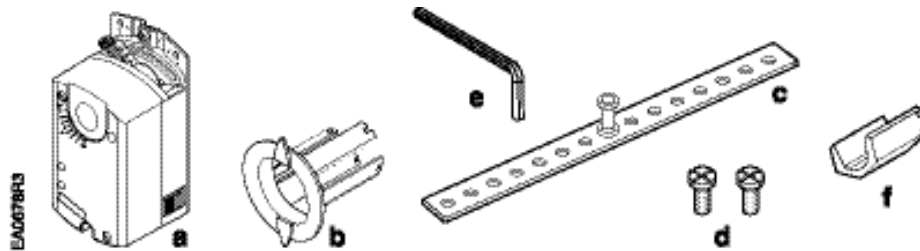


### OpenAir™ GDE Series, Non-Spring Return Electronic Damper Actuator , Rotary with Terminal Strip



- a. Actuator
- b. Position indicator
- c. Mounting bracket
- d. Mounting screws
- e. 4 mm hex key
- f. Shaft insert for use with 3/8-inch (8-10 mm) shafts

Figure 1. Parts of the GDE Rotary Actuator.

### Product Description

Steps for direct-coupled mounting of the OpenAir electronic damper actuator GDE Series non-spring return rotary with terminal strip.

### Product Numbers

GDE131.1T
GDE131.1T/B (24 pk)
GDE161.1T
GDE161.1T/B (24 pk)

### Required Tools

- 4 mm hex wrench
- 4 mm (5/32-inch) drill bit and drill
- Small flat-blade screwdriver
- Marker or pencil

### Estimated Installation Time

30 minutes

### Warning/Caution Notations

<b>WARNING:</b>		Personal injury/loss of life may occur if you do not follow a procedure as specified.
<b>CAUTION:</b>		Equipment damage or loss of data may occur if you do not follow a procedure as specified.

### Instructions



**WARNING:**

Do not open the actuator.

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

1. Determine whether the damper blades will rotate clockwise or counterclockwise to open. See Figure 2.
2. If the blades will rotate counterclockwise, slide the manual override switch to manual, and move the adjustment lever to the right. Return the switch to automatic. See Figure 9.

### GDE161.1T

To mount a (modulating) GDE161.1T, 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. See Figure 2. The factory setting is clockwise (middle switch), with a direct-acting feedback signal (right switch).
2. Close the tab over the DIP switches.

### GDE131.1T

To mount a (3-position) GDE131.1T for counterclockwise rotation, follow the *Counterclockwise Damper Rotation* instructions located in the *Wiring Diagrams* section when wiring the actuator to the controller.

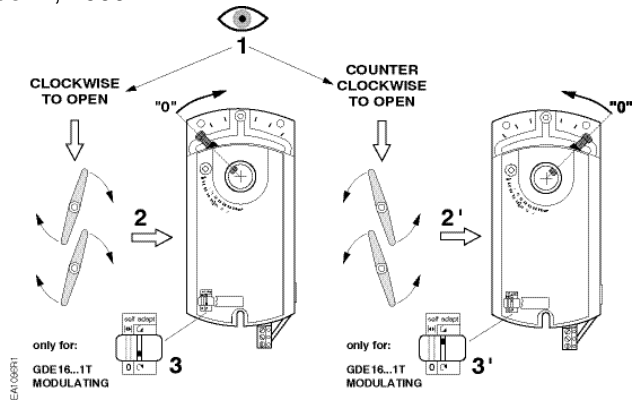


Figure 2. Setting the Direction of Rotation.

**NOTE:**  
 For DIP switch setting options, see the *Technical Instructions EA GDE/GLB-1* (155-187P25).

## Mounting and Installation

**NOTE:** The GDE actuator comes with a factory installed 1/2-inch shaft guide. If shaft size is 1/2-inch, proceed with Figure 6.

When using a 3/8-inch shaft,

1. remove factory installed 1/2-inch guide. See Figure 3.

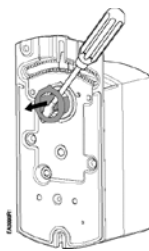


Figure 3. Removing 1/2-inch Ø Shaft Guide for 3/8-in or 5/8-in Shaft.

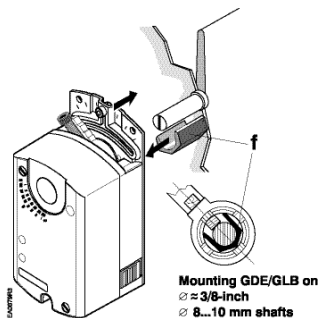


Figure 4. 3/8-inch Ø Shaft, see Figure 1.

2. A 3/8-inch shaft adapter is provided in actuator package.
3. Hold the shaft insert so that the raised tabs are inserted last when placing the insert into the back of the actuator.
4. Proceed to Figure 6.

**When using a 5/8-inch shaft:**

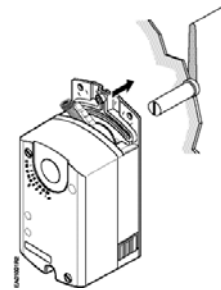


Figure 5. 5/8-inch Ø Shaft.

1. Remove factory installed 1/2-inch guide. See Figure 3.
2. Mount actuator to shaft per Figure 6.

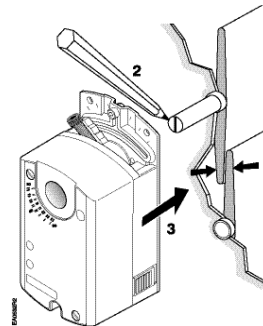


Figure 6. Mounting Actuator to Damper Shaft.

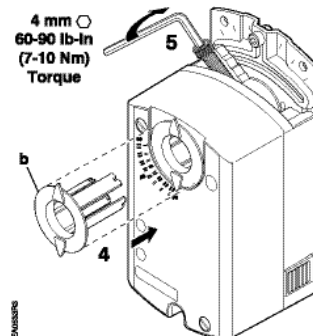


Figure 7. Installing the Position Indicator (b).

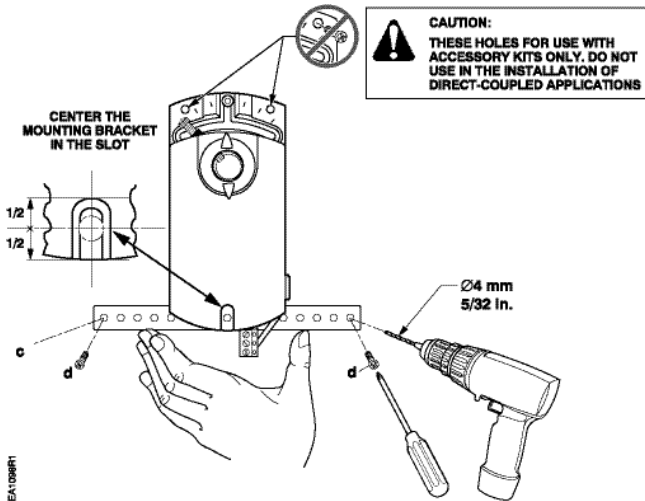


Figure 8. Attaching the Mounting Bracket.

## Manual Override

To move the damper blades and lock the position with no power present, do the following:

1. Slide the red manual override knob toward the back of the actuator.
2. Make adjustments to the 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.

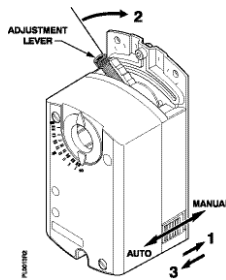


Figure 9. Manual Override.

## Mechanical Range Adjustment

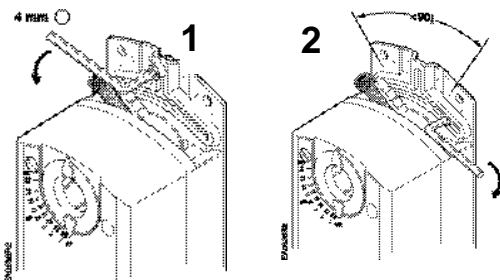


Figure 10. Moving the Mechanical Range Stop.

1. Loosen the stop set screw.
2. Move it along the track to the desired position, and fasten it in place.

## Mechanical range limitation and self-adapt feature

1. To use the entire 0 to 10V 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.
2. Set the self-adapt DIP switch to (ON).
3. 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).

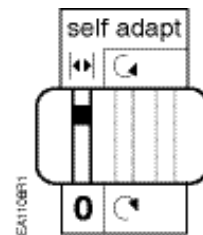


Figure 11. Self-adapt Switch in the On Position.

Factory setting 0 (OFF)



### CAUTION:

When turning the self-adaptive feature on, or after software reset with the feature on, the actuator will enter a five-minute calibration cycle as the actuator adjusts to the rotation limits of the system. The software reset happens after power on, or may be caused by electrostatic discharge (ESD) at levels of 2 kV and above.

## Wiring

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. It is recommended that one transformer power no more than 10 actuators.



**WARNING:**

**Installations requiring CE Conformance**

- All wiring for CE rated actuators must only be separated extra low voltage (SELV) or protective extra low voltage (PELV) per HD384-4-41.
- Use safety-isolating transformers (Class III transformer) per EN 61558. They must be rated for 100% duty cycle.
- Over current protection for supply lines is maximum 10A.

**GDE131.1T**

**Counterclockwise Damper Rotation of GDE131.1T**

If the damper blades turn counterclockwise to open (CCW), reverse the CW and CCW wires at the actuator.

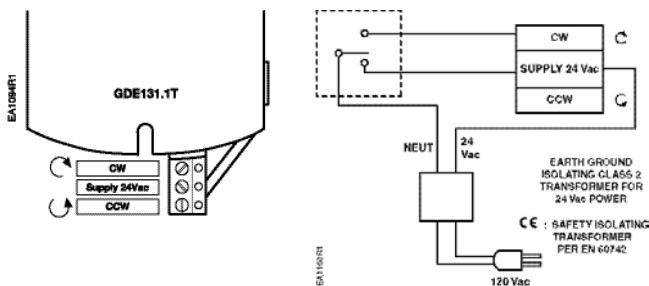


**CAUTION:**

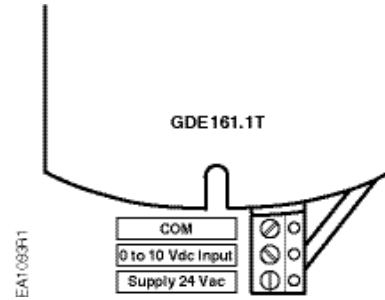
Do not wire different types of actuators (such as GBB or GIB actuators) in parallel with these models.

**Wiring Diagrams**

**NOTE:** Maximum wire size, 14 AWG.



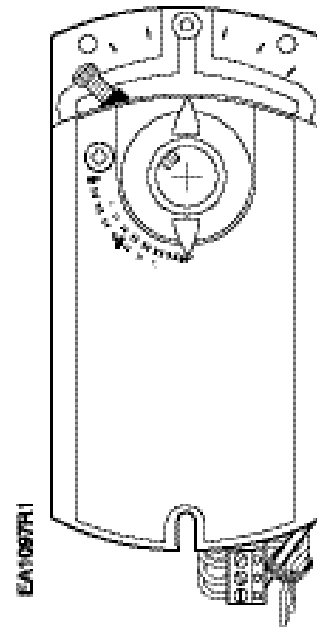
**Figure 12. 3-position control.**



**Figure 13. 0 to 10 Vdc Modulating Control.**

**Strain Relief**

**NOTE:** The open bracket to the right of the actuator terminal strip is the strain relief for the customer provided control wires. Secure the wires to the actuator bracket with a tie wrap as shown in Figure 14.



**Figure 14. Strain Relief.**

## Dimensions

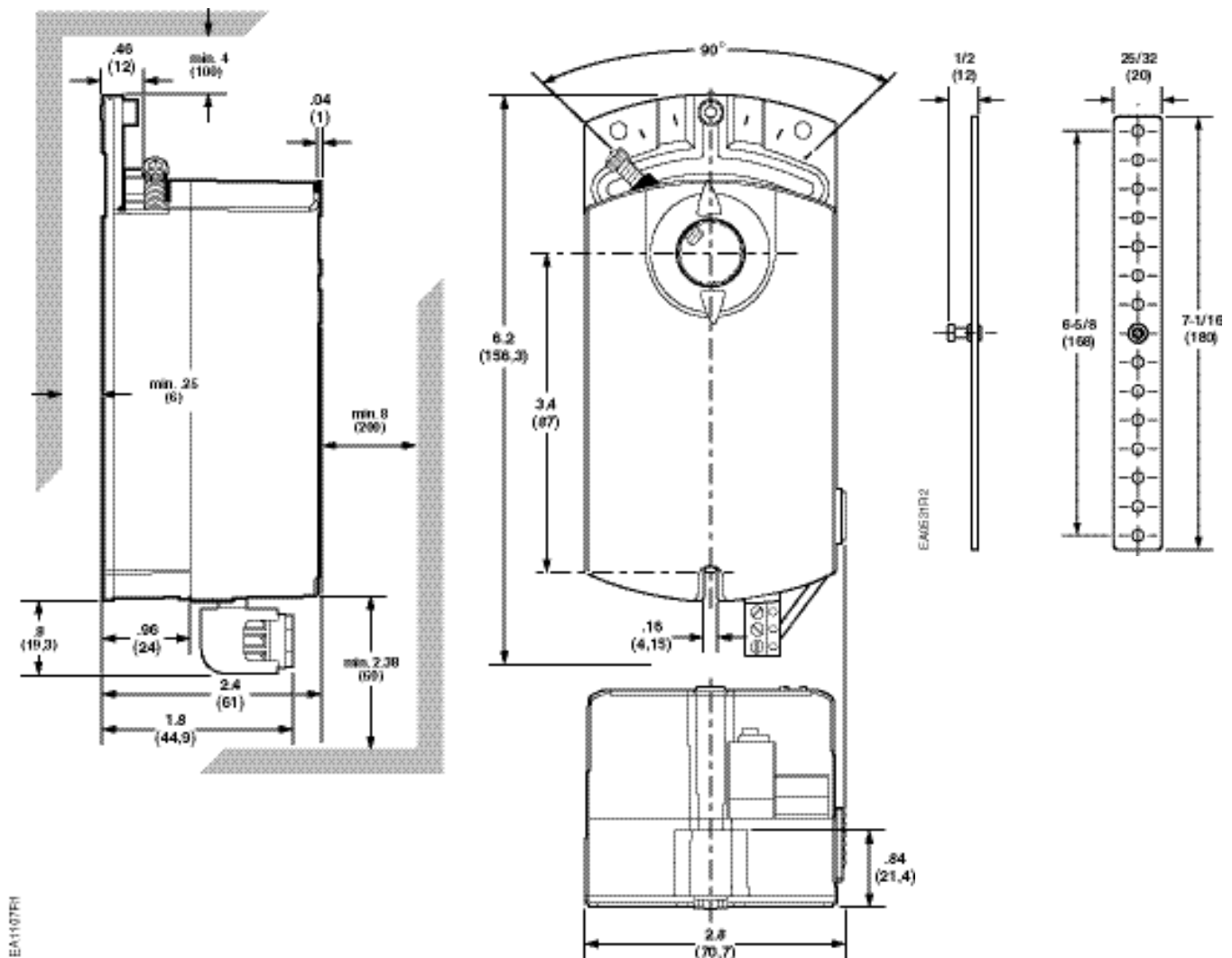


Figure 15. Dimensions of the OpenAir GDE Actuator with Terminal Strip and Mounting Bracket in Inches (mm).

## References

EA GDE/GLB-1 155-187P25

OpenAir™ Electronic Damper Actuators  
 GDE/GLB Series Non-spring Return Rotary  
 24 Vac Modulating Control

EA GDE/GLB-2 155-188P25

OpenAir™ Electronic Damper Actuators  
 GDE/GLB Series Non-spring Return Rotary  
 24 Vac Floating Control

Information in this publication is based on current specifications. The company reserves the right to make changes in specifications and models as design improvements are introduced. OpenAir is a registered trademark of Siemens Industry, Inc. Product or company names mentioned herein may be the trademarks of their respective owners. © 2009 Siemens Industry, Inc.