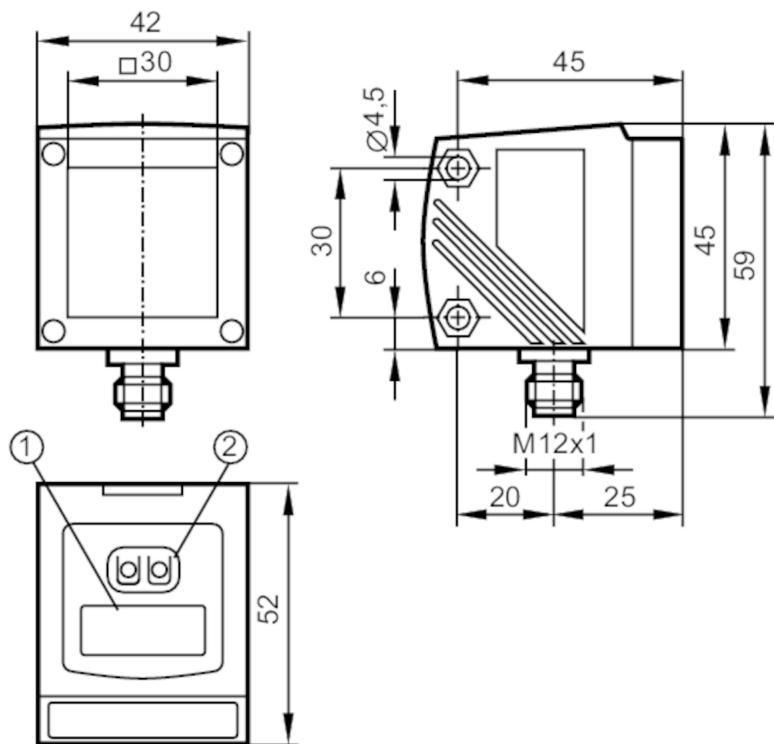


# O1D100



## Photoelectric distance sensor

O1DLF3KG/IO-LINK



- 1 alphanumeric display 4-digit  
2 programming buttons



### Product characteristics

|                        |             |
|------------------------|-------------|
| Laser protection class | 2           |
| Housing                | rectangular |

### Electrical data

|                             |                                         |
|-----------------------------|-----------------------------------------|
| Operating voltage [V]       | 18...30 DC; ("supply class 2" to cULus) |
| Current consumption [mA]    | < 150                                   |
| Protection class            | III                                     |
| Reverse polarity protection | yes                                     |
| 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; (parameterisable) |
| Max. current load per output [mA] | 200                                                |
| Number of analogue outputs        | 1                                                  |
| Analogue current output [mA]      | 4...20; (IEC 61131-2)                              |

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|                                  |                                     |                                                                                           |
|----------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------|
| 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                                                                                       |
| <b>Detection zone</b>            |                                     |                                                                                           |
| Max. light spot width            | [mm]                                | 15                                                                                        |
| Max. light spot height           | [mm]                                | 15                                                                                        |
| Light spot dimensions refer to   |                                     | 10 m                                                                                      |
| Background suppression           | [m]                                 | 0...19                                                                                    |
| <b>Measuring/setting range</b>   |                                     |                                                                                           |
| Measuring range                  | [m]                                 | 0.2...10; (white paper 200 x 200 mm 90% remission)                                        |
| Sampling rate                    | [Hz]                                | 1...50                                                                                    |
| <b>Interfaces</b>                |                                     |                                                                                           |
| Communication interface          |                                     | IO-Link                                                                                   |
| Transmission type                |                                     | COM2 (38,4 kBaud)                                                                         |
| IO-Link revision                 |                                     | 1.1                                                                                       |
| SDCI standard                    |                                     | IEC 61131-9                                                                               |
| Profiles                         |                                     | Smart Sensor: Sensor Identification; Binary Data Channel; Process Value; Sensor Diagnosis |
| SIO mode                         |                                     | yes                                                                                       |
| Required master port type        |                                     | A                                                                                         |
| Process data analogue            |                                     | 2                                                                                         |
| Process data binary              |                                     | 3                                                                                         |
| Min. process cycle time          | [ms]                                | 6                                                                                         |
| Supported DeviceIDs              | <b>Type of operation</b><br>default | <b>DeviceID</b><br>806                                                                    |
| <b>Operating conditions</b>      |                                     |                                                                                           |
| Ambient temperature              | [°C]                                | -10...60                                                                                  |
| Protection                       |                                     | IP 67                                                                                     |
| <b>Tests / approvals</b>         |                                     |                                                                                           |
| EMC                              | EN 60947-5-2                        |                                                                                           |
| Laser protection class           |                                     | 2                                                                                         |

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### Notes on laser protection

|                                    |                                                                                                   |
|------------------------------------|---------------------------------------------------------------------------------------------------|
| Caution:                           | laser light                                                                                       |
| Power:                             | $\leq 4 \text{ mW}$                                                                               |
| Wave length:                       | 650 nm                                                                                            |
| pulse:                             | 1,3 ns                                                                                            |
| Do not stare into beam.            |                                                                                                   |
| Avoid exposure to the laser light. |                                                                                                   |
| laser class:                       | 2                                                                                                 |
|                                    | 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] | 182 |
|------|---------|-----|

### Mechanical data

|                |      |                                                          |
|----------------|------|----------------------------------------------------------|
| Weight         | [g]  | 243.5                                                    |
| Housing        |      | rectangular                                              |
| Dimensions     | [mm] | 59 x 42 x 52                                             |
| Materials      |      | housing: diecast zinc; front pane: glass; LED window: PC |
| Lens alignment |      | side lens                                                |

### Displays / operating elements

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

### Accessories

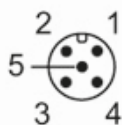
|                        |                          |
|------------------------|--------------------------|
| Accessories (optional) | Protective cover, E21133 |
|------------------------|--------------------------|

### Remarks

|               |                                                                                                          |
|---------------|----------------------------------------------------------------------------------------------------------|
| Remarks       | For more information about the measuring range / application please refer to the operating instructions. |
| Pack quantity | 1 pcs.                                                                                                   |

### Electrical connection

Connector: 1 x M12; coding: A



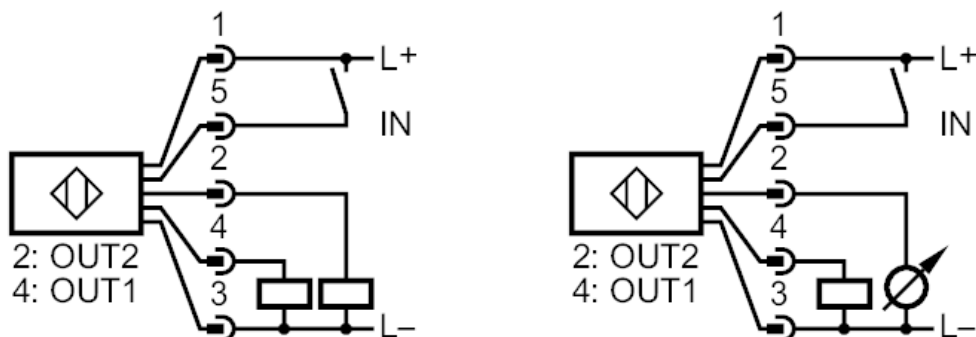
# O1D100



## Photoelectric distance sensor

O1DLF3KG/IO-LINK

### Connection



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

### Other data

| Parameter | Setting range            | Factory setting |
|-----------|--------------------------|-----------------|
| Uni       | mm, m, inch              | mm              |
| OU1       | Hno, Hnc, Fno, Fnc       | Hno             |
| SP1 [mm]  | 200...9999               | 1000            |
| nSP1 [mm] | 200...9999               | 800             |
| FSP1 [mm] | 200...9999               | 1200            |
| OU2       | Hno, Hnc, Fno, Fnc, I, U | I               |
| SP2 [mm]  | 200...9999               | 2000            |
| nSP2 [mm] | 200...9999               | 1800            |
| FSP2 [mm] | 200...9999               | 2200            |
| ASP [mm]  | 0...9999                 | 0               |
| AEP [mm]  | 0...9999                 | 9999            |
| rATE [Hz] | 1...50                   | 50              |
| dS1 [s]   | 0...0.1...5              | 0               |
| dr1 [s]   | 0...0.1...5              | 0               |
| dS2 [s]   | 0...0.1...5              | 0               |
| dr2 [s]   | 0...0.1...5              | 0               |
| dFo [s]   | 0...0.1...5              | 0               |
| dIS       | d1...3 ; rd1...3; OFF    | d3              |

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## Photoelectric distance sensor

O1DLF3KG/IO-LINK

### repeatability/accuracy

| read/write distance (mm)       | repeatability of the measured values |                       | accuracy               |                       |
|--------------------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                                | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 200...1000 mm                  | ± 5.0 mm                             | ±7.5 mm               | ± 15.0 mm              | ± 18.0 mm             |
| 1000...2000 mm                 | ± 5.5 mm                             | ±10.0 mm              | ± 15.0 mm              | ± 20.0 mm             |
| 2000...4000 mm                 | ± 17.5 mm                            | ±22.5 mm              | ± 25.0 mm              | ± 32.0 mm             |
| 4000...6000 mm                 | ± 27.5 mm                            | ±40.0 mm              | ± 35.0 mm              | ± 50.0 mm             |
| 6000...10000 mm                | ± 60.0 mm                            |                       | ± 70.0mm               |                       |
| Sampling rate                  |                                      | 50 Hz                 |                        |                       |
| Extraneous light on the object |                                      | < 40 klx              |                        |                       |

### repeatability/accuracy

| read/write distance (mm)       | repeatability of the measured values |                       | accuracy               |                       |
|--------------------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                                | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 200...1000 mm                  | ± 16.5 mm                            | ±16.5 mm              | ± 26.5 mm              | ± 26.5 mm             |
| 1000...2000 mm                 | ± 16.5 mm                            | ±16.5 mm              | ± 26.5 mm              | ± 26.5 mm             |
| 2000...4000 mm                 | ± 30.0 mm                            | ±37.0 mm              | ± 40.0 mm              | ± 47.0 mm             |
| 4000...6000 mm                 | ± 37.0 mm                            | ±57.0 mm              | ± 47.0 mm              | ± 67.0 mm             |
| 6000...10000 mm                | ± 75.0 mm                            | —                     | ± 85.0mm               | —                     |
| Sampling rate                  |                                      | 50 Hz                 |                        |                       |
| Extraneous light on the object |                                      | 40...100 klx          |                        |                       |

### repeatability/accuracy

| read/write distance (mm)       | repeatability of the measured values |                       | accuracy               |                       |
|--------------------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                                | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 200...1000 mm                  | ± 4.0 mm                             | ±4.5 mm               | ± 14.0 mm              | ± 15.0 mm             |
| 1000...2000 mm                 | ± 4.5 mm                             | ±6.0 mm               | ± 14.5 mm              | ± 16.0 mm             |
| 2000...4000 mm                 | ± 13.5 mm                            | ±14.5 mm              | ± 23.5 mm              | ± 24.0 mm             |
| 4000...6000 mm                 | ± 19.0 mm                            | ±21.0 mm              | ± 29.0 mm              | ± 31.0 mm             |
| 6000...10000 mm                | ± 37.0 mm                            | —                     | ± 47.0mm               | —                     |
| Sampling rate                  |                                      | 1 Hz                  |                        |                       |
| Extraneous light on the object |                                      | < 40 klx              |                        |                       |

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### repeatability/accuracy

| read/write distance (mm)              | repeatability of the measured values |                       | accuracy               |                       |
|---------------------------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                                       | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 200...1000 mm                         | ± 10.0 mm                            | ± 10.0 mm             | ± 20.0 mm              | ± 20.0 mm             |
| 1000...2000 mm                        | ± 10.0 mm                            | ± 10.0 mm             | ± 20.0 mm              | ± 20.0 mm             |
| 2000...4000 mm                        | ± 17.0 mm                            | ± 18.0 mm             | ± 27.0 mm              | ± 28.0 mm             |
| 4000...6000 mm                        | ± 22.0 mm                            | ± 25.0 mm             | ± 32.0 mm              | ± 35.0 mm             |
| 6000...10000 mm                       | ± 37.0 mm                            | —                     | ± 47.0mm               | —                     |
| Sampling rate                         | 1 Hz                                 |                       |                        |                       |
| Extraneous light on the object        | < 40...100 klx                       |                       |                        |                       |
| -                                     | -                                    |                       |                        |                       |
| Range on black object (6 % remission) | <= 4000 mm                           |                       |                        |                       |
| -                                     | -                                    |                       |                        |                       |
| The values apply at                   |                                      |                       |                        |                       |
| constant ambient conditions           | 23 °C / 960 hPa                      |                       |                        |                       |
| minimum power-on time in minutes      | 10                                   |                       |                        |                       |