



Photoelectric sensors
W12-3, Photoelectric proximity sensor,
Background suppression

WTB12-3P2531S46



Type > [WTB12-3P2531S46](#)
Part No. > [1044103](#)



Illustration may differ

At a glance

- State of the art technology provides precise background suppression
- Withstands harsh environments
- PinPoint LED technology with highly visible light spot; variants available with IR LED for highly critical applications
- Rugged die-cast zinc housing, with optional Teflon® coating
- Versatile mounting options due to dovetail mounting - mounting holes and oblong holes
- Flexible sensing ranges and hysteresis settings
- Key lock function, remote teach, quality monitoring
- Diagnostics messages (contamination and short-circuit)

Your benefits

State of the art technology, e.g. OES3 provides precise background suppression and reliable detection of challenging objects

High immunity to ambient light, optical reflections and crosstalk ensures fewer false readings and less downtime

PinPoint LED technology provides a highly visible light spot that enables quick and easy sensor alignment

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

A rugged metal housing withstands high-pressure cleaners and cleaning agents, reducing downtime

Complementary outputs in one housing reduce inventory and procurement costs

IO-Link enables quick remote diagnostics and maintenance (optional)

Easy installation using SICK accessories



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission):	Rectangular
Sensing range max.:	30 mm ... 350 mm ¹⁾
Sensing range:	50 mm ... 350 mm
Type of light:	Visible red light

Light source: LED ²⁾
 Wave length: 640 nm
 Special features: Health output, Switching frequency 1500 Hz
 Adjustment: Potentiometer, 5 turns
 Light spot size (distance): Ø 6 mm (200 mm)

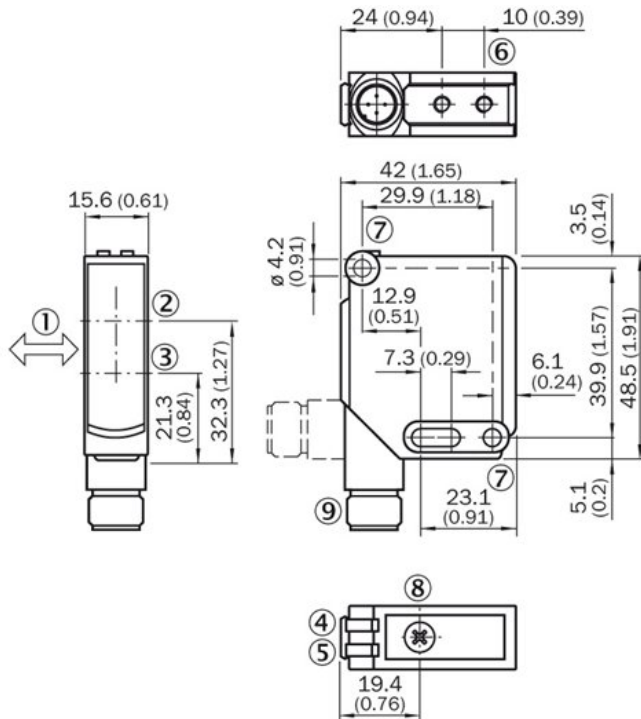
¹⁾ Object with 90 % reflectance (referred to standard white DIN 5033) ²⁾ Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

Supply voltage: 10 V DC ... 30 V DC ¹⁾
 Ripple: $\leq 5\text{ Vpp}$ ²⁾
 Power consumption: $\leq 60\text{ mA}$ ³⁾
 Output type: PNP
 Output function: Complementary
 Switching mode: Light/dark switching
 Signal voltage PNP HIGH/LOW: $> U_v - 2,5\text{ V} / \text{ca. } 0\text{ V}$
 Output current $I_{\text{max.}}$: 100 mA
 Response time: $< 330\text{ }\mu\text{s}$ ⁴⁾
 Switching frequency: 1,500 Hz ⁵⁾
 Connection type: Male connector M12, 5-pin
 Circuit protection::: A, C, D ^{6) 7) 8)}
 Protection class: II
 Weight: 120 g
 Special device: ✓
 Housing material: Metal
 Enclosure rating: IP 66
 IP 67
 IP 69K
 Ambient operating temperature: $-40\text{ °C} \dots 60\text{ °C}$
 Ambient storage temperature: $-40\text{ °C} \dots 75\text{ °C}$
 UL File No.: NRKH.E181493 & NRKH7.E181493

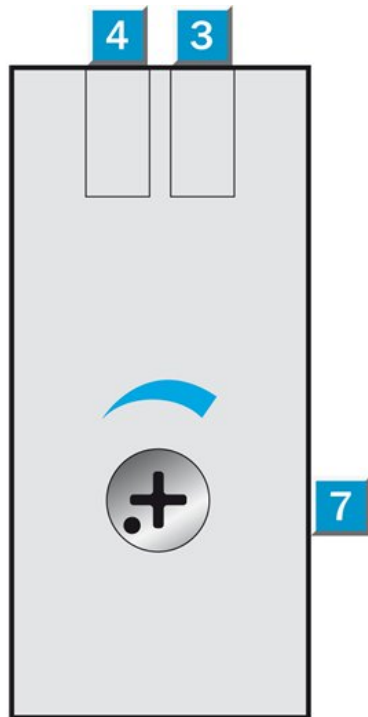
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ D = outputs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

Dimensional drawing



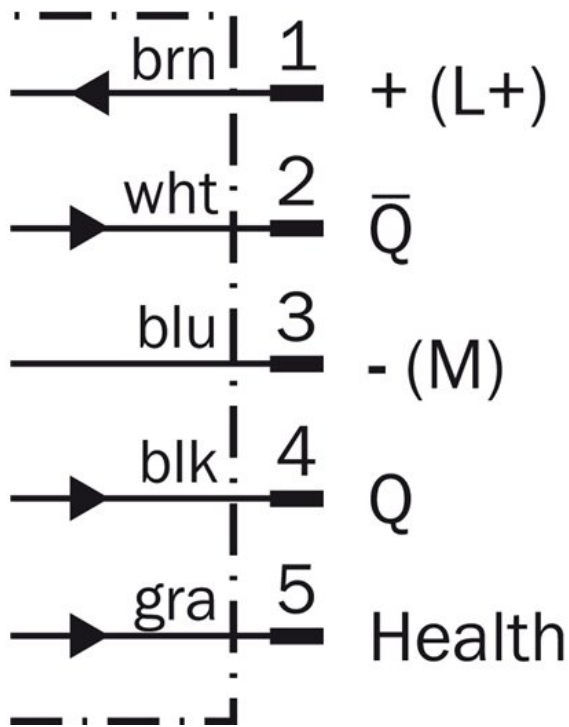
- |1| Standard direction of the material being scanned
- |2| Optical axis, receiver
- |3| Optical axis, sender
- |4| Status indicator LED green: power on
- |5| Status indicator LED, yellow: Status of received light beam
- |6| M4 threaded mounting hole, 4 mm deep
- |7| Mounting hole, $\varnothing 4.2$ mm
- |8| Sensing range adjustment: potentiometer
- |9| Connection

Adjustments possible

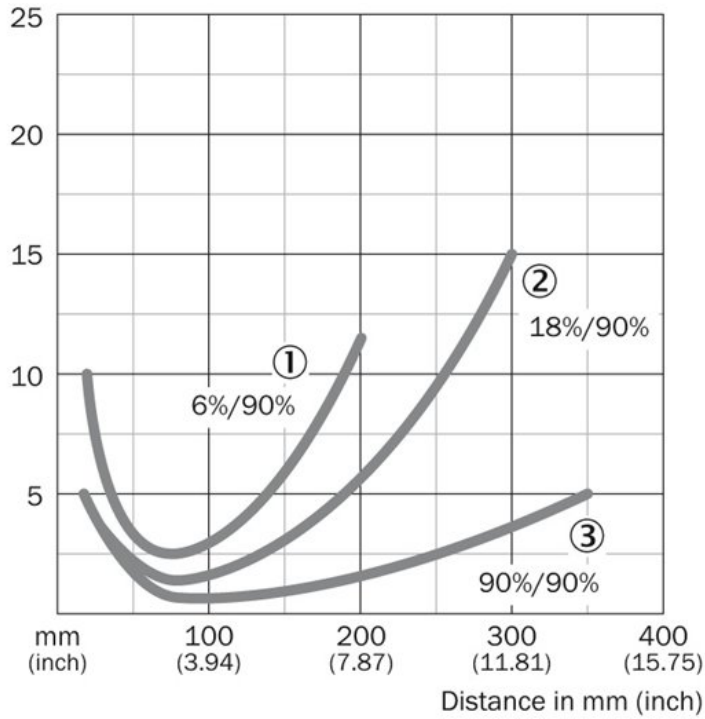


- |4| Green LED indicator: supply voltage active
- |5| LED indicator yellow: Light received
- |8| Sensing range adjustment: potentiometer

Connection diagram

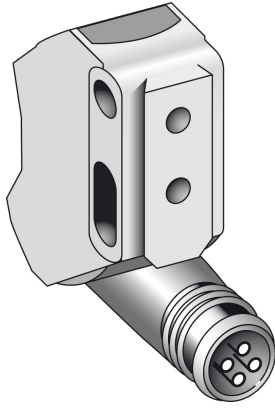


Characteristic curve

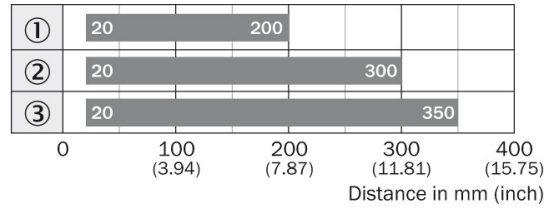


- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

Connection type



Sensing range diagram



Australia

Phone +61 3 9457 0600
1800 33 48 02 – 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 marketing@sick.com.br

Canada

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

Česká 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 info@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 +972-4-6881000
E-Mail info@sick-sensors.com

Italia

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

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

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

Nederland

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

Norge

Phone +47 67 81 50 00
E-Mail sick@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 sales.gsg@sick.com

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 88 65 878
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