



## Photoelectric sensors W15, Photoelectric proximity sensor, Background suppression

WTB15-P2431



**Model Name** > [WTB15-P2431](#)  
**Part No.** > [1044305](#)



*Illustration may differ*

**At a glance**

- Photoelectric proximity sensor with background suppression and 200 mm sensing distance
- Suppression of background reflections based on OES3 ASIC technology, with second LED emitter
- Red PinPoint LED
- Mounting flexibility: M18 front mount using plastic nut or snap ring, side assembly with 24.1 mm through holes
- Flush mounting possible using the snap ring
- Transparent back cover

**Your benefits**

- Photoelectric proximity sensor with best-in-class background suppression, reducing product loss and increasing throughput
- Reliable object detection, even in difficult environments
- Perfect light spot visibility and light spot geometry simplifies alignment
- Completely compatible with many competitor models, making it easy to install and commission
- Flush mounting reduces setup time and prevents obstructions to material flow on conveyor sections
- Clearly visible LED indicators reduce setup time and simplify troubleshooting



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	16.2 mm x 48.5 mm x 31.9 mm
Housing design (light emission):	Hybrid
Thread diameter (housing):	M18 x 1
Sensing range max.:	4 mm ... 200 mm <sup>1)</sup>
Sensing range:	15 mm ... 200 mm
Type of light:	Visible red light
Light source:	PinPoint LED <sup>2)</sup>
Wave length:	650 nm
Light spot size (distance):	Ø 7 mm (50 mm)

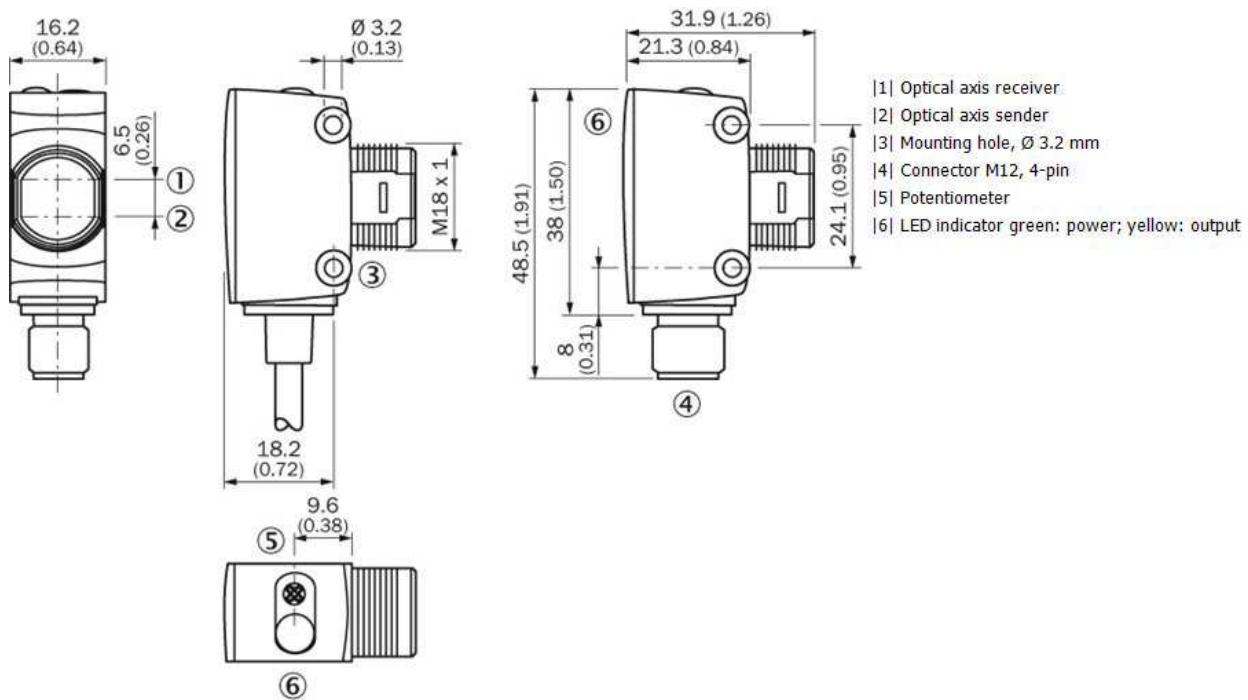
<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)    <sup>2)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

**Mechanics/electronics**

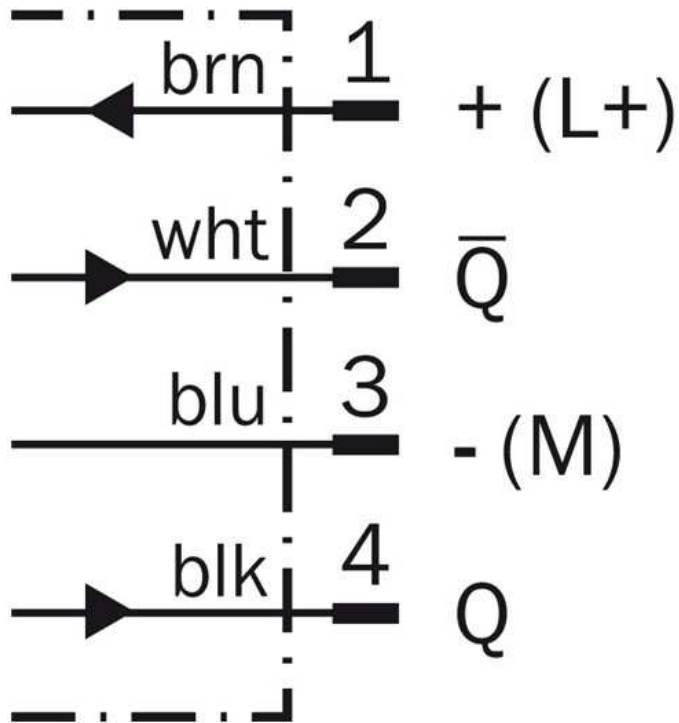
Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	< 5 Vpp <sup>2)</sup>
Power consumption:	≤ 30 mA <sup>3)</sup>
Output type:	PNP
Output function:	Complementary
Switching mode:	Light/dark switching
Output current I <sub>max</sub> :	≤ 100 mA
Response time:	< 0.5 ms <sup>4)</sup>
Switching frequency:	1,000 Hz <sup>5)</sup>
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, B, D <sup>6) 7) 8)</sup>
Protection class:	II <sup>9)</sup>
Weight:	10 g
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67
Items supplied:	Snap-ring and M18 nut
Ambient operating temperature:	-40 °C ... +60 °C
Ambient storage temperature:	-40 °C ... +75 °C
UL File No.:	NRKH.E189383 & NRKH7.E189383
Housing material:	ABS, Plastic

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> A =  $V_S$  connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> D = outputs overcurrent and short-circuit protected <sup>9)</sup> Reference voltage: 50 V DC

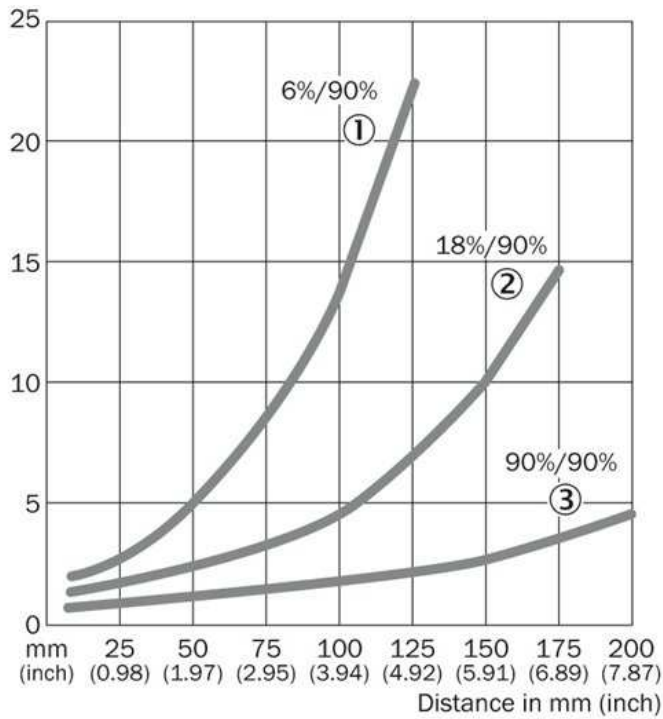
## Dimensional drawing



## Connection diagram

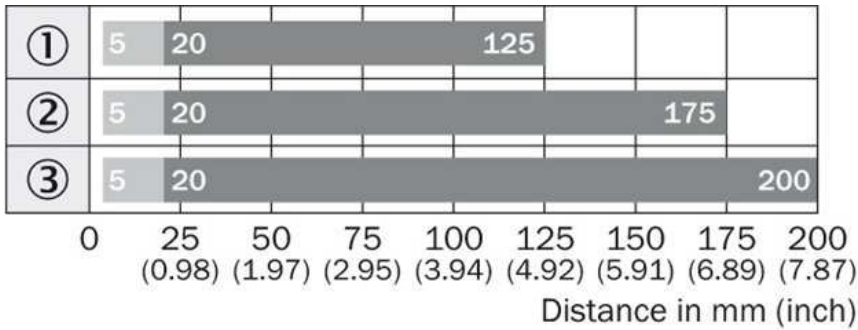


### Characteristic curve



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

### Sensing range diagram

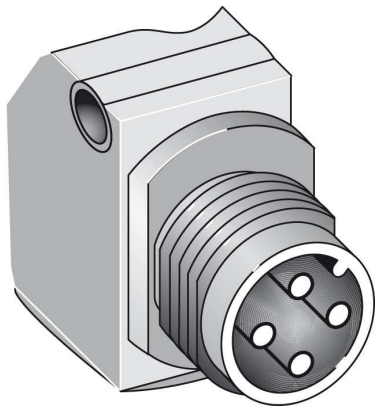


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on white, 90 % remission

■ Sensing range      ■ Sensing range max.

Connection type

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