



Photoelectric sensors W24-2 Ex, Photoelectric proximity sensor, Background suppression

WT24-2X200



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Model Name > [WT24-2X200](#)
Part No. > [1041910](#)



Illustration may differ

At a glance

- Classification: EX II 2G Ex ia op is IIC T4 according to Directive 94/9/EC (ATEX)
- Corresponds to Category 2G
- Output type: EN 60947-5-6 (NAMUR)
- Long sensing range with very precise background suppression
- M12 or terminal chamber connection: 90° rotatable
- Durable metal housing

Your benefits

- Allows longer sensing range despite the limited factors of the norms for Category 2G (ATEX, explosive environments)
- Metal housing that has been IP 69K tested provides reliability and a long service life
- Flexible installation due to 90° rotatable connector



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	27 mm x 87.5 mm x 65 mm
Housing design (light emission):	Rectangular
Sensing range max.:	40 mm ... 2,000 mm ¹⁾
Sensing range:	100 mm ... 2,000 mm
Type of light:	Infrared light
Light source:	LED ²⁾
Adjustment:	Potentiometer
Light spot size (distance):	Ø 50 mm (2,000 mm)

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

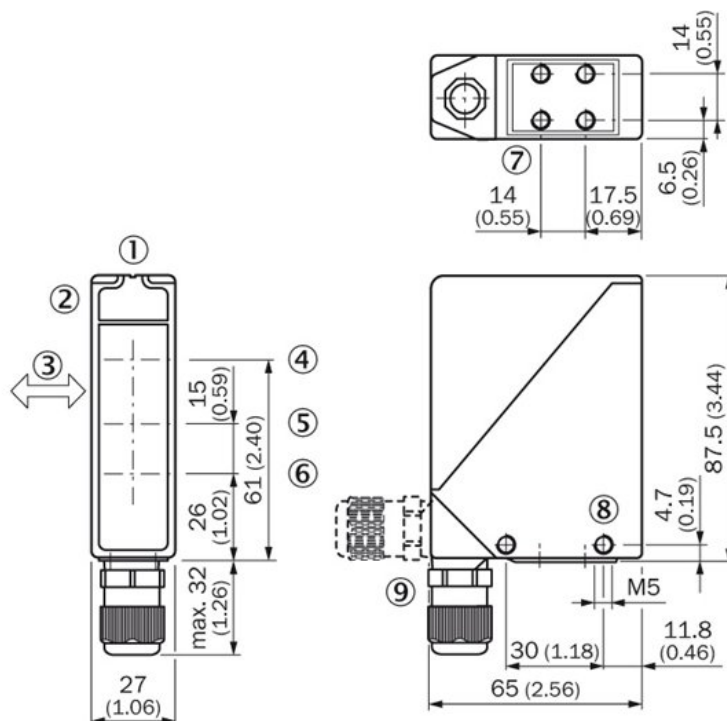
Mechanics/electronics

Supply voltage:	5 V DC ... 15.5 V DC ¹⁾
Output type:	NAMUR
Switching mode:	Light switching
Response time:	≤ 10 ms ²⁾
Switching frequency:	50 Hz ³⁾
Connection type:	Terminal connection with M16 gland ⁴⁾
Circuit protection:	A, C ^{5) 6)}

Protection class:	II ⁷⁾
Weight:	330 g
Front screen heating:	-
Housing material:	Metal, Zinc diecast
Optics material:	Glass
Enclosure rating:	IP 67
EC Approval Certificate:	PTB 03 ATEX 2105
ATEX marking:	II 2G Ex ia op is IIC T4 according to directive 94/9/EG (ATEX)
Hazardous area category:	2G
Input voltage U_i max.:	$\leq 15.5 \text{ V}$ ⁸⁾
Input power P_i max.:	$\leq 100 \text{ mW}$ ⁹⁾
Input current I_i max.:	$\leq 53 \text{ mA}$ ¹⁰⁾
Internal capacitance C_i max.:	80 nF ¹¹⁾
Internal inductance L_i max.:	$0 \mu\text{H}$ ¹²⁾
Ambient operating temperature:	$-20^\circ\text{C} \dots 60^\circ\text{C}$
Ambient storage temperature:	$-25^\circ\text{C} \dots 70^\circ\text{C}$

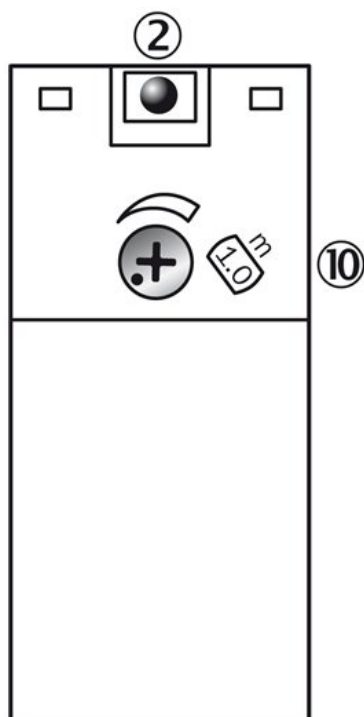
¹⁾ Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm) ²⁾ Signal transit time with resistive load ³⁾ With light/dark ratio 1:1 ⁴⁾
 Connection rotatable by 90° ⁵⁾ $A = V_S$ connections reverse-polarity protected ⁶⁾ C = interference suppression ⁷⁾ Reference voltage 50 V DC ⁸⁾ ⁹⁾ ¹⁰⁾ ¹¹⁾ ¹²⁾ For
 connection to a sperately certified intrinsically safe circuit only

Dimensional drawing



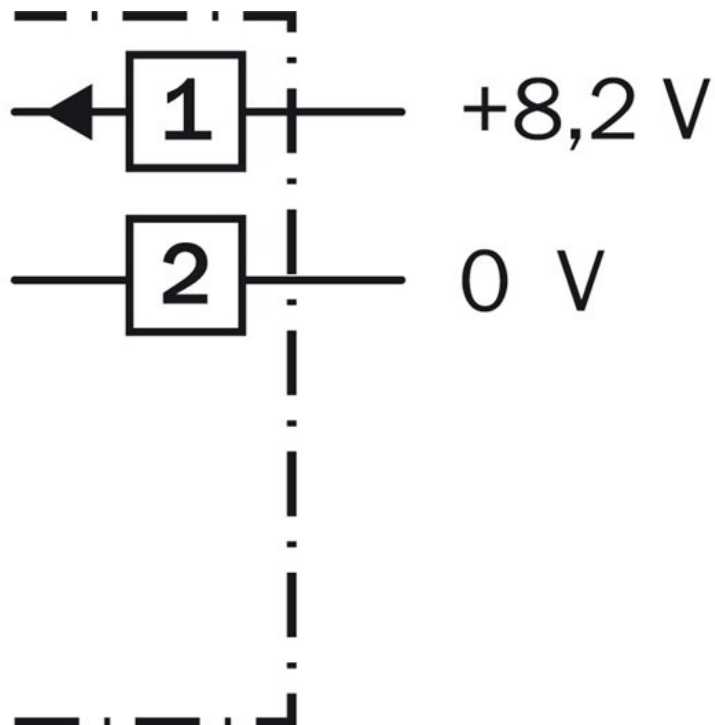
- [1] Alignment sight
- [2] LED signal strength indicator
- [3] Standard direction of the material being scanned
- [4] Center of optical axis, sender
- [5] Centre of optical axis, receiver (close range)
- [6] Centre of optical axis, receiver (far range)
- [7] M5 threaded mounting hole, 6 mm deep
- [8] M5 threaded mounting hole, through-hole
- [9] M16 screw fixing and plug rotatable by 90°

Adjustments possible

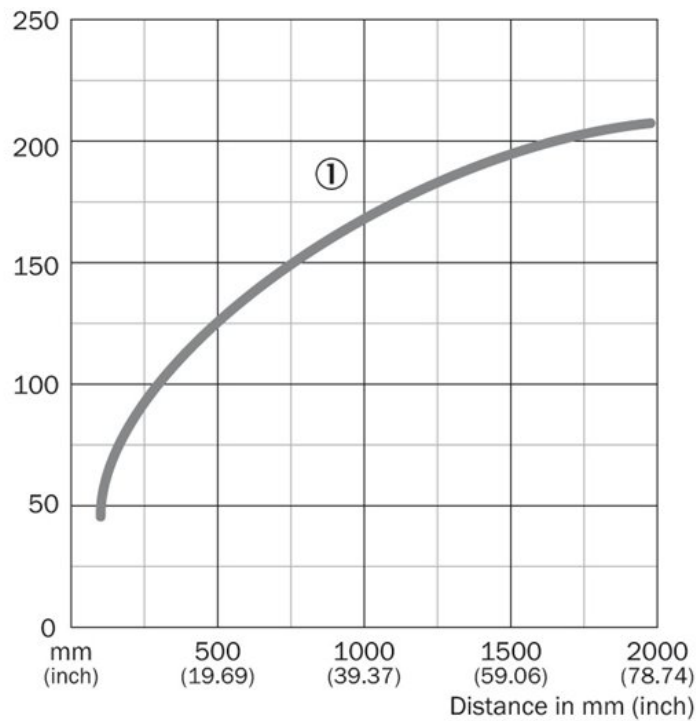


|2| LED signal strength indicator
|10| Sensing range adjustment

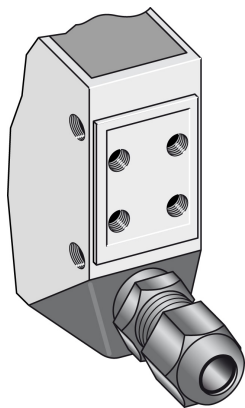
Connection diagram



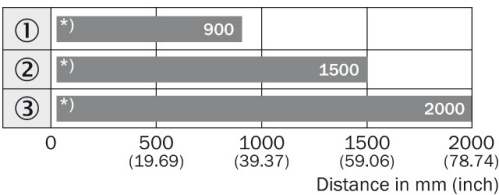
Characteristic curve



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

*) Lower bound of detection area depending on the adjusted sensing distance (see blind zone curve)

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