MOLD PROTECTIVE SWITCHES

Smartflow® Mold Protective Limit Switches are designed and built by engineers with expert mold-building experience. Thinswitch®, SmartLock® and Versaswitch™ are the benchmark switches in the injection molding industry. Molders rely on them to provide dependable position indication and protection for valuable injection molds.

Thinswitch for ejector plate return
- Standard Temperature
- High Temperature
- Liquid-Resistant
- Global (3mm, 4mm or 3/16" height) for use with European or US Standard Molds
SmartLock Slide Retainer and Limit Switch for slide retention and position verification
- Standard Temperature
- High Temperature
- Locking Plunger
Versaswitch for core pull applications
- Optional Mounting Bracket

SMARTFLOW Limit Switches are designed for use in very low power mold protection control circuits. They are not intended to switch heavy loads in power applications.

Form #183 (11.17)
**General Description**

Smartflow Thinswitch Limit Switch verifies ejector plate return in plastics injection molds. This small switch is thin enough to fit inside the ejector housing. It can also be used for core slides, or places where space is limited. Choose from the original design or the liquid-resistant housing for areas where water or oil spray is present.

The Thinswitch® Limit Switch has been tested for reliability over 10 million cycles without failure. Two switches can be used in series for larger molds.

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**Part Numbers**

Original Thinswitch
- T-222 ...........................................175°F (79.4°C) max.
- HT-291 ..............................................250°F (121°C) max.

Liquid-Resistant Thinswitch (IP 41)
- T-222-LR ........................................175°F (79.4°C) max.
- HT-291-LR .......................................250°F (121°C) max.

**Specifications**

**Electrical**
- 250VAC .............................................5 Amps Resistive
- 28VDC (sea level) ................................5 Amps Resistive

**Materials**
- Body ...........................................Glass-Filled Nylon
- Spring .............................................Stainless Steel
- Back Cover .......................................Polyester Film
- Wire Leads .......................................22ga stranded

**Rated Current vs. Steel Temperature**

<table>
<thead>
<tr>
<th></th>
<th>HT-291</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amps</td>
<td>°F</td>
</tr>
<tr>
<td>5.0</td>
<td>85</td>
</tr>
<tr>
<td>4.0</td>
<td>120</td>
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</tr>
<tr>
<td>2.0</td>
<td>175</td>
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</tbody>
</table>

Switching ..................................................SPDT

**Drill and Tap** #10-24 x 3/8" deep to accept #10 button head screws included with Thinswitch® limit switch

**Schematic Diagram**

**T-222 & HT-291 Dimensions**

**T-222-LR & HT-291-LR Dimensions (IP 41)**
General Description
Smartflow Smartlock Slide Retainer and Limit Switch provides a switch and slide detent in one unique package. The locking function prevents premature slide movement during molded part ejection while the SPDT switch is simultaneously actuated.

The Smartlock has been tested for reliability over 10 million cycles without failure. Two or more switches may be used for larger molds, or molds with multiple slides. Slide position verification and prevention of mold damage result when the Smartlock slide retainer and limit switch is installed in a mold. A capture screw holds the plunger in the slide to prevent loss when using the “-C” version of the switch.

Part Numbers
Switches with 11mm/.44” dia Standard Plunger
SL-222-S-S.............................175°F (79.4°C) max.
SL-291-S-S.............................250°F (121°C) max.

Switches with 14.2mm/.56” dia Captive Plunger
SL-222-S-C.............................175°F (79.4°C) max.
SL-291-S-C.............................250°F (121°C) max.

Specifications
Electrical .........................................250VAC / 28VDC
5 Amps Resistive
4 Amps Inductive

See chart below for temperature effects on maximum current rating

<table>
<thead>
<tr>
<th>Rated Currents vs. Steel Temperature</th>
<th>SL-222 Series</th>
<th>SL-291 Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amps</td>
<td>°F</td>
<td>°C</td>
</tr>
<tr>
<td>5.0</td>
<td>85</td>
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<tr>
<td>2.0</td>
<td>175</td>
<td>79.4</td>
</tr>
</tbody>
</table>

Break Away Force..............17 to 27 lbs. (adjustable)
Switching ..............................................SPDT

Materials
Switch Body .........................Glass-Reinforced Nylon
Locking Plate............................Hardened Steel
Locking Plunger.............................Hardened Steel
Wire Leads .........................................22ga stranded
3-conductor, shielded cable
6 ft. (1.8m) long ends stripped and tinned
General Description
Smartflow Versaswitch Limit Switch installs into an injection mold to indicate location of the core, preventing tool damage.

Versaswitch is easily installed into a 5/8"-24 female thread. The switch actuates when 3.5 lbs of force is applied to the plunger. Actuation height is adjusted by threading the switch to the correct position in the installation. The switch is held in place via a lockwasher and hex nut. SPDT snap action switch provides a simple, positive indication of the mold or core location.

Optional mounting bracket is available to aid installation. Threaded fastener holes facilitate mounting the switch in many positions. The bracket is made from corrosion-resistant anodized aluminum.

Part Numbers
V-222 ........................................... Versaswitch includes lockwasher and nut
VB-222 ..................................... Mounting Bracket red anodized aluminum

Switch Specifications
Electrical ........................................... 240VAC
5 Amps Resistive
3 Amps Inductive
Operating Temperature ......................... 180°F max. (82°C max.)
Switching .......................................... SPDT
Operating Force ......................... 3.5 lbs (1.605 kg)
Pre-travel to operating point ........... 0.06" (1.5mm)
Overtravel ........................................... 0.01" (.25mm)
Enclosure .................................. Watertight per IP68S

Switch Materials
Body .................................. Anodized Aluminum/Epoxy
Plunger .................................. Stainless Steel
Nut ........................................... Anodized Aluminum
Lockwasher ................................ Zinc-Plated Steel
Wire Leads .................................. 22ga stranded 3-conductor, shielded cable 6 ft. (1.8m) long ends stripped and tinned

Schematic Diagram

Linear = mm

V-222 Switch Dimensions

VB-222 Bracket Dimensions