



Photoelectric sensors
W18-3, Photoelectric proximity sensor,
Background suppression

WT18-3P420S12



Type > [WT18-3P420S12](#)
Part No. > [1029213](#)



Illustration may differ

At a glance

- Sender LED with infrared light
- Precise background suppression
- Adjustable sensing distance
- Immune to ambient light
- Rugged plastic housing

Your benefits

- Long sensing distances due to high-performance infrared light
- Reliable object detection with high-precision background suppression due to second sender LED
- Quick and easy sensing range adjustment
- Crosstalk and ambient light immunity reduce false readings and downtime
- High availability in the field



Features

| | |
|----------------------------------|--|
| Sensor/detection principle: | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D): | 17.6 mm x 75.5 mm x 33.5 mm |
| Housing design (light emission): | Rectangular |
| Sensing range max.: | 10 mm ... 700 mm ¹⁾ |
| Sensing range: | 50 mm ... 700 mm ²⁾ |
| Type of light: | Infrared light |
| Light source: | LED ³⁾ |
| Alarm output: | - |
| Health output: | - |
| Special features: | Front screen printing, optimized function on high-gloss background, 150 mm |
| Adjustment: | Potentiometer, 4 turns |
| Light spot size (distance): | Ø 30 mm (600 mm) |
| Continuous threshold adaption: | - |

^{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

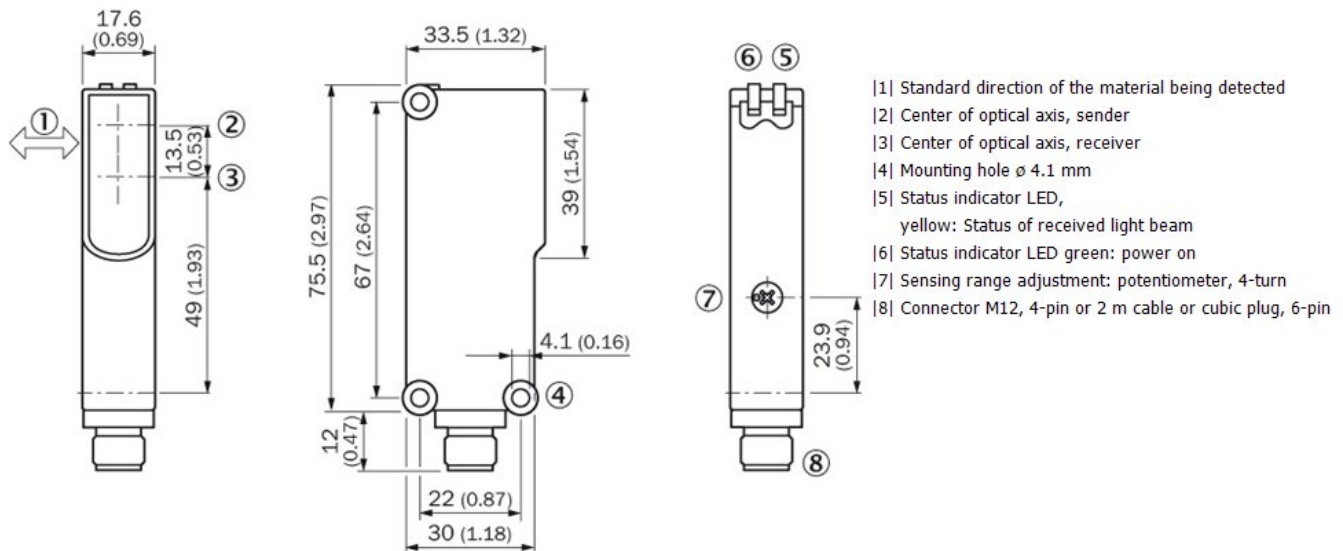
Mechanics/electronics

| | |
|--------------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Ripple: | < 5 Vpp ²⁾ |
| Power consumption: | 55 mA ³⁾ |

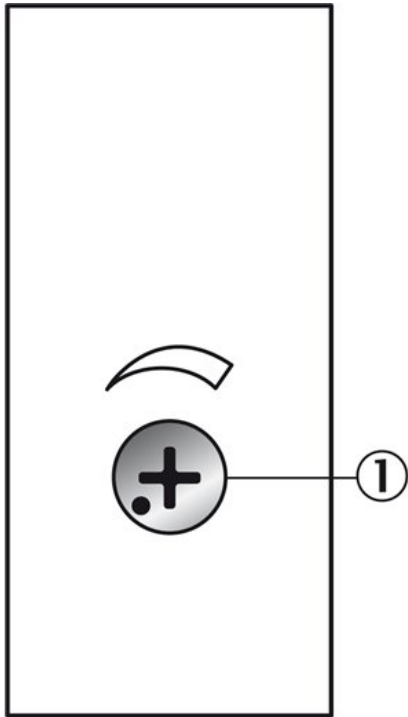
| | |
|-------------------------------------|------------------------------|
| Output type: | PNP |
| Output function: | Complementary |
| Switching mode: | Light/dark switching |
| Output current I _{max} ..: | 100 mA |
| Response time: | < 700 μs ⁴⁾ |
| Switching frequency: | 700 Hz ⁵⁾ |
| Connection type: | M12, 4-pin male connector |
| Circuit protection::: | A, C, D ^{6) 7) 8)} |
| Weight: | 40 g |
| IO-Link: | - |
| Special device: | ✓ |
| Housing material: | ABS, Plastic |
| Optics material: | PMMA |
| Enclosure rating: | IP 67 |
| Ambient operating temperature: | -40 °C ... +60 °C |
| Ambient storage temperature: | -40 °C ... +75 °C |
| UL File No.: | NRKH.E181493 & NRKH7.E181493 |

1) Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ D = outputs overcurrent and short-circuit protected

Dimensional drawing

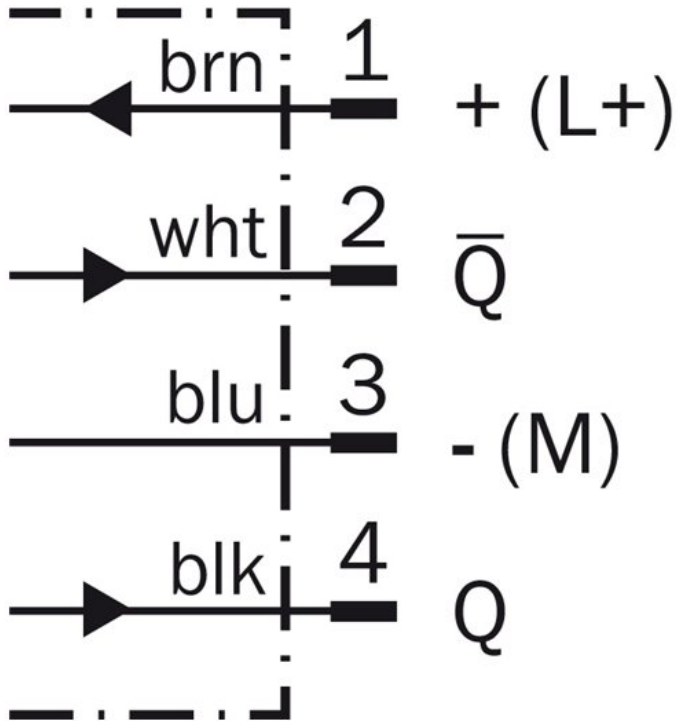


Adjustments possible

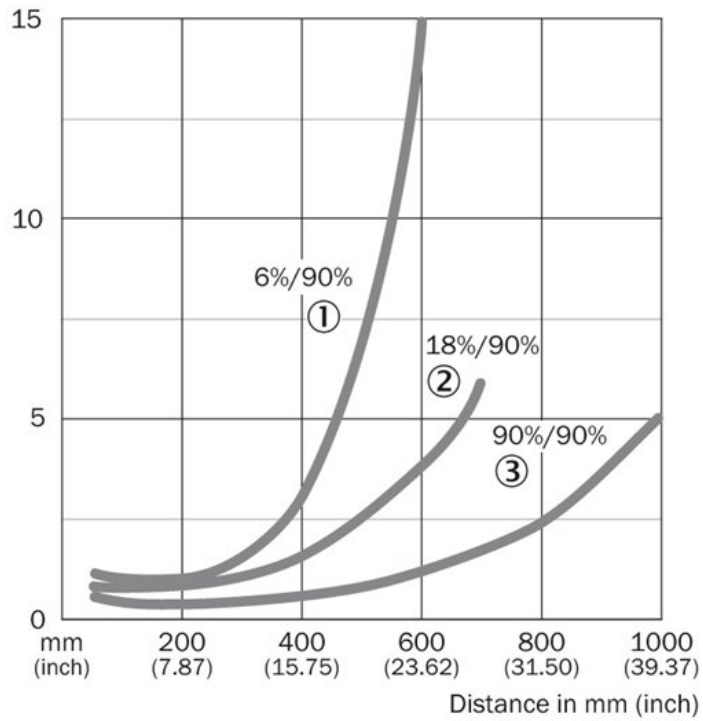


[1] Sensing range adjustment: potentiometer, 4-turn

Connection diagram

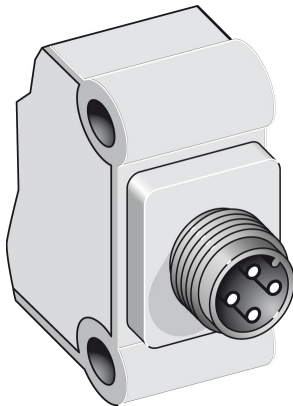


Characteristic curve

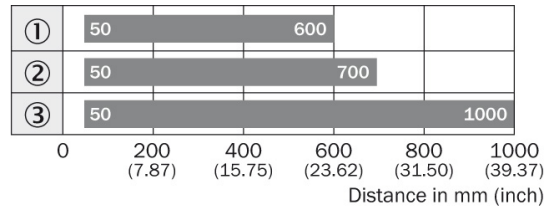


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on white, 90 % remission

Connection type



Sensing range diagram



■ Sensing range

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