

802T

Introduction



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, 13 and 6P ① 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.

① Plug-in lever type low-torque models.

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 R5-63).

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 R5-39.

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 R5-47.

General Information

Plug-In Style page R5-39
NonPlug-In Style page R5-47

Operating Levers

Lever Selection page R5-83



Specifications

Enclosure Rating	NEMA 4, 13 and 6P ^①
Approvals	UL listed, CSA certified, and CE marked for applicable directives
Ambient Temperature^②	-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
B600 ^③	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

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, 13 and 6P^① 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

Plug-In Style

Lever Type • Spring Return page R5-40
Standard and Low Operating Torque Models

Lever Type • Maintained . . . page R5-42
Contact and Neutral Position

Push Type • Spring Return page R5-43
Wobble Stick and Cat page R5-45
Whisker • Spring Return

Modifications and page R5-46
Accessories

802T Operating Levers

Lever Selection page R5-83

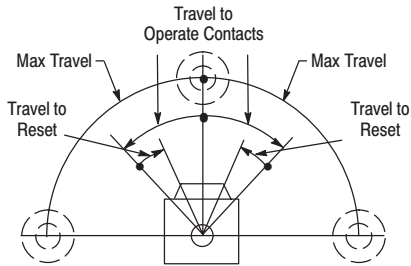
^① Plug-In lever type except low-torque models.

^② Temperature range below 0°C (+32°F) is based on the absence of freezing moisture or water. See Page R5-46 for Low Temperature Options.

^③ Low Operating Torque-Spring Return ratings only.

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 ①	802T-AP1 802T-A5P1 ①	
			0.56N.m (5lb in)	5° Nominal		2.5°	802T-FP	802T-FP1	
		Clockwise		0.29N.m (2.6lb in)		13° 18°	7°	802T-A1P 802T-A3P ①	802T-A1P1 802T-A3P1 ①
				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 ①	802T-A2P1 802T-A4P1 ①
				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 ②	802T-ALP1 ②	
						7°	802T-AL1P ②	802T-AL1P1 ②	
						7°	802T-AL2P ②	802T-AL2P1 ②	
		Clockwise		0.106N.m (0.94lb in)		13°	7°	802T-ALP ②	802T-ALP1 ②
							7°	802T-AL1P ②	802T-AL1P1 ②
							7°	802T-AL2P ②	802T-AL2P1 ②
Counterclockwise		0.106N.m (0.94lb in)	13°	7°	802T-ALP ②	802T-ALP1 ②			
				7°	802T-AL1P ②	802T-AL1P1 ②			
				7°	802T-AL2P ②	802T-AL2P1 ②			
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

① Fluorinated elastomer shaft seal is supplied with these devices.

② 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.

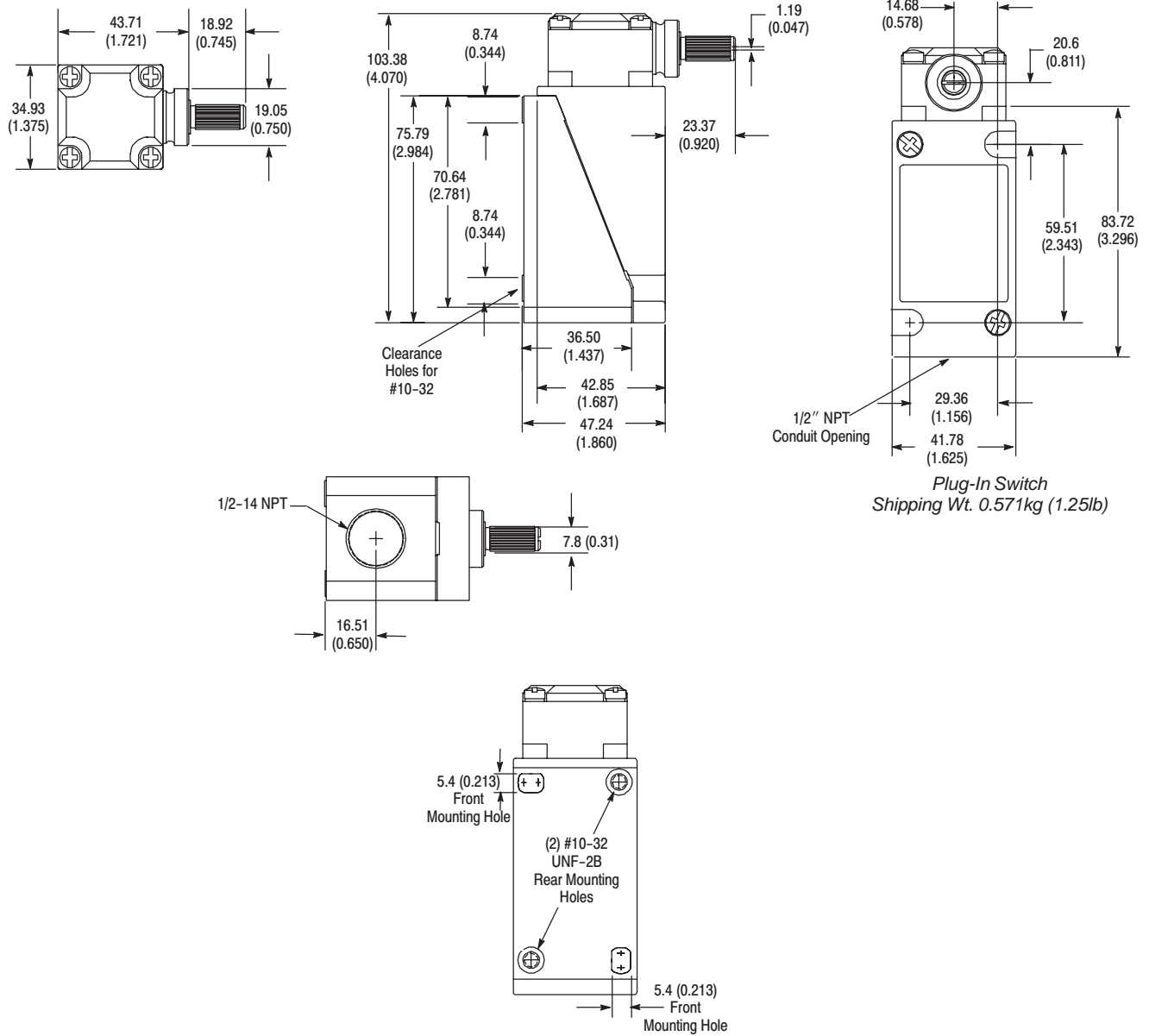
Dimensions—See page R5-41.

Levers—See page R5-83 for a complete listing of operating levers.

Modifications and Accessories—See page R5-46.

Limit Switches
802T Lever Type • Spring Return
 Plug-In Style Oiltight Switches

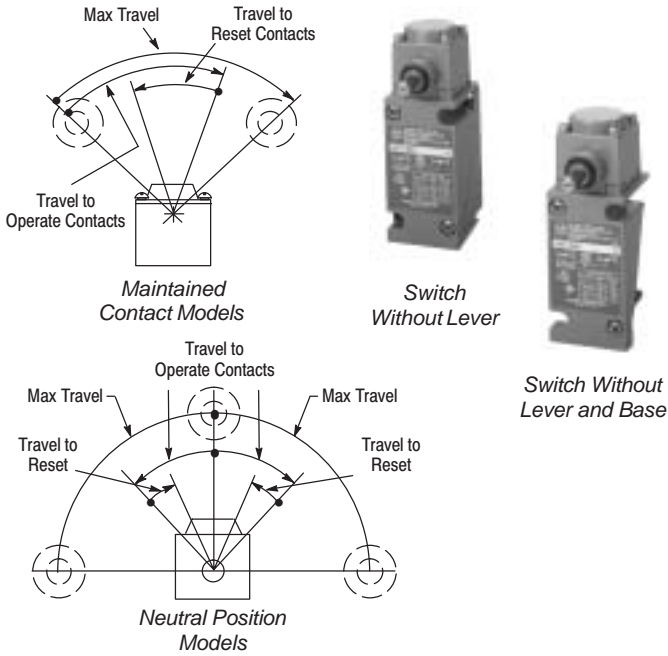
Dimensions—mm (inches)



Levers—See page R5–83 for a complete listing of operating levers.
Modifications and Accessories—See page R5–46.

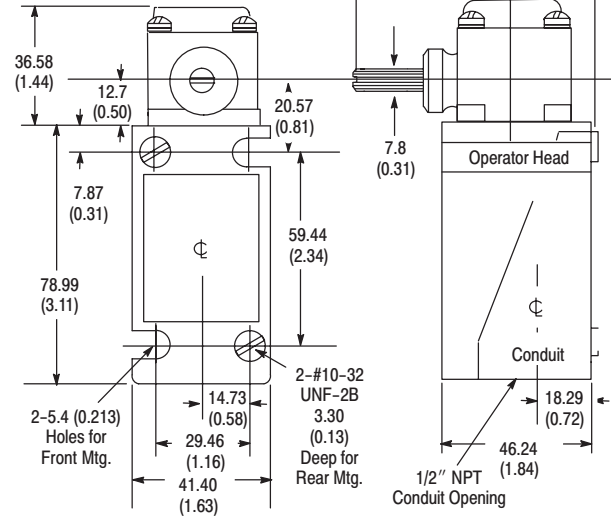
802T Lever Type • Maintained Contact and Neutral Position Plug-In Style Oiltight Switches

Range of Operation



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)				802T-AMP	802T-AMP1
4	Clockwise or Counterclockwise 	0.32N.m (2.8lb in)	70° ①	88° ①	32°	802T-AMTP	802T-AMTP1

① 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.

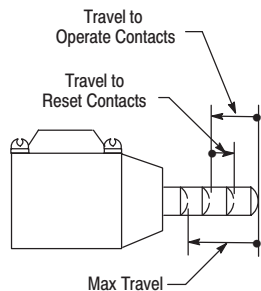
Levers—See page R5-83 for a complete listing of operating levers.

Modifications and Accessories—See page R5-46.

802T Push Type • Spring Return

Plug-In Style Oiltight Switches

Range of Operation



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	<table border="0"> <tr><td>1 ○</td><td>○ 2</td></tr> <tr><td>3 ○</td><td>○ 4</td></tr> </table>	1 ○	○ 2	3 ○	○ 4	<table border="0"> <tr><td>1 ○</td><td>○ 2</td></tr> <tr><td>3 ○</td><td>○ 4</td></tr> </table>	1 ○	○ 2	3 ○	○ 4	Top Push Rod	13.8N (3.1lb)	1.4mm (0.057in)	6.0mm (0.236in)	0.7mm (0.028in)	802T-BP	802T-BP1								
		1 ○	○ 2																						
		3 ○	○ 4																						
		1 ○	○ 2																						
		3 ○	○ 4																						
		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	<table border="0"> <tr><td>1 ○</td><td>○ 2</td></tr> <tr><td>3 ○</td><td>○ 4</td></tr> <tr><td>5 ○</td><td>○ 6</td></tr> <tr><td>7 ○</td><td>○ 8</td></tr> </table>	1 ○	○ 2	3 ○	○ 4	5 ○	○ 6	7 ○	○ 8	<table border="0"> <tr><td>1 ○</td><td>○ 2</td></tr> <tr><td>3 ○</td><td>○ 4</td></tr> <tr><td>5 ○</td><td>○ 6</td></tr> <tr><td>7 ○</td><td>○ 8</td></tr> </table>	1 ○	○ 2	3 ○	○ 4	5 ○	○ 6	7 ○	○ 8	Top Push Rod	22.2N (5.0lb)	1.4mm (0.057in)	6.0mm (0.236in)	0.7mm (0.028in)	802T-BTP	802T-BTP1
		1 ○	○ 2																						
		3 ○	○ 4																						
		5 ○	○ 6																						
		7 ○	○ 8																						
		1 ○	○ 2																						
3 ○	○ 4																								
5 ○	○ 6																								
7 ○	○ 8																								
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.

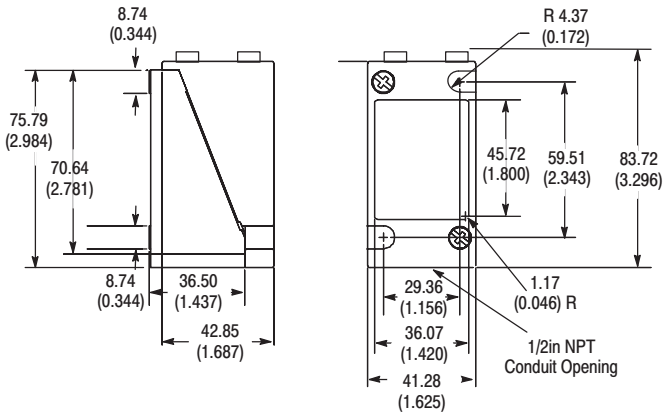
Note: For replacement parts, see publication 0802-6.0.

Modifications and Accessories—See page R5-46.

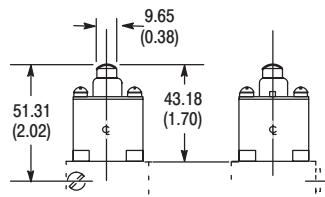
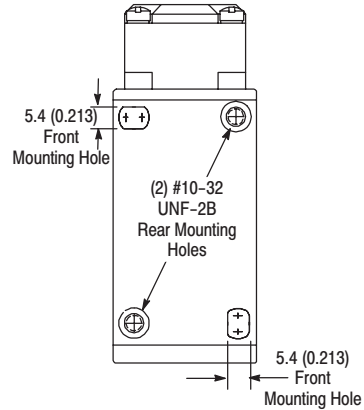
Limit Switches

802T Push Type • Spring Return
Plug-In Style Oiltight Switches

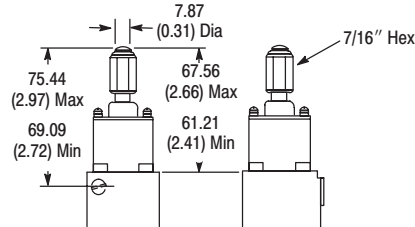
Dimensions—mm (inches)



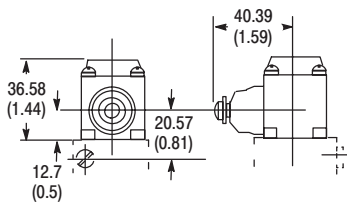
Switch Body



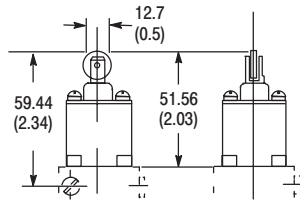
40146-013-59
 Top Push Rod Head
 Shipping Wt. 0.142kg (5oz)



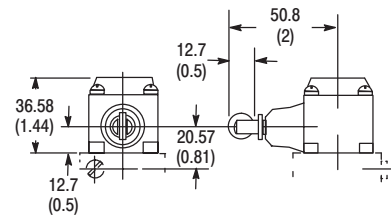
40146-013-65
 Adjustable Top Push Rod Head
 Shipping Wt. 0.142kg (5oz)



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



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

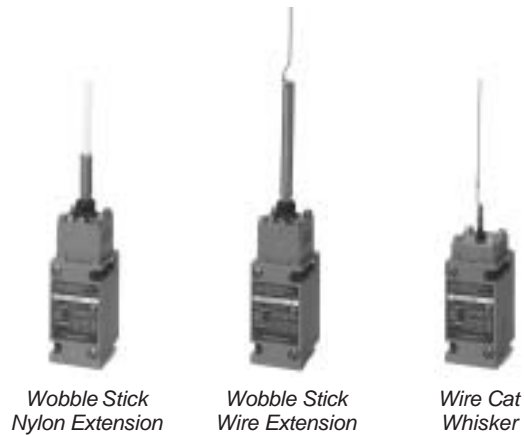
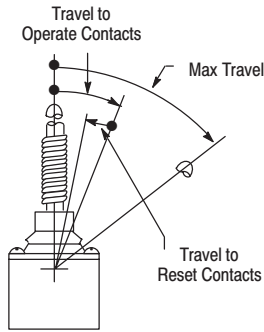


40146-017-64
 Side Push Roller Head
 Shipping Wt. 0.142kg (5oz)

Modifications and Accessories—See page R5-46.

802T Wobble Stick and Cat Whisker • Spring Return Plug-In Style Oiltight Switches

Range of Operation

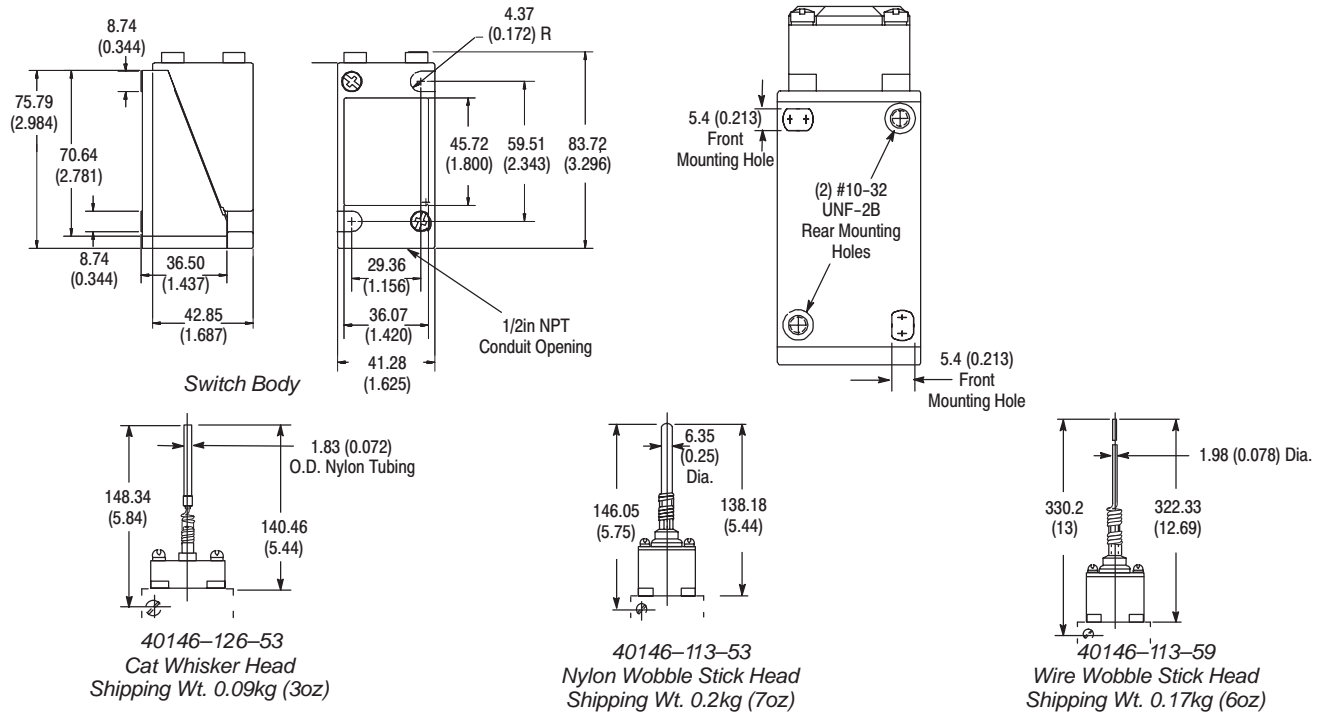


Selection Guide

Operator Type	Contact Operation	Torque to Operate (Max) Ⓣ	Travel to Operate Contacts (Max) Ⓣ	Max Travel Ⓣ	Travel to Reset Contacts (Max) Ⓣ	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

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

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 replacement parts, see publication 0802-6.0.

Modifications and Accessories—See page R5-46.

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.

Fluorinated Elastomer Seals

To order limit switches with all fluorinated elastomer 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 fluorinated elastomer 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 $+110^{\circ}\text{C}$ (0°F to $+230^{\circ}\text{F}$), -18°C to $+54^{\circ}\text{C}$ (0°F to $+130^{\circ}\text{F}$) for wobble stick and cat whisker). Special limit switches modified for low temperature operation at -40°C to $+110^{\circ}\text{C}$ (-40°F to $+230^{\circ}\text{F}$) are available. Temperature ranges below 0°C ($+32^{\circ}\text{F}$) 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

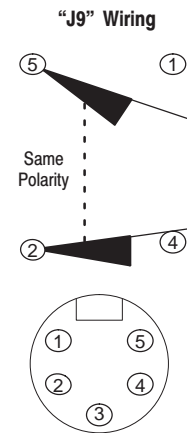
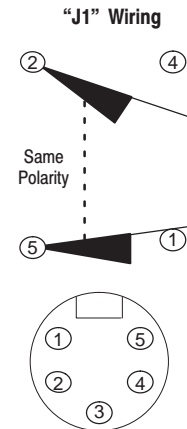
To order factory installed Pre-Wired type "STOOW-A" cable for 2-circuit (5-conductor) and 4-circuit (9-conductor) switches, add the suffix "Y" plus the number of feet required. **Example:** To order an **802T-AP** with 5ft (2.4m) of cable the catalog number would become **802T-APY5**.

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



9-Pin Mini-Type Receptacle

