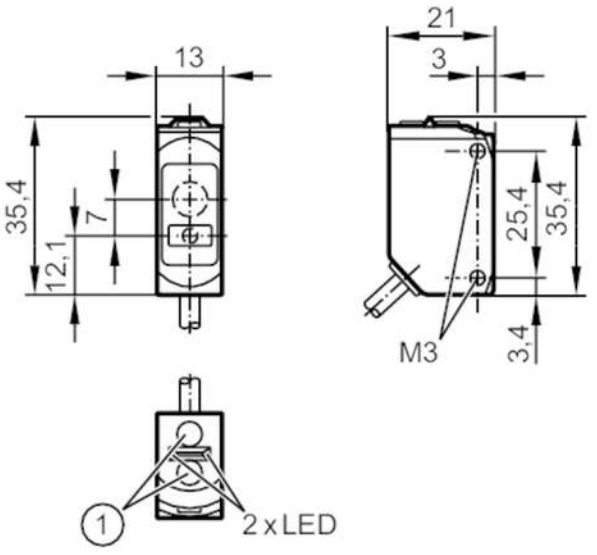
# O6H701

## Diffuse reflection sensor with background suppression

O6HLFPKG/0,30m/US




1 Programmiertaste
receiver in upper lens
transmitter in lower lens

| | | |
|---|---|---|
| **Product characteristics** | | |
| Type of light | | red light |
| Laser protection class | | 1 |
| Housing | | rectangular |
| **Application** | | |
| Special feature | | Background suppression |
| Function principle | | Diffuse reflection sensor |
| **Electrical data** | | |
| Operating voltage | [V] | 10...30 DC |
| Current consumption | [mA] | 16;  (24 V) |
| Protection class | | III |
| Reverse polarity protection | | yes |
| Type of light | | red light |
| Wave length | [nm] | 650 |
| **Outputs** | | |
| Electrical design | | PNP |
| Output function | | light-on/dark-on mode;  (selectable) |
| Max. voltage drop switching output DC | [V] | 2.5 |
| Permanent current rating of switching output DC | [mA] | 100 |
| Switching frequency DC | [Hz] | 1000 |
| Short-circuit protection | | yes |
| Type of short-circuit protection | | pulsed |

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| | | | |
|---|---|---|---|
| **Detection zone** | | | |
| Range | [mm] | 1...100; (white paper 200 x 200 mm) | |
| Range on white object (90 % remission) | [mm] | 1...100 | |
| Range on grey object (18 % remission) | [mm] | 8...100 | |
| Range on black object (6 % remission) | [mm] | 12...100 | |
| Range adjustable | | yes | |
| Max. light spot diameter | [mm] | 2 | |
| Light spot dimensions refer to | | at maximum range | |
| Background suppression available | | yes | |
| **Interfaces** | | | |
| Communication interface | | IO-Link | |
| Transmission type | | COM2 (38,4 kBaud) | |
| IO-Link revision | | 1.1 | |
| SDCI standard | | IEC 61131-9 | |
| Profiles | | Smart Sensor: Device Identification; Device Diagnosis; Teach Channel; Switching Channel; Process Data Variable | |
| SIO mode | | yes | |
| Required master port type | | A | |
| Min. process cycle time | [ms] | 10 | |
| IO-Link process data (cyclical) | | **function** | **bit length** |
| | | process value | 32 |
| | | device status | 4 |
| | | binary switching information | 1 |
| IO-Link functions (acyclical) | | application specific tag; operating hours counter; switch-on cycle counter | |
| Supported DeviceIDs | | **Type of operation** | **DeviceID** |
| | | default | 526 |
| **Operating conditions** | | | |
| Ambient temperature | [°C] | -10...60 | |
| Protection | | IP 65; IP 67 | |
| **Tests / approvals** | | | |
| EMC | | EN 60947-5-2 | |
| Laser protection class | | 1 | |
| 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] | 513 | |
| **Mechanical data** | | | |
| Weight | [g] | 33.8 | |
| Housing | | rectangular | |

# O6H701

## Diffuse reflection sensor with background suppression

**O6HLFPKG/0,30m/US**

| | | |
|---|---|---|
| Dimensions | [mm] | 35.4 x 13 x 21 |
| Materials | | housing: ABS; PPSU; Sealing: EPDM |
| Lens material | | PMMA |
| Lens alignment | | side lens |
| Tightening torque | [Nm] | 0.5;  (screws) |

### Displays / operating elements

| | | |
|---|---|---|
| Display | switching status | 1 x LED, yellow |
| | operation | 1 x LED, green |

### Remarks

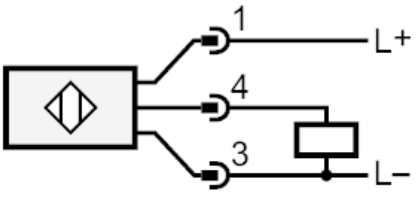
| | |
|---|---|
| Remarks | operating voltage "supply class 2" according to cULus |
| Pack quantity | 1 pcs. |

### Electrical connection

Connector: 1 x M12; coding: A




Connection




| | |
|---|---|
| 4 | OUT / IO-Link |

# O6H701

## Diffuse reflection sensor with background suppression

O6HLFPKG/0,30m/US

### Electrical connection - plug

Cable: 0.3 m, PUR, black, Ø 3.7 mm; 3 x 0.25 mm²

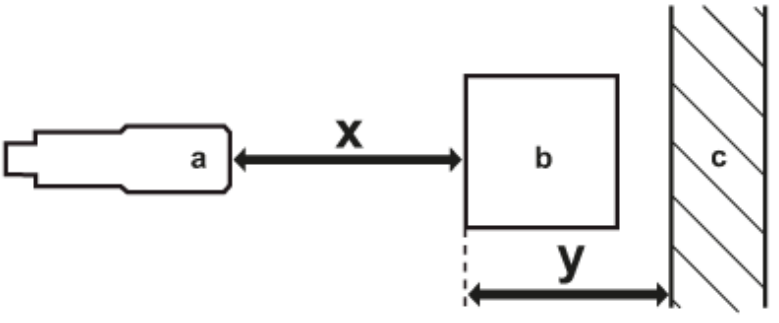
### Other data

**Repeatability / precision: 6 σ**

| | repeatability of the measured values | |
|---|---|---|
| Abstand | white (90 % remission) | black (6 %...90 % remission) |
| 20 mm | 0.1 mm | 0.5 mm |
| 50 mm | 0.2 mm | 1.0 mm |
| 100 mm | 0.5 mm | 2.0 mm |
| | accuracy | |
| Abstand | white (90 % remission) | black (6 %...90 % remission) |
| 20 mm | ± 0.6 mm | ± 0.9 mm |
| 50 mm | ± 1.5 mm | ± 2.0 mm |
| 100 mm | ± 3.0 mm | ± 4.0 mm |

| | |
|---|---|
| The values apply at | |
| Extraneous light on the object | < 10 klx |
| constant ambient conditions | 23 °C / 960 hPa |
| minimum power-on time in minutes | 10 |
| IO-Link - measuring mode | |

### Diagrams and graphs

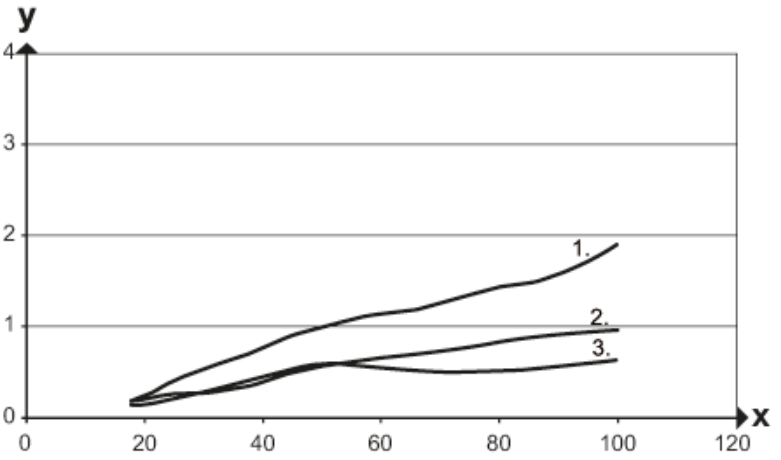



a: sensor
b: object
c: background
x: distance sensor/object [mm]
y: min. distance object/background [mm]

# O6H701

## Diffuse reflection sensor with background suppression

**O6HLFPKG/0,30m/US**




x: distance sensor/object [mm]

y: min. distance object/background [mm]

1 = object black (6 % remission) , background white (90 % remission)

2 = object grey (18 % remission) , background white (90 % remission)

3 = object white (90 % remission) , background white (90 % remission)