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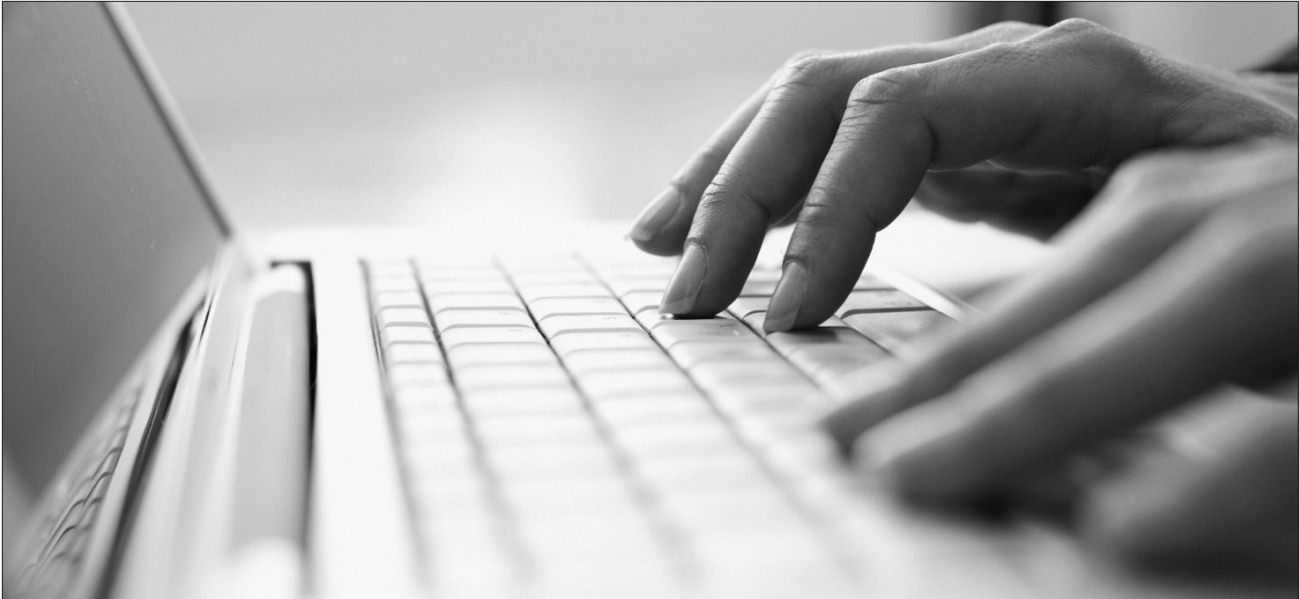
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- Calculate pressure drop and quantity of steam

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## 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.
- Pressure Independent Control Valves automatically adjust to pressure fluctuations to maintain a consistent flow in all applications
- 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			
PICV			
Ball			
Magnetic			
Service			
		Butterfly	
Terminal	AHU/Unitary	Distribution	Central Equipment

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Valves

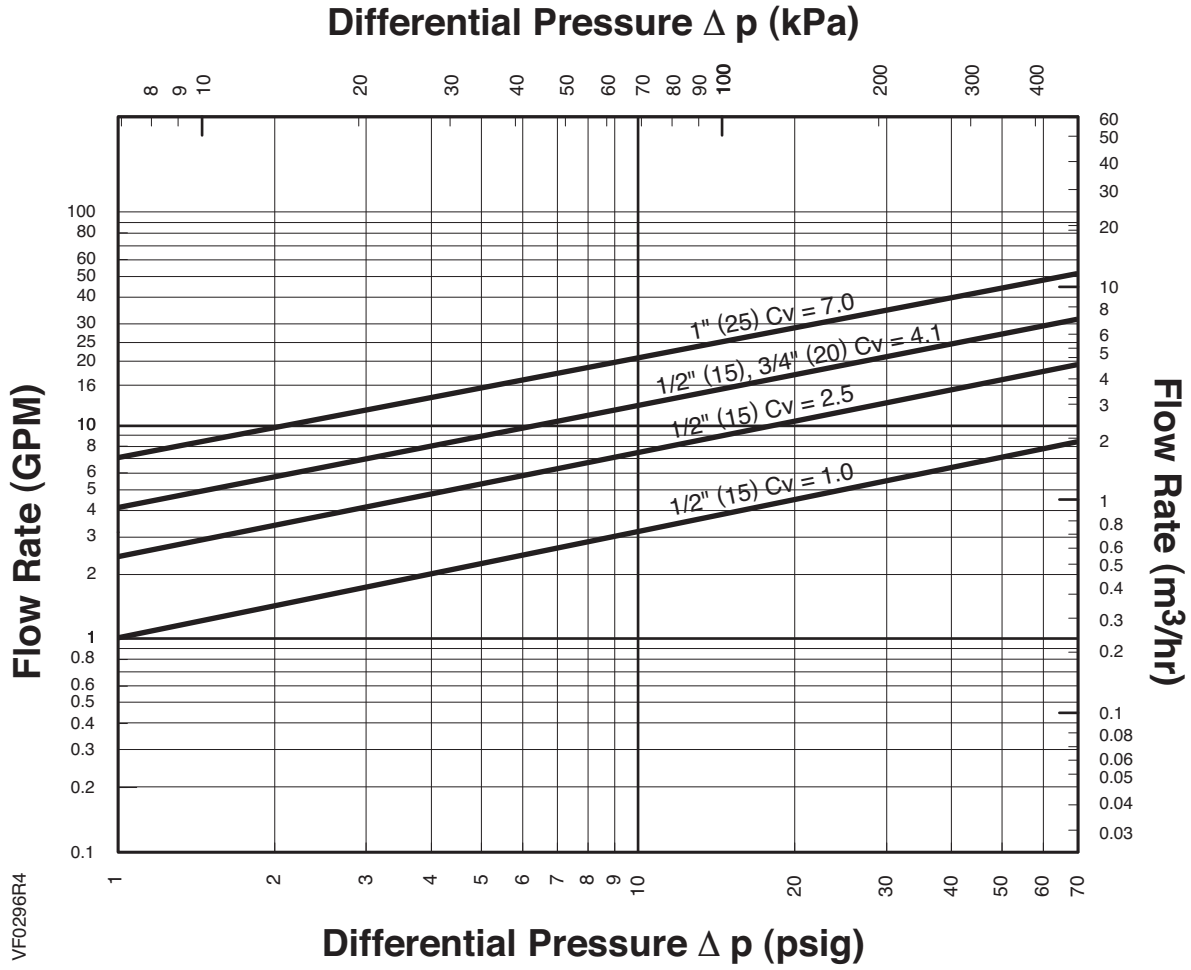
## Valve Selection Matrix by Application

Application	Controlled Medium	Valve Size	Type of Valve	Refer to Page
Baseboard/Fan Coil/Radiant Heat	Water	1/2 to 1"	Zone, PICV	A-79, A-105
Baseboard/Terminal Unit	Water	1/2 to 1"	Powermite MZ Series, PICV	A-79, A-125
Terminal Unit	Water and Low Pressure steam <sup>1</sup>	1/2 to 1"	Powermite MT Series, PICV (Water Only)	A-79, A-135
Unitary/Fan Coil	Water and Low Pressure steam <sup>1</sup>	1/2 to 1"	Powermite MT Series, PICV (Water Only)	A-79, A-135
Unitary/Fan Coil	Water (Equal Percentage) and High Pressure steam (Linear)	1/2 to 2"	Flowrite Globe, PICV (Water Only)	A-79, A-155
Air Handling Unit	Water (Equal Percentage) and High Pressure steam (Linear)	1/2 to 2"	Flowrite Globe, PICV (Water Only)	A-79, A-155
Central Plant	Water (Equal Percentage) and High Pressure steam (Linear)	2-1/2 to 6"	Flowrite Globe, PICV (Water Only)	A-79, A-155
Fan Coil/VAV/Isolation and Control/AHU	Water	1/2 to 2"	Ball, PICV	A-79, A-195
High performance Control and Domestic Water	Water (including Domestic), Low Pressure Steam and High Pressure Steam	1/2 to 4"	Magnetic	A-215
Baseboard/Terminal Unit/Radiant (Replacement)	Water and Low Pressure Steam	1/2 to 1-1/4"	Service	A-223
Central Plant Isolation and Distribution	Water	2 to 20"	Butterfly	A-245

**Table Note:**

1. Low pressure steam = 15 psi or less

# Zone Valves Water Capacity Graph



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Valves

## 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 (m<sup>3</sup>/hr).

### Close-off Pressures

Spring Return or Non-Spring Return Actuators						
Valve Size Inch	Valve Size (mm)	Cv	SFA	SFP	SSA/SSP	STA/STP
			APC 240, 242	APC 241, 243	APC 244, 245, 248	APC 346, 347
1/2	(15)	1.0	87 (600)	80 (552)	94 (648)	29 (200)
		2.5 / 4.0	51 (352)	44 (303)	65 (448)	29 (200)
3/4	(20)	4.1	51 (352)	44 (303)	65 (448)	29 (200)
1	(25)	7.0	29 (200)	25 (172)	36 (248)	22 (152)

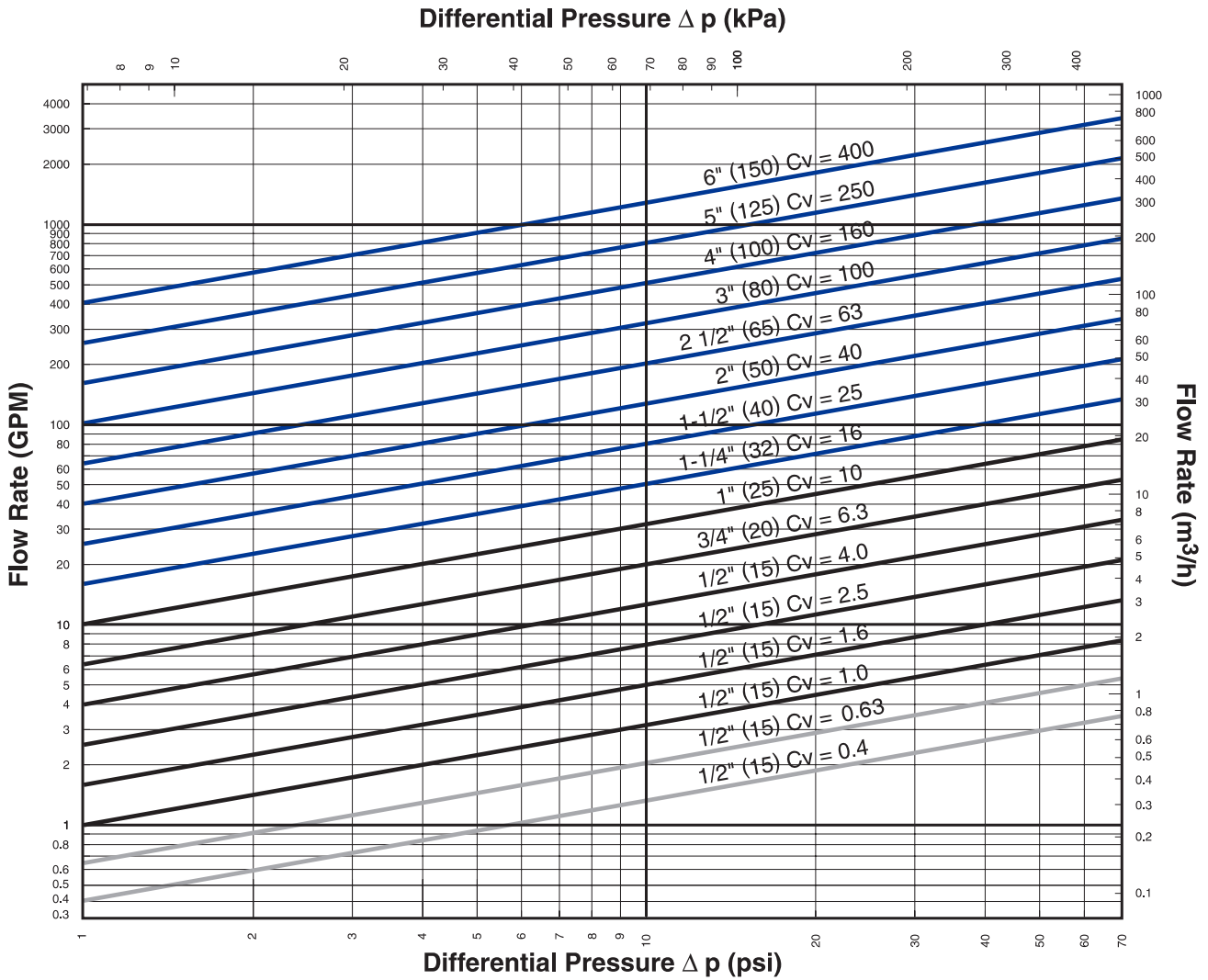
#### Table Notes:

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

# Powermite/Flowrite **Globe** Water Capacity Graph

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Valves



### 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.

## Powermite/Flowrite **Globe** Water Capacity Tables

Valve Size Inches	English Pressure Differential															
	Cv/1	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 (m<sup>3</sup>/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	Cv	English Inlet Pressure							
		2 psi		5 psi			10 psi		
		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
	0.63	7.53	11	14	16	17	21	24	26
	1	12	17	22	25	28	34	38	42
	1.6	19	27	35	40	44	54	61	67
	2.5	30	42	55	62	69	85	96	104
	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 Inches	Cv	English Inlet Pressure										
		15 psi			25 psi			50 psi			100 psi	
		Pressure Differential										
		9 psi	12 psi	15 psi	5 psi	15 psi	20 psi	15 psi	30 psi	32.5 psi	50 psi	57.5 psi
1/2"	0.4	18	19	22	16	26	29	35	45	47	79	83
	0.63	28	31	34	26	41	46	55	72	74	125	132
	1	45	48	54	41	65	72	87	114	117	198	209
	1.6	72	78	87	65	104	116	139	183	188	318	334
	2.5	112	121	135	101	163	181	217	286	294	497	522
	4	179	194	217	162	261	290	348	458	471	796	835
3/4"	6.3	282	305	341	255	411	456	548	722	742	1253	1315
1"	10	447	485	542	405	653	724	870	1147	1178	1989	2088
1-1/4"	16	716	775	867	648	1044	1158	1392	1835	1885	3182	3340
1-1/2"	25	1118	1211	1355	1013	1632	1810	2175	2867	2946	4972	5220
2"	40	1789	1938	2168	1620	2611	2895	3480	4587	4713	7956	8351
2-1/2"	63	2818	3053	3414	2552	4112	4560	5480	7225	7424	12530	13153
3"	100	4473	4845	5419	4050	6527	7238	8699	11468	11784	19889	20878
4"	160	7156	7753	8671	6481	10443	11581	13919	18348	18855	31823	33405
5"	250	11181	12114	13549	10126	16317	18095	21748	28669	29462	49723	52195
6"	400	17890	19382	21678	16201	26108	28953	34797	45870	47139	79556	83512

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

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Valves

## Powermite/Flowrite **Globe** Temperature Pressure Ratings

### Powermite Valve Bodies

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

### Flowrite Valve Bodies

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

**Table Notes:**

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

# Powermite **Globe** Close-off Pressures

## MZ Series

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

**Table Note:**

All close-off 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).

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Valves

## MT Series

2-Way Valve Size	Pneumatic			Electronic	
	599-01088			SQS	SSC
	3 to 8 psi (21 to 55 kPa)	8 to 13 psi (55 to 90 kPa)	10 to 15 psi (69 to 103 kPa)		
<b>Normally Open</b>					
1/2", Cv ≤ 1.6	95 (655)	45 (310)	20 (138)	160 (1103)	120 (868)
1/2", Cv ≤ 4	45 (310)	25 (172)	15 (103)	85 (586)	65 (448)
3/4 to 1", Cv ≤ 10	35 (241)	10 (69)	—	70 (482)	55 (379)
<b>Normally Closed</b>					
1/2", Cv ≤ 1.6	40 (276)	95 (655)	95 (655)	95 (655)	95 (655)
1/2", Cv ≤ 4	28 (193)	50 (345)	50 (345)	50 (345)	50 (345)
3/4 to 1", Cv ≤ 10	18 (124)	40 (276)	40 (276)	40 (276)	40 (276)

3-Way Valve Size	Pneumatic			Electronic	
	599-01088			SQS	SSC
	3 to 8 psi (21 to 55 kPa)	8 to 13 psi (55 to 90 kPa)	10 to 15 psi (69 to 103 kPa)		
<b>Normally Open</b>					
1/2", Cv ≤ 1.6	95 (655)	45 (310)	20 (138)	160 (1103)	95 (655)
1/2", Cv ≤ 4	45 (310)	25 (172)	15 (103)	85 (586)	50 (379)
3/4 to 1", Cv ≤ 10	35 (241)	10 (69)	—	70 (482)	40 (276)
<b>Normally Closed</b>					
1/2", Cv ≤ 1.6	40 (276)	95 (655)	120 (827)	95 (655)	95 (655)
1/2", Cv ≤ 4	28 (193)	50 (345)	65 (448)	50 (345)	50 (345)
3/4 to 1", Cv ≤ 10	18 (124)	40 (276)	50 (345)	40 (276)	40 (276)

**Table Notes:**

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

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.



**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 close-off 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.

**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 close-off values within table are in psi (kPa) unless otherwise indicated.

# Flowrite **Globe** Close-off Pressures

## Electronic

Valve Size in. (mm)		Rack & Pinion APC 298, 299	SAX NSR APC 371, 373	SKD APC 267, 274-276	SKB APC 289-291	SKC APC 292-294
<b>Normally Open</b>						
1/2	(15)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	—
3/4	(20)	231 (1593)	211 (1456)	250 (1724)	250 (1724)	—
1	(25)	149 (1028)	137 (945)	201 (1386)	250 (1724)	—
1-1/4	(32)	92 (634)	85 (586)	124 (855)	250 (1724)	—
1-1/2	(40)	59 (407)	55 (379)	80 (552)	250 (1724)	—
2	(50)	36 (248)	34 (235)	49 (338)	201 (1386)	—
2-1/2	(65)	25 (172)	26 (179)	38 (262)	153 (518)	—
3	(80)	18 (124)	17 (117)	25 (172)	101 (342)	—
4	(100)	—	—	—	—	65 (448)
5	(125)	—	—	—	—	42 (289)
6	(150)	—	—	—	—	29 (199)
<b>Normally Closed</b>						
1/2	(15)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	—
3/4	(20)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	—
1	(25)	173 (1193)	159 (1097)	203 (1400)	250 (1724)	—
1-1/4	(32)	100 (690)	92 (634)	117 (807)	250 (1724)	—
1-1/2	(40)	61 (421)	57 (393)	73 (503)	208 (1434)	—
2	(50)	37 (255)	35 (241)	44 (303)	126 (869)	—
2-1/2	(65)	25 (172)	26 (179)	34 (234)	97 (668)	—
3	(80)	18 (124)	17 (117)	22 (152)	63 (434)	—
4	(100)	—	—	—	—	39 (268)
5	(125)	—	—	—	—	25 (172)
6	(150)	—	—	—	—	17 (117)

**Table Notes:**

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

## Electronic High Pressure Close-off

Valve Size in. (mm)		Electro-Hydraulic 24 VAC	
		SKD	SKC
<b>Normally Open</b>			
2-1/2	(65)	200 (1378)	—
3	(80)	200 (1378)	—
4	(100)	—	200 (1378)
5	(125)	—	200 (1378)
6	(150)	—	200 (1378)
<b>Normally Closed</b>			
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 close-off 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 (15)	3/4 (20)	1 (25)	1-1/4 (32)	1-1/2 (40)	2 (50)	2-1/2 (65)	3 (80)
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 (32)	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)

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Valves

### ✂ 3-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 (15)	3/4 (20)	1 (25)	1-1/4 (32)	1-1/2 (40)	2 (50)	2-1/2 (65)	3 (80)
1/2 (15)	599-10357 or 599-10357S	10.0 (8.62)	6.94 (5.93)	6.19 (5.29)					
3/4 (20)	599-10360 or 599-10360S		16.00 (13.79)	13.9 (11.98)	12.4 (10.69)				
1 (25)	599-10363 or 599-10363S			25.00 (21.55)	22.5 (19.4)	21.2 (18.27)			
1-1/4 (32)	599-10366 or 599-10366S				40.00 (34.48)	36.9 (31.81)	33.3 (28.70)		
1-1/2 (40)	599-10369 or 599-10369S					63.00 (54.31)	55.3 (47.67)	51.00 (43.96)	
2 (50)	599-10372 or 599-10372S						100 (86.21)	94.3 (81.29)	86.1 (74.23)

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

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







# Two-Way PICV Assemblies

**NEW!**

ANSI Class 250  
Electronic Spring Return or Non-Spring Return Actuators

- Normally Open
- Field adjustable maximum flow
- 200 psi close-off with ANSI Class IV leakage



NO 1/2 to 3/4"			Spring Return Actuator		Non-Spring Return Actuator	
			Floating	0-10 V	Floating	0-10 V
<b>2-Way Valve Body Part No.</b>	<b>Valve Size in.</b>	<b>Factory Preset Max. GPM</b>	 SSD81.5U	 SSD61.5U	 SSD81U	 SSD61U
<b>Normally Open</b>						
	1/2	0.5	232-04310-0.5	233-04310-0.5	230-04310-0.5	231-04310-0.5
		1.0	232-04311-1	233-04311-1	230-04311-1	231-04311-1
		1.5	232-04311-1.5	233-04311-1.5	230-04311-1.5	231-04311-1.5
		2.0	232-04311-2	233-04311-2	230-04311-2	231-04311-2
	3/4	2.5	232-04311-2.5	233-04311-2.5	230-04311-2.5	231-04311-2.5
		1.0	232-04312-1	233-04312-1	230-04312-1	231-04312-1
		1.5	232-04312-1.5	233-04312-1.5	230-04312-1.5	231-04312-1.5
		2.0	232-04312-2	233-04312-2	230-04312-2	231-04312-2
		2.5	232-04312-2.5	233-04312-2.5	230-04312-2.5	231-04312-2.5
		3.0	232-04312-3	233-04312-3	230-04312-3	231-04312-3
		3.5	232-04312-3.5	233-04312-3.5	230-04312-3.5	231-04312-3.5
		4.0	232-04312-4	233-04312-4	230-04312-4	231-04312-4
		4.5	232-04312-4.5	233-04312-4.5	230-04312-4.5	231-04312-4.5
		5.0	232-04312-5	233-04312-5	230-04312-5	231-04312-5
5.5	232-04312-5.5	233-04312-5.5	230-04312-5.5	231-04312-5.5		

**Table Notes:**  
Part numbers in red indicate complete assemblies.

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Valves

# Two-Way PICV Assemblies








**NEW!**

ANSI Class 250  
Electronic Spring Return or Non-Spring Return Actuators

- Normally Closed
- Field adjustable maximum flow
- 45 psi close-off with ANSI Class IV leakage

# PICV Selection Tables



NC 1/2 to 3/4"			Spring Return Actuator		Non-Spring Return Actuator	
			Floating	0-10 V	Floating	0-10 V
	Valve Size in.	Factory Preset Max. GPM	 SSD81.5U	 SSD61.5U	 SSD81U	 SSD61U
			<b>Normally Closed</b>			
	1/2	0.5	232-04300-0.5	233-04300-0.5	230-04300-0.5	231-04300-0.5
		1.0	232-04300-1	233-04300-1	230-04300-1	231-04300-1
		1.5	232-04300-1.5	233-04300-1.5	230-04300-1.5	231-04300-1.5
		2.0	232-04300-2	233-04300-2	230-04300-2	231-04300-2
		2.5	232-04300-2.5	233-04300-2.5	230-04300-2.5	231-04300-2.5
		3.0	232-04301-3	233-04301-3	230-04301-3	231-04301-3
		3.5	232-04301-3.5	233-04301-3.5	230-04301-3.5	231-04301-3.5
		4.0	232-04301-4	233-04301-4	230-04301-4	231-04301-4
		4.5	232-04301-4.5	233-04301-4.5	230-04301-4.5	231-04301-4.5
		5.0	232-04301-5	233-04301-5	230-04301-5	231-04301-5
		5.5	232-04301-5.5	233-04301-5.5	230-04301-5.5	231-04301-5.5
		6.0	232-04301-6	233-04301-6	230-04301-6	231-04301-6
		6.5	232-04301-6.5	233-04301-6.5	230-04301-6.5	231-04301-6.5
		7.0	232-04301-7	233-04301-7	230-04301-7	231-04301-7
		7.5	232-04301-7.5	233-04301-7.5	230-04301-7.5	231-04301-7.5
	3/4	1.0	232-04302-1	233-04302-1	230-04302-1	231-04302-1
		1.5	232-04302-1.5	233-04302-1.5	230-04302-1.5	231-04302-1.5
		2.0	232-04302-2	233-04302-2	230-04302-2	231-04302-2
		2.5	232-04302-2.5	233-04302-2.5	230-04302-2.5	231-04302-2.5
		3.0	232-04302-3	233-04302-3	230-04302-3	231-04302-3
		3.5	232-04302-3.5	233-04302-3.5	230-04302-3.5	231-04302-3.5
		4.0	232-04302-4	233-04302-4	230-04302-4	231-04302-4
		4.5	232-04302-4.5	233-04302-4.5	230-04302-4.5	231-04302-4.5
		5.0	232-04303-5	233-04303-5	230-04303-5	231-04303-5
		5.5	232-04303-5.5	233-04303-5.5	230-04303-5.5	231-04303-5.5
		6.0	232-04303-6	233-04303-6	230-04303-6	231-04303-6
		6.5	232-04303-6.5	233-04303-6.5	230-04303-6.5	231-04303-6.5
		7.0	232-04303-7	233-04303-7	230-04303-7	231-04303-7
		7.5	232-04303-7.5	233-04303-7.5	230-04303-7.5	231-04303-7.5
		8.0	232-04303-8	233-04303-8	230-04303-8	231-04303-8
8.5	232-04303-8.5	233-04303-8.5	230-04303-8.5	231-04303-8.5		

**Table Notes:**  
Part numbers in red indicate complete assemblies.

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Valves

# Two-Way PICV Assemblies



ANSI Class 250  
Electronic Spring Return or Non-Spring Return Actuators



- Normally Closed
- Field adjustable maximum flow
- 45 psi close-off with ANSI Class IV leakage

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Valves

NC 1 to 1-1/4"			Spring Return Actuator		Non-Spring Return Actuator	
			Floating	0-10 V	Floating	0-10 V
2-Way Valve Body Part No.	Valve Size in.	Factory Preset Max. GPM	SSD81.5U	SSD61.5U	SSD81U	SSD61U
Normally Closed						
	1	1	232-04304-1	233-04304-1	230-04304-1	231-04304-1
		2	232-04304-2	233-04304-2	230-04304-2	231-04304-2
		3	232-04304-3	233-04304-3	230-04304-3	231-04304-3
		4	232-04304-4	233-04304-4	230-04304-4	231-04304-4
		5	232-04304-5	233-04304-5	230-04304-5	231-04304-5
		6	232-04304-6	233-04304-6	230-04304-6	231-04304-6
		7	232-04304-7	233-04304-7	230-04304-7	231-04304-7
		8	232-04304-8	233-04304-8	230-04304-8	231-04304-8
		9	232-04304-9	233-04304-9	230-04304-9	231-04304-9
	1-1/4	3	232-04305-3	233-04305-3	230-04305-3	231-04305-3
		4	232-04305-4	233-04305-4	230-04305-4	231-04305-4
		5	232-04305-5	233-04305-5	230-04305-5	231-04305-5
		6	232-04305-6	233-04305-6	230-04305-6	231-04305-6
		7	232-04305-7	233-04305-7	230-04305-7	231-04305-7
		8	232-04305-8	233-04305-8	230-04305-8	231-04305-8
		9	232-04305-9	233-04305-9	230-04305-9	231-04305-9
		10	232-04305-10	233-04305-10	230-04305-10	231-04305-10
		11	232-04305-11	233-04305-11	230-04305-11	231-04305-11
12	232-04305-12	233-04305-12	230-04305-12	231-04305-12		
13	232-04305-13	233-04305-13	230-04305-13	231-04305-13		

Table Notes:  
Part numbers in red indicate complete assemblies.

## Two-Way PICV Assemblies



ANSI Class 250  
Non-Spring Return Actuators

- Normally Closed
- Field adjustable maximum flow
- 50 psi close-off with ANSI Class III leakage



NC 1-1/2 to 2"			Non-Spring Return Actuator	
			Floating	0-10 V
	Valve Size in.	Factory Preset Max. GPM	 SQU85.03U	 SQU65U
<b>Normally Closed</b>				
	1-1/2	10	234-04306-10	235-04306-10
		15	234-04306-15	235-04306-15
		20	234-04306-20	235-04306-20
		25	234-04306-25	235-04306-25
	2	30	234-04306-30	235-04306-30
		15	234-04307-15	235-04307-15
		20	234-04307-20	235-04307-20
		25	234-04307-25	235-04307-25
	2	30	234-04307-30	235-04307-30
		35	234-04307-35	235-04307-35

**Table Notes:**  
Part numbers in red indicate complete assemblies.

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Valves

# Two-Way Flanged PICV Assemblies

**NEW!**

ANSI Class 125 and 250

Electronic Spring Return or Non-Spring Return Actuators

- Normally Open or Normally Closed
- Field adjustable maximum flow
- 100 psi close-off with ANSI Class IV leakage









NO/NC 2-1/2 to 3"			Spring Return Actuator		Non-Spring Return Actuator	
			NO	NC	NO	
			Floating, 0-10 V, 4 to 20 mA		Floating	0-10 V
2-Way Valve Body Part No.	Valve Size in.	Maximum Flow	 SQV91P30U	 SQV91P40U	 SAX81.03U	 SAX61.03U
<b>ANSI CLASS 125</b>						
 599-07310	2-1/2	110	238-07310	239-07310	373-07310	371-07310
599-07315		154	238-07315	239-07315	373-07315	371-07315
599-07311	3	150	238-07311	239-07311	373-07311	371-07311
599-07316		190	238-07316	239-07316	373-07316	371-07316
<b>ANSI CLASS 250</b>						
 599-07320	2-1/2	110	238-07320	239-07320	373-07320	371-07320
599-07325		154	238-07325	239-07325	373-07325	371-07325
599-07321	3	150	238-07321	239-07321	373-07321	371-07321
599-07326		190	238-07326	239-07326	373-07326	371-07326

Table Notes:

Part numbers in red indicate complete assemblies.

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Valves

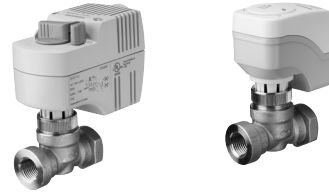


## Two-Way **Zone** Valve Assemblies

ANSI Class 125

Electronic Spring Return or Non-Spring Return Actuators

- Normally Open or Normally Closed
- Brass Trim
- NPT and Sweat Connections
- New higher close-offs



NO/NC 1/2 to 1"			Spring Return Actuator							
			NO				NC			
			2P 120 Vac				2P 24 Vac			
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	SFP11U		SFA11U		SFP71U		SFA71U	
<b>NPT Connection</b>										
	1/2	1.0	80	241-00210	87	240-00210	80	243-00210	87	242-00210
		2.5	44	241-00211	51	240-00211	44	243-00211	51	242-00211
		4.0	44	241-00214	51	240-00214	44	243-00214	51	242-00214
	3/4	4.1	44	241-00212	51	240-00212	44	243-00212	51	242-00212
	1	7.0	25	241-00213	29	240-00213	25	243-00213	29	242-00213
<b>Sweat Connection</b>										
	1/2	1.0	80	241-00510	87	240-00510	80	243-00510	87	242-00510
		2.5	44	241-00511	51	240-00511	44	243-00511	51	242-00511
		4.0	44	241-00514	51	240-00514	44	243-00514	51	242-00514
	3/4	4.1	44	241-00512	51	240-00512	44	243-00512	51	242-00512
	1	7.0	25	241-00513	29	240-00513	25	243-00513	29	242-00513

Table Notes:

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

NO/NC 1/2 to 1"			Non-Spring Return Actuator			
			NC	NO	NC	
			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	SSA81U	SSP61U	SSA61U	
<b>NPT Connection</b>						
	1/2	1.0	94	244-00210	94	245-00210
		2.5	65	244-00211	65	245-00211
		4.0	65	244-00214	65	245-00214
	3/4	4.1	65	244-00212	65	245-00212
	1	7.0	36	244-00213	36	245-00213
<b>Sweat Connection</b>						
	1/2	1.0	94	244-00510	94	245-00510
		2.5	65	244-00511	65	245-00511
		4.0	65	244-00514	65	245-00514
	3/4	4.1	65	244-00512	65	245-00512
	1	7.0	36	244-00513	36	245-00513

Table Notes:

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







# 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
- New higher close-offs



<b>Diverting</b> 1/2 to 1"			Spring Return Actuator								
			AB→A NO		AB→A NC		AB→A NO		AB→A NC		
			2P 120 Vac				2P 24 Vac				
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SFP11U		 SFA11U		 SFP71U		 SFA71U		
<b>NPT Connection</b>											
	599-00230	1/2	1.0	80	241-00230	87	240-00230	80	243-00230	87	242-00230
	599-00231	1/2	2.5	44	241-00231	51	240-00231	44	243-00231	51	242-00231
	599-00234	1/2	4.0	44	241-00234	51	240-00234	44	243-00234	51	242-00234
	599-00232	3/4	4.1	44	241-00232	51	240-00232	44	243-00232	51	242-00232
	599-00233	1	7.0	25	241-00233	29	240-00233	25	243-00233	29	242-00233
<b>Sweat Connection</b>											
	599-00530	1/2	1.0	80	241-00530	87	240-00530	80	243-00530	87	242-00530
	599-00531	1/2	2.5	44	241-00531	51	240-00531	44	243-00531	51	242-00531
	599-00534	1/2	4.0	44	241-00534	51	240-00534	44	243-00534	51	242-00534
	599-00532	3/4	4.1	44	241-00532	51	240-00532	44	243-00532	51	242-00532
	599-00533	1	7.0	25	241-00533	29	240-00533	25	243-00533	29	242-00533

**Table Notes:**

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi. \*Flow rate is for AB→A. Values are for the NC upper port. For NO lower port values, refer to Engineering, Section G.

<b>Diverting</b> 1/2 to 1"			Non-Spring Return Actuator						
			AB→A NC		AB→A NO		AB→A NC		
			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	 SSA81U		 SSP61U		 SSA61U		
<b>NPT Connection</b>									
	599-00230	1/2	1.0	94	244-00230	94	248-00230	94	245-00230
	599-00231	1/2	2.5	65	244-00231	65	248-00231	65	245-00231
	599-00234	1/2	4.0	65	244-00234	65	248-00234	65	245-00234
	599-00232	3/4	4.1	65	244-00232	65	248-00232	65	245-00232
	599-00233	1	7.0	36	244-00233	36	248-00233	36	245-00233
<b>Sweat Connection</b>									
	599-00530	1/2	1.0	94	244-00530	94	248-00530	94	245-00530
	599-00531	1/2	2.5	65	244-00531	65	248-00531	65	245-00531
	599-00534	1/2	4.0	65	244-00534	65	248-00514	65	245-00534
	599-00532	3/4	4.1	65	244-00532	65	248-00532	65	245-00532
	599-00533	1	7.0	36	244-00533	36	248-00533	36	245-00533

**Table Notes:**

Part numbers in red indicate complete assemblies. Black numbers indicate close-off psi. \*Flow rate is for AB→A. Values are for the NC upper port. For NO lower port values, refer to Engineering, Section G.

A-22

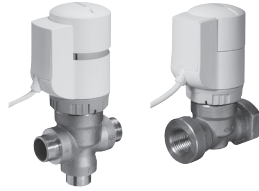
Valves





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

ANSI Class 125  
Thermic Spring Return Actuators

**NEW!**





- 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		
			NPT Connection	
	1/2	1.0	29 <b>347-00210</b>	29 <b>346-00210</b>
		2.5	29 <b>347-00211</b>	29 <b>346-00211</b>
		4.0	29 <b>347-00214</b>	29 <b>346-00214</b>
	3/4	4.1	29 <b>347-00212</b>	29 <b>346-00212</b>
	1	7.0	22 <b>347-00213</b>	22 <b>346-00213</b>
			Sweat Connection	
	1/2	1.0	29 <b>347-00510</b>	29 <b>346-00510</b>
		2.5	29 <b>347-00511</b>	29 <b>346-00511</b>
		4.0	29 <b>347-00514</b>	29 <b>346-00514</b>
	3/4	4.1	29 <b>347-00512</b>	29 <b>346-00512</b>
	1	7.0	22 <b>347-00513</b>	22 <b>346-00513</b>

**Table Notes:**

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

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		
			NPT Connection	
	1/2	1.0	29 <b>347-00230</b>	29 <b>346-00230</b>
		2.5	29 <b>347-00231</b>	29 <b>346-00231</b>
		4.0	29 <b>347-00234</b>	29 <b>346-00234</b>
	3/4	4.1	29 <b>347-00232</b>	29 <b>346-00232</b>
	1	7.0	22 <b>347-00233</b>	22 <b>346-00233</b>
			Sweat Connection	
	1/2	1.0	29 <b>347-00530</b>	29 <b>346-00530</b>
		2.5	29 <b>347-00531</b>	29 <b>346-00531</b>
		4.0	29 <b>347-00534</b>	29 <b>346-00534</b>
	3/4	4.1	29 <b>347-00532</b>	29 <b>346-00532</b>
	1	7.0	22 <b>347-00533</b>	22 <b>346-00533</b>

**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 Engineering, Section G.





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

ANSI Class 250

Electronic Non-Spring Return Actuators




- Normally Open or Normally Closed
- Brass Trim



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		
<b>Normally Open</b>					
	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
		2.5	35	254-01123	255-01123
	4	35	254-01126	255-01126	
	3/4	6.3	30	254-01129	255-01129
	1	10	30	254-01131	255-01131
<b>Normally Closed</b>					
	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
		2.5	40	254-01108	255-01108
	4	40	254-01110	255-01110	
	3/4	6.3	30	254-01112	255-01112
	1	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		
	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 Engineering, Section G.






## 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		
599-02030	1/2	0.4	95 <b>257-02030</b>	45 <b>258-02030C</b>	20 <b>256-02030A</b>
599-02032		0.63	95 <b>257-02032</b>	45 <b>258-02032C</b>	20 <b>256-02032A</b>
599-02034		1	95 <b>257-02034</b>	45 <b>258-02034C</b>	20 <b>256-02034A</b>
599-02036		1.6	95 <b>257-02036</b>	45 <b>258-02036C</b>	20 <b>256-02036A</b>
599-02038		2.5	45 <b>257-02038</b>	25 <b>258-02038C</b>	15 <b>256-02038A</b>
599-02041		4	45 <b>257-02041</b>	25 <b>258-02041C</b>	15 <b>256-02041A</b>
599-02044	3/4	6.3	35 <b>257-02044</b>	10 <b>258-02044C</b>	—
599-02046	1	10	35 <b>257-02046</b>	10 <b>258-02046C</b>	—
			Close-off psi — Stainless Steel Trim		
599-02047	1/2	0.4	95 <b>257-02047</b>	45 <b>258-02047C</b>	20 <b>256-02047A</b>
599-02049		0.63	95 <b>257-02049</b>	45 <b>258-02049C</b>	20 <b>256-02049A</b>
599-02051		1	95 <b>257-02051</b>	45 <b>258-02051C</b>	20 <b>256-02051A</b>
599-02053		1.6	95 <b>257-02053</b>	45 <b>258-02053C</b>	20 <b>256-02053A</b>
599-02055		2.5	45 <b>257-02055</b>	25 <b>258-02055C</b>	15 <b>256-02055A</b>
599-02058		4	45 <b>257-02058</b>	25 <b>258-02058C</b>	15 <b>256-02058A</b>
599-02061	3/4	6.3	35 <b>257-02061</b>	10 <b>258-02061C</b>	—
599-02063	1	10	35 <b>257-02063</b>	10 <b>258-02063C</b>	—
Normally Closed					
			Close-off psi — Brass Trim		
599-02000	1/2	0.4	40 <b>257-02000B</b>	95 <b>258-02000C</b>	95 <b>256-02000</b>
599-02002		0.63	40 <b>257-02002B</b>	95 <b>258-02002C</b>	95 <b>256-02002</b>
599-02004		1	40 <b>257-02004B</b>	95 <b>258-02004C</b>	95 <b>256-02004</b>
599-02006		1.6	40 <b>257-02006B</b>	95 <b>258-02006C</b>	95 <b>256-02006</b>
599-02008		2.5	28 <b>257-02008B</b>	50 <b>258-02008C</b>	50 <b>256-02008</b>
599-02010		4	28 <b>257-02010B</b>	50 <b>258-02010C</b>	50 <b>256-02010</b>
599-02012	3/4	6.3	18 <b>257-02012B</b>	40 <b>258-02012C</b>	40 <b>256-02012</b>
599-02014	1	10	18 <b>257-02014B</b>	40 <b>258-02014C</b>	40 <b>256-02014</b>
			Close-off psi — Stainless Steel Trim		
599-02015	1/2	0.4	40 <b>257-02015B</b>	95 <b>258-02015C</b>	95 <b>256-02015</b>
599-02017		0.63	40 <b>257-02017B</b>	95 <b>258-02017C</b>	95 <b>256-02017</b>
599-02019		1	40 <b>257-02019B</b>	95 <b>258-02019C</b>	95 <b>256-02019</b>
599-02021		1.6	40 <b>257-02021B</b>	95 <b>258-02021C</b>	95 <b>256-02021</b>
599-02023		2.5	28 <b>257-02023B</b>	50 <b>258-02023C</b>	50 <b>256-02023</b>
599-02025		4	28 <b>257-02025B</b>	50 <b>258-02025C</b>	50 <b>256-02025</b>
599-02027	3/4	6.3	18 <b>257-02027B</b>	40 <b>258-02027C</b>	40 <b>256-02027</b>
599-02029	1	10	18 <b>257-02029B</b>	40 <b>258-02029C</b>	40 <b>256-02029</b>

**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							
<b>Normally Open</b>									
<b>Close-off psi — Brass Trim</b>									
599-02030	1/2	0.4	120 <b>260-02030</b>	160 <b>266-02030</b>	120 <b>262-02030</b>	160 <b>265-02030</b>	120 <b>259-02030</b>	120 <b>261-02030</b>	160 <b>264-02030</b>
599-02032		0.63	120 <b>260-02032</b>	160 <b>266-02032</b>	120 <b>262-02032</b>	160 <b>265-02032</b>	120 <b>259-02032</b>	120 <b>261-02032</b>	160 <b>264-02032</b>
599-02034		1	120 <b>260-02034</b>	160 <b>266-02034</b>	120 <b>262-02034</b>	160 <b>265-02034</b>	120 <b>259-02034</b>	120 <b>261-02034</b>	160 <b>264-02034</b>
599-02036		1.6	120 <b>260-02036</b>	160 <b>266-02036</b>	120 <b>262-02036</b>	160 <b>265-02036</b>	120 <b>259-02036</b>	120 <b>261-02036</b>	160 <b>264-02036</b>
599-02038		2.5	65 <b>260-02038</b>	85 <b>266-02038</b>	65 <b>262-02038</b>	85 <b>265-02038</b>	65 <b>259-02038</b>	65 <b>261-02038</b>	85 <b>264-02038</b>
599-02041		4	65 <b>260-02041</b>	85 <b>266-02041</b>	65 <b>262-02041</b>	85 <b>265-02041</b>	65 <b>259-02041</b>	65 <b>261-02041</b>	85 <b>264-02041</b>
599-02044	3/4	6.3	55 <b>260-02044</b>	70 <b>266-02044</b>	55 <b>262-02044</b>	70 <b>265-02044</b>	55 <b>259-02044</b>	55 <b>261-02044</b>	70 <b>264-02044</b>
599-02046	1	10	55 <b>260-02046</b>	70 <b>266-02046</b>	55 <b>262-02046</b>	70 <b>265-02046</b>	55 <b>259-02046</b>	55 <b>261-02046</b>	70 <b>264-02046</b>
<b>Close-off psi — Stainless Steel Trim</b>									
599-02047	1/2	0.4	120 <b>260-02047</b>	160 <b>266-02047</b>	120 <b>262-02047</b>	160 <b>265-02047</b>	120 <b>259-02047</b>	120 <b>261-02047</b>	160 <b>264-02047</b>
599-02049		0.63	120 <b>260-02049</b>	160 <b>266-02049</b>	120 <b>262-02049</b>	160 <b>265-02049</b>	120 <b>259-02049</b>	120 <b>261-02049</b>	160 <b>264-02049</b>
599-02051		1	120 <b>260-02051</b>	160 <b>266-02051</b>	120 <b>262-02051</b>	160 <b>265-02051</b>	120 <b>259-02051</b>	120 <b>261-02051</b>	160 <b>264-02051</b>
599-02053		1.6	120 <b>260-02053</b>	160 <b>266-02053</b>	120 <b>262-02053</b>	160 <b>265-02053</b>	120 <b>259-02053</b>	120 <b>261-02053</b>	160 <b>264-02053</b>
599-02055		2.5	65 <b>260-02055</b>	85 <b>266-02055</b>	65 <b>262-02055</b>	85 <b>265-02055</b>	65 <b>259-02055</b>	65 <b>261-02055</b>	85 <b>264-02055</b>
599-02058		4	65 <b>260-02058</b>	85 <b>266-02058</b>	65 <b>262-02058</b>	85 <b>265-02058</b>	65 <b>259-02058</b>	65 <b>261-02058</b>	85 <b>264-02058</b>
599-02061	3/4	6.3	55 <b>260-02061</b>	70 <b>266-02061</b>	55 <b>262-02061</b>	70 <b>265-02061</b>	55 <b>259-02061</b>	55 <b>261-02061</b>	70 <b>264-02061</b>
599-02063	1	10	55 <b>260-02063</b>	70 <b>266-02063</b>	55 <b>262-02063</b>	70 <b>265-02063</b>	55 <b>259-02063</b>	55 <b>261-02063</b>	70 <b>264-02063</b>
<b>Normally Closed</b>									
<b>Close-off psi — Brass Trim</b>									
599-02000	1/2	0.4	95 <b>260-02000</b>	95 <b>266-02000</b>	95 <b>262-02000</b>	95 <b>265-02000</b>	95 <b>259-02000</b>	95 <b>261-02000</b>	95 <b>264-02000</b>
599-02002		0.63	95 <b>260-02002</b>	95 <b>266-02002</b>	95 <b>262-02002</b>	95 <b>265-02002</b>	95 <b>259-02002</b>	95 <b>261-02002</b>	95 <b>264-02002</b>
599-02004		1	95 <b>260-02004</b>	95 <b>266-02004</b>	95 <b>262-02004</b>	95 <b>265-02004</b>	95 <b>259-02004</b>	95 <b>261-02004</b>	95 <b>264-02004</b>
599-02006		1.6	95 <b>260-02006</b>	95 <b>266-02006</b>	95 <b>262-02006</b>	95 <b>265-02006</b>	95 <b>259-02006</b>	95 <b>261-02006</b>	95 <b>264-02006</b>
599-02008		2.5	50 <b>260-02008</b>	50 <b>266-02008</b>	50 <b>262-02008</b>	50 <b>265-02008</b>	50 <b>259-02008</b>	50 <b>261-02008</b>	50 <b>264-02008</b>
599-02010		4	50 <b>260-02010</b>	50 <b>266-02010</b>	50 <b>262-02010</b>	50 <b>265-02010</b>	50 <b>259-02010</b>	50 <b>261-02010</b>	50 <b>264-02010</b>
599-02012	3/4	6.3	40 <b>260-02012</b>	40 <b>266-02012</b>	40 <b>262-02012</b>	40 <b>265-02012</b>	40 <b>259-02012</b>	40 <b>261-02012</b>	40 <b>264-02012</b>
599-02014	1	10	40 <b>260-02014</b>	40 <b>266-02014</b>	40 <b>262-02014</b>	40 <b>265-02014</b>	40 <b>259-02014</b>	40 <b>261-02014</b>	40 <b>264-02014</b>
<b>Close-off psi — Stainless Steel Trim</b>									
599-02015	1/2	0.4	95 <b>260-02015</b>	95 <b>266-02015</b>	95 <b>262-02015</b>	95 <b>265-02015</b>	95 <b>259-02015</b>	95 <b>261-02015</b>	95 <b>264-02015</b>
599-02017		0.63	95 <b>260-02017</b>	95 <b>266-02017</b>	95 <b>262-02017</b>	95 <b>265-02017</b>	95 <b>259-02017</b>	95 <b>261-02017</b>	95 <b>264-02017</b>
599-02019		1	95 <b>260-02019</b>	95 <b>266-02019</b>	95 <b>262-02019</b>	95 <b>265-02019</b>	95 <b>259-02019</b>	95 <b>261-02019</b>	95 <b>264-02019</b>
599-02021		1.6	95 <b>260-02021</b>	95 <b>266-02021</b>	95 <b>262-02021</b>	95 <b>265-02021</b>	95 <b>259-02021</b>	95 <b>261-02021</b>	95 <b>264-02021</b>
599-02023		2.5	50 <b>260-02023</b>	50 <b>266-02023</b>	50 <b>262-02023</b>	50 <b>265-02023</b>	50 <b>259-02023</b>	50 <b>261-02023</b>	50 <b>264-02023</b>
599-02025		4	50 <b>260-02025</b>	50 <b>266-02025</b>	50 <b>262-02025</b>	50 <b>265-02025</b>	50 <b>259-02025</b>	50 <b>261-02025</b>	50 <b>264-02025</b>
599-02027	3/4	6.3	40 <b>260-02027</b>	40 <b>266-02027</b>	40 <b>262-02027</b>	40 <b>265-02027</b>	40 <b>259-02027</b>	40 <b>261-02027</b>	40 <b>264-02027</b>
599-02029	1	10	40 <b>260-02029</b>	40 <b>266-02029</b>	40 <b>262-02029</b>	40 <b>265-02029</b>	40 <b>259-02029</b>	40 <b>261-02029</b>	40 <b>264-02029</b>

**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

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			
<b>Close-off psi — Brass Trim</b>								
599-02064	1/2	0.4	40	<b>257-02064B</b>	95	<b>258-02064</b>	120	<b>256-02064A</b>
599-02065		0.63	40	<b>257-02065B</b>	95	<b>258-02065</b>	120	<b>256-02065A</b>
599-02066		1	40	<b>257-02066B</b>	95	<b>258-02066</b>	120	<b>256-02066A</b>
599-02067		1.6	40	<b>257-02067B</b>	95	<b>258-02067</b>	120	<b>256-02067A</b>
599-02068		2.5	28	<b>257-02068B</b>	50	<b>258-02068</b>	65	<b>256-02068A</b>
599-02069		4	28	<b>257-02069B</b>	50	<b>258-02069</b>	65	<b>256-02069A</b>
599-02070	3/4	6.3	18	<b>257-02070B</b>	40	<b>258-02070</b>	50	<b>256-02070A</b>
599-02071	1	10	18	<b>257-02071B</b>	40	<b>258-02071</b>	50	<b>256-02071A</b>
<b>Close-off psi — Stainless Steel Trim</b>								
599-02072	1/2	0.4	40	<b>257-02072B</b>	95	<b>258-02072</b>	120	<b>256-02072A</b>
599-02073		0.63	40	<b>257-02073B</b>	95	<b>258-02073</b>	120	<b>256-02073A</b>
599-02074		1	40	<b>257-02074B</b>	95	<b>258-02074</b>	120	<b>256-02074A</b>
599-02075		1.6	40	<b>257-02075B</b>	95	<b>258-02075</b>	120	<b>256-02075A</b>
599-02076		2.5	28	<b>257-02076B</b>	50	<b>258-02076</b>	65	<b>256-02076A</b>
599-02077		4	28	<b>257-02077B</b>	50	<b>258-02077</b>	65	<b>256-02077A</b>
599-02078	3/4	6.3	18	<b>257-02078B</b>	40	<b>258-02078</b>	50	<b>256-02078A</b>
599-02079	1	10	18	<b>257-02079B</b>	40	<b>258-02079</b>	50	<b>256-02079A</b>

**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 Engineering, Section G.

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

ANSI Class 250

Electronic Spring Return or Non-Spring Return Actuators

- Brass and Stainless Steel Trim



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							
				<b>Brass Trim</b>						
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
				<b>Stainless Steel Trim</b>						
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 Engineering, Section G.

A-28

Valves










## 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	
<b>Normally Open</b>						
	<b>Close-off psi — Brass Trim</b>					
	1/2	1	142	<b>268-03162</b>	250 <b>277-03162</b>	250 <b>283-03162</b>
		1.6	142	<b>268-03163</b>	250 <b>277-03163</b>	250 <b>283-03163</b>
		2.5	142	<b>268-03164</b>	250 <b>277-03164</b>	250 <b>283-03164</b>
		4	142	<b>268-03165</b>	250 <b>277-03165</b>	250 <b>283-03165</b>
	3/4	6.3	80	<b>268-03166</b>	231 <b>277-03166</b>	231 <b>283-03166</b>
	1	10	52	<b>268-03167</b>	150 <b>277-03167</b>	150 <b>283-03167</b>
	1-1/4	16	32	<b>268-03168</b>	93 <b>277-03168</b>	93 <b>283-03168</b>
	1-1/2	25	20	<b>268-03169</b>	60 <b>277-03169</b>	60 <b>283-03169</b>
	2	40	12	<b>268-03170</b>	37 <b>277-03170</b>	37 <b>283-03170</b>
	<b>Close-off psi — Stainless Steel Trim</b>					
	1/2	1	142	<b>268-03108</b>	250 <b>277-03108</b>	250 <b>283-03108</b>
		1.6	142	<b>268-03109</b>	250 <b>277-03109</b>	250 <b>283-03109</b>
		2.5	142	<b>268-03110</b>	250 <b>277-03110</b>	250 <b>283-03110</b>
		4	142	<b>268-03111</b>	250 <b>277-03111</b>	250 <b>283-03111</b>
		3/4	6.3	80	<b>268-03112</b>	231 <b>277-03112</b>
1		10	52	<b>268-03113</b>	150 <b>277-03113</b>	150 <b>283-03113</b>
1-1/4		16	32	<b>268-03114</b>	93 <b>277-03114</b>	93 <b>283-03114</b>
1-1/2		25	20	<b>268-03115</b>	60 <b>277-03115</b>	60 <b>283-03115</b>
2	40	12	<b>268-03116</b>	37 <b>277-03116</b>	37 <b>283-03116</b>	
<b>Normally Closed</b>						
	<b>Close-off psi — Brass Trim</b>					
	1/2	1	236	<b>270-03180</b>	250 <b>277-03180</b>	250 <b>283-03180</b>
		1.6	236	<b>270-03181</b>	250 <b>277-03181</b>	250 <b>283-03181</b>
		2.5	236	<b>270-03182</b>	250 <b>277-03182</b>	250 <b>283-03182</b>
		4	236	<b>270-03183</b>	250 <b>277-03183</b>	250 <b>283-03183</b>
	3/4	6.3	155	<b>270-03184</b>	250 <b>277-03184</b>	250 <b>283-03184</b>
	1	10	91	<b>270-03185</b>	250 <b>277-03185</b>	250 <b>283-03185</b>
	1-1/4	16	52	<b>270-03186</b>	148 <b>277-03186</b>	148 <b>283-03186</b>
	1-1/2	25	32	<b>270-03187</b>	92 <b>277-03187</b>	92 <b>283-03187</b>
	2	40	20	<b>270-03188</b>	55 <b>277-03188</b>	55 <b>283-03188</b>
	<b>Close-off psi — Stainless Steel Trim</b>					
	1/2	1	236	<b>270-03126</b>	250 <b>277-03126</b>	250 <b>283-03126</b>
		1.6	236	<b>270-03127</b>	250 <b>277-03127</b>	250 <b>283-03127</b>
		2.5	236	<b>270-03128</b>	250 <b>277-03128</b>	250 <b>283-03128</b>
		4	236	<b>270-03129</b>	250 <b>277-03129</b>	250 <b>283-03129</b>
		3/4	6.3	155	<b>270-03130</b>	250 <b>277-03130</b>
1		10	91	<b>270-03131</b>	250 <b>277-03131</b>	250 <b>283-03131</b>
1-1/4		16	52	<b>270-03132</b>	148 <b>277-03132</b>	148 <b>283-03132</b>
1-1/2		25	32	<b>270-03133</b>	92 <b>277-03133</b>	92 <b>283-03133</b>
2	40	20	<b>270-03134</b>	55 <b>277-03134</b>	55 <b>283-03134</b>	

**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									
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Rack & Pinion 2P	Floating 3P	Rack & Pinion 0-10 Vdc	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA					
												
			599-03611	SKD82.51U	599-03609	SKD62U	SKB62U					
<b>Normally Open</b>												
<b>Close-off psi — Brass Trim</b>												
599-03162	1/2	1	250	299-03162	250	276-03162	250	298-03162	250	274-03162	—	
599-03163		1.6	250	299-03163	250	276-03163	250	298-03163	250	274-03163	—	
599-03164		2.5	250	299-03164	250	276-03164	250	298-03164	250	274-03164	—	
599-03165		4	250	299-03165	250	276-03165	250	298-03165	250	274-03165	—	
599-03166	3/4	6.3	231	299-03166	250	276-03166	231	298-03166	250	274-03166	—	
599-03167	1	10	149	299-03167	201	276-03167	149	298-03167	201	274-03167	250	291-03167
599-03168	1-1/4	16	92	299-03168	124	276-03168	92	298-03168	124	274-03168	250	291-03168
599-03169	1-1/2	25	59	299-03169	80	276-03169	59	298-03169	80	274-03169	250	291-03169
599-03170	2	40	36	299-03170	49	276-03170	36	298-03170	49	274-03170	201	291-03170
<b>Close-off psi — Stainless Steel Trim</b>												
599-03108	1/2	1	250	299-03108	250	276-03108	250	298-03108	250	274-03108	—	
599-03109		1.6	250	299-03109	250	276-03109	250	298-03109	250	274-03109	—	
599-03110		2.5	250	299-03110	250	276-03110	250	298-03110	250	274-03110	—	
599-03111		4	250	299-03111	250	276-03111	250	298-03111	250	274-03111	—	
599-03112	3/4	6.3	231	299-03112	250	276-03112	231	298-03112	250	274-03112	—	
599-03113	1	10	149	299-03113	201	276-03113	149	298-03113	201	274-03113	250	291-03113
599-03114	1-1/4	16	92	299-03114	124	276-03114	92	298-03114	124	274-03114	250	291-03114
599-03115	1-1/2	25	59	299-03115	80	276-03115	59	298-03115	80	274-03115	250	291-03115
599-03116	2	40	36	299-03116	49	276-03116	36	298-03116	49	274-03116	201	291-03116
<b>Normally Closed</b>												
<b>Close-off psi — Brass Trim</b>												
599-03180	1/2	1	250	299-03180	250	276-03180	250	298-03180	250	274-03180	—	
599-03181		1.6	250	299-03181	250	276-03181	250	298-03181	250	274-03181	—	
599-03182		2.5	250	299-03182	250	276-03182	250	298-03182	250	274-03182	—	
599-03183		4	250	299-03183	250	276-03183	250	298-03183	250	274-03183	—	
599-03184	3/4	6.3	250	299-03184	250	276-03184	250	298-03184	250	274-03184	—	
599-03185	1	10	173	299-03185	203	276-03185	173	298-03185	203	274-03185	250	291-03185
599-03186	1-1/4	16	100	299-03186	117	276-03186	100	298-03186	117	274-03186	250	291-03186
599-03187	1-1/2	25	61	299-03187	73	276-03187	61	298-03187	73	274-03187	208	291-03187
599-03188	2	40	37	299-03188	44	276-03188	37	298-03188	44	274-03188	126	291-03188
<b>Close-off psi — Stainless Steel Trim</b>												
599-03126	1/2	1	250	299-03126	250	276-03126	250	298-03126	250	274-03126	—	
599-03127		1.6	250	299-03127	250	276-03127	250	298-03127	250	274-03127	—	
599-03128		2.5	250	299-03128	250	276-03128	250	298-03128	250	274-03128	—	
599-03129		4	250	299-03129	250	276-03129	250	298-03129	250	274-03129	—	
599-03130	3/4	6.3	250	299-03130	250	276-03130	250	298-03130	250	274-03130	—	
599-03131	1	10	173	299-03131	203	276-03131	173	298-03131	203	274-03131	250	291-03131
599-03132	1-1/4	16	100	299-03132	117	276-03132	100	298-03132	117	274-03132	250	291-03132
599-03133	1-1/2	25	61	299-03133	73	276-03133	61	298-03133	73	274-03133	208	291-03133
599-03134	2	40	37	299-03134	44	276-03134	37	298-03134	44	274-03134	126	291-03134

**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
- 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	0-10 Vdc 4-20 mA				
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SAX81.03U	 SKD82.50U	 SAX61.03U	 <b>NEW!</b> SKD60U				
<b>Normally Open</b>										
			<b>Close-off psi — Brass Trim</b>							
	1/2	1	250	<b>373-03162</b>	250	<b>275-03162</b>	250	<b>371-03162</b>	250	<b>267-03162</b>
		1.6	250	<b>373-03163</b>	250	<b>275-03163</b>	250	<b>371-03163</b>	250	<b>267-03163</b>
		2.5	250	<b>373-03164</b>	250	<b>275-03164</b>	250	<b>371-03164</b>	250	<b>267-03164</b>
		4	250	<b>373-03165</b>	250	<b>275-03165</b>	250	<b>371-03165</b>	250	<b>267-03165</b>
	3/4	6.3	211	<b>373-03166</b>	250	<b>275-03166</b>	211	<b>371-03166</b>	250	<b>267-03166</b>
	1	10	137	<b>373-03167</b>	201	<b>275-03167</b>	137	<b>371-03167</b>	201	<b>267-03167</b>
	1-1/4	16	85	<b>373-03168</b>	124	<b>275-03168</b>	85	<b>371-03168</b>	124	<b>267-03168</b>
	1-1/2	25	55	<b>373-03169</b>	80	<b>275-03169</b>	55	<b>371-03169</b>	80	<b>267-03169</b>
	2	40	34	<b>373-03170</b>	49	<b>275-03170</b>	34	<b>371-03170</b>	49	<b>267-03170</b>
				<b>Close-off psi — Stainless Steel Trim</b>						
	1/2	1	250	<b>373-03108</b>	250	<b>275-03108</b>	250	<b>371-03108</b>	250	<b>267-03108</b>
		1.6	250	<b>373-03109</b>	250	<b>275-03109</b>	250	<b>371-03109</b>	250	<b>267-03109</b>
		2.5	250	<b>373-03110</b>	250	<b>275-03110</b>	250	<b>371-03110</b>	250	<b>267-03110</b>
		4	250	<b>373-03111</b>	250	<b>275-03111</b>	250	<b>371-03111</b>	250	<b>267-03111</b>
	3/4	6.3	211	<b>373-03112</b>	250	<b>275-03112</b>	211	<b>371-03112</b>	250	<b>267-03112</b>
	1	10	137	<b>373-03113</b>	201	<b>275-03113</b>	137	<b>371-03113</b>	201	<b>267-03113</b>
	1-1/4	16	85	<b>373-03114</b>	124	<b>275-03114</b>	85	<b>371-03114</b>	124	<b>267-03114</b>
	1-1/2	25	55	<b>373-03115</b>	80	<b>275-03115</b>	55	<b>371-03115</b>	80	<b>267-03115</b>
2	40	34	<b>373-03116</b>	49	<b>275-03116</b>	34	<b>371-03116</b>	49	<b>267-03116</b>	
<b>Normally Closed</b>										
			<b>Close-off psi — Brass Trim</b>							
	1/2	1	250	<b>373-03180</b>	250	<b>275-03180</b>	250	<b>371-03180</b>	250	<b>267-03180</b>
		1.6	250	<b>373-03181</b>	250	<b>275-03181</b>	250	<b>371-03181</b>	250	<b>267-03181</b>
		2.5	250	<b>373-03182</b>	250	<b>275-03182</b>	250	<b>371-03182</b>	250	<b>267-03182</b>
		4	250	<b>373-03183</b>	250	<b>275-03183</b>	250	<b>371-03183</b>	250	<b>267-03183</b>
	3/4	6.3	250	<b>373-03184</b>	250	<b>275-03184</b>	250	<b>371-03184</b>	250	<b>267-03184</b>
	1	10	159	<b>373-03185</b>	203	<b>275-03185</b>	159	<b>371-03185</b>	203	<b>267-03185</b>
	1-1/4	16	92	<b>373-03186</b>	117	<b>275-03186</b>	92	<b>371-03186</b>	117	<b>267-03186</b>
	1-1/2	25	57	<b>373-03187</b>	73	<b>275-03187</b>	57	<b>371-03187</b>	73	<b>267-03187</b>
	2	40	35	<b>373-03188</b>	44	<b>275-03188</b>	35	<b>371-03188</b>	44	<b>267-03188</b>
				<b>Close-off psi — Stainless Steel Trim</b>						
	1/2	1	250	<b>373-03126</b>	250	<b>275-03126</b>	250	<b>371-03126</b>	250	<b>267-03126</b>
		1.6	250	<b>373-03127</b>	250	<b>275-03127</b>	250	<b>371-03127</b>	250	<b>267-03127</b>
		2.5	250	<b>373-03128</b>	250	<b>275-03128</b>	250	<b>371-03128</b>	250	<b>267-03128</b>
		4	250	<b>373-03129</b>	250	<b>275-03129</b>	250	<b>371-03129</b>	250	<b>267-03129</b>
	3/4	6.3	250	<b>373-03130</b>	250	<b>275-03130</b>	250	<b>371-03130</b>	250	<b>267-03130</b>
	1	10	159	<b>373-03131</b>	203	<b>275-03131</b>	159	<b>371-03131</b>	203	<b>267-03131</b>
	1-1/4	16	92	<b>373-03132</b>	117	<b>275-03132</b>	92	<b>371-03132</b>	117	<b>267-03132</b>
	1-1/2	25	57	<b>373-03133</b>	73	<b>275-03133</b>	57	<b>371-03133</b>	73	<b>267-03133</b>
	2	40	35	<b>373-03134</b>	44	<b>275-03134</b>	35	<b>371-03134</b>	44	<b>267-03134</b>

**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					
<b>Normally Open</b>												
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>												
	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	—			
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>												
	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	
<b>Normally Closed</b>												
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>												
	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	—			
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>												
	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

# Flowrite Selection Tables

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									
			Rack & Pinion 2P	Floating 3P	Rack & Pinion 0-10 Vdc	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA					
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv										
			599-03611	SKD82.51U	599-03609	SKD62U	SKB62U					
<b>Normally Open</b>												
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>												
	1/2	1	250	299-03000	250	276-03000	250	298-03000	250	274-03000	—	
		1.6	250	299-03001	250	276-03001	250	298-03001	250	274-03001	—	
		2.5	250	299-03002	250	276-03002	250	298-03002	250	274-03002	—	
		4	250	299-03003	250	276-03003	250	298-03003	250	274-03003	—	
	3/4	6.3	231	299-03004	250	276-03004	231	298-03004	250	274-03004	—	
	1	10	149	299-03005	201	276-03005	149	298-03005	201	274-03005	250	291-03005
	1-1/4	16	92	299-03006	124	276-03006	92	298-03006	124	274-03006	250	291-03006
	1-1/2	25	59	299-03007	80	276-03007	59	298-03007	80	274-03007	250	291-03007
	2	40	36	299-03008	49	276-03008	36	298-03008	49	274-03008	201	291-03008
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>												
	1/2	1	—	250	276-03054	—	250	274-03054	—	—		
		1.6	—	250	276-03055	—	250	274-03055	—	—		
		2.5	—	250	276-03056	—	250	274-03056	—	—		
		4	—	250	276-03057	—	250	274-03057	—	—		
	3/4	6.3	—	250	276-03058	—	250	274-03058	—	—		
	1	10	—	201	276-03059	—	201	274-03059	250	291-03059		
	1-1/4	16	—	124	276-03060	—	124	274-03060	250	291-03060		
	1-1/2	25	—	80	276-03061	—	80	274-03061	250	291-03061		
	2	40	—	49	276-03062	—	49	274-03062	201	291-03062		
<b>Normally Closed</b>												
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>												
	1/2	1	250	299-03018	250	276-03018	250	298-03018	250	274-03018	—	
		1.6	250	299-03019	250	276-03019	250	298-03019	250	274-03019	—	
		2.5	250	299-03020	250	276-03020	250	298-03020	250	274-03020	—	
		4	250	299-03021	250	276-03021	250	298-03021	250	274-03021	—	
	3/4	6.3	250	299-03022	250	276-03022	250	298-03022	250	274-03022	—	
	1	10	173	299-03023	203	276-03023	173	298-03023	203	274-03023	250	291-03023
	1-1/4	16	100	299-03024	117	276-03024	100	298-03024	117	274-03024	250	291-03024
	1-1/2	25	61	299-03025	73	276-03025	61	298-03025	73	274-03025	208	291-03025
	2	40	37	299-03026	44	276-03026	37	298-03026	44	274-03026	126	291-03026
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>												
	1/2	1	—	250	276-03072	—	250	274-03072	—	—		
		1.6	—	250	276-03073	—	250	274-03073	—	—		
		2.5	—	250	276-03074	—	250	274-03074	—	—		
		4	—	250	276-03075	—	250	274-03075	—	—		
	3/4	6.3	—	250	276-03076	—	250	274-03076	—	—		
	1	10	—	203	276-03077	—	203	274-03077	250	291-03077		
	1-1/4	16	—	117	276-03078	—	117	274-03078	250	291-03078		
	1-1/2	25	—	73	276-03079	—	73	274-03079	208	291-03079		
	2	40	—	44	276-03080	—	44	274-03080	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		0-10 Vdc 4-20 mA	
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SAX81.03U		 SKD82.50U		 SAX61.03U		 SKD60U	
<b>Normally Open</b>										
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>										
599-03000	1/2	1	250	373-03000	250	275-03000	250	371-03000	250	267-03000
599-03001		1.6	250	373-03001	250	275-03001	250	371-03001	250	267-03001
599-03002		2.5	250	373-03002	250	275-03002	250	371-03002	250	267-03002
599-03003		4	250	373-03003	250	275-03003	250	371-03003	250	267-03003
599-03004	3/4	6.3	211	373-03004	250	275-03004	211	371-03004	250	267-03004
599-03005	1	10	137	373-03005	201	275-03005	137	371-03005	201	267-03005
599-03006	1-1/4	16	85	373-03006	124	275-03006	85	371-03006	124	267-03006
599-03007	1-1/2	25	55	373-03007	80	275-03007	55	371-03007	80	267-03007
599-03008	2	40	34	373-03008	49	275-03008	34	371-03008	49	267-03008
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>										
599-03054	1/2	1	—	250	275-03054	—	250	267-03054	—	267-03054
599-03055		1.6	—	250	275-03055	—	250	267-03055	—	267-03055
599-03056		2.5	—	250	275-03056	—	250	267-03056	—	267-03056
599-03057		4	—	250	275-03057	—	250	267-03057	—	267-03057
599-03058	3/4	6.3	—	250	275-03058	—	250	267-03058	—	267-03058
599-03059	1	10	—	201	275-03059	—	201	267-03059	—	267-03059
599-03060	1-1/4	16	—	124	275-03060	—	124	267-03060	—	267-03060
599-03061	1-1/2	25	—	80	275-03061	—	80	267-03061	—	267-03061
599-03062	2	40	—	49	275-03062	—	49	267-03062	—	267-03062
<b>Normally Closed</b>										
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>										
599-03018	1/2	1	250	373-03018	250	275-03018	250	371-03018	250	267-03018
599-03019		1.6	250	373-03019	250	275-03019	250	371-03019	250	267-03019
599-03020		2.5	250	373-03020	250	275-03020	250	371-03020	250	267-03020
599-03021		4	250	373-03021	250	275-03021	250	371-03021	250	267-03021
599-03022	3/4	6.3	250	373-03022	250	275-03022	250	371-03022	250	267-03022
599-03023	1	10	159	373-03023	203	275-03023	159	371-03023	203	267-03023
599-03024	1-1/4	16	92	373-03024	117	275-03024	92	371-03024	117	267-03024
599-03025	1-1/2	25	57	373-03025	73	275-03025	57	371-03025	73	267-03025
599-03026	2	40	35	373-03026	44	275-03026	35	371-03026	44	267-03026
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>										
599-03072	1/2	1	—	250	275-03072	—	250	267-03072	—	267-03072
599-03073		1.6	—	250	275-03073	—	250	267-03073	—	267-03073
599-03074		2.5	—	250	275-03074	—	250	267-03074	—	267-03074
599-03075		4	—	250	275-03075	—	250	267-03075	—	267-03075
599-03076	3/4	6.3	—	250	275-03076	—	250	267-03076	—	267-03076
599-03077	1	10	—	203	275-03077	—	203	267-03077	—	267-03077
599-03078	1-1/4	16	—	117	275-03078	—	117	267-03078	—	267-03078
599-03079	1-1/2	25	—	73	275-03079	—	73	267-03079	—	267-03079
599-03080	2	40	—	44	275-03080	—	44	267-03080	—	267-03080

**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
			<b>Close-off psi — Brass Trim</b>				
599-03198	1/2	1	236 <b>268-03198</b>	236 <b>269-03198</b>	236 <b>270-03198</b>	250 <b>277-03198</b>	250 <b>283-03198</b>
599-03199		1.6	236 <b>268-03199</b>	236 <b>269-03199</b>	236 <b>270-03199</b>	250 <b>277-03199</b>	250 <b>283-03199</b>
599-03200		2.5	236 <b>268-03200</b>	236 <b>269-03200</b>	236 <b>270-03200</b>	250 <b>277-03200</b>	250 <b>283-03200</b>
599-03201		4	236 <b>268-03201</b>	236 <b>269-03201</b>	236 <b>270-03201</b>	250 <b>277-03201</b>	250 <b>283-03201</b>
599-03202	3/4	6.3	155 <b>268-03202</b>	155 <b>269-03202</b>	155 <b>270-03202</b>	250 <b>277-03202</b>	250 <b>283-03202</b>
599-03203	1	10	91 <b>268-03203</b>	91 <b>269-03203</b>	91 <b>270-03203</b>	250 <b>277-03203</b>	250 <b>283-03203</b>
599-03204	1-1/4	16	52 <b>268-03204</b>	52 <b>269-03204</b>	52 <b>270-03204</b>	148 <b>277-03204</b>	148 <b>283-03204</b>
599-03205	1-1/2	25	32 <b>268-03205</b>	32 <b>269-03205</b>	32 <b>270-03205</b>	92 <b>277-03205</b>	92 <b>283-03205</b>
599-03206	2	40	20 <b>268-03206</b>	20 <b>269-03206</b>	20 <b>270-03206</b>	55 <b>277-03206</b>	55 <b>283-03206</b>
			<b>Close-off psi — Stainless Steel Trim</b>				
599-03144	1/2	1	236 <b>268-03144</b>	236 <b>269-03144</b>	236 <b>270-03144</b>	250 <b>277-03144</b>	250 <b>283-03144</b>
599-03145		1.6	236 <b>268-03145</b>	236 <b>269-03145</b>	236 <b>270-03145</b>	250 <b>277-03145</b>	250 <b>283-03145</b>
599-03146		2.5	236 <b>268-03146</b>	236 <b>269-03146</b>	236 <b>270-03146</b>	250 <b>277-03146</b>	250 <b>283-03146</b>
599-03147		4	236 <b>268-03147</b>	236 <b>269-03147</b>	236 <b>270-03147</b>	250 <b>277-03147</b>	250 <b>283-03147</b>
599-03148	3/4	6.3	155 <b>268-03148</b>	155 <b>269-03148</b>	155 <b>270-03148</b>	250 <b>277-03148</b>	250 <b>283-03148</b>
599-03149	1	10	91 <b>268-03149</b>	91 <b>269-03149</b>	91 <b>270-03149</b>	250 <b>277-03149</b>	250 <b>283-03149</b>
599-03150	1-1/4	16	52 <b>268-03150</b>	52 <b>269-03150</b>	52 <b>270-03150</b>	148 <b>277-03150</b>	148 <b>283-03150</b>
599-03151	1-1/2	25	32 <b>268-03151</b>	32 <b>269-03151</b>	32 <b>270-03151</b>	92 <b>277-03151</b>	92 <b>283-03151</b>
599-03152	2	40	20 <b>268-03152</b>	20 <b>269-03152</b>	20 <b>270-03152</b>	55 <b>277-03152</b>	55 <b>283-03152</b>

**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 Engineering, Section G.

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.

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Valves



# 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									
			Rack & Pinion 2P	Floating 3P	Rack & Pinion 0-10 Vdc	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA					
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 599-03611	 SKD82.51U	 599-03609	 SKD62U	 SKB62U					
			<b>Close-off psi — Brass Trim</b>									
599-03198	1/2	1	250	<b>299-03198</b>	250	<b>276-03198</b>	50	<b>298-03198</b>	250	<b>274-03198</b>	—	
599-03199		1.6	250	<b>299-03199</b>	250	<b>276-03199</b>	250	<b>298-03199</b>	250	<b>274-03199</b>	—	
599-03200		2.5	250	<b>299-03200</b>	250	<b>276-03200</b>	250	<b>298-03200</b>	250	<b>274-03200</b>	—	
599-03201		4	250	<b>299-03201</b>	250	<b>276-03201</b>	250	<b>298-03201</b>	250	<b>274-03201</b>	—	
599-03202	3/4	6.3	250	<b>299-03202</b>	250	<b>276-03202</b>	250	<b>298-03202</b>	250	<b>274-03202</b>	—	
599-03203	1	10	173	<b>299-03203</b>	203	<b>276-03203</b>	173	<b>298-03203</b>	203	<b>274-03203</b>	250	<b>291-03203</b>
599-03204	1-1/4	16	100	<b>299-03204</b>	117	<b>276-03204</b>	100	<b>298-03204</b>	117	<b>274-03204</b>	250	<b>291-03204</b>
599-03205	1-1/2	25	61	<b>299-03205</b>	73	<b>276-03205</b>	61	<b>298-03205</b>	73	<b>274-03205</b>	208	<b>291-03205</b>
599-03206	2	40	37	<b>299-03206</b>	44	<b>276-03206</b>	37	<b>298-03206</b>	44	<b>274-03206</b>	126	<b>291-03206</b>
			<b>Close-off psi — Stainless Steel Trim</b>									
599-03144	1/2	1	250	<b>299-03144</b>	250	<b>276-03144</b>	250	<b>298-03144</b>	250	<b>274-03144</b>	—	
599-03145		1.6	250	<b>299-03145</b>	250	<b>276-03145</b>	250	<b>298-03145</b>	250	<b>274-03145</b>	—	
599-03146		2.5	250	<b>299-03146</b>	250	<b>276-03146</b>	250	<b>298-03146</b>	250	<b>274-03146</b>	—	
599-03147		4	250	<b>299-03147</b>	250	<b>276-03147</b>	250	<b>298-03147</b>	250	<b>274-03147</b>	—	
599-03148	3/4	6.3	250	<b>299-03148</b>	250	<b>276-03148</b>	250	<b>298-03148</b>	250	<b>274-03148</b>	—	
599-03149	1	10	173	<b>299-03149</b>	203	<b>276-03149</b>	173	<b>298-03149</b>	203	<b>274-03149</b>	250	<b>291-03149</b>
599-03150	1-1/4	16	100	<b>299-03150</b>	117	<b>276-03150</b>	100	<b>298-03150</b>	117	<b>274-03150</b>	250	<b>291-03150</b>
599-03151	1-1/2	25	61	<b>299-03151</b>	73	<b>276-03151</b>	61	<b>298-03151</b>	73	<b>274-03151</b>	208	<b>291-03151</b>
599-03152	2	40	37	<b>299-03152</b>	44	<b>276-03152</b>	37	<b>298-03152</b>	44	<b>274-03152</b>	126	<b>291-03152</b>

**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 Engineering, Section G.

A-36

Valves









## Three-Way **Globe** Valve Assemblies

ANSI Class 250  
Electronic Non-Spring Return Actuators

- Brass and Stainless Steel Trim



Mixing 1/2 to 2"			Non-Spring Return Actuator			
			Floating 3P	Floating 3P	0-10 Vdc 4-20 mA	0-10 Vdc 4-20 mA
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SAX81.03U	 SKD82.50U	 SAX61.03U	 SKD60U
			<b>Close-off psi — Brass Trim</b>			
599-03198	1/2	1	250 <b>373-03198</b>	250 <b>275-03198</b>	250 <b>371-03198</b>	250 <b>267-03198</b>
599-03199		1.6	250 <b>373-03199</b>	250 <b>275-03199</b>	250 <b>371-03199</b>	250 <b>267-03199</b>
599-03200		2.5	250 <b>373-03200</b>	250 <b>275-03200</b>	250 <b>371-03200</b>	250 <b>267-03200</b>
599-03201		4	250 <b>373-03201</b>	250 <b>275-03201</b>	250 <b>371-03201</b>	250 <b>267-03201</b>
599-03202	3/4	6.3	250 <b>373-03202</b>	250 <b>275-03202</b>	250 <b>371-03202</b>	250 <b>267-03202</b>
599-03203	1	10	159 <b>373-03203</b>	203 <b>275-03203</b>	159 <b>371-03203</b>	203 <b>267-03203</b>
599-03204	1-1/4	16	92 <b>373-03204</b>	117 <b>275-03204</b>	92 <b>371-03204</b>	117 <b>267-03204</b>
599-03205	1-1/2	25	57 <b>373-03205</b>	73 <b>275-03205</b>	57 <b>371-03205</b>	73 <b>267-03205</b>
599-03206	2	40	35 <b>373-03206</b>	44 <b>275-03206</b>	35 <b>371-03206</b>	44 <b>267-03206</b>
<b>Close-off psi — Stainless Steel Trim</b>						
599-03144	1/2	1	250 <b>373-03144</b>	250 <b>275-03144</b>	250 <b>371-03144</b>	250 <b>267-03144</b>
599-03145		1.6	250 <b>373-03145</b>	250 <b>275-03145</b>	250 <b>371-03145</b>	250 <b>267-03145</b>
599-03146		2.5	250 <b>373-03146</b>	250 <b>275-03146</b>	250 <b>371-03146</b>	250 <b>267-03146</b>
599-03147		4	250 <b>373-03147</b>	250 <b>275-03147</b>	250 <b>371-03147</b>	250 <b>267-03147</b>
599-03148	3/4	6.3	250 <b>373-03148</b>	250 <b>275-03148</b>	250 <b>371-03148</b>	250 <b>267-03148</b>
599-03149	1	10	159 <b>373-03149</b>	203 <b>275-03149</b>	159 <b>371-03149</b>	203 <b>267-03149</b>
599-03150	1-1/4	16	92 <b>373-03150</b>	117 <b>275-03150</b>	92 <b>371-03150</b>	117 <b>267-03150</b>
599-03151	1-1/2	25	57 <b>373-03151</b>	73 <b>275-03151</b>	57 <b>371-03151</b>	73 <b>267-03151</b>
599-03152	2	40	35 <b>373-03152</b>	44 <b>275-03152</b>	35 <b>371-03152</b>	44 <b>267-03152</b>

**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 Engineering, Section G.

A-37

Valves

# Two-Way Flanged **Globe** Valve Assemblies









ANSI Class 125  
Pneumatic Spring Return Actuators

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



A-38

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
<b>Normally Open</b>			<b>Close-off psi — Bronze Trim</b>					
	599-05980	2-1/2 63	31 <b>277-05980</b>	95 <b>279-05980</b>	—	31 <b>283-05980</b>	95 <b>285-05980</b>	—
	599-05981	3 100	20 <b>277-05981</b>	63 <b>279-05981</b>	—	20 <b>283-05981</b>	63 <b>285-05981</b>	—
	599-05982	4 160	—	—	40 <b>281-05982</b>	—	—	40 <b>287-05982</b>
	599-05983	5 250	—	—	26 <b>281-05983</b>	—	—	26 <b>287-05983</b>
	599-05984	6 400	—	—	18 <b>281-05984</b>	—	—	18 <b>287-05984</b>
			<b>Close-off psi — Stainless Steel Trim</b>					
	599-05960	2-1/2 63	31 <b>277-05960</b>	95 <b>279-05960</b>	—	31 <b>283-05960</b>	95 <b>285-05960</b>	—
	599-05961	3 100	20 <b>277-05961</b>	63 <b>279-05961</b>	—	20 <b>283-05961</b>	63 <b>285-05961</b>	—
	599-05962	4 160	—	—	40 <b>281-05962</b>	—	—	40 <b>287-05962</b>
	599-05963	5 250	—	—	26 <b>281-05963</b>	—	—	26 <b>287-05963</b>
	599-05964	6 400	—	—	18 <b>281-05964</b>	—	—	18 <b>287-05964</b>
<b>Normally Closed</b>			<b>Close-off psi — Bronze Trim</b>					
	599-05990	2-1/2 63	36 <b>277-05990</b>	114 <b>279-05990</b>	—	36 <b>283-05990</b>	114 <b>285-05990</b>	—
	599-05991	3 100	23 <b>277-05991</b>	74 <b>279-05991</b>	—	23 <b>283-05991</b>	74 <b>285-05991</b>	—
	599-05992	4 160	—	—	46 <b>281-05992</b>	—	—	46 <b>287-05992</b>
	599-05993	5 250	—	—	29 <b>281-05993</b>	—	—	29 <b>287-05993</b>
	599-05994	6 400	—	—	20 <b>281-05994</b>	—	—	20 <b>287-05994</b>
			<b>Close-off psi — Stainless Steel Trim</b>					
	599-05970	2-1/2 63	36 <b>277-05970</b>	114 <b>279-05970</b>	—	36 <b>283-05970</b>	114 <b>285-05970</b>	—
	599-05971	3 100	23 <b>277-05971</b>	74 <b>279-05971</b>	—	23 <b>283-05971</b>	74 <b>285-05971</b>	—
	599-05972	4 160	—	—	46 <b>281-05972</b>	—	—	46 <b>287-05972</b>
	599-05973	5 250	—	—	29 <b>281-05973</b>	—	—	29 <b>287-05973</b>
	599-05974	6 400	—	—	20 <b>281-05974</b>	—	—	20 <b>287-05974</b>

**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
- 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						
<b>Normally Open</b>			<b>Close-off psi — Bronze Trim</b>											
	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
				<b>Close-off psi — Stainless Steel Trim</b>										
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	
<b>Normally Closed</b>			<b>Close-off psi — Bronze Trim</b>											
	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
				<b>Close-off psi — Stainless Steel Trim</b>										
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.

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Valves

# Two-Way Flanged **Globe** Valve Assemblies







ANSI Class 125  
Electronic Non-Spring Return Actuators

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



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Valves

NO/NC Equal Percentage Flanged 2-1/2 to 6"			Non-Spring Return Actuator						
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA			
									
			SKD82.50U	SKB82.50U	SKC82.60U	SKD60U			
<b>Normally Open</b>			<b>Close-off psi — Bronze Trim</b>						
599-05980	2-1/2	63	38	275-05980	153	290-05980	—	38	267-05980
599-05981	3	100	25	275-05981	101	290-05981	—	25	267-05981
599-05982	4	160	—	—	—	65	293-05982	—	—
599-05983	5	250	—	—	—	42	293-05983	—	—
599-05984	6	400	—	—	—	29	293-05984	—	—
			<b>Close-off psi — Stainless Steel Trim</b>						
599-05960	2-1/2	63	38	275-05960	153	290-05960	—	38	267-05960
599-05961	3	100	25	275-05961	101	290-05961	—	25	267-05961
599-05962	4	160	—	—	—	65	293-05962	—	—
599-05963	5	250	—	—	—	42	293-05963	—	—
599-05964	6	400	—	—	—	29	293-05964	—	—
<b>Normally Closed</b>			<b>Close-off psi — Bronze Trim</b>						
599-05990	2-1/2	63	34	275-05990	97	290-05990	—	34	267-05990
599-05991	3	100	22	275-05991	63	290-05991	—	22	267-05991
599-05992	4	160	—	—	—	39	293-05992	—	—
599-05993	5	250	—	—	—	25	293-05993	—	—
599-05994	6	400	—	—	—	17	293-05994	—	—
			<b>Close-off psi — Stainless Steel Trim</b>						
599-05970	2-1/2	63	34	275-05970	97	290-05970	—	34	267-05970
599-05971	3	100	22	275-05971	63	290-05971	—	22	267-05971
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	
<b>2-Way Valve Body Part No.</b>	<b>Valve Size in.</b>	<b>Flow Rate Cv</b>									
			599-01050	599-01051	599-01010	599-01000	599-01050 + 599-00426	599-01051 + 599-00426	599-01010 + 599-00423	599-01000 + 599-00423	
<b>Normally Open</b>											
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>											
	599-06060	2-1/2	63	31 <b>277-06060</b>	—	95 <b>279-06060</b>	—	31 <b>283-06060</b>	—	95 <b>285-06060</b>	—
	599-06061	3	100	20 <b>277-06061</b>	—	63 <b>279-06061</b>	—	20 <b>283-06061</b>	—	63 <b>285-06061</b>	—
	599-06062	4	160	—	—	—	40 <b>281-06062</b>	—	—	—	40 <b>287-06062</b>
	599-06063	5	250	—	—	—	26 <b>281-06063</b>	—	—	—	26 <b>287-06063</b>
	599-06064	6	400	—	—	—	18 <b>281-06064</b>	—	—	—	18 <b>287-06064</b>
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>											
	599-06040	2-1/2	63	31 <b>277-06040</b>	31 <b>278-06040</b>	95 <b>279-06040</b>	—	31 <b>283-06040</b>	31 <b>284-06040</b>	95 <b>285-06040</b>	—
	599-06041	3	100	20 <b>277-06041</b>	20 <b>278-06041</b>	63 <b>279-06041</b>	—	20 <b>283-06041</b>	20 <b>284-06041</b>	63 <b>285-06041</b>	—
	599-06042	4	160	—	—	—	40 <b>281-06042</b>	—	—	—	40 <b>287-06042</b>
	599-06043	5	250	—	—	—	26 <b>281-06043</b>	—	—	—	26 <b>287-06043</b>
	599-06044	6	400	—	—	—	18 <b>281-06044</b>	—	—	—	18 <b>287-06044</b>
<b>Normally Closed</b>											
<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>											
	599-06070	2-1/2	63	36 <b>277-06070</b>	—	114 <b>279-06070</b>	—	36 <b>283-06070</b>	—	114 <b>285-06070</b>	—
	599-06071	3	100	23 <b>277-06071</b>	—	74 <b>279-06071</b>	—	23 <b>283-06071</b>	—	74 <b>285-06071</b>	—
	599-06072	4	160	—	—	—	46 <b>281-06072</b>	—	—	—	46 <b>287-06072</b>
	599-06073	5	250	—	—	—	29 <b>281-06073</b>	—	—	—	29 <b>287-06073</b>
	599-06074	6	400	—	—	—	20 <b>281-06074</b>	—	—	—	20 <b>287-06074</b>
<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>											
	599-06050	2-1/2	63	36 <b>277-06050</b>	36 <b>278-06050</b>	114 <b>279-06050</b>	—	36 <b>283-06050</b>	36 <b>284-06050</b>	114 <b>285-06050</b>	—
	599-06051	3	100	23 <b>277-06051</b>	23 <b>278-06051</b>	74 <b>279-06051</b>	—	23 <b>283-06051</b>	23 <b>284-06051</b>	74 <b>285-06051</b>	—
	599-06052	4	160	—	—	—	46 <b>281-06052</b>	—	—	—	46 <b>287-06052</b>
	599-06053	5	250	—	—	—	29 <b>281-06053</b>	—	—	—	29 <b>287-06053</b>
	599-06054	6	400	—	—	—	20 <b>281-06054</b>	—	—	—	20 <b>287-06054</b>

**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.

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Valves

# Two-Way Flanged **Globe** Valve Assemblies







ANSI Class 125  
Electronic Spring Return Actuators

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



A-42

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			<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>					
599-06060	2-1/2	63	38 <b>276-06060</b>	153 <b>289-06060</b>	—	38 <b>274-06060</b>	153 <b>291-06060</b>	—
599-06061	3	100	25 <b>276-06061</b>	101 <b>289-06061</b>	—	25 <b>274-06061</b>	101 <b>291-06061</b>	—
599-06062	4	160	—	—	65 <b>292-06062</b>	—	—	65 <b>294-06062</b>
599-06063	5	250	—	—	42 <b>292-06063</b>	—	—	42 <b>294-06063</b>
599-06064	6	400	—	—	29 <b>292-06064</b>	—	—	29 <b>294-06064</b>
			<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>					
599-06040	2-1/2	63	38 <b>276-06040</b>	153 <b>289-06040</b>	—	38 <b>274-06040</b>	153 <b>291-06040</b>	—
599-06041	3	100	25 <b>276-06041</b>	101 <b>289-06041</b>	—	25 <b>274-06041</b>	101 <b>291-06041</b>	—
599-06042	4	160	—	—	65 <b>292-06042</b>	—	—	65 <b>294-06042</b>
599-06043	5	250	—	—	42 <b>292-06043</b>	—	—	42 <b>294-06043</b>
599-06044	6	400	—	—	29 <b>292-06044</b>	—	—	29 <b>294-06044</b>
Normally Closed			<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>					
599-06070	2-1/2	63	34 <b>276-06070</b>	97 <b>289-06070</b>	—	34 <b>274-06070</b>	97 <b>291-06070</b>	—
599-06071	3	100	22 <b>276-06071</b>	63 <b>289-06071</b>	—	22 <b>274-06071</b>	63 <b>291-06071</b>	—
599-06072	4	160	—	—	39 <b>292-06072</b>	—	—	39 <b>294-06072</b>
599-06073	5	250	—	—	25 <b>292-06073</b>	—	—	25 <b>294-06073</b>
599-06074	6	400	—	—	17 <b>292-06074</b>	—	—	17 <b>294-06074</b>
			<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>					
599-06050	2-1/2	63	34 <b>276-06050</b>	97 <b>289-06050</b>	—	34 <b>274-06050</b>	97 <b>291-06050</b>	—
599-06051	3	100	22 <b>276-06051</b>	63 <b>289-06051</b>	—	22 <b>274-06051</b>	63 <b>291-06051</b>	—
599-06052	4	160	—	—	39 <b>292-06052</b>	—	—	39 <b>294-06052</b>
599-06053	5	250	—	—	25 <b>292-06053</b>	—	—	25 <b>294-06053</b>
599-06054	6	400	—	—	17 <b>292-06054</b>	—	—	17 <b>294-06054</b>

**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	0-10 Vdc 4-20 mA
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SKD82.50U	 SKB82.50U	 SKC82.60U	 SKD60U
<b>Normally Open</b>						
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)						
	599-06060	2-1/2 63	38 <b>275-06060</b>	153 <b>290-06060</b>	—	38 <b>267-06060</b>
	599-06061	3 100	25 <b>275-06061</b>	101 <b>290-06061</b>	—	25 <b>267-06061</b>
	599-06062	4 160	—	—	65 <b>293-06062</b>	—
	599-06063	5 250	—	—	42 <b>293-06063</b>	—
	599-06064	6 400	—	—	29 <b>293-06064</b>	—
Close-off psi — High-temperature Range is 337° F max. (170° C)						
	599-06040	2-1/2 63	38 <b>275-06040</b>	153 <b>290-06040</b>	—	38 <b>267-06040</b>
	599-06041	3 100	25 <b>275-06041</b>	101 <b>290-06041</b>	—	25 <b>267-06041</b>
	599-06042	4 160	—	—	65 <b>293-06042</b>	—
	599-06043	5 250	—	—	42 <b>293-06043</b>	—
	599-06044	6 400	—	—	29 <b>293-06044</b>	—
<b>Normally Closed</b>						
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)						
	599-06070	2-1/2 63	34 <b>275-06070</b>	97 <b>290-06070</b>	—	34 <b>267-06070</b>
	599-06071	3 100	22 <b>275-06071</b>	63 <b>290-06071</b>	—	22 <b>267-06071</b>
	599-06072	4 160	—	—	39 <b>293-06072</b>	—
	599-06073	5 250	—	—	25 <b>293-06073</b>	—
	599-06074	6 400	—	—	17 <b>293-06074</b>	—
Close-off psi — High-temperature Range is 337° F max. (170° C)						
	599-06050	2-1/2 63	34 <b>275-06050</b>	97 <b>290-06050</b>	—	34 <b>267-06050</b>
	599-06051	3 100	22 <b>275-06051</b>	63 <b>290-06051</b>	—	22 <b>267-06051</b>
	599-06052	4 160	—	—	39 <b>293-06052</b>	—
	599-06053	5 250	—	—	25 <b>293-06053</b>	—
	599-06054	6 400	—	—	17 <b>293-06054</b>	—

**Table Notes:**

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

A-43

Valves








# Three-Way Flanged **Globe** Valve Assemblies

ANSI Class 125

Pneumatic Spring Return Actuators

- 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					
599-06160	2-1/2	63	36 <b>277-06160</b>	114 <b>279-06160</b>	—	36 <b>283-06160</b>	114 <b>285-06160</b>	—
599-06161	3	100	23 <b>277-06161</b>	74 <b>279-06161</b>	—	23 <b>283-06161</b>	74 <b>285-06161</b>	—
599-06162	4	160	—	—	46 <b>281-06162</b>	—	—	46 <b>287-06162</b>
599-06163	5	250	—	—	29 <b>281-06163</b>	—	—	29 <b>287-06163</b>
599-06164	6	400	—	—	20 <b>281-06164</b>	—	—	20 <b>287-06164</b>
			Close-off psi — Stainless Steel Trim					
599-06165	2-1/2	63	36 <b>277-06165</b>	114 <b>279-06165</b>	—	36 <b>283-06165</b>	114 <b>285-06165</b>	—
599-06166	3	100	23 <b>277-06166</b>	74 <b>279-06166</b>	—	23 <b>283-06166</b>	74 <b>285-06166</b>	—
599-06167	4	160	—	—	46 <b>281-06167</b>	—	—	46 <b>287-06167</b>
599-06168	5	250	—	—	29 <b>281-06168</b>	—	—	29 <b>287-06168</b>
599-06169	6	400	—	—	20 <b>281-06169</b>	—	—	20 <b>287-06169</b>

**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.

A-44

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
<b>Close-off psi — Bronze Trim</b>								
599-06160	2-1/2	63	34 <b>276-06160</b>	97 <b>289-06160</b>	—	34 <b>274-06160</b>	97 <b>291-06160</b>	—
599-06161	3	100	22 <b>276-06161</b>	63 <b>289-06161</b>	—	22 <b>274-06161</b>	63 <b>291-06161</b>	—
599-06162	4	160	—	—	39 <b>292-06162</b>	—	—	39 <b>294-06162</b>
599-06163	5	250	—	—	25 <b>292-06163</b>	—	—	25 <b>294-06163</b>
599-06164	6	400	—	—	17 <b>292-06164</b>	—	—	17 <b>294-06164</b>
<b>Close-off psi — Stainless Steel Trim</b>								
599-06165	2-1/2	63	34 <b>276-06165</b>	97 <b>289-06165</b>	—	34 <b>274-06165</b>	97 <b>291-06165</b>	—
599-06166	3	100	22 <b>276-06166</b>	63 <b>289-06166</b>	—	22 <b>274-06166</b>	63 <b>291-06166</b>	—
599-06167	4	160	—	—	39 <b>292-06167</b>	—	—	39 <b>294-06167</b>
599-06168	5	250	—	—	25 <b>292-06168</b>	—	—	25 <b>294-06168</b>
599-06169	6	400	—	—	17 <b>292-06169</b>	—	—	17 <b>294-06169</b>

**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 Engineering Section G.

Mixing Flanged 2-1/2 to 6" 			Non-Spring Return Actuator			
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv				
			SKD82.50U	SKB82.50U	SKC82.60U	SKD60U
<b>Close-off psi — Bronze Trim</b>						
599-06160	2-1/2	63	34 <b>275-06160</b>	97 <b>290-06160</b>	—	34 <b>267-06160</b>
599-06161	3	100	22 <b>275-06161</b>	63 <b>290-06161</b>	—	22 <b>267-06161</b>
599-06162	4	160	—	—	39 <b>293-06162</b>	—
599-06163	5	250	—	—	25 <b>293-06163</b>	—
599-06164	6	400	—	—	17 <b>293-06164</b>	—
<b>Close-off psi — Stainless Steel Trim</b>						
599-06165	2-1/2	63	34 <b>275-06165</b>	97 <b>290-06165</b>	—	34 <b>267-06165</b>
599-06166	3	100	22 <b>275-06166</b>	63 <b>290-06166</b>	—	22 <b>267-06166</b>
599-06167	4	160	—	—	39 <b>293-06167</b>	—
599-06168	5	250	—	—	25 <b>293-06168</b>	—
599-06169	6	400	—	—	17 <b>293-06169</b>	—

**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 Engineering, Section G.







# 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	
<b>Normally Open</b>				<b>Stainless Steel Trim</b>				
	599-06610	2-1/2	63	200	<b>283-06610</b>	—	<b>274-06610</b>	—
	599-06611	3	100	200	<b>283-06611</b>	—	<b>274-06611</b>	—
	599-06612	4	160	200	—	<b>287-06612</b>	—	<b>294-06612</b>
	599-06613	5	250	200	—	<b>287-06613</b>	—	<b>294-06613</b>
	599-06614	6	400	200	—	<b>287-06614</b>	—	<b>294-06614</b>
<b>Normally Closed</b>				<b>Stainless Steel Trim</b>				
	599-06615	2-1/2	63	200	<b>283-06615</b>	—	<b>274-06615</b>	—
	599-06616	3	100	200	<b>283-06616</b>	—	<b>274-06616</b>	—
	599-06617	4	160	200	—	<b>287-06617</b>	—	<b>294-06617</b>
	599-06618	5	250	200	—	<b>287-06618</b>	—	<b>294-06618</b>
	599-06619	6	400	200	—	<b>287-06619</b>	—	<b>294-06619</b>

**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.

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Valves







## 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 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
<b>2-Way Valve Body Part No.</b>	<b>Valve Size in.</b>	<b>Flow Rate Cv</b>	<b>Close Off psi</b>	 599-01050 + 599-00426	 599-01000 + 599-00423	 SKD62U	 SKC62U
<b>Normally Open</b>							
				<b>Stainless Steel Trim</b>			
	599-06620	2-1/2	63	200	<b>283-06620</b>	—	<b>274-06620</b>
	599-06621	3	100	200	<b>283-06621</b>	—	<b>274-06621</b>
	599-06622	4	160	200	—	<b>287-06622</b>	<b>294-06622</b>
	599-06623	5	250	200	—	<b>287-06623</b>	<b>294-06623</b>
	599-06624	6	400	200	—	<b>287-06624</b>	<b>294-06624</b>
<b>Normally Closed</b>							
				<b>Stainless Steel Trim</b>			
	599-06625	2-1/2	63	200	<b>283-06625</b>	—	<b>274-06625</b>
	599-06626	3	100	200	<b>283-06626</b>	—	<b>274-06626</b>
	599-06627	4	160	200	—	<b>287-06627</b>	<b>294-06627</b>
	599-06628	5	250	200	—	<b>287-06628</b>	<b>294-06628</b>
	599-06629	6	400	200	—	<b>287-06629</b>	<b>294-06629</b>

**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.

A-47

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



A-48

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

**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	
<b>Normally Open</b>			<b>Close-off psi — Bronze Trim</b>						
	599-05940	2-1/2	63	38 <b>276-05940</b>	153 <b>289-05940</b>	—	38 <b>274-05940</b>	153 <b>291-05940</b>	—
	599-05941	3	100	25 <b>276-05941</b>	101 <b>289-05941</b>	—	25 <b>274-05941</b>	101 <b>291-05941</b>	—
	599-05942	4	160	—	—	65 <b>292-05942</b>	—	—	65 <b>294-05942</b>
	599-05943	5	250	—	—	42 <b>292-05943</b>	—	—	42 <b>294-05943</b>
	599-05944	6	400	—	—	29 <b>292-05944</b>	—	—	29 <b>294-05944</b>
				<b>Close-off psi — Stainless Steel Trim</b>					
599-05920	2-1/2	63	38 <b>276-05920</b>	153 <b>289-05920</b>	—	38 <b>274-05920</b>	153 <b>291-05920</b>	—	
599-05921	3	100	25 <b>276-05921</b>	101 <b>289-05921</b>	—	25 <b>274-05921</b>	101 <b>291-05921</b>	—	
599-05922	4	160	—	—	65 <b>292-05922</b>	—	—	65 <b>294-05922</b>	
599-05923	5	250	—	—	42 <b>292-05923</b>	—	—	42 <b>294-05923</b>	
599-05924	6	400	—	—	29 <b>292-05924</b>	—	—	29 <b>294-05924</b>	
<b>Normally Closed</b>			<b>Close-off psi — Bronze Trim</b>						
	599-05950	2-1/2	63	34 <b>276-05950</b>	97 <b>289-05950</b>	—	34 <b>274-05950</b>	97 <b>291-05950</b>	—
	599-05951	3	100	22 <b>276-05951</b>	63 <b>289-05951</b>	—	22 <b>274-05951</b>	63 <b>291-05951</b>	—
	599-05952	4	160	—	—	39 <b>292-05952</b>	—	—	39 <b>294-05952</b>
	599-05953	5	250	—	—	25 <b>292-05953</b>	—	—	25 <b>294-05953</b>
	599-05954	6	400	—	—	17 <b>292-05954</b>	—	—	17 <b>294-05954</b>
				<b>Close-off psi — Stainless Steel Trim</b>					
599-05930	2-1/2	63	34 <b>276-05930</b>	97 <b>289-05930</b>	—	34 <b>274-05930</b>	97 <b>291-05930</b>	—	
599-05931	3	100	22 <b>276-05931</b>	63 <b>289-05931</b>	—	22 <b>274-05931</b>	63 <b>291-05931</b>	—	
599-05932	4	160	—	—	39 <b>292-05932</b>	—	—	39 <b>294-05932</b>	
599-05933	5	250	—	—	25 <b>292-05933</b>	—	—	25 <b>294-05933</b>	
599-05934	6	400	—	—	17 <b>292-05934</b>	—	—	17 <b>294-05934</b>	

**Table Notes:**

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

A-49

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



A-50

Valves

NO/NC Equal Percentage Flanged 2-1/2 to 6"			Non-Spring Return Actuator			
			Floating 3P	Floating 3P	Floating 3P	0-10 Vdc 4-20 mA
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SKD82.50U	 SKB82.50U	 SKC82.60U	 SKD60U
<b>Normally Open</b>			<b>Close-off psi — Bronze Trim</b>			
	599-05940	2-1/2 63	38 <b>275-05940</b>	153 <b>290-05940</b>	—	38 <b>267-05940</b>
	599-05941	3 100	25 <b>275-05941</b>	101 <b>290-05941</b>	—	25 <b>267-05941</b>
	599-05942	4 160	—	—	65 <b>293-05942</b>	—
	599-05943	5 250	—	—	42 <b>293-05943</b>	—
	599-05944	6 400	—	—	29 <b>293-05944</b>	—
			<b>Close-off psi — Stainless Steel Trim</b>			
	599-05920	2-1/2 63	38 <b>275-05920</b>	153 <b>290-05920</b>	—	38 <b>267-05920</b>
	599-05921	3 100	25 <b>275-05921</b>	101 <b>290-05921</b>	—	25 <b>267-05921</b>
	599-05922	4 160	—	—	65 <b>293-05922</b>	—
	599-05923	5 250	—	—	42 <b>293-05923</b>	—
	599-05924	6 400	—	—	29 <b>293-05924</b>	—
<b>Normally Closed</b>			<b>Close-off psi — Bronze Trim</b>			
	599-05950	2-1/2 63	34 <b>275-05950</b>	97 <b>290-05950</b>	—	34 <b>267-05950</b>
	599-05951	3 100	22 <b>275-05951</b>	63 <b>290-05951</b>	—	22 <b>267-05951</b>
	599-05952	4 160	—	—	39 <b>293-05952</b>	—
	599-05953	5 250	—	—	25 <b>293-05953</b>	—
	599-05954	6 400	—	—	17 <b>293-05954</b>	—
			<b>Close-off psi — Stainless Steel Trim</b>			
	599-05930	2-1/2 63	34 <b>275-05930</b>	97 <b>290-05930</b>	—	34 <b>267-05930</b>
	599-05931	3 100	22 <b>275-05931</b>	63 <b>290-05931</b>	—	22 <b>267-05931</b>
	599-05932	4 160	—	—	39 <b>293-05932</b>	—
	599-05933	5 250	—	—	25 <b>293-05933</b>	—
	599-05934	6 400	—	—	17 <b>293-05934</b>	—











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

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

**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.

A-51

Valves

# Two-Way Flanged **Globe** Valve Assemblies









ANSI Class 250  
Electronic Spring Return Actuators

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



A-52

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
<b>Normally Open</b>			<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>					
	599-06140	2-1/2 63	38 <b>276-06140</b>	153 <b>289-06140</b>	—	38 <b>274-06140</b>	153 <b>291-06140</b>	—
	599-06141	3 100	25 <b>276-06141</b>	101 <b>289-06141</b>	—	25 <b>274-06141</b>	101 <b>291-06141</b>	—
	599-06142	4 160	—	—	65 <b>292-06142</b>	—	—	65 <b>294-06142</b>
	599-06143	5 250	—	—	42 <b>292-06143</b>	—	—	42 <b>294-06143</b>
	599-06144	6 400	—	—	29 <b>292-06144</b>	—	—	29 <b>294-06144</b>
			<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>					
	599-06120	2-1/2 63	38 <b>276-06120</b>	153 <b>289-06120</b>	—	38 <b>274-06120</b>	153 <b>291-06120</b>	—
	599-06121	3 100	25 <b>276-06121</b>	101 <b>289-06121</b>	—	25 <b>274-06121</b>	101 <b>291-06121</b>	—
	599-06122	4 160	—	—	65 <b>292-06122</b>	—	—	65 <b>294-06122</b>
	599-06123	5 250	—	—	42 <b>292-06123</b>	—	—	42 <b>294-06123</b>
	599-06124	6 400	—	—	29 <b>292-06124</b>	—	—	29 <b>294-06124</b>
<b>Normally Closed</b>			<b>Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)</b>					
	599-06150	2-1/2 63	34 <b>276-06150</b>	97 <b>289-06150</b>	—	34 <b>274-06150</b>	97 <b>291-06150</b>	—
	599-06151	3 100	22 <b>276-06151</b>	63 <b>289-06151</b>	—	22 <b>274-06151</b>	63 <b>291-06151</b>	—
	599-06152	4 160	—	—	39 <b>292-06152</b>	—	—	39 <b>294-06152</b>
	599-06153	5 250	—	—	25 <b>292-06153</b>	—	—	25 <b>294-06153</b>
	599-06154	6 400	—	—	17 <b>292-06154</b>	—	—	17 <b>294-06154</b>
			<b>Close-off psi — High-temperature Range is 337° F max. (170° C)</b>					
	599-06130	2-1/2 63	34 <b>276-06130</b>	97 <b>289-06130</b>	—	34 <b>274-06130</b>	97 <b>291-06130</b>	—
	599-06131	3 100	22 <b>276-06131</b>	63 <b>289-06131</b>	—	22 <b>274-06131</b>	63 <b>291-06131</b>	—
	599-06132	4 160	—	—	39 <b>292-06132</b>	—	—	39 <b>294-06132</b>
	599-06133	5 250	—	—	25 <b>292-06133</b>	—	—	25 <b>294-06133</b>
	599-06134	6 400	—	—	17 <b>292-06134</b>	—	—	17 <b>294-06134</b>

**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	0-10 Vdc 4-20 mA				
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	 SKD82.50U	 SKB82.50U	 SKC82.60U	 SKD60U				
<b>Normally Open</b>										
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)										
	599-06140	2-1/2	63	38	<b>275-06140</b>	153	<b>290-06140</b>	—	38	<b>267-06140</b>
	599-06141	3	100	25	<b>275-06141</b>	101	<b>290-06141</b>	—	25	<b>267-06141</b>
	599-06142	4	160	—	—	—	65	<b>293-06142</b>	—	—
	599-06143	5	250	—	—	—	42	<b>293-06143</b>	—	—
	599-06144	6	400	—	—	—	29	<b>293-06144</b>	—	—
Close-off psi — High-temperature Range is 337° F max. (170° C)										
	599-06120	2-1/2	63	38	<b>275-06120</b>	153	<b>290-06120</b>	—	38	<b>267-06120</b>
	599-06121	3	100	25	<b>275-06121</b>	101	<b>290-06121</b>	—	25	<b>267-06121</b>
	599-06122	4	160	—	—	—	65	<b>293-06122</b>	—	—
	599-06123	5	250	—	—	—	42	<b>293-06123</b>	—	—
	599-06124	6	400	—	—	—	29	<b>293-06124</b>	—	—
<b>Normally Closed</b>										
Close-off psi — Standard-temperature Range 20° F to 250° F (-7° C to 120° C)										
	599-06150	2-1/2	63	34	<b>275-06150</b>	97	<b>290-06150</b>	—	34	<b>267-06150</b>
	599-06151	3	100	22	<b>275-06151</b>	63	<b>290-06151</b>	—	22	<b>267-06151</b>
	599-06152	4	160	—	—	—	39	<b>293-06152</b>	—	—
	599-06153	5	250	—	—	—	25	<b>293-06153</b>	—	—
	599-06154	6	400	—	—	—	17	<b>293-06154</b>	—	—
Close-off psi — High-temperature Range is 337° F max. (170° C)										
	599-06130	2-1/2	63	34	<b>275-06130</b>	97	<b>290-06130</b>	—	34	<b>267-06130</b>
	599-06131	3	100	22	<b>275-06131</b>	63	<b>290-06131</b>	—	22	<b>267-06131</b>
	599-06132	4	160	—	—	—	39	<b>293-06132</b>	—	—
	599-06133	5	250	—	—	—	25	<b>293-06133</b>	—	—
	599-06134	6	400	—	—	—	17	<b>293-06134</b>	—	—

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

A-53

Valves








# 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
			<b>Close-off psi — Bronze Trim</b>					
599-06170	2-1/2	63	36 <b>277-06170</b>	114 <b>279-06170</b>	—	36 <b>283-06170</b>	114 <b>285-06170</b>	—
599-06171	3	100	23 <b>277-06171</b>	74 <b>279-06171</b>	—	23 <b>283-06171</b>	74 <b>285-06171</b>	—
599-06172	4	160	—	—	46 <b>281-06172</b>	—	—	46 <b>287-06172</b>
599-06173	5	250	—	—	29 <b>281-06173</b>	—	—	29 <b>287-06173</b>
599-06174	6	400	—	—	20 <b>281-06174</b>	—	—	20 <b>287-06174</b>
			<b>Close-off psi — Stainless Steel Trim</b>					
599-06175	2-1/2	63	36 <b>277-06175</b>	114 <b>279-06175</b>	—	36 <b>283-06175</b>	114 <b>285-06175</b>	—
599-06176	3	100	23 <b>277-06176</b>	74 <b>279-06176</b>	—	23 <b>283-06176</b>	74 <b>285-06176</b>	—
599-06177	4	160	—	—	46 <b>281-06177</b>	—	—	46 <b>287-06177</b>
599-06178	5	250	—	—	29 <b>281-06178</b>	—	—	29 <b>287-06178</b>
599-06179	6	400	—	—	20 <b>281-06179</b>	—	—	20 <b>287-06179</b>

**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 Engineering, Section G.

A-54

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
<b>Close-off psi — Bronze Trim</b>								
599-06170	2-1/2	63	34 <b>276-06170</b>	97 <b>289-06170</b>	—	34 <b>274-06170</b>	97 <b>291-06170</b>	—
599-06171	3	100	22 <b>276-06171</b>	63 <b>289-06171</b>	—	22 <b>274-06171</b>	63 <b>291-06171</b>	—
599-06172	4	160	—	—	39 <b>292-06172</b>	—	—	39 <b>294-06172</b>
599-06173	5	250	—	—	25 <b>292-06173</b>	—	—	25 <b>294-06173</b>
599-06174	6	400	—	—	17 <b>292-06174</b>	—	—	17 <b>294-06174</b>
<b>Close-off psi — Stainless Steel Trim</b>								
599-06175	2-1/2	63	34 <b>276-06175</b>	97 <b>289-06175</b>	—	34 <b>274-06175</b>	97 <b>291-06175</b>	—
599-06176	3	100	22 <b>276-06176</b>	63 <b>289-06176</b>	—	22 <b>274-06176</b>	63 <b>291-06176</b>	—
599-06177	4	160	—	—	39 <b>292-06177</b>	—	—	39 <b>294-06177</b>
599-06178	5	250	—	—	25 <b>292-06178</b>	—	—	25 <b>294-06178</b>
599-06179	6	400	—	—	17 <b>292-06179</b>	—	—	17 <b>294-06179</b>

**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	0-10 Vdc 4-20 mA
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv				 <b>NEW!</b>
			SKD82.50U	SKB82.50U	SKC82.60U	SKD60U
<b>Close-off psi — Bronze Trim</b>						
599-06170	2-1/2	63	34 <b>275-06170</b>	97 <b>290-06170</b>	—	34 <b>267-06170</b>
599-06171	3	100	22 <b>275-06171</b>	63 <b>290-06171</b>	—	22 <b>267-06171</b>
599-06172	4	160	—	—	39 <b>293-06172</b>	—
599-06173	5	250	—	—	25 <b>293-06173</b>	—
599-06174	6	400	—	—	17 <b>293-06174</b>	—
<b>Close-off psi — Stainless Steel Trim</b>						
599-06175	2-1/2	63	34 <b>275-06175</b>	97 <b>290-06175</b>	—	34 <b>267-06175</b>
599-06176	3	100	22 <b>275-06176</b>	63 <b>290-06176</b>	—	22 <b>267-06176</b>
599-06177	4	160	—	—	39 <b>293-06177</b>	—
599-06178	5	250	—	—	25 <b>293-06178</b>	—
599-06179	6	400	—	—	17 <b>293-06179</b>	—

**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 Engineering, Section G.

A-55






Valves

# Two-Way Ball Valve Assemblies

## Electronic Spring Return Actuators

- Normally Open
- 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 1/2 to 3/4"				Spring Return Actuator								
				Normally Open								
				2P	2P w/ Dual Aux. Switches	2P, 120 V	Floating	2-10 Vdc				
												
				GQD121.1P	GQD126.1P	GQD221.1U	GQD131.1P	GQD151.1P				
				Chrome-Plated Brass Ball and Brass Stem								
A-56 Valves	2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	171H-10300	—	—	171J-10300	171K-10300			
					599-10300	0.4	200	171H-10301	—	—	171J-10301	171K-10301
					599-10301	0.63	200	171H-10302	—	—	171J-10302	171K-10302
					599-10302	1.0	200	171H-10303	—	—	171J-10303	171K-10303
					599-10303	1.6	200	171H-10304	—	—	171J-10304	171K-10304
					599-10304	2.5	200	171H-10305	—	—	171J-10305	171K-10305
					599-10305	4.0	200	171H-10306	—	—	171J-10306	171K-10306
	599-10306	6.3	200	171H-10307*	—	171L-10307*	171J-10307*	171K-10307*				
	599-10307*	10	200	171H-10308	—	—	171J-10308	171K-10308				
	599-10308	6.3	200	171H-10309	—	—	171J-10309	171K-10309				
	599-10309	10	200	171H-10310	—	—	171J-10310	171K-10310				
	599-10310	16	200	171H-10311*	—	171L-10311*	171J-10311*	171K-10311*				
	599-10311*	25	200	Stainless Steel Ball and Stem								
	599-10300S	2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	171H-10300S	—	—	171J-10300S	171K-10300S		
599-10300S						0.4	200	171H-10301S	—	—	171J-10301S	171K-10301S
599-10301S						0.63	200	171H-10302S	—	—	171J-10302S	171K-10302S
599-10302S						1.0	200	171H-10303S	—	—	171J-10303S	171K-10303S
599-10303S						1.6	200	171H-10304S	—	—	171J-10304S	171K-10304S
599-10304S						2.5	200	171H-10305S	—	—	171J-10305S	171K-10305S
599-10305S						4.0	200	171H-10306S	—	—	171J-10306S	171K-10306S
599-10306S		6.3	200	171H-10307S*	171N-10307S*	171L-10307S*	171J-10307S*	171K-10307S*				
599-10307S*		10	200	171H-10308S	—	—	171J-10308S	171K-10308S				
599-10308S		6.3	200	171H-10309S	—	—	171J-10309S	171K-10309S				
599-10309S		10	200	171H-10310S	—	—	171J-10310S	171K-10310S				
599-10310S		16	200	171H-10311S*	171N-10311S*	171L-10311S*	171J-10311S*	171K-10311S*				
599-10311S*		25	200									

**Table Notes:**

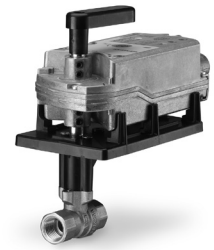
Part numbers in red indicate complete assemblies.

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

## Two-Way Ball Valve Assemblies

### Electronic Spring Return Actuators

- Normally Open
- 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 1 to 2"				Spring Return Actuator				
				Normally Open				
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P	2P w/ Dual Aux. Switches	2P, 120 V	Floating	0-10 Vdc
<b>Chrome-Plated Brass Ball and Brass Stem</b>								
599-10312	1	10	200	171E-10312	—	—	171F-10312	171G-10312
599-10313		16	200	171E-10313	—	—	171F-10313	171G-10313
599-10314		25	200	171E-10314	—	—	171F-10314	171G-10314
599-10315		40	200	171E-10315	—	—	171F-10315	171G-10315
599-10316*		63	200	171E-10316*	—	171M-10316*	171F-10316*	171G-10316*
599-10317	1-1/4	16	200	171E-10317	—	—	171F-10317	171G-10317
599-10318		25	200	171E-10318	—	—	171F-10318	171G-10318
599-10319		40	200	171E-10319	—	—	171F-10319	171G-10319
599-10320		63	200	171E-10320	—	—	171F-10320	171G-10320
599-10321*		100	200	171E-10321*	—	171M-10321*	171F-10321*	171G-10321*
599-10322	1-1/2	25	200	171E-10322	—	—	171F-10322	171G-10322
599-10323		40	200	171E-10323	—	—	171F-10323	171G-10323
599-10324		63	200	171E-10324	—	—	171F-10324	171G-10324
599-10325		100	200	171E-10325	—	—	171F-10325	171G-10325
599-10326*		160	200	171E-10326*	—	171M-10326*	171F-10326*	171G-10326*
599-10327	2	40	200	171E-10327	—	—	171F-10327	171G-10327
599-10328		63	200	171E-10328	—	—	171F-10328	171G-10328
599-10329*		100	200	171E-10329*	—	—	171F-10329*	171G-10329*
599-10330*		160	200	171E-10330*	—	171M-10330*	171F-10330*	171G-10330*
<b>Stainless Steel Ball and Stem</b>								
599-10312S	1	10	200	171E-10312S	—	—	171F-10312S	171G-10312S
599-10313S		16	200	171E-10313S	—	—	171F-10313S	171G-10313S
599-10314S		25	200	171E-10314S	—	—	171F-10314S	171G-10314S
599-10315S		40	200	171E-10315S	—	—	171F-10315S	171G-10315S
599-10316S*		63	200	171E-10316S*	171P-10316S*	171M-10316S*	171F-10316S*	171G-10316S*
599-10317S	1-1/4	16	200	171E-10317S	—	—	171F-10317S	171G-10317S
599-10318S		25	200	171E-10318S	—	—	171F-10318S	171G-10318S
599-10319S		40	200	171E-10319S	—	—	171F-10319S	171G-10319S
599-10320S		63	200	171E-10320S	—	—	171F-10320S	171G-10320S
599-10321S*		100	200	171E-10321S*	171P-10321S*	171M-10321S*	171F-10321S*	171G-10321S*
599-10322S	1-1/2	25	200	171E-10322S	—	—	171F-10322S	171G-10322S
599-10323S		40	200	171E-10323S	—	—	171F-10323S	171G-10323S
599-10324S*		63	200	171E-10324S*	—	—	171F-10324S*	171G-10324S*
599-10325S		100	200	171E-10325S	—	—	171F-10325S	171G-10325S
599-10326S*		160	200	171E-10326S*	171P-10326S*	171M-10326S*	171F-10326S*	171G-10326S*
599-10327S	2	40	200	171E-10327S	—	—	171F-10327S	171G-10327S
599-10328S		63	200	171E-10328S	—	—	171F-10328S	171G-10328S
599-10329S*		100	200	171E-10329S*	—	—	171F-10329S*	171G-10329S*
599-10330S*		160	200	171E-10330S*	171P-10330S*	171M-10330S*	171F-10330S*	171G-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 Spring Return Actuators

- 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



NC 1/2 to 3/4"				Spring Return Actuator								
				Normally Closed								
				2P	2P w/ Dual Aux. Switches	2P, 120 V	Floating	2-10 Vdc				
												
				GQD121.1P	GQD126.1P	GQD221.1U	GQD131.1P	GQD151.1P				
				Chrome-Plated Brass Ball and Brass Stem								
A-58 Valves	2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	172H-10300	—	—	172J-10300	172K-10300			
					599-10300	0.4	200	172H-10301	—	—	172J-10301	172K-10301
					599-10301	0.63	200	172H-10302	—	—	172J-10302	172K-10302
					599-10302	1.0	200	172H-10303	—	—	172J-10303	172K-10303
					599-10303	1.6	200	172H-10304	—	—	172J-10304	172K-10304
					599-10304	2.5	200	172H-10305	—	—	172J-10305	172K-10305
					599-10305	4.0	200	172H-10306	—	—	172J-10306	172K-10306
	599-10306	6.3	200	172H-10307*	—	172L-10307*	172J-10307*	172K-10307*				
	599-10307*	10	200	172H-10308	—	—	172J-10308	172K-10308				
	599-10308	6.3	200	172H-10309	—	—	172J-10309	172K-10309				
	599-10309	10	200	172H-10310	—	—	172J-10310	172K-10310				
	599-10310	16	200	172H-10311*	—	172L-10311*	172J-10311*	172K-10311*				
	599-10311*	25	200	Stainless Steel Ball and Stem								
	599-10300S	2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	172H-10300S	—	—	172J-10300S	172K-10300S		
599-10300S						0.4	200	172H-10301S	—	—	172J-10301S	172K-10301S
599-10301S						0.63	200	172H-10302S	—	—	172J-10302S	172K-10302S
599-10302S						1.0	200	172H-10303S	—	—	172J-10303S	172K-10303S
599-10303S						1.6	200	172H-10304S	—	—	172J-10304S	172K-10304S
599-10304S						2.5	200	172H-10305S	—	—	172J-10305S	172K-10305S
599-10305S						4.0	200	172H-10306S	—	—	172J-10306S	172K-10306S
599-10306S		6.3	200	172H-10307S*	172N-10307S*	172L-10307S*	172J-10307S*	172K-10307S*				
599-10307S*		10	200	172H-10308S	—	—	172J-10308S	172K-10308S				
599-10308S		6.3	200	172H-10309S	—	—	172J-10309S	172K-10309S				
599-10309S		10	200	172H-10310S	—	—	172J-10310S	172K-10310S				
599-10310S		16	200	172H-10311S*	172N-10311S*	172L-10311S*	172J-10311S*	172K-10311S*				
599-10311S*		25	200									

**Table Notes:**

Part numbers in red indicate complete assemblies.

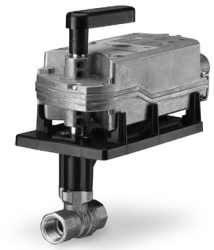
\*Denotes a full-port valve with no flow optimizer insert.






# Two-Way Ball Valve Assemblies

## Electronic Spring Return Actuators

# Ball Selection Tables

- 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



NC 1 to 2"				Spring Return Actuator				
				Normally Closed				
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P	2P w/ Dual Aux. Switches	2P, 120 V	Floating	0-10 Vdc
								
<b>Chrome-Plated Brass Ball and Brass Stem</b>								
599-10312	1	10	200	172E-10312	—	—	172F-10312	172G-10312
599-10313		16	200	172E-10313	—	—	172F-10313	172G-10313
599-10314		25	200	172E-10314	—	—	172F-10314	172G-10314
599-10315		40	200	172E-10315	—	—	172F-10315	172G-10315
599-10316*		63	200	172E-10316*	—	172M-10316*	172F-10316*	172G-10316*
599-10317	1-1/4	16	200	172E-10317	—	—	172F-10317	172G-10317
599-10318		25	200	172E-10318	—	—	172F-10318	172G-10318
599-10319		40	200	172E-10319	—	—	172F-10319	172G-10319
599-10320		63	200	172E-10320	—	—	172F-10320	172G-10320
599-10321*		100	200	172E-10321*	—	172M-10321*	172F-10321*	172G-10321*
599-10322	1-1/2	25	200	172E-10322	—	—	172F-10322	172G-10322
599-10323		40	200	172E-10323	—	—	172F-10323	172G-10323
599-10324		63	200	172E-10324	—	—	172F-10324	172G-10324
599-10325		100	200	172E-10325	—	—	172F-10325	172G-10325
599-10326*		160	200	172E-10326*	—	172M-10326*	172F-10326*	172G-10326*
599-10327	2	40	200	172E-10327	—	—	172F-10327	172G-10327
599-10328		63	200	172E-10328	—	—	172F-10328	172G-10328
599-10329*		100	200	172E-10329*	—	—	172F-10329*	172G-10329*
599-10330*		160	200	172E-10330*	—	172M-10330*	172F-10330*	172G-10330*
<b>Stainless Steel Ball and Stem</b>								
599-10312S	1	10	200	172E-10312S	—	—	172F-10312S	172G-10312S
599-10313S		16	200	172E-10313S	—	—	172F-10313S	172G-10313S
599-10314S		25	200	172E-10314S	—	—	172F-10314S	172G-10314S
599-10315S		40	200	172E-10315S	—	—	172F-10315S	172G-10315S
599-10316S*		63	200	172E-10316S*	172P-10316S*	172M-10316S*	172F-10316S*	172G-10316S*
599-10317S	1-1/4	16	200	172E-10317S	—	—	172F-10317S	172G-10317S
599-10318S		25	200	172E-10318S	—	—	172F-10318S	172G-10318S
599-10319S		40	200	172E-10319S	—	—	172F-10319S	172G-10319S
599-10320S		63	200	172E-10320S	—	—	172F-10320S	172G-10320S
599-10321S*		100	200	172E-10321S*	172P-10321S*	172M-10321S*	172F-10321S*	172G-10321S*
599-10322S	1-1/2	25	200	172E-10322S	—	—	172F-10322S	172G-10322S
599-10323S		40	200	172E-10323S	—	—	172F-10323S	172G-10323S
599-10324S		63	200	172E-10324S	—	—	172F-10324S	172G-10324S
599-10325S		100	200	172E-10325S	—	—	172F-10325S	172G-10325S
599-10326S*		160	200	172E-10326S*	172P-10326S*	172M-10326S*	172F-10326S*	172G-10326S*
599-10327S	2	40	200	172E-10327S	—	—	172F-10327S	172G-10327S
599-10328S		63	200	172E-10328S	—	—	172F-10328S	172G-10328S
599-10329S*		100	200	172E-10329S*	—	—	172F-10329S*	172G-10329S*
599-10330S*		160	200	172E-10330S*	172P-10330S*	172M-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



A-60

Valves

<b>NO</b> 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.








# Two-Way Ball Valve Assemblies

Electronic Non-Spring Return Actuators

# Ball Selection Tables

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



<b>NO</b> 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
<b>Stainless Steel Ball and Stem</b>							
	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	
1	25	200	171A-10311S*	173A-10311S*	171C-10311S*	173C-10311S*	
	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.

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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



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Valves

<b>NO</b> 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
<b>Chrome-Plated Brass Ball and Brass Stem</b>							
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*
<b>Stainless Steel Ball and Stem</b>							
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

# Ball Selection Tables



Mixing/Diverting 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	 GMA131.1P	 GMA161.1P
<b>Chrome-Plated Brass Ball and Brass Stem</b>						
599-10350	1/2	0.4	200	171E-10350	171F-10350	171G-10350
599-10351		0.63	200	171E-10351	171F-10351	171G-10351
599-10352		1.0	200	171E-10352	171F-10352	171G-10352
599-10353		1.6	200	171E-10353	171F-10353	171G-10353
599-10354		2.5	200	171E-10354	171F-10354	171G-10354
599-10355		4	200	171E-10355	171F-10355	171G-10355
599-10356		6.3	200	171E-10356	171F-10356	171G-10356
599-10357*		10	200	171E-10357*	171F-10357*	171G-10357*
599-10358		3/4	6.3	200	171E-10358	171F-10358
599-10359	10		200	171E-10359	171F-10359	171G-10359
599-10360*	16		200	171E-10360*	171F-10360*	171G-10360*
599-10361	1	10	200	171E-10361	171F-10361	171G-10361
599-10362		16	200	171E-10362	171F-10362	171G-10362
599-10363*		25	200	171E-10363*	171F-10363*	171G-10363*
599-10364	1-1/4	16	200	171E-10364	171F-10364	171G-10364
599-10365		25	200	171E-10365	171F-10365	171G-10365
599-10366*		40	200	171E-10366*	171F-10366*	171G-10366*
599-10367	1-1/2	25	200	171E-10367	171F-10367	171G-10367
599-10368		40	200	171E-10368	171F-10368	171G-10368
599-10369*		63	200	171E-10369*	171F-10369*	171G-10369*
599-10370	2	40	200	171E-10370	171F-10370	171G-10370
599-10371		63	200	171E-10371	171F-10371	171G-10371
599-10372*		100	200	171E-10372*	171F-10372*	171G-10372*

**Table Notes:**

Part numbers in red indicate complete assemblies.

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

**NOTE:** Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2", 35 psi for 2"

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Valves

# 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
- Stainless steel ball and stem



Mixing/Diverting 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	 GMA131.1P	 GMA161.1P
<b>Stainless Steel Ball and Stem</b>						
599-10350S	1/2	0.4	200	171E-10350S	171F-10350S	171G-10350S
599-10351S		0.63	200	171E-10351S	171F-10351S	171G-10351S
599-10352S		1.0	200	171E-10352S	171F-10352S	171G-10352S
599-10353S		1.6	200	171E-10353S	171F-10353S	171G-10353S
599-10354S		2.5	200	171E-10354S	171F-10354S	171G-10354S
599-10355S		4	200	171E-10355S	171F-10355S	171G-10355S
599-10356S		6.3	200	171E-10356S	171F-10356S	171G-10356S
599-10357S*		10	200	171E-10357S*	171F-10357S*	171G-10357S*
599-10358S	3/4	6.3	200	171E-10358S	171F-10358S	171G-10358S
599-10359S		10	200	171E-10359S	171F-10359S	171G-10359S
599-10360S*		16	200	171E-10360S*	171F-10360S*	171G-10360S*
599-10361S	1	10	200	171E-10361S	171F-10361S	171G-10361S
599-10362S		16	200	171E-10362S	171F-10362S	171G-10362S
599-10363S*		25	200	171E-10363S*	171F-10363S*	171G-10363S*
599-10364S	1-1/4	16	200	171E-10364S	171F-10364S	171G-10364S
599-10365S		25	200	171E-10365S	171F-10365S	171G-10365S
599-10366S*		40	200	171E-10366S*	171F-10366S*	171G-10366S*
599-10367S	1-1/2	25	200	171E-10367S	171F-10367S	171G-10367S
599-10368S		40	200	171E-10368S	171F-10368S	171G-10368S
599-10369S*		63	200	171E-10369S*	171F-10369S*	171G-10369S*
599-10370S	2	40	200	171E-10370S	171F-10370S	171G-10370S
599-10371S		63	200	171E-10371S	171F-10371S	171G-10371S
599-10372S*		100	200	171E-10372S*	171F-10372S*	171G-10372S*

**Table Notes:**

Part numbers in red indicate complete assemblies.

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

NOTE: Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2", 35 psi for 2"

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Valves







## Three-Way Ball Valve Assemblies

### Electronic Non-Spring Return Actuators

- GDE/GLB 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



Mixing/Diverting 1/2 to 2"				Non-Spring Return Actuator			
				GDE and GLB Series			
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	Floating		0-10 Vdc	
							
				GDE131.1P (171A) and GLB131.1P (171B) 3-foot (.9m) Wires	GDE131.1Q (173A) and GLB131.1Q (173B) Conduit Adapter & 6-foot (1.8m) Wires	GDE161.1P (171C) and GLB161.1P (171D) 3-foot (.9m) Wires	GDE161.1Q (173C) and GLB161.1Q (173D) Conduit Adapter & 6-foot (1.8m) Wires
Chrome-Plated Brass Ball and Brass Stem							
599-10350	1/2	0.4	200	171A-10350	173A-10350	171C-10350	173C-10350
599-10351		0.63	200	171A-10351	173A-10351	171C-10351	173C-10351
599-10352		1.0	200	171A-10352	173A-10352	171C-10352	173C-10352
599-10353		1.6	200	171A-10353	173A-10353	171C-10353	173C-10353
599-10354		2.5	200	171A-10354	173A-10354	171C-10354	173C-10354
599-10355		4	200	171A-10355	173A-10355	171C-10355	173C-10355
599-10356		6.3	200	171A-10356	173A-10356	171C-10356	173C-10356
599-10357*		10	200	171A-10357*	173A-10357*	171C-10357*	173C-10357*
599-10358	3/4	6.3	200	171A-10358	173A-10358	171C-10358	173C-10358
599-10359		10	200	171A-10359	173A-10359	171C-10359	173C-10359
599-10360*		16	200	171A-10360*	173A-10360*	171C-10360*	173C-10360*
599-10361	1	10	200	171A-10361	173A-10361	171C-10361	173C-10361
599-10362		16	200	171A-10362	173A-10362	171C-10362	173C-10362
599-10363*		25	200	171A-10363*	173A-10363*	171C-10363*	173C-10363*
599-10364	1-1/4	16	200	171A-10364	173A-10364	171C-10364	173C-10364
599-10365		25	200	171A-10365	173A-10365	171C-10365	173C-10365
599-10366*		40	200	171A-10366*	173A-10366*	171C-10366*	173C-10366*
599-10367	1-1/2	25	200	171B-10367	173B-10367	171D-10367	173D-10367
599-10368		40	200	171B-10368	173B-10368	171D-10368	173D-10368
599-10369*		63	200	171B-10369*	173B-10369*	171D-10369*	173D-10369*
599-10370	2	40	200	171B-10370	173B-10370	171D-10370	173D-10370
599-10371		63	200	171B-10371	173B-10371	171D-10371	173D-10371
599-10372*		100	200	171B-10372*	173B-10372*	171D-10372*	173D-10372*

**Table Notes:**

Part numbers in red indicate complete assemblies.

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

NOTE: Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2", 35 psi for 2"

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Valves

# Three-Way Ball Valve Assemblies

Electronic Non-Spring Return Actuators



- GDE/GLB 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

Mixing/Diverting 1/2 to 2"				Non-Spring Return Actuator			
				GDE and GLB Series			
				Floating		0-10 Vdc	
3-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	 GDE131.1P (171A) and GLB131.1P (171B) 3-foot (.9m) Wires	 GDE131.1Q (173A) and GLB131.1Q (173B) Conduit Adapter & 6-foot (1.8m) Wires	 GDE161.1P (171C) and GLB161.1P (171D) 3-foot (.9m) Wires	 GDE161.1Q (173C) and GLB161.1Q (173D) Conduit Adapter & 6-foot (1.8m) Wires
Stainless Steel Ball and Stem							
599-10350S	1/2	0.4	200	171A-10350S	173A-10350S	171C-10350S	173C-10350S
599-10351S		0.63	200	171A-10351S	173A-10351S	171C-10351S	173C-10351S
599-10352S		1.0	200	171A-10352S	173A-10352S	171C-10352S	173C-10352S
599-10353S		1.6	200	171A-10353S	173A-10353S	171C-10353S	173C-10353S
599-10354S		2.5	200	171A-10354S	173A-10354S	171C-10354S	173C-10354S
599-10355S		4	200	171A-10355S	173A-10355S	171C-10355S	173C-10355S
599-10356S		6.3	200	171A-10356S	173A-10356S	171C-10356S	173C-10356S
599-10357S*	10	200	171A-10357S*	173A-10357S*	171C-10357S*	173C-10357S*	
599-10358S	3/4	6.3	200	171A-10358S	173A-10358S	171C-10358S	173C-10358S
599-10359S		10	200	171A-10359S	173A-10359S	171C-10359S	173C-10359S
599-10360S*		16	200	171A-10360S*	173A-10360S*	171C-10360S*	173C-10360S*
599-10361S	1	10	200	171A-10361S	173A-10361S	171C-10361S	173C-10361S
599-10362S		16	200	171A-10362S	173A-10362S	171C-10362S	173C-10362S
599-10363S*		25	200	171A-10363S*	173A-10363S*	171C-10363S*	173C-10363S*
599-10364S	1-1/4	16	200	171A-10364S	173A-10364S	171C-10364S	173C-10364S
599-10365S		25	200	171A-10365S	173A-10365S	171C-10365S	173C-10365S
599-10366S*		40	200	171A-10366S*	173A-10366S*	171C-10366S*	173C-10366S*
599-10367S	1-1/2	25	200	171B-10367S	173B-10367S	171D-10367S	173D-10367S
599-10368S		40	200	171B-10368S	173B-10368S	171D-10368S	173D-10368S
599-10369S*		63	200	171B-10369S*	173B-10369S*	171D-10369S*	173D-10369S*
599-10370S	2	40	200	171B-10370S	173B-10370S	171D-10370S	173D-10370S
599-10371S		63	200	171B-10371S	173B-10371S	171D-10371S	173D-10371S
599-10372S*		100	200	171B-10372S*	173B-10372S*	171D-10372S*	173D-10372S*

**Table Notes:**

Part numbers in red indicate complete assemblies.

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

NOTE: Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2", 35 psi for 2"

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Valves

## 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.
<b>NPT Unions</b>			
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
<b>Flange</b>			
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.
<b>Without Flange Kits</b>			
3" 3-Way	93	44	M3P80FY
4" 3-Way	152	29	M3P100FY
<b>With Flange Kits</b>			
3" 2-Way	93	44	M3P80FY/2BN
4" 2-Way	152	29	M3P100FY/2BN
3" 3-Way	93	44	M3P80FY/3BN
4" 3-Way	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.
<b>Without Flange Kits</b>			
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
<b>With NPT Flange Kits</b>			
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
<b>With Weld Flange Kits</b>			
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

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

## 2-Way Valves




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

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

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## 2-Way Angle Union Valves




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

**Table Note:** End connections are AFxUM.

## 3-Way 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)	<b>656-0009</b>
	1/2" (15 mm)	2.5	95 psi (655 kPa)	3 to 8 lb. (21 to 55 kPa)	<b>656-0010</b>
	1/2" (15 mm)	1.5	95 psi (655 kPa)	3 to 8 lb. (21 to 55 kPa)	<b>656-0011</b>

**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.
	<b>Normally Open</b>				
	1" (25 mm)	10	100 psi (689 kPa)	2 to 6 psi (14 to 41 kPa)	<b>658-0012</b>
	1-1/4" (32 mm)	16	60 psi (413 kPa)	2 to 6 psi (14 to 41 kPa)	<b>658-0014</b>

**Table Note:** End connections are AFxUM.

### 3-Way Sequence and Changeover Valves



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


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

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Valves

# 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.
<b>Base Model</b>					
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
<b>Positioner</b>					
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
<b>120 V E/P Valve</b>					
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
<b>24 V E/P Valve</b>					
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

\*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.

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Valves

# Three-Way Butterfly Valves

Pneumatic Spring Return Actuators

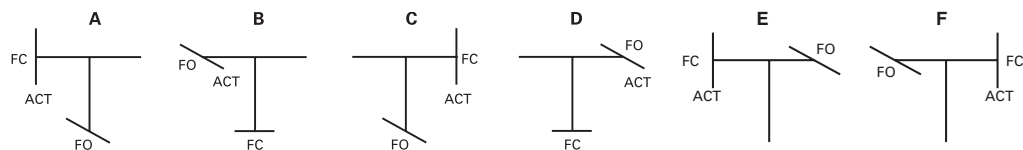
# Butterfly Selection Tables

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				
<b>Base Model</b>						
			<b>Assembly A</b>	<b>Assembly A</b>	<b>Assembly B</b>	<b>Assembly B</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
<b>Positioner</b>						
			<b>Assembly A</b>	<b>Assembly A</b>	<b>Assembly B</b>	<b>Assembly B</b>
2	58	54	BV3W02FS2LCPXXX	N/A	BV3W02FS2LBPXXX	N/A
2-1/2	135	114	BV3W25FS2LCPXXX	N/A	BV3W25FS2LBPXXX	N/A
3	165	148*	BV3W03FS2LCPXXX	N/A	BV3W03FS2LBPXXX	N/A
4	419	348*	BV3W04FS2LCPXXX	BV3W04US2LCPXXX	BV3W04FS2LBPXXX	BV3W04US2LBPXXX
5	740	600*	BV3W05FS2LCPXXX	BV3W05US2LCPXXX	BV3W05FS2LBPXXX	BV3W05US2LBPXXX
6	1051	867*	BV3W06FS2LCPXXX	BV3W06US2LCPXXX	BV3W06FS2LBPXXX	BV3W06US2LBPXXX
8	1661	1424*	N/A	BV3W08US2LCPXXX	N/A	BV3W08US2LBPXXX
10	2439	2132*	N/A	BV3W10US2LCPXXX	N/A	BV3W10US2LBPXXX
12	3401	3019*	N/A	BV3W12US2LCPXXX	N/A	BV3W12US2LBPXXX
			<b>Assembly C</b>	<b>Assembly C</b>	<b>Assembly D</b>	<b>Assembly D</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

\*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

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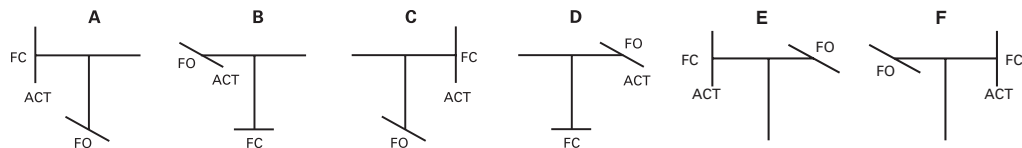
Valves

2 to 12"			Normally Open (Fail Open to Port B)		Normally Closed (Fail Closed to Port B)	
Valve Size in.	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
	Run	Branch	Part No.	Part No.	Part No.	Part No.
<b>120 V E/P Valve</b>						
			<b>Assembly A</b>	<b>Assembly A</b>	<b>Assembly B</b>	<b>Assembly B</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
			<b>Assembly C</b>	<b>Assembly C</b>	<b>Assembly D</b>	<b>Assembly D</b>
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
<b>24 V E/P Valve</b>						
			<b>Assembly A</b>	<b>Assembly A</b>	<b>Assembly B</b>	<b>Assembly B</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
			<b>Assembly C</b>	<b>Assembly C</b>	<b>Assembly D</b>	<b>Assembly D</b>
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.
<b>120 Vac On/Off</b>			
2	60	BV2W02UG1LOXXX	BV2W02UG1LCXXX
2-1/2	151	BV2W25UG1LOXXX	BV2W25UG1LCXXX
3	262	BV2W03UG1LOXXX	BV2W03UG1LCXXX
4	647	BV2W04UG1LOXXX	BV2W04UG1LCXXX
<b>24 Vac On/Off</b>			
2	60	BV2W02UG2LOXXX	BV2W02UG2LCXXX
2-1/2	151	BV2W25UG2LOXXX	BV2W25UG2LCXXX
3	262	BV2W03UG2LOXXX	BV2W03UG2LCXXX
4	647	BV2W04UG2LOXXX	BV2W04UG2LCXXX
<b>24 Vac Floating</b>			
2	60	BV2W02UG3LOXXX	BV2W02UG3LCXXX
2-1/2	151	BV2W25UG3LOXXX	BV2W25UG3LCXXX
3	262	BV2W03UG3LOXXX	BV2W03UG3LCXXX
4	647	BV2W04UG3LOXXX	BV2W04UG3LCXXX
<b>24 Vac Modulating 0-10 V</b>			
2	60	BV2W02UG4LOXXX	BV2W02UG4LCXXX
2-1/2	151	BV2W25UG4LOXXX	BV2W25UG4LCXXX
3	262	BV2W03UG4LOXXX	BV2W03UG4LCXXX
4	647	BV2W04UG4LOXXX	BV2W04UG4LCXXX
<b>24 Vac Modulating 4-20 mA</b>			
2	60	BV2W02UG5LOXXX	BV2W02UG5LCXXX
2-1/2	151	BV2W25UG5LOXXX	BV2W25UG5LCXXX
3	262	BV2W03UG5LOXXX	BV2W03UG5LCXXX
4	647	BV2W04UG5LOXXX	BV2W04UG5LCXXX

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Valves

# Three-Way Butterfly Valves

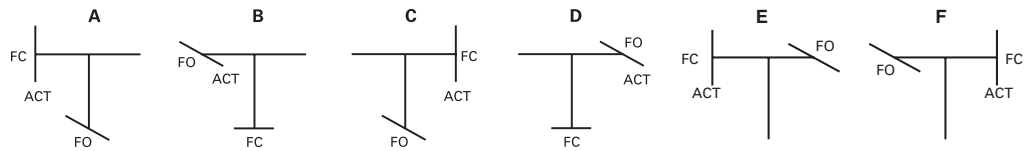
Electronic Spring Return Actuators

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.
<b>120 Vac On/Off</b>						
			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
<b>24 Vac On/Off</b>						
			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
<b>24 Vac Floating</b>						
			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
<b>24 Vac Modulating 0-10 V</b>						
			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
<b>24 Vac Modulating 4-20 mA</b>						
			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

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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.
<b>Floating / 2-position</b>				
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
<b>Modulating 0-10 V</b>				
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
<b>Modulating 4-20 mA</b>				
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.

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Valves

# Three-Way Butterfly Valves

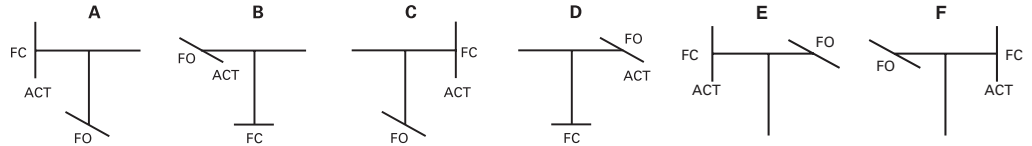
Electronic Non-Spring Return Actuators

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				
<b>Floating 2-position</b>						
			<b>Assembly A</b>	<b>Assembly A</b>	<b>Assembly B</b>	<b>Assembly B</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
			<b>Assembly C</b>	<b>Assembly C</b>	<b>Assembly D</b>	<b>Assembly D</b>
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.

## Three-Way Assembly Configurations



**Key:** FC Fail Closed      FO Fail Open      ACT Actuator Location



# Three-Way Butterfly Valves

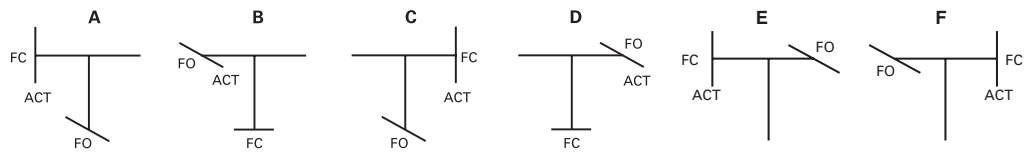
Electronic Non-Spring Return Actuators

# Butterfly Selection Tables

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				
<b>Modulating 0-10 V</b>						
			<b>Assembly A</b>	<b>Assembly A</b>	<b>Assembly B</b>	<b>Assembly B</b>
2	58	54	BV3W02FEMLAXXHX	BV3W02UG7LAXXXX	BV3W02FEMLBXXHX	BV3W02UG7LBXXXX
2-1/2	135	114	BV3W25FEMLAXXHX	BV3W25UG7LAXXXX	BV3W25FEMLBXXHX	BV3W25UG7LBXXXX
3	229	188	BV3W03FEMLAXXHX	BV3W03UG7LAXXXX	BV3W03FEMLBXXHX	BV3W03UG7LBXXXX
4	511	385	BV3W04FEMLAXXHX	BV3W04UG7LAXXXX	BV3W04FEMLBXXHX	BV3W04UG7LBXXXX
5	870	642	BV3W05FEMLAXXHX	BV3W05UG7LAXXXX	BV3W05FEMLBXXHX	BV3W05UG7LBXXXX
6	1242	935	BV3W06FEMLAXXHX	BV3W06UG7LAXXXX	BV3W06FEMLBXXHX	BV3W06UG7LBXXXX
8	2254	1688	BV3W08FEMLAXXHX	BV3W08UEMLAXXHX	BV3W08FEMLBXXHX	BV3W08UEMLBXXHX
10	3570	2667	BV3W10FEMLAXXHX	BV3W10UEMLAXXHX	BV3W10FEMLBXXHX	BV3W10UEMLBXXHX
12	5240	3938	BV3W12FEMLAXXHX	BV3W12UEMLAXXHX	BV3W12FEMLBXXHX	BV3W12UEMLBXXHX
			<b>Assembly C</b>	<b>Assembly C</b>	<b>Assembly D</b>	<b>Assembly D</b>
2	58	54	BV3W02FEMLCXXHX	BV3W02UG7LCXXXX	BV3W02FEMLDXXHX	BV3W02UG7LDXXXX
2-1/2	135	114	BV3W25FEMLCXXHX	BV3W25UG7LCXXXX	BV3W25FEMLDXXHX	BV3W25UG7LDXXXX
3	229	188	BV3W03FEMLCXXHX	BV3W03UG7LCXXXX	BV3W03FEMLDXXHX	BV3W03UG7LDXXXX
4	511	385	BV3W04FEMLCXXHX	BV3W04UG7LCXXXX	BV3W04FEMLDXXHX	BV3W04UG7LDXXXX
5	870	642	BV3W05FEMLCXXHX	BV3W05UG7LCXXXX	BV3W05FEMLDXXHX	BV3W05UG7LDXXXX
6	1242	935	BV3W06FEMLCXXHX	BV3W06UG7LCXXXX	BV3W06FEMLDXXHX	BV3W06UG7LDXXXX
8	2254	1688	BV3W08FEMLCXXHX	BV3W08UEMLCXXHX	BV3W08FEMLDXXHX	BV3W08UEMLDXXHX
10	3570	2667	BV3W10FEMLCXXHX	BV3W10UEMLCXXHX	BV3W10FEMLDXXHX	BV3W10UEMLDXXHX
12	5240	3938	BV3W12FEMLCXXHX	BV3W12UEMLCXXHX	BV3W12FEMLDXXHX	BV3W12UEMLDXXHX
<b>Modulating 4-20 mA</b>						
			<b>Assembly A</b>	<b>Assembly A</b>	<b>Assembly B</b>	<b>Assembly B</b>
2	58	54	BV3W02FEPLAXXHX	BV3W02UG8LAXXXX	BV3W02FEPLBXXHX	BV3W02UG8LBXXXX
2-1/2	135	114	BV3W25FEPLAXXHX	BV3W25UG8LAXXXX	BV3W25FEPLBXXHX	BV3W25UG8LBXXXX
3	229	188	BV3W03FEPLAXXHX	BV3W03UG8LAXXXX	BV3W03FEPLBXXHX	BV3W03UG8LBXXXX
4	511	385	BV3W04FEPLAXXHX	BV3W04UG8LAXXXX	BV3W04FEPLBXXHX	BV3W04UG8LBXXXX
5	870	642	BV3W05FEPLAXXHX	N/A	BV3W05FEPLBXXHX	N/A
6	1242	935	BV3W06FEPLAXXHX	N/A	BV3W06FEPLBXXHX	N/A
8	2254	1688	BV3W08FEPLAXXHX	BV3W08UEPLAXXHX	BV3W08FEPLBXXHX	BV3W08UEPLBXXHX
10	3570	2667	BV3W10FEPLAXXHX	BV3W10UEPLAXXHX	BV3W10FEPLBXXHX	BV3W10UEPLBXXHX
12	5240	3938	BV3W12FEPLAXXHX	BV3W12UEPLAXXHX	BV3W12FEPLBXXHX	BV3W12UEPLBXXHX
			<b>Assembly C</b>	<b>Assembly C</b>	<b>Assembly D</b>	<b>Assembly D</b>
2	58	54	BV3W02FEPLCXXHX	BV3W02UG8LCXXXX	BV3W02FEPLDXXHX	BV3W02UG8LDXXXX
2-1/2	135	114	BV3W25FEPLCXXHX	BV3W25UG8LCXXXX	BV3W25FEPLDXXHX	BV3W25UG8LDXXXX
3	229	188	BV3W03FEPLCXXHX	BV3W03UG8LCXXXX	BV3W03FEPLDXXHX	BV3W03UG8LDXXXX
4	511	385	BV3W04FEPLCXXHX	BV3W04UG8LCXXXX	BV3W04FEPLDXXHX	BV3W04UG8LDXXXX
5	870	642	BV3W05FEPLCXXHX	N/A	BV3W05FEPLDXXHX	N/A
6	1242	935	BV3W06FEPLCXXHX	N/A	BV3W06FEPLDXXHX	N/A
8	2254	1688	BV3W08FEPLCXXHX	BV3W08UEPLCXXHX	BV3W08FEPLDXXHX	BV3W08UEPLDXXHX
10	3570	2667	BV3W10FEPLCXXHX	BV3W10UEPLCXXHX	BV3W10FEPLDXXHX	BV3W10UEPLDXXHX
12	5240	3938	BV3W12FEPLCXXHX	BV3W12UEPLCXXHX	BV3W12FEPLDXXHX	BV3W12UEPLDXXHX

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



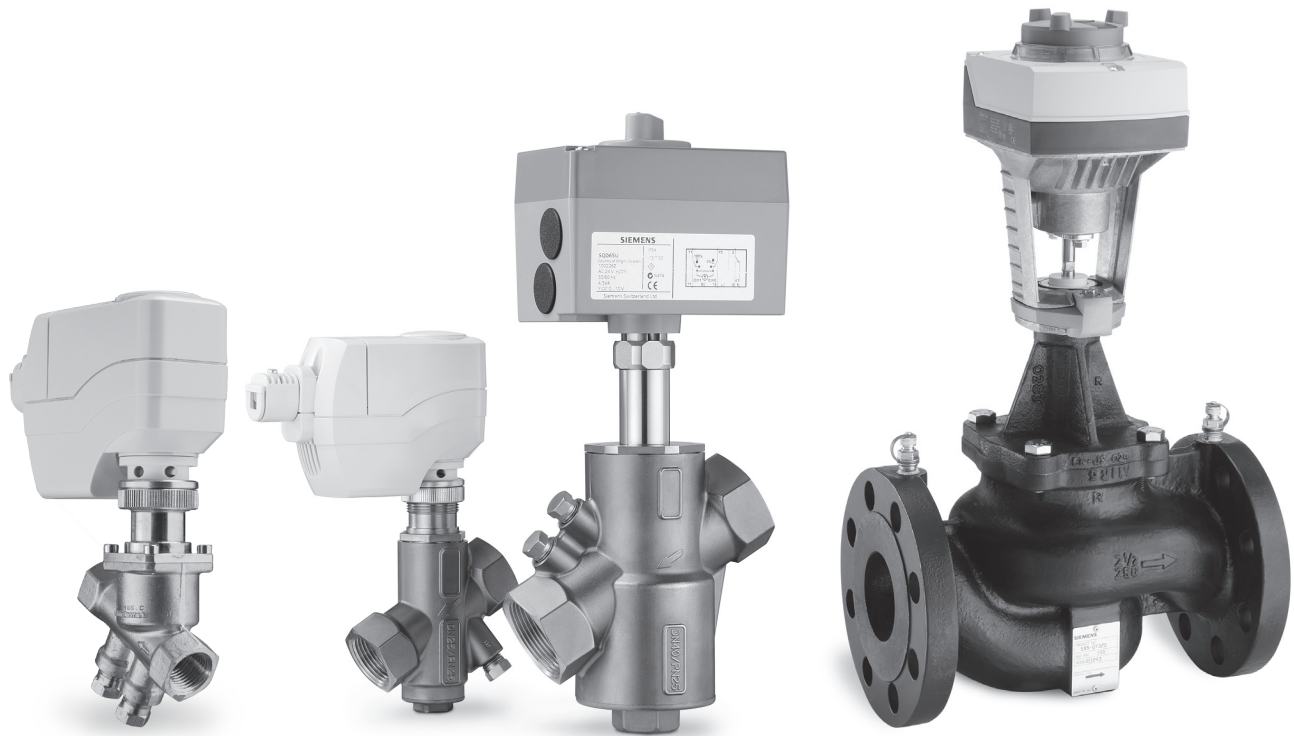
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# Pressure Independent Control Valves **NEW!**



A-79

Valves

## Three functions in one streamlined device

2-Way Pressure Independent Control Valves are uniquely designed with three functions integrated into one single device: control valve, adjustable flow limiter, and automatic pressure regulator. This 3-in-1 device improves accuracy and reliability – regardless of pressure fluctuations. Install them for an excellent solution when trying to achieve hydronic balancing in room, zone and many other HVAC applications.

The combination of control valve and differential pressure regulator in one valve simplifies installation and makes commissioning fast and easy. Count on them to help prolong maintenance and preserve the life of HVAC equipment, enhance room comfort and optimize energy efficiency. Pair them with SSD, SQD, SAX, and SQV Series spring return and non-spring return valve actuators and you have the ideal solution for renovations, expansions, and new construction projects.

### Control Valve Features

- Threaded valves are ANSI Class 250
- Flanged valves available in ANSI Class 125 and 250
- Low ANSI Class IV leakage on 1/2 to 1-1/4 inch and 2-1/2 and 3 inch valves
- Brass trim with stainless steel stem

### Field Adjustable Flow Limiter Features

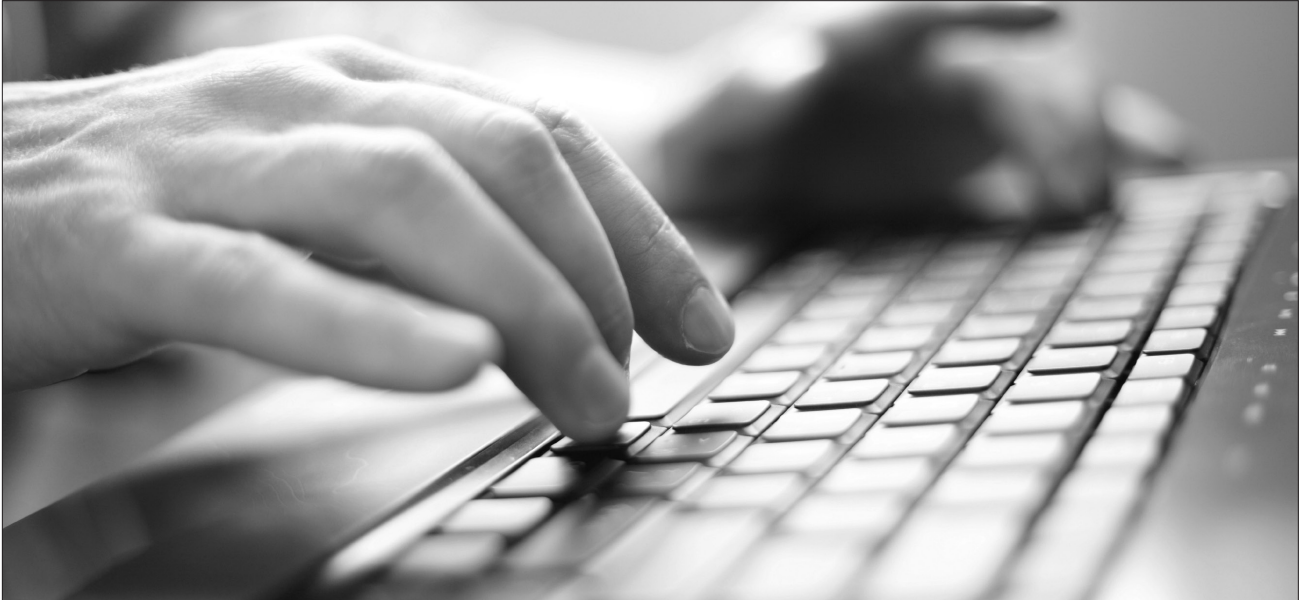
- Full stroke always maintained regardless of maximum flow setting enabling higher control accuracy
- Easily adjust maximum flow at any time when usage patterns change
- Presetting prevents oversupply to the coil

### Control Valve Features

- Automatically adjusts to pressure fluctuations in the system, maintaining consistent flow at any given control setting while providing better comfort and lower energy consumption
- No mutual hydronic interaction between branches with different operational situations, preventing over- or under-supply
- Fast commissioning with extremely simplified hydronic balancing



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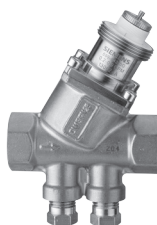
# Two-Way PICV **NEW!**

*Control Valve, Adjustable Flow Limiter, and Automatic Pressure Regulator*

*1/2 to 2" Brass Body*

*ANSI Class 250*

*Normally Open or Normally Closed*



1/2 and 3/4" Two-Way NO  
Pressure Independent Control Valve.



1/2 to 1-1/4" Two-Way NC  
Pressure Independent Control Valve.



1-1/2 to 2" Two-Way NC  
Pressure Independent Control Valve.

## Description

The 1/2- to 1-1/4-inch normally closed and 3/4-inch normally open Pressure Independent Control Valves have a 5 mm stroke, and work with the SSD Series Electronic Actuators. The 1/2-inch normally open valves have a 2.5 mm stroke and also work with SSD Actuators. The 1-1/2 to 2-inch valves have a 6.5 mm stroke, and work with the SQD Series Electronic Actuators. The actuators require a 24 volt power supply to provide floating or 0 to 10 Vdc control.

Typical applications include control of hot or chilled water or water-glycol solutions up to 50% in closed loop systems.

## Features

- Control valve with integrated pressure regulator and adjustable flow limiter
- Direct-coupled, universal bonnet
- ANSI Class 250 valve body
- ANSI Class IV leakage @ 200 psi (1/2 and 3/4 inch) normally open valves
- ANSI Class IV leakage @ 45 psi (1/2 to 1-1/4 inch) normally closed valves
- ANSI Class III leakage @ 50 psi (1-1/2 to 2-inch) normally closed valves
- Linear Flow Characteristic
- Brass trim with stainless steel stem

## Applications

For use in HVAC applications with the Pressure Independent Control SSD or SQD Electronic Actuator, to control hot or chilled water or 50% water-glycol solution in closed loop systems.

A-81

Valves

# Two-Way PICV Specifications

<b>Body Material</b> .....	Brass
<b>Stem</b> .....	Stainless Steel
<b>Line Size</b> .....	1/2-inch to 2-inch (15 mm to 50 mm)
<b>Action</b> .....	2-Way
<b>Valve Body Rating</b> .....	ANSI 250
<b>Close-off Pressure/Leakage Rate</b>	
1/2 and 3/4-inch, NO .....	200 psi/Class IV (0.01%)
1/2 to 1-1/4-inch, NC .....	45 psi/ANSI Class IV (0.01%)
1-1/2 to 2-inch, NC .....	33 psi/0.05%
	50 psi/ANSI Class III (0.1%)
<b>Medium Temperature Range</b> .....	34°F to 250°F (1°C to 120°C)
<b>Flow Characteristic</b> .....	Linear
<b>Connection</b> .....	NPT threaded
<b>Actuator Specifications</b>	
<b>Operating Voltage</b>	
SSD81U/SSD81.5U .....	24 Vac
SSD61U .....	24 Vac/dc
SSD61.5U .....	24 Vac
SQD .....	24 Vac
<b>Frequency</b> .....	60 Hz
<b>Power Consumption (Normal Operation)</b>	
SSD81U .....	0.8 VA
SSD81.5U .....	2 VA
SSD61U .....	2.5 VA
SSD61.5U .....	2 VA
SQD65U .....	4.5 VA
SQD85.03U .....	2 VA

<b>Signal</b>		
SSD81U, SSD81.5U .....	Floating	
SQD85.03U		
SSD61U, SSD61.5U .....	0 to 10 Vdc	
SQD65U		
<b>Run Time</b>	<b>5 mm Stroke</b>	<b>2.5 mm Stroke</b>
SSD81U .....	150 seconds	75 seconds
SSD81.5U .....	125 seconds	70 seconds
SSD61U .....	90 seconds	45 seconds
SSD61.5U .....	30 seconds	15 seconds
SQD85.03U, SQD65U (6.5 mm Stroke) .....		43 seconds
<b>Force</b>		
SSD (NSR) .....	>56 lb (250 N)	
SSD (SR) .....	67 lb (300 N)	
SQD .....	>90 lb (400 N)	
<b>Agency Certification</b>		
UL .....	Meets UL 873	
cUL .....	Certified to Canadian Standard C22.2 No. 24.93	
<b>Mounting Location</b> .....	NEMA 1 (Interior only)	

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Valves

## Valve Body Flow Range

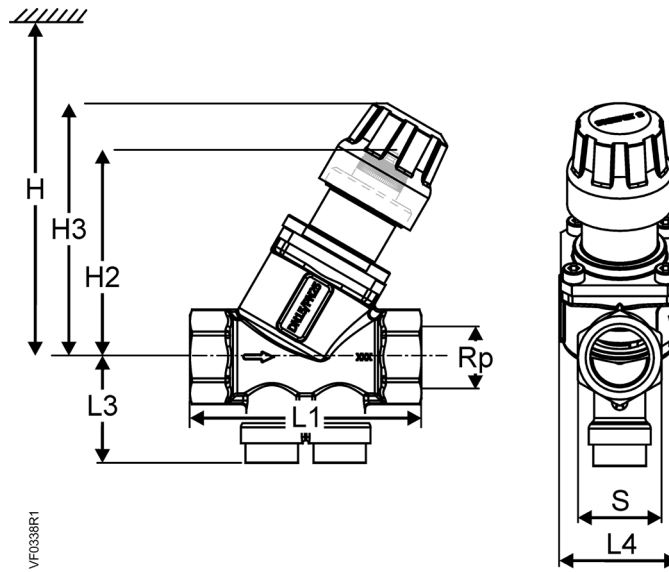
Size	Δp min (psi)	Δp max (psi)	GPM Flow Range	NO	NC
				Valve Body	
1/2	2.5	58	0.2 to 0.9	599-04310	—
	3.0		0.5 to 2.5	599-04311	—
	2.3		0.3 to 2.7	—	599-04300
	2.6		1.0 to 7.5	—	599-04301
3/4	2.3		0.5 to 4.5	—	599-04302
	3.5		1.0 to 5.8	599-04312	—
	3.2		1.0 to 8.9	—	599-04303
1	3.2		1.0 to 8.9	—	599-04304
1-1/4	2.6		2.5 to 13.2	—	599-04305
1-1/2	3.8		10 to 31	—	599-04306
2	4.6	11 to 37	—	599-04307	

## PICV Actuator Product Ordering

Description		Part No.	Actuator Prefix Code
	Floating, Spring Return	SSD81.5U	232
	0-10 Vdc, Spring Return	SSD61.5U	233
	Floating, Non-Spring Return	SSD81U	230
	0-10 Vdc, Non-Spring Return	SSD61U	231
	Floating, Non-Spring Return	SQD85.03U	234
	0-10 Vdc, Non-Spring Return	SQD65U	235

# Dimensions

## NO – 1/2 and 3/4 Inch Valves



VF038R1

Dimensions shown in inches (mm).

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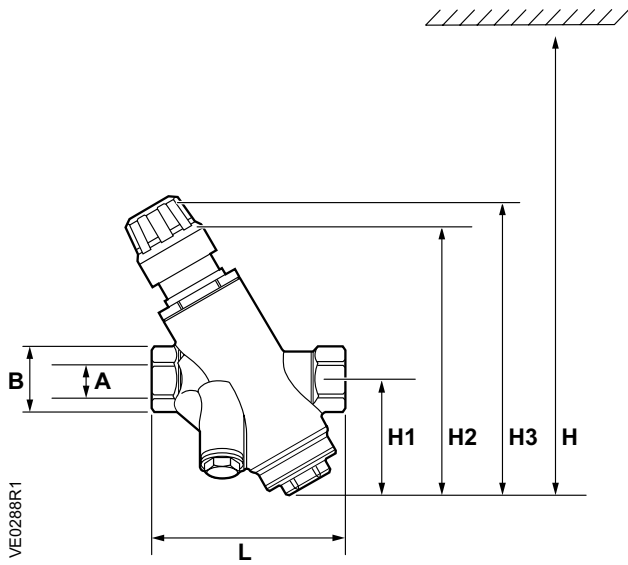
Valves

Valve Size Inches Rp	Dimensions							
	S	L1	L3	L4	H2	H3	H	Weight lb. (kg)
1/2	1.1 (27)	3.0 (75)	1.6 (41)	1.5 (38)	2.6 (67.3)	3.2 (82.4)	14.6 (371)	1.1 (0.50)
3/4	1.25 (32)	3.1 (79)	1.6 (41)	1.5 (38)	2.7 (67.5)	3.3 (82.5)	14.7 (374)	1.2 (0.53)

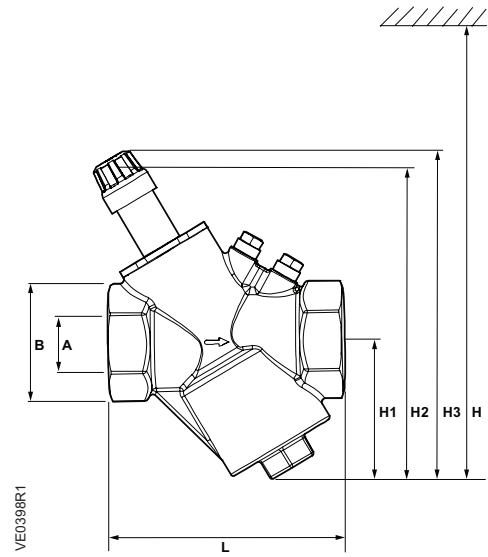


# Dimensions

## NC – 1/2 to 1-1/4 Inch Valves



## NC – 1-1/2 to 2-Inch Valves



Dimensions shown in inches (mm).

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Valves

Valve Size in.	Dimensions							Weight	
	A	B	L	H1	H2	H3	H	lb.	(kg)
1/2	.50 (15)	1.1 (27)	3.5 (88)	2.1 (53)	4.8 (123)	5.3 (135)	16.3 (414)	2.0	(0.9)
	.50 (15)	1.1 (27)	3.5 (88)	2.1 (53)	4.8 (123)	5.3 (135)	16.3 (414)	2.0	(0.9)
3/4	.75 (20)	1.3 (32)	3.5 (88)	2.1 (53)	4.8 (123)	5.3 (135)	16.3 (414)	2.0	(0.9)
	.75 (20)	1.3 (32)	3.5 (88)	2.1 (53)	4.8 (123)	5.3 (135)	16.3 (414)	2.0	(0.9)
1	1.0 (25)	1.5 (40)	3.6 (92)	2.1 (53)	4.8 (123)	5.3 (135)	16.3 (414)	2.0	(0.9)
1-1/4	1.25 (32)	1.8 (46)	5.0 (125)	2.7 (69)	5.7 (145)	6.2 (158)	19.9 (505)	3.3	(1.5)
1-1/2	1.5 (40)	2.1 (52)	5.7 (144)	3.4 (87)	7.6 (193)	8.1 (206)	14.0 (356)	2.5	(5.5)
2	2.0 (50)	2.7 (68)	5.7 (145)	3.6 (93)	7.9 (200)	8.6 (219)	14.5 (368)	3.2	(7.1)



# SSD Series Electronic Valve Actuators



24 Vac, Floating or 0 to 10 Vdc Control  
Spring Return and Non-Spring Return



SSD Series Spring Return Electronic Valve Actuator.



SSD Series Non-Spring Return Electronic Valve Actuator.

## Description

Pressure Independent Control Series SSD Electronic Valve Actuators require a 24 Vac power supply and receive a floating control signal (SSD81...) or a proportional 0 to 10 Vdc signal (SSD61...) to control a valve. The 0 to 10V SSD61U actuator also accepts a 24 Vdc power supply.

These actuators are designed to work with 1/2- to 1-1/4 inch normally open and normally closed Pressure Independent Control Series Valves with a 2.5 mm or 5 mm stroke and a threaded valve bonnet that fits the actuator.

## Features

- Floating or 0 to 10 Vdc control
- Spring return and non-spring return variants
- Automatic stroke calibration on the SSD61...
- Reduced power consumption in holding position
- Direct coupled installation; actuators mount on valves without tools or any adjustments required
- Manual override
- Visual position indication
- UL listed for plenum installation
- Maintenance-free, electromotoric actuator
- Plenum cable or 3/8" flex conduit connections

## Applications

For use in heating and cooling HVAC applications with Pressure Independent Control valves that require >56 lbs. (250N) actuator force.

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Valves



# SSD Series Electronic Valve Actuators Specifications

<b>Operating Voltage</b>		
Vac .....	24 Vac	±20%
Vdc (SSD61U only) .....	24 Vdc	±25%
<b>Frequency</b> ..... 50/60 Hz		
<b>Power Consumption (Normal Operation)</b>		
SSD81U .....	0.8 VA	max.
SSD61U .....	2.5 VA	max.
SSDx1.5U .....	2 VA	
<b>Control signal</b>		
SSD81... .....	Floating	
SSD61... .....	0 to 10 Vdc	
<b>Run Time</b>		
	<b>5 mm Stroke</b>	<b>2.5 mm Stroke</b>
SSD81U .....	150 Seconds	75 Seconds
SSD61U .....	90 Seconds	45 Seconds
SSD81.5U .....	125 Seconds	70 Seconds
SSD61.5U .....	30 Seconds	15 Seconds
<b>Spring Return</b>		
	<b>5 mm Stroke</b>	<b>2.5 mm Stroke</b>
SSD81.5U .....	30 Seconds	15 Seconds
SSD61.5U .....	30 Seconds	15 Seconds

<b>Nominal Stroke</b> .....	5 mm
<b>Nominal Force</b>	
SSD81U, SSD61U .....	>56 lbs. (250N)
SSDx1.5U .....	>67 lbs. (300N)
<b>Agency Approvals</b>	
UL .....	UL873
cUL .....	Certified to Canadian Standard C22.2 No. 24-93
<b>Ambient Temperature</b>	
Operation .....	41°F to 122°F (5°C to 50°C)
Transport/Storage .....	-13°F to 158°F (-25°C to 70°C)
<b>Humidity</b>	
Operation .....	5 to 85% rh
Transport .....	<95% rh
Storage .....	5% to 95% rh

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Valves

## SSD Series Actuator Product Ordering

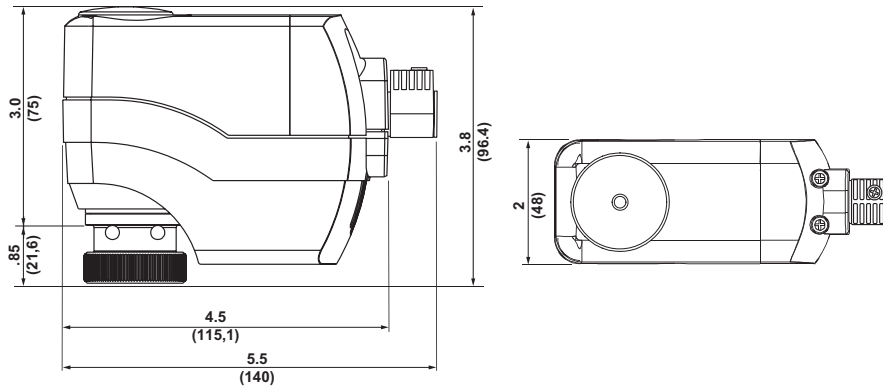
Description	Part No.	Actuator Prefix Code
<b>Non-Spring Return</b>		
Floating	<b>SSD81U</b>	230
0 to 10 Vdc	<b>SSD61U</b>	231
<b>Spring Return</b>		
Floating	<b>SSD81.5U</b>	232
0 to 10 Vdc	<b>SSD61.5U</b>	233

Accessories & Service Kits

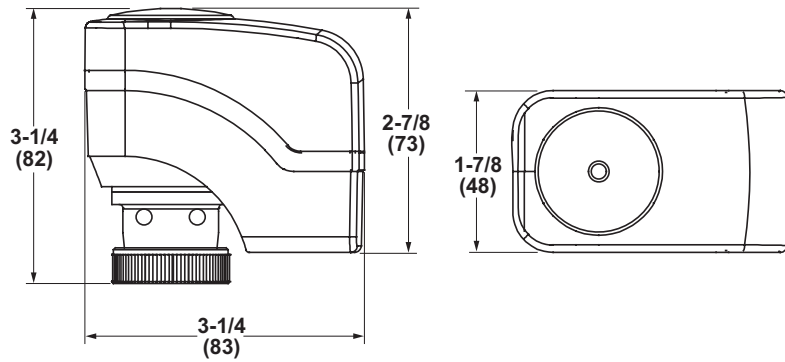
A-257

# Dimensions

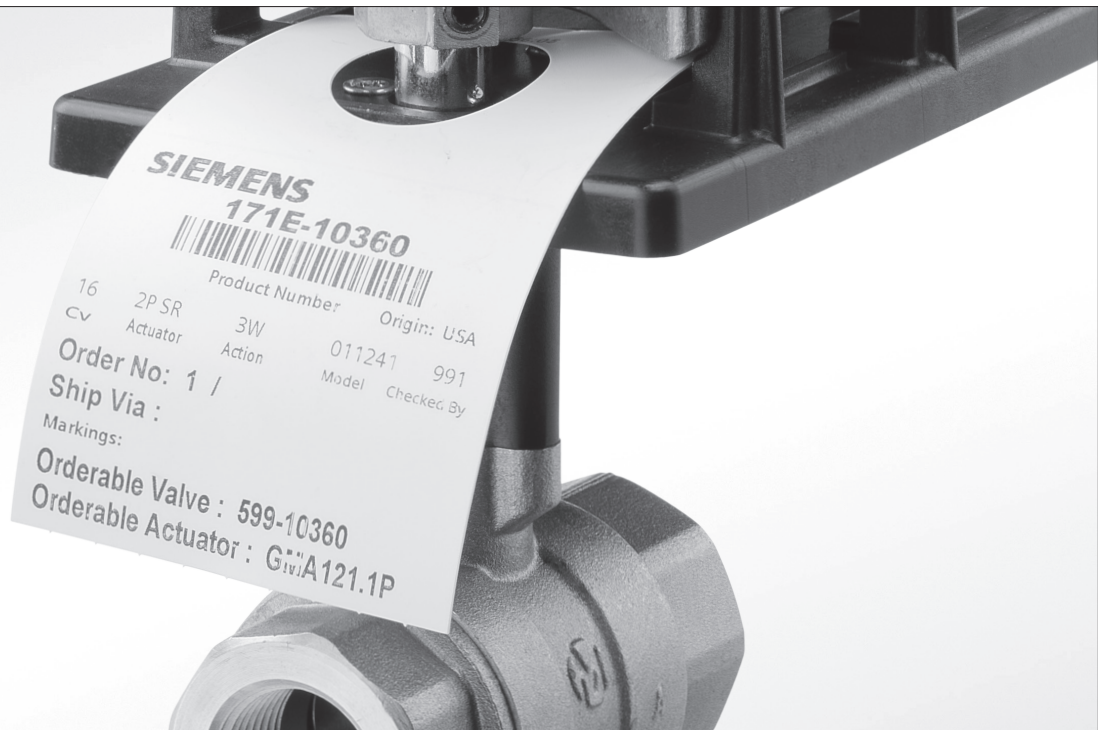
## SSD Series Spring Return Actuator



## SSD Series Non-Spring Return Actuator



Dimensions shown in inches (mm).



## FREE valve tagging for all orders

Perfect for large and complex jobs! Simply specify each valve's location when placing your initial order and we will tag them before shipping, saving you time and expense. And, use the online order form to place orders easily — once you enter a valve or valve actuator part number, a text box accepts tag information.

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## SQD Series Electronic Valve Actuators

NEW!

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



SQD Series Electronic Valve Actuator.

### Description

Pressure Independent Control Series SQD Electronic Valve Actuators require a 24 Vac power supply and receive a floating control signal (SQD85.03U) or a proportional 0 to 10 Vdc signal (SQD65U) to control a valve.

These actuators are designed to work with 1-1/2 inch and 2-inch Pressure Independent Control Series Valves with a 1/4-inch (6.5 mm) stroke and a threaded valve bonnet that fits the actuator.

### Features

- Floating or 0 to 10 Vdc control
- Non-spring return
- Reversible synchronous motor
- Antilocking gear train
- UL listed for plenum installation
- Direct mounting on valves; no adjustments required
- Visual position indication
- Manual override
- Electromotoric actuator, maintenance-free
- Load-dependent switch-off in stroke limit positions reduces power

### Applications

For use in heating and cooling HVAC applications with Pressure Independent Control valves that require up to 90 lbs. (400N) actuator force.

A-89

Valves



# SQD Series Electronic Valve Actuator Specifications

**Operating Voltage** ..... 24 Vac  $\pm$ 20%  
**Frequency** ..... 60 Hz  
**Fusing of Supply Lines** ..... Max. 10A Slow  
**Power Consumption**  
 SQD65U ..... 4.5 VA  
 SQD85.03U ..... 2 VA  
**Signal Inputs**  
 Terminals Y1, Y2 (SQD85.03U) ..... 3-Position (Floating)  
 Terminal Y (SQD65U) ..... 0-10 Vdc, 0.1 mA Maximum  
 Terminal R (SQD65U) ..... 0 to 1,000 Ohms  
**Signal Output**  
 Terminal U (SQD65U) ..... 0 to 10 Vdc, 0.5 mA Maximum  
**Operating Data**  
 Run time ..... 43 Seconds  
 Positioning force ..... >90 lbs (400 N)  
 Nominal stroke ..... 6.5 mm  
 Admissible temperature of medium in the valve ..... 34°F to 248°F  
 (1°C to 120°C)  
 Parallel operation of actuators ..... 10 Maximum

**Cable Entries** ..... 2 Entries for 1/2" Conduit Connection  
**Agency Approvals**  
 UL ..... UL873  
 cUL ..... Certified to Canadian Standard C22.2 No. 24-93  
**Ambient Temperature**  
 Operation ..... 23°F to 122°F (-5°C to 50°C)  
 Transport ..... -13°F to 158°F (-25°C to 70°C)  
 Storage ..... 23°F to 122°F (-5°C to 50°C)  
**Humidity**  
 Operation ..... 5 to 95% rh  
 Transport ..... <95% rh  
 Storage ..... 5% to 95% rh

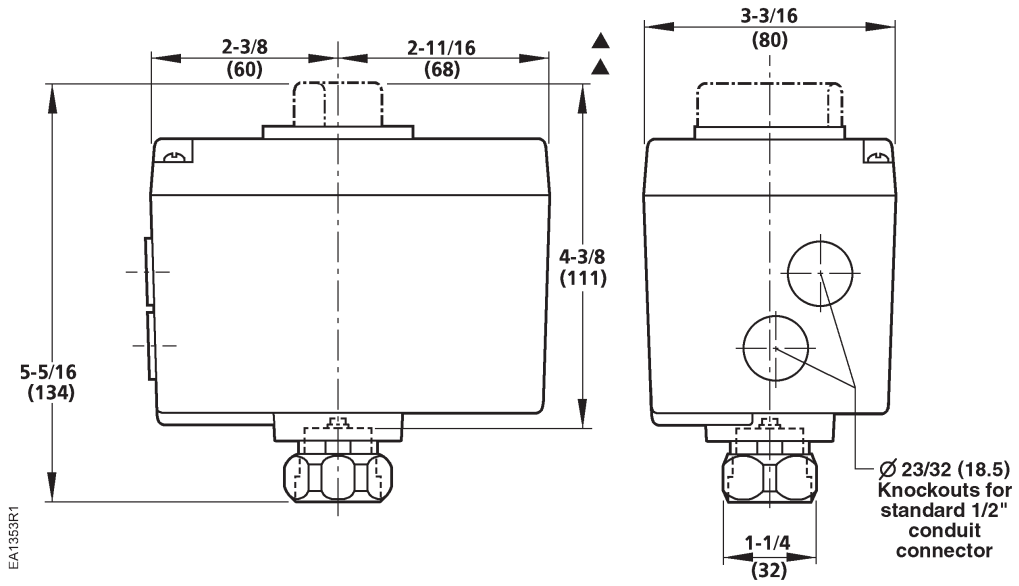
A-90

## SQD Series Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
24 Vac, 3-position, 400N, NSR PICV Actuator	<b>SQD85.03U</b>	234
24 Vac, 0 to 10V, 400N, NSR PICV Actuator	<b>SQD65U</b>	235

Valves

# Dimensions



Dimensions shown in inches (mm).

A-91

Valves



## Online order tracking

This handy online feature stores all your past and current orders online for quick and easy reference. The Order Tracker function lets you access information such as:

- Ordered By
- Date Placed
- Order No.
- Acknowledgement of Order
- Shipping Date
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**To view your history and status, register online at [www.usa.siemens.com/buildingtechnologiesonlineordering](http://www.usa.siemens.com/buildingtechnologiesonlineordering)**



## Two-Way Flanged PICV

NEW!

*Control Valve, Adjustable Flow Limiter,  
and Automatic Pressure Regulator*

*2-1/2 to 3"*

*ANSI Class 125 or 250*

*Normally Open*



Flanged PICV Valve.

### Description

Pressure Independent Control Valves automatically adjust to differential pressure changes, providing constant flow in HVAC systems. This reduces “hunting” for the right setting, and results in better control and increased comfort. Overall system performance can be optimized with PICV, requiring less pumping energy and contributing to more efficient loading of boilers and chillers.

Siemens Pressure Independent Control Valves integrate three functions into a single device: control valve, adjustable flow limiter, and automatic pressure regulator. The 2-1/2 and 3 inch valves have a 20 mm stroke and use the SAX non-spring return electronic valve actuators and the new SQV spring return electronic valve actuators.

### Features

- 3-in-1 device includes a control valve, field adjustable flow limiter, and automatic pressure regulator.
- Full stroke regardless of maximum flow setting.
- Maximum flow preset is easily field adjustable.
- Choice of low flow (up to 110 gpm for 2.5 inch and 150 gpm for 3 inch) or high flow (up to 154 gpm for 2.5 inch and 190 gpm for 3 inch) versions
- Available in both ANSI 125 and ANSI 250 pressure classes.
- Both SQV actuators (normally open and normally closed) can be wired for floating, 0-10V or 4-20 mA control signals

### Applications

Typical applications include control of hot or chilled water or water-glycol solutions up to 50% in closed loop systems.

A-93

Valves



## Flanged PICV Specifications



Body Material	Cast Iron
Plug	Brass
Seat	Stainless Steel
Stem	Stainless Steel
Line size	2-1/2-inch (65 mm) 3-inch (80 mm)
Action	2-way
Valve Body Rating	ANSI 125/ANSI 250
Close-off	100 psi (700 kPa)
Leakage Rate	< ANSI Class IV (0.01%)
Medium Temperature Range	34°F to 250°F (1°C to 120°C)
Flow Characteristic	Linear
Connection	ANSI Flanged
<b>Actuator Specifications</b>	
<b>Operating Voltage</b>	
SAX, SQV	24 Vac/dc
Frequency	50/60 Hz

<b>Power consumption (normal operation)</b>	
SAX	8 VA/3.75W
SQV	20 VA/7.5W
<b>Control Signal</b>	
SAX81.03U	Floating
SAX61.03U	0 to 10 Vdc
SQV	Selectable (Floating, 0 to 10 Vdc, 4 to 20 mA)
<b>Run time</b>	
SAX	30 seconds
SQV	40 to 120 seconds (adjustable)
<b>Force</b>	
SAX	180 lb (800 N)
SQV	250 lb (1100 N)
<b>Weight</b>	
SAX	4 lbs (1.8 kg)
SQV	14 lbs (6.2 kg)
<b>Agency Certification</b>	
UL	Meets UL 873
cUL	Certified to Canadian Standard C22.2 No. 24.93

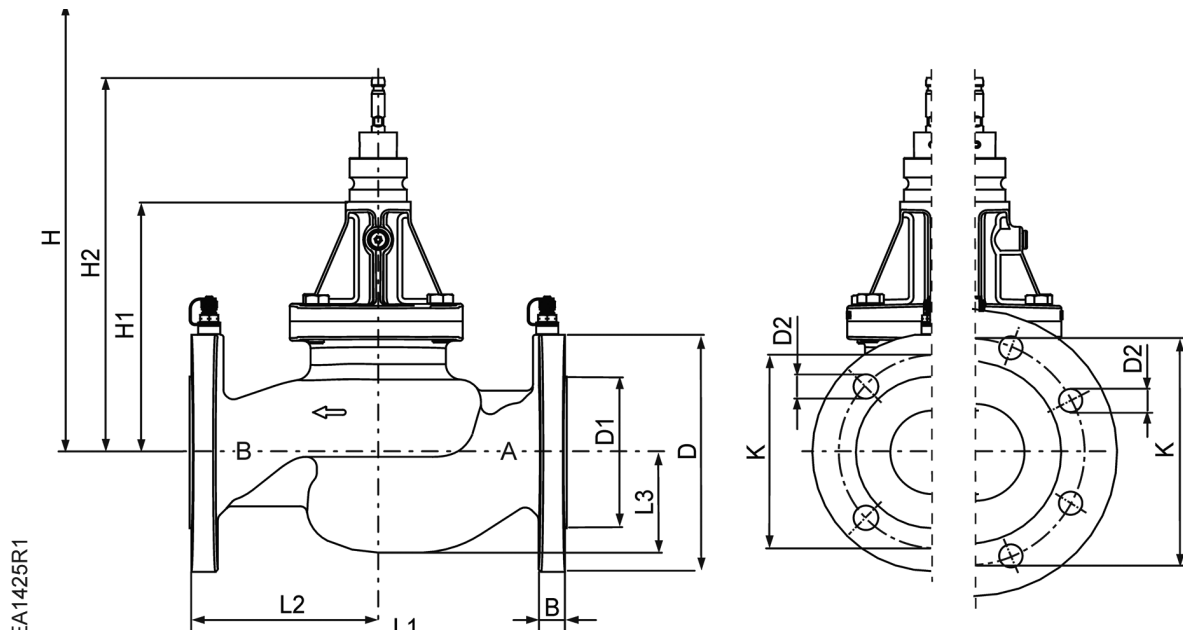
## Flanged PICV Product Ordering

Valve Size in. (mm)	Maximum Flow Range GPM (m³/h)	ANSI Class 125		ANSI Class 250	
		Part No.		Part No.	
2-1/2 (65)	19 to 110 (4.4 to 25)	599-07310		—	
	26 to 154 (6 to 35)	599-07315		—	
	19 to 110 (4.4 to 25)	—		599-07320	
	26 to 154 (6 to 35)	—		599-07325	
3 (80)	24 to 150 (5.3 to 34)	599-07311		—	
	31 to 190 (7 to 43)	599-07316		—	
	24 to 150 (5.3 to 34)	—		599-07321	
	31 to 190 (7 to 43)	—		599-07326	

## PICV Actuator Product Ordering

Description		Part No.	Actuator Prefix Code
 Electro-Mechanical	Floating, 0-10V or 4 to 20mA, Spring Return, Normally Open	SQV91P30U	238
	Floating, 0-10V or 4 to 20mA, Spring Return, Normally Closed	SQV91P40U	239
 Electro-Mechanical	Floating, 3P, Non-Spring Return	SAX81.03U	373
	24 Vac, Proportional Non-Spring Return	SAX61.03U	371

## Dimensions



Dimensions shown in inches (mm).

A-95

Valves

Valve Size in.	ANSI Class	Dimensions										H		Weight	
		B	Ø D	Ø D1	Ø D2	L1	L2	L3	Ø K	H1	H2	SAX	SQV	lb.	(kg)
2-1/2	125	.69 (17.5)	7.01 (178)	N/A	.75 (19)	10.87 (276)	5.43 (138)	3.11 (79)	5.5 (139.7)	7.68 (195)	11.42 (290)	25.08 (637)	26.93 (684)	42	(19)
	250	1.00 (25.4)	7.48 (190)	4.96 (126)	.88 (22.4)	11.5 (292)	5.75 (146)	3.31 (84)	5.88 (149.4)	7.68 (195)	11.42 (290)	25.08 (637)	26.93 (684)	56	(25.4)
3	125	.75 (19)	7.50 (191)	N/A	.75 (19)	11.75 (298)	5.87 (149)	3.75 (95.3)	6.0 (152)	8.52 (216.5)	12.32 (313)	25.95 (659)	23.86 (606)	62	(28.1)
	250	1.12 (28.5)	8.25 (210)	5.69 (145)	.88 (22.4)	12.5 (318)	6.26 (159)	3.88 (98.4)	6.62 (168)	8.52 (216.5)	12.32 (313)	25.95 (659)	23.86 (606)	82	(37.2)



## More torque, less energy consumption

Siemens damper actuators ship ready to install, with built-in time and cost-saving features such as a patented self-centering shaft adapter, standardized wiring, and brushless motor technology. With torques ranging from 20 to 310 lb-in., this powerful and flexible line-up delivers out-of-the-box performance and long-lasting reliability for all types of HVAC applications.

Fast acting GNP/GAP rotary actuators bring the proven OpenAir™ platform to critical environment control. Their addition is perfectly suited for Supply Terminals, Exhaust Terminals, and Fume Hoods.

## SQV Valve Actuator

24 Vac/dc, Floating or Proportional Control  
 Floating, 0-10 V or 4-20 mA  
 Spring Return

NEW!



SQV Series Electro-Motoric Valve Actuators

### Description

Pressure Independent Control Series SQV Electro-Motoric Valve Actuators require a 24 V ac or dc power supply and receive a floating, 0-10 V or 4-20 mA signal to control a valve. The SQV Actuators are available as either fail open or fail closed when used with the Siemens Flanged Pressure Independent Control Valves.

These actuators are designed to work the 2-1/2 and 3 inch Pressure Independent Control Series Valves with a 3/4-inch (20 mm) stroke and the standard Siemens Flowrite bonnet connection.

### Features

- Operating voltage: AC/DC 24V
- Control signals: 3-position, DC 0 to 10V, DC 4 to 20 mA
- Fail-safe function
- Position feedback
- Manual adjuster
- Position and status indication (LED)
- Selectable positioning times from 40 to 120 seconds for 3/4 inch (20 mm) Stroke
- Selection of acting direction and flow characteristic
- Direct mounting on Pressure Independent Control Valves
- UL Listed

### Applications

Electro-Motoric actuators to operate Siemens Pressure Independent Control Valves with 20 mm stroke as control valves for large air handling units and distribution of hot and chilled water.

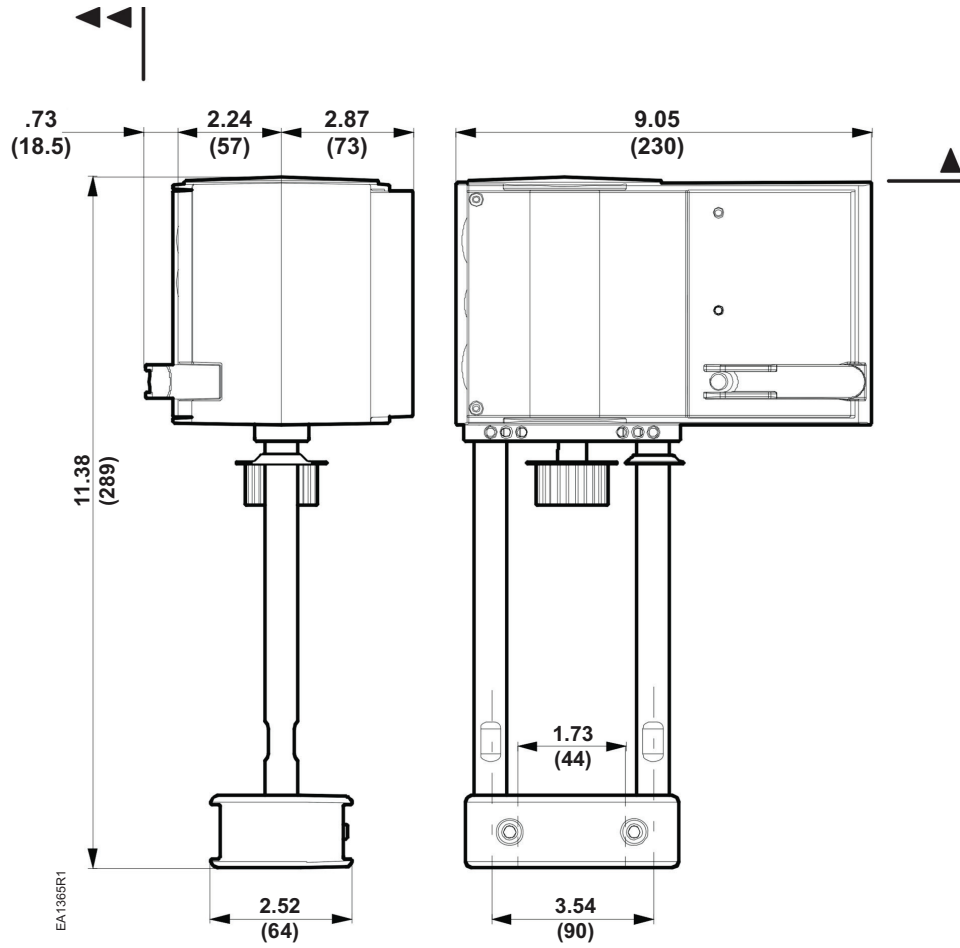
A-97

Valves





# Dimensions



Dimensions shown in inches (mm).

A-99

Valves

A-100

Valves



## Install accuracy, reliability and peace-of-mind

Our Siemens combination CO<sub>2</sub>/VOC sensors are the perfect way to ensure optimum air quality at all times. These sensors have two separate sensing elements, one measures CO<sub>2</sub> and the other measures VOCs. The sensor algorithm then adjusts the output signal to reflect the higher of the two values.

Siemens offers a complete line of CO<sub>2</sub> sensors, including basic CO<sub>2</sub> sensors and combination units that measure CO<sub>2</sub> + VOC and CO<sub>2</sub> + temperature + humidity. All are available in both wall mounted and duct mounted configurations.



## SAX Valve Actuator

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



SAX Electronic Valve Actuator

### Description

Designed for use with Pressure Independent Control Valves with a 3/4-inch (20 mm) stroke. The SAX Electronic Actuator requires either a 24 Vac or 24 Vdc supply, and receives a 0 to 10 Vdc or 4 to 20 mA control signal to proportionally control the valve or a floating control signal to provide floating control of the valve.

### Features

- Proportional or floating (3P) control
- Direct-coupled installation
- Visual and electronic stroke indication
- Manual override
- Non-spring return
- 180 lb. (800 N) nominal force
- Automatic calibration (SAX61.03U only)
- Electro-mechanical switches protect components from overload and stall condition
- Maintenance-free

### Applications

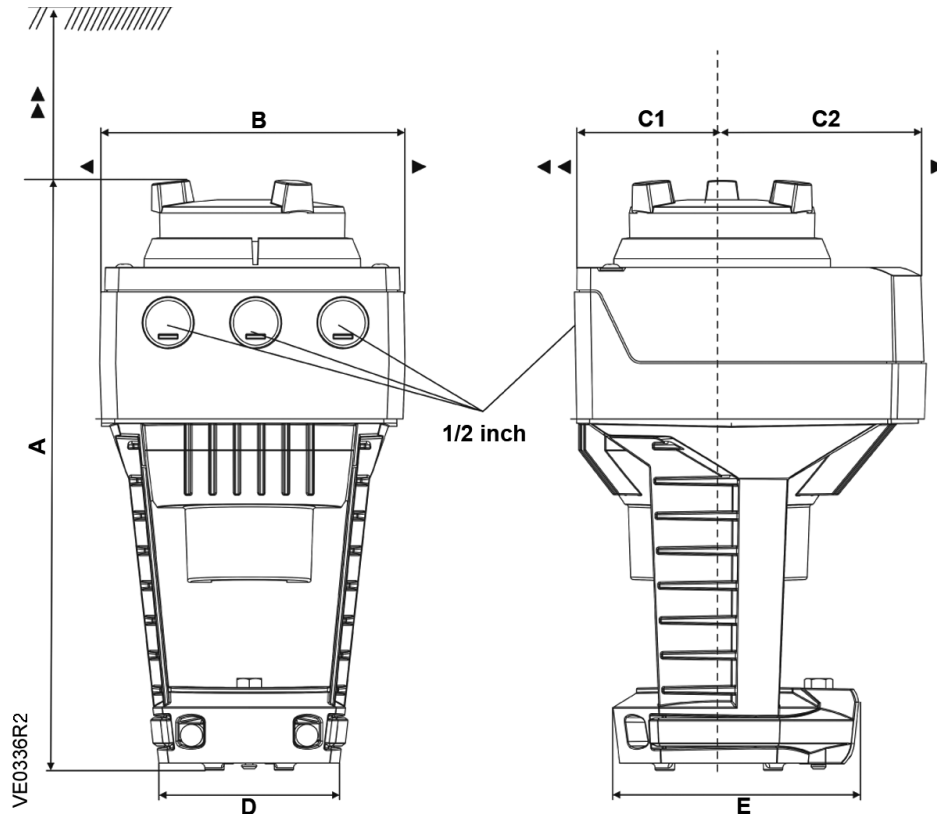
The SAX Electronic Valve Actuator is designed to be used with the Pressure Independent Control Valves in liquid service applications. They are ideal for installations requiring quick response and excellent resolution.

A-101

Valves



# Dimensions



Dimensions shown in inches (mm).

A	B	C	C1	C2	D	E	▶	▶▶
9.5 (242)	5 (125)	6 (150)	2.7 (68)	3.3 (82)	3 (80)	4 (100)	4 (100)	8 (200)

A-103

Valves



## BT300 Variable Frequency Drives

Available in frame sizes up to 250 hp, the BT300 is well-suited for demanding HVAC environments. Siemens new BT300 helps save 20-50% of energy compared to equipment with little or no control.

Built-in features – like a real-time clock, energy savings optimization programming, and a sleep function – help measure energy savings. An easy-to-use, read and understand interface uses built-in wizards that get HVAC equipment up and running quickly and accurately.

## Zone Valves



D-105

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 proportional 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 proportional actuators
- On/off actuators available in 24V and 120V supply voltages
- Manual override
- Visual position indication



Siemens  
Product Guard  
PLUS 3 Warranty

A-106

Valves



## Retrofits made easy

Whether you are replacing Siemens or another manufacturer, Siemens is the perfect solution for your next retrofit job. Our valves and damper actuators are easy on the budget and easy to install.

To order genuine Siemens Building Automation HVAC replacement parts, call toll free: 800.516.9964.

## Two- and Three-Way Zone Valves

1/2 to 1" Brass Body

Normally Open/Normally Closed/Diverting



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.

A-107

Valves

## Two- Three-Way Zone Valve Specifications

**Line Size** ..... 1/2-inch to 1-inch (15 mm to 25 mm)  
**Body Style** ..... Globe  
**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 Range** ..... 34 to 230°F (1 to 110°C)  
**Maximum Inlet Pressure** ..... 125 psig  
**Leakage Rate** ..... ANSI Class III  
**Close-off Ratings** ..... According to ANSI/FCI 70-2  
**Flow Characteristic** ..... Linear

## Zone Valve Body Product Ordering

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

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Valves

## Zone Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code
Two-Way Valves	Three-Way Valves		
<b>Normally Open</b>			
24 Vac, 0 to 10 Vdc, Modulating	24 Vac, 0-10 Vdc, Modulating	<b>SSP61U</b>	248
24 Vac/dc, 2-Position, Spring Return	24 Vac/dc, 2-Position, Fail AB→A	<b>STP73U</b>	347
24 Vac, 2-Position, Spring Return	24 Vac, 2-Position, Fail AB→A	<b>SFP71U</b>	243
120 Vac, 2-Position, Spring Return	120 Vac, 2-Position, Fail AB→A	<b>SFP11U</b>	241
208 Vac, 2-Position, Spring Return	208 Vac, 2-Position, Fail AB→A	<b>SFP208U/25*</b>	**
277 Vac, 2-Position, Spring Return	277 Vac, 2-Position, Fail AB→A	<b>SFP277U/25*</b>	**
<b>Normally Closed</b>			
24 Vac, Floating	24 Vac, Floating	<b>SSA81U</b>	244
24 Vac, 0 to 10 Vdc, Modulating	24 Vac, 0-10 Vdc, Modulating	<b>SSA61U</b>	245
24 Vac/dc, 2-Position, Spring Return	24 Vac/dc, 2-Position, Fail AB→B	<b>STA73U</b>	346
24 Vac, 2-Position, Spring Return	24 Vac, 2-Position, Fail AB→B	<b>SFA71U</b>	242
120 Vac, 2-Position, Spring Return	120 Vac, 2-Position, Fail AB→B	<b>SFA11U</b>	240
208 Vac, 2-Position, Spring Return	208 Vac, 2-Position, Fail AB→B	<b>SFA208U/25*</b>	**
277 Vac, 2-Position, Spring Return	277 Vac, 2-Position, Fail AB→B	<b>SFA277U/25*</b>	**

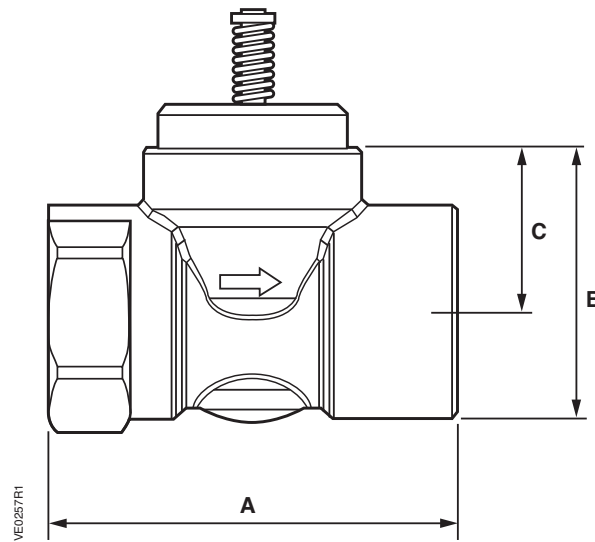
\*Part numbers with /25 come with 8.2 ft. (2.5m) leads.

\*\*Actuator only; not available as an assembly.

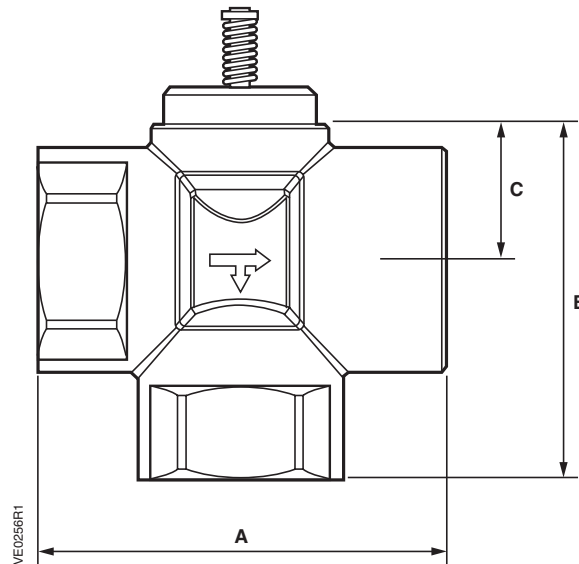


# Dimensions

## Two-Way Zone Valve Body



## Three-Way Zone Valve Body



A-109

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).



## Size and select valves with SimpleSelect™

SimpleSelect quickly narrows your search from our entire portfolio of valves down to the products you need. It features a robust cross-reference that searches through 8,000 competitive and obsolete Siemens part numbers to find the exact replacement.

Quickly build a valve schedule from our complete portfolio of valves & actuators: PICV, Zone, Globe, Ball, Magnetic, and Butterfly Valves.

- An intuitive, easy-to-use interface helps you quickly size the valve you need with menus that allow you to:
- Select type of valve from the portfolio
- Choose the medium being controlled
- Determine the correct Cv or required flow (gpm)
- Calculate pressure drop and quantity of steam

Go to [www.usa.siemens.com/simpleselect](http://www.usa.siemens.com/simpleselect) to put this time-saving tool to work for you today!

## SFA/SFP Series Electronic Valve Actuator

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



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.

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Valves



Siemens  
Product Guard  
PLUS 3 Warranty

# SFA/SFP Zone Valve Specifications

## Power Supply

Operating Voltage .....24 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 Time .....10 Seconds  
Nominal Stroke..... 1/10-in. (2.5 mm)  
Nominal Force ..... SFA: 31.5 lb. (140N)  
SFP: 28 lb. (125N)

**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 Temperature** ..... 34 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 Weight** ..... 1.18 lb. (0.54 kg)

## Two-Position SFA/SFP Series Actuator Product Ordering

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

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

\*\*Actuator only; not available as an assembly.

A-112

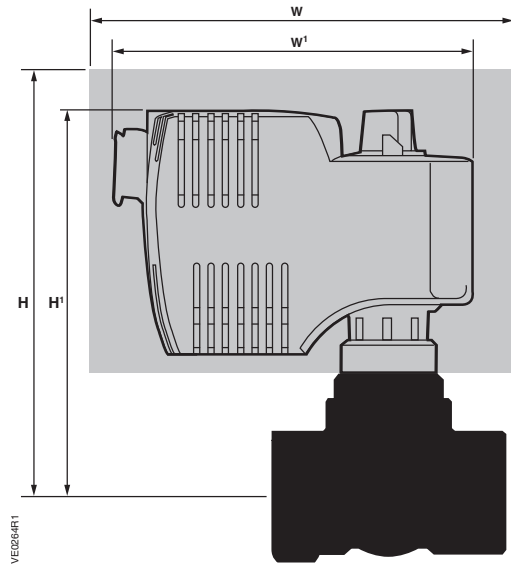
Valves

Accessories & Service Kits

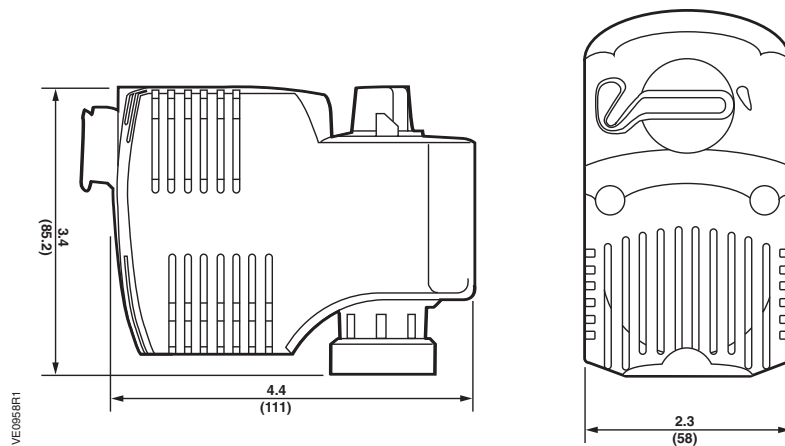
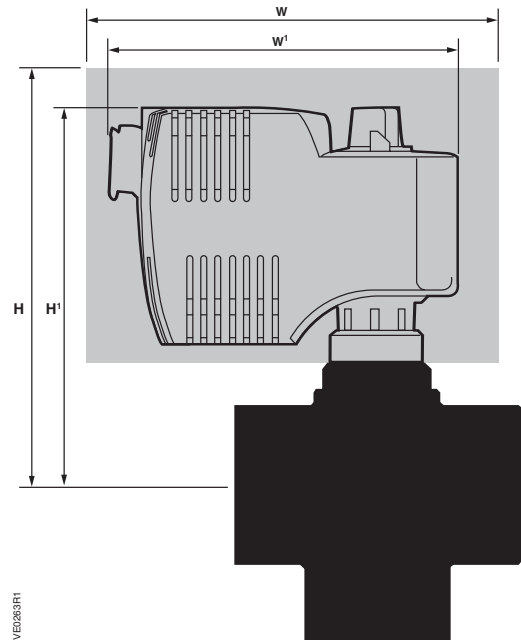
A-257

# 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.

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Valves



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## 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.

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Valves



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# 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 ..... 36 lb. (160N)

**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	<b>SSA81U</b>	244
24 Vac, 0-10 Vdc, AB-A NC	<b>SSA61U</b>	245
24 Vac, 0-10 Vdc, AB-A NO	<b>SSP61U</b>	248

A-116

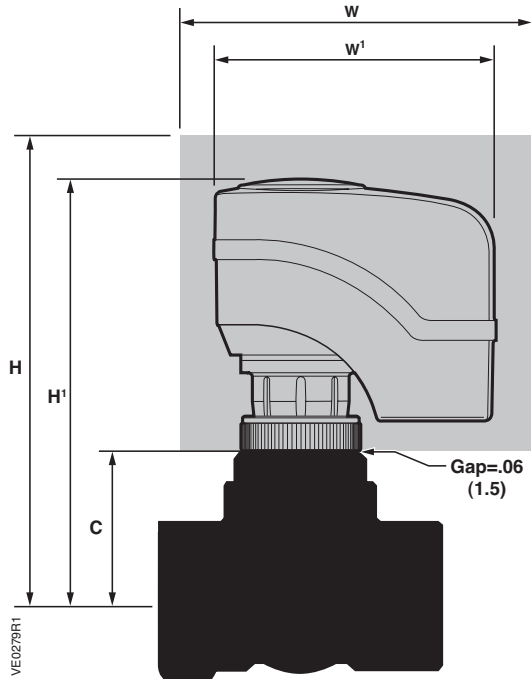
Valves

### Accessories & Service Kits A-257

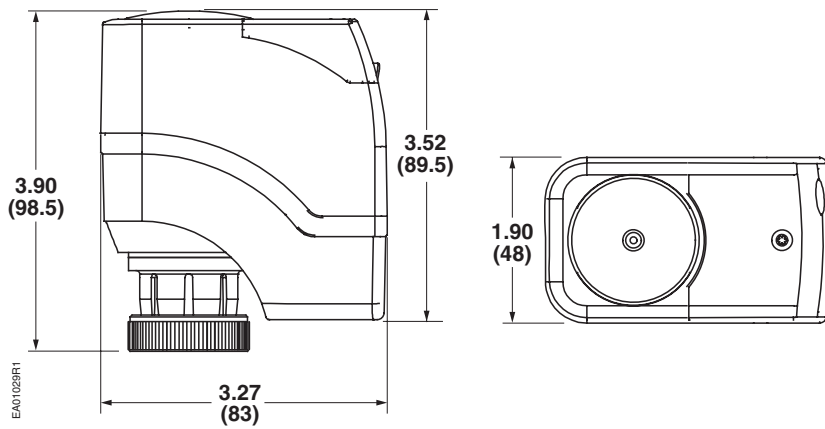
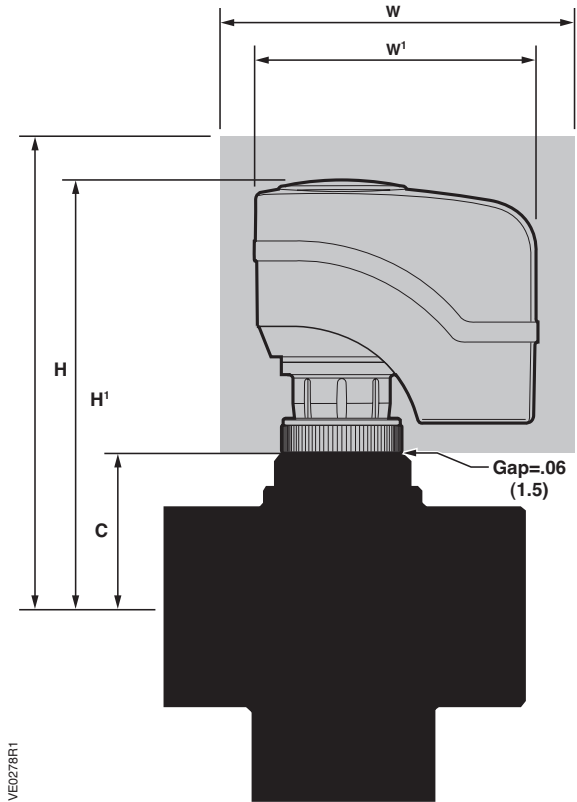


# Dimensions

**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.



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## Thermic Actuator

24 Vac/Vdc, Two-Position control  
Spring Return



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.

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Valves

# Thermic Actuator Specifications

**Power Supply**

Supply Voltage .....24 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** .....Max. 0.18 in. (4.5 mm)

**Nominal Force** .....22.5 lb. (100N)

**Positioning Time**

at 65°F (20°C) .....270 sec

**Permissible Temperature of Medium in Valve** .....34-230°F (1-110°C)

**Operation**

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

**Storage**

Temperature ..... 41 to 122°F (5 to 50°C)  
 Humidity ..... 5 to 100% RH

**Transport**

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

**Agency Approvals** .....Conforms to CE Requirements

**Dimensions (H x W x D)** ..... 2.9 x 2.6 x 1.7 in. (74 x 65 x 44 mm)

**Shipping Weight** .....0.4 lb. (0.18 kg)

## Thermic Actuators Product Ordering

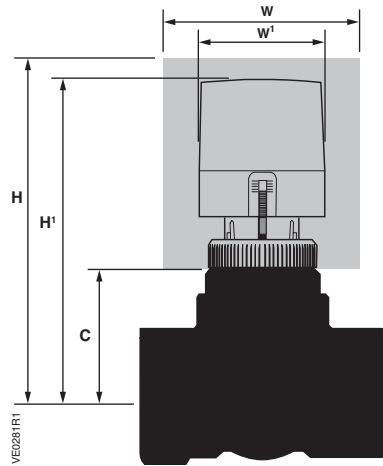
A-120

Description	Part No.	Actuator Prefix Code
24 Vac/Vdc, Normally Closed	STA73U	346
24 Vac/Vdc, Normally Open	STP73U	347

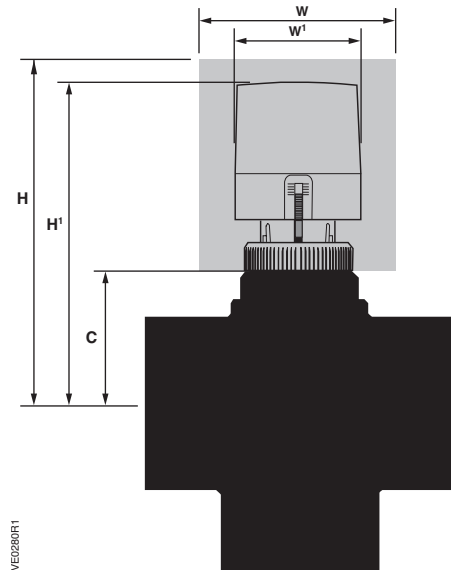
Valves

# Dimensions

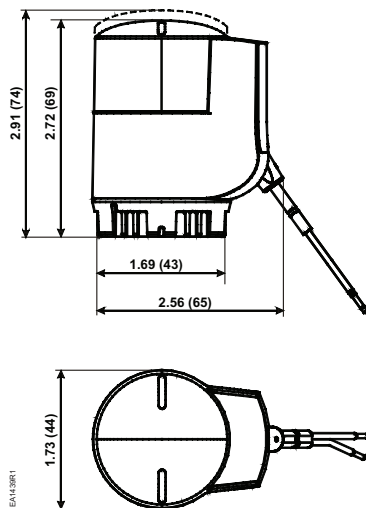
**Thermic Actuator:  
2-Way Valve Assembly Service Envelope**



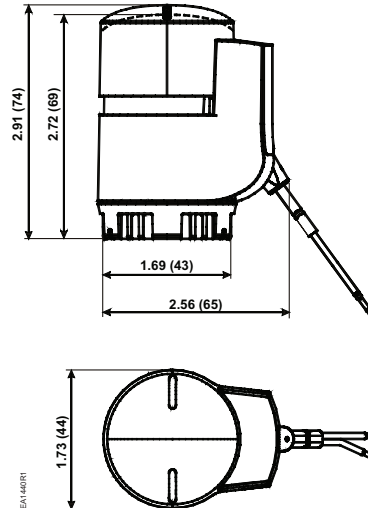
**Thermic Actuator:  
3-Way Valve Assembly Service Envelope**



**STA73U**



**STP73U**



Dimensions shown in inches (mm).

Valve Size in. (mm)	Valve Center Line to Top of Actuator H <sup>1</sup>		Service Height H		Valve Center Line to Actuator Coupling C		Width or Diameter of Actuator W <sup>1</sup>		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)	3.90 (99)	3.90 (99)	8.20 (200)	8.20 (200)	1.00 (25)	1.00 (25)	1.75 (44)	1.75 (44)	9.86 (251)	9.86 (251)
0.5 (15)	3.90 (99)	3.90 (99)	8.20 (200)	8.20 (200)	1.00 (25)	1.00 (25)	1.75 (44)	1.75 (44)	9.86 (251)	9.86 (251)
0.75 (20)	3.90 (99)	3.90 (99)	8.20 (200)	8.20 (200)	1.00 (25)	1.00 (25)	1.75 (44)	1.75 (44)	9.86 (251)	9.86 (251)
1.00 (25)	3.90 (99)	3.90 (99)	8.20 (200)	8.20 (200)	1.00 (25)	1.00 (25)	1.75 (44)	1.75 (44)	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.



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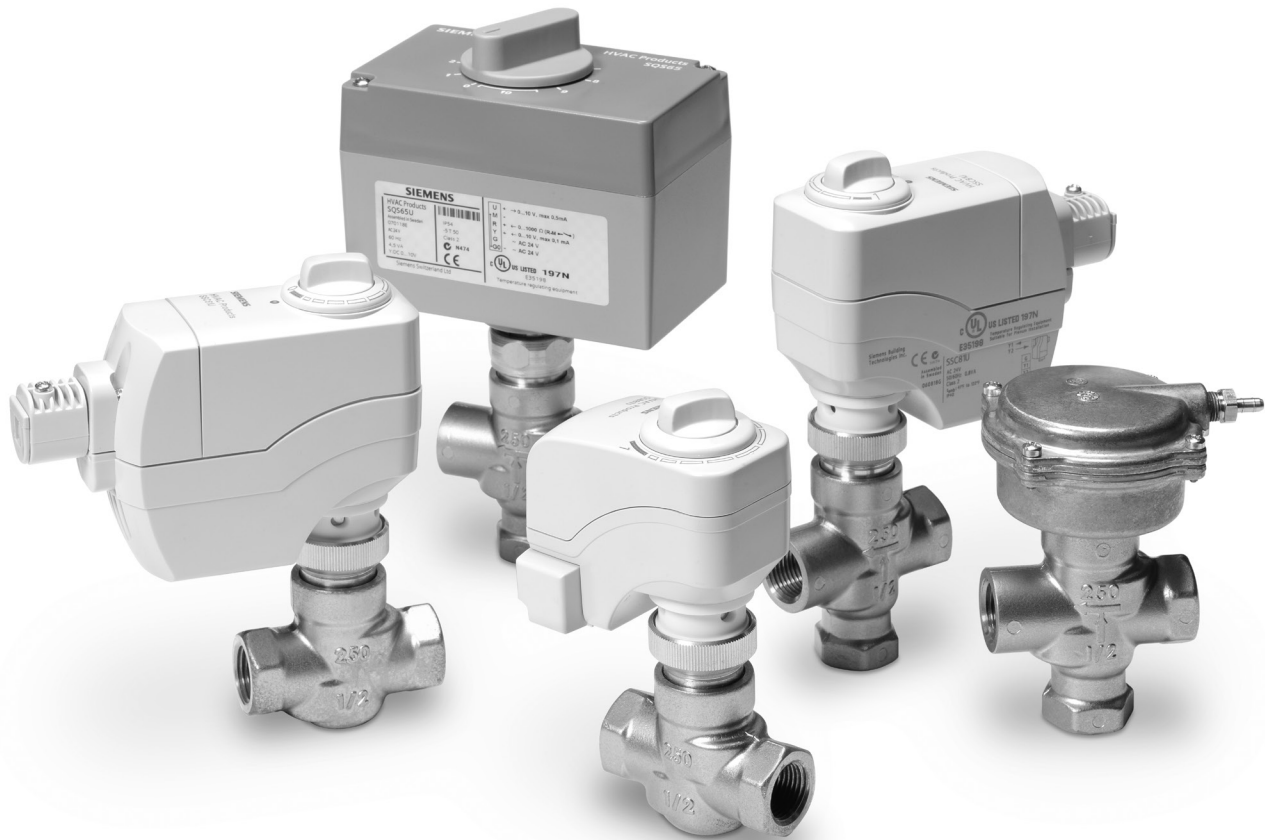
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## Powermite Globe Valves



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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.

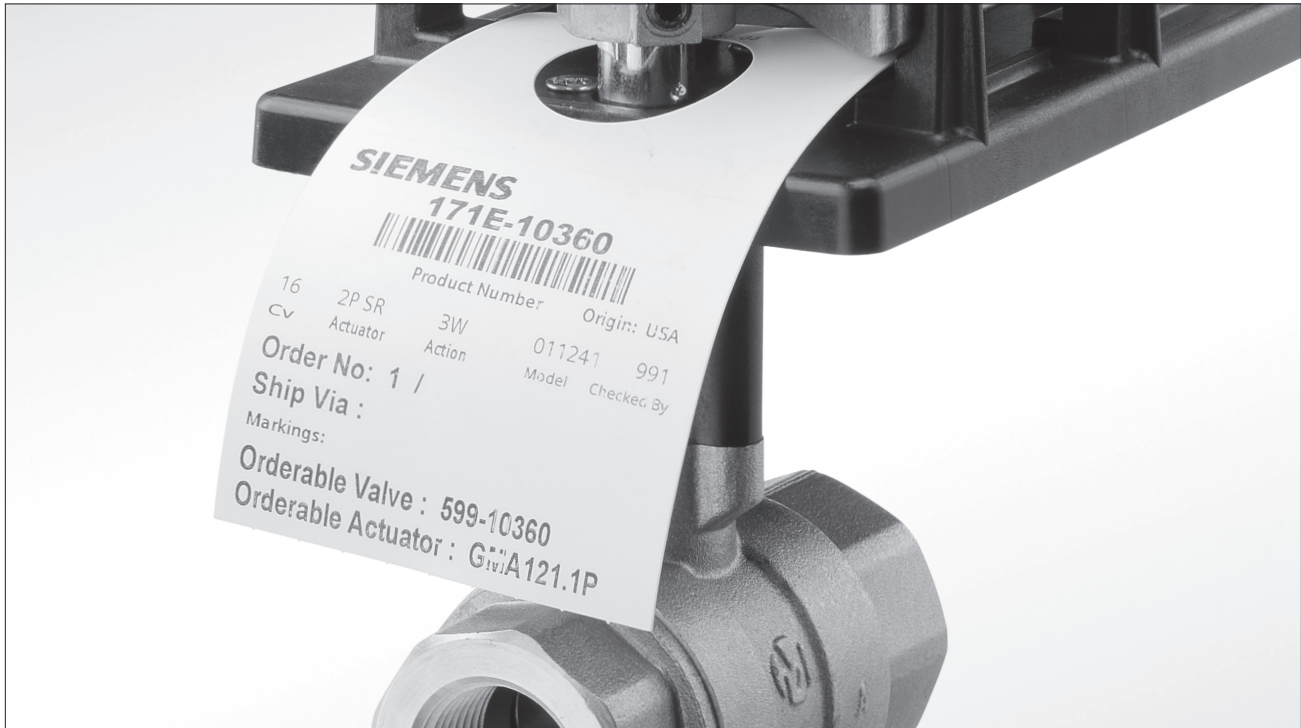
### The Powermite Globe Valve line features:

#### **MZ Series**

- Close-off up to 70 psi
- Electronic Non-Spring Return actuators only
  - 0 to 10 V
  - 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)



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## 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:

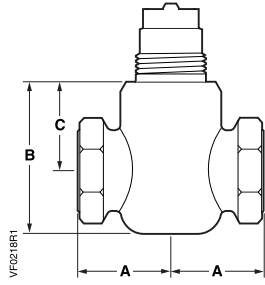
Use only with the MZ Series SSB Valve Actuators.

A-125

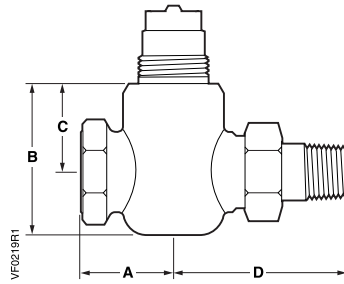
Valves



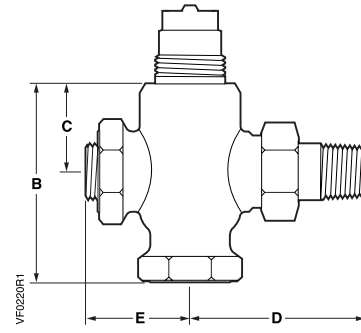
## Dimensions and Weights



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
		FxF & FxUM	AFxUM (NO Only)			(NO Only)			
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)	—	—

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Valves



## Online order tracking

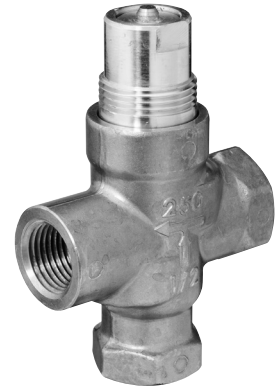
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## Three-way Mixing Valves

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.

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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)
<b>Materials</b>	
Body .....	Forged Brass C37700 (1/2 and 3/4 inch) or UNS CA 844 Bronze (1 inch)
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)

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

A-130

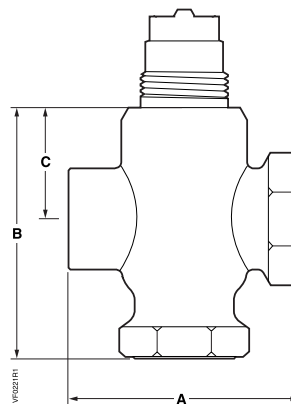
Valves

## Three-way MZ Series Valve Actuator Product Ordering

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

## 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)



## 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.

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Valves

# SSB61U Specifications

**Operating Voltage** ..... 24 Vac  $\pm$ 20% or 24 Vdc  $\pm$ 25%  
**Frequency** ..... 50/60 Hz  
**Power Supply** ..... Earth Ground Isolating, Class 2, 24 Vac Transformer  
**Power Consumption** ..... 2.0 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 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)

## SSB61U Product Ordering

Description	Part No.	Actuator Prefix Code
0 to 10 V	<b>SSB61U</b>	<b>255</b>

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

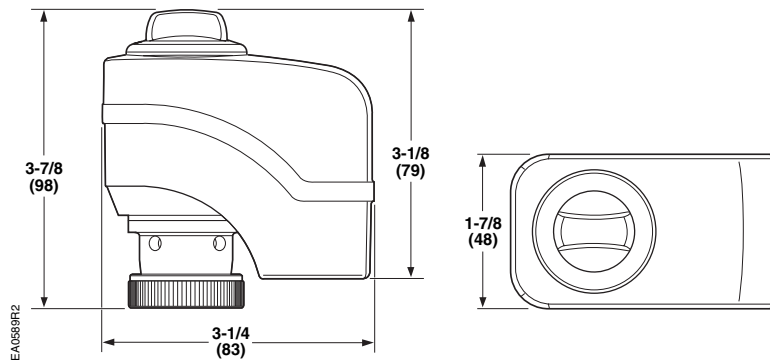
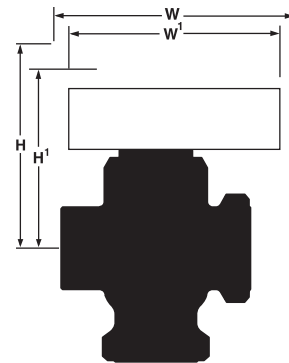
A-132

Valves

## Dimensions

Valve Size in.	Center Line to Top of Actuator	Service Height	Actual Width	Service Width
	H <sup>1</sup>	H	W <sup>1</sup>	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).



## 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.

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Valves

# SSB81U Specifications

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)

# SSB81U Product Ordering

Description	Part No.	Actuator Prefix Code
Floating	SSB81U	254

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

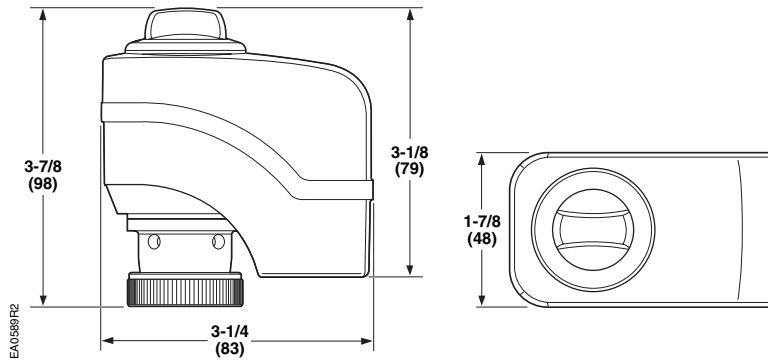
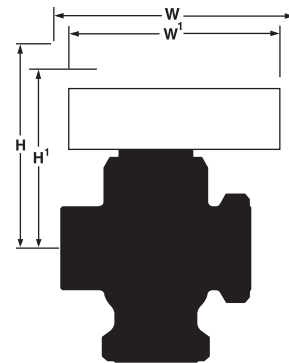
A-134

Valves

## Dimensions

Valve Size in.	Center Line to Top of Actuator	Service Height	Actual Width	Service Width
	H <sup>1</sup>	H	W <sup>1</sup>	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).

## 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.

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Valves

## Two-way MT Series Valve Specifications

<b>Valve Size</b> .....	1/2 to 1" (15 to 25 mm)
<b>Body Style</b> .....	Globe
<b>Seat Style</b> .....	Metal to Metal
<b>Action</b> .....	NO/NC
<b>Valve Body Rating</b> .....	ANSI Class 250
<b>Stem Travel (Stroke)</b> .....	7/32" (5.5 mm)
<b>Materials</b>	
Body .....	Forged Brass C37700 (1/2 and 3/4 inch) or UNS CA 844 Bronze (1 inch)
Trim .....	Stainless Steel or Brass
Stem .....	Stainless Steel ASTM A582 Type 303
Packing .....	EPDM O-rings
<b>Controlled Medium</b> .....	Water, Steam, Glycol Solutions up to 50%
<b>Spring Range</b>	
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)

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

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

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Accessories & Service Kits

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Valves

## 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.
<b>Standard Temperature Packing — 20 to 250°F (-7 to 120°C)</b>					
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.

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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.
<b>Standard Temperature Packing — 20 to 250°F (-7 to 120°C)</b>					
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)	<b>599-01088</b>	<b>257</b>
		8-13 psi (55-90 kPa)	<b>599-01088</b>	<b>258</b>
		10-15 psi (69-103 kPa)	<b>599-01088</b>	<b>256</b>
	Electro-Mechanical	24 V, Floating, Spring Return	<b>SSC81.5U</b>	<b>260</b>
		24 V, Floating, Non-Spring Return	<b>SSC81U</b>	<b>259</b>
		24 V, 0-10 V, Spring Return	<b>SSC61.5U</b>	<b>262</b>
		24 V, 0-10 V, Non-Spring Return	<b>SSC61U</b>	<b>261</b>
	Electro-Mechanical	24 V, Floating, Spring Return	<b>SQS85.53U</b>	<b>266</b>
		24 V, 0-10 V, Spring Return	<b>SQS65.5U</b>	<b>265</b>
		24 V, 0-10 V, Non-Spring Return	<b>SQS65U</b>	<b>264</b>

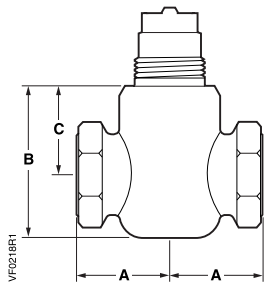
\*Powermite MT Series valve bodies have the spring in the body, rather than in the pneumatic actuator. There are different valve part numbers for the different spring ranges.

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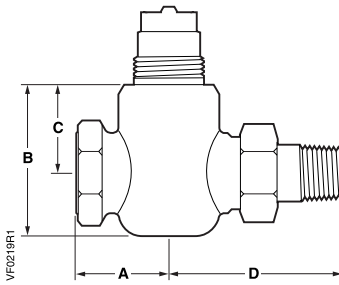
Refer back to the Selection Chart at the beginning of this section to make sure the configuration is valid.

Valves

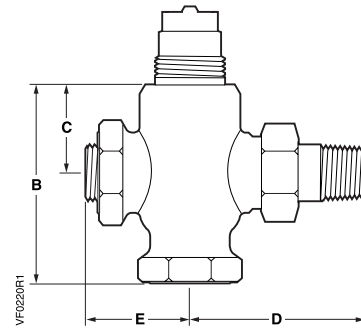
# Dimensions and Weights



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		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)	—	—

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Valves

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Valves



## More torque, less energy consumption

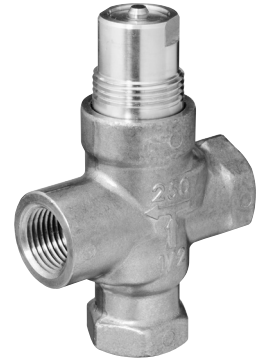
Siemens damper actuators ship ready to install, with built-in time and cost-saving features such as a patented self-centering shaft adapter, standardized wiring, and brushless motor technology. With torques ranging from 20 to 310 lb-in., this powerful and flexible line-up delivers out-of-the-box performance and long-lasting reliability for all types of HVAC applications.

Fast acting GNP/GAP rotary actuators bring the proven OpenAir™ platform to critical environment control. Their addition is perfectly suited for Supply Terminals, Exhaust Terminals, and Fume Hoods.



## 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
- 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.

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Valves



## Three-way Mixing MT Series Valve Actuator Product Ordering

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

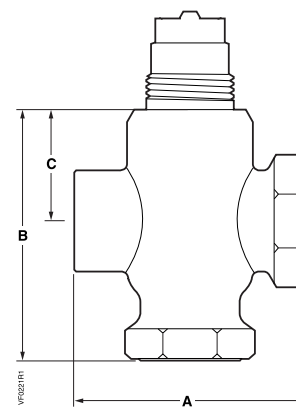
\*Powermite MT Series valve bodies have the spring in the body, rather than in the pneumatic actuator. There are different valve part numbers for the different spring ranges.

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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)



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Valves



## Install accuracy, reliability and peace-of-mind

Our Siemens combination CO<sub>2</sub>/VOC sensors are the perfect way to ensure optimum air quality at all times. These sensors have two separate sensing elements, one measures CO<sub>2</sub> and the other measures VOCs. The sensor algorithm then adjusts the output signal to reflect the higher of the two values.

Siemens offers a complete line of CO<sub>2</sub> sensors, including basic CO<sub>2</sub> sensors and combination units that measure CO<sub>2</sub> + VOC and CO<sub>2</sub> + temperature + humidity. All are available in both wall mounted and duct mounted configurations.

## 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.

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Valves

## 2" Pneumatic Actuator Specifications

Effective Diaphragm Area .....	3.4 in. <sup>2</sup> (22 cm <sup>2</sup> )
Diaphragm Material .....	Silicone
Nominal Spring Range .....	Valve Dependent
Span .....	5 psi (34 kPa)
Nominal Stroke .....	7/32" (5.5 mm)
Max. Diaphragm Pressure .....	35 psig (241 kPa)
Air Connection .....	1/8" NPT Barbed Fitting for 1/4" (6 mm) OD Polyethylene Tubing
<b>Ambient Temperature</b>	
Transportation .....	-40 to +180°F (-40 to +82°C)
<b>Mounting Location</b> .....	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 A-25 and A-27 to determine spring range.

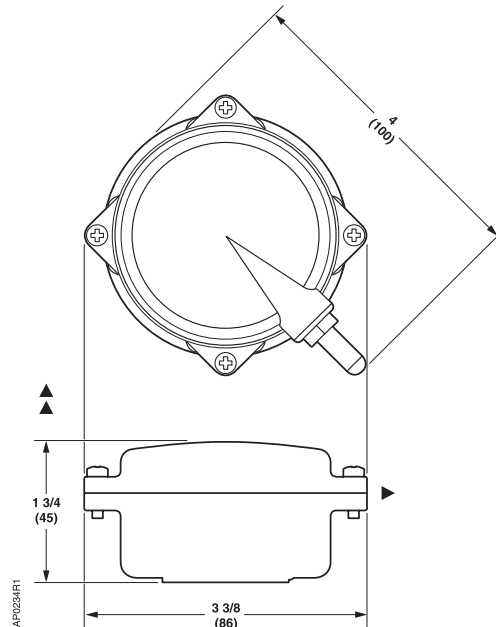
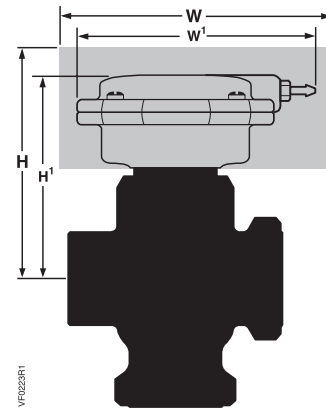
## Dimensions

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Valves

Valve Size in.	Center Line to Top of Actuator	Service Height	Actual Width	Service Width
	H <sup>1</sup>	H	W <sup>1</sup>	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).

## 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.

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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

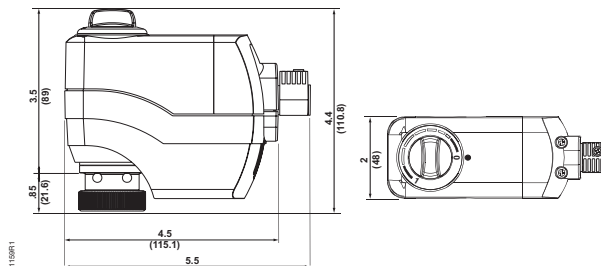
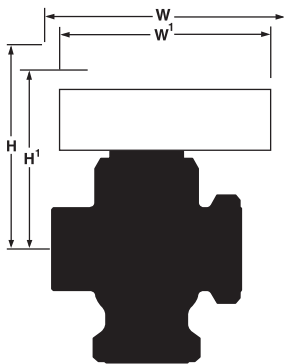
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Valves

## Dimensions

Valve Size in.	Center Line to Top of Actuator		Service Height		Actual Width of Actuator	Service Width
	H <sup>1</sup>		H		W <sup>1</sup>	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).



## 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.

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Valves



## 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 SQS65U and SQS65.5U 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 (SQS65.5U 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.

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Valves

# SQS65/65.5 Actuator Specifications

**Operating Voltage**  
60 Hz..... 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.**

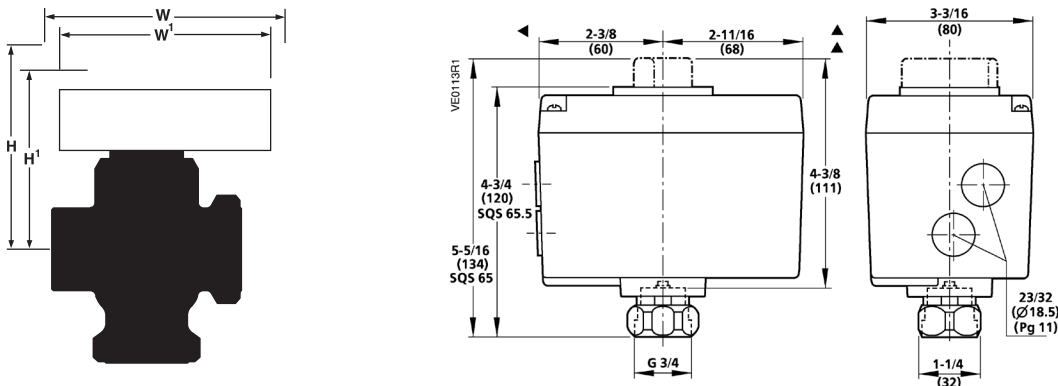
A-152

Valves

## Dimensions

Valve Size in.	Center Line to Top of Actuator		Service Height		Actual Width of Actuator	Service Width
	H <sup>1</sup>		H		W <sup>1</sup>	W
	NO	NC	NO	NC		
<b>SQS65</b>						
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)
<b>SQS65.5</b>						
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

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## SQS Electronic Valve Actuator

*24 Vac, Floating Control  
Spring Return*



Powermite MT Series SQS85.53U  
Electronic Valve Actuator

### Description

The Powermite SQS85.53U 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.

A-153

Valves

# SQS85.53U Actuator Specifications

**Operating Voltage**  
 60 Hz.....24 Vac, + 20%, -15%  
**Frequency** .....60 Hz  
**Power Supply**..... Earth Ground Isolating, Class 2, 24 Vac Transformer  
**Power Consumption** ..... 5 VA  
**Control Signal** ..... Floating  
 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 Stroke** .....7/32" (5.5 mm)  
**Nominal Force** .....90 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 Humidity** ..... 0 to 90% RH, Non-condensing  
**Wiring Connection** ..... Plenum Cable or Conduit via a 1/2" Knockout  
**Mounting Location** ..... NEMA 1 (Interior Only)

## SQS85.53U Actuator Product Ordering

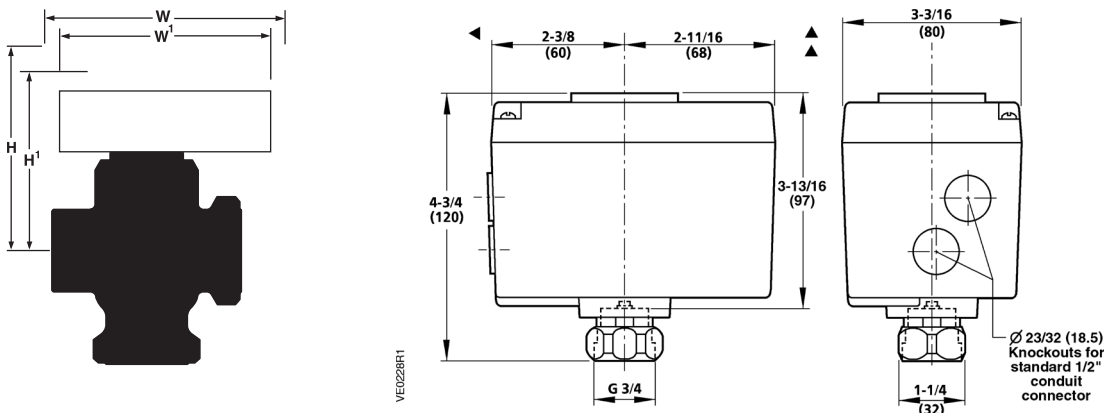
Description	Part No.	Actuator Prefix Code
Floating 3P Spring Return	<b>SQS85.53U</b>	<b>266</b>
<b>There are no repair parts for this product.            Replace the entire actuator if inoperative.</b>		

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## 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



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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.

### Nearly 80 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.

### Flowrite Features

- Unique caged-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



Siemens  
Product Guard  
PLUS 3 Warranty



## BT300 Variable Frequency Drives

Available in frame sizes up to 250 hp, the BT300 is well-suited for demanding HVAC environments. Siemens new BT300 helps save 20-50% of energy compared to equipment with little or no control.

Built-in features – like a real-time clock, energy savings optimization programming, and a sleep function – help measure energy savings. An easy-to-use, read and understand interface uses built-in wizards that get HVAC equipment up and running quickly and accurately.



## 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
- 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.

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Valves

## Two-way Globe Valve Specifications

Valve Size	1/2 to 2" (15 to 50 mm)
Body Style	Globe Style Control Valve
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
<b>Materials</b>	
Body	UNS CA 844 Bronze
Trim	Brass or Stainless Steel
Stem	Stainless Steel ASTM A582 Type 303
<b>Packing</b>	
Normal Duty	EPDM O-rings
Steam	PTFE V-rings and EPDM O-ring
<b>Operating</b>	
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

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Valves

## Two-way Globe Valve Body Product Ordering

### Normally Open/Normally Closed, Equal Percentage



Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Normally Open Part No.	Normally Closed Part No.
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>					
<b>Brass Trim</b>					
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
	2 (50)	40 (34)	3/4	599-03170	599-03188
<b>Stainless Steel Trim</b>					
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
	2 (50)	40 (34)	3/4	599-03116	599-03134

Accessories & Service Kits

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## 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.
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>					
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
2 (50)	40 (34)	3/4	599-03008	599-03026	
<b>High-Temperature Packing — 337°F (170°C)</b>					
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
2 (50)	40 (34)	3/4	599-03062	599-03080	

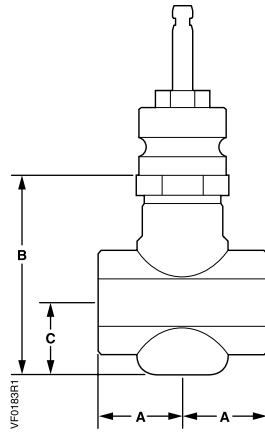
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## Flowrite Globe Valve Actuators Product Ordering

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	Rack & Pinion 2P, Spring Return	599-03611	299
		Rack & Pinion, 0-10 Vdc, Spring Return	599-03609	298
		24 V, Floating 3P, Non-Spring Return	SAX81.03U	373
		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, Non-Spring Return	SKD60U	267
		24 V, 0-10 V, 4-20 mA, Spring Return	SKB62U	291

Valves

## Two-way Globe Valve Body Dimensions and Weights



Female NPT by Female NPT (FxF)

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Valves

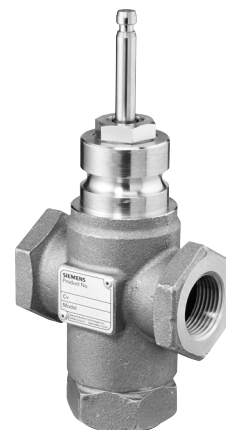
Valve Size	Dimensions			Weight
	A	B	C	FxF
<b>Normally Open</b>				
1/2" (15 mm)	1-7/16" (36 mm)	—	2-15/16" (74 mm)	3 lb. (1.4 kg)
3/4" (20 mm)	1-11/16" (43 mm)	—	3-15/16" (99 mm)	4 lb. (1.8 kg)
1" (25 mm)	2" (50 mm)	—	3-3/4" (96 mm)	5 lb. (2.3 kg)
1-1/4" (32 mm)	2-1/2" (62 mm)	3-3/4" (95 mm)	4-1/8" <sup>1</sup> (104 mm)	7 lb. (3.2 kg)
1-1/2" (40 mm)	2-9/16" (65 mm)	3-15/16" (99 mm)	4-1/4" <sup>1</sup> (109 mm) <sup>1</sup>	9 lb. (4.1 kg)
2" (50 mm)	3-1/8" (79 mm)	4-9/16" (115 mm)	4-9/16" <sup>1</sup> (115 mm) <sup>1</sup>	13 lb. (5.9 kg)
<b>Normally Closed</b>				
1/2" (15 mm)	1-7/16" (36 mm)	—	3-13/16" (97 mm)	3 lb. (1.4 kg)
3/4" (20 mm)	1-11/16" (43 mm)	—	3-13/16" (97 mm)	4 lb. (1.8 kg)
1" (25 mm)	2" (50 mm)	—	3-13/16" (97 mm)	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)	7 lb. (3.2 kg)
1-1/2" (40 mm)	2-9/16" (65 mm)	3-15/16" (99 mm)	3-7/8" (99 mm)	8 lb. (3.6 kg)
2" (50 mm)	3-1/8" (79 mm)	4-9/16" (115 mm)	4-3/16" (106 mm)	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) and linear flow (NO port) characteristics
- Brass or stainless steel trim
- Accepts any 3/4-inch stroke Flowrite pneumatic or electronic actuator
- Greater than 100:1 rangeability
- 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

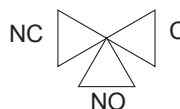
### Applications

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, refer to Technical Instructions 155-185P25 for limitations or contact your local representative for more information.

### Flow Characteristics



Equal percentage for NC/Linear for NO

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Valves

# Three-way Globe Valve Specifications

**Valve Size** ..... 1/2 to 2" (15 to 50 mm)  
**Body Style** .....Globe Style Control Valve  
**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








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Valves

Connection	Valve Size in. (mm)	Flow Rate Cv (Kvs)	Stroke (in.)	Brass Trim Part No.	Stainless Steel Trim Part No.
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>					
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
2 (50)	40 (34)	3/4	599-03206	599-03152	

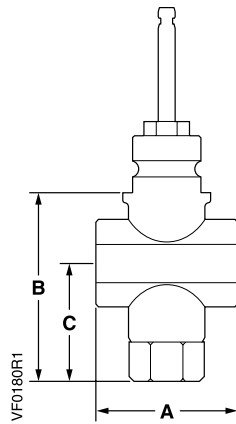
## Flowrite Globe Valve Actuators Product Ordering

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	Rack & Pinion 2P, Spring Return	599-03611	299
		Rack & Pinion, 0-10 Vdc, Spring Return	599-03609	298
		24 V, Floating 3P, Non-Spring Return	SAX81.03U	373
		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, Non-Spring Return	SKD60U	267
		24 V, 0-10 V, 4-20 mA, Spring Return	SKB62U	291

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Valves

## Three-way Globe Valve Body Dimensions and Weights



Female NPT x Female NPT x Female NPT  
(FxFxF)

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Valves

Valve Size	Dimensions			Weight
	A	B	C	
1/2" (15 mm)	2-7/8" (72 mm)	4-5/16" (110 mm)	2-11/16" (68 mm)	3.0 lb. (1.4 kg)
3/4" (20 mm)	3-3/8" (85 mm)	4-5/16" (110 mm)	2-3/4" (69 mm)	4.0 lb. (1.8 kg)
1" (25 mm)	3-15/16" (100 mm)	4-1/2" (114 mm)	2-7/8" (72 mm)	5.0 lb. (2.3 kg)
1-1/4" (32 mm)	4-15/16" (125 mm)	4-5/8" (116 mm)	2-15/16" (74 mm)	7.0 lb. (3.2 kg)
1-1/2" (40 mm)	5-1/8" (130 mm)	4-5/8" (117 mm)	3" (76 mm)	9.0 lb. (4.1 kg)
2" (50 mm)	6-1/4" (158 mm)	5-1/8" (130 mm)	3-3/16" (81 mm)	13.0 lb. (5.9 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 ANSI/ISA S75.03 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)

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Valves



## Two-way Flanged Iron Globe Valve Specifications

**Valve Size** .....2-1/2 to 6" (65 to 150 mm)  
**Body Style** .....Flanged  
**Seat Style** .....Single seat  
**Action** .....Normally Closed (NC); Normally Open (NO)  
**Valve Body Rating** .....ANSI 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**  
 Body .....Cast Iron ASTM A126 Class B  
 Trim .....Bronze or Stainless Steel  
 Stem .....Stainless 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  
 Liquid ..... 25 psi (173 kPa)  
 Steam ..... 15 psi (103 kPa)  
 Stainless Steel Trim  
 Liquid ..... 50 psi (345 kPa)  
 Steam ..... 50 psi (345 kPa)  
**Rangeability** ..... >100:1  
**Close-off Ratings** ..... According to ANSI/FCI 70-2  
**Close-off Pressure** .....Refer to the Flowrite Reference Section.  
**Leakage Rate** ..... Class IV (0.01% of Cv)  
**Flow Characteristics** .....Equal Percentage or Linear  
**Dimensions**  
 Face-to-face ..... ANSI/ISA S75.03

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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.
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>						
<b>Bronze</b>						
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
<b>Stainless Steel</b>						
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.	
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>							
2-1/2 (65)	63 (54)	3/4	<b>599-06060</b>	<b>599-06070</b>	<b>599-06140</b>	<b>599-06150</b>	
3 (80)	100 (86)	3/4	<b>599-06061</b>	<b>599-06071</b>	<b>599-06141</b>	<b>599-06151</b>	
4 (100)	160 (140)	1-1/2	<b>599-06062</b>	<b>599-06072</b>	<b>599-06142</b>	<b>599-06152</b>	
5 (125)	250 (215)	1-1/2	<b>599-06063</b>	<b>599-06073</b>	<b>599-06143</b>	<b>599-06153</b>	
6 (150)	400 (340)	1-1/2	<b>599-06064</b>	<b>599-06074</b>	<b>599-06144</b>	<b>599-06154</b>	
<b>High-Temperature Packing — 337°F (170°C)</b>							
2-1/2 (65)	63 (54)	3/4	<b>599-06040</b>	<b>599-06050</b>	<b>599-06120</b>	<b>599-06130</b>	
3 (80)	100 (86)	3/4	<b>599-06041</b>	<b>599-06051</b>	<b>599-06121</b>	<b>599-06131</b>	
4 (100)	160 (140)	1-1/2	<b>599-06042</b>	<b>599-06052</b>	<b>599-06122</b>	<b>599-06132</b>	
5 (125)	250 (215)	1-1/2	<b>599-06043</b>	<b>599-06053</b>	<b>599-06123</b>	<b>599-06133</b>	
6 (150)	400 (340)	1-1/2	<b>599-06044</b>	<b>599-06054</b>	<b>599-06124</b>	<b>599-06134</b>	

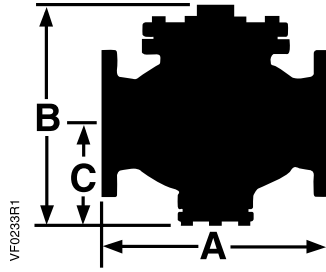
## Flowrite Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code	
 8"	Pneumatic	20 mm Stroke/Normal Temp.	<b>599-01050</b>	<b>277</b>
		20 mm Stroke/Hi-Temp.	<b>599-01051</b>	<b>278</b>
 12"	Pneumatic	20 mm Stroke	<b>599-01010</b>	<b>279</b>
		40 mm Stroke	<b>599-01000</b>	<b>281</b>
 8"	Pneumatic w/ Positioner	20 mm Stroke/Normal Temp.	<b>599-01050 + 599-00426</b>	<b>283</b>
		20 mm Stroke/Hi-Temp.	<b>599-01051 + 599-00426</b>	<b>284</b>
 12"	Pneumatic w/ Positioner	20 mm Stroke	<b>599-01010 + 599-00423</b>	<b>285</b>
		40 mm Stroke	<b>599-01000 + 599-00423</b>	<b>287</b>
	Electro-Hydraulic	<b>20 mm Stroke</b>		
		24 V, Floating 3P, Spring Return	<b>SKD82.51U</b>	<b>276</b>
		24 V, Floating 3P, Spring Return	<b>SKB82.51U</b>	<b>289</b>
		24 V, Floating 3P, Non-Spring Return	<b>SKD82.50U</b>	<b>275</b>
		24 V, Floating 3P, Non-Spring Return	<b>SKB82.50U</b>	<b>290</b>
		24 V, 0-10 V, 4-20 mA, Non-Spring Return	<b>SKD60U</b>	<b>267</b>
		24 V, 0-10 V, 4-20 mA, Spring Return	<b>SKD62U</b>	<b>274</b>
		24 V, 0-10 V, 4-20 mA, Spring Return	<b>SKB62U</b>	<b>291</b>
		<b>40 mm Stroke</b>		
		24 V, Floating 3P, Spring Return	<b>SKC82.61U</b>	<b>292</b>
		24 V, Floating 3P, Non-Spring Return	<b>SKC82.60U</b>	<b>293</b>
24 V, 0-10 V, 4-20 mA, Spring Return	<b>SKC62U</b>	<b>294</b>		

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Valves

## Two-way Flanged Iron Globe Valve Body Dimensions and Weights



Valve Size	ANSI Class 125				ANSI Class 250			
	Dimensions			Weight	Dimensions			Weight
	A	B	C		A	B	C	
<b>Normally Open</b>								
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)
<b>Normally Closed</b>								
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)

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Valves

## 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 SK Series electro-hydraulic 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%.

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Valves

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

**Valve Size** .....2-1/2 to 6" (65 to 150 mm)  
**Body Style** .....Cast Iron ASTM A126 Class B  
**Seat Style** .....Metal to Metal  
**Action** .....Normally Open (NO) or Normally Closed (NC)  
**Valve Body Rating** .....ANSI 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**  
 Body .....Cast Iron ASTM A126 Class B  
 Trim .....Stainless Steel  
 Stem .....Stainless Steel ASTM A582 Type 303  
**Packing**  
 Normal Duty Packing ..... EPDM O-ring  
**Operating**  
 Controlled Medium ..... Water, Glycol Solutions to 50%

**Medium Temperature Range** .....20°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 S75.03

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




Normally Open/Normally Closed, Equal Percentage 

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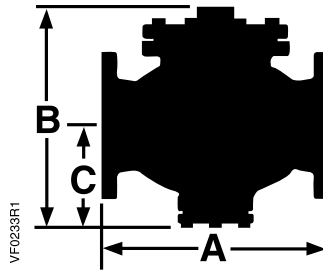
Valves

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.	
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>							
2-1/2 (65)	63 (54)	3/4	<b>599-06610</b>	<b>599-06615</b>	<b>599-06620</b>	<b>599-06625</b>	
3 (80)	100 (86)	3/4	<b>599-06611</b>	<b>599-06616</b>	<b>599-06621</b>	<b>599-06626</b>	
4 (100)	160 (140)	1-1/2	<b>599-06612</b>	<b>599-06617</b>	<b>599-06622</b>	<b>599-06627</b>	
5 (125)	250 (215)	1-1/2	<b>599-06613</b>	<b>599-06618</b>	<b>599-06623</b>	<b>599-06628</b>	
6 (150)	400 (340)	1-1/2	<b>599-06614</b>	<b>599-06619</b>	<b>599-06624</b>	<b>599-06629</b>	

## Flowrite Valve Actuator Product Ordering

Description			Part No.	Actuator Prefix Code
	Pneumatic w/ Positioner	20 mm Stroke	<b>599-01050 + 599-00426</b>	<b>283</b>
	Pneumatic w/ Positioner	40 mm Stroke	<b>599-01000 + 599-00423</b>	<b>287</b>
	Electro-Hydraulic	24 V, 0-10 V, 4-20 mA, 3/4" Stroke Spring Return	<b>SKD62U</b>	<b>274</b>
		24 V, 0-10 V, 4-20 mA, 1-1/2" Stroke Spring Return	<b>SKC62U</b>	<b>294</b>

## Dimensions and Weights



Valve Size	ANSI Class 125				ANSI Class 250			
	Dimensions			Weight	Dimensions			Weight
	A	B	C		A	B	C	
<b>Normally Open</b>								
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)
<b>Normally Closed</b>								
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)

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Valves

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Valves



## Retrofits made easy

Whether you are replacing Siemens or another manufacturer, Siemens is the perfect solution for your next retrofit job. Our valves and damper actuators are easy on the budget and easy to install.

To order genuine Siemens Building Automation HVAC replacement parts, call toll free: 800.516.9964.



## 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 ANSI/ISA S75.03 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

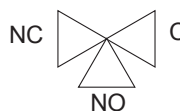
### Applications

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

To use this valve as a diverting valve, refer to Technical Instructions 155-160P25 for limitations or contact your local representative for more information.

### Flow Characteristics



Equal percentage for NC/Linear for NO

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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 ..... 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
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>						
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
<b>Standard-Temperature Packing — 20 to 250°F (-7 to 120°C)</b>						
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.

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Valves

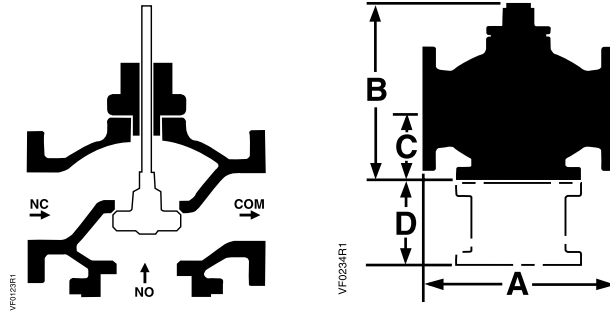
# Flowrite Valve Actuator Product Ordering

Description		Part No.	Actuator Prefix Code	
 8"	Pneumatic	20 mm Stroke/Normal Temp.	<b>599-01050</b>	<b>277</b>
		20 mm Stroke/Hi-Temp.	<b>599-01051</b>	<b>278</b>
 12"	Pneumatic	20 mm Stroke	<b>599-01010</b>	<b>279</b>
		40 mm Stroke	<b>599-01000</b>	<b>281</b>
 8"	Pneumatic w/ Positioner	20 mm Stroke/Normal Temp.	<b>599-01050 + 599-00426</b>	<b>283</b>
		20 mm Stroke/Hi-Temp.	<b>599-01051 + 599-00426</b>	<b>284</b>
 12"	Pneumatic w/ Positioner	20 mm Stroke	<b>599-01010 + 599-00423</b>	<b>285</b>
		40 mm Stroke	<b>599-01000 + 599-00423</b>	<b>287</b>
	Electro-Hydraulic	<b>20 mm Stroke</b>		
		24 V, Floating 3P, Spring Return	<b>SKD82.51U</b>	<b>276</b>
		24 V, Floating 3P, Spring Return	<b>SKB82.51U</b>	<b>289</b>
		24 V, Floating 3P, Non-Spring Return	<b>SKD82.50U</b>	<b>275</b>
		24 V, Floating 3P, Non-Spring Return	<b>SKB82.50U</b>	<b>290</b>
		24 V, 0-10 V, 4-20 mA, Non-Spring Return	<b>SKD60U</b>	<b>267</b>
		24 V, 0-10 V, 4-20 mA, Spring Return	<b>SKD62U</b>	<b>274</b>
		24 V, 0-10 V, 4-20 mA, Spring Return	<b>SKB62U</b>	<b>291</b>
		<b>40 mm Stroke</b>		
		24 V, Floating 3P, Spring Return	<b>SKC82.61U</b>	<b>292</b>
		24 V, Floating 3P, Non-Spring Return	<b>SKC82.60U</b>	<b>293</b>
24 V, 0-10 V, 4-20 mA, Spring Return	<b>SKC62U</b>	<b>294</b>		

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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)

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Valves

## Pneumatic 4-inch Valve Actuator



Flowrite 4-inch Pneumatic Valve Actuator.

### Description

Designed for use with the threaded 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 threaded Flowrite valves in liquid and steam service applications.

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Valves

# 4-inch Pneumatic Actuator Specifications

Effective Diaphragm Area ..... 11 in.<sup>2</sup> (71 cm<sup>2</sup>)  
 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)

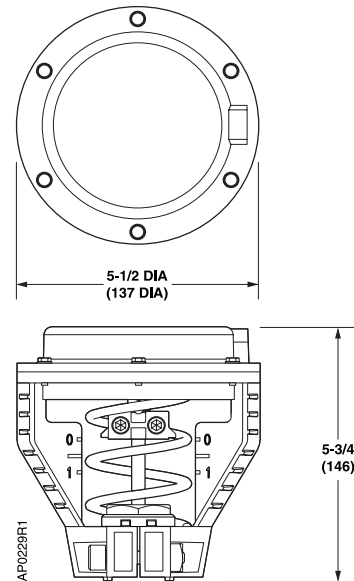
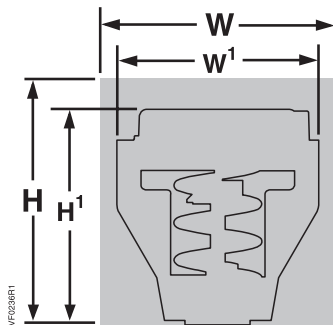
## 4-inch Pneumatic Actuator Product Ordering

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

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Valves

## Dimensions



Dimensions shown in inches (mm).

Actuator	Height of Actuator H <sup>1</sup>	Service Height H	Width/Diameter of Actuator W <sup>1</sup>	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.

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Valves



# 8-inch Pneumatic Actuator Specifications

**Effective Diaphragm Area** ..... 28 in.<sup>2</sup> (180 cm<sup>2</sup>)

**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)

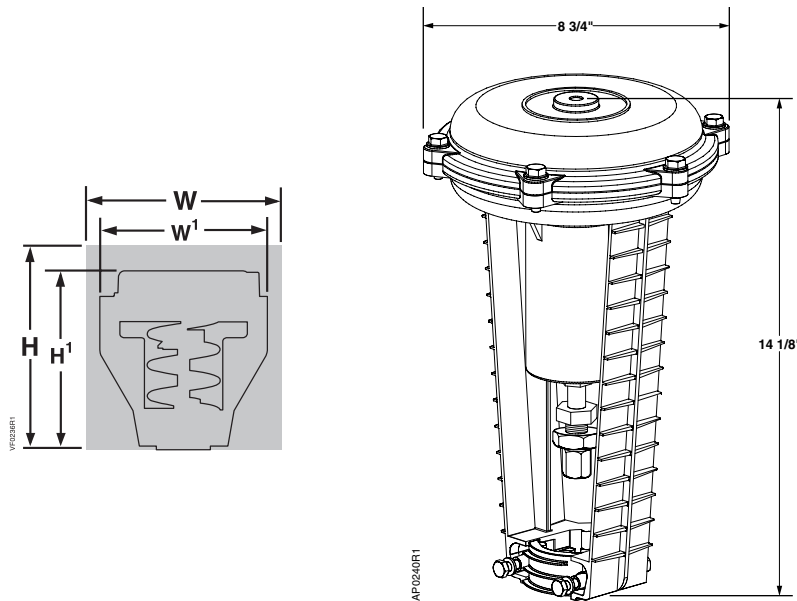
## 8-inch Pneumatic Actuator Product Ordering

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

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Valves

## Dimensions



Actuator	Height of Actuator H¹	Service Height H	Width/Diameter of Actuator W¹	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.

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Valves

# 12-inch Pneumatic Actuator Specifications

<b>Effective Diaphragm Area</b> .....	90 in. <sup>2</sup> (580 cm <sup>2</sup> )	<b>Max. Diaphragm Pressure</b> .....	35 psig (241 kPa)
<b>Diaphragm Material</b> .....	Buna-N	<b>Air Connection</b> .....	1/4" NPT
<b>Nominal Spring Range</b>		<b>Medium Temperature</b> .....	25 to 366°F (-4 to 186°C)
Fixed Span .....	5 psig (34 kPa)	<b>Ambient Operating and Storage Temperature</b> .....	35 to 180°F (2 to 85°C)
Adjustable Start Point .....	3 to 10 psig (21 to 69 kPa)	<b>Mounting Location</b> .....	NEMA 1 (Interior Only)
Factory Setting .....	3 to 8 psig (21 to 55 kPa)		
<b>Nominal Stroke</b> .....	3/4 or 1-1/2" (20 or 40 mm)		

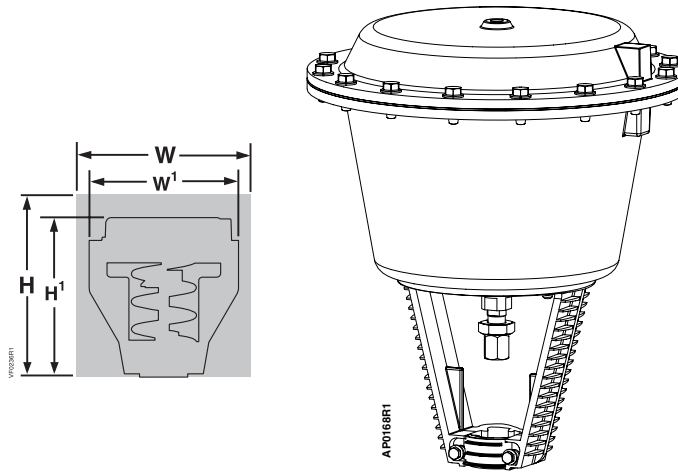
## 12-inch Pneumatic Actuator Product Ordering

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

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Valves

## Dimensions



Actuator	Height of Actuator H <sup>1</sup>	Service Height H	Width/Diameter of Actuator W <sup>1</sup>	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, Floating or Proportional Control  
Floating, 0 to 10 Vdc or 4 to 20 mA  
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 either a 24 Vac or 24 Vdc supply, and receives a 0 to 10 Vdc or 4 to 20 mA control signal to proportionally control the valve or a floating control signal to provide floating control of the valve.

### Features

- Proportional or floating (3P) control
- Direct-coupled installation
- Visual and electronic stroke indication
- Manual override
- Non-spring return
- 180 lb. (800 N) nominal force
- Automatic calibration (SAX61.03U only)
- Electro-mechanical switches protect components from overload and stall condition
- Maintenance-free

### Applications

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

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Valves



## Electro-Mechanical Rack and Pinion Actuator

*24 Vac, Proportional or On/Off Control  
0 to 10 Vdc or 2-position  
Spring Return*



Flowrite Electro-Mechanical Rack and Pinion.

### Description

The Flowrite Electronic Rack and Pinion is designed for use with 1/2- to 2-inch Flowrite two- and three-way valves with a 3/4-inch stroke. A linkage fastens the actuator and the valve body together and transforms the rotary movement of the actuator output shaft to the linear motion required to position the valve.

### Features

- Brushless DC motor technology with stall protection
- Bi-directional fail-safe spring return
- All metal housing
- UL and C-UL listed
- Spring return to fail-safe position

### Applications

The Flowrite Valves and Valve Actuators are used to control water and glycol solutions to 50 percent in small to large air handling units and central plant applications.

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Valves

# Rack and Pinion Specifications

## Power Supply

Operating Voltage .....24 Vac, +20%, -15%  
 Frequency ..... 50/60 Hz

## Power Consumption

599-03609 assembly  
 (with GCA161.1U actuator) ..... 9 VA running, 5 VA holding  
 599-03611 assembly  
 (with GCA121.1U actuator) ..... 8 VA running, 3 VA holding

Equipment Rating .....Class 2, in accordance with UL/CSA

## Control Signal .....(599-03609 assembly with GCA161.1U actuator)

### Input Signal

Voltage Input..... 0 to 10 Vdc (max. 35 Vdc)  
 Input Resistance .....100K Ohms  
 Current Input..... 4 to 20 mA  
 Input Resistance .....500 Ohms

Position Output Feedback Signal .....0 to 10 Vdc, ±1 mA maximum

## Mounting

Nominal Angle of Rotation .....90°  
 Maximum Angular Rotation .....95°  
 Noise Level ..... <45 dBA (running)  
 Enclosure .....NEMA 2 in vertical to horizontal 90

**Ambient Operating Temperature** .....-25 to +130° F (-32 to +55°C)

**Storage and Transport Temperature** .....-25 to +158° F (-32 to +70°C)

**Ambient Humidity** .....95% RH, non-condensing

**Agency Certification** .....UL873  
 C-UL certified to Canadian Standard C22.2 No. 24-93

**Pre-connected Cable** ..... 18 AWG, 3 ft. (0.9 m)

# Rack and Pinion Product Ordering

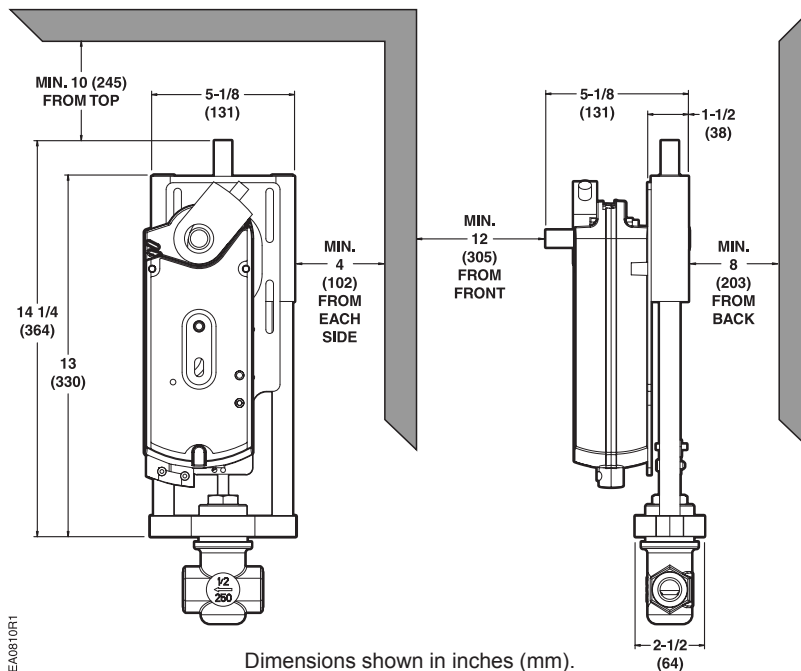
Description	Part No.	Actuator Prefix Code
0 to 10 Vdc, Spring Return	599-03609	298
2-position, Spring Return	599-03611	299
Bracket Only	599-03610	—

## Table Note

The linkage, OpenAir Actuator, and Flowrite Valve are available as an assembly. Refer to: *TB 249, Flowrite Valve and Actuator Assembly Selection Technical Bulletin*, 155-304P25 for details and product numbers.

# Dimensions

## Normal Duty Application as Shipped from Factory



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Valves

## SKD Valve Actuator

24 Vac, Proportional Control  
0 to 10 Vdc or 4 to 20 mA  
Spring Return or Non-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 spring return 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 or non-spring return
- Maintenance-free

#### Advanced Features (Spring return only)

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.

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Valves



# SKD Actuator Specifications

**Operating Voltage** ..... 24 Vac  $\pm$ 20%

**Frequency** ..... 50/60 Hz

**Power Consumption**..... 17 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)

Pushing Stroke, 0 to 100% ..... 30 sec.

Pulling 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)

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## SKD Actuator Product Ordering

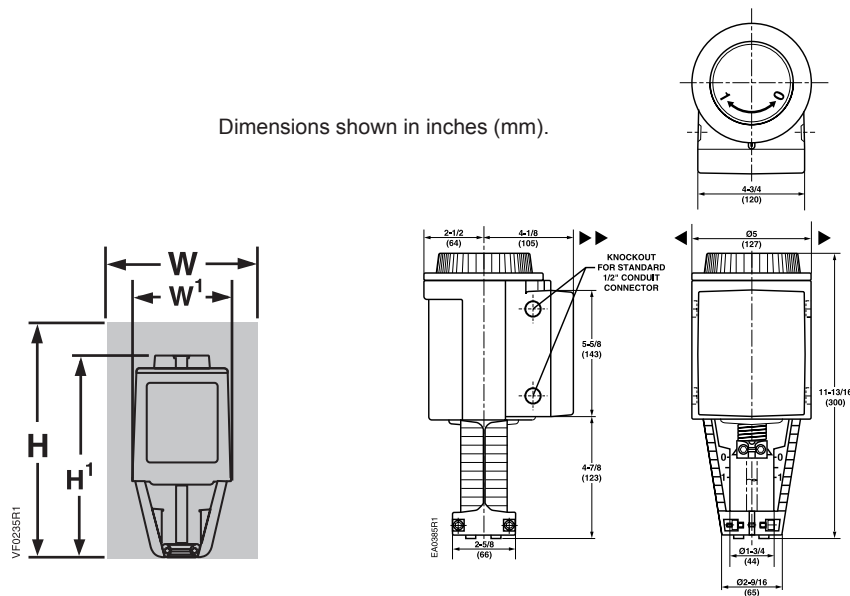
Description	Part No.	Actuator Prefix Code
24 Vac, Proportional Control, Non-Spring Return	SKD60U	267
24 Vac, Proportional Control, Spring Return	SKD62U	274
24 Vac, Proportional Control with Advanced Features, Spring Return	SKD62UA	—

**Ordering Note:**

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

## Dimensions

Dimensions shown in inches (mm).



Height of Actuator H <sup>1</sup>	Service Height H	Width/Diameter of Actuator W <sup>1</sup>	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.

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Valves

# SKD Actuator Specifications

Operating Voltage ..... 24 Vac  $\pm$ 20%

Frequency ..... 50/60 Hz

**Power Consumption**

SKD82.50U ..... 13 VA (8 W)

SKD82.51U ..... 18 VA (11 W)

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 ..... 120 sec.

Return Stroke, 100 to 0% @ 60 Hz ..... 120 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)

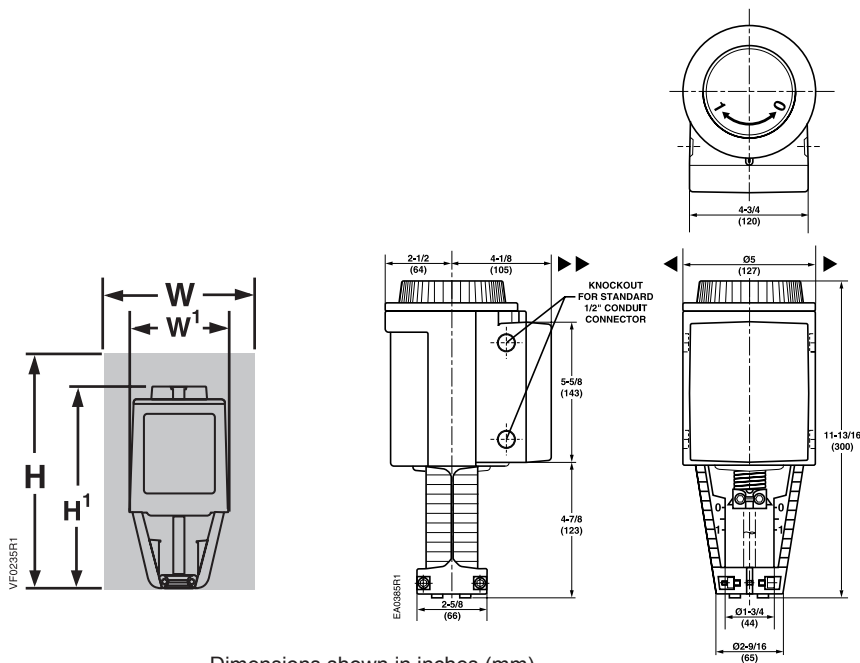
## SKD Actuator Product Ordering

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

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Valves

## Dimensions



Dimensions shown in inches (mm).

Height of Actuator H <sup>1</sup>	Service Height H	Width/Diameter of Actuator W <sup>1</sup>	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.

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Valves



# SKB/SKC Specifications

**Nominal Stroke**  
 SKB62U/UA ..... 3/4" (20 mm)  
 SKC62U/UA ..... 1-1/2" (40 mm)

**Operating Voltage** ..... 24 Vac  $\pm$ 20%

**Frequency** ..... 50/60 Hz

**Power Consumption**  
 SKB62U/UA ..... 17 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)  
 Pushing ..... 120 sec.  
 Pulling with Spring  
 SKB62U ..... 10 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
<b>3/4" Stroke</b>		
Standard Features	<b>SKB62U</b>	<b>291</b>
Advanced Features	<b>SKB62UA</b>	—
<b>1-1/2" Stroke</b>		
Standard Features	<b>SKC62U</b>	<b>294</b>
Advanced Features	<b>SKC62UA</b>	—

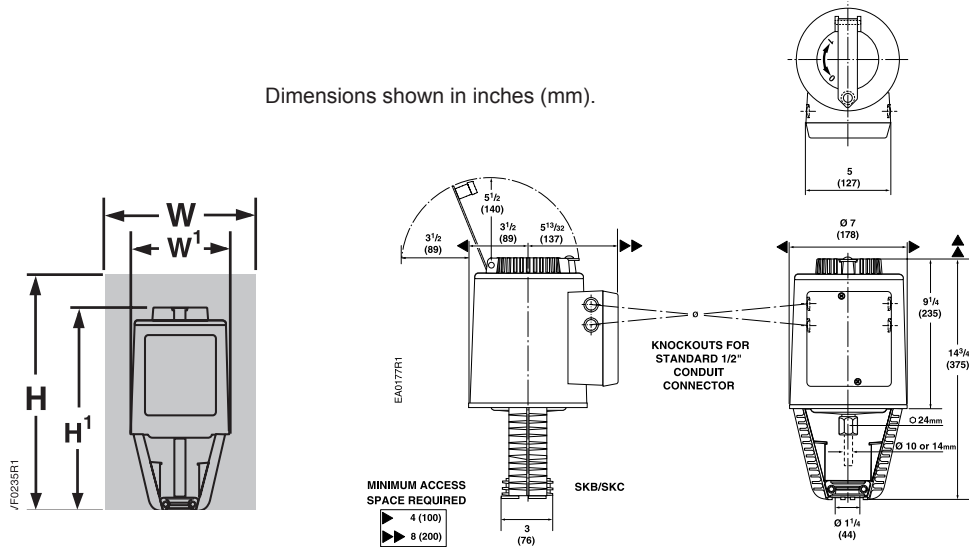
**Ordering Note:**  
 The SKB/UA can be used with other manufacturer's valves with the appropriate Universal Valve Linkage Kit.

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Valves

## Dimensions

Dimensions shown in inches (mm).



Height of Actuator H <sup>1</sup>	Service Height H	Width/Diameter of Actuator W <sup>1</sup>	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 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
- Manual override
- Spring return or non-spring return
- 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.

A-193

Valves

# SKB/SKC Specifications

Operating Voltage .....	24 Vac ±20%
Frequency .....	50/60 Hz
<b>Power Consumption</b>	
SKB82.50U.....	13 VA (8W)
SKB82.51U.....	18 VA (11W)
SKC82.60U.....	19 VA (16W)
SKC82.61U.....	24 VA (18W)
<b>Control Signal</b> .....	Floating
<b>Nominal Stroke</b>	
SKB.....	3/4" (20 mm)
SKC.....	1-1/2" (40 mm)

<b>Run Time with Control Operation (full stroke)</b> .....	120 sec. Pushing and Pulling
<b>Spring Return Time (on power failure)</b>	
SKB82.51U.....	10 sec.
SKC82.61U.....	18 sec.
<b>Nominal Force</b>	
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)
<b>Agency Approvals</b> .....	UL873, CSA C22.2 No. 24-93
<b>Enclosure</b> .....	NEMA 1 (Interior Only)
<b>Operating</b>	
Ambient Temperature .....	5 to 130°F (-15 to 55°C)
Media Temperature .....	14 to 300°F (-10 to 150°C)
<b>Mounting Location</b> .....	NEMA 1 (Interior Only)

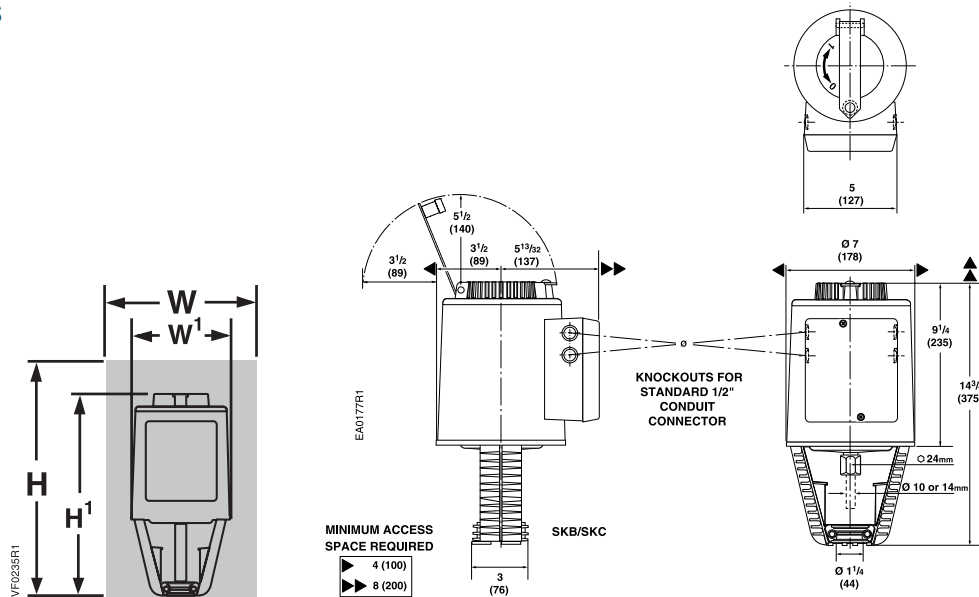
## SKB/SKC Product Ordering

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

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Valves

## Dimensions



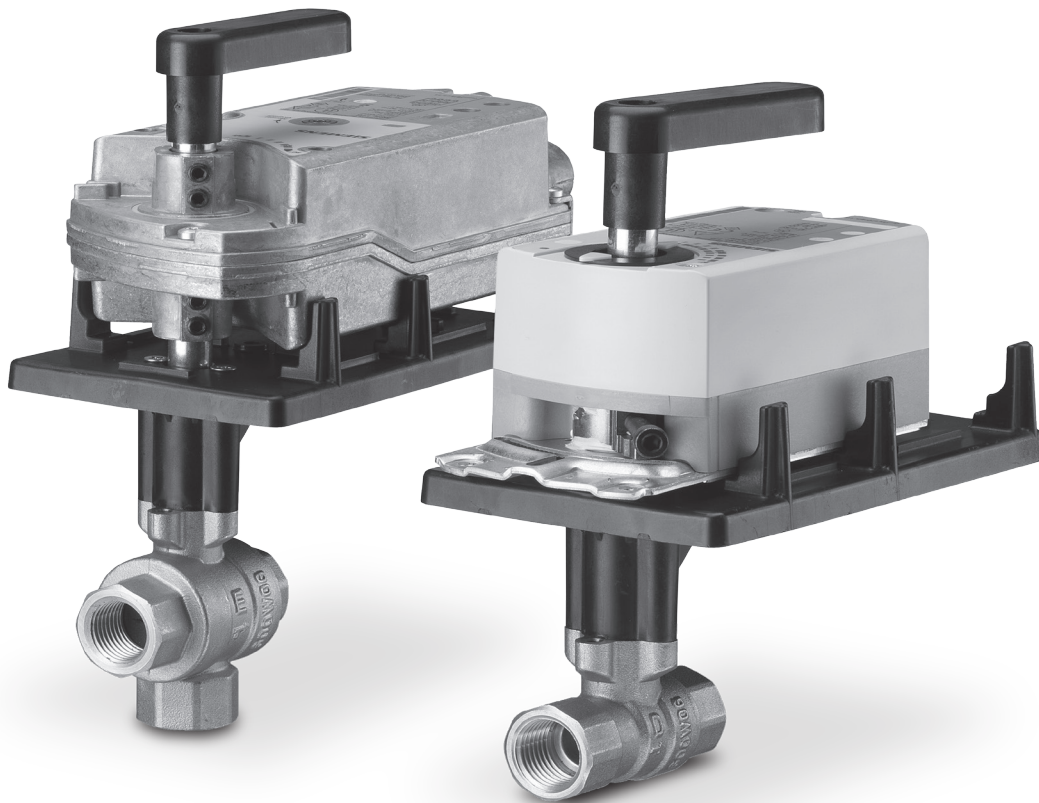
Dimensions shown in inches (mm).

Height of Actuator H <sup>1</sup>	Service Height H	Width/Diameter of Actuator W <sup>1</sup>	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



A-195

Valves

Siemens 599 Series characterized 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- and three-way valves available with chrome-plated brass ball and brass stem or stainless steel ball and stem to withstand harsh conditions
- Equal percentage flow characteristic
- 0.4 to 160 Cv range enables better sizing of valves to the job requirements
- 200 psi close-off
- 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
- 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 provides a thermal barrier between the actuator and the mounting plate

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



Siemens  
Product Guard  
PLUS 3 Warranty



## Size and select valves with SimpleSelect™

SimpleSelect quickly narrows your search from our entire portfolio of valves down to the products you need. It features a robust cross-reference that searches through 8,000 competitive and obsolete Siemens part numbers to find the exact replacement.

Quickly build a valve schedule from our complete portfolio of valves & actuators: PICV, Zone, Globe, Ball, Magnetic, and Butterfly Valves.

- An intuitive, easy-to-use interface helps you quickly size the valve you need with menus that allow you to:
- Select type of valve from the portfolio
- Choose the medium being controlled
- Determine the correct Cv or required flow (gpm)
- Calculate pressure drop and quantity of steam

Go to [www.usa.siemens.com/simpleselect](http://www.usa.siemens.com/simpleselect) to put this time-saving tool to work for you today!



## Two-Way Ball Valves

24 Vac, On/Off, Floating or Proportional Control

1/2 to 2-inch

Chrome-plated Ball & Brass Stem or Stainless Steel Ball & Stem

Spring Return or Non-Spring Return



2-Way Ball Valve and Actuator.

### Description

Designed to provide excellent equal percentage flow control, two-way 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

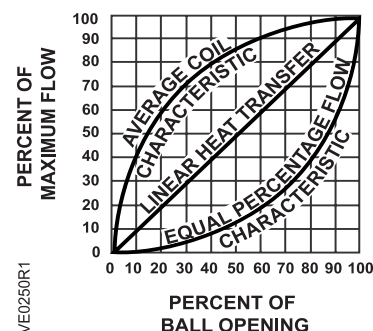
- Universal mounting plate accommodates different actuator sizes
- Variety of ball sizes and flow coefficients minimizes the need for downsizing pipes and accurately controls fluid through coils
- Industry leading close-off
- Actuator and plate can be rotated to facilitate installation and wiring
- Standoffs 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 proportional control
- Spring return or non-spring return
- On/off with dual auxiliary switches available on full port valves with stainless steel ball and stem

### 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 Ball Valve Specifications

**Pressure Class** .....ANSI 250 (600 WOG)  
**Static Pressure/Temp.** ..... 360 psig/250°F  
**Controlled Medium** ..... Water, Glycol Solutions up to 50%  
**Media Temperature** ..... 35 to 250°F (2 to 121°C)  
**Materials**  
 Body ..... Forged Brass ASTM B283, C37700  
 Ball ..... Chrome-plated Brass or Stainless Steel  
 Ball Seals ..... Glass-filled PTFE with EPDM O-Rings  
 Flow Optimizer ..... Glass-filled PTFE  
 Stem ..... Brass or Stainless Steel  
 Stem Seals ..... EPDM O-rings  
**End Connections** ..... NPT Female  
**Angle of Rotation** ..... 0 to 90 Degrees

## Two-Way Ball Valve Assemblies Product Ordering

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Valves

NO 1/2 to 3/4"				Spring Return Actuator 				
				Normally Open				
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P	2P w/ Dual Aux. Switches	2P, 120 V	3P, Floating	2-10 Vdc
				GQD121.1P	GQD126.1P	GQD221.1U	GQD131.1P	GQD151.1P
<b>Chrome-Plated Brass Ball and Brass Stem</b>								
599-10300	1/2	0.4	200	171H-10300	—	—	171J-10300	171K-10300
599-10301		0.63	200	171H-10301	—	—	171J-10301	171K-10301
599-10302		1.0	200	171H-10302	—	—	171J-10302	171K-10302
599-10303		1.6	200	171H-10303	—	—	171J-10303	171K-10303
599-10304		2.5	200	171H-10304	—	—	171J-10304	171K-10304
599-10305		4	200	171H-10305	—	—	171J-10305	171K-10305
599-10306		6.3	200	171H-10306	—	—	171J-10306	171K-10306
599-10307*		10	200	171H-10307*	—	—	171L-10307*	171J-10307*
599-10308	3/4	6.3	200	171H-10308	—	—	171J-10308	171K-10308
599-10309		10	200	171H-10309	—	—	171J-10309	171K-10309
599-10310		16	200	171H-10310	—	—	171J-10310	171K-10310
599-10311*		25	200	171H-10311*	—	—	171L-10311*	171J-10311*
<b>Stainless Steel Ball and Stem</b>								
599-10300S	1/2	0.4	200	171H-10300S	—	—	171J-10300S	171K-10300S
599-10301S		0.63	200	171H-10301S	—	—	171J-10301S	171K-10301S
599-10302S		1.0	200	171H-10302S	—	—	171J-10302S	171K-10302S
599-10303S		1.6	200	171H-10303S	—	—	171J-10303S	171K-10303S
599-10304S		2.5	200	171H-10304S	—	—	171J-10304S	171K-10304S
599-10305S		4	200	171H-10305S	—	—	171J-10305S	171K-10305S
599-10306S		6.3	200	171H-10306S	—	—	171J-10306S	171K-10306S
599-10307S*		10	200	171H-10307S*	171N-10307S*	—	171L-10307S*	171J-10307S*
599-10308S	3/4	6.3	200	171H-10308S	—	—	171J-10308S	171K-10308S
599-10309S		10	200	171H-10309S	—	—	171J-10309S	171K-10309S
599-10310S		16	200	171H-10310S	—	—	171J-10310S	171K-10310S
599-10311S*		25	200	171H-10311S*	171N-10311S*	—	171L-10311S*	171J-10311S*

**Table Notes:**

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


# Two-Way Ball Valve Assemblies Product Ordering

NO 1 to 2"				Spring Return Actuator 				
				Normally Open				
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P	2P w/ Dual Aux. Switches	2P, 120 V	3P, Floating	0-10 Vdc
				GMA121.1P	GMA126.1P	GMA221.1U	GMA131.1P	GMA161.1P
<b>Chrome-Plated Brass Ball and Brass Stem</b>								
599-10312	1	10	200	171E-10312	—	—	171F-10312	171G-10312
599-10313		16	200	171E-10313	—	—	171F-10313	171G-10313
599-10314		25	200	171E-10314	—	—	171F-10314	171G-10314
599-10315		40	200	171E-10315	—	—	171F-10315	171G-10315
599-10316*		63	200	171E-10316*	—	171M-10316*	171F-10316*	171G-10316*
599-10317	1-1/4	16	200	171E-10317	—	—	171F-10317	171G-10317
599-10318		25	200	171E-10318	—	—	171F-10318	171G-10318
599-10319		40	200	171E-10319	—	—	171F-10319	171G-10319
599-10320		63	200	171E-10320	—	—	171F-10320	171G-10320
599-10321*		100	200	171E-10321*	—	171M-10321*	171F-10321*	171G-10321*
599-10322	1-1/2	25	200	171E-10322	—	—	171F-10322	171G-10322
599-10323		40	200	171E-10323	—	—	171F-10323	171G-10323
599-10324		63	200	171E-10324	—	—	171F-10324	171G-10324
599-10325		100	200	171E-10325	—	—	171F-10325	171G-10325
599-10326*		160	200	171E-10326*	—	171M-10326*	171F-10326*	171G-10326*
599-10327	2	40	200	171E-10327	—	—	171F-10327	171G-10327
599-10328		63	200	171E-10328	—	—	171F-10328	171G-10328
599-10329*		100	200	171E-10329*	—	—	171F-10329*	171G-10329*
599-10330		160	200	171E-10330	—	171M-10330	171F-10330	171G-10330
<b>Stainless Steel Ball and Stem</b>								
599-10312S	1	10	200	171E-10312S	—	—	171F-10312S	171G-10312S
599-10313S		16	200	171E-10313S	—	—	171F-10313S	171G-10313S
599-10314S		25	200	171E-10314S	—	—	171F-10314S	171G-10314S
599-10315S		40	200	171E-10315S	—	—	171F-10315S	171G-10315S
599-10316S*		63	200	171E-10316S*	171P-10316S*	171M-10316S*	171F-10316S*	171G-10316S*
599-10317S	1-1/4	16	200	171E-10317S	—	—	171F-10317S	171G-10317S
599-10318S		25	200	171E-10318S	—	—	171F-10318S	171G-10318S
599-10319S		40	200	171E-10319S	—	—	171F-10319S	171G-10319S
599-10320S		63	200	171E-10320S	—	—	171F-10320S	171G-10320S
599-10321S*		100	200	171E-10321S*	171P-10321S*	171M-10321S*	171F-10321S*	171G-10321S*
599-10322S	1-1/2	25	200	171E-10322S	—	—	171F-10322S	171G-10322S
599-10323S		40	200	171E-10323S	—	—	171F-10323S	171G-10323S
599-10324S		63	200	171E-10324S	—	—	171F-10324S	171G-10324S
599-10325S		100	200	171E-10325S	—	—	171F-10325S	171G-10325S
599-10326S*		160	200	171E-10326S*	171P-10326S*	171M-10326S*	171F-10326S*	171G-10326S*
599-10327S	2	40	200	171E-10327S	—	—	171F-10327S	171G-10327S
599-10328S		63	200	171E-10328S	—	—	171F-10328S	171G-10328S
599-10329S*		100	200	171E-10329S*	—	—	171F-10329S*	171G-10329S*
599-10330S*		160	200	171E-10330S*	171P-10330S*	171M-10330S*	171F-10330S*	171G-10330S*

**Table Notes:**

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

# Two-Way Ball Valve Assemblies Product Ordering

NC 1/2 to 3/4"				Spring Return Actuator 				
				Normally Closed				
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P	2P w/ Dual Aux. Switches	2P, 120 V	3P, Floating	2-10 Vdc
				GQD121.1P	GQD126.1P	GQD221.1U	GQD131.1P	GQD151.1P
<b>Chrome-Plated Brass Ball and Brass Stem</b>								
599-10300	1/2	0.4	200	172H-10300	—	—	172J-10300	172K-10300
599-10301		0.63	200	172H-10301	—	—	172J-10301	172K-10301
599-10302		1.0	200	172H-10302	—	—	172J-10302	172K-10302
599-10303		1.6	200	172H-10303	—	—	172J-10303	172K-10303
599-10304		2.5	200	172H-10304	—	—	172J-10304	172K-10304
599-10305		4	200	172H-10305	—	—	172J-10305	172K-10305
599-10306		6.3	200	172H-10306	—	—	172J-10306	172K-10306
599-10307*		10	200	172H-10307*	—	172L-10307*	172J-10307*	172K-10307*
599-10308	3/4	6.3	200	172H-10308	—	—	172J-10308	172K-10308
599-10309		10	200	172H-10309	—	—	172J-10309	172K-10309
599-10310		16	200	172H-10310	—	—	172J-10310	172K-10310
599-10311*		25	200	172H-10311*	—	172L-10311*	172J-10311*	172K-10311*
<b>Stainless Steel Ball and Stem</b>								
599-10300S	1/2	0.4	200	172H-10300S	—	—	172J-10300S	172K-10300S
599-10301S		0.63	200	172H-10301S	—	—	172J-10301S	172K-10301S
599-10302S		1.0	200	172H-10302S	—	—	172J-10302S	172K-10302S
599-10303S		1.6	200	172H-10303S	—	—	172J-10303S	172K-10303S
599-10304S		2.5	200	172H-10304S	—	—	172J-10304S	172K-10304S
599-10305S		4	200	172H-10305S	—	—	172J-10305S	172K-10305S
599-10306S		6.3	200	172H-10306S	—	—	172J-10306S	172K-10306S
599-10307S*		10	200	172H-10307S*	172N-10307S*	172L-10307S*	172J-10307S*	172K-10307S*
599-10308S	3/4	6.3	200	172H-10308S	—	—	172J-10308S	172K-10308S
599-10309S		10	200	172H-10309S	—	—	172J-10309S	172K-10309S
599-10310S		16	200	172H-10310S	—	—	172J-10310S	172K-10310S
599-10311S*		25	200	172H-10311S*	172N-10311S*	172L-10311S*	172J-10311S*	172K-10311S*


**Table Notes:**

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

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Valves


# Two-Way Ball Valve Assemblies Product Ordering

NC 1 to 2"				Spring Return Actuator 				
Normally Closed								
2-Way Valve Body Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	2P	2P w/ Dual Aux. Switches	2P, 120 V	3P, Floating	0-10 Vdc
				GMA121.1P	GMA126.1P	GMA221.1U	GMA131.1P	GMA161.1P
<b>Chrome-Plated Brass Ball and Brass Stem</b>								
599-10312	1	10	200	172E-10312	—	—	172F-10312	172G-10312
599-10313		16	200	172E-10313	—	—	172F-10313	172G-10313
599-10314		25	200	172E-10314	—	—	172F-10314	172G-10314
599-10315		40	200	172E-10315	—	—	172F-10315	172G-10315
599-10316*		63	200	172E-10316*	—	172M-10316*	172F-10316*	172G-10316*
599-10317	1-1/4	16	200	172E-10317	—	—	172F-10317	172G-10317
599-10318		25	200	172E-10318	—	—	172F-10318	172G-10318
599-10319		40	200	172E-10319	—	—	172F-10319	172G-10319
599-10320		63	200	172E-10320	—	—	172F-10320	172G-10320
599-10321*		100	200	172E-10321*	—	172M-10321*	172F-10321*	172G-10321*
599-10322	1-1/2	25	200	172E-10322	—	—	172F-10322	172G-10322
599-10323		40	200	172E-10323	—	—	172F-10323	172G-10323
599-10324		63	200	172E-10324	—	—	172F-10324	172G-10324
599-10325		100	200	172E-10325	—	—	172F-10325	172G-10325
599-10326*		160	200	172E-10326*	—	172M-10326*	172F-10326*	172G-10326*
599-10327	2	40	200	172E-10327	—	—	172F-10327	172G-10327
599-10328		63	200	172E-10328	—	—	172F-10328	172G-10328
599-10329*		100	200	172E-10329*	—	—	172F-10329*	172G-10329*
599-10330*		160	200	172E-10330*	—	172M-10330*	172F-10330*	172G-10330*
<b>Stainless Steel Ball and Stem</b>								
599-10312S	1	10	200	172E-10312S	—	—	172F-10312S	172G-10312S
599-10313S		16	200	172E-10313S	—	—	172F-10313S	172G-10313S
599-10314S		25	200	172E-10314S	—	—	172F-10314S	172G-10314S
599-10315S		40	200	172E-10315S	—	—	172F-10315S	172G-10315S
599-10316S*		63	200	172E-10316S*	172P-10316S*	172M-10316S*	172F-10316S*	172G-10316S*
599-10317S	1-1/4	16	200	172E-10317S	—	—	172F-10317S	172G-10317S
599-10318S		25	200	172E-10318S	—	—	172F-10318S	172G-10318S
599-10319S		40	200	172E-10319S	—	—	172F-10319S	172G-10319S
599-10320S		63	200	172E-10320S	—	—	172F-10320S	172G-10320S
599-10321S*		100	200	172E-10321S*	172P-10321S*	172M-10321S*	172F-10321S*	172G-10321S*
599-10322S	1-1/2	25	200	172E-10322S	—	—	172F-10322S	172G-10322S
599-10323S		40	200	172E-10323S	—	—	172F-10323S	172G-10323S
599-10324S		63	200	172E-10324S	—	—	172F-10324S	172G-10324S
599-10325S		100	200	172E-10325S	—	—	172F-10325S	172G-10325S
599-10326S*		160	200	172E-10326S*	172P-10326S*	172M-10326S*	172F-10326S*	172G-10326S*
599-10327S	2	40	200	172E-10327S	—	—	172F-10327S	172G-10327S
599-10328S		63	200	172E-10328S	—	—	172F-10328S	172G-10328S
599-10329S*		100	200	172E-10329S*	—	—	172F-10329S*	172G-10329S*
599-10330S*		160	200	172E-10330S*	172P-10330S*	172M-10330S*	172F-10330S*	172G-10330S*

**Table Notes:**

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


# 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	
				3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires	3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires
				GDE131.1P	GDE131.1Q	GDE161.1P	GDE161.1Q
<b>Chrome-Plated Brass Ball and Brass Stem</b>							
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*
<b>Stainless Steel Ball and Stem</b>							
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	200	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.

# Two-Way Ball Valve Assemblies Product Ordering

NO 1-1/2 to 2"				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	
				3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires	3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires
				GLB131.1P	GLB131.1Q	GLB161.1P	GLB161.1Q
<b>Chrome-Plated Brass Ball and Brass Stem</b>							
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
<b>Stainless Steel Ball and Stem</b>							
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.

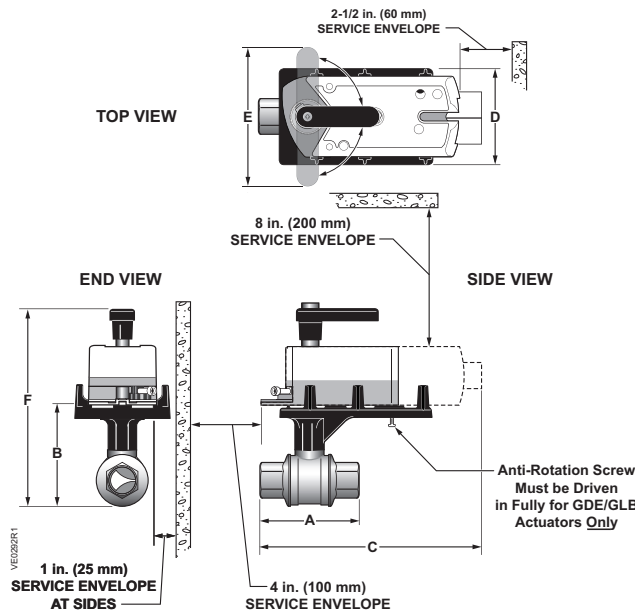
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Valves



# Dimensions and Weights

## Two-Way Ball Valves with Actuator Dimensions and Service Envelope



Dimensions shown in inches (mm).

A-204

Valves

Part No.	Valve Size (mm)	Flow Rate Cv Range	A	C	C	C	F	Weight lbs (kg)
			Length	Length* Actuator Codes 171A-D, 173A-D GDE/GLB	Length* Actuator Codes 171H, J, K, L, N GQD	Length* Actuator Codes 171E, F, G, M, P 172E, F, G, M, P 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)	4.69 (2.13)

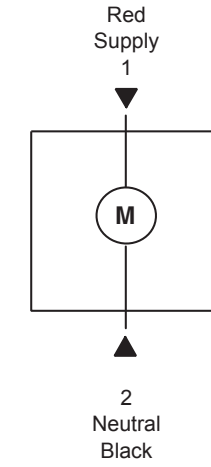
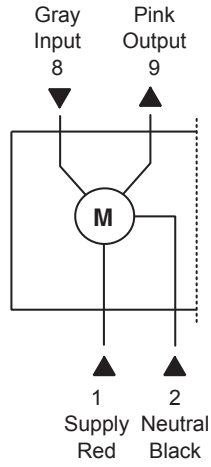
**Table Notes:**

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

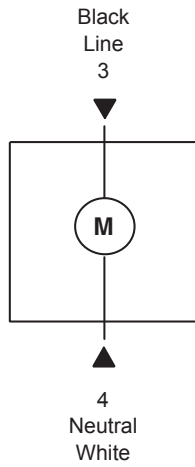
1. All dimensions are in inches (mm) and weights are in pounds (kg).
2. Dimension "D", Depth, is 3.7 inches (94.5 mm).
3. Dimension "E", Handle, is 5.3 inches (136 mm).



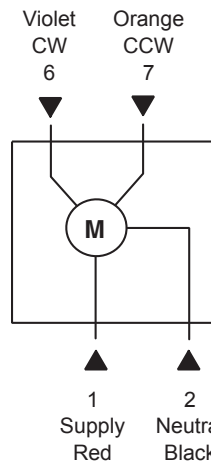
# Wiring Diagrams



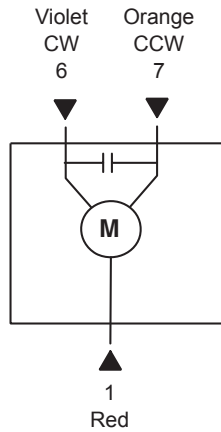
**2-position, 24 Vac  
(GMA, GQD 2-position)**



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



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



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



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## Three-Way Ball Valves

24 Vac, On/Off, Floating or Proportional Control

1/2 to 2-inch

Chrome-plated Ball & Brass Stem or Stainless Steel Ball & Stem

Spring Return or Non-Spring Return



3-Way Ball Valve and Actuator.

### Description

Designed to provide excellent equal percentage flow control, Three-way 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

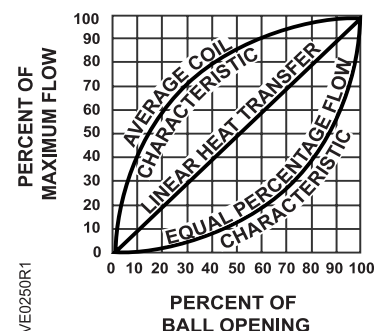
- Universal mounting plate accommodates different actuator sizes
- Variety of ball sizes and flow coefficients minimizes the need for downsizing pipes and accurately controls fluid through coils
- Industry leading close-off
- Actuator and plate can be rotated to facilitate installation and wiring
- Standoffs 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 proportional control
- Spring return or non-spring return

### 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.

# Three-Way Ball Valve Specifications

**Pressure Class** ..... ANSI 250 (600 WOG)  
**Static Pressure/Temp.** ..... 360 psig/250°F  
**Controlled Medium** ..... Water, Glycol Solutions up to 50%  
**Media Temperature**  
 1/2 to 1-1/4" ..... 35 to 250°F (2 to 121°C)  
 1-1/2 to 2" ..... 35 to 230°F (2 to 110°C)  
**Materials**  
 Body ..... Forged Brass ASTM B283, C37700  
 Ball ..... Chrome-plated Brass or Stainless Steel  
 Ball Seals ..... Glass-filled PTFE with EPDM O-Rings  
 Flow Optimizer ..... Glass-filled PTFE  
 Stem ..... Brass or Stainless Steel  
 Stem Seals ..... EPDM O-rings

**End Connections** ..... NPT Female  
**Angle of Rotation** ..... 0 to 90 Degrees  
**Maximum Operating Differential Pressure**  
 1/2 to 1-1/2" ..... 60 psi  
 2" ..... 35 psi  
**Close-off Ratings (per ANSI/FCI 70-2)**  
 For A → AB ..... ANSI Class IV (0.01%)  
 For B → AB ..... ANSI Class III (0.1%)

# Three-Way Ball Valve Assemblies Product Ordering

Mixing/Diverting 1/2 to 2"				Spring Return Actuator 		
				2-Position	Floating	0 to 10 Vdc
				3-foot (.9m) Wires		
3-Way Ball Valve Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	GMA121.1P	GMA131.1P	GMA161.1P
<b>Chrome-Plated Brass Ball and Brass Stem</b>						
599-10350	1/2	0.4	200	171E-10350	171F-10350	171G-10350
599-10351		0.63	200	171E-10351	171F-10351	171G-10351
599-10352		1.0	200	171E-10352	171F-10352	171G-10352
599-10353		1.6	200	171E-1035S	171F-10353	171G-10353
599-10354		2.5	200	171E-10354	171F-10354	171G-10354
599-10355		4	200	171E-1035S	171F-10355	171G-10355
599-10356		6.3	200	171E-10356	171F-10356	171G-10356
599-10357*		10	200	171E-10357*	171F-10357*	171G-10357*
599-10358	3/4	6.3	200	171E-10358	171F-10358	171G-10358
599-10359		10	200	171E-10359	171F-10359	171G-10359
599-10360*		16	200	171E-10360*	171F-10360*	171G-10360*
599-10361	1	10	200	171E-10361	171F-10361	171G-10361
599-10362		16	200	171E-10362	171F-10362	171G-10362
599-10363*		25	200	171E-10363*	171F-10363*	171G-10363*
599-10364	1-1/4	16	200	171E-10364	171F-10364	171G-10364
599-10365		25	200	171E-10365	171F-10365	171G-10365
599-10366*		40	200	171E-10366*	171F-10366*	171G-10366*
599-10367	1-1/2	25	200	171E-10367	171F-10367	171G-10367
599-10368		40	200	171E-10368	171F-10368	171G-10368
599-10369*		63	200	171E-10369*	171F-10369*	171G-10369*
599-10370	2	40	200	171E-10370	171F-10370	171G-10370
599-10371		63	200	171E-10371	171F-10371	171G-10371
599-10372*		100	200	171E-10372*	171F-10372*	171G-10372*


**Table Note:**

\*Denotes a full-port valve with no flow optimizer insert.  
**NOTE:** Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2", 35 psi for 2"

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Valves

# Three-Way Ball Valve Assemblies Product Ordering


Mixing/Diverting 1/2 to 2"				Spring Return Actuator 		
				2-Position	Floating	0 to 10 Vdc
				3-foot (.9m) Wires		
3-Way Ball Valve Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	GMA121.1P	GMA131.1P	GMA161.1P
<b>Stainless Steel Ball and Stem</b>						
599-10350S	1/2	0.4	200	171E-10350S	171F-10350S	171G-10350S
599-10351S		0.63	200	171E-10351S	171F-10351S	171G-10351S
599-10352S		1.0	200	171E-10352S	171F-10352S	171G-10352S
599-10353S		1.6	200	171E-10353S	171F-10353S	171G-10353S
599-10354S		2.5	200	171E-10354S	171F-10354S	171G-10354S
599-10355S		4	200	171E-10355S	171F-10355S	171G-10355S
599-10356S		6.3	200	171E-10356S	171F-10356S	171G-10356S
599-10357S*		10	200	171E-10357S*	171F-10357S*	171G-10357S*
599-10358S	3/4	6.3	200	171E-10358S	171F-10358S	171G-10358S
599-10359S		10	200	171E-10359S	171F-10359S	171G-10359S
599-10360S*		16	200	171E-10360S*	171F-10360S*	171G-10360S*
599-10361S	1	10	200	171E-10361S	171F-10361S	171G-10361S
599-10362S		16	200	171E-10362S	171F-10362S	171G-10362S
599-10363S*		25	200	171E-10363S*	171F-10363S*	171G-10363S*
599-10364S	1-1/4	16	200	171E-10364S	171F-10364S	171G-10364S
599-10365S		25	200	171E-10365S	171F-10365S	171G-10365S
599-10366S*		40	200	171E-10366S*	171F-10366S*	171G-10366S*
599-10367S	1-1/2	25	200	171E-10367S	171F-10367S	171G-10367S
599-10368S		40	200	171E-10368S	171F-10368S	171G-10368S
599-10369S*		63	200	171E-10369S*	171F-10369S*	171G-10369S*
599-10370S	2	40	200	171E-10370S	171F-10370S	171G-10370S
599-10371S		63	200	171E-10371S	171F-10371S	171G-10371S
599-10372S*		100	200	171E-10372S*	171F-10372S*	171G-10372S*

**Table Note:**

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

**NOTE:** Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2" 35 psi for 2".

# Three-Way Ball Valve Assemblies Product Ordering

Mixing/Diverting 1/2 to 2"				Non-Spring Return Actuator 			
				Floating		0 to 10 Vdc	
3-Way Ball Valve Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires	3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires
				GDE131.1P (171A) and GLB131.1P (171B)	GDE131.1Q (173A) and GLB131.1Q (173B)	GDE161.1P (171C) and GLB161.1P (171D)	GDE161.1Q (173C) and GLB161.1Q (173D)
<b>Chrome-Plated Brass Ball and Brass Stem</b>							
599-10350	1/2	0.4	200	171A-10350	173A-10350	171C-10350	173C-10350
599-10351		0.63	200	171A-10351	173A-10351	171C-10351	173C-10351
599-10352		1.0	200	171A-10352	173A-10352	171C-10352	173C-10352
599-10353		1.6	200	171A-10353	173A-10353	171C-10353	173C-10353
599-10354		2.5	200	171A-10354	173A-10354	171C-10354	173C-10354
599-10355		4	200	171A-10355	173A-10355	171C-10355	173C-10355
599-10356		6.3	200	171A-10356	173A-10356	171C-10356	173C-10356
599-10357*		10	200	171A-10357*	173A-10357*	171C-10357*	173C-10357*
599-10358	3/4	6.3	200	171A-10358	173A-10358	171C-10358	173C-10358
599-10359		10	200	171A-10359	173A-10359	171C-10359	173C-10359
599-10360*		16	200	171A-10360*	173A-10360*	171C-10360*	173C-10360*
599-10361	1	10	200	171A-10361	173A-10361	171C-10361	173C-10361
599-10362		16	200	171A-10362	173A-10362	171C-10362	173C-10362
599-10363*		25	200	171A-10363*	173A-10363*	171C-10363*	173C-10363*
599-10364	1-1/4	16	200	171A-10364	173A-10364	171C-10364	173C-10364
599-10365		25	200	171A-10365	173A-10365	171C-10365	173C-10365
599-10366*		40	200	171A-10366*	173A-10366*	171C-10366*	173C-10366*
599-10367	1-1/2	25	200	171B-10367	173B-10367	171D-10367	173D-10367
599-10368		40	200	171B-10368	173B-10368	171D-10368	173D-10368
599-10369*		63	200	171B-10369*	173B-10369*	171D-10369*	173D-10369*
599-10370	2	40	200	171B-10370	173B-10370	171D-10370	173D-10370
599-10371		63	200	171B-10371	173B-10371	171D-10371	173D-10371
599-10372*		100	200	171B-10372*	173B-10372*	171D-10372*	173D-10372*



**Table Note:**

\*Denotes a full-port valve with no flow optimizer insert.  
**NOTE:** Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2", 35 psi for 2"

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Valves

# Three-Way Ball Valve Assemblies Product Ordering

Mixing/Diverting 1/2 to 2" 				Non-Spring Return Actuator 			
				Floating		0 to 10 Vdc	
3-Way Ball Valve Part No.	Valve Size in.	Flow Rate Cv	Close Off psi	3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires	3-foot (.9m) Wires	Conduit Adapter & 6-foot (1.8m) Wires
				GDE131.1P (171A) and GLB131.1P (171B)	GDE131.1Q (173A) and GLB131.1Q (173B)	GDE161.1P (171C) and GLB161.1P (171D)	GDE161.1Q (173C) and GLB161.1Q (173D)
<b>Stainless Steel Ball and Stem</b>							
599-10350S	1/2	0.4	200	171A-10350S	173A-10350S	171C-10350S	173C-10350S
599-10351S		0.63	200	171A-10351S	173A-10351S	171C-10351S	173C-10351S
599-10352S		1.0	200	171A-10352S	173A-10352S	171C-10352S	173C-10352S
599-10353S		1.6	200	171A-10353S	173A-10353S	171C-10353S	173C-10353S
599-10354S		2.5	200	171A-10354S	173A-10354S	171C-10354S	173C-10354S
599-10355S		4	200	171A-10355S	173A-10355S	171C-10355S	173C-10355S
599-10356S		6.3	200	171A-10356S	173A-10356S	171C-10356S	173C-10356S
599-10357S*		10	200	171A-10357S*	173A-10357S*	171C-10357S*	173C-10357S*
599-10358S	3/4	6.3	200	171A-10358S	173A-10358S	171C-10358S	173C-10358S
599-10359S		10	200	171A-10359S	173A-10359S	171C-10359S	173C-10359S
599-10360S*		16	200	171A-10360S*	173A-10360S*	171C-10360S*	173C-10360S*
599-10361S	1	10	200	171A-10361S	173A-10361S	171C-10361S	173C-10361S
599-10362S		16	200	171A-10362S	173A-10362S	171C-10362S	173C-10362S
599-10363S*		25	200	171A-10363S*	173A-10363S*	171C-10363S*	173C-10363S*
599-10364S	1-1/4	16	200	171A-10364S	173A-10364S	171C-10364S	173C-10364S
599-10365S		25	200	171A-10365S	173A-10365S	171C-10365S	173C-10365S
599-10366S*		40	200	171A-10366S*	173A-10366S*	171C-10366S*	173C-10366S*
599-10367S	1-1/2	25	200	171B-10367S	173B-10367S	171D-10367S	173D-10367S
599-10368S		40	200	171B-10368S	173B-10368S	171D-10368S	173D-10368S
599-10369S*		63	200	171B-10369S*	173B-10369S*	171D-10369S*	173D-10369S*
599-10370S	2	40	200	171B-10370S	173B-10370S	171D-10370S	173D-10370S
599-10371S		63	200	171B-10371S	173B-10371S	171D-10371S	173D-10371S
599-10372S*		100	200	171B-10372S*	173B-10372S*	171D-10372S*	173D-10372S*

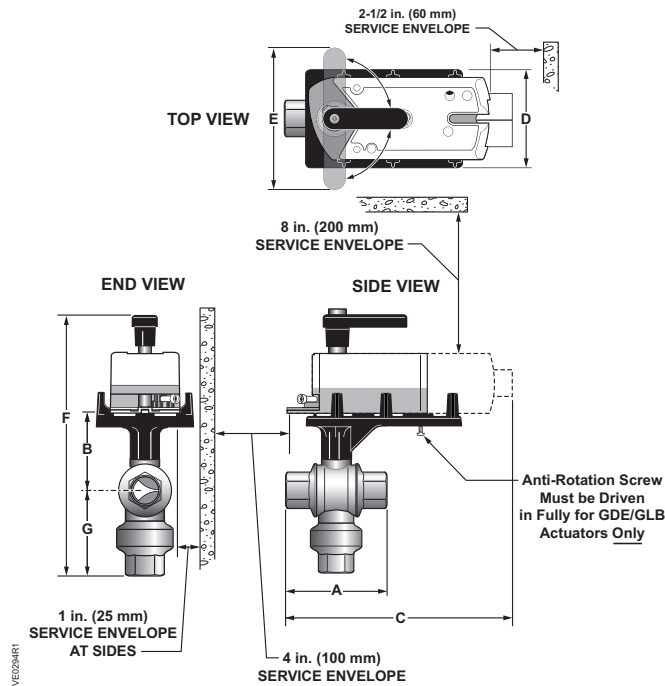
**Table Note:**

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

**NOTE:** Maximum operating differential pressure = 60 psi for 1/2" to 1-1/2", 35 psi for 2"

# Dimensions and Weights

## Three-Way Ball Valves with Actuator Dimensions and Service Envelope



Dimensions shown in inches (mm).

Part No.	Line Size Inches (mm)	A	C	C	B	G	F	Weight lbs (kg)
		Length	Length* Actuator Codes 171A-D 173A-D	Length* Actuator Codes 171E-G	Height	Height	Height	
599-10350(S) to 599-10357(S)	1/2" (15 mm)	2-9/16" (65 mm)	6-11/16" (170 mm)	8-3/8" (213 mm)	3-1/4" (83 mm)	1-3/8" (35 mm)	8-5/8" (219 mm)	1.50 lb. (0.68 kg)
599-10358(S)	3/4" (20 mm)	2-3/4" (70 mm)	6-11/16" (170 mm)	8-3/8" (213 mm)	3-1/4" (83 mm)	1-3/8" (35 mm)	8-5/8" (219 mm)	1.60 lb. (0.73 kg)
599-10359(S) to 599-10360(S)		3-1/8" (79 mm)	6-11/16" (170 mm)	8-3/8" (213 mm)	3-1/4" (83 mm)	1-11/16" (43 mm)	8-5/8" (219 mm)	2.20 lb. (1.00 kg)
599-10361(S)	1" (25 mm)	3-1/4" (83 mm)	6-11/16" (170 mm)	8-3/8" (213 mm)	3-3/4" (95 mm)	1-11/16" (43 mm)	9-1/8" (232 mm)	2.37 lb. (1.08 kg)
599-10362(S) 599-10363(S)		3-13/16" (77 mm)	6-15/16" (176 mm)	8-5/8" (219 mm)	4" (102 mm)	2" (51 mm)	9-5/8" (244 mm)	2.74 lb. (1.24 kg)
599-10364(S) 599-10365(S)	1-1/4" (32 mm)	3-5/8" (92 mm)	6-7/8" (174 mm)	8-9/16" (217 mm)	4" (102 mm)	2-1/8" (54 mm)	9-3/4" (248 mm)	2.85 lb. (1.29 kg)
599-10366(S)		3-15/16" (100 mm)	7" (178 mm)	8-11/16" (221 mm)	4" (102 mm)	2-5/16" (59 mm)	10-1/4" (260 mm)	4.30 lb. (1.95 kg)
599-10367(S) 599-10368(S)	1-1/2" (40 mm)	3-15/16" (100 mm)	7" (178 mm)	8-11/16" (221 mm)	4" (102 mm)	2-5/16" (59 mm)	10-1/4" (260 mm)	3.90 lb. (1.61 kg)
599-10369(S)		4-5/8" (117 mm)	7-1/4" (184 mm)	7-7/8" (200 mm)	4-1/2" (114 mm)	2-13/16" (71 mm)	11" (279 mm)	7.83 lb. (17.16 kg)
599-10370(S)	2" (50 mm)	4-5/8" (117 mm)	7-1/4" (184 mm)	8-11/16" (221 mm)	4-1/2" (114 mm)	2-7/8" (73 mm)	10-3/8" (264 mm)	6.70 lb. (3.04 kg)
599-10371(S) 599-10372(S)		4-5/8" (117 mm)	7-1/4" (184 mm)	9-1/16" (230 mm)	5-3/4" (146 mm)	2-7/8" (73 mm)	11-3/16" (284 mm)	6.70 lb. (3.04 kg)

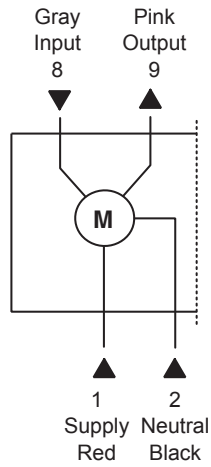
**Table Notes:**

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

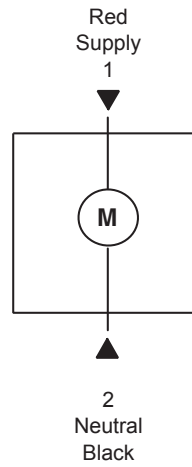
1. All dimensions are in inches (mm) and weights are in pounds (kg).
2. Dimension "D", Depth, is 3 inches (76 mm).
3. Dimension "E", Handle, is 4 inches (102 mm).



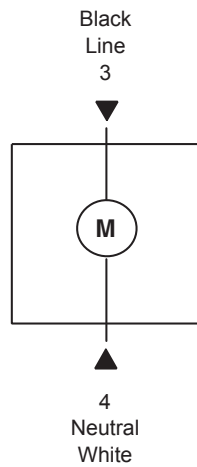
# Wiring Diagrams



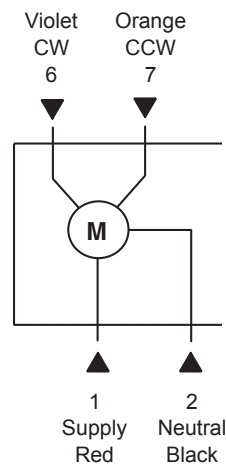
**Modulating (0 to 10 Vdc), 24 Vac  
(Applies to all)**



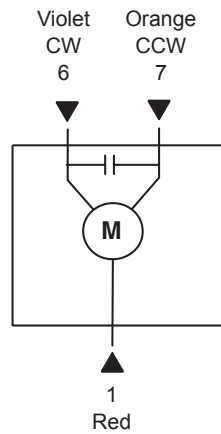
**2-position, 24 Vac  
(GMA, GQD 2-position)**



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



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



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



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## Magnetic Valves

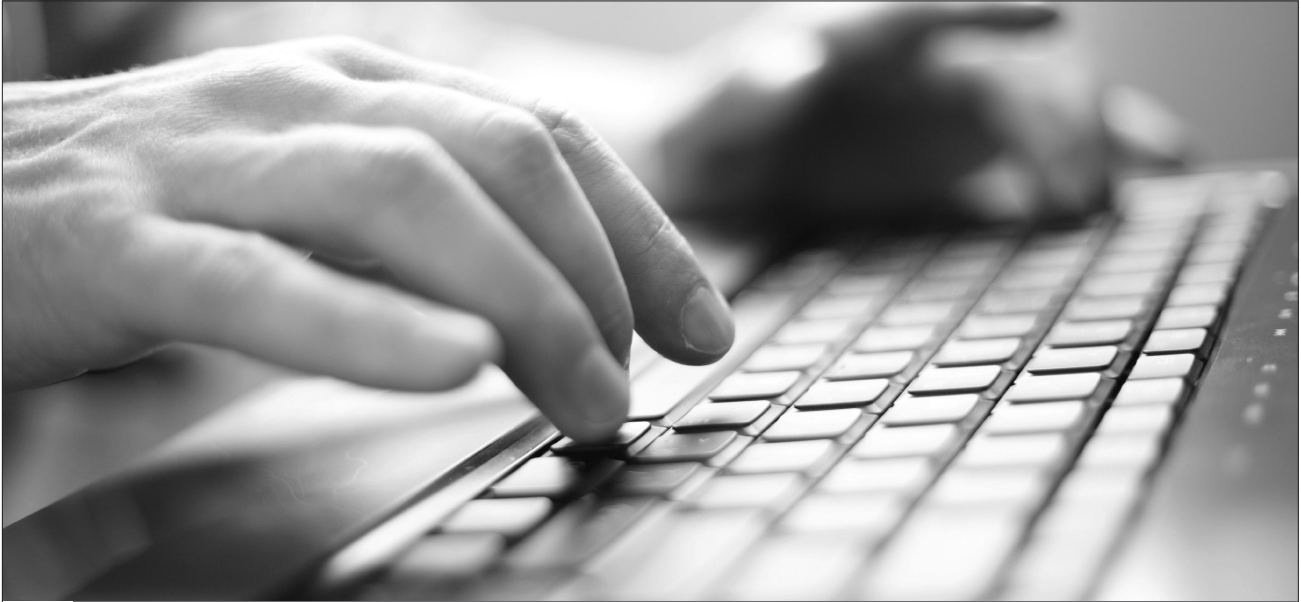


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Valves

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.



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# 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

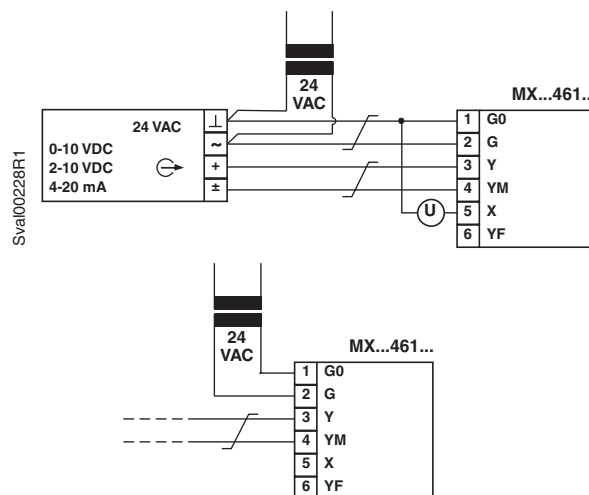
- Fast positioning time (< 2 seconds)
- 1000:1 resolution
- Magnetic actuation
- No maintenance
- Manual override
- Auto calibration
- Dip switch selectable signal input (0 to 10 V or 4 to 20 mA)
- Dip switch selectable flow characteristic
- Built-in position feedback

## Applications

The Magnetic MX.. Mixing Valve is designed for modulating control of chilled water and 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

# Magnetic Control Valve Specifications

**Operating Voltage** ..... 24 Vac +20%, -15%  
**Typical Power Consumption**  
 1/2 - 1-1/4" ..... 5w  
 1-1/2 - 2-1/2" ..... 6w  
**Frequency** ..... 45-65 Hz  
**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. 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 (Selectable)** ..... 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

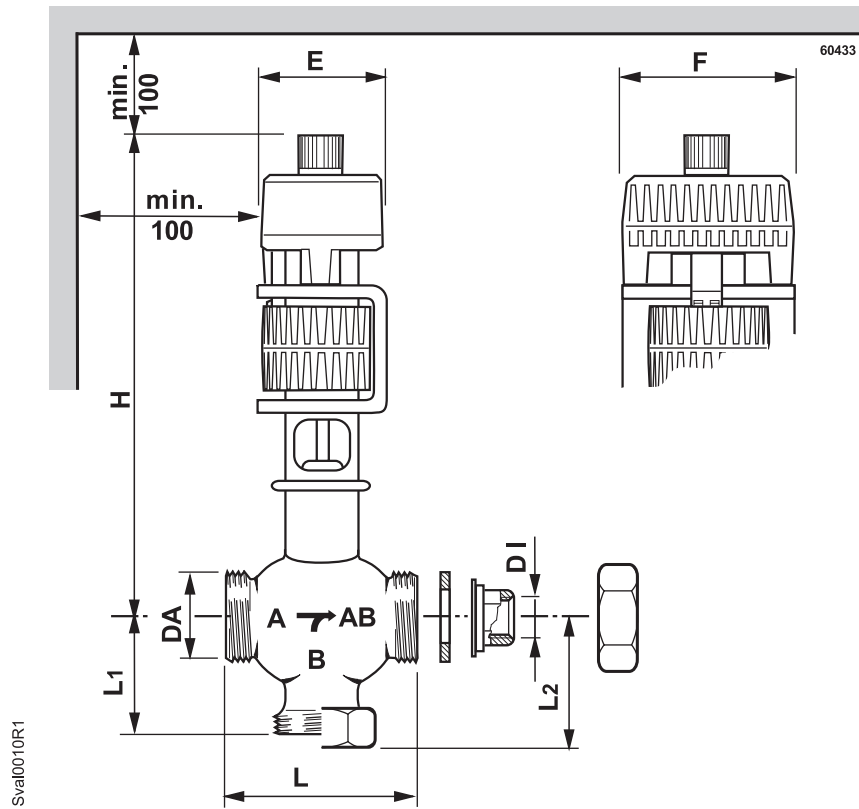
Valve Size	Cv	Part No.
<b>NPT Union</b>		
1/2"	0.7	MXG461.15-0.6U
1/2"	1.7	MXG461.15-1.5U
1/2"	3.5	MXG461.15-3.0U
3/4"	5.8	MXG461.20-5.0U
1"	9.3	MXG461.25-8.0U
1-1/4"	14	MXG461.32-12U
1-1/2"	23	MXG461.40-20U
2"	35	MXG461.50-30U
<b>Flanged</b>		
2-1/2"	58	MXF461.65-50U*

**Table Note:**

\*No blanking flange

# 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:**

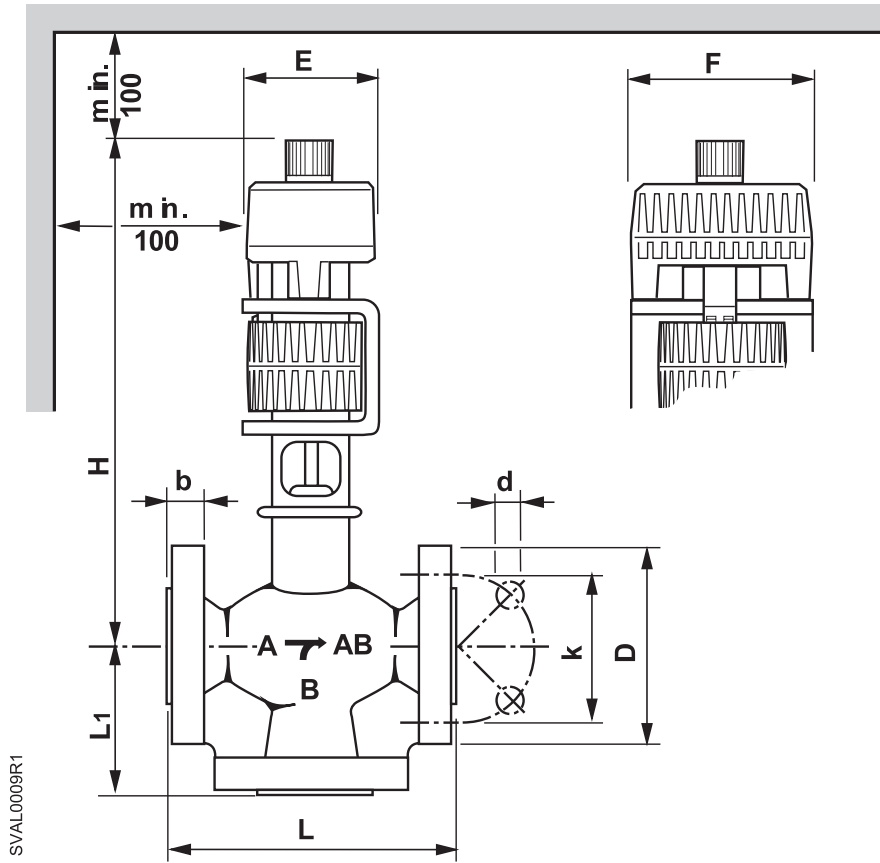
\*When used as a straight-through valve

# Dimensions and Weights

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

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Valves



Dimensions shown in inches (mm).

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.

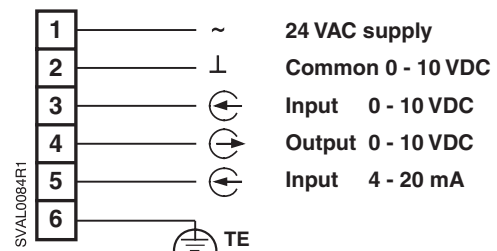
### Features

- 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 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



## 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. 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

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## M3P...FY Valves with ZM Module Product Ordering

Description	Cv	Part No.
<b>Without Flanges</b>		
3" 3-way	93	M3P80FY
4" 3-way	152	M3P100FY
<b>With Flanges</b>		
3" 2-way	93	M3P80FY/2BN
4" 2-way	152	M3P100FY/2BN
3" 3-way	93	M3P80FY/3BN
4" 3-way	152	M3P100FY/3BN

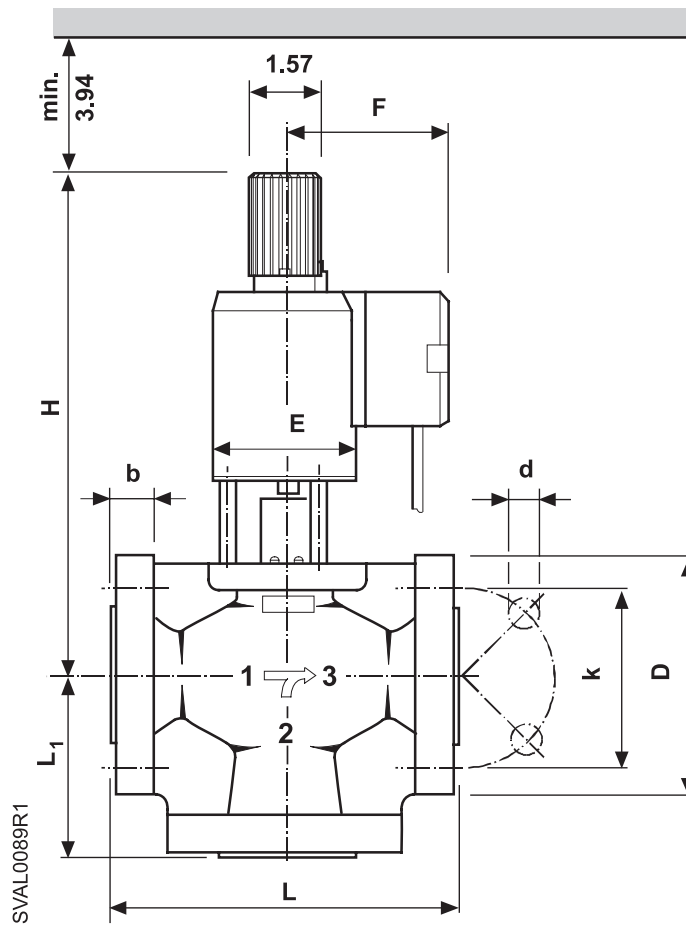
Valves

Accessories & Service Kits

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# Dimensions and Weights

## M3P..FY Control Valve

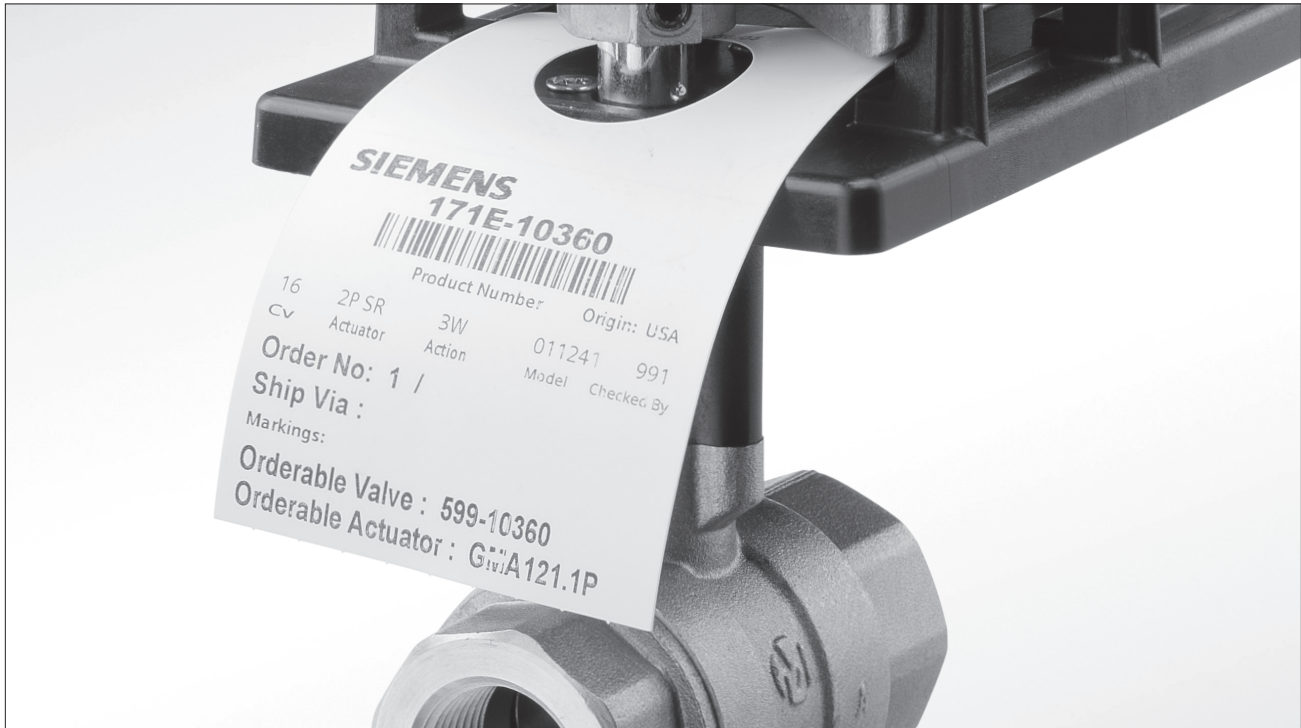


Dimensions shown in inches (mm).

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



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## 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

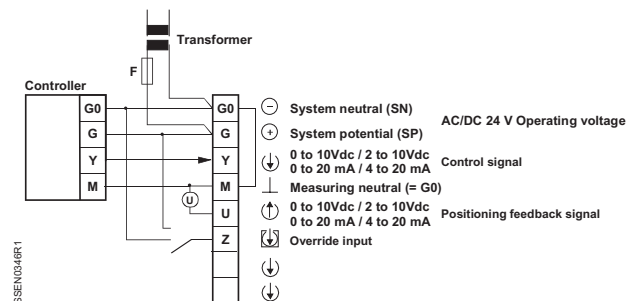
- Fast positioning time (< 2 seconds)
- Selectable valve characteristic: Equal percentage or linear
- Selectable standard interface: 0/2 to 10 Vdc or 0/4 to 20 mA
- High resolution (>1000:1)
- High rangeability
- Wear-free inductive stroke measurement
- Spring return fails closed when de-energized
- 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 fails 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 Only ..... Class 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 Pressure<sup>1</sup> ..... 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 mm<sup>2</sup> Min. Cross-sectional Area<sup>3</sup>)

## 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

..... 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 Linear<sup>2</sup>

## Environmental Protection

..... NEMA Type 1

## Notes:

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

<sup>2</sup>Can be selected via DIP switch.

<sup>3</sup>In case of strong vibrations, use high-flex stranded wires.

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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

Accessories & Service Kits

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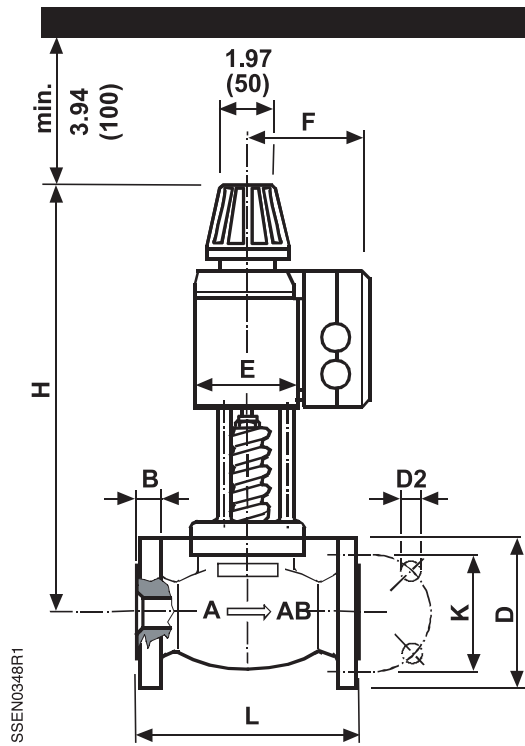
# MVF461H Modulating Control Valve Product Ordering

Valve Size (in)	Cv	Part No.
<b>ISO Flanges Without Adapters</b>		
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
<b>With NPT Adapter Flanges</b>		
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
<b>With Weld Adapter Flanges</b>		
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.

# Dimensions and Weights



Dimensions shown in inches (mm).

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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)	4 x 0.55 (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)	4 x 0.55 (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)	4 x 0.55 (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)	4 x 0.55 (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)	4 x 0.55 (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)	4 x 0.71 (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)	4 x 0.71 (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)	4 x 0.71 (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

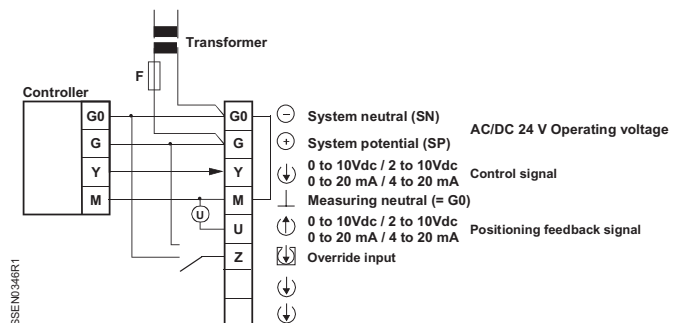
- Fast positioning time (< 2 seconds)
- Selectable valve characteristic: Equal percentage or linear
- Selectable control signal: 0/2 to 10 Vdc or 0/4 to 20 mA
- High resolution (>1000:1)
- High rangeability
- Wear-free inductive stroke measurement
- Spring return A → AB closed when de-energized
- Positioning 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 Only ..... Class 2 (SELV, PELV)

## 24 Vac

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

## 24 Vdc

Operating Voltage ..... 20 to 30 Vdc

## Functional Data of Actuator

### Input

Positioning Signal Y ..... 0/2 to 10 Vdc or 0/4 to 20mA  
 Impedance  
     0/2 to 10Vdc ..... 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)  
 Operating Pressure  $p_{e,max}^1$  ..... 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 Temperature<sup>2</sup> ..... -4 to 248°F (-20 to 120°C)  
 Valve Characteristic<sup>3</sup> ..... Equal Percentage or Linear, Optimized  
     Near the Closing Point

Resolution ..... 1:1000

Type of Operation ..... Modulating

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

Orientation ..... Upright to Horizontal

Positioning Time ..... < 2 Seconds

## Materials

Body ..... Red Bronze  
 Cover Flange ..... Red Bronze  
 Seat/Inner Valve ..... Stainless Steel

## Packing

Normal Duty ..... EPDM (O-ring)

Pipe Connections ..... Screwed 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 Area<sup>4</sup> ..... 18 ga. AWG  
 Max. Cable Length ..... Refer to Sizing Table.

## 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

## 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 Characteristics ..... Equal Percentage or Linear

## Notes:

- <sup>1</sup> Tested at 1.5 x PN (24 bar), similar to DIN 3230-3
- <sup>2</sup> For medium temperatures <32°F (0°C), the Z366 stem heating element is required.
- <sup>3</sup> Can be selected via DIP switch.
- <sup>4</sup> In case of strong vibrations, use high-flex stranded wires.

## 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

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Valves

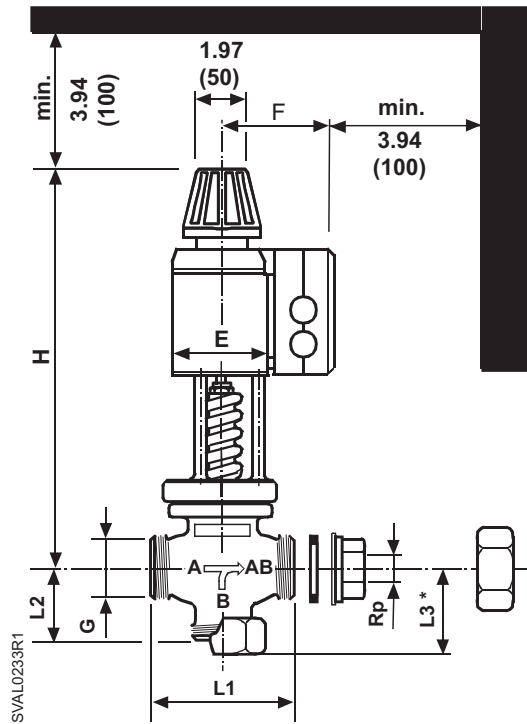
## MXG461B Modulating Control Valve Product Ordering

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 screwed fittings and gaskets are supplied with these valves.

# Dimensions and Weights



Dimensions shown in inches (mm).

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Valves

Part No.	Line Size In. (mm)	RP	G (in)	L1	L2	L3	H	E	F	Weight lb. (kg)
MXG461B15-0.6	1/2 (15)	1/2	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	1/2 (15)	1/2	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	1/2 (15)	1/2	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	3/4 (20)	3/4	G1-1/4B	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	1 (25)	1	G1-1/2B	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	1-1/4 (32)	1-1/4	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	1-1/2 (40)	1-1/2	G2-1/4B	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	2 (50)	2	G2-3/4B	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)

## Angle/Flared/Sequence/Changeover Service Valves



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Valves

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



## Online order tracking

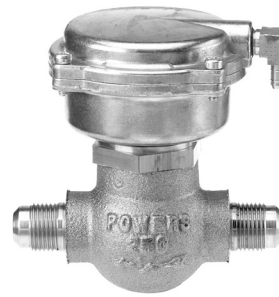
This handy online feature stores all your past and current orders online for quick and easy reference. The Order Tracker function lets you access information such as:

- Ordered By
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**To view your history and status, register online at [www.usa.siemens.com/buildingtechnologiesonlineordering](http://www.usa.siemens.com/buildingtechnologiesonlineordering)**

## Two-Way Valves

1/2" 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

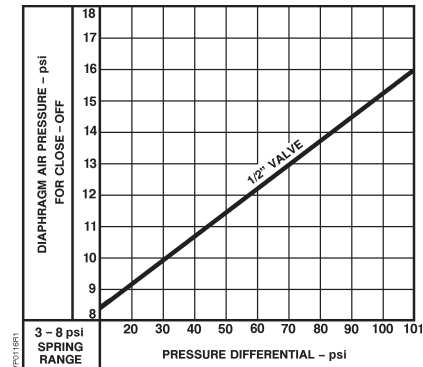
### Applications

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.

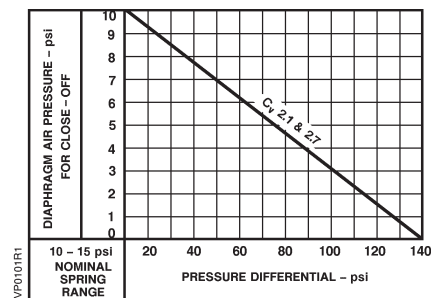
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Valves

### Nominal Close-off Ratings



Normally Open.



Normally Closed.





## Three-Way Water Mixing Valves

*1/2" Flared Type  
Mixing*



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.

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Valves

## 656 Powermite Three-Way Specifications

Valve Size .....	1/2" (15 mm)	Effective Diaphragm Area .....	3.4 in. <sup>2</sup> (22 cm <sup>2</sup> )
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)		

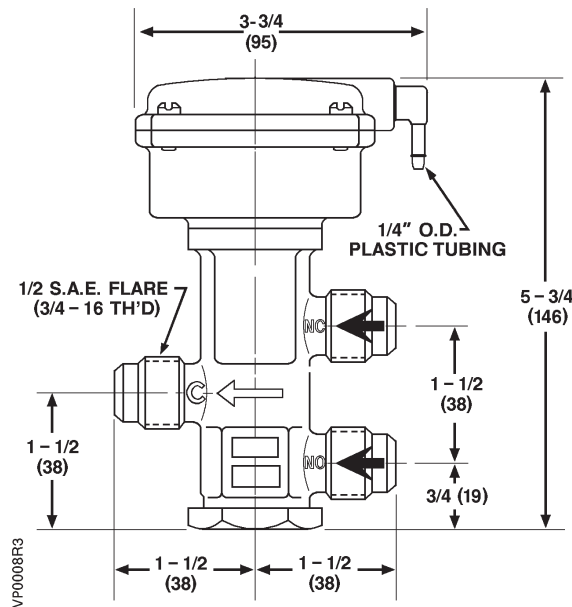
## 656 Powermite Three-Way Product Ordering

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

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Valves

## Dimensions and Weights



Dimensions shown in inches (mm).

## Two-Way Angle Union Valves

1/2 to 3/4" Angle Female x Union Male  
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

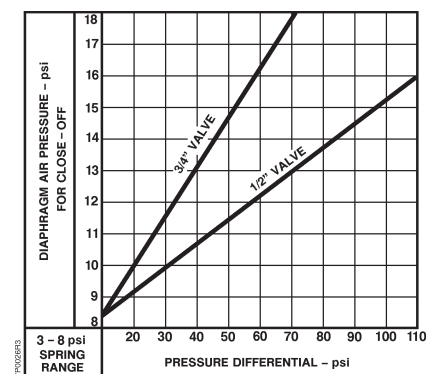
### Applications

The Powermite 656 Series Angle Union Valves are recommended for control of hot or chilled water or steam 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.

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Valves

### Nominal Close-off Ratings





## Two-Way Angle Union Valves

*1 to 1-1/4" Angle Female x Union Male  
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.

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Valves



## Sequence and Changeover Valves

1/2" Flared Type



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
- 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.

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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							

UP0006951

## 658 Powertop Specifications

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

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

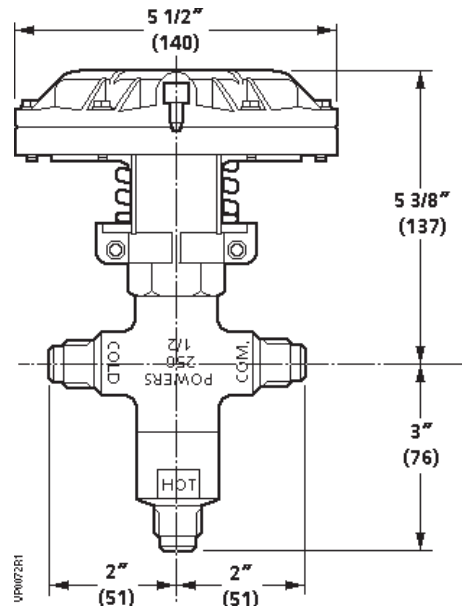
## 658 Powertop Product Ordering

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

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Valves

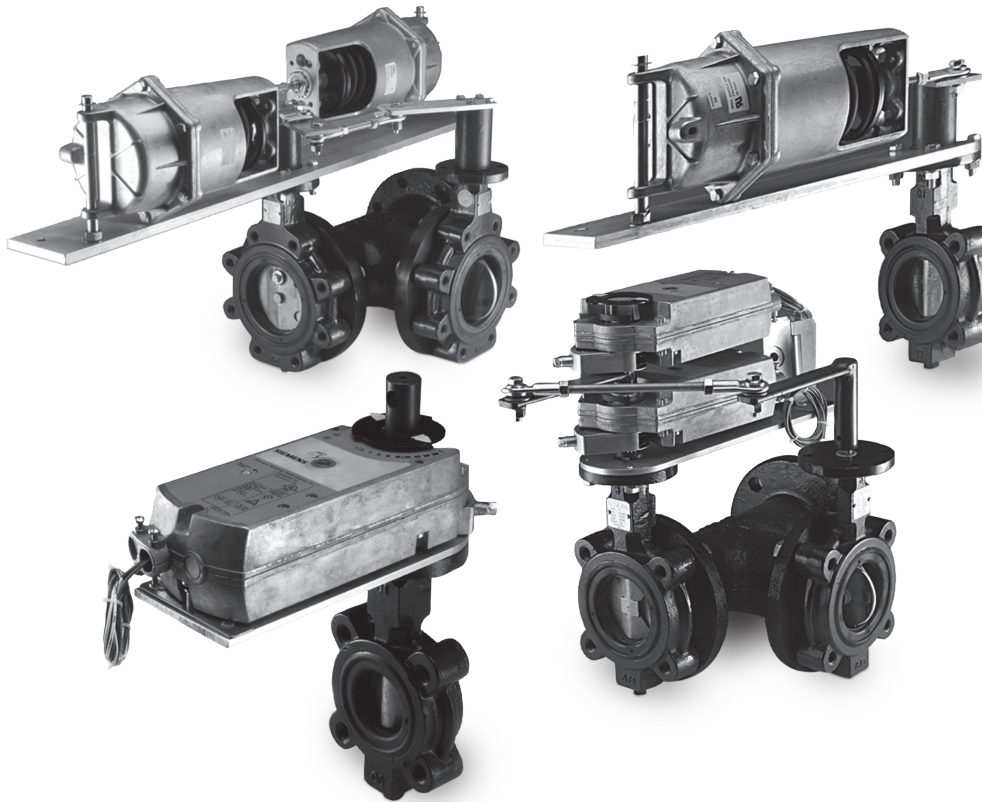
## Dimensions and Weights



Dimensions shown in inches (mm).



## Resilient Seat Butterfly Valves



A-245

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 G-16 in the Engineering Section. 

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Valves

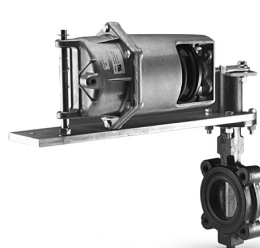


## More torque, less energy consumption

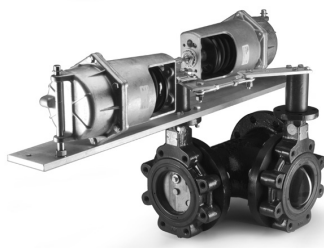
Siemens damper actuators ship ready to install, with built-in time and cost-saving features such as a patented self-centering shaft adapter, standardized wiring, and brushless motor technology. With torques ranging from 20 to 310 lb-in., this powerful and flexible line-up delivers out-of-the-box performance and long-lasting reliability for all types of HVAC applications.

Fast acting GNP/GAP rotary actuators bring the proven OpenAir™ platform to critical environment control. Their addition is perfectly suited for Supply Terminals, Exhaust Terminals, and Fume Hoods.

## 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 low pressure steam, hot water, chilled water, condenser water, and thermal storage systems applications.

### Specifications

<b>Valve Size</b> .....	2 to 20" (51 to 508 mm)
<b>Body Style</b> .....	Butterfly
<b>Assembly Type</b> .....	2-Way/3-Way
<b>Materials</b>	
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
<b>Controlled Medium</b> .....	Chilled Water, Hot Water
<b>Temperatures</b> .....	-40 to +250°F (-40 to +121°C)
<b>Close-off Ratings</b> .....	Refer to Selection Tables

# Part Number Configuration

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Valves

		BV	2W	02	F	S2	L	O	X	X	X	X	Add accessories by simply replacing the X with the appropriate letter.
<b>Assembly Configuration</b>													
<b>2W</b>	2-Way												<b>Manual Override</b>
<b>3W</b>	3-Way												<b>M</b> Manual Override (Non-STD) (Pneumatic Actuator Only)
<b>Valve Size</b>													<b>X</b> Not Used
<b>02</b>	2-inch												
<b>25</b>	2.5-inch												
<b>03</b>	3-inch												
	to												<b>Heater</b>
<b>20</b>	20-inch												<b>H</b> Heater (Must Be Used with EM and EP, Optional with E2)
<b>Disc Type</b>													<b>X</b> Not Used
<b>F</b>	Full Cut Disc — 150 psi Shutoff												
<b>U</b>	Under Cut Disc 100 psi Tight Shutoff 2-6" 50 psi Tight Shutoff 8"+												<b>Actuator Type</b>
<b>Actuator Type</b>													<b>S</b> Limit (End) Switch for Pneumatic, Actuators (Non-STD)
<b>S2<sup>3</sup></b>	Pneumatic Spring Return 30 psi												<b>A</b> Limit (End) Switch for G1, G2, G4, G5, G7, and G8 Actuators (Non-STD)
<b>S6</b>	Pneumatic Spring Return 60 psi												<b>X</b> Not Used
<b>D6</b>	Pneumatic Double Acting 60 psi, Non-Spring Return												
<b>E2</b>	Electronic 2-position/Floating, 100-240 Vac/Vdc, Non-Spring Return												
<b>EM</b>	Electronic Modulating 0-10 Vdc, 100-240 Vac/Vdc, Non-Spring Return												<b>Actuator Accessories/Options</b>
<b>EP</b>	Electronic Modulating 4-20 mA, 100-240 Vac/Vdc, Non-Spring Return												<b>P</b> Pneumatic Positioner, 20 psi Actuator
<b>G1<sup>1</sup></b>	Electronic Spring Return, On/Off, 120 Vac												<b>Q</b> Pneumatic Positioner, 60 psi Spring Return Actuator
<b>G2<sup>1</sup></b>	Electronic Spring Return, On/Off, 24 Vac												<b>R</b> Pneumatic Positioner, 60 psi Direct Acting Actuator
<b>G3<sup>1</sup></b>	Electronic Spring Return, Floating, 24 Vac												<b>T</b> E/P Valve, 120 Vac, 20 psi Spring Return Actuator
<b>G4<sup>1</sup></b>	Electronic Spring Return, Modulating 0-10 V, 24 Vac												<b>U</b> E/P Valve, 24 Vac, 20 psi Spring Return Actuator
<b>G5<sup>1</sup></b>	Electronic Spring Return, Modulating 4-20 mA, 24 Vac												<b>V</b> E/P Valve, 120 Vac, 60 psi Spring Return Actuator
<b>G6<sup>2</sup></b>	Electronic Floating, 24 Vac, NSR												<b>W</b> E/P Valve, 24 Vac, 60 psi Spring Return Actuator
<b>G7<sup>2</sup></b>	Electronic Modulating 0-10 Vdc, 24 Vac, Non-Spring Return												<b>Y</b> E/P Valve, 120 Vac, 60 psi Direct Acting Actuator
<b>G8<sup>1</sup></b>	Electronic Modulating 4-20 mA, 24 Vac <sup>4</sup> , Non-Spring Return												<b>Z</b> E/P Valve, 24 Vac, 60 psi Direct Acting Actuator
<b>Valve Body Style</b>													<b>X</b> Not Used
<b>L</b>	Lug-cast Iron (Standard)												<b>Fail Position/Assembly Configuration</b>
													<b>O</b> Fail Open 2-Way Spring Return
													<b>C</b> Fail Closed 2-Way Spring Return
													<b>N</b> 2-Way Non-Spring Return
													<b>A-F</b> 3-Way Spring Return
													<b>A-F</b> 3-Way Non-Spring Return

**Ordering Notes:**

<sup>1</sup>2 to 4-inch sizes only    <sup>2</sup>2 to 6-inch sizes only    <sup>3</sup>2 to 12-inch sizes only    <sup>4</sup>Also 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

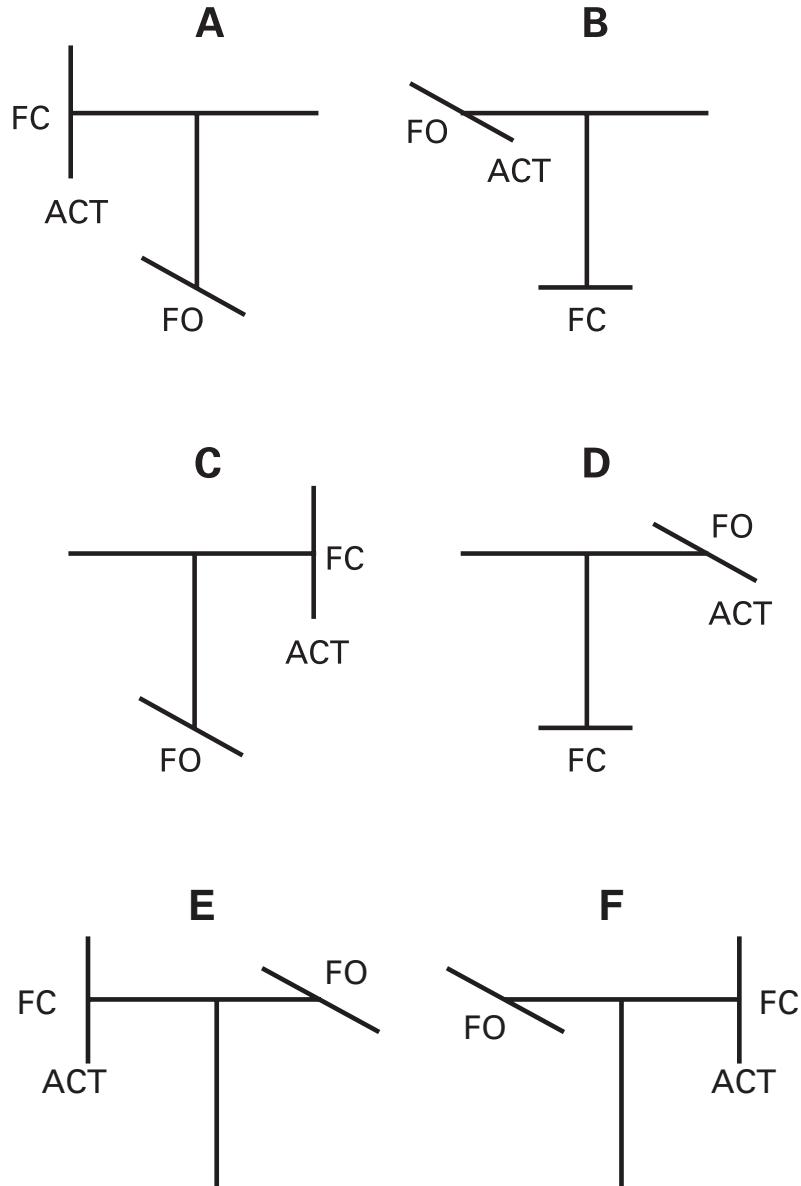
## Three-Way Butterfly Valve Configurations

**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 <sub>L</sub> Pipe To Top Plate	Face/ Face	Tap Size	Bolt Circle	# Bolts	Actuator Height	Actuator Removal Clearance	Actuator Width	C <sub>L</sub> 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°

A-250

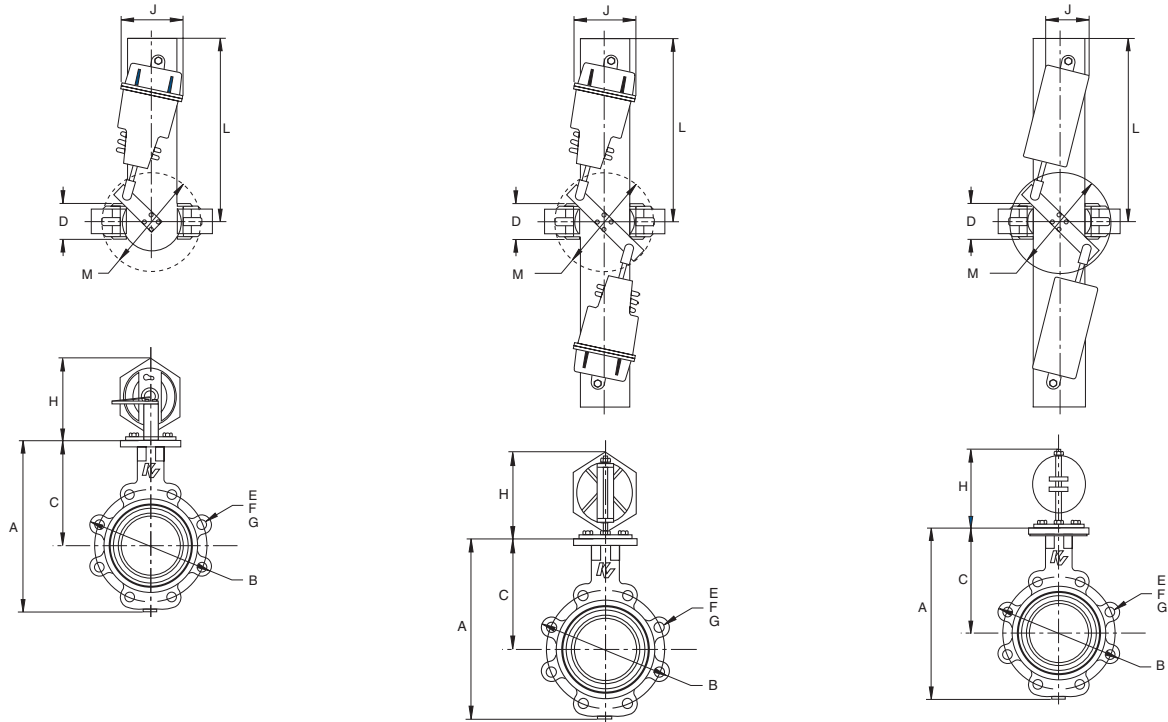
Valves

**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

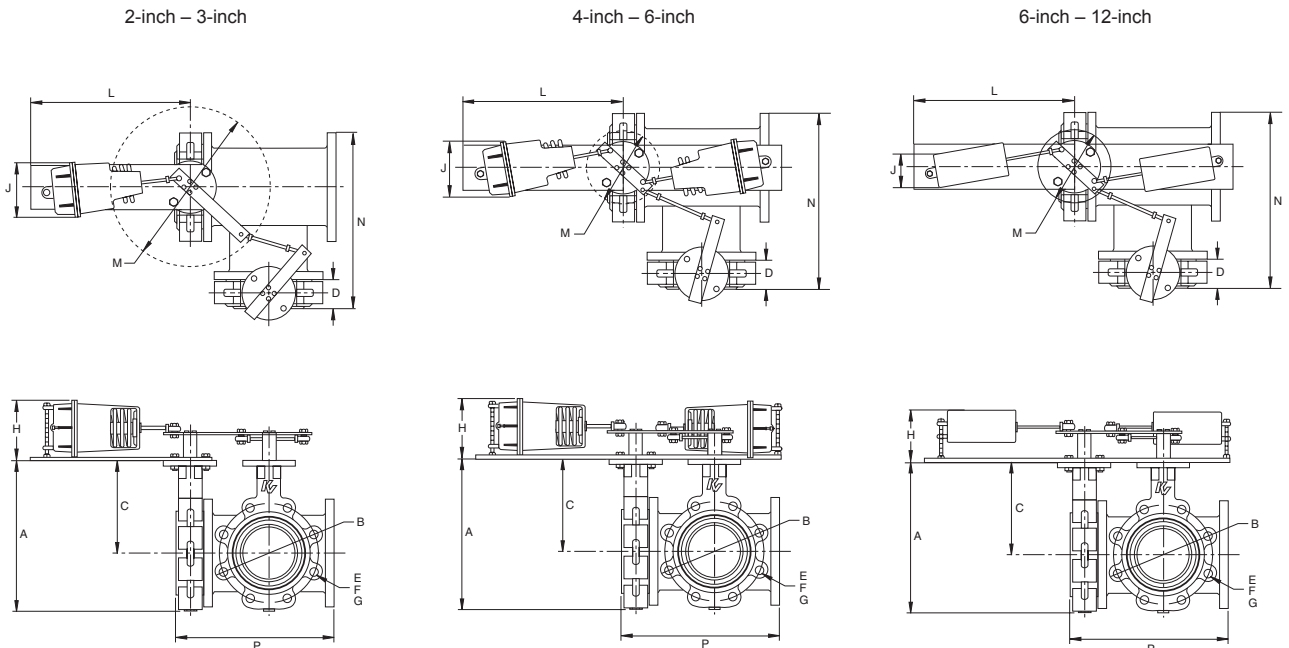
**Figure 2 Three-Way Valve Assemblies with Pneumatic Actuators**

Valve Size	A	B	C	D	E	F	G	H	H1	J	L	M	N	P	Notes
	Valve Height	Body O.D.	C <sub>L</sub> Pipe To Top Plate	Face/ Face	Tap Size	Bolt Circle	# Bolts	Actuator Height	Actuator Removal Clearance	Actuator Width	C <sub>L</sub> 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°

**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 <sub>L</sub> Pipe To Top Plate	Face/ Face	Tap Size	Bolt Circle	# Bolts	Actuator Height	Actuator Removal Clearance	Dual Actuator Height	Actuator Width	Actuator Length	C <sub>L</sub> 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)	9" (229 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

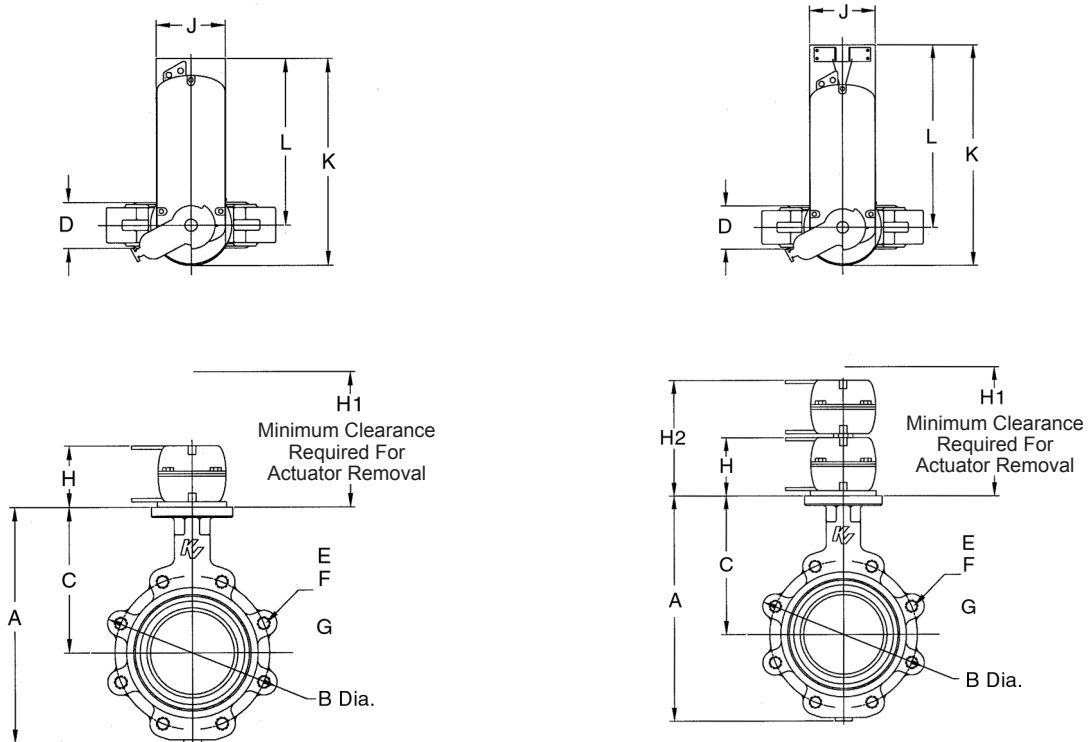
**Table Notes:**

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

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Valves

**G Series Electronic Actuated Two-Way Valve Assemblies**





## Figure 4 Three-Way OpenAir Electronic Actuator Valve Assemblies

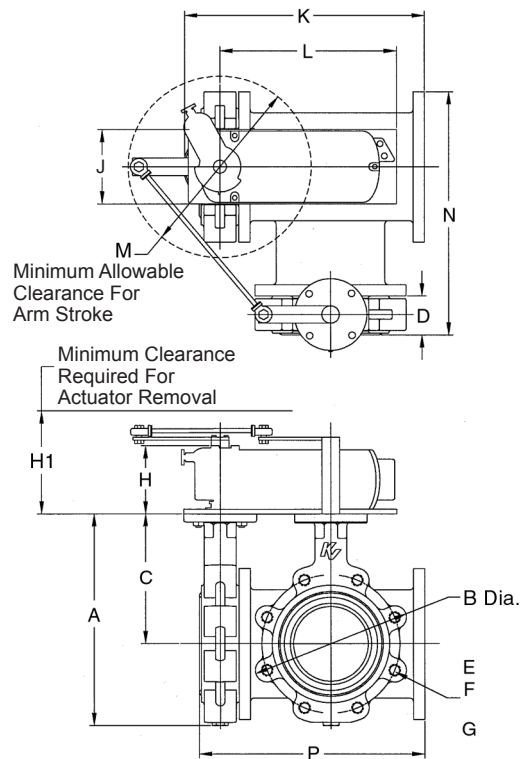
Valve Size	A Valve Height	B Body O.D.	C C <sub>L</sub> Pipe To Top Plate	D Face/ Face	E Tap Size	F Bolt Circle	G # Bolts	H Actuator Height	H1 Actuator Removal Clearance	H2 Dual Actuator Height	J Actuator Width	K Actuator Length	L C <sub>L</sub> Length	M Arm Stroke Clearance
2"	8.50" (216 mm)	6.00" (153 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

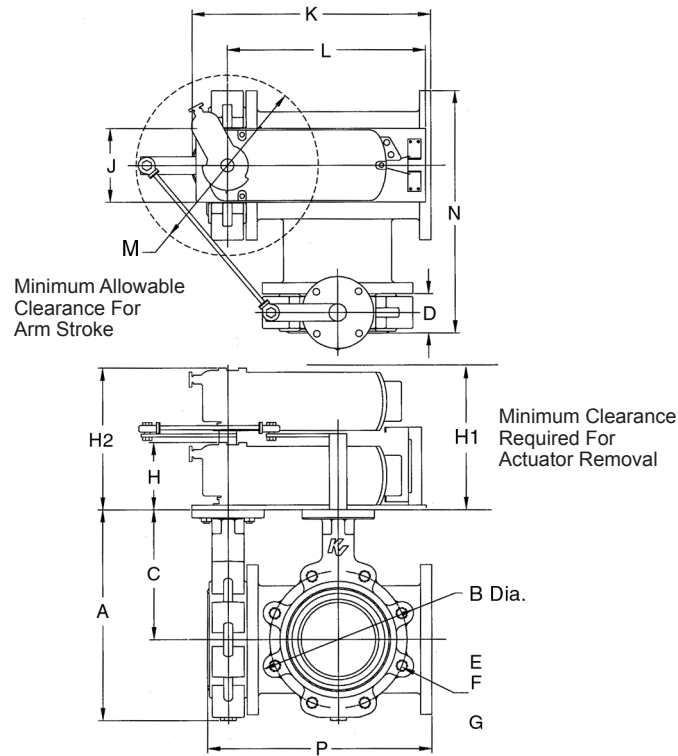
## G Series Electronic Actuated Three-Way Valve Assemblies



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.

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.*

# Dimensions — Electronic

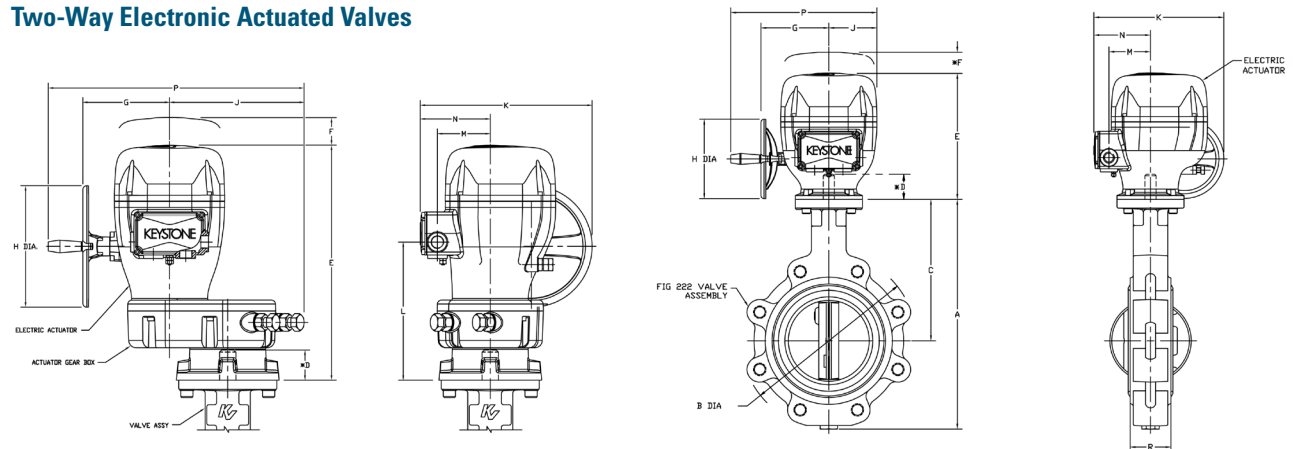
Figure 5 Two-Way EPI<sub>2</sub> Electronic Actuator Valve Assemblies

Valve Size	A Valve Height	B Body O.D.	C C <sub>L</sub> Pipe To Top Plate	D Face/ Face	E Actuator Height	F Actuator Removal Clearance	G Pipe C <sub>L</sub> 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



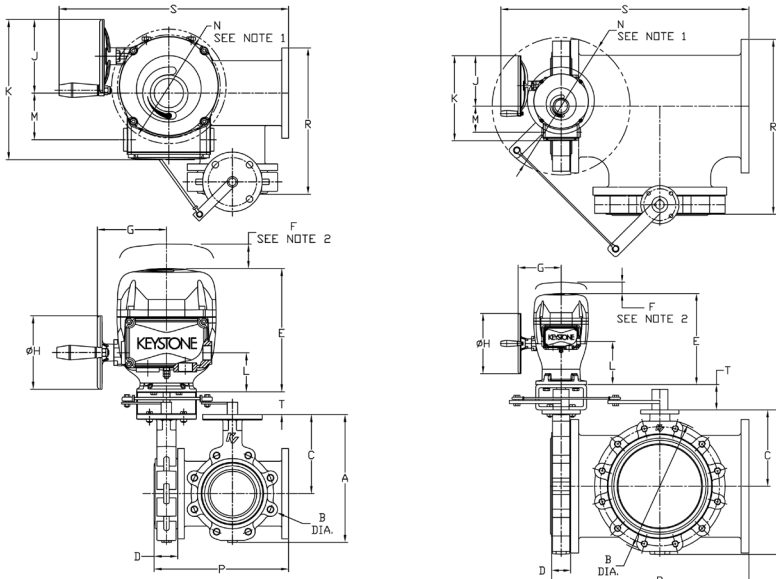
## Figure 6 Three-Way EPI<sub>2</sub> Electronic Actuator Valve Assemblies

Valve Size	A Valve Height	B Body O.D.	C C <sub>L</sub> 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:**

- Under cut two-position assemblies
- Under cut modulating assemblies
- Full cut two-position assemblies
- Full cut modulating assemblies

### Three-Way Electronic Actuated, Two-Position and Modulating 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.

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Valves

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Valves

## 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 adaptor, bonnet adaptor insert, stem adaptor 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.

### Universal Valve Retrofit Kit Product Ordering

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

## Accessories & Service Kits




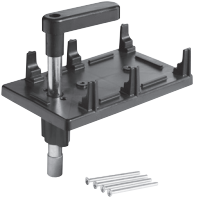




	Description	Product Group	Quantity	Part No.
<b>Pressure Independent Control Valves</b>				
	PT Port Kit <span style="float: right;"><b>NEW!</b></span>	PICV	1 Set	599-10079
<b>Zone Valves</b>				
	Actuator Support Ring.	All Zone Valves	Package of 10	599-00599
	Weathershield for Zone & Powermite Valves.	All Zone Valves & Powermite Valves	1	599-10077
<b>Powermite Valves</b>				
	Adaptor for 1/2" Conduit.	SQS, SQD	1	544-023
	Conduit Connectors.	SSA, SSP, SSB, SSD61U, SSD81U	1	ASY97
	Terminal Plug and Cover. Labeled Y1-G-Y2. (Cover not shown)	SSB81U, SSA81U, SSP81U, SSD81U	1	ASY99
	Terminal Plug and Cover. Labeled G-G0-Y. (Cover not shown)	SSB61U, SSA61U, SSP61U, SSD61U	1	ASY100
	Replacement Screws. For use with conduit or terminal connectors.	SSA, SSP, SSB, SSD	1	ASY98
	Protective Black Knob. Protects bonnet and threads.	MZ, MT	1	4 268 8895 0
	Cord and Plug. <ul style="list-style-type: none"> <li>• 4.9 ft. L (1.5 mL)</li> <li>• 14.8 ft. L (4.5 mL)</li> </ul>	SSB, SSA, SSP, SSD	1	ASY8L15
			1	ASY8L45
	Diaphragm Kit. Contains five diaphragms and mounting screws.	MT	Package of 5	656-736

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Valves



## Accessories & Service Kits

	Description	Product Group	Quantity	Part No.
<b>Powermite Valves</b>				
	<b>Powermite Male Union Connection Kits.</b>	MT		
	<ul style="list-style-type: none"> <li>• 1/2"</li> <li>• 3/4"</li> </ul>		1	599-02941
	<b>Powermite Union Gasket Kit.</b>	MT		
	<ul style="list-style-type: none"> <li>• 1/2"</li> <li>• 3/4"</li> </ul>		25 Pieces	698-088
	<b>Weathershield for Zone &amp; Powermite Valves.</b>	All Zone Valves & Powermite Valves	1	599-10077
<b>Ball Valves</b>				
	<b>Ball Valve Bracket Kit.</b> Includes mounting screws.		1	599-10078
	<b>Ball Valve Weathershield</b>	<b>NEW!</b>	1	599-10080
<b>Flowrite Valves</b>				
	<b>Auxiliary Switch.</b> 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
	<b>Double Auxiliary Switch.</b> Switch has adjustable cams that can be set to give a signal at a desired position.	SKD82, SKB82, SKC82		
	<ul style="list-style-type: none"> <li>• SKB/C</li> <li>• SKD</li> </ul>		1	ASC9.3BCU
	<b>Auxiliary Switch.</b> Switches on or off when a certain position is reached. The switching point can lie between 0 to 100%.	SAX	1	ASC10.51

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Valves



# Accessories & Service Kits

A-262

Valves

	Description	Product Group	Quantity	Part No.
<b>Flowrite Valves</b>				
	<b>Potentiometer.</b> Potentiometer delivers a resistance value to the controller relative to the exact position of the actuator (continuous position feedback).	SAX81		
	<ul style="list-style-type: none"> <li>• 1000 Ω</li> </ul>		1	ASZ7.5/1000
	<ul style="list-style-type: none"> <li>• 200 Ω</li> </ul>		1	ASZ7.5/200
	<ul style="list-style-type: none"> <li>• 135 Ω</li> </ul>		1	ASZ7.5/135
	<b>Function Module</b> <ul style="list-style-type: none"> <li>• Changeover of acting direction</li> <li>• Connection terminals</li> <li>• Sequence control</li> </ul>	SAX61	1	AZX61.1
	<b>Positioning Relay and Mounting Kit.</b> <ul style="list-style-type: none"> <li>• 8-inch</li> </ul>	Flowrite	1	599-00426
	<ul style="list-style-type: none"> <li>• 12-inch</li> </ul>		1	599-00423
	<b>Adaptor for 1/2" Conduit.</b>	SKD SKB/SKC	1	544-023
	<b>Rack and Pinion/Bracket Only.</b> Use with OpenAir on Flowrite 1/2-2" (20 mm) stroke valves.	Flowrite	1	599-03610
	<b>Weathershield.</b>	SKB/SKC	1	599-10065
	<b>Weathershield.</b>	SKD/SQX	1	599-10071
	<b>Weathershield.</b>	SAX	1	ASK39.1

# Accessories & Service Kits


	Description	Product Group	Quantity	Part No.	
<b>Flowrite Valves</b>					
	<b>Universal Valve Retrofit Kit.</b> Contains parts to adapt a valve to Siemens Flowrite 599 Series Actuators.	SKB/SKC, SKD, SQX	1	See table below	
<b>Brand</b>	<b>Valve and Product No.</b>	<b>Kit Part No.</b>			
Siemens	658-XXXX and 339-XXXX	<b>ARK10</b>			
	591-XXXX and 598-XXXX	<b>ARK11</b>			
Honeywell	V3XXXX (2-1/2 and 3-in.)	<b>ARK16</b>			
	V3XXXX (4 thru 6-in.)	<b>ARK18</b>			
	V501X (A, B, C, F, G, N) 1/2 thru 3-in.	<b>ARK17</b>			
	V501X (A, B, C) 4 thru 6-in.	<b>ARK21</b>			
Johnson Controls	VG2XXX	<b>ARK12</b>			
	VG7XXX (1 thru 2-in.)	<b>ARK13</b>			
	VG7XXX (1/2 to 3/4-in.)	<b>ARK19</b>			
Siebe	VB7XXX and VB9XXX (threaded & flanged)	<b>ARK14</b>			
	<b>1/2" to 2" 2-way Bronze Valve Body Rebuild/Repack Service Kits.</b>	Flowrite	1	See table below	
<b>Valve Part No.</b>				<b>Model 1 Part No.</b>	<b>Model 2 Part No.</b>
<b>FxF</b>	<b>FxUF</b>	<b>UFxUF</b>	<b>FxUM</b>		
599-03000	599-03009	—	599-03216	<b>599-03300</b>	—
599-03001	599-03010	—	599-03217	<b>599-03301</b>	—
599-03002	599-03011	—	599-03218	<b>599-03302</b>	—
599-03003	599-03012	—	599-03219	<b>599-03303</b>	—
599-03004	599-03013	—	599-03220	<b>599-03304</b>	—
599-03005	599-03014	—	599-03221	<b>599-03305</b>	—
599-03006	—	599-03015	—	<b>599-03306</b>	<b>599-09201</b>
599-03007	—	599-03016	—	<b>599-03307</b>	<b>599-09202</b>
599-03008	—	599-03017	—	<b>599-03308</b>	<b>599-09203</b>
599-03018	599-03027	—	599-03225	<b>599-03309</b>	—
599-03019	599-03028	—	599-03226	<b>599-03310</b>	—
599-03020	599-03029	—	599-03227	<b>599-03311</b>	—
599-03021	599-03030	—	599-03228	<b>599-03312</b>	—
599-03022	599-03031	—	599-03229	<b>599-03313</b>	—
599-03023	599-03032	—	599-03230	<b>599-03314</b>	—
599-03024	—	599-03033	—	<b>599-03315</b>	<b>599-09213</b>
599-03025	—	599-03034	—	<b>599-03316</b>	<b>599-09214</b>
599-03026	—	599-03035	—	<b>599-03317</b>	<b>599-09215</b>
599-03054	599-03063	—	599-03234	<b>599-03318</b>	—
599-03055	599-03064	—	599-03235	<b>599-03319</b>	—
599-03056	599-03065	—	599-03236	<b>599-03320</b>	—
599-03057	599-03066	—	599-03237	<b>599-03321</b>	—
599-03058	599-03067	—	599-03238	<b>599-03322</b>	—
599-03059	599-03068	—	599-03239	<b>599-03323</b>	—
<b>Note:</b>				<b>Continued...</b>	
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.				<b>Key:</b>	
				<b>F</b> Female NPT	<b>UF</b> Union Female
				<b>AF</b> Angle Female	<b>UM</b> Union Male

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Valves

# Accessories & Service Kits





Continued...

		Description	Product Group	Quantity	Part No.
<b>Flowrite Valves</b>					
		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		
599-03060	—	599-03069	—	<b>599-03324</b>	<b>599-09204</b>
599-03061	—	599-03070	—	<b>599-03325</b>	<b>599-09205</b>
599-03062	—	599-03071	—	<b>599-03326</b>	<b>599-09206</b>
599-03072	599-03081	—	599-03243	<b>599-03327</b>	—
599-03073	599-03082	—	599-03244	<b>599-03328</b>	—
599-03074	599-03083	—	599-03245	<b>599-03329</b>	—
599-03075	599-03084	—	599-03246	<b>599-03330</b>	—
599-03076	599-03085	—	599-03247	<b>599-03331</b>	—
599-03077	599-03086	—	599-03248	<b>599-03332</b>	—
599-03078	—	599-03087	—	<b>599-03333</b>	<b>599-09216</b>
599-03079	—	599-03088	—	<b>599-03334</b>	<b>599-09217</b>
599-03080	—	599-03089	—	<b>599-03335</b>	<b>599-09218</b>
599-03108	599-03117	—	599-03252	<b>599-03336</b>	—
599-03109	599-03118	—	599-03253	<b>599-03337</b>	—
599-03110	599-03119	—	599-03254	<b>599-03338</b>	—
599-03111	599-03120	—	599-03255	<b>599-03339</b>	—
599-03112	599-03121	—	599-03256	<b>599-03340</b>	—
599-03113	599-03122	—	599-03257	<b>599-03341</b>	—
599-03114	—	599-03123	—	<b>599-03342</b>	<b>599-09207</b>
599-03115	—	599-03124	—	<b>599-03343</b>	<b>599-09208</b>
599-03116	—	599-03125	—	<b>599-03344</b>	<b>599-09209</b>
599-03126	599-03135	—	599-03261	<b>599-03345</b>	—
599-03127	599-03136	—	599-03262	<b>599-03346</b>	—
599-03128	599-03137	—	599-03263	<b>599-03347</b>	—
599-03129	599-03138	—	599-03264	<b>599-03348</b>	—
599-03130	599-03139	—	599-03265	<b>599-03349</b>	—
599-03131	599-03140	—	599-03266	<b>599-03350</b>	—
599-03132	—	599-03141	—	<b>599-03351</b>	<b>599-09219</b>
599-03133	—	599-03142	—	<b>599-03352</b>	<b>599-09220</b>
599-03134	—	599-03143	—	<b>599-03353</b>	<b>599-09221</b>
599-03162	599-03171	—	599-03270	<b>599-03354</b>	—
599-03163	599-03172	—	599-03271	<b>599-03355</b>	—
599-03164	599-03173	—	599-03272	<b>599-03356</b>	—
599-03165	599-03174	—	599-03273	<b>599-03357</b>	—
599-03166	599-03175	—	599-03274	<b>599-03358</b>	—
599-03167	599-03176	—	599-03275	<b>599-03359</b>	—
599-03168	—	599-03177	599-03276	<b>599-03360</b>	<b>599-09210</b>
599-03169	—	599-03178	—	<b>599-03361</b>	<b>599-09211</b>
599-03170	—	599-03179	—	<b>599-03362</b>	<b>599-09212</b>
599-03180	599-03189	—	599-03279	<b>599-03363</b>	—
599-03181	599-03190	—	599-03280	<b>599-03364</b>	—
599-03182	599-03191	—	599-03281	<b>599-03365</b>	—
599-03183	599-03192	—	599-03282	<b>599-03366</b>	—
599-03184	599-03193	—	599-03283	<b>599-03367</b>	—
599-03185	599-03194	—	599-03284	<b>599-03368</b>	—
599-03186	—	599-03195	—	<b>599-03369</b>	<b>599-09222</b>
599-03187	—	599-03196	—	<b>599-03370</b>	<b>599-09223</b>
599-03188	—	599-03197	—	<b>599-03371</b>	<b>599-09224</b>

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Valves

# Accessories & Service Kits

	Description	Product Group	Quantity	Part No.																																																																												
<b>Flowrite Valves</b>																																																																																
 <p><b>Note:</b> 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.</p> <p><b>Key:</b> F Female NPT AF Angle Female UF Union Female UM Union Male</p>	<b>1/2 to 2" 3-way Bronze Valve Body Rebuild/Repack Service Kits.</b>	Flowrite	1	See table below																																																																												
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	<ul style="list-style-type: none"> <li>• Normal Duty</li> <li>• Steam</li> </ul>		1	<b>599-03390</b>																																																																												
	<b>Packing Kits.</b>	Flowrite 591-598 Series Valves																																																																														
	<ul style="list-style-type: none"> <li>• 1/4" Diameter</li> <li>• 3/8" Diameter</li> </ul>		1	<b>591-501</b>																																																																												
	<b>2-1/2 to 6" 2-way Flanged Iron Valve Body Rebuild/Repack Service Kits.</b>	Flowrite	1	See table below																																																																												
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A-265


Valves

Continued...

# Accessories & Service Kits



A-266

Valves

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# Accessories & Service Kits

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Valves



# Accessories & Service Kits




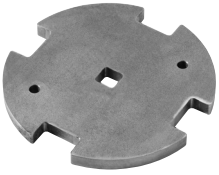


	Description	Product Group	Quantity	Part No.
<b>Flowrite Valves</b>				
	<b>2-1/2 to 6" Flanged Iron Valve Body Repack Kit (14 mm dia.). (Cartridge)</b>	Flowrite		
	• Normal Duty		1	599-08020
	• Steam		1	599-08021
 8" Shown	<b>Diaphragm Replacement Kits.</b>	Flowrite		
	• 4-inch Normal Duty		1	599-01093
	• 8-inch Normal Duty		1	599-01060
	• 8-inch High Temperature		1	599-01061
	• 12-inch Normal Duty		1	599-01070
	<b>Stem Retainer Kit.</b> With interface nut and stem retainer ring. For 8-inch, 12-inch and SKB/C actuators.	Flowrite		
	• 10 mm		1	599-10048
	• 14 mm		1	599-10049
	<b>Circuit Board Replacement.</b>	SKB/SKC SKD62U	1	466857488
		SKB/C/D62UA	1	466857518
	<b>Plastic Wiring Compartment Cover.</b>	SKD	1	410456348
		SKB/SKC	1	410455828
	<b>Manual Override Crank Assembly.</b>	SKB/SKC	1	426855108
		SKD	1	426855048
	<b>Packing Heating Element.</b>	SKB/SKC	1	599-00418
	<b>Packing Heating Element.</b>	SKD	1	599-00417
	<b>Stem Heater</b>	Flowrite	1	ASZ6.6

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Valves




# Accessories & Service Kits

	Description	Product Group	Quantity	Part No.																
<b>Flowrite Valves</b>																				
	<b>Stroke Inverter.</b> 1/2" - 2.5" valves with .75" max. stroke.	SKD	1	<b>ASK50</b>																
		SKB	1	<b>ASK51</b>																
	<b>Retainer Clamp Kit.</b>	SKB/C	1	<b>599-10200</b>																
		8 & 12" pneu	1	<b>599-00436</b>																
	<b>3-way Valve Service Flanges.</b> Allows easy access to the stem and plug assembly without removing the valve.	Flowrite	1	<b>See table below</b>																
		<table border="1"> <thead> <tr> <th>Valve Size</th> <th>ANSI Class 125</th> <th>ANSI Class 250</th> </tr> </thead> <tbody> <tr> <td>2-1/2"</td> <td><b>599-05011</b></td> <td><b>599-05016</b></td> </tr> <tr> <td>3"</td> <td><b>599-05012</b></td> <td><b>599-05017</b></td> </tr> <tr> <td>4"</td> <td><b>599-05013</b></td> <td><b>599-05018</b></td> </tr> <tr> <td>5"</td> <td><b>599-05014</b></td> <td><b>599-05019</b></td> </tr> <tr> <td>6"</td> <td><b>599-05015</b></td> <td><b>599-05020</b></td> </tr> </tbody> </table>			Valve Size	ANSI Class 125	ANSI Class 250	2-1/2"	<b>599-05011</b>	<b>599-05016</b>	3"	<b>599-05012</b>	<b>599-05017</b>	4"	<b>599-05013</b>	<b>599-05018</b>	5"	<b>599-05014</b>	<b>599-05019</b>	6"
Valve Size	ANSI Class 125	ANSI Class 250																		
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6"	<b>599-05015</b>	<b>599-05020</b>																		
	<b>Flange Bolts and Gasket Service Kit.</b> For lower bypass port of 3-way valves. Includes one gasket and the number and size of bolts needed for the replacement.	Flowrite	1	<b>See table below</b>																
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Valve Size	ANSI Class 125	ANSI Class 250																		
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6"	<b>599-09240</b>	<b>599-09245</b>																		
	<b>Lower Seat Tools for Valve Size:</b>	Flowrite																		
	• 2-1/2"		1	<b>599-09144</b>																
	• 3"		1	<b>599-09145</b>																
	• 4"		1	<b>599-09146</b>																
	• 5"		1	<b>599-09147</b>																
	• 6"		1	<b>599-09148</b>																
	<b>Flowrite Female Union Kits.</b>	Flowrite																		
	• 1/2" (15 mm)		1	<b>599-09185</b>																
	• 3/4" (20 mm)		1	<b>599-09186</b>																
	• 1" (25 mm)		1	<b>599-09187</b>																
	• 1-1/4" (32 mm)		1	<b>599-09188</b>																
	• 1-1/2" (40 mm)		1	<b>599-09189</b>																
	• 2" (50 mm)		1	<b>599-09190</b>																
	<b>Flowrite Union Gasket Kits.</b>	Flowrite																		
	• 1/2" NPT		25 Pieces	<b>599-03394</b>																
	• 3/4" NPT		25 Pieces	<b>599-03395</b>																
	• 1" NPT		25 Pieces	<b>599-03396</b>																
	• 1-1/4" NPT		25 Pieces	<b>599-03397</b>																
	• 1-1/2" NPT		25 Pieces	<b>599-03398</b>																
	• 2" NPT		25 Pieces	<b>599-03399</b>																

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Valves



# Accessories & Service Kits

	Description	Product Group	Quantity	Part No.
<b>Magnetic Valves</b>				
	<b>Control Signal Module w/ Feedback, 0-2".</b>	MX..	1	ZM150
	<b>Control Signal Module w/ Feedback, 3-4".</b>	MX..	1	ZM250
	<b>Terminal Housing.</b> Converts 0 to 10 Vdc input to 0 to 20 Vdc phase cut output.			
	• up to 40W, IP54 rated housing	M3P	1	ZM101/A
	<b>Terminal Housing.</b> For straight through 0 to 20 Vdc electrical housing only.			
	• to 40W, IP54 rated housing	M3P	1	ZM111
	<b>Terminal Housing.</b> Converts 0 to 20 mA/24 Vdc input to 0 to 20 Vdc phase cut output.			
	• to 40W, IP54 rated housing	M3P	1	ZM121/A
	<b>Blanking Flange.</b>	M3P		
	• 3"		1	Z155/80
	• 4"		1	Z155/100
	<b>580 PSI Weld Neck Adaptor Flange.</b>	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
	<b>230 PSI Weld Neck Adaptor Flange.</b>	MX../M3P		
	• 4"		1	Z56/100
	<b>580 PSI NPT Adaptor Flange.</b>	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
	<b>Replacement Circuit Board.</b>	MVF461H/ MXG461B	1	ASE12

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Valves

## Accessories & Service Kits

	Description	Product Group	Quantity	Part No.
<b>Magnetic Valves</b>				
	<b>Repair Module.</b>			
	<ul style="list-style-type: none"> <li>• 1/2" to 1-1/4"</li> <li>• 1-1/2" to 2-1/2"</li> </ul>	MXG461  MXG461/ MXF461	1  1	ASE1  ASE2
	<b>Phase Cut to 0 to 10 Vdc Signal Converter.</b>	MX../M3P/MV..	1	SEZ91.6

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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
<b>VP 656 Powermite Valves</b>									
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.

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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)	Actuator with Trim	Replacement Actuator
<b>VP 658 Powertop Valves</b>									
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	—	658-069
658-0027	.50 (13)	3WM	10-14 (69-97)	.50 (13)	2.5	658-166	658-167	—	658-068
658-0028	.75 (19)	3WM	3-7 (21-48)	.50 (13)	6.3	658-166	658-167	—	658-069
658-0029	.75 (19)	3WM	10-14 (69-97)	.50 (13)	6.3	658-166	658-167	—	658-068
658-0030	1 (25)	3WM	3-7 (21-48)	.50 (13)	10	658-166	658-167	—	658-069
658-0031	1 (25)	3WM	10-14 (69-97)	.50 (13)	10	658-166	658-167	—	658-068
658-0032	1.25 (32)	3WM	10-14 (69-97)	.50 (13)	16	658-166	658-167	—	658-068
658-0033	1.25 (32)	3WM	3-7 (21-48)	.50 (13)	16	658-166	658-167	—	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

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Valves















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Valves



## Install accuracy, reliability and peace-of-mind

Our Siemens combination CO<sub>2</sub>/VOC sensors are the perfect way to ensure optimum air quality at all times. These sensors have two separate sensing elements, one measures CO<sub>2</sub> and the other measures VOCs. The sensor algorithm then adjusts the output signal to reflect the higher of the two values.

Siemens offers a complete line of CO<sub>2</sub> sensors, including basic CO<sub>2</sub> sensors and combination units that measure CO<sub>2</sub> + VOC and CO<sub>2</sub> + temperature + humidity. All are available in both wall mounted and duct mounted configurations.