Data sheet

WTT190L-K3534

WTT190 PowerProx

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WTT190L-K3534	6062143

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) [4]
Adjustment	Single teach-in button (4 x), Display
Items supplied	BEF-W190 mounting bracket
Safety-related parameters	
$MTTF_D$	169.1 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.

[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	75 mA [3]
Switching output	PNP [4] NPN [5]
Number of switching outputs	3 (Q_1, Q_2, Q_3) [4]
Switching mode	Light/dark switching [4]
Switching mode selector	Selectable via menu
Output current $I_{max.}$	≤ 100 mA
Response time	0.6 ms [6] 1 ms [7] 3.4 ms [8] 13 ms 51.4 ms
Switching frequency	833 Hz, 500 Hz, 147 Hz, 38 Hz, 10 Hz [7] [8] [9]
Time functions	Without time delay Off delay Switch-on delay One 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, Q3 = 3 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	45 g
Connection type	Cable with plug M12, 5-pin, 0.3 m
Connection type Detail	
Cable material	Plastic, PVC

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.

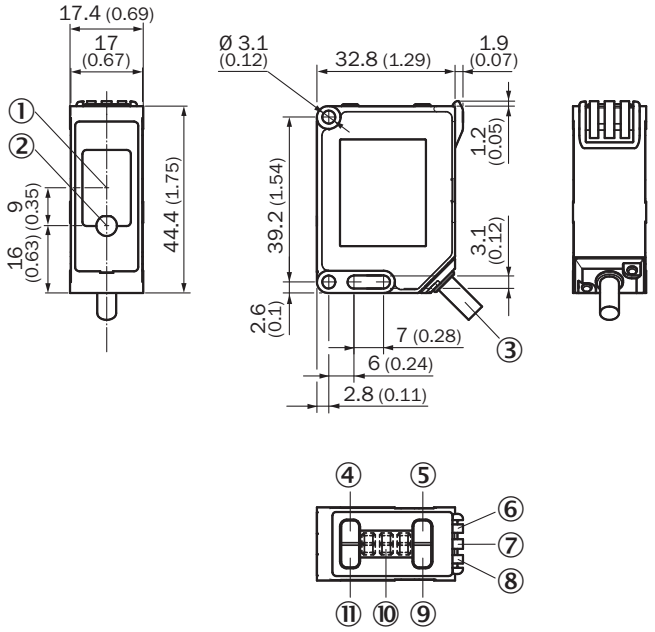
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cRUus certificate	✓
Laser safety (IEC 60825-1) certificate	✓

Classifications

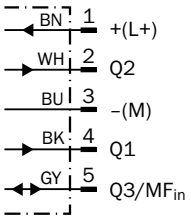
ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC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

Dimensional drawing

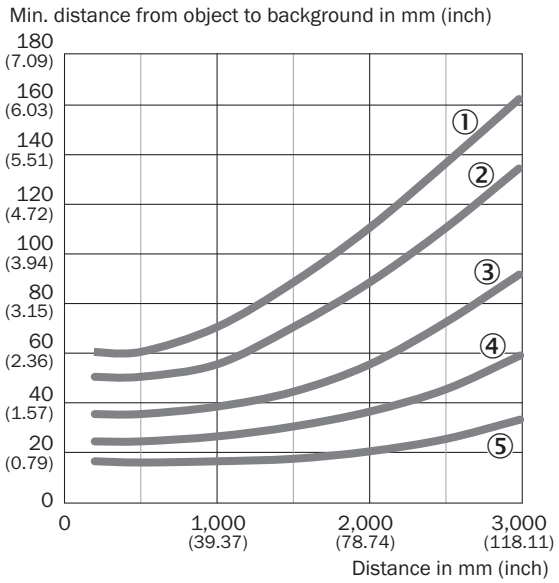


Dimensions in mm (inch)
① receiver
② sender
③ Connection
④ RUN button
⑤ (+/Q2) button
⑥ Status indicator orange: Q2 output indicator
⑦ Status indicator LED, green/red/orange: power on / stability indicator / Q3 output indicator
⑧ Status indicator orange: Q1 output indicator
⑨ (-/Q1) button
⑩ Display
⑪ SET button

Connection diagram Cd-371

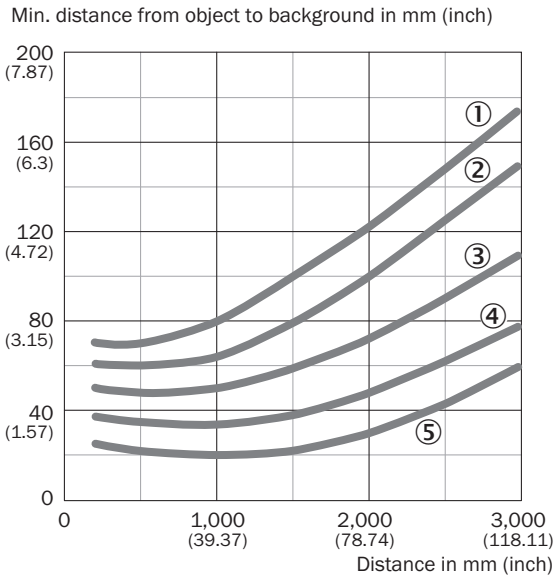


Characteristic curve



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

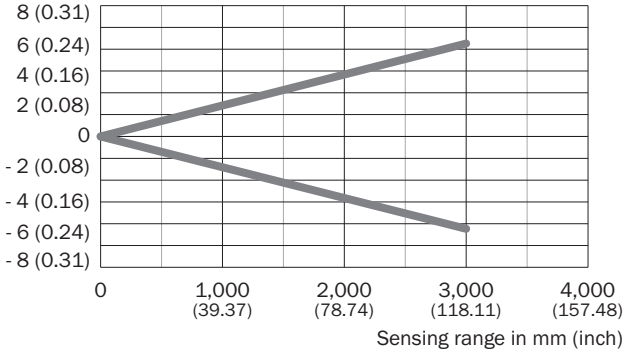
Characteristic curve



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

Light spot size

Radius mm (inch)



Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	• **Description:** Sensor/actuator cable, unshielded • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 5-wire, PVC • **Application:** Uncontaminated zones, Zones with chemicals	YF2A15-050VB5XLEAX	2096240
	• **Description:** Unshielded • **Connection type head A:** Male connector, M12, 5-pin, straight, A-coded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm² • **Note:** For field bus technology	STE-1205-G	6022083

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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.

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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