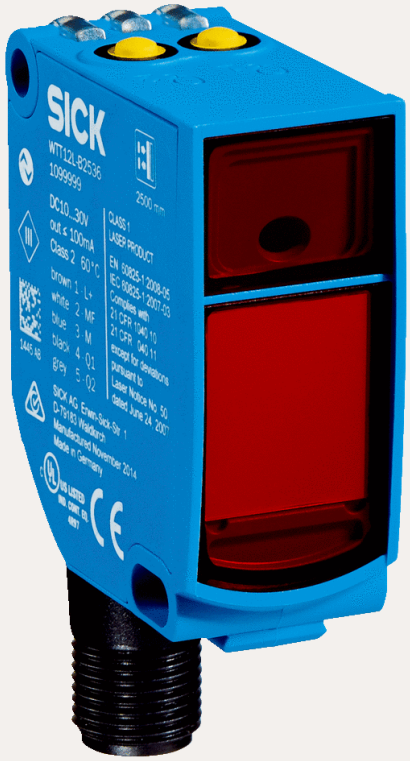
SICK.COM



DATA SHEET

WTT12L-B2553

WTT12 PowerProx
Time-of-flight sensors

SICK Sensor Intelligence



Illustration may differ

TIME-OF-FLIGHT SENSORS

WTT12L-B2553

ORDERING INFORMATION

Type	part no.
WTT12L-B2553	1082415

Further device versions and accessories at www.sick.com/WTT12_PowerProx

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression, Optical time-of-flight
Housing design (light emission)	Rectangular
Sensing range max.	50 mm ... 1,800 mm [1]
Sensing range	100 mm ... 1,800 mm [2] [1]
Type of light	Visible red light
Light source	Laser [3]
Light spot size (distance)	Ø 12 mm (1,800 mm)
Wave length	658 nm
Laser class	1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11) [4]
Adjustment	Single teach-in button (2 x)
Safety-related parameters	
$MTTF_D$	138 years
DC_{avg}	0 %
T_M (mission time)	20 years

[1] Object with 6 ... 90% remission (based on standard white, DIN 5033).

[2] Adjustable.

[3] Average service life: 100,000 h at T_U = +25 °C.

[4] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	70 mA [3]
Switching output	Push-pull: PNP/NPN [4]
Number of switching outputs	2 (Q_1, Q_2) [4]
Switching mode	Light switching [4]
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 5 ms [5]
Switching frequency	100 Hz [6]
Analog output	-
Input	Sender off
Circuit protection	A [7] B [8] C [9]
Protection class	III
Enclosure rating	IP67
Warm-up time	< 15 min [10]
Initialization time	< 300 ms

[1] Limit values. Operated in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed U_V tolerances.

[3] Without load. At V_S = 24 V.

[4] Q1, Q2 = 2 switching thresholds, light switching.

[5] Signal transit time with resistive load.

[6] With light/dark ratio 1:1.

[7] A = V_S connections reverse-polarity protected.

[8] B = inputs and output reverse-polarity protected.

[9] C = interference suppression.

[10] Below T_u = –10 °C a warm-up time is necessary.

MECHANICS

Dimensions (W x H x D)	20 mm x 49.6 mm x 44.2 mm
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Weight	48 g
Connection type	Plug, M12, 5-pin

AMBIENT DATA

Ambient operating temperature	–35 °C ... +50 °C [1]
Ambient temperature, storage	–40 °C ... +70 °C

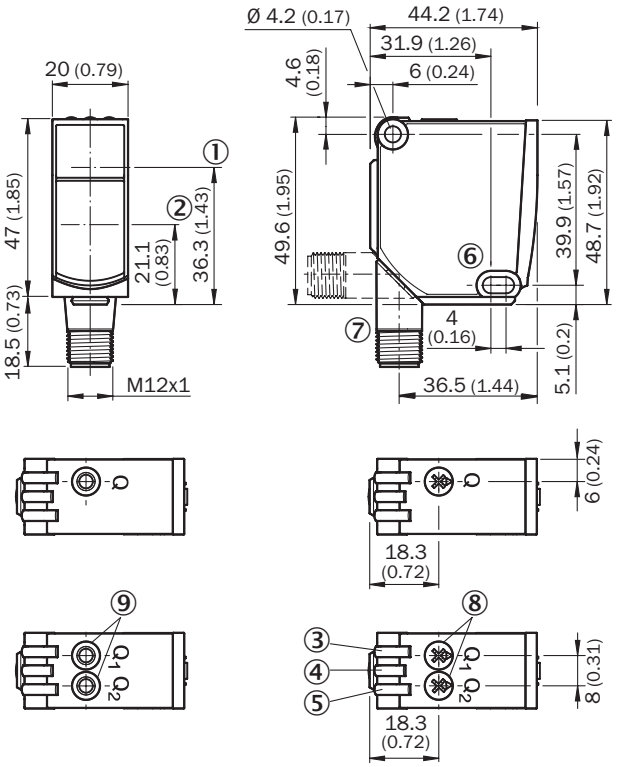
[1] As of T_a = 45 °C, a max.load current $I_{max.}$ = 50 mA is permitted.

CERTIFICATES

EU declaration of conformity	✓

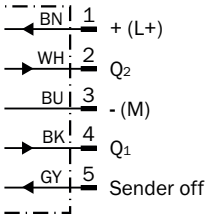
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Laser safety (IEC 60825-1) certificate	✓

DIMENSIONAL DRAWING

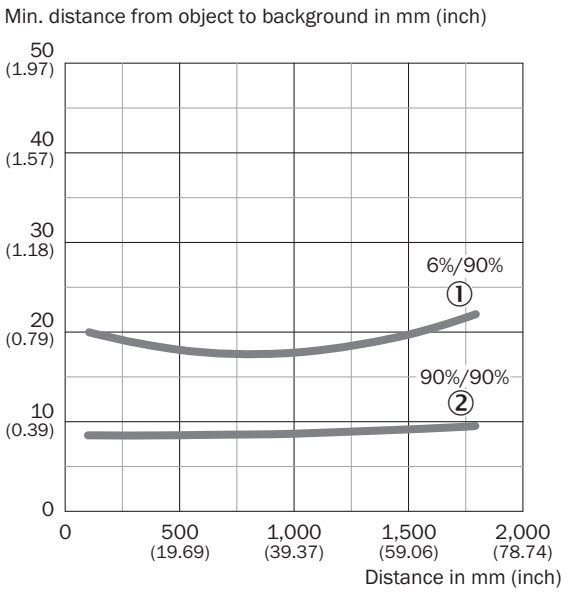


Dimensions in mm (inch)
① optical axis, sender
② optical axis, receiver
③ LED indicator yellow: Status of received light beam
④ LED indicator green: power on
⑤ LED indicator yellow: Status of received light beam
⑥ Mounting hole, Ø 4.2 mm
⑦ Connection
⑧ Potentiometer
⑨ single teach-in button

CONNECTION DIAGRAM CD-284

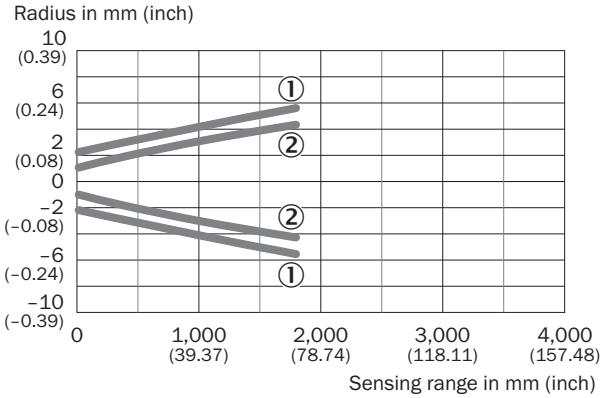


CHARACTERISTIC CURVE



① Sensing range on black, 6% remission factor
② Sensing range on white, 90% remission factor

LIGHT SPOT SIZE



① Light spot horizontal
② Light spot vertical

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1082415

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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