



Photoelectric sensors
W4-3, Photoelectric proximity sensor,
Background suppression

WTB4-3P2271



Model Name > [WTB4-3P2271](#)
Part No. > [1042190](#)



Illustration may differ

At a glance

- Intense light spot with PinPoint LED technology
- Sensor with IR light available upon request
- Sensing range of 4 - 150 mm
- Background suppression sensor available with laser-like light spot
- Adjustment either via teach-in pushbutton, 5-turn potentiometer, cable or IO-Link
- Second emitter LED designed for suppression of shiny backgrounds
- Flexible sensing ranges and hysteresis settings
- Key lock function, remote teach, quality monitoring

Your benefits

- Reliable detection of objects regardless of color and consistency
- Smart machine design ensures low-cost integration due to mounting flexibility in areas with limited space
- Best-in-class background suppression and a high immunity to ambient light, ensuring reliable object detection
- Rugged mounting system with M3 threaded metal inserts reduces maintenance costs due to a long service life
- Precise detection with a high level of repeat accuracy due to an intense light spot with PinPoint LED technology
- Quick and easy format adjustment
- Easy monitoring of sensor status
- Key lock function and parameter download prevent incorrect settings



Features

| | |
|----------------------------------|--|
| Sensor/detection principle: | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D): | 16 mm x 39.5 mm x 12 mm |
| Housing design (light emission): | Rectangular |
| Sensing range max.: | 4 mm ... 150 mm ¹⁾ |
| Sensing range: | 15 mm ... 150 mm ²⁾ |
| Type of light: | Visible red light |
| Light source: | PinPoint LED ³⁾ |
| Wave length: | 650 nm |
| Adjustment: | Potentiometer, 5 turns |
| Light spot size (distance): | 5 x 28 mm (50 mm) |

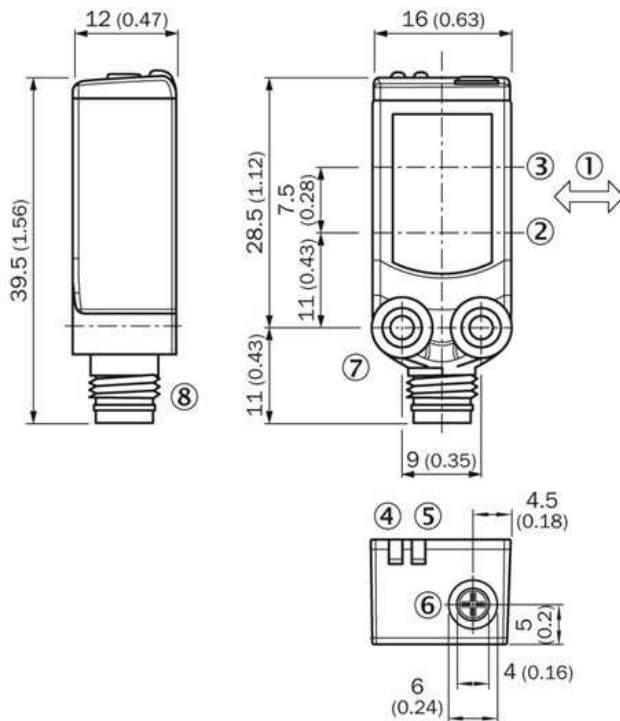
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

| | |
|------------------------------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Ripple:: | < 5 Vpp ^{2) 3)} |
| Power consumption: | ≤ 20 mA ⁴⁾ |
| Output type: | PNP |
| Output function: | Complementary |
| Switching mode: | Light/dark switching |
| Output current I _{max.} : | ≤ 100 mA |
| Response time: | < 0.5 ms ⁵⁾ |
| Switching frequency: | 1,000 Hz ⁶⁾ |
| Connection type: | Connector M8, 4-pin |
| Circuit protection::: | A, C, D ^{7) 8) 9)} |
| Protection class: | III |
| Weight: | 30 g |
| Optics material: | PMMA |
| Enclosure rating: | IP 67 IP 66 |
| Special feature: | Line-shaped light spot |
| Ambient operating temperature: | -40 °C ... +60 °C |
| Ambient storage temperature: | -40 °C ... +75 °C |
| UL File No.: | NRKH.E181493 & NRKH7.E181493 |
| Housing material: | ABS, Plastic |

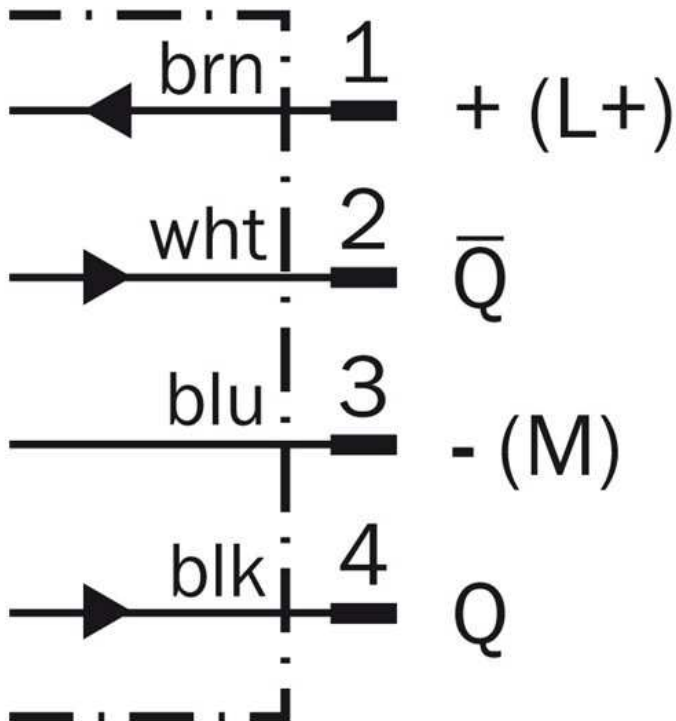
¹⁾ Limit values ^{2) 3)} May not exceed or fall short of V_S tolerances ⁴⁾ Without load ⁵⁾ Signal transit time with resistive load ⁶⁾ With light/dark ratio 1:1 ⁷⁾ A = V_S
⁸⁾ C = interference suppression ⁹⁾ D = outputs overcurrent and short-circuit protected

Dimensional drawing



- |1| Standard direction of the material being detected
- |2| Optical axis, sender
- |3| Optical axis, receiver
- |4| Status indicator LED,
yellow: Status of received light beam
- |5| Status indicator LED green: supply voltage on
- |6| Potentiometer
- |7| Threaded mounting hole M3
- |8| Connection

Connection diagram



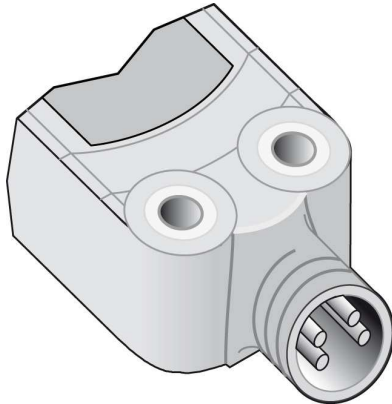
Sensing range diagram



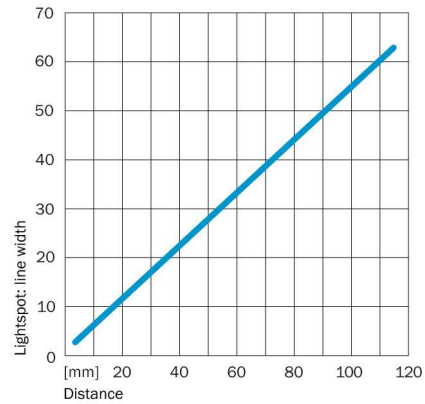
|1| Sensing range on white, 90 % remission
|2| Sensing range on black, 6 % remission

| | |
|---|---|
| 1 | Scanning range on white, 90 % reflectance |
| 2 | Scanning range on black, 6 % reflectance |

Connection type



Light spot size



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