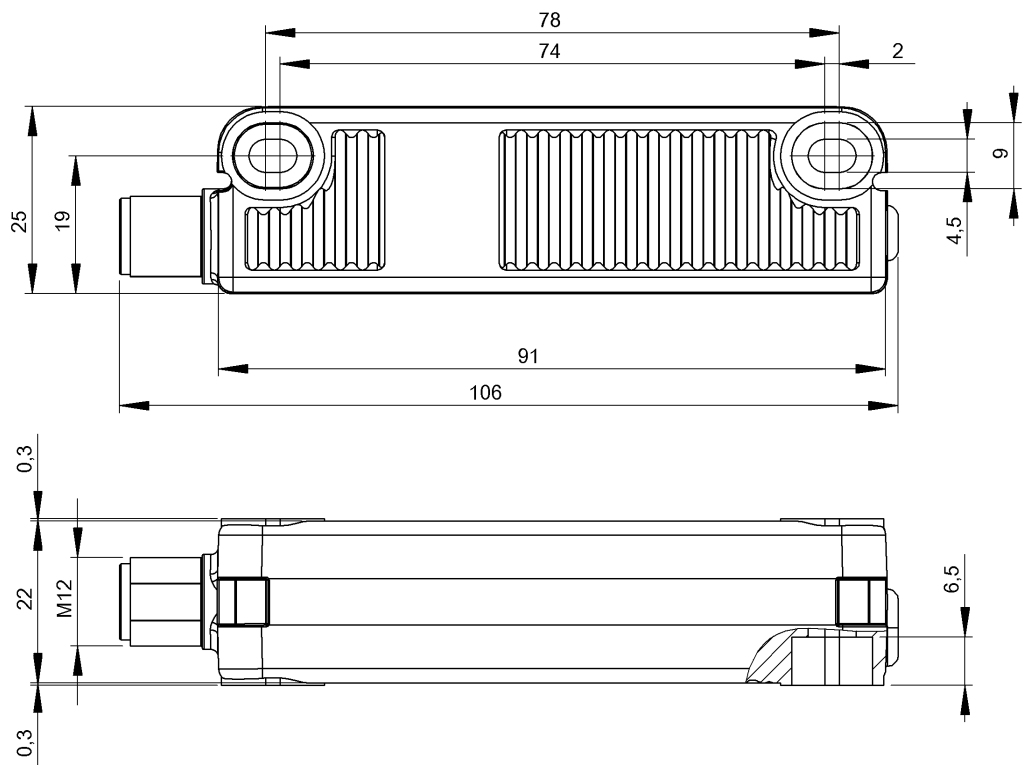




**Basic features**

|                          |                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------|
| Additional features      | expanded diagnostic function:<br>blink codes red/yellow LED                                            |
| Approval/Conformity      | CE<br>cULus<br>TÜV<br>Ecolab<br>WEEE                                                                   |
| Guard locking, principle | no                                                                                                     |
| Operating principle      | non-contact (RFID)                                                                                     |
| Principle of operation   | RFID safety sensor                                                                                     |
| Scope of delivery        | 1 pc.                                                                                                  |
| Series                   | BID R03K                                                                                               |
| Use                      | Interlock which prevents<br>execution of hazardous machine<br>functions under specified<br>conditions. |
| Version                  | Interlocking device                                                                                    |

**Electrical connection**

|                          |                                 |
|--------------------------|---------------------------------|
| Connection               | M12x1, Straight, 5-pin, A-coded |
| Number of safe outputs   | 2                               |
| Short-circuit protection | yes                             |

Safety Sensors  
**BID R03K-4R1S0-O20ZZ0-S92**  
Order Code: BID000E

**BALLUFF**

### Electrical data

|                               |                                          |
|-------------------------------|------------------------------------------|
| Current draw max.             | 600 mA                                   |
| Min. operating current Im     | 0.5 mA                                   |
| No-load current Io max. at Ue | 35 mA                                    |
| Operating voltage Ub          | 20.4...26.4 VDC                          |
| Protection class              | III                                      |
| Rated insulation voltage Ui   | 32 V DC                                  |
| Rated operating current Ie    | 600 mA                                   |
| Rated operating voltage Ue DC | 24 V                                     |
| Rated short circuit current   | 100 A                                    |
| Rated surge voltage Uimp      | 800 V                                    |
| Ready delay tv max.           | 2 s                                      |
| Residual current Ir max.      | 500 µA                                   |
| Switching current             | 250 mA                                   |
| Switching frequency           | 1 Hz                                     |
| Test pulse duration ti max.   | 0.3 ms                                   |
| Test pulse interval T         | 1 s                                      |
| Utilization category          | DC-12: 24 V/0.25 A<br>DC-13: 24 V/0.25 A |
| Voltage drop Ud max. at Ie    | 1 V                                      |

### Environmental conditions

|                         |                            |
|-------------------------|----------------------------|
| Ambient temperature     | -25...70 °C                |
| Contamination scale     | 3                          |
| EN 60068-2-27, Shock    | 30 g, 11 ms                |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 1 mm |
| IP rating               | IP65, IP67, IP69           |
| Storage temperature     | -25...85 °C                |

### Functional safety

|                                  |              |
|----------------------------------|--------------|
| Coding level (EN ISO 14119)      | low          |
| Device type (VDMA 66413)         | 1            |
| Mission Time                     | 20 a         |
| Overvoltage category             | III          |
| PFD (IEC 61508)                  | 2.1 E-5 1/h  |
| PFH (IEC 61508)                  | 2.7 E-10 1/h |
| PFHd (EN 62061)                  | 2.7 E-10 1/h |
| Performance Level                | e            |
| Risk time                        | 200 ms       |
| SIL (IEC 61508)                  | 3            |
| SIL CL (EN 62061)                | 3            |
| Safety category (EN ISO 13849-1) | 4            |
| Type (EN ISO 14119)              | 4            |

### Material

|                  |                                       |
|------------------|---------------------------------------|
| Housing material | Thermoplastic, glass-fiber reinforced |
|------------------|---------------------------------------|

### Mechanical data

|                          |                        |
|--------------------------|------------------------|
| Actuator retention force | 18 N                   |
| Approach direction       | any to sensing surface |
| Dimension                | 106 x 25 x 22 mm       |
| Installation             | for flush mounting     |
| Mounting holes, number   | 2                      |
| Mounting part            | Screw M4               |
| Sensing surface          | lateral                |
| Tightening torque        | 2.2...2.5 Nm           |
| Weight                   | 82 g                   |

### Output/Interface

|                  |             |
|------------------|-------------|
| Switching output | 2x PNP OSSD |
|------------------|-------------|

### Range/Distance

|                                 |        |
|---------------------------------|--------|
| Assured operating distance Sao  | 10 mm  |
| Assured switch off distance Sar | 20 mm  |
| Response time max.              | 100 ms |

### Remarks

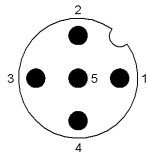
To install the sensors/actuators and lateral approach direction M4x25 mm screws are generally sufficient. For upright installed actuator and/or when using the gasket set 30 mm long screws are recommended.

Axial offset: The long side allows for a maximum height misalignment (x) of sensor and actuator of 8 mm (e.g. mounting tolerance or due to guard door sagging). The axial misalignment (y) is max. ± 18 mm. see drawing: Operating principle

Minimum separation between two sensor systems or another system having the same frequency (125 kHz) ≥ 100 mm for lateral approach.

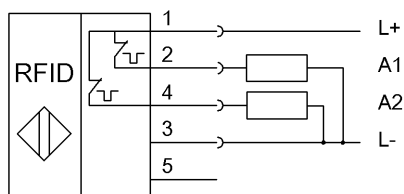
The system is suitable as a door stop for up to 5 kg at 0.25 mm/s.

## Connector Drawings



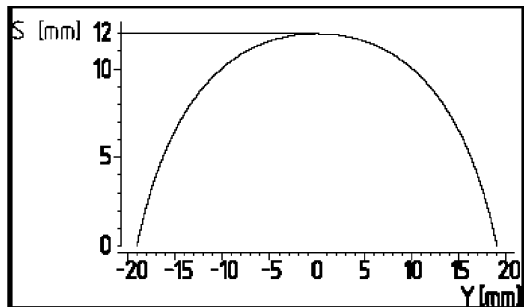
PIN 1: +UB  
 PIN 2: Output 1 OSSD  
 PIN 3: 0V  
 PIN 4: Output 2 OSSD  
 PIN 5: n.c.

## Wiring Diagrams

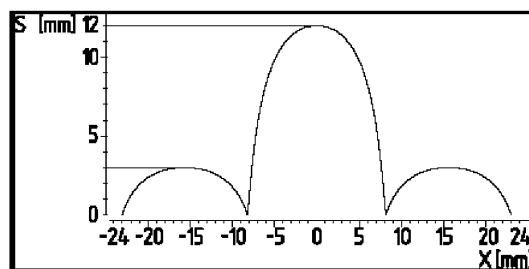


Shown in damped state

## Technical Drawings



Distance characteristic



Distance characteristic