (375 mm)	22-3/4" (578 mm)	7" (178 mm) Width x 8-15/16" (226 mm) Depth	25" (635 mm)

Table Note:

Service height and width are the recommended dimensions to allow access to the product.

599 Series Ball Valves



D-161

Valves

Siemens 599 Series ball valves and valve actuators deliver comprehensive control solutions. Available in spring return, non-spring return, 2-position, floating, and proportional control to suit a wide variety of control specifications and strategies, Siemens OpenAir™ electronic actuators are known for their reliability. They require no special programming or tools, saving on installation time and delivering immediate results.

Designed to provide excellent equal percentage flow control and so much more:

- Two-way valves available with chrome-plated brass ball and brass stem or stainless steel ball and stem to withstand harsh conditions
- 0.4 to 160 Cv range enables better sizing of valves to the job requirements
- 200 psi close-off for two-way valves and actuators
- Low ANSI Class IV leakage (0.01% of Cv) at rated close-off pressure on all ports reduces energy consumption
- 600 WOG/ANSI 250 pressure rating meets the specifications of more applications
- Blow-out proof stem withstands high pressure
- Double o-ring stem packing prevents leaking and ensures long-lasting performance
- Universal actuator mounting bracket with standoffs provide a thermal barrier between the actuator and the mounting plate

▶ For more information on OpenAir Electronic Damper Actuators, refer to Section E.

D-162

Valves

2-Way Ball Valves with Stainless Steel or Chrome Trim

Available with chrome-plated brass ball and brass stem or stainless steel ball and stem valves. And a 200 psi close-off for 1/2-inch to 2-inch line sizes makes these ball valves ready to meet specifications for more applications – even harsh environments.

- 0.4 to 160 Cv range enables better sizing of valves to the job requirements
- 200 psi close-off for all line sizes and actuators
- Low ANSI Class IV leakage (0.01% of Cv) at rated close-off pressure reduces energy consumption
- 600 WOG/ANSI 250 pressure rating meets the specifications of more applications

**SIEMENS**

Two- & Three-Way Ball Valves

24 Vac Proportional Control



2-Way Ball Valve and Actuator.



3-Way Ball Valve and Actuator.

Description

Designed to provide excellent equal percentage flow control, Ball Valves are available in 1/2 to 2-inch line sizes and are 1/4-turn rotary control valves. These ball valves are designed to couple with an OpenAir actuator.

Features

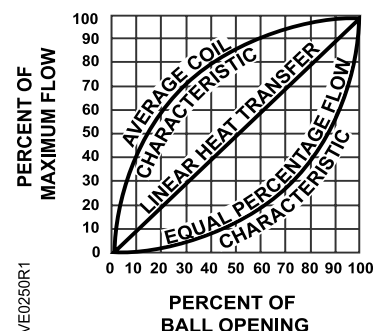
- Universal mounting plate accommodates different actuator sizes
- Variety of ball sizes and flow coefficients minimizes the need for downsizing pipes and accurately controls fluid through coils
- Industry leading close-off
- Actuator and plate can be rotated to facilitate installation and wiring
- Standoffs and mounting plate provide a thermal barrier between the actuator and valve
- Plastic mounting plate, extensions, and handle do not condensate in chilled or hot water applications
- Operating handle can manually operate valve in the event of a power failure
- Available as on/off (2P), floating (3P), or modulating

Applications

Ball Valves can control hot or chilled water and up to 50% glycol solution in convectors, fan coil units, unit conditioners, radiation, and reheat coils.

Application Drawings

The parabolic shape of the flow optimizer orifice allows a slow opening valve. Equal movements of the valve stem at any point of the flow range changes the existing flow an equal percentage regardless of the existing flow. The ball valve equal percentage flow characteristic mirrors the flow characteristic of a coil, resulting in linear heat transfer.



Ball Valve Equal Percentage Flow Control.

Two-Way & Three-Way Ball Valve Specifications

Static Pressure/Temp.360 psig/250°F (600 WOG)

Controlled Medium Water, Glycol Solutions up to 50%

Media Temperature 35 to 250°F (2 to 121°C)

Materials

BodyBrass ASTM B283, C37700

BallChrome-plated Brass or Stainless Steel

Ball SealsGlass-filled PTFE with EPDM O-Rings

Flow OptimizerGlass-filled PTFE

Stem Brass or Stainless Steel

Stem Seals..... EDPM O-rings

End Connections NPT Female

Angle of Rotation0 to 90 Degrees

Two-Way Ball Valve Assemblies Product Ordering

D-164

Valves


NO/NC 1/2 to 3/4"				Spring Return Actuator 					
				Normally Open			Normally Closed		
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P GQD121.1P	Floating GQD131.1P	2-10 Vdc GQD151.1P	2P GQD121.1P	Floating GQD131.1P	2-10 Vdc GQD151.1P
Chrome-Plated Brass Ball and Brass Stem									
599-10300	1/2	0.4	200	171H-10300	171J-10300	171K-10300	172H-10300	172J-10300	172K-10300
599-10301		0.63	200	171H-10301	171J-10301	171K-10301	172H-10301	172J-10301	172K-10301
599-10302		1.0	200	171H-10302	171J-10302	171K-10302	172H-10302	172J-10302	172K-10302
599-10303		1.6	200	171H-10303	171J-10303	171K-10303	172H-10303	172J-10303	172K-10303
599-10304		2.5	200	171H-10304	171J-10304	171K-10304	172H-10304	172J-10304	172K-10304
599-10305		4	200	171H-10305	171J-10305	171K-10305	172H-10305	172J-10305	172K-10305
599-10306		6.3	200	171H-10306	171J-10306	171K-10306	172H-10306	172J-10306	172K-10306
599-10307*		10	200	171H-10307*	171J-10307*	171K-10307*	172H-10307*	172J-10307*	172K-10307*
599-10308	3/4	6.3	200	171H-10308	171J-10308	171K-10308	172H-10308	172J-10308	172K-10308
599-10309		10	200	171H-10309	171J-10309	171K-10309	172H-10309	172J-10309	172K-10309
599-10310		16	200	171H-10310	171J-10310	171K-10310	172H-10310	172J-10310	172K-10310
599-10311*		25	200	171H-10311*	171J-10311*	171K-10311*	172H-10311*	172J-10311*	172K-10311*
Stainless Steel Ball and Stem									
599-10300S	1/2	0.4	200	171H-10300S	171J-10300S	171K-10300S	172H-10300S	172J-10300S	172K-10300S
599-10301S		0.63	200	171H-10301S	171J-10301S	171K-10301S	172H-10301S	172J-10301S	172K-10301S
599-10302S		1.0	200	171H-10302S	171J-10302S	171K-10302S	172H-10302S	172J-10302S	172K-10302S
599-10303S		1.6	200	171H-10303S	171J-10303S	171K-10303S	172H-10303S	172J-10303S	172K-10303S
599-10304S		2.5	200	171H-10304S	171J-10304S	171K-10304S	172H-10304S	172J-10304S	172K-10304S
599-10305S		4	200	171H-10305S	171J-10305S	171K-10305S	172H-10305S	172J-10305S	172K-10305S
599-10306S		6.3	200	171H-10306S	171J-10306S	171K-10306S	172H-10306S	172J-10306S	172K-10306S
599-10307S*		10	200	171H-10307S*	171J-10307S*	171K-10307S*	172H-10307S*	172J-10307S*	172K-10307S*
599-10308S	3/4	6.3	200	171H-10308S	171J-10308S	171K-10308S	172H-10308S	172J-10308S	172K-10308S
599-10309S		10	200	171H-10309S	171J-10309S	171K-10309S	172H-10309S	172J-10309S	172K-10309S
599-10310S		16	200	171H-10310S	171J-10310S	171K-10310S	172H-10310S	172J-10310S	172K-10310S
599-10311S*		25	200	171H-10311S*	171J-10311S*	171K-10311S*	172H-10311S*	172J-10311S*	172K-10311S*

Table Notes:

*Denotes a full-port valve with no flow optimizer insert.

Two-Way Ball Valve Assemblies Product Ordering


NO/NC 1 to 2"				Spring Return Actuator 					
				Normally Open			Normally Closed		
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P GMA121.1P	Floating GMA131.1P	0-10 Vdc GMA161.1P	2P GMA121.1P	Floating GMA131.1P	0-10 Vdc GMA161.1P
Chrome-Plated Brass Ball and Brass Stem									
599-10312	1	10	200	171E-10312	171F-10312	171G-10312	172E-10312	172F-10312	172G-10312
599-10313		16	200	171E-10313	171F-10313	171G-10313	172E-10313	172F-10313	172G-10313
599-10314		25	200	171E-10314	171F-10314	171G-10314	172E-10314	172F-10314	172G-10314
599-10315		40	200	171E-10315	171F-10315	171G-10315	172E-10315	172F-10315	172G-10315
599-10316*		63	200	171E-10316*	171F-10316*	171G-10316*	172E-10316*	172F-10316*	172G-10316*
599-10317	1-1/4	16	200	171E-10317	171F-10317	171G-10317	172E-10317	172F-10317	172G-10317
599-10318		25	200	171E-10318	171F-10318	171G-10318	172E-10318	172F-10318	172G-10318
599-10319		40	200	171E-10319	171F-10319	171G-10319	172E-10319	172F-10319	172G-10319
599-10320		63	200	171E-10320	171F-10320	171G-10320	172E-10320	172F-10320	172G-10320
599-10321*		100	200	171E-10321*	171F-10321*	171G-10321*	172E-10321*	172F-10321*	172G-10321*
599-10322	1-1/2	25	200	171E-10322	171F-10322	171G-10322	172E-10322	172F-10322	172G-10322
599-10323		40	200	171E-10323	171F-10323	171G-10323	172E-10323	172F-10323	172G-10323
599-10324		63	200	171E-10324	171F-10324	171G-10324	172E-10324	172F-10324	172G-10324
599-10325		100	200	171E-10325	171F-10325	171G-10325	172E-10325	172F-10325	172G-10325
599-10326*		160	200	171E-10326*	171F-10326*	171G-10326*	172E-10326*	172F-10326*	172G-10326*
599-10327	2	40	200	171E-10327	171F-10327	171G-10327	172E-10327	172F-10327	172G-10327
599-10328		63	200	171E-10328	171F-10328	171G-10328	172E-10328	172F-10328	172G-10328
599-10329*		100	200	171E-10329*	171F-10329*	171G-10329*	172E-10329*	172F-10329*	172G-10329*
599-10330		160	200	171E-10330	171F-10330	171G-10330	172E-10330	172F-10330	172G-10330
Stainless Steel Ball and Stem									
599-10312S	1	10	200	171E-10312S	171F-10312S	171G-10312S	172E-10312S	172F-10312S	172G-10312S
599-10313S		16	200	171E-10313S	171F-10313S	171G-10313S	172E-10313S	172F-10313S	172G-10313S
599-10314S		25	200	171E-10314S	171F-10314S	171G-10314S	172E-10314S	172F-10314S	172G-10314S
599-10315S		40	200	171E-10315S	171F-10315S	171G-10315S	172E-10315S	172F-10315S	172G-10315S
599-10316S*		63	200	171E-10316S*	171F-10316S*	171G-10316S*	172E-10316S*	172F-10316S*	172G-10316S*
599-10317S	1-1/4	16	200	171E-10317S	171F-10317S	171G-10317S	172E-10317S	172F-10317S	172G-10317S
599-10318S		25	200	171E-10318S	171F-10318S	171G-10318S	172E-10318S	172F-10318S	172G-10318S
599-10319S		40	200	171E-10319S	171F-10319S	171G-10319S	172E-10319S	172F-10319S	172G-10319S
599-10320S		63	200	171E-10320S	171F-10320S	171G-10320S	172E-10320S	172F-10320S	172G-10320S
599-10321S*		100	200	171E-10321S*	171F-10321S*	171G-10321S*	172E-10321S*	172F-10321S*	172G-10321S*
599-10322S	1-1/2	25	200	171E-10322S	171F-10322S	171G-10322S	172E-10322S	172F-10322S	172G-10322S
599-10323S		40	200	171E-10323S	171F-10323S	171G-10323S	172E-10323S	172F-10323S	172G-10323S
599-10324S		63	200	171E-10324S	171F-10324S	171G-10324S	172E-10324S	172F-10324S	172G-10324S
599-10325S		100	200	171E-10325S	171F-10325S	171G-10325S	172E-10325S	172F-10325S	172G-10325S
599-10326S*		160	200	171E-10326S*	171F-10326S*	171G-10326S*	172E-10326S*	172F-10326S*	172G-10326S*
599-10327S	2	40	200	171E-10327S	171F-10327S	171G-10327S	172E-10327S	172F-10327S	172G-10327S
599-10328S		63	200	171E-10328S	171F-10328S	171G-10328S	172E-10328S	172F-10328S	172G-10328S
599-10329S*		100	200	171E-10329S*	171F-10329S*	171G-10329S*	172E-10329S*	172F-10329S*	172G-10329S*
599-10330S		160	200	171E-10330S	171F-10330S	171G-10330S	172E-10330S	172F-10330S	172G-10330S

Table Notes:

*Denotes a full-port valve with no flow optimizer insert.

D-165

Valves

Two-Way Ball Valve Assemblies Product Ordering


NO 1/2 to 1-1/4"				Non-Spring Return Actuator 			
				Normally Open			
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	Floating		0-10 Vdc	
				GDE131.1P 3-foot (.9m) Wires	GDE131.1Q Conduit Adapter & 6-foot (1.8m) Wires	GDE161.1P 3-foot (.9m) Wires	GDE161.1Q Conduit Adapter & 6-foot (1.8m) Wires
Chrome-Plated Brass Ball and Brass Stem							
599-10300	1/2	0.4	200	171A-10300	173A-10300	171C-10300	173C-10300
599-10301		0.63	200	171A-10301	173A-10301	171C-10301	173C-10301
599-10302		1.0	200	171A-10302	173A-10302	171C-10302	173C-10302
599-10303		1.6	200	171A-10303	173A-10303	171C-10303	173C-10303
599-10304		2.5	200	171A-10304	173A-10304	171C-10304	173C-10304
599-10305		4.0	200	171A-10305	173A-10305	171C-10305	173C-10305
599-10306		6.3	200	171A-10306	173A-10306	171C-10306	173C-10306
599-10307*		10	200	171A-10307*	173A-10307*	171C-10307*	173C-10307*
599-10308	3/4	6.3	200	171A-10308	173A-10308	171C-10308	173C-10308
599-10309		10	200	171A-10309	173A-10309	171C-10309	173C-10309
599-10310		16	200	171A-10310	173A-10310	171C-10310	173C-10310
599-10311*		25	200	171A-10311*	173A-10311*	171C-10311*	173C-10311*
599-10312	1	10	200	171A-10312	173A-10312	171C-10312	173C-10312
599-10313		16	200	171A-10313	173A-10313	171C-10313	173C-10313
599-10314		25	200	171A-10314	173A-10314	171C-10314	173C-10314
599-10315		40	200	171A-10315	173A-10315	171C-10315	173C-10315
599-10316*		63	100	171A-10316*	173A-10316*	171C-10316*	173C-10316*
599-10317	1-1/4	16	200	171A-10317	173A-10317	171C-10317	173C-10317
599-10318		25	200	171A-10318	173A-10318	171C-10318	173C-10318
599-10319		40	200	171A-10319	173A-10319	171C-10319	173C-10319
599-10320		63	200	171A-10320	173A-10320	171C-10320	173C-10320
599-10321*		100	200	171A-10321*	173A-10321*	171C-10321*	173C-10321*
Stainless Steel Ball and Stem							
599-10300S	1/2	0.4	200	171A-10300S	173A-10300S	171C-10300S	173C-10300S
599-10301S		0.63	200	171A-10301S	173A-10301S	171C-10301S	173C-10301S
599-10302S		1.0	200	171A-10302S	173A-10302S	171C-10302S	173C-10302S
599-10303S		1.6	200	171A-10303S	173A-10303S	171C-10303S	173C-10303S
599-10304S		2.5	200	171A-10304S	173A-10304S	171C-10304S	173C-10304S
599-10305S		4.0	200	171A-10305S	173A-10305S	171C-10305S	173C-10305S
599-10306S		6.3	200	171A-10306S	173A-10306S	171C-10306S	173C-10306S
599-10307S*		10	200	171A-10307S*	173A-10307S*	171C-10307S*	173C-10307S*
599-10308S	3/4	6.3	200	171A-10308S	173A-10308S	171C-10308S	173C-10308S
599-10309S		10	200	171A-10309S	173A-10309S	171C-10309S	173C-10309S
599-10310S		16	200	171A-10310S	173A-10310S	171C-10310S	173C-10310S
599-10311S*		25	200	171A-10311S*	173A-10311S*	171C-10311S*	173C-10311S*
599-10312S	1	10	200	171A-10312S	173A-10312S	171C-10312S	173C-10312S
599-10313S		16	200	171A-10313S	173A-10313S	171C-10313S	173C-10313S
599-10314S		25	200	171A-10314S	173A-10314S	171C-10314S	173C-10314S
599-10315S		40	200	171A-10315S	173A-10315S	171C-10315S	173C-10315S
599-10316S*		63	100	171A-10316S*	173A-10316S*	171C-10316S*	173C-10316S*
599-10317S	1-1/4	16	200	171A-10317S	173A-10317S	171C-10317S	173C-10317S
599-10318S		25	200	171A-10318S	173A-10318S	171C-10318S	173C-10318S
599-10319S		40	200	171A-10319S	173A-10319S	171C-10319S	173C-10319S
599-10320S		63	200	171A-10320S	173A-10320S	171C-10320S	173C-10320S
599-10321S*		100	200	171A-10321S*	173A-10321S*	171C-10321S*	173C-10321S*

Table Notes:

*Denotes a full-port valve with no flow optimizer insert.

D-166

Valves

Two-Way Ball Valve Assemblies Product Ordering


NO/NC 1-1/2 to 2"				Non-Spring Return Actuator 			
				Normally Open		Normally Closed	
				Floating		0-10 Vdc	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	GLB131.1P 3-foot (.9m) Wires	GLB131.1Q Conduit Adapter & 6-foot (1.8m) Wires	GLB161.1P 3-foot (.9m) Wires	GLB161.1Q Conduit Adapter & 6-foot (1.8m) Wires
Chrome-Plated Brass Ball and Brass Stem							
599-10322	1-1/2	25	200	171B-10322	173B-10322	171D-10322	173D-10322
599-10323		40	200	171B-10323	173B-10323	171D-10323	173D-10323
599-10324		63	200	171B-10324	173B-10324	171D-10324	173D-10324
599-10325		100	200	171B-10325	173B-10325	171D-10325	173D-10325
599-10326*		160	200	171B-10326*	173B-10326*	171D-10326*	173D-10326*
599-10327	2	40	200	171B-10327	173B-10327	171D-10327	173D-10327
599-10328		63	200	171B-10328	173B-10328	171D-10328	173D-10328
599-10329*		100	200	171B-10329*	173B-10329*	171D-10329*	173D-10329*
599-10330		160	200	171B-10330	173B-10330	171D-10330	173D-10330
Stainless Steel Ball and Stem							
599-10322S	1-1/2	25	200	171B-10322S	173B-10322S	171D-10322S	173D-10322S
599-10323S		40	200	171B-10323S	173B-10323S	171D-10323S	173D-10323S
599-10324S		63	200	171B-10324S	173B-10324S	171D-10324S	173D-10324S
599-10325S		100	200	171B-10325S	173B-10325S	171D-10325S	173D-10325S
599-10326S*		160	200	171B-10326S*	173B-10326S*	171D-10326S*	173D-10326S*
599-10327S	2	40	200	171B-10327S	173B-10327S	171D-10327S	173D-10327S
599-10328S		63	200	171B-10328S	173B-10328S	171D-10328S	173D-10328S
599-10329S*		100	200	171B-10329S*	173B-10329S*	171D-10329S*	173D-10329S*
599-10330S		160	200	171B-10330S	173B-10330S	171D-10330S	173D-10330S

Table Notes:

*Denotes a full-port valve with no flow optimizer insert.

D-167

Valves

Three-Way Ball Valve Assemblies Product Ordering


Mixing 1/2 to 2"			Spring Return Actuator 		
			2-Position	Floating	0 to 10 Vdc
3-Way Ball Valve Part No.	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Assemblies with 3-Ft. (.9m) Wires		
			GMA121.1P	GMA131.1P	GMA161.1P
599-10250	1/2 (15)	0.4 (34)	171E-10250	171F-10250	171G-10250
599-10251		0.63 (0.54)	171E-10251	171F-10251	171G-10251
599-10252		1.0 (0.86)	171E-10252	171F-10252	171G-10252
599-10253		2.5 (2.2)	171E-10253	171F-10253	171G-10253
599-10254		4 (3.5)	171E-10254	171F-10254	171G-10254
599-10255*		10 (8.6)	171E-10255	171F-10255	171G-10255
599-10256*	3/4 (20)	16 (14)	171E-10256	171F-10256	171G-10256
599-10257	1 (25)	10 (8.6)	171E-10257	171F-10257	171G-10257
599-10258		16 (14)	171E-10258	171F-10258	171G-10258
599-10259*		25 (22)	171E-10259	171F-10259	171G-10259
599-10260	1-1/4 (30)	16 (14)	171E-10260	171F-10260	171G-10260
599-10261*		40 (35)	171E-10261	171F-10261	171G-10261
599-10262	1-1/2 (40)	16 (14)	171E-10262	171F-10262	171G-10262
599-10263		25 (22)	171E-10263	171F-10263	171G-10263
599-10264*		63 (54)	171E-10264	171F-10264	171G-10264
599-10265	2 (50)	25 (22)	171E-10265	171F-10265	171G-10265
599-10266		40 (35)	171E-10266	171F-10266	171G-10266
599-10267*		100 (86)	171E-10267	171F-10267	171G-10267

Table Note:

*Denotes a full-port valve with no flow optimizer insert.

D-168

Valves

Three-Way Ball Valve Assemblies Product Ordering


Mixing 1/2 to 2"			 Non-Spring Return Actuator			
			Floating		0 to 10 Vdc	
3-way Ball Valve Part No.	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Assemblies with 3-Ft. (.9m) Wires	Assemblies with Conduit Adapter & 6-Ft. (1.8m) Wires	Assemblies with 3-Ft. (.9m) Wires	Assemblies with Conduit Adapter & 6-Ft. (1.8m) Wires
			171A (GDE131.1P) and 171B (GLB131.1P)	173A (GDE131.1Q) and 173B (GLB131.1Q)	171C (GDE161.1P) and 171D (GLB161.1P)	173C (GDE161.1Q) and 173D (GLB161.1Q)
599-10250	1/2 (15)	0.4 (34)	171A-10250	173A-10250	171C-10250	173C-10250
599-10251		0.63 (0.54)	171A-10251	173A-10251	171C-10251	173C-10251
599-10252		1.0 (0.86)	171A-10252	173A-10252	171C-10252	173C-10252
599-10253		2.5 (2.2)	171A-10253	173A-10253	171C-10253	173C-10253
599-10254		4 (3.5)	171A-10254	173A-10254	171C-10254	173C-10254
599-10255*		10 (8.6)	171A-10255	173A-10255	171C-10255	173C-10255
599-10256*	3/4 (20)	16 (14)	171A-10256	173A-10256	171C-10256	173C-10256
599-10257	1 (25)	10 (8.6)	171A-10257	173A-10257	171C-10257	173C-10257
599-10258		16 (14)	171A-10258	173A-10258	171C-10258	173C-10258
599-10259*		25 (22)	171A-10259	173A-10259	171C-10259	173C-10259
599-10260	1-1/4 (30)	16 (14)	171A-10260	173A-10260	171C-10260	173C-10260
599-10261*		40 (35)	171A-10261	173A-10261	171C-10261	173C-10261
599-10262	1-1/2 (40)	16 (14)	171B-10262	173B-10262	171D-10262	173D-10262
599-10263		25 (22)	171B-10263	173B-10263	171D-10263	173D-10263
599-10264*		63 (54)	171B-10264	173B-10264	171D-10264	173D-10264
599-10265	2 (50)	25 (22)	171B-10265	173B-10265	171D-10265	173D-10265
599-10266		40 (35)	171B-10266	173B-10266	171D-10266	173D-10266
599-10267*		100 (86)	171B-10267	173B-10267	171D-10267	173D-10267

Table Note:

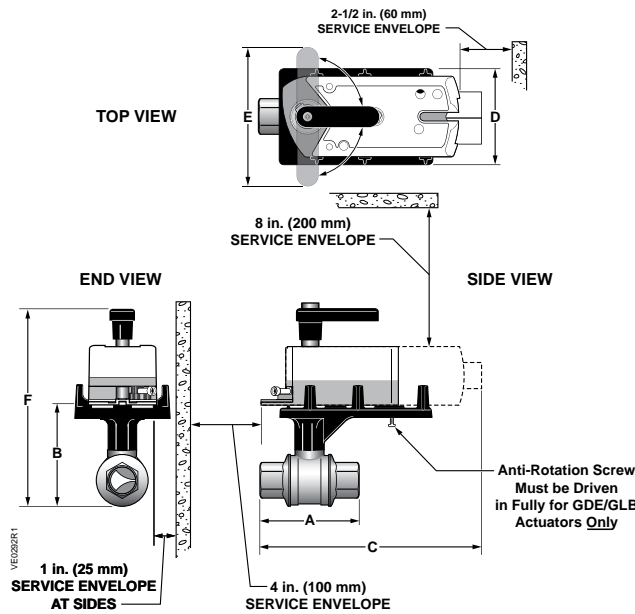
*Denotes a full-port valve with no flow optimizer insert.

D-169

Valves

Dimensions and Weights

Two-Way Ball Valves with Actuator Dimensions and Service Envelope



Dimensions shown in inches (mm).

D-170

Valves

Part No.	Valve Size (mm)	Flow Rate Cv Range	A	C	C	C	F	Weight (kg)
			Length	Length* Actuator Codes 171A-D, 173A-D GDE/GLB	Length* Actuator Codes 171H-K GQD	Length* Actuator Codes 171E-F, 172E-F Fail Safe GMA	Height	
599-10300(S) to 599-10307(S)	1/2 (15)	0.4 - 10.0	2-7/16 (61)	6-11/16 (170)	6 (153)	—	7-5/8 (193)	.50 (.23)
599-10308(S) to 599-10311(S)	3/4 (20)	6.3 - 25	2-3/4 (70)	6-11/16 (170)	6 (153)	—	8 (204)	.78 (.35)
599-10312(S) to 599-10316(S)	1 (25)	10	3 (77)	6-11/16 (170)	—	8-3/8 (213)	8 (204)	.97 (.44)
		16	3-1/4 (82)	6-11/16 (170)	—	8-3/8 (213)	8-5/16 (212)	1.75 (.79)
		40, 63	3-1/4 (82)	6-11/16 (170)	—	8-3/8 (213)	8-5/15 (212)	1.19 (.54)
		25	3-7/8 (98)	7 (178)	—	8-11/16 (221)	8-13/16 (213)	1.19 (.54)
599-10317(S) to 599-10321(S)	1-1/4 (30)	16	3-3/8 (86)	6-11/16 (170)	—	8-7/16 (214)	8-3/8 (213)	1.41 (.64)
		25 - 100	3-11/16 (94)	6-15/16 (176)	—	8-11/16 (221)	8-13/16 (213)	1.81 (.82)
599-10322(S) to 599-10326(S)	1-1/2 (40)	25, 63	3-5/8 (92)	6-15/16 (176)	—	8-7/16 (214)	8-13/16 (223)	1.19 (.54)
		40, 100, 160	3-15/16 (100)	7-1/16 (180)	—	8-3/4 (223)	9-1/4 (235)	2.50 (1.13)
599-10327(S) to 599-10330(S)	2 (50)	40, 100	4 (102)	7-1/16 (180)	—	8-3/4 (223)	9-3/8 (238)	2.53 (1.14)
		63	4-5/8 (118)	7-1/2 (190)	—	9-1/8 (223)	10-1/16 (255)	4.66 (2.11)
		160	4-5/8 (118)	7-1/2 (190)	—	9-1/8 (223)	10-1/16 (255)	4.60 (2.13)

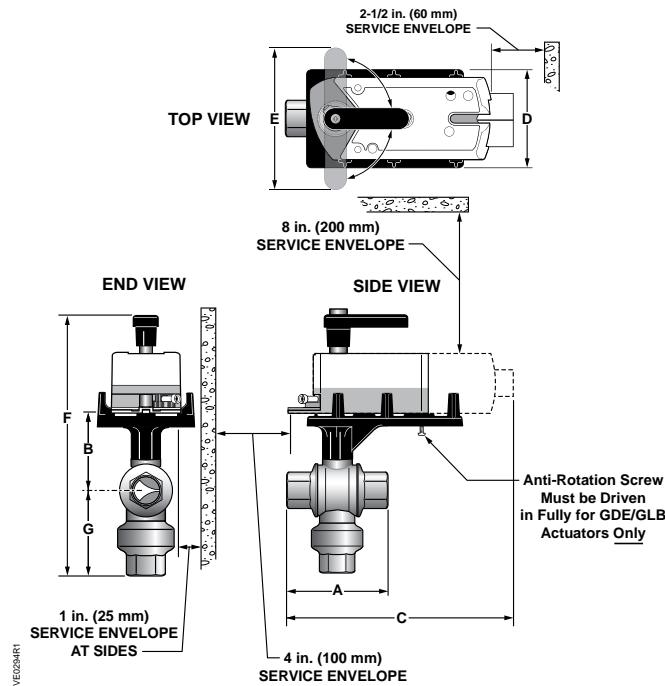
Table Notes:

*Dimension "C" is maximum length, measured from the actuator, end fitting, or mounting plate, whichever extends the furthest.

1. All dimensions are in inches (mm) and weights are in pounds (kg).
2. Dimension "D", Depth, is 3.7 inches (94.5 mm).
3. Dimension "E", Handle, is 5.3 inches (136 mm).

Dimensions and Weights

Three-Way Ball Valves with Actuator Dimensions and Service Envelope



Dimensions shown in inches (mm).

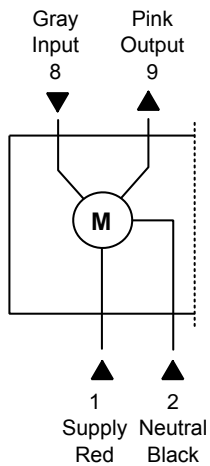
Part No.	Valve Size	Ball Size	A	C	C	B	G	F	Weight
			Length	Length* Codes 171A-D	Length* Codes 171E-G	Height	Height	Depth	
599-10250 to 599-10255	1/2" (15 mm)	3/4" (20 mm)	3-1/2" (89 mm)	7" (178 mm)	7-5/8" (194 mm)	3-1/4" (83 mm)	2-3/8" (60 mm)	9-3/8" (238 mm)	1.60 lb. (0.73 kg)
599-10256	3/4" (20 mm)	3/4" (20 mm)	2-3/4" (70 mm)	6-1/2" (165 mm)	7-1/8" (181 mm)	3-1/4" (83 mm)	2" (51 mm)	8-3/4" (222 mm)	1.64 lb. (0.74 kg)
599-10257	1" (25 mm)	1" (25 mm)	3" (76 mm)	6-3/4" (171 mm)	7-3/8" (187 mm)	3-3/4" (95 mm)	2-1/2" (64 mm)	9-3/4" (248 mm)	2.26 lb. (1.03 kg)
599-10258 and 599-10259		1-1/4" (30 mm)	4-1/2" (114 mm)	7-3/4" (197 mm)	8-3/8" (213 mm)	4" (102 mm)	3-1/4" (83 mm)	10-3/4" (273 mm)	3.56 lb. (1.61 kg)
599-10260 and 599-10261		1-1/4" (30 mm)	3-5/8" (91 mm)	7-1/4" (184 mm)	7-7/8" (200 mm)	4" (102 mm)	2-3/4" (70 mm)	10-1/4" (260 mm)	3.50 lb. (1.59 kg)
599-10262	1-1/2" (40 mm)	1-1/4" (30 mm)	4-1/2" (114 mm)	7-3/4" (197 mm)	8-3/8" (213 mm)	4" (102 mm)	3-1/4" (83 mm)	10-3/4" (273 mm)	3.56 lb. (1.61 kg)
599-10263 and 599-10264		1-1/2" (40 mm)	4" (102 mm)	7-1/4" (184 mm)	7-7/8" (200 mm)	4-1/2" (114 mm)	3-1/4" (83 mm)	11" (279 mm)	5.16 lb. (2.34 kg)
599-10265		1-1/2" (40 mm)	4" (102 mm)	7-1/4" (184 mm)	7-7/8" (200 mm)	4-1/2" (114 mm)	3-1/4" (83 mm)	11" (279 mm)	5.16 lb. (2.34 kg)
599-10266 and 599-10267	2" (50 mm)	1-1/2" (40 mm)	4" (102 mm)	7-1/4" (184 mm)	7-7/8" (200 mm)	4-1/2" (114 mm)	3-1/4" (83 mm)	11" (279 mm)	5.16 lb. (2.34 kg)
		2" (50 mm)	5" (127 mm)	7-3/4" (197 mm)	8-3/8" (213 mm)	5-3/4" (146 mm)	3-3/4" (95 mm)	12-1/4" (311 mm)	8.50 lb. (3.86 kg)

Table Notes:

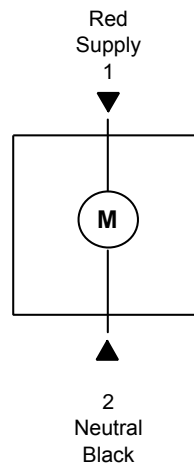
*Dimension "C" is maximum length, measured from the actuator, end fitting, or mounting plate, whichever extends the furthest.

1. All dimensions are in inches (mm) and weights are in pounds (kg).
2. Dimension "D", Depth, is 3 inches (76 mm).
3. Dimension "E", Handle, is 4 inches (102 mm).

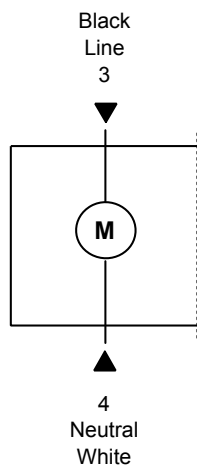
Wiring Diagrams



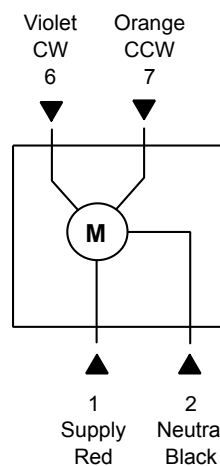
**Modulating (0 to 10 Vdc), 24 Vac
(Applies to all)**



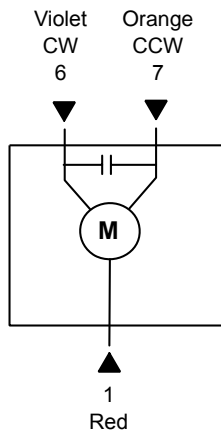
**2-position, 24 Vac
(GMA, GQD 2-position)**



**2-position, 120 Vac
(GMA, GQD)**



**3-position, 24 Vac-SR
(GMA, GQD)**



**3-position, 24 Vac-NSR
(GDE/GLB)**

D-172

Valves

Magnetic Valves



D-173

Valves

Magnetic Valves use magnetic actuation to enhance response time and provide stability. Large signal changes switch the actuator to the large signal band, allowing high-gain response to quickly position the valve element. Small signal changes switch the actuator to the small signal band to provide loop stability and precise positioning.

Note: To use any current magnetic valve with phase cut control signal use SEZ91.6 signal converter.

Control Valves for Hot and Chilled Water



MXG461...U
Magnetic Control Valve.

Description

The Magnetic MX.. Mixing Valve uses magnetic actuation to enhance response time and provide stability. Large signal changes switch the actuator to the large signal band, allowing high-gain response to quickly position the valve element. Small signal changes switch the actuator to the small signal band to provide loop stability and precise positioning.

Features

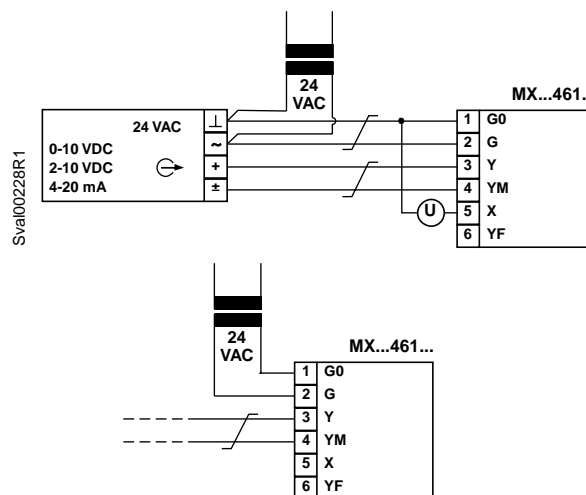
- Fast positioning time (< 2 seconds)
- 1000:1 resolution
- Magnetic actuation
- No maintenance
- Manual override
- Auto calibration
- Dip switch selectable signal input (0 to 10 V or 4 to 20 mA)
- Dip switch selectable flow characteristic
- Built-in position feedback

Applications

The Magnetic MX.. Mixing Valve is designed for modulating control of chilled water and low-pressure hot water and is well suited for HVAC systems.

The valves can be configured for straight-through or 3-way applications and can be used in closed loop applications. Valves are shipped with NPT screwed fittings. A flanged version is also available in the 2-1/2" line size.

Wiring Diagram



Connection to Controller with Four-wire Output.

Ⓢ = Indication of valve position (only where required).
 0 to 10 Vdc □ 0 to 100% volumetric flow

D-175

Valves

Magnetic Control Valve Specifications

Operating Voltage 24 Vac
Nominal Power
 1/2 - 1-1/4" 29 VA (5w)
 1-1/2 - 2" 44 VA (6w)
 2-1/2" 46 VA (6w)
Frequency 50/60 Hz +20/-15%
Control Signals 0 to 10 Vdc, 2 to 10 Vdc, or 4 to 20 mA
Position Feedback Signal 0 to 10 Vdc; Load Resistance > 500 Ω
Materials
 Body Cast Iron
 Plug CrNi Steel
 Seat Brass
 Bellows Tombac, Bronze, CrNi Steel

Packing
 Normal Duty EDPM (O-ring)
Max. Pressure
 p_emax 150 psig
 Max. Differential Pressure 44 psi
Temperature of Medium 34° to 266°F (1° to 130°C)
Resolution 1000:1
Position with Actuator De-energized A → AB Closed
Positioning Time <2 Seconds
Agency Approvals UL873, cUL, CSA C22.2 No. 24
Flow Characteristic Equal Percentage or Linear
Environmental Protection NEMA Type 1

Sizing

Part No.	Line Size (in.)	Cv	Max. Close-off Pressure (psi)	Power for Transformer Sizing (VA)	Power Consumption (W)	Fuse Required (A)	Wire Gauge			
							18	16	14	12
							Max. Cable Length (ft.)			
MXG461.15-0.6U	1/2	0.7	44	29	5	3.15	108	213	361	525
MXG461.15-1.5U	1/2	1.7	44	29	5	3.15	108	213	361	525
MXG461.15-3.0U	1/2	3.5	44	29	5	3.15	108	213	361	525
MXG461.20-5.0U	3/4	5.8	44	29	5	3.15	108	213	361	525
MXG461.25-8.0U	1	9.3	44	29	5	3.15	108	213	361	525
MXG461.32-12U	1-1/4	14	44	29	5	3.15	108	213	361	525
MXG461.40-20U	1-1/2	23	44	44	6	4.00	66	118	197	328
MXG461.50-30U	2	35	44	44	6	4.00	66	118	197	328
MXF461.65-50U	2-1/2	58	44	46	6	5.00	49	98	164	262

*All data relates to a supply of 24 Vac.



MX..Valves with Electronics Module Product Ordering

Valve Size	Cv	Part No.
NPT Union		
1/2"	0.7	MXG461.15-0.6U
1/2"	1.7	MXG461.15-1.5U
1/2"	3.5	MXG461.15-3.0U
3/4"	5.8	MXG461.20-5.0U
1"	9.3	MXG461.25-8.0U
1-1/4"	14	MXG461.32-12U
1-1/2"	23	MXG461.40-20U
2"	35	MXG461.50-30U
Flanged		
2-1/2"	58	MXF461.65-50U*

Table Note:

*No blanking flange

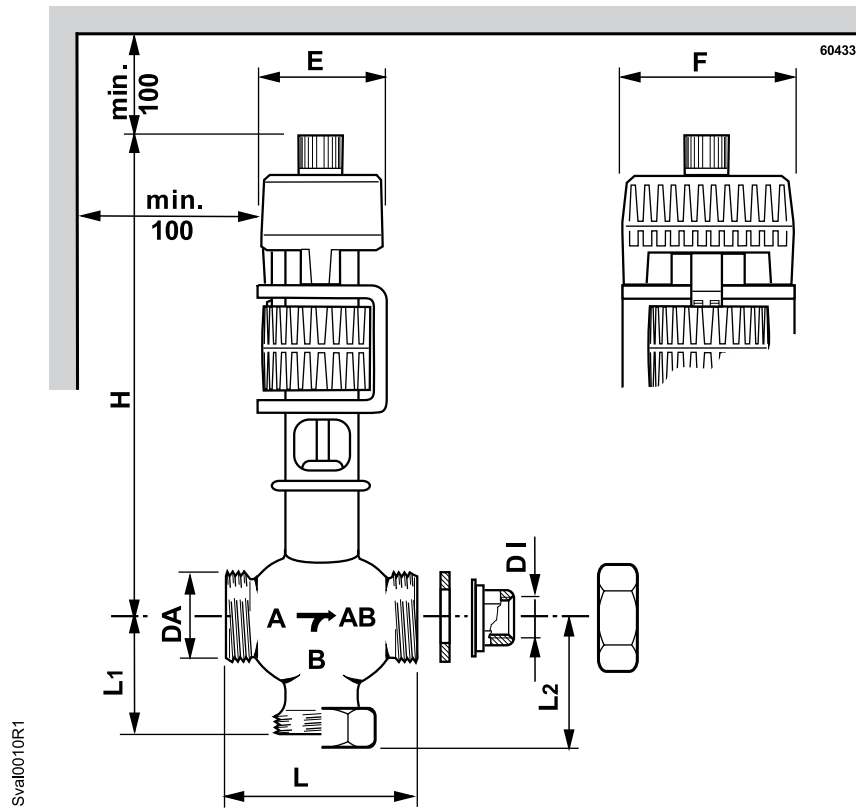
Accessories & Service Kits D-217



D-176 Valves

Dimensions and Weights

MX.461...U Valves with Electronics Module



Dimensions shown in inches (mm).

Part No.	DI	DA	L	L1	L2*	H	E	F	Weight lb. (kg)
MXG461.15-0.6U	1/2	1	3.15 (80)	1.67 (42.5)	2.01 (51)	9.45 (240)	3.15 (80)	3.94 (100)	8.4 (3.8)
MXG461.15-1.5U	1/2	1	3.15 (80)	1.67 (42.5)	2.01 (51)	9.45 (240)	3.15 (80)	3.94 (100)	8.4 (3.8)
MXG461.15-3.0U	1/2	1	3.15 (80)	1.67 (42.5)	2.01 (51)	9.45 (240)	3.15 (80)	3.94 (100)	8.4 (3.8)
MXG461.20-5.0U	3/4	1-1/4	3.74 (95)	2.07 (52.5)	2.40 (51)	10.24 (260)	3.15 (80)	3.94 (100)	9.3 (4.2)
MXG461.25-8.0U	1	1-1/2	4.33 (110)	2.22 (56.5)	2.56 (65)	10.63 (270)	3.15 (80)	3.94 (100)	10.4 (4.7)
MXG461.32-12U	1-1/4	2	4.92 (125)	2.66 (67.5)	2.99 (76)	11.22 (285)	3.15 (80)	3.94 (100)	12.3 (5.6)
MXG461.40-20U	1-1/2	2-1/4	5.51 (140)	3.17 (80.5)	3.70 (94)	12.60 (320)	3.94 (100)	4.72 (120)	20.5 (9.3)
MXG461.50-30U	2	2-3/4	6.69 (170)	3.68 (93.5)	4.29 (109)	13.39 (340)	3.94 (100)	4.72 (120)	26.2 (11.9)

Table Note:

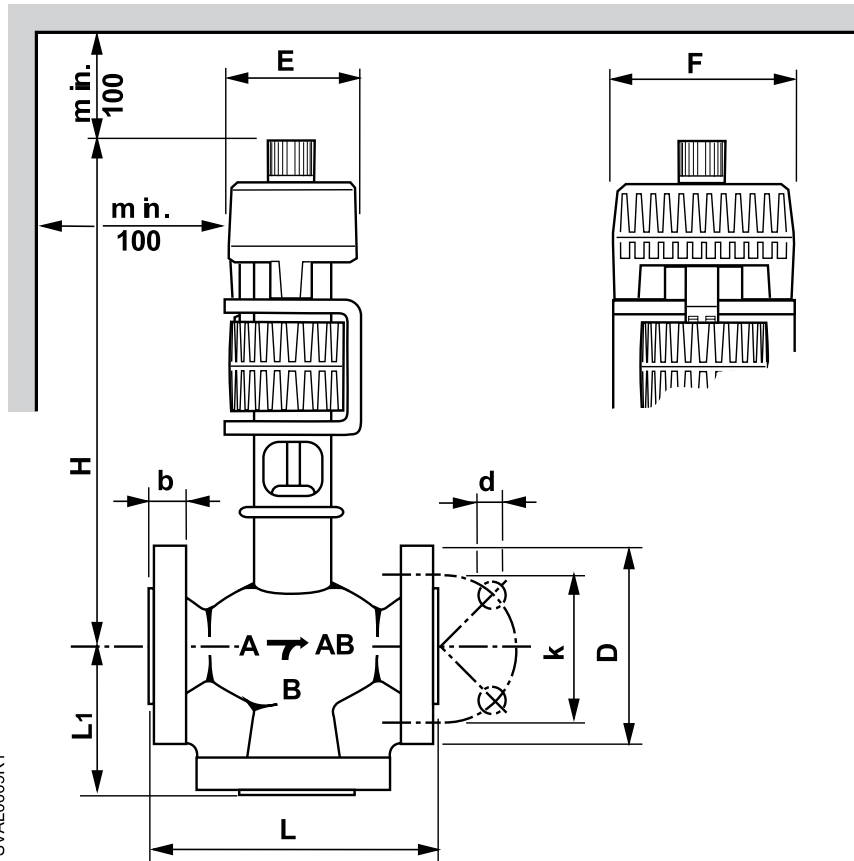
*When used as a straight-through valve

D-177

Valves

Dimensions and Weights

MX.461...U Flanged Valves with Electronics Module



SVAL0009R1

Dimensions shown in inches (mm).

D-178

Valves

Part No.	L	L1	D	b	k	d 4X	H	E	F	Weight lb. (kg)
MXF461.65-50U	11.42 (290)	4.92 (125)	7.00 (177.8)	0.88 (22.4)	5.50 (139.7)	0.75 (19.05)	15.43 (392)	3.15 (80)	3.94 (100)	63.1 (28.6)

Control Valves for Hot and Chilled Water with ZM Signal Module



Magnetic M3P..FY
Mixing Valve with Actuator.

Description

The Magnetic M3P..FY valve uses a magnetic actuator to positively position with extremely high speed and accuracy. The combination of >1000:1 resolution and full range positioning in less than one second allows exceptional loop stability and reaction time.

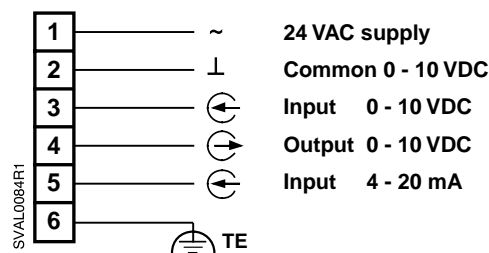
Features

- Fast positioning time (< 1 second)
- >1000:1 resolution
- Magnetic actuation
- No periodic maintenance
- Manual override
- Built-in position control and feedback
- Low friction, heavy-duty and maintenance free

Applications

The Magnetic M3P..FY Mixing Valve is designed for modulating control of chilled water and low-pressure hot water, especially in HVAC systems. The valves are also configured for straight-through applications. The valves may be shipped with flanged fittings: 2BN is two-way with Companion Flange Kit, and 3BN is three-way with Companion Flange Kit. The valves are used in closed loop applications.

Wiring Diagram



D-179

Valves

M3P...FY Valves Specifications

Operating Voltage 24 Vac
 Nominal Power
 3" 80 VA (20w)
 4" 120 VA (30w)
 Frequency 50/60 Hz +15/-10%
 Control Signals 0 to 10 Vdc or 4 to 20 mA
 Position Feedback Signal 0 to 10 Vdc
Materials
 Body Cast Iron
 Plug CrNi Steel
 Seat Brass
Packing
 Normal Duty EDPM (O-ring)

Max. Pressure
 p_emax 145 psig
 Max. Differential Pressure 44 psi (3 in.)
 29 psi (4 in.)
Water Temperature 35° to 248°F (2° to 120°C)
Ambient Temperature 35° to 122°F (2° to 50°C)
Resolution >1000:1
Position with Actuator De-energized A → AB Closed
Positioning Time <1 Second
Agency Approvals UL873, cUL, CSA C22.2 No. 24
Flow Characteristic Linear
Environmental Protection NEMA Type 1

Sizing

Part No.	Valve Size (in.)	Cv	Max. Differential Pressure and Close-off		Power for Transformer Sizing (VA)	Power Consumption (W)	Wire Gauge (AWG)		
			(psi)	(bar)			16	14	12
							Max. Wiring Length (ft.)		
M3P80FY	3	93	44	3	80	20	33	52	89
M3P100FY	4	152	29	2	120	30	20	33	56

D-180

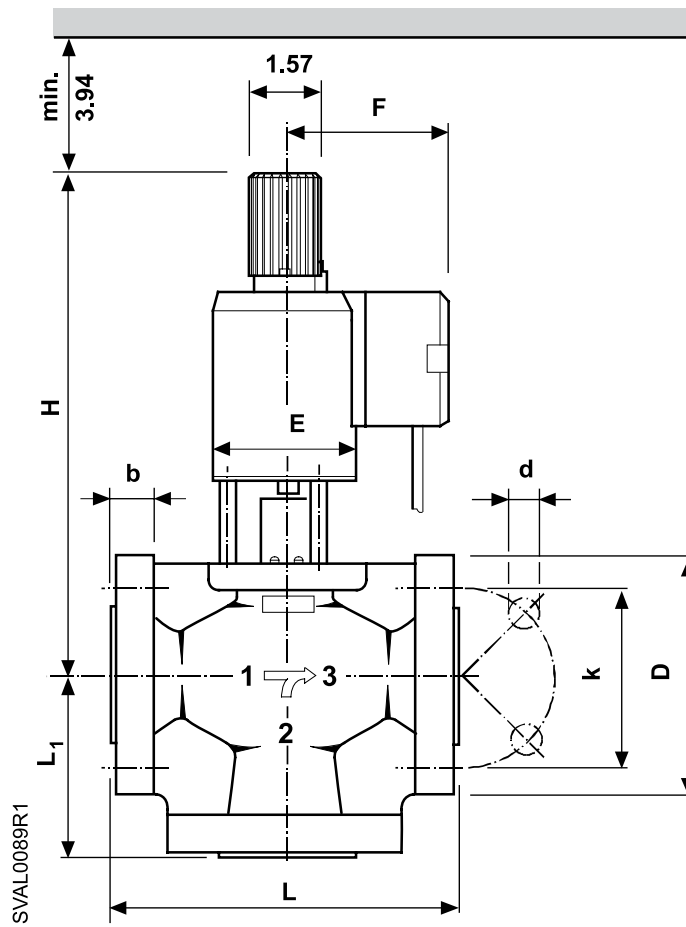
M3P...FY Valves with ZM Module Product Ordering

Description	Cv	Part No.
Without Flanges		
3" 3-way, Pilot Position	93	M3P80FY
4" 3-way, Pilot Position	152	M3P100FY
With Flanges		
3" 2-way, Pilot Position	93	M3P80FY/2BN
4" 2-way, Pilot Position	152	M3P100FY/2BN
3" 3-way, Pilot Position	93	M3P80FY/3BN
4" 3-way, Pilot Position	152	M3P100FY/3BN

Valves

Dimensions and Weights

M3P..FY Control Valve



Dimensions shown in inches (mm).

Part No.	L	L1	D	b	k	d	H	E	F	Weight lb. (kg)
M3P80FY	12.20 (310)	5.51 (140)	7.87 (200)	0.87 (22)	6.30 (160)	8x 0.71 (8x18)	20.00 (508)	5.71 (145)	4.88 (124)	100.0 (45.5)
M3P100FY	13.78 (350)	6.30 (160)	8.66 (220)	0.94 (24)	7.09 (180)	8x 0.71 (8x18)	22.44 (570)	5.71 (145)	4.88 (124)	130.0 (59.0)

Table Note:

Counter flanges are not supplied. Flange dimensions to DIN2533, PN16

D-182

Valves

A Winning Combination!

Our 2-Way Ball Valves with Stainless Steel or Chrome Trim and OpenAir™ actuators team up to offer tight flow control and the ability to close-off against very high differential pressure.

- 0.4 to 160 Cv range enables better sizing of valves to the job requirements
- 200 psi close-off for all line sizes and actuators

With better sizing, superior long-life reliability, and economical pricing these valve assemblies are ready to meet specifications for more applications.

**SIEMENS**

Modulating Control Valves

with Magnetic Actuators, Positioning Control and Position Feedback for Hot Water and Steam



MVF461H Series Magnetic Control Valve.

Description

MVF461H Series Modulating Control Valves are control valves with magnetic actuators, for modulating control of hot water, high temperature hot water, and steam.

Features

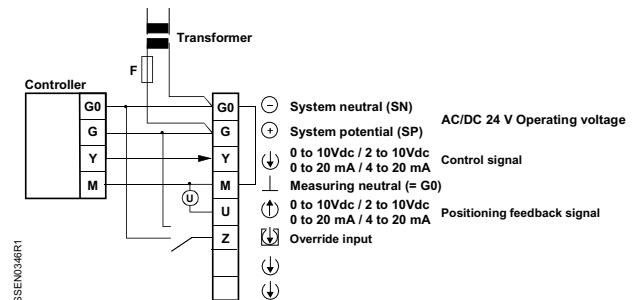
- Fast positioning time (< 2 seconds)
- Selectable valve characteristic: Equal percentage or linear
- Selectable standard interface: 0/2 to 10 Vdc or 0/4 to 20 mA
- High resolution (>1000:1)
- High rangeability
- Wear-free inductive stroke measurement
- Spring return A → AB closed when de-energized
- Positioning control and position feedback signal
- Low-friction, heavy-duty and maintenance-free

Applications

The MVF461H... Control Valves are through-port valves with magnetic actuators. The actuator is equipped with an electronics module for positioning control and position feedback. If the power is off, the valve control path A → AB is closed.

The short positioning time, high resolution and high rangeability make these valves ideal for proportional control of district heating stations, and heating applications using high temperature hot water and steam.

Wiring Diagram



MVF461H Modulating Control Valve Specifications

Electrical

Low-voltage Use OnlyClass 2 (SELV, PELV)

24 Vac

Operating Voltage..... 24 Vac +20/-15%
 Frequency 45 to 65 Hz
 Typical Power Consumption..... See Sizing Table
 Standby <1 W (Valve Fully Closed)
 Nominal Apparent Power..... See Sizing Table
 Suitable Fuse Slow

24 Vdc

Operating Voltage..... 20 to 30 Vdc

Functional Data of Actuator

Input

Positioning Signal Y 0/2 to 10 Vdc, 0/4 to 20mA
 Impedance
 0/2 to 10 Vdc..... 100 kΩ//5nF
 0/4 to 20 mA 240 Ω//5nF

Forced Control

Impedance..... 22 kΩ
 Closing the Valve (Z Connected to G0)..... <1 Vac; <0.8 Vdc
 Opening the valve (Z Connected to G0)..... > 6 Vac; >5 Vdc
 No Function (Z Not Wired)..... Positioning Signal Y Active

Output

Position Feedback Signal Voltage..... 0/2 to 10 Vdc;
 Load Resistance > 500Ω
 Current..... 0/4 to 20 mA;
 Load Resistance < 500Ω
 Stroke Measurement..... Inductive
 Nonlinearity ±3% of End Value

Functional Data of Valve

Nominal Pressure.....ANSI 125 (PN 16)
 Perm. Operating Pressure¹ Water up to 248°F (120°C)
 232 psig (16 bar)
 Water Above 248°F (120°C):
 188 psig (13 bar)
 Saturated Steam: 130 psig (9 bar)

Pressure Differential $\Delta p_{max} / \Delta ps$ 145 psi (10 bar)

Materials

Body Nodular Cast Iron
 Cover Flange..... Nodular Cast Iron
 Seat/Inner Valve Stainless Steel

Packing

Normal Duty EDPM (O-ring)

Electrical Connections

Cable Entries..... 3 x M20 x 1.5 or PG13.5/G1/2
 Connection Terminals.....Screw Terminals for up to 12 AWG Wires
 (0.75 mm² Min. Cross-sectional Area³)

Max. Pressure

Max. Differential Pressure 145 psi

Media Temperature

..... 34° to 356°F (1° to 180°C)

Ambient Conditions

Temperature
 Operation and Storage 23° to 113°F (-5° to 45°C)
 Transport -13° to 158°F (-25° to 70°C)
 Humidity 5 to 95% rh (Non-condensing)

Resolution

..... 1000:1

Position with Actuator De-energized

..... A → AB Closed

Positioning Time

..... <2 Seconds

Approvals

..... IP31 to IEC 529
 Conforms to CE Requirements, UL 873,
 Certified to Canadian Standard C22.2, No. 24, C-Tick N-474,
 PED 97/23/EC: Pressure-carrying Parts
 Par. 1, Section. 2.1.4 / Par. 3, Section 3 Fluid Group 2

Flow Characteristic

..... Equal Percentage or Linear²

Environmental Protection

.....NEMA Type 1

Notes:

¹Tested at 1.5 x PN (24 bar), similar to DIN 3230-3

²Can be selected via DIP switch.

³In case of strong vibrations, use high-flex stranded wires.

D-184

Valves

Sizing

Part No.	Line Size (in.)	Cv	Max. Differential Pressure and Close-off (psi)	Power for Transformer Sizing (VA)	Power Consumption (W)	Slow Fuse	Wire Gauge (AWG)		
							16	14	12
							Max. Wiring Length (ft.)		
MVF461H15-0.6	1/2	0.7	145	33	15	3.15	130	215	360
MVF461H15-1.5	1/2	1.8	145	33	15	3.15	130	215	360
MVF461H15-3	1/2	3.5	145	33	15	3.15	130	215	360
MVF461H20-5	3/4	5.9	145	33	15	3.15	130	215	360
MVF461H25-8	1	9.4	145	33	15	3.15	130	215	360
MVF461H32-12	1-1/4	14.0	145	43	20	4	100	165	260
MVF461H40-20	1-1/2	23.3	145	65	20	6.3	100	165	260
MVF461H50-30	2	35.0	145	65	26	6.3	65	100	165

MVF461H Modulating Control Valve Product Ordering

Valve Size (in)	Cv	Part No.
Without Flanges		
1/2	0.7	MVF461H15-0.6
1/2	1.8	MVF461H15-1.5
1/2	3.5	MVF461H15-3
3/4	5.9	MVF461H20-5
1	9.4	MVF461H25-8
1-1/4	14.0	MVF461H32-12
1-1/2	23.3	MVF461H40-20
2	35.0	MVF461H50-30
With NPT Flanges		
1/2	0.7	MVF461H15-0.6-N
1/2	1.8	MVF461H15-1.5-N
1/2	3.5	MVF461H15-3-N
3/4	5.9	MVF461H20-5-N
1	9.4	MVF461H25-8-N
1-1/4	14.0	MVF461H32-12-N
1-1/2	23.3	MVF461H40-20-N
2	35.0	MVF461H50-30-N
With Weld Flanges		
1/2	0.7	MVF461H15-0.6-W
1/2	1.8	MVF461H15-1.5-W
1/2	3.5	MVF461H15-3-W
3/4	5.9	MVF461H20-5-W
1	9.4	MVF461H25-8-W
1-1/4	14.0	MVF461H32-12-W
1-1/2	23.3	MVF461H40-20-W
2	35.0	MVF461H50-30-W

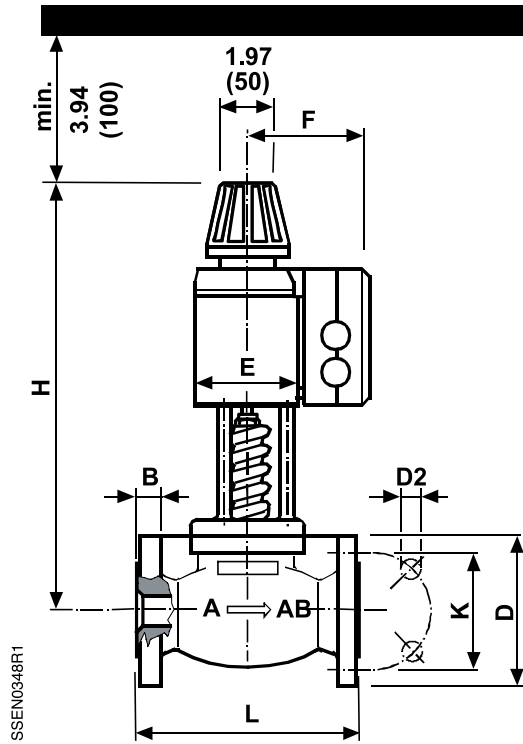
Ordering Notes:

- When placing an order, specify the quantity, product number and description.
Example: 1 MVF461H15-0.6 valve
- The valve body and magnetic actuator assemblies cannot be separated.

D-185

Valves

Dimensions and Weights



Dimensions shown in inches (mm).

D-186

Valves

Part No.	DN	L	D	D2	B	K	H	E	F	Weight lb. (kg)
MVF461H15-0.6	15	5.12 (130)	3.74 (95)	0.16x0.55 (4x14)	0.55 (14)	2.56 (65)	13.4 (340)	3.15 (80)	4.53 (115)	18.3 (8.3)
MVF461H15-1.5	15	5.12 (130)	3.74 (95)	0.16x0.55 (4x14)	0.55 (14)	2.56 (65)	13.4 (340)	3.15 (80)	4.53 (115)	18.3 (8.3)
MVF461H15-3	15	5.12 (130)	3.74 (95)	0.16x0.55 (4x14)	0.55 (14)	2.56 (65)	13.4 (340)	3.15 (80)	4.53 (115)	18.3 (8.3)
MVF461H20-5	20	5.91 (150)	4.13 (105)	0.16x0.55 (4x14)	0.63 (16)	2.95 (75)	13.3 (339)	3.15 (80)	4.53 (115)	19.6 (8.9)
MVF461H25-8	25	6.30 (160)	4.53 (115)	0.16x0.55 (4x14)	0.63 (16)	3.35 (85)	13.6 (346)	3.15 (80)	4.53 (115)	22.1 (10.0)
MVF461H32-12	32	7.09 (180)	5.51 (140)	0.16x0.71 (4x18)	0.71 (18)	3.94 (100)	15.12 (384)	3.94 (100)	4.92 (125)	34.6 (15.7)
MVF461H40-20	40	7.87 (200)	5.91 (150)	0.16x0.71 (4x18)	0.71 (18)	4.33 (110)	15.79 (401)	3.94 (100)	4.92 (125)	39.2 (17.8)
MVF461H50-30	50	9.05 (230)	6.50 (165)	0.16x0.71 (4x18)	0.79 (20)	4.92 (125)	17.58 (449)	4.92 (125)	5.43 (138)	60.0 (27.2)

Table expressed in inches (mm).

Modulating Control Valves

with Magnetic Actuators, Positioning Control and Position Feedback for Domestic Water



MXG461B Series Modulating Control Valve.

Description

The MXG461B Modulating Control Valve is a control valve with magnetic actuator, for modulating control of domestic water, cold water and hot water systems.

Features

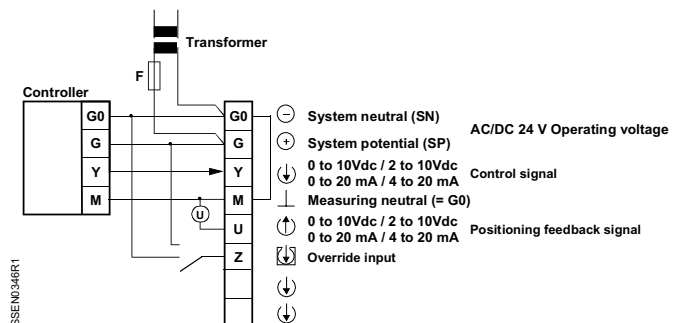
- Fast positioning time (< 2 seconds)
- Selectable valve characteristic: Equal percentage or linear
- Selectable standard interface: 0/2 to 10 Vdc or 0/4 to 20 mA
- High resolution (>1000:1)
- High rangeability
- Wear-free inductive stroke measurement
- Spring return A → AB closed when de-energized
- Positioning control and position feedback signal
- Low-friction, heavy-duty and maintenance-free

Applications

The MXG461B... Modulating Control Valves are through-port or mixing valves with magnetic actuators. The actuator is equipped with an electronics module for positioning control and position feedback. If the power is off, the valve control path A → AB is closed.

The short positioning time, high resolution and high rangeability make these valves ideal for modulating control of domestic, hot and cold water systems.

Wiring Diagram



MXG461B Modulating Control Valve Specifications

Electrical

Low-voltage Use OnlyClass 2 (SELV, PELV)

24 Vac

Operating Voltage.....24 Vac +20/-15%
 Frequency45 to 65 Hz
 Typical Power Consumption.....See Table 1
 Standby<1 W (Valve Fully Closed)
 Nominal Apparent Power.....See Sizing Table
 Suitable FuseSlow, See Table 1

24 Vdc

Operating Voltage.....20 to 30 Vdc

Functional Data of Actuator

Input

Positioning Signal Y0/2 to 10 Vdc or 0/4 to 20mA
 Impedance
 0/2 to 10Vdc.....100 kΩ/5nF
 0/4 to 20 mA240 Ω/5nF

Forced Control

Impedance.....22 kΩ
 Closing the Valve (Z Connected to G0).....<1 Vac; <0.8 Vdc
 Opening the Valve (Z Connected to G0)> 6 Vac; >5 Vdc
 No Function (Z Not Wired).....Positioning Signal Y Active

Output

Position Feedback Signal Voltage.....0/2 to 10 Vdc;
 Load Resistance > 500Ω
 Current.....0/4 to 20 mA;
 Load Resistance < 500Ω
 Stroke Measurement.....Inductive
 Nonlinearity±3% of End Value

Functional Data of Valve

Nominal Pressure.....ANSI 125 (PN 16)
 Operating Pressure $p_{o,max}^1$ 232 psi (16 bar)
 Pressure Differential $Dp_{v,max}$See Sizing Table.
 Leakage.....A → AB Maximum 0.05% Cv
 B → AB Depends on Application Data
 (0.2% Cv)
 Water Temperature².....-4 to 248°F (-20 to 120°C)
 Valve Characteristic³Equal Percentage or Linear, Optimized
 Near the Closing Point

Resolution1:1000

Type of Operation.....Modulating

Position De-energized.....A → AB Closed

OrientationUpright to Horizontal

Positioning Time.....< 2 Seconds

Materials

BodyRed Bronze
 Cover Flange.....Red Bronze
 Seat/Inner ValveStainless Steel

Packing

Normal DutyEPDM (O-ring)

Pipe ConnectionsScrewed Fittings, Bronze/Brass

Electrical Connections

Cable Entries.....3 x M20 x1.5 or PG13.5/G1/2
 Connection Terminals.....Screw Terminals for 12 AWG Wires
 Min. Cross-sectional Area⁴18 ga. AWG
 Max. Cable LengthRefer to Sizing Table.

Ambient Conditions

Temperature
 Operation and Storage23 to 113°F (-5 to 45°C)
 Transport-13 to 158°F (-25 to 70°C)
 Humidity5 to 95% rh

Agency Approvals

.....IP31 to IEC 529
 Conforms to CE Requirements, UL 873,
 Certified to Canadian Standard C22.2 No. 24, C-Tick N-474,
 PED 97/23/EC: Pressure-carrying Parts,
 Par. 1, Section. 2.1.4 / Par. 3, Section 3, Fluid Group 2

Flow CharacteristicsEqual Percentage or Linear

Notes:

¹ Tested at 1.5 x PN (24 bar), similar to DIN 3230-3

² For medium temperatures <32°F (0°C), the Z366 stem heating element is required.

³ Can be selected via DIP switch.

⁴ In case of strong vibrations, use high-flex stranded wires.

D-188

Valves

Sizing

Part No.	Valve Size (in.)	Cv	Max. Close-off Pressure (psi)	Power for Transformer Sizing (VA)	Power Consumption (W)	Slow Fuse	Wire Gauge (AWG)		
							16	14	12
MXG461B15-0.6	1/2	0.7	145	33	15	3.15	130	215	360
MXG461B15-1.5	1/2	1.8	145	33	15	3.15	130	215	360
MXG461B15-3	1/2	3.5	145	33	15	3.15	130	215	360
MXG461B20-5	3/4	5.8	116	33	15	3.15	130	215	360
MXG461B25-8	1	9.3	102	33	15	3.15	130	215	360
MXG461B32-12	1-1/4	14	87	43	20	4	100	165	260
MXG461B40-20	1-1/2	23	87	43	20	4	100	165	260
MXG461B50-30	2	35	87	65	22	6.3	65	100	185

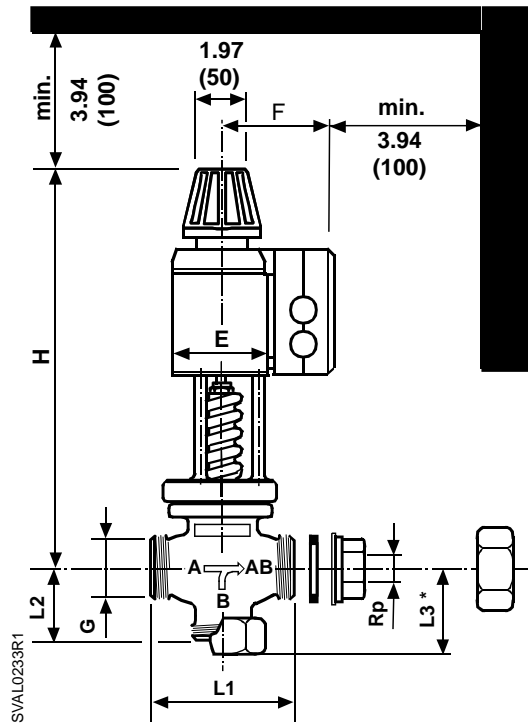
MXG461B Modulating Control Valve Product Ordering

Valve Size (in)	Cv	Part No.
1/2	0.7	MXG461B15-0.6
1/2	1.8	MXG461B15-1.5
1/2	3.5	MXG461B15-3
3/4	5.8	MXG461B20-5
1	9.3	MXG461B25-8
1-1/4	14	MXG461B32-12
1-1/2	23	MXG461B40-20
2	35	MXG461B50-30

Ordering Notes:

- When placing an order, specify the quantity, product number and description.
Example: 1 MXG461B15-0.6 valve and 1 Z366 stem heater
- The valve body and magnetic actuator assemblies cannot be separated. The brass/bronze fittings are included. The Z366 stem heater must be ordered separately.
- The screwed fittings and gaskets are supplied with these valves.

Dimensions and Weights



Dimensions shown in inches (mm).

D-190

Valves

Part No.	DN		G (in)	L1	L2	L3	H	E	F	Weight lb. (kg)
	(mm)	(in)								
MXG461B15-0.6	15	Rp x	G1B	3.15 (80)	1.67 (42.5)	1.97 (50)	13.4 (340)	3.15 (80)	4.53 (115)	15.65 (7.1)
MXG461B15-1.5	15	Rp x	G1B	3.15 (80)	1.67 (42.5)	1.97 (50)	13.4 (340)	3.15 (80)	4.53 (115)	16.09 (7.3)
MXG461B15-3	15	Rp x	G1B	3.15 (80)	1.67 (42.5)	1.97 (50)	13.4 (340)	3.15 (80)	4.53 (115)	16.09 (7.3)
MXG461B20-5	20	Rp x	G1xB	3.74 (95)	2.07 (52.5)	2.36 (60)	13.3 (339)	3.15 (80)	4.53 (115)	16.97 (7.7)
MXG461B25-8	25	Rp 1	G1xB	4.33 (110)	2.22 (56.5)	2.52 (64)	13.6 (346)	3.15 (80)	4.53 (115)	18.73 (8.5)
MXG461B32-12	32	Rp 1x	G2B	4.92 (125)	2.66 (67.5)	2.95 (75)	15.12 (384)	3.94 (100)	4.92 (125)	28.22 (12.8)
MXG461B40-20	40	Rp 1x	G2xB	5.51 (140)	3.17 (80.5)	3.66 (93)	15.79 (401)	3.94 (100)	4.92 (125)	32.19 (14.6)
MXG461B50-30	50	Rp 2	G2xB	6.69 (170)	3.68 (93.5)	4.2 (108)	17.58 (449)	3.94 (100)	4.92 (125)	41.00 (18.6)

Table expressed in inches (mm).

Table Notes:

- A: External thread G...B to ISO228/1
- DN: Internal thread Rp to ISO7/1
- Fittings to ISO 49/DIN 2950 (supplied complete with flange gaskets)

Terminal Modules for Magnetic Valves



ZM, ZM../A Terminal Modules for Magnetic Valves.

Description

ZM../A Terminal Modules are signal transducers/power amplifiers. They convert a 0 to 10 Vdc or 4 - 20 mA control signal and a 24 Vac power supply into a 0 to 20 Vdc phase cut signal.

Applications

ZM../A Terminal Modules are for use with Magnetic Valves only.

D-191

Valves

Terminal Module Specifications

Supply Voltage24 Vac +15/-10%, Class 2, 50/60 Hz
Current ConsumptionMax. 1 mA @ 0 to 10 Vdc
 (Input Impedance 2 x 56 kΩ)
Control Signals0 to 10 Vdc, 4 to 20 mA, 0 to 20 Vdc Phase Cut
Shunt Resistance (4 to 20 mA) 150 Ohms
Mean Operating DataRefer to Appropriate Valve.
Housing MaterialAluminum
Connection Terminals For max. 1 x 12 AWG or 2 x 14 AWG
Ambient Temperature
 ZM100/A, ZM110, ZM120/A36 to 122°F (2 to 50°C)
 ZM101/A, ZM111, ZM121/A..... -40 to 122°F (-40 to 50°C)
 ZM200/A, ZM210, ZM220/A36 to 122°F (2 to 50°C)

Dimensions
 ZM1.. 1.6"H x 2.4"W x 3.0"D
 ZM2.. 1.6"H x 3.5"W x 4.5"D
Shipping Weights
 ZM100/A, ZM111, ZM120/A.....0.5 lb.
 ZM101/A, ZM121/A0.5 lb.
 ZM1100.4 lb.
 ZM200/A.....1.0 lb.
 ZM2100.8 lb.
 ZM220/A.....1.0 lb.
Agency ApprovalsConforms to CE Requirements

Terminal Module Product Ordering

Description	Part No.
Terminal Module. Converts 0-10 Vdc input to 0-20 Vdc phase cut output.	
• up to 40W, IP30 rated housing	ZM100/A
• up to 40W, IP54 rated housing	ZM101/A
• up to 120W, IP30 rated housing	ZM200/A
Terminal Module. For straight through 0-20 Vdc electrical housing only.	
• up to 40W, IP30 rated housing	ZM110
• to 40W, IP54 rated housing	ZM111
• up to 120W, IP30 rated housing	ZM210
Terminal Module. Converts 0-20 mA/24 Vdc input to 0-20 Vdc phase cut output.	
• up to 40W, IP30 rated housing	ZM120/A
• to 40W, IP54 rated housing	ZM121/A
• up to 120W, IP30 rated housing	ZM220/A



D-192

Valves

Accessories & Service Kits

D-217



SIEMENS

Angle/Flared/Sequence/Changeover Service Valves



D-193

Valves

In this section, you will find flared, angled, sequence and changeover valves for use in service applications.

Powermite 656 Series Globe

Two-Way Valves

Flared type, Normally Open or Normally Closed



656 Powermite
Two-Way Normally Open Valve.



656 Powermite
Two-Way Normally Closed Valve.

Description

Designed to control the flow of both water and steam, the Powermite 656 Series Powermite Two-way Valves are available with normally open or normally closed action.

Features

- Modified equal percentage throttling characteristics
- Replaceable disc for tight shutoff
- Dual sealing feature for the valve stem
- Disassembly of the valve top, inspection, and upper packing replacement without system shutdown or valve body removal
- Actuator can be rotated to facilitate piping control air from different directions

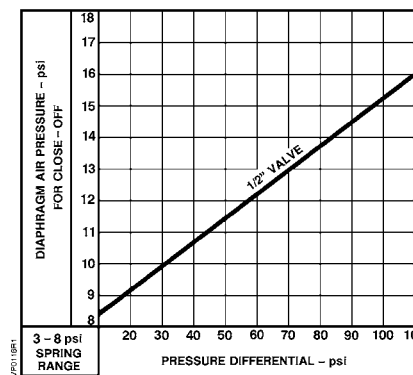
Applications

The Powermite 656 Series Valves are recommended for use with hot or chilled water and steam for control of convectors, fan coil units, radiation, reheat coils, and similar terminal unit applications. The dual sealing packed design is excellent for applications for higher-pressure systems encountered in high rise buildings. The compact size is excellent for use when space is limited.

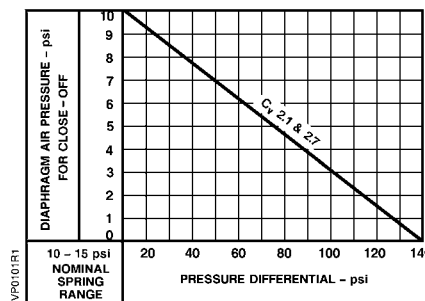
D-195

Valves

Nominal Close-off Ratings



Normally Open.



Normally Closed.

Powermite 656 Series Globe

Three-Way Water Mixing Valves

Flared type



656 Powermite
Three-Way Water Mixing Valve.

Description

Designed for water mixing applications, the 656 Powermite Three-way Mixing Valve is a high-grade bronze body forged with connections for 1/2-inch OD SAE flare fittings.

Features

- Enclosed actuator protects spring, diaphragm
- Compact size
- Actuator can be rotated to facilitate air connection
- Modified equal percentage NO port characteristic
- Dual valve stem packing allows upper packing ring replacement without system shutdown

Applications

The 656 Powermite Three-way Water Mix Valve are recommended for mixing of hot or chilled water for convectors, fan coil units, radiation, reheat coils and similar terminal units which require water mixing. The dual sealing packed design is excellent for applications for higher-pressure systems encountered in high rise buildings. The compact size is excellent for use when space is limited.

D-197

Valves

656 Powermite Three-Way Specifications

Valve Size	1/2" (15 mm)	Effective Diaphragm Area	3.4 in. ² (22 cm ²)
Valve Body Style	Flared End	Max. Diaphragm Pressure	30 psi (207 kPa)
Valve Action	Upper Seat NC/Lower Seat NO	Air Connection	1/8" NPT
Stem Travel	3/8" (10 mm)	Controlled Medium	Water, Glycol Solution
Valve Body Material	Bronze	Max. Medium Temperature	250°F (121°C)
Valve Body Rating	ANSI Class 250	Max. Differential Pressure for Modulating Service	
Standard Spring Ranges with 10 psi (69 kPa)		Between Inlets.....	25 psi (172 kPa)
Differential Pressure.....	3 to 8 psi (21 to 55 kPa)	Between Inlet & Outlet.....	25 psi (172 kPa)
	10 to 15 psi (69 to 103 kPa)	Shipping Weight	2.0 lb. (0.9 kg)
Nominal Spring Span	5 psi (35 kPa)		

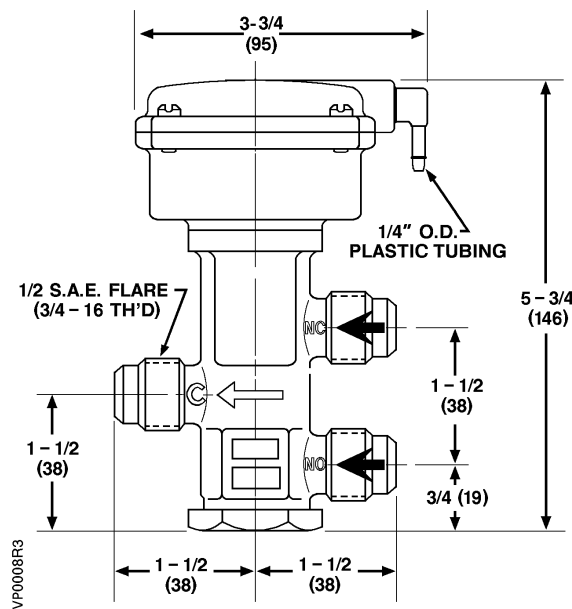
656 Powermite Three-Way Product Ordering

Valve Size	Cv	Spring Range	Part No.
1/2" (15 mm)	2.5	10 to 15 lb. (69 to 103 kPa)	656-0009
1/2" (15 mm)	2.5	3 to 8 lb. (21 to 55 kPa)	656-0010
1/2" (15 mm)	1.5	3 to 8 lb. (21 to 55 kPa)	656-0011

D-198

Valves

Dimensions and Weights



Dimensions shown in inches (mm).

Powermite 656 Series Globe

Two-Way Angle Union Valves

Normally Open



656 Powermite Two-Way Normally Open Valve with Angle Union Outlet.

Description

Designed to control the flow of both water and steam, the Powermite 656 Series Two-way Angle Union Valves are available with normally open action.

Features

- Enclosed actuator housing to protect components
- Small size allows easier installation in tight spaces
- Replaceable soft disc provides tight shut-off
- Dual sealing feature for the valve stem
- Actuator can be rotated to facilitate piping control from different directions
- Stainless steel valve stem to reduce friction and corrosion

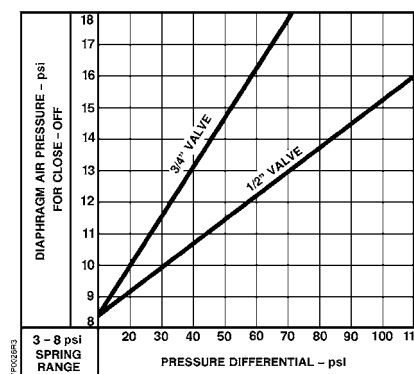
Applications

The Powermite 656 Series Angle Union Valves are recommended for control of hot or chilled water for controlling convectors, fan coil units, radiation, reheat coils, and similar terminal unit applications. Designed with dual sealing packed construction, this valve can be used in systems having relatively high pressures. Typical uses are sites where efficient economical control is desired. The compact size is excellent where space is limited.

D-199

Valves

Nominal Close-off Ratings



656 Powermite Two-Way Specifications

Valve Size 1/2" (15 mm), 3/4" (20 mm)
 Valve Body Style Angle Union
 Valve Action Normally Open (NO)
 Valve Stroke 1/4" (6 mm)
 Valve Body Rating ANSI Class 125

Diaphragm
 Effective Area 3.4 in.² (22 cm²)
 Material Silicone Rubber
 Ambient Temperature Range 30 to 160°F (-1 to +71°C)
 Maximum Air Pressure 30 psi (207 kPa)

Maximum Medium Temperature 250°F (121°C)
 Controlled Medium Steam, Water, Ethylene Glycol Solution

Maximum Medium Inlet Pressure
 Water Refer to Valve Body Rating Table in Reference Section.
 Saturated Steam 15 psi (103 kPa)

Maximum Recommended Differential Pressure for Modulating Service
 Water 20 psi (138 kPa)
 Seam 15 psi (102 kPa)

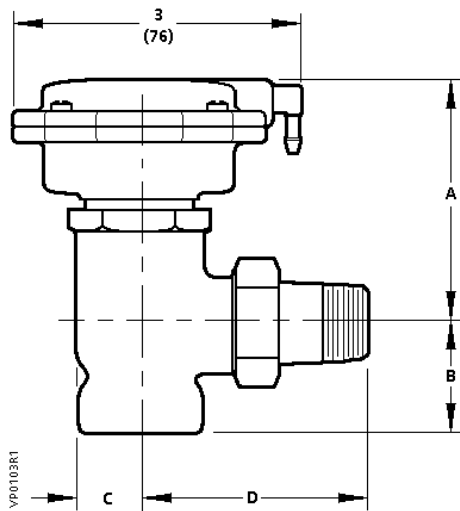
656 Powermite Two-Way Product Ordering

Valve Size	Cv	Close-offs	Spring Range	Part No.
1/2" (15 mm)	2.1	95 psi (655 kPa)	3 to 8 psi (21 to 55 kPa)	656-0017
1/2" (15 mm)	2.1	60 psi (414 kPa)	5 to 10 psi (34 to 69 kPa)	656-0019
3/4" (20 mm)	4.6	50 psi (345 kPa)	3 to 8 psi (21 to 55 kPa)	656-0018
3/4" (20 mm)	4.6	35 psi (241 kPa)	5 to 10 psi (34 to 69 kPa)	656-0021

D-200

Dimensions and Weights

Valves



Dimensions shown in inches (mm).

Valve Size	Dimensions				Weight
	A	B	C	D	
1/2" (15 mm)	2-15/16" (75 mm)	1-1/4" (32 mm)	13/16" (21 mm)	2-5/8" (67 mm)	2.2 lb. (1.0 kg)
3/4" (20 mm)	3-1/16" (78 mm)	1-5/16" (33 mm)	1-1/8" (29 mm)	2-7/8" (73 mm)	2.7 lb. (1.2 kg)

Powertop 658 Series Globe

Two-Way Angle Union Valves

Normally Open



658 Powertop Two-Way
Normally Open Valve with Angle Union Outlet.

Description

Designed to control the flow of steam, water, and ethylene glycol solutions, the Powertop 658 Series Two-way Angle Union Valves are available with normally open action.

Features

- Replaceable soft disc provides tight shut-off
- Actuator can be rotated to facilitate piping control from different directions
- Stainless steel valve stem to reduce friction and corrosion
- Large diaphragm area for control accuracy and tight close-off
- Equal percentage plugs and long stroke for controllability
- Removable actuator for ease of servicing

Applications

The Powertop 658 Series Angle Union valves are recommended for control of steam, water and ethylene glycol solutions for controlling unit ventilators, reheat coils, fan coil units, induction units, and duct coils.

D-201

Valves

Powertop 658 Series Globe

Sequence and Changeover Valves



658 Powertop Sequence Valve.

Description

Designed to select and modulate the flow of either hot or chilled water, without mixing, for radiant panel and similar applications, the 658 Powertop Sequence and Changeover Valves are designed with 2 inlets and one outlet for the sequence valve and with one inlet and 2 outlets in the changeover valve.

Features

- Stainless steel stem for smooth operation and rugged durability
- Large diaphragm area for control accuracy and tight close-off
- Removable actuator for ease of servicing
- Durable actuator made to eliminate electrolytic action
- Replaceable disc assemblies
- Matched sequencing of control and changeover

Applications

The 658 Powertop Sequence and Changeover Valves are used for the selection and modulating of hot or chilled water through radiant panels connected to separate hot water and chilled water (4-pipe) systems.

D-203

Valves

Control Schedule

		NOMINAL CONTROL SCHEDULE						
CONTROL PRESSURE -- psig		2	4	6	8	10	12	14
SEQUENCE VALVE	OPEN	HOT WATER SUPPLY					CHILLED WATER SUPPLY	
	CLOSED							
CHANGEOVER VALVE	OPEN	HOT WATER RETURN					CHILLED WATER RETURN	
	CLOSED							

VP0060951

658 Powertop Specifications

Valve Size	1/2" (15 mm)
Valve Body Style	Flared End
Flow Characteristics	
Sequence	Equal Percentage
Changeover	Quick-opening
Valve Type	
Sequence	2 Inlets/1 Outlet
Changeover	1 Inlet/2 Outlets
Valve Action	NO/Hot to Common
	NC/Cold to Common
Stem Travel	13/32" (10 mm)
Valve Body Rating	ANSI Class 250

Materials	
Valve Body	Bronze
Disc	Buna-N
Stem	Stainless Steel
Packing	EP Rubber
Diaphragm Area	11 in. ² (71 cm ²)
Max. Diaphragm Pressure	30 psi (207 kPa)
Controlled Medium	Water, Glycol Solution
Max. Medium Temperature	250°F (121°C)
Maximum Inlet Pressure	Refer to Reference Section
Max. Differential Pressure Between Hot and Cold Ports	
Sequence	50 psi (350 kPa)
Changeover	10 psi (69 kPa)
Max. Differential Pressure for Modulating Service	
Sequence Valve	25 psi (170 kPa)
Ambient Operating Temperature	35 to 140°F (2 to 60°C)

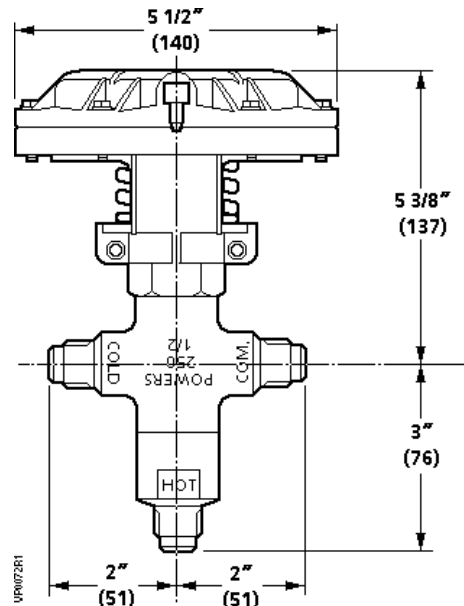
658 Powertop Product Ordering

Valve Size	Valve Type	Cv	Close-offs	Part No.
1/2" (15 mm)	Sequence	1.5	50 psi (344 kPa)	658-0050
1/2" (15 mm)	Sequence	2.5	50 psi (344 kPa)	658-0051
1/2" (15 mm)	Changeover	2.5	10 psi (68 kPa)	658-0052

D-204

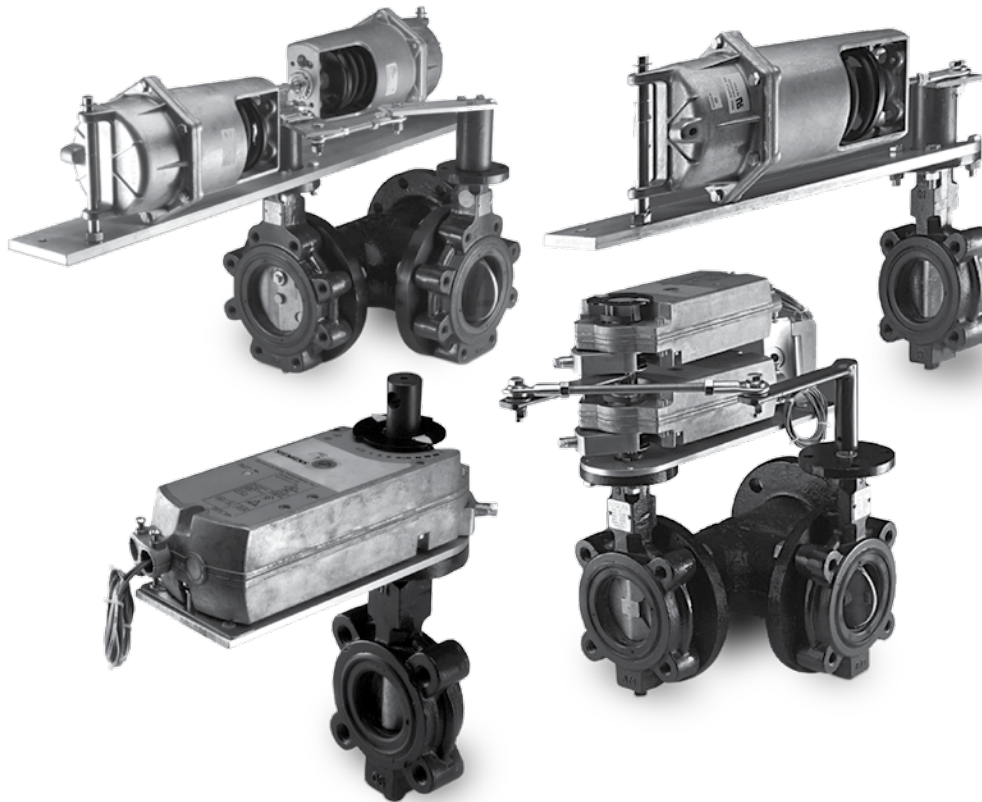
Valves

Dimensions and Weights



Dimensions shown in inches (mm).

Resilient Seat Butterfly Valves



D-205

Valves

Resilient Seat Butterfly Valves are now available in sizes up to 20-inches. Excellent for isolation applications, two-way and three-way Butterfly Valves provide 2-position (On/Off), floating and modulating control. Three-way Butterfly Valves are available in a variety of configurations.

This catalog contains information on sizes 2 through 12-inches. For larger sizes, please contact Customer Care.

Valve Size	2-Way	3-Way	Pneumatic	Spring Return Electronic	Non-spring Return Electronic	In Catalog
2 to 12"	•	•	•	2 to 4"	2 to 12"	•
14 to 20"	•	•	•	—	•	Contact Customer Care.

For sizing information on Butterfly Valves, refer to page I-15 in the Engineering Section.

Two- and Three-Way Resilient Seat Valve Assemblies



Two-Way Butterfly Valve with pneumatic actuator.



Three-Way Butterfly Valve with pneumatic actuators tandem mounted.



Two-Way Butterfly Valve with electronic actuator.



Three-Way Butterfly Valve with electronic actuators tandem mounted.

Description

Available in two-way and three-way arrangements for two-position (On/Off), floating and modulating control, Resilient Seat Butterfly Valve Assemblies provide bubble-tight shutoff for the assemblies' full-rated pressure.

Features

- Molded-in resilient seat provides bubble-tight shutoff up to 150 psi
- Operating temperature up to 250°F (120°C)
- Lugged body is drilled and tapped for isolation and removal of downstream piping at full-rated pressure
- Round, polished disc and hub edge provides 360 degree concentric seating, minimum flow restriction, lower torques and longer seat life
- Upper and lower inboard bronze bearings ensure longer service life with low operating torques
- Thru-stem design provides high strength and positive disc control with standardized end connection for operator interchangeability
- Extended neck allows adequate clearance for flanges and insulation
- Bi-directional, self-adjusting stem seal is suitable for vacuum and pressure while preventing external contamination of the stem area
- Heavy-duty corrosion resistant top bushing, absorbs actuator side thrust
- Cast-in top plate is an integral part of the body and is standardized to allow direct mounting of actuators
- Each valve is factory tested to 110 percent of specified pressure rating
- Available in multiple configurations to match jobsite needs.

Applications

Butterfly Valve assemblies provide excellent flow control of hot water, chilled water, condenser water, and thermal storage systems applications.

Specifications

Valve Size	2 to 20" (51 to 508 mm)
Body Style	Butterfly
Assembly Type	2-Way/3-Way
Materials	
Full Cut Disk 2 to 12" / Under Cut Disk 2 to 6":	
Body	Cast Iron
Disc	304 Stainless Steel
Stem	416 Stainless Steel
Seat	EPDM
Bearing	Bronze
Upper Stem Bushing	Polyester
Upper Stem Seal	NBR
Full Cut Disk 14 to 20" / Under Cut Disk 8 to 20":	
Body	Cast Iron
Disc	Aluminum Bronze
Stem	316 or 18-8 Stainless Steel
Seat	EPDM
Bearing	Sintered Metal
Upper Stem Bushing	Polyester
Upper Stem Seal	NBR
Controlled Medium	Chilled Water, Hot Water
Temperatures	-40 to +250°F (-40 to +121°C)
Close-off Ratings	Refer to Selection Tables

Part Number Configuration

D-208

Valves

		BV	2W	02	F	S2	L	O	X	X	X	X	Add accessories by simply replacing the X with the appropriate letter.	
Assembly Configuration														
2W	2-Way													Manual Override
3W	3-Way												M	Manual Override (Non-STD) (Pneumatic Actuator Only)
Valve Size													X	Not Used
02	2-inch													
25	2.5-inch													
03	3-inch													
	to													Heater
20	20-inch												H	Heater (Must Be Used with EM and EP, Optional with E2)
Disc Type													X	Not Used
F	Full Cut Disc — 150 psi Shutoff													
U	Under Cut Disc													
	100 psi Tight Shutoff 2-6"													
	50 psi Tight Shutoff 8"+													Actuator Type
Actuator Type													S	Limit (End) Switch for Pneumatic, Actuators (Non-STD)
S2³	Pneumatic Spring Return 30 psi												A	Limit (End) Switch for G1, G2, G4, G5, G7, and G8 Actuators (Non-STD)
S6	Pneumatic Spring Return 60 psi												X	Not Used
D6	Pneumatic Double Acting 60 psi, Non-Spring Return													
E2	Electronic 2-position/Floating, 24-240 Vac/Vdc, Non-Spring Return													
EM	Electronic Modulating 0-10 Vdc, 24-240 Vac/Vdc, Non-Spring Return													
EP	Electronic Modulating 4-20 mA, 24-240 Vac/Vdc, Non-Spring Return													Actuator Accessories/Options
G1¹	Electronic Spring Return, On/Off, 120 Vac												P	Pneumatic Positioner, 20 psi Actuator
G2¹	Electronic Spring Return, On/Off, 24 Vac												Q	Pneumatic Positioner, 60 psi Spring Return Actuator
G3¹	Electronic Spring Return, Floating, 24 Vac												R	Pneumatic Positioner, 60 psi Direct Acting Actuator
G4¹	Electronic Spring Return, Modulating 0-10 V, 24 Vac												T	E/P Valve, 120 Vac, 20 psi Spring Return Actuator
G5¹	Electronic Spring Return, Modulating 4-20 mA, 24 Vac												U	E/P Valve, 24 Vac, 20 psi Spring Return Actuator
G6²	Electronic Floating, 24 Vac, NSR												V	E/P Valve, 120 Vac, 60 psi Spring Return Actuator
G7²	Electronic Modulating 0-10 Vdc, 24 Vac, Non-Spring Return												W	E/P Valve, 24 Vac, 60 psi Spring Return Actuator
G8¹	Electronic Modulating 4-20 mA, 24 Vac ⁴ , Non-Spring Return												Y	E/P Valve, 120 Vac, 60 psi Direct Acting Actuator
													Z	E/P Valve, 24 Vac, 60 psi Direct Acting Actuator
													X	Not Used
Valve Body Style														Fail Position/Assembly Configuration
L	Lug-cast Iron (Standard)												O	Fail Open 2-Way Spring Return
													C	Fail Closed 2-Way Spring Return
													N	2-Way Non-Spring Return
													A-F	3-Way Spring Return
													A-F	3-Way Non-Spring Return

Ordering Notes:

¹2 to 4-inch sizes only ²2 to 6-inch sizes only ³2 to 12-inch sizes only ⁴Also order 499 Ohm Restrictor Kit, 985-124.

Table Notes:

- Not all assembly configurations are available. Consult Customer Care.
- Items marked NON-STD (non-standard) will require factory pricing and may have longer lead times.
- For 3-way valve assemblies with spring return actuators — 1 Port Fail Close (FC). 1 Port Fail Open (FO).
- For 2-way and 3-way valve assemblies with pneumatic non-spring return actuators, fail last position. For 2-way and 3-way valve assemblies with electric non-spring return actuators, fail position will depend on type of failure and controls installed, consult Customer Care.

Part Number Configuration

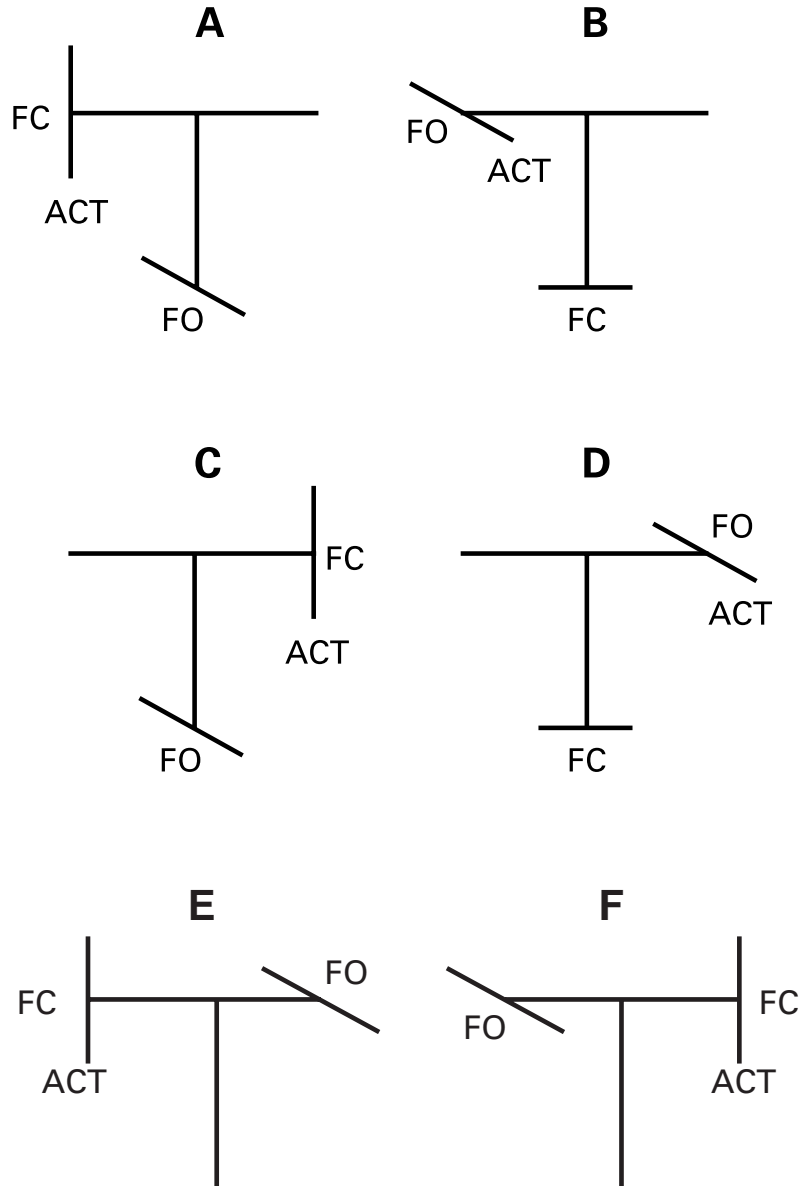
Three-Way Butterfly Valve Configurations

Key:

FC Fail Closed

FO Fail Open

ACT Actuator Location



View from Top of Valve/Actuator Assembly
(Shaft or Actuator End)

Dimensions — Pneumatic

Figure 1 Two-Way Valve Assemblies with Pneumatic Actuators

Valve Size	A	B	C	D	E	F	G	H	H1	J	L	M	Notes
	Valve Height	Body O.D.	C _L Pipe To Top Plate	Face/ Face	Tap Size	Bolt Circle	# Bolts	Actuator Height	Actuator Removal Clearance	Actuator Width	C _L Length	Stroke Clearance	
2"	8.50" (216 mm)	6.00" (153 mm)	5.31" (135 mm)	1.69" (43 mm)	0.625-11 UNC-2B	4.75" (121 mm)	4	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	1, 2
2.5"	9.31" (236 mm)	6.75" (172 mm)	5.98" (150 mm)	1.81" (46 mm)	0.625-11 UNC-2B	5.50" (140 mm)	4	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	1, 2
3"	10.00" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	1, 2
4"	11.38" (288 mm)	8.81" (223 mm)	7.13" (180 mm)	2.06" (52 mm)	0.625-11 UNC-2B	7.50" (191 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	1, 2
5"	12.81" (325 mm)	10.00" (254 mm)	7.69" (195 mm)	2.25" (56 mm)	0.750-10 UNC-2B	8.50" (216 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	1, 3
5"	12.81" (325 mm)	10.00" (254 mm)	7.69" (195 mm)	2.25" (56 mm)	0.750-10 UNC-2B	8.50" (216 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	2
6"	13.94" (354 mm)	11.00" (279 mm)	8.31" (210 mm)	2.25" (56 mm)	0.750-10 UNC-2B	9.50" (241 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	1, 3, 4
6"	13.94" (354 mm)	11.00" (279 mm)	8.31" (210 mm)	2.25" (56 mm)	0.750-10 UNC-2B	9.50" (241 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	5.0" (127 mm)	2
8"	16.19" (411 mm)	13.25" (336 mm)	9.50" (249 mm)	2.50" (64 mm)	0.750-10 UNC-2B	11.75" (298 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	7.5" (191 mm)	2, 3, 4
10"	19.00" (483 mm)	15.88" (403 mm)	10.75" (273 mm)	2.50" (64 mm)	0.875-9 UNC-2B	14.25" (362 mm)	12	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	7.5" (191 mm)	2, 3, 4
12"	21.63" (549 mm)	18.63" (473 mm)	12.25" (311 mm)	3.00" (76 mm)	0.875-9 UNC-2B	17.00" (432 mm)	12	9.25" (235 mm)	11.25" (286 mm)	8.25" (210 mm)	17.75" (451 mm)	7.5" (191 mm)	2, 3, 4

Table Notes:

1. Full cut assemblies (150 psi shutoff)
2. Under cut assemblies (100 psi shutoff) 2-6 inches; (50 psi shutoff) 8-12 inches
3. Two actuators included in assembly
4. Maximum angle of disc opening is 70°

D-210

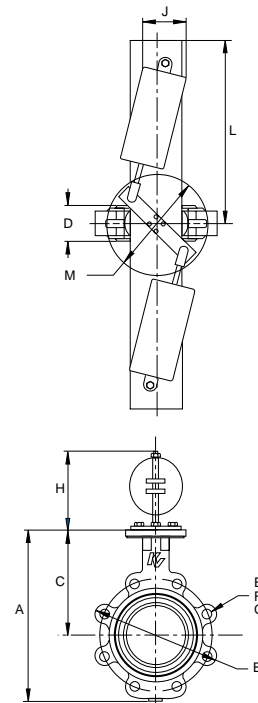
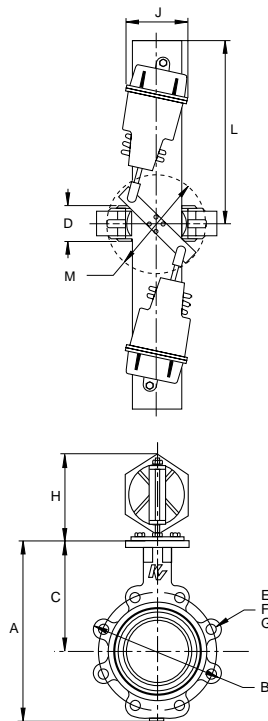
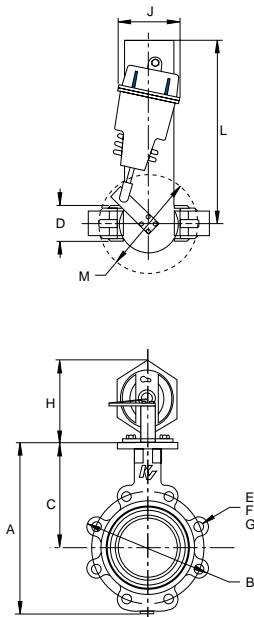
Valves

S2 Series Pneumatic Actuated Two-Way Valve Assemblies — 20 psi Pneumatic Spring Return

2-inch – 6-inch
5-inch and 6-inch (50 psi close off)

5-inch and 6-inch
8-inch – 10-inch (50 psi close off)

12-inch
(50 psi close off)



Dimensions — Pneumatic

Figure 2 Three-Way Valve Assemblies with Pneumatic Actuators

Valve Size	A	B	C	D	E	F	G	H	H1	J	L	M	N	P	Notes
	Valve Height	Body O.D.	C _L Pipe To Top Plate	Face/Face	Tap Size	Bolt Circle	# Bolts	Actuator Height	Actuator Removal Clearance	Actuator Width	C _L Length	Stroke Clearance	Tee Width	Run Length	
2"	8.50" (216 mm)	6.00" (153 mm)	5.31" (135 mm)	1.69" (43 mm)	0.625-11 UNC-2B	4.75" (121 mm)	4	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	8.38" (213 mm)	9.22" (234 mm)	10.69" (272 mm)	1, 2
2.5"	9.31" (236 mm)	6.75" (172 mm)	5.94" (150 mm)	1.81" (46 mm)	0.625-11 UNC-2B	5.50" (140 mm)	4	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	8.38" (213 mm)	10.31" (262 mm)	12.31" (313 mm)	1, 2
3"	10.00" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	10.38" (265 mm)	11.44" (291 mm)	12.88" (327 mm)	1, 2, 4
4"	11.38" (288 mm)	8.81" (223 mm)	7.13" (180 mm)	2.06" (52 mm)	0.625-11 UNC-2B	7.50" (191 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	7.25" (184 mm)	13.13" (333 mm)	15.13" (384 mm)	1, 2, 3, 4
5"	12.19" (310 mm)	10.00" (254 mm)	7.69" (195 mm)	2.25" (56 mm)	0.750-10 UNC-2B	8.50" (216 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	8.69" (221 mm)	14.56" (370 mm)	17.25" (438 mm)	1, 2, 3, 4
6"	13.94" (354 mm)	11.00" (279 mm)	8.31" (210 mm)	2.25" (56 mm)	0.750-10 UNC-2B	9.50" (241 mm)	8	7.75" (197 mm)	9.75" (248 mm)	7.13" (181 mm)	18.00" (457 mm)	10.38" (264 mm)	15.50" (394 mm)	18.25" (464 mm)	2, 3, 4
6"	13.94" (354 mm)	13.25" (337 mm)	8.31" (210 mm)	2.25" (56 mm)	0.750-10 UNC-2B	9.50" (241 mm)	8	9.25" (235 mm)	11.25" (286 mm)	8.25" (210 mm)	20.00" (508 mm)	15.00" (381 mm)	15.50" (394 mm)	18.25" (464 mm)	1, 3, 4
8"	16.19" (411 mm)	13.25" (337 mm)	9.50" (241 mm)	2.50" (64 mm)	0.750-10 UNC-2B	11.75" (298 mm)	8	9.25" (235 mm)	11.25" (286 mm)	8.25" (210 mm)	20.00" (508 mm)	15.00" (381 mm)	17.81" (452 mm)	20.50" (521 mm)	2, 3, 4
10"	19.00" (483 mm)	15.88" (403 mm)	10.75" (273 mm)	2.50" (64 mm)	0.875-9 UNC-2B	14.25" (362 mm)	12	9.25" (235 mm)	11.25" (286 mm)	8.25" (210 mm)	20.00" (508 mm)	15.00" (381 mm)	21.38" (543 mm)	24.25" (622 mm)	2, 3, 4
12"	21.63" (549 mm)	18.63" (473 mm)	12.25" (311 mm)	3.00" (76 mm)	0.875-9 UNC-2B	17.00" (432 mm)	12	9.25" (235 mm)	11.25" (286 mm)	8.25" (210 mm)	20.00" (508 mm)	15.00" (381 mm)	23.41" (595 mm)	27.00" (686 mm)	2, 3, 4

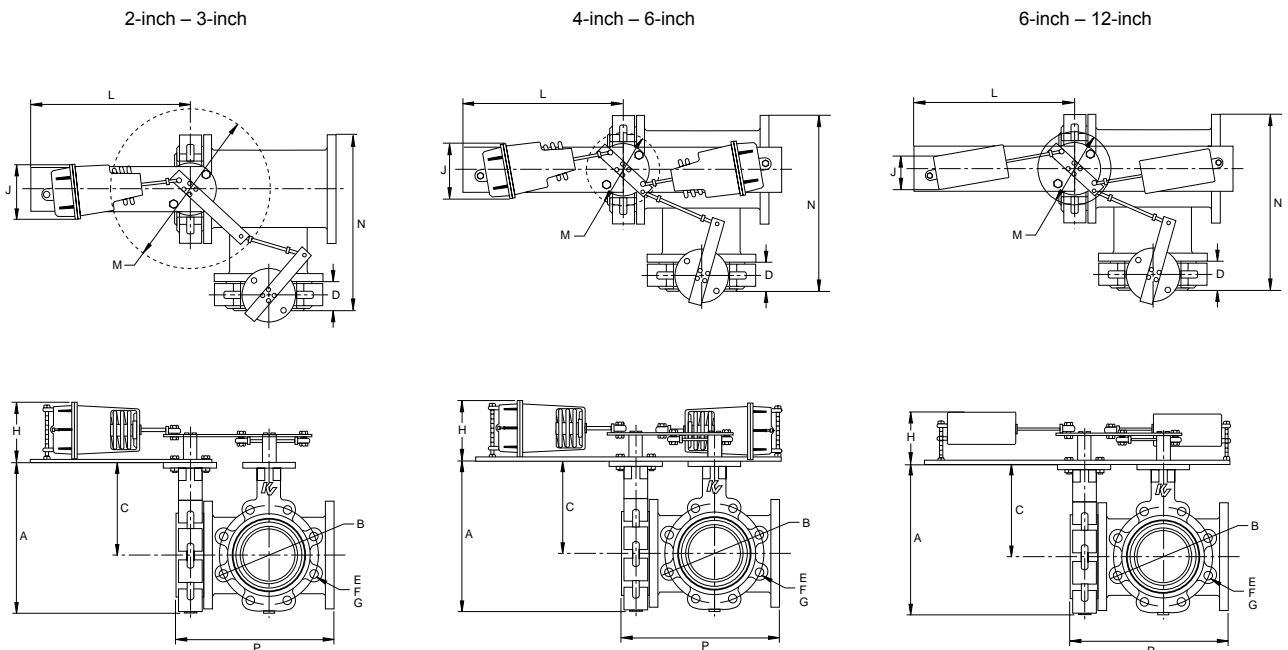
Table Notes:

1. Full cut assemblies (150 psi shutoff)
2. Under cut assemblies (100 psi shutoff) 2-6 inches; (50 psi shutoff) 8-12 inches
3. Two actuators included in assembly
4. Maximum angle of disc opening is 70°

D-211

Valves

S2 Series Pneumatic Actuated Three-Way Valve Assemblies — 20 psi Pneumatic Spring Return



Drawings shown are for Assemblies A & B. For Assemblies C & D, the valve and actuator are on right-hand side of the run of tee and for Assemblies E & F, the valves are on both sides of the run tee.

Dimensions — Electronic

Figure 3 Two-Way OpenAir Electronic Actuator Valve Assemblies

Valve Size	A	B	C	D	E	F	G	H	H1	H2	J	K	L	Notes
	Valve Height	Body O.D.	C _L Pipe To Top Plate	Face/ Face	Tap Size	Bolt Circle	# Bolts	Actuator Height	Actuator Removal Clearance	Dual Actuator Height	Actuator Width	Actuator Length	C _L Length	
2"	8.5" (216 mm)	6" (153 mm)	5.31" (135 mm)	1.69" (43 mm)	0.625-11 UNC-2B	4.75" (121 mm)	4	3.25" (83 mm)	5.25" (133 mm)	—	4.00" (102 mm)	10.35" (263 mm)	8.35" (212 mm)	1, 2, 4, 5
2.5"	9.31" (236 mm)	6.75" (172 mm)	5.98" (135 mm)	1.81" (46 mm)	0.625-11 UNC-2B	5.50" (140 mm)	4	3.25" (83 mm)	5.25" (133 mm)	—	4.00" (102 mm)	10.35" (263 mm)	8.35" (212 mm)	1, 2, 4, 5
3"	10" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	3.25" (83 mm)	5.25" (133 mm)	—	4.00" (102 mm)	10.35" (263 mm)	8.35" (212 mm)	1, 2, 4, 5
4"	11.38" (288 mm)	8.81" (223 mm)	7.14" (180 mm)	2.06" (52 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	3.25" (83 mm)	5.25" (133 mm)	—	4.00" (102 mm)	10.35" (263 mm)	8.35" (212 mm)	1, 2, 5
4"	11.13" (283 mm)	8.75" (222 mm)	7.00" (178 mm)	2.00" (51 mm)	0.625-11 UNC-2B	7.50" (191 mm)	8	3.25" (83 mm)	9.00" (229 mm)	7.00" (178 mm)	4.00" (102 mm)	14.84" (377 mm)	12.84" (327 mm)	1, 2, 3, 4
5"	12.13" (307 mm)	19" (254 mm)	7.50" (191 mm)	2.13" (54 mm)	0.625-11 UNC-2B	8.50" (216 mm)	8	3.25" (83 mm)	9.00" (229 mm)	7.00" (178 mm)	4.00" (102 mm)	14.84" (377 mm)	12.84" (327 mm)	1, 2, 3, 5
6"	13.25" (337 mm)	11.00" (279 mm)	8.00" (203 mm)	2.13" (54 mm)	0.625-11 UNC-2B	9.50" (241 mm)	8	3.25" (83 mm)	9.00" (229 mm)	7.00" (178 mm)	4.00" (102 mm)	14.84" (377 mm)	12.84" (327 mm)	1, 2, 3, 5

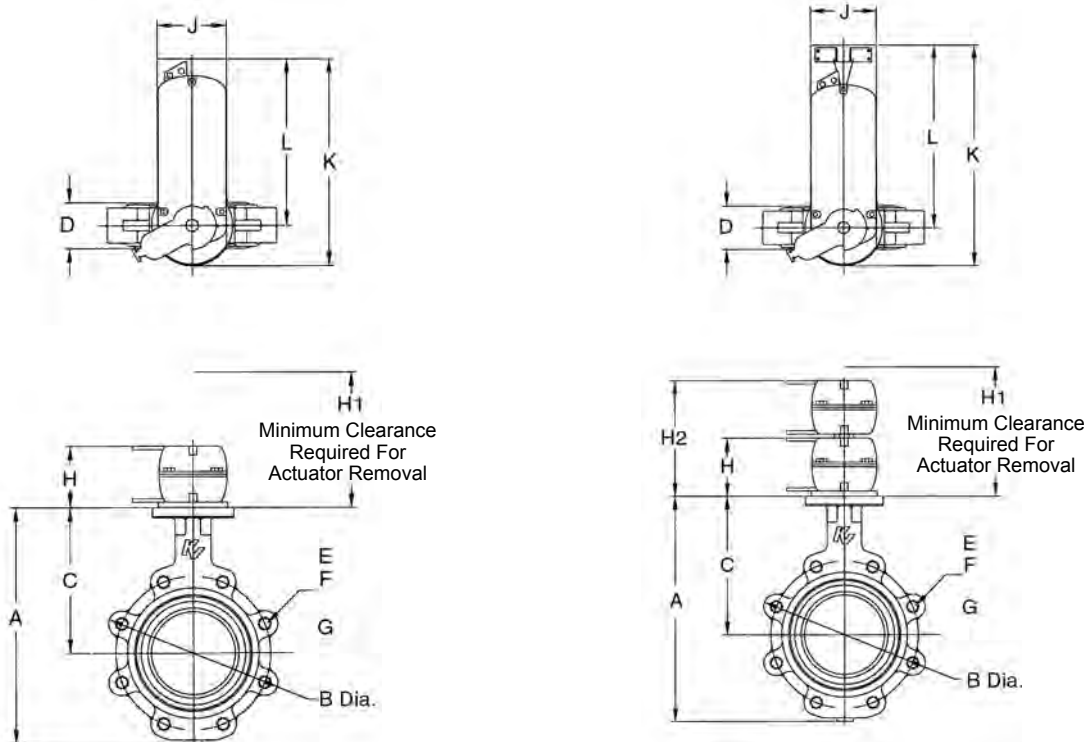
Table Notes:

- 100 psi shutoff pressure
- Under cut assemblies
- Tandem actuators
- Spring return
- Non-spring return

D-212

Valves

G Series Electronic Actuated Two-Way Valve Assemblies



Dimensions — Electronic

Figure 4 Three-Way OpenAir Electronic Actuator Valve Assemblies

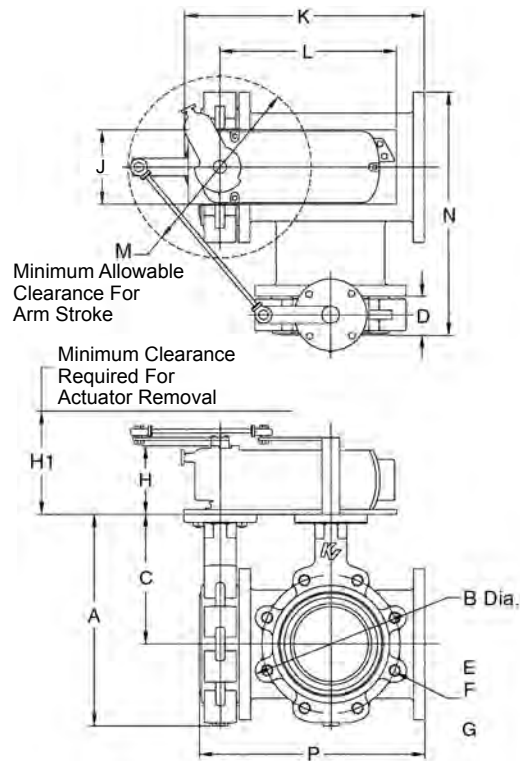
Valve Size	A Valve Height	B Body O.D.	C C ₁ Pipe To Top Plate	D Face/ Face	E Tap Size	F Bolt Circle	G # Bolts	H Actuator Height	H1 Actuator Removal Clearance	H2 Dual Actuator Height	J Actuator Width	K Actuator Length	L C _L Length	M Arm Stroke Clearance
2"	8.50" (216 mm)	6.00" (153 mm)	5.31" (135 mm)	1.69" (43 mm)	0.625-11 UNC-2B	4.75" (121 mm)	4	3.25" (83 mm)	5.25" (133 mm)	—	4.00" (102 mm)	11.84" (301 mm)	8.35" (212 mm)	7.25" (184 mm)
2.5"	9.31" (236 mm)	6.75" (172 mm)	5.94" (150 mm)	1.81" (46 mm)	0.625-11 UNC-2B	5.50" (140 mm)	4	3.25" (83 mm)	5.25" (133 mm)	—	4.00" (102 mm)	13.41" (341 mm)	8.35" (212 mm)	7.25" (184 mm)
3"	10.00" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	3.25" (83 mm)	9.00" (229 mm)	—	4.00" (102 mm)	13.98" (355 mm)	8.35" (212 mm)	7.25" (184 mm)
3"	10.00" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	3.25" (83 mm)	9.00" (229 mm)	7.00" (178 mm)	4.00" (102 mm)	13.98" (355 mm)	8.35" (212 mm)	7.25" (184 mm)
4"	11.38" (288 mm)	8.81" (223 mm)	7.13" (180 mm)	2.06" (52 mm)	0.625-11 UNC-2B	7.50" (191 mm)	8	3.25" (83 mm)	5.25" (133 mm)	—	4.00" (102 mm)	16.06" (408 mm)	8.35" (212 mm)	7.25" (184 mm)
4"	11.13" (283 mm)	8.75" (222 mm)	7.00" (178 mm)	2.00" (51 mm)	0.625-11 UNC-2B	7.50" (191 mm)	8	3.25" (83 mm)	9.00" (229 mm)	7.00" (178 mm)	4.00" (102 mm)	16.06" (408 mm)	16.0" (212 mm)	6.36" (184 mm)
5"	12.19" (310 mm)	10.00" (254 mm)	7.50" (191 mm)	2.13" (54 mm)	0.750-10 UNC-2B	8.50" (216 mm)	8	3.25" (83 mm)	9.00" (229 mm)	7.00" (178 mm)	4.00" (102 mm)	18.06" (459 mm)	8.35" (212 mm)	7.25" (184 mm)
6"	13.25" (337 mm)	11.00" (279 mm)	8.00" (203 mm)	2.13" (54 mm)	0.750-10 UNC-2B	9.50" (241 mm)	8	3.25" (83 mm)	9.00" (229 mm)	7.00" (178 mm)	4.00" (102 mm)	4.00" (102 mm)	19.06" (484 mm)	7.25" (184 mm)

Valve Size	N		Notes
	B Port Depth	A — AB Face to Face	
2"	9.22" (234 mm)	10.69" (272 mm)	1, 2, 4, 5
2.5"	10.31" (236 mm)	12.31" (313 mm)	1, 2, 4, 5
3"	11.44" (291 mm)	12.88" (327 mm)	1, 2, 5
3"	11.44" (291 mm)	12.88" (327 mm)	1, 2, 3, 4
4"	13.06" (332 mm)	15.06" (383 mm)	1, 2, 5
4"	13.06" (332 mm)	15.06" (383 mm)	1, 2, 3, 4
5"	14.44" (367 mm)	17.13" (435 mm)	1, 2, 3, 5
6"	15.38" (391 mm)	18.13" (460 mm)	1, 2, 3, 5

Table Notes:

- 100 psi shutoff pressure
- Under cut assemblies
- Tandem actuators
- Spring return
- Non-spring return

G Series Electronic Actuated Three-Way Valve Assemblies

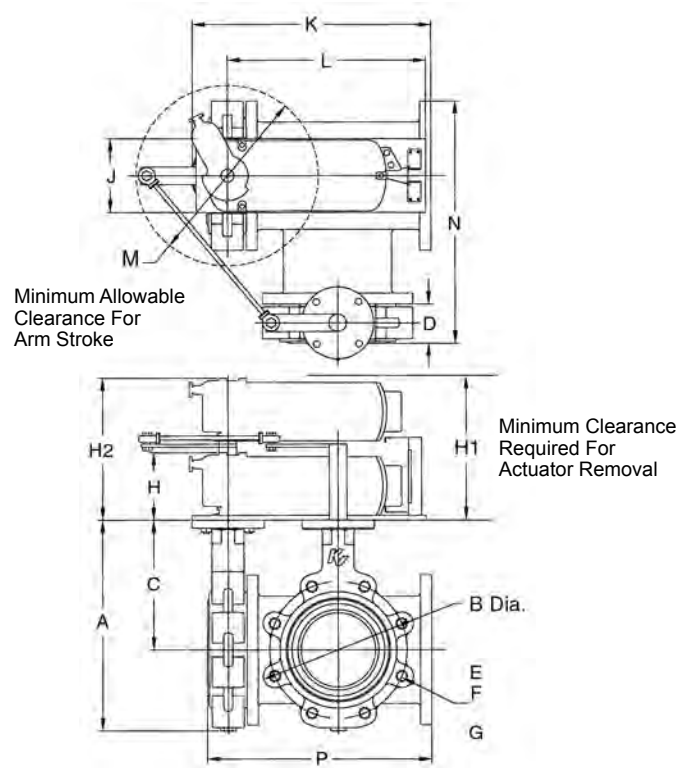


Drawings shown are for Assemblies A & B. For Assemblies C & D, the valve and actuator are on the left-hand side of the run of tee and for Assemblies E & F, the valves are on both sides of the run tee.

Dimensions — Electronic

Figure 4 Continued

G Series Electronic Actuated Three-Way Valve Assemblies



Drawings shown are for Assemblies A & B. For Assemblies C & D, the valve and actuator are on the right-hand side of the run of tee and for Assemblies E & F, the valves are on both sides of the run tee.

D-214

Valves

Dimensions — Electronic

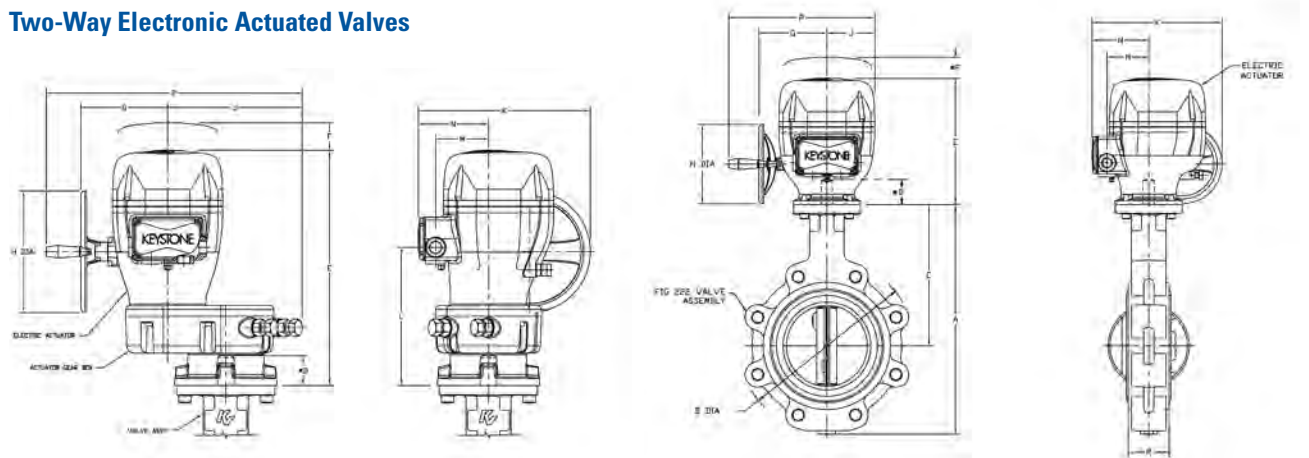
Figure 5 Two-Way EPI₂ Electronic Actuator Valve Assemblies

Valve Size	A Valve Height	B Body O.D.	C C _L Pipe To Top Plate	D Face/Face	E Actuator Height	F Actuator Removal Clearance	G Pipe C _L To H.W.	H H.W. D.A.	J Valve CL To aH.W. Ring	K Total Width	Actuator Model	Notes
2"	8.50" (216 mm)	6.00" (153 mm)	5.31" (135 mm)	1.69" (43 mm)	7.75" (196 mm)	6.38" (162 mm)	4.56" (115 mm)	5.00" (127 mm)	4.94" (125 mm)	7.38" (200 mm)	EPI-3	1, 2, 3, 4
2.5"	9.31" (237 mm)	6.75" (171 mm)	5.94" (151 mm)	1.81" (46 mm)	7.75" (196 mm)	6.38" (162 mm)	4.56" (115 mm)	5.00" (127 mm)	4.94" (125 mm)	7.38" (200 mm)	EPI-3	1, 2, 3, 4
3"	10.00" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	7.75" (196 mm)	6.38" (162 mm)	4.56" (115 mm)	5.00" (127 mm)	4.94" (125 mm)	7.38" (200 mm)	EPI-3	1, 2, 3, 4
4"	11.38" (289 mm)	8.81" (224 mm)	7.13" (181 mm)	2.06" (52 mm)	9.63" (244 mm)	6.38" (162 mm)	6.50" (165 mm)	8.00" (203 mm)	7.13" (181 mm)	10.94" (278 mm)	EPI-6	2, 3, 4
4"	11.38" (289 mm)	8.81" (224 mm)	7.13" (181 mm)	2.06" (52 mm)	7.75" (196 mm)	6.38" (162 mm)	4.56" (116 mm)	5.00" (127 mm)	4.94" (125 mm)	7.38" (200 mm)	EPI-3	1
5"	12.81" (325 mm)	10.00" (254 mm)	7.69" (195 mm)	2.25" (56 mm)	9.63" (244 mm)	6.38" (162 mm)	6.50" (165 mm)	8.00" (203 mm)	7.13" (181 mm)	10.94" (278 mm)	EPI-13	3, 4
5"	12.81" (325 mm)	10.00" (254 mm)	7.69" (195 mm)	2.25" (56 mm)	9.63" (244 mm)	6.38" (162 mm)	6.50" (165 mm)	8.00" (203 mm)	7.13" (181 mm)	10.94" (278 mm)	EPI-6	1, 2
6"	13.94" (354 mm)	11.00" (279 mm)	8.31" (210 mm)	2.25" (56 mm)	9.63" (244 mm)	6.38" (162 mm)	6.50" (165 mm)	8.00" (203 mm)	7.13" (181 mm)	10.94" (278 mm)	EPI-13	2, 3, 4
6"	13.94" (354 mm)	11.00" (279 mm)	8.31" (210 mm)	2.25" (56 mm)	9.63" (244 mm)	6.38" (162 mm)	6.50" (165 mm)	8.00" (203 mm)	7.13" (181 mm)	10.94" (278 mm)	EPI-6	1
8"	16.44" (418 mm)	13.25" (337 mm)	9.50" (241 mm)	2.38" (60 mm)	13.00" (330 mm)	7.88" (200 mm)	8.25" (210 mm)	12.00" (305 mm)	10.31" (262 mm)	4.00" (102 mm)	EPI-36	2, 3,
8"	16.19" (411 mm)	13.25" (337 mm)	9.50" (241 mm)	2.50" (64 mm)	9.63" (244 mm)	6.38" (162 mm)	6.50" (165 mm)	8.00" (203 mm)	7.13" (181 mm)	10.94" (278 mm)	EPI-6	1
10"	19.00" (483 mm)	16.00" (406 mm)	10.88" (276 mm)	2.69" (68 mm)	13.00" (330 mm)	7.88" (200 mm)	8.25" (210 mm)	12.00" (305 mm)	10.31" (262 mm)	4.00" (102 mm)	EPI-36	3, 4
10"	19.00" (483 mm)	15.90" (403 mm)	10.80" (273 mm)	2.50" (64 mm)	13.00" (330 mm)	6.38" (162 mm)	8.25" (210 mm)	12.00" (305 mm)	10.31" (262 mm)	4.00" (102 mm)	EPI-13	1, 2
12"	21.63" (549 mm)	18.75" (476 mm)	12.25" (311 mm)	3.13" (80 mm)	13.00" (330 mm)	7.88" (200 mm)	8.25" (210 mm)	12.00" (305 mm)	10.31" (262 mm)	4.00" (102 mm)	EPI-51	3
12"	21.63" (549 mm)	18.60" (473 mm)	12.30" (311 mm)	3.00" (76 mm)	13.00" (330 mm)	7.88" (200 mm)	8.25" (210 mm)	12.00" (305 mm)	10.31" (262 mm)	4.00" (102 mm)	EPI-36	1, 2
12"	21.63" (549 mm)	18.60" (473 mm)	12.30" (311 mm)	3.00" (76 mm)	17.375" (441 mm)	7.88" (200 mm)	8.25" (210 mm)	12.00" (305 mm)	16.132" (414 mm)	23.375" (594 mm)	EPI-91	4

Table Notes:

1. Under cut two-position assemblies
2. Under cut modulating assemblies
3. Full cut two-position assemblies
4. Full cut modulating assemblies

Two-Way Electronic Actuated Valves



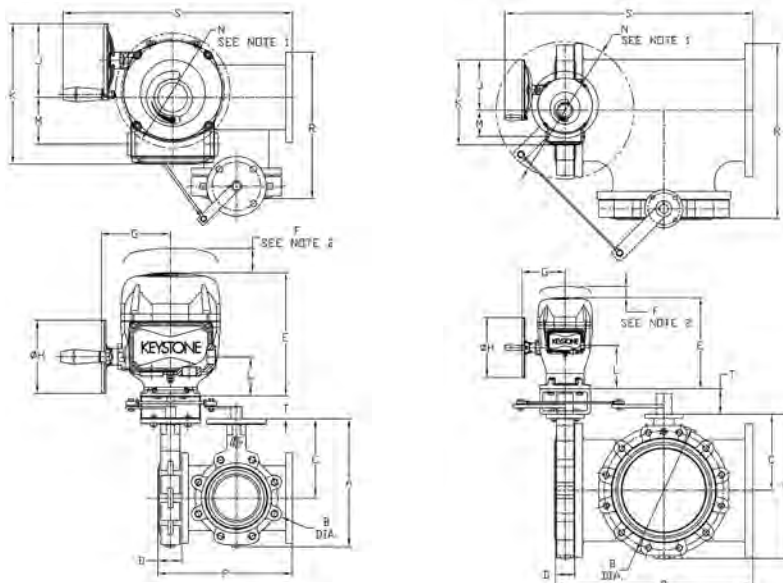
Dimensions — Electronic

Figure 6 Three-Way EPI₂ Electronic Actuator Valve Assemblies

Valve Size	A Valve Height	B Body O.D.	C C _L Pipe To Top Plate	D Face/Face	Tap Size	Bolt Circle	# Bolts	F Actuator Removal Clearance	P Pipe Run Height	R Total Width	S Bracket Length	T Bracket Height	Actuator Model	Notes
2"	8.50" (216 mm)	6.00" (152 mm)	5.31" (135 mm)	1.69" (43 mm)	0.625-11 UNC-2B	4.75" (121 mm)	4	6.38" (162 mm)	10.69" (272 mm)	9.22" (234 mm)	14.38" (365 mm)	4.00" (102 mm)	EPI-3	1, 3
2"	8.50" (216 mm)	6.00" (152 mm)	5.31" (135 mm)	1.69" (43 mm)	0.625-11 UNC-2B	4.75" (121 mm)	4	6.38" (162 mm)	10.69" (272 mm)	9.22" (234 mm)	14.38" (365 mm)	4.00" (102 mm)	EPI-6	2, 4
2.5"	9.31" (236 mm)	6.75" (171 mm)	5.94" (151 mm)	1.81" (46 mm)	0.625-11 UNC-2B	5.50" (140 mm)	4	6.38" (162 mm)	12.31" (313 mm)	10.31" (262 mm)	15.95" (405 mm)	4.00" (102 mm)	EPI-6	2, 3, 4
2.5"	9.31" (236 mm)	6.75" (171 mm)	5.94" (151 mm)	1.81" (46 mm)	0.625-11 UNC-2B	5.50" (140 mm)	4	6.38" (162 mm)	12.31" (313 mm)	10.31" (262 mm)	15.95" (405 mm)	4.00" (102 mm)	EPI-3	1
3"	10.00" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	6.38" (162 mm)	12.88" (327 mm)	11.44" (291 mm)	16.52" (420 mm)	4.00" (102 mm)	EPI-6	2, 3, 4
3"	10.00" (254 mm)	7.25" (184 mm)	6.31" (160 mm)	1.81" (46 mm)	0.625-11 UNC-2B	6.00" (152 mm)	4	6.38" (162 mm)	12.88" (327 mm)	11.44" (291 mm)	16.52" (420 mm)	4.00" (102 mm)	EPI-3	1
4"	11.38" (289 mm)	8.81" (224 mm)	7.13" (181 mm)	2.06" (52 mm)	0.625-11 UNC-2B	7.50" (191 mm)	8	6.38" (162 mm)	15.13" (384 mm)	13.13" (334 mm)	20.59" (523 mm)	4.00" (102 mm)	EPI-13	4
4"	11.38" (289 mm)	8.81" (224 mm)	7.13" (181 mm)	2.06" (52 mm)	0.625-11 UNC-2B	7.50" (191 mm)	8	6.38" (162 mm)	15.13" (384 mm)	13.13" (334 mm)	20.59" (523 mm)	4.00" (102 mm)	EPI-6	1, 2, 3
5"	12.81" (325 mm)	10.00" (254 mm)	7.69" (195 mm)	2.25" (57 mm)	0.750-10 UNC-2B	8.50" (216 mm)	8	6.38" (162 mm)	17.25" (438 mm)	14.56" (370 mm)	22.63" (575 mm)	4.00" (102 mm)	EPI-13	1, 2, 3, 4
6"	13.94" (354 mm)	11.00" (279 mm)	8.31" (211 mm)	2.25" (57 mm)	0.750-10 UNC-2B	9.50" (241 mm)	8	7.88" (200 mm)	18.25" (464 mm)	15.50" (394 mm)	23.63" (600 mm)	4.00" (102 mm)	EPI-36	3, 4
6"	13.94" (354 mm)	11.00" (279 mm)	8.31" (211 mm)	2.25" (57 mm)	0.750-10 UNC-2B	9.50" (241 mm)	8	6.38" (162 mm)	18.25" (464 mm)	15.50" (394 mm)	23.63" (600 mm)	4.00" (102 mm)	EPI-13	1, 2
8"	16.44" (418 mm)	13.25" (337 mm)	9.50" (241 mm)	2.38" (60 mm)	0.750-10 UNC-2B	11.75" (298 mm)	8	7.88" (200 mm)	20.38" (518 mm)	17.69" (449 mm)	25.66" (652 mm)	4.00" (102 mm)	EPI-51	4
8"	16.19" (411 mm)	13.25" (337 mm)	9.50" (241 mm)	2.50" (64 mm)	0.750-10 UNC-2B	11.75" (298 mm)	8	7.88" (200 mm)	20.50" (521 mm)	17.81" (452 mm)	25.69" (652 mm)	4.00" (102 mm)	EPI-36	1, 2, 3
10"	19.00" (483 mm)	16.00" (406 mm)	10.88" (276 mm)	2.69" (68 mm)	0.875-9 UNC-2B	14.25" (361 mm)	12	7.88" (200 mm)	26.69" (678 mm)	23.09" (543 mm)	33.81" (859 mm)	4.00" (102 mm)	EPI-91	3, 4
10"	19.00" (483 mm)	15.88" (403 mm)	10.75" (273 mm)	2.50" (64 mm)	0.875-9 UNC-2B	14.25" (361 mm)	12	7.88" (200 mm)	24.50" (622 mm)	21.38" (543 mm)	31.50" (800 mm)	4.00" (102 mm)	EPI-36	1, 2
12"	21.63" (549 mm)	18.75" (476 mm)	12.25" (311 mm)	3.13" (80 mm)	0.875-9 UNC-2B	17.00" (432 mm)	12	7.88" (200 mm)	27.13" (622 mm)	23.53" (598)	33.81" (859 mm)	4.00" (102 mm)	EPI-91	3, 4
12"	21.63" (549 mm)	18.60" (473 mm)	12.30" (311 mm)	3.00" (76 mm)	0.875-9 UNC-2B	17.00" (432 mm)	12	7.88" (200 mm)	27.00" (686 mm)	23.41" (595 mm)	33.75" (857 mm)	4.00" (102 mm)	EPI-36/51	1, 2

Table Notes:

- 1. Under cut two-position assemblies
- 2. Under cut modulating assemblies
- 3. Full cut two-position assemblies
- 4. Full cut modulating assemblies



Drawings shown are for Assemblies A & B. For Assemblies C & D, the valve and actuator are on the right-hand side of the run of tee and for Assemblies E & F, the valves are on both sides of the run tee.

D-216

Valves

Table of Contents

PRODUCT GROUP	PAGE #
Featured Accessory	
Universal Valve Retrofit Kit	D-219
Zone	
Replacement Parts	D-220
Powermite	
Mounting/Installation Devices	D-220
Replacement Parts	D-220
Service Kits	D-221
Ball	
Bracket Kit	D-221
Flowrite	
Switches	D-221
Potentiometer	D-221
Pilot Positioners	D-222
Mounting/Installation Devices	D-222
Weathershields	D-222
Retrofit Kits	D-222
Rebuild/Repack Kits	D-223 – D-227
Diaphragms	D-227
Stem Retainer Kit	D-227
Circuit Boards	D-227
Compartment Cover	D-227
Crank Assembly	D-227
Packing Heating Element	D-228
Stroke Inverter	D-228
Retainer Clamp Kit	D-228
Service Flanges	D-228
Service Kits	D-228
Lower Seat Tools	D-228
Union Kits	D-229
Gasket Kits	D-229

(Continued on next page)

D-217

Valves

Table of Contents *(Continued)*

PRODUCT GROUP	PAGE #
Magnetic Valves	
Control Signal Modules	D-229
Terminal Housing	D-229
Blanking Flange	D-229
Adapter Flanges	D-229
Stem Heater	D-230
Circuit Board	D-230
Repair Module	D-230
Signal Converter	D-230
Powermite 656 Series	
Repack/Rebuild Kits	D-231
Powertop 658 Series	
Repack/Rebuild Kits	D-232

D-218

Valves

Featured Accessory

Universal Valve Retrofit Kit

Description

The Universal Valve Retrofit Kit allows you to install a state-of-the-art Siemens Flowrite Electronic Actuators, regardless of the valve's manufacturer. This kit contains the parts needed to adapt a valve to all Flowrite Pneumatic or SKB, SKC, SKD or SAX Actuators. Kit includes: bonnet adapter, bonnet adapter insert, stem adapter jam nut and square head set screws.

Features

- Easy installation
- Works with electronic or pneumatic actuators
- Installs on most manufacturer's valves



Universal Valve Actuator Retrofit Kit.



Assembling the Universal Valve Retrofit Kit is quick and easy.













D-219

Valves

Universal Valve Retrofit Kit Product Ordering

Brand	Valve Part No.	Kit Part No.
Siemens	658-XXXX and 339-XXXX	ARK10
	591-XXXX and 598-XXXX	ARK11
Honeywell	V3XXXX (2-1/2 and 3-in.)	ARK16
	V3XXXX (4 through 6-in.)	ARK18
	V501X (A, B, C, F, G, N) 1/2 through 3-in.	ARK17
	V501X (A, B, C) 4 through 6-in.	ARK21
Johnson Controls	VG2XXX	ARK12
	VG7XXX (1 thru 2-in.)	ARK13
	VG7XXX (1/2 to 3/4-in.)	ARK19
Siebe	VB7XXX and VB9XXX (threaded and flanged)	ARK14









Accessories & Service Kits

	Description	Product Group	Quantity	Part No.
Zone Valves				
	Actuator Support Ring.	All Zone Valves	Package of 10	599-00599
	Weathershield for Zone & Powermite Valves.	All Zone Valves & Powermite Valves	1	599-10077
Powermite Valves				
	Adapter for 1/2" Conduit.	SQS	1	544-023
	Conduit Connectors.	SSA SSP SSB	1	ASY97
	Terminal Plug and Cover. Labeled Y1-G-Y2. (Cover not shown)	SSB81U SSA/P81U	1	ASY99
	Terminal Plug and Cover. Labeled G-G0-Y. (Cover not shown)	SSB61U SSA/SSP61U	1	ASY100
	Replacement Screws. For use with conduit or terminal connectors.	SSB/SSA/SSP	1	ASY98
	Protective Black Knob. Protects bonnet and threads.	MZ/MT	1	4 268 8895 0
	Cord and Plug. • 4.9 ft. L (1.5 mL) • 14.8 ft. L (4.5 mL)	SSB/SSA/SSP	1	ASY8L15
			1	ASY8L45
	Diaphragm Kit. Contains five diaphragms and mounting screws.	MT	Package of 5	656-736
	Powermite Male Union Connection Kits. • 1/2" • 3/4"	MT	1	599-02941
			1	599-02942
	Powermite Union Gasket Kit. • 1/2" • 3/4"	MT	25 Pieces	698-088
			25 Pieces	599-03394

D-220

Valves

Accessories & Service Kits

	Description	Product Group	Quantity	Part No.
Powermite Valves				
	Service Kit. Includes terminal cover, cover screws (2), tail piece and screw, cable lock and terminal blocks (3). (current model)	SSC	1	411555648
	Weathershield for Zone & Powermite Valves.	All Zone Valves & Powermite Valves	1	599-10077
Ball Valves				
	Ball Valve Bracket Kit. Includes mounting screws.		1	599-10078
Flowrite Valves				
	Auxiliary Switch. Sends a signal to indicate that the valve is in the 0% stroke position; switching point is fixed at the 0% stroke position.	SKD62, SKB62/SKC62	1	ASC1.6
	Double Auxiliary Switch. Switch has adjustable cams that can be set to give a signal at a desired position.	SKD82, SKB82/C82	1	ASC9.3BCU
			1	ASC9.3DU
	Auxiliary Switch. Auxiliary switch ASC10.51 switches on or off when a certain position is reached. The switching point can lie between 0 to 100%.	SAX	1	ASC10.51
	Potentiometer. Potentiometer delivers a resistance value to the controller relative to the exact position of the actuator (continuous position feedback).	SAX81	1	ASZ7.5/1000
			1	ASZ7.5/200
			1	ASZ7.5/135
	Function Module • Changeover of acting direction • Connection terminals • Sequence control	SAX61	1	AZX61.1








D-221

Valves

Accessories & Service Kits


D-222

Valves

	Description	Product Group	Quantity	Part No.
Flowrite Valves				
	Positioning Relay and Mounting Kit. • 8-inch • 12-inch	Flowrite	1	599-00426
			1	599-00423
	Adapter for 1/2" Conduit.	SKD & SKB/C	1	544-023
	Rack and Pinion/Bracket Only. Use with OpenAir on Flowrite 1/2-2" (20 mm) stroke valves.	Flowrite	1	599-03610
	Weathershield.	SKB/SKC	1	599-10065
	Weathershield.	SKD/SQX	1	599-10071
	Weathershield.	SAX	1	ASK39.1
	Universal Valve Retrofit Kit. Contains parts to adapt a valve to Siemens Flowrite 599 Series Actuators.	SKB/SKC, SKD, SQX	1	See table below

Brand	Valve and Product No.	Kit Part No.
Siemens	658-XXXX and 339-XXXX	ARK10
	591-XXXX and 598-XXXX	ARK11
Honeywell	V3XXXX (2-1/2 and 3-in.)	ARK16
	V3XXXX (4 thru 6-in.)	ARK18
	V501X (A, B, C, F, G, N) 1/2 thru 3-in.	ARK17
	V501X (A, B, C) 4 thru 6-in.	ARK21
Johnson Controls	VG2XXX	ARK12
	VG7XXX (1 thru 2-in.)	ARK13
	VG7XXX (1/2 to 3/4-in.)	ARK19
Siebe	VB7XXX and VB9XXX (threaded & flanged)	ARK14

Accessories & Service Kits

		Description	Product Group	Quantity	Part No.
Flowrite					
		1/2" to 2" 2-way Bronze Valve Body Rebuild/Repack Service Kits.	Flowrite	1	See table below
Valve Part No.				Model 1 Part No.	Model 2 Part No.
FxF	FxUF	UFxUF	FxUM		
599-03000	599-03009	—	599-03216	599-03300	—
599-03001	599-03010	—	599-03217	599-03301	—
599-03002	599-03011	—	599-03218	599-03302	—
599-03003	599-03012	—	599-03219	599-03303	—
599-03004	599-03013	—	599-03220	599-03304	—
599-03005	599-03014	—	599-03221	599-03305	—
599-03006	—	599-03015	—	599-03306	599-09201
599-03007	—	599-03016	—	599-03307	599-09202
599-03008	—	599-03017	—	599-03308	599-09203
599-03018	599-03027	—	599-03225	599-03309	—
599-03019	599-03028	—	599-03226	599-03310	—
599-03020	599-03029	—	599-03227	599-03311	—
599-03021	599-03030	—	599-03228	599-03312	—
599-03022	599-03031	—	599-03229	599-03313	—
599-03023	599-03032	—	599-03230	599-03314	—
599-03024	—	599-03033	—	599-03315	599-09213
599-03025	—	599-03034	—	599-03316	599-09214
599-03026	—	599-03035	—	599-03317	599-09215
599-03054	599-03063	—	599-03234	599-03318	—
599-03055	599-03064	—	599-03235	599-03319	—
599-03056	599-03065	—	599-03236	599-03320	—
599-03057	599-03066	—	599-03237	599-03321	—
599-03058	599-03067	—	599-03238	599-03322	—
599-03059	599-03068	—	599-03239	599-03323	—
599-03060	—	599-03069	—	599-03324	599-09204
599-03061	—	599-03070	—	599-03325	599-09205
599-03062	—	599-03071	—	599-03326	599-09206
599-03072	599-03081	—	599-03243	599-03327	—
599-03073	599-03082	—	599-03244	599-03328	—
599-03074	599-03083	—	599-03245	599-03329	—
599-03075	599-03084	—	599-03246	599-03330	—
599-03076	599-03085	—	599-03247	599-03331	—
599-03077	599-03086	—	599-03248	599-03332	—
599-03078	—	599-03087	—	599-03333	599-09216
599-03079	—	599-03088	—	599-03334	599-09217
599-03080	—	599-03089	—	599-03335	599-09218
599-03108	599-03117	—	599-03252	599-03336	—
599-03109	599-03118	—	599-03253	599-03337	—
599-03110	599-03119	—	599-03254	599-03338	—
599-03111	599-03120	—	599-03255	599-03339	—
599-03112	599-03121	—	599-03256	599-03340	—
599-03113	599-03122	—	599-03257	599-03341	—
599-03114	—	599-03123	—	599-03342	599-09207
599-03115	—	599-03124	—	599-03343	599-09208
599-03116	—	599-03125	—	599-03344	599-09209

Note:

The model (M), year (Y) and week (W) of original manufacture of the valve is stamped on the valve tag in MM/YY/WW format.

Key:

F Female NPT **UF** Union Female
AF Angle Female **UM** Union Male

Continued...




D-223

Valves


Accessories & Service Kits

D-224

Valves

		Description	Product Group	Quantity	Part No.
		1/2 to 2" 2-way Bronze Valve Body Rebuild/Repack Service Kits.	Flowrite	1	See table below
Valve Part No.				Model 1 Part No.	Model 2 Part No.
FxF	FxUF	UFxUF	FxUM		
599-03126	599-03135	—	599-03261	599-03345	—
599-03127	599-03136	—	599-03262	599-03346	—
599-03128	599-03137	—	599-03263	599-03347	—
599-03129	599-03138	—	599-03264	599-03348	—
599-03130	599-03139	—	599-03265	599-03349	—
599-03131	599-03140	—	599-03266	599-03350	—
599-03132	—	599-03141	—	599-03351	599-09219
599-03133	—	599-03142	—	599-03352	599-09220
599-03134	—	599-03143	—	599-03353	599-09221
599-03162	599-03171	—	599-03270	599-03354	—
599-03163	599-03172	—	599-03271	599-03355	—
599-03164	599-03173	—	599-03272	599-03356	—
599-03165	599-03174	—	599-03273	599-03357	—
599-03166	599-03175	—	599-03274	599-03358	—
599-03167	599-03176	—	599-03275	599-03359	—
599-03168	—	599-03177	599-03276	599-03360	599-09210
599-03169	—	599-03178	—	599-03361	599-09211
599-03170	—	599-03179	—	599-03362	599-09212
599-03180	599-03189	—	599-03279	599-03363	—
599-03181	599-03190	—	599-03280	599-03364	—
599-03182	599-03191	—	599-03281	599-03365	—
599-03183	599-03192	—	599-03282	599-03366	—
599-03184	599-03193	—	599-03283	599-03367	—
599-03185	599-03194	—	599-03284	599-03368	—
599-03186	—	599-03195	—	599-03369	599-09222
599-03187	—	599-03196	—	599-03370	599-09223
599-03188	—	599-03197	—	599-03371	599-09224
		1/2 to 2" 3-way Bronze Valve Body Rebuild/Repack Service Kits.	Flowrite	1	See table below
FxF	UFxUF	Model 1 Part No.	Model 2 Part No.		
599-03144	599-03153	599-03372	—		
599-03145	599-03154	599-03373	—		
599-03146	599-03155	599-03374	—		
599-03147	599-03156	599-03375	—		
599-03148	599-03157	599-03376	—		
599-03149	599-03158	599-03377	—		
599-03150	599-03159	599-03378	599-09225		
599-03151	599-03160	599-03379	599-09226		
599-03152	599-03161	599-03380	599-09227		
599-03198	599-03207	599-03381	—		
599-03199	599-03208	599-03382	—		
599-03200	599-03209	599-03383	—		
599-03201	599-03210	599-03384	—		
599-03202	599-03211	599-03385	—		
599-03203	599-03212	599-03386	—		
599-03204	599-03213	599-03387	599-09228		
599-03205	599-03214	599-03388	599-09229		
599-03206	599-03215	599-03389	599-09230		
		1/2 to 2" Bronze Valve Body Valve Repack Kits (10 mm. dia.).	Flowrite		
		• Normal Duty		1	599-03390
		• Steam		1	599-03391

Accessories & Service Kits



	Description	Product Group	Quantity	Part No.																																																																																																																								
Flowrite																																																																																																																												
	2-1/2 to 6" 2-way Flanged Iron Valve Body Rebuild/Repack Service Kits.	Flowrite	1	See table below																																																																																																																								
		<table border="1"> <thead> <tr> <th>Valve Part No.</th> <th>Kit Part No.</th> </tr> </thead> <tbody> <tr><td>599-05920</td><td>599-10130</td></tr> <tr><td>599-05921</td><td>599-10131</td></tr> <tr><td>599-05922</td><td>599-10132</td></tr> <tr><td>599-05923</td><td>599-10133</td></tr> <tr><td>599-05924</td><td>599-10134</td></tr> <tr><td>599-05930</td><td>599-10140</td></tr> <tr><td>599-05931</td><td>599-10141</td></tr> <tr><td>599-05932</td><td>599-10142</td></tr> <tr><td>599-05933</td><td>599-10143</td></tr> <tr><td>599-05934</td><td>599-10144</td></tr> <tr><td>599-05940</td><td>599-10135</td></tr> <tr><td>599-05941</td><td>599-10136</td></tr> <tr><td>599-05942</td><td>599-10137</td></tr> <tr><td>599-05943</td><td>599-10138</td></tr> <tr><td>599-05944</td><td>599-10139</td></tr> <tr><td>599-05950</td><td>599-10145</td></tr> <tr><td>599-05951</td><td>599-10146</td></tr> <tr><td>599-05952</td><td>599-10147</td></tr> <tr><td>599-05953</td><td>599-10148</td></tr> <tr><td>599-05954</td><td>599-10149</td></tr> <tr><td>599-05960</td><td>599-10130</td></tr> <tr><td>599-05961</td><td>599-10131</td></tr> <tr><td>599-05962</td><td>599-10132</td></tr> <tr><td>599-05963</td><td>599-10133</td></tr> <tr><td>599-05964</td><td>599-10134</td></tr> <tr><td>599-05970</td><td>599-10140</td></tr> <tr><td>599-05971</td><td>599-10141</td></tr> <tr><td>599-05972</td><td>599-10142</td></tr> <tr><td>599-05973</td><td>599-10143</td></tr> <tr><td>599-05974</td><td>599-10144</td></tr> <tr><td>599-05980</td><td>599-10135</td></tr> <tr><td>599-05981</td><td>599-10136</td></tr> <tr><td>599-05982</td><td>599-10137</td></tr> <tr><td>599-05983</td><td>599-10138</td></tr> <tr><td>599-05984</td><td>599-10139</td></tr> <tr><td>599-05990</td><td>599-10145</td></tr> <tr><td>599-05991</td><td>599-10146</td></tr> <tr><td>599-05992</td><td>599-10147</td></tr> <tr><td>599-05993</td><td>599-10148</td></tr> <tr><td>599-05994</td><td>599-10149</td></tr> <tr><td>599-06040</td><td>599-10110</td></tr> <tr><td>599-06041</td><td>599-10111</td></tr> <tr><td>599-06042</td><td>599-10112</td></tr> <tr><td>599-06043</td><td>599-10113</td></tr> <tr><td>599-06044</td><td>599-10114</td></tr> <tr><td>599-06050</td><td>599-10115</td></tr> <tr><td>599-06051</td><td>599-10116</td></tr> <tr><td>599-06052</td><td>599-10117</td></tr> <tr><td>599-06053</td><td>599-10118</td></tr> <tr><td>599-06054</td><td>599-10119</td></tr> <tr><td>599-06060</td><td>599-10100</td></tr> <tr><td>599-06061</td><td>599-10101</td></tr> <tr><td>599-06062</td><td>599-10102</td></tr> <tr><td>599-06063</td><td>599-10103</td></tr> <tr><td>599-06064</td><td>599-10104</td></tr> <tr><td>599-06070</td><td>599-10105</td></tr> <tr><td>599-06071</td><td>599-10106</td></tr> <tr><td>599-06072</td><td>599-10107</td></tr> <tr><td>599-06073</td><td>599-10108</td></tr> <tr><td>599-06074</td><td>599-10109</td></tr> </tbody> </table>	Valve Part No.	Kit Part No.	599-05920	599-10130	599-05921	599-10131	599-05922	599-10132	599-05923	599-10133	599-05924	599-10134	599-05930	599-10140	599-05931	599-10141	599-05932	599-10142	599-05933	599-10143	599-05934	599-10144	599-05940	599-10135	599-05941	599-10136	599-05942	599-10137	599-05943	599-10138	599-05944	599-10139	599-05950	599-10145	599-05951	599-10146	599-05952	599-10147	599-05953	599-10148	599-05954	599-10149	599-05960	599-10130	599-05961	599-10131	599-05962	599-10132	599-05963	599-10133	599-05964	599-10134	599-05970	599-10140	599-05971	599-10141	599-05972	599-10142	599-05973	599-10143	599-05974	599-10144	599-05980	599-10135	599-05981	599-10136	599-05982	599-10137	599-05983	599-10138	599-05984	599-10139	599-05990	599-10145	599-05991	599-10146	599-05992	599-10147	599-05993	599-10148	599-05994	599-10149	599-06040	599-10110	599-06041	599-10111	599-06042	599-10112	599-06043	599-10113	599-06044	599-10114	599-06050	599-10115	599-06051	599-10116	599-06052	599-10117	599-06053	599-10118	599-06054	599-10119	599-06060	599-10100	599-06061	599-10101	599-06062	599-10102	599-06063	599-10103	599-06064	599-10104	599-06070	599-10105	599-06071	599-10106	599-06072	599-10107	599-06073	599-10108	599-06074	599-10109
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D-225

Valves

Accessories & Service Kits




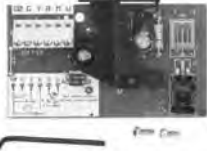
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	2-1/2 to 6" 2-way Flanged Iron Valve Body Rebuild/Repack Service Kits.	Flowrite	1	See table below																																											
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D-226

Valves

Accessories & Service Kits

	Description	Product Group	Quantity	Part No.					
Flowrite									
	2-1/2 to 6" High Close Off Rebuild/Repack Service Kits (ANSI 125 & 250)	Flowrite	1	See table below					
	2-1/2 to 6" Flanged Iron Valve Body Repack Kit (14 mm dia.) (Cartridge) • Normal Duty • Steam	Flowrite	1	599-08020					
			1	599-08021					
 <p>8" Shown</p>	Diaphragm Replacement Kits. • 4-inch Normal Duty • 8-inch Normal Duty • 8-inch High Temperature • 12-inch Normal Duty	Flowrite	1	599-01093					
			1	599-01060					
			1	599-01061					
			1	599-01070					
	Stem Retainer Kit. With interface nut and stem retainer ring. For 8-inch, 12-inch and SKB/C actuators. • 10 mm • 14 mm	Flowrite	1	599-10048					
			1	599-10049					
	Circuit Board Replacement. • Date codes After 030215 • All date codes	SQX62	1	466856668					
		SQX82	1	466856418					
	Plastic Wiring Compartment Cover.	SQX	1	410455758					
	Circuit Board Replacement.	SKB/SKC SKD62U	1	466857488					
		SKB/C/D62UA	1	466857518					





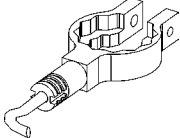



D-227

Valves





Accessories & Service Kits

D-228

Valves

	Description	Product Group	Quantity	Part No.
Flowrite				
	Plastic Wiring Compartment Cover.	SKD	1	410456348
		SKB/SKC	1	410455828
	Manual Override Crank Assembly.	SKB/C	1	426855108
		SKD	1	426855048
	Packing Heating Element.	SKB/C	1	599-00418
	Packing Heating Element.	SKD	1	599-00417
	Stem Heater	SAX	1	ASZ6.6
	Stroke Inverter. 1/2" - 2.5" valves with .75" max. stroke.	SKD	1	ASK50
		SKB	1	ASK51
	Retainer Clamp Kit.	SKB/C	1	599-10200
		8 & 12" pneu	1	599-00436
	3-way Valve Service Flanges. Allows easy access to the stem and plug assembly without removing the valve.	Flowrite	1	See table below
		Valve Size	ANSI Class 125	ANSI Class 250
		2-1/2"	599-05011	599-05016
		3"	599-05012	599-05017
		4"	599-05013	599-05018
		5"	599-05014	599-05019
6"	599-05015	599-05020		
	Flange Bolts and Gasket Service Kit. For lower bypass port of 3-way valves. Includes one gasket and the number and size of bolts needed for the replacement.	Flowrite	1	See table below
		Valve Size	ANSI Class 125	ANSI Class 250
		2-1/2"	599-09236	599-09241
		3"	599-09237	599-09242
		4"	599-09238	599-09243
		5"	599-09239	599-09244
6"	599-09240	599-09245		





Accessories & Service Kits

	Description	Product Group	Quantity	Part No.	Part No.	
Flowrite						
	Lower Seat Tools for Valve Size:	Flowrite				
	• 2-1/2"		1	599-09144	—	
	• 3"		1	599-09145	—	
	• 4"		1	599-09146	—	
	• 5"		1	599-09147	—	
	• 6"		1	599-09148	—	
	Flowrite Union Kits.	Flowrite		Female	Male	
	• 1/2" (15 mm)		1	599-09185	599-09181	
	• 3/4" (20 mm)		1	599-09186	599-09182	
	• 1" (25 mm)		1	599-09187	599-09183	
	• 1-1/4" (32 mm)		1	599-09188	599-09184	
	• 1-1/2" (40 mm)		1	599-09189	—	
	• 2" (50 mm)		1	599-09190	—	
	Flowrite Union Gasket Kits.	Flowrite			—	
	• 1/2" NPT		25 Pieces	599-03394	—	
	• 3/4" NPT		25 Pieces	599-03395	—	
	• 1" NPT		25 Pieces	599-03396	—	
	• 1-1/4" NPT		25 Pieces	599-03387	—	
	• 1-1/2" NPT		25 Pieces	599-03388	—	
	• 2" NPT		25 Pieces	599-03389	—	
Magnetic						
	Control Signal Module w/ Feedback, 0-2".	MX..	1	ZM150		
	Control Signal Module w/ Feedback, 3-4".	MX..	1	ZM250		
	Terminal Housing. Converts 0 to 10 Vdc input to 0 to 20 Vdc phase cut output.					
	• up to 40W, IP30 rated housing	M3P	1	ZM100/A		
	• up to 40W, IP54 rated housing	M3P	1	ZM101/A		
	• up to 120W, IP30 rated housing	M3P	1	ZM200/A		
	Terminal Housing. For straight through 0 to 20 Vdc electrical housing only.					
	• to 40W, IP54 rated housing	M3P	1	ZM111		
	• up to 120W, IP30 rated housing	M3P	1	ZM210		
	Terminal Housing. Converts 0 to 20 mA/24 Vdc input to 0 to 20 Vdc phase cut output.					
• up to 40W, IP30 rated housing	M3P	1	ZM120/A			
• to 40W, IP54 rated housing	M3P	1	ZM121/A			
• up to 120W, IP30 rated housing	M3P	1	ZM220/A			
	Blanking Flange.	M3P				
	• 3"		1	Z155/80		
	• 4"		1	Z155/100		

D-229

Valves

Accessories & Service Kits

	Description	Product Group	Quantity	Part No.
Magnetic				
	580 PSI Weld Neck Adaptor Flange.	MX../M3P/MV..		
	• 1/2"		1	Z205/15
	• 3/4"		1	Z205/20
	• 1"		1	Z205/25
	• 1-1/4"		1	Z205/32
	• 1-1/2"		1	Z205/40
	• 2"		1	Z205/50
	• 2-1/2"		1	Z205/65
	• 3"		1	Z205/80
	• 4"		1	Z205/100
	230 PSI Weld Neck Adaptor Flange.	MX../M3P		
	• 4"		1	Z56/100
	580 PSI NPT Adaptor Flange.	MX../M3P/MV..		
	• 1/2"		1	Z206/15
	• 3/4"		1	Z206/20
	• 1"		1	Z206/25
	• 1-1/4"		1	Z206/32
	• 1-1/2"		1	Z206/40
	• 2"		1	Z206/50
	Replacement Circuit Board.	MVF461H/ MXG461B	1	ASE12
	Repair Module.			
	• 1/2" to 1-1/4"	MXG461	1	ASE1
	• 1-1/2" to 2-1/2"	MXG461/ MXF461	1	ASE2
	Phase Cut to 0 to 10 Vdc Signal Converter.	MX../M3P/MV..	1	SEZ91.6

D-230

Valves

Accessories & Service Kits

Part No.	Valve Size in. (mm)	Valve Action	Actuator Spring Range psi (kPa)	Nominal Stem Travel in. (mm)	Cv, USgpm	Diaphragm (Pkg. of 5)	Stem Repack Kit (Pkg. of 6)	Rebuild Kit	Replacement Actuator
VP 656 Powermite Valves									
656-0001	.50 (13)	NO	3-8 (21-55)	.25 (6.4)	2.1	656-736	656-601	656-761	656-599
656-0002	.50 (13)	NO	3-8 (21-55)	.25 (6.4)	2.1	656-736	656-601	656-761	656-599
656-0003	.50 (13)	NO	3-8 (21-55)	.25 (6.4)	0.9	656-736	656-601	656-761	656-830
656-0004	.50 (13)	NO	3-8 (21-55)	.25 (6.4)	0.9	656-736	656-601	656-761	656-830
656-0005	.75 (19)	NO	3-8 (21-55)	.25 (6.4)	4.6	656-736	656-601	656-762	656-600
656-0009	.50 (13)	3WM	10-15 (69-103)	.375 (9.5)	2.5	656-736	656-601	656-765	—
656-0010	.50 (13)	3WM	3-8 (21-55)	.375 (9.5)	2.5	656-736	656-601	656-765	—
656-0011	.50 (13)	3WM	3-8 (21-55)	.375 (9.5)	1.5	656-736	656-601	656-764	—
656-0012	.50 (13)	NC	10-15 (69-103)	.25 (6.4)	2.1	656-736	656-601	656-014	—
656-0013	.50 (13)	NC	10-15 (69-103)	.25 (6.4)	2.7	656-736	656-601	656-014	—
656-0014	.50 (13)	3WM	3-8 (21-55)	.375 (9.5)	3.1	656-736	656-601	656-766	—
656-0015	.50 (13)	3WM	10-15 (69-103)	.375 (9.5)	3.1	656-736	656-601	656-766	—
656-0017	.50 (13)	NO	3-8 (21-55)	.25 (6.4)	2.1	656-736	656-601	656-761	656-599
656-0018	.75 (19)	NO	3-8 (21-55)	.25 (6.4)	4.6	656-736	656-601	656-762	656-600
656-0019	.50 (13)	NO	5-10 (34-69)	.25 (6.4)	2.1	656-736	656-601	656-761	656-831
656-0020	.50 (13)	NO	5-10 (34-69)	.25 (6.4)	2.1	656-736	656-601	656-761	656-831
656-0021	.75 (19)	NO	5-10 (34-69)	.25 (6.4)	4.6	656-736	656-601	656-762	656-832
656-0022	.75 (19)	NO	5-10 (34-69)	.25 (6.4)	4.6	656-736	656-601	656-762	656-832
656-0028	.50 (13)	NO	3-8 (21-55)	.25 (6.4)	0.5	656-736	656-601	656-768	656-833
656-0029	.50 (13)	NO	5-10 (34-69)	.25 (6.4)	0.5	656-736	656-601	656-768	656-834

Note: Actuator with trim includes actuator, rebuild kit and bonnet pre-assembled.

D-231

Valves

Accessories & Service Kits

Part No.	Valve Size in. (mm)	Valve Action	Actuator Spring Range psi (kPa)	Nominal Stem Travel in. (mm)	Cv, USgpm	Diaphragm (Pkg. of 5)	Stem Repack Kit (Pkg. of 6)	Rebuild Kit	Actuator with Trim	Replacement Actuator
VP 658 Powertop Valves										
658-0001	.50 (13)	NO	2-6 (14-41)	.50 (13)	1.0	658-166	658-167	—	658-379	658-067
658-0002	.50 (13)	NO	2-6 (14-41)	.50 (13)	2.5	658-166	658-167	—	658-070	658-067
658-0004	.50 (13)	NO	2-6 (14-41)	.50 (13)	1.0	658-166	658-167	—	658-379	658-067
658-0005	.50 (13)	NO	2-6 (14-41)	.50 (13)	2.5	658-166	658-167	—	658-070	658-067
658-0007	.50 (13)	NO	2-6 (14-41)	.50 (13)	1.0	658-166	658-167	—	658-379	658-067
658-0008	.50 (13)	NO	2-6 (14-41)	.50 (13)	2.5	658-166	658-167	—	658-070	658-067
658-0009	.75 (19)	NO	2-6 (14-41)	.50 (13)	6.3	658-166	658-167	—	658-071	658-067
658-0010	.75 (19)	NO	2-6 (14-41)	.50 (13)	6.3	658-166	658-167	—	658-071	658-067
658-0011	1 (25)	NO	2-6 (14-41)	.50 (13)	10	658-166	658-167	—	658-072	658-067
658-0012	1 (25)	NO	2-6 (14-41)	.50 (13)	10	658-166	658-167	—	658-072	658-067
658-0013	1.25 (32)	NO	2-6 (14-41)	.50 (13)	16	658-166	658-167	—	658-074	658-067
658-0014	1.25 (32)	NO	2-6 (14-41)	.50 (13)	16	658-166	658-167	—	658-074	658-067
658-0018	.50 (13)	NO	2-6 (14-41)	.50 (13)	1.0	658-166	658-167	—	658-379	658-067
658-0019	.50 (13)	NO	2-6 (14-41)	.50 (13)	2.5	658-166	658-167	—	658-070	658-067
658-0020	.75 (19)	NO	2-6 (14-41)	.50 (13)	6.3	658-166	658-167	—	658-071	658-067
658-0021	1 (25)	NO	2-6 (14-41)	.50 (13)	10	658-166	658-167	—	658-072	658-067
658-0022	1.25 (32)	NO	2-6 (14-41)	.50 (13)	16	658-166	658-167	—	658-074	658-067
658-0026	.50 (13)	3WM	3-7 (21-48)	.50 (13)	2.5	658-166	658-167	658-405	—	658-069
658-0027	.50 (13)	3WM	10-14 (69-97)	.50 (13)	2.5	658-166	658-167	658-405	—	658-068
658-0028	.75 (19)	3WM	3-7 (21-48)	.50 (13)	6.3	658-166	658-167	658-406	—	658-069
658-0029	.75 (19)	3WM	10-14 (69-97)	.50 (13)	6.3	658-166	658-167	658-406	—	658-068
658-0030	1 (25)	3WM	3-7 (21-48)	.50 (13)	10	658-166	658-167	658-407	—	658-069
658-0031	1 (25)	3WM	10-14 (69-97)	.50 (13)	10	658-166	658-167	658-407	—	658-068
658-0032	1.25 (32)	3WM	10-14 (69-97)	.50 (13)	16	658-166	658-167	658-408	—	658-068
658-0033	1.25 (32)	3WM	3-7 (21-48)	.50 (13)	16	658-166	658-167	658-408	—	658-069
658-0040	.50 (13)	NC	10-14 (69-97)	.50 (13)	2.5	658-166	658-167	—	—	658-068
658-0041	.75 (19)	NC	10-14 (69-97)	.50 (13)	6.3	658-166	658-167	—	—	658-068
658-0042	1 (25)	NC	10-14 (69-97)	.50 (13)	10	658-166	658-167	—	—	658-068
658-0043	.50 (13)	NC	10-14 (69-97)	.50 (13)	2.5	658-166	658-167	—	—	658-068
658-0050	.50 (13)	SEQ	2-11 (14-76)	.406 (10)	1.5	658-166	658-167	—	—	658-066
658-0051	.50 (13)	SEQ	2-11 (14-76)	.406 (10)	2.5	658-166	658-167	—	—	658-066
658-0052	.50 (13)	CHG	2-11 (14-76)	.406 (10)	2.5	658-166	658-167	—	—	658-066
658-0060	.50 (13)	NO	10-14 (69-97)	.50 (13)	1.0	658-166	658-167	—	658-379	658-068
658-0061	.50 (13)	NO	10-14 (69-97)	.50 (13)	2.5	658-166	658-167	—	658-070	658-068
658-0062	.50 (13)	NO	10-14 (69-97)	.50 (13)	1.0	658-166	658-167	—	658-379	658-068
658-0063	.50 (13)	NO	10-14 (69-97)	.50 (13)	2.5	658-166	658-167	—	658-070	658-068
658-0064	.50 (13)	NO	10-14 (69-97)	.50 (13)	1.0	658-166	658-167	—	658-379	658-068
658-0065	.50 (13)	NO	10-14 (69-97)	.50 (13)	2.5	658-166	658-167	—	658-070	658-068
658-0066	.75 (19)	NO	10-14 (69-97)	.50 (13)	6.3	658-166	658-167	—	658-071	658-068
658-0067	.75 (19)	NO	10-14 (69-97)	.50 (13)	6.3	658-166	658-167	—	658-072	658-068
658-0068	1 (25)	NO	10-14 (69-97)	.50 (13)	10	658-166	658-167	—	658-072	658-068
658-0069	1 (25)	NO	10-14 (69-97)	.50 (13)	10	658-166	658-167	—	658-072	658-068
658-0070	1.25 (32)	NO	10-14 (69-97)	.50 (13)	16	658-166	658-167	—	658-074	658-068
658-0071	1.25 (32)	NO	10-14 (69-97)	.50 (13)	16	658-166	658-167	—	—	658-068
658-0085	.50 (13)	NC	10-14 (69-97)	.50 (13)	1.0	658-166	658-167	—	—	658-068
658-0086	.50 (13)	NC	10-14 (69-97)	.50 (13)	1.0	658-166	658-167	—	—	658-068
658-0100	.50 (13)	NO	2-6 (14-41)	.50 (13)	0.5	658-166	658-167	—	658-376	658-067
658-0101	.50 (13)	NO	2-6 (14-41)	.50 (13)	0.5	658-166	658-167	—	658-376	658-067

D-232

Valves