

TLS-Z GD2 Guard Locking Switches

The TLS-ZR GD2 and the TLS-ZL GD2 guard locking switches have the following features:

- Meets PLe to ISO 13849-1
- Solid-state OSSD outputs series connectable to ISO 14119
- RFID uniquely coded door target
- Easy QD connection
- Same mechanical arrangement as standard TLS-GD2
- High locking force ≤ 2000 N (450 lbf)

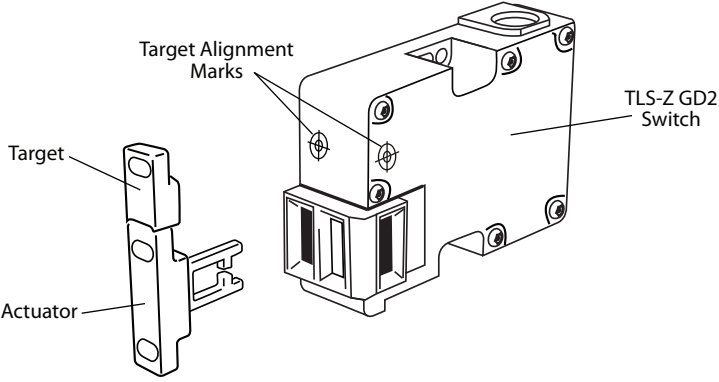


Specifications




Attribute	Value
Safety ratings	
Standards	ISO 14119, IEC 60947-5-3, ISO 13849-1
Safety classification	Type 4 interlocking device with guard locking per ISO 14119 with high (unique) coding per ISO 14119 PLe Cat 4 per ISO 13849-1
Functional safety	Visit https://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Outputs (guard door closed and locked)	
Safety outputs	2 x PNP, 0.2 A max, status: ON (+24V DC)
Auxiliary outputs	1 x PNP, 0.2 A max, status: OFF (0V DC)
Operating characteristics	
TLSZR-GD2	Power to release
TLSZL-GD2	Power to lock
Assured locking distance [mm (in.)]	Max door target distance: 13 (0.51), max clearance between actuator base and switch in door-closed position: 5 mm
Torque for M5 mounting	1.4 N·m (12.39 lbf·in)
Torque for cover mounting	1.2 N·m (10.62 lbf·in)
Holding force F_{max} (ISO 14119)	Plastic pins: 1950 N (488 lbf) Steel bolts: 2600 N (585 lbf)
Holding force F_{th} (ISO 14119)	Plastic pins: 1500 N (337 lbf), Steel bolts: 2000 N (450 lbf)
Output current, max (all outputs)	200 mA
Current consumption	50 mA — Solenoid not energized (no load supply current); 120 mA (260 mA inrush) — Solenoid energized (no load supply current); <0.5 mA DC — Off state
Solenoid duty cycle	100%
Maximum number of switches, connected in series	Unlimited
Operating voltage U_e	24V DC +10%/-15% Class 2
Operating frequency	1 Hz
Actuation speed, max	160 mm (6.29 in.) per second
Actuation speed, min	100 mm (3.94 in.) per minute
Response time	75 ms 1st switch, 25 ms each additional switch (Off)
Utilization category	DC-13 24V 200 mA (IEC 60947-5-2)
Rated impulse withstand voltage	250V




Attribute	Value
Pollution degree	3
Protection Type	2
Mechanical life	1,000,000 operations
Actuation speed, max	160 mm (6.29 in.) per second
Operating radius (only for use with flexible actuator)	80 mm (3.15 in.)
Environmental	
Enclosure type rating	NEMA 3, 4X, 12, 13; IP66, IP69K
Operating temperature	-10...+60 °C (14...140 °F)
Relative humidity	5...95%
Shock and vibration	IEC 60068-2-27 30 g, 11 ms/IEC 60068-2-6 10...55 Hz, 1 mm
Frequency	IEC 61000-4-3, IEC 61000-4-6
Physical characteristics	
Housing material	UL Approved glass-filled PBT
Actuator material	Stainless Steel
Target type	UL Approved glass-filled PBT
Weight [g (lb)]	400 (0.88)
Color	Red

Product Selection

Description		Cat. No.
 <p>The diagram illustrates the TLS-Z GD2 Switch assembly. It shows a rectangular housing labeled 'TLS-Z GD2 Switch' with 'Target Alignment Marks' on its top surface. A 'Target' is mounted on the front face, and an 'Actuator' is attached to its side. The target has two circular marks for alignment.</p>	TLS-ZR GD2 guard locking switch OSSD outputs power-to-release QD 24V	440G-TZS21UPRH
	TLS-ZL GD2 guard locking switch OSSD outputs power-to-lock QD 24V	440G-TZS21UPLH

Accessories

Description		Cat. No.
 Target	Spare RFID door target	440G-ATZA
	Fully flexible actuator	440G-A27143
	Cover for TLS-1 with external override key for series E and later	440G-A27371
	Cover for TLS-1 with override key attached for series E and later	440G-A27373

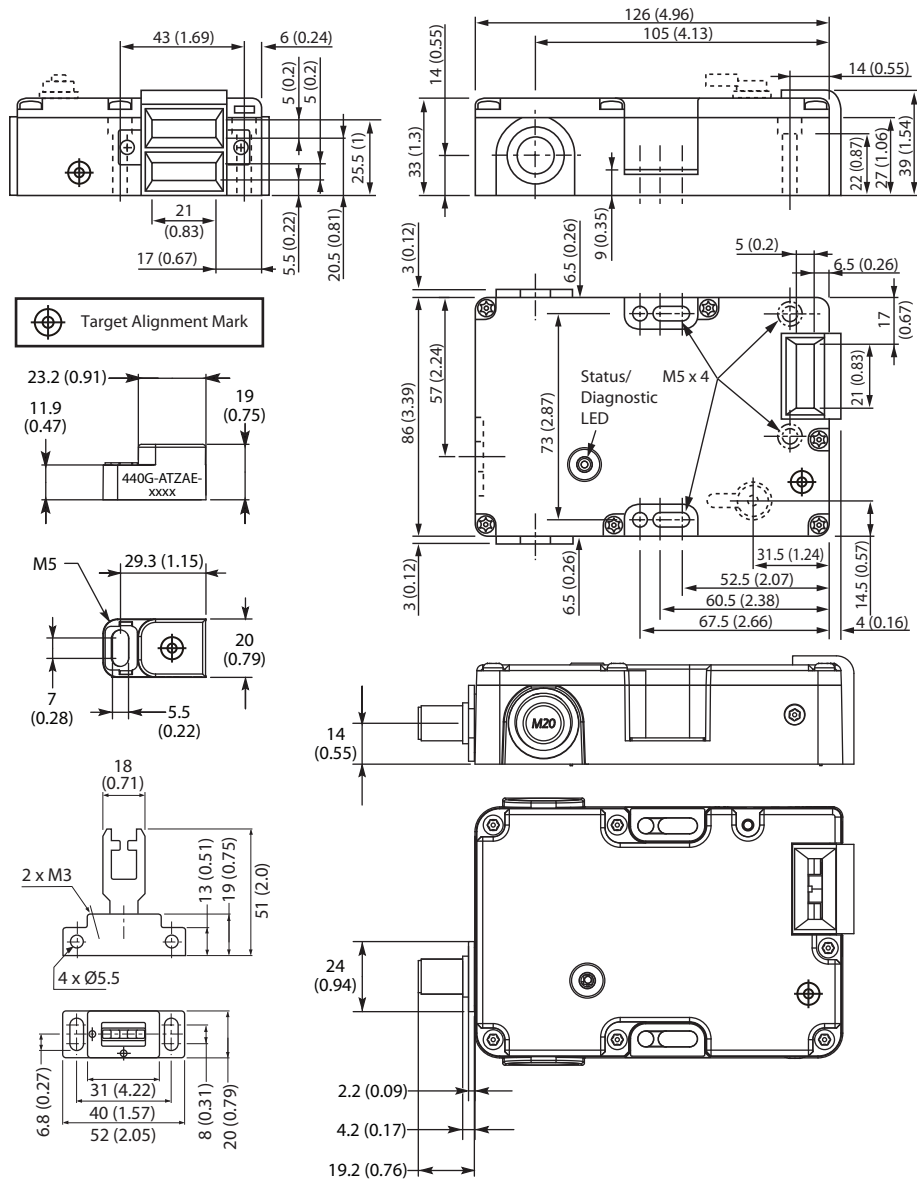
	Emergency override key (See Warning below.)	440G-A36026
	Flexible release—1 m (3.28 ft) cable	440G-A27356
	Flexible release—3 m (9.84 ft) cable	440G-A27357
	Dust cover	440K-A17183



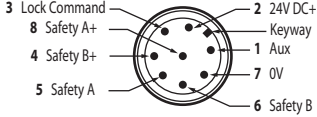
WARNING: Do not attach the Emergency Override Key to the TLS-Z-GD switch.

Approximate Dimensions

Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



Typical Wiring Diagrams

8-Pin Micro (M12)			
8-Pin Cordset 889D-F8AB-x⁽¹⁾ or cable version	Color	Function	Pin
	White	Aux	1
	Brown	24V DC +	2
	Green	Lock	3
	Yellow	Safety B+	4
	Grey	Safety A	5
	Pink	Safety B	6
	Blue	Gnd/0V	7
	Red	Safety A+	8

(1) Replace x with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.