



# 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](http://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 <sup>1)</sup>
Sensing range	200 mm ... 3,000 mm <sup>2)</sup> <sup>1)</sup>
Type of light	Visible red light
Light source	Laser <sup>3)</sup>
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 <sub>D</sub> 169.1 years
	DC <sub>avg</sub> 0 %

<sup>1)</sup> Object with 6 ... 90% remission (based on standard white, DIN 5033).  
<sup>2)</sup> Adjustable.  
<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	75 mA <sup>3)</sup>
<b>Switching output</b>	PNP, NPN <sup>4)</sup> <sup>5)</sup>
<b>Number of switching outputs</b>	3 (Q <sub>1</sub> , Q <sub>2</sub> , Q <sub>3</sub> ) <sup>4)</sup>
<b>Switching mode</b>	Light/dark switching <sup>4)</sup>
<b>Switching mode selector</b>	Selectable via menu
<b>Output current <math>I_{max}</math></b>	≤ 100 mA
<b>Response time</b>	0.6 ms, 1 ms, 3.4 ms, 13 ms, 51.4 ms <sup>6)</sup> <sup>7)</sup> <sup>8)</sup>
<b>Switching frequency</b>	833 Hz, 500 Hz, 147 Hz, 38 Hz, 10 Hz <sup>7)</sup> <sup>8)</sup> <sup>9)</sup>
<b>Time functions</b>	Without time delay Off delay Switch-on delay One shot
<b>Delay time</b>	Programmable, 0 ms ... 999 ms
<b>Analog output</b>	-
<b>Input</b>	MF <sub>in</sub> = multifunctional input programmable
<b>Circuit protection</b>	A <sup>10)</sup> B <sup>11)</sup> C <sup>12)</sup>
<b>Protection class</b>	III
<b>Enclosure rating</b>	IP67
<b>Warm-up time</b>	< 5 min <sup>13)</sup>
<b>Initialization time</b>	< 300 ms

<sup>1)</sup> Limit values. Operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>V</sub> tolerances.

<sup>3)</sup> Without load. At V<sub>S</sub> = 24 V.

<sup>4)</sup> Q<sub>1</sub>, Q<sub>2</sub>, Q<sub>3</sub> = 3 switching thresholds, light/dark switching selectable via light/dark selector.

<sup>5)</sup> PNP/NPN switchable.

<sup>6)</sup> Signal transit time with resistive load.

<sup>7)</sup> Can be set via a mean value filter (AVG1, AVG4, AVG16, AVG64, AVG256).

<sup>8)</sup> Depending on distance to object, distance to background and selected switching threshold.

<sup>9)</sup> With light/dark ratio 1:1.

<sup>10)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>11)</sup> B = inputs and output reverse-polarity protected.

<sup>12)</sup> C = interference suppression.

<sup>13)</sup> For optimum performance observe max. warm-up time of 5 minutes.

## Mechanics

<b>Dimensions (W x H x D)</b>	17.4 mm x 45.6 mm x 34.7 mm
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Weight</b>	45 g
<b>Connection type</b>	Cable with plug M12, 5-pin, 0.3 m
<b>Connection type Detail</b>	

Cable material	Plastic, PVC
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Ambient data

Ambient operating temperature	-30 °C ... +50 °C <sup>1)</sup>
Ambient temperature, storage	-40 °C ... +70 °C

<sup>1)</sup> U<sub>v</sub> ≥ 24 V. At T<sub>u</sub> < -10 °C warm-up time < 10 min.

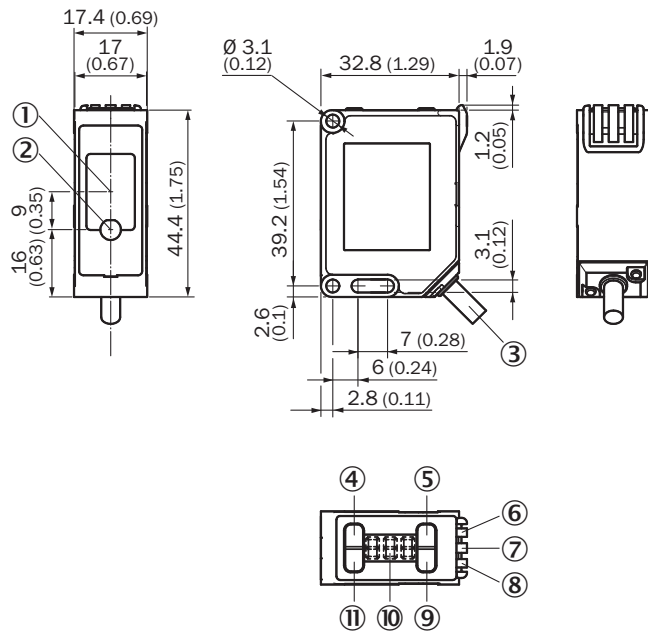
Certificates

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

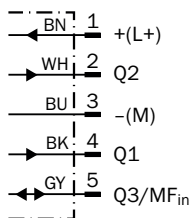
## Dimensional drawing



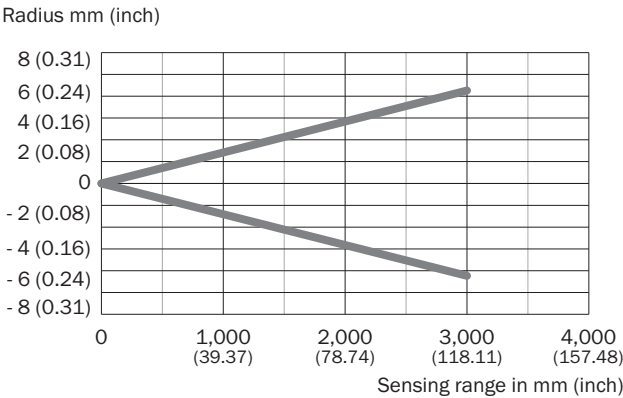
Dimensions in mm (inch)

- 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

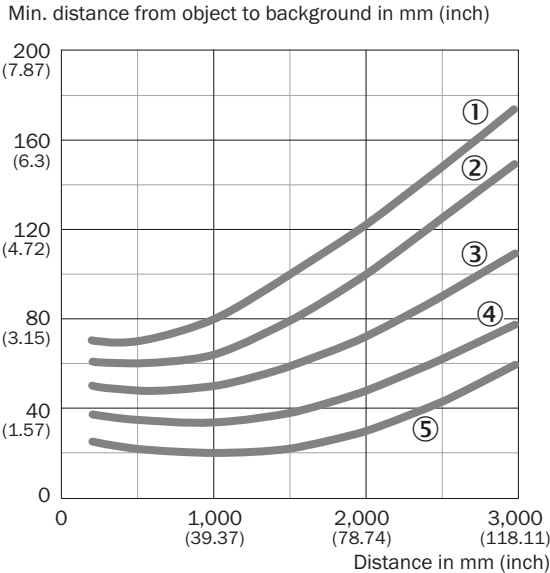
## Connection diagram Cd-371



Light spot size

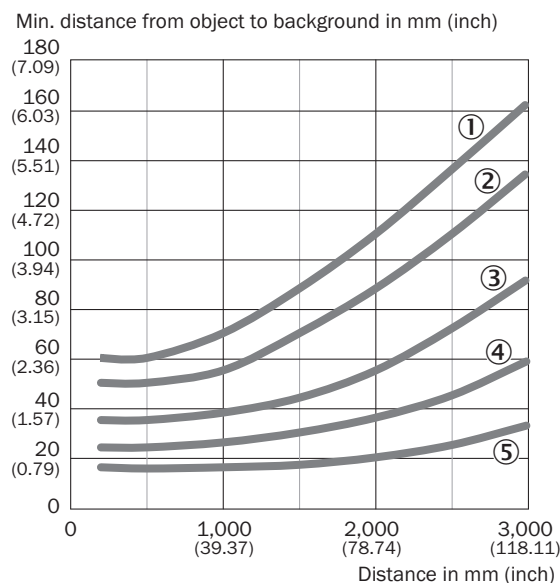


Scanning range



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

## Scanning range



- 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](http://www.sick.com/WTT190_PowerProx)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 5-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A15-050VB5XLEAX	2096240
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M12, 5-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> ≤ 0.75 mm²</li><li>• <b>Note:</b> For field bus technology</li></ul>	STE-1205-G	6022083

## 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](http://www.sick.com)