Product data sheet



TR10-SRM01C

TR10 Lock

SAFETY LOCKING DEVICES

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
TR10-SRM01C	6054758

Other models and accessories ➜ www.sick.com/TR10_Lock

Detailed technical data

Features

Sensor principle	RFID
Locking principle	Power to release
Number of safe outputs	2
Coding	Universally coded
Locking force F_{max}	1,690 N (EN ISO 14119)
Locking force F_{Zh}	1,300 N (EN ISO 14119)
Retaining force	0 N
Actuation directions	4
Approach speed	≥ 2 mm/s

Safety-related parameters

Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (EN ISO 13849)
Performance level	PL e (EN ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	9.1×10^{-10}
T_M (mission time)	20 years (EN ISO 13849)
Type	Type 4 (EN ISO 14119)
Actuator coding level	Low 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.

Functions

Switching behavior of the OSSDs	Locking monitoring
Safe series connection	With T-connector (without diagnostics) With Flexi Loop (with diagnostics)

Interfaces

Connection type	Cable with plug M12, 8-pin
Length of cable	0.2 m
Long connecting cable	≤ 200 m
Cable diameter	6.5 mm
Conductor cross section	0.25 mm²
Bend radius (with fixed installation)	> 7 x cable diameter
Bend radius (with moving cable)	> 14 x cable diameter
Cable material	PVC
Conductor material	Copper
Coupling nut material	Stainless steel
Display elements	LEDs
Diagnostics indicator	✓
Status display	✓

Electrical data

Protection class	II (IEC 61140)
Contamination rating	3
Classification according to cULus	Class 2
Usage category	DC-13 (IEC 60947-5-1)
Rated operating current (voltage)	200 mA (24 V DC)
Rated insulation voltage U_i	75 V
Rated impulse withstand voltage U_{imp}	1,000 V
Supply voltage V_S	24 V DC (20.4 V DC ... 26.4 V DC)
Type of output	Self-monitoring semiconductor outputs (OSSDs)
Output current	≤ 200 mA
Peak current	400 mA, 100 ms [1]
Power consumption	2.5 W
Response time	100 ms for the first switch, 50 ms for each subsequent switch [2]
Release time	600 ms
Risk time	100 ms
Switch-on time	7 s
Locking principle	Power to release

[1] During switching on, locking, or unlocking.
[2] Time until the outputs are switched off.

Mechanical data

Weight	+ 0.4 kg
Housing material	ABS
Locking bolt material	Stainless steel 304
Mechanical life	5 x 10^5 switching cycles

Ambient data

Enclosure rating	IP66, IP67, IP69K (IEC 60529, IEC 60529, IEC 60529)

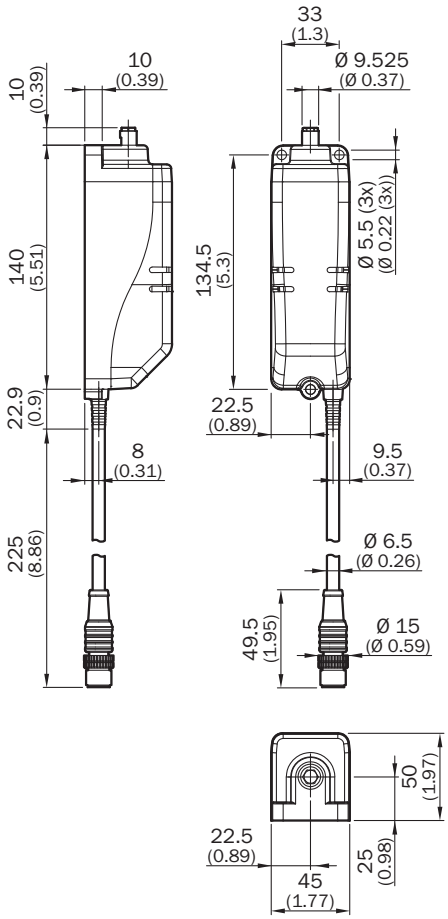
Ambient operating temperature	0 °C ... +55 °C
Storage temperature	–25 °C ... +75 °C
Vibration resistance	10 Hz ... 55 Hz (IEC 60068-2-6)
Shock resistance	30 g, 11 ms (EN 60068-2-27)
EMC	IEC 60947-5-3

Classifications

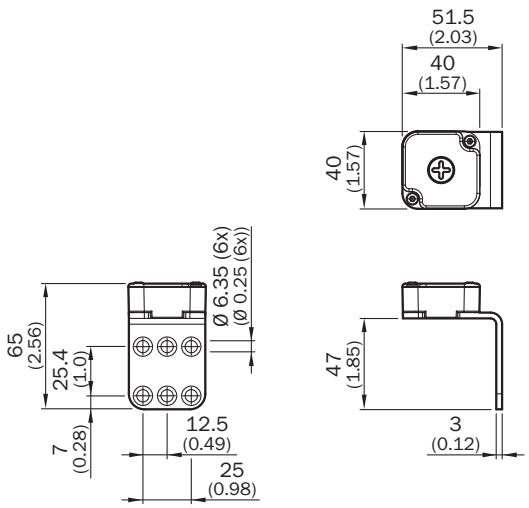
ECLASS 5.0	27272603
ECLASS 5.1.4	27272603
ECLASS 6.0	27272603
ECLASS 6.2	27272603
ECLASS 7.0	27272603
ECLASS 8.0	27272603
ECLASS 8.1	27272603
ECLASS 9.0	27272603
ECLASS 10.0	27272603
ECLASS 11.0	27272603
ECLASS 12.0	27272603
ETIM 5.0	EC002593
ETIM 6.0	EC002593
ETIM 7.0	EC002593
ETIM 8.0	EC002593
UNSPSC 16.0901	39122205

Dimensional drawing (Dimensions in mm (inch))

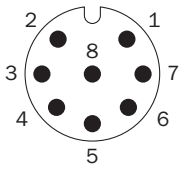
Sensor with cable and male connector



Actuator and mounting bracket



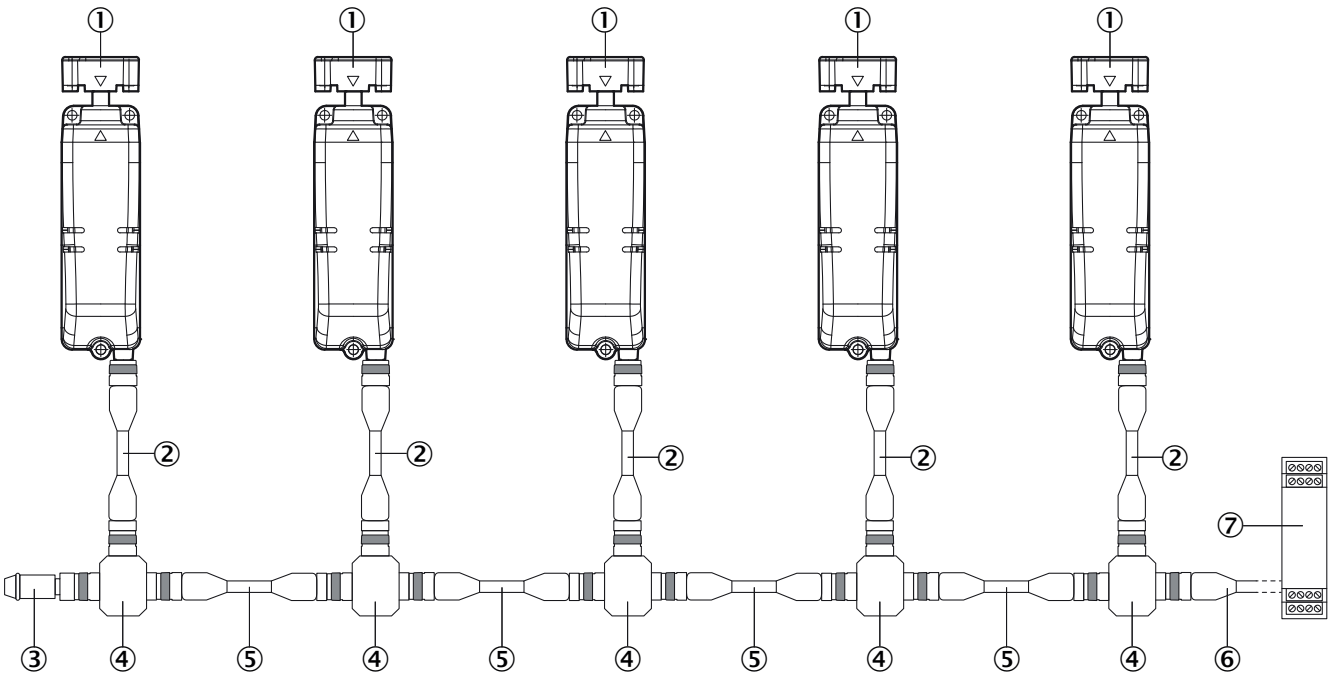
Pin assignment



1	Aux output (not safe)
2	Voltage supply 24 V DC
3	Lock control
4	OSSD 2 input
5	OSSD 1 output
6	OSSD 2 output
7	Voltage supply 0 V DC
8	OSSD 1 input

Series connection

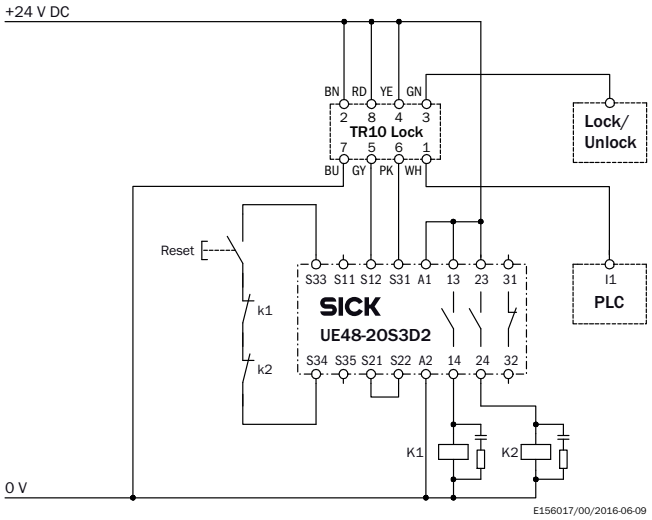
Series connection with T-piece (without diagnostics)



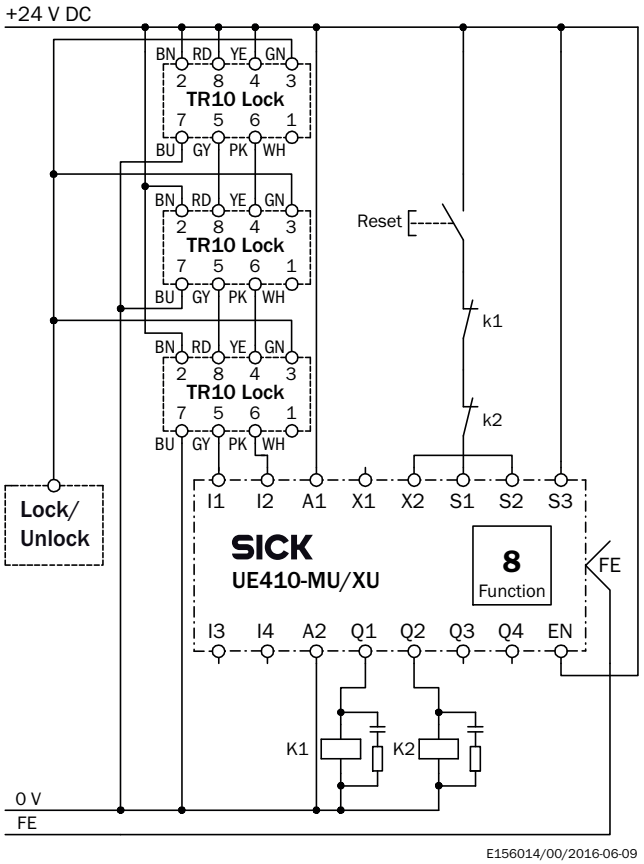
① TR10 Lock safety locking device
② Connection cable with 8-pin, M12 male connector and 8-pin, M12 female connector (e.g., DSL-1208-xxxxx)
③ MLP1-XXT end connector
④ STR1-XXA T-connector
⑤ Connection cable with 5-pin, M12 male connector and 5-pin, M12 female connector (e.g., DSL-1205-xxxxx)
⑥ Connecting cable with M12 female connector, 5-pin and flying leads (e.g., DOL-1205-xxxxx)
⑦ Safe evaluation unit

Connection diagram

TR10 Lock safety locking device to UE48-2OS safety relay



Series connection of three TR10 Lock safety locking devices to a Flexi Classic safety controller



Recommended accessories

Other models and accessories ➜ www.sick.com/TR10_Lock

	Brief description	Type	Part no.
Nuts and screws			
	10 pieces, Safety screws for mounting bracket of actuator	Safety screws M5 x 10	5334497
Others			
		DOL-1208-G2M5C	6058863
		YF2A18-050UA5XLEAX	2095653
		YF2A18-100UA5XLEAX	2095654
		YF2A18-200UA5XLEAX	2095680

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DFS60B-S4PC10000 FX3-MPL000001 GL10G-P4251 IME12-08NPSZW2K MPS-128TSTP0 LFP2000-A4NMB VT12T-2P112 YF8U14-020UA3XLEAX C4C-SA06030A10000 IMB12-04BNPVC0S KUP-0610-S IMB12-04BPPVC0K SBO-02F12-SM1 WFM50-60P311 WL11-2P2432 WTB26I-24161420A00 BEF-KHZT01MPA BEF-WN-W18 IME12-04BPOZW2K IM18-12NNS-ZQD YF8U14-050UA3XLEAX IME12-04BNOZC0S IME12-04BPSZW2S MPS-160TSTP0 PLV14-A S30A-XXXXBA C4P-SA03031A00 IMB18-12NPSVC0S IME08-04NPSZW2K WTB2S-2P3230