Data sheet

WT12L-2B550T01

W12

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WT12L-2B550T01	1018582

Other models and accessories ➜ www.sick.com/W12

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range max.	30 mm ... 200 mm [1]
Emitted beam	
Light source	Laser [2]
Type of light	Visible red light
Light spot size (distance)	Ø 0.2 mm (100 mm)
Focus position	100 mm
Key laser figures	
Normative reference	EN 60825-1:2014, IEC 60825-1:2007
Laser class	2 [3]
Key LED figures	
Wave length	650 nm
Adjustment	Potentiometer
Special features	Teflon coated housing
Special applications	Detecting small objects, Detection of objects moving at high speeds

[1] Object with 18% remission (based on standard white, DIN 5033).
[2] Average service life: 50,000 h at T_U = +25 °C.
[3] Pulse length 4 µs, max. pulse power < 5,0 mW.

Safety-related parameters

$MTTF_D$	284 years
DC_{avg}	0 %
T_M (mission time)	10 years

Electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	55 mA [3]
Protection class	III
Digital output	
Type	PNP [4]
	NPN [5]
Switching mode	Light switching, Dark switching [4] [5]
Switching mode selector	Selectable via L/D control cable
Signal voltage PNP HIGH/LOW	Uv - < 2 V, Uv / 0 V, <= 1.5 V
Signal voltage NPN HIGH/LOW	Uv - < 2 V, Uv / 0 V, <= 1.5 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 200 µs [6]
Switching frequency	2,500 Hz [7]
Circuit protection	A [8] C [9] D [10]

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not fall below or exceed U_V tolerances.
[3] Without load.
[4] 0 V or not connected, light switching.
[5] Uv, dark switching.
[6] Signal transit time with resistive load.
[7] With light/dark ratio 1:1.
[8] A = V_S connections reverse-polarity protected.
[9] C = interference suppression.
[10] D = outputs overcurrent and short-circuit protected.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	15 mm x 49 mm x 41.5 mm
Connection	Plug, M12, 5-pin
Material	
Housing	Metal, zinc diecast
	Plastic, PTFE coating
Front screen	Plastic, PMMA
Weight	130 g

Ambient data

Enclosure rating	IP67 IP69K
Ambient operating temperature	–10 °C ... +50 °C
Ambient temperature, storage	–25 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

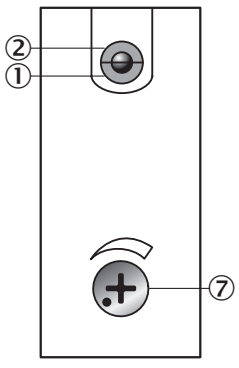
Certificates

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

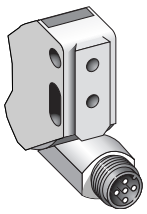
ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC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

Adjustments WT12L-2

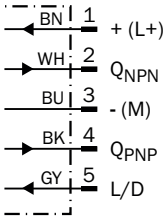


① Operating indicator, green
② LED reception indicator, yellow
⑦ Adjustment of sensing range

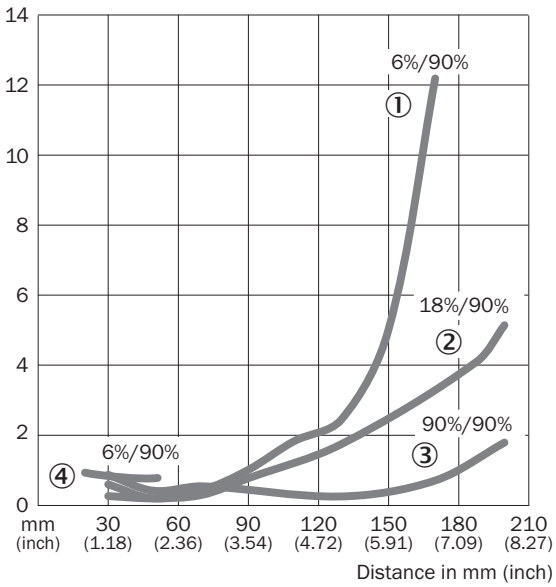
Connection type



Connection diagram Cd-145

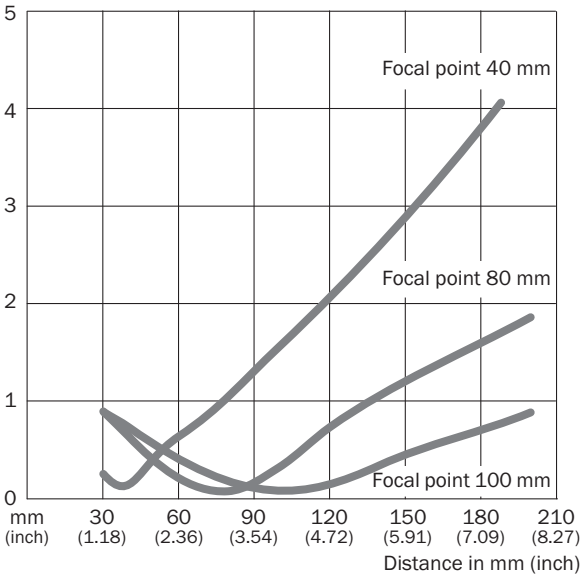


Characteristic curve WT12L-2

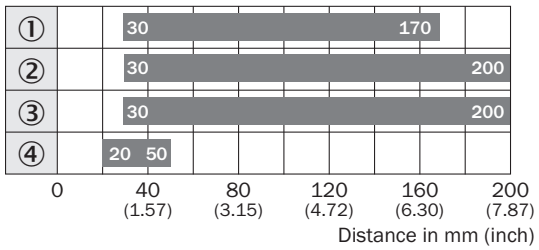


① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor
④ Sensing range on black, 6 % remission, fix

Light spot size WT12L-2



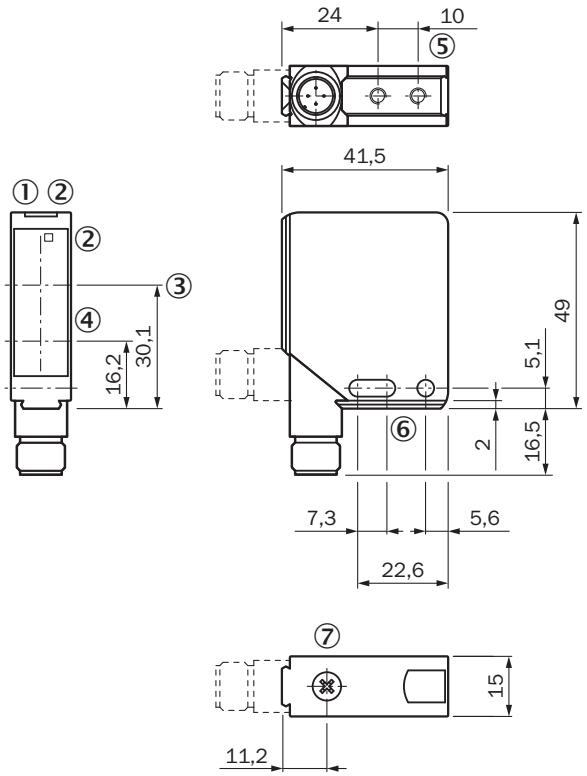
Sensing range diagram WT12L-2



Sensing range

① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor
④ Sensing range on black, 6 % remission, fix

Dimensional drawing WT12L-2



Dimensions in mm (inch)
① Operating indicator, green
② LED reception indicator, yellow
③ Optical axis, receiver
④ Optical axis, sender
⑤ M4 threaded mounting hole – 4 mm depth
⑥ Mounting hole, Ø 4.2 mm
⑦ Adjustment of sensing range

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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