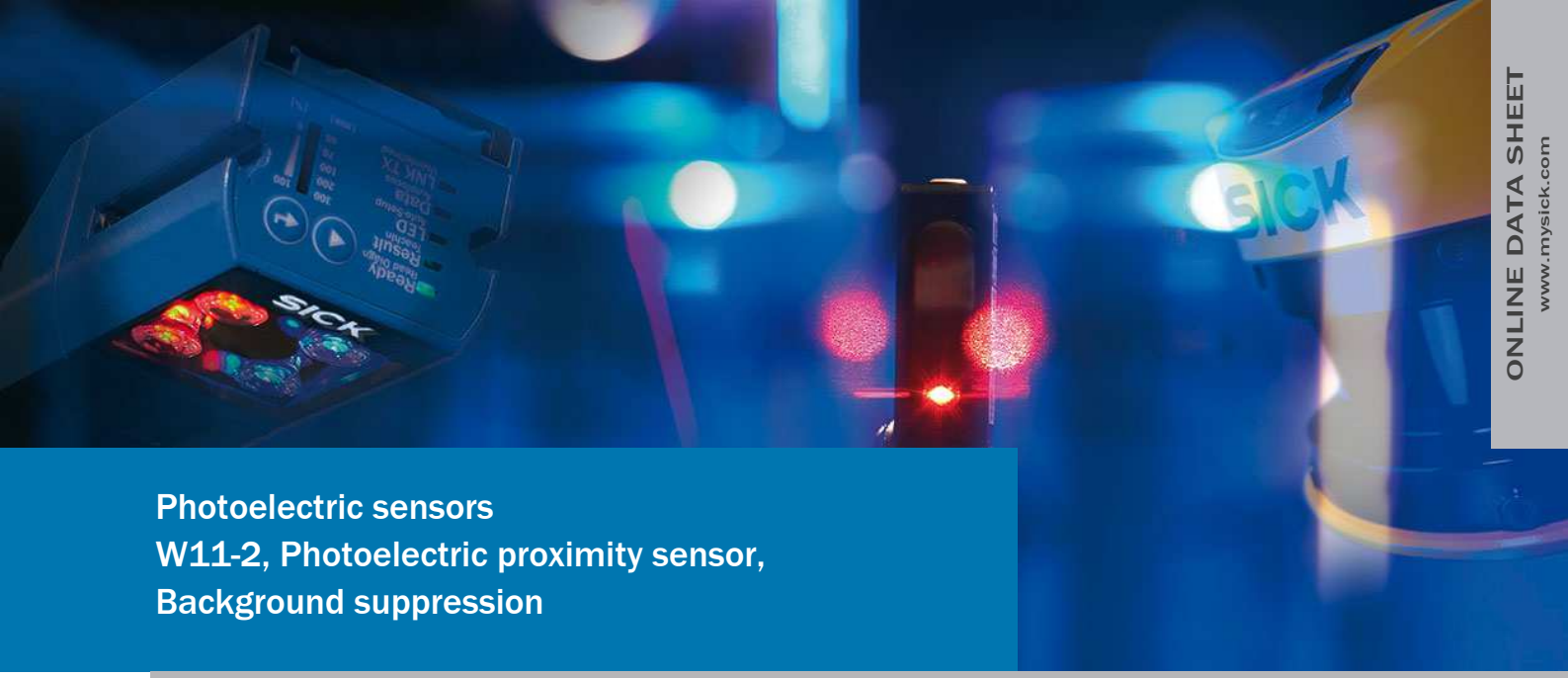



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# Photoelectric sensors
# W11-2, Photoelectric proximity sensor, Background suppression

WTB11-2P2431




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# W11-2, Photoelectric proximity sensor, Background suppression

**Model Name** > WTB11-2P2431
**Part No.** > 1041376





*Illustration may differ*

## At a glance

- Precise background suppression
- Rugged housing for industrial use
- PinPoint LED technology with a 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 distance adjustment via potentiometer
- Operating distance up to 1,100 mm

## Your benefits

- State of the art technology e.g OES-3 provides, reliable background suppression and object detection, independent of object color
- High immunity to optical inference reduces false readings and downtime
- PinPoint LED technology provides a bright, small and precise light spot that enables 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, Background 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.: | 20 mm ... 350 mm [1] |
| Sensing range: | 20 mm ... 350 mm |
| Type of light: | Visible red light |
| Light source: | LED [2] |
| Wave length: | 640 nm |
| Adjustment: | Potentiometer, 5 turns |
| Light spot size (distance): | Ø 6 mm (200 mm) |

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


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## Mechanics/electronics

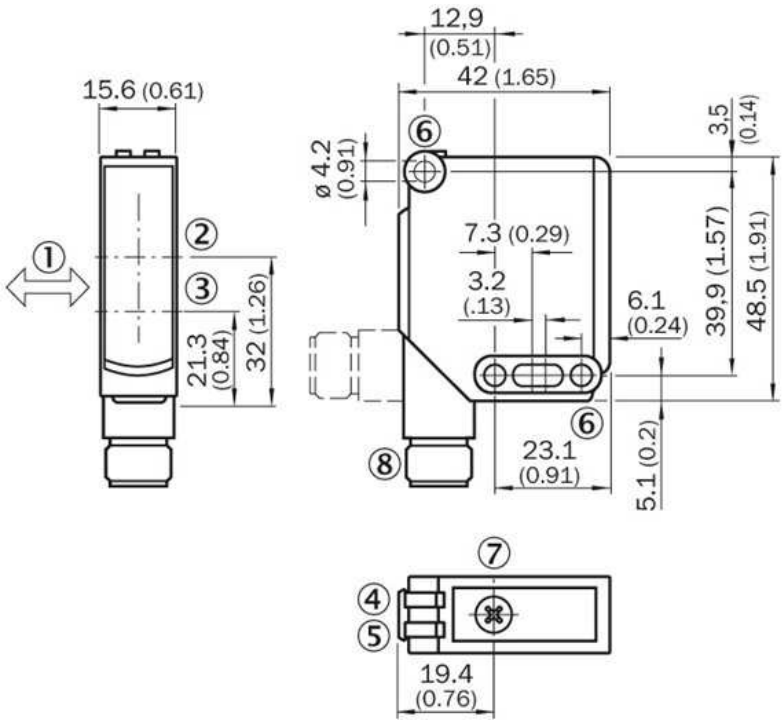
| | |
|---|---|
| Supply voltage: | 10 V DC ... 30 V DC [1] |
| Power consumption: | ≤ 30 mA [2] |
| Output type: | PNP |
| Output function: | Complementary |
| Switching mode: | Light/dark switching |
| Signal voltage PNP HIGH/LOW: | Uv - 2.5 V/approx. 0 V |
| Output current Imax.: | 100 mA |
| Response time: | ≤ 2.5 ms [3] |
| Switching frequency: | 200 Hz [4] |
| Connection type: | Connector M12, 4-pin |
| Circuit protection::: | A, C, D [5] [6] [7] |
| 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;

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

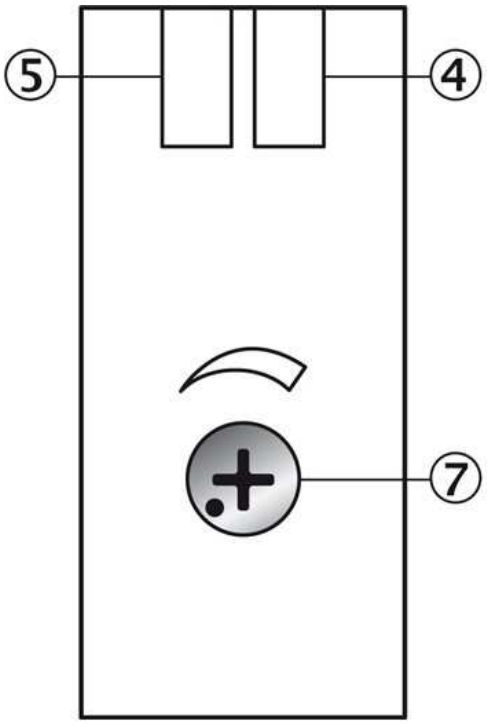

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## Dimensional drawing




|1| Standard direction of the material being scanned
|2| Optical axis, receiver
|3| Optical axis, sender
|4| Status indicator LED green: power on
|5| Status indicator LED,
yellow: Status of received light beam
|6| Mounting hole ø 4.2 mm
|7| Sensing range adjustment: potentiometer
|8| Connection

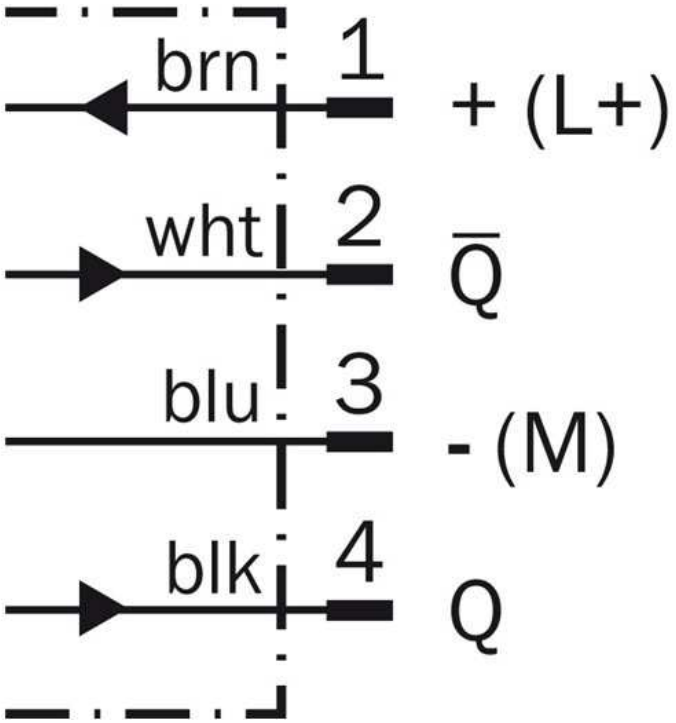
## Adjustments possible



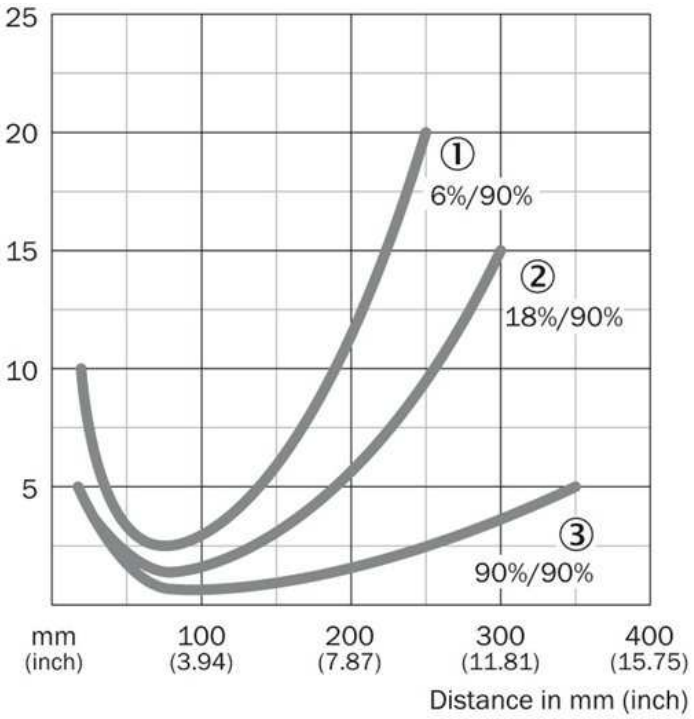
|4| Status indicator LED green: power on
|5| Status indicator LED,
yellow: Status of received light beam
|7| Sensing range adjustment: potentiometer


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## Connection diagram



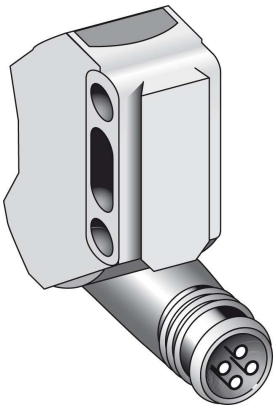

## Characteristic curve



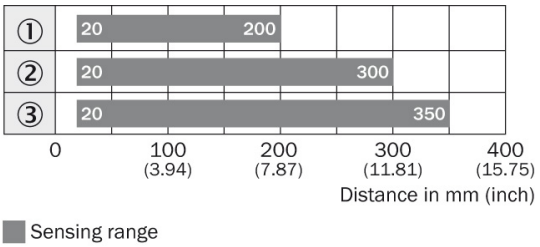

|1| Sensing range on black, 6 % remission
|2| Sensing range on grey, 18 % remission
|3| Sensing range on white, 90 % remission


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## Connection type



## Sensing range diagram




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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