**Product Description**
This installation instruction describes the steps for direct-coupled mounting of the Delta DC-44 and DC-88 Series non-spring return rotary electronic valve and damper actuator.

**Parts Included for Damper Mounting**
- a) Actuator
- b) Position indicator
- c) Mounting bracket
- d) Mounting screws
- e) 3 mm hex key
- f) Coupling insert
- g) Handle (included on valve assemblies only)

**Required Tools**
- • 3 mm hex key (provided)
- • 4 mm (5/32-in.) drill bit and drill
- • Phillips screwdriver
- • Marker or pencil

**Damper Mounting Instructions**
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.
2. If 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 5.

To mount a (modulating) DCM-44/88... set the Dual In-line Package (DIP) switches to the required positions by following these steps:

1. Access the DIP switches by raising 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 (Refer to page 5 of this document for complete DIP switch setting instructions).
2. Close the tab over the DIP switches.

To mount a (3-position) DC-44-T/88... 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.

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**Figure 2. Setting the Direction of Rotation**
Manual Override

To move the damper blades and lock the position with no power present:
1. Slide the red manual override switch toward the back of the actuator.
2. Make adjustments to the damper position.
3. Slide the red manual override switch toward the front of the actuator.

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

1. Loosen the stop set screw.
2. Move the screw along the track to the desired position, and fasten it in place.
3. 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 8.
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).

Dual Auxiliary Switch Setting

For product numbers with suffix A only.
Factory setting:
A = 5°
B = 85°
Use a flat blade screwdriver to adjust the A switch. The long arm of the X points the setting. Manually turn the red ring of the B switch. The narrower tab on ring points to the setting.

The scale for the auxiliary switch setting is valid only when the actuator is in “0” position and clockwise rotation.

Slope and Offset Adjustment

For DCM24-44-Z... DCM24-88-Z... only.
Factory setting:
Span ΔU = 10
Offset U₀ = 0

Use a flat-blade screwdriver to make adjustments. The long arm of the X points the setting.
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.

DC24-44-T and DC24-88-T Series
24 VAC
Three Position Control

Direction of Damper Rotation DC-44/88...
If the damper blades turn counterclockwise to open (CCW), reverse the 6 (violet) and 7 (orange) wires at the controller.

Table 1. Three position Control 24 VAC

<table>
<thead>
<tr>
<th>Standard Symbol</th>
<th>Function</th>
<th>Terminal Designation</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply (SP)</td>
<td>G</td>
<td>Red</td>
</tr>
<tr>
<td>6</td>
<td>Control Signal CW</td>
<td>Y1</td>
<td>Violet</td>
</tr>
<tr>
<td>7</td>
<td>Control Signal CCW</td>
<td>Y2</td>
<td>Orange</td>
</tr>
</tbody>
</table>

Wiring Continued
DCM24-44 and DCM24-88 Series
24 VAC
0 to 10 V Modulating Control

Table 2. Modulating Control

<table>
<thead>
<tr>
<th>Standard Symbol</th>
<th>Function</th>
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<tbody>
<tr>
<td>1</td>
<td>Supply (SP)</td>
<td>G</td>
<td>Red</td>
</tr>
<tr>
<td>2</td>
<td>Neutral (SN)</td>
<td>G0</td>
<td>Black</td>
</tr>
<tr>
<td>8</td>
<td>0 to 10 VDC Signal</td>
<td>Y</td>
<td>Gray</td>
</tr>
<tr>
<td>9</td>
<td>Output 0 to 10 VDC</td>
<td>U</td>
<td>Pink</td>
</tr>
</tbody>
</table>

FACTORY INSTALLED OPTIONS

<table>
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<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Switch A Common</td>
<td>Q11</td>
<td>Black</td>
</tr>
<tr>
<td>S2</td>
<td>Switch A N.C.</td>
<td>Q12</td>
<td>Black</td>
</tr>
<tr>
<td>S3</td>
<td>Switch A N.O.</td>
<td>Q14</td>
<td>Black</td>
</tr>
<tr>
<td>S4</td>
<td>Switch B Common</td>
<td>Q21</td>
<td>Black</td>
</tr>
<tr>
<td>S5</td>
<td>Switch B N.C.</td>
<td>Q22</td>
<td>Black</td>
</tr>
<tr>
<td>S6</td>
<td>Switch B N.O.</td>
<td>Q24</td>
<td>Black</td>
</tr>
</tbody>
</table>

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<td>Q24</td>
<td>Black</td>
</tr>
</tbody>
</table>
## Dual In-Line Package (DIP Switches)

Raise the protective cover from the left to right to locate the DIP switches.

**MECHANICAL RANGE STOP**

<table>
<thead>
<tr>
<th>self adapt</th>
<th>0</th>
</tr>
</thead>
</table>

The Factory Setting is 0 (OFF).

When using the mechanical range stop to limit the angle of rotation, turn the self-adapting switch \[\leftrightarrow\] ON so that the adjusted range will become the new 0 to 100% for the actuator logic. In this case, 0 to 100% is not equal to 90°.

When the self-adapt feature is ON, it will automatically check the range after the voltage failure, or after the switch has been turned off and on with operating voltage supplied.

**DIRECTION OF ROTATION SWITCH**

<table>
<thead>
<tr>
<th>self adapt</th>
<th>0</th>
</tr>
</thead>
</table>

The Factory Setting is Clockwise.

The direction of rotation switch should match the damper rotation movement.

**OUTPUT SIGNAL SWITCH**

<table>
<thead>
<tr>
<th>self adapt</th>
<th>0</th>
</tr>
</thead>
</table>

The Factory Setting is Direct Acting.

As the clockwise angle of rotation increases, the output voltage increases.

If the direction of rotation is CCW, the output signal switch should be set at reverse acting to match the direction of the rotation switch.

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## Dimensions

![Dimensions Diagram](image-url)

**Figure 11. Dimensions of the Delta DC-44 and DC-88 Series Actuator and Mounting Bracket.**

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