



fiber-optic sensors WLL24 Ex, Fiber-optic photoelectric sensor

WLL24-2X230



Model Name > [WLL24-2X230](#)
Part No. > [1026038](#)



Illustration may differ

At a glance

- Marking: EX II 2G Ex ia op is IIC T4, according to Directive 94/9/EC (ATEX)
- Rated category 2G for explosive environments
- Output type: EN 60947-5-6 (NAMUR)
- Long sensing distances with fiber-optic systems
- M12 plug or M16 screw connection: rotatable 90°
- Durable zinc die-cast housing

Your benefits

- Long sensing distance despite sensing limits for 2G-rated devices
- Metal housing provides high resistance to external factors and a long service life
- Flexible installation due to rotatable connector



Features

Dimensions (W x H x D):	27 mm x 87.5 mm x 74.7 mm
Sensing range max.:::	0 ... 10 mm, 0 ... 25 mm, 0 mm ... 40 mm ^{1) 2) 3)}
Sensing range:::	0 ... 1,000 mm, through-beam system, 0 ... 100 mm, through-beam system, 0 mm ... 40 mm, proximity system ^{4) 5) 6) 7)}
Light source:	LED
Type of light:	Visible red light
Sensitivity adjustment:	Sensitivity adjustment
Indication:	LED
Sensor/detection principle:	Fiber-optic photoelectric sensor
Housing design (light emission):	Rectangular

¹⁾ Object with 90 % reflectance (referred to standard white DIN 5033) ²⁾ Object with 18 % reflectance (referred to grey) ³⁾ Objects to be sensed with 6 % reflectivity
(based on black) ⁴⁾ LL3-DB01 ⁵⁾ LL3-TB02 and tip adapter LL3-TA01 ⁶⁾ LL3-TB02 ⁷⁾ Average service life of 100,000 h at T_A = +25 °C

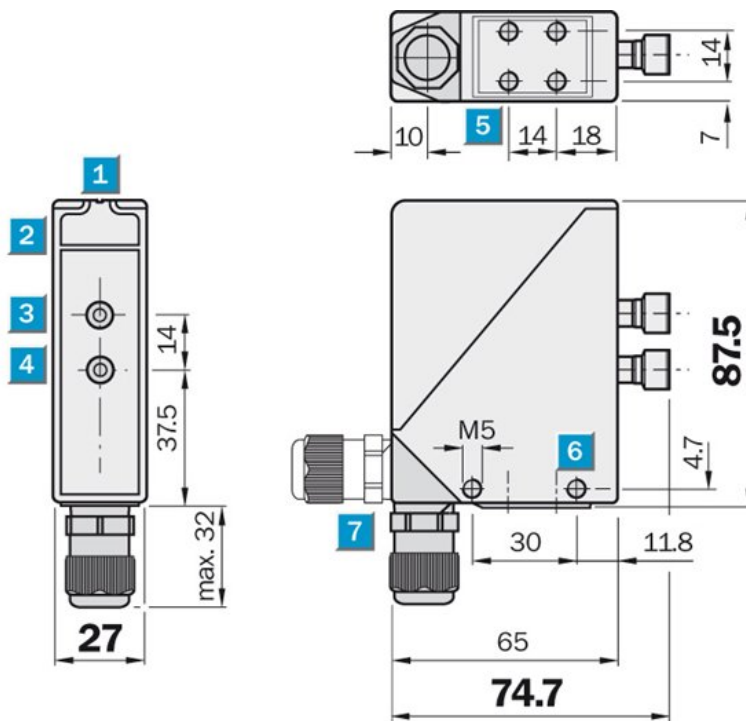
Mechanics/electronics

Enclosure rating:	IP 65
Supply voltage:	5 V DC ... 15.5 V DC ¹⁾
Ripple:	< 0.4 Vpp ²⁾
Output type:	NAMUR, Light-switching
Response time:	≤ 10 ms ³⁾
Switching frequency:	50 Hz ⁴⁾
Connection type:	Terminal connection with M16 gland ⁵⁾
Protection class:	II ⁶⁾

Circuit protection::	A, C ^{7) 8)}
Housing material:	Zinc diecast
Ambient operating temperature:	-20 °C ... 60 °C
Ambient storage temperature:	-25 °C ... 70 °C
Weight:	330 g
Optics material:	Glass
EC Approval Certificate:	PTB 08 ATEX 2029
ATEX marking:	II 2G Ex ia op is IIC T4 according to directive 94/9/EG (ATEX)
Input voltage U_i max.:	$\geq 15.5 \text{ V}$ ⁹⁾
Input power P_i max.:	$\geq 100 \text{ mW}$ ¹⁰⁾
Input current I_i max.:	$\geq 53 \text{ mA}$ ¹¹⁾
Internal capacitance C_i max.:	80 nF ¹²⁾
Internal inductance L_i max.:	$0 \text{ }\mu\text{H}$ ¹³⁾
UL File-No.:	Ex II 2G EEx ia op is IIC T4, ATEX Nr. PTB08 ATEX 2029
Hazardous area category:	2G

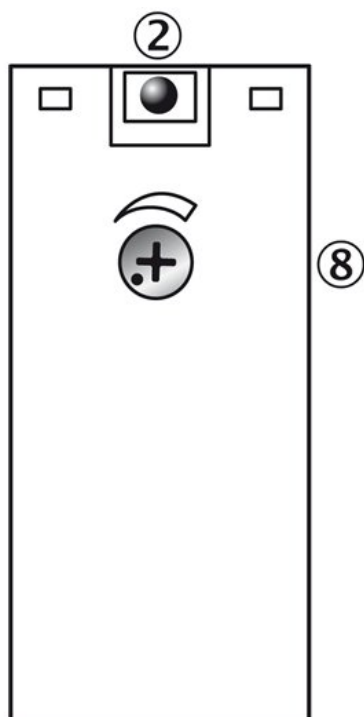
¹⁾ Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm) ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Signal transit time with resistive load ⁴⁾ With light/dark ratio 1:1 ⁵⁾ Connection rotatable by 90° ⁶⁾ Reference voltage 50 V DC ⁷⁾ $A = V_S$ connections reverse-polarity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

Dimensional drawing



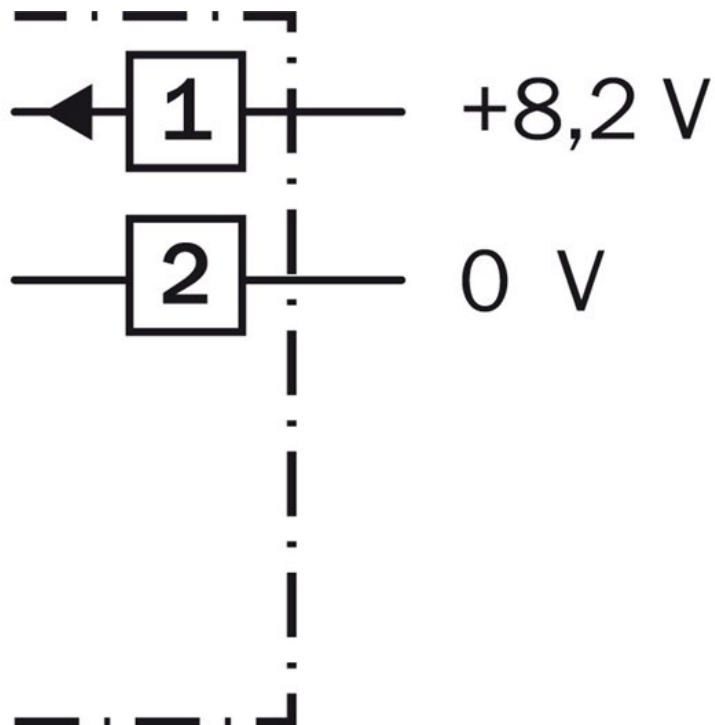
- [1] Alignment sight
- [2] LED signal strength indicator
- [3] Center of optical axis, sender
- [4] Center of optical axis, receiver
- [5] M5 threaded mounting hole, 6 mm deep
- [6] M5 threaded mounting hole, through-hole
- [7] M16 screw fixing and plug rotatable by 90°

Adjustments possible

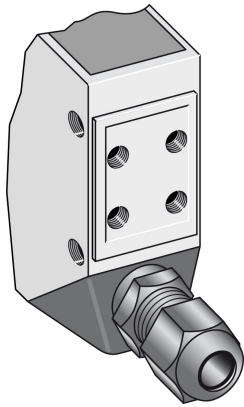


|2| LED signal strength indicator
|8| Sensitivity adjustment

Connection diagram



Connection type



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