



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



G

safety interlock switches

TL4019

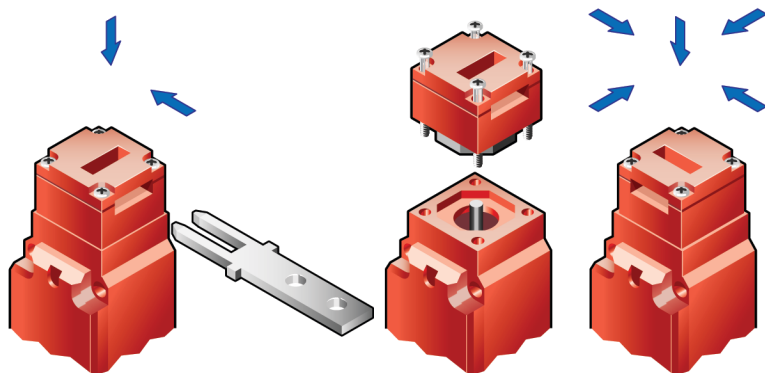
Safety Interlock Switch with Guard Door Locking

- High locking force of 1200 N (270 lb.) locks guard door shut until machine is safe to enter
- IP67 (NEMA 6) enclosure enables the TL4019 to withstand water washdown
- Door and lock monitoring—the TL4019 has a total of 4 contacts: 2 N/C safety + 1 contact for door position monitoring + 1 contact for lock monitoring
- Rear manual release—allows unlocking of switch from inside of guarded area per ANSI/RIA R15.06
- Narrow profile enables mounting to 2 in. square tubing or in applications with space restrictions
- Rotatable head—the rotatable head of the TL4019 provides 8 actuator entry positions to satisfy most installation requirements
- Optional key release—this option on power-to-unlock models allows manual unlocking of the guard door
- Optional slide bolt with integral door handle aids installation on sliding and swinging guard doors
- Long life—the TL4019 is designed for a minimum of one million actuations with its variety of stainless steel actuators

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**



Alignment Guide

Optional stainless steel alignment guide aids actuator entry and is easily installed.



Flat Actuator

Available with and without rubber bushings.



90-Degree Actuator

Available with and without rubber bushings.



Optional Key Release

A key release unit is easily attached to the TL4019 to provide emergency override of the switch locking mechanism by a qualified, responsible person.



Flexible 1 Actuator

15 degree flexibility may be adjusted with the set screw.



Flexible 2 Actuator

15 degree flexibility may be adjusted with the set screw.

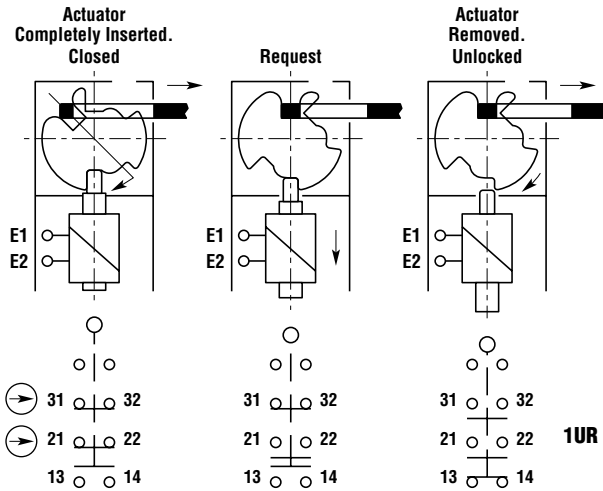


■ Operation (continued)

Contact Arrangements

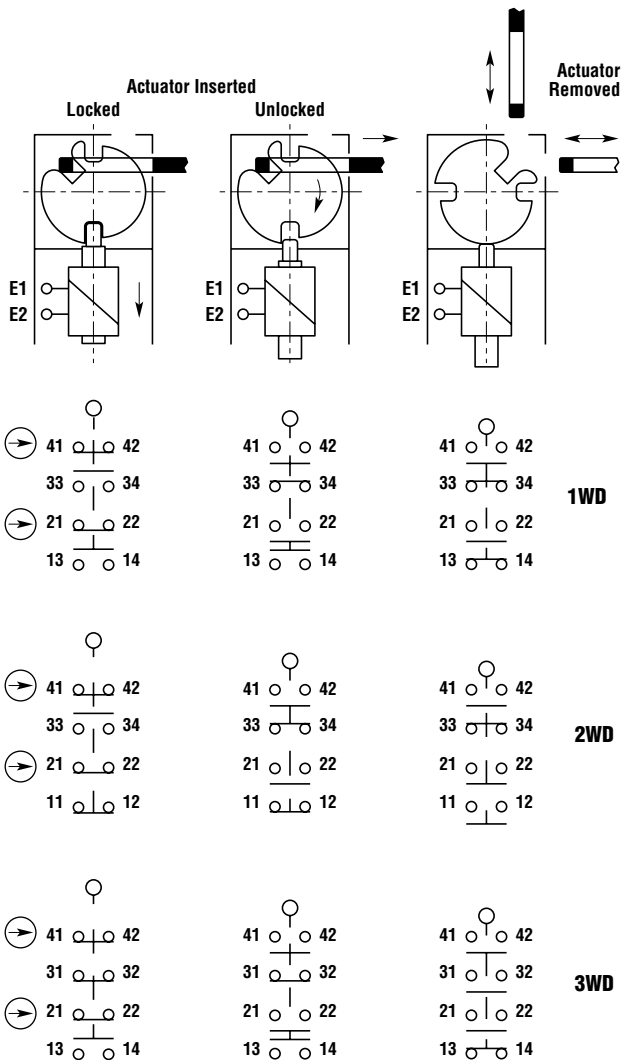
With Unlock Request Contact

1UR 1 positively driven N/C contact as door unlock request contact
1 positively driven N/C contact + 1 N/O (without door contact)



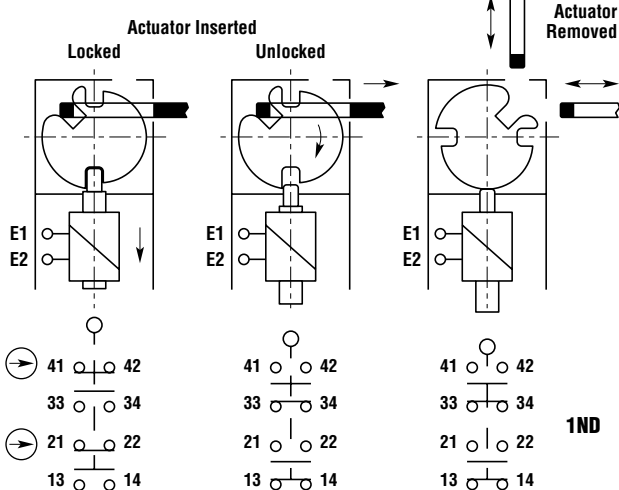
With Door Contact

1WD 2 positively driven N/C contacts + 1 N/O + 1 N/O as door contact
2WD 2 positively driven N/C contacts + 1 N/O + 1 N/C as door contact
3WD 2 positively driven N/C contacts + 1 N/C + 1 N/O as door contact



Without Door Contact

1ND 2 positively driven N/C contacts + 2 N/O



G 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

Optional Slide Bolts

- Allows easy installation of switch on machine guards
- Actuator included (order switch separately)
- Integral handle included
- Metal is ideal for heavy doors; plastic is suitable for smaller and lighter doors
- Slotted hole in bolt permits attaching multiple padlocks
- Yellow color for easy recognition



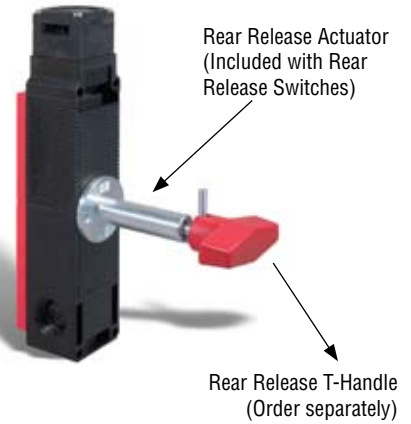
Metal Slide Bolt



Plastic Slide Bolt

Optional Rear Release

- Allows manual rear release of a locked switch from inside a guarded area per ANSI/RIA R15.06
- May be installed on switch in conjunction with or without the use of a slide bolt
- Must use with Rear Release Switch Models only



Optional LED Lid Kit

Provides red and green LED indicators with user-configured operation.



Optional SLD Series



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



Optional Interior Lever Kit

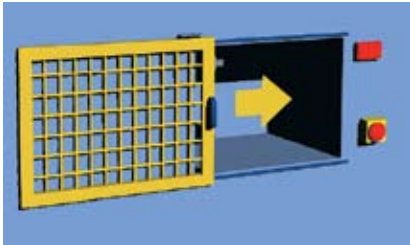
Use with metal rear release slide bolts.




G 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.



G
safety interlock switches

 For a wiring example of the TL4019 switch with a SR209AD delayed output safety monitoring relay see “Common Circuit Examples” in the Engineering Section of this catalog.

■ Application Monitoring Units

 For information on these Safety Monitoring Relays, see page H1.



SR223SMT Timer Unit

Used with the TL4019 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 TL4019 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.

■ Specifications

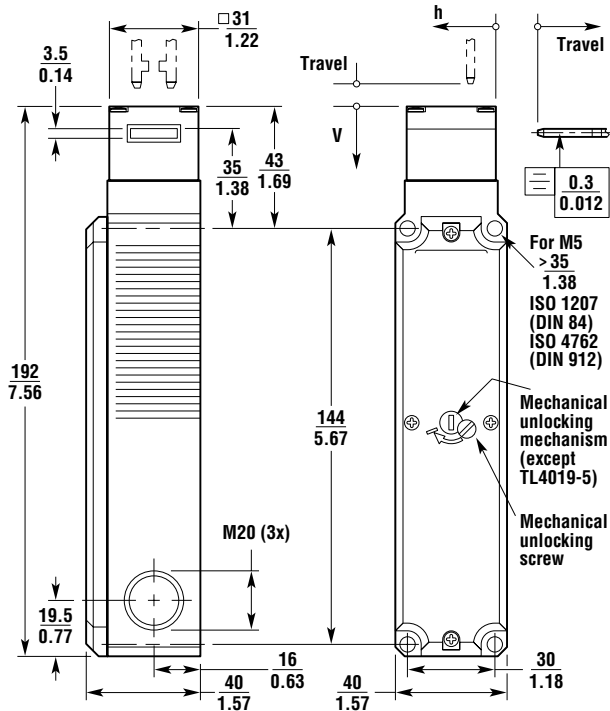
Electrical	All Models	TL4019-1 & -2	TL4019-3 & -4	TL4019-5
Safety Contacts:		2 N/C	2 N/C	1 N/C
Auxiliary Contacts:		2 N/O	1 N/O + 1 N/O 1 N/O + 1 N/C 1 N/C + 1 N/O	1 N/C + 1 N/O
Switching Ability	AC:	230 V – 4 A		
	DC:	24 V – 4 A		
Safety Contact Material:	Silver alloy with gold flash			
Minimum Current:	24 V 1 mA			
Solenoid Supply Voltage:	24 VAC/DC or 110 VAC (all -15% / +10%)			
Solenoid Power:	8 W			
Solenoid Rating:	100% duty			
Mechanical				
Mounting:	Any position			
Mounting Hardware:	4 x M5 screws (not supplied)			
Min Operating Radius:	Approximately 100 mm (3.9 in.) with flex actuators Approximately 1000 mm (39 in.) with flat and 90-degree actuators			
Max Holding Force:	1200 N (270 lb.)			
Max Actuation Speed:	20 m/min.			
Case Material:	Reinforced thermoplastic			
Actuator Material:	Stainless steel			
Wiring Entry:	3 x M20 conduit with 0.5 in. NPT adapter			
Weight:	500 g (17 oz.)			
Color:	Red			
Mechanical Life:	1 x 10 ⁶ minimum			
Environmental				
Protection:	IP67 (NEMA 6)			
Operating Temperature:	-20 to 55°C (-4 to 131°F)			
Cleaning:	Water washdown			
Compliance				
Standards:	EN1088, EN292, EN60947-5-1, EN60204-1			
Approvals/Listings:	CE marked for all applicable directives, UL and C-UL, BG			

Specifications are subject to change without notice.

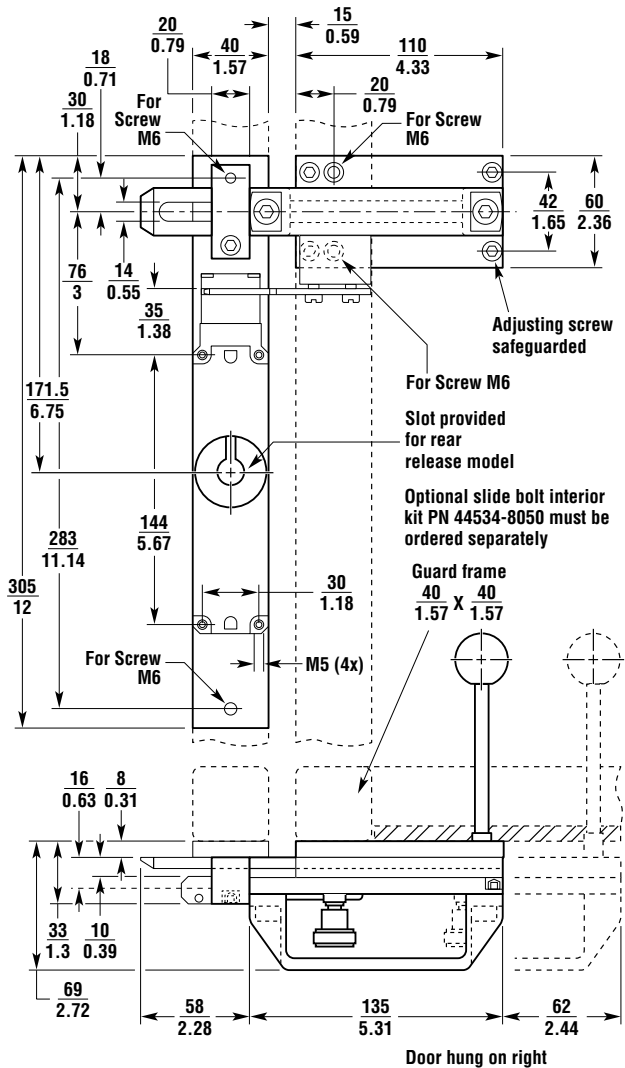
Note: The safety contacts of the Omron STI switches are described as normally closed (N/C)—i.e., with the guard closed, actuator in place, and the machine able to be started.

■ Dimensions — mm/in.

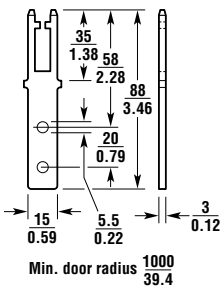
TL4019



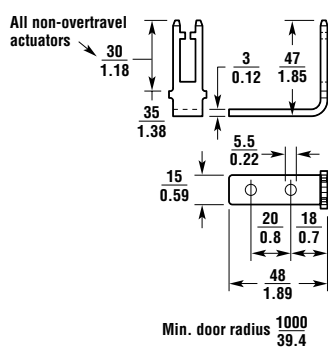
Optional Metal Slide Bolt for TL4019



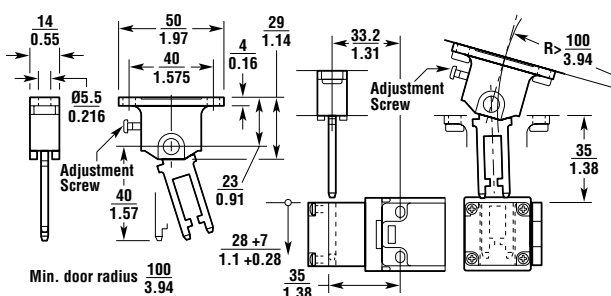
Overtravel Flat Actuator



Overtravel 90-Degree Actuator

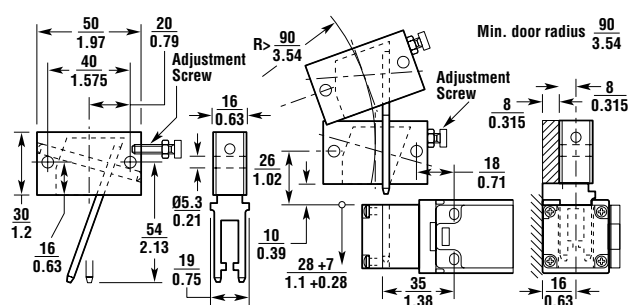


Flexible 1 Actuator



For the optional Plastic Slide Bolt Dimensions, see www.sti.com

Flexible 2 Actuator



G safety interlock switches

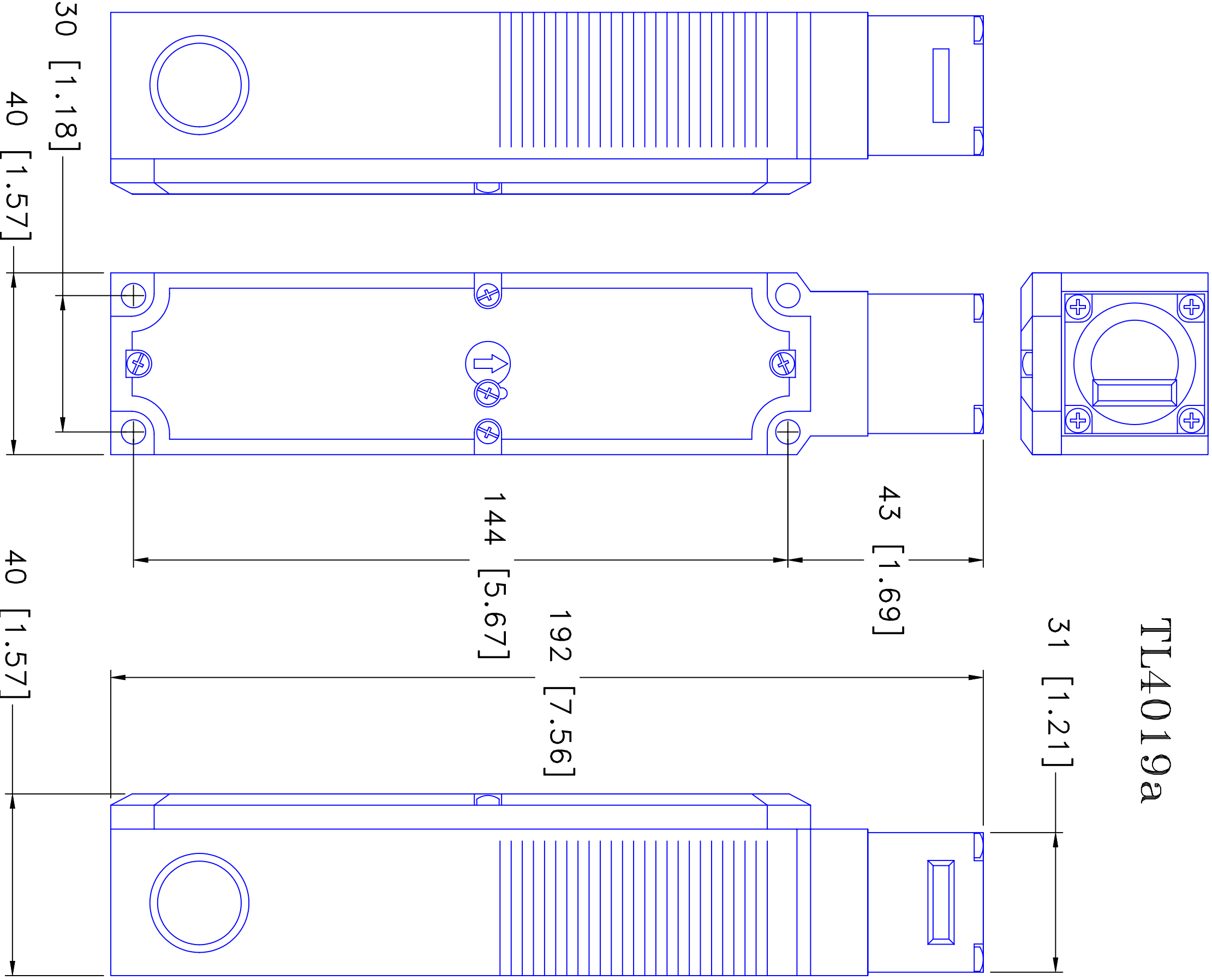
Model	Solenoid	Contacts	Wiring Entry	Part No.
POWER TO UNLOCK (with door contact)				
TL4019-30241TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x M20 with NPT adapter	44534-0050
TL4019-30241SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x M20 with NPT adapter	44534-0150
TL4019-30241F2M (flex 2 actuator)	24 VAC/DC	2 N/C + 1 N/O + 1N/O	3 x M20 with NPT adapter	44534-0250
TL4019-30241F1M (flex 1 actuator)	24 VAC/DC	2 N/C + 1 N/O + 1N/O	3 x M20 with NPT adapter	44534-0350
TL4019-31101TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1N/O	3 x M20 with NPT adapter	44534-0060
TL4019-31101SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1N/O	3 x M20 with NPT adapter	44534-0160
TL4019-31101F2M (flex 2 actuator)	110 VAC	2 N/C + 1 N/O + 1N/O	3 x M20 with NPT adapter	44534-0260
TL4019-31101F1M (flex 1 actuator)	110 VAC	2 N/C + 1 N/O + 1N/O	3 x M20 with NPT adapter	44534-0360
TL4019-30242TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0070
TL4019-30242SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0170
TL4019-30242F2M (flex 2 actuator)	24 VAC/DC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0270
TL4019-30242F1M (flex 1 actuator)	24 VAC/DC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0370
TL4019-31102TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0080
TL4019-31102SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0180
TL4019-31102F2M (flex 2 actuator)	110 VAC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0280
TL4019-31102F1M (flex 1 actuator)	110 VAC	2 N/C + 1 N/O + 1N/C	3 x M20 with NPT adapter	44534-0380
TL4019-30243TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/C + 1N/O	3 x M20 with NPT adapter	44534-0090
TL4019-30243SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0190
TL4019-30243F2M (flex 2 actuator)	24 VAC/DC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0290
TL4019-30243F1M (flex 1 actuator)	24 VAC/DC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0390
TL4019-31103TM (flat actuator)	110 VAC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0400
TL4019-31103SM (90-degree actuator)	110 VAC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0500
TL4019-31103F2M (flex 2 actuator)	110 VAC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0600
TL4019-31103F1M (flex 1 actuator)	110 VAC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-1700
TL4019-30241SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x M20 with NPT adapter	44534-1150
TL4019-31101SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x M20 with NPT adapter	44534-1160
TL4019-30242SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x M20 with NPT adapter	44534-1170
TL4019-31102SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x M20 with NPT adapter	44534-1180
TL4019-30243SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-1190
TL4019-31103SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-1500
POWER TO UNLOCK (with unlock request contact) (mechanical unlocking is not available on these switches)				
TL4019-50241TM (flat actuator)	24 VAC/DC	1 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0470
TL4019-50241SM (90-degree actuator)	24 VAC/DC	1 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0570
TL4019-50241F2M (flex 2 actuator)	24 VAC/DC	1 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-0670
TL4019-50241F1M (flex 1 actuator)	24 VAC/DC	1 N/C + 1 N/C + 1 N/O	3 x M20 with NPT adapter	44534-1770

(Continued on next page)

G

safety interlock switches

TL4019a



Drawn to Scale in Decimal Inches
 For Metric units (mm), multiply by 25.4
 Dimension as Required
 For Detailed Dimensions, refer to Catalog

