



**NON-CONTACT SAFETY SWITCHES** 



NON-CONTACT SAFETY SWITCHES



Ordering information

Туре	Part no.
TR4-SBU03PB	6070796

Other models and accessories -> www.sick.com/TR4\_Direct

### Detailed technical data

#### Features

System part	Sensor with actuator
Sensor principle	RFID
Number of safe outputs	2
Safe switch on distance $\mathbf{S}_{ao}$	25 mm
Safe switch off distance S <sub>ar</sub>	35 mm
Active sensor surfaces	2
Actuation directions	5
Coding	Uniquely coded

### Safety-related parameters

Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (EN ISO 13849)
Performance level	PL e (EN ISO 13849)
$\ensuremath{PFH}\xspace_D$ (mean probability of a dangerous failure per hour)	6.03 * 10 <sup>-10</sup>
T <sub>M</sub> (mission time)	20 years (EN ISO 13849)
Туре	Type 4 (EN ISO 14119)
Actuator coding level	High coding level (EN ISO 14119)
Classification in compliance with IEC/ EN 60947-5-3	PDF-M
Safe state in the event of a fault	At least one safety-related semiconductor output (OSSD) is in the OFF state.
Functions	
Safe series connection	In control cabinet (with diagnostics)
Interfaces	
Connection type	Cable

1) Detection time for external faults (e.g., short-circuit or cross-circuit of output signal switching devices). Follow the detailed information in the operating instructions.

Length of cable 3 m

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Long connecting cable	≤ 200 m
Cable diameter	6.5 mm
Conductor cross section	0.25 mm <sup>2</sup>
Bend radius (with fixed installation)	> 7 x cable diameter
Bend radius (with moving cable)	> 14 x cable diameter
Cable material	PVC
Conductor material	Copper
IO-Link Safety	
OFDT	≤ 100 ms <sup>1)</sup>
Display elements	LEDs
Status display	1

<sup>1)</sup> Detection time for external faults (e.g., short-circuit or cross-circuit of output signal switching devices). Follow the detailed information in the operating instructions.

#### Electrical data

Protection class	III (EN 50178)
Classification according to cULus	Class 2
Supply voltage V <sub>s</sub>	24 V DC (20.4 V DC 26.4 V DC)
Power consumption	≤ 50 mA
Type of output	Self-monitoring semiconductor outputs (OSSDs)
Output current	≤ 200 mA
Response time	45 ms <sup>1)</sup>
Release time	360 ms <sup>2)</sup>
Risk time	≤ 100 ms <sup>3)</sup>
Switch-on time	2 s <sup>4</sup> )
Electrical life	10 x 10 <sup>6</sup> switching cycles

<sup>1)</sup> In a safe series connection, each downstream safety switch increases the system response time. More response times can be found in the operating instructions.

 $^{\rm 2)}$  Response time on approach to the enable zone.

<sup>3)</sup> Detection time for external faults (e.g., short-circuit or cross-circuit of output signal switching devices). Follow the detailed information in the operating instructions.

 $^{\rm 4)}$  After application of the supply voltage to the safety switch.

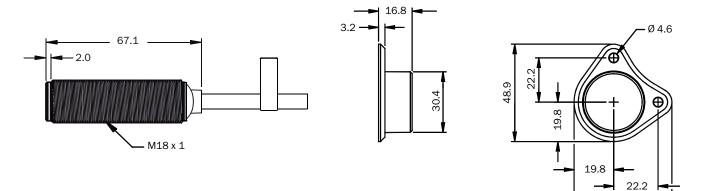
### Mechanical data

Design	Cylindrical
Housing diameter (sensor/actuator)	M18 / M30
Weight	237 g
Housing material	Valox® DR48
Ambient data	
Enclosure rating	IP67 (IEC 60529) IP69K (ISO 20653)
Ambient operating temperature	-25 °C +70 °C
Vibration resistance	10 Hz 55 Hz, 3.5 mm (IEC 60068-2-6)
Shock resistance	30 g, 11 ms (EN 60068-2-27)
Classifications	
ECLASS 5.0	27272403

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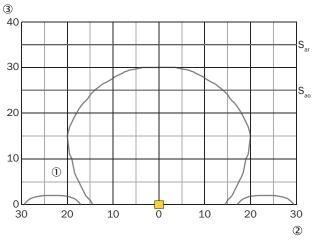
ECLASS 5.1.4	27272403
ECLASS 5.1.4	21212403
ECLASS 6.0	27272403
ECLASS 6.2	27272403
ECLASS 7.0	27272403
ECLASS 8.0	27272403
ECLASS 8.1	27272403
ECLASS 9.0	27272403
ECLASS 10.0	27272403
ECLASS 11.0	27272403
ECLASS 12.0	27274601
ETIM 5.0	EC001829
ETIM 6.0	EC001829
ETIM 7.0	EC001829
ETIM 8.0	EC001829
UNSPSC 16.0901	39122205

### Dimensional drawing (Dimensions in mm (inch))



48.9

### Response range



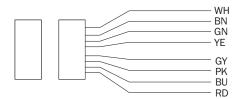
If the actuator moves laterally in relation to the surface of the sensor, a minimum distance of 3 mm must be maintained. This distance will prevent premature triggering due to the side approach areas.

① Sensing range

② Side deviation in mm

③ Distance to sensor surface

### Pin assignment



Aux output (not safe)	
Voltage supply 24 V DC	
Not connected	
Enable input for channel B	
Safety output A	
Safety output B	
Voltage supply 0 V DC	
Enable input for channel A	

#### **Recommended accessories**

Other models and accessories -> www.sick.com/TR4\_Direct

	Brief description	Туре	Part no.
Mounting brackets and plates			
40	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446

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	Brief description	Туре	Part no.
Terminal and	alignment brackets		
<b>K</b>	Clamping block for round sensors M18, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KH-M18	2051481

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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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