

## Technical data sheet

### Safety transponder

Part no.: 63002060  
RD800-MSCA-CB2-R

#### Contents

- Technical data
- Dimensioned drawings
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- Circuit diagrams
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For illustration purposes only



## Technical data

### Basic data

|             |                |
|-------------|----------------|
| Series      | RD800          |
| Application | Individual use |
|             | Series use     |
| Code type   | Standard code  |

### Characteristic parameters

|                             |                                       |
|-----------------------------|---------------------------------------|
| SIL                         | Up to 3, IEC 61508                    |
| SILCL                       | Up to 3, IEC/EN 62061                 |
| Performance Level (PL)      | Up to and including e, EN ISO 13849-1 |
| MTTF <sub>d</sub>           | 4,077 years, EN ISO 13849-1           |
| PFH <sub>D</sub>            | 1.45E-09 per hour                     |
| Mission time T <sub>M</sub> | 20 years, EN ISO 13849-1              |
| Category                    | Up to and including 4, EN ISO 13849   |
| DC                          | High                                  |

### Electrical data

|                         |                                  |
|-------------------------|----------------------------------|
| Protective circuit      | Cross circuit protection         |
|                         | Short circuit protected          |
| Pulse resistance        | 1,500 V                          |
| Usage category at DC 12 | Ue 24 V, Ie 0.25 A, EN 60947-5-1 |

### Performance data

|                                    |                                |
|------------------------------------|--------------------------------|
| Supply voltage U <sub>B</sub>      | 24 V, DC, -15 ... 10 %         |
| Current consumption, max.          | 250 mA                         |
| Power consumption, max.            | 1 W                            |
| Nominal current, min.              | 0.5 mA                         |
| Overvoltage category               | III                            |
| Fuse, external                     | 1 A                            |
| Fuse, internal                     | 0.75 A polyfuse (O1 + O2 + O3) |
| Rated insulation voltage           | 32 V DC                        |
| Conventional thermal current, max. | 0.25 A                         |

### Inputs

|                                    |            |
|------------------------------------|------------|
| Number of digital switching inputs | 2 Piece(s) |
|------------------------------------|------------|

### Switching inputs

|                           |                         |
|---------------------------|-------------------------|
| Type                      | Digital switching input |
| Switching voltage, type.  | 24 V                    |
| Voltage type              | DC                      |
| Current consumption, max. | 5 mA                    |

### Outputs

|                                                    |            |
|----------------------------------------------------|------------|
| Number of safety-related switching outputs (OSSDs) | 2 Piece(s) |
| Number of digital switching outputs                | 1 Piece(s) |
| Switching power, max.                              | 6 W        |

### Safety-related switching outputs

|                                             |                                      |
|---------------------------------------------|--------------------------------------|
| Type                                        | Safety-related switching output OSSD |
| Switching voltage, type.                    | 24 V                                 |
| Voltage type                                | DC                                   |
| Test-pulse length, max.                     | 0.3 ms                               |
| Output current, max.                        | 250 mA                               |
| Capacitance, max. between an output and GND | 200 nF                               |
| Capacitance, max. between two outputs       | 200 nF                               |

### Safety-related switching output 1

|                   |                 |
|-------------------|-----------------|
| Switching element | Transistor, PNP |
|-------------------|-----------------|

### Safety-related switching output 2

|                   |                 |
|-------------------|-----------------|
| Switching element | Transistor, PNP |
|-------------------|-----------------|

### Switching outputs

|                          |                          |
|--------------------------|--------------------------|
| Type                     | Digital switching output |
| Switching voltage, type. | 24 V                     |
| Voltage type             | DC                       |
| Switching current, max.  | 100 mA                   |

### Switching output 1

|                   |                 |
|-------------------|-----------------|
| Switching element | Transistor, PNP |
| Function          | Signal output   |

### Time behavior

|                                                 |        |
|-------------------------------------------------|--------|
| Reaction time after removing the actuator, min. | 80 ms  |
| Reaction time after removing the actuator, max. | 150 ms |
| Reaction time after shutdown, input, min.       | 7 ms   |
| Reaction time after shutdown, input, max.       | 12 ms  |

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

### Connection 1

|          |                     |
|----------|---------------------|
| Function | Connection with PLC |
|          | Signal OUT          |
|          | Voltage supply      |

|                      |               |
|----------------------|---------------|
| Type of connection   | Cable         |
| Cable length         | 2,000 mm      |
| Connector            | On right side |
| Sheathing material   | PVC           |
| Cable color          | Black         |
| Number of conductors | 8 -wire       |

### Cable properties

|                                  |      |
|----------------------------------|------|
| Length of connection cable, max. | 50 m |
|----------------------------------|------|

### Mechanical data

|                                                       |                       |
|-------------------------------------------------------|-----------------------|
| Design                                                | Cubic                 |
| Dimension (W x H x L)                                 | 25 mm x 18 mm x 72 mm |
| Housing material                                      | Plastic               |
| Plastic housing                                       | PA 66                 |
| Net weight                                            | 150 g                 |
| Housing color                                         | Black                 |
| Type of fastening                                     | Through-hole mounting |
| Switching hysteresis, max.                            | 2.4 mm                |
| Assured cut-out distance (Sar), min.                  | 16 mm                 |
| Assured cut-in distance (Sao), max.                   | 10 mm                 |
| Nominal switch-off distance, max.                     | 14 mm                 |
| Nominal operating distance, max.                      | 12 mm                 |
| Distance between two systems (sensor, actuator), min. | 50 mm                 |
| Repeatability, max.                                   | 1.2 mm                |
| Screw tightening torque                               | 1 N·m                 |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 4 Piece(s) |

## Technical data

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -25 ... 70 °C |
| Ambient temperature, storage   | -25 ... 85 °C |
| Degree of contamination        | 3, EN 60947-1 |

### Certifications

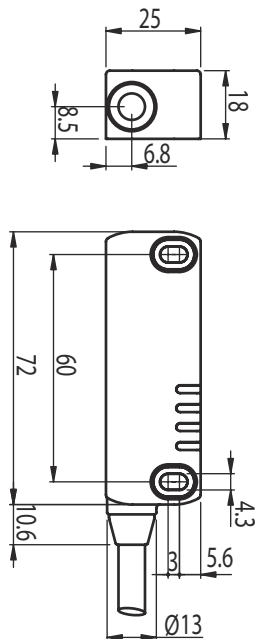
|                                                          |               |
|----------------------------------------------------------|---------------|
| Degree of protection                                     | IP 67         |
|                                                          | IP 69K        |
| Approvals                                                | c UL US       |
|                                                          | TÜV Süd       |
| Test procedure for shock in accordance with standard     | EN 60068-2-27 |
| Test procedure for vibration in accordance with standard | EN 60068-2-6  |

### Classification

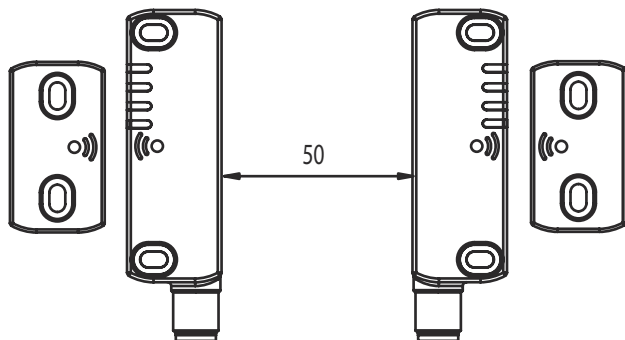
|                       |          |
|-----------------------|----------|
| Customs tariff number | 85369095 |
| ECLASS 5.1.4          | 27272403 |
| ECLASS 8.0            | 27272403 |
| ECLASS 9.0            | 27272403 |
| ECLASS 10.0           | 27272403 |
| ECLASS 11.0           | 27272403 |
| ECLASS 12.0           | 27274601 |
| ECLASS 13.0           | 27274601 |
| ECLASS 14.0           | 27274601 |
| ECLASS 15.0           | 27274601 |
| ETIM 5.0              | EC001829 |
| ETIM 6.0              | EC001829 |
| ETIM 7.0              | EC001829 |
| ETIM 8.0              | EC001829 |
| ETIM 9.0              | EC001829 |
| ETIM 10.0             | EC001829 |

## Dimensioned drawings

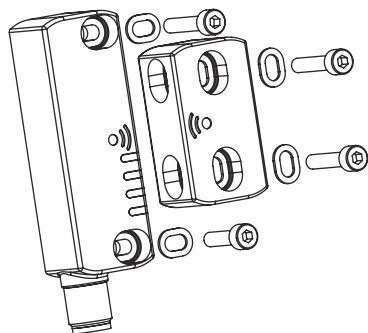
All dimensions in millimeters



Minimum distance in mm



Fastening



Electrical connection

Connection 1

|                      |                     |
|----------------------|---------------------|
| Function             | Connection with PLC |
|                      | Signal OUT          |
|                      | Voltage supply      |
| Type of connection   | Cable               |
| Cable length         | 2,000 mm            |
| Connector            | On right side       |
| Sheathing material   | PVC                 |
| Cable color          | Black               |
| Number of conductors | 8 -wire             |

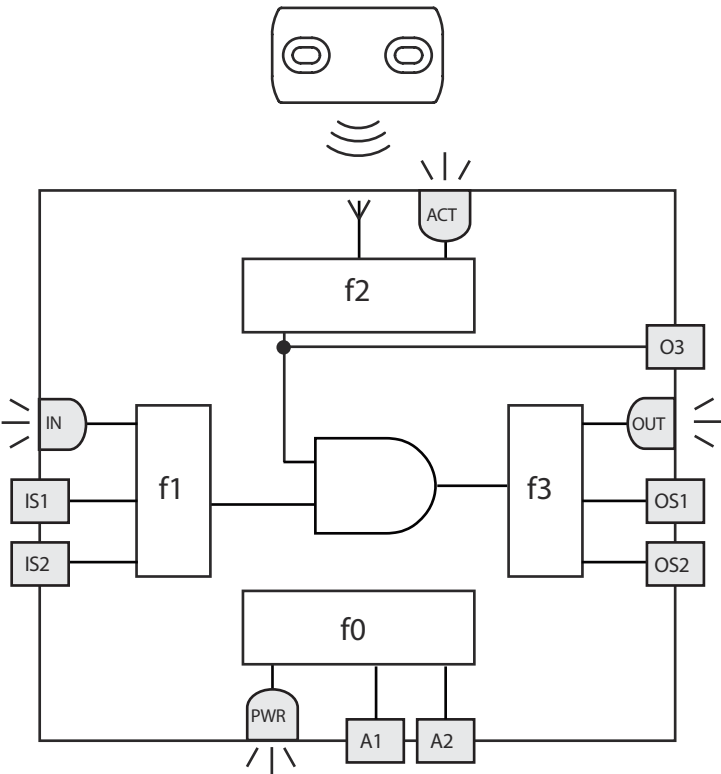
Conductor color

Conductor assignment

|                |      |
|----------------|------|
| Brown          | A1   |
| Red            | IS1  |
| Blue           | A2   |
| Red / White    | OS1  |
| Black          | O3   |
| Violet         | IS2  |
| Black / White  | OS2  |
| Violet / White | n.c. |

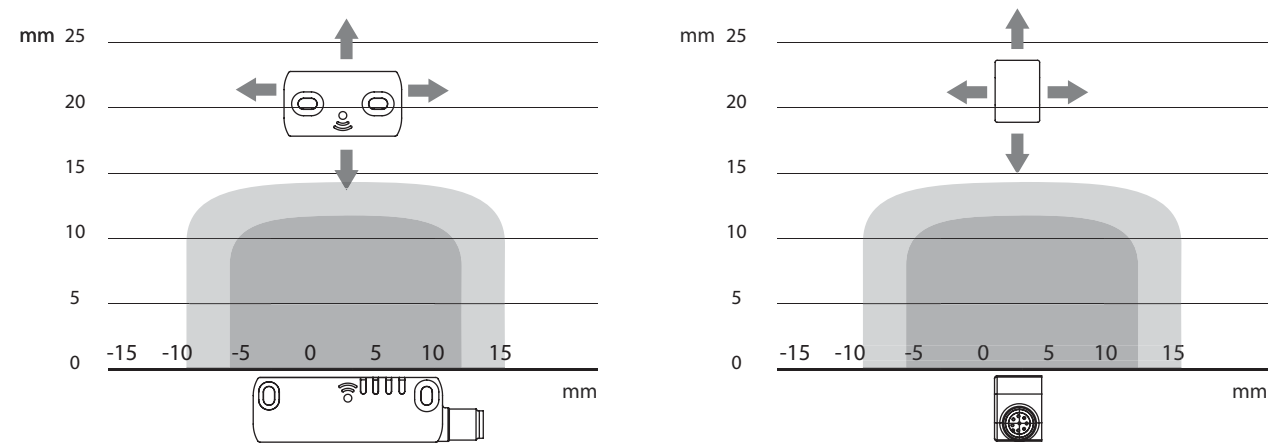
Circuit diagrams

Internal circuit diagram

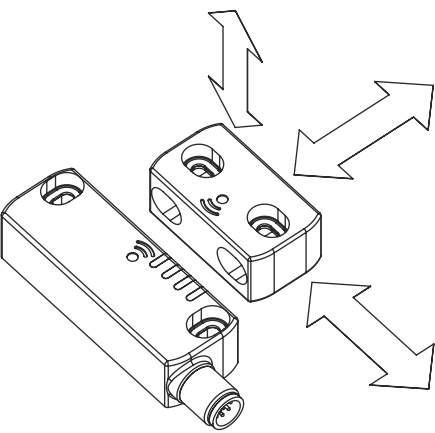


Diagrams

Safety-related distances



Approach directions



Notes

| ! Observe intended use! |                                                                                                                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| !                       | <ul style="list-style-type: none"><li>⚡ The product may only be put into operation by competent persons.</li><li>⚡ Only use the product in accordance with its intended use.</li></ul> |