



## Photoelectric sensors W24-2 Ex, Photoelectric retro-reflective sensor

WL24-2X230



**Model Name** > [WL24-2X230](#)  
**Part No.** > [1026036](#)



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
- Red light
- 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 retro-reflective sensor
Dimensions (W x H x D):	27 mm x 87.5 mm x 65 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 m ... 22 m <sup>1)</sup>
Sensing range:	0 mm ... 15 mm <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Adjustment:	Sensitivity adjustment
Light spot size (distance):	Ø 250 mm (15 m)

<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

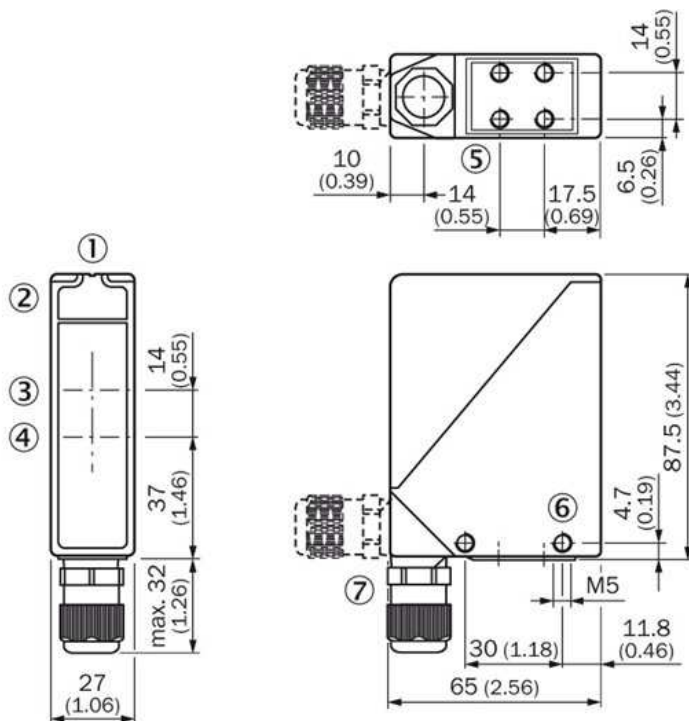
**Mechanics/electronics**

Supply voltage:	5 V DC ... 15.5 V DC <sup>1)</sup>
Ripple:	< 0.4 Vpp <sup>2)</sup>
Output type:	NAMUR
Switching mode:	Light switching
Response time:	≤ 10 ms <sup>3)</sup>
Switching frequency:	50 Hz <sup>4)</sup>
Connection type:	Terminal connection with M16 gland <sup>5)</sup>

Circuit protection::	A, C <sup>6) 7)</sup>
Protection class:	II <sup>8)</sup>
Weight:	330 g
Polarisation filter:	✓
Housing material:	Metal, Zinc diecast
Optics material:	Glass
Enclosure rating:	IP 67
EC Approval Certificate:	PTB 08 ATEX 2029
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.:	$\leq 15.5 \text{ V}$ <sup>9)</sup>
Input power $P_i$ max.:	$\leq 100 \text{ mW}$ <sup>10)</sup>
Input current $I_i$ max.:	$\leq 53 \text{ mA}$ <sup>11)</sup>
Internal capacitance $C_i$ max.:	$80 \text{ nF}$ <sup>12)</sup>
Internal inductance $L_i$ max.:	$0 \mu\text{H}$ <sup>13)</sup>
Ambient operating temperature:	-20 °C ... +60 °C
Ambient storage temperature:	-25 °C ... +70 °C
UL File No.:	Ex II 2G EEx ia op is IIC T4, ATEX Nr. PTB08 ATEX 2029

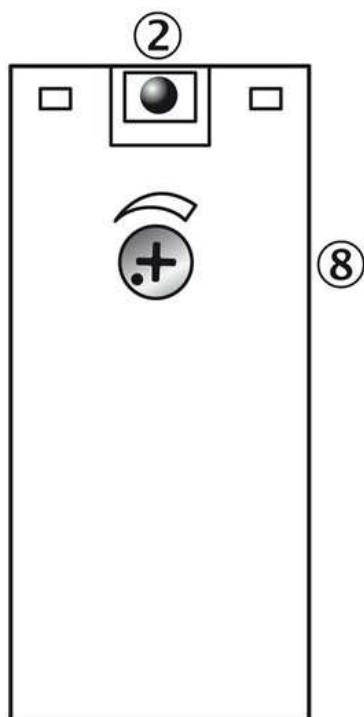
<sup>1)</sup> Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm) <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Signal transit time with resistive load <sup>4)</sup> With light/dark ratio 1:1 <sup>5)</sup> Connection rotatable by 90° <sup>6)</sup>  $A = V_S$  connections reverse-polarity protected <sup>7)</sup>  $S_C$  = interference suppression <sup>8)</sup> Reference voltage: 50 V DC <sup>9)</sup> <sup>10)</sup> <sup>11)</sup> <sup>12)</sup> <sup>13)</sup> For connection to a sperately certified intrinsically safe circuit only

## Dimensional drawing



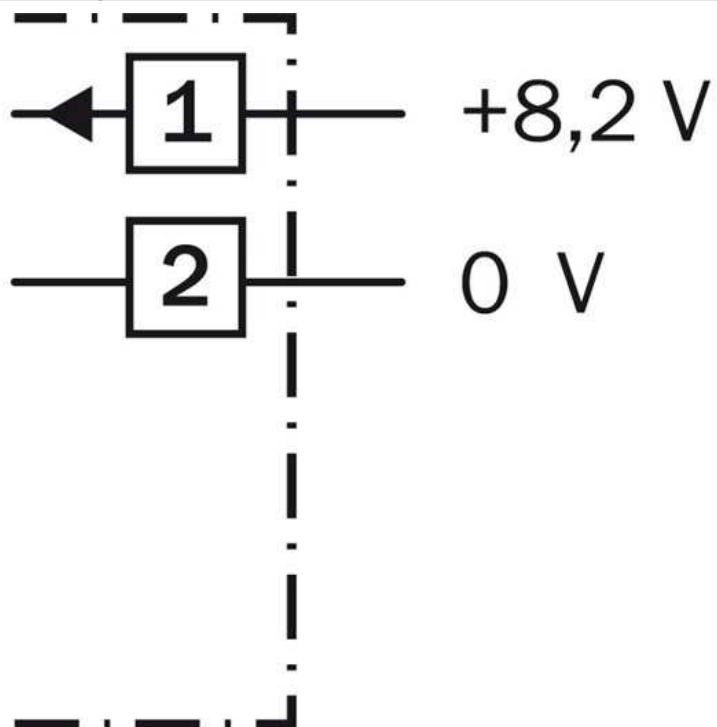
- [1] Alignment sight
- [2] LED signal strength indicator
- [3] Center of optical axis, sender
- [4] Center of optical axis, receiver
- [5] M5 threaded mounting hole, 6 mm deep
- [6] M5 threaded mounting hole, through-hole
- [7] M16 screw fixing rotatable by 90°

## Adjustments possible

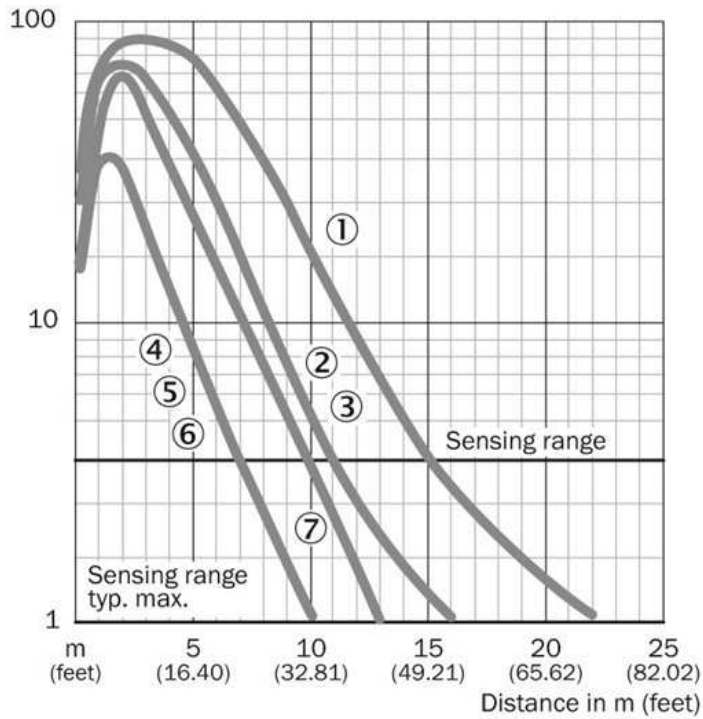


- |2| LED signal strength indicator
- |8| Sensitivity adjustment

## Connection diagram

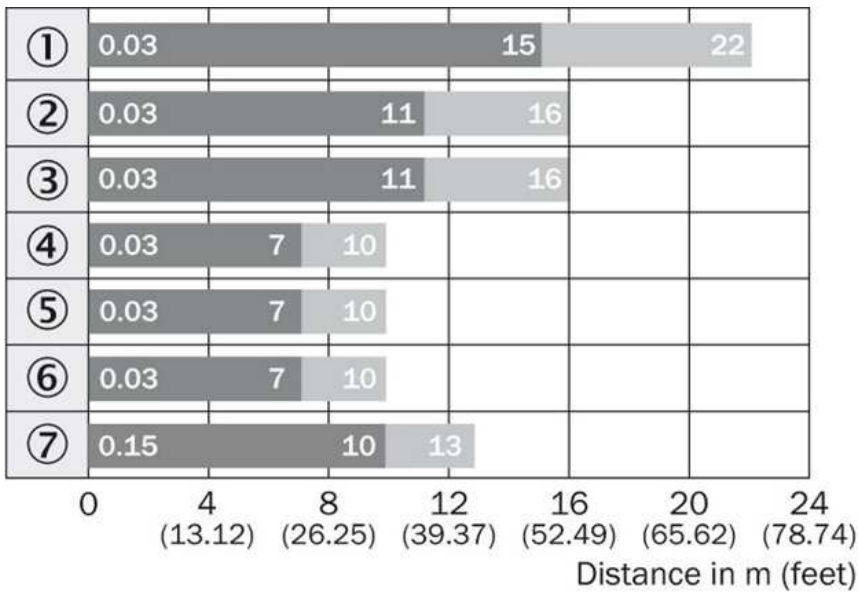


**Characteristic curve**



- |1| PL80A
- |2| PL50A
- |3| PL40A
- |4| PL30A
- |5| PL20A
- |6| Reflective tape Diamond Grade
- |7| C110A

**Sensing range diagram**

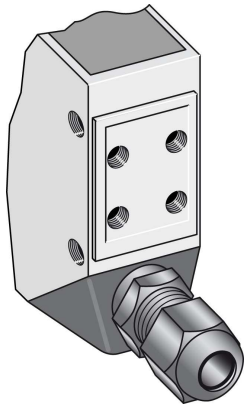


- |1| PL80A
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- |3| PL40A
- |4| PL30A
- |5| PL20A
- |6| Reflective tape Diamond Grade
- |7| C110A

■ Sensing range      ■ Sensing range max.

Connection type

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**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](http://www.sick.com)