



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

WT18-3P431S23



Type > [WT18-3P431S23](#)  
Part No. > [1041329](#)



*Illustration may differ*

#### At a glance

- Sender LED with visible red light
- Precise foreground suppression
- Adjustable sensing distance
- Immune to ambient light
- Rugged plastic housing

#### Your benefits

- Quick and easy installation due to highly visible red light
- Reliable object detection with high-precision background suppression due to second sender LED
- Quick and easy sensing distance adjustment
- Crosstalk and ambient light immunity reduce false readings and downtime
- High availability in the field



#### Features

|                                  |                                                                  |
|----------------------------------|------------------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric proximity sensor, Foreground 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 ... 600 mm <sup>1)</sup>                                   |
| Sensing range:                   | 50 mm ... 600 mm <sup>2)</sup>                                   |
| Type of light:                   | Visible red light                                                |
| Light source:                    | LED <sup>3)</sup>                                                |
| Teach-in:                        | Double teach-in button                                           |
| Special features:                | Front screen printing, optimized function on high-gloss surfaces |
| Adjustment:                      | Double teach-in button                                           |
| Light spot size (distance):      | Ø 15 mm (300 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

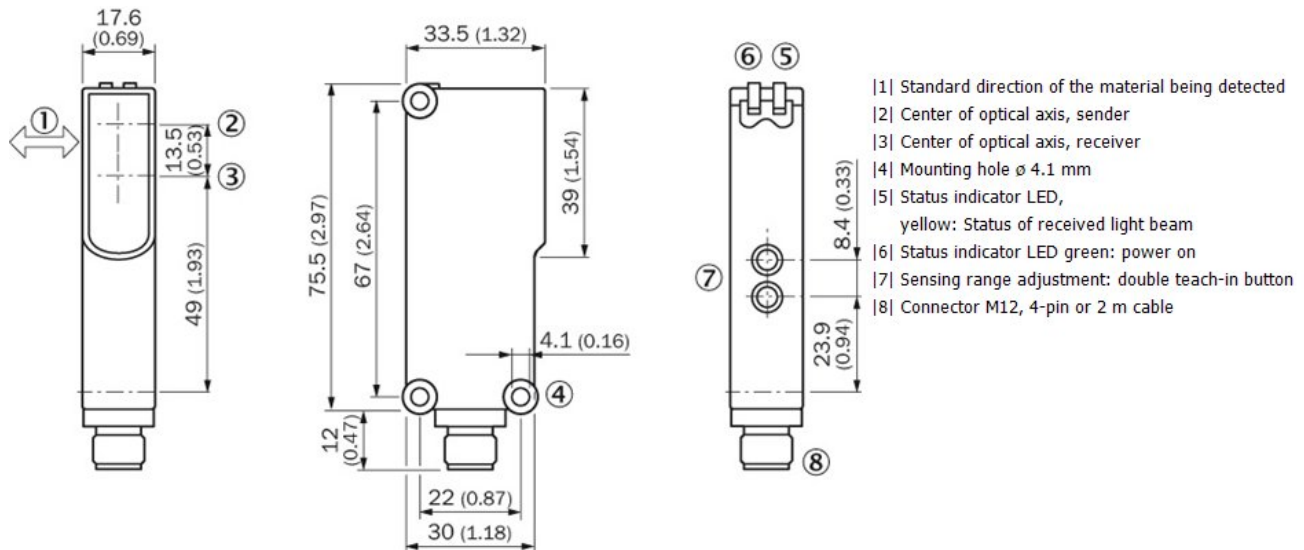
#### Mechanics/electronics

|                    |                                   |
|--------------------|-----------------------------------|
| Supply voltage:    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:            | < 5 V <sub>pp</sub> <sup>2)</sup> |
| Power consumption: | 40 mA <sup>3)</sup>               |
| Output type:       | PNP                               |
| Output function:   | Complementary                     |

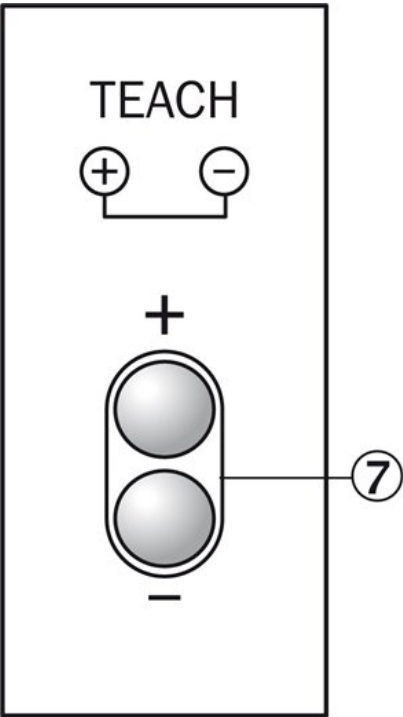
|                                   |                              |
|-----------------------------------|------------------------------|
| Switching mode:                   | Light/dark switching         |
| Output current I <sub>max</sub> : | 100 mA                       |
| Response time:                    | < 700 µs <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                         |
| 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

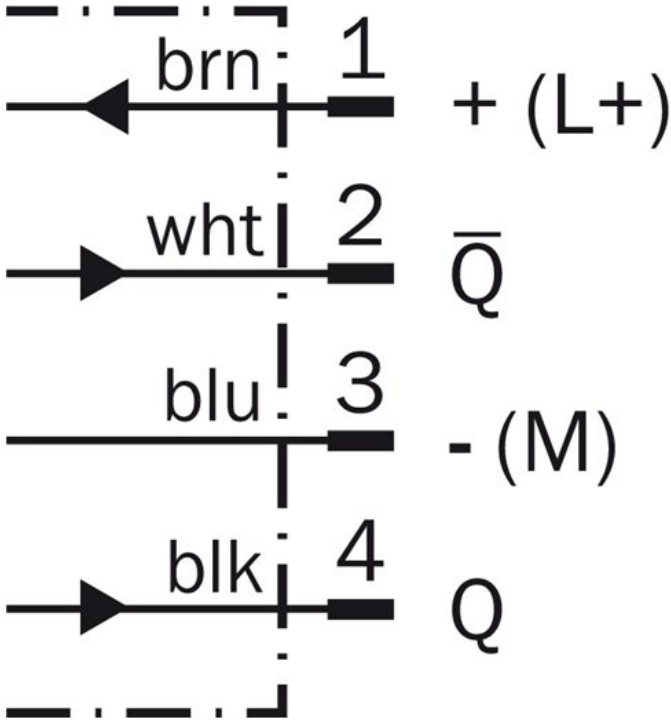


Adjustments possible



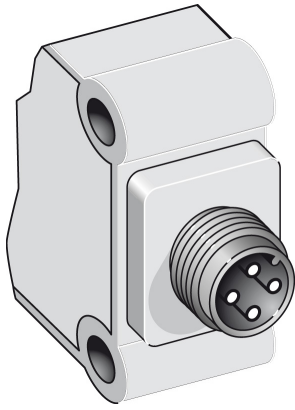
[1] Sensing range adjustment: double teach-in button

Connection diagram



## Connection type

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