Direct Opening Action Limit Switch

Catalog Numbers 802T-ATPDD5, 802T-DTPDD5

Overview

Bulletin 802T Direct Opening Action limit switches have been designed for use in applications requiring control-reliability performance per ANSI B11.19 and in safety applications when applied as shown in ISO 14119. Limit switches are used in electrical control systems to sense position. They are actuated when the predetermined motion of a cam, machine component, or piece part. These limit switches are suitable for use in control systems requiring control-reliability performance or safety-related performance per ISO 13849–1.

Figure 1 - Typical Example of a Dual Channel Safety Application

Before installation of a safety application, perform a risk assessment to determine whether the specifications of this device are suitable for foreseeable operational and environmental characteristics of the machine, which is to be controlled. Only the normally closed set of contacts are considered safety contacts. When applying the limit switches in a safety system application, all applicable standards for application must be followed. Follow the operating specifications and be sure that the actuator is displaced beyond the point where Direct Action occurs. These devices are not to be used for direct control of a motor.

General Data

- Safety Contacts: Two normally closed
- Enclosure rating:
  - NEMA 4, 6P, 12, and 13
  - IP67
- Operating rate and speed (1)
  - Lever Type: 150/min x 9 m (30 ft)/min
  - Top Push Roller: 150/min x 9 m (30 ft)/min

Table 1 - Mounting Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Tightening Torque [N-m (in-lb)]</th>
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<tbody>
<tr>
<td>Terminal Screws</td>
<td>2.03 (18)</td>
</tr>
<tr>
<td>Front to Rear Base</td>
<td>1.81...2.26 (16...20)</td>
</tr>
<tr>
<td>Head Screws</td>
<td>1.35...2.03 (12...18)</td>
</tr>
<tr>
<td>Lever Arm</td>
<td>2.82...4.07 (25...36)</td>
</tr>
</tbody>
</table>

Wiring

The pressure type connector terminals in the base accept No. 12 AWG and smaller solid or stranded wire. For proper tightening, it is suggested that you don’t use anything smaller than No. 18 AWG. Before you insert the wire under the pressure plates, strip the insulation approximately 3/8 inch. Tighten all pressure plate terminals whether used or not, to avoid interference with the switch cover.

After wiring has been completed, check to be sure all wires are in the wiring cavity of the terminal block so they don’t interfere with the switch when it is plugged into the terminal block. Recheck all wiring terminal screws for tightness.

ATTENTION: To avoid electrical shock and unintended operation of equipment, disconnect all power to the limit switch and the controlled equipment before proceeding with any repair or adjustment of the limit switch.

ATTENTION: Do not use adjustable length lever actuators in a safety systems application.

ATTENTION: When using 802T-W1A operating lever, be sure to use a 30° non-overtravel dog.

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IMPORTANT The contacts in each switching element must have the same polarity. The circuit diagram is shown on the nameplate.

IMPORTANT For switches that are factory wired, check wire color and their position in the terminal block for proper circuit hookup.

(1) Based on operation temperature of 20...30 °C (68...86 °F).
(2) Using 802T-W1A operating lever.
(3) Using 30° non-overtravel dog.
• Grounding of switch can be achieved per National Electric Code (NFPA 70) requirements. The grounding terminal is in the terminal block housing.
• Arrange control wiring according to terminal markings.
• Tighten terminal screws according to specifications.
• Only use insulated connectors.

**Actuator Head Positioning**

The actuator head can be placed in any of four positions on the switch body. Loosen the four captive screws. Place the head in the desired position and securely retighten the four screws (see Figure 3).

**Figure 3 - Head Position**

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**Lever Positioning**

The lever on rotary actuated devices is adjustable to any position through 360° around the shaft. Loosen the nut, move the lever to the desired position, and securely retighten the nut (see Figure 4).

**Figure 4 - Tightening the Nut**

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**Change Direction of Actuation**

The switch action of lever-operated limit switches can be adjusted to operate with either clockwise, counterclockwise, or both directions of movement of the shaft.

To change the actuation direction, follow these steps:

1. Loosen the four head mounting screws and remove the operating head from the switch body.
2. Locate the plunger on the underside of the operating head.
3. Pull the plunger outward and rotate it in steps of 90° to provide the operating mode desired. The respective settings are shown in Figure 5.

**Figure 5 - Rotation Options**

4. Make sure that the plunger is pushed back inward and the "O" ring is properly seated before the operating head is reattached to the switch body.
5. Securely retighten the operating head mounting screws.
6. Check for the desired actuation mode.

**Figure 6 - Methods of Actuation Examples**

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**Waste Electrical and Electronic Equipment (WEEE)**

At the end of life, this equipment should be collected separately from any unsorted municipal waste.