



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

WTB4S-3P5204HS02



Model Name > [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 ¹⁾ |
| Sensing range: | 10 mm ... 120 mm ²⁾ |
| Type of light: | Visible red light |
| Light source: | PinPoint LED ³⁾ |
| 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

Light spot size (distance): Ø 2.5 mm (50 mm)

1) 2) Object with 90 % reflectance (referred to standard white DIN 5033) 3) Average service life of 100,000 h at $T_A = +25\text{ °C}$ 4) External teach-in: pulse > 2 s with

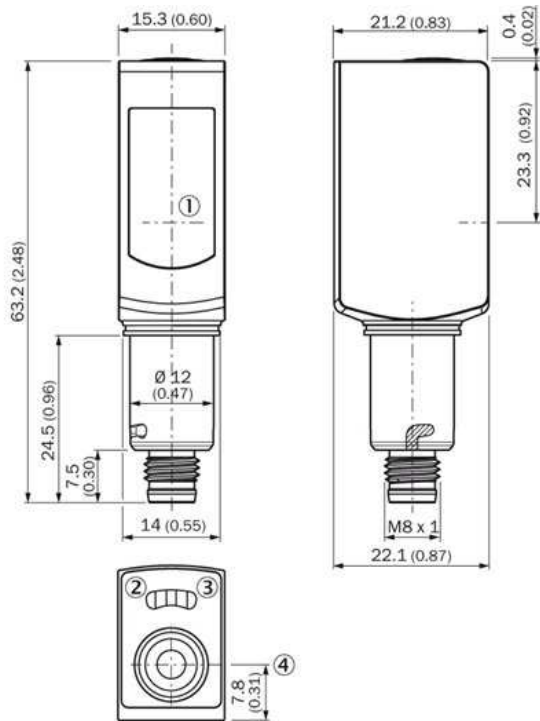
voltage Uv with PNP and M with NPN

Mechanics/electronics

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

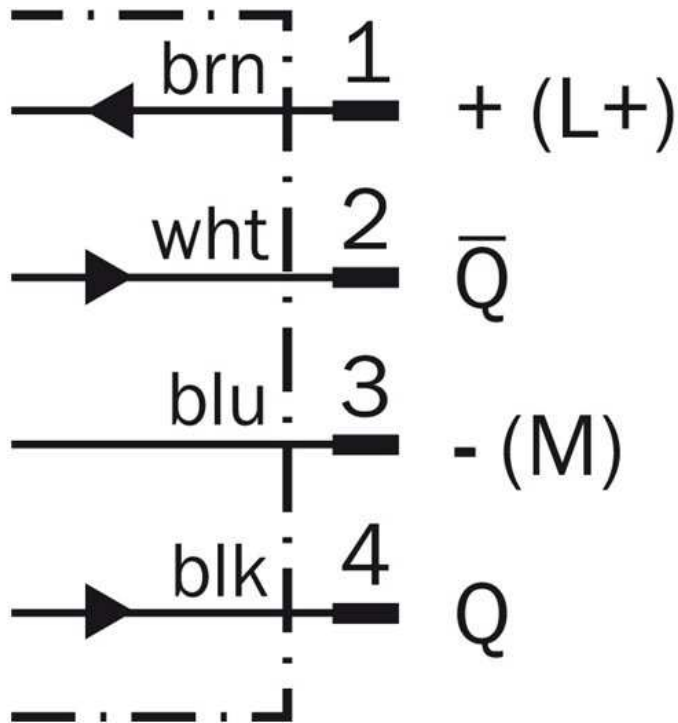
1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A ²⁾ Without load ³⁾ Signal transit time with resistive load ⁴⁾ With light/dark ratio 1:1 ⁵⁾ Tightening torque, max.: 0.6 Nm ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ B = inputs and output reverse-polarity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

Dimensional drawing

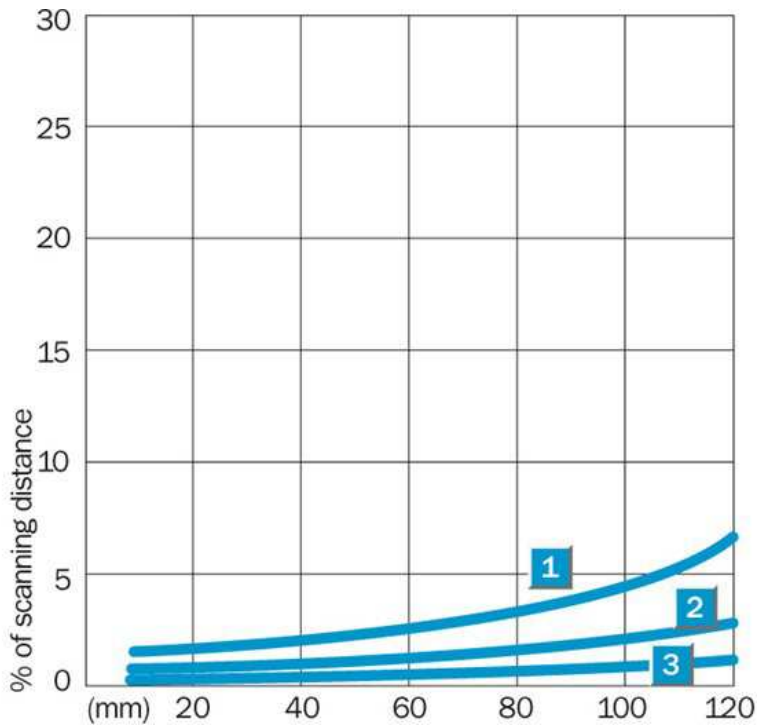


- |1| Centre of receiver's optical axis
- |2| Center of optical axis, sender
- |3| Status indicator LED,
yellow: Status of received light beam
- |4| Status indicator LED green: power on
- |5| single teach-in button

Connection diagram

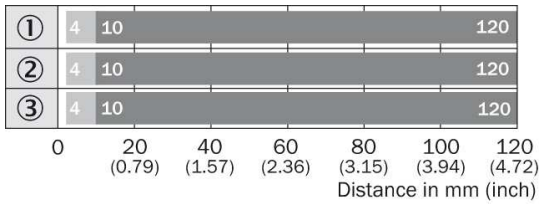


Characteristic curve



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

Sensing range diagram



■ Operating distance ■ Sensing distance max. typ.

- 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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