Contents

Quick Selection Guide

Specifications	 **801** **General Purpose**	 **802G** **Gravity Return**	 **802M and 802MC** **Pre-Wired Factory Sealed**	 **802R** **Sealed Contact**
Description	• General purpose limit switch for a wide variety of applications.	• Plug-In gravity return switch, designed for conveyor-type operations with small or lightweight objects.	• Compact, pre-wired switch is factory sealed to meet the requirements of demanding applications, wet or dry.	• Similar in construction to the 802T NonPlug-In. A glass hermetically sealed reed switch is used as the switching element to provide high contact reliability.
Features	• Mounting option; Surface	• Mounting options: Surface, manifold	• The cable entry and wire strands are epoxy sealed to protect against fluids entering or wicking into the switch. Mounting options: surface.	• Enclosure: gasketed, transparent plastic cover allows inspection of terminals without removing the cover. Mounting option: Surface
Contact Rating	• NEMA A600	• NEMA B600	• 2-circuit: NEMA A600 4-circuit: NEMA B300	• NEMA B600
Temperature Rating	• –0° to 40°C (32° to 104°F)	• 0° to 110°C (32° to 230°F)	• 0° to 80°C (32° to 180°F)	• –29° to 121°C (–20° to 250°F)
Actuators	• Lever, maintained	• Three adjustable rod levers	• Lever, maintained, top and side push (with or without rollers).	• Lever, low operating force, top and side push (with or without rollers), cat whisker, wobble stick
Enclosure	• NEMA Type 1, Type 4 or Type 7 and 9	• NEMA Type 1	• NEMA Types 1, 4, 4X, 6P and 13; IP67 (IEC529)	• NEMA Types 13
Additional Info	• See page 5–7	• See page 5–11	• See page 5–13	• See page 5–32

Quick Selection Guide

 **802T** **Plug-In Style**	 **802T** **NonPlug-In Style**	 **802T** **Safety Limit Switches**	 **802X** **Watertight or Hazardous Location**	 **802XR** **Sealed Contact Hazardous Location**
• Plug-in construction provides quick and easy installation. New front-mounting design and method of mode change in head make it easy to apply.	• The NonPlug-In limit switch is ideal for applications which require heavy-duty pilot ratings, a high degree of versatility and a rugged, oiltight construction.	• Bulletin 802T Direct Opening Action limit switches have been designed for use in control reliable applications and safety applications per ISO 14119.	• NEMA Types 7 and 9: Designed for hazardous locations only. Class I, Groups B, C, D Class II, Groups E, F and G Class III	• Designed for hazardous locations. Contains sealed glass contact switch for greater contact reliability.
• Circuitry: 4-circuit version (for most types the same size as the 2-circuit switches); Seals: Viton seals for special applications; Mounting options: Surface, manifold	• Switches: dual, air operated, 2-pole vertical or horizontal, lever operated time delay; Mounting options: Surface, cavity, manifold	• Direct opening action • Snap acting contacts • Rugged metal construction • Long life and reliability • Plug-in design • NEMA 6P/IP67 sealing	• Mounting option: Surface	• Mounting option: Surface
• 2-Circuit: NEMA A600 4-Circuit: NEMA A300	• NEMA A600	• 2-circuit: A600/AC–15 Q300/DC-13 • 4-circuit: A300 Q300/DC-13	• NEMA A600	• NEMA B600
• –18° to 110°C (0° to 230°F); Optional: –40° to 110°C (–40° to 230°F),	• –18° to 54°C (0° to 130°F) Optional: –29° to 121°C (–20° to 250°F)	• –18°C to +110°C (0°F to +230°F)	• –46° to 121°C (–50° to 250°F)	• –29° to 121°C (–20° to 250°F)
• Lever, maintained, low operating force, top and side push (with or without rollers), cat whisker, wobble stick, neutral position	• Lever, maintained, low operating force, top and side push (with or without rollers), cat whisker, wobble stick, neutral position	• Lever, top push roller, side push verticle roller, side push horizontal roller	• Lever, maintained, top and side push (with or without rollers), wobble stick, neutral position	• Lever, top and side push (with or without rollers), wobble stick
• NEMA Types 1, 4, 6P (select side rotary styles), 13	• NEMA Types 1, 13	• NEMA 4, 6P, 12, 13 and IP67	• NEMA Types 7 and 9 Class I, Groups B, C or D Class II, Groups E, F or G Class III	• NEMA Types 7 and 9 Class I, Groups B, C or D Class II, Groups E, F or G
• See page 5–39	• See page 5–47	• See page 5–66	• See page 5–70	• See page 5–77

Quick Selection Guide

Specifications	 **802B** Compact	 **802B** Precision	 **802B** Small Precision	 **440P–C** International Small Plastic	 **440P–M** International Large Metal
Description	• Compact metal body is prewired to maintain enclosure seals. Industry standard mounting for ease of installation.	• Precision style limit switch uses industry standard mounting. Low trip and reset points for more precise sensing.	• Small Precision limit switches are metal bodied for use in industrial applications. Twelve different styles are available for solving multiple applications.	• Conforms to EN50047 (22mm) • Glass reinforced thermoplastic housing • Most feature direct opening contacts designed to meet IEC 947. Available in snap-acting, slow make/break with 2 or 3 pole contact arrangement. • Heads can be rotated in 90° increments for flexible mounting	• Conforms to EN50041 (30mm x 60mm) • Cast aluminum housing • Most feature direct opening contacts designed to meet IEC 947. Available in snap-acting, slow make/break with 2, 3 or 4 pole contact arrangement. • Heads can be rotated in 90° increments for flexible mounting
Features	• 3 meter cable standard • AC or DC LED versions • Low current versions • Booted and Panel mount versions • UL/CSA and CE marked for all applicable directives	• 1/2in NPT conduit entry • Grounding screw • Booted models • Side and flange mounting available • UL/CSA and CE marked for all applicable directives	• 12 different actuators • Screw termination • Small size • Booted and Panel mount versions • UL/CSA and CE marked for all applicable directives	• Available in1/2in NPT, M20 and QD versions • Cat. 1 device per EN954–1, dual-channel interlocks suitable for Cat. 3 or 4 systems • cULus, TUV, and CE marked for all applicable directives • Mounting options: surface	• Available in1/2in NPT, M20 and QD versions • Cat. 1 device per EN954–1, dual-channel interlocks suitable for Cat. 3 or 4 systems • cULus, TUV, and CE marked for all applicable directives • Mounting options: surface
Contact Rating	• SPDT Form C • NEMA B300	• SPDT Form C • 15a @ 125/250/480V AC	• SPDT Form C • NEMA B300	• A600/AC–15 • N600/DC–13	• A600/AC–15 • N600/DC–13
Temperature Rating	• –10° to 70°C (14° to 158°F)	• –10° to 80°C (14° to 176°F)	• –10° to 80°C (14° to 176°F)	• –25° to 80°C (–18° to 176°F)	• –25° to 80°C (–18° to 176°F)
Actuators	• Rotary arm, center rotary arm, wobble stick, top push, top push bevel, top push roller, top push cross roller	• Top push, top push roller, top push cross roller, roller lever, one-way roller lever	• Top push, top push roller, top push cross roller, hinge lever, short hinge lever, roller lever, short roller lever, one-way roller lever, short one-way roller lever	• Roller plunger, dome plunger, hinge lever, short lever, offset hinge, adjustable lever, large rubber roller	• Roller plunger, dome plunger, short lever, adjustable lever, rod lever, spring rod, telescope arm
Enclosure	• NEMA 1, 3, 4, 6, 12, 13 and IP67	• Nonbooted: NEMA 1 and IP 60 • Booted: NEMA 1, 3, 4 and IP65	• NEMA 1, 3, 4, 6, 13 and IP67	• IP66	• IP66
Additional Info	• See page 5–90	• See page 5–98	• See page 5–106	• See page 5–111	• See page 5–117

Technical Definitions and Terminology

Actuator: A switch mechanism that when moved as intended, operates the switch contacts. This mechanism transmits the applied force from the actuating device to the contact block, causing the contacts to operate.

Actuator Free Position: The initial position of the actuator when there is no external force (except gravity) applied to the actuator.

Actuator Operating Position: The position of the actuator when the contacts operate.

Actuator Resetting Position: The position of the actuator at which the contacts move from the operated position to the “normal” position.

Differential Travel (Travel to reset contacts): The angle or distance through which the actuator moves from the contact operating position to the actuator resetting position, or the distance between the operating point and the release point.

Normal Contact Position: The position of the contacts when no operating force is applied.

Operating Contact Position: The position to which the contacts move when the actuator is deflected to or beyond the actuator operating position.

Operating Force: The straight line force in the designed direction applied to the switch actuator to cause the contacts to move to the operated position.

Operating Torque: The torque that must be applied to the actuator to cause the movable contacts to move to the operated contact position.

Overtravel: The movement of the actuator beyond the contact operating position.

Pretravel (Travel to the operate contacts): Travel to operate the contacts from the actuator free position.

Slow Make-Slow Break: A type of contact structure with no overcenter mechanism. Contacts move at a speed directly proportional to the speed of operation of the actuator. Contacts may touch with little contact pressure.

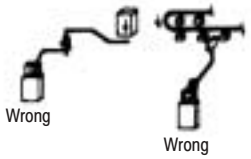
Snap Action: In this type of contact structure, movement of the actuator applies force to an overcenter mechanism, which creates a fast change in contact state once the overcenter position has been exceeded.

Snap Action/IEC Positive Opening Action: This contact structure is very similar to the snap action contact with one addition: continued operation of the operating mechanism beyond the normal snap action position applies force directly to the normally closed (N.C.) contact if it has not opened with the snap action mechanism. This helps to ensure opening of even a welded contact. For example, if a contact has a snap action operating point at 40° rotary movement, the direct opening action point may be at 60° or more. No direct opening action forces are applied to the N.O. contact.

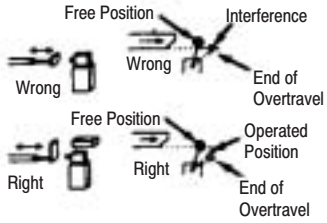
Total or Maximum Travel: The sum of the pretravel and the overtravel.

Application Considerations

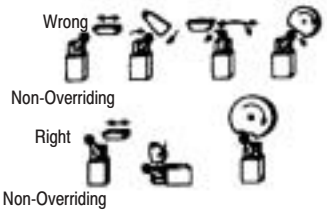
Actuator Consideration



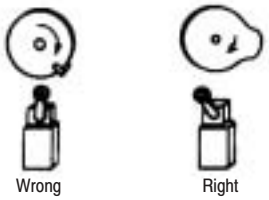
Limit switches are designed for proper performance with the actuators with which they are supplied. Supplementary actuators should not be used unless the limit switches are specifically designed for them.



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.

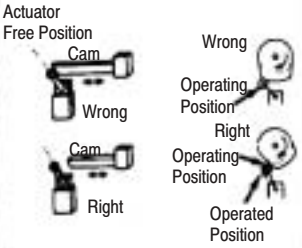


For limit switches with lever actuators, the actuating force should be applied as nearly perpendicular to the lever as practical and perpendicular to the shaft axis about which the lever rotates.

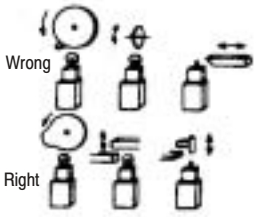


Where relatively fast motions are involved cam arrangements should be such that the actuator does not receive a severe impact. Cams should be designed such that the limit switch will be held operated long enough to operate relays, valves, etc.

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

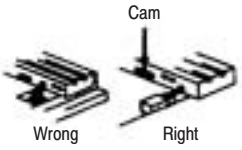


A limit switch actuator must be allowed to move far enough for positive operation of the contacts.

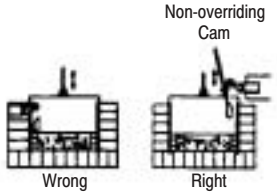


For limit switches with pushrod actuators the actuating force should be applied as nearly as possible in line with the pushrod axis.

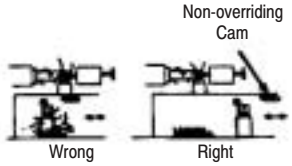
Location and Installation



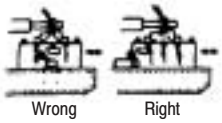
Limit switches should be mounted rigidly and in readily accessible locations with suitable clearances to permit easy service and replacement when necessary. Cover plates should face the maintenance access point.



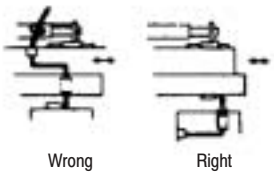
Limit switches should not be used in locations where temperature or atmosphere conditions are beyond those for which they have been specifically designed.



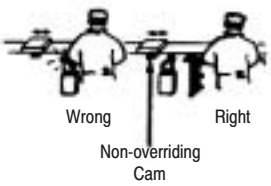
Limit switches should be placed in locations where machining chips do not accumulate under normal operating condictions.



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.


801–ASA11


801–ASC17


801–CMC21


801–FSC148


801–ASC1411

Description

The Bulletin 801 line of general purpose limit switches includes many types of switches for use in a wide variety of applications. Many different contact arrangements are available. Slow and snap action contact operating mechanisms are available. Snap action limit switches are designed to provide high snap through force once the mechanism has traveled the required distance. Refer to the table on page 5–10 for limit switch selection.

Figure 1

Lever on right side as illustrated. Clockwise operation only. Lever can be adjusted through 360°.

Figure 2

Contacts are operated in both directions of roller lever. With roller on inside, lever is adjustable through 49° either side of center line. With roller on outside, lever is adjustable through 360°.

Figure 3

Similar to Figure 2 except roller lever is longer for use where more space is necessary between limit switch and its operating device. The total height from base of limit switch to the end of roller is 181.0mm (7.125in).

Figure 4

Same contact operation in either direction, with roller on either inside or outside. Starting position of lever is adjustable 43° either side of center line.

Figure 5

Contact operation is obtained only in direction shown. Lever is free to move in opposite direction, but contacts are not actuated. With roller on inside, starting position of lever can be adjusted through 128° from extreme left position; with roller on outside, the roller lever is adjustable through 360°.

Figure 6

Similar to Figure 5, except that operation is to the left.

Figure 7

For clockwise operation. Ratchet type. When lever is moved to right, contacts are operated. Lever is spring return, but contacts remain in the operated position. Next movement of roller lever to the right returns the contacts to their original position. This completes cycle of operation. Lever is adjustable through 360°.

Figure 8

Similar to Figure 7 except that operation is counterclockwise.

Figure 9

Contacts are operated when fork lever is operated in one direction and are restored to original position when lever is operated in the reverse direction. Rod or Chain/Stroke Type Actuators not shown.

Figure 10❶

Roller lever on right side. Roller 34.9mm (1.375in) in diameter. Lever travels through 30° arc. Downward travel of roller, 33.3mm (1.312in).

Figure 11❶

Similar to Figure 10, except roller has a rubber trim, 76.2mm (3in) in diameter. Downward Travel of roller, 42.1mm (1.656in).

Figure 12❶

Roller lever on right side. Steel roller, 34.9mm (1.375in) in diameter. Lever travel, either direction, 30°.

Figure 13❶

For clockwise operation. Roller, 1.375in (34.9mm) diameter. Downward linear travel of roller, 50mm (1.969in).

❶ For NEMA 7 & 9 housing, reduce total height by 1.6mm (0.063in).

Figure 14❶

Contact operation obtained when fork lever is moved in direction shown and restored to original position when lever is operated in reverse direction.

Figure 15

Contacts operate in the direction shown. Track type limit switch with roller fork lever. Rollers 22.2mm (0.875in) diameter hardened steel.

Figure 16

Contacts operate when the lever is moved in either direction. Should only be used where the link between lever and operating mechanism is short, so that the weight of the connecting mechanism will not offset the force of the spring return. Maximum weight of connecting mechanism: 0.5lb.

Figure 17

Counterweight holds contacts closed. When the hook reaches the upper limit of its travel, it raises the counterweight and the weighted lever operates the contacts. When the hook is lowered the contacts are reset.

Figure 18

Similar to Figure 1 except lever is on left side.

Figure 19

Similar to Figures 5 and 6 except contacts are arranged for maintained operation. Contacts are actuated when lever is operated in direction shown. Contacts are restored when lever is operated in reverse direction.

Figure 20

Similar to Figures 2 and 3 except contacts are arranged for sequential operation in either direction. Operation is as follows:

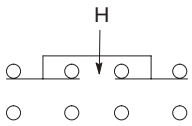
Circuit 1 opens at 14°,
Circuit 2 closes at 45°,
Total travel is 55°.

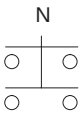
Contact Arrangements and Ratings

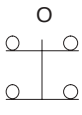
AC
- 3A, 120V
- 1.5A, 240V
- 0.75A, 480V
- 0.6A, 600V

DC
- 1.1A, 115V
- 0.55A, 230V
- 0.2A, 550V

Light Duty







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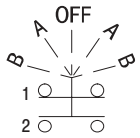
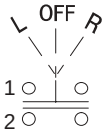


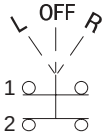
Lever Pos.	Contact Pos. 1	2
Off	C	O
A	O	O
B	O	C

F



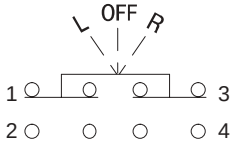
Lever Pos.	Contact Pos. 1	2
R	C	O
Off	O	O
L	O	C

G



Lever Pos.	Contact Pos. 1	2
R	C	O
Off	C	C
L	O	C

K



Lever Pos.	Contact Pos. 1	2	3	4
R	C	O	O	C
Off	C	O	C	O
L	O	C	C	O

AC
- 6A, 120V
- 3A, 240V
- 1.5A, 480V
- 1.2A, 600V

DC
- 2.2A, 115V
- 1.1A, 230V
- 0.4A, 550V

Standard Duty

Ambient Temperature Range

0°C to +40°C (+32°F to +104°F) minimum temperature based on the absence of freezing moisture or water.

Dimensions—mm (inches)

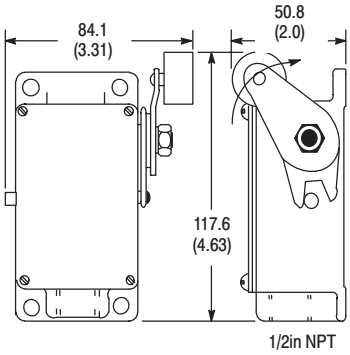


Figure 1, 18

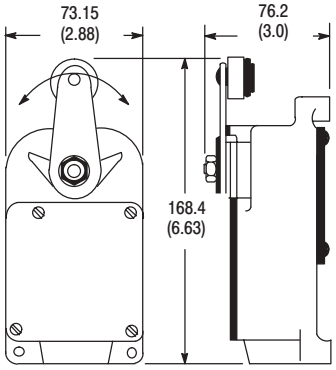


Figure 2, 3, 20

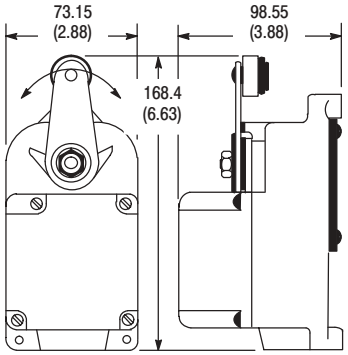


Figure 4

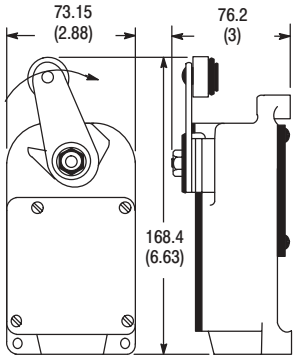


Figure 5, 6, 19

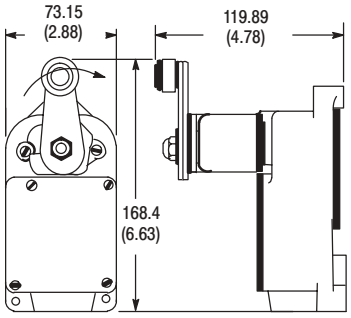


Figure 7, 8

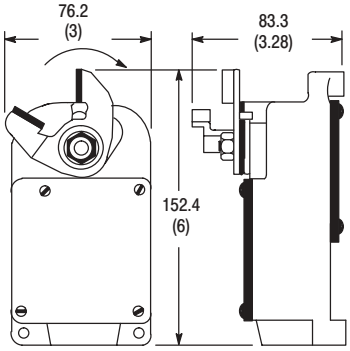


Figure 9

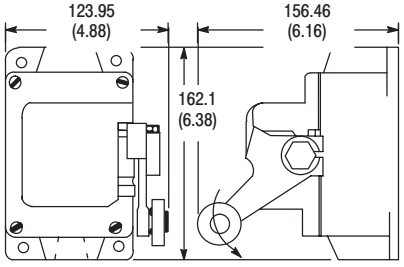


Figure 10, 11

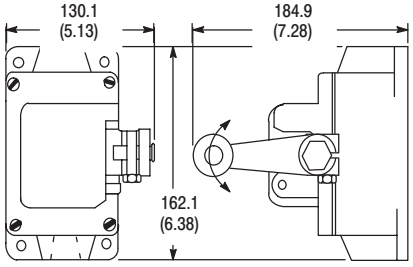


Figure 12

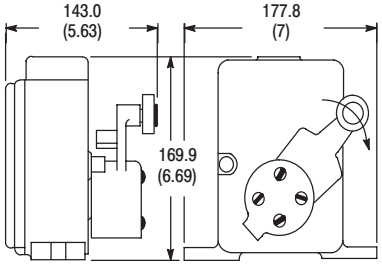


Figure 13

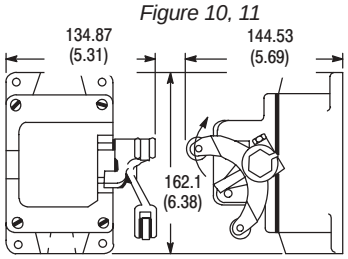


Figure 14

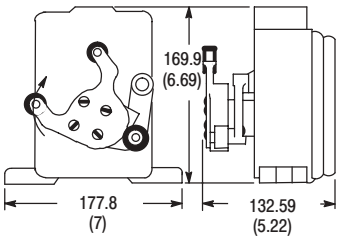


Figure 15

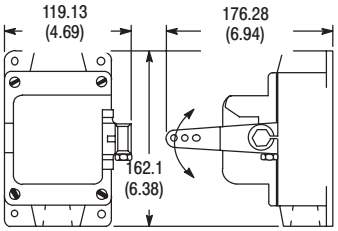


Figure 16

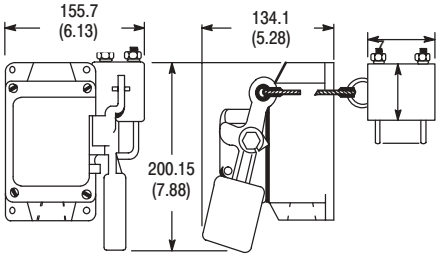


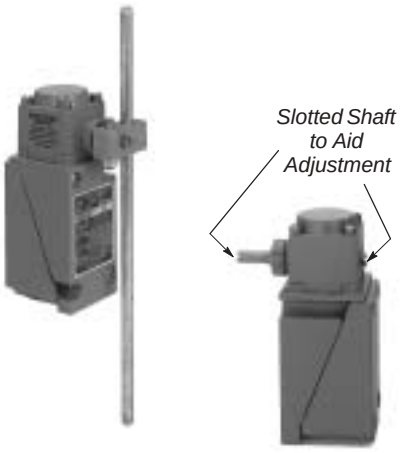
Figure 17

Selection Guide

Type of Lever	Contact Operation	Housing Style	Contact Type & Rating ❶	Force to Operate (Max)	Travel to Operate Contacts (Nominal)	Over Travel (Min)	Catalog Number
NEMA Type 1 Enclosure							
Roller	Slow Action Spring Return	Figure 1	A	15.58N (3.5lbs)	8°	3°	**801–ASA11**
			B	15.58N (3.5lbs)	3°	8°	**801–ASB11**
		Figure 18	A	15.58N (3.5lbs)	8°	3°	**801–ASA12**
		Figure 2	C	10.0N (2.25lbs)	30°	25°	**801–ASC17**
			D	10.0N (2.25lbs)	See Figure 20 ❷	See Figure 20 ❷	**801–ASD17**
			F	10.0N (2.25lbs)	25°	30°	**801–ASF17**
			G	10.0N (2.25lbs)	15°	40°	**801–ASG17**
	Snap Action Spring Return	Figure 2	C	22.25N (5.0lbs)	25°	30°	**801–ASC21**
			C	37.82N (8.5lbs)	9°	40°	**801–ASC21X**
			N	22.25N (5.0lbs)	25°	30°	**801–ASN21**
			N	37.82N (8.5lbs)	9°	40°	**801–ASN21X**
			O	22.25N (5.0lbs)	25°	30°	**801–ASO21**
			O	37.82N (8.5lbs)	9°	40°	**801–ASO21X**
			C	10.0N (2.25lbs)	30°	25°	**801–ASC313**
		Figure 4	H	22.25N (5.0lbs)	30°	20°	**801–ASH22**
			H	31.15N (7.0lbs)	10°	43°	**801–ASH26X**
		Figure 3	C	17.8N (4.0lbs)	25°	30°	**801–ASC25**
			C	31.15N (7.0lbs)	9°	44°	**801–ASC25X**
			N	17.8N (4.0lbs)	25°	30°	**801–ASN25**
			N	28.92N (6.5lbs)	9°	44°	**801–ASN25X**
		Figure 5	C	22.25N (5.0lbs)	25°	15°	**801–ASC27**
		Figure 6	C	17.8N (4.0lbs)	25°	15°	**801–ASC29**
	Ratchet Type Maintained	Figure 7	C	28.92N (6.5lbs)	68°	12°	**801–ASC218**
		Figure 8	C	22.25N (5.0lbs)	68°	12°	**801–ASC220**
	Snap Action Maintained	Figure 19	C	10.0N (2.25lbs)	38°	24°	**801–AMC211**
Fork	Snap Action Maintained	Figure 9	C	15.58N (3.5lbs)	20.6mm (0.81in)	—	**801–CMC21**
Rod or Chain			C	10.0N (2.25lbs)	20.6mm (0.81in)	20.6mm (0.81in)	**801–DMC21**
Stroke			C	20.0N (4.5lbs)	14.2mm (0.56in)	—	**801–EMC21**
NEMA Type 4 Enclosure (For Indoor Use)							
Roller	Slow Action Spring Return	Figure 10	C	27.81N (6.25lbs)	26°	4°	**801–ASC1411**
			H	27.81N (6.25lbs)	26°	4°	**801–ASH1411**
		Figure 11	C	17.8N (4.0lbs)	26°	4°	**801–ASC1415**
		Figure 12	K	17.8N (4.0lbs)	26°	4°	**801–ASK1421**
	Snap Action Spring Return	Figure 13	C	17.8N (4.0lbs)	26.5°	6°	**801–ASC2426**
Fork	Slow Action Maintained	Figure 14	C	31.15N (7.0lbs)	31.8mm (1.25in)	—	**801–CMC144**
	Snap Action Maintained	Figure 15	C	28.92N (6.5lbs)	38.1mm (1.5in)	—	**801–CMC2411**
Rod or Chain	Slow Action Spring Return	Figure 16	K	13.35N (3.0lbs)	26°	4°	**801–DSK145**
Weight		Figure 17	C	22.25N (5.0lbs)	26°	4°	**801–FSC148** ❸
NEMA Type 7 & 9 Enclosure							
Roller	Slow Action Spring Return	Figure 10	C	27.81N (6.25lbs)	26°	4°	**801–ASC1711**
			H	27.81N (6.25lbs)	26°	4°	**801–ASH1711**
		Figure 11	C	17.8N (4.0lbs)	26°	4°	**801–ASC1715**
		Figure 12	K	17.8N (4.0lbs)	26°	4°	**801–ASK1721**
	Snap Action Spring Return	Figure 13	C	17.8N (4.0lbs)	26.5°	6°	**801–ASC2726**
Fork	Snap Action Maintained	Figure 15	C	28.92N (6.5lbs)	38.1mm (1.5in)	—	**801–CMC2711**

❶ See table on page 5–8.
❷ See Figure 20 on page 5–7.
❸ The following replacement parts are available: combination lever/weight = B7391, counterweight = Z1997, counterweight cable = B37939.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.



802G–GP with Steel Operating Lever

Specifications

Enclosure Rating	NEMA 1
Approvals	UL listed, CSA certified, and CE marked for applicable directives
Ambient Temperature	0°C to +110°C (+32°F to +230°F)

AC Contact Rating (Maximum per Pole, 50 or 60Hz, Same Polarity)

NEMA Rating Designation	Max AC Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
B600	120	30	3.00	5A	3600	360
	240	15	1.50	5A	3600	360
	480	7.5	0.75	5A	3600	360
	600	6	0.60	5A	3600	360

DC Contact Rating (Maximum per Pole, Same Polarity)

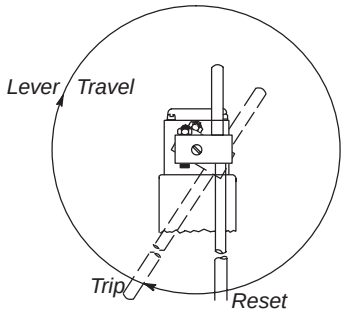
Voltage Range	Current Rating
115–125	0.4A
230–250	0.2A
550–600	0.1A

Description

The Bulletin 802G is a plug-in gravity return limit switch designed for conveyor applications with small or lightweight moving objects. It has an extremely low operating torque and uses the action of gravity on the lever arm to reset the contacts. Three unique lever arms are available for the Bulletin 802G in nylon or steel with adjustable lengths. **Bulletin 802T or 802MC levers cannot be used on the gravity return limit switch. The gravity return limit switch requires the lever identified by catalog number 802T–W5**.

Since the switch shaft can be rotated continuously through 360º, the trip point is adjustable to any angle. This adjustment is easily made using the slots provided at both ends to hold the shaft, while rotating the lever arm to the desired angle. A clamping pin is used to maintain this setting, and a set screw to hold the rod length adustment. The trip angle and lever length must be carefully adjusted to provide proper switch action.

Example: CW Operation



Features

- Light operating torque
- Unique lever arms
- Trip point adjustable to any angle

Selection Guide

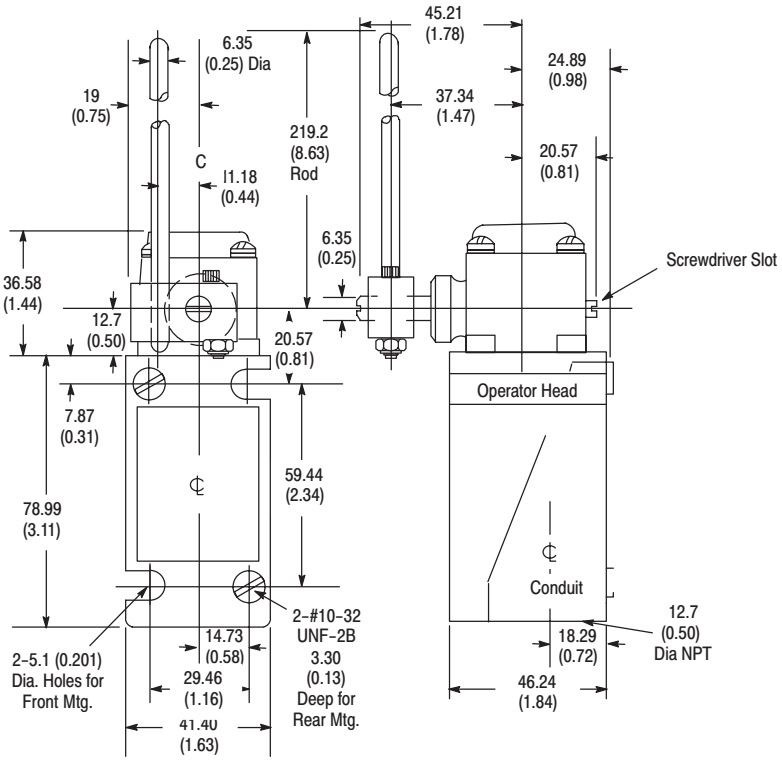
Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
					Complete Switch Without Lever	Switch Without Lever and Base
1 N.O. 1 N.C.	0.018Nm (2.5oz-in) (without lever)	Adj. from 10° to 180°	360° CW or CCW	10°❶	802G–GP	802G–GP1

❶ 10° opposite trip direction, 180° in trip direction.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)

Dimensions are not intended to be used for manufacturing purposes.



802G–GP with 802G–W10 Lever
Approximate Shipping Wt. 1.5lbs (680g)

Modification for Neon Indicating Light

The Bulletin 802G gravity return limit switch can be supplied with a neon indicating light. To order, add the letter **"N"** for 120V AC 50/60Hz or **"N5"** for 240V AC 50/60Hz. **Example**: Catalog number **802G–GP,** becomes catalog number **802G–GPN.**

The indicating light is to be internally connected by the user to two isolated terminals in the base assembly allowing complete flexibility in the connection of the light. Switches with an indicating light have a contact rating of NEMA B300.

Operating Levers

Description	Catalog Number
6.35mm (0.25in) Steel Rod, Adjustable to 219.0mm (8.625in) Length	**802G–W10**
3.18mm (0.125in) Steel Rod, Adjustable to 219.0mm (8.625in) Length	**802G–W10A**
6.35mm (0.25in) Nylon Rod, Adjustable to 219.0mm (8.625in) Length	**802G–W11**

802MC–AY5 with
802MC–W1A Lever

Description

Bulletin 802M compact pre-wired limit switches are factory sealed to meet the demanding requirements for NEMA 1, 4, 6P, 13, and IP67 (IEC529) enclosures. Outstanding features designed into the switch make it ideal for wet environments and washdown applications.

Bulletin 802MC limit switches are also factory sealed against fluid ingress. In addition, they feature a NEMA 4X rating, making the 802MC an ideal solution for washdown applications with harsh chemicals.

A wide variety of operating heads and operating levers are available. Operating heads can be mounted in four positions, 90° apart.

Sealing System

The cable entrance and wire strands are epoxy sealed to protect against liquids entering or wicking into the switch. The interface between the operating head and base is sealed with a chemically resistant O-ring. The operating shaft for lever type switches is protected by a three-way seal. Push type switches have a special boot to prevent oil and other foreign material from entering the mechanism. A flexible diaphragm seal between the operating head and the switch body helps isolate the switch against the ingress of contaminants. After pre-wiring, the cover is factory installed and epoxy sealed.

Construction

The body and operating head of the Bulletin 802M and 802MC pre-wired limit switch are constructed from a glass filled polymer. This material is characterized by excellent dimensional stability and is resistant to moisture and numerous chemicals.

The Bulletin 802MC switch also capitalizes on the corrosion-resistant properties of the operating shaft and operating head mounting screws, which are made of Type 316 stainless steel.

The basic switching mechanism has double-throw, double-break, snap-action contacts with minimum contact bounce. The switch is pre-wired and factory sealed with “STO”❶ cable. An optional mini-type or micro-type receptacle can also be supplied. Refer to Modifications on page 5–25 and 5–31.

Installation

Although physically smaller, the Bulletin 802M switch can be interchanged with a Bulletin 802T front mounted lever operated switch by using the mounting foot adaptor included (see dimensions on page 5–21). Cam tracking characteristics from the top mounting hole of the Bulletin 802M and 802MC switch are identical to the Bulletin 802T nonplug-in rotary operated switch line.

Time saving factory pre-wiring makes the switch economical to use. There is no need to purchase a separate cable grip or cable because internal wiring by the installer is eliminated. Merely connect the STO cable to a junction box. Since the switch body is nonmetallic, no ground wire is required for the switch.

❶ STO is a common identification of this cable. The more complete identification of the cable used on the Bulletin 802M is STOOW–A which incorporates an oil resistant jacket and conductor insulation, for indoor and outdoor use.

Lever Type Switches

These switches are operated by means of a lever which is clamped to a knurled shaft extending from the operating head. These devices can be easily field converted to clockwise, counterclockwise, or both directions of operation without any loose parts. Total travel is 86° in either direction. Operating heads are interchangeable and can be mounted in any of four positions 90° apart for maximum flexibility. The head is interlocked with the base unit to resist accidental shearing.

Lever type switches can be equipped with a variety of operating levers: roller lever, adjustable roller lever, micrometer adjustment roller lever, rod lever, one-way rod or roller lever and fork lever.

Push Type Switches

These switches are actuated by means of a rod or plunger located on the top or side of the operating unit. Pushing the plunger into the head causes the contacts to operate. Two types of plungers are available: rod and roller. Push type switches are supplied in spring return construction.

802M

Pre-Wired—Factory Sealed Switches

Specifications

Enclosure Rating	NEMA 1, 4, 6P, 13 and IP67 (IEC 529)
Approvals	UL listed, CSA certified, and CE marked for applicable directives
Ambient Temperature	0°C to +80°C (+32°F to +180°F) minimum temperature based on the absence of freezing moisture or water.

AC Contact Rating❶ (Maximum per Pole, 50 or 60Hz, 2 Circuits Same Polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A600	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720
	480	15	1.50	10	7200	720
	600	12	1.20	10	7200	720

AC Contact Rating❶ (Maximum per Pole, 50 or 60Hz, 4 Circuits Same Polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
B300	120	30	3.00	5	3600	360
	240	15	1.50	5	3600	360

DC Contact Rating❶ (Maximum per Pole, 2 Circuits Same Polarity)

Nominal Voltage	A	Continuous Carrying Current (A)
24	1.1	5

❶ All units have double-break fine silver contacts.

Description

The Bulletin 802M compact pre-wired limit switch is factory sealed to meet the demanding requirements for NEMA 1, 4, 6P and 13 enclosures. Outstanding features designed into the switch make it ideal for wet environments and washdown applications.

A wide variety of operating heads and operating levers are available. Operating heads can be mounted in four positions, 90° apart.

Applications

The Bulletin 802M is designed for dry and wet applications. The superior sealing system has been developed to protect against dust, dirt, and fluids normally found in industrial environments. The device has passed harsh environmental testing such as alternately drenching with a liquid and exposing to dust and abrasive grit with the switch operating 250 times per minute.

The switch is often used in applications subject to washdowns, streams of coolant, or occasionally submerged in fluids commonly found on machines or in industrial processes. This limit switch is being used successfully in High Water Content Fluid (HWCF) applications. Refer to the nearest district sales office for applications where potentially corrosive fluids are of a particular concern.

Features

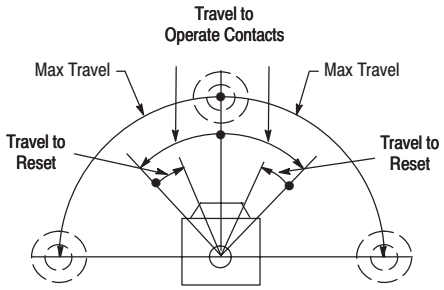
- Pre-wired and factory sealed
- Corrosion-resistant housings
- Corrosion-resistant hardware (802MC)
- Side rotary, adjustable top and top or side push styles with and without rollers

Pre-Wired—Factory Sealed

802M Lever Type • Spring Return

Pre-Wired—Factory Sealed Switches

Range of Operation

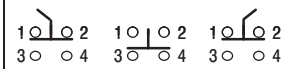
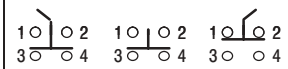
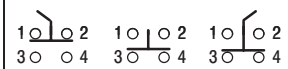
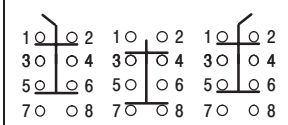
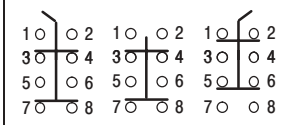
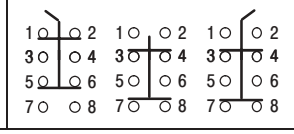


Complete Switch Without Lever

Operator Head Only

Switch Body Only

Selection Guide

Number of Circuits	Lever Movement vs. Contact Operation		Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number		
							Complete Switch w/o Lever ❶	Operator Head Only	Switch Body Only ❶
2	Clockwise or Counterclockwise		0.34N.m (3lb in)	15°	86°	6°	802M–AY5	802M–AX	802M–XY5
			0.56N.m (5lb in)	8°		4°	802M–HY5	802M–HX	
	Clockwise		0.34N.m (3lb in)	15°		6°	802M–A1Y5	802M–A1X	
			0.56N.m (5lb in)	8°		4°	802M–H1Y5	802M–H1X	
	Counterclockwise		0.34N.m (3lb in)	15°		6°	802M–A2Y5	802M–A2X	
			0.56N.m (5lb in)	8°		4°	802M–H2Y5	802M–H2X	
4	Clockwise or Counterclockwise		0.34N.m (3lb in)	15°		6°	802M–ATY5	802M–AX	802M–XTY5
			0.56N.m (5lb in)	8°		4°	802M–HTY5	802M–HX	
	Clockwise		0.34N.m (3lb in)	15°		6°	802M–A1TY5	802M–A1X	
			0.56N.m (5lb in)	8°		4°	802M–H1TY5	802M–H1X	
	Counterclockwise		0.34N.m (3lb in)	15°		6°	802M–A2TY5	802M–A2X	
			0.56N.m (5lb in)	8°		4°	802M–H2TY5	802M–H2X	

❶ The standard length of STO cable is 5ft (1.52m). For other lengths see Modifications and Accessories.

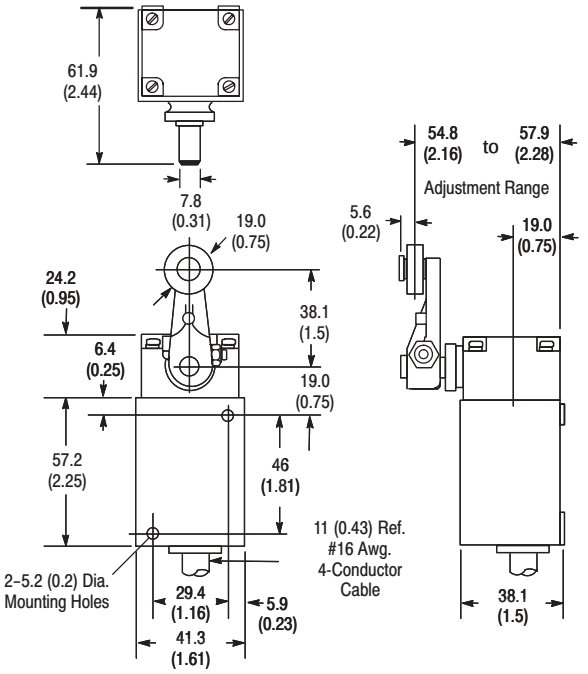
Levers—See page 5–83 for a complete listing of operating levers.
Wiring Diagrams—See page 5–22.
Modifications and Accessories—See page 5–25.

802M Lever Type • Spring Return

Pre-Wired—Factory Sealed Switches

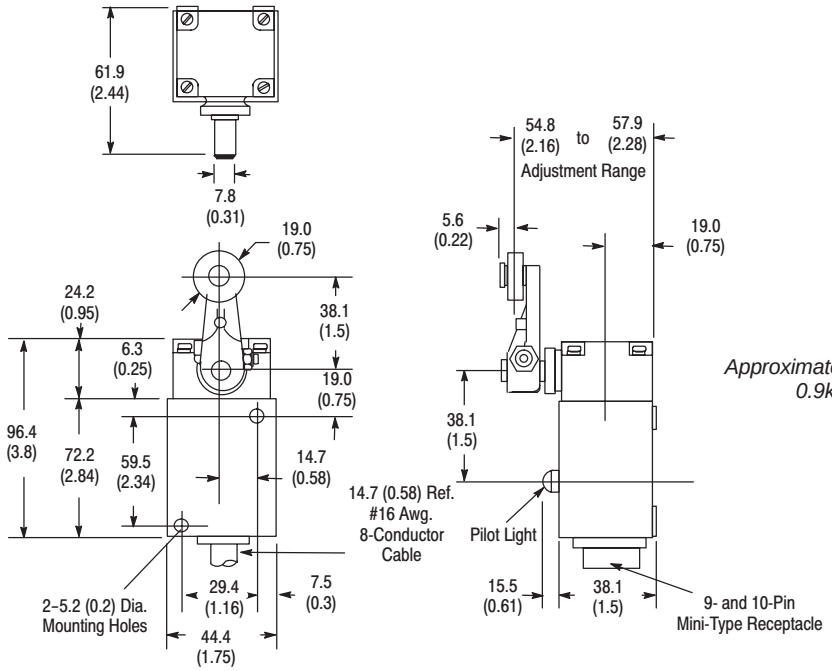
Dimensions—mm (inches)

2-Circuit



Shipping Wt.
1lb 0.53kg (3oz)

4-Circuit



Approximate Shipping Wt.
0.9kg (2lb)

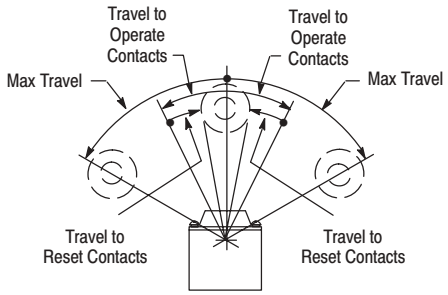
Note: Mounting foot adaptor as shown on page 5–21 is for use with 2-circuit 802M type switches only.

Levers—See page 5–83 for a complete listing of operating levers.
Wiring Diagrams—See page 5–22.
Modifications and Accessories—See page 5–25.

802M Lever Type Neutral Position • Spring Return

Pre-Wired—Factory Sealed Switches

Range of Operation

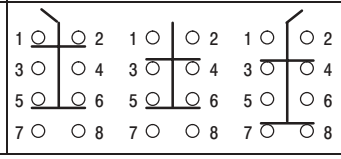


Complete Switch Without Lever

Operator Head Only

Switch Body Only

Selection Guide

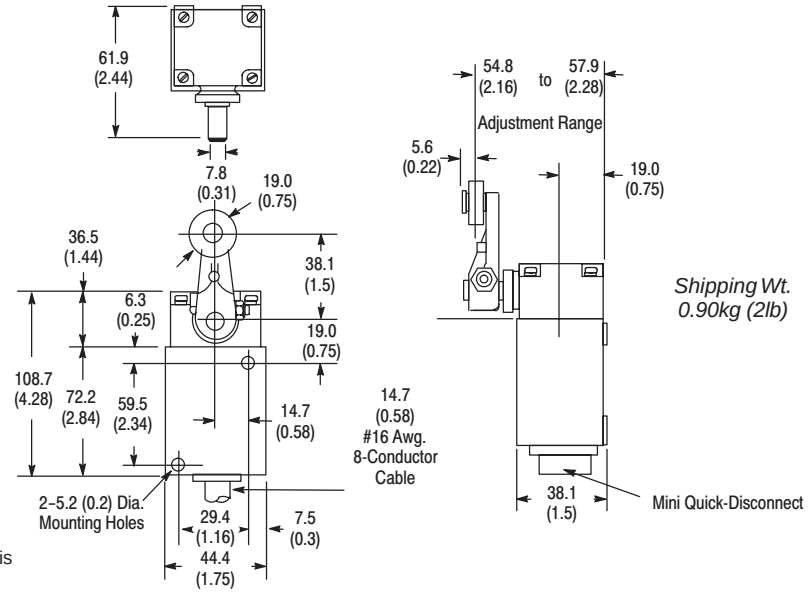
Number of Circuits	Lever Movement vs. Contact Operation	Torque to Operate (Max) CW	Torque to Operate (Max) CCW	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number: Complete Switch w/o Lever ❶❷	Catalog Number: Operator Head Only ❷	Catalog Number: Switch Body Only ❶
4		7lb in (0.79N.m)	7.5lb in (0.85N.m)	16°	75°	7°	**802M–NPY5**	**802M–NPX**	**802M–XNPY5**

❶ The standard length of STO cable is 1.52m (5ft). For other lengths see Modifications and Accessories.

❷ Operating lever 802T–W3F should not be used with this switch.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



Shipping Wt. 0.90kg (2lb)

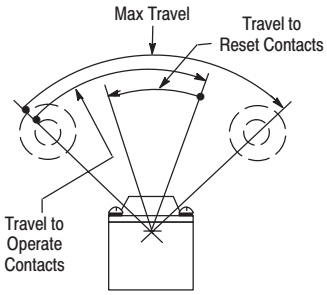
Note: Mounting foot adaptor as shown on page 5–21 is for use with 2-circuit 802M type switches only.

Levers—See page 5–83 for a complete listing of operating levers.
Wiring Diagrams—See page 5–22.
Modifications and Accessories—See page 5–25.

802M Lever Type • Maintained Contact

Pre-Wired—Factory Sealed Switches

Range of Operation

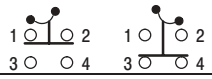
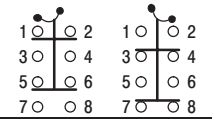


Complete Switch Without Lever

Operator Head Only

Switch Body Only

Selection Guide

Number of Circuits	Lever Movement vs. Contact Operation		Torque to Operate (Max)	Travel to Operate Contacts (Max)❷	Max Travel❷	Travel to Reset Contacts (Max)	Catalog Number		
							Complete Switch w/o Lever ❶	Operator Head Only	Switch Body Only ❶
2	Clockwise or Counterclockwise		0.31N.m (2.75lb in)	75°	87°	35°	802M–AMY5	802M–AMX	802M–XY5
4	Clockwise or Counterclockwise						802M–AMTY5		802M–XTY5

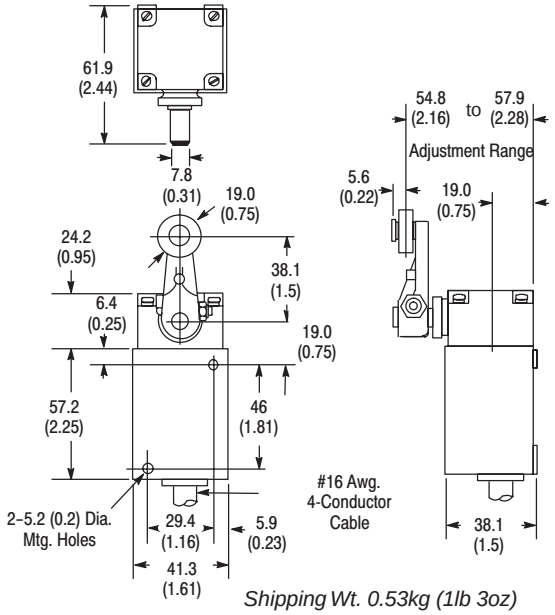
❶ The standard length of STO cable is 1.52m (5ft). For other lengths see Modifications and Accessories.

❷ From one maintained position to the other.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

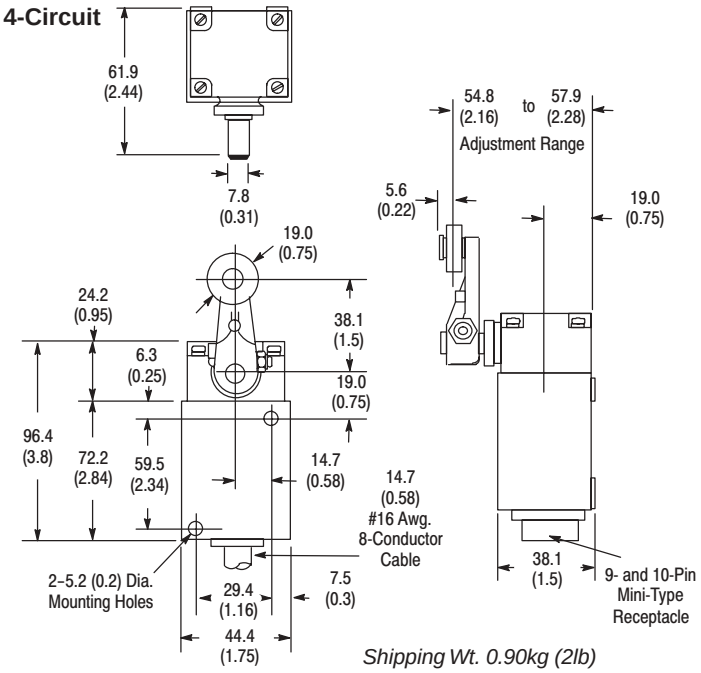
Dimensions—mm (inches)

2-Circuit



Shipping Wt. 0.53kg (1lb 3oz)

4-Circuit



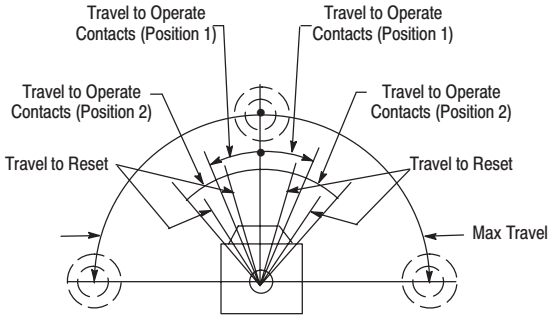
Shipping Wt. 0.90kg (2lb)

Levers—See page 5–83 for a complete listing of operating levers.
Wiring Diagrams—See page 5–22.
Modifications and Accessories—See page 5–25.

802M Lever Type Sequential • Spring Return

Pre-Wired—Factory Sealed Switches

Range of Operation

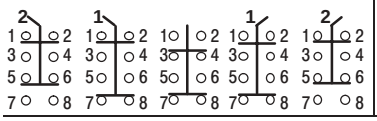


Complete Switch Without Lever

Operator Head Only

Switch Body Only

Selection Guide

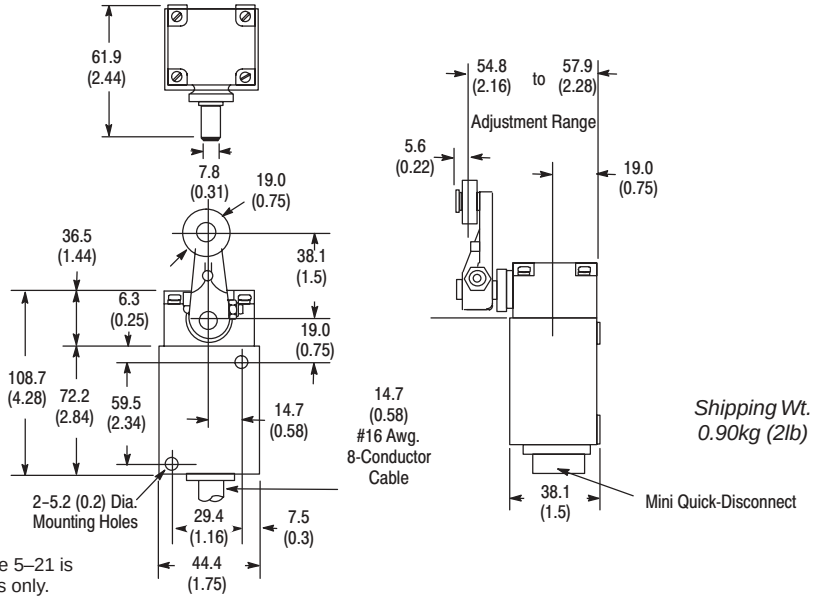
Lever Movement vs. Contact Operation	Torque to Operate (Max)			Travel to Operate Contacts (Max)		Max Travel	Travel to Reset Contacts (Max)	Catalog Number		
	Position 1	Position 2	To Max Travel	Position 1	Position 2			Complete Switch w/o Lever ❶❷	Operator Head Only ❷	Switch Body Only ❶
Counterclockwise / Clockwise 	0.79N.m (7lb in)	0.9N.m (8lb in)		10°± 3°	20°± 3°	88°	4°± 3°	**802M–ASY5**	**802M–ASX**	**802M–XSY5**

❶ The standard length of STO cable is 1.52m (5ft). For other lengths see Modifications and Accessories.

❷ Operating lever 802T-W3F should not be used with this switch.

Note: Details regarding wiring Allen-Bradley Limited Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



Shipping Wt. 0.90kg (2lb)

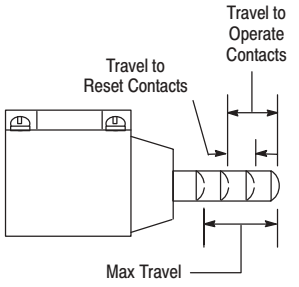
Note: Mounting foot adaptor as shown on page 5–21 is for use with 2-circuit 802M type switches only.

Levers—See page 5–83 for a complete listing of operating levers.
Wiring Diagrams—See page 5–22.
Modifications and Accessories—See page 5–25.

802M Push Type • Spring Return

Pre-Wired—Factory Sealed Switches

Range of Operation



Switch Body Only

Adjustable Top Push Rod Switch and Head

Adjustable Side Push Rod Switch and Head

Top Push Rod Head

Side Push Rod Head

Top Push Roller Head

Side Push Vertical Roller Head

Side Push Horizontal Roller Head

Selection Guide

Number of Circuits	Operator Type	Contact Operation		Force to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number		
		Normal	Operated					Complete Switch ❶	Operator Head Only	Switch Body Only ❶
2	Top Push Rod	1○ ○2 3○ ○4	1○ ○2 3○ ○4	13.3N (3lb)	1.45mm (0.057in)	5.26mm (0.207in)	0.56mm (0.022in)	802M–BY5	802M–BX	802M–XY5
	Adjustable Top Push Rod							802M–BAY5	802M–BAX	
	Side Push Rod			20N (4.5lb)	2.59mm (0.102in)	5.16mm (0.203in)	1.14mm (0.045in)	802M–CY5	802M–CX	
	Top Push Roller			14.7N (3.3lb)	1.45mm (0.057in)	5.26mm (0.207in)	0.56mm (0.022in)	802M–DY5	802M–DX	
	Side Push Vertical Roller			20N (4.5lb)	2.59mm (0.102in)	5.1mm (0.203in)	1.14mm (0.045in)	802M–KY5	802M–KX	
	Side Push Horizontal Roller							802M–K1Y5	802M–K1X	
	Adjustable Side Push Rod							802M–CAFY5	802M–CAFX	
4	Top Push Rod	1○ ○2 3○ ○4 5○ ○6 7○ ○8	1○ ○2 3○ ○4 5○ ○6 7○ ○8	13.3N (3.5lb)	1.45mm (0.057in)	5.13mm (0.202in)	0.076mm (0.030in)	802M–BTY5	802M–BX	802M–XTY5
	Adjustable Top Push Rod							802M–BATY5	802M–BAX	
	Side Push Rod			20N (4.5lb)	3.18mm (0.125in)	5.54mm (0.218in)	1.14mm (0.045in)	802M–CTY5	802M–CX	
	Top Push Roller			14.7N (3.5lb)	1.45mm (0.057in)	5.13mm (0.202in)	0.076mm (0.030in)	802M–DTY5	802M–DX	
	Side Push Vertical Roller			20N (4.5lb)	3.18mm (0.125in)	5.54mm (0.218in)	1.14mm (0.045in)	802M–KTY5	802M–KX	
	Side Push Horizontal Roller							802M–K1TY5	802M–K1X	
	Adjustable Side Push Rod				2.59mm (0.102in)	5.16mm (0.203in)		802M–CAFTY5	802M–CAFX	

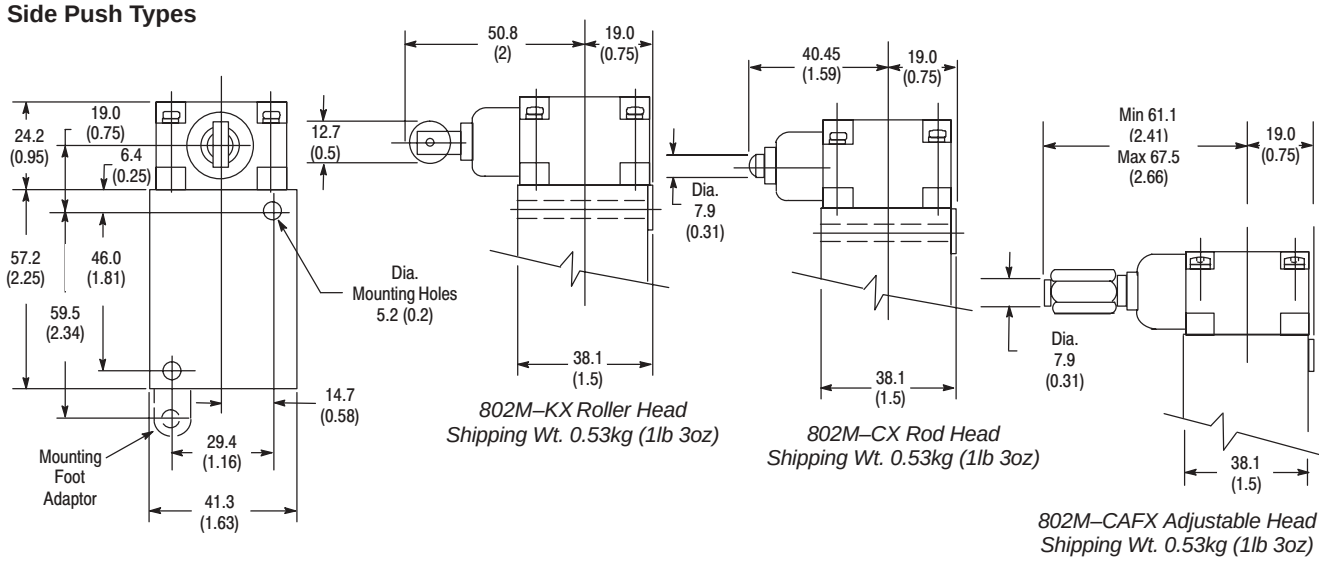
❶ The standard length of STO cable is 5ft (1.52m). For other lengths see Modifications and Accessories.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Wiring Diagrams—See page 5–22.
Modifications and Accessories—See page 5–25.

Dimensions—mm (inches)

Side Push Types

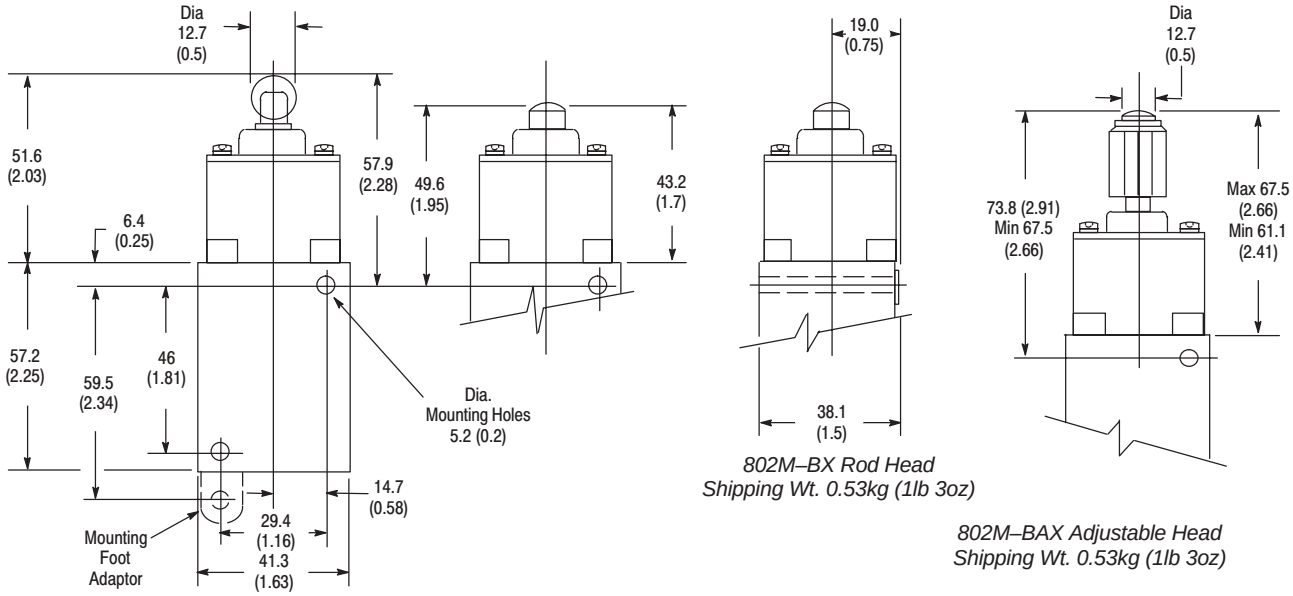


802M–KX Roller Head
Shipping Wt. 0.53kg (1lb 3oz)

802M–CX Rod Head
Shipping Wt. 0.53kg (1lb 3oz)

802M–CAFX Adjustable Head
Shipping Wt. 0.53kg (1lb 3oz)

Top Push Types



802M–DX Roller Head
Shipping Wt. 0.53kg (1lb 3oz)

802M–BX Rod Head
Shipping Wt. 0.53kg (1lb 3oz)

802M–BAX Adjustable Head
Shipping Wt. 0.53kg (1lb 3oz)

Note: Mounting foot adaptor as shown on page 5–21 is for use with 2-circuit 802M type switches only.

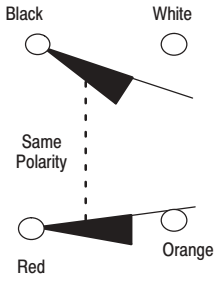
Wiring Diagrams—See page 5–22.
Modifications and Accessories—See page 5–25.

802M Wiring Diagrams for 2-Circuit Models

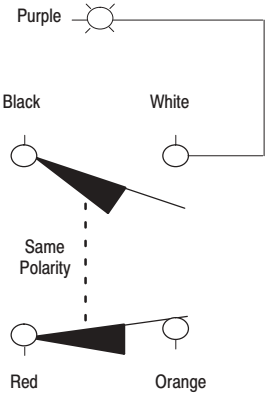
Pre-Wired—Factory Sealed Switches

Cable Models

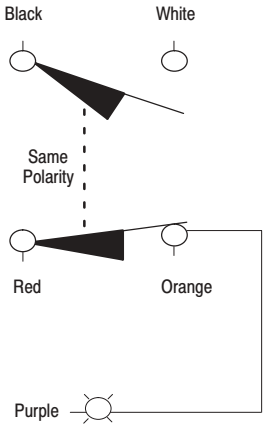
(See Applicable Codes and Laws)



Cable Models with One Indicating Light

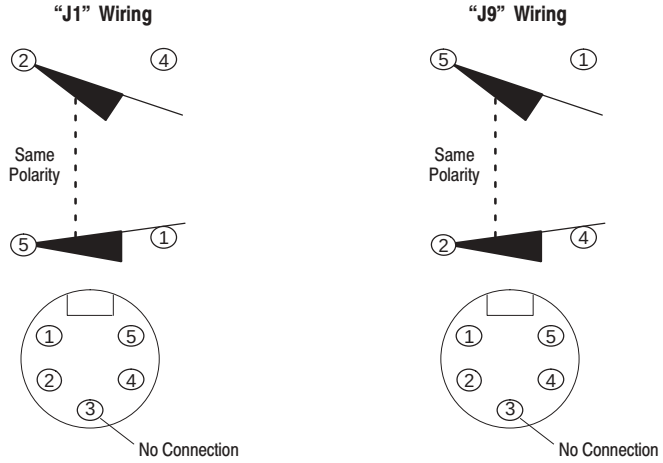


Light Wired to N.O. (White) Wire

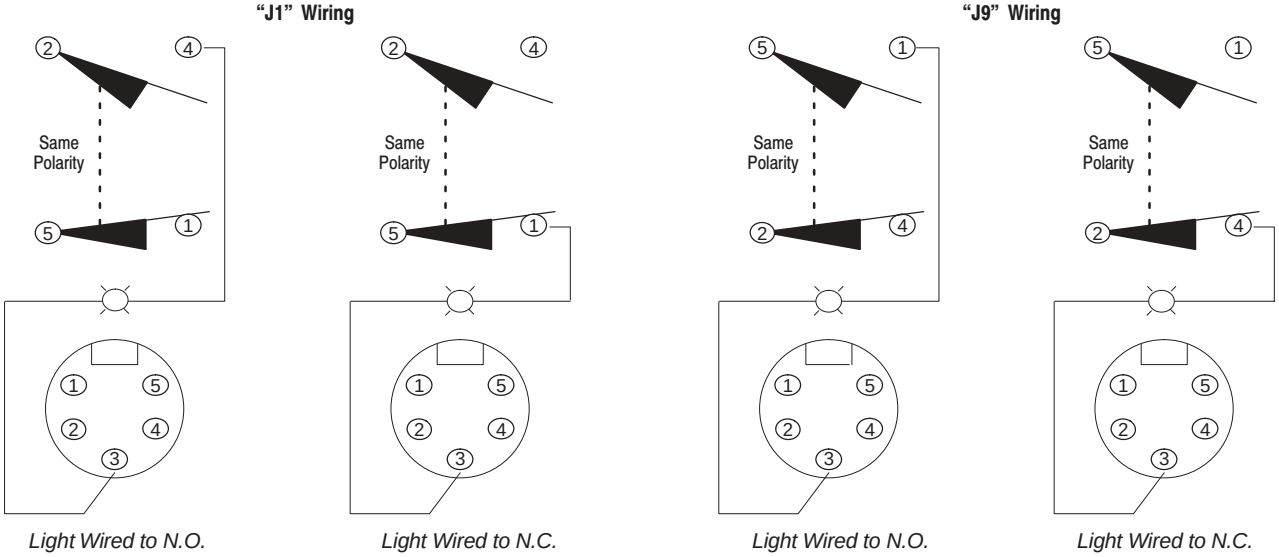


Light Wired to N.C. (Orange) Wire

5-Pin Mini-Type Receptacle



5-Pin Mini-Type Receptacle with One Indicating Light

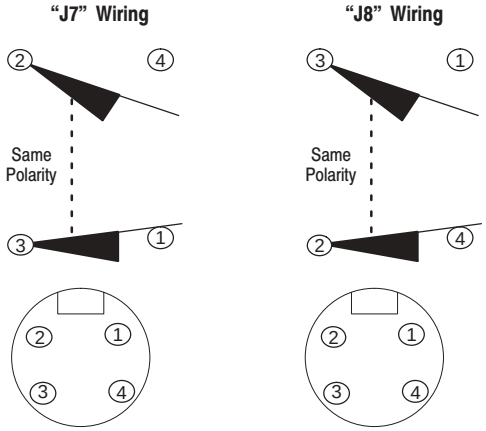


Light Wired to N.O. *Light Wired to N.C.* *Light Wired to N.O.* *Light Wired to N.C.*

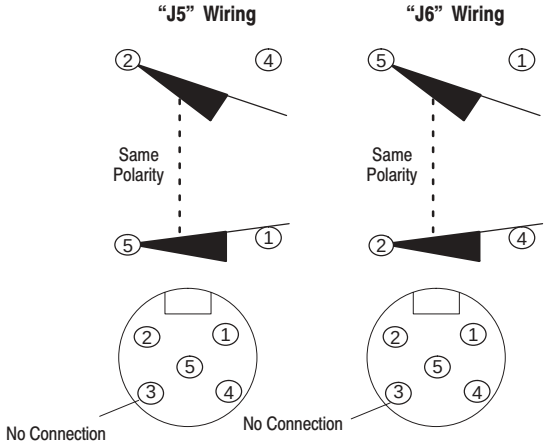
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

802M Wiring Diagrams for 2-Circuit Models

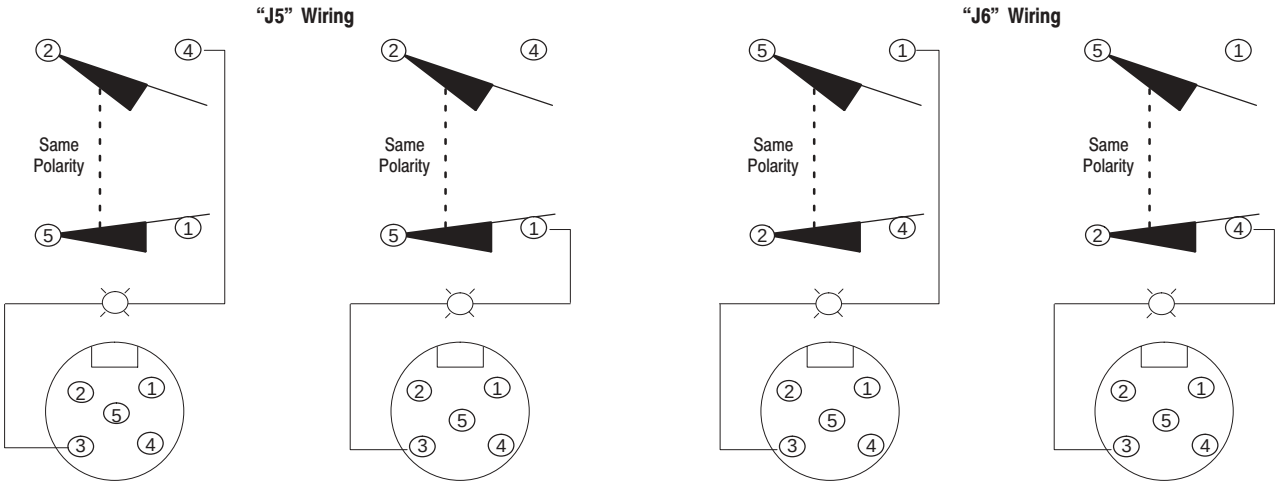
4-Pin Micro-Type Receptacle (DC only)



5-Pin Micro-Type Receptacle (DC only)



5-Pin Micro-Type Receptacle with One Indicating Light (DC only)



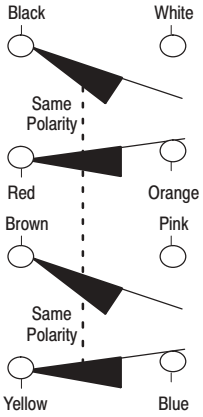
Light Wired to N.O. *Light Wired to N.C.* *Light Wired to N.O.* *Light Wired to N.C.*

802M Wiring Diagrams for 4-Circuit Models

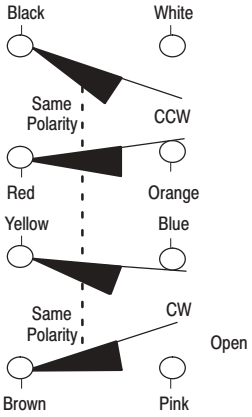
Pre-Wired—Factory Sealed Switches

Cable Models

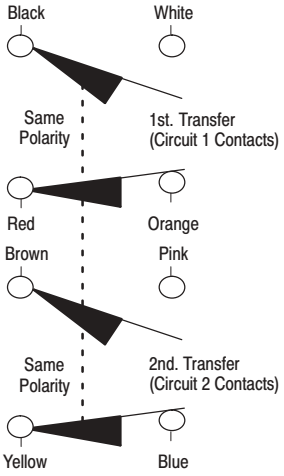
(See Applicable Codes and Laws)



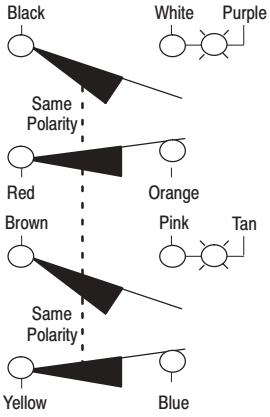
Neutral Position with Cable



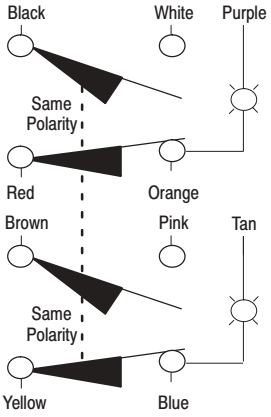
Sequential with Cable



Cable Models with Two Indicating Lights

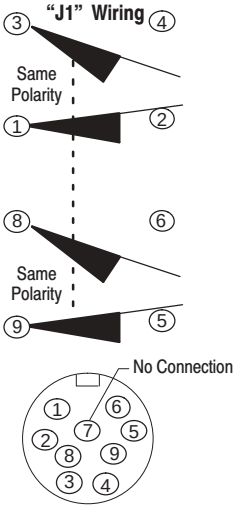


Light Wired to N.O. (White) Wire, and N.O. (Pink) Wire

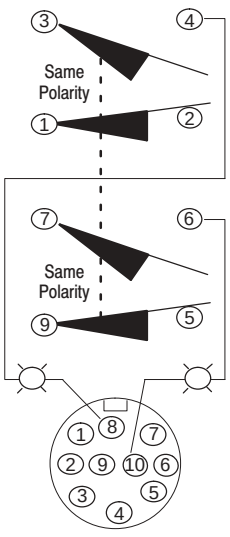


Light Wired to N.C. (Orange) Wire, and N.C. (Blue) Wire

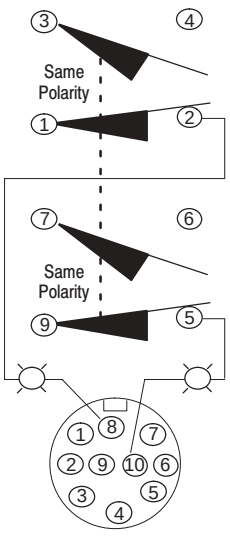
9-Pin Mini-Type Receptacle



10-Pin Mini-Type Receptacle with Two Indicating Lights



Light Wired to N.O.



Light Wired to N.C.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

24V DC Switches

All 2-circuit 802M limit switches are available with silver-nickel contacts rated for 24V DC applications. To order a switch rated for 24V DC use, insert the letter "**Z**" before the cable or connector designation. **Example: 802M–AZY5** is a 24V DC version of the **802M–AY5**. The use of the 24V DC micro connector option or 24V DC indicating light option require the switch be rated for 24V DC operation.

Extended Cable Lengths

The factory installed type STO cable is normally supplied in 1.52m (5ft) lengths. Extended cable lengths are available in multiples of four feet. To order, replace the suffix "**Y5**" in the catalog number with the appropriate suffix from the table below. **Example**: To order a lever type 2-circuit spring return switch with 1.83m (8ft) of STO cable the catalog number would be **802M–AY8**.

Additional Cable Length

Modification	Catalog Number Suffix
1.83m (8ft) Cable	Y8
3.66mm (12ft) Cable	Y12
4.78m (16ft) Cable	Y16

❶ A 5-pin, 9-pin or 10-pin plug-in receptacle is supplied to facilitate retrofitting existing installations. The normal ground wire pin is not required and is not connected inside the switch.

❷ STO is a common identification of this cable. The more complete identification of the cable used on the Bulletin 802M is STOOW–A which incorporates an oil resistant jacket and conductor insulation, for indoor and outdoor use.

5-Pin Mini-Type Receptacle❶ (2-Circuit Models Only)

802M with Mini-Type Receptacle 2-Circuit

To order a Bulletin 802M pre-wired limit switch with a 5-pin mini connector in place of the 5ft (1.52m) of "STO"❷ cable, replace the "**Y5**" in the catalog number with the suffix "**J1**" or "**J9**" depending upon the wiring configuration required. Maximum voltage rating for this receptacle is 250V AC.

An appropriate female connector with cable (**889N–F5AF–6F**) is available on page 7–8 in Connection Systems.

9-Pin Mini-Type Receptacle❶ (4-Circuit Models without Indicator Lights Only)

802M with Mini-Type Receptacle 4-Circuit

To order a Bulletin 802M pre-wired limit switch with a 9-pin mini connector in place of the 5ft (1.52m) of STO cable, replace the "**Y5**" in the catalog number with the suffix "**J1**." Maximum voltage rating for this receptacle is 250V AC.

10-Pin Mini-Type Receptacle❶ (4-Circuit Models with 2 Indicating Lights Only)

To order a Bulletin 802M pre-wired limit switch with a 10-pin mini connector and two indicating lights, replace the "**Y5**" in the catalog number with the suffix "**J4.**" Maximum voltage rating for this receptacle is 250V AC. Also, specify the indicating lights per the table on page 5–26.

Example: Catalog number **802M–ATY5** with mini-connector and (2) 120V AC indicating lights wired to one side of each N.O. contact would be catalog number **802M–ATJ4L1F.**

4-Pin Micro-Type Receptacle (2-Circuit 24V DC Models Only)

802M with Micro-Type Receptacle—2-Circuit

To order a Bulletin 802M pre-wired limit switch with a 4-pin micro connector in place of the 1.52m (5ft) of "STO"❷ cable, replace the "**Y5**" in the catalog number with the suffix "**J7**" or "**J8**" depending upon the wiring configuration required. This option requires that the switch is rated 24V DC.

An appropriate female connector with cable is available on page 7–41 in Connection Systems.

5-Pin Micro-Type Receptacle (2-Circuit 24V DC Models Only)

To order a Bulletin 802M pre-wired limit switch with a 5-pin micro connector in place of the 5ft (1.52m) of "STO"❷ cable, replace the "**Y5**" in the catalog number with the suffix "**J5**" or "**J6**" depending upon the wiring configuration required. This option requires that the switch is rated 24V DC.

802M Modifications

Pre-Wired—Factory Sealed Switches

Indicating Lights

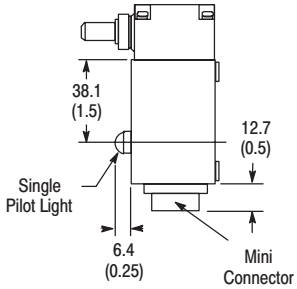
802M with Indicating Light 2-Circuit

802M with Indicating Lights 4-Circuit

2-Circuit—Bulletin 802M pre-wired limit switches can be supplied with an indicating light which is wired to one side of either the N.O. or N.C. contact. The second lead of the light is available as a fifth conductor for wiring flexibility. See pages 5–22 through 5–23 for wiring diagrams.

To order, add the appropriate suffix listed in the table below to the catalog number. **Example:** catalog number **802M–AY5** with a 120V AC LED indicating light wired to one side of the N.O. contact would be catalog number **802M–AY5L1F.**

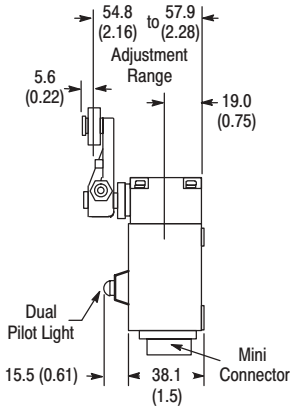
Example: Catalog number **802M-AY5** with mini-connector and 120V AC indicating light wired to one side of the N.O. contact would be catalog number **802M–AJ1L1F**.



4-Circuit—Bulletin 802M pre-wired limit switches can be supplied with 2 indicating lights wired to one side of each N.O. or N.C. contact of the 4-circuit contact block. Second leads from each light are available as ninth and tenth conductors for wiring flexibility. See page 5–24 for wiring diagram.

To order, add the appropriate suffix listed in the table below to the catalog number.

Example: Catalog number **802M–ATY5** with 120V AC LED indicating lights wired to one side of each N.C. contact would be catalog number **802M–ATY5L1C.**



LED Indicating Lights		
Voltage	**Wired to ❶**	**Catalog Number Suffix**
24V DC ❷	N.O. Contact	LF
	N.C. Contact	LC
120V AC 50–60Hz	N.O. Contact	L1F
	N.C. Contact	L1C

Neon Indicating Lights		
Voltage	**Wired to ❶**	**Catalog Number Suffix**
120V AC 50–60Hz	N.O. Contact	NF
	N.C. Contact	NC
240V AC 50–60Hz	N.O. Contact	N5F
	N.C. Contact	N5C

Fitting for Liquid-Tight Flexible Metal Conduit

802M 2-circuit switches can be obtained provided with a fitting for liquid-tight flexible metal conduit (flexible metal conduit not provided) and a pigtail for wiring. Add the following suffix to the part number (dashes indicate pigtail length):

GS_ straight–out fitting
GF_ front oriented 90° elbow fitting
GL_ left oriented 90° elbow fitting
GB_ back oriented 90° elbow fitting
GR_ right oriented 90° elbow fitting.

Example: GS5=5 foot long pigtail. Additional cable length over 5 feet is available in multiples of 4 feet.

❶ See wiring diagrams page 5–22 through 5–24.
❷ Requires the switch be rated for 24V DC operation.

Adaptor Foot

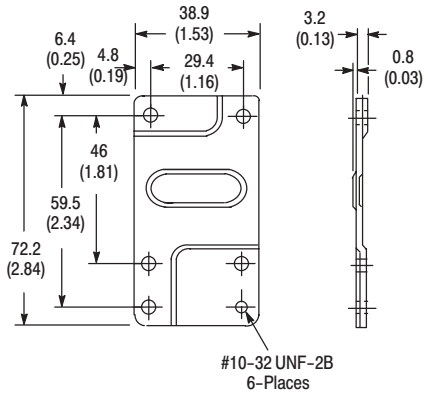
To mount a 2-circuit 802M in the same 1.16in x 2.34in mounting hole pattern as an 802T, an adaptor foot is required and is included with each 802M as shipped. This accessory is made of steel and is chromate plated to resist corrosion. To obtain replacement adaptor feet, order catalog number **40246–008–02**.

Rear Mounting Adaptor Kit

For rear mounting of 2-circuit or 4-circuit Bulletin 802M pre-wired limit switch (not suitable for use on Bulletin 802MC).

Kit includes mounting plate and 2 screws for mounting adaptor plate to switch. To mount to surface from rear use 2 #10–32 screws. Select proper screw length to pass through adaptor plate without bottoming against back of limit switch.

Order catalog number **802M–N1**.



Approximate Shipping Wt. 0.2kg (8oz)

802MC

Corrosion-Resistant Pre-Wired—Factory Sealed Switches

Specifications

Enclosure Rating	NEMA 1, 4X, 6P, 13 and IP67 (IEC529)
Approvals	UL listed, CSA certified, and CE marked for applicable directives
Ambient Temperature❶	0°C to +80°C (+32°F to +180°F)

AC Contact Rating (Maximum per Pole, 50 or 60Hz, 2 Circuits Same Polarity)

NEMA Rating Designation	Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A600	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720
	480	15	1.50	10	7200	720
	600	12	1.20	10	7200	720

DC Contact Rating (Maximum per Pole, 2 Circuits Same Polarity)

NEMA Rating Designation	Voltage	A	Continuous Carrying Current	VA
P150	125	1.1	5	138

❶ Minimum temperature is based on the absence of freezing moisture or water.

Description

The Bulletin 802MC is a pre-wired limit switch especially designed to provide additional corrosion protection in wet or dry locations commonly found in industrial process. By using a polymeric enclosure and Type 316 stainless steel for the exposed metal parts, the Bulletin 802MC provides a tougher defense against environmental contaminants to provide the user with more dependable operation and longer lasting performance. In addition, this switch is factory sealed and is particularly effective in applications where it may be subjected to dust, dirt, streams of liquids or occasionally submerged in fluids.

Applications

Typical examples of Bulletin 802MC applications are plating facilities, chemical or fertilizer plants, meat packing plants, dairies, breweries and other processing industries, where equipment might be hosed down regularly with cleaning solutions.

Features

- Pre-wired and factory sealed
- Corrosion resistant
- Submersible

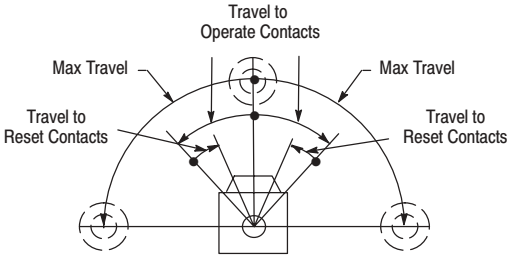
Corrosion-Resistant Pre-Wired

Lever Type • Spring Return page 5–29
Wiring Diagrams . . . . . page 5–30
Modifications and Accessories . . . . . page 5–31

802MC Lever Type • Spring Return

Corrosion-Resistant Pre-Wired—Factory Sealed Switches

Range of Operation

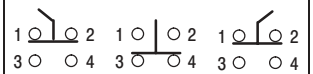
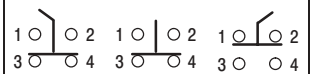
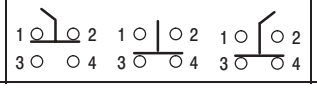


Complete Switch Without Lever

Operator Head Only

Base Only

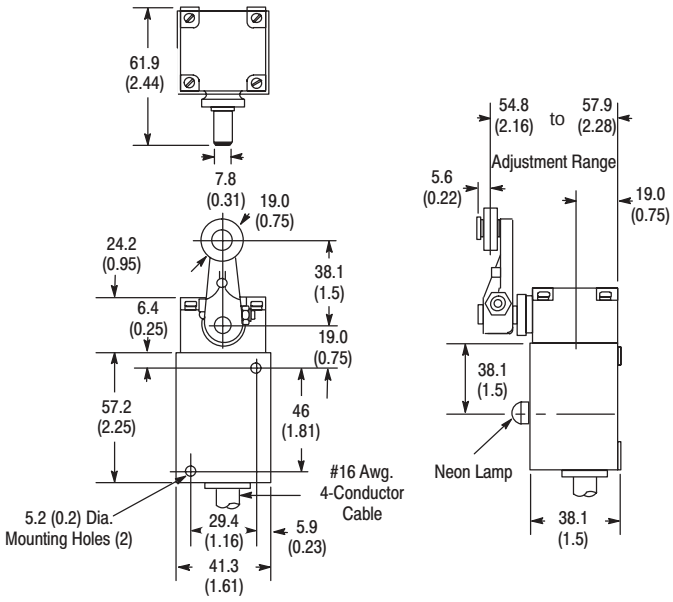
Selection Guide

Number of Circuits	Lever Movement vs. Contact Operation		Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number		
							Complete Switch w/o Lever ❶	Operator Head Only	Switch Only ❶
2	Clockwise or Counterclockwise		0.34N.m (3lb in)	15°	86°	6°	802MC–AY5	802MC–AX	802MC–XY5
	Clockwise						802MC–A1Y5	802MC–A1X	
	Counterclockwise						802MC–A2Y5	802MC–A2X	

❶ The standard length of STO cable is 1.52m (5ft). For other lengths, see Modifications and Accessories.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



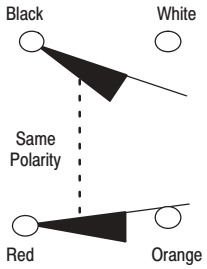
Levers—See page 5–83 for a complete listing of operating levers.
Wiring Diagrams—See page 5–30.
Modifications and Accessories—See page 5–31.

802MC Wiring Diagrams

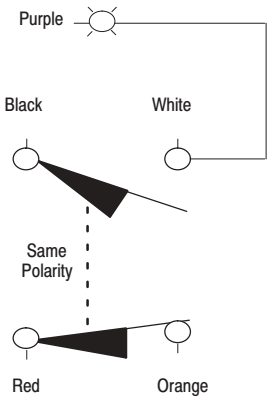
Corrosion-Resistant Pre-Wired—Factory Sealed Switches

Cable Models

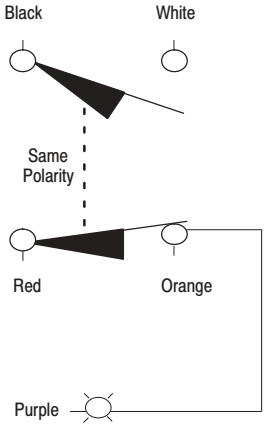
(See Applicable Codes and Laws)



Cable Models with Indicating Light



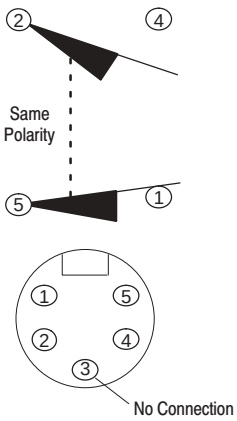
Light Wired to N.O. (White) Wire



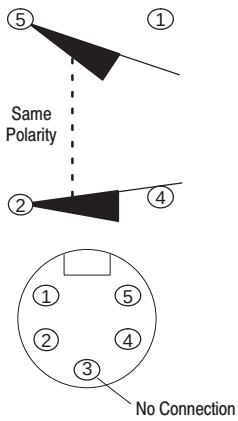
Light Wired to N.C. (Orange) Wire

5-Pin Mini-Type Receptacle

"J1" Wiring

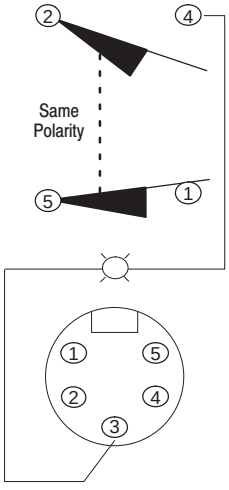


"J9" Wiring

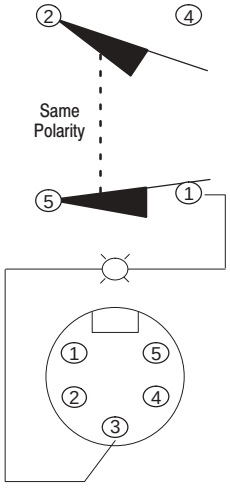


5-Pin Mini-Type Receptacle with Indicating Light

"J1" Wiring

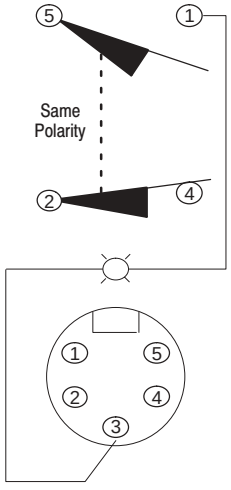


Light Wired to N.O.

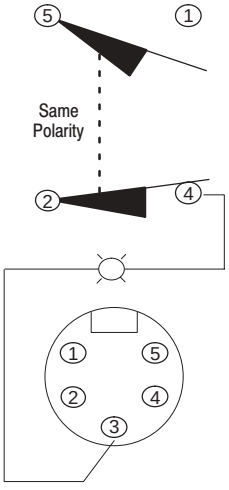


Light Wired to N.C.

"J9" Wiring



Light Wired to N.O.



Light Wired to N.C.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Neon Indicating Light

5-Pin Mini-Type Receptacle

Indicating Light

Bulletin 802MC pre-wired limit switches can be supplied with an indicating light wired to one side of either the N.O. or N.C. contact. The second lead of the light is available as a fifth conductor for wiring flexibility.

To order, add the appropriate suffix listed in the table below to the catalog number. **Example:** Catalog number **802MC–AY5** with a 120V AC LED indicating light wired across the N.O. contact would be catalog number **802MC–AY5L1F**.

LED Indicating Light

Voltage	Wired to	Catalog Number Suffix
24V DC ❶	N.O. Contact	LF
	N.C. Contact	LC
120V AC 50–60Hz	N.O. Contact	L1F
	N.C. Contact	L1C

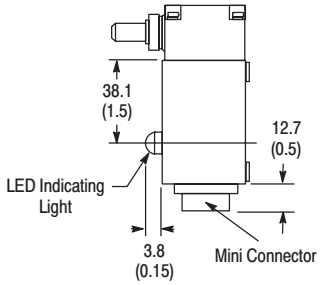
Neon Indicating Light

Voltage	Wired to	Catalog Number Suffix
120V AC 50–60Hz	N.O. Contact	NF
	N.C. Contact	NC
240V AC 50–60Hz	N.O. Contact	N5F
	N.C. Contact	N5C

5-Pin Mini-Type Receptacle❸—2-Circuit Contact Block

To order a Bulletin 802MC pre-wired limit switch with a 5-pin mini connector in place of the 1.52m (5ft) of "STO"❹ cable, replace the "**Y5**" in the catalog number with the suffix "**J1**" or "**J9**" depending upon the wiring configuration required. Maximum voltage rating for this receptacle is 250V AC.

An appropriate female connector with cable is available on page 7–8 in the Connection Systems section of this catalog.



❶ Requires switch to be rated for 24V DC operation.

❷ A 5-pin mini-type receptacle is supplied to facilitate retro-fitting existing installations. The normal ground wire pin is not required and is not connected inside the switch.

❸ STO is a common identification of this cable. The more complete identification of the cable used on the Bulletin 802M is STOOW–A which incorporates an oil resistant jacket and conductor insulation, for indoor and outdoor use.

Cable Length

The factory installed pre-wired, type STO cable is normally supplied in 5ft (1.52m) lengths. Extended cable lengths are available in multiples of 4 feet. To order, replace the suffix "**Y5**" in the catalog number with the appropriate suffix from the table below. **Example**: To order a lever type spring return switch with 8ft (1.83m) of STO cable the catalog number would be **802MC–AY8**.

Modification	Catalog Number Suffix
1.83m (8ft) Cable	Y8
3.66m (12ft) Cable	Y12
4.78m (16ft) Cable	Y16

2-Circuit 24V DC Switches

All 2-circuit 802MC limit switches are available with silver-nickel contacts and rated for 24V DC applications. To order a switch rated for 24V DC use, insert the letter "**Z**" before the cable or connection designation. **Example: 802MC–AZY5** is a 24V DC version of the **802MC–AY5**. The use of the 24V DC pilot light option requires the switch be rated for 24V DC operation.

802R

Sealed Contact Switches

Sealed Contact Switch

802R–AF (cover removed) with 802T–W1 Lever

Description

This sealed contact limit switch features a rugged single contact, hermetically sealed in a glass envelope, that has excellent contact reliability even in contaminated atmospheres. The switch is Programmable Controller compatible (24V and above) and is pilot duty rated NEMA B600 for AC and NEMA P300 for DC as shown on page 5–33. The enclosure is NEMA Type 13.

Lever Type Switches

These switches can be equipped with any one of seven different operating levers: roller lever, adjustable roller lever, micrometer adjustment roller lever, rod lever, one-way rod or roller lever and fork lever. These can be used interchangeably on all lever type switches **except the low operating force switch**, which requires the lever indentified by catalog number **802T–W5**.

The micrometer adjustment roller lever, catalog number **802T–W6**, is designed especially for installations where the position of the roller is a critical factor. This lever has a pivoted roller which can be turned laterally. After clamping the lever to the switch shaft, the position of the roller can be precisely adjusted through an arc of 7.5° on either side of the center or straight-line position.

Push Type Switches

Switches in this category are actuated by means of a rod or plunger located on the top or side of the operating head. Pushing the plunger into the head causes the contacts to operate. Three types of plungers are available: push rod, adjustable push rod and steel push roller.

Wobble Stick and Cat Whisker Type Switches

Both switches are actuated by a rod or wire extending from the top of the operating head. Moving the rod through a specified angle in any direction causes the contacts to operate. All wobble stick and cat whisker switches are supplied with spring return construction only.

Ambient Temperature Range

Bulletin 802R limit switches, except devices with wobble stick or cat whisker operators, have an ambient temperature range of –29°C to +121°C (–20°F to +250°F). Wobble stick and cat whisker limit switches are rated from –18°C to +54°C (0°F to +130°F). **Note:** Temperature ranges below 0°C (+32°F) are based on the absence of freezing moisture or water.

Underwriters' Laboratories, Inc. Listed, CSA Certified

These switches are listed by Underwriters' Laboratories, Inc. for use in **Class 1, Division 2, Groups A, B, C and D hazardous locations** as defined by the National Electrical Code.

802R–AF

Specifications

Enclosure Rating	NEMA 13
Approvals	UL listed and CSA certified
Ambient Temperature	–29°C to +121°C (–20°F to +250°F) Exception: Wobble stick and cat whisker devices are rated from –18°C to +54°C (0°F to +130°F)

AC Contact Rating (Maximum per Pole, 50 or 60Hz, Same Polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
B600	120	30	3.00	5	3600	360
	240	15	1.50	5	3600	360
	480	7.5	0.75	5	3600	360
	600	6	0.60	5	3600	360

DC Contact Rating (Maximum per Pole, Same Polarity)

NEMA Rating Designation	Voltage Range	Current Rating
P300	115–125	1.1A
	230–250	0.55A

Description

This sealed contact limit switch features a rugged single contact, hermetically sealed in a glass envelope, that has excellent contact reliability even in contaminated atmospheres. The switch is Programmable Controller compatible (24 volts and above) and is pilot duty rated NEMA B600 for AC and NEMA P300 for DC as shown to the right. The enclosure is NEMA Type 13.

Features

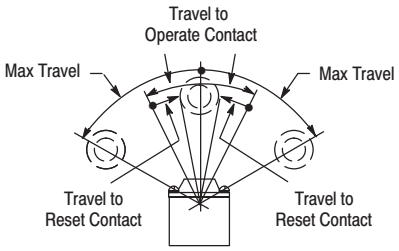
- PLC compatible
- High contact reliability in contaminated atmospheres

Sealed Contact

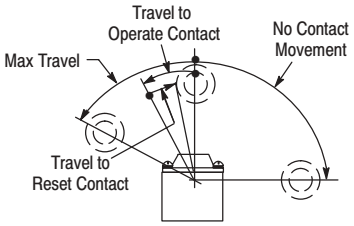
802R Lever Type • Spring Return

Sealed Contact Switches

Range of Operation



Lever Operation with
Standard Levers



Lever Operation When "One-Way"
Levers 802T–W7 or W8 Are Used

802R–AF Without Lever

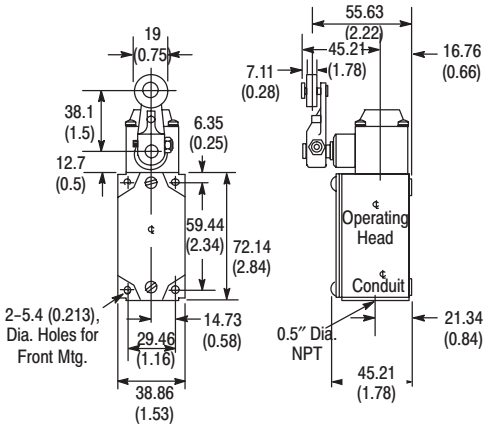
802R–ALFW5

Selection Guide—Standard and Low Operating Torque Models

Lever Movement	Torque to Operate (Max)	Travel to Operate Contact (Max)	Max Travel	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Clockwise or Counterclockwise	0.34N.m (3lb in)	16°	42°	9°	N.O.	**802R–AF**
					N.C.	**802R–AC**
	0.51N.m (4.5lb in)	7°	53°	3.5°	N.O.	**802R–HF**
					N.C.	**802R–HC**
Clockwise			50°		N.O.	**802R–H1F**
					N.C.	**802R–H1C**
Counterclockwise					N.O.	**802R–H2F**
					N.C.	**802R–H2C**
Clockwise Lever cannot move counterclockwise	0.45N.m (4lb in)	20°	91°	11°	N.O.	**802R–L1F**
					N.C.	**802R–L1C**
Counterclockwise Lever cannot move clockwise					N.O.	**802R–L2F**
					N.C.	**802R–L2C**
Clockwise or Counterclockwise	0.09N.m (0.78lb in)	22°	43°	12°	N.O.	**802R–ALFW5** ❶
					N.C.	**802R–ALCW5** ❶
Clockwise Lever cannot be moved counterclockwise					N.O.	**802R–AL1FW5** ❶
					N.C.	**802R–AL1CW5** ❶
Counterclockwise Lever cannot be moved clockwise					N.O.	**802R–AL2FW5** ❶
					N.C.	**802R–AL2CW5** ❶

❶ These low operating force limit switches can only be supplied with the catalog number **802T–W5** rod lever. The rod can easily be formed to meet special application requirements. The contact is restored to its normal position when pressure on the rod is released.

Dimensions—mm (inches)

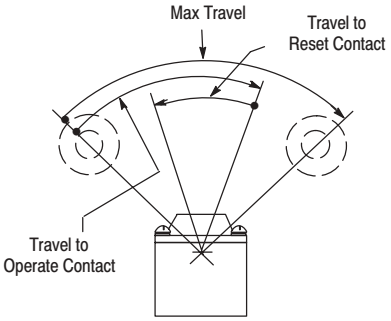


Standard Switch with 802T–W1 Lever
Shipping Wt. 0.35kg (12.5oz)

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–37.

Range of Operation



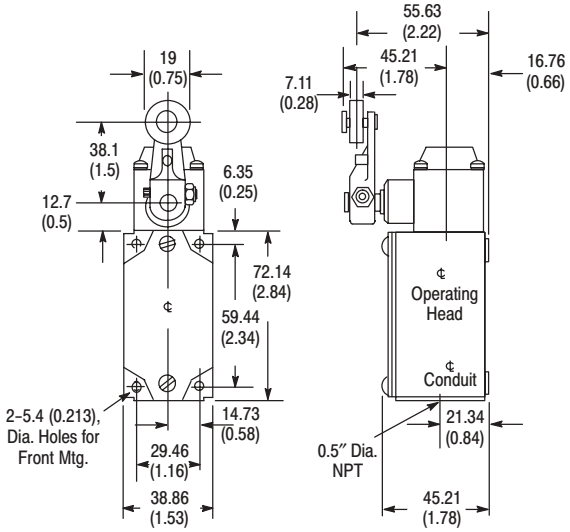
Switch Without Lever

Selection Guide

Lever Movement	Torque to Operate (Max)	Travel to Operate Contact (Max)	Max Travel	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Clockwise or Counterclockwise	0.25N.m (2.25lb in)	70° ❶	84° ❶	35°	N.O.	**802R–AMF**
					N.C.	**802R–AMC**

❶ From one maintained position to the other.

Dimensions—mm (inches)



Standard Switch with 802T–W1 Lever
Shipping Wt. 0.35kg (12.5oz)

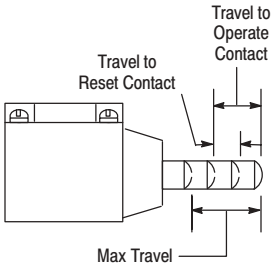
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–37.

802R Push Type • Spring Return

Sealed Contact Switches

Range of Operation



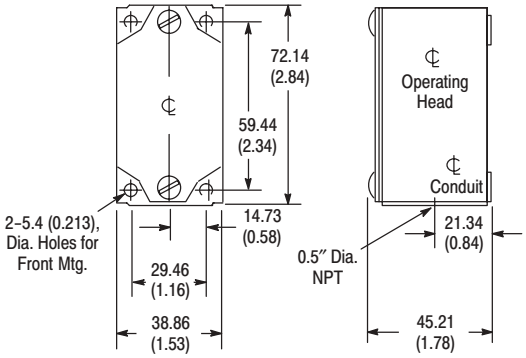
Top Push Rod | *Adjustable Top Push Rod* | *Side Push Rod* | *Top Push Roller* | *Side Push Roller*

Selection Guide

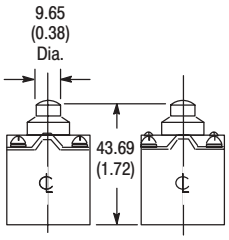
Operator Type	Force to Operate (Max)	Travel to Operate Contact (Max)	Max Travel	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Top Push Rod	15.6N (3.5lb)	1.75mm (0.069in)	5.13mm (0.202in)	0.71mm (0.028in)	N.O.	**802R–BF**
					N.C.	**802R–BC**
Adjustable Top Push Rod					N.O.	**802R–BAF**
					N.C.	**802R–BAC**
Side Push Rod	20.0N (4.5lb)	3.18mm (0.125in)	5.54mm (0.218in)	1.45mm (0.057in)	N.O.	**802R–CF**
					N.C.	**802R–CC**
Top Push Roller	15.6N (3.5lb)	1.75mm (0.069in)	5.13mm (0.202in)	0.71mm (0.028in)	N.O.	**802R–DF**
					N.C.	**802R–DC**
Side Push Vertical Roller	20.0N (4.5lb)	3.18mm (0.125in)	5.54mm (0.218in)	1.45mm (0.057in)	N.O.	**802R–KF**
					N.C.	**802R–KC**
Side Push Horizontal Roller					N.O.	**802R–K1F**
					N.C.	**802R–K1C**

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

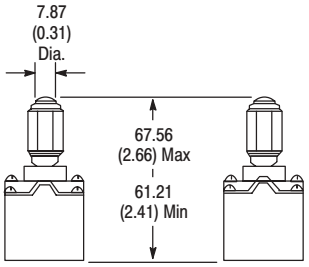
Dimensions—mm (inches)



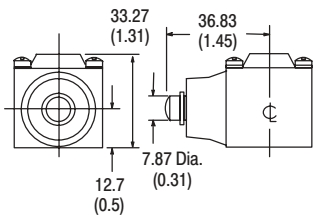
Standard Switch
Shipping Wt. 0.35kg (12.5oz)



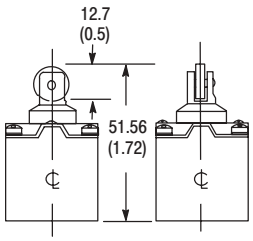
Z–36615
Top Push Rod Head
Shipping Wt. 0.12kg (4.25oz)



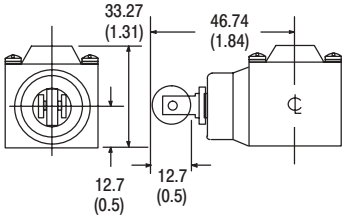
40182–022–52
Adjustable Top Push Rod Head
Shipping Wt. 0.12kg (4.25oz)



Z–36616
Side Push Rod Head
Shipping Wt. 0.12kg (4.25oz)



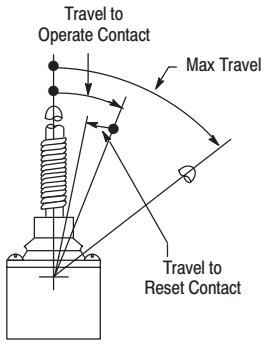
Z–36618
Top Push Roller Head
Shipping Wt. 0.12kg (4.25oz)



Z–36622
Side Push Vertical Roller Head
Shipping Wt. 0.12kg (4.25oz)

Modifications and Accessories—See page 5–37.

Range of Operation ❶



Wire Wobble Stick

Cat Whisker

Selection Guide

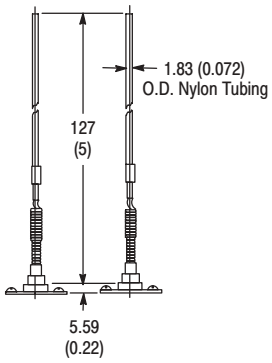
Operator Type	Torque to Operate (Max)	Travel to Operate Contact (Max)	Max Travel ❶	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Wire Wobble Stick	0.51N.m (4.5lb in)	11°	11°	5°	N.O.	**802R–WS1F ❷**
					N.C.	**802R–WS1C ❷**
Wire Cat Whisker	0.06N.m (8oz in)	25°	25°	14°	N.O.	**802R–CWF ❷**
					N.C.	**802R–CWC ❷**

❶ These switches should be mounted in such a way that the wobble or cat whisker will not be deflected beyond the "Maximum Travel" position. This is to avoid excessive backlash, which could cause undesirable repetition of contact action.

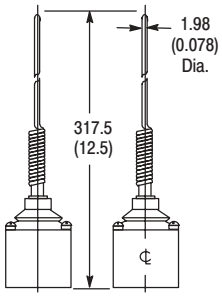
❷ Ambient temperature 18°C to 54°C (0°F to 130°F).

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



Z–35607
Cat Whisker Head
Shipping Wt. 0.3kg (1oz)



Z–35617
Wire Wobble Stick Head
Shipping Wt. 0.17kg (6oz)

Modification for Transparent Cover

Switches can be furnished with a gasketed, transparent plastic cover. This modification enables the electrician to inspect terminal wiring without removing the switch cover. To order, add the letter "**Z**" to the catalog number of the standard switch. **Example:** Catalog number **802R–DF** becomes catalog number **802R–DFZ**.

Conduit Seal #802T–N3

A synthetic rubber conduit seal is available to protect the conduit opening against the ingress of oil into the wiring compartment. Each wire hole in the seal has a thin inner wall which is pierced when a wire is passed through. Thus, any unused opening remains sealed.

Special Conduit Lock Nut #802T–X4

This option, a "Tru-Seal" lock nut with threaded PTFE insert, is a valuable accessory for any Bulletin 802R which is connected by means of conduit.

802T

Plug-In/NonPlug-In Style Oiltight Switches

Plug-In Style 802T–AP with Lever

NonPlug-In Style 802T–A with Lever

Description

Bulletin 802T limit switches are ideal for applications in which heavy duty pilot ratings, small size, a high degree of versatility and a rugged NEMA Type 4 and 13 oiltight construction are desirable. An important factor in the automation of industry, these limit switches are being applied extensively on conveyor systems, transfer machines, automatic turret lathes, milling and boring machines, radial drills, and many other types of modern, high speed production equipment.

High Degree of Versatility

Bulletin 802T limit switches can be mounted in any position, with operating heads that can be rotated and fastened in any one of four positions 90° apart. Most operating levers are interchangeable and can be rotated and clamped in any position through 360°. Accessories can be added to switches already in the field.

NEMA Type 4 and 13 Oiltight Construction

802T limit switches feature NEMA Type 4 and 13 construction with synthetic rubber seals to protect the operating parts against entry of oil, dust, abrasives, water and coolant, within the limits of NEMA-specified tests.

Rugged, Dependable Contact Block

The contacts used in Bulletin 802T switches are snap-action type with high snap-through force resulting in minimum contact rebound. Double break, fine silver contacts are electrically independent, but cannot be used on opposite polarities.

Easy Mounting and Wiring

Each switch base has four mounting holes: two “through” holes for front mounting and two tapped holes in the back for rear mounting. The pressure plate type terminals on the contact block face to the front of the switch and have ample wiring space around them. The switch conduit opening is a $^{1}/_{2}$-inch threaded pipe tap in the bottom of the housing.

Direct Opening Action Position Interlock Switches

Bulletin 802T Direct Opening Action limit switches have been designed for use in control reliable applications and safety applications per ISO 14119.

Direct Opening Action assures that the normally closed contacts open when the limit switch is actuated. This opening will occur even in the event of a contact weld condition, up to 10 Newtons.

Lever Type Switches

These switches are operated by means of a lever which is clamped to a knurled shaft extending from the operating head.

Lever type switches can be equipped with a variety of operating levers: roller lever, adjustable roller lever, micrometer adjustment roller lever, rod lever, one-way rod or roller lever and fork lever. These can be used interchangeably on all lever type switches except the **low operating force switch.**

Push Type Switches

These switches are actuated by means of a rod or plunger located on the top or side of the operating head. Pushing the plunger into the head causes the contacts to operate. Two types of plungers are available: rod type and steel roller. Side push rod switches can be supplied in spring return or maintained contact constructions. An adjustable length top push rod is also available. The contacts are snap-acting with high snap-through force resulting in minimum contact rebound.

Wobble Stick and Cat Whisker Type Switches

Both switches are actuated by a rod or wire extending from the top of the operating head. Moving the rod through a specified angle in any direction causes the contacts to operate. All wobble stick and cat whisker switches are supplied with spring return construction only. The contacts are snap-action type with high snap-through force resulting in minimum contact rebound.

Dual Switches

The dual switch is actually two limit switches which function independently but have a common enclosure. These switches are used for installations where two switches would be mounted side by side. There is a saving on installation time and fittings (see page 5–63).

Plug-In Switches

Plug-in style limit switches can reduce costly downtime by eliminating the need for rewiring switches. The head and switch body can be replaced without disturbing the wiring chamber in the base. These units, featuring a castle lock head design, snap-action contacts and reliable plug-in connection are available in 2-circuit or 4-circuit construction. Plug-in style limit switches are listed on page 5–39.

Four-Circuit NonPlug-In Switches

These switches contain two single pole single throw contact blocks (a total of two N.O. and two N.C. contacts) mounted in a common enclosure. The blocks are mounted one above the other in the vertical limit switch construction, or side by side in the horizontal construction. Switch plungers are mechanically coupled in both constructions. When actuated, contacts in both blocks are operated. These switches in both types of construction are listed on page 5–47.

General Information

Plug-In Style . . . . . page 5–39
NonPlug-In Style . . . . . page 5–47

Operating Levers

Lever Selection . . . . . page 5–83

Description

Bulletin 802T limit switches are ideal for applications in which heavy duty pilot ratings, small size, a high degree of versatility and a rugged NEMA Type 4 and 13 construction are desirable. An important factor in the automation of industry, these limit switches are being applied extensively on conveyor systems, transfer machines, automatic turret lathes, milling and boring machines, radial drills, and many other types of modern, high speed production equipment.

A wide variety of operating heads and operating levers are available. Operating heads can be mounted in four positions, 90° apart.

Features

- Front mount for simplified mounting
- Plug-In style for ease of wiring
- Side rotary, wobble stick, cat whisker, adjustable top and top or side push styles with and without rollers
- Quick mode change to clockwise and counterclockwise operation only
- Castle lock head design for high durability

Specifications

Enclosure Rating	NEMA 4, 13 and IP65 (IEC 529)
Approvals	UL listed, CSA certified, and CE marked for applicable directives
Ambient Temperature❶	–18°C to +110°C (0°F to +230°F) Exception: Wobble stick and cat whisker devices are rated from –18°C to +54°C (0°F to +130°F)

AC Contact Rating (Maximum per Pole, 50 or 60Hz, 2 Circuits Same Polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A600	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720
	480	15	1.50	10	7200	720
	600	12	1.20	10	7200	720
B600❷	120	30	3.00	5	3600	360
	240	15	1.50	5	3600	360
	480	7.5	0.75	5	3600	360
	600	6	0.60	5	3600	360

AC Contact Rating (Maximum per Pole, 50 or 60Hz, 4 Circuits Same Polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A300	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720

DC Contact Rating (Maximum per Pole)

Circuits	Voltage Range	Current Rating
2	115–125	0.4A
	230–250	0.2A
	550–600	0.1A
4	115–125	0.4A
	230–250	0.2A

❶ Temperature range below 0°C (+32°F) is based on the absence of freezing moisture or water. See Page 5–46 for Low Temperature Options.

❷ Low Operating Torque-Spring Return ratings only.

Plug-In Style

Lever Type • Spring Return page 5–40
Standard and Low Operating Torque Models

Lever Type • Maintained . . page 5–42
Contact and Neutral Position

Push Type • Spring Return . page 5–43

Wobble Stick and Cat . . . . . page 5–45
Whisker • Spring Return

Modifications and . . . . . page 5–46
Accessories

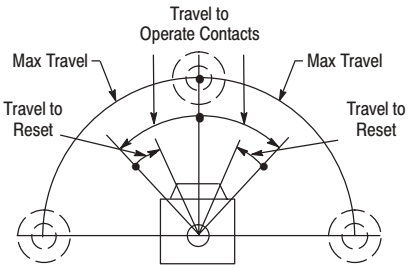
802T Operating Levers

Lever Selection . . . . . page 5–83

802T Lever Type • Spring Return

Plug-In Style Oiltight Switches

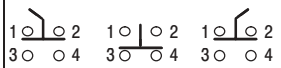
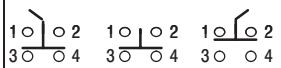
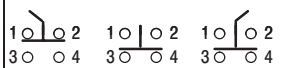
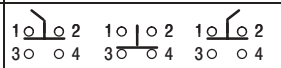
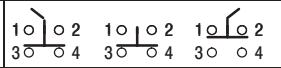
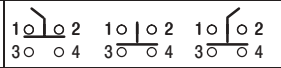
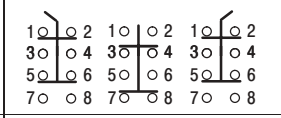
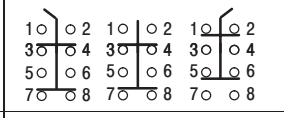
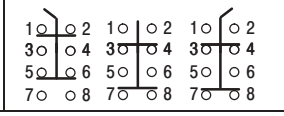
Range of Operation



Switch Without Lever

Switch Without Lever and Base

Selection Guide—Standard and Low Operating Torque Models

Number of Circuits	Lever Movement vs. Contact Operation		Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
							Switch w/o Lever	Switch w/o Lever and Base
2	Clockwise or Counterclockwise		0.29N.m (2.6lb in)	13° 18°	90°	7°	802T–AP 802T–A5P ❶	802T–AP1 802T–A5P1 ❶
				5° Nominal		2.5°	802T–FP	802T–FP1
			0.56N.m (5lb in)	9°		3.5°	802T–HP	802T–HP1
	Clockwise		0.29N.m (2.6lb in)	13° 18°		7°	802T–A1P 802T–A3P ❶	802T–A1P1 802T–A3P1 ❶
			0.56N.m (5lb in)	9°		3.5°	802T–H1P	802T–H1P1
	Counterclockwise		0.29N.m (2.6lb in)	13° 18°		7°	802T–A2P 802T–A4P ❶	802T–A2P1 802T–A4P1 ❶
			0.56N.m (5lb in)	9°		3.5°	802T–H2P	802T–H2P1
	Clockwise or Counterclockwise		0.106N.m (0.94lb in)	13°	90°	7°	802T–ALP ❷	802T–ALP1 ❷
	Clockwise						802T–AL1P ❷	802T–AL1P1 ❷
	Counterclockwise						802T–AL2P ❷	802T–AL2P1 ❷
4	Clockwise or Counterclockwise		0.45N.m (4lb in)	13°	90°	7°	802T–ATP	802T–ATP1
			0.79N.m (7lb in)	9°		3.5°	802T–HTP	802T–HTP1
	Clockwise		0.45N.m (4lb in)	13°		7°	802T–A1TP	802T–A1TP1
			0.79N.m (7lb in)	9°		3.5°	802T–H1TP	802T–H1TP1
	Counterclockwise		0.45N.m (4lb in)	13°		7°	802T–A2TP	802T–A2TP1
			0.79N.m (7lb in)	9°		3.5°	802T–H2TP	802T–H2TP1

❶ Viton shaft seal is supplied with these devices.

❷ Low operating torque model.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

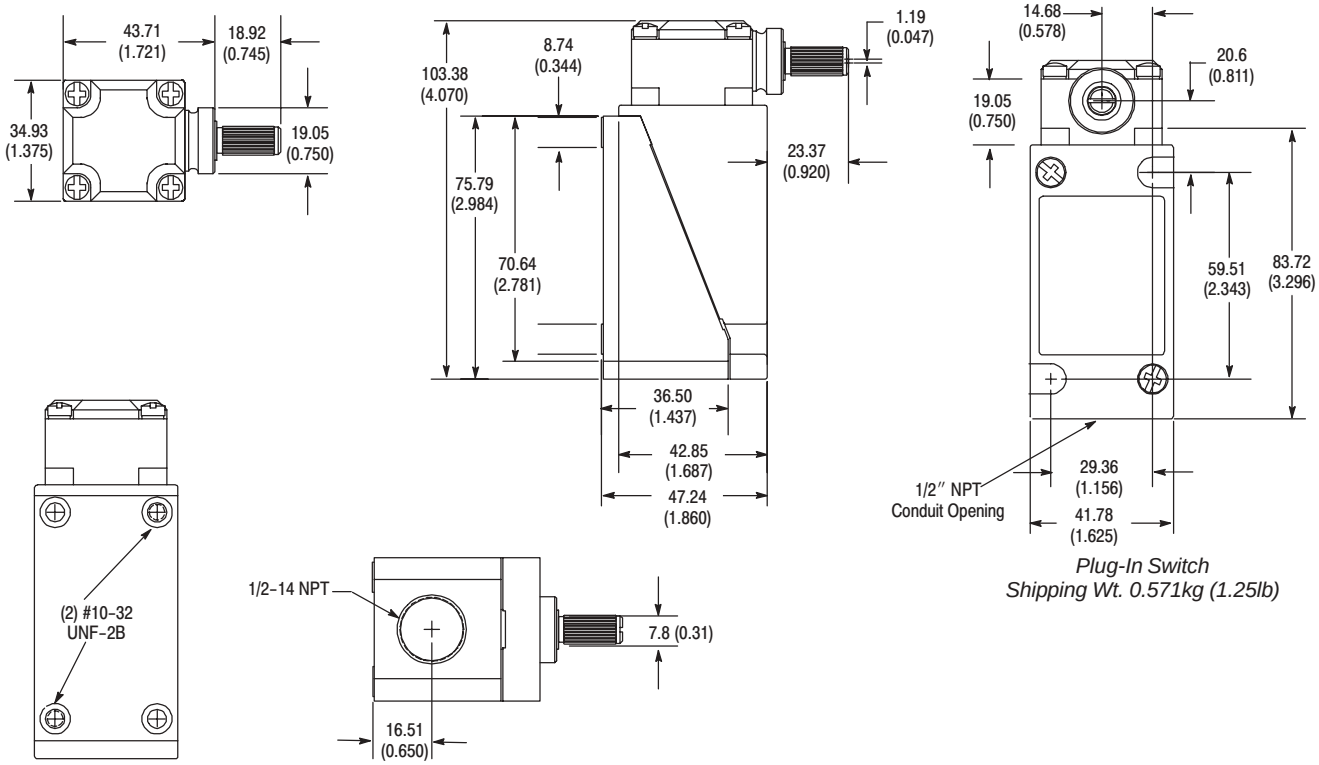
Note: For replacement parts, see publication 0802–6.0.

Dimensions—See page 5–41.

Levers—See page 5–83 for a complete listing of operating levers.

Modifications and Accessories—See page 5–46.

Dimensions—mm (inches)



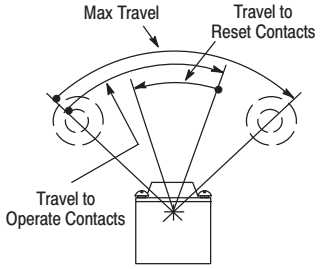
Plug-In Switch
Shipping Wt. 0.571kg (1.25lb)

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–46.

802T Lever Type • Maintained Contact and Neutral Position

Plug-In Style Oiltight Switches

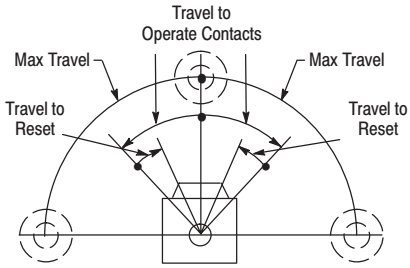
Range of Operation



Maintained Contact Models

Switch Without Lever

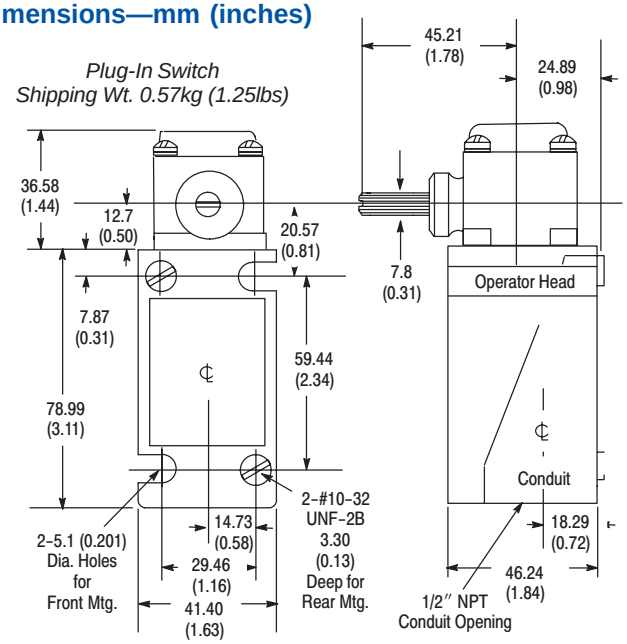
Switch Without Lever and Base



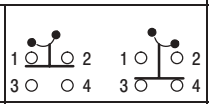
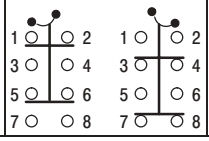
Neutral Position Models

Dimensions—mm (inches)

Plug-In Switch
Shipping Wt. 0.57kg (1.25lbs)

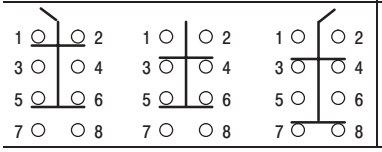


Selection Guide—Maintained Contact Models

Number of Circuits	Lever Movement vs. Contact Operation		Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
							Switch w/o Lever	Switch w/o Lever & Base
2	Clockwise or Counterclockwise		0.31N.m (2.75lb in)	61° ❶	88° ❶	28°	802T–AMP	802T–AMP1
4	Clockwise or Counterclockwise		0.32N.m (2.8lb in)				802T–AMTP	802T–AMTP1

❶ From one maintained position to another.

Selection Guide—Neutral Position Models

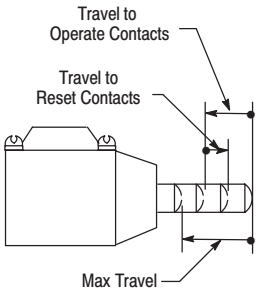
Lever Movement vs. Contact Operation	Torque to Operate (Max)		Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
	Clockwise	Counter-clockwise				Switch w/o Lever	Switch w/o Lever & Base
	0.28N.m (2.5lb in)	0.47N.m (4.2lb in)	13°	75°	7°	802T–NPTP	802T–NPTP1

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Note: For replacement parts, see publication 0802–6.0.

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–46.

Range of Operation



Top Push Rod | *Adjustable Top Push Rod* | *Side Push Rod* | *Top Push Roller* | *Side Push Horizontal Roller*

Selection Guide

Number of Circuits	Contact Operation		Operator Type	Force to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
	Normal	Operated						Complete Switch	Switch w/o Base
2			Top Push Rod	13.8N (3.1lb)	1.4mm (0.057in)	6.0mm (0.236in)	0.7mm (0.028in)	802T–BP	802T–BP1
			Adjustable Top Push Rod					802T–BAP	802T–BAP1
			Side Push Rod	16.4N (3.7lb)	3.3mm (0.131in)	5.7mm (0.226in)	1.3mm (0.052in)	802T–CP	802T–CP1
			Top Push Roller	13.8N (3.1lb)	1.4mm (0.057in)	6.0mm (0.236in)	0.7mm (0.028in)	802T–DP	802T–DP1
			Side Push Vertical Roller	16.4N (3.7lb)	3.3mm (0.131in)	5.7mm (0.226in)	1.3mm (0.052in)	802T–KP	802T–KP1
			Side Push Horizontal Roller					802T–K1P	802T–K1P1
4			Top Push Rod	22.2N (5.0lb)	1.4mm (0.057in)	6.0mm (0.236in)	0.7mm (0.028in)	802T–BTP	802T–BTP1
			Adjustable Top Push Rod					802T–BATP	802T–BATP1
			Side Push Rod	24.9N (5.6lb)	3.3mm (0.131in)	5.7mm (0.226in)	1.3mm (0.052in)	802T–CTP	802T–CTP1
			Top Push Roller	22.2N (5.0lb)	1.4mm (0.057in)	6.0mm (0.236in)	0.7mm (0.028in)	802T–DTP	802T–DTP1
			Side Push Vertical Roller	24.9N (5.6lb)	3.3mm (0.131in)	5.7mm (0.226in)	1.3mm (0.052in)	802T–KTP	802T–KTP1
			Side Push Horizontal Roller					802T–K1TP	802T–K1TP1

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

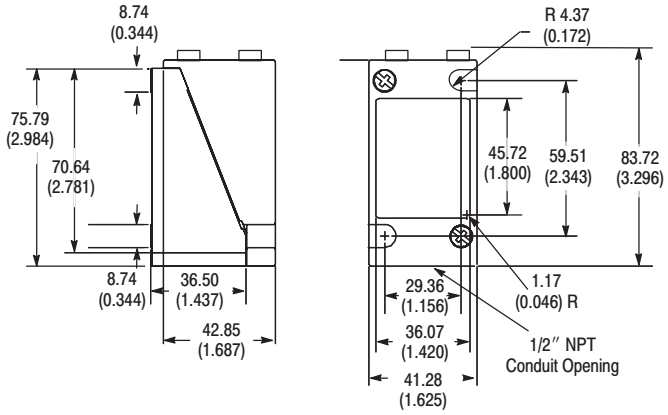
Note: For replacement parts, see publication 0802–6.0.

Modifications and Accessories—See page 5–46.

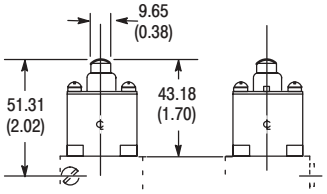
802T Push Type • Spring Return

Plug-In Style Oiltight Switches

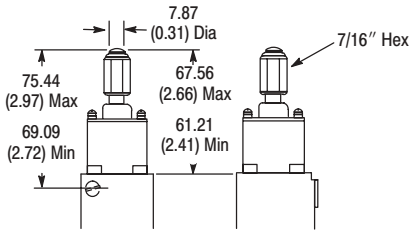
Dimensions—mm (inches)



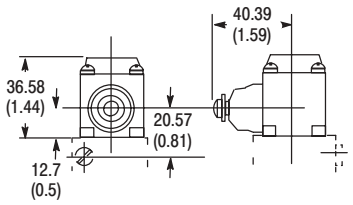
Switch Body



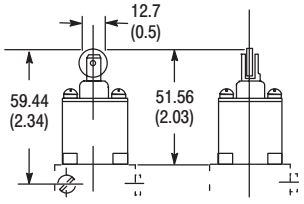
40146–013–59
Top Push Rod Head
Shipping Wt. 0.142kg (5oz)



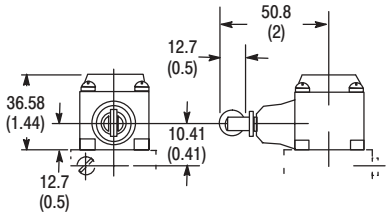
40146–013–65
Adjustable Top Push Rod Head
Shipping Wt. 0.142kg (5oz)



40146–017–63
Side Push Rod Head
Shipping Wt. 0.142kg (5oz)



40146–013–60
Top Push Roller Head
Shipping Wt. 0.142kg (5oz)



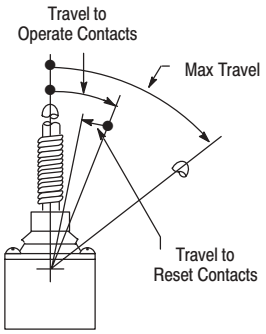
40146–017–64
Side Push Roller Head
Shipping Wt. 0.142kg (5oz)

Modifications and Accessories—See page 5–46.

802T Wobble Stick and Cat Whisker • Spring Return

Plug-In Style Oiltight Switches

Range of Operation❶



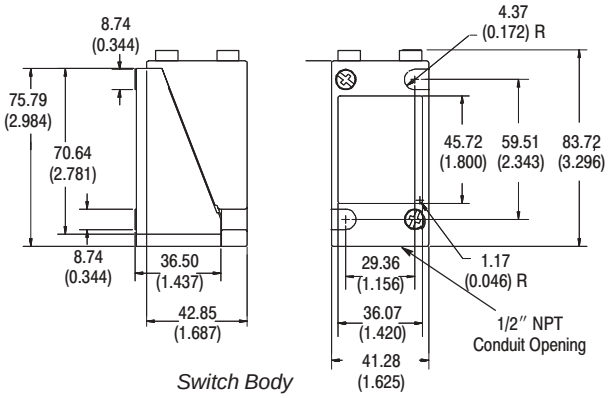
Wobble Stick Nylon Extension *Wobble Stick Wire Extension* *Wire Cat Whisker*

Selection Guide

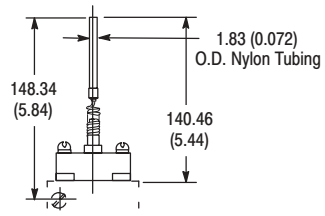
Operator Type	Contact Operation	Torque to Operate (Max) ❷	Travel to Operate Contacts (Max)❷	Max Travel❶❷	Travel to Reset Contacts (Max)❷	Catalog Number	
						Complete Switch	Switch Without Base
Nylon Wobble Stick		0.51N.m (4.5lb in)	9°	10°	5°	802T–WSP	802T–WSP1
Wire Wobble Stick						802T–WS1P	802T–WS1P1
Wire Cat Whisker		0.06N.m (8 oz in)	21°	28°	14°	802T–CWP	802T–CWP1

❶ These switches should be mounted in such a way that the wobble stick or cat whisker will not be deflected beyond the "Maximum Travel" position, as this could cause undesirable repetition of contact action on rebound.
❷ Operating travels and torque are measured at rigid section of stick or cat whisker.

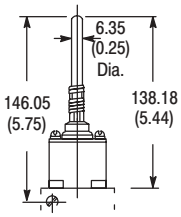
Dimensions—mm (inches)



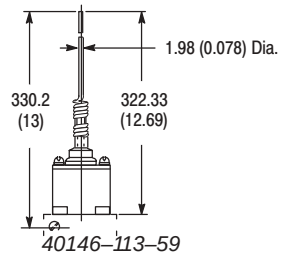
Switch Body



40146–126–53
Cat Whisker Head
Shipping Wt. 0.09kg (3oz)



40146–113–53
Nylon Wobble Stick Head
Shipping Wt. 0.2kg (7oz)



40146–113–59
Wire Wobble Stick Head
Shipping Wt. 0.17kg (6oz)

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Note: For replacement parts, see publication 0802–6.0.

Modifications and Accessories—See page 5–46.

802T Modifications and Accessories

Plug-In Style Oiltight Switches

Manifold Mount

Indicating Light

Manifold Mount

All 2-circuit Plug-In limit switches can be supplied with a special terminal base which permits mounting the switch manifold style on a machine base, panel or raceway. As shown above, this base is supplied with a wiring hole and gasket on the back.

To order a manifold mount switch, add the letter "**U**" to the listed catalog number. **Example:** Catalog number **802T–AP** becomes catalog number **802T–APU**.

Indicating Light

Bulletin 802T 2-circuit Plug-In limit switches (except for the cat whisker, wobble stick, and manifold mount devices) can be supplied with an indicating light. To order add the letter "**N**" for 120V AC, 50/60 Hz or "**N5**" for 240V AC 50/60Hz. **Example:** Catalog number **802T–AP** becomes catalog number **802T–APN**.

The indicating light is internally connected to two isolated terminals in the base assembly allowing the user to wire the light to either the N.O. or the N.C. contact. Switches with an indicating light have a contact rating of NEMA A300.

Where an indicator light and a pre-wired 5-pin mini connector are used, the light is pre-wired to the N.C. contact with J1 wiring and to the N.O. contact with J9 wiring. Indicating lights are not available on 4-circuit 802T switches.

VITON™ Seals

To order limit switches with all VITON seals, add the letter "**V**" to the end of the listed catalog number. Not available on manifold mount, low operating torque, low temperature or limit switches with an indicating light.

To order lever type limit switches with the VITON shaft seal only, add "**V1**" to the end of the listed catalog number.

Base Assembly

The limit switch base, including the terminal block, is available as a separate unit per the following table.

	Catalog Number
2–Circuit Base	**802T–X7**
2–Circuit Base with Indicating Light	**802T–X7N**
2–Circuit Manifold Mount Base	**802T–X7U**
4–Circuit Base	**802T–X8**

Low Temperature Operation

Plug-in limit switches are designed to operate in an ambient temperature range of –18°C to +110°C (0°F to +230°F), –18°C to +54°C (0°F to +130°F) for wobble stick and cat whisker). Special limit switches modified for low temperature operation at –40°C to +110°C (–40°F to +230°F) are available. Temperature ranges below 0°C (+32°F) are based on absence of freezing moisture or water. To order, add the letter "**E**" to catalog number. **Not available** on wobble stick, cat whisker or pre-wired cable switches; standard on low torque and maintained devices.

Pre-Wired Cable

To order factory installed Pre-Wired type **"STOOW-A"** cable for 2-circuit (5-conductor) and 4-circuit (9-conductor) switches, add the suffix "**Y**" plus the number of feet required. **Example:** To order an **802T-AP** with 5ft (2.4m) of cable the catalog number would become **802T–APY5**.

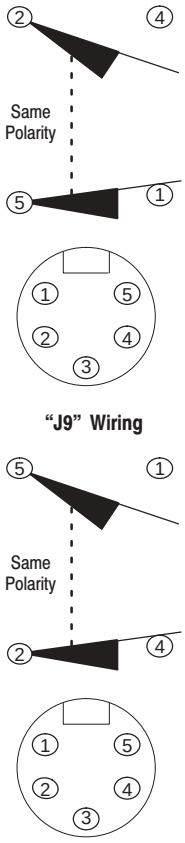
The standard cable length is 5ft (2.4m). Extended cable lengths are available in multiples of 4ft (1.22m) only.

Mini-Type Receptacles

To order a bulletin **802T** pre-wired limit switch with a five-pin (2 circuit) or nine pin (4 circuit) mini connector, add the suffix "**J1**" or "**J9**" depending on desired wiring ("J9" wiring not available for 4-circuit models).

5-Pin Mini-Type Receptacle

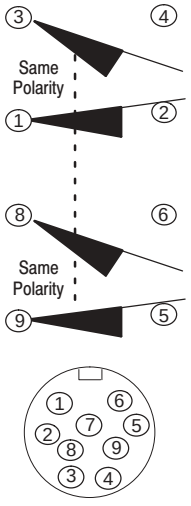
"J1" Wiring



"J9" Wiring

9-Pin Mini-Type Receptacle

"J1" Wiring ("J9" wiring not available for 4 circuit)



Specifications

Enclosure Rating	NEMA 13 and IP65 (IEC529)
Approvals	UL listed, CSA certified, and CE marked for applicable directives
Ambient Temperature❶	NonPlug-In limit switches are designed to operate in an ambient temperature range of –18°C to +54°C (0°F to +130°F).

AC Contact Rating (Maximum per Pole, 50 or 60Hz, Same Polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A600	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720
	480	15	1.50	10	7200	720
	600	12	1.20	10	7200	720

DC Contact Rating (Maximum per Pole, Same Polarity)

Voltage Range	Current Rating
115–125	0.4A
230–250	0.2A
550–600	0.1A

❶ Temperature range below 0°C (+32°F) is based on the absence of freezing moisture or water.
See page 5–65 for Extended Temperature Option.

Description

Bulletin 802T limit switches are ideal for applications in which heavy duty pilot ratings, small size, a high degree of versatility and a rugged NEMA Type 13 oiltight construction are desirable. An important factor in the automation of industry, these limit switches are being applied extensively on conveyor systems, transfer machines, automatic turret lathes, milling and boring machines, radial drills, and many other types of modern, high speed production equipment.

A wide variety of operating heads and operating levers are available. Operating heads can be mounted in four positions, 90° apart.

Features

- Side rotary, wobble stick, cat whisker, adjustable top and top or side push styles, with or without rollers
- Rugged construction
- Proven reliability

NonPlug-In Style

2-Circuit

4-Circuit Vertical Construction

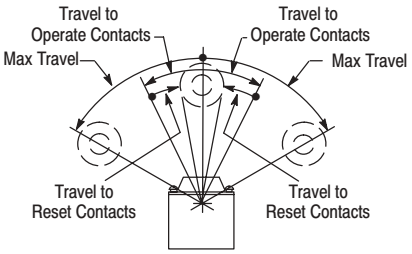
4-Circuit Horizontal Construction

Operating Levers

802T 2-Circuit Lever Type • Spring Return

NonPlug-In Style Oiltight Switches

Range of Operation



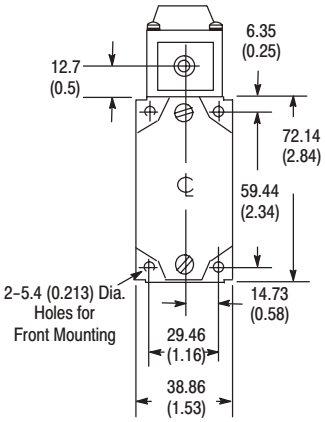
Lever Operation with Standard Levers

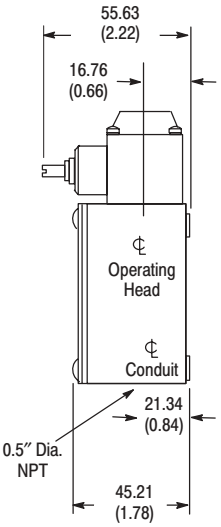
802T–A

802T–ALW5

Dimensions—mm (inches)

NonPlug-In Switch
Shipping Wt. 0.45kg (1lb)





Selection Guide—Standard and Low Operating Torque Models

Lever Movement vs. Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
Clockwise or Counterclockwise	0.34N.m (3lb in)	16.5°	43°	8°	**802T–A**
	0.51N.m (4.5lb in)	6°	50°	3°	**802T–H**
Clockwise	0.40N.m (3.5lb in)	16.5°	43°	8°	**802T–A1**
	0.51N.m (4.5lb in)	6°	50°	3°	**802T–H1**
Counterclockwise	0.40N.m (3.5lb in)	16.5°	43°	8°	**802T–A2**
	0.51N.m (4.5lb in)	6°	50°	3°	**802T–H2**
Clockwise Lever cannot move counterclockwise	0.45N.m (4lb in)	20°	91°	11°	**802T–L1**
Counterclockwise Lever cannot move clockwise					**802T–L2**
Clockwise or Counterclockwise	0.09N.m (12.5oz in)	22°	43°	12°	**802T–ALW5❶**
Clockwise					**802T–AL1W5❶**
Counterclockwise					**802T–AL2W5❶**

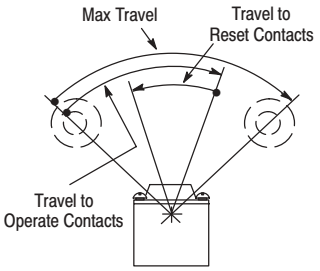
❶ These low operating torque limit switches can only be supplied with catalog number **802T–W5** rod lever. The rod can easily be formed to meet special application requirements.

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–65.

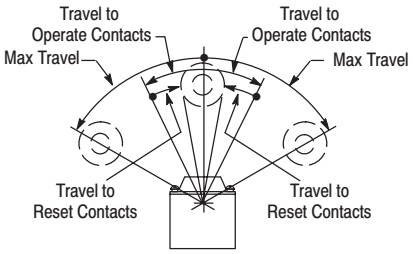
802T 2-Circuit Lever Type • Maintained Contact and Neutral Position

NonPlug-In Style Oiltight Switches

Range of Operation



Maintained Contact Models

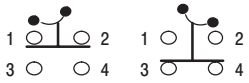
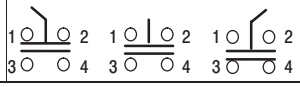


Neutral Position Models

802T–AM

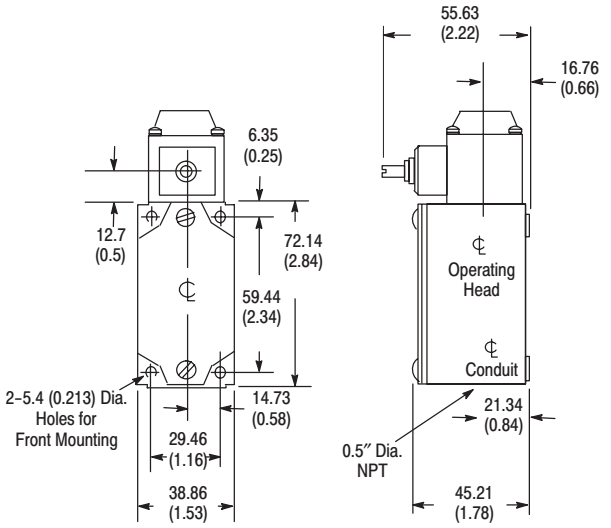
802T–NP

Selection Guide

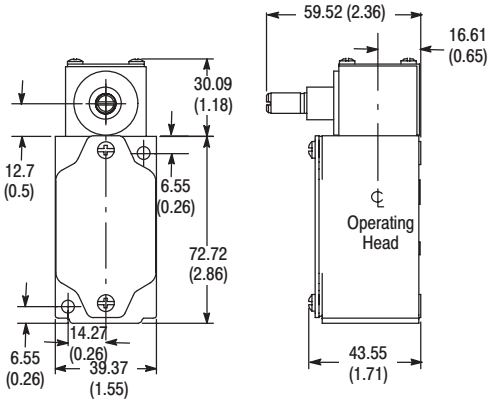
Contact Type	Lever Movement vs. Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
Maintained		0.25N.m (2.25lb in)	70° ❶	84° ❶	50°	**802T–AM**
Neutral Position			12°	53°	6°	**802T–NP**

❶ From one maintained position to the other.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.



NonPlug-In Switch
Shipping Wt. 0.45kg (1lb)
802T–AM



NonPlug-In Switch
Shipping Wt. 0.45kg (1lb)
802T–NP

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–65.

802T 1-Circuit Lever Type with Time Delay • Spring Return

NonPlug-In Style Oiltight Switches

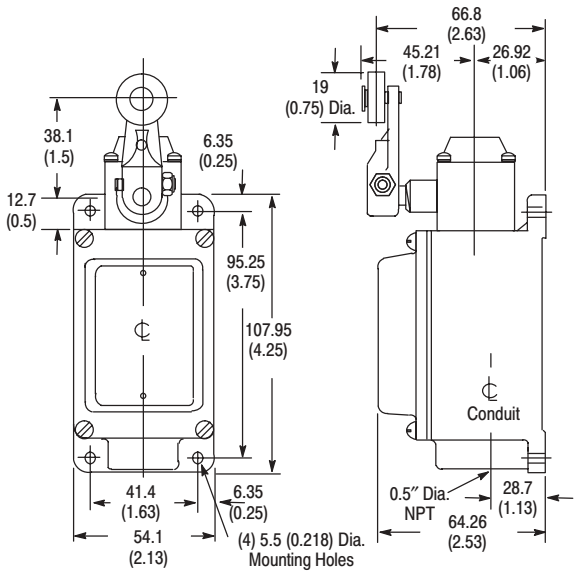
802T–R1TD with 802T–W1 Lever

Selection Guide

Lever Movement vs. Contact Operation❸			Torque to Operate (Max)	Travel to Operate Contact (Max)	Overtravel	Max Travel	Catalog Number	
							On-Delay❷❹❺	Off-Delay❷❻
Clockwise Lever cannot move counterclockwise	1 ○ ○ 2	1 ○ ○ 2	0.23N.m (2lb in)	45°❶	45°❶	Approx. 90°	802T–R1TD	802T–R7TD
	1 ○ ○ 2	1 ○ ○ 2					802T–R3TD	802T–R5TD
Counterclockwise Lever cannot move clockwise	1 ○ ○ 2	1 ○ ○ 2					802T–R2TD	802T–R8TD
	1 ○ ○ 2	1 ○ ○ 2					802T–R4TD	802T–R6TD

❶ Required for Timing Accuracy.
❷ The time delay is adjustable from 0.5 to 15 seconds ± 25%.
❸ Contacts are rated for 3A, 120V AC maximum.
❹ The lever travel must be faster than the timing setting.
❺ Time Delay Occurs After Lever Is Moved to Operated Position
❻ Time Delay Occurs After Lever Is Moved From Operated to Normal Position

Dimensions—mm (inches)



Time Delay Switch with 802T–W1 Lever
Shipping Wt. 0.90kg (2lbs)

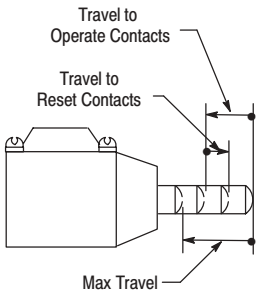
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–65.

802T 2-Circuit Push Type • Spring Return and Maintained Contact

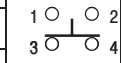
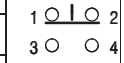
NonPlug-In Style Oiltight Switches

Range of Operation



Top Push Rod | *Adjustable Top Push Rod* | *Side Push Rod* | *Top Push Roller* | *Side Push Roller* | *Side Push Rod Maintained*

Selection Guide

Operator Type	Contact Operation: Normal	Contact Operation: Operated	Force to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
Top Push Rod			15.6N (3.5lb)	1.9mm (0.075in)	5.1mm (0.202in)	0.8mm (0.030in)	**802T–B**
Adjustable Top Push Rod							**802T–BA**
Top Push Roller							**802T–D**
Side Push Rod			20.0N (4.5lb)	3.2mm (0.125in)	5.5mm (0.218in)	1.5mm (0.057in)	**802T–C**
Side Push Vertical Roller							**802T–K**
Side Push Horizontal Roller							**802T–K1**
Maintained Contact Side Push Rod			35.6N (8lbs)	5.9mm (0.234in)	7.5mm (0.296in)	5.1mm (0.202in)	**802T–CM**

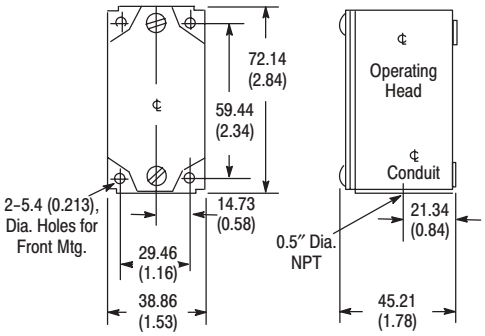
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Modifications and Accessories—See page 5–65.

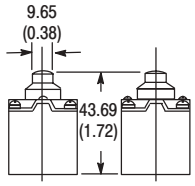
802T 2-Circuit Push Type • Spring Return and Maintained Contact

NonPlug-In Style Oiltight Switches

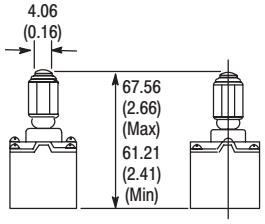
Dimensions—mm (inches)



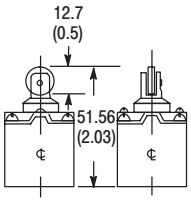
NonPlug-In Switch
Shipping Wt. 0.45kg (1lb)



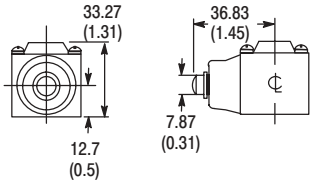
802T–B Top Push Rod Head
Shipping Wt. 0.128kg (4.5oz)



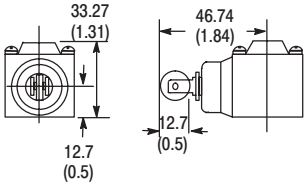
802T–BA Adjustable
Top Push Rod Head
Shipping Wt. 0.128kg (4.5oz)



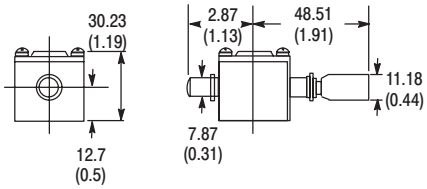
802T–D Top Push Roller Head
Shipping Wt. 0.128kg (4.5oz)



802T–C Side Push Rod Head
Shipping Wt. 0.128kg (4.5oz)



802T–K Side Push Roller Head
Shipping Wt. 0.128kg (4.5oz)



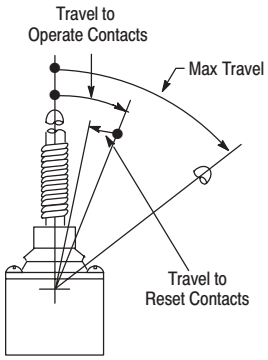
802T–CM Maintained Side Push Rod Head
Shipping Wt. 4.5oz (0.128kg)

Modifications and Accessories—See page 5–65.

802T 2-Circuit Wobble Stick and Cat Whisker • Spring Return

NonPlug-In Style Oiltight Switches

Range of Operation



Wobble Stick
Nylon Extension

Wobble Stick
Wire Extension

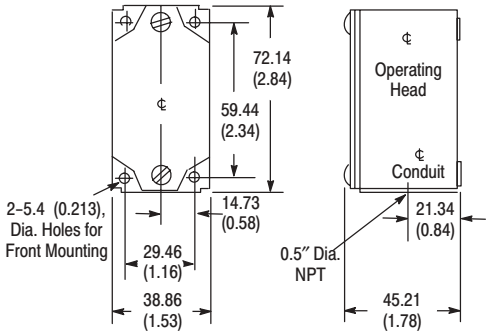
Cat Whisker

Selection Guide

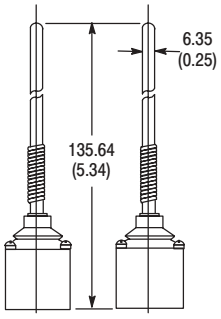
Operator Type	Contact Operation	Torque to Operate (Max)❶	Travel to Operate Contacts (Max)❶	Max Travel❶	Travel to Reset Contacts (Max)❶	Catalog Number
Nylon Wobble Stick		0.51N.m (4.5lb in)	9°	10°	4°	**802T–WS**
Wire Wobble Stick						**802T–WS1**
Wire Cat Whisker		0.06N.m (8oz in)	21°	22°	14°	**802T–CW**

❶ Operating travels and torque are measured at rigid section of stick or cat whisker.

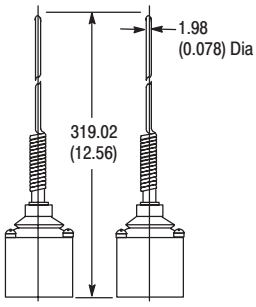
Dimensions—mm (inches)



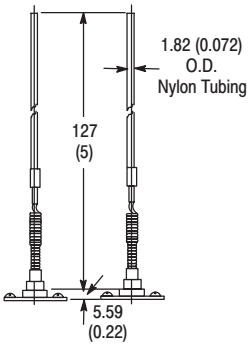
NonPlug-In Switch
Shipping Wt. 0.45kg (1lb)



Z–18210 Nylon
Wobble Stick Head
Shipping Wt. 0.128kg
(4.5oz)



Z–18211 Wire
Wobble Stick Head
Shipping Wt.0.149kg
(5.25oz)



Z–25142
Cat Wisker Head
Shipping Wt. 0.028kg
(1oz)

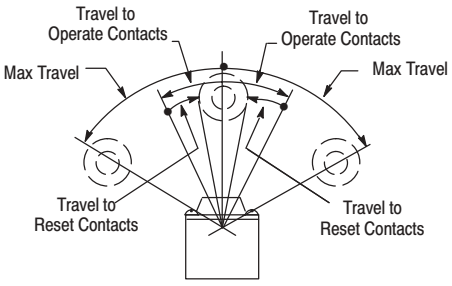
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Modifications and Accessories—See page 5–65.

802T Vertical 4-Circuit Push Type • Spring Return & Maintained Contact

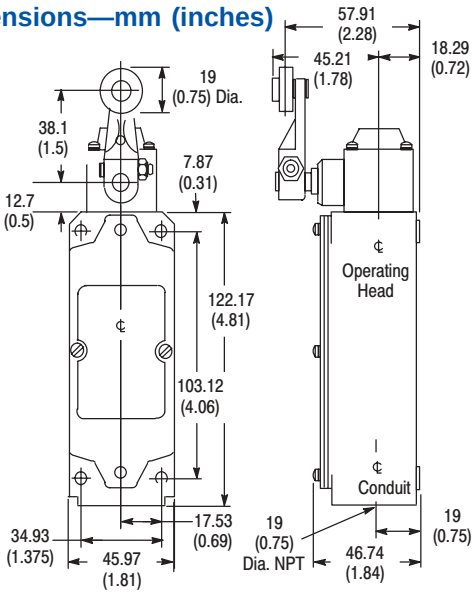
NonPlug-In Style Oiltight Switches

Range of Operation



Switch Without Lever

Dimensions—mm (inches)



4 Circuit NonPlug-In Switch with 802T–W1 Lever
Shipping Wt. 0.57kg (1.25lb)

Selection Guide

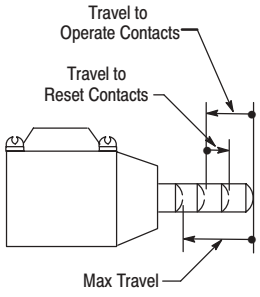
Lever Movement vs. Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
Clockwise or Counterclockwise	0.34N.m (3lb in)	18°	42°	14°	**802T–AT**
	0.68N.m (6lb in)	9°	50°	6°	**802T–HT**
Clockwise	0.40N.m (3.5lb in)	18°	42°	14°	**802T–A1T**
	0.68N.m (6lb in)	9°	50°	6°	**802T–H1T**
Counterclockwise	0.40N.m (3.5lb in)	18°	42°	14°	**802T–A2T**
	0.68N.m (6lb in)	9°	50°	6°	**802T–H2T**
Clockwise Lever cannot move counterclockwise	0.45N.m (4lb in)	28°	91°	18°	**802T–L1T**
Counterclockwise Lever cannot move clockwise					**802T–L2T**
Maintained Contact Clockwise or Counterclockwise	0.34N.m (3lb in)	75°	84° From one maintained position to the other	50°	**802T–AMT**

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–65.

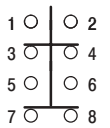
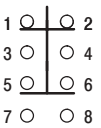
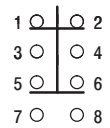
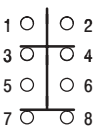
802T Vertical 4-Circuit Push Type • Spring Return & Maintained Contact

Range of Operation



Top Rod | *Adjustable Top Push Rod* | *Side Rod* | *Top Roller* | *Side Roller* | *Side Rod*

Selection Guide

Operator Type	Contact Operation: Normal	Contact Operation: Operated	Force to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number ❶
Top Push Rod			24.4N (5.5lb)	3.6mm (0.140in)	6.0mm (0.234in)	1.6mm (0.062in)	**802T–BT**
Adjustable Top Push Rod							**802T–BAT**
Side Push Rod			28.9N (6.5lb)			2.4mm (0.094in)	**802T–CT**
Top Push Roller			24.4N (5.5lb)			1.6mm (0.062in)	**802T–DT**
Side Push Vertical Roller			28.9N (6.5lb)			2.4mm (0.094in)	**802T–KT**
Side Push Horizontal Roller							**802T–K1T**
Maintained Contact Side Push Rod			62.2N (14lb)	6.0mm (0.234in)	6.7mm (0.265in)	5.1mm (0.202in)	**802T–CMT**

❶ These devices are not available with VITON seals or neon indicating lights.

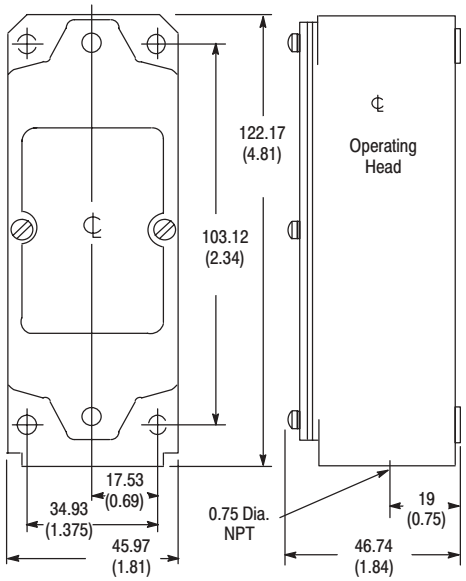
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Modifications and Accessories—See page 5–65.

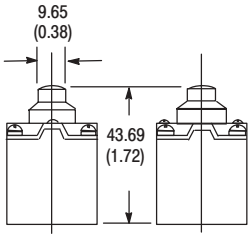
802T Vertical 4-Circuit Push Type • Spring Return & Maintained Contact

NonPlug-In Style Oiltight Switches

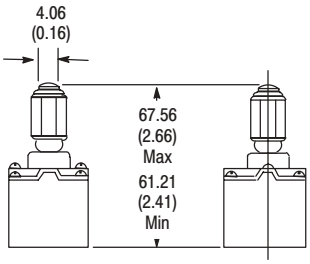
Dimensions—mm (inches)



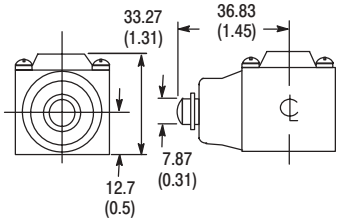
NonPlug-In Switch
Shipping Wt. 0.57kg (1.25lb)



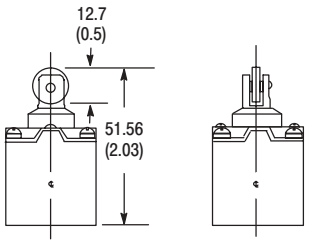
802T–BT
Top Push Rod Head
Shipping Wt. 0.128kg (4.5oz)



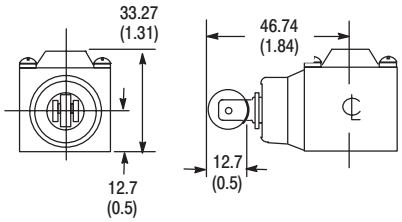
Adjustable Top Push Rod Head
for 802T–BAT
Shipping Wt. 0.128kg (4.5oz) ❶



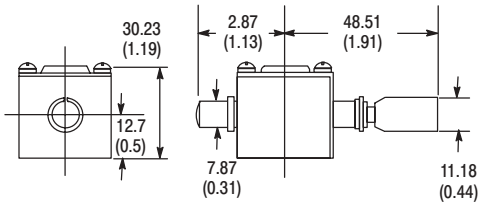
802T–CT
Side Push Rod Head
Shippling Wt. 0.128kg (4.5oz)



802T–DT
Top Push Roller Head
Shipping Wt. 0.128kg (4.5oz)



802T–KT
802T–K1T
Side Push Roller Head
Shipping Wt. 0.128kg (4.5oz)



802T–CMT
Maintained Side Push Rod Head
Shipping Wt. 0.128kg (4.5oz)

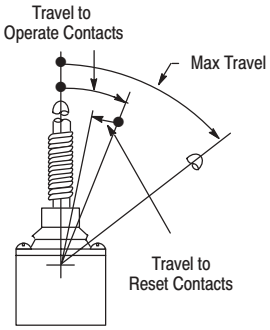
❶ Not a saleable item.

Modifications and Accessories—See page 5–65.

802T Vertical 4-Circuit Wobble Stick and Cat Whisker • Spring Return

NonPlug-In Style Oiltight Switches

Range of Operation

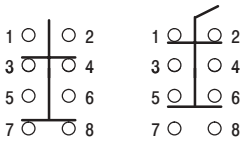


Travels Are Measured at Rigid Section of Stick or Whisker

Wobble Stick

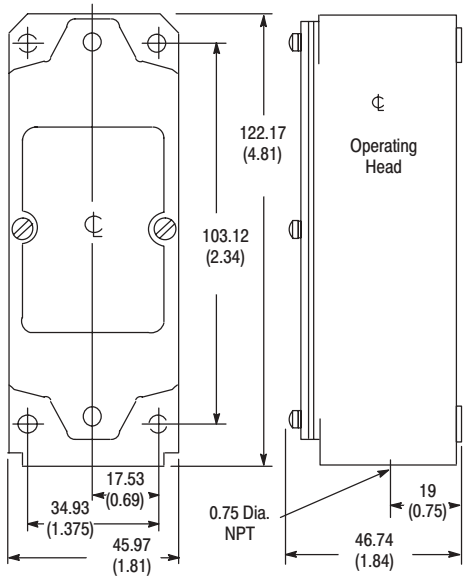
Cat Whisker

Selection Guide

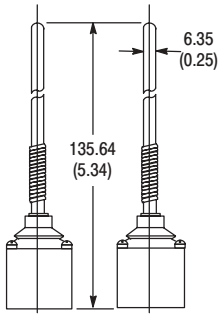
Operator Type	Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel ❶	Travel to Reset Contacts (Max)	Catalog Number
Nylon Wobble Stick		0.79N.m (7lb in)	12°	12°	9°	802T–WST
Wire Cat Whisker						802T–WS1T

❶ These switches should be mounted in such a way that the wobble stick or cat whisker will not be deflected beyond the "Maximum Travel" position, as this could cause undesirable repetition of contact action on rebound.

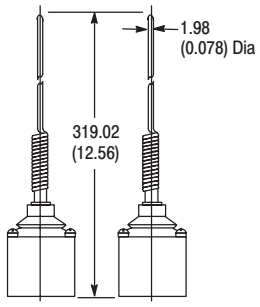
Dimensions—mm (inches)



NonPlug-In Switch Shipping Wt. 0.45kg (1lb)



Z–18210 Nylon Wobble Stick Head Shipping Wt. 0.128kg (4.5oz)



Z–18211 Wire Wobble Stick Head Shipping Wt. 0.149kg (5.25oz)

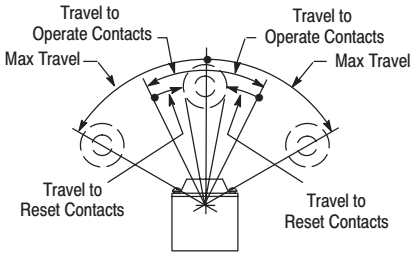
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Modifications and Accessories—See page 5–65.

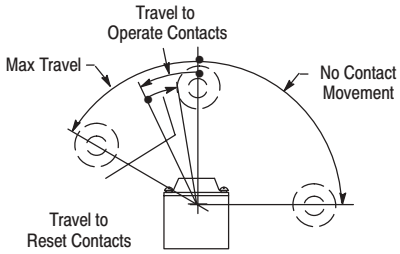
802T Horizontal 4-Circuit Lever Type • Spring Return

NonPlug-In Style Oiltight Switches

Range of Operation



Lever Operation When Standard Levers Are Used



Lever Operation When 802T–W7 and W8 "One-Way" Levers Are Used

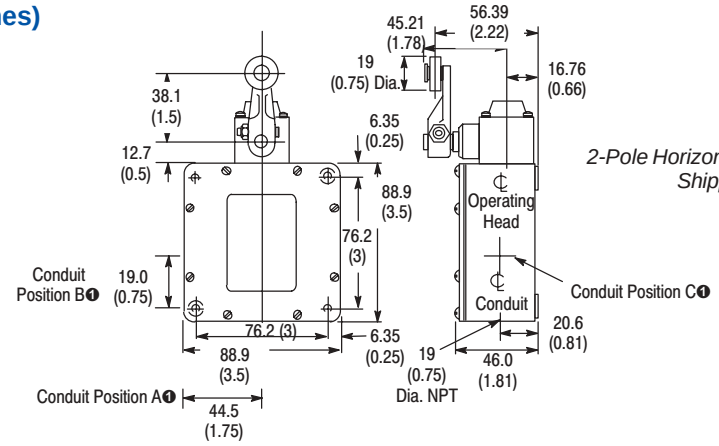
Switch Without Lever

Selection Guide

Lever Movement vs. Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
Clockwise or Counterclockwise	0.34N.m (3lb in)	14°	42°	8°	**802T–ATH**
	0.68N.m (6lb in)	6°	50°	3°	**802T–HTH**
Clockwise	0.39N.m (3.5lb in)	14°	42°	8°	**802T–A1TH**
	0.68N.m (6lb in)	6°	50°	3°	**802T–H1TH**
Counterclockwise	0.39N.m (3.5lb in)	14°	42°	8°	**802T–A2TH**
	0.68N.m (6lb in)	6°	50°	3°	**802T–H2TH**
Clockwise Lever cannot move counterclockwise	0.45N.m (4lb in)	20°	91°	11°	**802T–L1TH**
Counterclockwise Lever cannot move clockwise					**802T–L2TH**

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



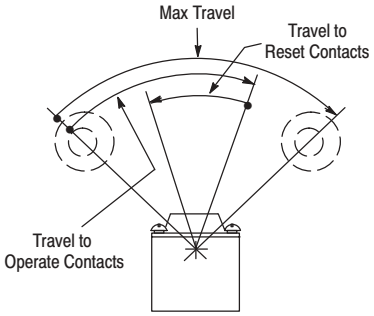
2-Pole Horizontal Switch with 802T–W1 Lever Shipping Wt. 0.91kg (2lbs)

❶Conduit positions for modifications S1, S2, S3

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–65.

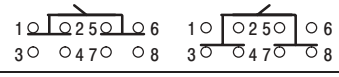
802T Horizontal 4-Circuit Lever Type • Maintained Contact

Range of Operation

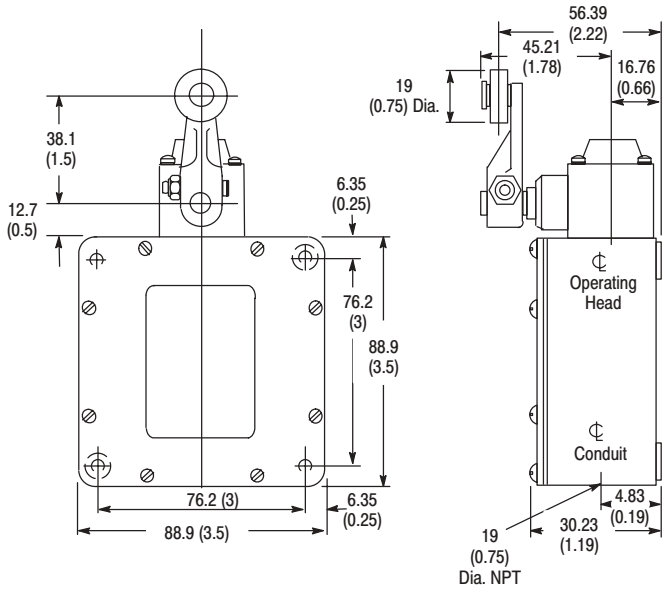


Switch
Without Lever

Selection Guide

Lever Movement vs. Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
Clockwise or Counterclockwise 	0.34N.m (3lb in)	70°	84° From one maintained position to the other	35°	**802T–AMTH**

Dimensions—mm (inches)



2-Pole Horizontal Switch
with 802T–W1 Lever
Shipping Wt. 0.91kg (2lb)

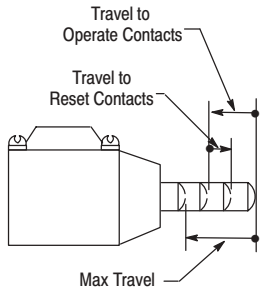
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Levers—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–65.

802T Horizontal 4-Circuit Push Type • Spring Return & Maintained Contact

NonPlug-In Style Oiltight Switches

Range of Operation



Top Push Rod

Adjustable Top Push Rod

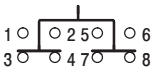
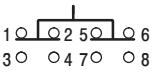
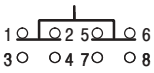
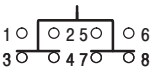
Side Push Rod

Top Push Roller

Side Push Roller

Side Push Rod Maintained Contact

Selection Guide

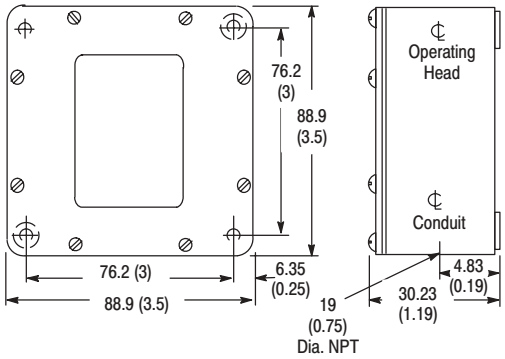
Operator Type	Contact Operation		Force to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
	Normal	Operated					
Top Push Rod			24.4N (5.5lbs)	2.4mm (0.094in)	5.9mm (0.234in)	1.2mm (0.046in)	**802T–BTH**
Adjustable Top Push Rod							**802T–BATH**
Top Push Roller							**802T–DTH**
Side Push Rod				2.8mm (0.109in)		1.6mm (0.062in)	**802T–CTH**
Side Push Vertical Roller							**802T–KTH**
Side Push Horizontal Roller							**802T–K1TH**
Maintained Contact Side Push Rod			62.2N (14lbs)	5.9mm (0.234in)	6.7mm (0.265in)	5.1mm (0.202in)	**802T–CMTH**

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

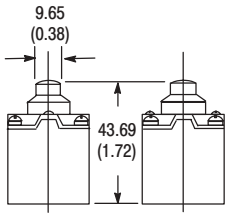
Modifications and Accessories—See page 5–65.

802T Horizontal 4-Circuit Push Type • Spring Return & Maintained Contact

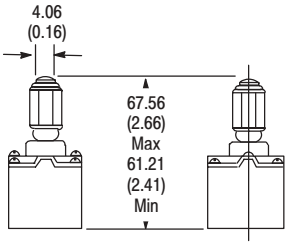
Dimensions—mm (inches)



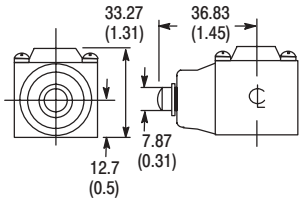
2-Pole Horizontal Switch Base
Shipping Wt. 0.91kg (2lb)



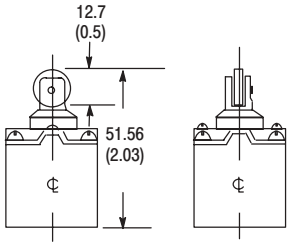
Z–19243
Top Push Rod Head
Shipping Wt. 0.128kg (4.5oz)



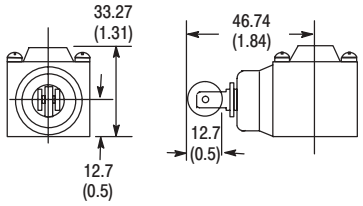
Adjustable Top Push Rod Head
for 802T–KTH
Shipping Wt. 0.128kg (4.5oz) ❶



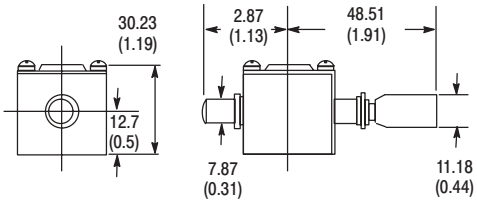
Z–21165
Side Push Rod Head
Shipping Wt. 0.128kg (4.5oz)



Z–19241
Top Push Roller Head
Shipping Wt. 0.128kg (4.5oz)



Z–21166
Side Push Roller Head
Shipping Wt. 0.128kg (4.5oz)



Z–21168
Maintained Side Push Rod Head
Shipping Wt. 0.128kg (4.5oz)

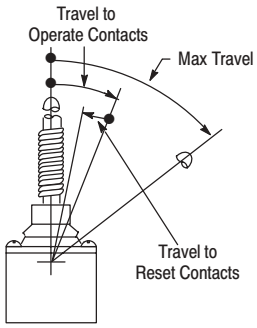
❶ Not a saleable item.

Modifications and Accessories—See page 5–65.

802T Horizontal 4-Circuit Wobble Stick & Cat Whisker • Spring Return

NonPlug-In Style Oiltight Switches

Range of Operation ❶

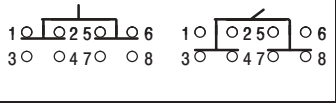


Travels Are Measured at Rigid Section of Stick

Wobble Stick

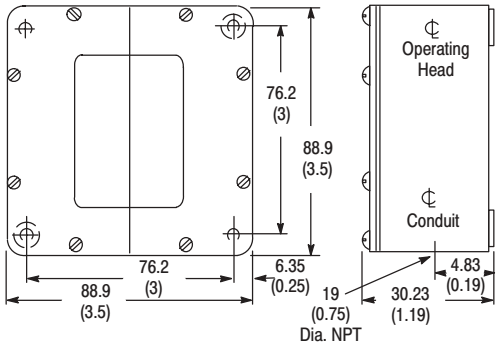
Cat Whisker

Selection Guide

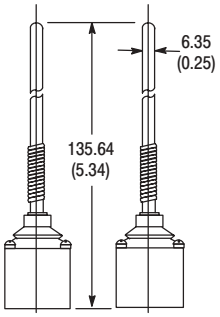
Operator Type	Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel ❶	Travel to Reset Contacts (Max)	Catalog Number
Nylon Wobble Stick		0.79N.m (7lb in)	12°	12°	9°	802T–WSTH
Wire Cat Whisker						802T–WS1TH

❶ These switches should be mounted in such a way that the wobble stick or cat whisker will not be deflected beyond the "Maximum Travel" position, as this could cause undesirable repetition of contact action on rebound.

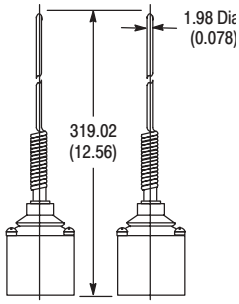
Dimensions—mm (inches)



2-Pole Horizontal Switch
Shipping Wt. 0.91kg (2lb)



Z–29195 Nylon
Wobble Stick Head
Shipping Wt. 0.128kg (4.5oz)



Z–32109 Wire
Wobble Stick Head
Shipping Wt. 0.149kg (5.25oz)

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Modifications and Accessories—See page 5–65.

802T Dual Switch Lever and Push Types • Spring Return

NonPlug-In Style Oiltight Switches

Dual Switch with 802T–W1 Levers

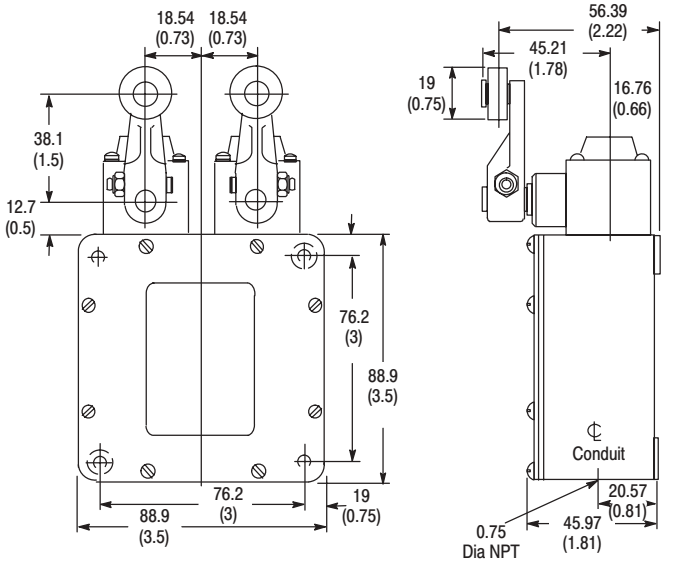
Selection Guide❶

		Right Hand Switch					
		802T–A	802T–H	802T–A1	802T–A2	802T–C	802T–D
Left Hand Switch	802T–A	802T–AD	802T–AHD	802T–AA1D	802T–AA2D	802T–ACD	802T–ADD
	802T–H	802T–HAD	802T–HD	802T–HA1D	802T–HA2D	802T–HCD	802T–HDD
	802T–A1	802T–A1AD	802T–A1HD	802T–A1D	802T–A1A2D	802T–A1CD	802T–A1DD
	802T–A2	802T–A2AD	802T–A2HD	802T–A2A1D	802T–A2D	802T–A2CD	802T–A2DD
	802T–C	802T–CAD	802T–CHD	802T–CA1D	802T–CA2D	802T–CD	802T–CDD
	802T–D	802T–DAD	802T–DHD	802T–DA1D	802T–DA2D	802T–DCD	802T–DD

❶ Ordering Information—Refer to limit switch listings on pages 5–48 and 5–51 determine which units and levers are correct for the desired application. Select left limit switch from left hand vertical column. Select right hand switch from right hand horizontal column. The correct catalog number is found at the intersecting box.

❷ Most levers listed on page 5–83 can be used. When dual limit switch combinations are desired, consult your local Allen-Bradley Office (see page 13–1).

Dimensions—mm (inches)



Dual Switch with 802T–W1 Levers
Shipping Wt. 0.91kg (2lbs)

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Levers❷—See page 5–83 for a complete listing of operating levers.
Modifications and Accessories—See page 5–65.

802T Air-Operated • Spring Return

NonPlug-In Style Oiltight Switches

Single Unit

Double Unit

Selection Guide

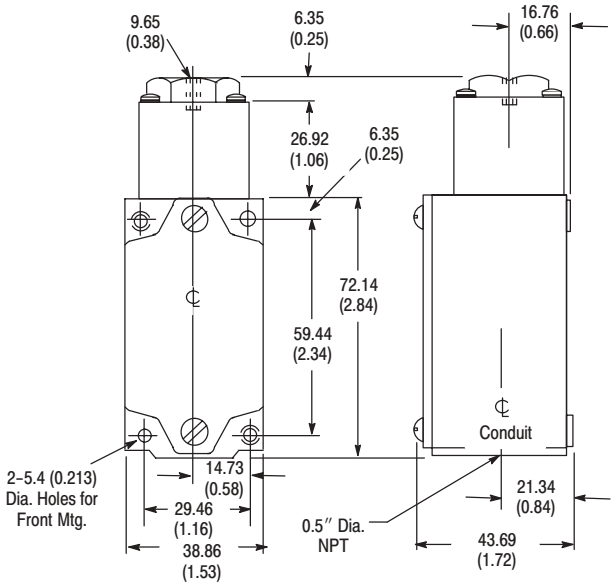
Contact Operation❶	Catalog Number	
	Single Unit ❷	Double Unit ❸
Will operate when 25 psi (172kPa) ±25% of air pressure is applied, and will reset with a pressure drop of 6 to 15 psi (41 to 103kPa). Maximum allowable pressure is 100 psi (680kPa).	**802T–P**	**802T–2P**

❶ When the switch is in the reset state a small rod protrudes from the top of the die casting. The rod is flush with the surface when the switch trips on higher pressure. The switch can be manually operated by pressing down on the rod.

❷ Contact operation similar to 2-circuit devices.

❸ Contact operation similar to 4-circuit horizontal construction devices.

Dimensions—mm (inches)



Air-Operated Switch
Shipping Wt. 0.34kg (12oz)

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Modifications and Accessories—See page 5–65.

Cavity Mounting

Front View *Rear View*

802T–AO with 802T–W1A Lever

Manifold Mounting

802T–AMU with 802T–W4A Lever

Cavity Mounting

Except for the types identified by catalog numbers **802T–B**, **802T–D**, **802T–WS**, **802T–WS1**, and **802T–CW**, Bulletin 802T switches can be supplied in a special construction for cavity mounting in a machine base or panel. With this construction, the actuator and contact block are mounted on the back of a gasketed steel plate. To order a switch for cavity mounting, add the letter "**O**" to the catalog number of the corresponding surface mounted switch. Example: Catalog number **802T–A** becomes catalog number **802T–AO** (shown).

Manifold Mounting

All 2-circuit Bulletin 802T switches can be supplied with a special base which permits mounting the switch manifold style on a machine base, panel or raceway. This base is equipped with a wiring hole and synthetic rubber gasket on the back (see illustration).

To order a switch with a manifold mounting base, add the letter "**U**" to the catalog number. Example: Catalog number **802T–AM** becomes catalog number **802T–AMU** (shown).

Transparent Cover

Switches can be furnished with a gasketed, transparent plastic cover. This modification enables the electrician to inspect terminal wiring without removing the switch cover. Not available on cat whisker, time delay or cavity style mounted limit switches.

To order a switch with a transparent cover, add the letter "**Z**" to the catalog number of the switch. For example: Catalog number **802T–D** becomes catalog number **802T–DZ**.

Extended Temperature Operation

Bulletin 802T NonPlug-In limit switches are designed to operate in a temperature range of –18°C to +54°C (0°F to +130°F). Special limit switches modified for extended temperature operation –29°C to +121°C (–20°F to +250°F) are available.

Note: Temperature ranges below 0°C (+32°F) are based on the absence of freezing moisture or water.

To order a Bulletin 802T modified for extended temperature operation, insert the letter "**E**" after the operating head designation. Example: Catalog number **802T–A** becomes catalog number **802T–AE**. (Catalog numbers **802T–WS**, **WS1**, **CW**, **P**, **2P** and the Time Delay limit switches are not available for extended temperature operation. Catalog numbers **802T–A3** and **A4** are available for extended temperature operation except with a reduction in damping.)

Special Conduit Positions

Dual Operating Head Switches can be obtained with up to three conduit openings. The location of conduit openings A, B, and C are illustrated in the dimension drawing on page 5–58. The conduit opening in Position A is 3/4in NPT, the conduit openings in Position B and C are 1/2in NPT. To order a switch with special conduit positioning, add the suffix "**S1**," "**S2**" or "**S3**" to the catalog number per the following:

S1=Position A+B
S2=Position A+C
S3=Position B+C

Neon Indicating Lights (2-Circuit Models Only)

Two circuit Bulletin 802T surface mounted limit switches can be supplied with two neon indicating lights—AC 208/240V, 50–60Hz and 120V, 50–60Hz. To order, add the letter "**N**" for 120V or "**N5**" for 240V before the lever designation. Example: Catalog number **802T–A1** with indicating lights would be **802T–A1N**. Not available on 4-circuit devices.

In addition, indicating light kits as shown in the table below are available for field installation on two circuit devices.

Limit Switch Construction	Light Kit Catalog Number	
	120V AC 50–60Hz	208/240V AC 50–60Hz
Surface Mounted	**802T–N1**	**802T–N4**
Neutral Position	**802T–N2**	**802T–N10**

Conduit Seal

A synthetic rubber conduit seal is available to protect the conduit opening against entry of oil and moisture. The seal can be added easily before switch installation and should be installed so that the 5/8in diameter projection (the other projection is 23/32in diameter) faces against the shoulder at the bottom of the pipe tap. The seal can accommodate up to four wires of #12 gauge or smaller. Each wire hole in the seal has a thin inner wall which is pierced when a wire is passed through. Thus, any unused opening remains sealed. The seat is designed for single contact block, surface mounted base limit switches having 1/2in conduit openings.

Conduit seal catalog number	**802T–N3**

Special Conduit Lock Nut

This option, a "Tru-Seal" nut with threaded PTFE insert, is a valuable accessory for any Bulletin 802T which is connected by means of conduit.

"Tru-Seal" lock nut for 1/2-inch conduit catalog number	**802T–X4**

802T Safety Limit Switches

Direct Opening Action Position Interlock Switches

Specifications

Enclosure Rating	NEMA 4, 6P, 12, 13 and IP67
Approvals	cULus listed, CE marked for all applicable directives and TUV for 2-circuit models
Standards	EN954-1, ISO13849-1, IEC/EN60204-1, NFPA79, EN1088, ISO14119, IEC/EN60947-5-1, ANSI B11.19, AS4024-1
Category	Cat. 1 Device per EN954-1 Dual channel interlocks suitable for Cat. 3 or 4 systems
Operating Temperature	-18°C to +110°C (0°F to +230°F)
Cable Versions Temperature	-18°C to 60°C (0°F to 140°F)
Storage Temperature	-40°C to 121°C (-40°F to 250°F)

AC Contact Rating (Maximum per Pole, 50 or 60Hz, 2 Circuits)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A600	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720
AC-15	480	15	1.50	10	7200	720
	600	12	1.20	10	7200	720

AC Contact Rating (Maximum per Pole, 50 or 60Hz, 4 Circuits)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A300	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720

DC Contact Rating (Maximum per Pole)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
Q300	250	0.27	0.27	2.5	69	69
	125	0.55	0.55	2.5	69	69
DC 13						

Low Voltage DC

24V DC @ 1.1 Amps resistive load

Description

Bulletin 802T Direct Opening Action limit switches have been designed for use in control reliable applications and safety applications per ISO 14119. These limit switches utilize the same mounting dimensions as other NEMA style limit switches. The rugged metal construction and plug-in body are designed for use in harsh industrial environments.

Direct Opening Action assures that the normally closed contacts open when the limit switch is actuated. This opening will occur even in the event of a contact weld condition, up to 10 Newtons.

ATTENTION: To ensure that the normally closed (safety) contacts open, the limit switch actuator must be displaced beyond the point of Direct Opening Action (see specifications).

Features

- Direct opening action
- Snap acting contacts
- Rugged metal construction
- Long life and reliability
- Plug-in design
- NEMA 6P/IP67 sealing

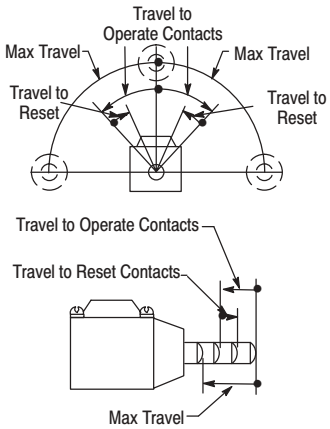
Typical Applications

- Machine guards
- Access gates and doors
- Cranes or hoists
- Transfer stations
- Indexing tables
- Robotic cells

Direct Opening Action

Lever Type • Spring Return page 5–67
Top Push Roller • Spring Return . . . . . page 5–67
Side Push Verticle Roller • Spring Return . . . . . page 5–67
Side Push Horizontal Roller • Spring Return . . . . . page 5–67
Dimensions . . . . . page NO TAG
Modifications . . . . . page 5–69

Range of Operation



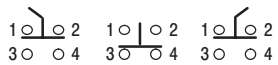
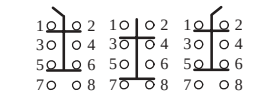
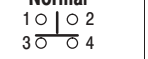
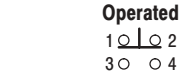
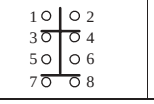
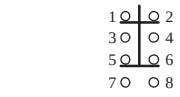
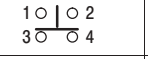
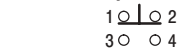
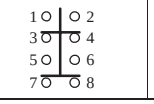
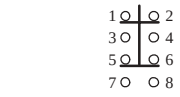
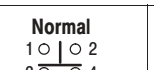
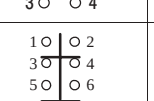
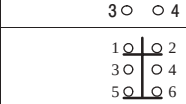
Lever Type Spring Return

Top Push Roller Spring Return

Side Push Verticle Roller Spring Return

Side Push Horizontal Roller Spring Return

Selection Guide

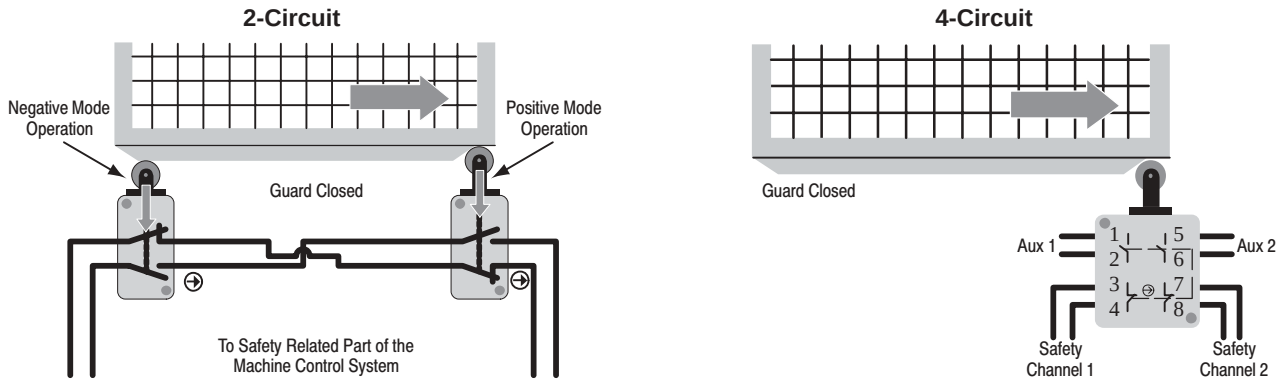
Number of Circuits	Lever Movement vs. Contact Operation		Torque/ Force to Operate (Max)	Travel to Operate (Max)	Torque/ Force to Operate Direct Opening Action (Min)	Travel to Operate Direct Opening Action (Min)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number
Lever Type • Spring Return									
2	Clockwise or Counter Clockwise		0.45 N.m (4.0 lbin)	13°	0.90 N.m (8lbf.in)	25°	90°	7°	**Switch w/o Lever 802T–APD**
4									**802T–ATPD**
Top Push Roller • Spring Return									
2	**Normal** 	**Operated** 	28.47N (6.4 lbf)	1.17mm (0.046in)	66.72N (15.0 lbf)	2.29mm (0.090in)	5.99mm (0.236in)	0.64mm (0.025in)	**Complete Switch 802T–DPD**
4									**802T–DTPD**
Side Push Verticle Roller • Spring Return									
2	**Normal** 	**Operated** 	24.5N (5.5 lbf)	2.08mm (0.082in)	53.4N (12.0 lbf)	4.19mm (0.165in)	5.74mm (0.226in)	1.14mm (0.045in)	**Complete Switch 802T–KPD**
4									**802T–KTPD**
Side Push Horizontal Roller • Spring Return									
2	**Normal** 	**Operated** 	24.5N (5.5 lbf)	2.08mm (0.082in	53.4N (12.0 lbf)	4.19mm (0.165in)	5.74mm (0.226in)	1.14mm (0.045in)	**Complete Switch 802T–K1PD**
4									**802T–K1TPD**

Modifications and Accessories—See page 5–69.

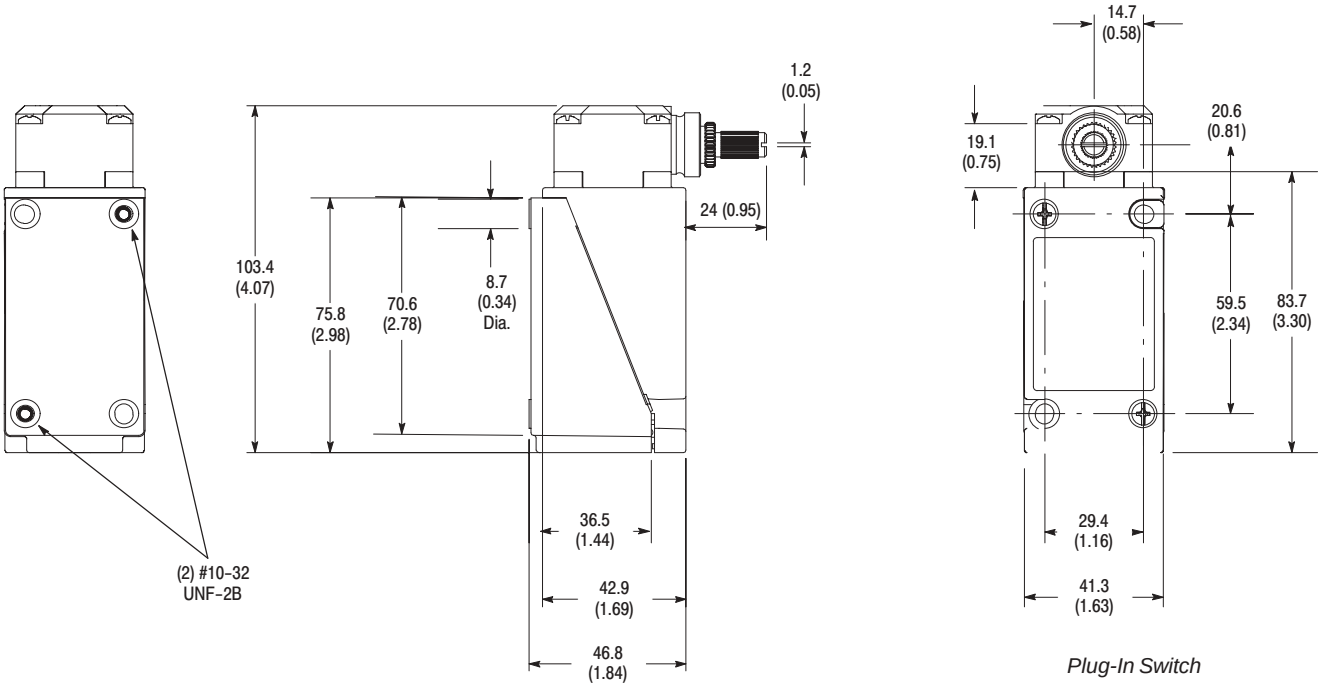
802T Safety Limit Switches

Direct Opening Action Position Interlock Switches

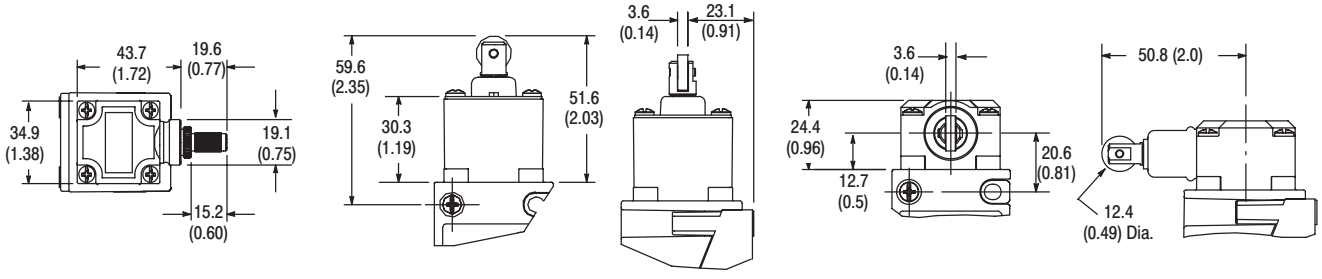
Typical Example of a Dual Channel Safety Application



Dimensions—mm (inches)



Plug-In Switch



Lever Type Head *Top Push Roller Head* *Side Push Roller Head*

Modifications

Metric Conduit Entry

To order a limit switch with a 20mm conduit entry, add the suffix **"S6"** to the catalog number. **Example: 802T–APDS6**

Pre-wired Cable

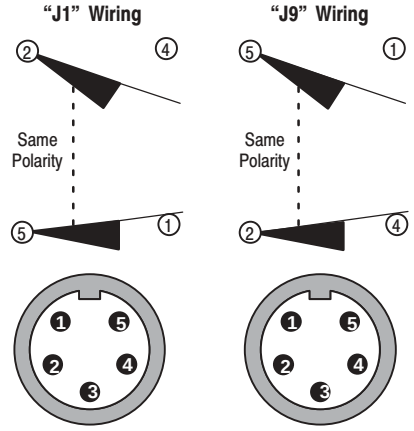
To order factory installed pre-wired type STOOW–A cable (5 conductor), add the suffix **"Y"** plus the number of feet required. The standard cable length is 1.52m (5ft). Extended cable lengths are available in multiples of 1.22m (4ft) only.

Example: To order a limit switch with a factory installed 1.52m (5ft) cable, the catalog number would become **802T–APDY5**. To order a limit switch with a factory installed 2.44m (8ft) cable, the catalog number would become **802T–APDY8.**

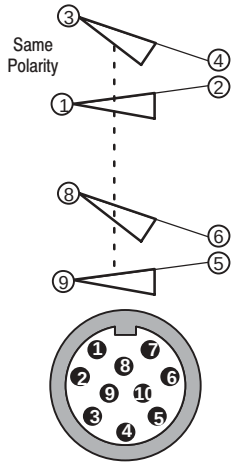
Mini Style Quick-Disconnect

To order a Bulletin 802T pre-wired limit switch with a 5-pin (2 circuit) or 9-pin (4 circuit) mini connector, add the suffix **"J1"** or **"J9"** depending on desired wiring ("J9" wiring not available for 4 circuit models) to the catalog number. **Example: 802T–APDJ1**

5-Pin Mini-Type Receptacle (2 circuit)

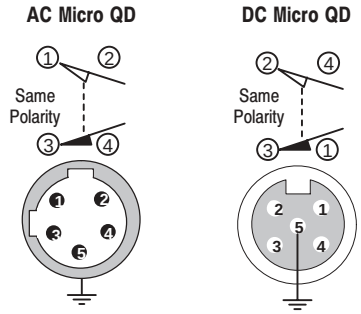


9-Pin Mini-Type Receptacle (4 circuit)
"J1" Wiring ("J9" wiring not available for 4 circuit)



Micro Style Quick-Disconnect

Micro quick-disconnects are available with a 5 pin 2 keyway AC or 5 pin single keyway DC. To order a limit switch with a AC micro quick-disconnect, add the suffix **"R5"** to the catalog number. To order a limit switch with a DC micro quick-disconnect, add the suffix **"D5"** to the catalog number. **Example: 802T–APDR5** and **802T–APDD5**.



Levers

Type	Roller			Catalog Number
	Material	Diameter—mm (inches)	Width—mm (inches)	
	Nylon	19 (0.75)	7.11 (0.28)	**802T–W1**
	Nylon	19 (0.75)	25.4 (1.0)	**802T–W1H**
	Steel	19 (0.75)	6.35 (0.25)	**802T–W1A**
Non-Adj. Cast Lever 1.5in Radius Roller on Front	Ball Bearing	19 (0.75)	5.84 (0.23)	**802T–W1B**

802X

Watertight or Hazardous Location Switches

Specifications

Enclosure Rating	NEMA 4 or 7 and 9
Approvals	UL listed, CSA certified
Ambient Temperature❶	Push type with spring return and all lever types except neutral position: −46°C to +121°C (−50°F to +250°F). Wobble stick and cat whisker devices: −29°C to +54°C (−20°F to +130°F). Side push maintained: −46°C to +121°C (−50°F to +250°F). Neutral position: −18°C to +121°C (0°F to +250°F).

AC Contact Rating (Maximum per Pole, 50 or 60Hz, same polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
A600	120	60	6.00	10	7200	720
	240	30	3.00	10	7200	720
	480	15	1.50	10	7200	720
	600	12	1.20	10	7200	720

DC Contact Rating (Maximum per Pole)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
P150	125	1.1		5	138	

❶ Temperature ranges below 0°C (+32°F) are based on the absence of freezing moisture or water.

Description

Bulletin 802X NEMA Type 7 and 9 limit switches are designed for use in atmospheres and locations defined as Class I, Groups B, C or D, Division 1, Class II, Groups E, F or G, or Class III in the National Electrical Code. Typical applications for this switch include refineries, distilleries, grain elevators and flour mills. For Class I, Division 2 locations, a Bulletin 802R limit switch may also be used (see page 5–32).

Bulletin 802X NEMA Type 4 watertight limit switches are designed for use indoors in locations where their internal parts require protection against seepage of water and splashing, falling or hose-directed water within the limits of the NEMA specified tests for Type 4 watertight enclosures. They are not sleet- (ice-) proof. Typical applications are dairies and food processing plants.

A wide variety of operating heads and operating levers are available. Operating heads can be mounted in four positions, 90° apart. The enclosure base has two through holes for front mounting, two tapped holes for rear mounting and two tapped holes for side mounting.

Features

- Class I, groups B, C and D or Class II, groups E, F and G or Class III
- Multiple operator styles: side rotary, wobble stick, cat whisker, adjustable top push and top or side push with or without rollers

Watertight or Hazardous Location

Lever Type • Spring Return page 5–71
Standard and Neutral Position Models

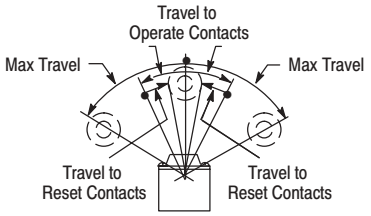
Lever Type • . . . . . page 5–72
Maintained Contact

Push Type • Spring Return . page 5–73

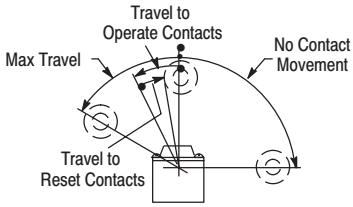
Push Type • . . . . . page 5–75
Maintained Contact

Wobble Stick and . . . . . page 5–76
Cat Whisker • Spring Return

Range of Operation



Lever Operation When Levers Except 802T-W7 and W8 Are Used



Lever Operation When 802T-W7 and W8 "One-Way" Levers Are Used

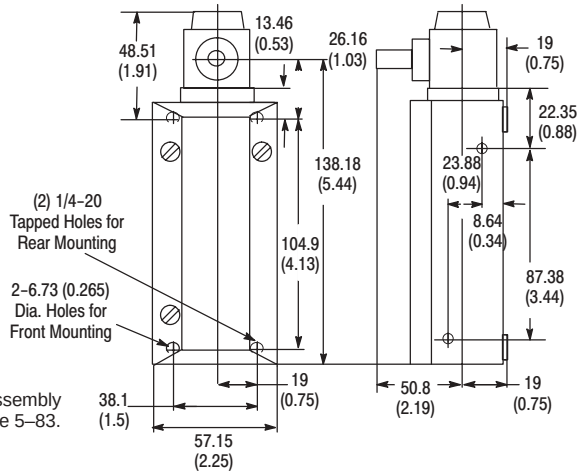
Switch Without Lever

Selection Guide—Standard and Neutral Position Models

Lever Movement vs. Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
					NEMA 4	NEMA 7 and 9
Clockwise or Counterclockwise	0.34N.m (3lb in)	16.5°	43°	8°	**802X–A4**	**802X–A7**
	0.51N.m (4.5lb in)	6°	50°	3°	—	**802X–H7**
Clockwise	0.34N.m (3.5lb in)	16.5°	43°	8°	**802X–A14**	**802X–A17**
	0.51N.m (4.5lb in)	6°	50°	3°	—	**802X–H17**
Counterclockwise	0.34N.m (3.5lb in)	16.5°	43°	8°	**802X–A24**	**802X–A27**
	0.51N.m (4.5lb in)	6°	50°	3°	—	**802X–H27**
Clockwise	0.45N.m (4lb in)	20°	91°	11°	**802X–L14**	**802X–L17**
Counterclockwise					**802X–L24**	**802X–L27**
Neutral Position Switch with Normally Open Contacts	0.25N.m (2.25lb in)	12°	53°	6°	—	**802X–NP7**

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

Approximate Shipping Wt. 0.9kg (2lbs)

Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. x 0.25in deep C'Bore for front mounting.

2—1/4–20 x 0.56in deep Tapped holes for rear mounting.

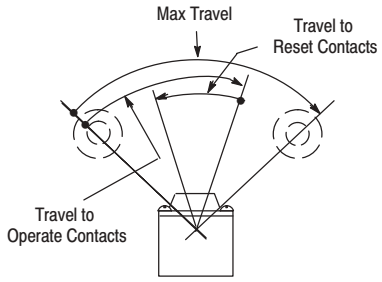
2—1/4–20 x 0.5in deep Tapped holes for side mounting.

Levers—See page 5–83 for a complete listing of operating levers.

802X Lever Type • Maintained Contact

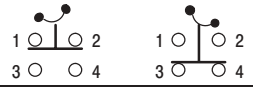
Watertight or Hazardous Location Switches

Range of Operation



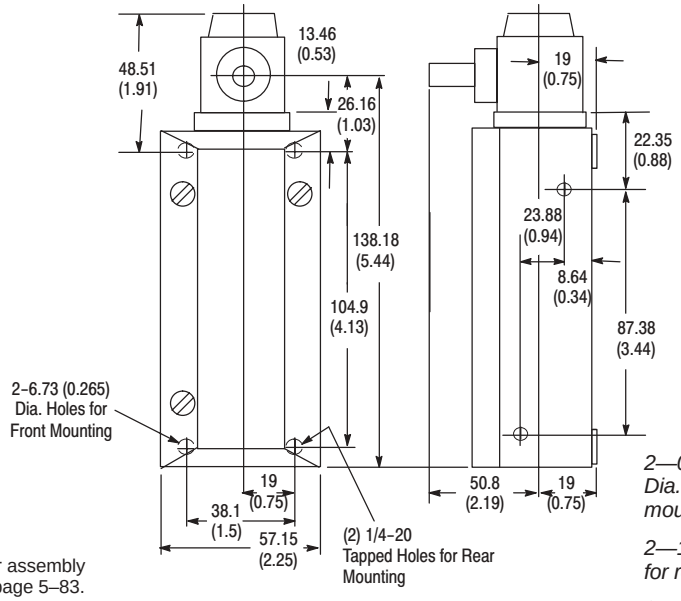
Switch Without Lever

Selection Guide

Lever Movement vs. Contact Operation	Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
					NEMA 4	NEMA 7 & 9
Clockwise or Counterclockwise 	0.25N.m (2.25lb in)	70° ❶	84° ❶	35°	802X–AM4	802X–AM7

❶ From one maintained position to the other.

Dimensions—mm (inches)



Approximate Shipping Wt. 0.9kg (2lbs)

Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. x 0.25in deep C'Bore for front mounting.

2—1/4–20 x 0.56in deep Tapped holes for rear mounting.

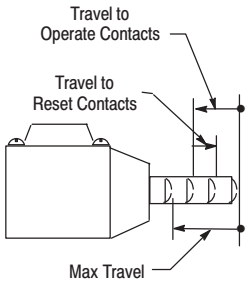
2—1/4–20 x 0.5in deep Tapped holes for side mounting.

Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Levers—See page 5–83 for a complete listing of operating levers.

Range of Operation

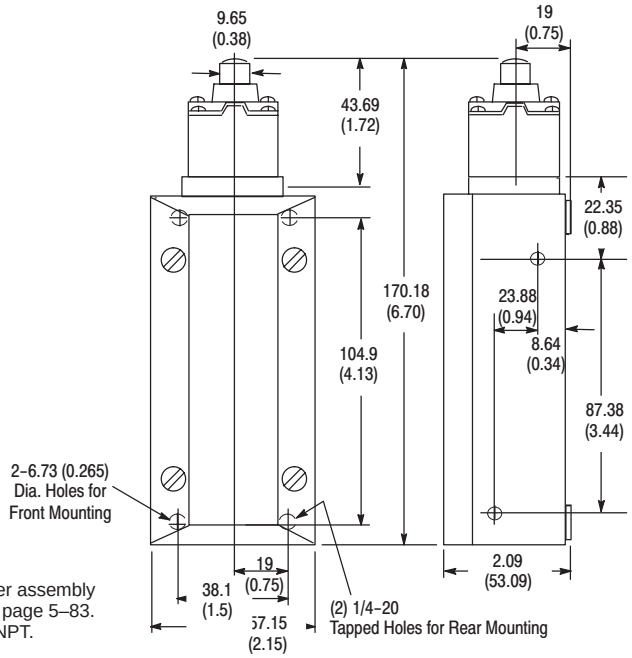


Top Push Rod | *Adjustable Top Push Rod* | *Side Push Rod* | *Top Push Roller* | *Side Push Roller*

Selection Guide

Operator Type	Contact Operation: Normal	Contact Operation: Operated	Force to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number: NEMA 4	Catalog Number: NEMA 7 and 9
Top Push Rod	1 ○ ○ 2 3 ○ ○ 4	1 ○ ○ 2 3 ○ ○ 4	15.6N (3.5lbs)	1.9mm (0.075in)	5.1mm (0.202in)	0.8mm (0.030in)	**802X–B4**	**802X–B7**
Adjustable Top Push Rod							**802X–BA4**	**802X–BA7**
Side Push Rod			20.0N (4.5lbs)	3.2mm (0.125in)	5.5mm (0.218in)	1.5mm (0.057in)	**802X–C4**	**802X–C7**
Top Push Roller	1 ○ ○ 2 3 ○ ○ 4	1 ○ ○ 2 3 ○ ○ 4	15.6N (3.5lbs)	1.9mm (0.075in)	5.1mm (0.202in)	0.8mm (0.030in)	**802X–D4**	**802X–D7**
Side Push Vertical Roller			20.0N (4.5lbs)	3.2mm (0.125in)	5.5mm (0.218in)	1.5mm (0.057in)	**802X–K4**	**802X–K7**
Side Push Horizontal Roller							**802X–K14**	**802X–K17**

Dimensions—mm (inches)



Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

Approximate Shipping Wt. 0.9kg (2lbs)

Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. x 0.25in deep C'Bore for front mounting.

2—1/4–20 x 0.56in deep Tapped holes for rear mounting.

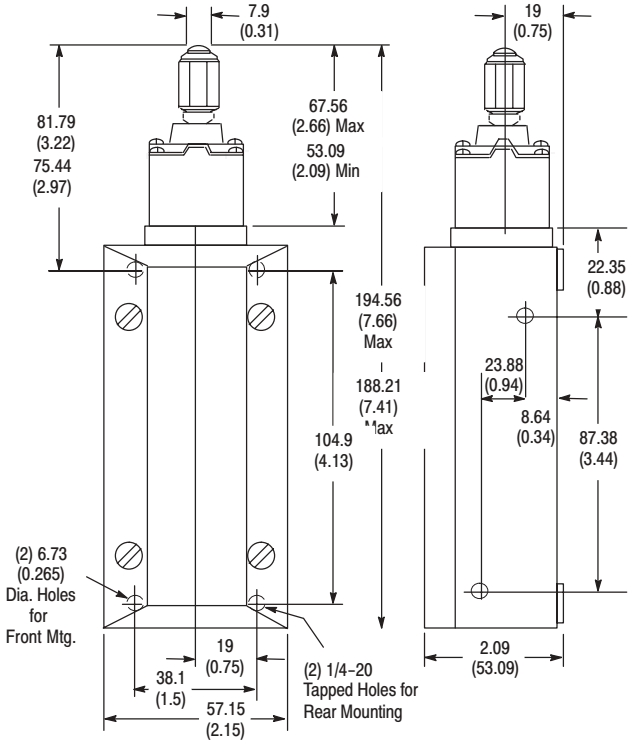
2—1/4–20 x 0.5in deep Tapped holes for side mounting.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

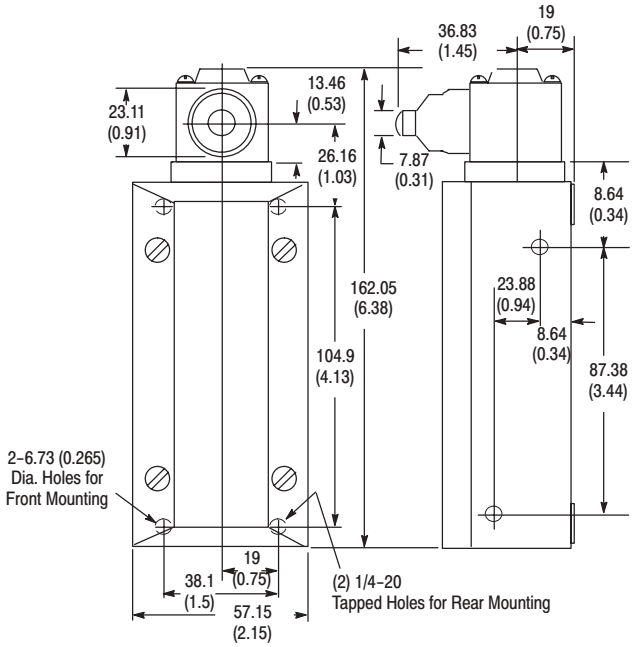
802X Push Type • Spring Return

Watertight or Hazardous Location Switches

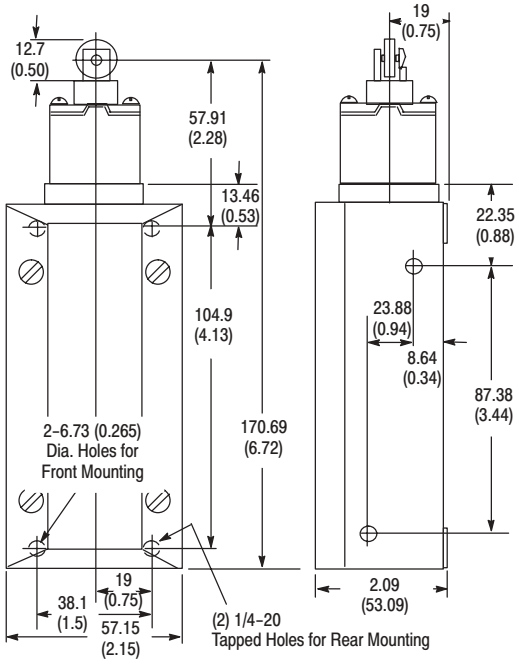
Dimensions—mm (inches)



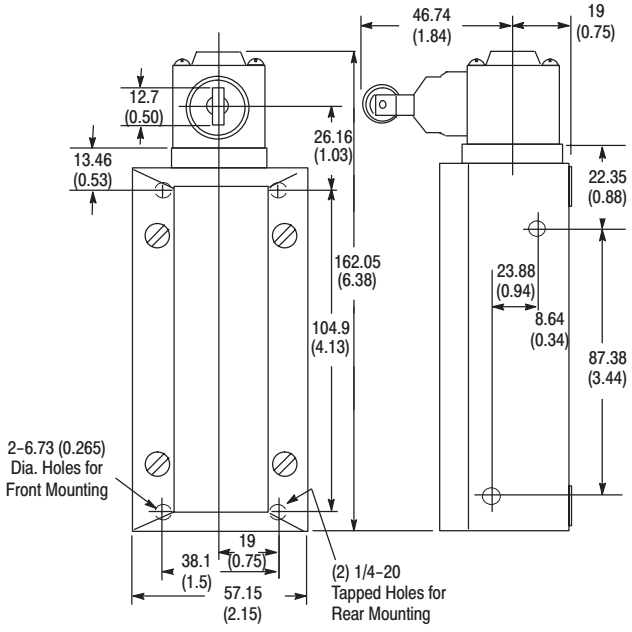
Bulletin 802X
Adjustable Top Push Rod Type



Bulletin 802X
Side Push Rod Type



Bulletin 802X
Top Push Roller Type



Bulletin 802X
Side Push Roller Type

Approximate Shipping Wt. 0.9kg (2lbs)

Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

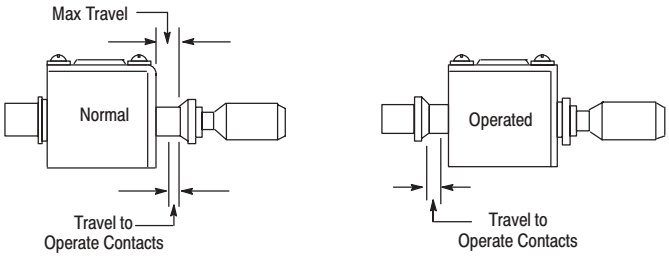
Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. x 0.25in deep C'Bore for front mounting.

2—1/4–20 x 0.56in deep Tapped holes for rear mounting.

2—1/4–20 x 0.5in deep Tapped holes for side mounting.

Range of Operation

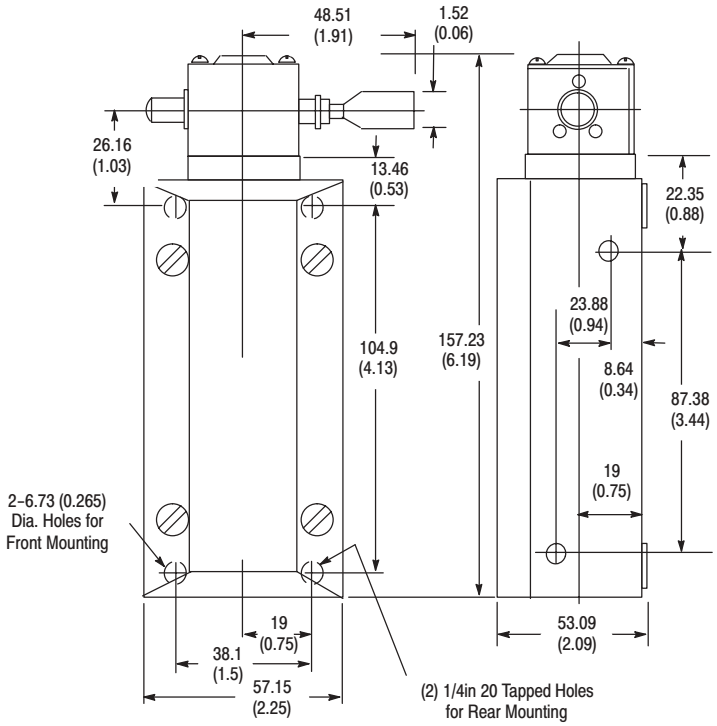


Side Push Rod

Selection Guide

Operator Type	Contact Operation		Force to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel	Travel to Reset Contacts (Max)	Catalog Number	
	Normal	Operated					NEMA 4	NEMA 7 and 9
Side Push Rod	1 ○ ○ 2 3 ○ ○ 4	1 ○ ○ 2 3 ○ ○ 4	35.49N (8lbs)	6.0mm (0.234in)	6.7mm (0.265in)	5.1mm (0.202in)	—	**802X-CM7**

Dimensions—mm (inches)



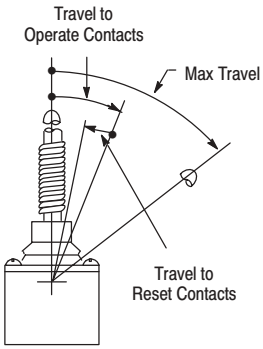
Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

802X Push Type • Wobble Stick and Cat Whisker • Spring Return

Watertight or Hazardous Location Switches

Range of Operation ❶



Travels are measured at rigid section of stick or whisker.

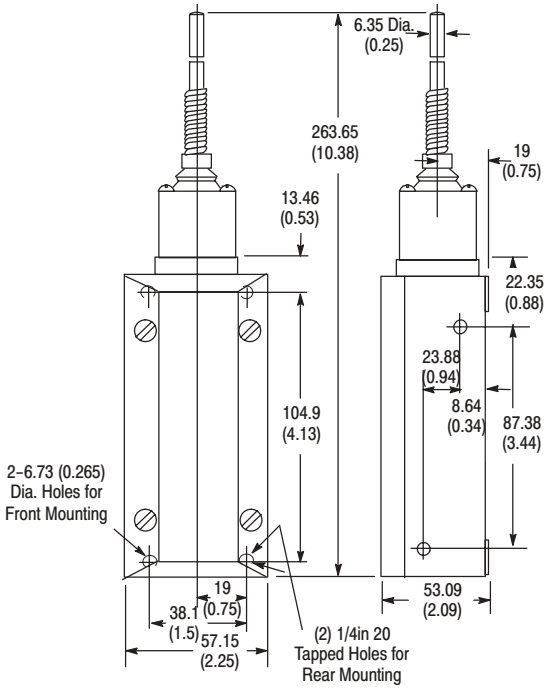
Wobble Stick *Cat Whisker*

Selection Guide

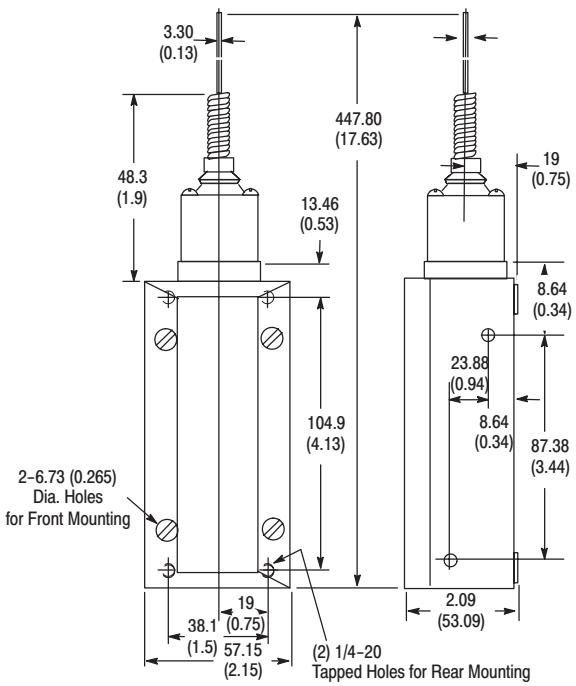
Operator Type	Contact Operation		Torque to Operate (Max)	Travel to Operate Contacts (Max)	Max Travel ❶	Travel to Reset Contacts (Max)	Catalog Number	
	Normal	Operated					NEMA 4	NEMA 7 & 9
Nylon Wobble Stick	1 ○ | ○ 2 3 ○—○ 4	1 ○—○ 2 3 ○ ○ 4	0.51N.m (4.5lb in)	9°	10°	4°	802X–WS4	802X–WS7
Wire Cat Whisker							802X–WS14	802X–WS17

❶ These switches should be mounted in such a way that the wobble stick will not be deflected beyond the "Maximum Travel" position, as this could cause undesirable repetition of contact action on rebound.

Dimensions—mm (inches)



802X–WS4 and 802X–WS7



Bulletin 802X Wire Wobble Stick Type

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

Description

Bulletin 802XR NEMA Type 7 and 9 limit switches for hazardous locations are designed to operate in atmospheres and locations defined as Class I, Groups B, C or D or Class II, Groups E, F or G in the National Electrical Code. Typical applications for this switch include refineries, distilleries, grain elevators and flour mills. For Class I, Division 2 locations, a Bulletin 802R limit switch may also be used (see page 5–32).

As an added protection, the contact is hermetically sealed in a glass envelope for excellent contact reliability even in contaminated atmospheres. This switch is Programmable Controller compatible (24V and above) and is pilot duty rated NEMA B600 for AC and NEMA P300 for DC as shown in the specification.

Specifications

Enclosure Rating	NEMA 7 and 9
Approvals	UL listed, CSA certified
Ambient Temperature❶	–29°C to +121°C (–20°F to +250°F) except devices with wobble stick operators. Wobble stick models are rated from –18°C to +54°C (0°F to +130°F).

AC Contact Rating (Maximum per Pole, 50 or 60Hz, Same Polarity)

NEMA Rating Designation	Max Voltage	A		Continuous Carrying Current	VA	
		Make	Break		Make	Break
B600	120	30	3.00	5A	3600	360
	240	15	1.50	5A	3600	360
	480	7.5	0.75	5A	3600	360
	600	6	0.60	5A	3600	360

DC Contact Rating (Maximum per Pole)

NEMA Rating Designation	Voltage Range	Current Rating
P300	115–125	1.1A
	230–250	0.55A

Note: Temperature range below 0°C (+32°F) is based on the absence of freezing moisture or water.

Features

- Class I, Groups B, C, and D or Class II, Groups E, F and G
- Side rotary, wobble stick, adjustable top and top or side push styles with and without rollers

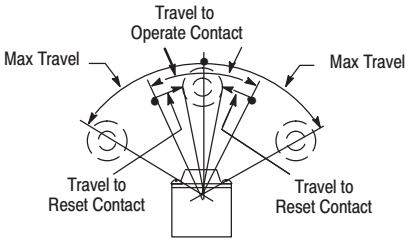
Sealed Contact

Lever Type • Spring Return page 5–78
Lever Type • Maintained Contact . . . . . page 5–79
Push Type • Spring Return . page 5–80
Cat Whisker • Spring Return . . . . . page 5–82

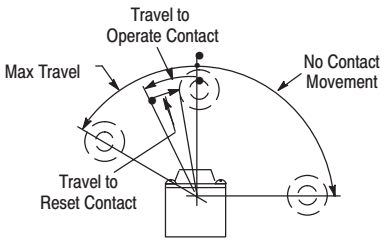
802XR Lever Type • Spring Return

Sealed Contact Hazardous Location Switches

Range of Operation



Lever Operation With Standard Levers



Lever Operation With W7 and W8 "One-Way" Levers

Switch Without Lever

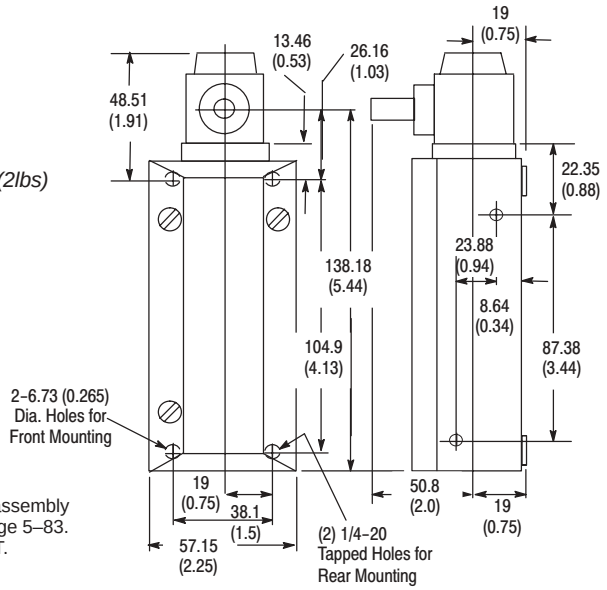
Selection Guide

Lever Movement	Torque to Operate (Max)	Travel to Operate Contact (Max)	Max Travel	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Clockwise or Counterclockwise	0.34N.m (3lb in)	16°	42°	9°	N.O.	802XR–AF7
					N.C.	802XR–AC7
	0.51N.m (4.5lb in)	7°	53°	3.5°	N.O.	802XR–HF7
					N.C.	802XR–HC7
Clockwise	0.167N.m (1.5lb in)	17°	42°	10°	N.O.	802XR–A3F7
					N.C.	802XR–A3C7
	0.51N.m (4.5lb in)	7°	50°	3.5°	N.O.	802XR–H1F7
					N.C.	802XR–H1C7
Counterclockwise	0.167N.m (1.5lb in)	17°	42°	10°	N.O.	802XR–A4F7
					N.C.	802XR–A4C7
	0.51N.m (4.5lb in)	7°	50°	3.5°	N.O.	802XR–H2F7
					N.C.	802XR–H2C7
Clockwise Lever cannot move counterclockwise	0.45N.m (4lb in)	20°	91°	11°	N.O.	802XR–L1F7
					N.C.	802XR–L1C7
Counterclockwise Lever cannot move clockwise					N.O.	802XR–L2F7
					N.C.	802XR–L2C7

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)

Approximate Shipping Wt. 0.9kg (2lbs)



Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

Mounting Hole Dimensions

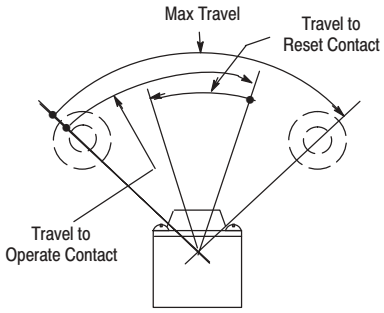
2—0.265 Dia. through hole with 0.500 Dia. C'Bore 0.25in deep for front mounting.

2—1/4–20 Tapped holes 0.56in deep for rear mounting.

2—1/4–20 Tapped holes 0.5in deep for side mounting.

Levers—See page 5–83 for a complete listing of operating levers.

Range of Operation



Switch
Without Lever

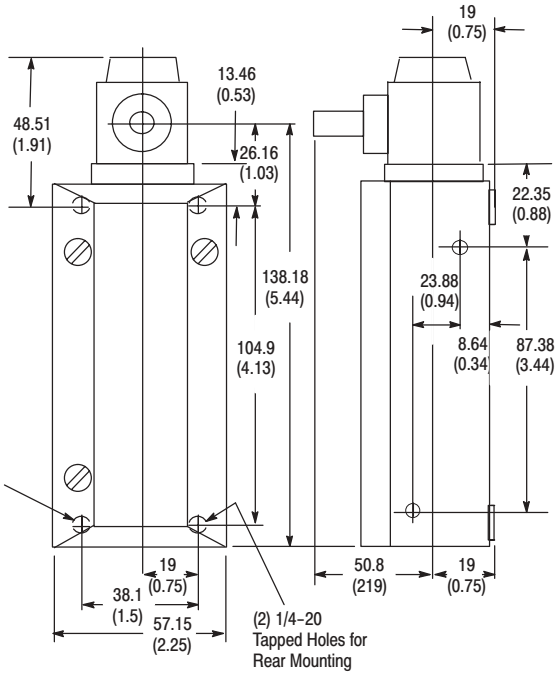
Selection Guide

Lever Movement	Torque to Operate (Max)	Travel to Operate Contact (Max)	Max Travel	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Counterclockwise	0.25N.m (2.25lb in)	70° ❶	84° ❶	35°	N.O.	**802XR–AMF7**
					N.C.	**802XR–AMC7**

❶ From one maintained position to the other.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



Approximate Shipping Wt. 0.9kg (2lbs)

Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. C'Bore 0.25in deep for front mounting.

2—1/4–20 Tapped holes 0.56in deep for rear mounting.

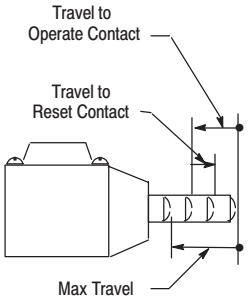
2—1/4–20 Tapped holes 0.5in deep for side mounting.

Levers—See page 5–83 for a complete listing of operating levers.

802XR Push Type • Spring Return

Sealed Contact Hazardous Location Switches

Range of Operation



Top Push Rod

Adjustable Top Push Rod

Side Push Rod

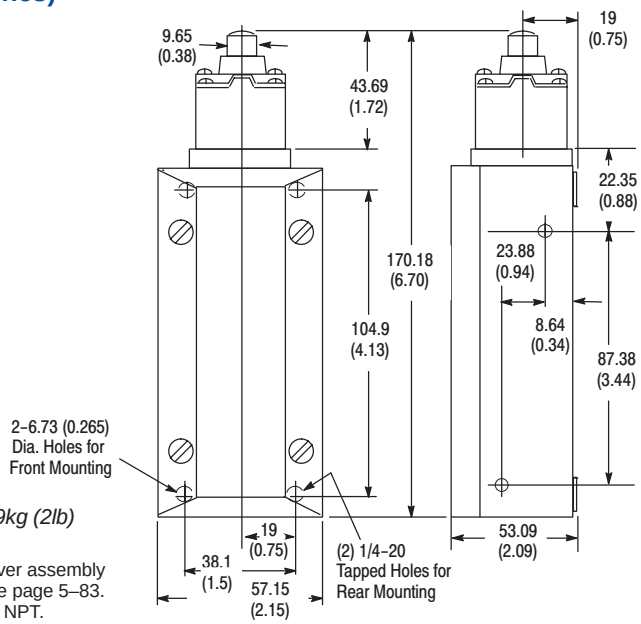
Top Push Roller

Side Push Roller

Selection Guide

Operator Type	Force to Operate (Max)	Travel to Operate Contact (Max)	Max Travel	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Top Push Rod	13.4N (3lbs)	1.75mm (0.069in)	5.1mm (0.202in)	0.71mm (0.028in)	N.O.	**802XR–BF7**
					N.C.	**802XR–BC7**
Adjustable Top Push Rod	15.6N (3.5lbs)				N.O.	**802XR–BAF7**
					N.C.	**802XR–BAC7**
Side Push Rod	20.0N (4.5lbs)	3.2mm (0.125in)	5.5mm (0.218in)	1.5mm (0.057in)	N.O.	**802XR–CF7**
					N.C.	**802XR–CC7**
Top Push Roller	15.6N (3.5lbs)	1.75mm (0.069in)	5.1mm (0.202in)	0.71mm (0.028in)	N.O.	**802XR–DF7**
					N.C.	**802XR–DC7**
Side Push Vertical Roller	20.0N (4.5lbs)	3.2mm (0.125in)	5.5mm (0.0218in)	1.5mm (0.057in)	N.O.	**802XR–KF7**
					N.C.	**802XR–KC7**
Side Push Horizontal Roller					N.O.	**802XR–K1F7**
					N.C.	**802XR–K1C7**

Dimensions—mm (inches)



Approximate Shipping Wt. 0.9kg (2lb)

Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

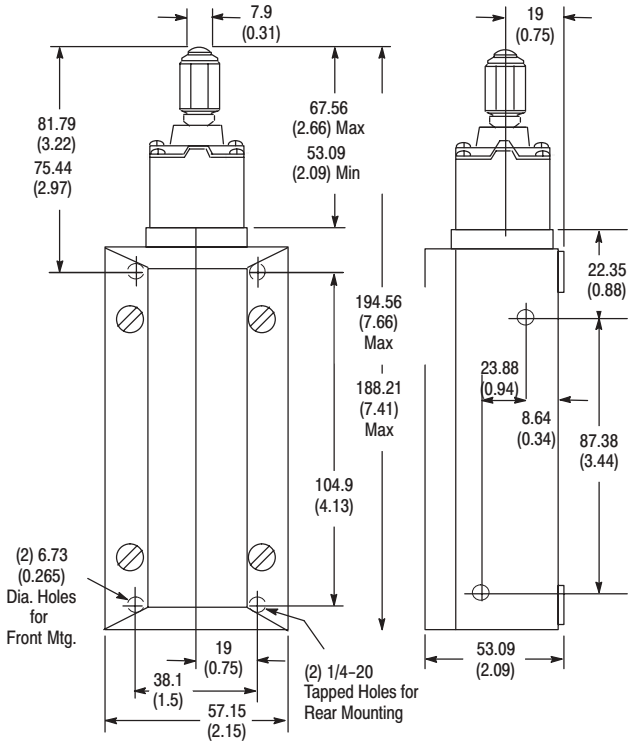
Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. C'Bore 0.25in deep for front mounting.

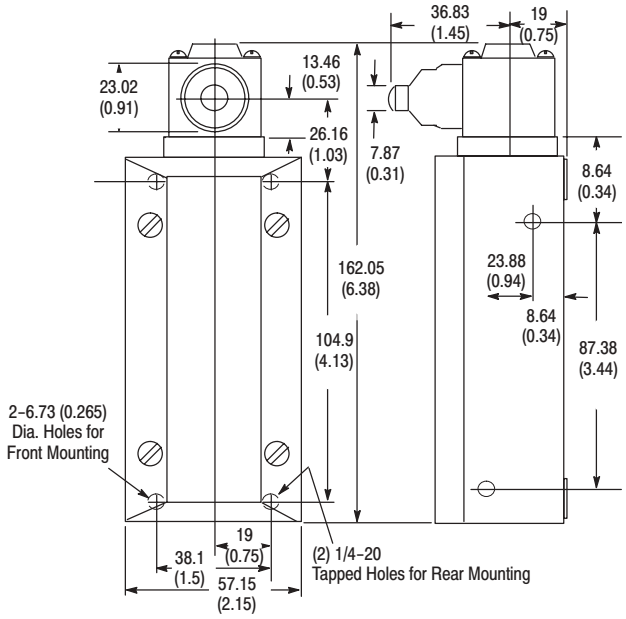
2—1/4–20 Tapped holes 0.56in deep for rear mounting.

2—1/4–20 Tapped holes 0.5in deep for side mounting.

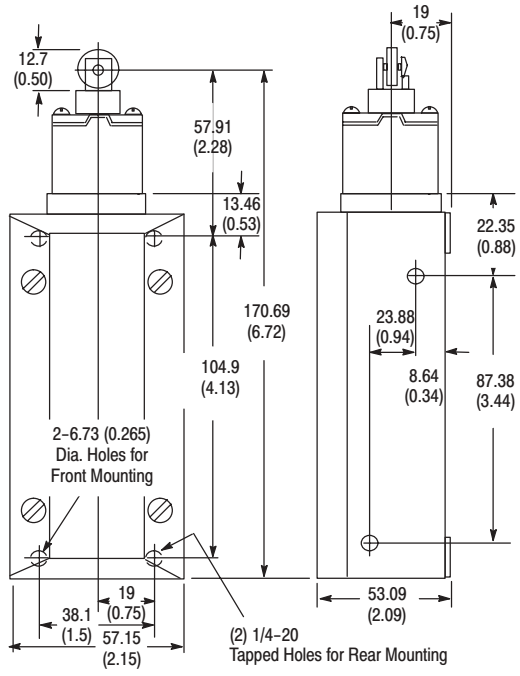
Dimensions—mm (inches)



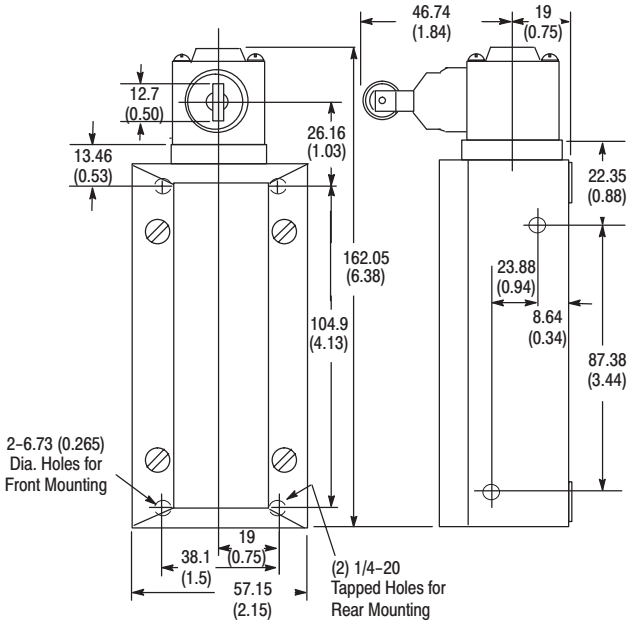
Bulletin 802XR Adjustable Top Push Rod Type



Bulletin 802XR Side Push Rod Type



Bulletin 802XR Top Push Roller Type



Bulletin 802XR Side Push Roller Type

Approximate Shipping Wt. 0.9kg (2lb)

Note: For operating head and lever assembly dimensions not shown, see page 5–83.
Conduit pipe opening 1/2″ NPT.

Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. C'Bore 0.25in deep for front mounting.

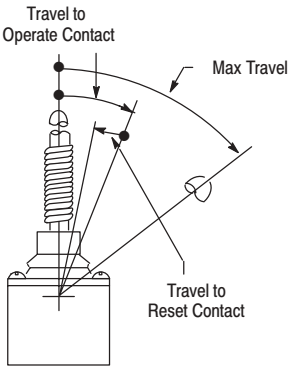
2—1/4–20 Tapped holes 0.56in deep for rear mounting.

2—1/4–20 Tapped holes 0.5in deep for side mounting.

802XR Cat Whisker • Spring Return

Sealed Contact Hazardous Location Switches

Range of Operation ❶



Travels Are Measured at Rigid Section of Operator

Cat Whisker

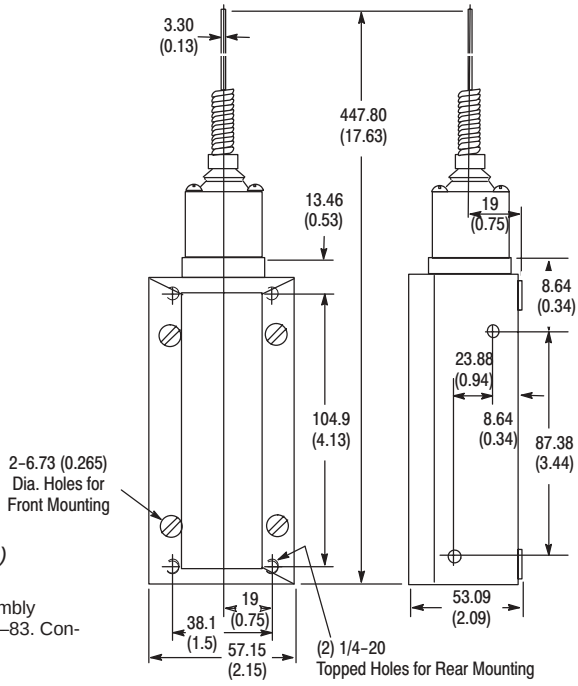
Selection Guide

Operator Type	Torque to Operate (Max)	Travel to Operate Contact (Max)	Max Travel ❶	Travel to Reset Contact (Max)	Contact Type	Catalog Number
Wire Cat Whisker	0.51N.m (4.5lbs)	11°	11°	5°	N.O.	**802XR–WS1F7**
					N.C.	**802XR–WS1C7**

❶ These switches should be mounted in such a way that the operator will not be deflected beyond the "Maximum Travel" position, as this could cause undesirable repetition of contact action on rebound.

Note: Details regarding wiring Allen-Bradley Limit Switches to Allen-Bradley PLCs can be found in publications 802T–4.0, 4.1, 4.2, and 4.3.

Dimensions—mm (inches)



Approximate Shipping Wt. 0.9kg (2lb)

Note: For operating head and lever assembly dimensions not shown, see page 5–83. Conduit pipe opening 1/2″ NPT.

Mounting Hole Dimensions

2—0.265 Dia. through hole with 0.500 Dia. C'Bore 0.25in deep for front mounting.

2—1/4–20 Tapped holes 0.56in deep for rear mounting.

2—1/4–20 Tapped holes 0.5in deep for side mounting.

Description

The micrometer adjustment roller lever, catalog number 802T–W6, is designed especially for installations where the exact position of the roller is critical. This lever has a pivoted roller which can be turned laterally. After clamping the lever to the switch shaft, the position of the roller can be precisely adjusted through an arc of 7.5° on either side of the center or straight-line position.

Roller Levers

Type	Roller			Catalog Number
	Material	Dia.	Width	
 *Non-Adj. Cast Lever 0.75″ Radius*	Metal	0.75″	0.27″	**802T–W9A**
 *Non-Adj. Cast Lever 1.5″ Radius Roller on Front*	Nylon	0.75″	0.28″	**802T–W1**
	Nylon	0.75″	1″	**802T–W1H**
	Dual Nylon	0.75″	1″ each	**802T–W1HH**
	Steel	0.75″	0.25″	**802T–W1A**
	Steel	0.75″	0.75″	**802T–W1N**
	Ball Bearing	0.75″	0.23″	**802T–W1B**
	Beryllium Copper (Nonsparking)	0.75″	0.28″	**802T–W1J**
	Nylon	0.75″	0.75″	**802T–W1L**
 *Non-Adj. Cast Lever 1.5″ Radius Roller on Rear*	Nylon	0.75″	0.28″	**802T–W1E**
	Nylon	0.75″	1″	**802T–W1D**
	Nylon	1.5″	0.28″	**802T–W1G**
	Steel	0.75″	0.25″	**802T–W1F**
	Steel	0.75″	0.75″	**802T–W1C**
	Nylon	0.75″	0.75″	**802T–W1M**
 *Non-Adj. Steel Lever 2.0″ Radius Roller on Front*	Nylon	0.75″	0.28″	**802T–W20**
	Nylon	0.75″	1″	**802T–W20D**
	Steel	0.75″	0.25″	**802T–W20A**
	Steel	0.75″	0.75″	**802T–W20B**
	Ball Bearing	0.75″	0.23″	**802T–W20C**
	Beryllium Copper	0.75″	0.28″	**802T–W20E**
 *Non-Adj. Steel Lever 2.0″ Radius Roller on Rear*	Nylon	0.75″	0.28″	**802T–W20J**
	Nylon	0.75″	1″	**802T–W20K**
	Steel	0.75″	0.25″	**802T–W20L**
	Steel	0.75″	0.75″	**802T–W20M**
	Ball Bearing	0.75″	0.23″	**802T–W20N**
	Beryllium Copper	0.75″	0.28″	**802T–W20P**
 *Non-Adj. Steel Lever 2 1/8″ Radius Roller on Front*	Nylon	0.75″	0.75″	**802T–W18**
	Nylon	0.75″	1″	**802T–W18A**

Type	Roller			Catalog Number
	Material	Dia.	Width	
 *Non-Adj. Steel Lever 2.5″ Radius Roller on Front*	Nylon	0.75″	0.28″	**802T–W25**
	Nylon	0.75″	1″	**802T–W25D**
	Steel	0.75″	0.25″	**802T–W25A**
	Steel	0.75″	0.75″	**802T–W25B**
	Ball Bearing	0.75″	0.23″	**802T–W25C**
	Beryllium Copper	0.75″	0.28″	**802T–W25E**
 *Non-Adj. Steel Lever 2.5″ Radius Roller on Rear*	Nylon	0.75″	0.28″	**802T–W25J**
	Nylon	0.75″	1″	**802T–W25K**
	Steel	0.75″	0.25″	**802T–W25L**
	Steel	0.75″	0.75″	**802T–W25M**
	Ball Bearing	0.75″	0.23″	**802T–W25N**
	Beryllium Copper	0.75″	0.28″	**802T–W25P**
 *Non-Adj. Steel Lever 3.0″ Radius Roller on Front*	Nylon	0.75″	0.28″	**802T–W30**
	Nylon	0.75″	1″	**802T–W30D**
	Steel	0.75″	0.25″	**802T–W30A**
	Steel	0.75″	0.75″	**802T–W30B**
	Ball Bearing	0.75″	0.23″	**802T–W30C**
	Beryllium Copper	0.75″	0.28″	**802T–W30E**
 *Non-Adj. Steel Lever 3.0″ Radius Roller on Rear*	Nylon	0.75″	0.28″	**802T–W30J**
	Nylon	0.75″	1″	**802T–W30K**
	Steel	0.75″	0.25″	**802T–W30L**
	Steel	0.75″	0.75″	**802T–W30M**
	Ball Bearing	0.75″	0.23″	**802T–W30N**
	Beryllium Copper	0.75″	0.28″	**802T–W30P**
 *Adjustable Lever 1.19″ to 3″ Radius*	Nylon	0.75″	0.28″	**802T–W2**
	Nylon	0.75″	1″	**802T–W2D**
	Nylon	1.5″	0.28″	**802T–W2A**
	Steel	0.75″	0.25″	**802T–W2B**
	Ball Bearing	0.75″	0.23″	**802T–W2C**
	Steel	1.4″	0.27″	**802T–W2E**
	Rubber	1.5″	0.5″	**802T–W2R**
	Beryllium Copper	0.75″	0.28″	**802T–NX94**
 *Adjustable Lever 1.19″ to 4″ Radius*	Nylon	0.75″	0.28″	**802T–W17**
		1.5″		**802T–W17A**

❶ The micrometer adjustment roller lever is designed especially for installations where the position of the roller is a critical factor. This lever has a pivoted roller which can be turned laterally. After clamping the lever to the switch shaft, the position of the roller can be precisely adjusted through an arc of 7.5° on either side of the center or straight-line position.

Operating Levers

Roller Levers (continued)

Type	Roller			Catalog Number
	Material	Dia.	Width	
 *Fork Lever 1.5″ Radius*	Nylon; L.H. Roller on Front; R.H. Roller on Back	0.75″	0.28″	**802T–W4**
	Steel; L.H. Roller on Front; R.H. Roller on Back	0.75″	0.25″	**802T–W4B**
	Nylon; Both Rollers on Front	0.75″	0.28″	**802T–W4A**
	Nylon; Both Rollers on Rear	0.75″	0.28	**802T–NX115**
	Nylon; Both Rollers on Front	0.75″	1″	**802T–W4F**
	Steel; Both Rollers on Front	0.75″	0.25″	**802T–W4C**
	Nylon; L.H. Roller on Back; R.H. Roller on Front	0.75″	0.28″	**802T–W4D**
 *Micrometer Adjustment Lever ❶ 1.5″ Radius*	Nylon R.H. Adj.	0.75″	0.28″	**802T–W6**
	Steel R.H. Adj.	0.75″	0.25″	**802T–W6A**
	Ball Bearing R.H. Adj.	0.75″	0.23″	**802T–W6B**
	Nylon L.H. Adj.	0.75″	0.28″	**802T–W6C**
	Steel L.H. Adj.	0.75″	0.25″	**802T–W6D**
	Ball Bearing L.H. Adj.	0.75″	0.23″	**802T–W6E**
	Nylon R.H. Adj.	0.75″	1″	**802T–W6F**
 *Non-Adj. One-Way Lever 1.5″ Radius*	Nylon	0.75″	0.28″	**802T–W7❶**
	Steel	0.75″	0.25″	**802T–W7A❶**
	Ball Bearing	0.75″	0.23″	**802T–W7B❶**
 ***Non-Adj. Offset Lever*** *1.44″ Radius Roller on Front*	Nylon	0.75″	0.28″	**802T–W12❷**
	Steel	0.75″	0.25″	**802T–W12A❷**
	Bearing Roller	0.75″	0.23″	**802T–W12B**
 *Non-Adj. Offset Lever 1.44″ Radius Roller on Rear*	Nylon	0.75″	0.28″	**802T–W12E**
	Steel	0.75″	0.25″	**802T–W12F**

Roller Levers—Corrosion-Resistant

Type	Material	Roller		Catalog Number
		Dia.	Width	
 *1.5″ Radius Roller on Front*	Type 316 stainless steel roller, roller pin and clamp pin One–piece cast aluminum arm is protected with TUFRAM®❺	0.75″	0.25″	**802MC–W1A**
 *1.5″ Radius Roller on Rear*	Nylon Roller One-piece cast aluminum arm is protected with TUFRAM®❺	1.5″	0.28″	**802MC–W1G**
 *Non-Adj. Offset Lever 1.44″ Radius Roller on Front*	Nylon Roller One-piece cast aluminum arm is protected with TUFRAM®❺	0.75″	0.28″	**802MC–W12**
 *Adjustable 1.19″–3″ Radius*	Type 316 stainless steel roller, roller pin, clamp pin and adjustable lever arm Block is cast aluminum protected with TUFRAM❺	0.75″	0.25″	**802MC–W2B**

❶ Do not use on maintained contact limit switches.

❷ When mounted on Plug-In devices, the offset lever provides equivalent cam tracking to the NonPlug-In devices using catalog number 802T–W1 levers.

❸ Recommended for use with low operating torque switches.

❹ Not for use with 802M–NPY5 or 802M–ASY5 type switches.

❺ TUFRAM is a synergistic coating which combines the advantages of anodizing with a controlled infusion of Teflon® for added corrosion resistance.

Rod Levers

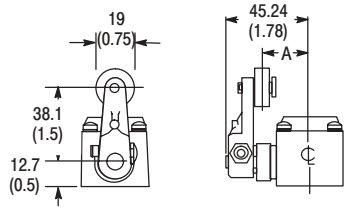
Type	Material	Dia.	Catalog Number
	Stainless Steel Rod 5″ Long	0.13″	**802T–W3❸**
	Stainless Steel Rod 8.5″ Long	0.13″	**802T–W3B❸**
	Stainless Steel Rod 12″ Long	0.13″	**802T–NX50**
	Stainless Steel Rod 11.5″ Long	0.13″	**802T–W3A**
		0.08″	**802T–W3F❹**
	Stainless Steel Rod 14″ Long	0.13″	**802T–NX159**
	Nylon Rod 12″ Long	0.25″	**802T–W3C**
	Stainless Steel Rod 5″ Long	0.06″	**802T–W5❸**
	Stainless Steel Rod 5″ Long One-Way	0.06″	**802T–W8❶**
	Nylatron Looped Rod 6″ Long 2″ Wide Loop	0.18″	**802T–W14**
	Steel Rod 9″ Long	0.25″	**802T–W16**
	Nylon Rod 9″ Long	0.25″	**802T–W16A**

Rod Levers—Corrosion-Resistant

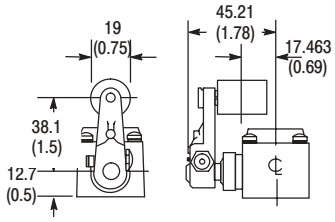
Type	Material	Dia.	Catalog Number
	Type 316 stainless steel rod 5″ long Block is cast aluminum protected with TUFRAM❶	0.13″	**802MC–W3**
	Type 316 stainless steel rod 11.5″ long Block is cast aluminum protected with TUFRAM❶	0.08″	**802MC–W3A**
	Nylon Rod 12″ long Block is cast aluminum protected with TUFRAM❶	0.25″	**802MC–W3C**

Operating Levers

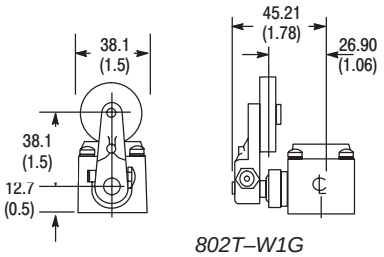
Dimensions—mm (inches)



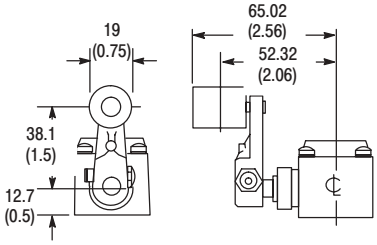
802T–W1C (Dim. A = 0.81");
802T–W1E and 802T–W1F (Dim. A = 1.03")
Shipping Wt. 57g (2oz). (W1C), 1 oz. (W1E), 43g (1.5oz) (W1F)



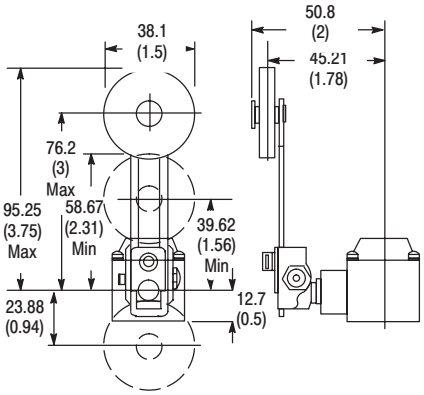
802T–W1D
Shipping Wt. 43g (1.5oz)



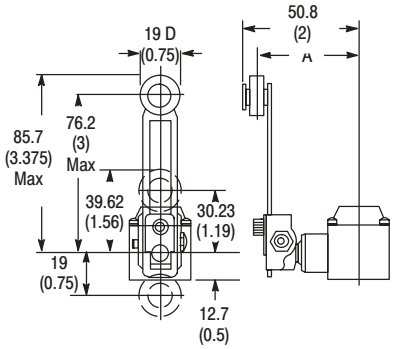
802T–W1G
Shipping Wt. 28g (1oz)



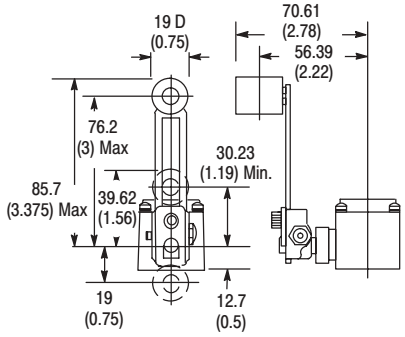
802T–W1H
Shipping Wt. 43g (1.5o)



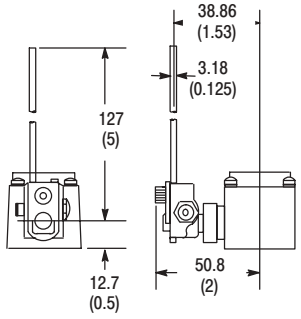
802T–W2A
Shipping Wt. 57g (2oz)



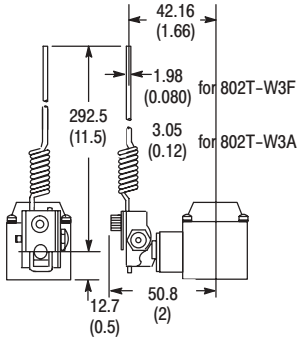
802T–W2 & 802T–W2B (Dim. A = 1.78");
802T–W2C (Dim. A = 1.81")
Shipping Wt. 57g (2oz)



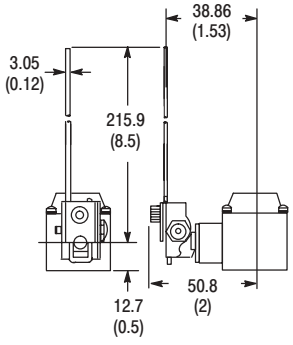
802T–W2D
Shipping Wt. 57g (2oz)



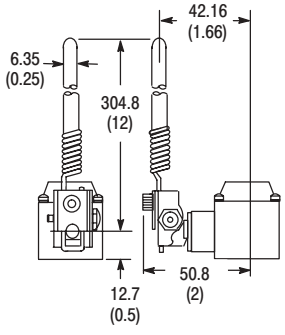
802T–W3
Shipping Wt. 43g (1.5oz)



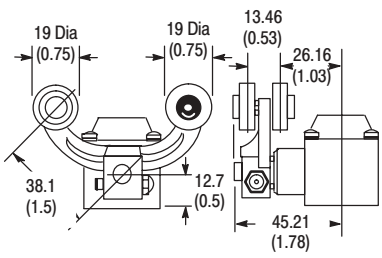
802T–W3A and 802T–W3F
Shipping Wt. 57g (2oz)



802T–W3B and 802T–W3F
Shipping Wt. 43g (1.5oz)

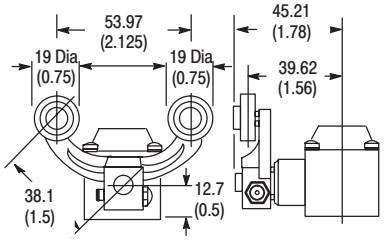


802T–W3C
Shipping Wt. 57g (2oz)

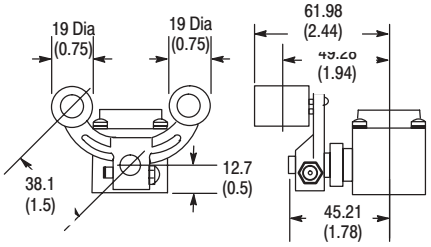


802T–W4 and 802T–W4D
Shipping Wt. 43g (1.5oz) 802T–W4B
Shipping Wt. 57g (2oz)

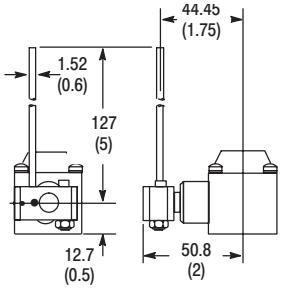
Dimensions—mm (inches) (continued)



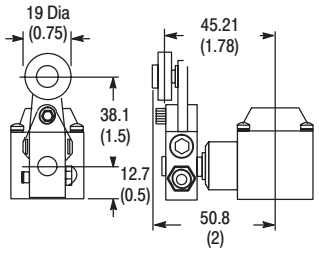
802T–W4A and 802T–W4C
Shipping Wt. 57g (2oz)



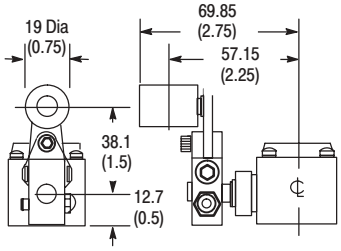
802T–W4F
Shipping Wt. 57g (2oz)



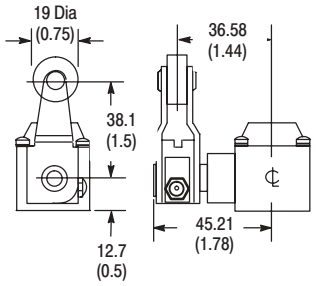
802T–W5
Shipping Wt. 28g (1oz)



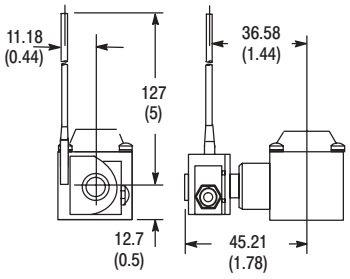
802T–W6, 802T–W6A,
802T–W6B, 802T–W6E
Shipping Wt. 57g (2oz)



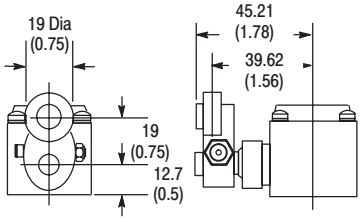
802T–W6F
Shipping Wt. 57g (2oz)



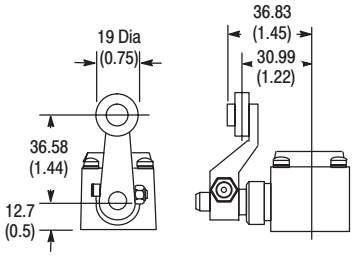
802T–W7, 802T–W7A
and 802T–W7B
Shipping Wt. 57g (2oz)



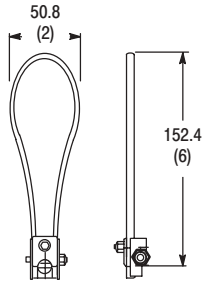
802T–W8
Shipping Wt. 43g (1.5oz)



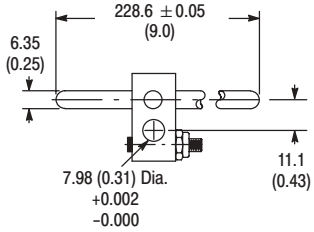
802T–W9
Shipping Wt. 28g (1oz)



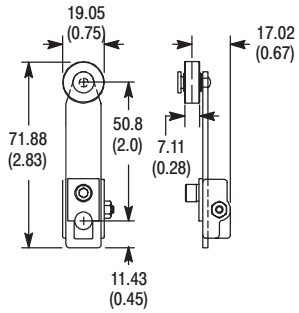
802T–W12 Shipping Wt. 1 oz. and
802T–W12A 802T–W6B, 802T–W6E
Shipping Wt. 43g (1.5oz)



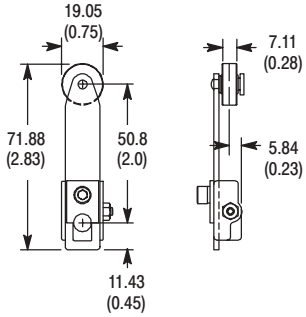
802T–W14
Shipping Wt. 43g (1.5oz)



802T–W16
802T–W16A



802T–W20
Shipping Wt. 57g (2oz)



802T–W20J
Shipping Wt. 57g (2oz)

802B Compact, Precision and Small Precision

Compact

Precision

Small Precision

Description

Bulletin 802B consists of different body styles: compact, precision and small precision. Each style has been designed to withstand the rugged environments that industrial applications demand. Each style utilizes industry standard mounting dimensions and operating characteristics. The 802B family of limit switches can be mounted in areas that traditional NEMA limit switches can not, due to their size and mounting options.

The 802B Compact limit switch uses a die-cast housing with a 3m prewired cable. This limit switch is available with 13 unique head configurations. Each head style can be ordered as a standard model, LED indicator model, or as a low current model. The compact limit switch maintains NEMA 6 and IP67 enclosure ratings by utilizing a triple seal construction.

The 802B Precision limit switch uses a die-cast housing with 1/2 NPT conduit entry. This limit switch is available with 5 unique head configurations. Each different head is available as standard or with a rubber boot for additional sealing. Two different mounting styles are available. Side mount or flange rubber boot for additional sealing. Two different mounting styles are available: side mount or flange mount.

The 802B Small Precision limit switch is similar to the 802B Precision limit switch with some additional features. This switch offers an enclosure rating of

NEMA 6 and IP67 which is achieved by a rubber cable gland sealing the control cable entry. This limit switch offers 12 different head configurations, including some that are unique to this product offering.

Specifications

	Compact	Precision	Small Precision
Approvals	UL listed, CSA certified and CE marked for all applicable directives	UL listed, CSA certified and CE marked for all applicable directives	UL recognized, CSA certified and CE marked for all applicable directives
Enclosure Rating	NEMA 1,3,4,6,12,13 and IP67	NonBooted: NEMA 1 and IP60 Booted: NEMA 1,3,4, and IP65	NEMA 1, 3, 4, 6, 13 and IP67
Mechanical Life	Approx. 10,000,000 operations ❶	Approx. 10,000,000 operations ❶	Approx. 10,000,000 operations ❷
Electrical Life	Approx. 200,000 operations (3A 250V AC, resistive load) ❶	Approx. 500,000 operations (15A 250V AC, resistive load) ❶	Approx. 500,000 operations (10A 250V AC, resistive load) ❷
Operating Speed			
Top Push	0.1mm to 0.5m per second	0.01mm to 0.5m per second	0.05mm to 0.5m per second
Side Rotary	1mm to 1m per second		
Lever Type		0.02mm to 0.5m per second	
Operating Frequency			
Mechanical	120 operations/minute	120 operations/minute	120 operations/minute
Electrical	30 operations/minute	20 operations/minute	20 operations/minute
Operating Temperature	–10°C to 70°C (14°F to 158°F) with no icing	–10°C to 80°C (14°F to 176°F) with no icing	–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	Quick blow fuse suitable for rated current is recommended	Quick blow fuse suitable for rated current is recommended
Contact Type	SPDT Form C	SPDT Form C	SPDT Form C

❶ Life expectancy has been calculated at an operating temperature of 5°C to 35°C (41°F to 95°F) and an operating humidity of 40% to 70%.

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

Features

- Rugged die-cast housing
- Industry standard dimensions
- Compact size
- Multiple mounting options
- Wide range of operating voltage and current ratings

Style

Compact . . . . . page 5–90
Precision . . . . . page 5–98
Small Precision . . . . . page 5–106

Specifications

Compact

Rated Voltage	Non-Inductive Resistive Load	Inductive Load			Inrush Current	
		Inductive	Motor Load N/O	Motor Load N/C	N/O	N/C
Standard Models						
125V AC	5A	3A	1.3A	2.5A	10A max	20A max
250V AC	5A	2A	0.8A	1.5A		
8V DC	5A	5A	3A	3A		
14V DC	5A	4A	3A	3A		
30V DC	4A	3A	3A	3A		
125V DC	0.4A	0.4A	0.05A	0.05A		
250V DC	0.2A	0.2A	0.03A	0.03A		
AC LED Models						
125V AC	5A	3A	2.5A	1.3A		
125V DC	0.4A	0.4A	0.05A	0.05A		
DC LED Models						
30V DC	4A	3A	3A	3A		
Low Current Models						
125V AC	0.1A	—				
8V DC	0.1A					
14V DC	0.1A					
30V DC	0.1A					

UL/CSA Approved Ratings

NEMA Rating Designation	Rated Voltage	A Make	A Break	Continuous Current	Volt	Amps
B300	120V AC	30	3	5	3,600	360
	240V AC	15	1.5			
AC LED Versions						
B150	120V AC	30	3	5	3,600	360

Leakage Current for LED Models

	Voltage	Leakage Current	Resistance		
AC LED	125	1.7 mA	68 kÙ		
DC LED	30		15 kÙ		

Precision

Rated Voltage	Non-Inductive Resistive Load	Inductive Load: Inductive	Inductive Load: Motor Load N/O	Inductive Load: Motor Load N/C	Inrush Current N/O	Inrush Current N/C	UL/CSA Approved Ratings: Rated Voltage	Current	Horsepower
125V AC	15A	15A	2.5A	5A	15A max	30A max	120V AC	15A	1/8 HP 1/4 HP
250V AC	15A	2.5A	1.5A	3A			250V AC	15A	
480V AC	10A	1.5A	0.75A	1.5A			480V AC	15A	
125V DC	0.5A	0.5A	0.05A				125V DC	0.5A	—
250V DC	0.25A	0.25A	0.03A				250V DC	0.25A	

Small Precision

Rated Voltage	Non-Inductive Resistive Load	Inductive Load: Inductive	Inductive Load: Motor Load N/O	Inductive Load: Motor Load N/C	Inrush Current N/O	Inrush Current N/C	UL/CSA Approved Ratings: NEMA Rating Designation	Rated Voltage	A Make	A Break	Continuous Current	Volt	Amps
125V AC	10A	10A	2.5A	5A	15A max	30A max	A300	120V AC	60	6	10	7,200	720
250V AC	10A	10A	1.5A	3A				240V AC	30	3			
8V DC	10A	6A	2.5A	5A									
14V DC	10A	6A	2.5A	5A									
30V DC	6A	5A	2.5A	5A									
125V DC	0.5A	0.05A	0.05A										
250V DC	0.25A	0.03A	0.03A										

802B Compact

Small Metal Body

Rotary Arm

Center Rotary Arm

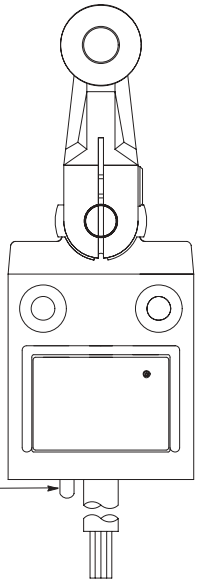
Wobble Stick

Selection Guide

Head Type	Torque to Operate	Travel to Operate	Max Travel	Travel to Reset	Output Type	Catalog Number
Rotary Arm	0.216N · m (2lb in)	25°	70°	3°	Standard AC LED DC LED Low Voltage/Current	**802B–CSAAXSXC3** **802B–CSAAXSLC3** **802B–CSDAXSLC3** **802B–CSDAXSXC3**
Center Rotary Arm	0.216N · m (2lb in)	10 ±3°	65°	4°	Standard AC LED DC LED Low Voltage/Current	**802B–CSAA2XSXC3** **802B–CSAA2XSLC3** **802B–CSDA2XSLC3** **802B–CSDA2XSXC3**
Wobble Stick	0.118N · m (1.04lb in)	15°	18° (Nominal Value)	11° (Nominal Value)	Standard AC LED DC LED Low Voltage/Current	**802B–CSACXSXC3** **802B–CSACXSLC3** **802B–CSDCXSLC3** **802B–CSDCXSXC3**

Wiring Diagrams

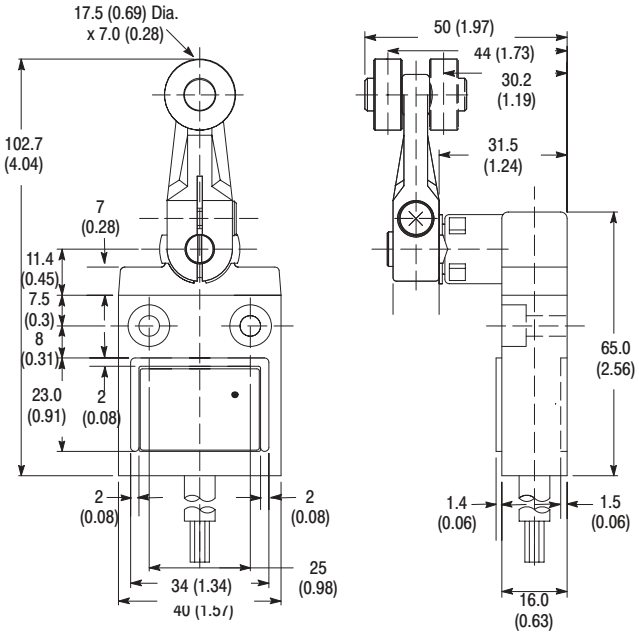
Com	N.O.	N.C.	G
Black	Blue	Brown	Green/Yellow



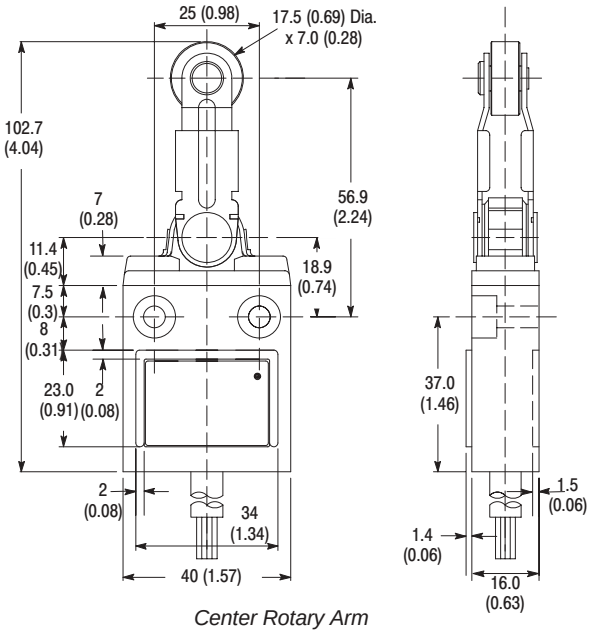
All compact models are available with LED.

Dimensions—See page 5–91.

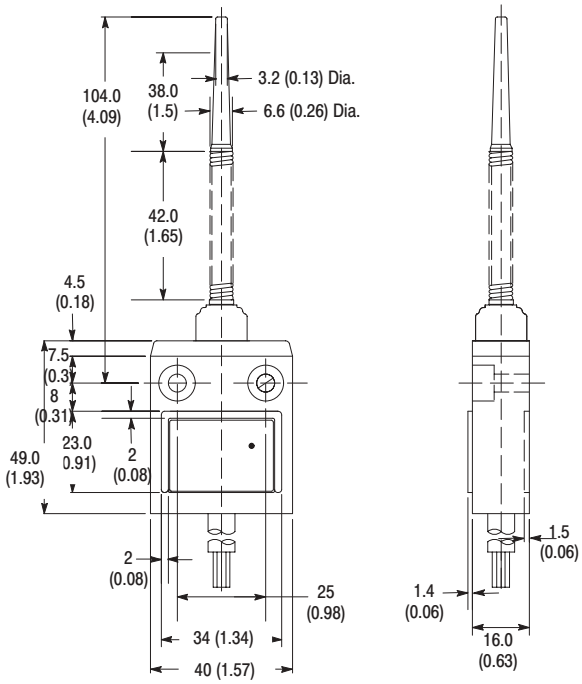
Dimensions—mm (inches)



Rotary Arm



Center Rotary Arm



Wobble Stick

802B Compact

Small Metal Body

Top Push

Top Push Bevel

Top Push Roller

Top Push Cross Roller

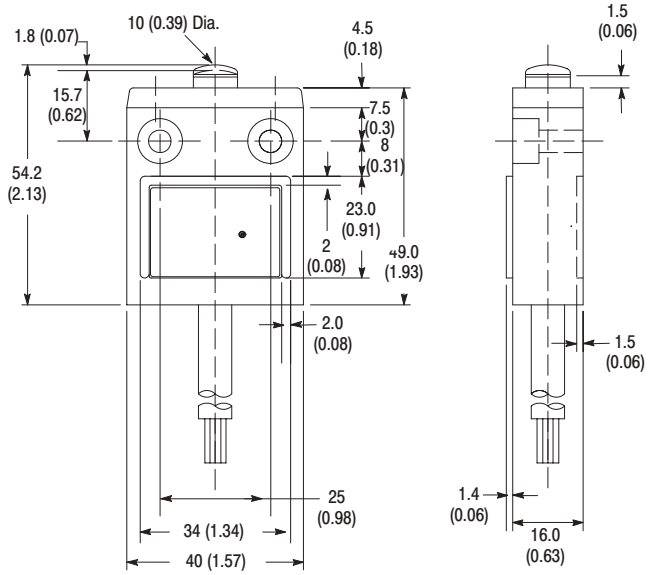
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Output Type	Catalog Number
Top Push	11.77N (2.65lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CSABXSXC3** **802B–CSABXSLC3** **802B–CSDBXSLC3** **802B–CSDBXSXC3**
Top Push Bevel	11.77N (2.65lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CSAB1XSXC3** **802B–CSAB1XSLC3** **802B–CSDB1XSLC3** **802B–CSDB1XSXC3**
Top Push Roller	11.77N (2.65lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CSADXSXC3** **802B–CSADXSLC3** **802B–CSDDXSLC3** **802B–CSDDXSXC3**
Top Push Cross Roller	11.77N (2.65lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CSAD1XSXC3** **802B–CSAD1XSLC3** **802B–CSDD1XSLC3** **802B–CSDD1XSXC3**

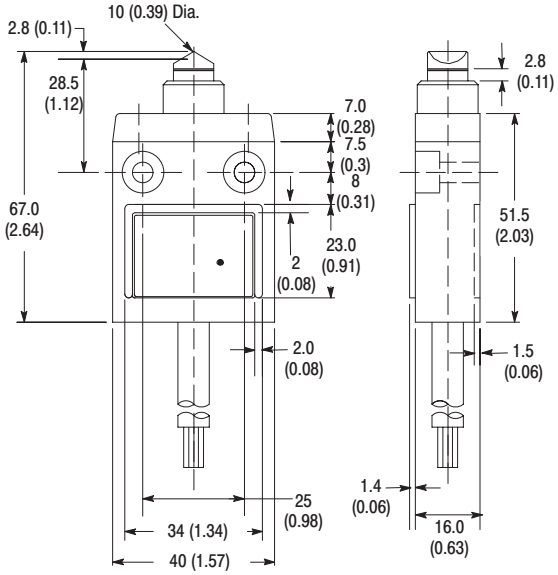
Wiring Diagrams

Com	N.O.	N.C.	G
Black	Blue	Brown	Green/Yellow

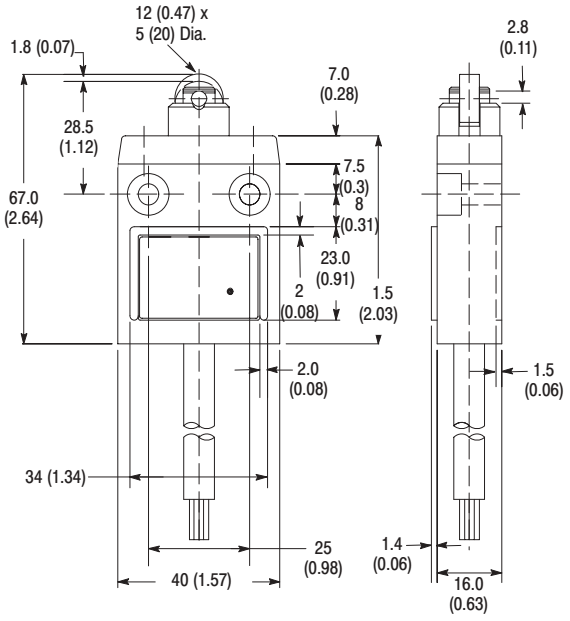
Dimensions—mm (inches)



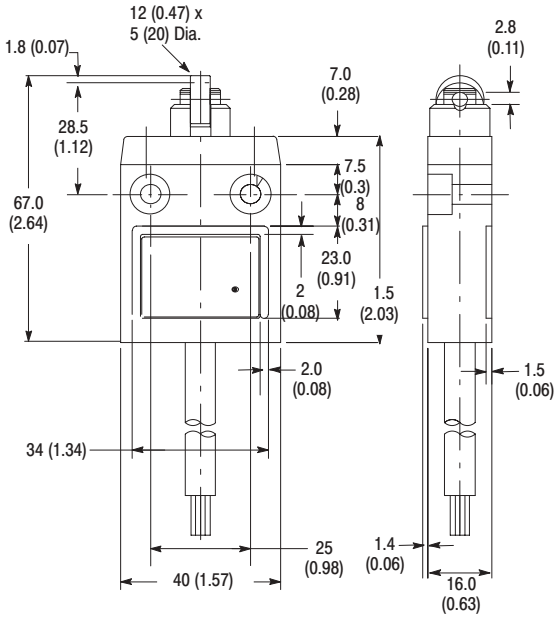
Top Push



Top Push Bevel



Top Push Roller



Top Push Cross Roller

802B Compact

Small Metal Body

Top Push
Panel Mount

Top Push Roller
Panel Mount

Top Push Cross
Roller Panel Mount

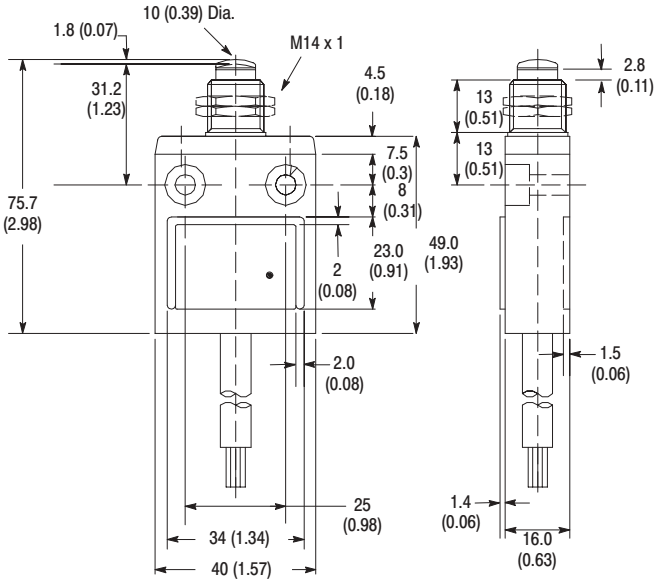
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Output Type	Catalog Number
Top Push Panel Mount	11.77N (2.65lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CPABXSXC3** **802B–CPABXSLC3** **802B–CPDBXSLC3** **802B–CPDBXSXC3**
Top Push Roller Panel Mount	11.77N (2.65lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CPADXSXC3** **802B–CPADXSLC3** **802B–CPDDXSLC3** **802B–CPDDXSXC3**
Top Push Cross Roller Panel Mount	11.77N (2.65lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CPAD1XSXC3** **802B–CPAD1XSLC3** **802B–CPDD1XSLC3** **802B–CPDD1XSXC3**

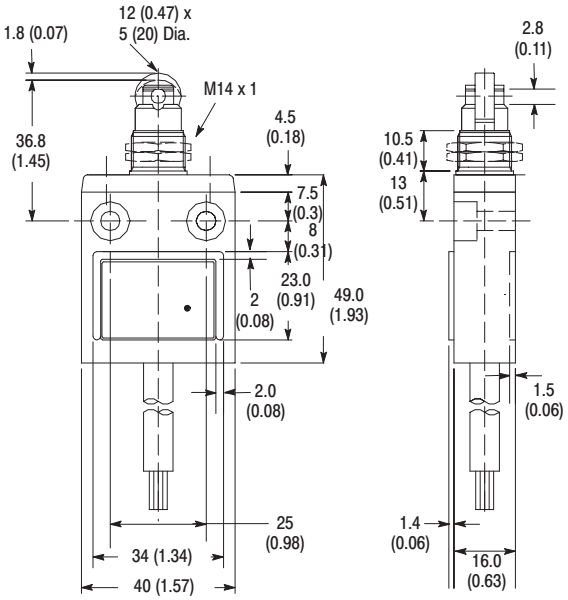
Wiring Diagrams

Com	N.O.	N.C.	G
Black	Blue	Brown	Green/Yellow

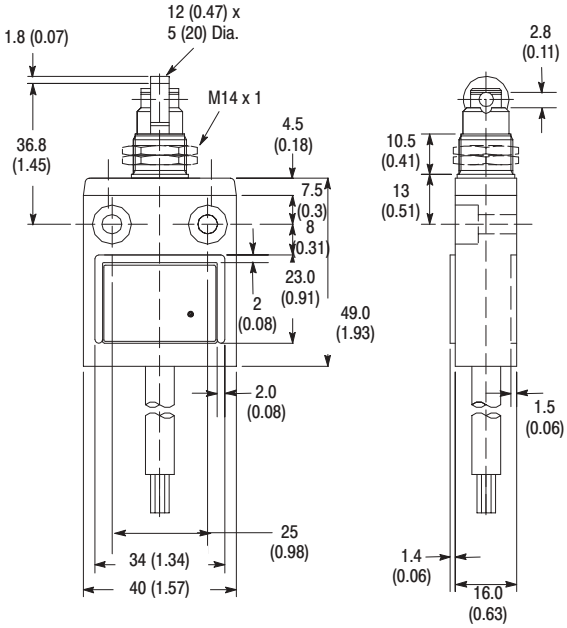
Dimensions—mm (inches)



Top Push Panel Mount



Top Push Roller Panel Mount



Top Push Cross Roller Panel Mount

802B Compact

Small Metal Body

Top Push Booted Head

Top Push Roller Booted Head

Top Push Cross Roller Booted Head

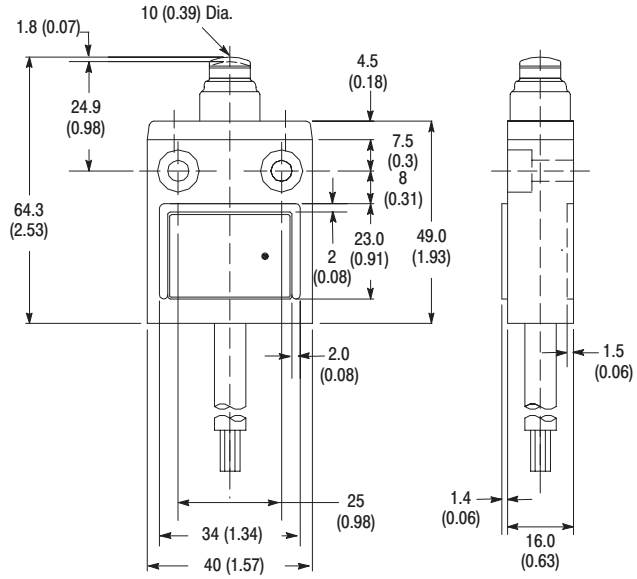
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Output Type	Catalog Number
Top Push Booted Head	17.65N (3.97lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CSABBSXC3** **802B–CSABBSLC3** **802B–CSDBBSLC3** **802B–CSDBBSXC3**
Top Push Roller Booted Head	17.65N (3.97lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CSADBSXC3** **802B–CSADBSLC3** **802B–CSDDBSLC3** **802B–CSDDBSXC3**
Top Push Cross Roller Booted Head	17.65N (3.97lb)	1.8mm (0.071in)	5mm (0.197in)	0.2mm (0.008in)	Standard AC LED DC LED Low Voltage/Current	**802B–CSAD1BSXC3** **802B–CSAD1BSLC3** **802B–CSDD1BSLC3** **802B–CSDD1BSXC3**

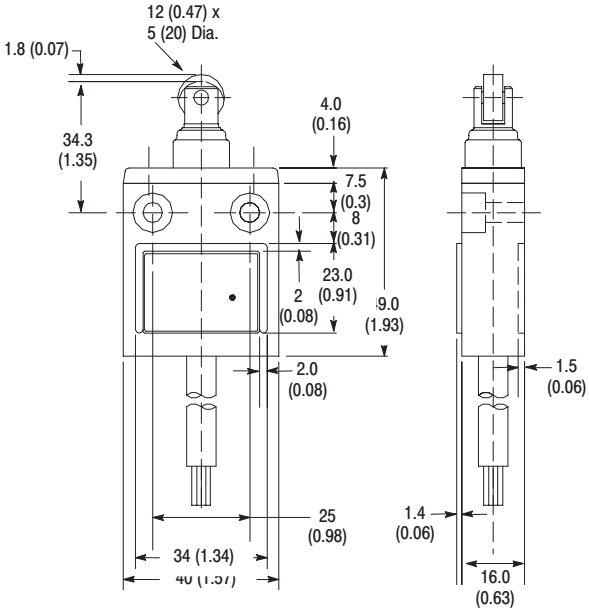
Wiring Diagrams

Com	N.O.	N.C.	G
Black	Blue	Brown	Green/Yellow

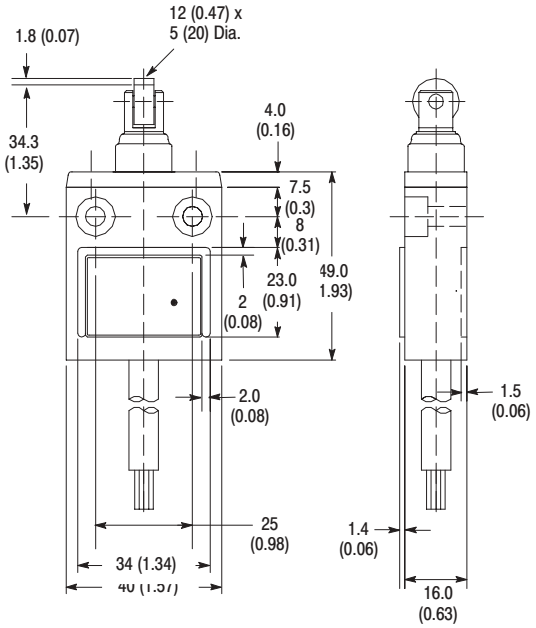
Dimensions—mm (inches)



Top Push Sealed Head



Top Push Roller Sealed Head



Top Push Cross Roller Sealed Head

802B Precision

Small Metal Body

Top Push

Top Push Roller

Top Push Cross Roller

Roller Lever

One-Way Roller Lever

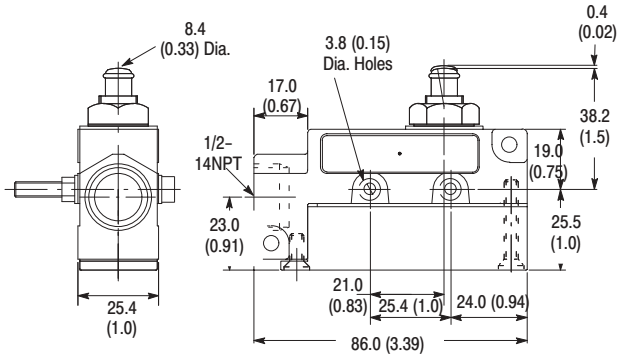
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Mounting Style	Catalog Number
Top Push	2.45–3.43N (0.55–0.77lb)	0.4mm (0.016in)	5.9mm (0.232in)	0.05mm (0.002in)	Side	**802B–PSABXSX**
Top Push Roller		0.5mm (0.020in)	4.1mm (0.161in)			**802B–PSADXSX**
Top Push Cross Roller						**802B–PSAD1XSX**
Roller Lever	5.59N (1.28lb)	4mm (0.157in)	10mm (0.394in)	0.4mm (0.016in)		**802B–PSARXSX**
One-Way Roller Lever						**802B–PSAR2XSX**

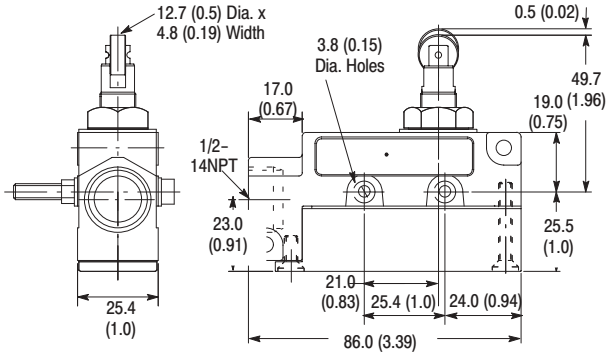
Wiring Diagrams

⊕ Com	⊕ N.O.	⊕ N.C.

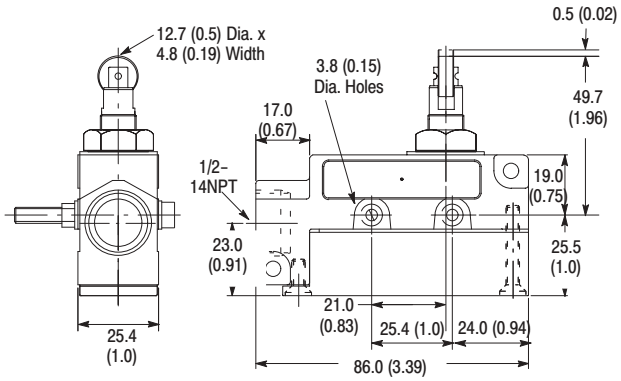
Dimensions—mm (inches)



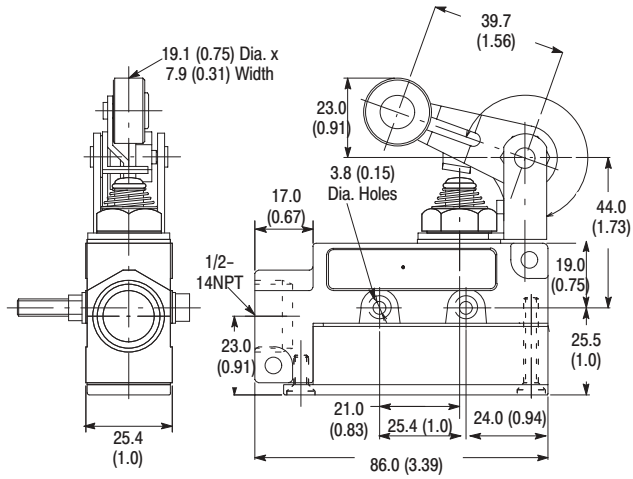
802B–PSABXSX



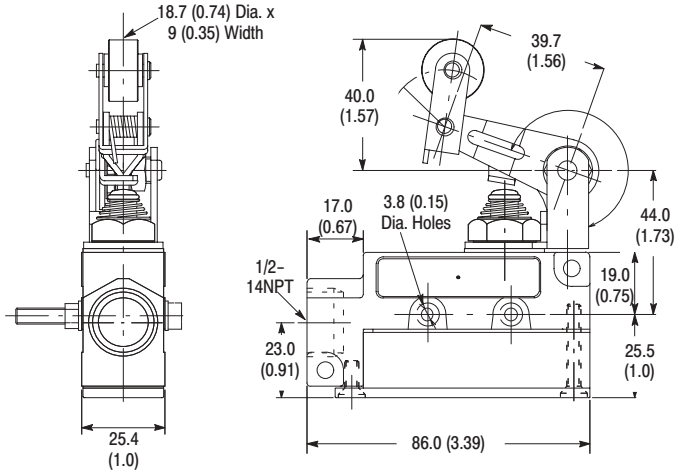
802B–PSADXSX



802B–PSD1XSX



802B–PSARXSX



802B–PSAR2XSX

802B Precision

Small Metal Body

Top Push Booted

Top Push Roller Booted

Top Push Cross Roller Booted

Roller Lever Booted

One-Way Roller Lever Booted

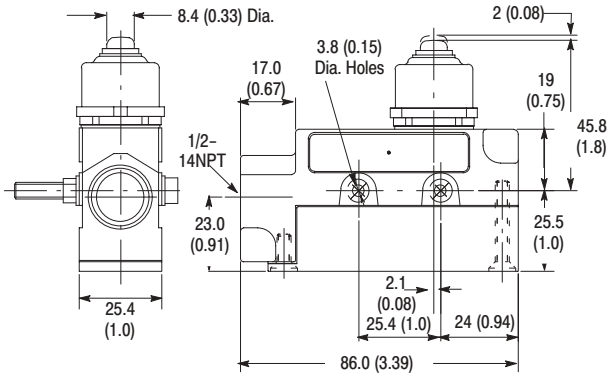
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Mounting Style	Catalog Number
Top Push Booted	7.85N (1.76lb)	2mm (0.079in)	7mm (0.276in)	0.1mm (0.004in)	Side	**802B–PSABBSX**
Top Push Roller Booted	4.9N (1.09lb)	1mm (0.039in)	4.5mm (0.177in)	0.12mm (0.005in)		**802B–PSADBSX**
Top Push Cross Roller Booted						**802B–PSAD1BSX**
Roller Lever Booted	6.28N (1.40lb)	5mm (0.197in)	11mm (0.433in)	0.4mm (0.016in)		**802B–PSARBSX**
One-Way Roller Lever Booted						**802B–PSAR2BSX**

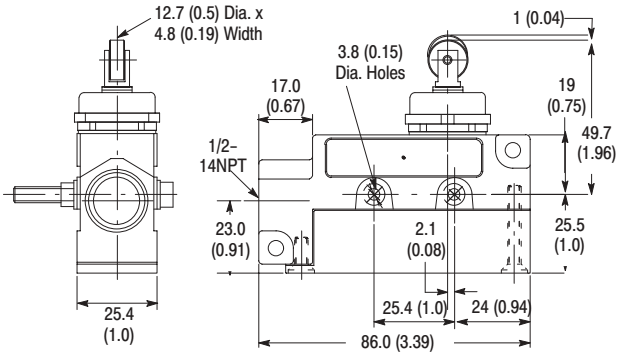
Wiring Diagrams

Com	N.O.	N.C.

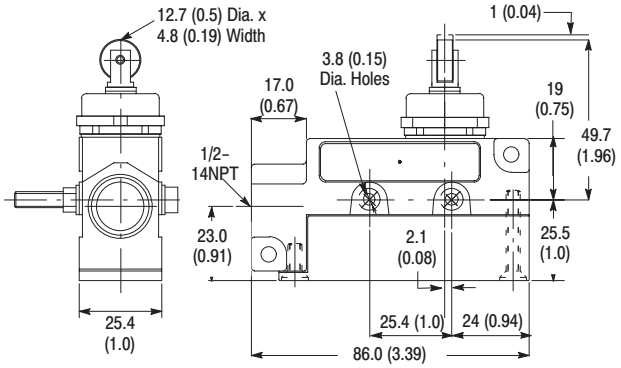
Dimensions—mm (inches)



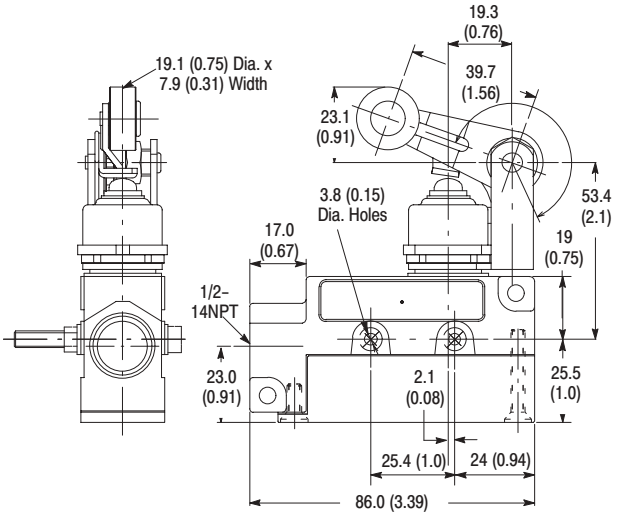
802B–PSABBSX



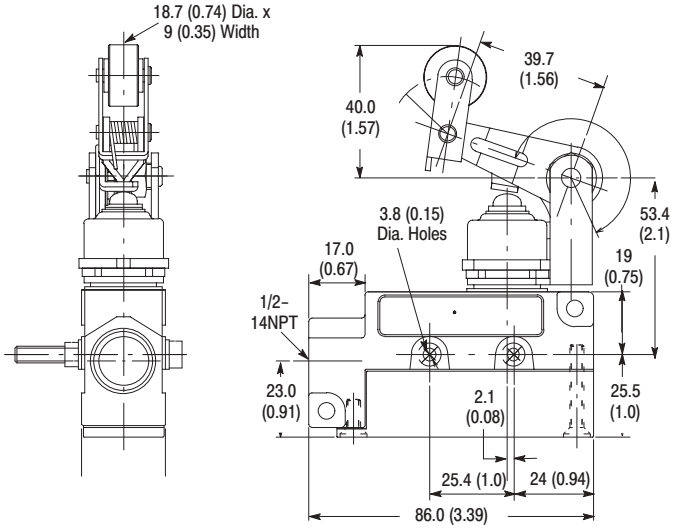
802B–PSADBSX



802B–PSAD1BSX



802B–PSARBSX



802B–PSAR2BSX

802B Precision

Small Metal Body

Top Push

Top Push Roller

Top Push Cross Roller

Roller Lever

One-Way Roller Lever

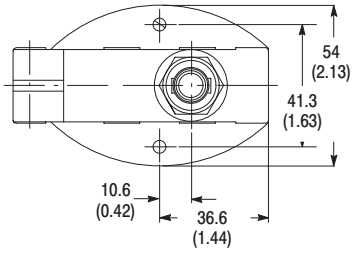
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Mounting Style	Catalog Number
Top Push	2.45–3.43N (0.55–0.77lb)	0.4mm (0.016in)	5.9mm (0.232in)	0.05mm (0.002in)	Flange	**802B–PFABXSX**
Top Push Roller		0.5mm (0.020in)	4.1mm (0.161in)			**802B–PFADXSX**
Top Push Cross Roller						**802B–PFAD1XSX**
Roller Lever	5.59N (1.28lb)	4mm (0.157in)	10mm (0.394in)	0.4mm (0.016in)		**802B–PFARXSX**
One-Way Roller Lever						**802B–PFAR2XSX**

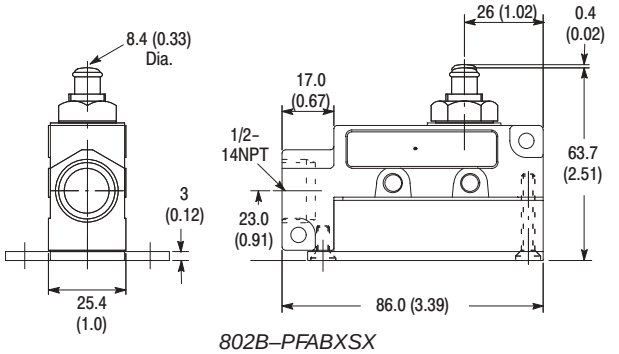
Wiring Diagrams

⊕ Com	⊕ N.O.	⊕ N.C.

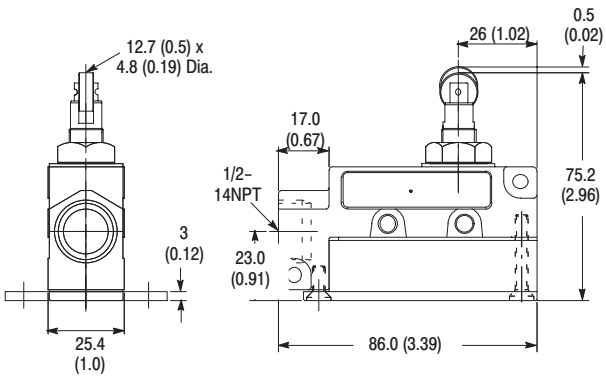
Dimensions—mm (inches)



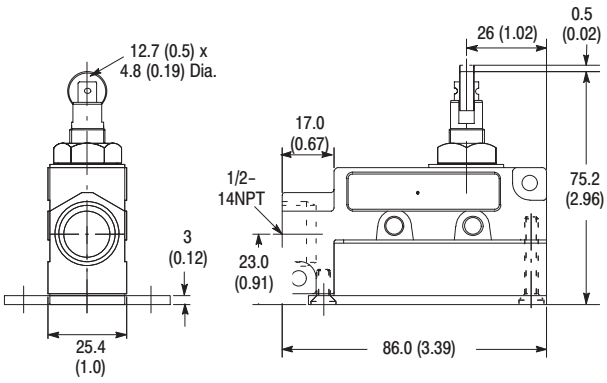
Top View



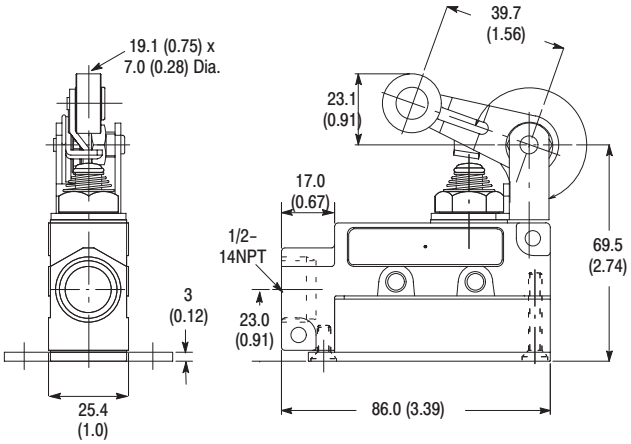
802B–PFABXSX



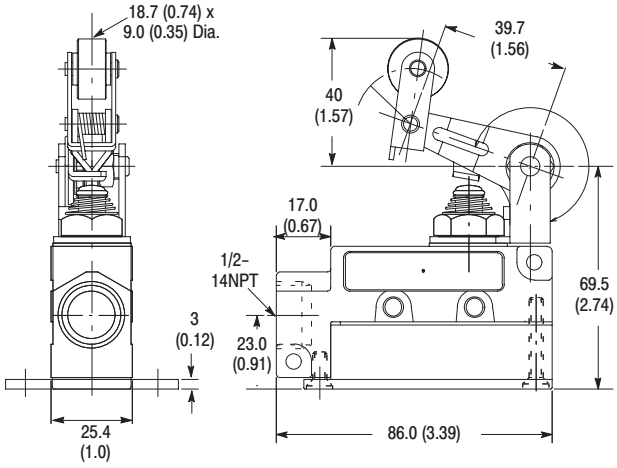
802B–PFADXSX



802B–PFAD1XSX



802B–PFARXSX



802B–PFAR2XSX

802B Precision

Small Metal Body

Top Push Booted

Top Push Roller Booted

Top Push Cross Roller Booted

Roller Lever Booted

One-Way Roller Lever Booted

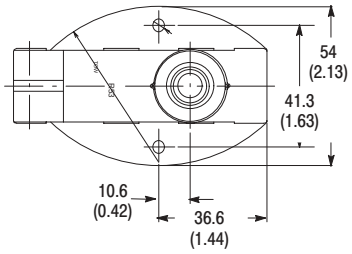
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Mounting Style	Catalog Number
Top Push Booted	7.85N (1.76lb)	2mm (0.079in)	7mm (0.276in)	0.1mm (0.004in)	Flange	**802B–PFABBSX**
Top Push Roller Booted	4.9N (1.09lb)	1mm (0.039in)	4.5mm (0.177in)	0.12mm (0.005in)		**802B–PFADBSX**
Top Push Cross Roller Booted						**802B–PFAD1BSX**
Roller Lever Booted	6.28N (1.40lb)	5mm (0.197in)	11mm (0.433in)	0.4mm (0.016in)		**802B–PFARBSX**
One-Way Roller Lever Booted						**802B–PFAR2BSX**

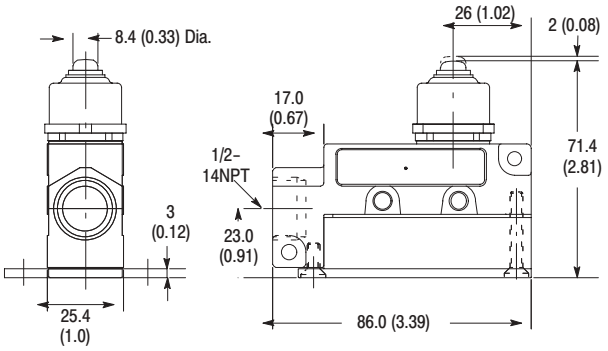
Wiring Diagrams

⊕ Com	⊕ N.O.	⊕ N.C.

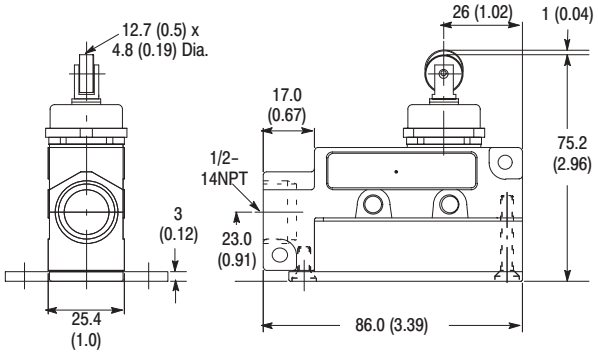
Dimensions—mm (inches)



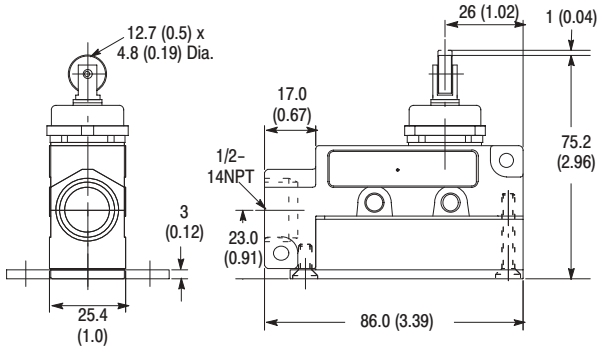
Top View



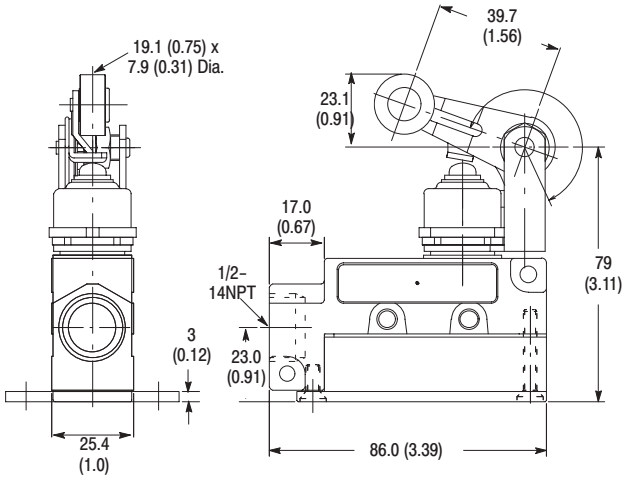
802B–PFABBSX



802B–PFADBSX



802B–PFAD1BSX



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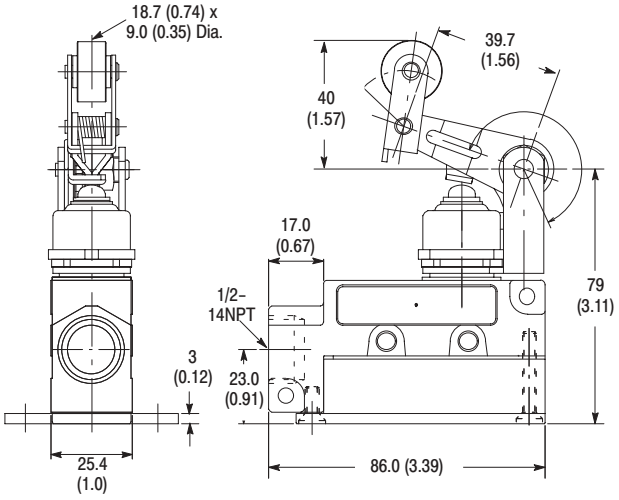


802B–PFAR2BSX

802B Small Precision

Small Metal Body

Top Push | *Top Push Panel Mount* | *Top Roller Panel Mount* | *Top Push Cross Roller Panel Mount* | *Top Push Roller Booted* | *Top Push Cross Roller Booted*

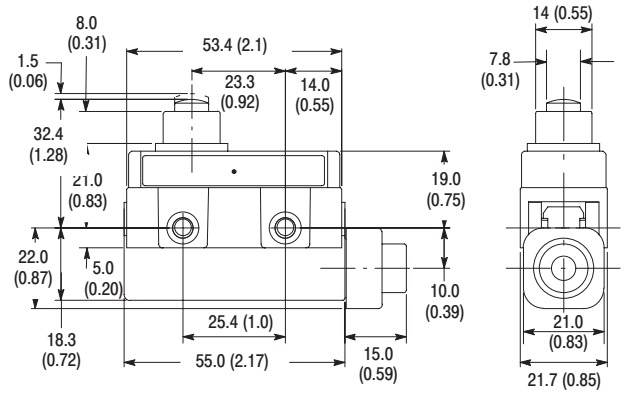
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Mounting Style	Catalog Number
Top Push	11.8N (2.65lb)	1.5mm (0.059in)	3.9mm (0.154in)	0.2mm (0.008in)	Side	802B–SSABXSX
Top Push Panel Mount			4.5mm (0.177in)			802B–SPABXSX
Top Push Roller Panel Mount						802B–SPADXSX
Top Push Cross Roller Panel Mount						802B–SPAD1XSX
Top Push Roller Booted	6.86N (1.54lb)		4mm (0.157in)			802B–SSADBSX
Top Push Cross Roller Booted						802B–SSAD1BSX

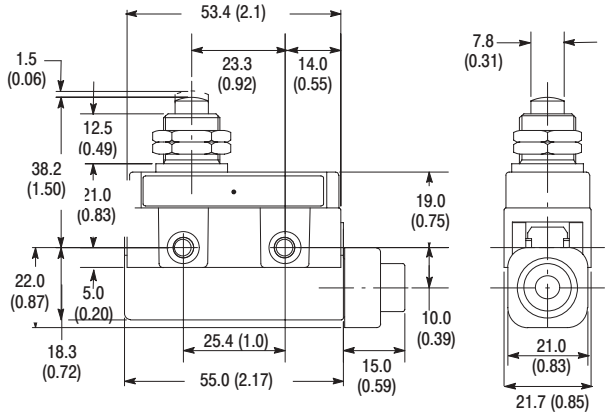
Wiring Diagrams

⊕ Com	⊕ N.O.	⊕ N.C.

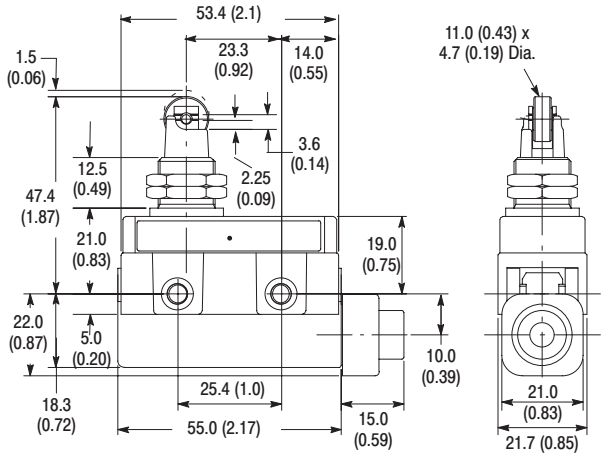
Dimensions—mm (inches)



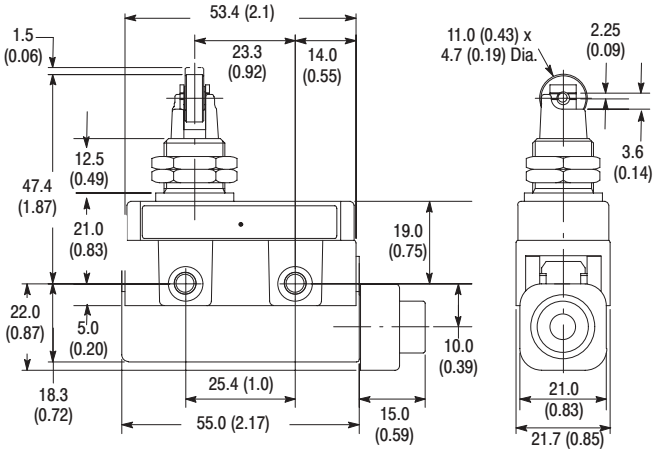
802B–SSABXSX



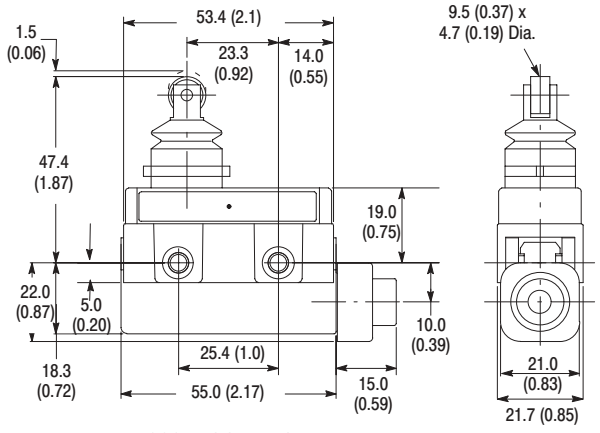
802B–SPABXSX



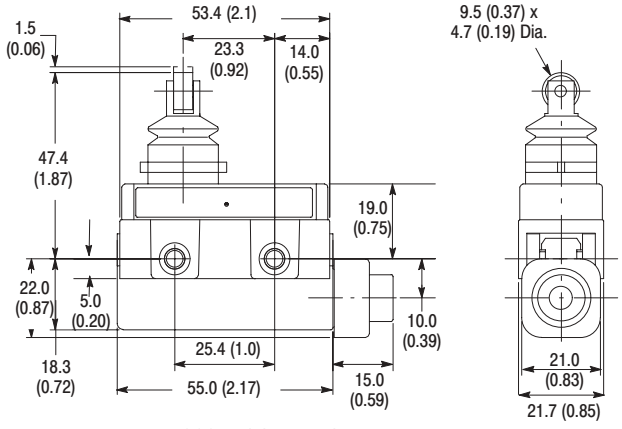
802B–SPADXSX



802B–SPAD1XSX



802B–SSADBSX



802B–SSAD1BSX

802B Small Precision

Small Metal Body

Short Hinge Lever | *Hinge Lever* | *Short Roller Lever* | *Roller Lever* | *Short One-Way Roller Lever* | *One-Way Roller Lever*

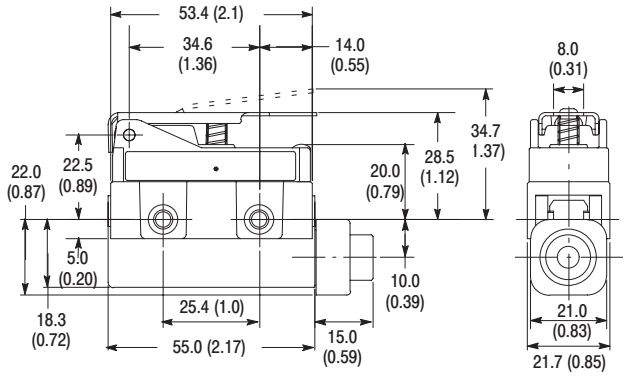
Selection Guide

Head Type	Force to Operate	Travel to Operate	Max Travel	Travel to Reset	Mounting Style	Catalog Number
Short Hinge Lever	3.92N (0.88lb)	6.2±1.2mm (0.244in)	12.2mm (0.480in)	1mm (0.04in)	Side	**802B–SSAH1XSX**
Hinge Lever	2.75N (0.62in)	8.2±1.2mm (0.323in)	16.6mm (0.645in)	1.4mm (0.055in)		**802B–SSAHXSX**
Short Roller Lever	3.92N (0.88lb)	6.2±1.2mm (0.244in)	12.2mm (0.480in)	1mm (0.04in)		**802B–SSAR1XSX**
Roller Lever	2.75N (0.62in)	8.3±1.2mm (0.327in)	16.7mm (0.657in)	1.4mm (0.055in)		**802B–SSARXSX**
Short One-Way Roller Lever	3.92N (0.88lb)	6.2±1.2mm (0.244in)	12.2mm (0.480in)	1mm (0.04in)		**802B–SSAR3XSX**
One-Way Roller Lever	2.75N (0.62in)	8.2±1.2mm (0.244in)	16.6mm (0.654in)	1.4mm (0.055in)		**802B–SSAR2XSX**

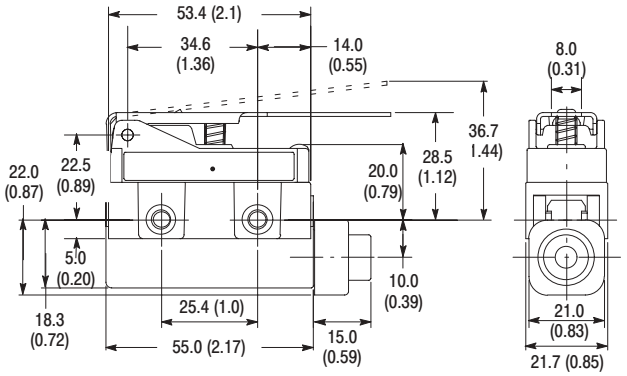
Wiring Diagrams

⊕ Com	⊕ N.O.	⊕ N.C.

Dimensions—mm (inches)



802B–SSAH1XSX



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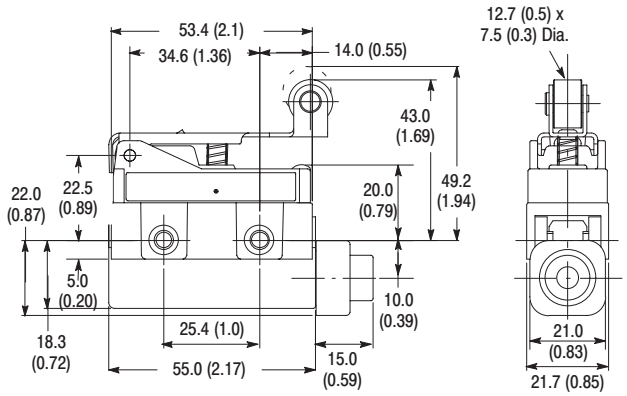
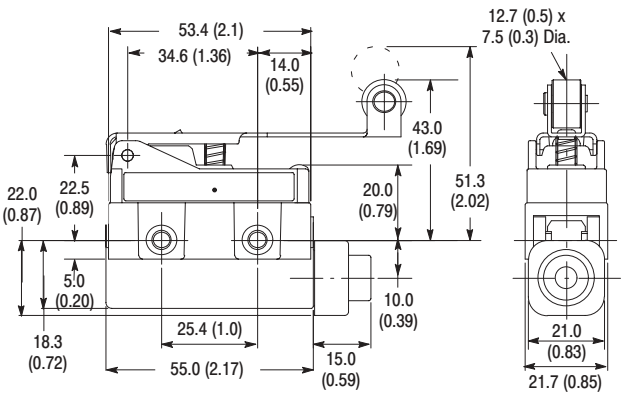
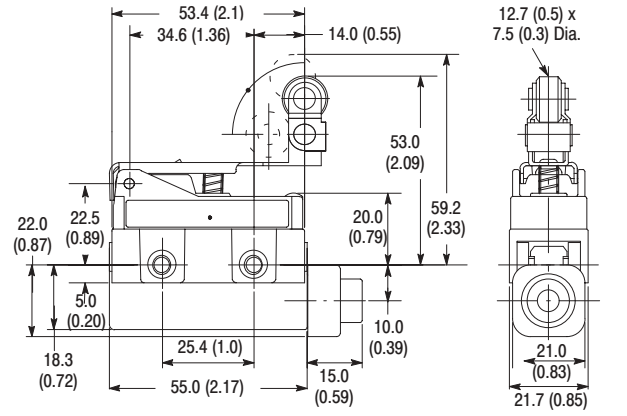


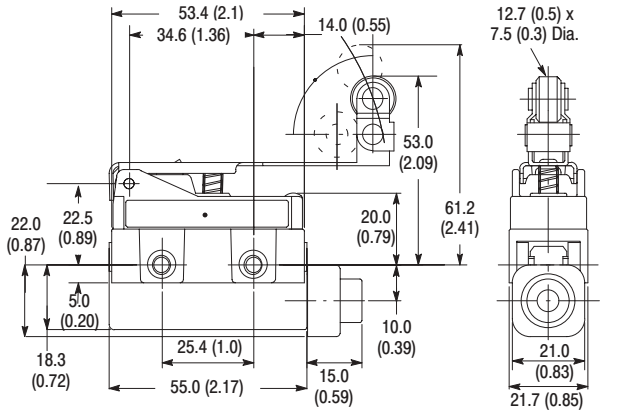
802B–SSAR1XSX



802B–SSARXSX



802B–SSAR3XSX



802B–SSAR2XSX

440P Safety Switches

International Style Safety Limit Switches

20mm Small Plastic

30mm Large Metal

General Description

The 440P limit switch family offers a full range of international style solutions for both safety and standard sensing applications. Available in three different body styles—30mm metal, 22mm plastic and 15mm plastic—with a broad selection of operator types, circuit arrangements and connection options, the 440P is ideal for a wide variety of applications. These include material handling, packaging, elevators, escalators, scissor lifts, industrial trucks and tractors, cranes and hoists, overhead door as well as general safety guarding applications.

Mechanical Enclosure

The large metal (440P–M) models feature die-cast alloy construction and conform to EN 50041 (30mm X 60mm), while the small plastic (440P–C) models are constructed of glass-filled polymer and conform to EN 50047 (22mm). Both types are IP66 rated and available with M20 or 1/2in NPT conduit opening or in micro quick-disconnect versions. The 15mm plastic models (440P–M18001 and 440P–M18002) are constructed of glass-filled polyester and are IP30 rated.

Actuator Types

440P international style limit switches are available with a wide variety of actuators to solve a broad range of applications. All lever type switches include their respective actuator arm.

The large metal body style is available in the following operator types:

- Metal roller plunger
- Metal dome plunger
- Metal short lever
- Metal adjustable lever
- Metal rod lever
- Metal spring rod
- Telescopic arm

The small plastic body style is available in the following operator types:

- Adjustable roller lever
- Adjustable rubber roller lever
- Short lever
- Hinge lever
- Roller plunger
- Dome plunger
- Offset hinge lever

The 15mm plastic switch is available with a roller plunger actuator.

Contact Arrangements

All 440P international style limit switches contain positive opening action contacts, making them ideal for safety-related applications. The small plastic models include a choice of snap acting, slow break/make with 2- or 3-contact configurations, while the large metal switches contain snap acting, slow break contacts in 2-, 3- or 4-contact configurations. The 15mm plastic versions are slow break 2-circuit models.

International Style

20mm Plastic Position Switch . . . . . page 5–111

30mm Metal Position Switches . . . . . page 5–117

15mm Plastic Position Interlock Switches . . . . . page 5–123

440P Safety Limit Switches

22mm Plastic Position Switches

Description

The 22mm plastic safety limit switches conform to EN 50047 and have been developed to provide a range of options including metal or plastic cases in various sizes, a choice of snap acting, slow break/make with 2 or 3 contact configurations and a choice of actuator heads.

The Senator range offers the option of rotating the head in 90° increments before installation to allow ease of mounting.

Allen-Bradley Guardmaster limit switches can be used in other applications other than guard doors, for example on moving machine beds, crane arms, lifts, elevators, etc.

Operation of these limit switches is achieved by the sliding action of the guard or other moving object deflecting the plunger or lever. For safety applications it is important that upon actuation, the guard or other moving objects should not pass completely over the switch and allow the plunger or lever to return to its original position.

Specifications

Standards	EN954–1, ISO13849–1, IEC/EN60204–1, NFPA79, EN1088, ISO14119, IEC/ EN60947–5–1, ANSI B11.19, AS4024.1				
Category	Cat. 1 Device per EN954–1 Dual channel interlocks suitable for Cat. 3 or 4 systems				
Approvals	cULus, TUV and CE marked for all applicable directives				
Safety Contacts	1 N.C. snap acting, 2 N.C., 3 N.C. or 4 N.C. slow acting				
Auxiliary Contacts	1 N.O. (with 2 N.C.)				
Designation/Utilization Cat.					
A600/AC–15	**(Ue)**	600V	500V	240V	120V
	(Ie)	1.2A	1.4A	3A	6A
N600/DC–13	**(Ue)**	600V	500V	250V	125V
	(Ie)	0.4A	0.55A	1.1A	2.2A
Min Current	5V, 5mA, DC				
Thermal Current (Ith)	10A				
Rated Insulation Voltage	600V AC				
Rated Impulse withstand Volt	2500V				
Travel for Positive Opening	Various (see Product Selection table)				
Max Switching Speed	250mm/s				
Min Switching Speed	100mm/min				
Max Switching Frequency	6000 operation per hour				
Case Material	UL approved glass-filled polybutylene terephthalate				
Roller Material	Various polymers				
Enclosure Protection	IP 66				
Operating Temperature	Min –25°C (–18°F) Max 80°C (+176°F)				
Pollution Degree ❶	3				
Mech. Life Expectancy	1 x 107				
Conduit Entry	M20 or 1/2in NPT				
Fixing	2 x M4				
Mounting	Any position				
Color	Red				

Features

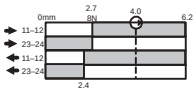
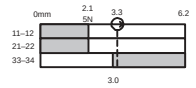
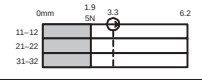
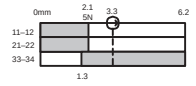
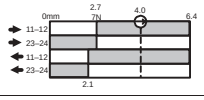
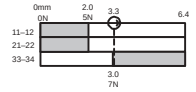
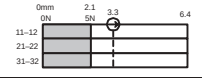
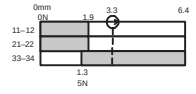
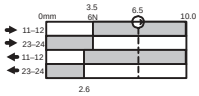
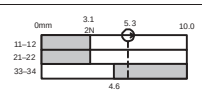
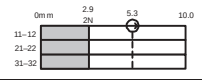
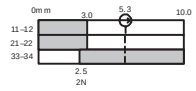
- Large selection of actuator heads
- Positive operation, forced disconnection of contacts
- Snap-acting, slow make before break or slow break before make contact blocks
- Contacts 1 N.C. + 1 N.O., 2 N.C. + 1 N.O. 3 N.C., 2 N.C. + 1 N.O.
- Conforms to EN 50047, EN 1088, EN 60947–5–1, EN 292 and EN 60204–1

Safety Limit Switches

440P Safety Limit Switches

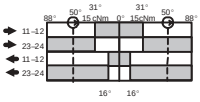
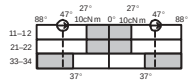
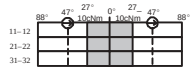
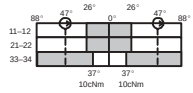
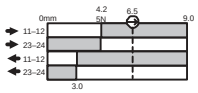
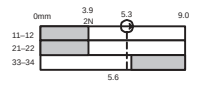
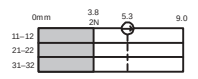
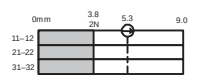
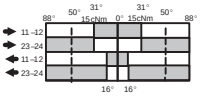
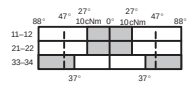
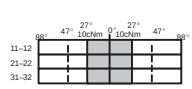
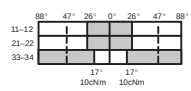
22mm Plastic Position Switches

Product Selection

Operator Type	Contact		Contact Type	Typical Force/ Torque to Operate	Contact Opening Characteristics □ Open ■ Closed ❸ Positive Opening Point	Catalog Number		
	Safety	Aux.				1/2in NPT Conduit	M20 Conduit	Quick Disconnect ❶
 Roller Plunger 	1 N.C.	1 N.O.	Snap Acting	5N		440P–CRPS11E	440P–CRPS11B	440P–CRPS11D4
	2 N.C.	1 N.O.	BBM	6N		440P–CRPB12E	440P–CRPB12B	440P–CRPB12R6
	3 N.C.	—	—	5N		440P–CRPB03E	440P–CRPB03B	440P–CRPB03R6
	2 N.C.	1 N.O.	MBB	6N		440P–CRPM12E	440P–CRPM12B	440P–CRPM12R6
 Dome Plunger 	1 N.C.	1 N.O.	Snap Acting	5N		440P–CDPS11E	440P–CDPS11B	440P–CDPS11D4
	2 N.C.	1 N.O.	BBM	6N		440P–CDPB12E	440P–CDPB12B	440P–CDPB12R6
	3 N.C.	—	—	5N		440P–CDPB03E	440P–CDPB03B	440P–CDPB03R6
	2 N.C.	1 N.O.	MBB	6N		440P–CDPM12E	440P–CDPM12B	440P–CDPM12R6
 Hinge Lever 	1 N.C.	1 N.O.	Snap Acting	5N		440P–CHLS11E	440P–CHLS11B	440P–CHLS11D4
	2 N.C.	1 N.O.	BBM	6N		440P–CHLB12E	440P–CHLB12B	440P–CHLB12R6
	3 N.C.	—	—	5N		440P–CHLB03E	440P–CHLB03B	440P–CHLB03R6
	2 N.C.	1 N.O.	MBB	6N		440P–CHLM12E	440P–CHLM12B	440P–CHLM12R6
Recommended standard cordset, 2m, 4-pin, DC Micro (M12) connector. See page ___ for additional lengths.								889D–F4AC–2
Recommended standard cordset, 2m, 6-pin AC Micro connector. See page ___ for additional lengths.								889R–F6ACA–2

❶ D4 suffix uses a 4–pin DC Micro (M12) connector.
R6 suffix uses a 6–pin AC Micro (dual keyway) connector.

Product Selection (continued)

Operator Type	Contact		Contact Type	Typical Force/ Torque to Operate	Contact Opening Characteristics □ Open ■ Closed ❸ Positive Opening Point	Catalog Number		
	Safety	Aux.				1/2in NPT Conduit	M20 Conduit	Quick Disconnect ❶
 Short Lever 	1 N.C.	1 N.O.	Snap Acting	0.15Nm		440P-CSLS11E	440P-CSLS11B	440P-CSLS11D4
	2 N.C.	1 N.O.	BBM	0.14Nm		440P-CSLB12E	440P-CSLB12B	440P-CSLB12R6
	3 N.C.	—	—	0.14Nm		440P-CSLB03E	440P-CSLB03B	440P-CSLB03R6
	2 N.C.	1 N.O.	MBB	0.14Nm		440P-CSLM12E	440P-CSLM12B	440P-CSLM12R6
 Offset Hinge 	1 N.C.	1 N.O.	Snap Acting	5N		440P-COHS11E	440P-COHS11B	440P-COHS11D4
	2 N.C.	1 N.O.	BBM	6N		440P-COHB12E	440P-COHB12B	440P-COHB12R6
	3 N.C.	—	—	5N		440P-COHB03E	440P-COHB03B	440P-COHB03R6
	2 N.C.	1 N.O.	MBB	6N		440P-COHM12E	440P-COHM12B	440P-COHM12R6
 Adjustable Lever ❷ 	1 N.C.	1 N.O.	Snap Acting	0.15Nm		440P-CALS11E	440P-CALS11B	440P-CALS11D4
	2 N.C.	1 N.O.	BBM	0.14Nm		440P-CALB12E	440P-CALB12B	440P-CALB12R6
	3 N.C.	—	—	0.14Nm		440P-CALB03E	440P-CALB03B	440P-CALB03R6
	2 N.C.	1 N.O.	MBB	0.14Nm		440P-CALM12E	440P-CALM12B	440P-CALM12R6
Recommended standard cordset, 2m, 4-pin, DC Micro (M12) connector. See page ___ for additional lengths.								889D-F4AC-2
Recommended standard cordset, 2m, 6-pin AC Micro connector. See page ___ for additional lengths.								889R-F6ACA-2

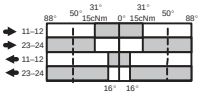
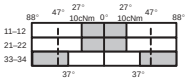
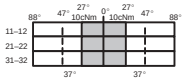
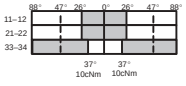
❶ D4 suffix uses a 4-pin DC Micro (M12) connector.
R6 suffix uses a 6-pin AC Micro (dual keyway) connector.

❷ Not positive opening

440P Safety Limit Switches

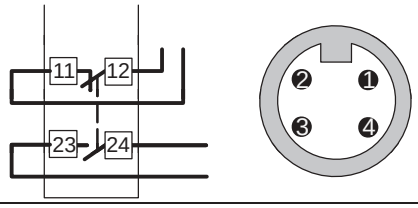
22mm Plastic Position Switches

Product Selection (continued)

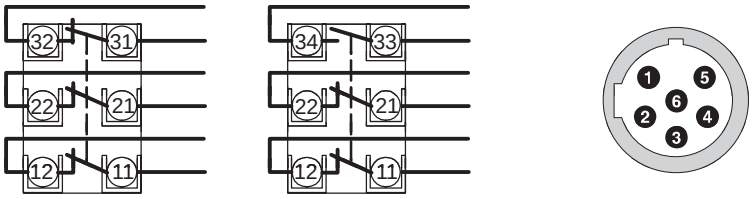
Operator Type	Contact		Contact Type	Typical Force/ Torque to Operate	Contact Opening Characteristics □ Open ■ Closed ❸ Positive Opening Point	Catalog Number		
	Safety	Aux.				1/2in NPT Conduit	M20 Conduit	Quick Disconnect ❶
 Rubber Roller ❷	1 N.C.	1 N.O.	Snap Acting	0.15Nm		440P-CRRS11E	440P-CRRS11B	440P-CRRS11D4
	2 N.C.	1 N.O.	BBM	0.14Nm		440P-CRRB12E	440P-CRRB12B	440P-CRRB12R6
	3 N.C.	—	—	0.14Nm		440P-CRRB03E	440P-CRRB03B	440P-CRRB03R6
	2 N.C.	1 N.O.	MBB	0.14Nm		440P-CRRM12E	440P-CRRM12B	440P-CRRM12R6
Recommended standard cordset, 2m, 4-pin, DC Micro (M12) connector. See page ___ for additional lengths.								889D-F4AC-2
Recommended standard cordset, 2m, 6-pin AC Micro connector. See page ___ for additional lengths.								889R-F6ACA-2

Typical Wiring Diagrams ❸

Two-Circuit Type D4 4-Pin Micro Connector

Connector Pinout		1 N.C. + 1 N.O.	
		Terminal	Contact
	1	11	N.C.
	3	12	
	2	23	N.O.
	4	24	

Three-Circuit Type R6 6-Pin Micro Connector

Connector Pinout		2 N.C. + 1 N.O.		3 N.C.	
		Terminal	Contact	Terminal	Contact
	1	11	N.C.	11	N.C.
	5	12		12	
	2	21	N.C.	21	N.C.
	6	22		22	
	3	33	N.O.	31	N.C.
	4	34		32	

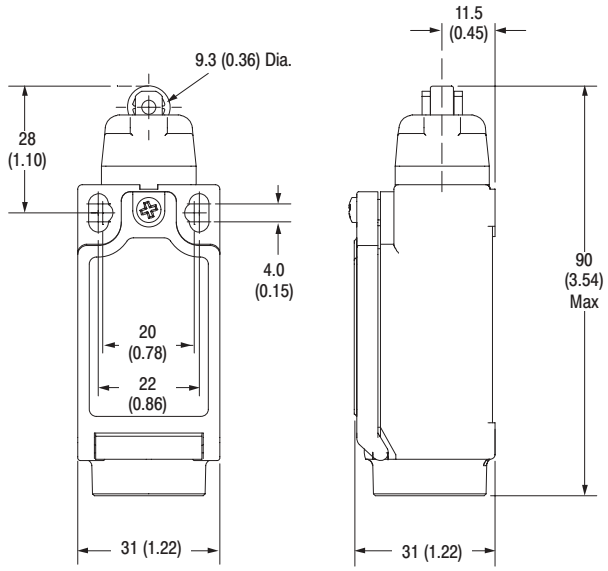
❶ D4 suffix uses a 4-pin DC Micro (M12) connector.
R6 suffix uses a 6-pin AC Micro (dual keyway) connector.

❷ Not positive opening

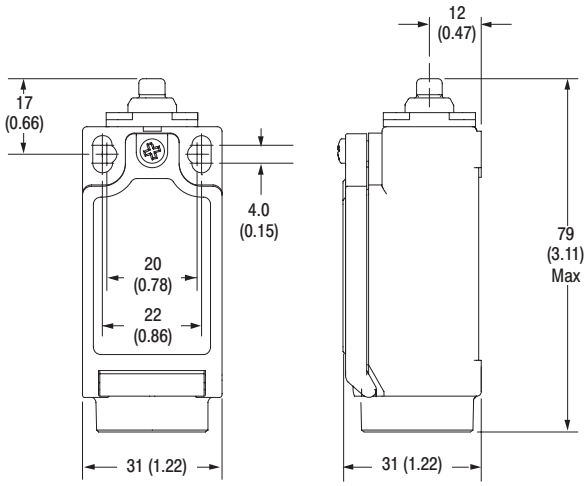
❸ See Product Selection tables for positive opening circuits.

Approximate Dimensions—mm (inches)

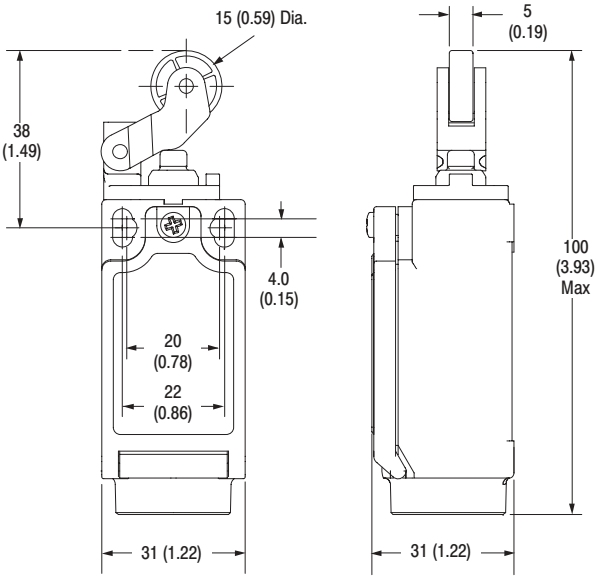
Dimensions are not intended to be used for installation purposes.



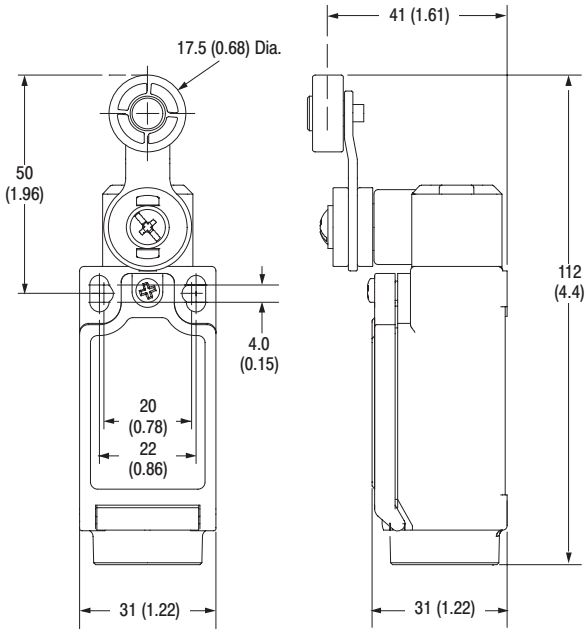
Roller Plunger



Dome Plunger



Hinge Lever



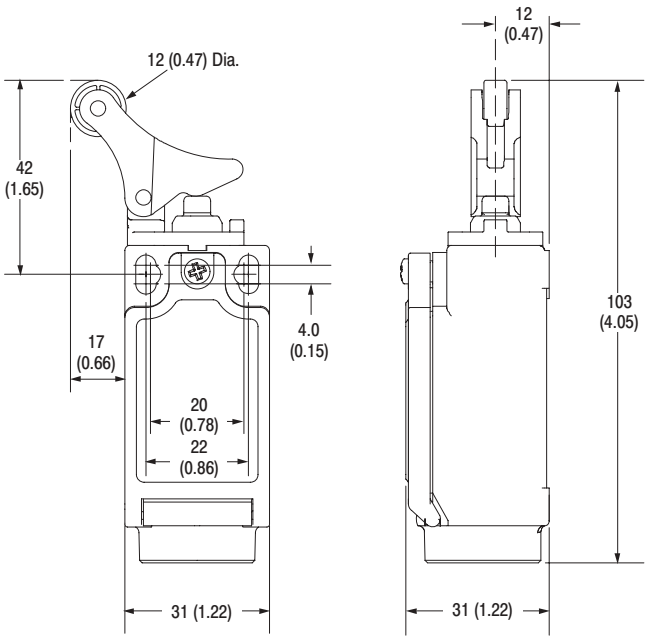
Short Lever

440P Safety Limit Switches

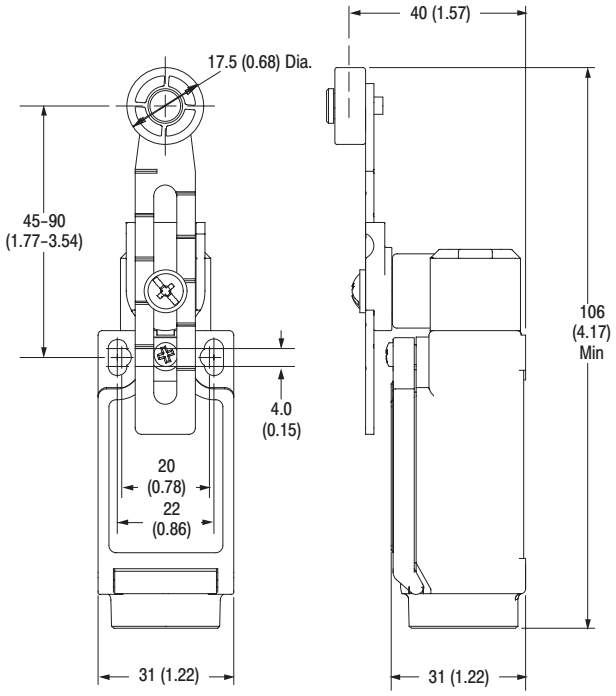
22mm Plastic Position Switches

Approximate Dimensions—mm (inches)

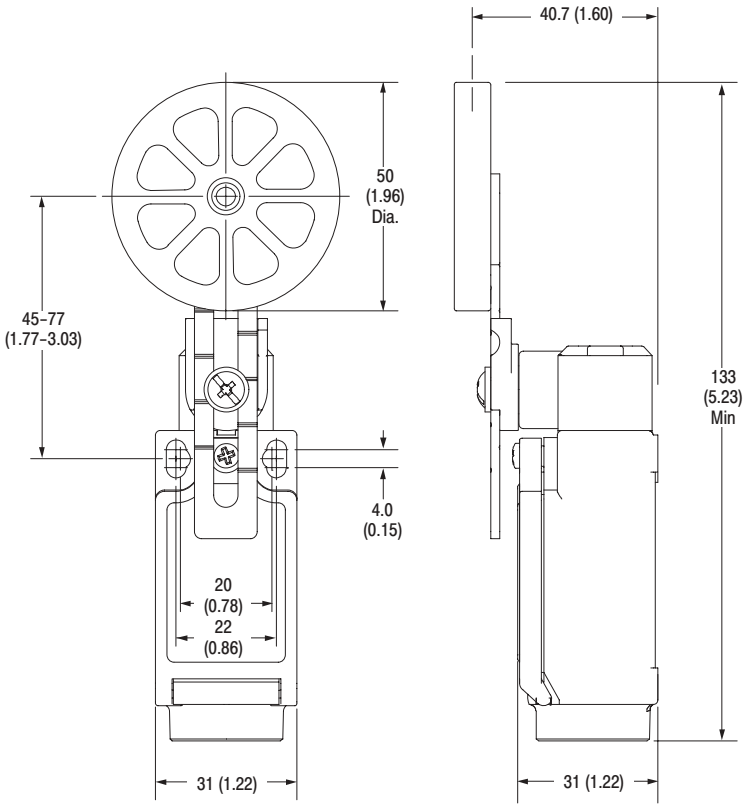
Dimensions are not intended to be used for installation purposes.



Offset Hinge



Adjustable Lever



Rubber Roller

440P Safety Limit Switches

30mm Metal Position Switches

The 30mm metal safety limit switches conform to EN 50041 and have been developed to provide a range of options including metal or plastic cases in various sizes, a choice of snap acting, slow break/make with 2, 3 or 4 contact configurations and a choice of actuator heads.

The Senator range offers the option of rotating the head in 90° increments before installation to allow ease of mounting.

Allen–Bradley/Guardmaster limit switches can be used in other applications other than guard doors, for example on moving machine beds, crane arms, lifts, elevators, etc.

Operation of these limit switches is achieved by the sliding action of the guard or other moving object deflecting the plunger or lever. For safety applications it is important that upon actuation, the guard or other moving objects should not pass completely over the switch and allow the plunger or lever to return to its original position.

Specifications

Standards	EN954–1, ISO13849–1, IEC/EN60204–1, NFPA79, EN1088, ISO14119, IEC/ EN60947–5–1, ANSI B11.19, AS4024.1				
Category	Cat. 1 Device per EN954–1 Dual channel interlocks suitable for Cat. 3 or 4 systems				
Approvals	cULus, TUV and CE marked for all applicable directives				
Safety Contacts	1 N.C. snap acting, 2 N.C., 3 N.C. or 4 N.C. slow acting				
Auxiliary Contacts	1 N.O. (with 2 N.C.)				
Designation/Utilization Cat.					
A600/AC–15	**(Ue)**	600V	500V	240V	120V
	(Ie)	1.2A	1.4A	3A	6A
N600/DC–13	**(Ue)**	600V	500V	250V	125V
	(Ie)	0.4A	0.55A	1.1A	2.2A
Min Current	5V, 5mA, DC				
Thermal Current (Ith)	10A				
Rated Insulation Voltage	600V AC				
Rated Impulse withstand Volt	2500V				
Travel for Positive Opening	Various (see Product Selection table)				
Max Switching Speed	250mm/s				
Min Switching Speed	100mm/min				
Max Switching Frequency	6000 operation per hour				
Case Material	Die cast alloy				
Actuator Material	See “Product Selection” table				
Enclosure Protection	IP 66				
Operating Temperature	Min –25°C (–18°F) Max 80°C (+176°F)				
Pollution Degree ❶	3				
Mechanical Life Expectancy	1 x 107				
Conduit Entry	M20 or 1/2in NPT				
Fixing	2 x M5				
Mounting	Any position				
Color	Red				

❶ Conductive pollution occurs, or dry, nonconductive pollution occurs which becomes conductive due to condensation.

Features

- Large selection of actuator heads
- Positive operation, forced disconnection of contacts
- Snap-acting, slow make before break or slow break before make contact blocks
- Contacts 1 N.C. + 1 N.O., 2 N.C. + 1 N.O. 3 N.C., 2 N.C. + 2 N.O., 3 N.C. + 1 N.O., or 4 N.C.
- Conforms to EN 50041, EN 1088, EN 60947–5–1, EN 292 and EN 60204–1

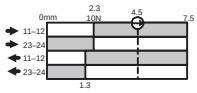
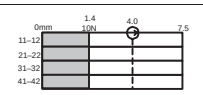
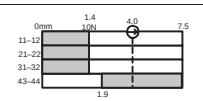
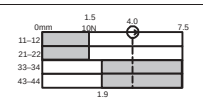
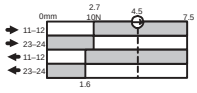
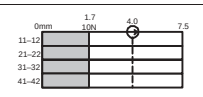
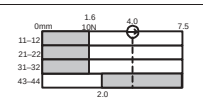
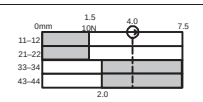
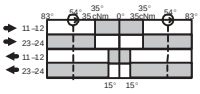
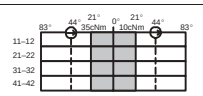
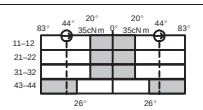
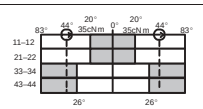
Safety Limit Switches

Product Selection . . . . . page 5–118
Wiring . . . . . page 5–121
Dimensions . . . . . page 5–121

440P Safety Limit Switches

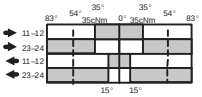
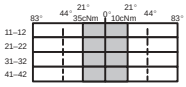
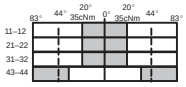
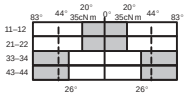
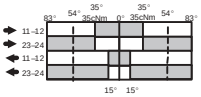
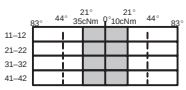
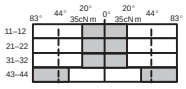
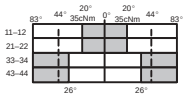
30mm Metal Position Switches

Product Selection

Operator Type	Contacts: Safety	Contacts: Aux.	Contact Type	Typical Force/ Torque to Operate	Contact Opening Characteristics (□ Open ■ Closed ❸ Positive Opening Point)	Catalog Number: 1/2in NPT Conduit	Catalog Number: M20 Conduit	Catalog Number: Quick Disconnect ❶
 Metal Roller Plunger	1 N.C.	1 N.O.	Snap Acting	13N		440P–MRPS11E	440P–MRPB11B	440P–MRPS11N5
	4 N.C.	—	—	11N		440P–MRPB04E	440P–MRPB04B	440P–MRPB04M9
	3 N.C.	1 N.O.	BBM	11N		440P–MRPB13E	440P–MRPB13B	440P–MRPB13M9
	2 N.C.	2 N.O.	BBM	11N		440P–MRPB22E	440P–MRPB22B	440P–MRPB22M9
 Metal Dome Plunger	1 N.C.	1 N.O.	Snap Acting	13N		440P–MDPS11E	440P–MDPB11B	440P–MDPS11N5
	4 N.C.	—	—	11N		440P–MDPB04E	440P–MDPB04B	440P–MDPB04M9
	3 N.C.	1 N.O.	BBM	11N		440P–MDPB13E	440P–MDPB13B	440P–MDPB13M9
	2 N.C.	2 N.O.	BBM	11N		440P–MDPB22E	440P–MDPB22B	440P–MDPB22M9
 Metal Short Lever	1 N.C.	1 N.O.	Snap Acting	0.34Nm		440P–MSLS11E	440P–MSLS11B	440P–MSLS11N5
	4 N.C.	—	—	0.20Nm		440P–MSLB04E	440P–MSLB04B	440P–MSLB04M9
	3 N.C.	1 N.O.	BBM	0.34Nm		440P–MSLB13E	440P–MSLB13B	440P–MSLB13M9
	2 N.C.	2 N.O.	BBM	0.34Nm		440P–MSLB22E	440P–MSLB22B	440P–MSLB22M9
Recommended standard cordset, 2m, 5-pin mini connector. See page ___ for additional lengths.								889N–F5AE–6F
Recommended standard cordset, 2m, 12-pin 9 wire. See page ___ for additional lengths.								889M–F12X9AE–2

❶ N5 = 5–pin mini connector.
M9 = 12–pin M23 connector (use 9 wire).

Product Selection (continued)

Operator Type	Contacts		Contact Type	Typical Force/ Torque to Operate	Contact Opening Characteristics □ Open ■ Closed ❸ Positive Opening Point	Catalog Number		
	Safety	Aux.				1/2in NPT Conduit	M20 Conduit	Quick Disconnect ❶
 Metal Adjustable Lever ❷	1 N.C.	1 N.O.	Snap Acting	0.34Nm		440P–MALS11E	440P–MALS11B	440P–MALS11N5
	4 N.C.	—	—	0.20Nm		440P–MALB04E	440P–MALB04B	440P–MALB04M9
	3 N.C.	1 N.O.	BBM	0.34Nm		440P–MALB13E	440P–MALB13B	440P–MALB13M9
	2 N.C.	2 N.O.	BBM	0.34Nm		440P–MALB22E	440P–MALB22B	440P–MALB22M9
 Metal Rod Lever ❷	1 N.C.	1 N.O.	Snap Acting	0.34Nm		440P–MARS11E	440P–MARS11B	440P–MARS11N5
	4 N.C.	—	—	0.20Nm		440P–MARB04E	440P–MARB04B	440P–MARB04M9
	3 N.C.	1 N.O.	BBM	0.34Nm		440P–MARB13E	440P–MARB13B	440P–MARB13M9
	2 N.C.	2 N.O.	BBM	0.34Nm		440P–MARB22E	440P–MARB22B	440P–MARB22M9
Recommended standard cordset, 2m, 5-pin mini connector. See page ___ for additional lengths.								889N–F5AE–6F
Recommended standard cordset, 2m, 12-pin 9 wire. See page ___ for additional lengths.								889M–F12X9AE–2

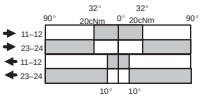
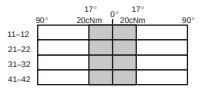
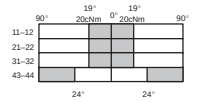
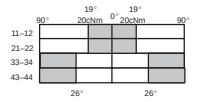
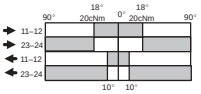
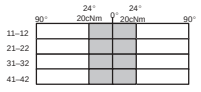
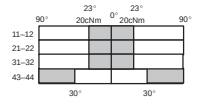
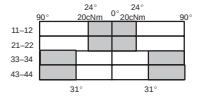
❶ N5 = 5–pin mini connector.
M9 = 12–pin M23 connector (use 9 wire).

❷ Not positive opening

440P Safety Limit Switches

30mm Metal Position Switches

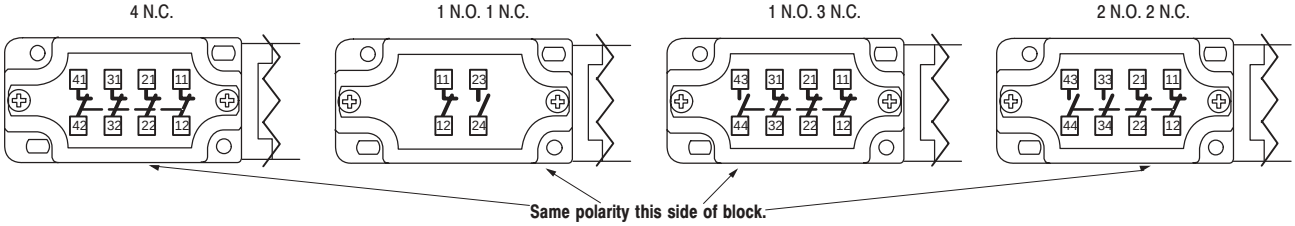
Product Selection (continued)

Operator Type	Contacts: Safety	Contacts: Aux.	Contact Type	Typical Force/ Torque to Operate	Contact Opening Characteristics (□ Open ■ Closed ❸ Positive Opening Point)	Catalogue Number 1/2in NPT Conduit	Catalogue Number M20 Conduit	Catalogue Number Quick Disconnect ❶
 Metal Spring Rod ❷	1 N.C.	1 N.O.	Snap Acting	0.20Nm		440P–MSRS11E	440P–MSRS11B	440P–MSRS11N5
	4 N.C.	—	—	0.20Nm		440P–MSRB04E	440P–MSRB04B	440P–MSRB04M9
	3 N.C.	1 N.O.	BBM	0.20Nm		440P–MSRB13E	440P–MSRB13B	440P–MSRB13M9
	2 N.C.	2 N.O.	BBM	0.20Nm		440P–MSRB22E	440P–MSRB22B	440P–MSRB22M9
 Telescope Arm ❷	1 N.C.	1 N.O.	Snap Acting	0.20Nm		440P–MTAS11E	440P–MTAS11B	440P–MTAS11N5
	4 N.C.	—	—	0.20Nm		440P–MTAB04E	440P–MTAB04B	440P–MTAB04M9
	3 N.C.	1 N.O.	BBM	0.20Nm		440P–MTAB13E	440P–MTAB13B	440P–MTAB13M9
	2 N.C.	2 N.O.	BBM	0.20Nm		440P–MTAB22E	440P–MTAB22B	440P–MTAB22M9
Recommended standard cordset, 2m, 5-pin mini connector. See page ___ for additional lengths.								889N–F5AE–6F
Recommended standard cordset, 2m, 12-pin 9 wire. See page ___ for additional lengths.								889M–F12X9AE–2

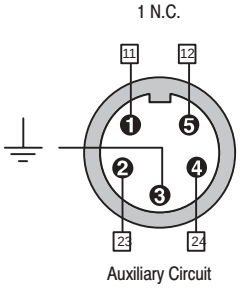
❶ N5 = 5–pin mini connector.
M9 = 12–pin M23 connector (use 9 wire).

❷ Not positive opening

Typical Wiring Diagram



N5 Connector 2 Circuit 5-Pin Mini Connector

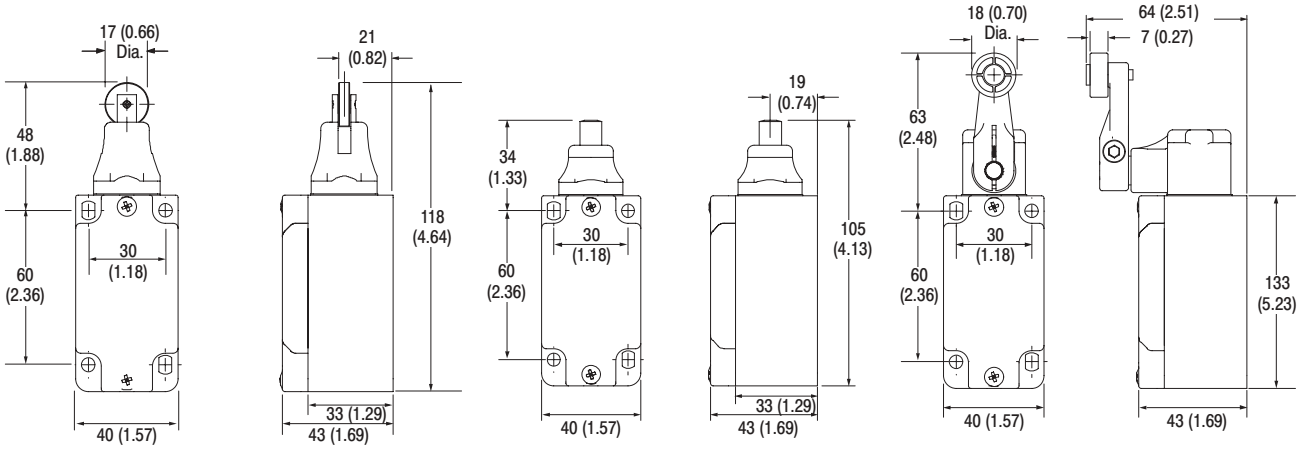


M9 12-Pin M23 Connector

Connector Pinout		4 N.C.		3 N.C. 1 N.O.		2 N.C. 2 N.O.	
		Terminal	Contact	Terminal	Contact	Terminal	Contact
	1	11	N.C.	11	N.C.	11	N.C.
	3	12		12		12	
	4	21	N.C.	21	N.C.	21	N.C.
	6	22		22		22	
	7	31	N.C.	31	N.C.	33	N.O.
	8	32		32		34	
	9	41	N.C.	43	N.O.	43	N.O.
	10	42		44		44	
	12	Ground					

Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.



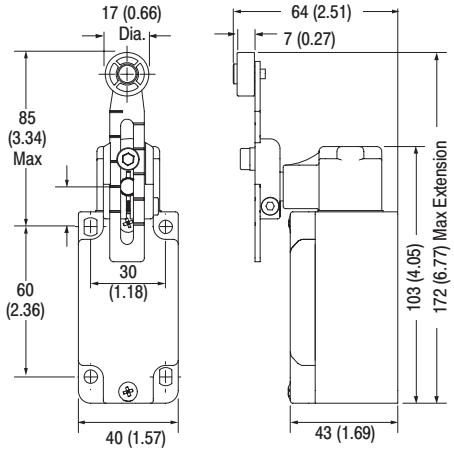
Roller Plunger *Dome Plunger* *Short Lever*

440P Safety Limit Switches

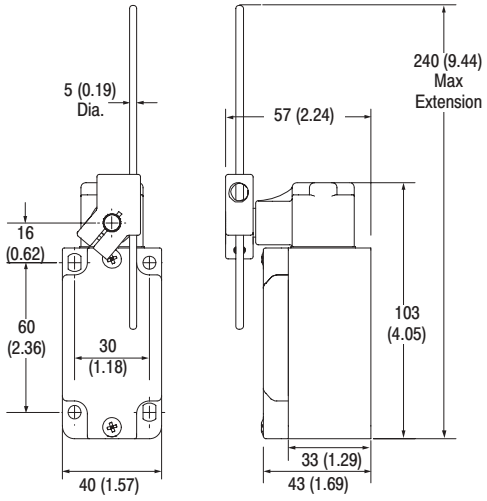
30mm Metal Position Switches

Approximate Dimensions—mm (inches)

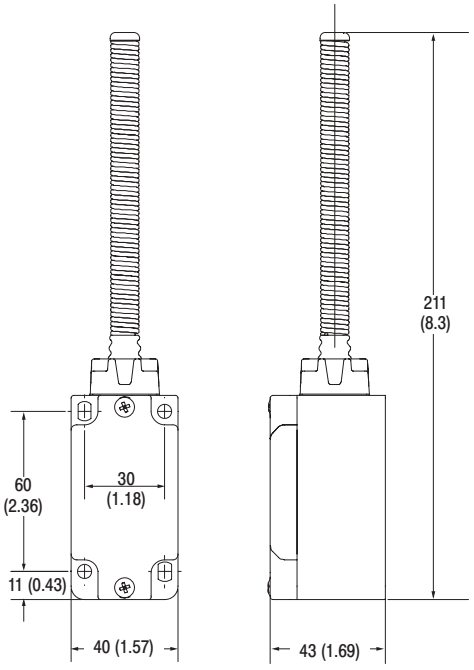
Dimensions are not intended to be used for installation purposes.



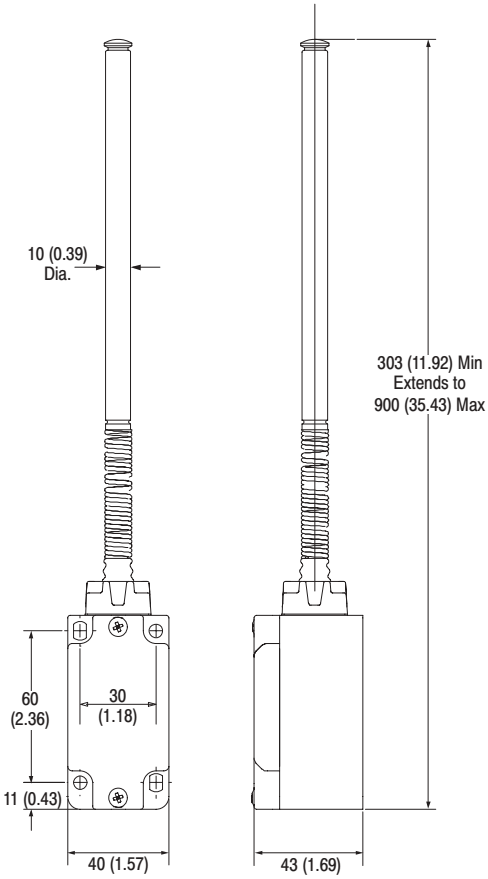
Adjustable Lever



Rod Lever



Spring Rod



Telescopic Arm

440P Safety Limit Switches

15mm Plastic Position Interlock Switches

Imp 1

Imp 2

Description

The Imp offers safety switch performance of bigger units in the most compact case available. Designed with two mounting hole options and a choice of actuator positions, the Imp will fit in the most confined spaces.

Features

- Positive operation, forced disconnection of contacts
- Contacts, 1 N.C. & 1 N.O.

Specifications

Standards	EN60947-5-1,EN292-1, EN60204-1, EN1088
Approvals	CE marked for all applicable directives and CSA NRTL/C
Safety Contacts	1 N.C. positive break
Utilization Category	AC 15
AC (Ue)	500V 250V 100V
(Ie)	1A 2A 5A
DC	250V 0.5A, 24V 2A
Max. Switched Current/ Voltage/Load	500V/500VA
Thermal Current (Ith)	10A
Minimum Current	5V 5mA DC
Safety Contact Gap	>2 x 2mm (0.079in)
Rtd. Insulation Voltage	(Ui) 500V
Rtd. Impulse Withstand Voltage	(Uimp) 2500V
Auxiliary Contacts	1 N.O.
Pollution Degree	3
Actuator Travel for Positive Opening	2.5mm (0.098in)
Break Contact Min. Force	10N (2.25lb)
Maximum Actuator Travel	5mm (0.197in)
Maximum Actuation Speed	160mm (6.29in) per sec
Maximum Actuation Frequency	2 Cycle per sec
Case Material	UL approved glass filled polyester
Actuator Material	Acetal
Protection	IP30
Conduit Entry	3x breakouts
Operating Temperature	-25°C to +80°C (-13°F to +176°F)
Mounting	2 x M3 front or 2 x M4 top
Mechanical Life	10,000,000 operations
Electrical Life	1,000,000 operations
Color	Red

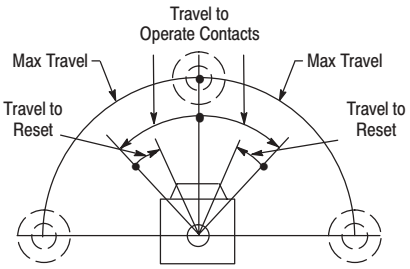
Position Interlock Switch

Selection Guide . . . . . page 5–124
Dimensions . . . . . page 5–124
Wiring Diagram . . . . . page 5–124
Operating Levers . . . . . page 5–83

440P Safety Limit Switches

15mm Plastic Position Interlock Switches

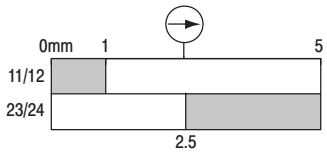
Range of Operation



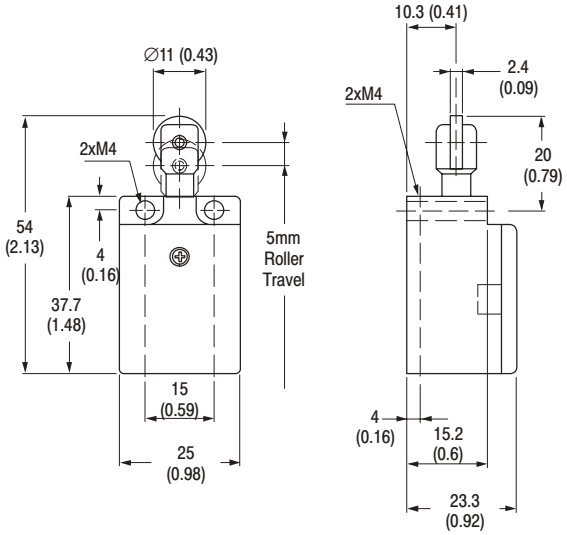
Imp 1

Imp 2

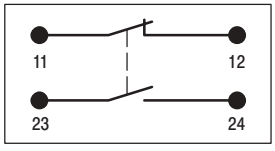
Selection Guide

Contact Action ☐ Contact Open ▒ Contact Closed	Conduit	Contact		Type	Operator Type		Catalog Number
	3x breakouts	Slow break before make	1 N.O. & 1 N.C.	Imp 1 (roller parallel to switch front)	Top Push Roller		**440P–M18001**
				Imp 2 (roller perpendicular to switch front)	Top Push Cross Roller		**440P–M18002**

Dimensions—mm (inches)



Wiring Diagram



1 N.O. & 1 N.C.