Installation Instructions

Document No. 129-612 January 19, 2016

SAS61 Series Electronic Valve Actuators

Product Description

The SAS actuators require a 24 Vac or 24 Vdc, Class 2, supply and a 0 to 10 Vdc or 4 to 20 mA signal to control Powermite 599 Series terminal unit valves with 7/32-inch (5.5 mm) stroke. In the SAS61.33U, a mechanical spring returns the valve to its normal position when there is no power supply.

Warning/Caution Notations

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

Product Numbers

SAS61.03U – Non-spring Return (Fail-in-place) actuator

SAS61.33U - Spring Return (Fail-safe) actuator

Required Tools

- #2 Phillips or flat-blade screwdriver
- Flat blade calibration screwdriver (3 mm) for wiring connections
- Wire cutter/stripper

Estimated Installation Time

- 12 minutes for wiring a factory-installed actuator.
- 30 minutes for field replacement of an actuator.

Prerequisites



WARNING:

Disconnect the controller power before replacing the actuator.



WARNING:

If mounting the actuator to a valve already in line, either 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.

Mounting

Figure 1 shows acceptable actuator mounting positions for water applications. The recommended mounting position of the actuator for low pressure steam applications is between 45° and horizontal.

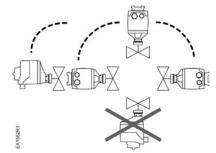


Figure 1. Acceptable Mounting Positions.

Installation

If you are mounting an actuator on a new valve, begin with the instructions, *Mounting an Actuator to a Valve*.

Remove Actuator from Valve

- Remove actuator cover screws using either a No. 2 Phillips or a No. 2 flat-blade screwdriver and detach actuator cover.
- 2. Identify and disconnect wires.
- Replace actuator cover. Use cover screws to secure actuator cover in place.
- 4. Loosen coupling piece.
- 5. Remove actuator from valve.

Item Number: 129-612, Rev. AA Page 1 of 3

Document No: 129-612 Installation Instructions January 19, 2016

Mounting an Actuator to a Valve

- If you are attaching the actuator to a new valve, remove the protective plastic cap from the valve stem.
- On the SAS61.03U Actuator, turn the manualpositioning knob counterclockwise to its end point.
- 3. Place the actuator on the valve.
- 4. Hand-tighten the coupling piece.
- Use either a Phillips head screwdriver or a flatblade screwdriver to remove the actuator cover for access to the terminal block.
- 6. Attach wires. See Wiring and Start-Up.
- 7. Place the cover on the actuator.
- 8. Fasten the cover with the screws.

Wiring

All wiring must conform to NEC and local codes and regulations.

Use earth ground isolating, step-down Class 2 transformers. Do not use auto transformers.

Determine the supply transformer rating by adding the total VA of all actuators used. The maximum rating for Class 2 step-down transformer is 100 VA. It is recommended that no more than 10 actuators be powered by one transformer.

- Remove actuator cover screws using either a No. 2 Phillips or a No. 2 flat-blade screwdriver and detach actuator cover.
- Access terminal block and attach wires per Figure 2.
- Replace actuator cover. Use cover screws to secure actuator cover in place.

G0	Neutral (-)
G	Hot (+)
Υ	Positioning signal for 0 to 10 Vdc/4 to 20 mA
М	Measuring neutral
U	Position feedback 0 to 10 Vdc
Z	Positioning signal forced control AC/DC \leq 24V, 0 to 1000 Ω

Figure 2. Terminal Connections.

A

WARNING:

Terminal connection G is 24 Vac HOT, not ground.



CAUTIONS:

- G0 and G must be properly wired for correct function and full life of the actuator.
- If the actuator makes a buzzing noise upon reaching setpoint, G and G0 are improperly wired and should be reversed.

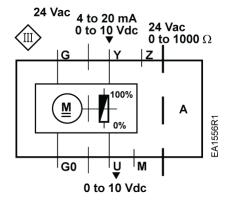


Figure 3. Wiring Diagram.

The diagram shows all possible connections. The application determines which connections are used.

Start-Up

The valve body (normally open or normally closed) determines the action of the complete valve/actuator assembly.

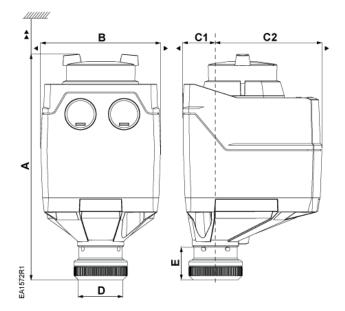
Troubleshooting

- Check wiring for proper connections and secure attachments.
- Check for adequate power supply.

References

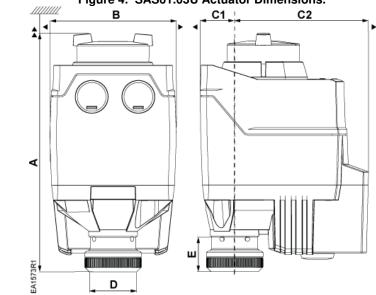
Powermite 599 MT Series SAS Electronic Valve Actuators, 24 Vac or 24 Vdc, Proportional Control Technical Instructions (155-682).

Dimensions



	Α	В	C1	C2	D	E	•	>>
Inches	5.9	3.1	0.9	2.8	1.2	0.9	4	8
mm	151	80	21.9	71.1	29.9	21.8	100	200

Figure 4. SAS61.03U Actuator Dimensions.



		Α	В	C1	C2	D	E	•	>>
ſ	Inches	5.9	3.1	0.9	3.3	1.2	0.9	4	8
I	mm	151	80	21.9	84.6	29.9	21.8	100	200

Figure 5. SAS61.33U Actuator Dimensions.

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