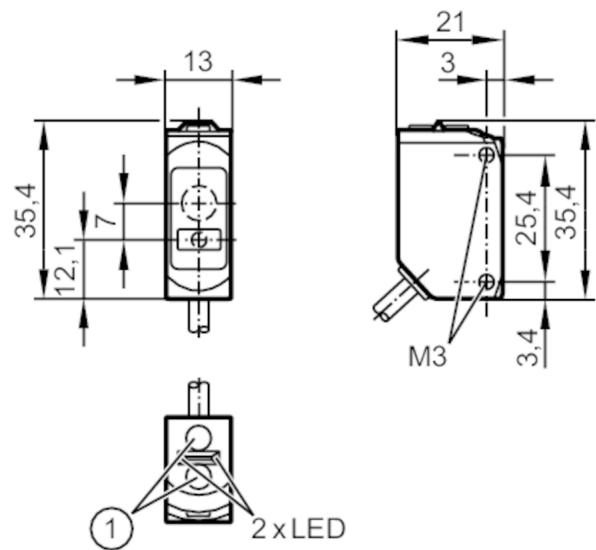


O6H704



Diffuse reflection sensors with background suppression

O6HLFNKG/0,30m/US



- 1     Programmirtaste  
Receiver in upper lens  
transmitter in lower lens



| Product characteristics                         |      |                                     |
|-------------------------------------------------|------|-------------------------------------|
| Type of light                                   |      | red light                           |
| Laser protection class                          |      | 1                                   |
| Housing                                         |      | rectangular                         |
| Application                                     |      |                                     |
| System                                          |      | 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                               |      | NPN                                 |
| 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                |      | yes (non-latching)                  |



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| Monitoring range                       |                              |                                                                                                                                     |
|----------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 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 - SSP 0         | Generic Profiled Sensor                                                                                                             |
|                                        | Function                     | Device identification                                                                                                               |
|                                        | Function                     | Multiple switching signal                                                                                                           |
|                                        | Function                     | Process data variable                                                                                                               |
|                                        | Function                     | Device diagnosis                                                                                                                    |
|                                        | Function                     | Teach channel                                                                                                                       |
| SIO mode                               |                              | yes                                                                                                                                 |
| Required master port class             |                              | 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 1040.10 except for conformance with IEC 60825-1 Ed. 3, as described in Laser Notice No. 56, dated May 8, 2019. |

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|             |                |             |
|-------------|----------------|-------------|
| MTTF        | [years]        | 513         |
| UL approval | Ta             | -25...50 °C |
|             | Enclosure type | Type 1      |
|             | voltage supply | Class 2     |

| Mechanical data   |      |                                   |
|-------------------|------|-----------------------------------|
| Weight            | [g]  | 33.9                              |
| Housing           |      | rectangular                       |
| Dimensions        | [mm] | 35.4 x 13 x 21                    |
| Material          |      | housing: ABS; PPSU; sealing: EPDM |
| Lens material     |      | PMMA                              |
| Lens alignment    |      | Side sensing                      |
| Tightening torque | [Nm] | 0.5; (screws)                     |

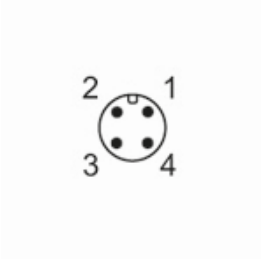
| Displays / operating elements |                  |                 |
|-------------------------------|------------------|-----------------|
| Display                       | Switching status | 1 x LED, yellow |
|                               | Power            | 1 x LED, green  |

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

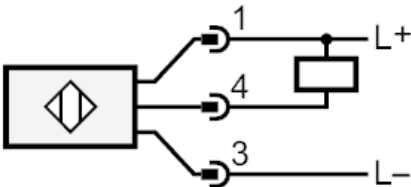
Electrical connection - plug

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

Connector: 1 x M12; coding: A



Connection





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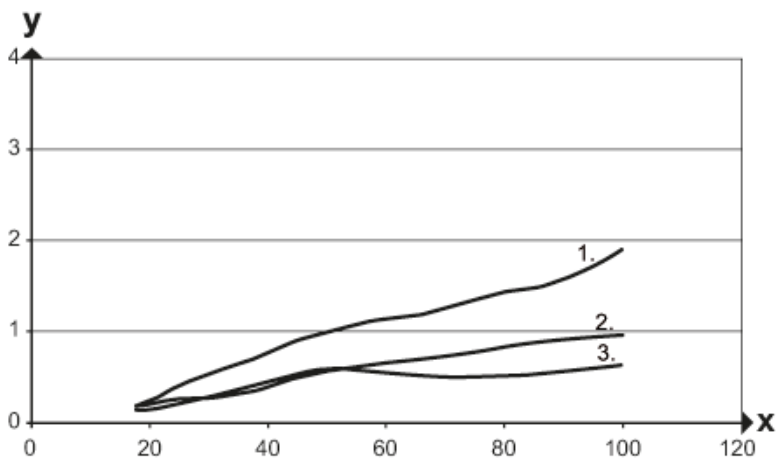
Other data

Repeatability: 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                             |                              |
| 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

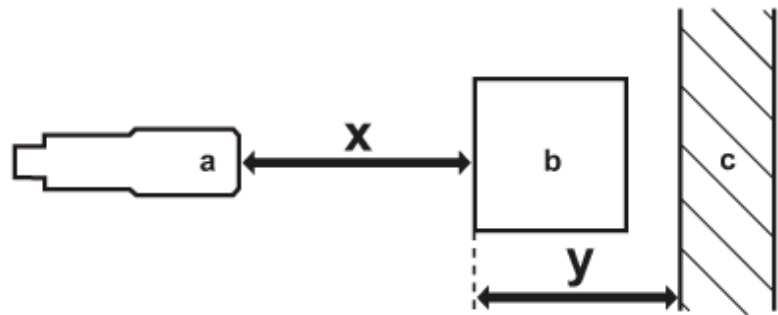


- x: distance sensor/object [mm]  
y: min. distance object/background [mm]  
1 = object black (6 % remission) , Background white (90 % remission)  
2 = object grey (18 % remission) , Background white (90 % remission)  
3 = object white (90 % remission) , Background white (90 % remission)



## Diffuse reflection sensors with background suppression

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a: sensor

b: object

c: background

x: distance sensor/object [mm]

y: min. distance object/background [mm]