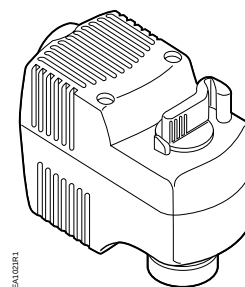


599 Series

Zone Valve Actuator

SF Series Electronic Valve Actuator, 2-position Control



Description

The 599 SF Series electronic zone valve actuators, accepts 24 Vac, 120 Vac, 208 Vac, or 277 Vac power supply signal to provide two-position control. This actuator works with Siemens 599 Series zone valves with 1/10-inch (2.5 mm) stroke.

Features

- UL listed for plenum installations
- Direct coupled installation without tools
- Manual override
- Visual position indication
- Spring return fail safe operation

Application

For use in heating and cooling HVAC applications with Siemens 599 Series Zone Valves that need 24 lb (105N) nominal force.

Product Number

Table 1.

	Actuator Product Number	Power Supply
Normally Open	SFP71U	24 Vac
	SFP11U	120 Vac
	SFP277U/25*	277 Vac
	SFP208U/25*	208 Vac
Normally Closed	SFA71U	24 Vac
	SFA11U	120 Vac
	SFA208U/25*	208 Vac
	SFA277U/25*	277 Vac

* Actuator with 2.5-meter cable only, not available as an assembly.

Ordering Information

To order a complete valve plus actuator assembly from the factory, combine the actuator prefix code with the suffix of the valve product number. See *Technical Bulletin TB254* (155-291) for selection procedures.

To order a single actuator, use the part number (for example, SFA11U).

Warning/Caution Notations

WARNING:		Personal injury or loss of life may occur if you do not perform a procedure as specified.
CAUTION:		Equipment damage may occur if you do not perform a procedure as specified.

Specifications		<u>24 Vac</u>	<u>120 Vac</u>	<u>208 Vac</u>	<u>277 Vac</u>
Power supply	Frequency	50/60 Hz	60 Hz	60 Hz	60 Hz
	Power consumption	9.8 VA	9.8 VA	10 VA	10 VA
Function	Running time	35 sec	35 sec	40 sec	40 sec
	Nominal stroke	1/10-inch (2.5 mm)			
	Nominal force	24 lb (105Nm)			
Agency certification		UL listed to UL873 cUL certified to Canadian Standard C22.2 No. 24-93			
Ambient conditions	Operation				
	Temperature	41°F to 122°F (5°C to 50°C)			
	Humidity	0% to 90% rh (non-condensing)			
	Transport and storage				
	Temperature	-13°F to 158°F (-25°C to 70°C)			
	Humidity	0% to 90% rh (non-condensing)			
Miscellaneous	Mounting location	NEMA 1 (interior only)			
	Noise	<35 db			
	Medium temperature	34°F to 230°F (1°C to 110°C)			
	Dimensions- Inches (mm)	3.4 (85.2) H × 4.4 (111) W × 2.3 (58) D			
	Weight	1.18 lb (0.54 kg)			

Operation

A 24 Vac, 120 Vac, 208 Vac, or 277 Vac control signal drives the actuator from its normal (0 voltage) position.

In the event of power loss, the actuator will return to its normal extended position for the SFA model actuators or normal retracted position for the SFP models.

Mounting and Installation

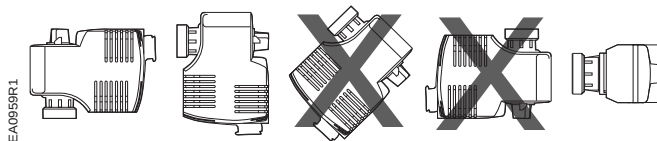


Figure 1. Mounting Position.

- Mount the actuator in one of the allowable positions shown in Figure 1.
 - When mounting the actuator in a plenum, the proper cable must be attached to meet local codes.
 - Allow 8 inches (200 mm) above the actuator and 8 inches (200 mm) behind the cable for service.
 - Installation Instructions are included with the actuator.
-

Wiring

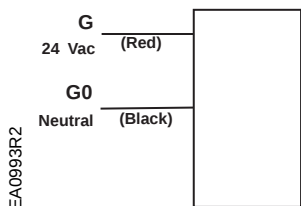


Figure 2.
24 Vac Wiring Diagram.

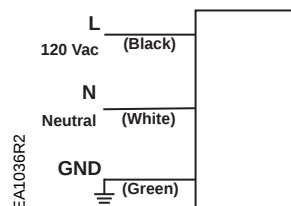


Figure 3.
120 Vac Wiring Diagram.



WARNING:

Wire connection, G is Hot, not ground.

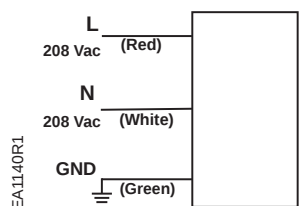


Figure 4.
208 Vac Wiring Diagram.

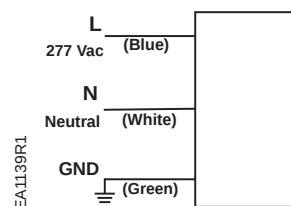


Figure 5.
277 Vac Wiring Diagram.

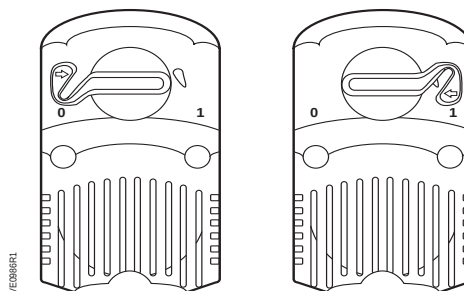
-
- Do not use autotransformers.
 - Use earth-ground isolating, step-down, Class 2, power supplies.
 - Determine supply transformer rating by summing total VA of all actuators used.
 - SFA71U/SFP71U 24 Vac actuators: Wiring connection is inside the actuator housing (remove housing top for access). The actuator lead length is 6 inches (152 mm).
 - SFA11U/SFP11U 120 Vac actuators: Wiring connection requires junction box and flex conduit no further than 15 inches (381 mm) from the actuator. The actuator lead length is 18 inches (457 mm).

NOTE: One transformer should power no more than 10 actuators.

Manual Override

For manual positioning, simply turn the manual override handle to the protruding stop and squeeze the handle to latch and hold its position.

The actuator will maintain its position until power is provided.



NOTE:
The "0" and "1" position indicators are intended for reference only, and not for stroke measurement.

Figure 6. Manual Override Handle Positioning.

Start-Up

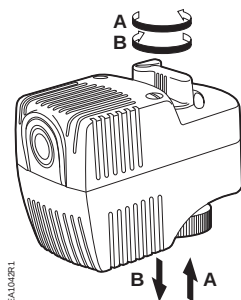
Check the wiring and the position indication.

When the position indicator is in the "0" position:

SFP: The output shaft will be retracted; the actuator is Normally Open. See Figure 7.

SFA: The output shaft will be extended; the actuator is Normally Closed. See Figure 8.

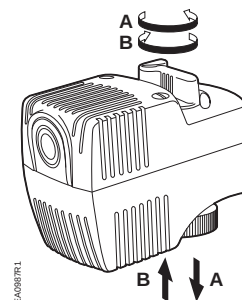
When the position indicator is in the "1" position, the reverse is true.



- (A) Allow handle to turn counterclockwise to retract spindle.
(B) Turn handle clockwise to extend spindle.



CAUTION:
Avoid damage to actuator; DO NOT manually assist spring return.



- (A) Allow handle to turn counterclockwise to extend spindle.
(B) Turn handle clockwise to retract spindle.

Figure 7. SFP Models, Normally Open.

Figure 8. SFA Models, Normally Closed.

Troubleshooting

See *Wiring* for proper connections.

Service Kits

If the actuator is inoperative, replace the unit.

Dimensions

Inches (Millimeters)

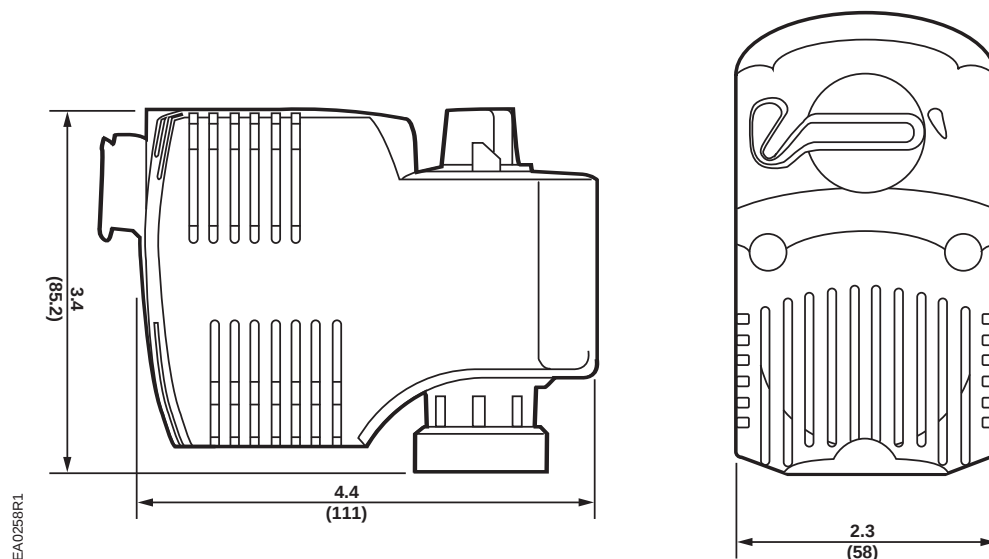


Figure 9. Dimensions of the SFx Series Actuator.

Service Envelope

Minimum access space recommended:

8 inches (200 mm) above the actuator and beside the terminal plug.

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