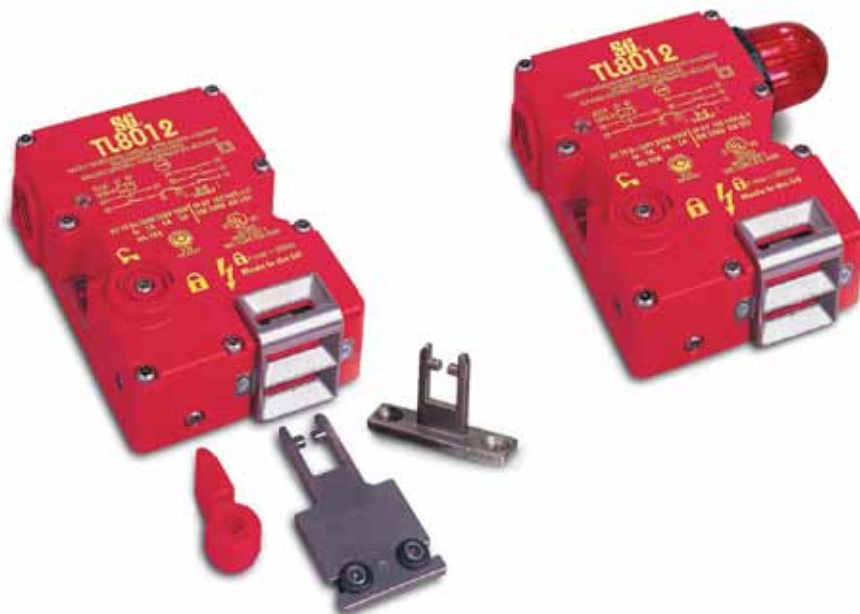




Conforms to EN1088, EN60947-5-1, EN292, EN60204-1  
UL and C-UL listed



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safety interlock switches

## TL8012-S

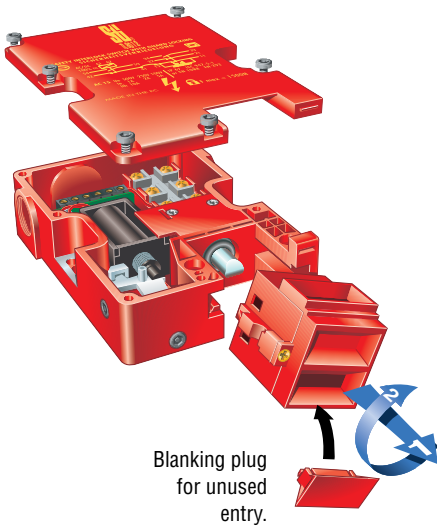
### Versatile Safety Interlock Switch with Guard Door Locking

- High locking force of 2000 N (450 lb.)—locks guard door shut until machine is safe to enter
- NEMA 6 enclosure enables the TL8012-S to withstand water washdown cleaning
- Door and lock monitoring—the TL8012-S has a total of 5 contacts: 2 N/C safety + 1 N/O for door position monitoring plus 1 N/C + 1 N/O for lock monitoring
- Lid-mounted status light is on when solenoid is energized, indicating that solenoid has unlocked the guard door
- Rotatable head—the rotatable head of the TL8012-S provides 4 actuator entry positions to satisfy most installation requirements
- Optional key release—this option on power-to-unlock models allows emergency manual unlocking of the guard door
- Long life—the TL8012, with its variety of stainless steel actuators and stainless steel guide, is designed for a minimum of one million actuations.

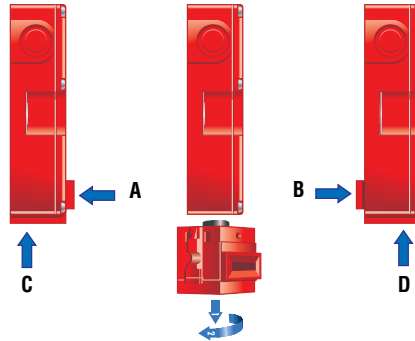
**A** **Go to the Engineering Guide**  
For in-depth information on safety standards and use.

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

■ Operation



Blanking plug for unused entry.

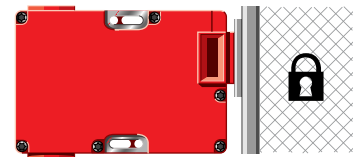
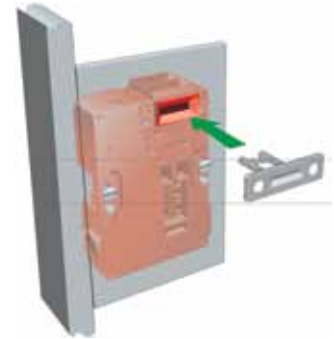


The head rotates 180° to give 4 possible actuator entry points.

A distance of 3.0 mm or less is required between face of switch and face of actuator for switch to lock.

**Actuator Alignment Guide**

Actuator alignment guide, easily replaced if damaged, provides an ideal letter box feature for mounting the switch behind a fixed panel.



Locking force = 450 lbs (2000 N) maximum

**Optional SLD Series**



Optional switch locking devices are available. See accessories section for details.



**Optional Key Release Version**

The TL8012-S is available with a key to provide emergency override of the switch locking mechanism by a qualified, responsible person.



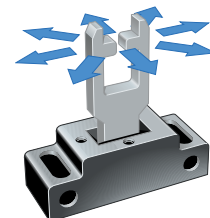
**Optional Flat Actuator**

Allows mounting to flat surfaces. Flexible rubber mounting bushings also allow for some actuator flexibility.



**Optional Flexible 1 Actuator**

15° flexibility in any direction. The actuator has 2 set screws for altering and locking adjustable angle.

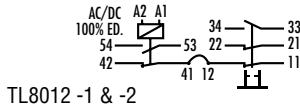


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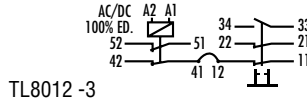
safety interlock switches

## ■ Operation (continued)

### Contact Arrangements

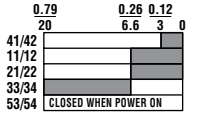


TL8012 -1 & -2



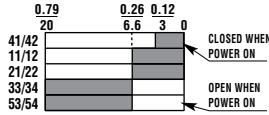
TL8012 -3

TL8012-1



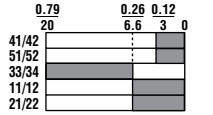
□ Contact Open ■ Contact Closed

TL8012-2



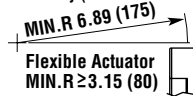
□ Contact Open ■ Contact Closed

TL8012-3

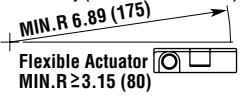


□ Contact Open ■ Contact Closed

Minimum Operating Radius  
Front-Entry (Std. & Flat Actuators)



Minimum Operating Radius  
End-Entry (Std. & Flat Actuators)

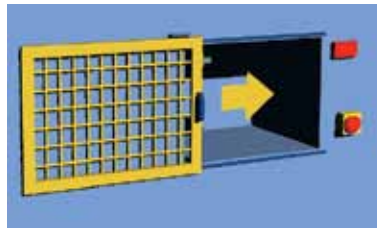


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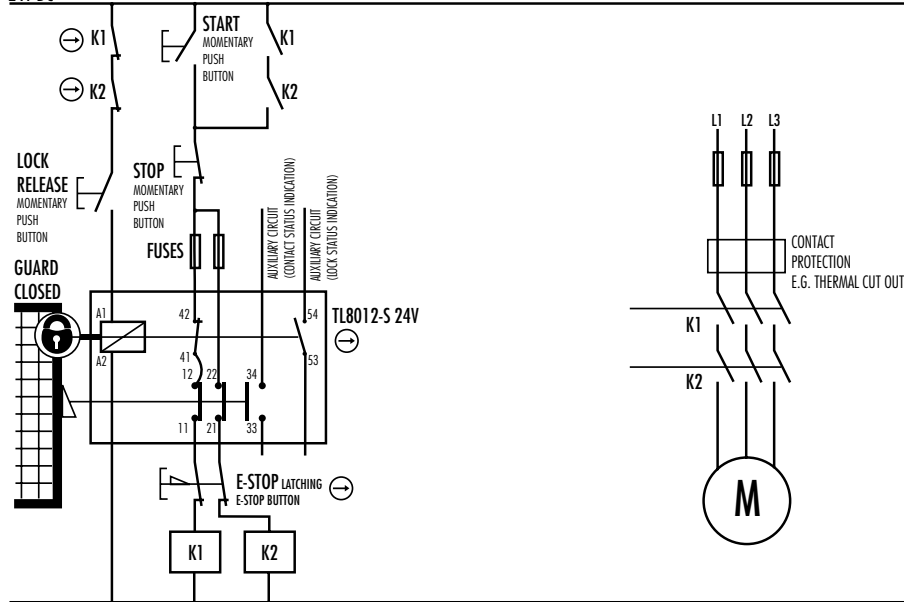
safety interlock switches

## ■ Applications

Typical applications are on sliding guard doors and swinging guard doors that must remain locked until a signal is applied to the internal solenoid that unlocks the guard door.



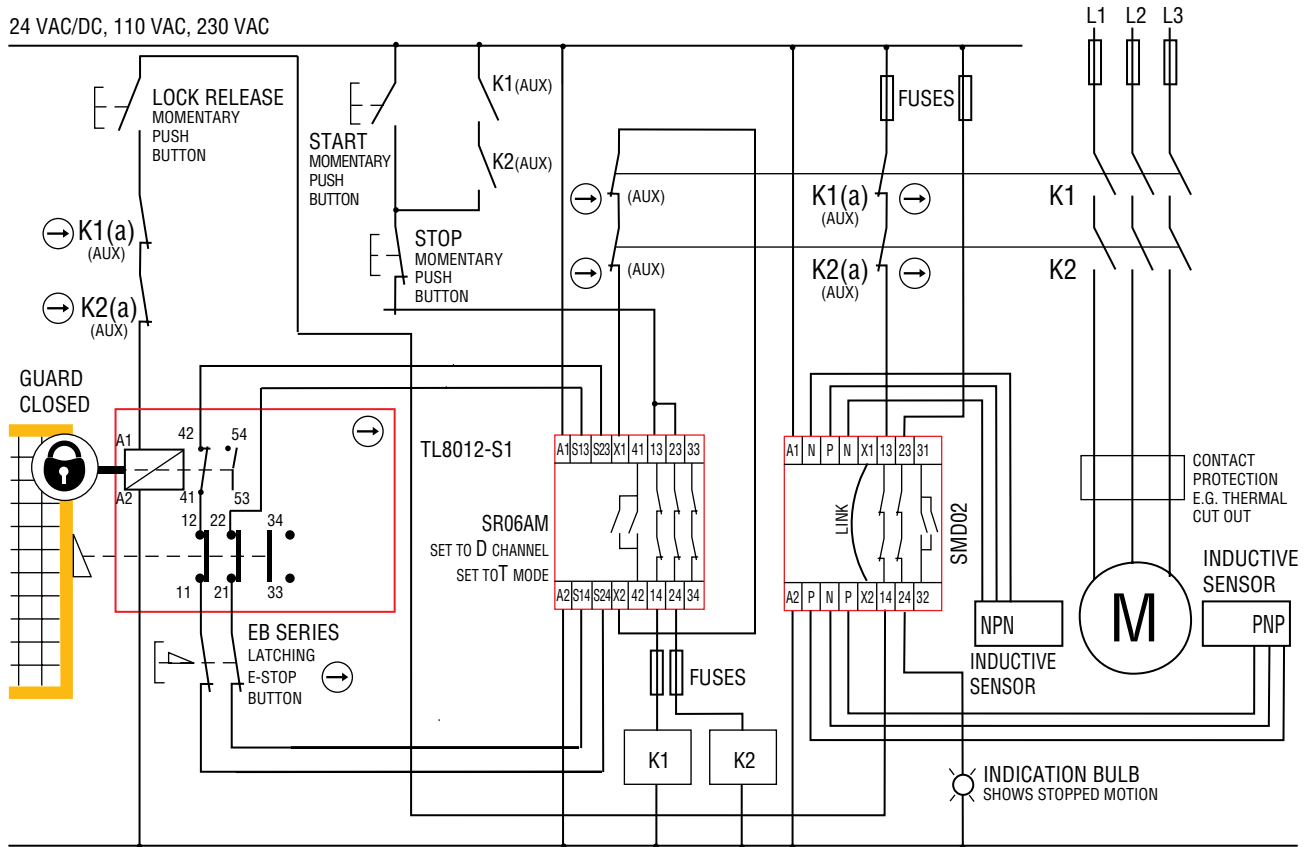
24V DC



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

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

■ Applications (continued)



For a full explanation of the circuit operating principle and fault detection, see "Common Circuit Examples" in the Engineering Section of this catalog.

■ Application Monitoring Units



**SR223SMT Timer Unit**

Used with the TL4024 for machines with constant overrun. Gives a timed delay to the lock/release signal. Failsafe and adjustable to a range of times from 1.0 seconds up to 31 seconds.

For information on the SR223SMT, see page H82



**SR125SMS Stop Motion Sensing Unit**

Used with the TL4024 for machines with inconstant or variable overrun. Senses back EMF of AC or DC motors. Failsafe and adjustable to a range of 0.01 V to 0.10 V.

For information on the SR125SMS, see page H42



**Safety Monitoring Relay Units**

Safety monitoring relays ensure a maximum level of safety by monitoring all wiring in the safety circuit, including switches and contactors. Any fault and the power to the machine is switched off. A variety of safety monitoring relay units are available.

For information on Safety Monitoring Relays, see page H1



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## ■ Specifications

Electrical	TL8012-S1 & -S2	All Models	TL8012-S3
<b>Contact Configurations:</b>	3 N/C + 2 N/O		4 N/C + 1 N/O
<b>Safety Contacts:</b>	3 N/C positive break		4 N/C positive break
<b>Switching Ability</b>			
<b>AC:</b>		500 V–1 A, 250 V–2 A, 100 V–5 A	
<b>DC:</b>		250 V–0.5 A, 24 V–2 A	
<b>Safety Contact Gap:</b>		> 2 mm (0.079 in.)	
<b>Auxiliary Contacts:</b>	2 N/O (1 solenoid monitoring)		1 N/O
<b>Max Switching Current/Volt/Amp:</b>		500 V/500 VA	
<b>Minimum Current:</b>		5 V 5 mA DC	
<b>Electrical Life:</b>		1 x 10 <sup>6</sup> minimum	
<b>Solenoid Supply Voltage:</b>		24 VDC or 24 VAC/DC or 110 VAC or 220 VAC	
<b>Solenoid Power:</b>		7 W, approx. 900 mA inrush	
<b>Solenoid Rating:</b>		100% duty	
<b>Mechanical</b>			
<b>Mounting:</b>		Any position	
<b>Mounting Hardware:</b>		4 x M5 screws	
<b>Actuator Travel for Positive Opening:</b>		7 mm (0.276 in.)	
<b>Min Operating Radius:</b>		Approximately 80 mm (3.25 in.) with flex actuator Approximately 175 mm (7 in.) with standard actuator	
<b>Max Holding Force:</b>		2000 N (450 lb.)	
<b>Max Actuation Speed:</b>		160 mm/sec (6.3 in./sec)	
<b>Max Activation Frequency:</b>		1 cycle/sec	
<b>Case Material:</b>		UL listed, glass-filled polyester	
<b>Actuator Material:</b>		Stainless steel	
<b>Wiring Entry:</b>		3 x M20 conduit with 0.5 in. NPT adapter	
<b>Weight:</b>		400 g (14 oz.)	
<b>Color:</b>		Red	
<b>Mechanical Life:</b>		1 x 10 <sup>6</sup> minimum	
<b>Environmental</b>			
<b>Protection:</b>		IP67 (NEMA 6)	
<b>Operating Temperature:</b>		-20 to 60°C (-4 to 176°F)	
<b>Cleaning:</b>		Water washdown	
<b>Compliance</b>			
<b>Standards:</b>		EN1088, EN60947-5-1, EN292, EN60204-1	
<b>Approvals/Listings:</b>		CE marked for all applicable directives, UL and C-UL	

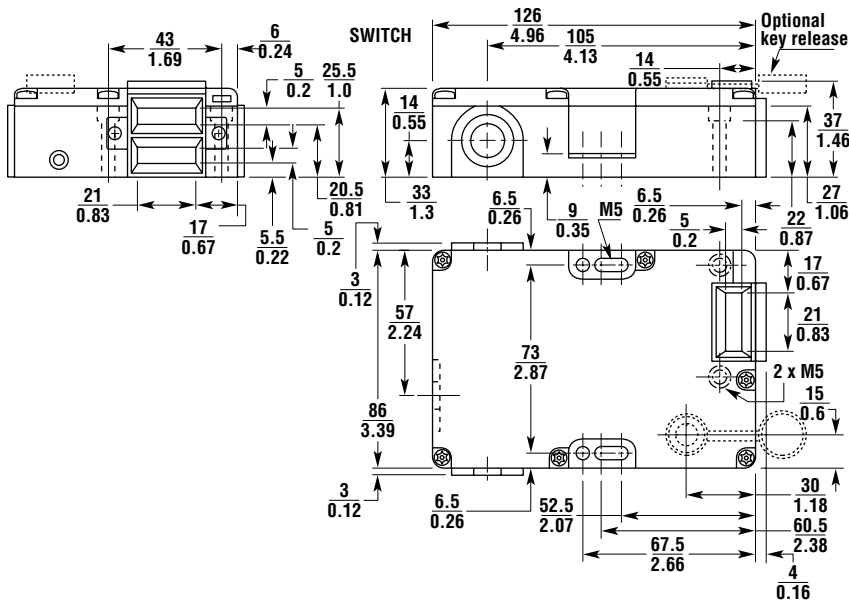
Specifications are subject to change without notice.

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.

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

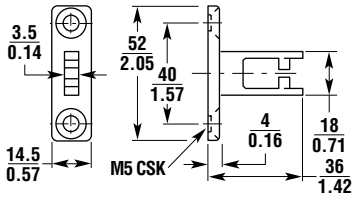
**N** **For More Guarding Products**  
See Section N for safeguarding cutting and turning machines

■ Dimensions — mm/in.

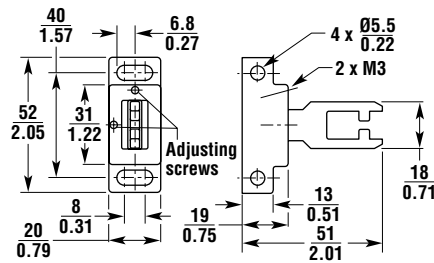


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safety interlock switches

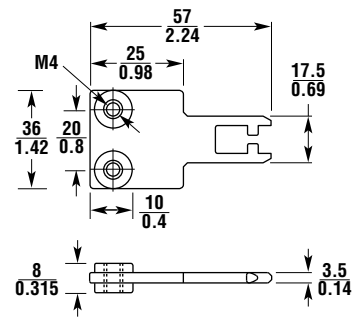
Standard Actuator



Flexible 1 Actuator



Flat Actuator



## ■ Ordering

Model	Solenoid	Contacts	Wiring Entry	Part No.
<b>POWER TO UNLOCK</b>				
TL8012-S1024SM (90-degree actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1080
TL8012-S1110SM (90-degree actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1020
TL8012-S1220SM (90-degree actuator)	220 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1030
TL8012-S1024FM (flex actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1100
TL8012-S1110FM (flex actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1110
TL8012-S1220FM (flex actuator)	220 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1120
TL8012-S1024TM (flat actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1130
TL8012-S1110TM (flat actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1140
TL8012-S1220TM (flat actuator)	220 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1150
<b>POWER TO UNLOCK WITH KEY</b>				
TL8012-S1024SKM w/ Key (90-degree actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1160
TL8012-S1110SKM w/ Key (90-degree actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1170
TL8012-S1220SKM w/ Key (90-degree actuator)	220 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1180
TL8012-S1024FKM w/ Key (flex actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1190
TL8012-S1110FKM w/ Key (flex actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1200
TL8012-S1220FKM w/ Key (flex actuator)	220 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1210
TL8012-S1024TKM w/ Key (flat actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1220
TL8012-S1110TKM w/ Key (flat actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1230
TL8012-S1220TKM w/ Key (flat actuator)	220 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1240

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safety interlock switches

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

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

## ■ Ordering (continued)

Model	Solenoid	Contacts	Wiring Entry	Part No.
<b>POWER TO LOCK</b>				
TL8012-S2024SM (90-degree actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1040
TL8012-S2110SM (90-degree actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1050
TL8012-S2220SM (90-degree actuator)	220 VAC*	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1060
TL8012-S2024FM (flex 1 actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1090
TL8012-S2110FM (flex 1 actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1250
TL8012-S2220FM (flex 1 actuator)	220 VAC*	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1070
TL8012-S2024TM (flat actuator)	24 VAC/DC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1260
TL8012-S2110TM (flat actuator)	110 VAC	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1270
TL8012-S2220TM (flat actuator)	220 VAC*	3 N/C + 2 N/O	3 x M20 with NPT adapter	44519-1280
<b>POWER TO UNLOCK</b>				
TL8012-S3024SM (90-degree actuator)	24 VAC/DC	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1400
TL8012-S3110SM (90-degree actuator)	110 VAC	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1410
TL8012-S3220SM (90-degree actuator)	220 VAC*	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1420
TL8012-S3024FM (flex 1 actuator)	24 VAC/DC	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1430
TL8012-S3110FM (flex 1 actuator)	110 VAC	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1440
TL8012-S3220FM (flex 1 actuator)	220 VAC*	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1450
TL8012-S3024TM (flat actuator)	24 VAC/DC	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1460
TL8012-S3110TM (flat actuator)	110 VAC	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1470
TL8012-S3220TM (flat actuator)	220 VAC*	4 N/C + 1 N/O	3 x M20 with NPT adapter	44519-1480
Replacement 90-Deg Actuator				44519-0700
Replacement Flex 1 Actuator with Alignment Guide				44519-0710
Replacement Flat Actuator				44519-0720
TL8012-S Replacement Head				44519-0730
Spare TL8012-S Actuator Guide (Plastic)				44519-0740
Spare TL8012-S Actuator Guide (Stainless Steel)				44519-0750
Lid with Lock & Key (Use only with Power to Unlock)				44519-0760
Override Key, Molded Plastic				44530-0700
Spare M20 to NPT Adapter				44512-0110
M20 Cord Grip				44512-0090
Accessories (see page G238)				

\*220 VAC units are available on special order. Minimum order quantities may apply.

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safety interlock switches



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