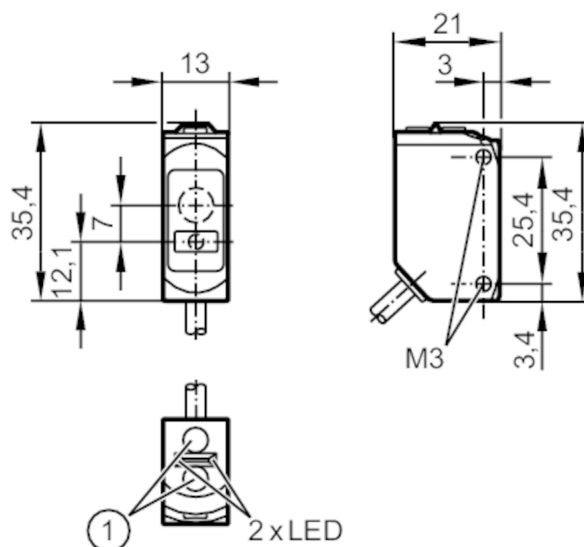


# O6H700



## Diffuse reflection sensor with background suppression

O6HLFPKG



- 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                                                                                                              |
| 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)        | <b>function</b>              | <b>bit length</b>                                                                                              |
|                                        | 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                    | <b>Type of operation</b>     | <b>DeviceID</b>                                                                                                |
|                                        | 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                                   | [ANN]                        | 594                                                                                                            |
| Mechanical data                        |                              |                                                                                                                |
| Weight                                 | [g]                          | 60.7                                                                                                           |
| Housing                                |                              | rectangular                                                                                                    |
| Dimensions                             | [mm]                         | 35.4 x 13 x 21                                                                                                 |

O6H700



Diffuse reflection sensor with background suppression

O6HLFPKG

|                        |                                   |
|------------------------|-----------------------------------|
| 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  |

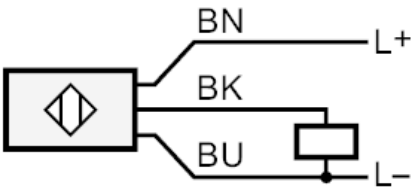
Remarks

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

Electrical connection

Cable: 2 m, PUR, black, Ø 3.7 mm; 3 x 0.25 mm²

Connection



|      |                |
|------|----------------|
| BK   | OUT / IO-Link  |
| BN = | Core colours : |
| BK = | brown          |
| BU = | black          |
|      | blue           |



Diffuse reflection sensor with background suppression

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Other data

Repeatability / precision: 6  $\sigma$

|         | 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   | $\pm 0.6$ mm                         | $\pm 0.9$ mm                 |
| 50 mm   | $\pm 1.5$ mm                         | $\pm 2.0$ mm                 |
| 100 mm  | $\pm 3.0$ mm                         | $\pm 4.0$ 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

The diagram illustrates the sensor's measurement principle. A sensor (a) is positioned on the left. A horizontal double-headed arrow labeled 'x' indicates the distance from the sensor to the front face of a square object (b). To the right of the object is a vertical line with diagonal hatching, labeled 'c', representing the background. A horizontal double-headed arrow labeled 'y' indicates the distance from the bottom edge of the object (b) to the background (c). A dashed vertical line extends from the bottom of the object to the start of the 'y' measurement.

a: sensor

b: object

c: background

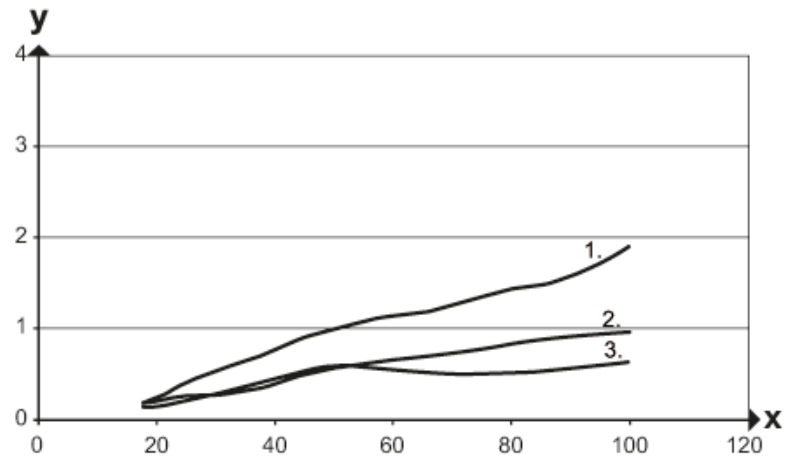
x: distance sensor/object [mm]

y: min. distance object/background [mm]



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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)