



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

WT18-3K420



Type > **WT18-3K420**  
Part No. > **1061203**



*Illustration may differ*

#### At a glance

- Sender LED with infrared light
- Precise background suppression
- Sensing range setting via potentiometer
- Immune to ambient light
- Rugged plastic housing

#### Your benefits

- Very 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 distance adjustment due to 4-turn potentiometer
- 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 ... 1,000 mm <sup>1)</sup>                       |
| Sensing range:                   | 50 mm ... 1,000 mm <sup>2)</sup>                       |
| Type of light:                   | Infrared light                                         |
| Light source:                    | LED <sup>3)</sup>                                      |
| Adjustment:                      | Potentiometer, 4 turns                                 |
| Light spot size (distance):      | Ø 30 mm (600 mm)                                       |
| Continuous threshold adaption:   | -                                                      |

<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

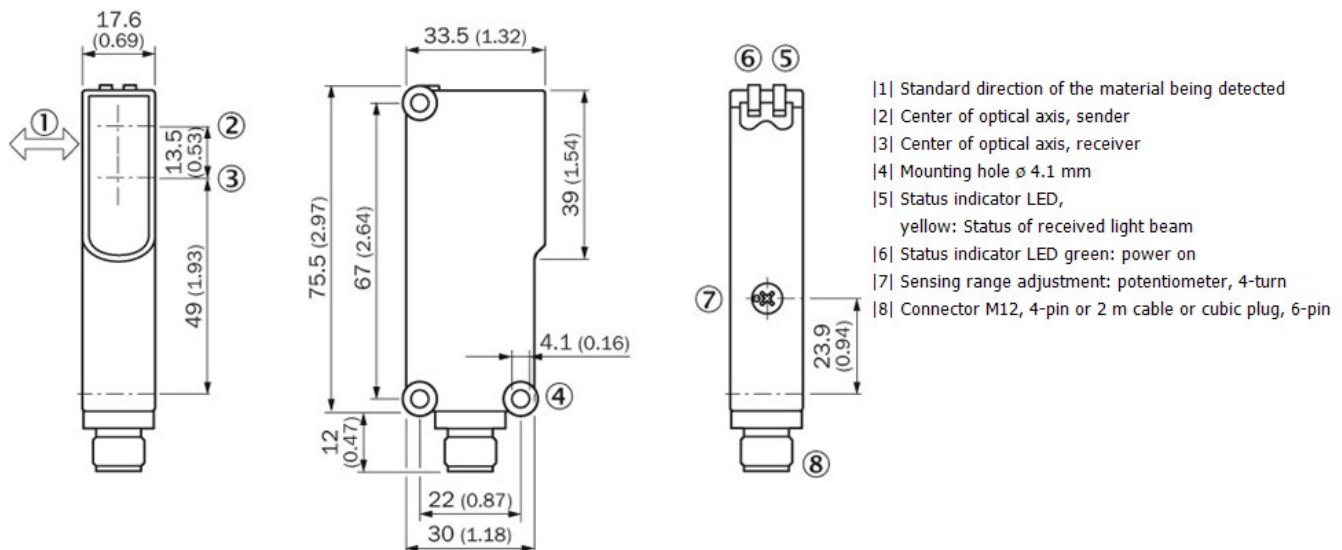
#### Mechanics/electronics

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| Supply voltage:                   | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:                           | < 5 Vpp <sup>2)</sup>             |
| Power consumption:                | 55 mA <sup>3)</sup>               |
| Output type:                      | PNP                               |
| Output function:                  | Complementary                     |
| Switching mode:                   | Light/dark switching              |
| Output current I <sub>max</sub> : | 100 mA                            |

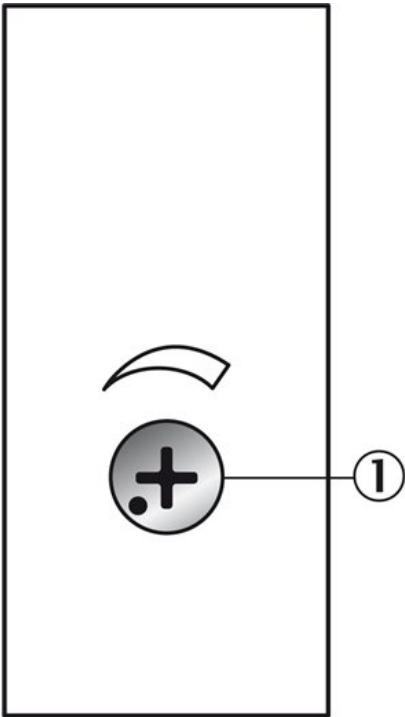
|                                |                              |
|--------------------------------|------------------------------|
| Response time:                 | < 700 $\mu$ s <sup>4)</sup>  |
| Switching frequency:           | 700 Hz <sup>5)</sup>         |
| Connection type:               | M12, 4-pin male connector    |
| Circuit protection:::          | A, C, D <sup>6) 7) 8)</sup>  |
| Weight:                        | 40 g                         |
| 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

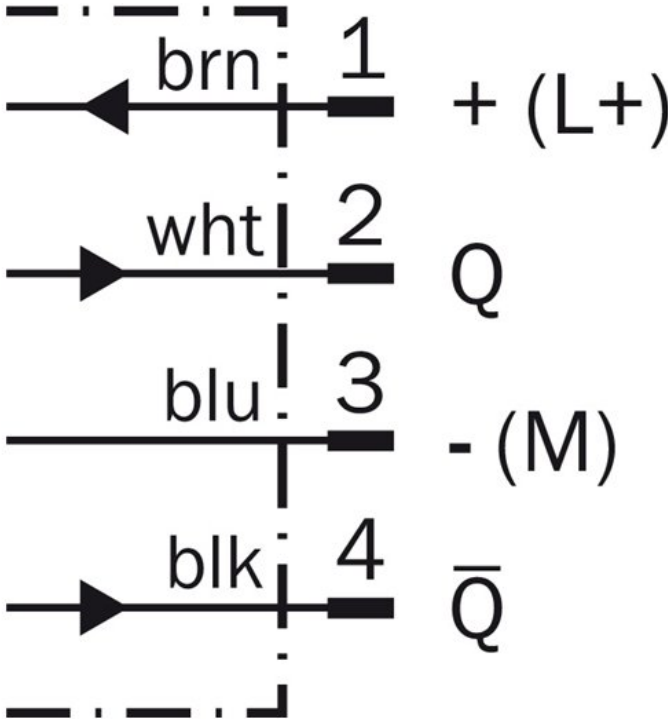


Adjustments possible

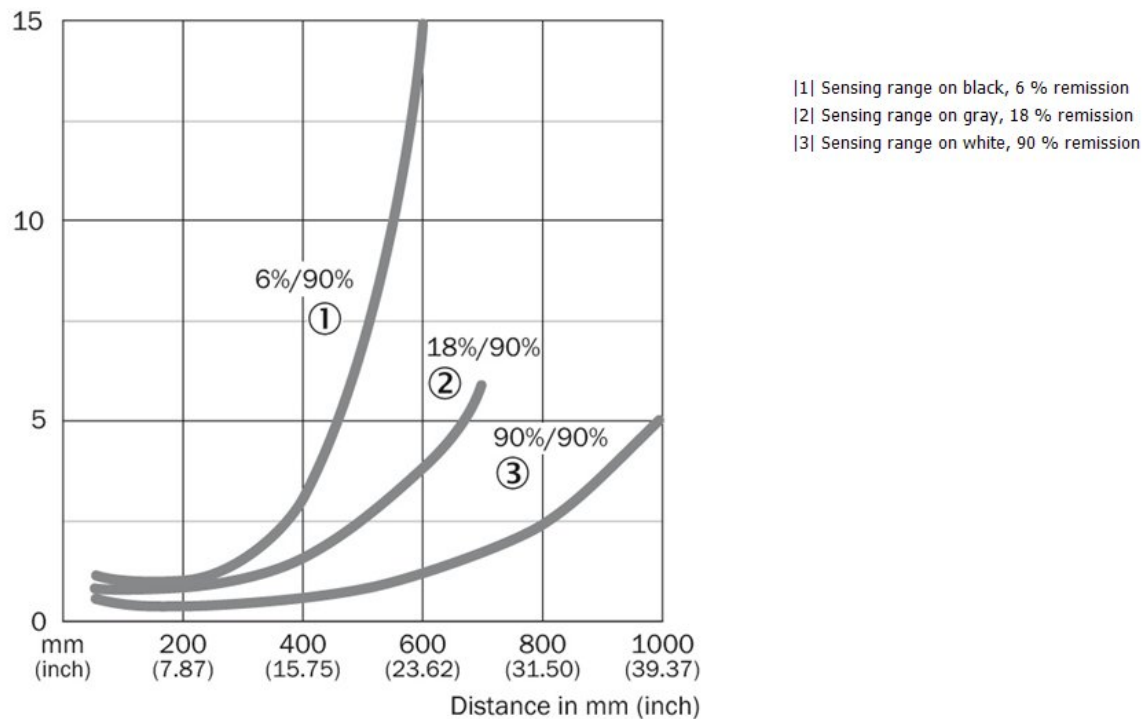


[1] Sensing range adjustment: potentiometer, 4-turn

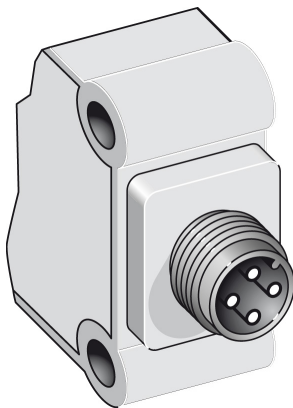
Connection diagram



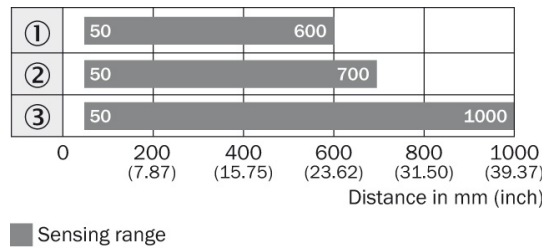
Characteristic curve



Connection type



Sensing range diagram



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