## 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 (µm) repeat accuracy
- No movement differential

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### Stopper Bolt Precision Limit Switches Selection Chart

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Price</th>
<th>Actuator/Head Type*</th>
<th>Barrel Type</th>
<th>Barrel Diameter/Thread</th>
<th>Stroke</th>
<th>Switching Output</th>
<th>Contact Force</th>
<th>Sensor Dimension</th>
<th>Connection Type</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>STP100UA-L</td>
<td>$59.00</td>
<td>Ø 5.5mm plunger with upward cover</td>
<td>M10×1.5</td>
<td>0.7mm</td>
<td>N.O.</td>
<td>4N</td>
<td>Figure 1</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STP100DA-L</td>
<td>$59.00</td>
<td>Ø 5.5mm plunger with downward cover</td>
<td>Threaded</td>
<td>M8×1.25</td>
<td>2N</td>
<td>2N</td>
<td>Figure 2</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STS080PA-L</td>
<td>$48.50</td>
<td>Ø 1.5mm plunger</td>
<td>M10×1.5</td>
<td></td>
<td></td>
<td></td>
<td>Figure 3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STS100PA-L</td>
<td>$50.00</td>
<td>Ø 1.5mm plunger</td>
<td>M8×1.25</td>
<td></td>
<td></td>
<td></td>
<td>Figure 4</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STE080PA-L</td>
<td>$52.00</td>
<td>Ø 1.5mm plunger</td>
<td>M8×1.25</td>
<td></td>
<td></td>
<td></td>
<td>Figure 5</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STE100PA-L</td>
<td>$52.00</td>
<td>Ø 1.5mm plunger</td>
<td>M10×1.5</td>
<td></td>
<td></td>
<td></td>
<td>Figure 6</td>
<td>F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Ø = diameter, SR = surface radius

For the latest prices, please check AutomationDirect.com.
Precision Limit Switches Dimensions
Stopper Bolt: STP / STS / STE Series

Dimensions
mm [inches]

Figure 1  
STP100UA-L

Figure 2  
STP100DA-L

Figure 3  
STS080PA-L

Figure 4  
STS100PA-L

Figure 5  
STE080PA-L

Figure 6  
STE100PA-L

See our website, www.AutomationDirect.com, for complete Engineering drawings.
# Precision Limit Switches

## Stopper Bolt Precision Limit Switches Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>STP</th>
<th>STS</th>
<th>STE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of Protection</td>
<td>IP67**</td>
<td>IP65**</td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td>Operating: 0–80°C (32–392°F) (Ice-free)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mechanical Ratings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure Material</td>
<td>Stainless Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torque (for nuts on threaded barrels, set screws on smooth barrels)</td>
<td>See Torque Limit Figure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oscillation</td>
<td>10–55Hz total amplitude 1.5 for X, Y, Z each direction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td>300 m/s² for X, Y, Z each direction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeat Accuracy</td>
<td>Both On Off, Off On/ 0.01 (range) (At operating speed 50-200mm/min) *2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended Minimum Operating Speed</td>
<td>10 mm/minute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withstand load</td>
<td>5000N</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Electrical Ratings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact Life</td>
<td>10 million (No bungle caused by vibration and use under contact rating)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact resistance</td>
<td>0.4J</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact Voltage</td>
<td>5–24VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steady Current Rating</td>
<td>10mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max In-rush Current Rating</td>
<td>20mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection Type</td>
<td>Standard length 2m Oil resistant 2.8 / 2 cores, Tensile strength 30N, minimum bending R7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicating</td>
<td>-L: LED indicator (mounted in cable 120mm from the switch)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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* 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]).

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### Circuit Diagrams

**With LED**

- Brown +
- Blue −

**LED Normally Off**

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### Torque Limits

<table>
<thead>
<tr>
<th>Applicable models</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>STS080PA</td>
<td>10N·m</td>
</tr>
<tr>
<td>STE080PA</td>
<td></td>
</tr>
<tr>
<td>STS100PA</td>
<td></td>
</tr>
<tr>
<td>STE100PA</td>
<td>25N·m</td>
</tr>
<tr>
<td>STP100UA</td>
<td></td>
</tr>
<tr>
<td>STP100DA</td>
<td></td>
</tr>
</tbody>
</table>

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