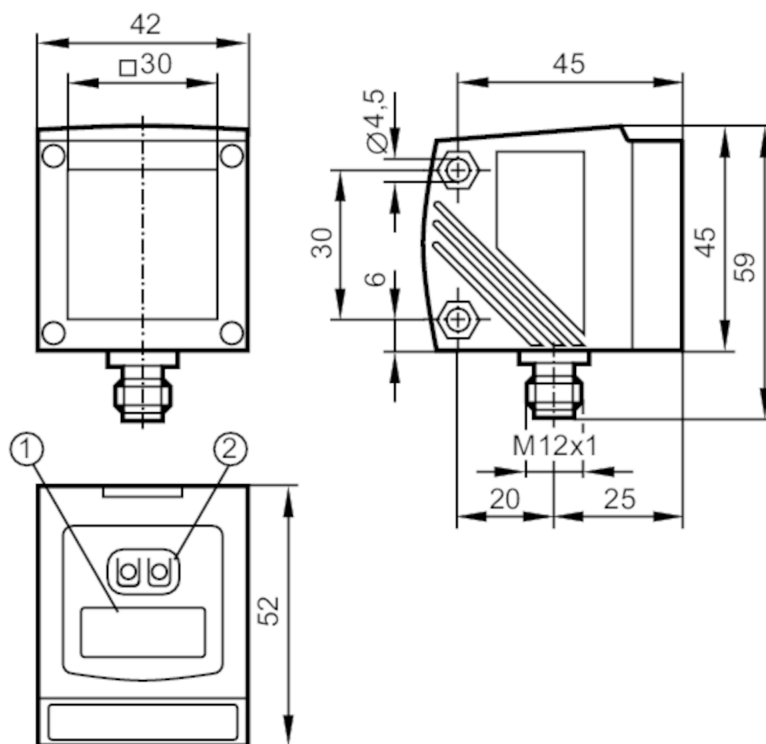




## Photoelectric distance sensor

O1DLF3KG/IO-LINK



- 1 alphanumeric display 4-digit  
2 programming buttons



## Product characteristics

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

## Electrical data

|                             |            |
|-----------------------------|------------|
| Operating voltage [V]       | 18...30 DC |
| Current consumption [mA]    | < 150      |
| Protection class            | III        |
| Reverse polarity protection | yes        |
| Type of light               | red light  |
| Wave length [nm]            | 650        |
| Typ. lifetime [h]           | 50000      |

## Inputs / outputs

|                              |                                                             |
|------------------------------|-------------------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1 |
|------------------------------|-------------------------------------------------------------|

## Outputs

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| Total number of outputs   | 2                                               |
| Electrical design         | PNP                                             |
| Number of digital outputs | 2                                               |
| Output function           | normally open / normally closed; (programmable) |

# O1D155



## Photoelectric distance sensor

O1DLF3KG/IO-LINK

|                                  |      |                       |
|----------------------------------|------|-----------------------|
| Max. current load per output     | [mA] | 200                   |
| Number of analogue outputs       |      | 1                     |
| Analogue current output          | [mA] | 4...20; (IEC 61131-2) |
| Max. load                        | [Ω]  | 250                   |
| Analogue voltage output          | [V]  | 0...10; (IEC 61131-2) |
| Min. load resistance             | [Ω]  | 5000                  |
| Short-circuit protection         |      | yes                   |
| Type of short-circuit protection |      | pulsed                |
| Overload protection              |      | yes                   |

### Detection zone

|                                |      |         |
|--------------------------------|------|---------|
| Max. light spot width          | [mm] | 8       |
| Max. light spot height         | [mm] | 8       |
| Light spot dimensions refer to |      | 6 m     |
| Background suppression         | [m]  | 6...100 |

### Measuring/setting range

|                 |      |                                                   |
|-----------------|------|---------------------------------------------------|
| Measuring range | [m]  | 0.3...6; (white paper 200 x 200 mm 90% remission) |
| Sampling rate   | [Hz] | 1...33                                            |

### Interfaces

|                           |                          |                       |
|---------------------------|--------------------------|-----------------------|
| Communication interface   | IO-Link                  |                       |
| Transmission type         | COM2 (38,4 kBaud)        |                       |
| IO-Link revision          | 1.1                      |                       |
| SDCI standard             | IEC 61131-9              |                       |
| Profiles                  | <b>Function class</b>    | <b>Designation</b>    |
|                           | 0x1                      | Smart Sensor Profil   |
|                           | 0x8000                   | Device Identification |
|                           | 0x8002                   | Process Data Variable |
|                           | 0x8003                   | Device Diagnosis      |
|                           | 0x8004                   | Teach Channel         |
| SIO mode                  | yes                      |                       |
| Required master port type | A                        |                       |
| Process data analogue     | 2                        |                       |
| Process data binary       | 2                        |                       |
| Min. process cycle time   | [ms]                     | 6                     |
| Supported DeviceIDs       | <b>Type of operation</b> | <b>DeviceID</b>       |
|                           | default                  | 812                   |

### Operating conditions

|                     |      |          |
|---------------------|------|----------|
| Ambient temperature | [°C] | -10...60 |
| Protection          |      | IP 67    |

### Tests / approvals

|                        |              |  |
|------------------------|--------------|--|
| EMC                    | EN 60947-5-2 |  |
| Laser protection class | 1            |  |

O1D155



Photoelectric distance sensor

O1DLF3KG/IO-LINK

|                           |              |                                                                                                   |
|---------------------------|--------------|---------------------------------------------------------------------------------------------------|
| 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]      | 186                                                                                               |

Mechanical data

|            |      |                                                          |
|------------|------|----------------------------------------------------------|
| Weight     | [g]  | 243                                                      |
| Housing    |      | rectangular                                              |
| Dimensions | [mm] | 59 x 42 x 52                                             |
| Materials  |      | housing: diecast zinc; front pane: glass; LED window: PC |

Displays / operating elements

|         |                             |                               |
|---------|-----------------------------|-------------------------------|
| Display | switching status            | 2 x LED, yellow               |
|         | operation                   | LED, green                    |
|         | distance value, programming | alphanumeric display, 4-digit |

Accessories

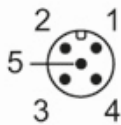
|                        |                          |
|------------------------|--------------------------|
| Accessories (optional) | Protective cover, E21133 |
|------------------------|--------------------------|

Remarks

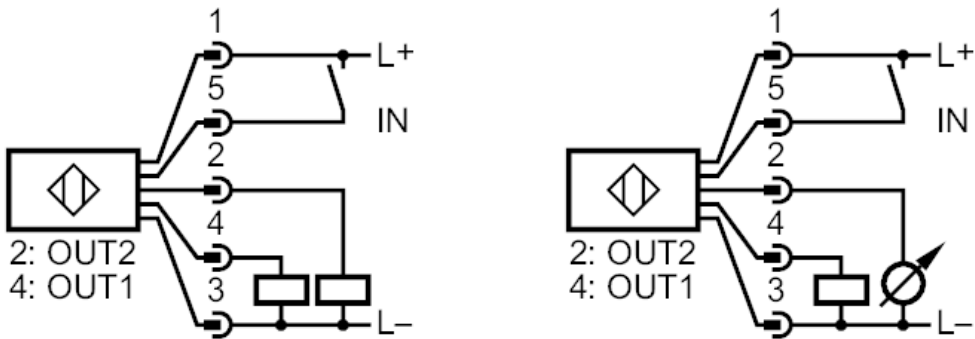
|               |                                                       |
|---------------|-------------------------------------------------------|
| Remarks       | operating voltage "supply class 2" according to cULus |
| Pack quantity | 1 pcs.                                                |

Electrical connection

Connector: 1 x M12; coding: A



Connection



- 2: OUT2 switching output or 4...20 mA / 0...10 V
- 4: OUT1 switching output or IO-Link
- 5: IN Laser On/ Off Ein / Aus

# O1D155



## Photoelectric distance sensor

O1DLF3KG/IO-LINK

| Other data |                          |                 |
|------------|--------------------------|-----------------|
| Parameter  | Setting range            | Factory setting |
| Uni        | mm, m, inch              | mm              |
| OU1        | Hno, Hnc, Fno, Fnc       | Hno             |
| SP1        | 300...5999               | 1000            |
| nSP1       | 300...5999               | 800             |
| FSP1       | 300...5999               | 1200            |
| OU2        | Hno, Hnc, Fno, Fnc, I, U | I               |
| SP2        | 300...5999               | 2000            |
| nSP2       | 300...5999               | 1800            |
| FSP2       | 300...5999               | 2200            |
| ASP        | 0...5999                 | 0               |
| AEP        | 0...5999                 | 5999            |
| rATE [Hz]  | 1...33                   | 15              |
| dS1        | 0...0.1...5              | 0               |
| dr1        | 0...0.1...5              | 0               |
| dS2        | 0...0.1...5              | 0               |
| dr2        | 0...0.1...5              | 0               |
| dFo        | 0...0.1...5              | 0               |
| dIS        | d1...3 ; rd1...3; OFF    | d3              |

### repeatability/accuracy

|                | repeatability of the measured values |                       | accuracy               |                       |
|----------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 300...1000 mm  | ± 11 mm                              | ± 13 mm               | ± 31mm                 | ± 33 mm               |
| 1000...2000 mm | ± 28 mm                              | ± 30 mm               | ± 48 mm                | ± 50 mm               |
| 2000...3000 mm | ± 50 mm                              | ± 50 mm               | ± 70 mm                | ± 70 mm               |
| 3000...4000 mm | ± 85 mm                              | ± 85 mm               | ± 105 mm               | ± 105 mm              |
| 4000...5000 mm | ± 105 mm                             |                       | ± 125 mm               |                       |
| 5000...6000 mm | ± 145 mm                             |                       | ± 165 mm               |                       |
| Sampling rate  | 15 Hz                                |                       |                        |                       |

# O1D155



## Photoelectric distance sensor

O1DLF3KG/IO-LINK

### repeatability/accuracy

|                | repeatability of the measured values |                       | accuracy               |                       |
|----------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 300...1000 mm  | ± 8 mm                               | ± 10 mm               | ± 28 mm                | ± 30 mm               |
| 1000...2000 mm | ± 25 mm                              | ± 25 mm               | ± 45 mm                | ± 45 mm               |
| 2000...3000 mm | ± 38 mm                              | ± 38 mm               | ± 58 mm                | ± 58 mm               |
| 3000...4000 mm | ± 70 mm                              | ± 70 mm               | ± 90 mm                | ± 90 mm               |
| 4000...5000 mm | ± 100 mm                             |                       | ± 120 mm               |                       |
| 5000...6000 mm | ± 100 mm                             |                       | ± 120 mm               |                       |
| Sampling rate  | 1 Hz                                 |                       |                        |                       |

|                                       |                 |
|---------------------------------------|-----------------|
| Range on black object (6 % remission) | <= 2500 klx     |
| The values apply at                   |                 |
| Extraneous light on the object        | < 100 klx       |
| constant ambient conditions           | 23 °C / 960 hPa |
| minimum power-on time in minutes      | 10              |