

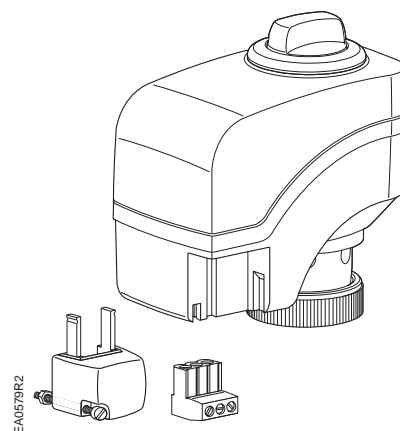
Powermite 599 Series

MZ Series SSB

Electronic

Valve Actuator

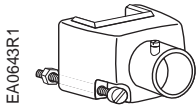
24 Vac Proportional Control



| | | | |
|-----------------------------|---|----------------------|-----|
| 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 style="list-style-type: none"> • 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 and steam service applications. | | |
| Product Number | SSB61U | Actuator prefix code | 255 |
| Ordering Information | <p>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 <i>Technical Bulletin TB 252</i> (155-307P25) for selection procedures.</p> <p>To order an actuator only, use the product number.</p> | | |

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

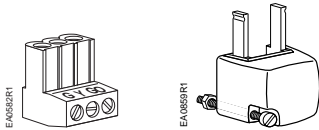
Accessory



ASY97 Conduit connector (quantity one).

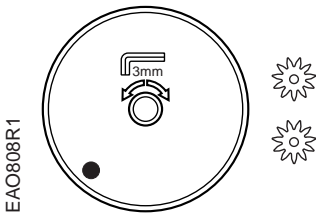
Figure 1. Conduit Connector.

Service Kits



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

Figure 2. Terminal Plug and Block Cover





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

Figure 3. Visual Position Kit.

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

Warning/Caution Notations

| | | |
|-----------------|---|--|
| WARNING: |  | Personal injury/loss of life may occur if a procedure is not performed as specified. |
| CAUTION: |  | Equipment damage may occur if the user does not follow a procedure as specified. |

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

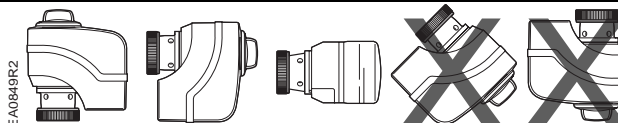


Figure 4. Mounting Positions.

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.

Manual Override

For manual positioning, turn the manual override knob in the center of the position indicator. See *Figure 5*. Turn clockwise to move the output shaft outward. The actuator will maintain its position until power is provided or restored.

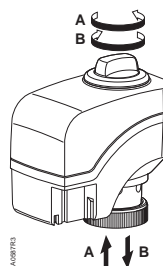


Figure 5. Manual Override.

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.

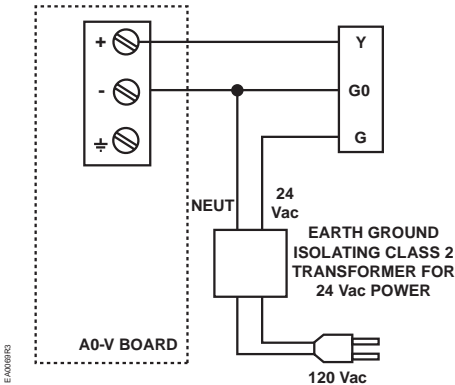


Figure 6. Terminal Connections of the SSB61U.

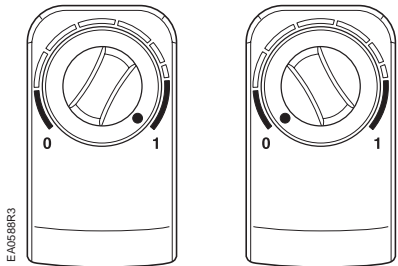
| Standard Symbol | Function | Terminal Connection |
|-----------------|----------------|---------------------|
| 1 | Supply (SP) | G |
| 2 | System neutral | G0 |
| 8 | Control signal | Y |



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 9. 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

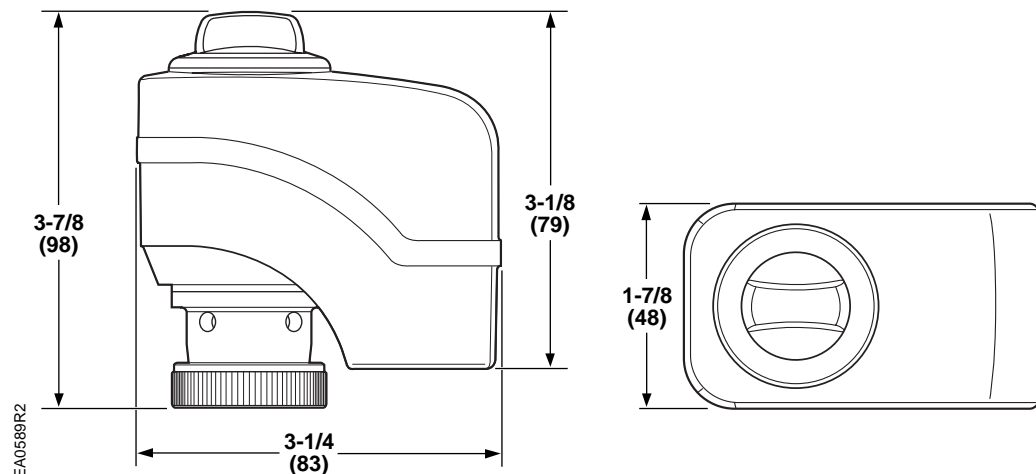


Figure 10. Dimensions of the SSB Actuator in Inches (Millimeters).

Service Envelope

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