WTT190L-K2233
WTT190 PowerProx

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.

WTT190L-K2233 | WTT190 PowerProx

TIME-OF-FLIGHT SENSORS

Illustration may differ

Ordering information

Type	Part no.
WTT190L-K2233	6062141

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 [1] [2]
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 (4 x), Display
Items supplied	BEF-W190 mounting bracket
Safety-related parameters	
$MTTF_D$	174.4 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.

Electronics

Supply voltage U$_B$	10 V DC ... 30 V DC [1]
Ripple	< 5 V$_{pp}$ [2]
Current consumption	75 mA [3]
Switching output	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, 1 ms, 3.4 ms, 13 ms, 51.4 ms [6] [7] [8]
Switching frequency	833 Hz, 500 Hz, 147 Hz, 38 Hz, 10 Hz [7] [8] [9]
Time functions	Without time delayoff delayswitch-on delayone shot
Delay time	Programmable, 0 ms ... 999 ms
Analog output	-
Input	MF$_{in}$ = multifunctional input programmable
Circuit protection	A [10] B [11] C [12]
Protection class	III
Enclosure rating	IP67
Warm-up time	< 5 min [13]
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/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, AVG4, AVG16, AVG64, AVG256).

[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.

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.

Classifications

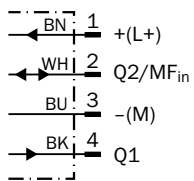|	
ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Dimensional drawing (Dimensions in mm (inch))
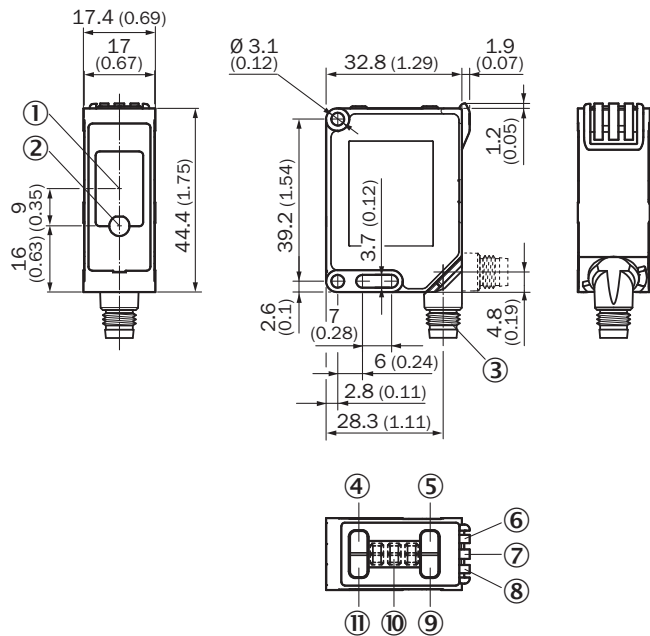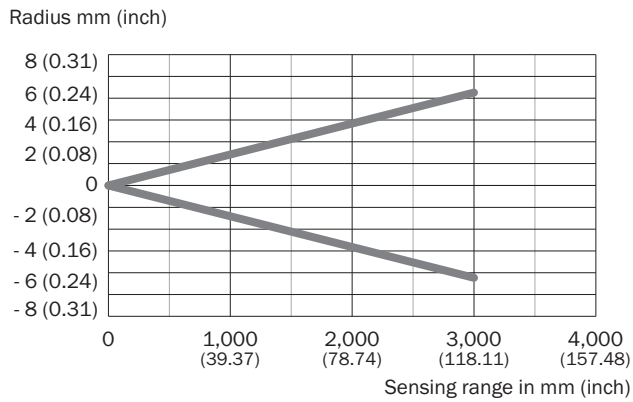
① Receiver
② Sender
③ Connection
④ RUN button
⑤ (+/Q2) button
⑥ Status indicator orange: Q2 output indicator
⑦ Status indicator LED, green/red: power on / stability indicator
⑧ Status indicator orange: Q1 output indicator
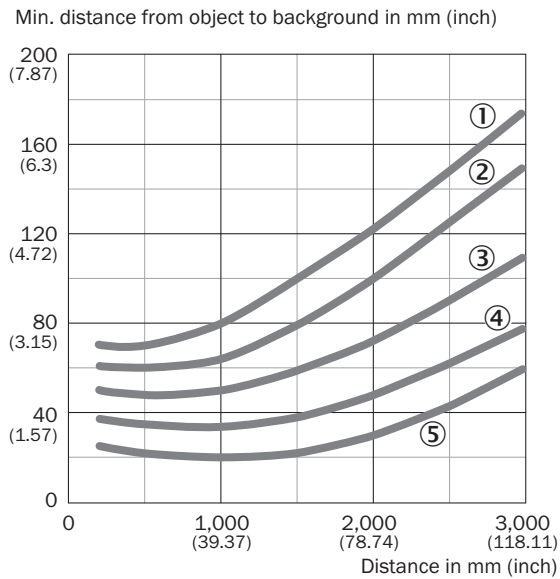⑨ (-/Q1) button
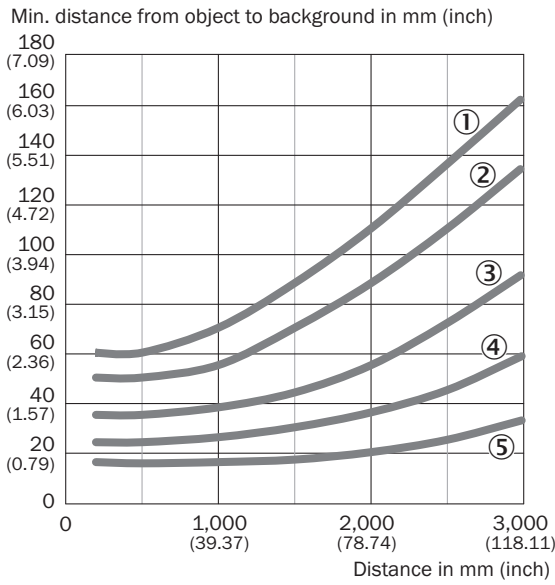⑩ Display
⑪ SET button

Connection diagram

Cd-369

Wire	Pin	Signal
BN	1	+(L+)
WH	2	$Q2/MF_{in}$
BU	3	–(M)
BK	4	Q1

Light spot size

Radius mm (inch)

Sensing range in mm (inch)

Scanning range

Min. distance from object to background in mm (inch)

Distance in mm (inch)

① 6 % / 90 % AVG1
② 6 % / 90 % AVG4
③ 6 % / 90 % AVG16
④ 6 % / 90 % AVG64
⑤ 6 % / 90 % AVG256

Min. distance from object to background in mm (inch)

① 90 % / 90 % AVG1
② 90 % / 90 % AVG4
③ 90 % / 90 % AVG16
④ 90 % / 90 % AVG64
⑤ 90 % / 90 % AVG256

Recommended accessories

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

	Brief description	Type	Part no.
Others			
	• **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	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

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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.

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