

# Precision Limit Switches

## Mini Stopper Precision Limit Switches

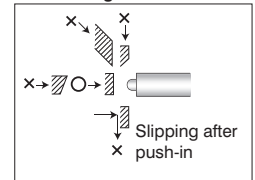
### Overview

Precision stopper limit switches incorporate a mechanical stop and a limit switch function in a single switch, eliminating the need for a separate stop.

### Features

- Mini Stopper switch
- Provides higher contact force ideal for indexing/positioning
- 10 micron ( $\mu\text{m}$ ) repeat accuracy
- No movement differential
- No temperature drift

#### Straight Touch

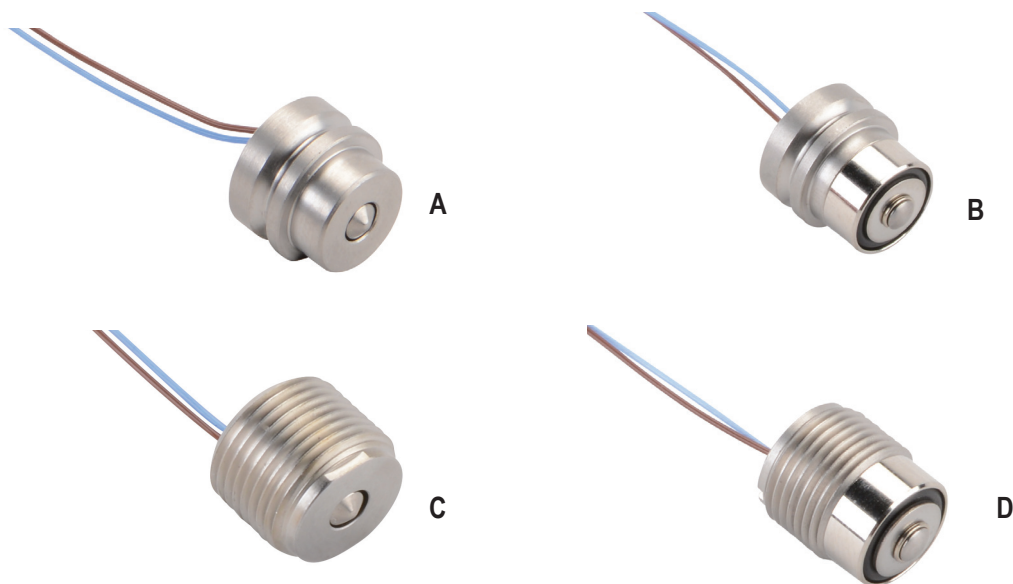


O indicates correct target approach and orientation. X indicates approach and orientation that should be avoided.

**Mini Stopper Precision Limit Switches Selection Chart**

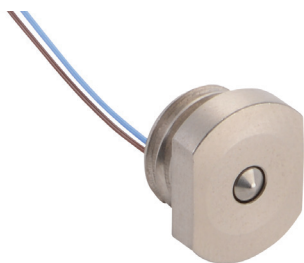
Part Number	Price	Drawing Link	Actuator/Head Type*	Barrel Type	Barrel Diameter/Thread	Stroke	Switching Output	Contact Force	Connection Type	Photo
<a href="#">STM13A</a>	\$47.50	<a href="#">PDF</a>	Ø 3mm plunger	smooth	Ø10	0.5 mm	N.O.	0.8 N	Core wire, 0.5 m length	A
<a href="#">STM63A</a>	\$62.00	<a href="#">PDF</a>	Ø 3mm plunger with boot	smooth	Ø11	0.3 mm		1N		B
<a href="#">STM31A</a>	\$49.00	<a href="#">PDF</a>	Ø 3mm plunger	threaded	M10×0.75	0.5 mm		0.8 N		C
<a href="#">STM81A</a>	\$66.00	<a href="#">PDF</a>	Ø 3mm plunger with boot	threaded	M10×0.75	0.3 mm		1N		D
<a href="#">STM33A</a>	\$52.00	<a href="#">PDF</a>	Ø 3mm plunger	threaded	M10×1.5	0.5 mm		0.8 N		E
<a href="#">STM83A</a>	\$62.00	<a href="#">PDF</a>	Ø 3mm plunger with boot	threaded	M10×1.5	0.3 mm		1N		F
<a href="#">STM14A-L</a>	\$66.00	<a href="#">PDF</a>	Ø 3mm plunger	smooth	Ø10	0.5 mm		0.8 N	Cable, 2m length	G
<a href="#">STM64A-L</a>	\$78.00	<a href="#">PDF</a>	Ø 3mm plunger with boot	smooth	Ø11	0.3 mm		1N		H
<a href="#">STM32A-L</a>	\$72.00	<a href="#">PDF</a>	Ø 3mm plunger	threaded	M10×0.75	0.5 mm		0.8 N		I
<a href="#">STM82A-L</a>	\$84.00	<a href="#">PDF</a>	Ø 3mm plunger with boot	threaded	M10×0.75	0.3 mm		1N		J
<a href="#">STM34A-L</a>	\$73.00	<a href="#">PDF</a>	Ø 3mm plunger	threaded	M10×1.5	0.5 mm		0.8 N		K
<a href="#">STM84A-L</a>	\$88.00	<a href="#">PDF</a>	Ø 3mm plunger with boot	threaded	M10×1.5	0.3 mm		1N		L

\* Ø = diameter, SR = surface radius

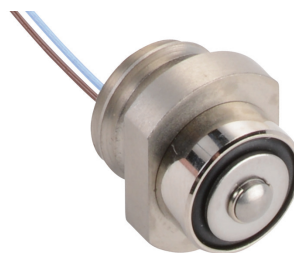


# Precision Limit Switches

## Mini Stopper: STM Series



E



F



G



H



I



J



K



L

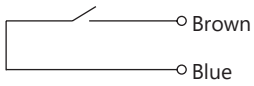
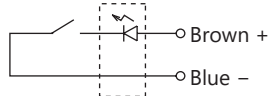
# Precision Limit Switches Specifications

Mini Stopper Precision Limit Switches Specifications	
<b>Series</b>	<b>STM</b>
<b>Environmental</b>	
<b>Degree of Protection</b>	IP44 (STM13A, STM31A, STM33A, STM14A-L, STM32A-L, STM34A-L) IP67 (STM63A, STM81A, STM83A, STM64A-L, STM82A-L, STM84A-L)
<b>Temperature Range</b>	Operating: 0 to 80°C [32 to 176°F] (Ice-free)
<b>Mechanical Ratings</b>	
<b>Enclosure Material</b>	Stainless Steel
<b>Torque (for nuts on threaded barrels, set screws on smooth barrels)</b>	10Nm
<b>Oscillation</b>	10–55Hz total amplitude 1.5 for X, Y, Z each direction
<b>Impact</b>	300 m/s <sup>2</sup> for X, Y, Z each direction
<b>Withstand Load</b>	3000N
<b>Repeat Accuracy</b>	Both On→Off, Off→On/ 0.01 (range) (At operating speed 50-200mm/min) *2
<b>Recommended Minimum Operating Speed</b>	10 mm/minute
<b>Electrical Ratings</b>	
<b>Contact Life</b>	10 million (No bounce caused by vibration and use under contact rating)
<b>Impact Resistance</b>	0.2J
<b>Contact Voltage</b>	5–24VDC
<b>Steady Current Rating</b>	10mA or less
<b>Max In-rush Current Rating</b>	20mA
<b>Connection Type</b>	Standard length 2m or 0.5 m Oil resistant 2.8 / 2 cores, Tensile strength 30N, minimum bending R7
<b>Indicating</b>	-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 Diagrams

Without LED	With LED
<p>Normally open (N.O.)</p>  <p>○ Brown</p> <p>○ Blue</p>	<p>Normally open (N.O.)</p>  <p>○ Brown +</p> <p>○ Blue -</p> <p>LED Normally Off</p>