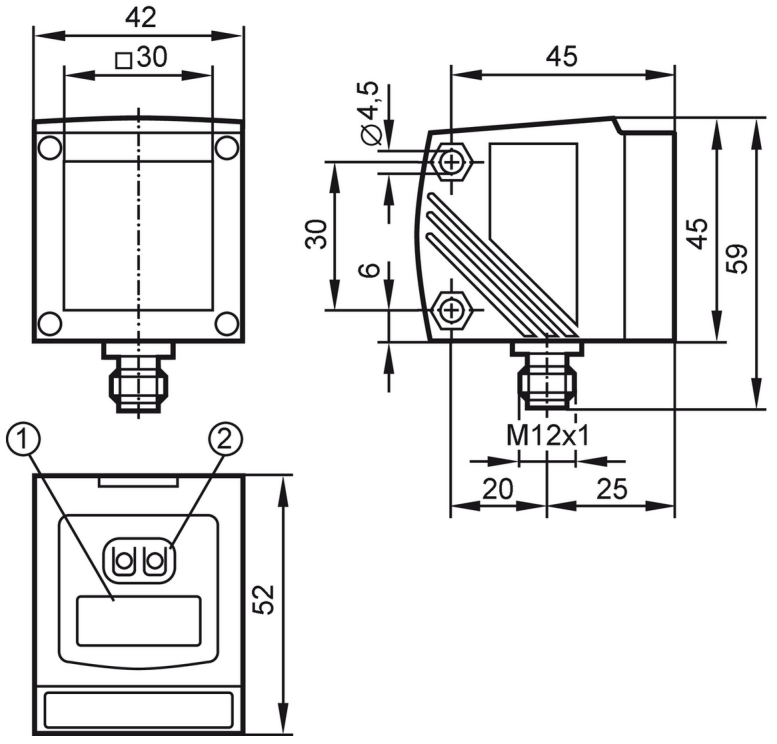
# O1D106

## Laser 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 analog outputs: 1 |
| **Outputs** | | |
| Total number of outputs | | 2 |
| Electrical design | | PNP |
| Number of digital outputs | | 2 |
| Output function | | normally open / closed; (programmable) |
| Max. current load per output | [mA] | 200 |
| Number of analog outputs | | 1 |
| Analog current output | [mA] | 4...20; (scalable IEC 61131-2) |
| Max. load | [Ω] | 250 |
| Analog voltage output | [V] | 0...10; (scalable IEC 61131-2) |

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| | | | |
|---|---|---|---|
| Min. load resistance | [Ω] | 5000 | |
| Short-circuit protection | | yes | |
| Type of short-circuit protection | | yes (non-latching) | |
| Overload protection | | yes | |
| **Monitoring range** | | | |
| 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 class | | A | |
| Process data analog | | 1 | |
| Process data binary | | 2 | |
| Min. process cycle time | [ms] | 5 | |
| Supported DeviceIDs | | **Type of operation** | **DeviceID** |
| | | 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: | <= 4,0 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 |
| Material | | housing: diecast zinc; front lens: glass; LED window: PC |
| Lens alignment | | Side sensing |

### Displays / operating elements

| | | |
|---|---|---|
| Display | Switching status | 2 x LED, yellow |
| | Power | LED, green |
| | Distance, programming | alphanumeric display, 4-digit |

### Accessories

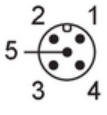
| | |
|---|---|
| Accessory required | Prismatic reflector:, E21159 |
| | Prismatic reflector:, E20454 |

### Remarks

| | |
|---|---|
| Remarks | cULus - Class 2 source required |
| Pack quantity | 1 pcs. |

### Electrical connection

Connector: 1 x M12; coding: A; Contacts: 5



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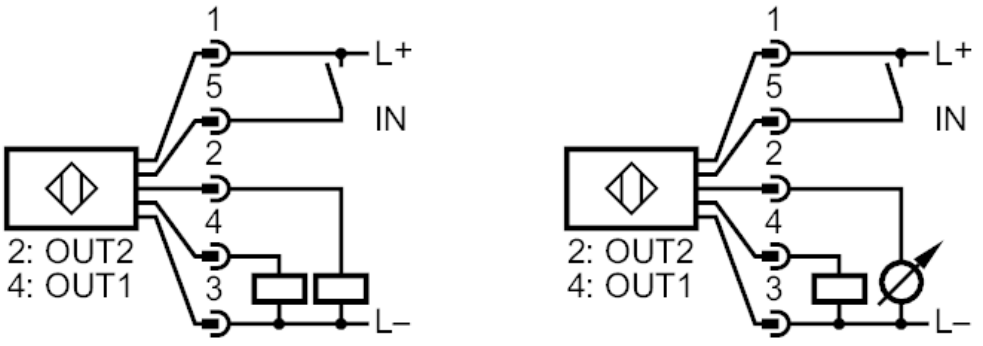
### Connection




| | |
|---|---|
| 2: | switching output or analog 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 | 33 Hz | |

### Repeatability / Accuracy

| distance | Repeatability of the measured values | Accuracy |
|---|---|---|
| 1...75 m | ± 15 mm | ± 35 mm |
| Sampling rate | 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 | |