



Photoelectric sensors W12-2 Laser, Photoelectric proximity sensor, Background suppression

WT12L-2B540



Photoelectric sensors W12-2 Laser, Photoelectric proximity sensor, Background suppression

Model Name > [WT12L-2B540](#)
Part No. > [1018251](#)



At a glance

- Laser protection class 1 or 2
- Precise background suppression
- Rugged sensors for industrial use
- Highly visible laser light spot for versatile object detection
- Rugged die-cast zinc housing with optional Teflon® coating
- Versatile mounting options due to dovetail mounting - mounting holes and oblong holes
- Highly visible status LEDs
- Sensing range adjustment via potentiometer

Your benefits

Precise background suppression reduces false readings caused by stray background reflections

High immunity to optical interference ensures fewer false readings and less downtime

Highly visible laser light spot provides quick and easy setup

Highly visible status LEDs simplify sensing distance adjustments and reduce installation time

Rugged metal housing (optional Teflon® coating available) requires fewer maintenance costs due to its resistance to high-pressure cleaning environments

Laser protection class 1 or 2 for eye safety

Rotatable connector provides easy installation



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	15 mm x 49 mm x 41.5 mm
Housing design (light emission):	Rectangular
Sensing range max.:	30 mm ... 200 mm ¹⁾
Type of light:	Visible red light
Light source:	Laser ²⁾
Light spot (distance):	0.2 mm (80 mm)
Wave length:	650 nm

Sensitivity adjustment:

Potentiometer

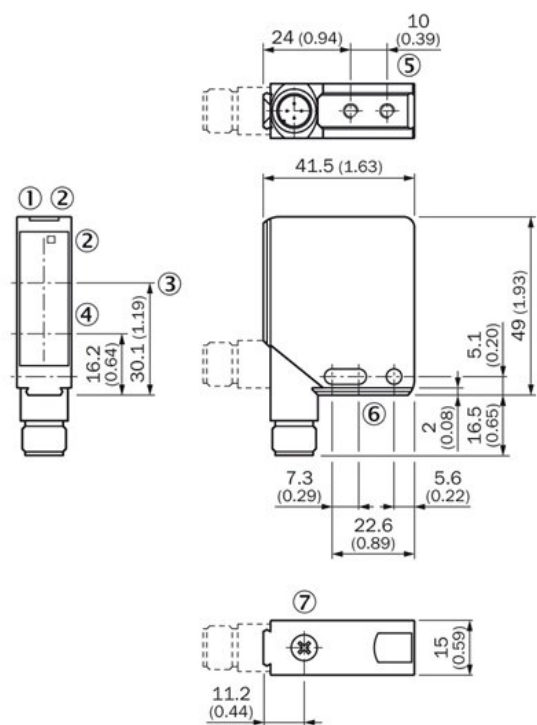
¹⁾ Objects to be sensed with 18 % reflectivity (based on DIN 5033 white standard) ²⁾ Average service life 50,000 h at Ta = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\leq 5 \text{ Vpp}$ ²⁾
Power consumption:	$\leq 55 \text{ mA}$ ³⁾
Output type:	NPN, Dark-switching, 0 V or not connected, light-switching, PNP, Light-switching, Selectable via L/D control wire, Uv, dark-switching
Signal voltage PNP HIGH/LOW:	$U_v - < 2 \text{ V}$, $U_v/0 \text{ V}$, $\leq 1.5 \text{ V}$
Signal voltage NPN HIGH/LOW:	$U_v - < 2 \text{ V}$, $U_v/0 \text{ V}$, $\leq 1.5 \text{ V}$
Output current I _{max} :	100 mA
Response time:	$\leq 200 \mu\text{s}$ ⁴⁾
Switching frequency:	2,500 Hz ⁵⁾
Connection type:	Connector M12, 5-pin
Circuit protection:::	A, C, D ⁶⁾ ⁷⁾ ⁸⁾
Protection class:	II
Weight:	130 g
Enclosure rating:	IP 67 IP 69K
Ambient operating temperature:	-10 °C ... 50 °C
Ambient storage temperature:	-25 °C ... 75 °C
UL File-No.:	UL No. NRKH.E181493, CDRH-Konform (0312012-00)

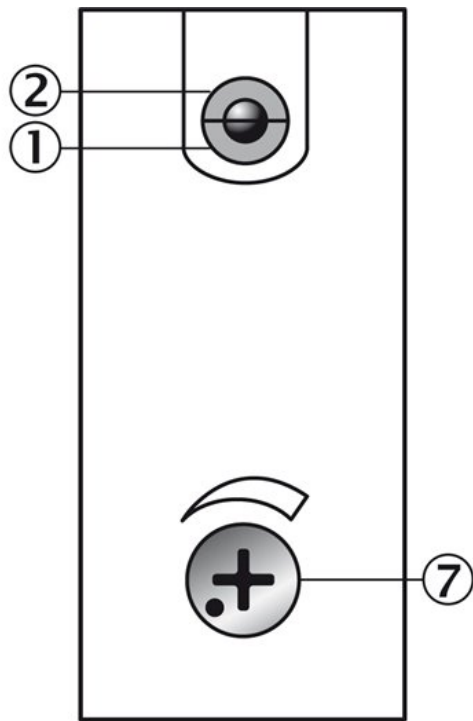
¹⁾ Limit values ²⁾ May not exceed or fall short of V ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ A = V _S connections reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ D = outputs overcurrent and short-circuit protected

Dimensional drawing

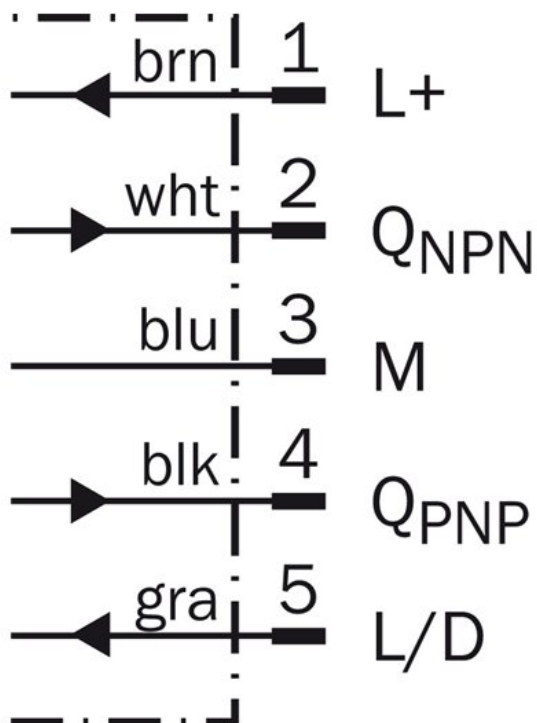


- |1| Operating indicator, green
- |2| LED reception indicator, yellow
- |3| Optical axis, receiver
- |4| Optical axis, sender
- |6| Mounting hole, Ø 4.2 mm
- |7| Sensing distance adjustment

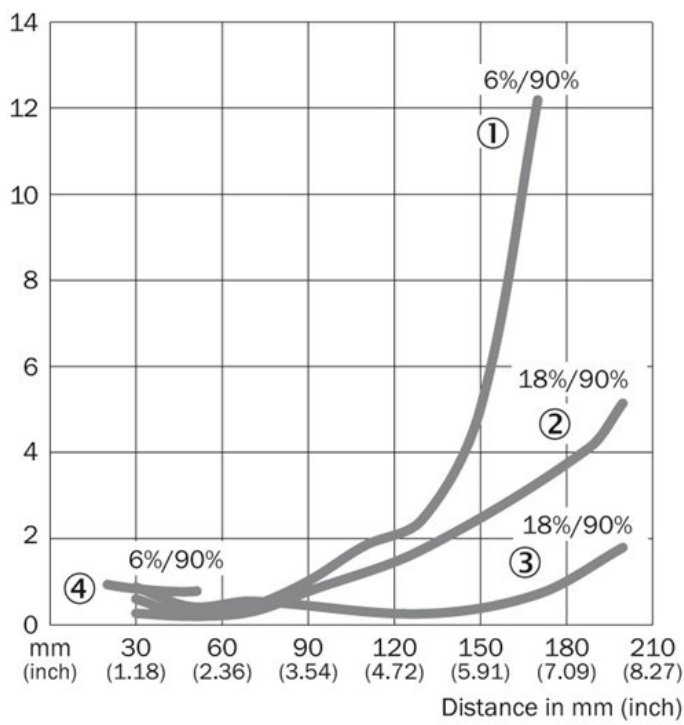
Adjustments possible



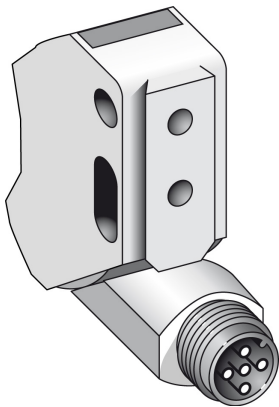
Connection diagram



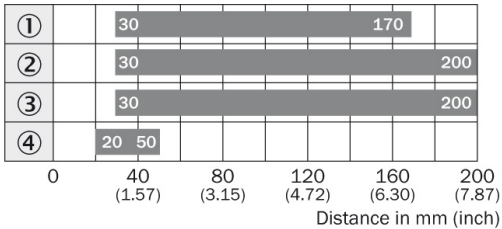
Characteristic curve



Connection type



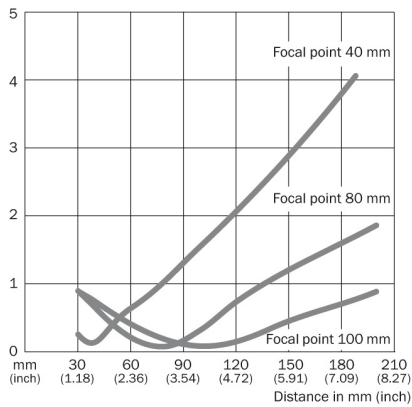
Sensing range diagram



■ Sensing range

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

Light spot size



Australia

Phone +61 3 9457 0600
1800 334 802 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail sac@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Ceská Republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail kundenservice@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6801000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 3358 1341
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederlands

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail austefjord@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail admin@sicksgp.com.sg

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886-2-2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 8865 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 800-325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com