



# T4000-1RBA01

T4000 Standard

NON-CONTACT SAFETY SWITCHES

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
T4000-1RBA01	6012147

Other models and accessories → [www.sick.com/T4000\\_Standard](http://www.sick.com/T4000_Standard)



### Detailed technical data

#### Features

<b>System part</b>	Evaluation unit
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#### Safety-related parameters

<b>Category</b>	Category 3 (EN ISO 13849)
<b>Performance level</b>	PL e (EN ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	4.3 x 10 <sup>-8</sup> (EN ISO 13849) <sup>1)</sup> 8.8 x 10 <sup>-8</sup> (EN ISO 13849) <sup>2)</sup>
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849) <sup>1)</sup> 8 years (EN ISO 13849) <sup>2)</sup>
<b>Type</b>	Type 4 (EN ISO 14119)
<b>Actuator coding level</b>	High coding level (EN ISO 14119)
<b>Classification in compliance with IEC/EN 60947-5-3</b>	PDF-M

<sup>1)</sup> With < 34.600 switching cycles p.a.

<sup>2)</sup> With < 90.000 switching cycles p.a.

#### Functions

<b>Safe series connection</b>	None, only individual wiring (with diagnostics)
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#### Interfaces

<b>Connection type</b>	Plug-in terminals
<b>Out indication</b>	✓
<b>Error indication</b>	✓
<b>Status display</b>	✓

#### Electrical data

<b>Protection class</b>	III (EN 50178)
<b>Contamination rating</b>	2
<b>Classification according to cULus</b>	Class 2

<sup>1)</sup> When the operating voltage is switched on, the relay outputs are electrically isolated during the initialisation period, and the door alarm contact set to LOW .

Note on supply voltage $U_S$	Operation with UL-class 2 power supply only
External fuse	At supply voltage $V_S$ 0.25 A ... 8 A
Switching voltage	60 V DC / 30 V AC
<b>Usage category</b>	AC-12/DC-12, AC-14/DC-13 (EN 60947-5-2)
<b>Rated operating current (voltage)</b>	0.3 A (60 V AC) 50 Hz 6 A (30 V AC) 50 Hz 0.3 A (60 V DC) 6 A (30 V DC) 2 A (30 V AC) 50 Hz 3 A (24 V DC)
<b>Rated insulation voltage <math>U_i</math></b>	63 V
<b>Rated impulse withstand voltage <math>U_{imp}</math></b>	1,500 V AC
<b>Supply voltage <math>V_S</math></b>	24 V DC (21 V DC ... 27 V DC)
<b>Short-circuit protection</b>	6 A gG
<b>Type of output</b>	Relays
<b>Switching voltage</b>	$\geq 0.1$ V DC
<b>Response time</b>	$\leq 180$ ms
<b>Switch-on time</b>	$\leq 3$ s <sup>1)</sup>
<b>Number of application diagnostic outputs</b>	1 semiconductor, p-switching
<b>Number of safe outputs (N/O)</b>	2

<sup>1)</sup> When the operating voltage is switched on, the relay outputs are electrically isolated during the initialisation period, and the door alarm contact set to LOW.

## Mechanical data

<b>Design</b>	Rectangular
<b>Dimensions (W x H x D)</b>	22.5 mm x 114 mm x 99 mm
<b>Weight</b>	0.327 kg
<b>Housing material</b>	Plastic PA6.6
<b>Mechanical life</b>	$10 \times 10^6$ switching cycles

## Ambient data

<b>Enclosure rating</b>	IP20
<b>Ambient operating temperature</b>	0 °C ... +55 °C
<b>Storage temperature</b>	-25 °C ... +70 °C
<b>Vibration resistance</b>	10 Hz ... 55 Hz, 0.5 mm (IEC 60068-2-6)
<b>Shock resistance</b>	30 g, 11 ms (IEC 60068-2-27)

## Classifications

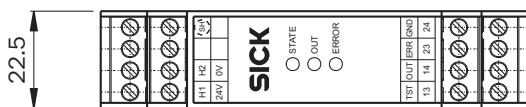
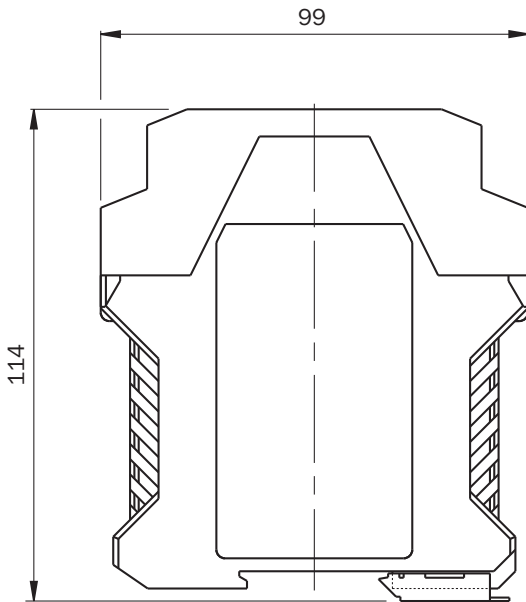
<b>ECl@ss 5.0</b>	27272403
<b>ECl@ss 5.1.4</b>	27272403
<b>ECl@ss 6.0</b>	27272403
<b>ECl@ss 6.2</b>	27272403
<b>ECl@ss 7.0</b>	27272403
<b>ECl@ss 8.0</b>	27272403
<b>ECl@ss 8.1</b>	27272403
<b>ECl@ss 9.0</b>	27272403

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## NON-CONTACT SAFETY SWITCHES

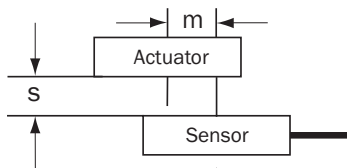
<b>ECl@ss 10.0</b>	27272403
<b>ECl@ss 11.0</b>	27272403
<b>ETIM 5.0</b>	EC001829
<b>ETIM 6.0</b>	EC001829
<b>ETIM 7.0</b>	EC001829
<b>UNSPSC 16.0901</b>	39122205

Dimensional drawing (Dimensions in mm (inch))

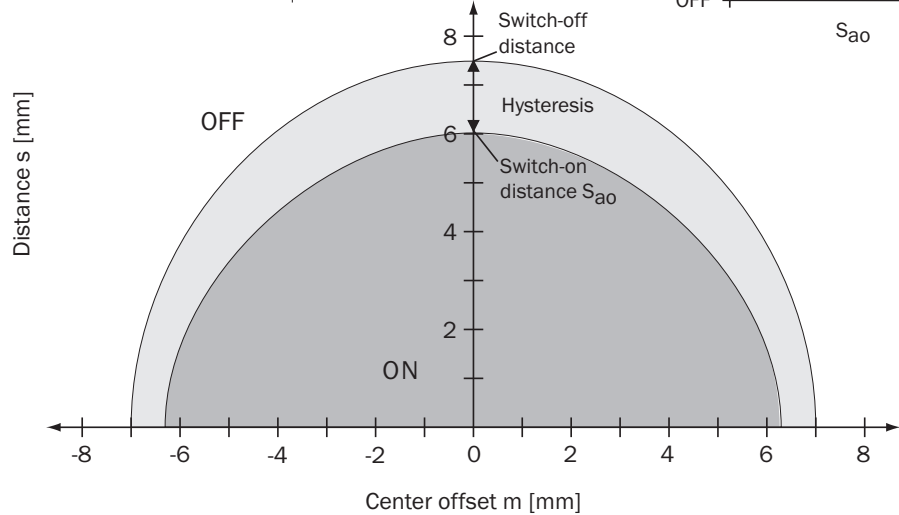
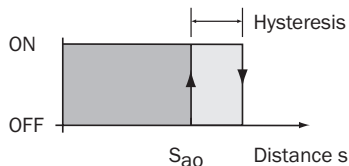


Response range

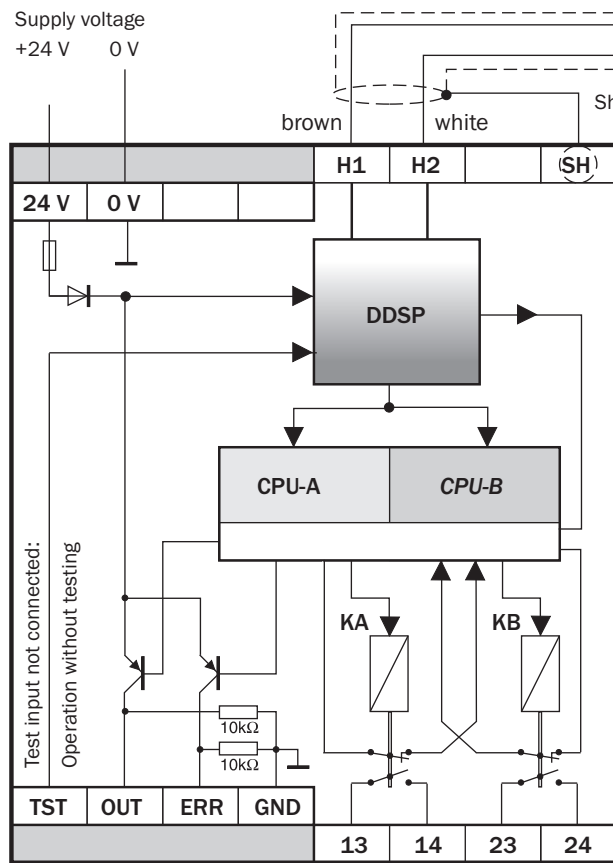
Observe the safe switch-off distance  $s_{ar} = 23 \text{ mm}$ . Relay outputs are safely deactivated



Output state



### Connection diagram



**DDSP:**  
 Double Dynamic Safety-Path  
 with error monitoring of the actuator,  
 of the sensor and of the cable  
 to the sensor

TST Test input (STATE)  
 OUT Enable output  
 ERR Diagnostic output (ERROR)  
 GND 0 V

H1 / H2 Connection, sensor  
 13 / 14 Connection, N/O contact 1, enable contact safety relay  
 23 / 24 Connection, N/O contact 2, enable contact safety relay

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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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