



**Photoelectric sensors**  
**W4S-3 Inox Hygiene, Photoelectric proximity**  
**sensor, Background suppression**

WTB4S-3P5204HS02



## Photoelectric sensors W4S-3 Inox Hygiene, Photoelectric proximity sensor, Background suppression

Type > [WTB4S-3P5204HS02](#)  
Part No. > [1054865](#)



*Illustration may differ*

### At a glance

- Hygienic designed stainless steel housing and accessories (316L/1.4404)
- Hygienic mounting using M12-adapter thread or D12-adapter shaft
- IP 66, IP 67, IP 68 and IP 69K enclosure rating and Ecolab certified
- Resistant to a variety of common cleaning and disinfection agents
- Best background and extraneous light suppression in its class with OES3 technology and two emitter LED's
- Stainless steel teach-in pushbutton with a metal membrane
- Flexible sensing ranges and hysteresis settings
- Key lock function, remote teach, quality monitoring

### Your benefits

- Smooth hygienic housing and accessories with no grooves or crevices eliminates the potential for bacteria to grow, providing a more hygienic solution.
- Long service life in harsh conditions ensures less downtime and fewer replacement costs
- OES3 technology and special optical design ensures reliable detection of objects at an extended range which ensures less machine downtime caused by faulty switching
- Easy adjustment via a stainless steel metal membrane teach-in pushbutton
- Quick and easy format adjustment
- Easy monitoring of sensor status
- Key lock function and parameter download prevent incorrect settings
- Simple sensor cloning



### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D):          | 15.25 mm x 63.2 mm x 22.15 mm                          |
| Housing design:                  | Hygiene                                                |
| Housing design (light emission): | Rectangular                                            |
| Sensing range max.:              | 4 mm ... 120 mm <sup>1)</sup>                          |
| Sensing range:                   | 10 mm ... 120 mm <sup>2)</sup>                         |
| Type of light:                   | Visible red light <sup>3)</sup>                        |
| Light source:                    | PinPoint LED <sup>3)</sup>                             |
| Wave length:                     | 650 nm                                                 |
| Teach-in:                        | Single teach-in button                                 |

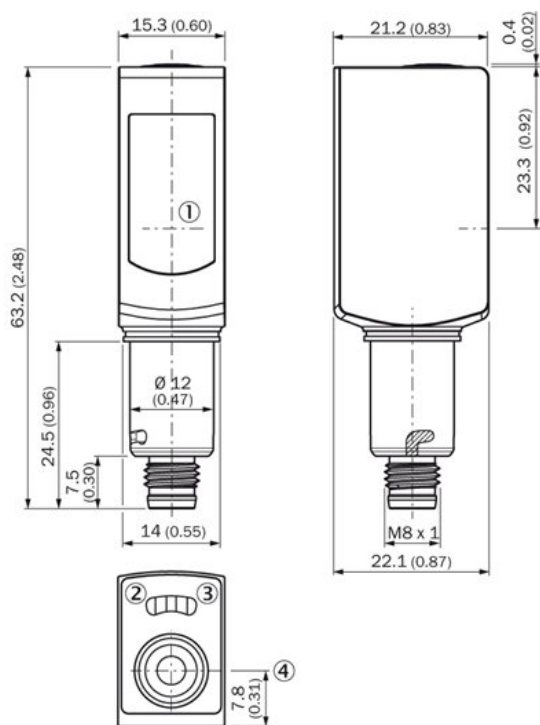
|                                                                                                                                                                                                                                                     |                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Special features:                                                                                                                                                                                                                                   | Light spot diameter of 2.5 mm in 150 mm distance, Reduced sensing range of 280 mm |
| Adjustment:                                                                                                                                                                                                                                         | Teach-in cable <sup>4)</sup>                                                      |
| Light spot size (distance):                                                                                                                                                                                                                         | Ø 2.5 mm (50 mm)                                                                  |
| <sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T <sub>A</sub> = +25 °C <sup>4)</sup> External teach-in: pulse > 2 s with voltage Uv with PNP and M with NPN |                                                                                   |

**Mechanics/electronics**

|                                   |                                                  |
|-----------------------------------|--------------------------------------------------|
| Supply voltage:                   | 10 V DC ... 30 V DC <sup>1)</sup>                |
| Ripple:                           | < 5 Vpp                                          |
| Power consumption:                | ≤ 30 mA <sup>2)</sup>                            |
| Output type:                      | PNP                                              |
| Output function:                  | Complementary                                    |
| Switching mode:                   | Light switching                                  |
| Output current I <sub>max</sub> : | ≤ 100 mA                                         |
| Response time:                    | < 0.5 ms <sup>3)</sup>                           |
| Switching frequency:              | ± 1,000 Hz <sup>4)</sup>                         |
| Connection type:                  | Connector M8, 4-pin <sup>5)</sup>                |
| Circuit protection:::             | A<br>B <sup>6) 7) 8)</sup><br>C                  |
| Protection class:                 | III                                              |
| Weight:                           | 140 g                                            |
| Housing material:                 | Stainless steel, Stainless steel 316L            |
| Enclosure rating:                 | IP 66<br>IP 67<br>IP 68<br>IP 69K                |
| Special feature:                  | D12 adapter shaft                                |
| Ambient operating temperature:    | -30 °C ... 60 °C, -30 °C ... 70 °C <sup>9)</sup> |
| Ambient storage temperature:      | -30 °C ... 75 °C                                 |
| Mechanical connection:            | D12 adapter shaft                                |

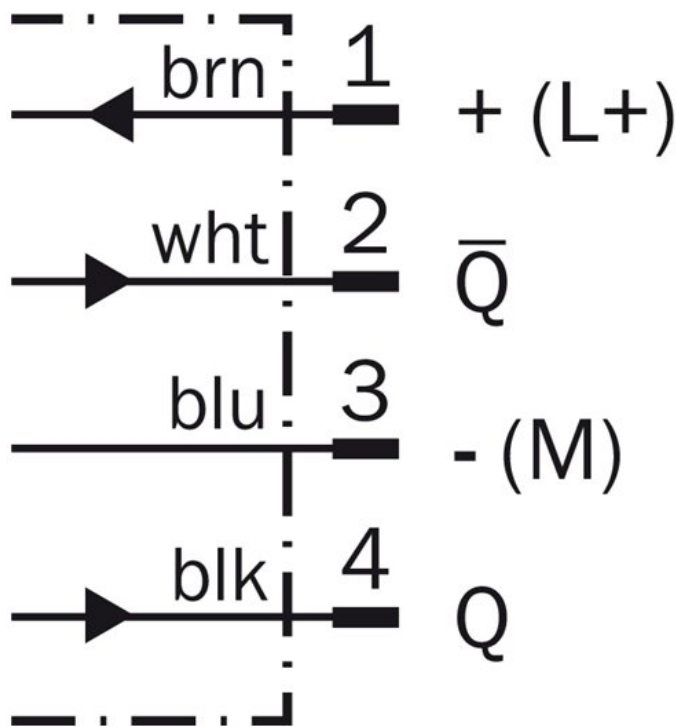
<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A <sup>2)</sup> Without load <sup>3)</sup> Signal transit time with resistive load <sup>4)</sup> With light/dark ratio 1:1 <sup>5)</sup> Tightening torque, max.: 0.6 Nm <sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> C = interference suppression <sup>9)</sup> At UV ≤ 24 V and IA < 30 mA

Dimensional drawing

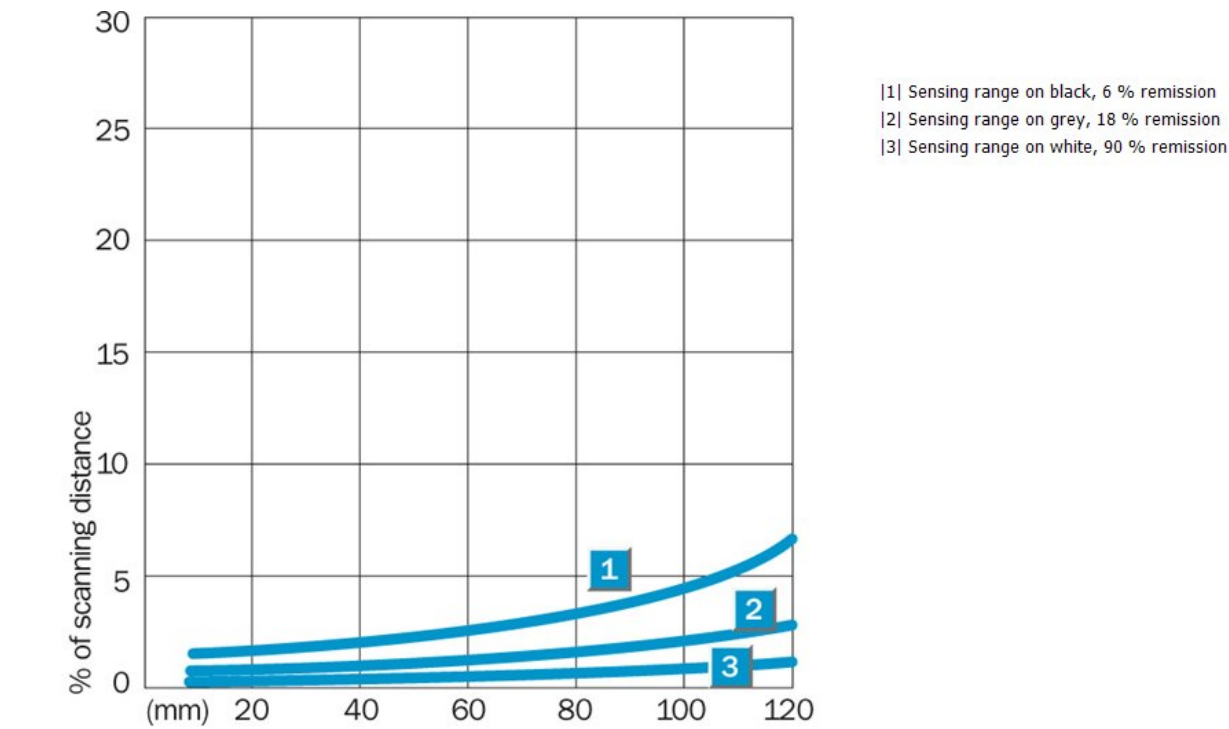


- [1] Centre of receiver's optical axis
- [2] Center of optical axis, sender
- [3] Status indicator LED, yellow: Status of received light beam
- [4] Status indicator LED green: power on
- [5] single teach-in button

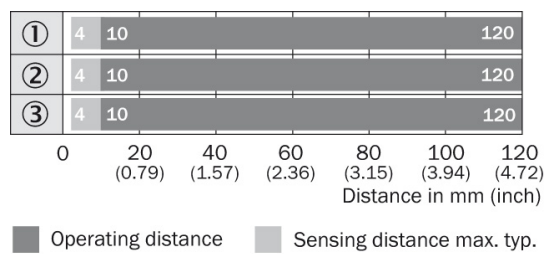
Connection diagram



Characteristic curve



Sensing range diagram



- ① Sensing distance on black, 6 % remission
- ② Sensing distance on grey, 18 % remission
- ③ Sensing distance on white, 90 % remission

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