

## overview

- Extended functional reserve capacities for maximum reliability
- Object detection through smallest holes and gaps without blind area thanks to single-lens optics
- Parallel laser beam for uniform detection over the measuring range
- IO-Link interface independent of the switching output (Dual Channel)
- Extended parameterization options and additional diagnostic data
- Robust housing with stainless steel spacer sleeves



Picture similar



## Technical data

### general data

|                                     |                                            |
|-------------------------------------|--------------------------------------------|
| type                                | retro-reflective sensor                    |
| version                             | single lens optics<br>IO-Link dual channel |
| light source                        | pulsed red laser diode                     |
| actual range Sb                     | 0,8 m                                      |
| nominal range Sn                    | 1,2 m                                      |
| smallest object recognizable typ.   | 3 mm at 500 mm                             |
| polarization filter                 | yes                                        |
| alignment / soiled lens indicator   | flashing output indicator                  |
| output indicator                    | LED yellow                                 |
| power on indication                 | LED green                                  |
| sensitivity adjustment              | IO-Link                                    |
| laser class                         | 1                                          |
| distance to focus                   | parallel beam                              |
| wave length                         | 680 nm                                     |
| suppression of reciprocal influence | yes                                        |
| alignment optical axis              | < 1,5°                                     |

### electrical data

|                              |                             |
|------------------------------|-----------------------------|
| response time / release time | < 0,2 ms (High Speed Mode)  |
| jitter                       | < 0,18 ms (High Speed Mode) |
| voltage supply range +Vs     | 10 ... 30 VDC               |

### electrical data

|                                    |                      |
|------------------------------------|----------------------|
| current consumption max. (no load) | 20 mA (@ 10 VDC)     |
| current consumption typ.           | 10 mA (@ 24 VDC)     |
| voltage drop Vd                    | < 2 VDC              |
| output function                    | light / dark operate |
| output circuit                     | push-pull            |
| output current                     | < 50 mA              |
| short circuit protection           | yes                  |
| reverse polarity protection        | yes                  |

### communication interface

|                       |                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| baud rate             | 38,4 kBaud (COM 2)                                                                                                                                                                            |
| adjustable parameters | switching point<br>time filters<br>LED status indicators<br>output logic<br>output circuit<br>counter<br>operation mode<br>deactivate the sensor element<br>Find Me function<br>Teach-in mode |
| IO-Link port type     | Class A                                                                                                                                                                                       |
| process data length   | 32 Bit                                                                                                                                                                                        |

## Technical data

### communication interface

|                        |                                                                                                                         |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|
| process data structure | Bit 0 = SSC1 (presence)<br>Bit 2 = quality<br>Bit 3 = alarm<br>Bit 5 = SSC4 (counter)<br>Bit 16-31 = 16 Bit measurement |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|

|           |              |
|-----------|--------------|
| interface | IO-Link V1.1 |
|-----------|--------------|

|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| additional data | signal strength<br>excess gain<br>operating cycles<br>device temperature |
|-----------------|--------------------------------------------------------------------------|

|            |          |
|------------|----------|
| cycle time | ≥ 2,7 ms |
|------------|----------|

### mechanical data

|                  |      |
|------------------|------|
| width / diameter | 8 mm |
|------------------|------|

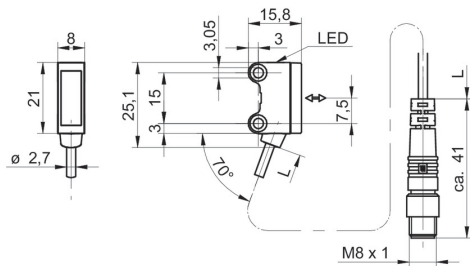
### mechanical data

|                       |                                      |
|-----------------------|--------------------------------------|
| height / length       | 25,1 mm                              |
| depth                 | 15,8 mm                              |
| type                  | rectangular                          |
| mechanical mounting   | sleeve smooth (stainless steel)      |
| housing material      | plastic (ASA, PMMA)                  |
| front (optics)        | PMMA                                 |
| connection types      | flylead connector M8 4 pin, L=200 mm |
| cable characteristics | PVC / PVC 4 x 0,08 mm <sup>2</sup>   |

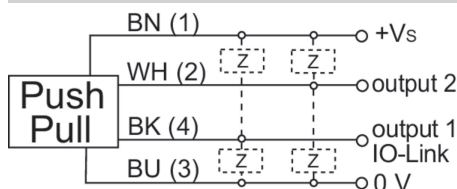
### ambient conditions

|                       |                |
|-----------------------|----------------|
| operating temperature | -20 ... +50 °C |
| protection class      | IP 67          |

## dimension drawing



## connection diagram

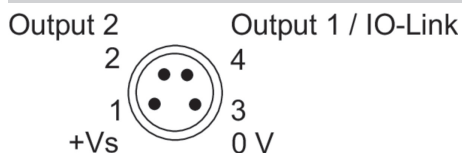


## laser warning

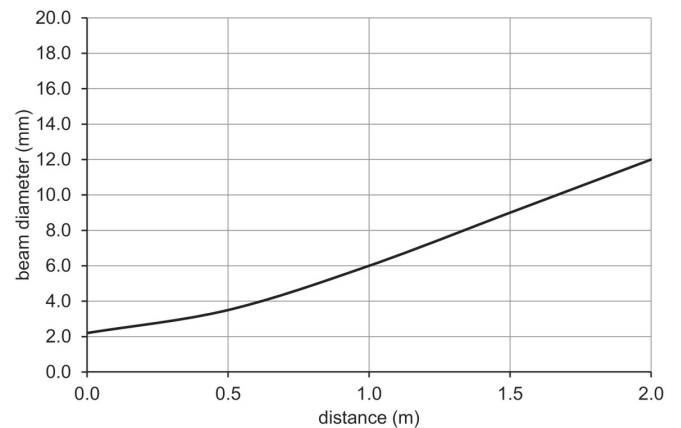
**CLASS 1 LASER  
PRODUCT**

IEC 60825-1/2014  
Complies with 21 CFR 1040.10 and 1040.11  
except for deviations pursuant to laser  
notice No. 50, dated June 24, 2007

## pin assignment



## beam characteristic (typically)



## excess gain curve

