

# O5H51A



## Diffuse reflection sensor with background suppression

O5H-FPKG/US100/3D



- 1 programming buttons  
receiver in upper lens  
transmitter in lower lens



### Product characteristics

|               |             |
|---------------|-------------|
| Type of light | red light   |
| Housing       | rectangular |

### Application

|                    |                           |
|--------------------|---------------------------|
| Special feature    | Background suppression    |
| Function principle | Diffuse reflection sensor |

### Electrical data

|                   |                                                                 |
|-------------------|-----------------------------------------------------------------|
| Operating voltage | [V] 10...30 DC; (when used outside the hazardous area: 10...36) |
|-------------------|-----------------------------------------------------------------|

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|                                                 |                  |                                                                                                                  |
|-------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------|
| Current consumption                             | [mA]             | 25                                                                                                               |
| Protection class                                |                  | III                                                                                                              |
| Reverse polarity protection                     |                  | yes                                                                                                              |
| Type of light                                   |                  | red light                                                                                                        |
| <b>Outputs</b>                                  |                  |                                                                                                                  |
| Electrical design                               |                  | PNP                                                                                                              |
| Output function                                 |                  | light-on/dark-on mode; (programmable)                                                                            |
| Max. voltage drop switching output DC           | [V]              | 2.5                                                                                                              |
| Permanent current rating of switching output DC | [mA]             | 100; (when used outside the hazardous area: 200)                                                                 |
| Switching frequency DC                          | [Hz]             | 1000                                                                                                             |
| Short-circuit protection                        |                  | yes                                                                                                              |
| Type of short-circuit protection                |                  | pulsed                                                                                                           |
| Overload protection                             |                  | yes                                                                                                              |
| <b>Detection zone</b>                           |                  |                                                                                                                  |
| Range                                           | [mm]             | 50...1800; (white paper 200 x 200 mm 90% remission)                                                              |
| Range on white object (90 % remission)          | [mm]             | 50...1800                                                                                                        |
| Range on grey object (18 % remission)           | [mm]             | 50...900                                                                                                         |
| Range on black object (6 % remission)           | [mm]             | 50...600                                                                                                         |
| Range adjustable                                |                  | yes                                                                                                              |
| Max. light spot diameter                        | [mm]             | 50                                                                                                               |
| Background suppression available                |                  | yes                                                                                                              |
| <b>Operating conditions</b>                     |                  |                                                                                                                  |
| Ambient temperature                             | [°C]             | -10...50                                                                                                         |
| Note on ambient temperature                     |                  | when used outside the hazardous area: -25...60 °C                                                                |
| Protection                                      |                  | IP 65                                                                                                            |
| <b>Tests / approvals</b>                        |                  |                                                                                                                  |
| ATEX marking                                    |                  |  II 3D Ex tc IIIC T105°C Dc X |
| EMC                                             |                  | EN 60947-5-2                                                                                                     |
| MTTF                                            | [years]          | 360                                                                                                              |
| <b>Mechanical data</b>                          |                  |                                                                                                                  |
| Weight                                          | [g]              | 335                                                                                                              |
| Housing                                         |                  | rectangular                                                                                                      |
| Dimensions                                      | [mm]             | 105 x 30 x 62                                                                                                    |
| Materials                                       |                  | housing: PA; bezel: stainless steel; operator interface: TPU; Protective bracket: stainless steel                |
| Lens material                                   |                  | PMMA                                                                                                             |
| Lens alignment                                  |                  | side lens                                                                                                        |
| <b>Displays / operating elements</b>            |                  |                                                                                                                  |
| Display                                         | switching status | 1 x LED, yellow                                                                                                  |



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|                 |     |
|-----------------|-----|
| Teach function  | yes |
| Electronic lock | yes |

### Remarks

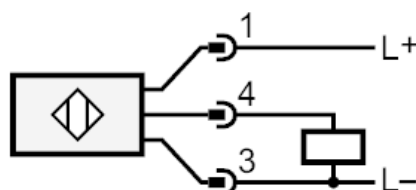
|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

### Electrical connection

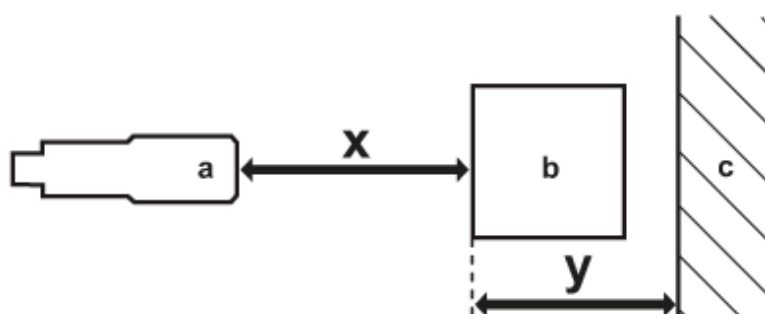
Connector: 1 x M12; coding: A



### Connection



### Diagrams and graphs



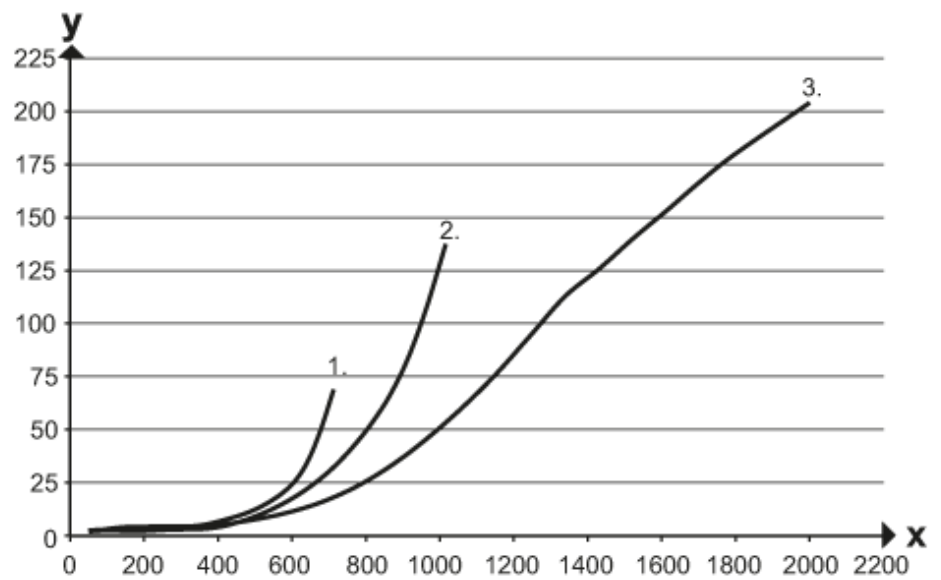
- a: sensor
- b: object
- c: background
- x: distance sensor/object [mm]
- y: min. distance object/background [mm]



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accuracy graph



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)