

Installation and Operating Instructions

Bulletin 802T Direct Opening Action Limit Switch



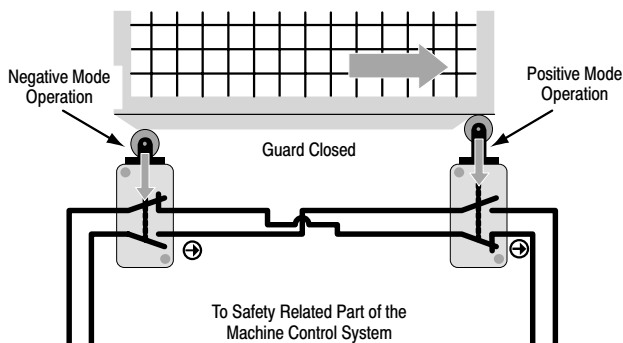
ATTENTION: To avoid electrical shock and unintended operation of equipment, disconnect all power to the limit switch and the controlled equipment before proceeding with any repair or adjustment of the limit switch.

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 by 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.

Typical Example of a Dual Channel Safety Application



Before installation in a safety application, a risk assessment should be performed 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 these limit switches in a safety system application, all applicable standards for application should be followed. Operating specifications must be followed and actuator must be displaced beyond the point where Direct Opening Action occurs. These devices are not to be used to directly control a motor.



ATTENTION: Adjustable length lever actuators should not be used in a safety systems application.

General Data

- Safety Contacts: 1 Normally Closed
- Auxiliary Contacts: 1 Normally Open
- Enclosure Rating:
 - NEMA 4, 6P, 12 and 13
 - IP67
- Operating rate and speed ❶
 - Lever Type: 150/minute @ 9m (30ft)/min ❷
 - Top Push Roller: 150/minute @ 9m (30ft)/min ❸
 - Side Push Roller: 150/minute @ 9m (30ft)/min ❹
- Operating Temperature (standard models) 18°C to 110°C (0°F to 230°F)
- Short Circuit Protection: 10 amp slow or 15 amp fast acting. Overload protection should be sized to load requirements.

Mounting

Limit switches should be securely mounted using the mounting holes provided. During installation, ensure that the actuator will be displaced beyond the point where Direct Opening Action takes place. Adjustable levers or rod actuators should not be used in safety systems applications.

Description	Tightening Torque
Terminal Screws	18in-lb
Front to Rear Base	16 to 20in-lb
Head Screws	12 to 18in-lb
Lever Arm	25 to 36in-lb

Wiring

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

The pressure type connector terminals in the base will accept No. 12 AWG and smaller solid or stranded wire. For proper tightening, it is suggested that nothing smaller than No. 18 AWG be used. Before inserting 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 that all wires are in the wiring cavity of the terminal block so they will not interfere with the switch when it is plugged into the terminal block. Recheck all wiring terminal screws for tightness.

❶ Based on operation temperature of 68°F to 86°F.

❷ Using 802T-W1A operating lever.

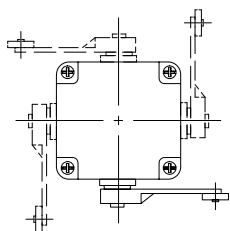
❸ Using 30° non-overtravel dog.

Note: For switches that have been factory wired, check wire color and their position in the terminal block for proper circuit hookup.

- Grounding of switch should be achieved per National Electric Code (NFPA 70) requirements. Grounding terminal is located in the terminal block housing.
- Arrange control wiring according to terminal markings.
- Tighten terminal screws according to specifications.
- Only use insulated connectors.

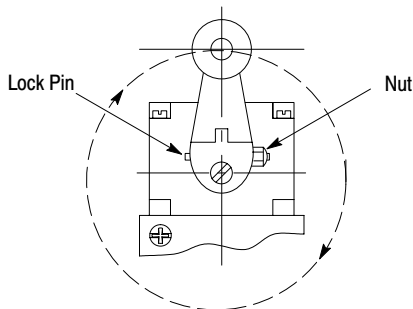
Actuator Head Positioning

The actuator head may 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 below).



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 below).



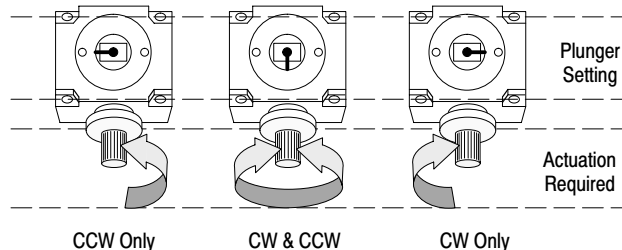
Changing Direction of Actuation

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

To change the actuation direction, follow the steps below:

Important: This procedure must be performed in a clean environment to avoid the introduction of foreign material into the operating mechanism.

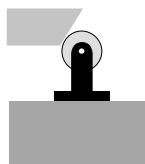
- Step 1:** Loosen the four head mounting screws and remove the operating head from the switch body.
- Step 2:** Locate the plunger on the underside of the operating head.
- Step 3:** Pull the plunger outward and rotate it in steps of 90° to provide the operating mode desired. The respective settings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



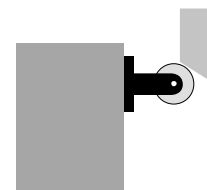
- Step 4:** Make sure the plunger is pushed back inward and the "O" ring is properly seated before the operating head is reattached to the switch body.
- Step 5:** Securely retighten the operating head mounting screws.
- Step 6:** Check for the desired actuation mode.

Methods of Actuation Examples

802T-DPD
Top Push Roller
30° Non-Overtravel Dog

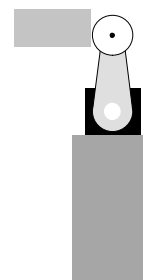


802T-KPD
Side Push Roller
30° Non-Overtravel Dog



Vmax = 30ft/min @ actuator
F max = 150 cycles/min

802T-APD
802T-W1A 1.5" Long
90° Non-Overtravel Dog



Vmax = 30ft/min @ actuator
F max = 150 cycles/min