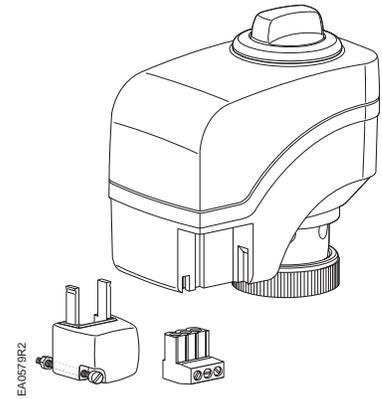


## Powermite 599 Series

### MZ Series SSB Electronic Valve Actuator 24 Vac Floating Control



**Description** The Powermite 599 MZ Series SSB electronic valve actuator requires a 24 Vac supply floating control signal to provide floating control. 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 lb. (200N) nominal force. They can be used in liquid service applications.

**Product Number** SSB81U Actuator prefix code 254

**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.

## Specifications

<b>Power supply</b>	Operating voltage	24 Vac $\pm$ 20%
	Frequency	50/60 Hz
	Power consumption	0.8 VA
<b>Function</b>	Running time	
	60 Hz	150 seconds
	50 Hz	180 seconds
	Nominal stroke	7/32-inch (5.5 mm)
	Nominal force	45 lbs. (200N)
<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°F to 122°F (1°C to 50°C)
	Transport and storage	-13°F to 158°F (-25°C to 70°C)
<b>Miscellaneous</b>	Medium temperature	34°F to 230°F (1°C to 110°C)
	Dimensions	See Figure 8
	Weight	9 oz. (0.25 kg)

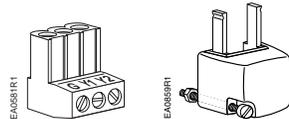
## Accessory



**ASY97** Conduit connector  
 quantity one (1).

**Figure 1. Conduit Connector.**

## Service Kits



**ASY99** Terminal plug and terminal block  
 cover for SSB81U  
 quantity one (1).

**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

A 24 Vac control signal to the Y1 extends the actuator output shaft.

A 24 Vac control signal to the Y2 retracts the actuator output shaft.

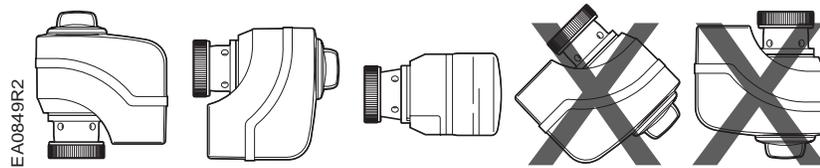
The stroke travel is proportional to the length of time the signal is applied. With no control voltage or in the event of a power failure, the actuator maintains its last position.

**NOTE:** Do not attempt to operate an actuator if it is not attached to a valve. In this situation, the actuator will only respond to a signal on terminal Y1, and drive to the full stroke position. It will then hold at the full stroke position.

Only by attaching the actuator to a valve, or by manually depressing the actuator stem to engage an internal micro-switch, will the actuator respond to a signal on terminal Y2.

---

## Mounting and Installation



**Figure 3. Mounting Position.**

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.

---

## Wiring

Do not use autotransformers. Use earth ground isolating step-down Class 2 power supplies.

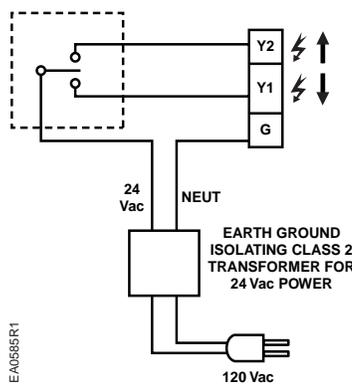
Determine supply transformer rating by summing total VA of all actuators used.

It is recommended that one transformer power no more than 10 actuators.

See Table 1 for terminal connections.

**NOTE:** Can be wired either neutral or hot switched.

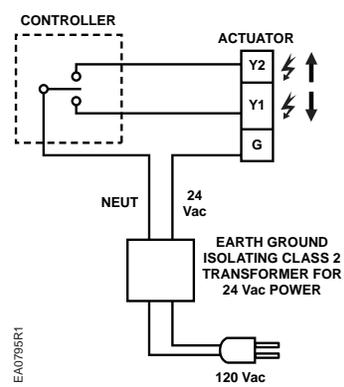
**Wiring, Continued**



EA0655R1

Y2 Retracts actuator shaft  
 Y1 Extends actuator shaft  
 G Neutral

**Figure 4. SSB81U Hot Switching Non-Spring Return**



EA0795R1

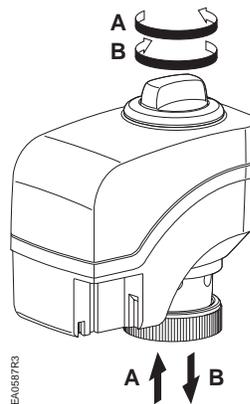
Y2 Retracts actuator shaft  
 Y1 Extends actuator shaft  
 G System potential (hot)

**Figure 5. SSB81U Neutral Switching Non-Spring Return.**

**Manual Override**

For manual positioning, turn the manual override knob in the center of the position indicator. See Figure 6. Turn clockwise to move the output shaft outward.

The actuator will maintain its position until power is provided or restored.



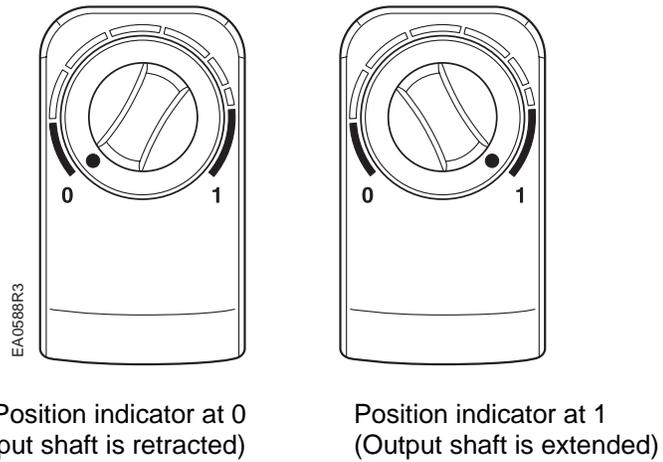
**Note:**  
 When knob is turned counterclockwise (A), the spindle is retracted.

When knob is turned clockwise (B), the spindle is extended

**Figure 6.**

## Start-Up

Check the wiring and the position indication.



**Figure 7. Position Indicator.**

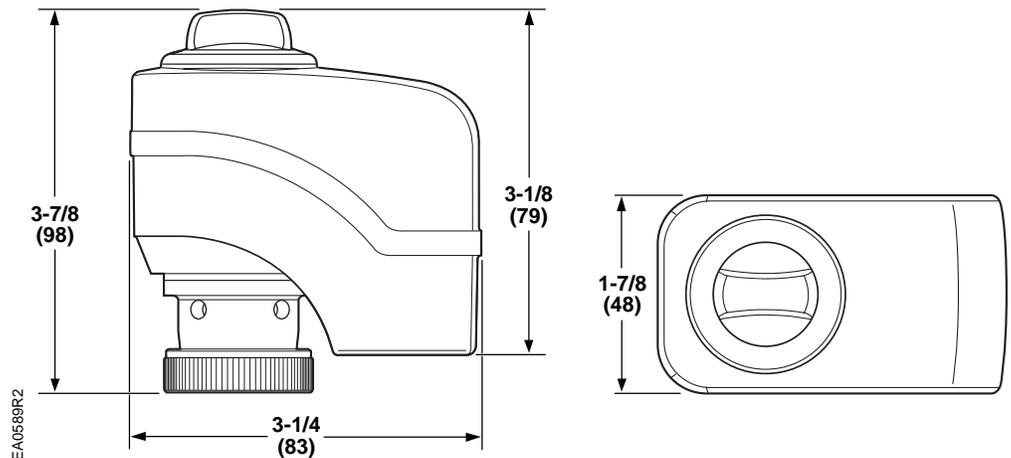
## Troubleshooting

Check *Wiring* for proper connections.

## Service Kits

See *Accessory and Service Kits* for available accessory and service parts.  
If the actuator is inoperative, replace the unit.

## Dimensions



**Figure 8. Dimensions of the SSB Actuator. Dimensions Shown 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.