



## TR4 Direct

RFID safety switch for door monitoring with manipulation protection

**SICK**  
Sensor Intelligence.



## Technical data overview

|                               |                                                                                        |
|-------------------------------|----------------------------------------------------------------------------------------|
| <b>Sensor principle</b>       | RFID                                                                                   |
| <b>Safety level</b>           | PL e, SIL 3                                                                            |
| <b>Actuator coding level</b>  | Low coding level (EN ISO 14119)<br>High coding level (EN ISO 14119)                    |
| <b>Type of output</b>         | Self-monitoring semiconductor outputs (OSSDs)                                          |
| <b>Number of safe outputs</b> | 2                                                                                      |
| <b>Connection type</b>        | Cable with plug M12, 8-pin<br>Cable with plug M12, 5-pin<br>Cable (depends on variant) |

## Product description

The TR4 Direct RFID safety switch is used for applications where a high level of manipulation protection is required. TR4 Direct has monitored semiconductor outputs (OSSD) and can therefore be connected directly to a safety controller. The safety switch is only released if a valid actuator is located within the response range of the TR4 Direct. Two actuation principles are available: For universally coded variants, any universally coded actuator can be located in the response range. For uniquely coded variants, only the uniquely coded actuator that has been taught in with the matching code stored may be located within the response range. Up to 30 safety switches, all with LED status indicators, can be connected in series, thereby making electrical installation and service both straightforward and convenient.

## At a glance

- Response range of up to 25 mm
- Unique and universally-coded sensors up to enclosure rating IP 69K
- Up to performance level PL e (EN ISO 13849)
- Two OSSD safety outputs
- Reliable series connection of up to 30 sensors possible (depending on the variant)
- LED status indicator
- Periphery indicator and magnetic holding force (optional)
- Flexi-Loop-compatible M12 plug connector (depending on the variant)

## Your benefits

- High level of manipulation protection due to individually coded actuator (depending on the type)
- High level of machine availability due to large door offset tolerances and periphery indicator
- High level of reliability due to resistance to shock and vibration
- Economical solution due to series connection of up to 30 sensors
- Long product service life due to low-wastage and low-maintenance configuration
- Fast diagnosis via LED status indicator
- The devices are easy to clean, making them ideal for use in highly contaminated areas or applications with stringent hygienic requirements
- Flexi Loop: Reliable series connection including diagnostics with minimal wiring work

## Fields of application

- Monitoring of safety doors and removable guards
- Applications requiring a high level of tamper-proofing
- Applications where precise guidance of the safety door is not possible
- Machinery and systems on which vibrations occur

## Ordering information

Other models and accessories → [www.sick.com/TR4\\_Direct](http://www.sick.com/TR4_Direct)

- **Design:** cylindrical
- **System part:** Sensor with actuator

| Coding            | Assured switch on distance $S_{a0}$ | Connection type Detail     | Length of cable | Safe series connection                                                     | Type        | Part no. |
|-------------------|-------------------------------------|----------------------------|-----------------|----------------------------------------------------------------------------|-------------|----------|
| Uniquely coded    | 15 mm                               | Cable                      | 3 m             | In control cabinet (with diagnostics)                                      | TR4-SAU03PB | 6070790  |
|                   |                                     |                            | 10 m            | In control cabinet (with diagnostics)                                      | TR4-SAU10PB | 6070791  |
|                   |                                     | Cable with plug M12, 5-pin | 0.2 m           | With Flexi Loop (with diagnostics)                                         | TR4-SAU02CB | 6070800  |
|                   |                                     | Cable with plug M12, 8-pin | 0.2 m           | With Flexi Loop (with diagnostics), with T-connector (without diagnostics) | TR4-SAU01CB | 6070792  |
|                   | 25 mm                               | Cable                      | 3 m             | In control cabinet (with diagnostics)                                      | TR4-SBU03PB | 6070796  |
|                   |                                     |                            | 10 m            | In control cabinet (with diagnostics)                                      | TR4-SBU10PB | 6070797  |
|                   |                                     | Cable with plug M12, 5-pin | 0.2 m           | With Flexi Loop (with diagnostics)                                         | TR4-SBU02CB | 6070802  |
|                   |                                     | Cable with plug M12, 8-pin | 0.2 m           | With Flexi Loop (with diagnostics), with T-connector (without diagnostics) | TR4-SBU01CB | 6070798  |
| Universally coded | 15 mm                               | Cable                      | 3 m             | In control cabinet (with diagnostics)                                      | TR4-SAM03PB | 6070787  |
|                   |                                     |                            | 10 m            | In control cabinet (with diagnostics)                                      | TR4-SAM10PB | 6070788  |
|                   |                                     | Cable with plug M12, 5-pin | 0.2 m           | With Flexi Loop (with diagnostics)                                         | TR4-SAM02CB | 6070799  |
|                   |                                     | Cable with plug M12, 8-pin | 0.2 m           | With Flexi Loop (with diagnostics), with T-connector (without diagnostics) | TR4-SAM01CB | 6070789  |
|                   | 25 mm                               | Cable                      | 3 m             | In control cabinet (with diagnostics)                                      | TR4-SBM03PB | 6070793  |
|                   |                                     |                            | 10 m            | In control cabinet (with diagnostics)                                      | TR4-SBM10PB | 6070794  |
|                   |                                     | Cable with plug M12, 5-pin | 0.2 m           | With Flexi Loop (with diagnostics)                                         | TR4-SBM02CB | 6070801  |
|                   |                                     | Cable with plug M12, 8-pin | 0.2 m           | With Flexi Loop (with diagnostics), with T-connector (without diagnostics) | TR4-SBM01CB | 6070795  |

- **Design:** rectangular
- **System part:** Sensor with actuator
- **Assured switch on distance  $S_{ao}$ :** 15 mm

| Coding            | Connection type Detail     | Length of cable | Safe series connection                                                     | Boundary area indication | Type        | Part no. |
|-------------------|----------------------------|-----------------|----------------------------------------------------------------------------|--------------------------|-------------|----------|
| Uniquely coded    | Cable                      | 3 m             | In control cabinet (with diagnostics)                                      | ✓                        | TR4-SEU03PB | 6070812  |
|                   |                            |                 |                                                                            | –                        | TR4-SFU03PB | 6070818  |
|                   |                            |                 |                                                                            | –                        | TR4-SDU03PB | 6070806  |
|                   |                            | 10 m            | In control cabinet (with diagnostics)                                      | ✓                        | TR4-SEU10PB | 6070813  |
|                   |                            |                 |                                                                            | –                        | TR4-SFU10PB | 6070819  |
|                   |                            |                 |                                                                            | –                        | TR4-SDU10PB | 6070807  |
|                   | Cable with plug M12, 5-pin | 0.2 m           | With Flexi Loop (with diagnostics)                                         | ✓                        | TR4-SEU02CB | 6070824  |
|                   |                            |                 |                                                                            | –                        | TR4-SFU02CB | 6070826  |
|                   |                            |                 |                                                                            | –                        | TR4-SDU02CB | 6070822  |
|                   | Cable with plug M12, 8-pin | 0.2 m           | With Flexi Loop (with diagnostics), with T-connector (without diagnostics) | ✓                        | TR4-SEU01CB | 6070814  |
|                   |                            |                 |                                                                            | –                        | TR4-SFU01CB | 6070820  |
|                   |                            |                 |                                                                            | –                        | TR4-SDU01CB | 6070808  |
| Universally coded | Cable                      | 3 m             | In control cabinet (with diagnostics)                                      | ✓                        | TR4-SEM03PB | 6070809  |
|                   |                            |                 |                                                                            | –                        | TR4-SFM03PB | 6070815  |
|                   |                            |                 |                                                                            | –                        | TR4-SDM03PB | 6070803  |
|                   |                            | 10 m            | In control cabinet (with diagnostics)                                      | ✓                        | TR4-SEM10PB | 6070810  |
|                   |                            |                 |                                                                            | –                        | TR4-SFM10PB | 6070816  |
|                   |                            |                 |                                                                            | –                        | TR4-SDM10PB | 6070804  |
|                   | Cable with plug M12, 5-pin | 0.2 m           | With Flexi Loop (with diagnostics)                                         | ✓                        | TR4-SEM02CB | 6070823  |
|                   |                            |                 |                                                                            | –                        | TR4-SFM02CB | 6070825  |
|                   |                            |                 |                                                                            | –                        | TR4-SDM02CB | 6070821  |
|                   | Cable with plug M12, 8-pin | 0.2 m           | With Flexi Loop (with diagnostics), with T-connector (without diagnostics) | ✓                        | TR4-SEM01CB | 6070811  |
|                   |                            |                 |                                                                            | –                        | TR4-SFM01CB | 6070817  |
|                   |                            |                 |                                                                            | –                        | TR4-SDM01CB | 6070805  |

## 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)