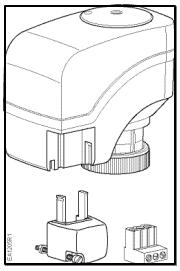
SIEMENS

Installation Instructions
Document No. 129-346
August 8, 2005

599 Series Zone Valves
SSA/P Electronic Zone Valve Actuator
24 Vac 3-Position or 0 to 10V Control
Fail-in-Place



Product Description

The SSA/P actuator requires 24 Vac, Class 2 power, and a 0 to 10 Vdc or three-position control signal to control 599 Series Zone Valves with 1/10-inch (2.5 mm) stroke.

Warning/Caution Notations

WARNING:	⚠	Personal injury/loss of life may occur if you do not follow a procedure as specified.
CAUTION:	⚠	Equipment damage, or loss of data may occur if you do not follow the procedures as specified.

Product Numbers

Description		Actuator Code
SSA81U	Normally Closed 3-Position	244
SSA61U	Normally Closed 0 to 10 Vdc	245
SSP61U	Normally Open 0 to 10 Vdc	248

Contents: One actuator

Required Tools

- Small flat-blade screwdriver
- Wire stripper

Estimated Installation Time

20 minutes

Prerequisites

⚠ **WARNING**:
If mounting the actuator to a valve already in line:

Close the shut-off valves in the piping (upstream first, then downstream);
Or
Switch off the pump to allow the differential pressure in the valve to drop.

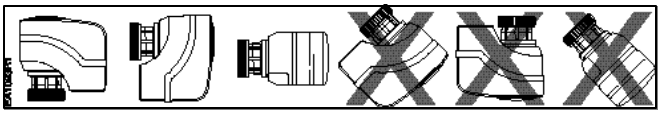


Figure 1. Acceptable Mounting Positions. *

*The vertical position is recommended for mounting.

⚠ **WARNING**:
Disconnect the controller power before replacing the actuator.

Installation

Mounting an Actuator to a Valve

CAUTIONS:

1. The black actuator attachment support ring must be in place on top of the valve bonnet before installing the actuator.

   If the support ring is not in place, damage to the actuator connection may result.

2. SSA61/81: Using the 3mm hex wrench, rotate the manual override to the "1" position before installing on a valve assembly.

1. Place the actuator on the valve and firmly hand-tighten the coupling piece.
2. Connect the wires per the *Wiring* section.

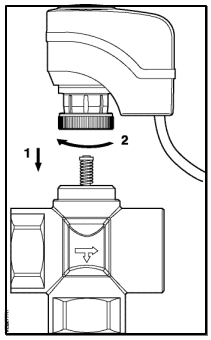


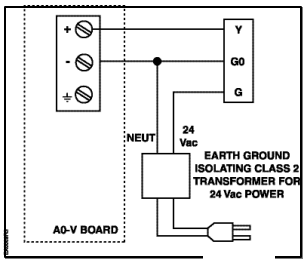
Figure 2. Mounting an Actuator to a Valve

The installation is now complete.

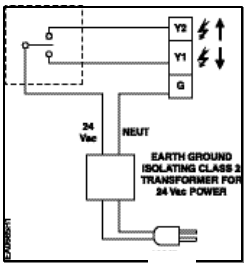
Removing an Actuator From a Valve

1. Disconnect the wiring.
2. Unscrew the actuator-coupling piece from the valve body threads.
3. Remove the actuator from the valve.

Wiring



SSA/P61U



SSA81U

Figure 3. SSA/P Series Actuator Wiring Diagram.

WARNING:
Wire connection G is 24 Vac HOT on the SSA/P61U, not ground.

CAUTION:
G0 and G must be properly wired for correct function and full life of the actuator.

- All wiring must conform to NEC and local codes and regulations.
- Use earth ground isolating step-down Class 2 transformers.
- Do not use autotransformers.
- Determine the supply transformer rating by summing the total VA of all actuators used.
- The maximum rating for a Class 2 step-down transformer is 100 VA.
- It is recommended that one transformer power no more than 10 actuators.

Start-up

Check the wiring and the position indication. See Figure 4 for referred positions "0" and "1" on the position indicator disc.

SSA61U and SSA81U Normally Closed

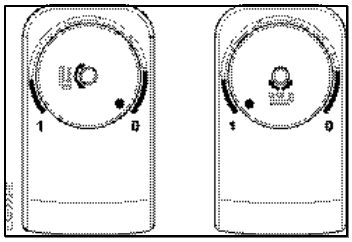
When the position indicator disc is at the "0" position the output shaft is extended (two-way valve closed).

When the position indicator disc rotates to position "1", the output shaft is retracted (two-way valve open).

SSP61U Normally Open

When the position indicator disc is at the "0" position the output shaft is *retracted* (two-way Valve open).

When the position indicator disc rotates to position "1" the output shaft is *extended* (two-way valve closed).



Position 0 Position 1

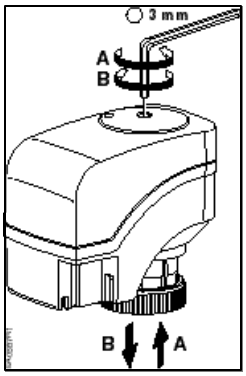
Figure 4. Visual Position Indication.

Note:
The "0" and "1" position markings are intended for reference only and not for stroke measurement.

Manual Override

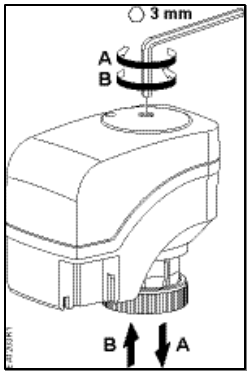
The actuators can be driven manually to any position between "0" and "1" with a 3 mm hex wrench. See Figure 5. A control signal from the controller, however, will take priority over any manual position.

NOTE: The SSA61U and the SSP61U calibrate (calibration stroke) during commissioning. Correct functioning cannot be guaranteed if the actuator is operated without a valve.



- (A) Turn hex wrench counterclockwise to retract the spindle.
- (B) Turn hex wrench clockwise to extend the spindle.

Figure 5. SSA61U and SSA81U Normally Closed.



- A) Turn hex wrench clockwise to extend the spindle.
- (B) Turn hex wrench counterclockwise to retract the spindle.

Figure 6. SSP61U Normally Open.

Troubleshooting

Check the wiring for the proper connections.

References

Technical Instructions	Document Number
SSA/P Electronic Valve Actuator 24 Vac 3-Position or 0-10 Vdc Control	155-710
Technical Bulletin TB254 599 Series Zone Valves Electric and Thermic Actuator Assembly Selection	155-291

Service Envelope

Minimum access space recommended: 8-inches (200 mm) above the actuator.

Dimensions

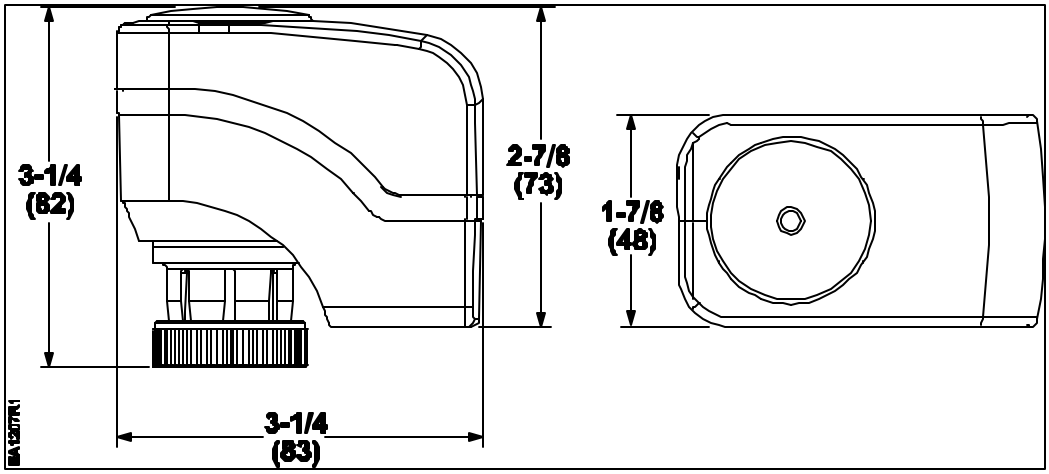


Figure 7. Dimensions of the SSA/P Series Actuator in Inches (mm).