

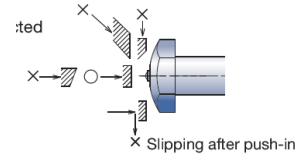
# Precision Limit Switches

## Stopper Bolt Precision Limit Switches

Stopper bolt precision limit switches incorporate a mechanical stop along with the limit switch function, eliminating the need for a separate mechanical stop in many situations.

- 2 tasks with one device
- Housing a high-accuracy built-in switch in a stopper bolt
- Provides higher contact force ideal for indexing/positioning
- 10 micron ( $\mu\text{m}$ ) repeat accuracy
- No movement differential
- No temperature drift
- Stainless steel

### Stopper Bolt



○ indicates correct target approach and orientation.  
 × indicates approach and orientation that should be avoided.

Stopper Bolt Precision Limit Switches Selection Chart									
Part Number	Price	Actuator/Head Type*	Barrel Type	Barrel Diameter/Thread	Stroke	Switching Output	Contact Force	Sensor Dimension	Connection Type
<b>Stopper Bolt</b>									
<b>STP100UA-L</b>	\$63.00	Ø 5.5mm plunger with upward cover	Threaded	M10×1.5	0.7mm	N.O.	4N	Figure 1	2m (6.56 ft) cable
<b>STP100DA-L</b>	\$63.00	Ø 5.5mm plunger with downward cover	Threaded	M10×1.5	0.7mm	N.O.	4N	Figure 2	2m (6.56 ft) cable
<b>STS060PA-L</b>	\$39.00	Ø 1.5mm plunger	Threaded	M6×1.0	0.7mm	N.O.	2N	Figure 3	2m (6.56 ft) cable
<b>STS080PA-L</b>	\$51.00	Ø 1.5mm plunger	Threaded	M8×1.25	0.7mm	N.O.	2N	Figure 4	2m (6.56 ft) cable
<b>STS100PA-L</b>	\$54.00	Ø 1.5mm plunger	Threaded	M10×1.5	0.7mm	N.O.	2N	Figure 5	2m (6.56 ft) cable
<b>STE060PA-L</b>	\$42.00	Ø 1.5mm plunger	Threaded	M6×1.0	0.7mm	N.O.	2N	Figure 6	2m (6.56 ft) cable
<b>STE080PA-L</b>	\$56.00	Ø 1.5mm plunger	Threaded	M8×1.25	0.7mm	N.O.	2N	Figure 7	2m (6.56 ft) cable
<b>STE100PA-L</b>	\$56.00	Ø 1.5mm plunger	Threaded	M10×1.5	0.7mm	N.O.	2N	Figure 8	2m (6.56 ft) cable

\* Ø = diameter

STP Series (Stopper With Protective Cover)

STS Series (Straight Stopper Bolt)

STE Series (Hexagonal Stopper Bolt)



STP100UA-L



STS060PA-L



STE060PA-L



STP100DA-L



STS080PA-L



STE080PA-L



STS100PA-L



STE100PA-L

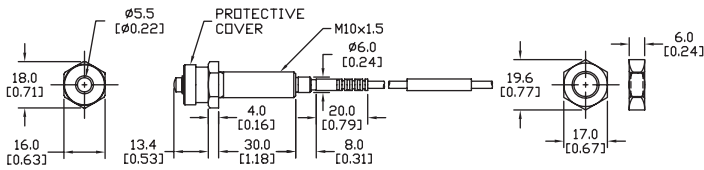
# Precision Limit Switches Dimensions

## Stopper Bolt: STP / STS / STE Series

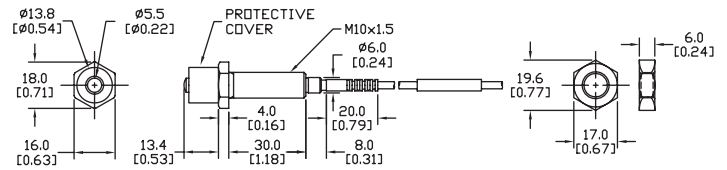
### Dimensions

mm [inches]

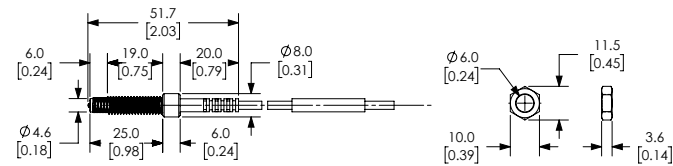
**Figure 1**  
**STP100UA-L**



**Figure 2**  
**STP100DA-L**

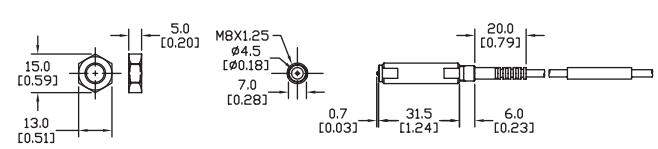


**Figure 3**  
**STS060PA-L**

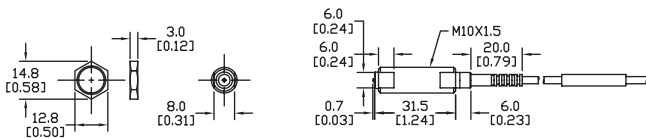


MATERIAL: SUS304

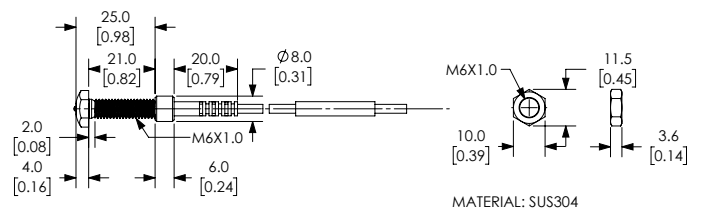
**Figure 4**  
**STS080PA-L**



**Figure 5**  
**STS100PA-L**

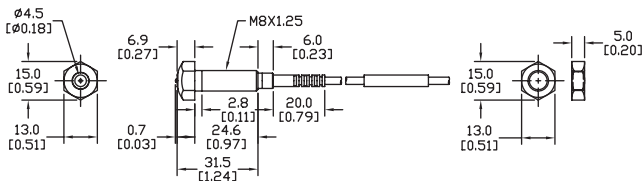


**Figure 6**  
**STE060PA-L**

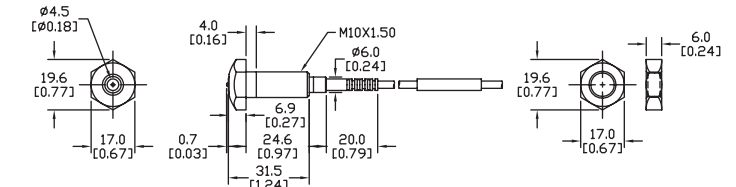


MATERIAL: SUS304

**Figure 7**  
**STE080PA-L**



**Figure 8**  
**STE100PA-L**



See our website, [www.AutomationDirect.com](http://www.AutomationDirect.com), for complete Engineering drawings.

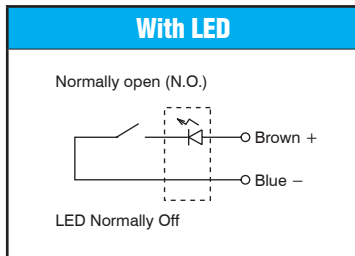
# Precision Limit Switches

Stopper Bolt Precision Limit Switches Specifications			
	STP	STS	STE
<b>Environmental</b>			
Degree of Protection	IP67**	IP65**	
Temperature Range	Operating: 0–80°C (32–392°F) (Ice-free)		
<b>Mechanical Ratings</b>			
Enclosure Material	Stainless steel		
Torque (for nuts on threaded barrels, set screws on smooth barrels)	See Torque Limit Figure		
Oscillation	10–55Hz total amplitude 1.5 for X, Y, Z each direction		
Impact	300 m/s <sup>2</sup> for X, Y, Z each direction		
Repeat Accuracy	Both On-Off, Off-On/ 0.01 (range) (At operating speed 50-200mm/min) *2		
Recommended Minimum Operating Speed	10 mm (0.394 in)/minute		
Withstand Load	5000N		
<b>Electrical Ratings</b>			
Contact Life	10 million (No bungle caused by vibration and use under contact rating)		
Impact resistance	0.4J		
Contact Voltage	5–24VDC		
Steady Current Rating	10mA or less		
Max In-rush Current Rating	20mA		
Connection Type	Standard length 2m (6.56 ft) oil resistant 2.8 / 2 cores, 26AWG Tensile strength 30N, minimum bending R7		
Indicating	-L: LED indicator (mounted in cable 120mm from the switch)		

\* At operating speed 50-200 mm/minute. Operating speed slower than 10 mm/min is not recommended.

\*\* At normal temperature (0–80°C [32–176°F]).

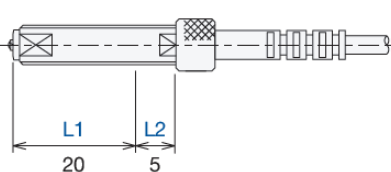
## Circuit Diagram



## Torque Limits

Applicable models	Tightening torque
STS060PA	L1: 4 N•m (2.95 lb•ft)
STE060PA	L2: 2.5 N•m (1.84 lb•ft)
STS080PA	10 N•m (7.38 lb•ft)
STE080PA	10 N•m (7.38 lb•ft)
STS100PA	25 N•m (18.44 lb•ft)
STE100PA	25 N•m (18.44 lb•ft)
STP100UA	25 N•m (18.44 lb•ft)
STP100DA	25 N•m (18.44 lb•ft)

STS060PA



STE060PA

