

# Reflex Sensor with Background Suppression

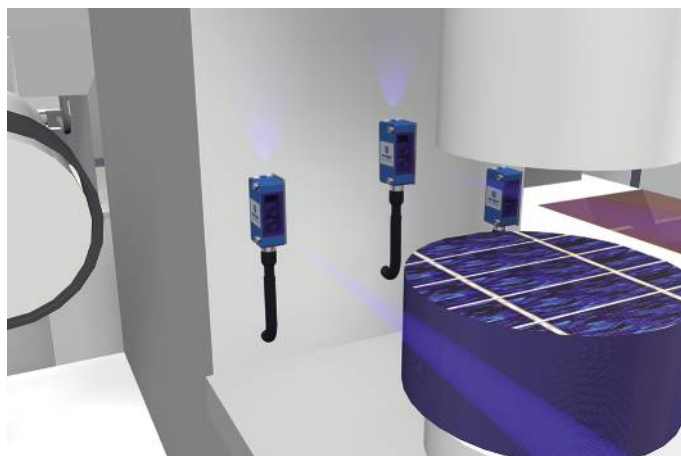
## P1KH050

Part Number



- Condition monitoring
- IO-Link 1.1
- Low switching distance deviation for black/white
- Reliably detect objects against any background

The reflex sensor with background suppression works with blue light according to the angle measurement principle and is designed to detect objects against any background. The sensor always has the same switching distance, regardless of the color, shape and surface of the objects. The reflect sensor with blue light is specially designed for applications with dark shiny objects, such as when manufacturing solar wafers. The IO-Link interface can be used to configure the reflex sensors (PNP/NPN, NC/NO, switching distance), as well as for reading out switching statuses and distance values.



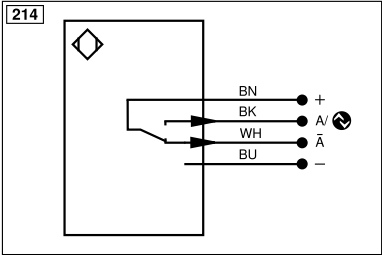
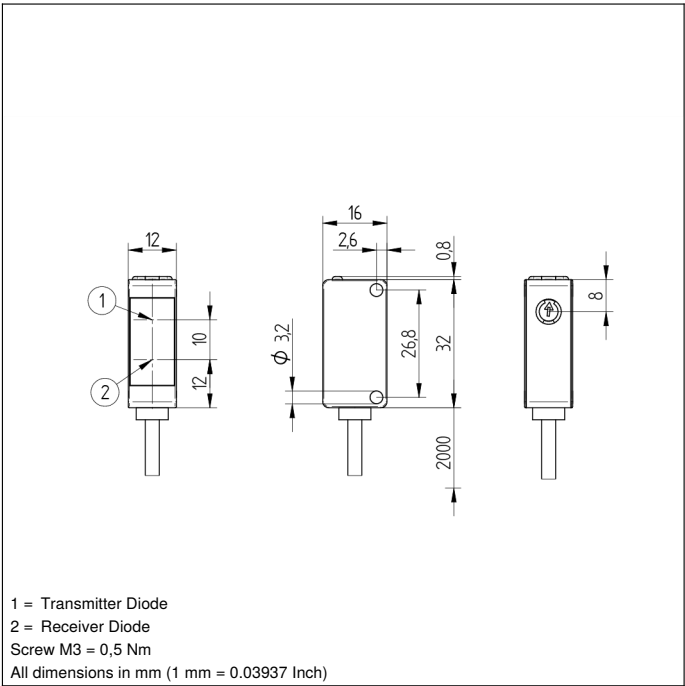
### Technical Data

| Optical Data                                 |                    |
|----------------------------------------------|--------------------|
| Range                                        | 150 mm             |
| Setting Range                                | 30...150 mm        |
| Switching Hysteresis                         | < 10 %             |
| Light Source                                 | Blue Light         |
| Service Life (T = +25 °C)                    | 100000 h           |
| Risk Group (EN 62471)                        | 1                  |
| Max. Ambient Light                           | 10000 Lux          |
| Light Spot Diameter                          | see Table 1        |
| Electrical Data                              |                    |
| Supply Voltage                               | 10...30 V DC       |
| Supply Voltage with IO-Link                  | 18...30 V DC       |
| Current Consumption (U <sub>b</sub> = 24 V)  | < 20 mA            |
| Switching Frequency                          | 1000 Hz            |
| Switching Frequency (interference-free mode) | 500 Hz             |
| Response Time                                | 0,5 ms             |
| Response time (interference-free mode)       | 1 ms               |
| Temperature Drift                            | < 5 %              |
| Temperature Range                            | -40...60 °C        |
| Switching Output Voltage Drop                | < 2 V              |
| Switching Output/Switching Current           | 100 mA             |
| Residual Current Switching Output            | < 50 µA            |
| Short Circuit and Overload Protection        | yes                |
| Reverse Polarity Protection                  | yes                |
| Lockable                                     | yes                |
| Interface                                    | IO-Link V1.1       |
| Protection Class                             | III                |
| Mechanical Data                              |                    |
| Setting Method                               | Potentiometer      |
| Housing Material                             | Plastic            |
| Degree of Protection                         | IP67/IP68          |
| Connection                                   | Cable, 4-wire, 2 m |
| Optic Cover                                  | PMMA               |
| Safety-relevant Data                         |                    |
| MTTFd (EN ISO 13849-1)                       | 1718,95 a          |
| PNP NC, PNP NO                               | ●                  |
| IO-Link                                      | ●                  |
| Connection Diagram No.                       | 214                |
| Control Panel No.                            | 1K1                |
| Suitable Mounting Technology No.             | 400                |

\* Temperature range with permanently installed cable, bending radius: > 40 mm

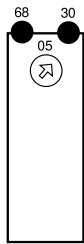
### Complementary Products

IO-Link Master  
Software



## Ctrl. Panel

1K1



05 = Switching Distance Adjuster  
30 = Switching Status/Contamination Warning  
68 = supply voltage indicator

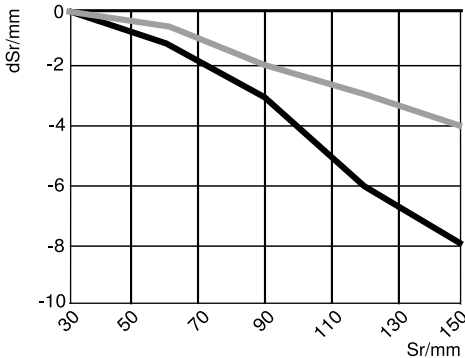
Table 1

| Detection Range     | 50 mm | 100 mm | 150 mm |
|---------------------|-------|--------|--------|
| Light Spot Diameter | 5 mm  | 7 mm   | 10 mm  |

## Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

P1KH BLUE



Sr = Switching Distance

dSr = Switching Distance Change

— black 6 % remission

— grey 18 % remission

