

# ME5000 Series of Electronic Control Actuators

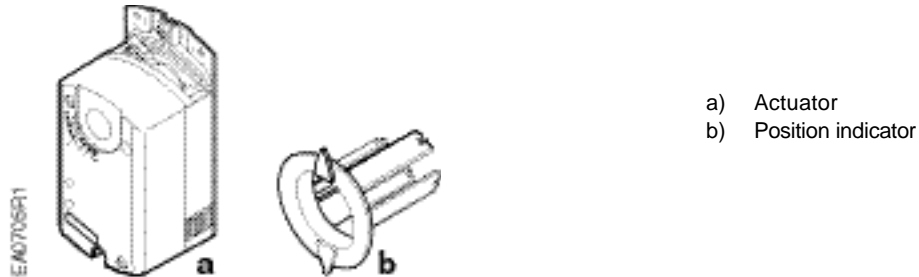


Figure 1. Parts of the Actuator.

## Product Description

This installation instruction describes the steps for direct-coupled mounting of the ME5XXX non-spring return rotary electronic control actuator.



## Product Numbers

Torque	Control	Cable	Part Number
44 lb-in (5 Nm)	3-position	Plenum	ME5125
		Standard	ME5120
		Plenum	ME5121
	0-10 Vdc modulating	Plenum	ME5320
		Plenum	ME5322
		Plenum	ME5321
88 lb-in (10 Nm)	3-position	Plenum	ME5130
		Plenum	ME5330
	0-10 Vdc modulating	Plenum	ME5332
		Plenum	ME5331
		Plenum	ME5331

## Required Tools

- 3 mm hex wrench
- 4 mm (5/32-in.) drill bit and drill
- Phillips screwdriver
- Marker or pencil

## Installation Conventions

<b>WARNING</b>		Personal injury/loss of life may occur if a procedure is not performed as specified.
<b>CAUTION</b>		Equipment damage or loss of data may occur if the user does not follow procedure as specified.

## Instructions



### WARNING:

Do not open the actuator.

**NOTE:** Place the actuator on the valve linkage or the damper shaft so that the front of the actuator is accessible. The label is on the front side.

1. Determine whether the valve or the damper blades will rotate clockwise or counterclockwise to open. See Figure 2.
2. If the valve or the blades will rotate counter clockwise, slide the manual override switch to manual, and move the adjustment lever to the right. Return the switch to automatic. See Figure 6.

To mount a (modulating) ME53XX, set the Dual In-line Package (DIP) switches to the required positions.

1. To access the DIP switches, raise the tab on the lower left side of the actuator. Refer to Figure 2. The factory setting is clockwise, with a direct-acting feedback signal.
2. Close the tab over the DIP switches.

To mount a (3-position) ME51XX for counter clockwise rotation, be sure to follow the instructions for direction of rotation located in the wiring section when wiring the actuator to the controller.

## Mounting to a Damper

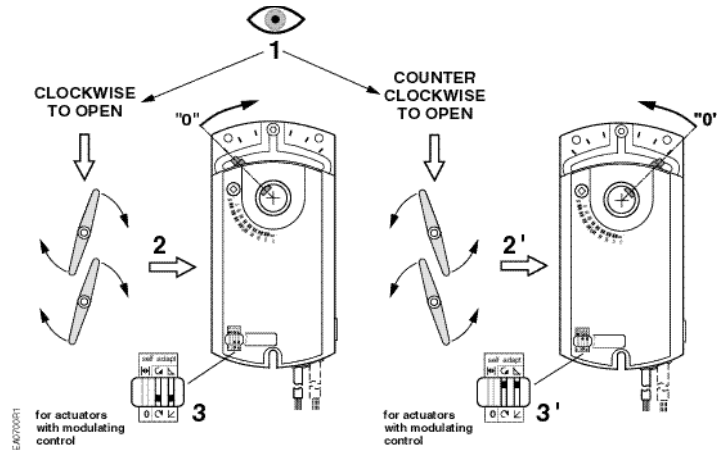


Figure 2. Setting the Direction of Rotation.



Figure 3. Mounting the Actuator to the Damper Shaft.

## Mounting to a Control Valve Assembly

1. When installing or replacing the valve actuator, position the linkage pointer and the actuator set screw pointer in the middle of the stroke.
2. Push the actuator onto the centering element drive shaft and anti-rotation pin.
3. Tighten the set screw.

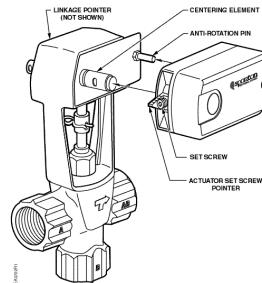


Figure 4. Actuator on Control Valve.

## Manual Override

To move the valve or damper blades and lock the position with no power present:

1. Slide the red manual override knob toward the back of the actuator.
2. Make adjustments to the valve or damper position.
3. Slide the red manual override knob toward the front of the actuator.

Once power is restored, the actuator returns to automated control.

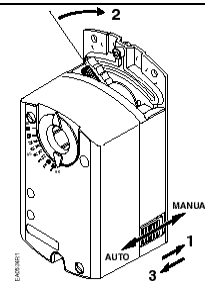


Figure 5. Manual Override.

## Dual Auxiliary Switch Setting

For ME5121, ME5321, ME5331... only.

Factory setting:

A = 5°

B = 85°

Use a flat blade screwdriver to adjust the A switch. The long arm of the X points to the setting.

Manually turn the red ring of the B switch. The narrower tab on the ring points to the setting.

**NOTE:** The auxiliary switch setting shafts rotate with the actuator. The scale is valid only when the actuator is in the "0" position on clockwise motion.

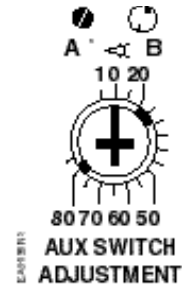


Figure 6.

## Slope and Offset adjustment

For ME5321 and ME5322 only.

Factory setting:

Slope  $\Delta U \approx 10$

Offset  $U_0 = 0$

Use a flat-blade screwdriver to make adjustments.

The long arm of the X points the setting.



Figure 7.

## Mechanical Range Adjustment – for dampers only



Figure 8. Moving the Mechanical Range Stop.

1. Loosen the stop screw.
2. Move it along the track to the desired position, and fasten it in place.
3. **For dampers and when actuator is installed on valve.** To use the entire 0 to 10 V input signal to control the adjusted range, raise the tab located on the lower left-hand side of the actuator and locate the DIP switches. See Figure 2.
4. Set the self-adapt DIP switch to (On).
5. Close the tab over the DIP switches.

For example, if you set the locking screw at 70° and turn the self-adapt switch ON, a 5V input signal will drive the damper to 35° (50% of its adjusted range).

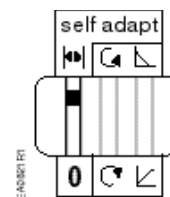


Figure 9. Self-adapt Switch on the On Position.

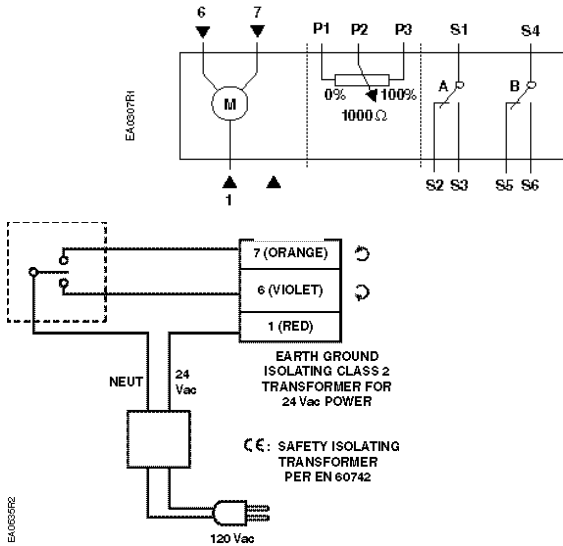
Factory setting 0 (Off)

## Wiring Diagrams

### ME51XX

#### 24 Vac power supply Three position control 24 Vac

Each wire has the standard symbol printed on it.  
See Table 1.



### Direction of Valve or Damper Rotation ME51.....

If the valve or damper blades turn counterclockwise to open (CCW), reverse the 6 (violet) and 7 (orange) wires at the controller.



#### CAUTION:

Do not wire different types of actuators in parallel with these models.

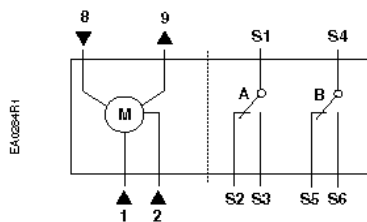
**Table 1. Three-position Control 24 Vac**

Standard Symbol	Function	Color	
		Standard	Plenum
1	Supply (+)	Red	Red
6	Control signal clockwise	Violet	Violet
7	Control signal counterclockwise	Orange	Orange
S1	Switch A Common	—	Black
S2	Switch A N.C.	—	Black
S3	Switch A N.O.	—	Black
S4	Switch B Common	—	Black
S5	Switch B N.C.	—	Black
S6	Switch B N.O.	—	Black
P1	Feedback Potentiometer 0 to 100% P1 - P2	—	Black
P2	Feedback Potentiometer Common	—	Black
P3	Feedback Potentiometer 100 to 0% P3 - P2	—	Black

### ME53XX

#### 24 Vac power supply 0 to 10 V modulating control

Each wire has the standard symbol printed on it. See Table 2.



**Table 2. Modulating Control.**

Standard Symbol	Function	Color
1	(+)	Red
2	Common	Black
8	0 to 10 V input signal	Gray
9	Output for 0 to 10 Vdc position indication	Pink
S1	Switch A Common	Black
S2	Switch A N.C.	Black
S3	Switch A N.O.	Black
S4	Switch B Common	Black
S5	Switch B N.C.	Black
S6	Switch B N.O.	Black