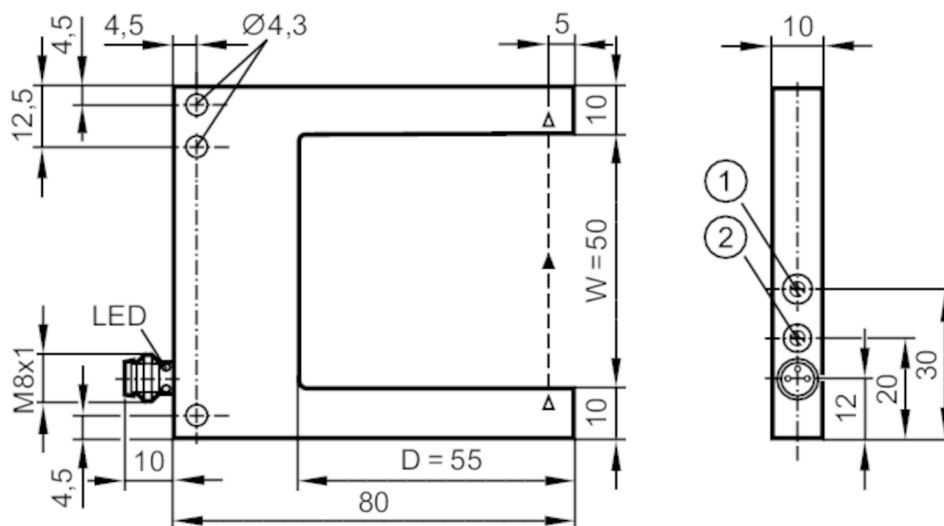




## Photoelectric fork sensor

OPULFPKG/IO-Link/AS



- 1 potentiometer sensitivity  
2 output function switch



### Product characteristics

|                        |           |
|------------------------|-----------|
| Type of light          | red light |
| Laser protection class | 1         |

### Application

|                    |                     |
|--------------------|---------------------|
| Function principle | Through-beam sensor |
|--------------------|---------------------|

### Electrical data

|                             |      |                                         |
|-----------------------------|------|-----------------------------------------|
| Operating voltage           | [V]  | 10...30 DC; ("supply class 2" to cULus) |
| Insulation rating           | [V]  | 500                                     |
| Current consumption         | [mA] | < 30                                    |
| Protection class            |      | III                                     |
| Reverse polarity protection |      | yes                                     |
| Max. power-on delay time    | [ms] | 150                                     |
| Type of light               |      | red light                               |
| Wave length                 | [nm] | 655                                     |

### Outputs

|                                                 |      |                                     |
|-------------------------------------------------|------|-------------------------------------|
| Electrical design                               |      | PNP/NPN; (parameterisable)          |
| Output function                                 |      | light-on/dark-on mode; (selectable) |
| Max. voltage drop switching output DC           | [V]  | 1                                   |
| Permanent current rating of switching output DC | [mA] | 100                                 |
| Switching frequency DC                          | [Hz] | 5000                                |
| Short-circuit protection                        |      | yes                                 |
| Type of short-circuit protection                |      | pulsed                              |
| Overload protection                             |      | yes                                 |



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| Detection zone                             |                                                                                                                       |                                                                                                   |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Diameter of the smallest detectable object | [mm]                                                                                                                  | 0.05                                                                                              |
| Accuracy / deviations                      |                                                                                                                       |                                                                                                   |
| Repeatability                              | [mm]                                                                                                                  | 0.01                                                                                              |
| Interfaces                                 |                                                                                                                       |                                                                                                   |
| Communication interface                    | IO-Link                                                                                                               |                                                                                                   |
| Transmission type                          | COM2 (38,4 kBaud)                                                                                                     |                                                                                                   |
| IO-Link revision                           | 1.1                                                                                                                   |                                                                                                   |
| SDCI standard                              | IEC 61131-9                                                                                                           |                                                                                                   |
| Profiles                                   | Smart Sensor: Device Identification; Device Diagnosis; Teach Channel; Switching Channel; Process Data Variable        |                                                                                                   |
| SIO mode                                   | yes                                                                                                                   |                                                                                                   |
| Required master port type                  | A                                                                                                                     |                                                                                                   |
| Min. process cycle time                    | [ms]                                                                                                                  | 3.2                                                                                               |
| IO-Link process data (cyclical)            | function                                                                                                              | bit length                                                                                        |
|                                            | process value                                                                                                         | 16                                                                                                |
|                                            | device status                                                                                                         | 4                                                                                                 |
|                                            | binary switching information                                                                                          | 1                                                                                                 |
| IO-Link functions (acyclical)              | application specific tag; operating hours counter; switching cycles counter; Min./Max. Signalspeicher; Operating mode |                                                                                                   |
| Supported DeviceIDs                        | Type of operation                                                                                                     | DeviceID                                                                                          |
|                                            | default                                                                                                               | 1209                                                                                              |
| Note                                       | For further information please see the IODD PDF file under "Downloads"                                                |                                                                                                   |
| Operating conditions                       |                                                                                                                       |                                                                                                   |
| Ambient temperature                        | [°C]                                                                                                                  | -25...60                                                                                          |
| Protection                                 | IP 67                                                                                                                 |                                                                                                   |
| Tests / approvals                          |                                                                                                                       |                                                                                                   |
| EMC                                        | DIN EN 61000-4-2 ESD                                                                                                  | 4 kV CD / 8 kV AD                                                                                 |
|                                            | DIN EN 61000-4-3 HF radiated                                                                                          | 10 V/m                                                                                            |
|                                            | DIN EN 61000-4-4 Burst                                                                                                | 2 kV                                                                                              |
|                                            | DIN EN 61000-4-6 HF conducted                                                                                         | 10 V                                                                                              |
|                                            | DIN EN 55011                                                                                                          | Class A                                                                                           |
| Vibration resistance                       | EN 60068-2-6 Fc                                                                                                       | (10-55) Hz 1 mm amplitude, oscillation period 5 min., 30 min. per axis at resonance or 55 Hz      |
| Shock resistance                           | EN 60068-2-27 Ea                                                                                                      | 30 g 11 ms half-sine; 3 shocks each in every direction of the 3 coordinate axes                   |
| Laser protection class                     | 1                                                                                                                     |                                                                                                   |
| Notes on laser protection                  | Caution:                                                                                                              | laser light                                                                                       |
|                                            | laser class:                                                                                                          | 1                                                                                                 |
|                                            |                                                                                                                       | EN / IEC60825-1:2007                                                                              |
|                                            |                                                                                                                       | EN / IEC60825-1:2014                                                                              |
|                                            |                                                                                                                       | Complies with 21 CFR 1040 except for deviations pursuant to Laser Notice No. 50, dated June 2007. |
| MTTF                                       | [years]                                                                                                               | 548                                                                                               |



## Photoelectric fork sensor

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| Mechanical data |                                                  |              |
|-----------------|--------------------------------------------------|--------------|
| Weight          | [g]                                              | 131          |
| Dimensions      | [mm]                                             | 70 x 10 x 80 |
| Fork depth D    | [mm]                                             | 55           |
| Fork width W    | [mm]                                             | 50           |
| Materials       | housing: diecast zinc powder-coated; lens: glass |              |

| Displays / operating elements |                  |                 |
|-------------------------------|------------------|-----------------|
| Display                       | switching status | 1 x LED, yellow |

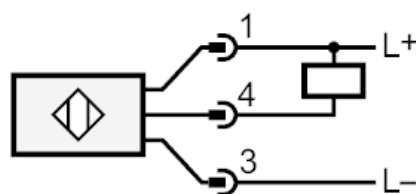
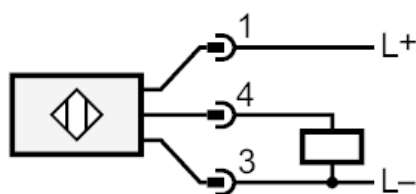
| Remarks       |        |  |
|---------------|--------|--|
| Pack quantity | 1 pcs. |  |

### Electrical connection

Connector: 1 x M8; coding: A



### Connection



### Other data

#### operating mode adjustable via IO-Link

|                     | standard   | high resolution | Power    | Speed    |
|---------------------|------------|-----------------|----------|----------|
| Resolution          | 0.05 mm    | 0.03 mm         | 0.1 mm   | 0.05 mm  |
| Repeatability       | 0.01 mm    | 0.01 mm         | 0.015 mm | 0.015 mm |
| Switching frequency | 5000 Hz    | 2000 Hz         | 1000 Hz  | 10000 Hz |
| Repeatability       | 3 $\sigma$ |                 |          |          |