WTB190L-P430

W190 Laser Standard

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WTB190L-P430 | W190 Laser Standard

PHOTOELECTRIC SENSORS

Illustration may differ

Ordering information

Type	part no.
WTB190L-P430	6026550

Other models and accessories ➜ www.sick.com/W190_Laser_Standard

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	15 mm x 44.4 mm x 30 mm
Housing design (light emission)	Rectangular
Sensing range max.	40 mm ... 100 mm [1]
Type of light	Visible red light
Light source	Laser
Light spot size (distance)	Ø 2 mm (80 mm)
Laser class	2
Adjustment	None

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

Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	± 10 % [2]

[1] Limit values.

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

[3] Without load.

[4] Signal transit time with resistive load.

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

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

[7] D = outputs overcurrent and short-circuit protected.

[8] Reference voltage: 50 V DC.

Current consumption	40 mA [3]
Switching output	PNP
Switching mode	Light/dark switching
Switching mode selector	Selectable via light/dark rotary switch
Output current I$_{max.}$	≤ 100 mA
Response time	0.7 ms [4]
Switching frequency	700 Hz [5]
Connection type	Male connector M8, 4-pin
Circuit protection	A [6] D [7]
Protection class	III [8]
Weight	120 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Tightening torque, max.	0.5 Nm
Enclosure rating	IP67
Ambient operating temperature	−10 °C ... +40 °C
Ambient temperature, storage	−20 °C ... +60 °C

[1] Limit values.

[2] May not fall below or exceed U$_V$ tolerances.

[3] Without load.

[4] Signal transit time with resistive load.

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

[6] A = V$_S$ connections reverse-polarity protected.

[7] D = outputs overcurrent and short-circuit protected.

[8] Reference voltage: 50 V DC.

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cRUus certificate	✓
Photobiological safety (DIN EN 62471) 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

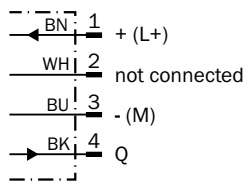| ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Adjustments
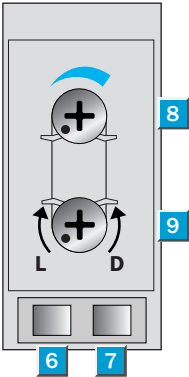
⑥ Status indicator LED, yellow: Output active
⑦ Status indicator LED, green: Laser on
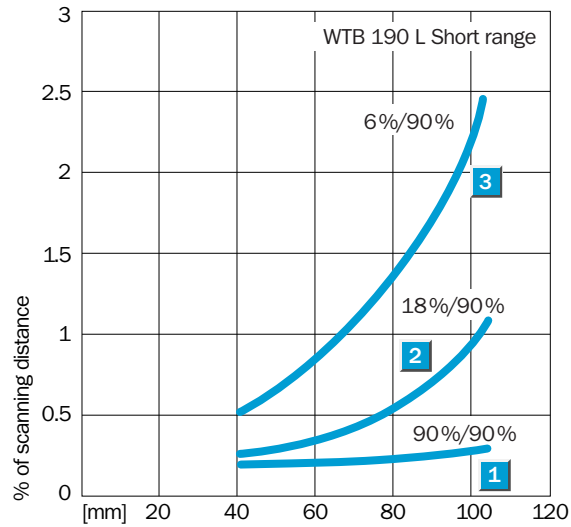⑧ Adjustment of sensing range
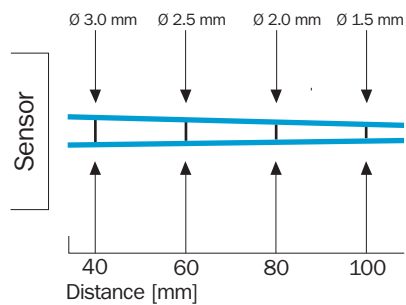⑨ selector switch light/dark switching
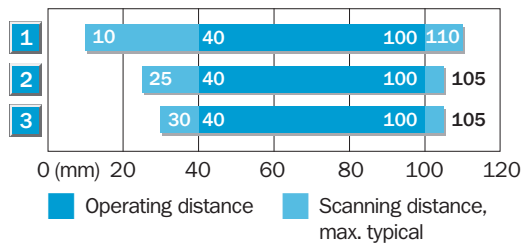
Connection type
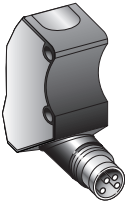
Connection diagram Cd-066

BN	1	+ (L+)
WH	2	not connected
BU	3	- (M)
BK	4	Q

Characteristic curve

WTB 190 L Short range

6%/90% — 3
18%/90% — 2
90%/90% — 1

Y-axis: % of scanning distance (0, 0.5, 1, 1.5, 2, 2.5, 3)
X-axis: [mm] 20 40 60 80 100 120

Light spot size

Ø 3.0 mm   Ø 2.5 mm   Ø 2.0 mm   Ø 1.5 mm

Sensor

Distance [mm]: 40 60 80 100

Sensing range diagram

1	10	40	100	110
2	25	40	100	105
3	30	40	100	105

0 (mm) 20 40 60 80 100 120

■ Operating distance   ■ Scanning distance, max. typical

1	Scanning range on white, 90 % remission
2	Scanning range on grey, 18 % remission
3	Scanning range on black, 6 % remission

Dimensional drawing
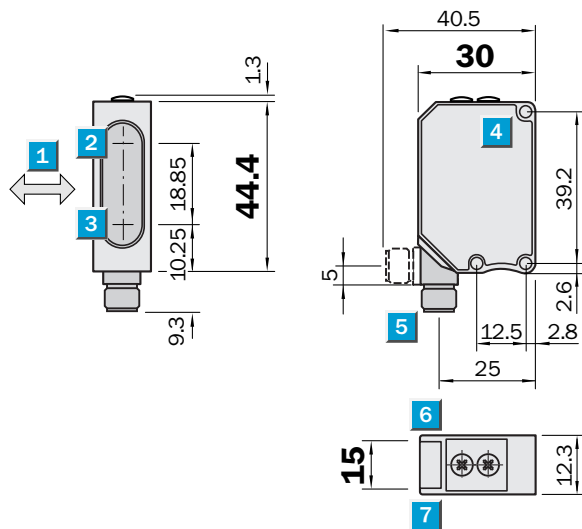
Dimensions in mm (inch)
① Center of optical axis
② Mounting hole, ø approx. 3.1 mm
③ Connector 4-pin, M8, 90° rotatable or cable 2 m, 3-wire
④ Status indicator LED, yellow: Output active
⑤ Status indicator LED, green: Laser on
⑥ sensitivity control
⑦ selector switch light/dark switching

Recommended accessories

Other models and accessories ➜ www.sick.com/W190_Laser_Standard

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Mounting bracket • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Mounting hardware included	BEF-W190	5311362
	• **Description:** Plate N11N for universal clamp bracket • **Material:** Stainless steel • **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) • **Items supplied:** Universal clamp (5322627), mounting hardware • **Usable for:** DeltaPac, Glare, WTD20E	BEF-KHS-N11N	2071081
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, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-050UA3XLEAX	2094792
	• **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."

WORLDWIDE PRESENCE:

Contacts and other locations –**www.sick.com**

SICK AG | Waldkirch | Germany | www.sick.com

SICK
Sensor Intelligence.