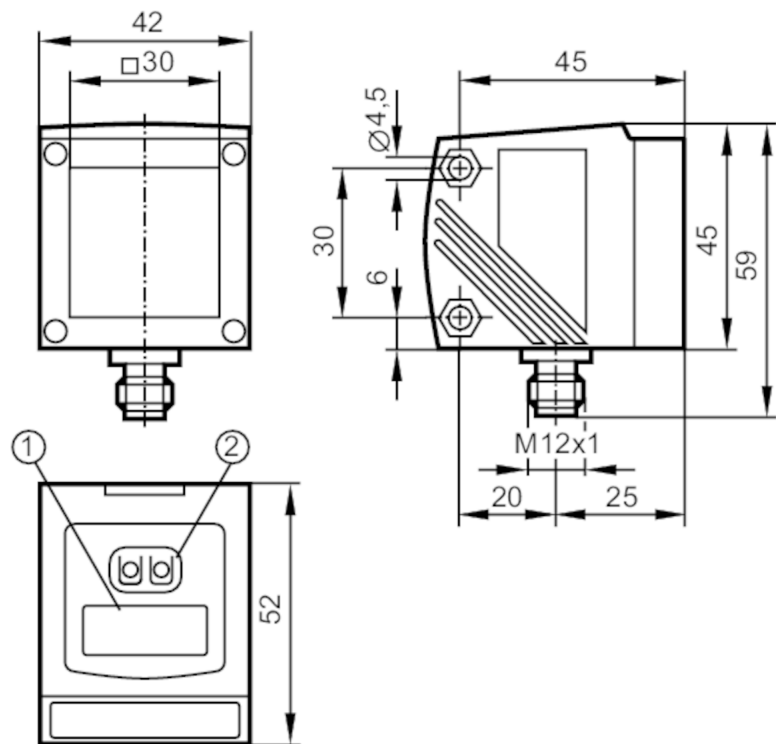


# O1D106



## Photoelectric distance sensor

O1DLF3KG



- 1 alphanumeric display 4-digit  
2 programming buttons



### Product characteristics

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

### Electrical data

|                             |            |
|-----------------------------|------------|
| Operating voltage [V]       | 18...30 DC |
| 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; (programmable) |
| Max. current load per output [mA] | 200                                             |
| Number of analogue outputs        | 1                                               |
| Analogue current output [mA]      | 4...20; (scalable IEC 61131-2)                  |

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|                                  |     |                                |
|----------------------------------|-----|--------------------------------|
| Max. load                        | [Ω] | 250                            |
| Analogue voltage output          | [V] | 0...10; (scalable 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] | 150      |
| Max. light spot height         | [mm] | 150      |
| Light spot dimensions refer to |      | 75 m     |
| Background suppression         | [m]  | 75...150 |

| Measuring/setting range |      |                            |
|-------------------------|------|----------------------------|
| Measuring range         | [m]  | 1...75; (Reflector E21159) |
| 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                  | Smart Sensor - SSP 0     | Generic Profiled Sensor |
|                           | Function                 | Device identification   |
|                           | Function                 | Process data variable   |
|                           | Function                 | Device diagnosis        |
|                           | Function                 | Teach channel           |
| SIO mode                  | yes                      |                         |
| Required master port type | A                        |                         |
| Process data analogue     | 1                        |                         |
| Process data binary       | 2                        |                         |
| Min. process cycle time   | [ms]                     | 5                       |
| Supported DeviceIDs       | <b>Type of operation</b> | <b>DeviceID</b>         |
|                           | default                  | 810                     |

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

| Tests / approvals      |              |   |
|------------------------|--------------|---|
| EMC                    | EN 60947-5-2 |   |
| Laser protection class |              | 2 |

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### Notes on laser protection

|                                    |                                                                                                                                     |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Caution:                           | laser light                                                                                                                         |
| Power:                             | $\leq 4,0 \text{ mW}$                                                                                                               |
| 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 1040.10 except for conformance with IEC 60825-1 Ed. 3, as described in Laser Notice No. 56, dated May 8, 2019. |
| MTTF [years]                       | 106                                                                                                                                 |

### Mechanical data

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| Weight [g]      | 242.6                                                    |
| 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

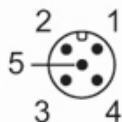
|                    |                              |
|--------------------|------------------------------|
| Accessory required | Prismatic reflector:, E21159 |
|                    | Prismatic reflector:, E20454 |

### Remarks

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

### Electrical connection

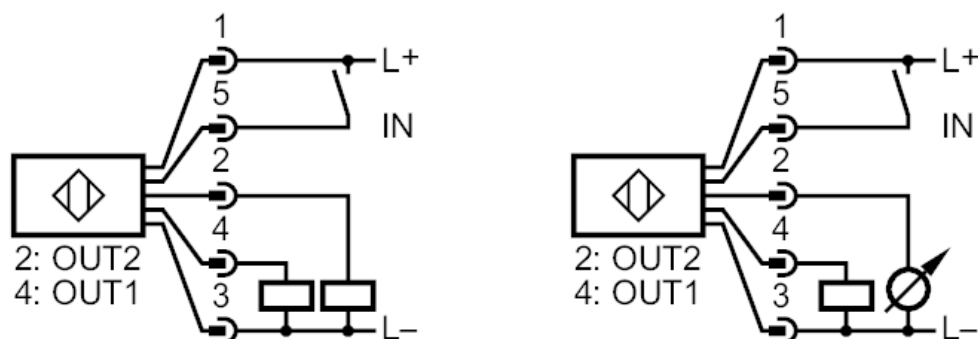
Connector: 1 x M12; coding: A



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## Connection



2: switching output or analogue output 4...20 mA / 0...10 V  
 4: switching output or IO-Link  
 5: IN1 Laser On/ Off

## Other data

| Parameter | Setting range            | Factory setting |
|-----------|--------------------------|-----------------|
| Uni       | m, feet                  | m               |
| OU1       | Hno, Hnc, Fno, Fnc       | Hno             |
| SP1       | 1.00...75.00             | 10.00           |
| nSP1      | 1.00...75.00             | 8.00            |
| FSP1      | 1.00...75.00             | 12.00           |
| OU2       | Hno, Hnc, Fno, Fnc, I, U | I               |
| SP2       | 1.00...75.00             | 20.00           |
| nSP2      | 1.00...75.00             | 18.00           |
| FSP2      | 1.00...75.00             | 22.00           |
| ASP       | 0...75.00                | 0               |
| AEP       | 0...75.00                | 75.00           |
| 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              | 0.2             |
| dIS       | d1...3; rd1...3; OFF     | d3              |

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### repeatability/accuracy

| distance      | repeatability of the measured values | accuracy |
|---------------|--------------------------------------|----------|
| 1...25 m      | ± 15 mm                              | ± 35 mm  |
| 30 m          | ± 15 mm                              | ± 35 mm  |
| 40 m          | ± 15 mm                              | ± 35 mm  |
| 50 m          | ± 19 mm                              | ± 39 mm  |
| 60 m          | ± 27 mm                              | ± 47 mm  |
| 70 m          | ± 43 mm                              | ± 63 mm  |
| Sampling rate |                                      |          |
| Reflector     | 33 Hz                                |          |

### repeatability/accuracy

| distance                         | repeatability of the measured values | accuracy |
|----------------------------------|--------------------------------------|----------|
| 1...75 m                         | ± 15 mm                              | ± 35 mm  |
| Sampling rate                    |                                      |          |
| Reflector                        | 1 Hz                                 |          |
| 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                                   |          |