



Photoelectric sensors  
W11-2, Photoelectric proximity sensor,  
Foreground suppression

WTF11-2P2431



**Model Name** > **WTF11-2P2431**  
**Part No.** > **1041380**



*Illustration may differ*

#### At a glance

- Precise foreground suppression
- Rugged housing for industrial use
- PinPoint LED technology with highly visible light spot
- Space-saving plastic housing in chemically, thermally or mechanically resistant designs
- Dovetail mounting - standard mounting holes and oblong holes
- Highly visible 360° status LEDs
- Sensing range adjustment via potentiometer
- Operating distance up to 350 mm

#### Your benefits

- State of the art technology, e.g. OES3 provides precise foreground suppression for reliable object detection
- High immunity to optical interference reduces false readings and downtime
- PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment
- Precise switching characteristics ensure high performance even in changing application conditions
- Highly visible 360° status LEDs provide quick and easy setup without additional personnel or costly training
- Rugged housing design withstands harsh environments, reducing downtime and maintenance effort
- Easy installation using SICK accessories



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric proximity sensor, Foreground suppression |
| Dimensions (W x H x D):          | 15.6 mm x 48.5 mm x 42 mm                              |
| Housing design (light emission): | Rectangular                                            |
| Sensing range max.:              | 35 mm ... 350 mm <sup>1)</sup>                         |
| Sensing range:                   | 35 mm ... 350 mm                                       |
| Type of light:                   | Visible red light                                      |
| Light source:                    | LED <sup>2)</sup>                                      |
| Wave length:                     | 640 nm                                                 |
| Adjustment:                      | Potentiometer, 5-turn                                  |
| Light spot size (distance):      | Ø 6 mm (200 mm)                                        |

<sup>1)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>2)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

## Mechanics/electronics

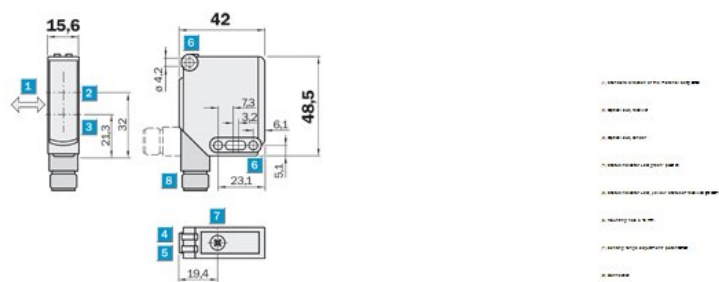
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|                                    |                                     |
|------------------------------------|-------------------------------------|
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>1)</sup>   |
| Power consumption:                 | $\leq 30 \text{ mA}$ <sup>2)</sup>  |
| Output type:                       | PNP                                 |
| Output function:                   | Complementary                       |
| Switching mode:                    | Light/dark-switching                |
| Signal voltage PNP HIGH/LOW:       | $U_v - 2.5 \text{ V}$ / approx. 0 V |
| Output current $I_{\text{max.}}$ : | 100 mA                              |
| Response time:                     | $\leq 2.5 \text{ ms}$ <sup>3)</sup> |
| Switching frequency:               | 200 Hz <sup>4)</sup>                |
| Connection type:                   | Connector M12, 4-pin                |
| Circuit protection:::              | A, C, D <sup>5) 6) 7)</sup>         |
| Protection class:                  | II                                  |
| Weight:                            | 120 g                               |
| Housing material:                  | ABS, Plastic                        |
| Optics material:                   | PMMA                                |
| Enclosure rating:                  | IP 66<br>IP 67<br>IP 69K            |
| Ambient operating temperature:     | -30 °C ... 60 °C                    |
| Ambient storage temperature:       | -40 °C ... 75 °C                    |
| UL File No.:                       | NRKH.E181493 & NRKH7.E181493        |

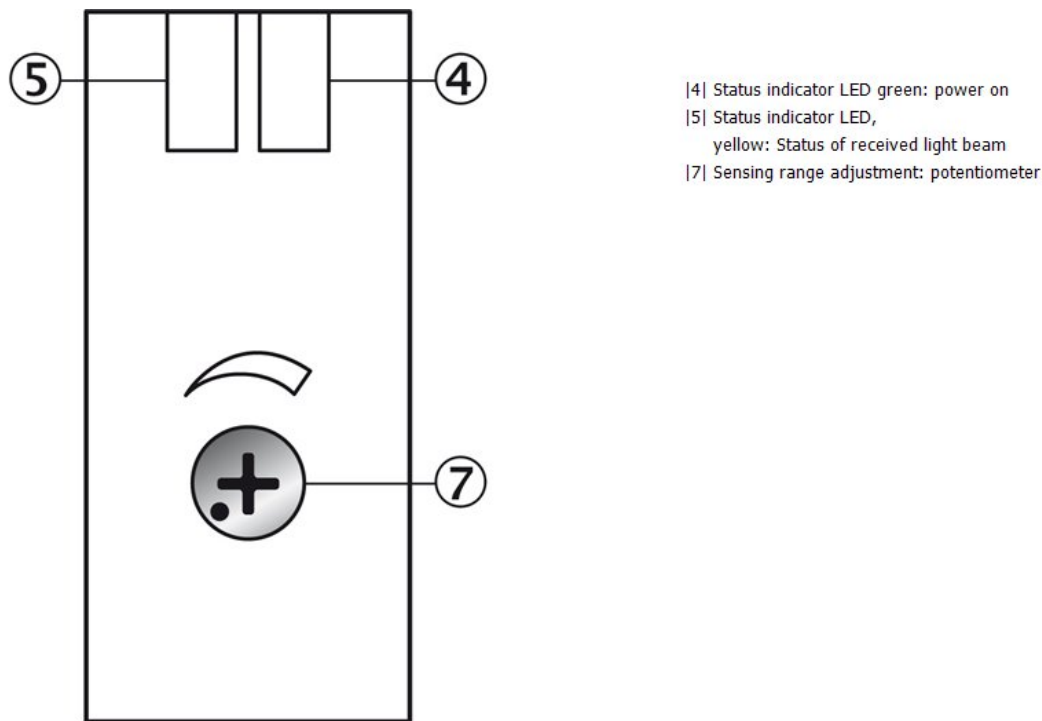
May not exceed or fall short of  $V_S$  tolerances;

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> Without load <sup>3)</sup> Signal transit time with resistive load <sup>4)</sup> With light/dark ratio 1:1 <sup>5)</sup>  $A = V_S$   
connections reverse-polarity protected <sup>6)</sup> C = interference suppression <sup>7)</sup> D = outputs overcurrent and short-circuit protected

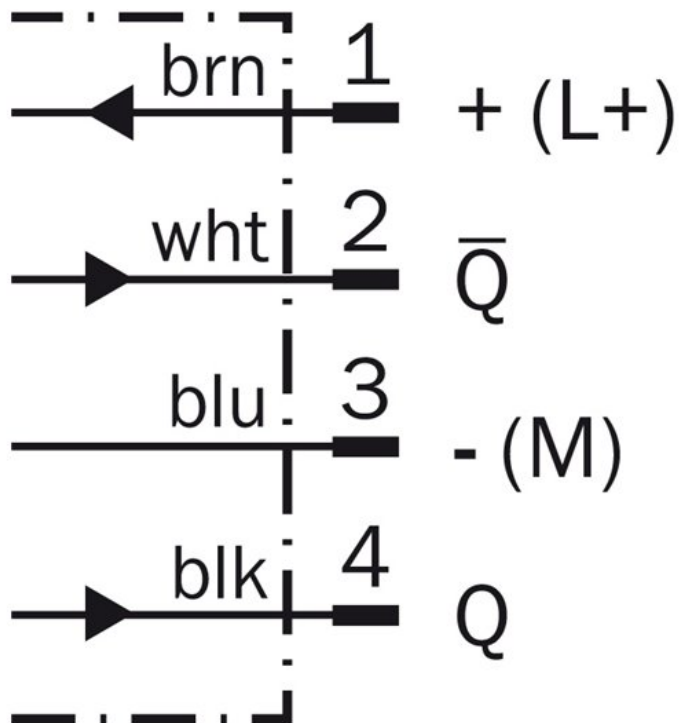
Dimensional drawing



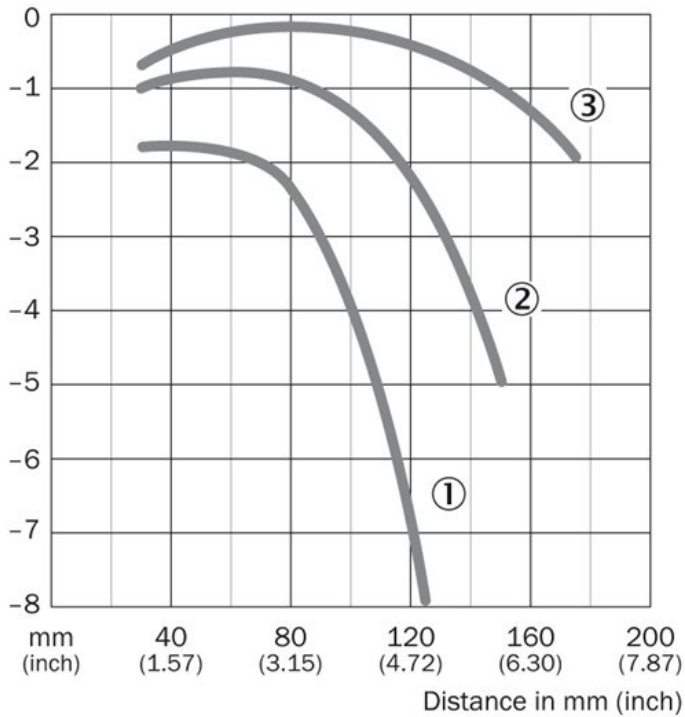
Adjustments possible



## Connection diagram

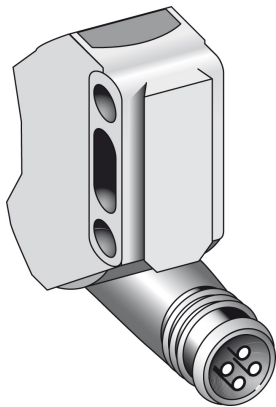


## Characteristic curve

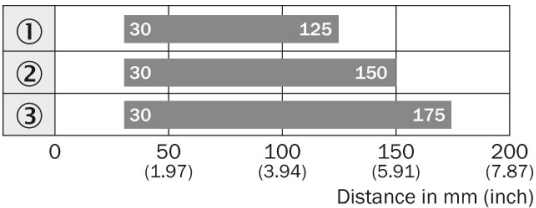


- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

Connection type



Sensing range diagram



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

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