Installation and Operating Instructions
Bulletin 802B Small Precision Limit Switch

IMPORTANT: SAVE THESE INSTRUCTIONS FOR FUTURE USE.
This publication does not include specifications, dimensions, and other installation considerations.
Refer to the product catalog pages for additional information.

WARNING: To avoid electrical shock and/or 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

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. This mechanical motion is then converted to an electrical signal through the actuation of a set of contacts. These signals can be used in the control circuits of solenoids, control relays, and motor starters to control the operation of conveyors, hoists, elevators, machine tools, etc. They are not to be used to directly control a motor.

General Data

- Enclosure Rating: NEMA 1, 3, 4, 6, 13 and IP67
- Mechanical Life: Approx. 10,000,000 operations ❶
- Electrical Life: Approx. 500,000 operations (10A 250V AC, resistive load) ❶
- Operating Speed
  - Top Push: 0.05mm to 0.5m per second
- Operating Frequency:
  - Mechanical: 120 operations/minute
  - Electrical: 20 operations/minute
- Operating Temperature: –10°C to 80°C (14°F to 176°F) with no icing
- Short Circuit Protection: Quick blow fuse suitable for rated current is recommended.

❶ Life expectancy has been calculated at an operating temperature of 20°C (68°F) and an operating humidity of 65%.

Mounting

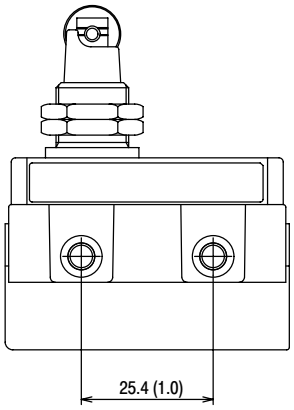
Units should be mounted using the mounting holes provided. These mounting holes are located on the side of the limit switches. The mounting holes are spaced 25.4mm (1in) center to center. The holes will accept an M4 mounting screw. Top push units without sealing boot, may be panel mounted using the M14 mounting nuts provided. When side mounting a switch that has the capabilities of panel mounting, remove the hex nuts provided with the switch.

Mounting Torque Specifications

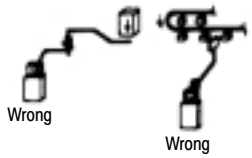
Hardware	Torque
Terminal Screw	0.78 to 1.18 N · m
Panel Mounting Nut	4.90 to 7.84 N · m
Side Mounting Screw	1.18 to 1.47 N · m

Wiring

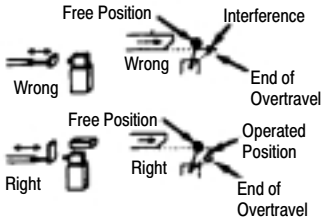
- Arrange control wiring according to terminal markings.
- Tighten terminal screws according to specifications
- Only use insulated conductors
- Each limit switch includes a rubber cable gland for sealing. This gland will accept wire diameters of 8.5 to 10.5mm.
- Grounding may be achieved though the mounting hardware per NEC.



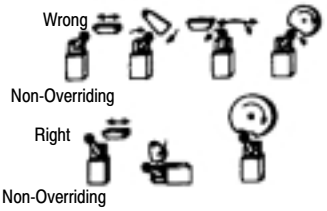
Actuator Consideration



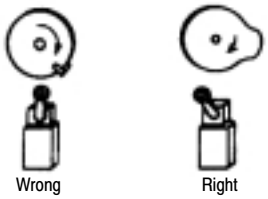
Limit switches are designed for proper performance with the actuators with which they are supplied. Supplementary actuators should not be used unless the limit switches are specifically designed for them.



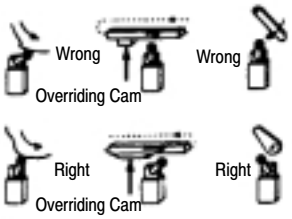
Operating mechanism for limit switches should be so designed that under any operating or emergency conditions the limit switch is not operated beyond its overtravel limit position. A limit switch should not be used as a mechanical stop.



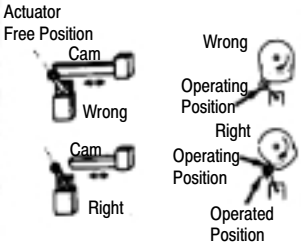
For limit switches with lever actuators, the actuating force should be applied as nearly perpendicular to the lever as practical and perpendicular to the shaft axis about which the lever rotates.



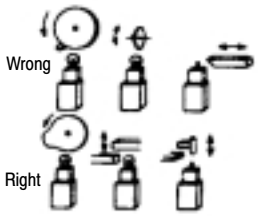
Where relatively fast motions are involved cam arrangements should be such that the actuator does not receive a severe impact. Cams should be designed such that the limit switch will be held operated long enough to operate relays, valves, etc.



Cam or dog arrangements should be such that the actuator is not suddenly released to snap back freely.

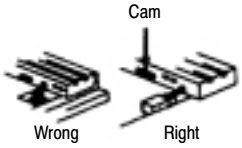


A limit switch actuator must be allowed to move far enough for positive operation of the contacts.

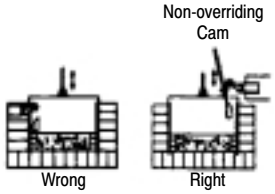


For limit switches with pushrod actuators the actuating force should be applied as nearly as possible in line with the pushrod axis.

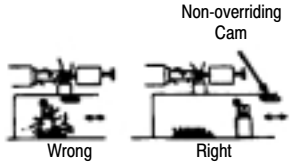
Location and Installation



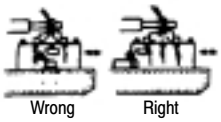
Limit switches should be mounted rigidly and in readily accessible locations with suitable clearances to permit easy service and replacement when necessary. Cover plates should face the maintenance access point.



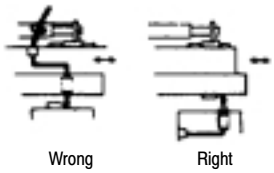
Limit switches should not be used in locations where temperature or atmosphere conditions are beyond those for which they have been specifically designed.



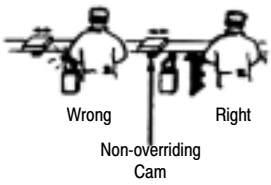
Limit switches should be placed in locations where machining chips do not accumulate under normal operating condictions.



Limit switches should not be submerged in or splashed with oils, coolants or other liquids.



The location of oiltight limit switches and the method of connecting them should be such that condensation in the conduit cannot enter the switch enclosure.



Limit switches should be mounted in locations which will prevent false operation by normal movements of operator or machine components.