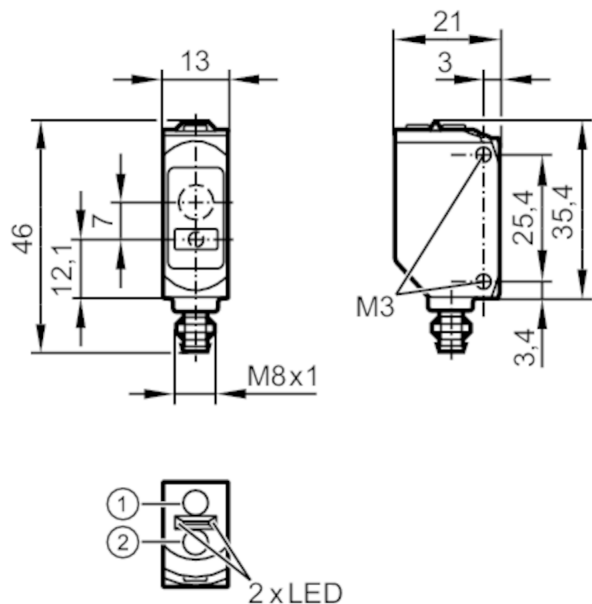


# O6H705



## Diffuse reflection sensors with background suppression

O6HLFNKG/AS/4P



- 1 Programmieraste  
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                                 |



## Diffuse reflection sensors with background suppression

O6HLFNKG/AS/4P

|                                             |                                                                            |                                                                                |
|---------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Type of short-circuit protection            | yes (non-latching)                                                         |                                                                                |
| 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)             | 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 1040.10 except for conformance with IEC 60825-1 Ed. 3, as |



Diffuse reflection sensors with background suppression

O6HLFNKG/AS/4P

|             |                |                                                      |
|-------------|----------------|------------------------------------------------------|
|             |                | described in Laser Notice No. 56, dated May 8, 2019. |
| MTTF        | [years]        | 513                                                  |
| UL approval | Ta             | -25...40 °C                                          |
|             | Enclosure type | Type 1                                               |
|             | voltage supply | Class 2                                              |

| Mechanical data   |      |                                   |
|-------------------|------|-----------------------------------|
| Weight            | [g]  | 19.1                              |
| Housing           |      | rectangular                       |
| Dimensions        | [mm] | 46 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  |

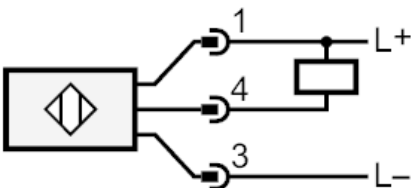
| Remarks       |  |                                 |
|---------------|--|---------------------------------|
| Remarks       |  | cULus - Class 2 source required |
| Pack quantity |  | 1 pcs.                          |

Electrical connection

Connector: 1 x M8; coding: A



Connection





Diffuse reflection sensors with background suppression

O6HLFNKG/AS/4P

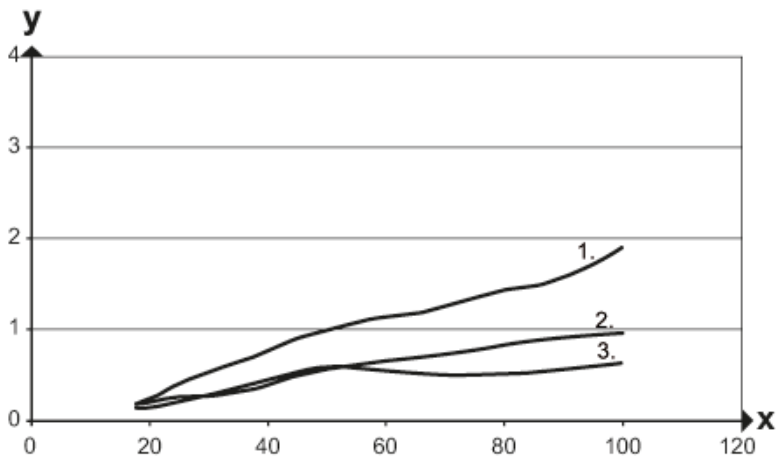
Other data

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                             |                              |
| 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

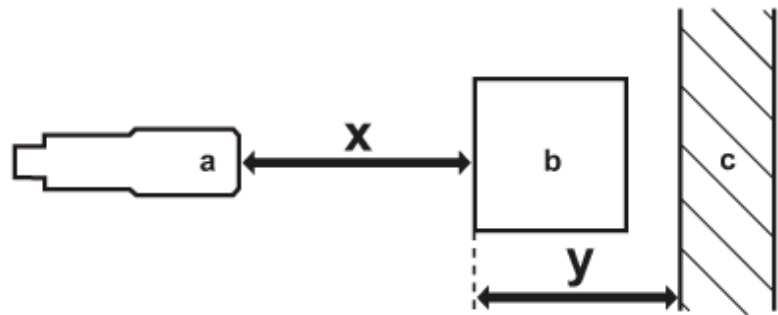


- x: distance sensor/object [mm]  
y: min. distance object/background [mm]  
1 = object black (6 % remission) , Background white (90 % remission)  
2 = object grey (18 % remission) , Background white (90 % remission)  
3 = object white (90 % remission) , Background white (90 % remission)



## Diffuse reflection sensors with background suppression

O6HLFNKG/AS/4P



a: sensor

b: object

c: background

x: distance sensor/object [mm]

y: min. distance object/background [mm]