



WTB16I-39111120ZZZ
W16

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WTB16I-39111120ZZZ	1222708

Other models and accessories → www.sick.com/W16

Detailed technical data

Features

Sensor/ detection principle	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D)	20 mm x 55.7 mm x 42 mm
Housing design (light emission)	Rectangular
Sensing range max.	10 mm ... 1,500 mm ¹⁾
Type of light	Infrared light
Light source	LED ²⁾
Light spot size (distance)	Ø 12 mm (800 mm)
Wave length	850 nm
Adjustment	
Teach-Turn adjustment	BluePilot: for setting the sensing range
Indication	
LED indicator blue	BluePilot: sensing range indicator
LED indicator green	Operating indicator Static: power on
LED indicator yellow	Status of received light beam Static on: object present Static off: object not present

¹⁾ Object with 90 % reflectance (referred to 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}
Current consumption	30 mA ²⁾ 50 mA ³⁾
Switching output	Push-pull: PNP/NPN
Output function	Factory setting: Pin 5 / white: NPN normally open (light switching), PNP normally closed (dark switching), Pin 4 / black: NPN normally closed (dark switching), PNP normally open (light switching)
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. V _S – 2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. V _S / < 2.5 V
Output current I_{max}	≤ 100 mA
Response time	≤ 500 μs ⁴⁾
Switching frequency	1,000 Hz ⁵⁾
Connection type	Cable with connector Q6, 6-pin, DC-coding, 270 mm ⁶⁾
Cable material	PVC
Circuit protection	A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾
Protection class	III
Weight	70 g
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP65 (According to EN 60529)
Ambient operating temperature	–40 °C ... +60 °C
Ambient storage temperature	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

¹⁾ Limit values.

²⁾ 16 V DC ... 30 V DC, without load.

³⁾ 10 V DC ... 16 V DC, without load.

⁴⁾ Signal transit time with resistive load in switching mode.

⁵⁾ With light/dark ratio 1:1 in switching mode.

⁶⁾ Do not bend below 0 °C.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

Safety-related parameters

MTTF_D	626 years
DC_{avg}	0%

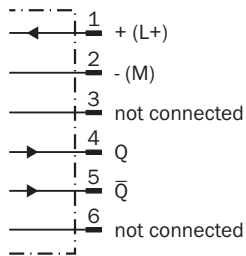
Classifications

ECI@ss 5.0	27270904
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ECI@ss 5.1.4	27270904
ECI@ss 6.0	27270904
ECI@ss 6.2	27270904
ECI@ss 7.0	27270904
ECI@ss 8.0	27270904
ECI@ss 8.1	27270904
ECI@ss 9.0	27270904
ECI@ss 10.0	27270904
ECI@ss 11.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
UNSPSC 16.0901	39121528

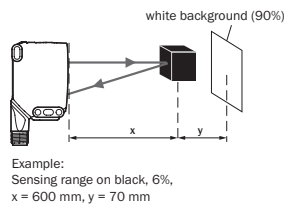
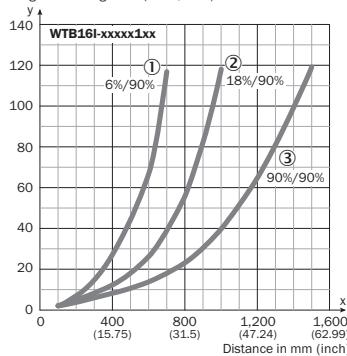
Connection diagram

Cd-176



Characteristic curve

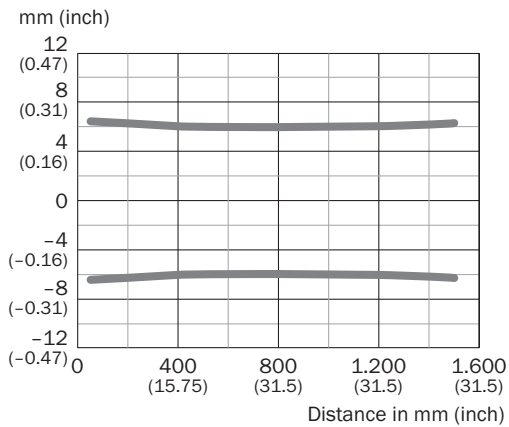
Minimum distance in mm (y) between the set sensing range and background (white, 90%)



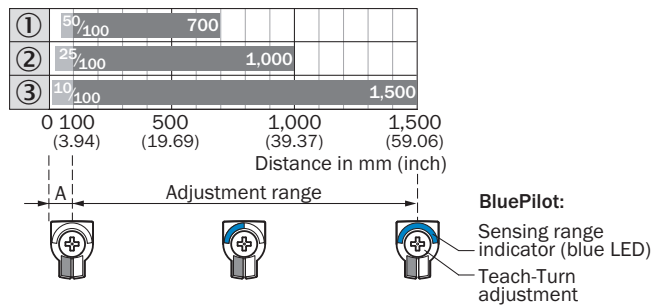
- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90% remission

Light spot size

WTB16I-xxxxx1xx



Sensing range diagram

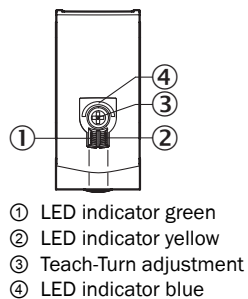


A = Detection distance (depending on object remission)

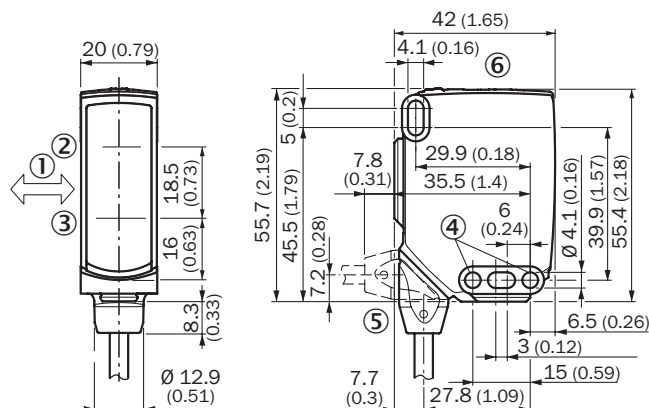
- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90% remission

Adjustments

Display and adjustment elements



WTB16, WTL16, cable



- ① Standard direction of the material being detected
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver
- ④ Mounting hole, Ø 4.1 mm
- ⑤ Connection
- ⑥ Display and adjustment elements

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	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
Mounting brackets and plates			
	Adapter for mounting W16 sensors in existing W14-2/W18-3 installations or L25 sensors in existing L28 installations, plastic, fastening screws included	BEF-AP-W16	2095677
Plug connectors and cables			
	Head A: female connector, 6-pin, angled, DC-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	DOL-1306-W02M	6030217

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