Data sheet

WTT190LC-B2233A00

WTT190 PowerProx

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WTT190LC-B2233A00	6067745

Included in delivery: BEF-W190 (1)

Other models and accessories ➜ www.sick.com/WTT190_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.	200 mm ... 3,000 mm [1]
Sensing range	200 mm ... 3,000 mm [2] [1]
Type of light	Visible red light
Light source	Laser [3]
Light spot size (distance)	Ø 12 mm (3,000 mm)
Wave length	658 nm
Laser class	1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11)
Adjustment	Single teach-in button (2 x), local user interface with display and button (2 x), IO-Link
Pin 2 configuration	External input, Teach-in input, Sender off input, Detection output, logic output
Items supplied	BEF-W190 mounting bracket
Safety-related parameters	
$MTTF_D$	170.9 years
DC_{avg}	0 %

[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.

Interfaces

Communication interface	IO-Link V1.1
Communication Interface detail	COM3 (230,4 kBaud)

Cycle time	1 ms
Process data length	32 Bit
Process data structure	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = detection signal Qint.1 Bit 3 = detection signal Qint.2 Bit 4 = detection signal Qint.3 Bit 5 = detection signal Qint.4 Bit 6 = detection signal Qint.5 Bit 7 = detection signal Qint.6 Bit 8 = detection signal Qint.7 Bit 9 = detection signal Qint.8 Bit 10 ... 15 = empty Bit 16 ... 31 = distance value
VendorID	26
DeviceID HEX	0x8001D3
DeviceID DEC	8389075

Electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	75 mA [3]
Switching output	Push-pull: PNP/NPN [4] [5]
Number of switching outputs	2 (Q_1, Q_2) [4]
Switching mode	Light/dark switching [4]
Switching mode selector	Selectable via menu
Output current $I_{max.}$	≤ 100 mA
Response time	0.6 ms, 0.8 ms, 1 ms, 1.8 ms, 3.4 ms, 6.6 ms, 13 ms, 25.8 ms, 51.4 ms, 102.6 ms [6] [7] [8]
Switching frequency	833 Hz, 625 Hz, 500 Hz, 278 Hz, 147 Hz, 76 Hz, 38 Hz, 19 Hz, 10 Hz, 4.9 Hz [7] [8] [9]
Analog output	-
Input	MF = multifunctional input and output, programmable
Circuit protection	A [10] B [11] C [12]
Protection class	III
Enclosure rating	IP67

[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/dark switching selectable via light/dark selector.
[5] PNP/NPN switchable.
[6] Signal transit time with resistive load.
[7] Can be set via a mean value filter (AVG1, AVG2, AVG4, AVG8, AVG16, AVG32, AVG64, AVG128, AVG256, AVG512).
[8] Depending on distance to object, distance to background and selected switching threshold.
[9] With light/dark ratio 1:1.
[10] A = V_S connections reverse-polarity protected.
[11] B = inputs and output reverse-polarity protected.
[12] C = interference suppression.
[13] For optimum performance observe max. warm-up time of 5 minutes.

Warm-up time	< 5 min [13)]
Initialization time	< 300 ms

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Mechanics

Dimensions (W x H x D)	17.4 mm x 45.6 mm x 34.7 mm
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Weight	25 g
Connection type	Male connector M8, 4-pin

Ambient data

Ambient operating temperature	–30 °C ... +50 °C [1)]
Ambient temperature, storage	–40 °C ... +70 °C

[1)] Uv ≥ 24 V. At Tu < –10 °C warm-up time < 10 min.

Smart Task

Smart Task name	Base logics
Logic function	Direct AND OR WINDOW Hysteresis
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Switching signal	
Switching signal Q_{L1}	Switching output
Switching signal Q_{L2}	Switching output

Certificates

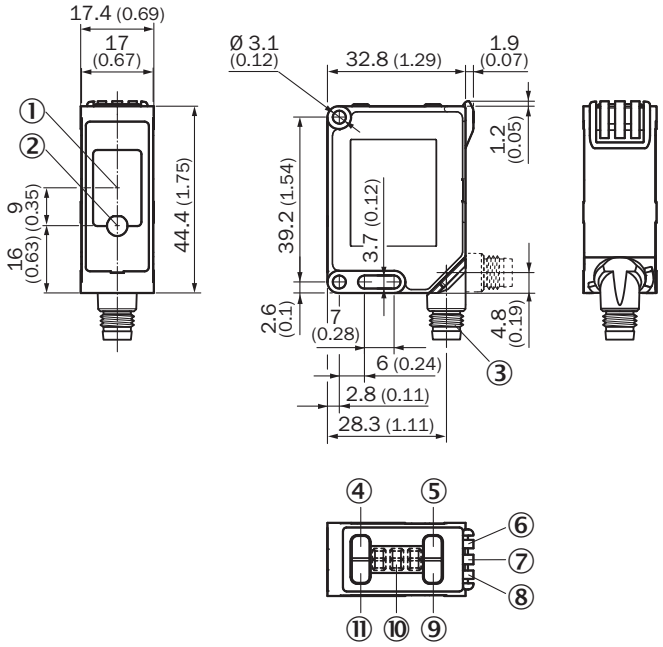
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓

China-RoHS	✓
cULus certificate	✓
Laser safety (IEC 60825-1) certificate	✓

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

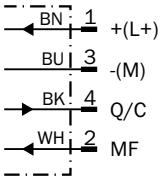
Dimensional drawing



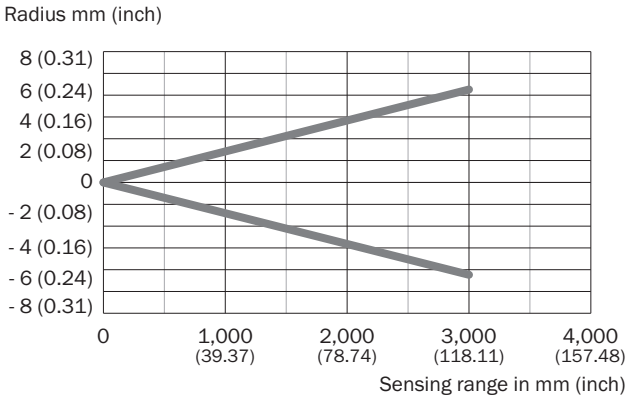
Dimensions in mm (inch)
① receiver
② sender

③ Connection
④ RUN button
⑤ (+/Q2) button
⑥ Status indicator orange: Q2 output indicator
⑦ Status indicator LED, green/red: power on / stability indicator
⑧ Status indicator orange: Q1 output indicator
⑨ (-/Q1) button
⑩ Display
⑪ SET button

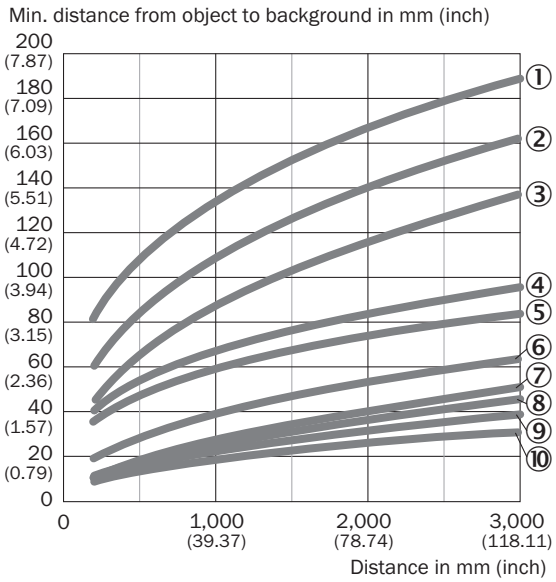
Connection diagram Cd-278



Light spot size



Scanning range



① 6 % / 90 % AVG1
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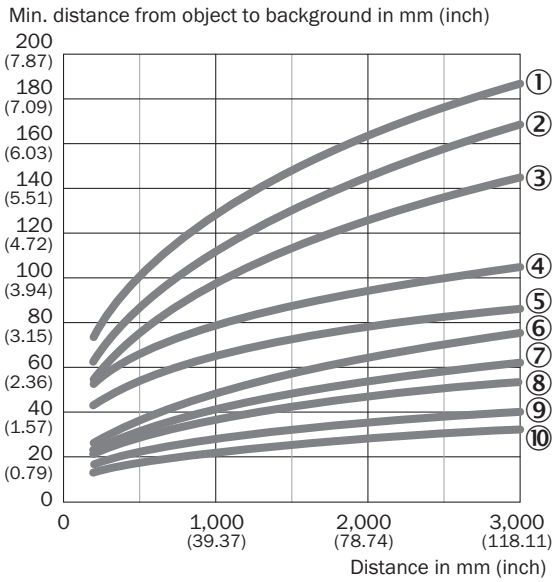
③ 6 % / 90 % AVG4
④ 6 % / 90 % AVG8
⑤ 6 % / 90 % AVG16
⑥ 6 % / 90 % AVG32
⑦ 6 % / 90 % AVG64
⑧ 6 % / 90 % AVG128
⑨ 6 % / 90 % AVG256
⑩ 6 % / 90 % AVG512

Scanning range



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⑧ 90 % / 90 % AVG128
⑨ 90 % / 90 % AVG256
⑩ 90 % / 90 % AVG512

Recommended accessories

Other models and accessories ➜ www.sick.com/WTT190_PowerProx

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, M8, 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	YF8U14-050VA3XLEAX	2095889
	• **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323

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.”

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