



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



G
safety interlock switches

TL4024

Safety Interlock Switch with Guard Door Locking

- High locking force of 1500 N (337 lb.) locks guard door shut until machine is safe to enter
- IP67 (NEMA 6) enclosure enables the TL4024 to withstand water washdown
- Door and lock monitoring—the TL4024 has a total of 4 contacts: 2 N/C safety + 1 contact for door position monitoring + 1 contact for lock monitoring
- Unlocking is possible with a back load on the door to satisfy the demands of high cycle time applications
- Narrow profile enables mounting to 2 in. square tubing or in applications with space restrictions
- Rotatable head—the rotatable head of the TL4024 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
- Two LED (red/green) status indicators on the lid may be wired to suit the application
- Long life—the TL4024 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**

The head may be rotated in 90 degree increments to give 8 possible entry points.



Flat Actuator

Flexible rubber mounting bushings allow for some actuator flexibility.



Flexible 1 Actuator

15 degree flexibility may be adjusted with the set screw.



90-Degree Actuator

Flexible rubber mounting bushings allow for some actuator flexibility.



Flexible 2 Actuator

15 degree flexibility may be adjusted with the set screw.



Optional Slide Bolt

- Allows easy installation of switch on machine guards
- Actuator included (order switch separately)
- Integral handle included
- Robust for use with heavy doors
- Slotted hole in bolt permits attaching multiple padlocks
- Yellow color for easy recognition



Optional Key Release

A key release unit is easily attached to the TL4024 to provide emergency override of the switch locking mechanism by a qualified, responsible person.



Optional SLD Series



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

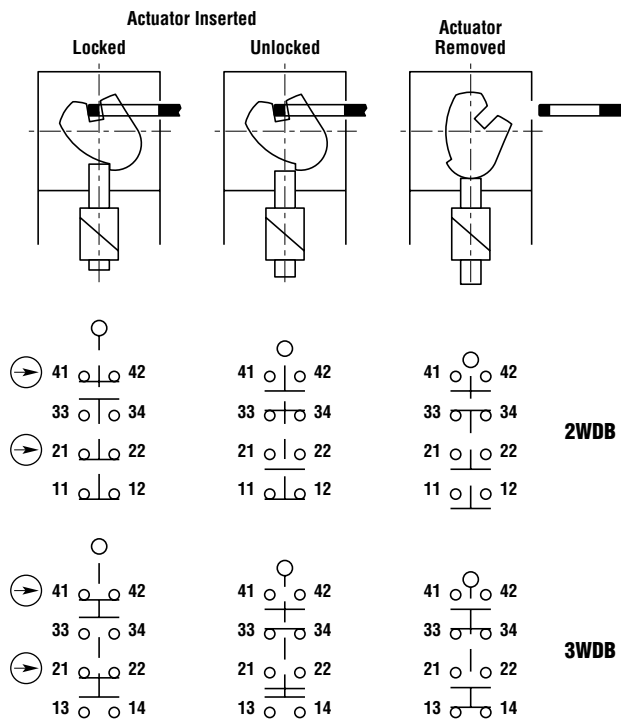
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safety interlock switches

■ Operation (continued)

Contact Arrangements

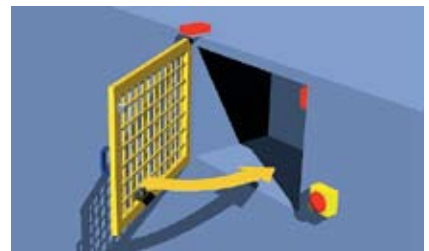
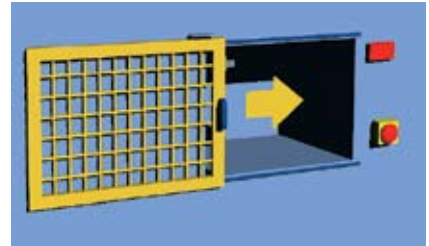
**With Door Contact PLUS
With & Without Back Load Unlocking**

2WDB 2 positively driven N/C contact + 1 N/O + 1/NC as door contact
3WDB 2 positively driven N/C contact + 1 N/O + 1/NO as door contact



■ 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.



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■ **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

■ **Specifications**

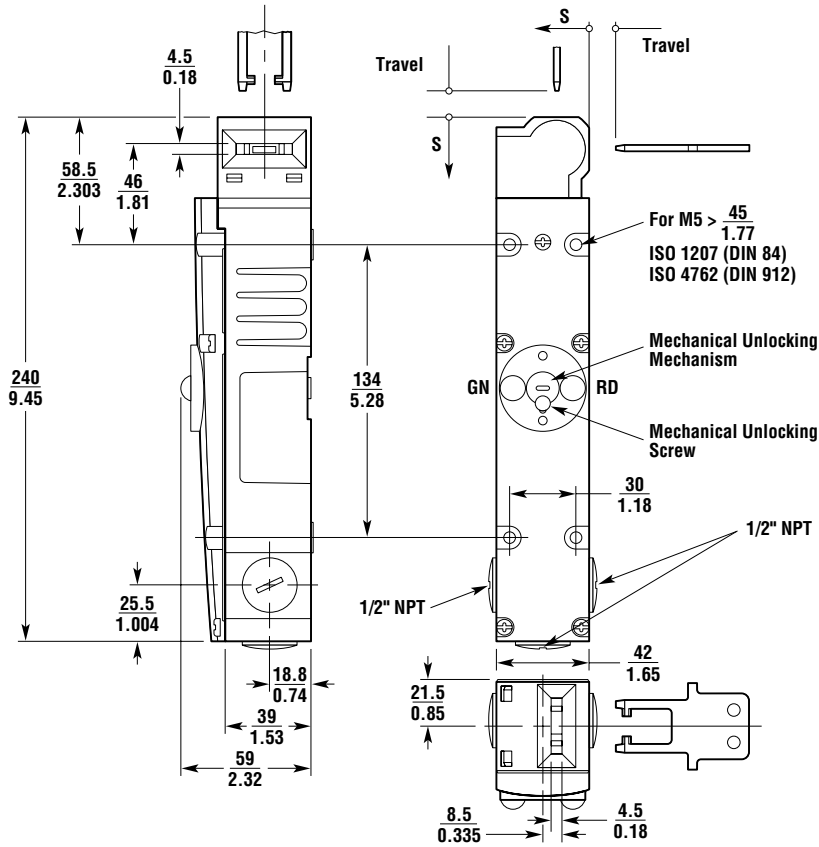
Electrical	
Safety Contacts:	2 N/C
Auxiliary Contacts:	1 N/O + 1 N/C 1 N/O + 1 N/O
Switching Ability	
AC:	230 V – 4 A
DC:	24 V – 4 A
Safety Contact Material:	Silver alloy with gold flash
Minimum Current:	12 V 10 mA, 24 V 1 mA
Solenoid Supply Voltage:	24 VAC/DC or 110 VAC (all -15% / +10%)
Solenoid Power:	8 W
Solenoid Rating:	100% duty
Mechanical	
Mounting:	Any position
Mounting Hardware:	4 x M5 screws (not supplied)
Min Operating Radius:	Approximately 300 mm (12 in.) with 90-degree actuator
Max Holding Force:	1500 N (337 lb.)
Max Actuation Speed:	20 m/min.
Case Material:	Anodized die-cast alloy
Actuator Material:	Stainless steel
Wiring Entry:	3 x 0.5 in. NPT
Weight:	800 g (28 oz.)
Color:	Red
Mechanical Life:	1 x 10 ⁶ minimum
Environmental	
Protection:	IP67 (NEMA 6)
Operating Temperature:	-20 to 80°C (-4 to 176°F)
Cleaning:	Water washdown
Compliance	
Standards:	EN1088, EN60947-5-1, EN292, 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.

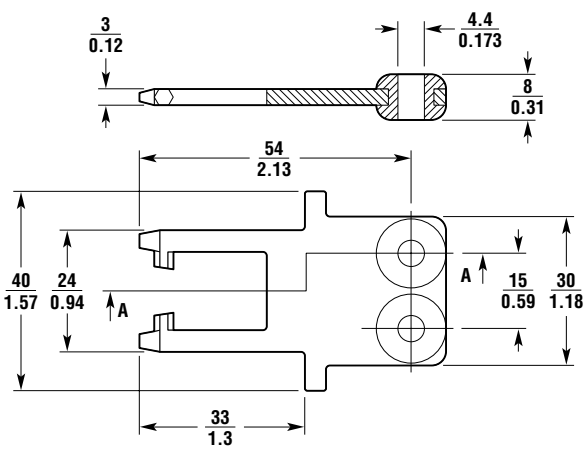
■ Dimensions — mm/in.

TL4024

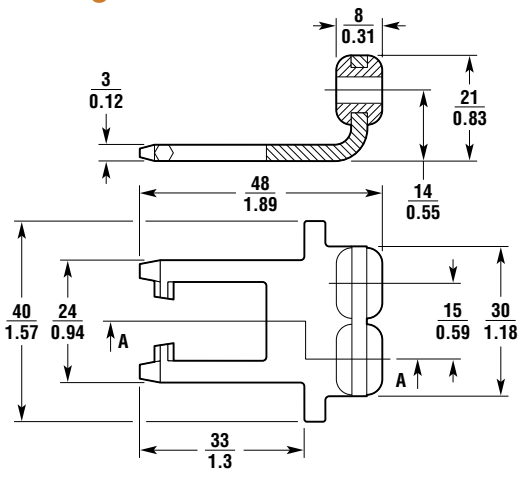


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Flat Actuator



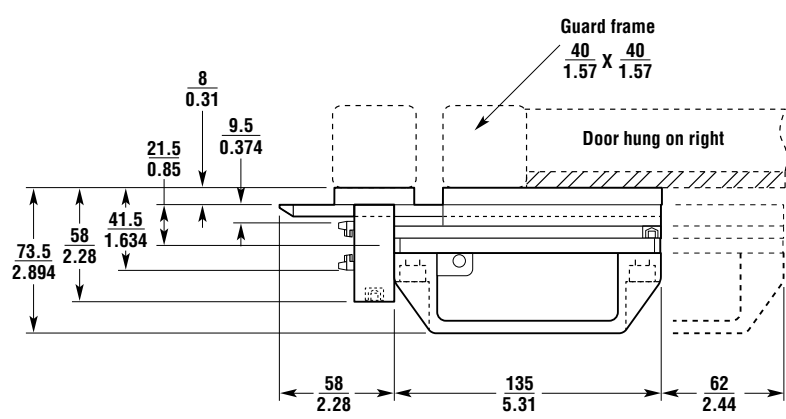
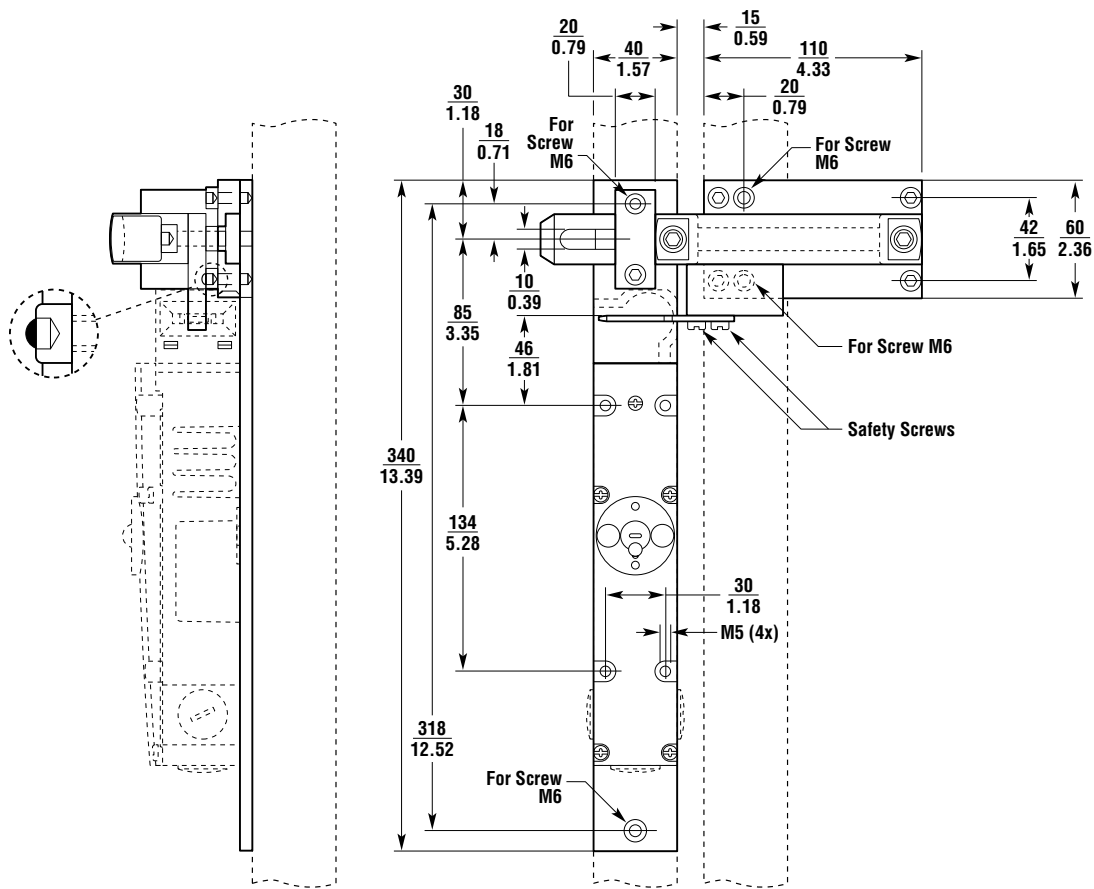
90-degree Actuator



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N For More Guarding Products
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Optional Metal Slide Bolt for TL4024



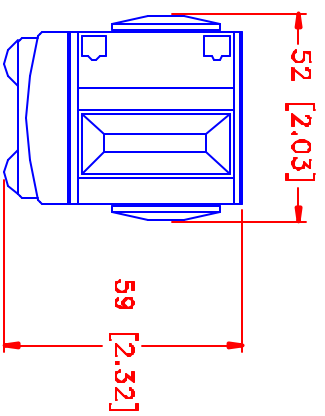
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■ Ordering

Model	Solenoid	Contacts	Wiring Entry	Part No.
POWER TO UNLOCK (with door contact)				
TL4024-10242TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0010
TL4024-10242SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0110
TL4024-11102TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0020
TL4024-11102SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0120
TL4024-10243TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0030
TL4024-10243SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0130
TL4024-11103TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0040
TL4024-11103SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0140
TL4024-10242SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1110
TL4024-11102SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1120
TL4024-10243SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1130
TL4024-11103SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1140
POWER TO UNLOCK (with door contact) (with back load unlocking)				
TL4024-30242TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0410
TL4024-30242SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0510
TL4024-31102TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0420
TL4024-31102SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0520
TL4024-30243TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0430
TL4024-30243SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0530
TL4024-31103TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0440
TL4024-31103SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0540
TL4024-30242SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1180
TL4024-31102SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1190
TL4024-30243SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1510
TL4024-31103SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1520
POWER TO LOCK (with door contact)				
TL4024-20242TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0050
TL4024-20242SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0150
TL4024-21102TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0060
TL4024-21102SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0160
TL4024-20243TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0070
TL4024-20243SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0170
TL4024-21103TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0080
TL4024-21103SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0180

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TI4024

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

