T3009

Compact Tongue-Operated Safety Interlock Switch

- Compact size—Allows the T3009 switch to be used on smaller machines with space restrictions
- Three sets of contacts—Provides a variety of contact configurations
- NEMA 6 enclosure—Enables the T3009 to withstand water washdown cleaning
- Rotatable head—Gives 8 possible actuator entry points for versatile installation. A blanking plug is supplied for the unused entry.
- Small swing radius—Allows use on doors with a swing radius as small as 2.5 in. when using the flex actuator with stainless steel guide
- Long life—The T3009 with its stainless steel actuators and optional stainless steel guide is designed for one million actuations
- Safety switch conformity—the T3009, with its force-guided contacts and a tamper-resistant mechanism, conforms to the European safety standards indicated here

Conforms to EN1088, EN292, EN60947-5-1, EN60204-1, EN50047
UL and C-UL listed

For the Latest Information
On the Internet: www.sti.com or www.omron.ca

Go to the Engineering Guide
For in-depth information on safety standards and use.

For More Guarding Products
See Section N for safeguarding cutting and turning machines
Operation

90° actuator

The head rotates 360° in 90° increments to give 8 possible actuator entry points.

Flat actuator

8 possible actuator entry points

Head Position 1  Head Position 2  Head Position 3  Head Position 4

Top entry  Front entry  Safety entry  Bottom entry

Front entry  Front entry  Front entry  Front entry

Optional Kit
Optional kit consists of the flex actuator and the stainless steel guide.

Flex Actuator
10° flexibility in one direction.

Contact Arrangements

Actuator Withdrawal Distance from Full Insertion: type 2N/C + 1N/O 8BM
(Break before make contacts)

<table>
<thead>
<tr>
<th>Entry</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12</td>
<td>3.8</td>
</tr>
<tr>
<td>21/22</td>
<td>0.16</td>
</tr>
<tr>
<td>33/34</td>
<td>0</td>
</tr>
</tbody>
</table>

Contact Open  Contact Closed

Actuator Withdrawal Distance from Full Insertion: type 8N/C + 1N/O MBB
(Make before break contacts)

<table>
<thead>
<tr>
<th>Entry</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12</td>
<td>3.8</td>
</tr>
<tr>
<td>21/22</td>
<td>0.13</td>
</tr>
<tr>
<td>33/34</td>
<td>0</td>
</tr>
</tbody>
</table>

Contact Open  Contact Closed

Actuator Withdrawal Distance from Full Insertion: type 3N/C

<table>
<thead>
<tr>
<th>Entry</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12</td>
<td>3.8</td>
</tr>
<tr>
<td>21/22</td>
<td>0.15</td>
</tr>
<tr>
<td>33/34</td>
<td>0</td>
</tr>
</tbody>
</table>

Connector Configuration

6-pin micro AC dual keyway
(1/2-20 UN2A) male connector

Safety Circuit 1 (N/C)
Safety Circuit 2 (N/C)
Safety Circuit 3 (N/C) = 33/34

Minimum Operating Radius Front-Entry Using Flex Actuator With Stainless Steel Guide

MIN.R 2.36 (60)
MIN.R 7.87 (200)
MIN.R 5.91 (150)
MIN.R 2.36 (60)
### Applications

Typical applications are on sliding guard doors or swinging guard doors with a 6 in. minimum swing radius.

### Specifications

#### Electrical

<table>
<thead>
<tr>
<th>Specification</th>
<th>All Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Configurations:</td>
<td>2 N/C + 1 N/O, 3 N/C</td>
</tr>
<tr>
<td>Safety Contacts:</td>
<td>2 N/C or 3 N/C</td>
</tr>
<tr>
<td>Switching Ability</td>
<td></td>
</tr>
<tr>
<td>AC:</td>
<td>500 V–1 A, 250 V–2 A, 100 V–5 A</td>
</tr>
<tr>
<td>DC:</td>
<td>250 V–0.5 A, 24 V–2 A</td>
</tr>
<tr>
<td>Safety Contact Gap:</td>
<td>&gt; 2 mm (0.079 in.)</td>
</tr>
<tr>
<td>Auxiliary Contacts:</td>
<td>1 N/O</td>
</tr>
<tr>
<td>Max Switching Current/Volt/Amp:</td>
<td>500 V/500 VA</td>
</tr>
<tr>
<td>Minimum Current:</td>
<td>5 V 5 mA DC</td>
</tr>
<tr>
<td>Electrical Life:</td>
<td>1 x 10^6 minimum</td>
</tr>
</tbody>
</table>

#### Mechanical

<table>
<thead>
<tr>
<th>Specification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting:</td>
<td>Any position</td>
</tr>
<tr>
<td>Mounting Hardware:</td>
<td>2 x M4 screws</td>
</tr>
<tr>
<td>Actuator Travel for Positive Opening:</td>
<td>5 mm (0.197 in.)</td>
</tr>
<tr>
<td>Min Operating Radius:</td>
<td>150 mm (5.91 in.)</td>
</tr>
<tr>
<td>Break Contact Min Force:</td>
<td>15 N (3.4 lb.)</td>
</tr>
<tr>
<td>Max Actuation Speed:</td>
<td>160 mm/sec (6.30 in./sec)</td>
</tr>
<tr>
<td>Max Actuation Frequency:</td>
<td>2 cycles/sec</td>
</tr>
<tr>
<td>Case Material:</td>
<td>UL listed, glass-filled polyester</td>
</tr>
<tr>
<td>Actuator Material:</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Wiring Entry:</td>
<td>1 x M16 conduit with 0.5 in. NPT adapter</td>
</tr>
<tr>
<td>Weight:</td>
<td>80 g (2.8 oz.)</td>
</tr>
<tr>
<td>Color:</td>
<td>Red</td>
</tr>
<tr>
<td>Mechanical Life:</td>
<td>1 x 10^6 minimum</td>
</tr>
</tbody>
</table>

#### Environmental

<table>
<thead>
<tr>
<th>Specification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection:</td>
<td>IP67 (NEMA 6)</td>
</tr>
<tr>
<td>Operating Temperature:</td>
<td>-20 to 80°C (-4 to 176°F)</td>
</tr>
<tr>
<td>Cleaning:</td>
<td>Water washdown</td>
</tr>
</tbody>
</table>

#### Compliance

- Standards: EN1088, EN292, EN60947-5-1, EN60204-1, EN50047
- Approvals/Listings: CE marked for all applicable directives, UL and C-UL

Specifications are subject to change without notice.

Note: The safety contacts of the Omron STI switches are described as normally closed (N/C)—i.e., with the guard closed, actuator in place, and the machine able to be started.

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### Dimensions — mm/in.

#### FLEX ACTUATOR

- 8.5 x 0.335
- 12 x 0.47
- 15 x 0.59
- 55.5 x 2.185

#### STAINLESS STEEL GUIDE

- 3 x 0.12
- 0.8 x 0.03
- 25 x 0.98
- 4 x 0.76
- 2 x 0.08
- 13.5 x 0.63
- 1.7/1.9 x 0.066/0.074

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For More Guarding Products
See Section N for safeguarding cutting and turning machines.
- **Dimensions — mm/in. (continued)**

![Diagram of actuator dimensions]

- **Ordering**

<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>Wiring Entry</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>90° ACTUATOR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T3009-021SM</td>
<td>2 N/C + 1 N/O BBM</td>
<td>1 x M16 with NPT adapter</td>
<td>44513-1010</td>
</tr>
<tr>
<td>T3009-021SCC</td>
<td>2 N/C + 1 N/O BBM</td>
<td>Connector</td>
<td>44513-1012</td>
</tr>
<tr>
<td>T3009-021SMCC</td>
<td>2 N/C + 1 N/O MBB</td>
<td>1 x M16 with NPT adapter</td>
<td>44513-1020</td>
</tr>
<tr>
<td>T3009-021SMCC</td>
<td>2 N/C + 1 N/O MBB</td>
<td>Connector</td>
<td>44513-1022</td>
</tr>
<tr>
<td>T3009-030SM</td>
<td>3 N/C</td>
<td>1 x M16 with NPT adapter</td>
<td>44513-1030</td>
</tr>
<tr>
<td>T3009-030SCC</td>
<td>3 N/C</td>
<td>Connector</td>
<td>44513-1032</td>
</tr>
<tr>
<td><strong>FLAT ACTUATOR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T3009-021TM</td>
<td>2 N/C + 1 N/O BBM</td>
<td>1 x M16 with NPT adapter</td>
<td>44513-1110</td>
</tr>
<tr>
<td>T3009-021TCC</td>
<td>2 N/C + 1 N/O BBM</td>
<td>Connector</td>
<td>44513-1112</td>
</tr>
<tr>
<td>T3009-021TMCC</td>
<td>2 N/C + 1 N/O MBB</td>
<td>1 x M16 with NPT adapter</td>
<td>44513-1120</td>
</tr>
<tr>
<td>T3009-021TMCC</td>
<td>2 N/C + 1 N/O MBB</td>
<td>Connector</td>
<td>44513-1122</td>
</tr>
<tr>
<td>T3009-030TM</td>
<td>3 N/C</td>
<td>1 x M16 with NPT adapter</td>
<td>44513-1130</td>
</tr>
<tr>
<td>T3009-030TCC</td>
<td>3 N/C</td>
<td>Connector</td>
<td>44513-1132</td>
</tr>
<tr>
<td>Spare 90° Actuator</td>
<td></td>
<td></td>
<td>44513-0700</td>
</tr>
<tr>
<td>Spare Flat Actuator</td>
<td></td>
<td></td>
<td>44513-0710</td>
</tr>
<tr>
<td>Flex Actuator w/stainless steel guide</td>
<td></td>
<td></td>
<td>44513-0730</td>
</tr>
<tr>
<td>Spare M16 to 0.5 in. NPT Adapter</td>
<td></td>
<td></td>
<td>44512-0300</td>
</tr>
<tr>
<td>M16 Cord Grip</td>
<td></td>
<td></td>
<td>44512-0080</td>
</tr>
</tbody>
</table>

Conduit Lights (see pages G239 & G240)

Accessories and Cables with Mating Connectors (see page G238)

BBM = Break Before Make Contacts, MBB = Make Before Break Contacts