



# TR110-SLU2B00

TR110 Lock

SAFETY LOCKING DEVICES

**SICK**  
Sensor Intelligence.



### Ordering information

| Type          | Part no. |
|---------------|----------|
| TR110-SLU2B00 | 6068077  |

The actuator has to be ordered separately. See "Accessories" for further details.

Other models and accessories → [www.sick.com/TR110\\_Lock](http://www.sick.com/TR110_Lock)



### Detailed technical data

#### Features

|  |   |
|--|---|
| <b>Sensor principle</b>                          | RFID  |
| <b>Locking principle</b>                         | Power to lock   |
| <b>Coding</b>                                    | Uniquely coded  |
| <b>Locking force <math>F_{max}</math></b>        | With straight actuator 3,900 N (EN ISO 14119)<br>With angled actuator 1,500 N (EN ISO 14119)<br>With hinged actuator 2,600 N (EN ISO 14119) |
| <b>Locking force <math>F_{Zh}</math></b>         | With straight actuator 3,000 N (EN ISO 14119)<br>With angled actuator 1,100 N (EN ISO 14119)<br>With hinged actuator 2,000 N (EN ISO 14119) |
| <b>Actuation force</b>                           | $\geq 10$ N   |
| <b>Retaining force</b>                           | 20 N  |
| <b>Force against which unlocking is possible</b> | $\leq 20$ N   |
| <b>Actuation frequency</b>                       | $\leq 0.5$ Hz   |
| <b>Approach speed</b>                            | $\leq 20$ m/min   |
| <b>Pushbuttons (illuminable)</b>                 | ✓   |
| <b>Items supplied</b>                            | Including 6 cover caps (blue, red, yellow, green, 2 x white)  |

#### Safety-related parameters

|                               |   |
|-------------------------------|---|
| <b>Safety integrity level</b> | SIL3 (IEC 61508)                        |
| <b>Category</b>               | Category 4 (EN ISO 13849) <sup>1)</sup> |
| <b>Performance level</b>      | PL e (EN ISO 13849) <sup>1)</sup>       |

<sup>1)</sup> Applies for monitoring of the door position (interlocking monitoring) and locking monitoring.

|   |  |
|---|--|
| <b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b> | 4.1 x 10 <sup>-9</sup> <sup>1)</sup>   |
| <b>T<sub>M</sub> (mission time)</b>                                       | 20 years (EN ISO 13849)  |
| <b>Type</b>   | Type 4 (EN ISO 14119)  |
| <b>Actuator coding level</b>  | High coding level (EN ISO 14119)   |
| <b>Safe state in the event of a fault</b>                                 | At least one safety-related semiconductor output (OSSD) is in the OFF state. |

<sup>1)</sup> Applies for monitoring of the door position (interlocking monitoring) and locking monitoring.

## Functions

|  |   |
|--|---|
| <b>Switching behavior of the OSSDs</b> | Locking monitoring                              |
| <b>Safe series connection</b>          | None, only individual wiring (with diagnostics) |

## Interfaces

|                                  |  |
|----------------------------------|--|
| <b>Connection type</b>           | Plug connector, M12, 8-pin<br>Plug connector, M12, 5-pin |
| Coupling nut material            | Brass  |
| <b>Pushbuttons (illuminable)</b> | ✓  |
| <b>Diagnostics indicator</b>     | ✓  |
| <b>Status display</b>            | ✓  |

## Electrical data

|  |   |
|--|---|
| <b>Protection class</b>                                | III (IEC 61140)   |
| <b>Contamination rating</b>                            | 3 (EN 60947-1)  |
| <b>Classification according to cULus</b>               | Class 2   |
| <b>Usage category</b>                                  | DC-13 (IEC 60947-5-1)   |
| <b>Rated operating current (voltage)</b>               | 150 mA (24 V DC) <sup>1)</sup>  |
| <b>Rated insulation voltage U<sub>i</sub></b>          | 50 V  |
| <b>Rated impulse withstand voltage U<sub>imp</sub></b> | 500 V   |
| <b>Supply voltage V<sub>s</sub></b>                    |   |
| Sensor   | 24 V DC (20.4 V DC ... 27.6 V DC)                                     |
| Magnet   | 24 V DC (20.4 V DC ... 26.4 V DC)                                     |
| <b>Power consumption</b>                               |   |
| Sensor   | 40 mA   |
| Magnet   | 400 mA  |
| Pushbutton (LED)                                       | 10 mA   |
| <b>Type of output</b>                                  | Self-monitoring semiconductor outputs (OSSDs)                         |
| Safety outputs   | 2 semiconductor outputs (OSSDs), p-switching, short-circuit protected |
| Application diagnostic outputs                         | P-switching, short-circuit protected                                  |
| <b>Output current</b>                                  |   |
| Safety outputs   | 1 mA ... 150 mA   |
| Application diagnostic outputs                         | 1 mA ... 50 mA  |
| Pushbutton switching outputs                           | 1 mA ... 50 mA  |

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

<sup>2)</sup> 5 ms for each additional switch.

|                                    |                            |
|------------------------------------|----------------------------|
| <b>Power consumption of magnet</b> | 6 W                        |
| <b>Switch-on time of magnet</b>    | 100 %                      |
| <b>Response time</b>               | ≤ 260 ms <sup>2)</sup>     |
| <b>Release time</b>                | 400 ms                     |
| <b>Switch-on time</b>              | 1 s                        |
| <b>Discrepancy time</b>            | ≤ 10 ms (EN IEC 60947-5-3) |
| <b>Locking principle</b>           | Power to lock              |

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

<sup>2)</sup> 5 ms for each additional switch.

### Mechanical data

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

### Ambient data

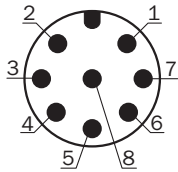
|                                      |                                 |
|--------------------------------------|---------------------------------|
| <b>Enclosure rating</b>              | IP65 (EN 60529)                 |
| <b>Ambient operating temperature</b> | -20 °C ... +55 °C               |
|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

### Classifications

|                       |          |
|-----------------------|----------|
| <b>eCl@ss 5.0</b>     | 27272603 |
| <b>eCl@ss 5.1.4</b>   | 27272603 |
| <b>eCl@ss 6.0</b>     | 27272603 |
| <b>eCl@ss 6.2</b>     | 27272603 |
| <b>eCl@ss 7.0</b>     | 27272603 |
| <b>eCl@ss 8.0</b>     | 27272603 |
| <b>eCl@ss 8.1</b>     | 27272603 |
| <b>eCl@ss 9.0</b>     | 27272603 |
| <b>eCl@ss 10.0</b>    | 27272603 |
| <b>eCl@ss 11.0</b>    | 27272603 |
| <b>eCl@ss 12.0</b>    | 27272603 |
| <b>ETIM 5.0</b>       | EC002593 |
| <b>ETIM 6.0</b>       | EC002593 |
| <b>ETIM 7.0</b>       | EC002593 |
| <b>ETIM 8.0</b>       | EC002593 |
| <b>UNSPSC 16.0901</b> | 39122205 |

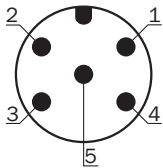


### Pin assignment



| Pin | Designation | Description                           |
|-----|-------------|---------------------------------------|
| 1   | AUX D00R    | Door application diagnostic output    |
| 2   | +24 V DC    | Safety switch voltage supply          |
| 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 | 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

### Recommended accessories

Other models and accessories → [www.sick.com/TR110\\_Lock](http://www.sick.com/TR110_Lock)

|   | Brief description   | Type       | Part no. |
|---|---|------------|----------|
| Actuators   |   |            |          |
|  | Actuator angled   | TR110-XABT | 5334663  |
|  | Hinged actuators for doors with hinges on bottom <sup>6</sup> | TR110-XAFB | 5338338  |

|   | Brief description                               | Type       | Part no. |
|---|---|------------|----------|
|  | Hinged actuators for doors with hinges on left  | TR110-XAFL | 5338331  |
|  | Hinged actuators for doors with hinges on right | TR110-XAFR | 5338332  |
|  | Hinged actuators for doors with hinges on top   | TR110-XAFT | 5338336  |
|  | Actuator straight                               | TR110-XAS  | 5321176  |

## SICK AT A GLANCE

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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