SIEMENS

Submittal Sheet
Document No. 154-034
February 1, 2023

599 Series Zone Valves
2-Way, 3-Way Zone Valve
Electric Actuators

Description

The 599 Series Zone Valves work with any SFA/P Series, SSA or SSE/F Series electric actuator. The actuators accept 24 Vac/dc, 24 Vac or 120 Vac power supplies signal to provide two-position, three-position or 0 to 10 Vdc controlTypical applications include hot or chilled water for zones with radiators; floor heating via manifolds; fan coil units; cooling ceilings (Zone Valves); wall-mounted boilers (zone valves); and VAV applications.

Features

Zone valves have a direct-coupled universal bonnet. SFA/P, SSA, and SSE/F actuators are UL listed. Actuators have a direct-coupled installation; are hand-tightened without tools, provide manual override and visual position indication.

Product Numbers

Use the product numbers in the tables to order the valve and the actuator assembled together. The product number consists of a 3-digit prefix code, a hyphen, and a 5-digit suffix code. The prefix specifies an actuator. The suffix specifies the valve body.

240-00211

3-Digit Prefix Code for Actuator

5-Digit Valve Body Suffix Code

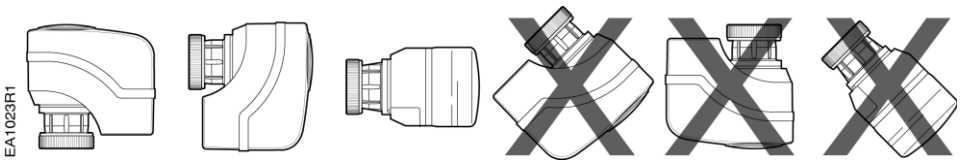


Figure 1. Preferred Mounting Position For the SFA/P Series, SSA or SSE/F Series Electric Actuator.

Table 1. Product Numbers: Electric Actuator/2-Way Zone Valve Assemblies.

Connection	Line Size		Flow Rate		Valve Body	120 Vac		24 Vac or 24 Vac/dc				
						Fail Safe (SR)		Fail Safe (SR)		Fail-in-Place		
						2-Position		2-Position		3-Position	0 to 10 Vdc Modulating	
						Normally Closed	Normally Open	Normally Closed	Normally Open	Normally Closed	Normally Closed	Normally Open
						SFA11U	SFP11U	SFA71U	SFP71U	SSA81U	SSE161.05U	SSF161.05U
	Inch	Mm	Cv	Kvs		Actuator Code 240	Actuator Code 241	Actuator Code 242	Actuator Code 243	Actuator Code 244	Actuator Code 245	Actuator Code 248
NPT	.50	15	1.0	.85	599-00210	240-00210	241-00210	242-00210	243-00210	244-00210	245-00210	248-00210
	.50	15	2.5	2.0	599-00211	240-00211	241-00211	242-00211	243-00211	244-00211	245-00211	248-00211
	.50	15	4.0	3.4	599-00214	240-00214	241-00214	242-00214	243-00214	244-00214	245-00214	248-00214
	.75	20	4.1	3.5	599-00212	240-00212	241-00212	242-00212	243-00212	244-00212	245-00212	248-00212
	1.00	25	7.0	6.0	599-00213	240-00213	241-00213	242-00213	243-00213	244-00213	245-00213	248-00213
Sweat	.50	15	1.0	.85	599-00510	*	*	*	*	*	*	*
	.50	15	2.5	2.0	599-00511	*	*	*	*	*	*	*
	.50	15	4.0	3.4	599-00514	*	*	*	*	*	*	*
	.75	20	4.1	3.5	599-00512	*	*	*	*	*	*	*
	1.00	25	7.0	6.0	599-00513	*	*	*	*	*	*	*

* Order valve and actuator separately.

NOTE: For more information, see *599 Series Zone Valve Bodies: Two-Way and Three-Way Technical Instructions* (155-320P25), *599 Series Zone Valve Actuator SF Series Electronic Valve Actuator, 2-Position Control Technical Instructions (*155-321P25), *599 Series Zone Valve Actuator SSA81U 24 Vac Electronic Valve Actuator: Floating Fail-in-Place Technical Instructions* (155-710), and *Electromotoric Actuator SSE161.05U/SSF161.05U Data Sheet* (A6V12681514).

Table 2. Product Numbers: Electric Actuator/3-Way Zone Valve Assemblies.

Connection	Line Size		Flow Rate AB→A			120 Vac		24 Vac or 24 Vac/dc				
						2-Position		2-Position		3-Position	0 to 10 Vdc Modulating	
						Fail AB▶B	Fail AB▶A	Fail AB▶B	Fail AB▶A	Fail-In-Place	Fail-In Place	
						SFA11U	SFP11U	SFA71U	SFP71U	SSA81U	SSE161.05U	SSF161.05U
	Inch	Mm	Cv	Kvs	Valve Body	Actuator Code 240	Actuator Code 241	Actuator Code 242	Actuator Code 243	Actuator Code 244	Actuator Code 245	Actuator Code 248
NPT	.50	15	1.0	.85	599-00230	240-00230	241-00230	242-00230	243-00230	244-00230	245-00230	248-00230
	.50	15	2.5	2.0	599-00231	240-00231	241-00231	242-00231	243-00231	244-00231	245-00231	248-00231
	.50	15	4.0	3.4	599-00234	240-00234	241-00234	242-00234	243-00234	244-00234	245-00234	248-00234
	.75	20	4.1	3.5	599-00232	240-00232	241-00232	242-00232	243-00232	244-00232	245-00232	248-00232
	1.00	25	7.0	6.0	599-00233	240-00233	241-00233	242-00233	243-00233	244-00233	245-00233	248-00233
Sweat	.50	15	1.0	.85	599-00530	*	*	*	*	*	*	*
	.50	15	2.5	2.0	599-00531	*	*	*	*	*	*	*
	.50	15	4.0	3.4	599-00534	*	*	*	*	*	*	*
	.75	20	4.1	3.5	599-00532	*	*	*	*	*	*	*
	1.00	25	7.0	6.0	599-00533	*	*	*	*	*	*	*

* Order valve and actuator separately.

NOTE: For more information, see *599 Series Zone Valve Bodies: Two-Way and Three-Way Technical Instructions* (155-320P25), *599 Series Zone Valve Actuator SF Series Electronic Valve Actuator, 2-Position Control Technical Instructions (*155-321P25), *599 Series Zone Valve Actuator SSA81U 24 Vac Electronic Valve Actuator: Floating Fail-in-Place Technical Instructions* (155-710), and *Electromotoric Actuator SSE161.05U/SSF161.05U Data Sheet* (A6V12681514).

Valve Specifications

Line size: 1/2-inch to 1-inch (15 mm to 25 mm)

Action:

2-way NO/NC determined by actuator

3-way diverting (mixing, limited application)

Valve body rating: ANSI Class 125

Leakage rate: ANSI Class III

Close off ratings: According to ANSI/FCI 70-2

Medium temperature range: 34°F to 230°F (1°C to 110°C)

Flow characteristic: Linear

Electric Actuator SFA/P Series Specifications

Control Signal: Two-position

Operating voltage: 24 Vac ±20% 120 Vac ±20%

Power Consumption: 9.8 VA 9.8 VA

Frequency: 50/60 Hz

Agency certification: UL listed to UL873
cUL certified to Canadian Standard C22.2 No. 24-93

Mounting location: NEMA 1 (interior only)

Weight: 1.18 lb (0.54 kg)

Dimensions inches (mm): 3.4 (85) H × 4.4 (111) W × 2.3 (58) D

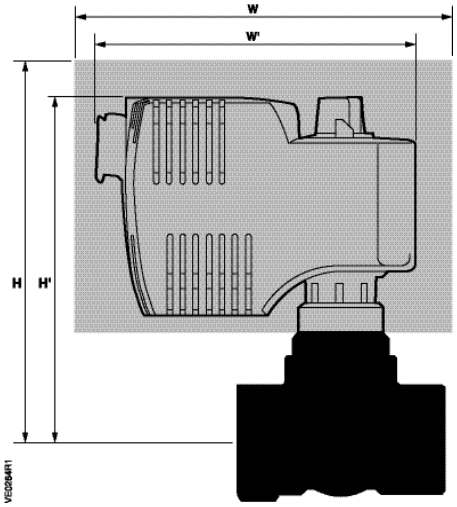


Figure 2. SFA/P Electric Actuator with 2-Way Valve: Assembly Service Envelope.

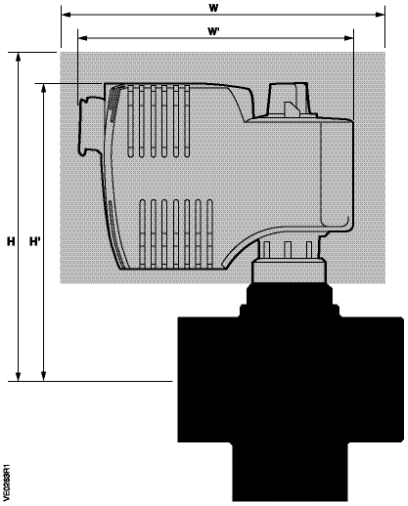


Figure 3. SFA/P Electric Actuator with 3-Way Valve: Assembly Service Envelope.

Table 3. SFA/P Electric Actuator/Valve Assembly Dimensions and Recommended Service Envelope in Inches (mm).

Actuator Prefix Codes	Valve Line Size	Valve Centerline to Top of Actuator H1		Service Height H		Width or Diameter of Actuator W1		Assembly Service Width W	
		2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way
240 241 242 243	.50 (15) .75 (20) 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)

Electric Actuator SSA Series Specifications

	SSA81U
Control Signal:	3-Position
Operating voltage:	24 Vac ±20%
Power Consumption:	0.8 VA
Frequency:	50/60 Hz
Agency Certification:	UL873 Conforms to CE requirements, cUL conforms to Canadian Standard 22.2 No. 24-93
Mounting location:	NEMA 1 (interior only)
Weight:	9 oz (0.25 kg)
Dimensions inches: (mm)	3.26 H × 3.26 W × 1.9 D (82×83×48)

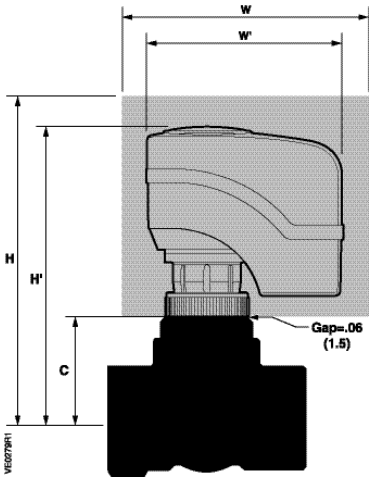


Figure 4. Electric Actuator SSA81U with 2-Way Valve: Assembly Service Envelope.

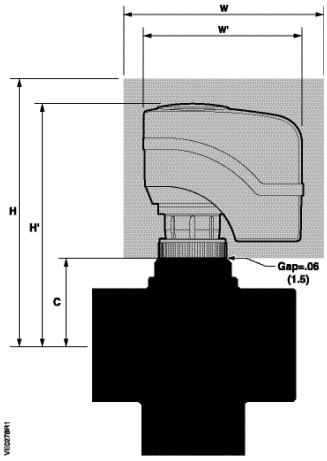


Figure 5. Electric Actuator SSA81U with 3-Way Valve: Assembly Service Envelope.

Table 4. SSA/P Electric Actuator/Valve Assembly Dimensions and Recommended Service Envelope in Inches (mm).

Actuator Prefix Codes	Valve Line Size	Valve Centerline to Top of Actuator H1		Service Height H		Valve Centerline to Actuator Coupling C		Width or Diameter of Actuator W1		Service Width W	
		2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way
244 **245**	.50 (15)	4.26 (108)	4.26 (108)	12.26 (311)	12.26 (311)	1.00 (25)	1.00 (25)	3.26 (83)	3.26 (83)	11.26 (286)	11.26 (286)
	.75 (20)										
	1.00 (25)										

Electric Actuator SSE/F Series Specifications

	SSE/F161.05U
Control Signal:	0 to 10 Vdc
Operating voltage:	24 Vac (± 15%) or 24 Vdc (± 20%)
Power Consumption:	3 VA (AC); 1.2 W (DC)
Frequency:	50/60 Hz

Agency Certification:	UL as per UL60730-1, UL60730-2-14 cUL as per CSA CAN E60730-1, E730-2-14 FCC CFR 47 Part 15 Class B
Mounting location:	NEMA 2/IP40 (interior only)
Weight:	7.7 oz (0.22 kg)
Dimensions inches: (mm)	3.7 H × 4.1 W × 1.9 D (92.6×104.4×49)

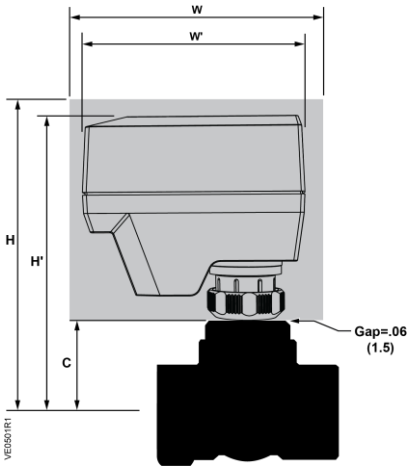


Figure 6. Electric Actuator SSE/F Series with 2-Way Valve: Assembly Service Envelope.

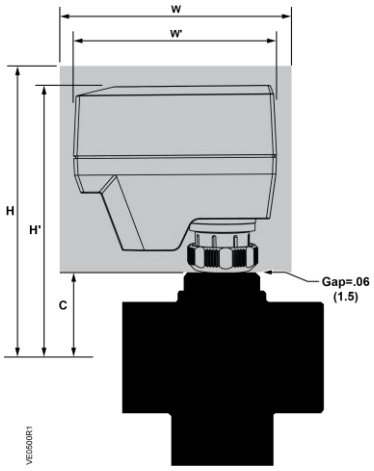
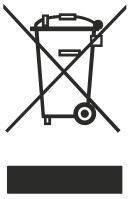


Figure 7. Electric Actuator SSE/F Series with 3-Way Valve: Assembly Service Envelope.

Table 5. SSE/F Electric Actuator/Valve Assembly Dimensions and Recommended Service Envelope in Inches (mm).

Actuator Prefix Codes	Valve Line Size	Valve Centerline to Top of Actuator H1		Service Height H		Valve Centerline to Actuator Coupling C		Width or Diameter of Actuator W1		Service Width W	
		2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way	2-Way	3-Way
245 248	.50 (15)	4.7 (118)	4.7 (118)	12.7 (321)	12.7 (321)	1.00 (25)	1.00 (25)	4.1 (104.4)	4.1 (104.4)	12.1 (307.4)	12.1 (307.4)
	.75 (20)										
	1.00 (25)										

Disposal



The actuators are considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the actuators through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.
- Do not dispose of valves as household waste.
- Special handling of individual components may be mandated by law or make ecological sense.

Information in this publication is based on current specifications. The company reserves the right to make changes in specifications and models as design improvements are introduced. Product or company names mentioned herein may be the trademarks of their respective owners.
© 2013-2023 Siemens Industry, Inc.