



DATA SHEET

TR110-SRU2B01

TR110 Lock
Safety locking devices



SAFETY LOCKING DEVICES

TR110-SRU2B01

ORDERING INFORMATION

Type	part no.
TR110-SRU2B01	6068078

Further device versions and accessories at www.sick.com/TR110_Lock



DETAILED TECHNICAL DATA

FEATURES

Sensor principle	RFID
Locking principle	Power to release
Coding	Uniquely coded
Locking force F_{max}	With straight actuator 3,900 N (EN ISO 14119) With angled actuator 1,500 N (EN ISO 14119) With hinged actuator 2,600 N (EN ISO 14119)
Locking force F_{zh}	With straight actuator 3,000 N (EN ISO 14119) With angled actuator 1,100 N (EN ISO 14119) With hinged actuator 2,000 N (EN ISO 14119)
Actuation force	≥ 10 N
Retaining force	20 N
Force against which unlocking is possible	≤ 20 N
Actuation frequency	≤ 0.5 Hz
Approach speed	≤ 20 m/min
Pushbuttons (illuminable)	✓
Items supplied	Including 6 cover caps (blue, red, yellow, green, 2 x white), extension of escape release

SAFETY-RELATED PARAMETERS

Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (EN ISO 13849) ¹⁾
Performance level	PL e (EN ISO 13849) ¹⁾
PFH _d (mean probability of a dangerous failure per hour)	4.1×10^{-9} ¹⁾
T _M (mission time)	20 years (EN ISO 13849)

¹⁾ Applies for monitoring of the door position (interlocking monitoring) and locking monitoring.

Type	Type 4 (EN ISO 14119)
Actuator coding level	High coding level (EN ISO 14119)
Safe state in the event of a fault	At least one safety-related semiconductor output (OSSD) is in the OFF state.

¹⁾ Applies for monitoring of the door position (interlocking monitoring) and locking monitoring.

FUNCTIONS

Escape release	✓
Switching behavior of the OSSDs	Locking monitoring
Safe series connection	None, only individual wiring (with diagnostics)

INTERFACES

Connection type	Plug connector, M12, 8-pin Plug connector, M12, 5-pin
Coupling nut material	Brass
Pushbuttons (illuminable)	✓
Display elements	LEDs
Diagnostics indicator	✓
Status display	✓

ELECTRICAL DATA

Protection class	III (IEC 61140)
Contamination rating	3 (EN 60947-1)
Classification according to cULus	Class 2
Usage category	DC-13 (IEC 60947-5-1)
Rated operating current (voltage)	150 mA (24 V DC) ¹⁾
Rated insulation voltage U_i	50 V
Rated impulse withstand voltage U_{imp}	500 V
Supply voltage V_s	Sensor 24 V DC (20.4 V DC ... 27.6 V DC) Magnet 24 V DC (20.4 V DC ... 26.4 V DC)
Power consumption	Sensor 40 mA Magnet 400 mA Pushbutton (LED) 10 mA
Type of output	Self-monitoring semiconductor outputs (OSSDs) Safety outputs 2 semiconductor outputs (OSSDs), p-switching, short-circuit protected Application diagnostic outputs P-switching, short-circuit protected
Output current	Safety outputs 1 mA ... 150 mA Application diagnostic outputs 1 mA ... 50 mA Pushbutton switching outputs 1 mA ... 50 mA
Power consumption of magnet	6 W
Switch-on time of magnet	100 %
Response time	$\leq 260 \text{ ms}$ ²⁾
Release time	400 ms
Switch-on time	1 s
Discrepancy time	$\leq 10 \text{ ms}$ (EN IEC 60947-5-3)

¹⁾ In the case of inductive loads, outputs must be protected with a freewheeling diode.

²⁾ 5 ms for each additional switch.

Locking principle	Power to release
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MECHANICAL DATA

Weight	0.42 kg		
Material			
	Switch head	Zinc diecast	
	Housing	Glass-fiber reinforced thermoplastic	
	Plug connectors	Nickel-plated brass	
Mechanical life	1 x 10 ⁶ switching cycles		

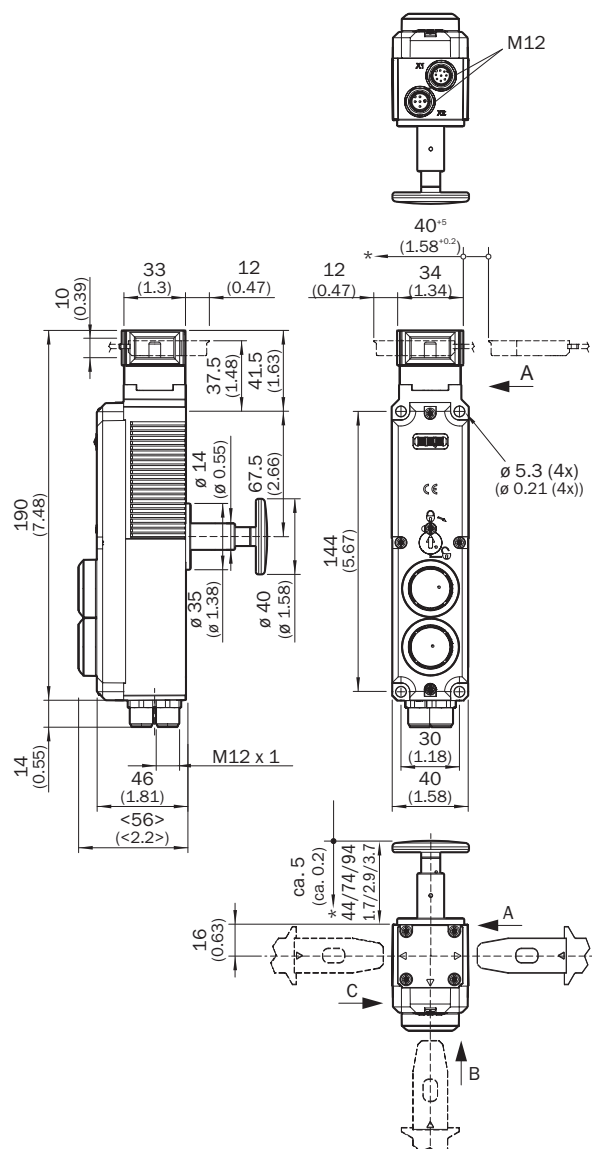
AMBIENT DATA

Enclosure rating	IP65 (EN 60529)
Ambient operating temperature	-20 °C ... +55 °C
Vibration resistance	10 Hz ... 55 Hz (IEC 60068-2-6)
Shock resistance	30 g, 11 ms (EN 60068-2-27)
EMC	EN IEC 60947-5-3

CERTIFICATES

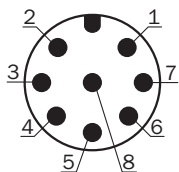
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

DIMENSIONAL DRAWING



Dimensions in mm (inch)

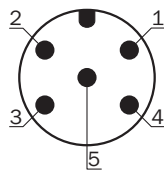
PIN ASSIGNMENT



Pin	Designation	Description
1	AUX DOOR	Door application diagnostic output
2	+24 V DC	Safety switch voltage supply

Pin	Designation	Description
3	Magnet +	Magnet control 24 V DC
4	AUX DIAG	Error application diagnostic output
5	OSSD 1	OSSD 1 output
6	OSSD 2	OSSD 2 output
7	0 V	0 V DC voltage supply
8	AUX LOCK	Locking application diagnostic output
For details see operating instructions		

PIN ASSIGNMENT



Pin	Designation	Description
1	NO1	Pushbutton 1, normally open
2	LED1	LED1
3	NO2	Pushbutton 2, normally open
4	LED2	LED2
5	Reset	Reset input
For details see operating instructions		

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6068078



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SICK AT A GLANCE

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Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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