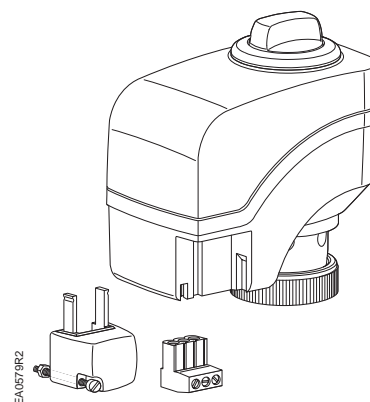


Powermite 599 Series

MZ Series SSB Electronic Valve Actuator

24 Vac 3-position (Floating) Control



Description The Powermite 599 MZ Series SSB electronic valve actuator requires a 24 Vac supply floating control signal to provide three-position 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 and steam 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

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 follow procedure as specified.

Specifications

Power supply	Operating voltage	24 Vac \pm 20%
	Frequency	50/60 Hz
	Power consumption	0.8 VA
Function	Running time	
	60 Hz	150 seconds
	50 Hz	180 seconds
	Nominal stroke	7/32-inch (5.5 mm)
Agency certification	Nominal force	45 lbs. (200N)
		UL listed to UL873
		cUL certified to Canadian Standard C22.2 No. 24-93
Ambient conditions	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)
Miscellaneous	Medium temperature	34°F to 230°F (1°C to 110°C)
	Dimensions	See Figure 8
	Weight	9 oz. (0.25 kg)

Accessory

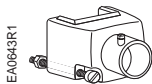


Figure 1. Conduit Connector.

ASY97 Conduit connector
quantity one (1).

Service Kits

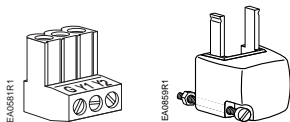


Figure 2. Terminal Plug and block cover.

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



Figure 3. Visual Position Kit.

4 224 5611 8 Visual Position Kit to
replace one indicator and two gears.
(Previous version)

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

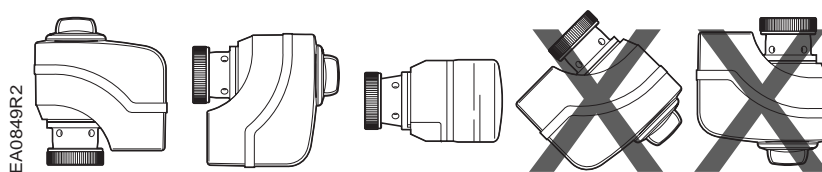


Figure 4. Mounting Position.

Mount the actuator in one of the allowable positions shown in Figure 4.

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.

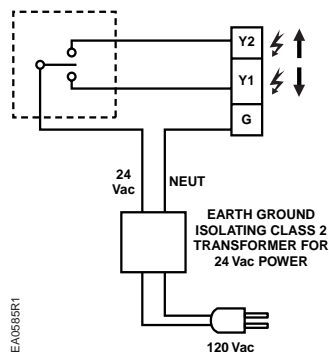


Figure 5. Terminal Connections of the SSB81U.

Wiring, Continued

Table 1. Terminal Connections.

Standard Symbol	Function	Terminal Connection
1	Supply (SP)	G
6	Control signal: Outward movement of the actuator output shaft	Y1
7	Control signal: Inward movement of the actuator output shaft	Y2



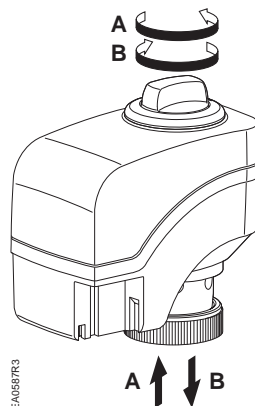
WARNING:

Terminal connection "G" is Common, not ground.

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.

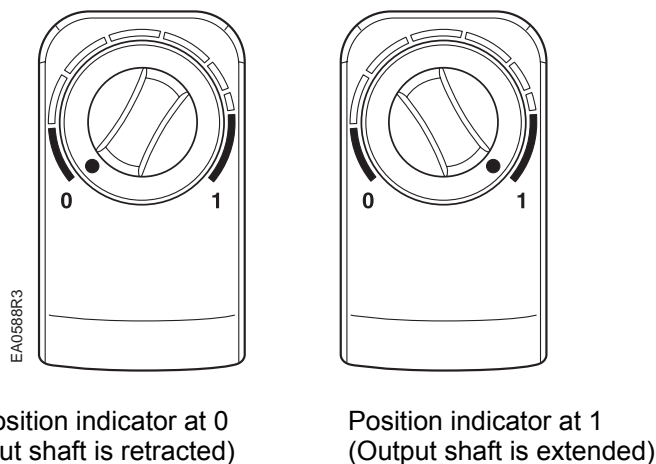


Figure 7. Position Indicator.

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

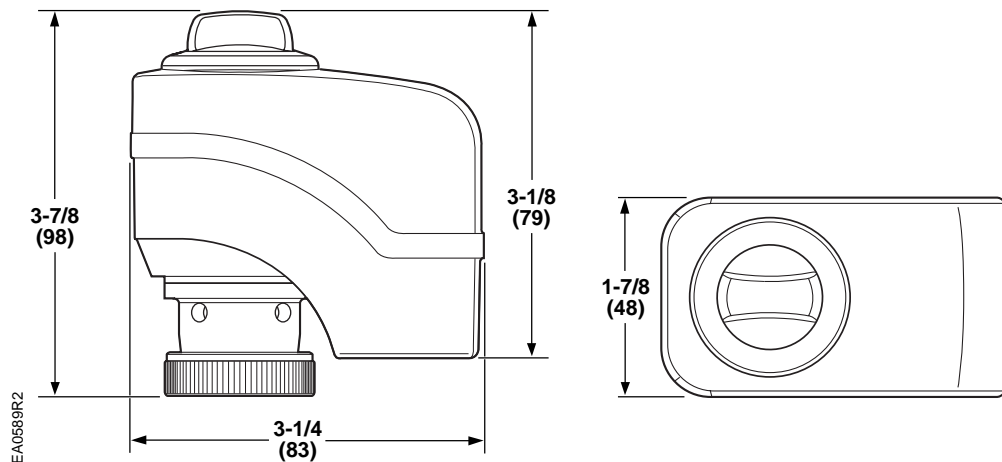


Figure 8. Dimensions of the SSB Actuator. Dimensions Shown in Inches (Millimeters).

Service envelope

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

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