

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.



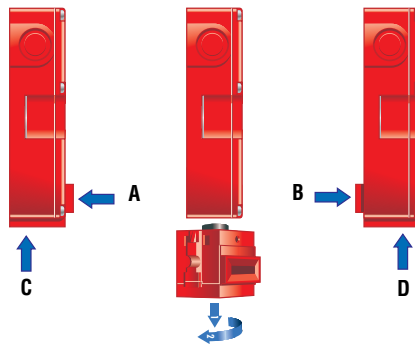
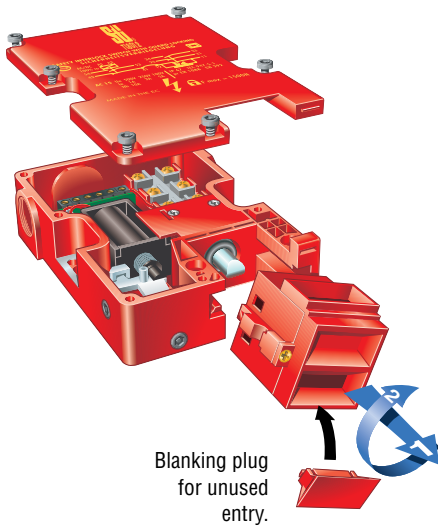
Conforms to EN1088, EN60947-5-1, EN292, EN60204-1
UL and C-UL listed

Specifications

Electrical	All Models	TL8012-S1 & -S2	TL8012-S3
Contact Configurations:		3 N/C + 2 N/O	4 N/C + 1 N/O
Safety Contacts:		3 N/C positive break	4 N/C positive break
Switching Ability	AC: 500 V–1 A, 250 V–2 A, 100 V–5 A DC: 250 V–0.5 A, 24 V–2 A		
Safety Contact Gap:	> 2 mm (0.079 in.)		
Auxiliary Contacts:		2 N/O (1 solenoid monitoring)	1 N/O
Max Switching Current/Volt/Amp:	500 V/500 VA		
Minimum Current:	5 V 5 mA DC		
Electrical Life:	1 x 10 ⁶ minimum		
Solenoid Supply Voltage:	24 VDC or 24 VAC/DC or 110 VAC or 220 VAC NOTE: 220 VAC not available for S2 and S3 configurations.		
Solenoid Power:	7 W, approx. 900 mA inrush		
Solenoid Rating:	100% duty		
Mechanical			
Mounting:	Any position		
Mounting Hardware:	4 x M5 screws		
Actuator Travel for Positive Opening:	7 mm (0.276 in.)		
Min Operating Radius:	Approximately 80 mm (3.25 in.) with flex actuator Approximately 175 mm (7 in.) with standard actuator		
Max Holding Force:	2000 N (450 lb.)		
Max Actuation Speed:	160 mm/sec (6.3 in./sec)		
Max Activation Frequency:	1 cycle/sec		
Case Material:	UL listed, glass-filled polyester		
Actuator Material:	Stainless steel		
Wiring Entry:	3 x M20 conduit with 0.5 in. NPT adapter		
Weight:	400 g (14 oz.)		
Color:	Red		
Mechanical Life:	1 x 10 ⁶ minimum		
Environmental			
Protection:	IP67 (NEMA 6)		
Operating Temperature:	-20 to 60°C (-4 to 176°F)		
Cleaning:	Water washdown		
Compliance			
Standards:	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

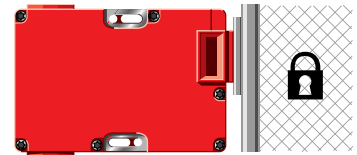
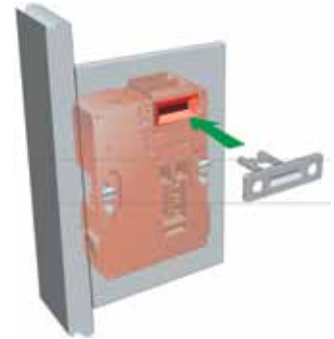


The head rotates 180° to give 4 possible actuator entry points.

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 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.



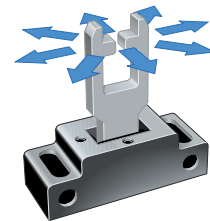
Optional Flat Actuator

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



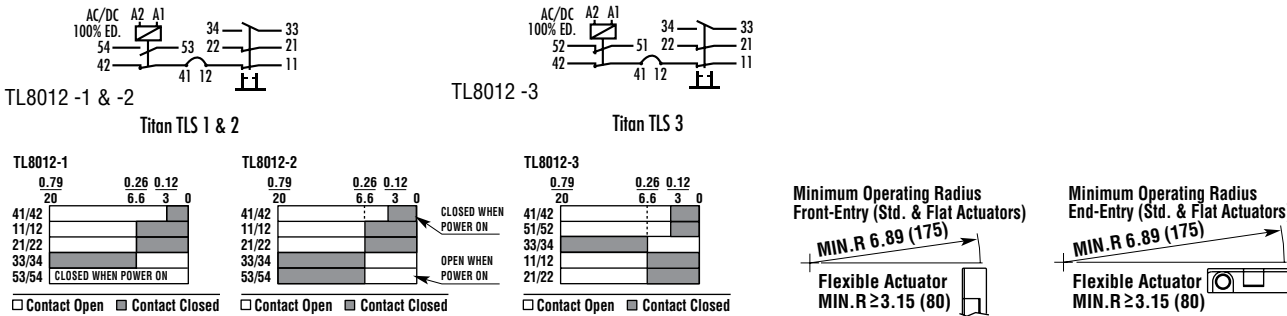
Optional Flexible 1 Actuator

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



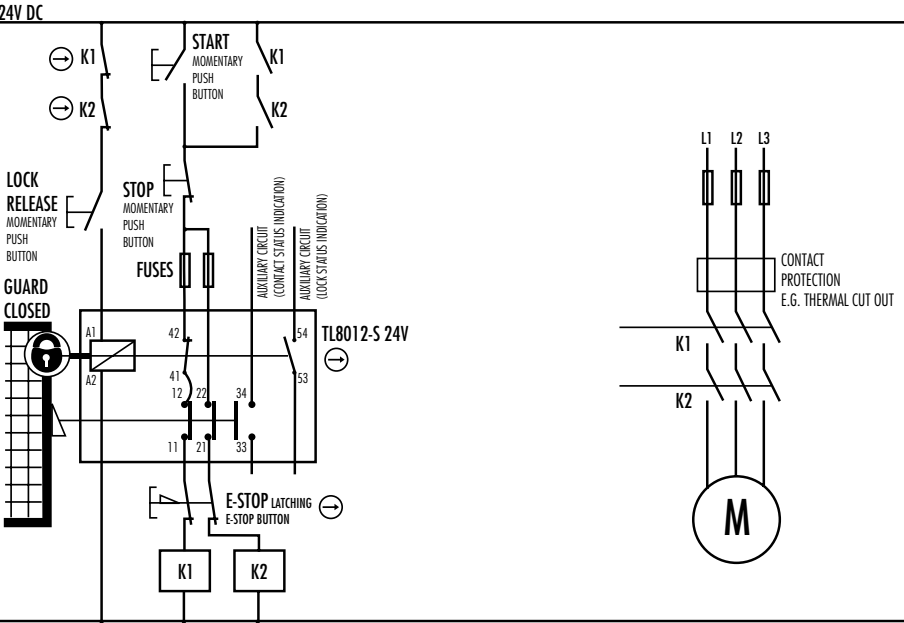
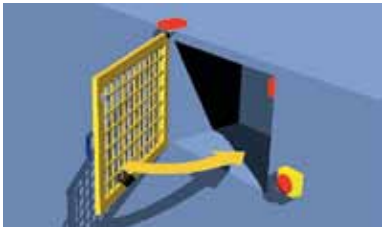
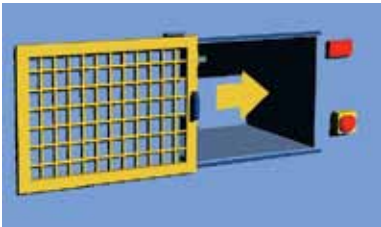
Operation (continued)

Contact Arrangements



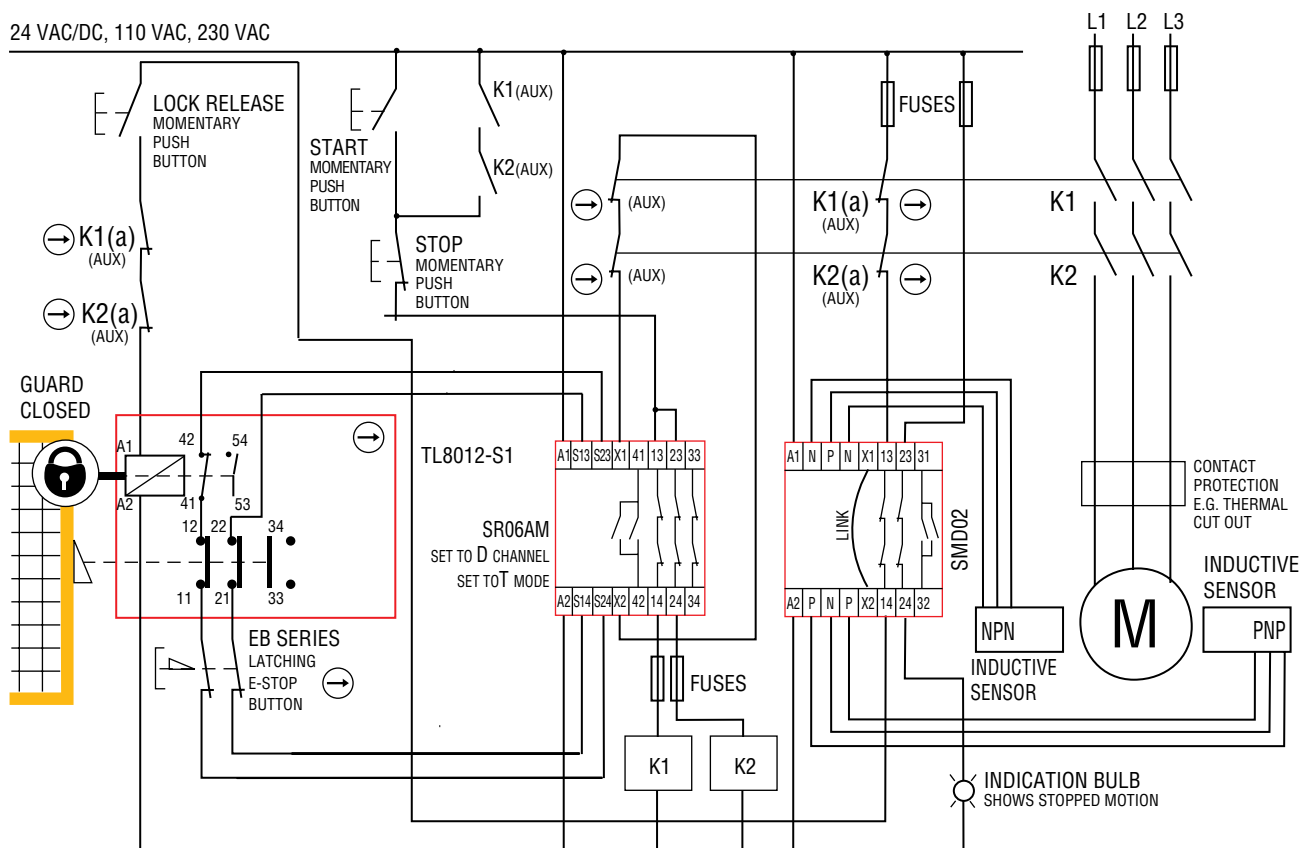
Applications

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.

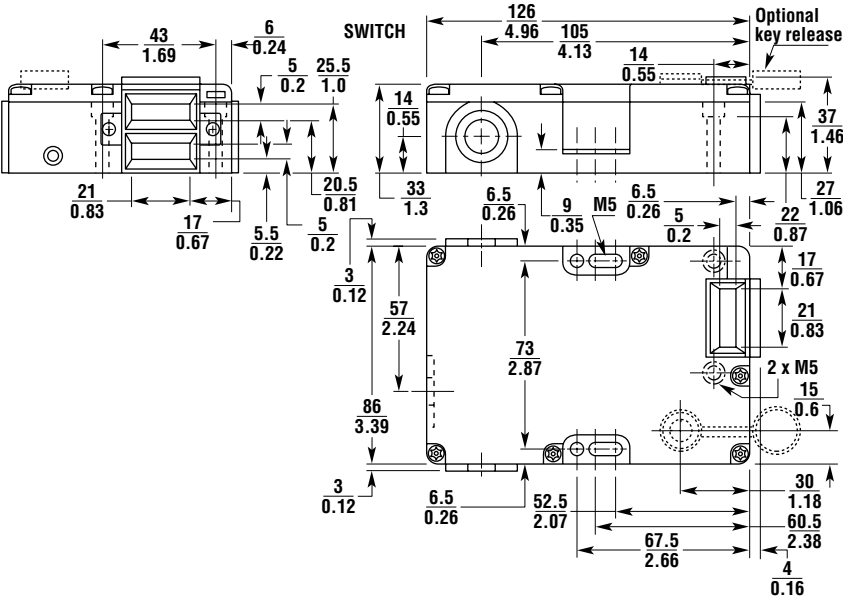


Safety Monitoring Relay Units

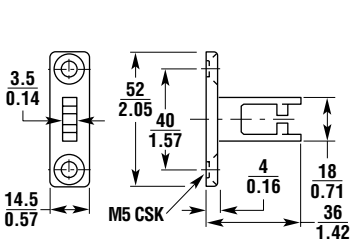
Safety monitoring relays ensure a maximum level of safety by monitoring all wiring in the safety circuit, including switches and contactors. Any fault and the power to the machine is switched off. A variety of safety monitoring relay units are available.

Dimensions

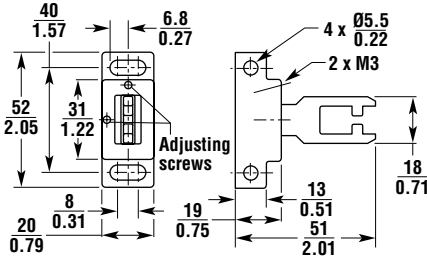
(mm/in.)



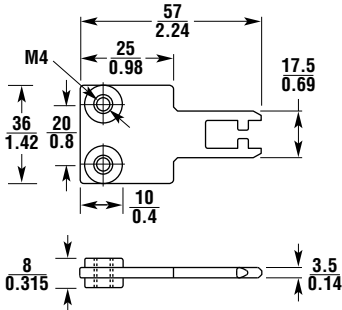
Standard Actuator



Flexible 1 Actuator



Flat Actuator



Ordering

Model	Solenoid	Contacts	Wiring Entry	Part No.
POWER TO UNLOCK				
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
POWER TO UNLOCK WITH KEY				
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
POWER TO LOCK				
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
POWER TO UNLOCK				
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

Model	Part No.
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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