



WTB15-N2431

W15

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	part no.
WTB15-N2431	1044306

Other models and accessories → www.sick.com/W15

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	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 ¹⁾
Sensing range	15 mm ... 200 mm
Type of light	Visible red light
Light source	PinPoint LED ²⁾
Light spot size (distance)	Ø 7 mm (50 mm)
Wave length	650 nm
Adjustment	Potentiometer, 5 turns (Sensing range) Potentiometer, 5 rotations

¹⁾ Object with 90% remission (based on standard white, DIN 5033).

²⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	30 mA ³⁾
Switching output	NPN

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_V 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⁾ B = inputs and output reverse-polarity protected.

⁸⁾ D = outputs overcurrent and short-circuit protected.

⁹⁾ Reference voltage: 50 V DC.

Output function	Complementary
Switching mode	Light/dark switching
Output current I_{\max}	$\leq 100 \text{ mA}$
Response time	$< 0.5 \text{ ms}^{4)}$
Switching frequency	$1,000 \text{ Hz}^{5)}$
Connection type	Male connector M12, 4-pin
Circuit protection	A ⁶⁾ B ⁷⁾ D ⁸⁾
Protection class	II ⁹⁾
Weight	10 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67
Items supplied	Snap-ring and M18 nut
Ambient operating temperature	$-40 \text{ °C} \dots +60 \text{ °C}$
Ambient temperature, storage	$-40 \text{ °C} \dots +75 \text{ °C}$
UL File No.	NRKH.E189383 & NRKH7.E189383

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not exceed or fall below U_V 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) B = inputs and output reverse-polarity protected.

8) D = outputs overcurrent and short-circuit protected.

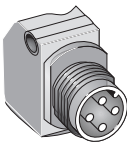
9) Reference voltage: 50 V DC.

Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719

ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

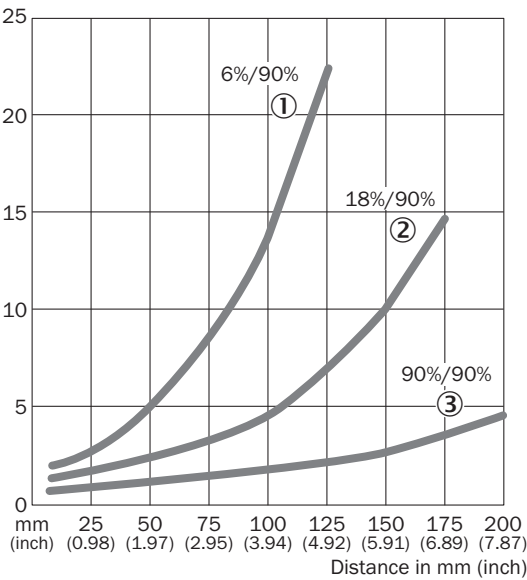
Connection type



Connection diagram Cd-083

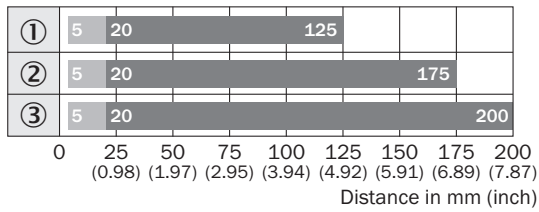


Characteristic curve WTB15



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

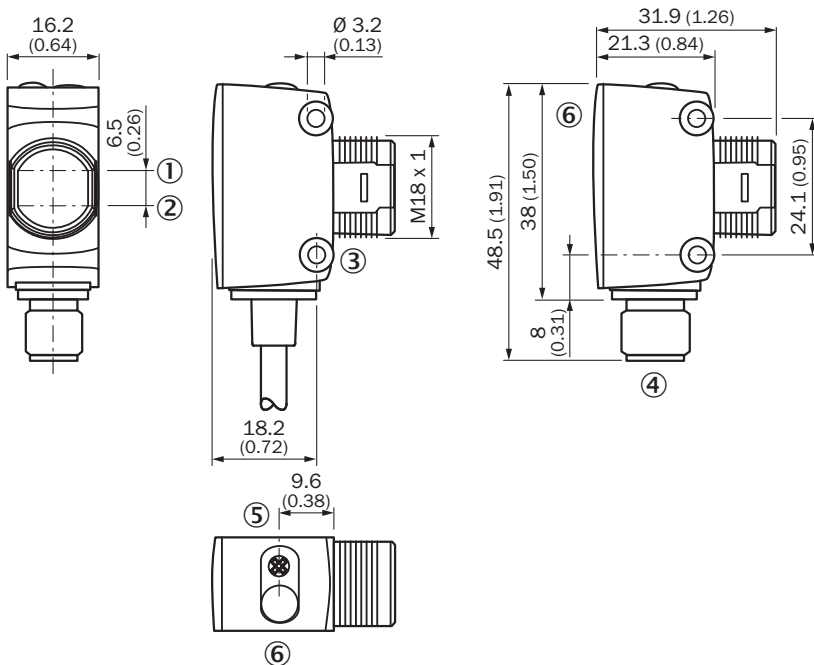
Sensing range diagram WTB15



■ Sensing range ■ Sensing range max.

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

Dimensional drawing WTE15, WTB15





Dimensions in mm (inch)

- ① optical axis, receiver
- ② optical axis, sender
- ③ Mounting hole, Ø 3.2 mm
- ④ M12 male device connector, 4-pin
- ⑤ Potentiometer
- ⑥ LED indicator green: power; yellow: output

Recommended accessories

Other models and accessories → www.sick.com/W15

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none">• Connection type head A: Female connector, M12, 4-pin, straight, A-coded• Connection type head B: Flying leads• Signal type: Sensor/actuator cable• Cable: 5 m, 4-wire, PVC• Description: Sensor/actuator cable, unshielded• Application: Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none">• Connection type head A: Male connector, M12, 4-pin, straight, A-coded• Description: Unshielded• Connection systems: Screw-type terminals• Permitted cross-section: ≤ 0.75 mm²	STE-1204-G	6009932

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com