

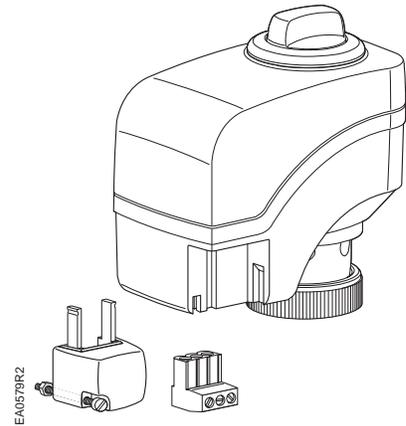
# Powermite 599 Series

## MZ Series SSB

### Electronic

### Valve Actuator

### 24 Vac Proportional Control



#### Description

The Powermite 599 MZ Series SSB 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 599 MZ Series Zone Control 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
- Manual override
- Visual position indication

#### Application

For use in heating and cooling HVAC applications with Powermite 599 MZ Series valves that need 45 lbs. (200N) nominal force. They can be used in liquid service applications.

#### Product Number

SSB61U

Actuator prefix code

255

#### 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 TB 252* (155-307P25) for selection procedures.

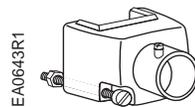
To order an actuator only, use the product number.

#### Warning/Caution Notations

<b>WARNING:</b>		Personal injury or loss of life may occur if you do not perform a procedure as specified.
<b>CAUTION:</b>		Equipment damage or loss of data may occur if you do not follow a procedure as specified.

<b>Specifications</b>	Operating voltage	24 Vac $\pm$ 20%, 24 Vdc $\pm$ 25%
	Frequency	50/60 Hz
<b>Power supply</b>	Power consumption	
	Vac	2.0 VA maximum
	Vdc	1.8 VA maximum
<b>Function</b>	Nominal stroke	7/32 inches (5.5 mm)
	Nominal force	45 lbs. (200N)
	Running time	
	60 Hz	75 seconds
	50 Hz	75 seconds
<b>Agency Certification</b>	UL	Listed to UL873
	cUL	Certified to Canadian Standard C22.2 No. 24-93
<b>Ambient Conditions</b>	Ambient temperature	
	Operation	34 to 122°F (1 to 50°C)
	Transport and storage	-13 to 158°F (-25 to 70°C)
<b>Miscellaneous</b>	Medium temperature	34 to 230°F (1 to 110°C)
	Dimensions	See Figure 7.
	Weight	9 oz. (0.25 kg)

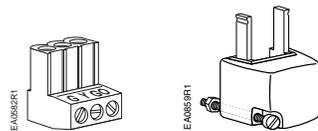
**Accessory**



**ASY97** Conduit connector (quantity one).

**Figure 1. Conduit Connector.**

**Service Kits**



**ASY100** Terminal plug and terminal block cover for SSB61U (quantity: one each).

**Figure 2. Terminal Plug and Block Cover**

**ASY98** Replacement screw and nut for use on the conduit connector or the terminal connector, quantity one each.

---

## Operation

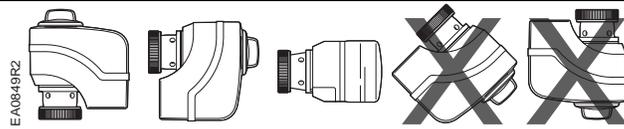
The stroke travel is proportional to control signal Y. A zero voltage control signal retracts the stroke and returns the valve to its normal position. With no supply voltage, the actuator maintains its last position.

The SSB61 is equipped with a microprocessor to control the valve stroke length. The actuator will complete a calibration stroke each time the power supply voltage is connected.

Do not attempt to calibrate an actuator if it is not attached to a valve. In this situation, the actuator will make three attempts to calibrate, and then will hold at the full stroke position. To calibrate the actuator, remove power, manually return the actuator to the 0 stroke position, attach it to a valve, and then apply power.

---

## Mounting and Installation



**Figure 3. Mounting Positions.**

Mount the actuator in one of the allowable positions shown in Figure 3.

When mounting the actuator in a plenum, the proper cable must be attached to meet local codes.

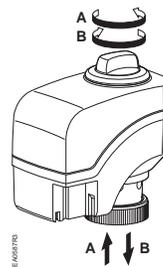
Allow 8 inches (200 mm) above the actuator and 8 inches (200 mm) behind the cable for service.

Installation instructions are included with the actuator.

---

## Manual Override

For manual positioning, turn the manual override knob in the center of the position indicator. See Figure 4. Turn clockwise to move the output shaft outward. The actuator will maintain its position until power is provided or restored.



**Figure 4. Manual Override.**

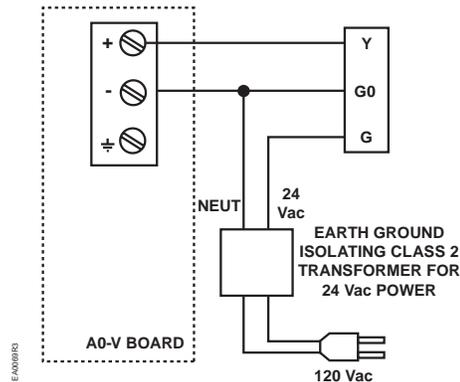
**NOTE:** Do not perform manual override while the power supply is connected; the actuator will not track accurately when the control signal is applied. A short power off/power on sequence is recommended to recalibrate the actuator.

## Wiring

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.

It is recommended that no more than 10 actuators be powered by one transformer.



**Figure 5. Terminal Connections of the SSB61U.**

Function	Terminal Connection
System potential	G
System neutral	G0
Control signal	Y



### WARNING:

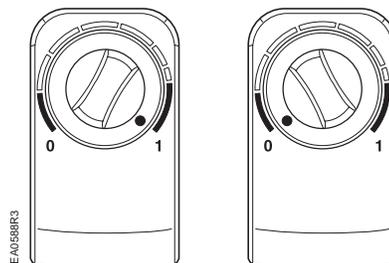
Terminal connection "G0" is Common, not ground.

## Start-Up

Check the wiring and the position indication.

When the position indicator is on the "1" position, the output shaft is extended.

When the position indicator is in the "0" position, the output shaft is retracted.



Position indicator at 1    Position indicator at 0

**Figure 6. Position Indicator.**

---

## Troubleshooting

Check *Wiring* for proper connections.

If the actuator does not provide full flow or full close-off, check that the actuator is properly attached to the valve. If not, turn power off, tighten the bonnet ring onto the valve completely, and power up to recalibrate.

---

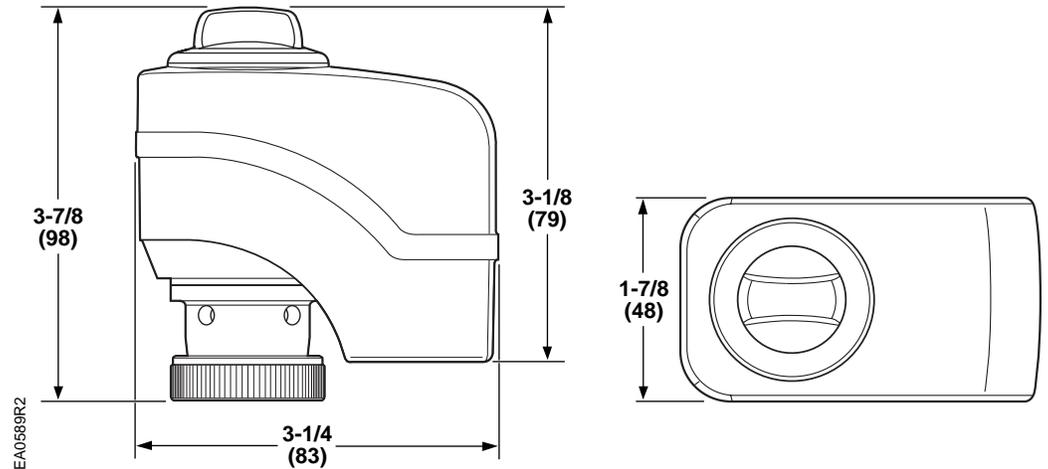
## Service Kits

See *Accessory and Service Kits* for available accessory and service parts.

If the actuator is inoperative, replace the unit.

---

## Dimensions



**Figure 7. Dimensions of the SSB Actuator in Inches (Millimeters).**

---

## Service Envelope

Minimum access space recommended:  
8 inches (200 mm) above the actuator and beside the terminal plug.

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 Siemens Industry, Inc.