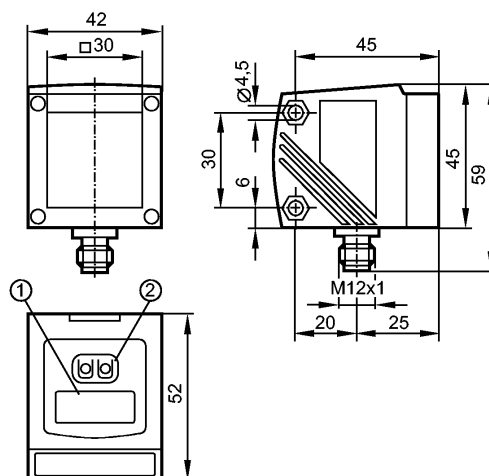


**O1D300**

O1DLF3KG

Photoelectric sensors



- 1: 4-digit alphanumeric display  
2: Programming buttons



Made in Germany

**Product characteristics**

Optical level sensor

Connector

Visible laser light, protection class 2 laser

4-digit alphanumeric display

Measuring range 0.2...10 m (Range referred to white paper 200 x 200 mm, 90 % remission)

Background suppression &gt; 10...100 m

**Electrical data**

|                             |            |
|-----------------------------|------------|
| Electrical design           | DC PNP     |
| Operating voltage [V]       | 18...30 DC |
| Current consumption [mA]    | < 150      |
| Life expectancy typ. [h]    | 50000      |
| Protection class            | III        |
| Reverse polarity protection | yes        |

**Outputs**

|                          |                                                                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Output function          | OUT1: normally open / closed programmable<br>OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) |
| Current rating [mA]      | 2 x 200                                                                                                                             |
| Short-circuit protection | pulsed                                                                                                                              |
| Overload protection      | yes                                                                                                                                 |
| Analogue output          |                                                                                                                                     |
| current output [mA]      | 4...20; according to IEC 61131-2                                                                                                    |
| - Max. load [Ω]          | 250                                                                                                                                 |
| voltage output [V]       | 0...10; according to IEC 61131-2                                                                                                    |
| - Min. load [Ω]          | 5000                                                                                                                                |

**Range**

|                          |                          |
|--------------------------|--------------------------|
| Background suppression   | > 10...100 m             |
| Light spot diameter [mm] | < 15 x 15 ( Range 10 m ) |

**Measuring / setting range**

# O1D300

O1DLF3KG

Photoelectric sensors

|                 |      |                                                                       |
|-----------------|------|-----------------------------------------------------------------------|
| Measuring range | [m]  | 0.2...10 (Range referred to white paper 200 x 200 mm, 90 % remission) |
| Sampling rate   | [Hz] | 1...33                                                                |

## Environment

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

## Tests / approvals

|      |         |              |
|------|---------|--------------|
| EMC  |         | EN 60947-5-2 |
| MTTF | [Years] | 186          |

## Mechanical data

|                   |      |                                                                 |
|-------------------|------|-----------------------------------------------------------------|
| Housing materials |      | housing: diecast zinc; window: glass; LED window: polycarbonate |
| Weight            | [kg] | 0.307                                                           |

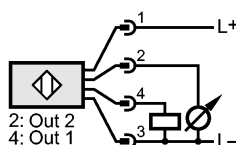
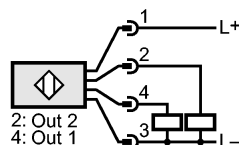
## Displays / operating elements

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

## Electrical connection

|            |  |               |
|------------|--|---------------|
| Connection |  | M12 connector |
|------------|--|---------------|

### Wiring



## Accessories

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

## Remarks

|         |                                                                                                                                                                                                           |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks | Caution: Laser Light<br>Power <= 4.1 mW wavelength = 650 nm<br>pulse 1.3 ns<br>Do not stare into beam<br>Avoid exposure<br>Class 2 laser product<br>EN 60825-1:2003-10<br>cULus - Class 2 source required |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|               |         |   |
|---------------|---------|---|
| Pack quantity | [piece] | 1 |
|---------------|---------|---|

## Other data

| Parameter | Setting range            | Factory setting |
|-----------|--------------------------|-----------------|
| Uni       | cm, m, inch              | cm              |
| OU1       | Hno, Hnc, Fno, Fnc       | Hno             |
| SP1       | 20.0...999.5             | 100.0           |
| rP1       | 20.0...999.5             | 80.0            |
| OU2       | Hno, Hnc, Fno, Fnc, I, U | I               |
| SP2       | 20.0...999.5             | 200.0           |
| rP2       | 20.0...999.5             | 180.0           |
| ASP       | 0...999.5                | 0               |

**O1D300**

O1DLF3KG

**Photoelectric sensors**

|           |              |       |
|-----------|--------------|-------|
| AEP       | 0...999.5    | 999.5 |
| dr1       | 0...0.1...5  | 0     |
| dr2       | 0...0.1...5  | 0     |
| FOU1      | ON ; OFF     | OFF   |
| FOU2      | ON ; OFF     | OFF   |
| dFO       | 0...0.1...5  | 0     |
| EMP       | 20.0...999.5 | 20.0  |
| cMEd      | 20.0...999.5 | --    |
| dIS       | ON ; OFF     | ON    |
| mEAn      | OFF ; 1...60 | OFF   |
| rATE [Hz] | 1...33       | 15    |

**Repeatability / Accuracy**
**Sampling rate 15 Hz - extraneous light on the object max.: 40 klx**

|                   | Repeatability of the measured values |                       | Accuracy               |                       |
|-------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                   | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 20.0...100.0 cm   | ± 0.45 cm                            | ± 0.6 cm              | ± 1.5 cm               | ± 1.6 cm              |
| 100.0...200.0 cm  | ± 0.5 cm                             | ± 0.8 cm              | ± 1.5 cm               | ± 1.8 cm              |
| 200.0...400.0 cm  | ± 1.6 cm                             | ± 1.9 cm              | ± 2.5 cm               | ± 3.0 cm              |
| 400.0...600.0 cm  | ± 2.4 cm                             | ± 3.3 cm              | ± 3.5 cm               | ± 4.5 cm              |
| 600.0...1000.0 cm | ± 5.0 cm                             | --                    | ± 6.5 cm               | --                    |

**Repeatability / Accuracy**
**Sampling rate 15 Hz - extraneous light on the object max.: 40...100 klx**

|                   | Repeatability of the measured values |                       | Accuracy               |                       |
|-------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                   | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 20.0...200.0 cm   | ± 1.4 cm                             | ± 1.4 cm              | ± 2.4 cm               | ± 2.4 cm              |
| 200.0...400.0 cm  | ± 2.5 cm                             | ± 3.0 cm              | ± 3.5 cm               | ± 4.0 cm              |
| 400.0...600.0 cm  | ± 3.1 cm                             | ± 4.5 cm              | ± 4.1 cm               | ± 5.5 cm              |
| 600.0...1000.0 cm | ± 6.0 cm                             | --                    | ± 7.0 cm               | --                    |

**Repeatability / Accuracy**
**Sampling rate 1 Hz - extraneous light on the object max.: 40 klx**

|                   | Repeatability of the measured values |                       | Accuracy               |                       |
|-------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                   | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 20.0...100.0 cm   | ± 0.4 cm                             | ± 0.45 cm             | ± 1.4 cm               | ± 1.5 cm              |
| 100.0...200.0 cm  | ± 0.45 cm                            | ± 0.6 cm              | ± 1.5 cm               | ± 1.6 cm              |
| 200.0...400.0 cm  | ± 1.35 cm                            | ± 1.4 cm              | ± 2.3 cm               | ± 2.4 cm              |
| 400.0...600.0 cm  | ± 1.9 cm                             | ± 2.1 cm              | ± 2.9 cm               | ± 3.1 cm              |
| 600.0...1000.0 cm | ± 3.7 cm                             | --                    | ± 4.7cm                | --                    |

**Repeatability / Accuracy**
**Sampling rate 1 Hz - extraneous light on the object max.: 40...100 klx**

|                  | Repeatability of the measured values |                       | Accuracy               |                       |
|------------------|--------------------------------------|-----------------------|------------------------|-----------------------|
|                  | white (90 % remission)               | grey (18 % remission) | white (90 % remission) | grey (18 % remission) |
| 20.0...200.0 cm  | ± 1.0 cm                             | ± 1.0 cm              | ± 2.0 cm               | ± 2.0 cm              |
| 200.0...400.0 cm | ± 1.8 cm                             | ± 1.9 cm              | ± 2.8 cm               | ± 2.9 cm              |
| 400.0...600.0 cm | ± 2.3 cm                             | ± 2.7 cm              | ± 3.3 cm               | ± 3.7 cm              |

**O1D300**

O1DLF3KG

**Photoelectric sensors**

|                   |          |    |          |    |
|-------------------|----------|----|----------|----|
| 600.0...1000.0 cm | ± 3.8 cm | -- | ± 4.8 cm | -- |
|-------------------|----------|----|----------|----|

Range on black (6 % remission) ≤ 400.0 cm

The values apply at

- constant ambient conditions: 23 °C / 960 hPa
- minimum power-on time in minutes: 10