

# 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 withstands 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—provides 4 actuator entry positions to simplify installation
- 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.



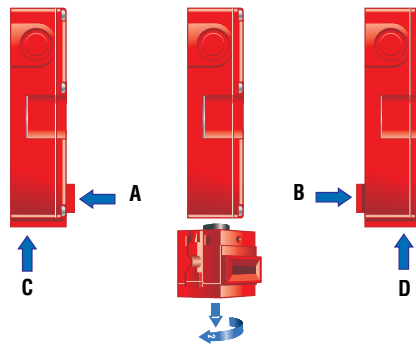
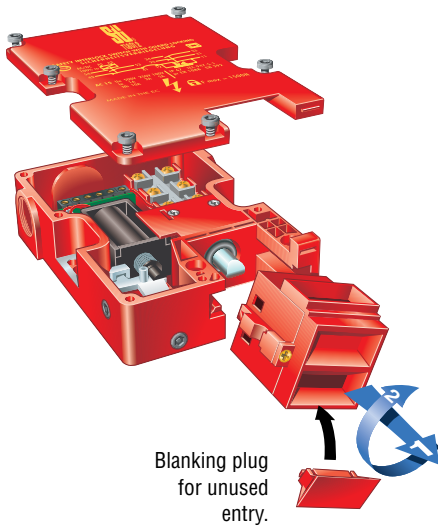
Conforms to EN1088, EN60947-5-1, EN292, EN60204-1  
UL and C-UL listed

### Specifications

Electrical	All Models	TL8012-S1 & -S2	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>	AC: 500 V–1 A, 250 V–2 A, 100 V–5 A DC: 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 NOTE: 220 VAC not available for S2 and S3 configurations.		
<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		

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

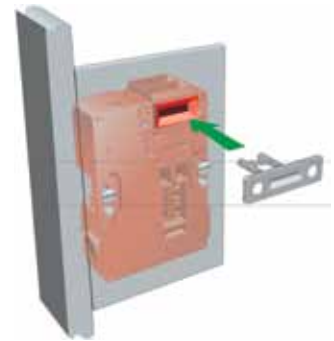
## Operation



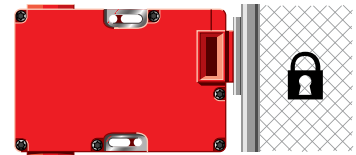
The head rotates 180° to give 4 possible actuator entry points.

### Actuator Alignment Guide

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



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



Locking force = 450 lbs (2000 N) maximum

### 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.



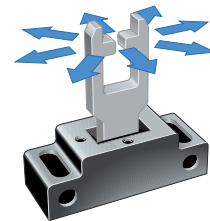
### Optional Flat Actuator

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



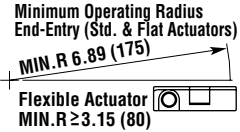
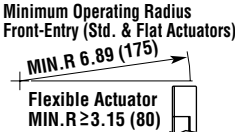
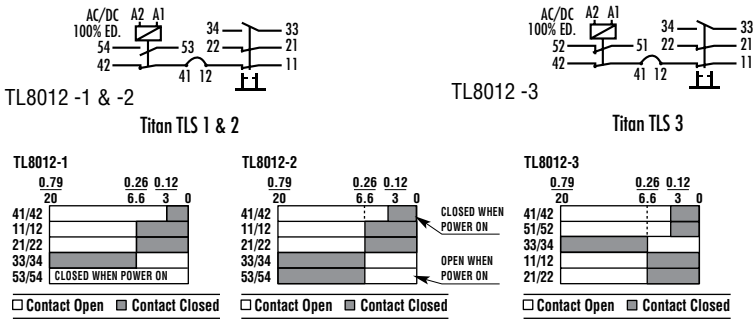
### Optional Flexible 1 Actuator

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



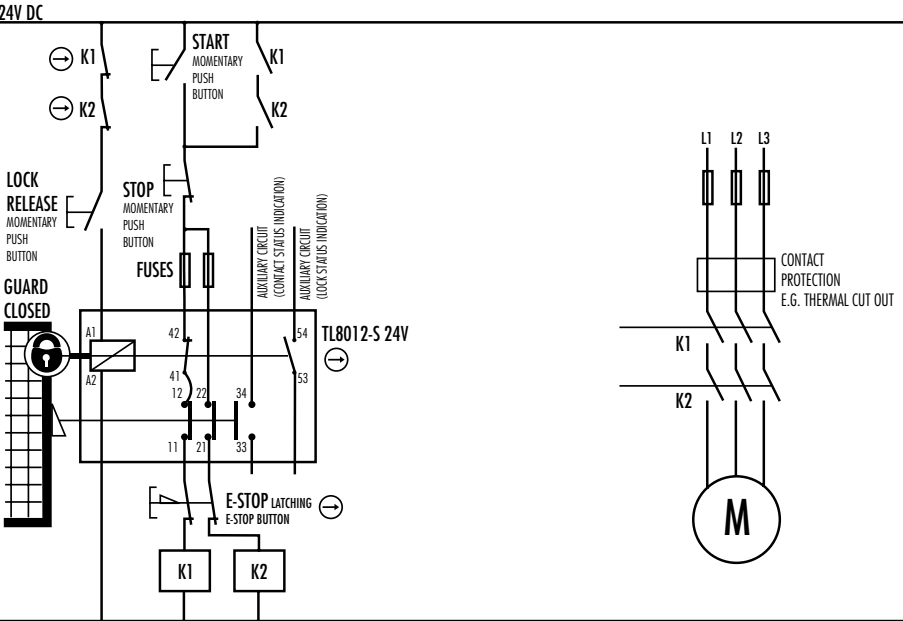
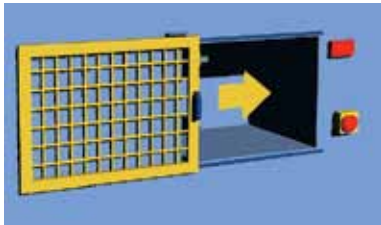
Operation (continued)

Contact Arrangements



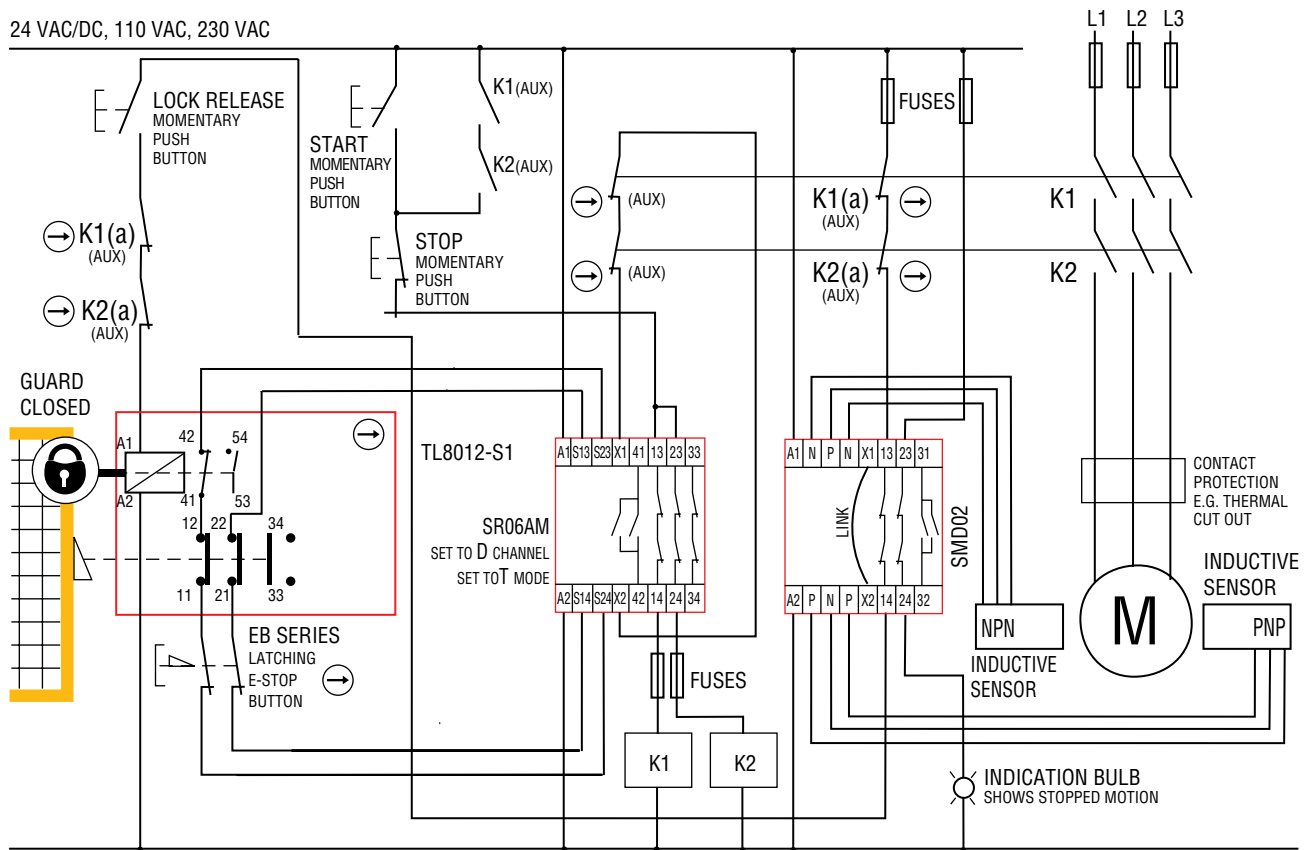
Applications

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.



Applications continued

24 VAC/DC, 110 VAC, 230 VAC



■ Application Monitoring Units



**SR223SMT Timer Unit**

Used with the TL8012-S 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.



**SR125SMS Stop Motion Sensing Unit**

Used with the TL8012-S 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.

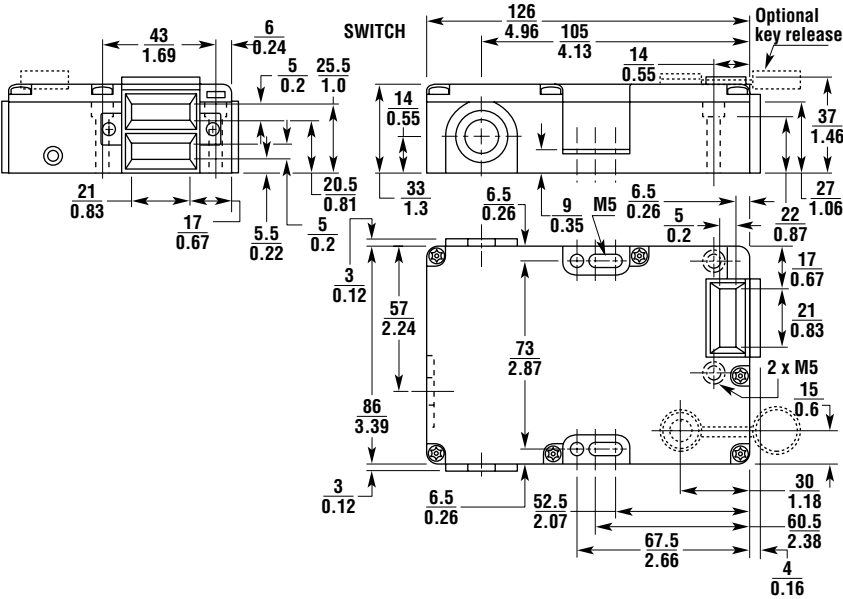


**Safety Monitoring Relay Units**

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.

Dimensions

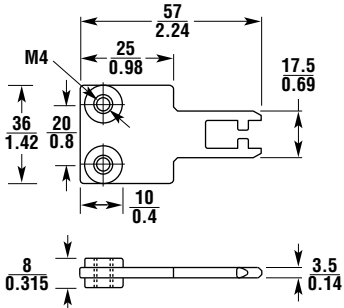
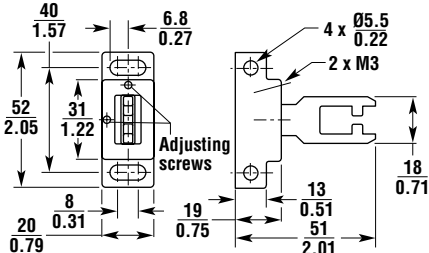
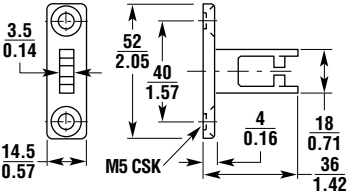
(mm/in.)



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
<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-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-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
<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-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-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

**Ordering continued**

**Accessories and Spare Parts**

<b>Model</b>	<b>Part No.</b>
Lockoff Actuator	44512-0700
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

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