



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

WT24-2X400



Model Name > [WT24-2X400](#)
Part No. > [1040722](#)



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 ²⁾
Type of light:	Infrared light
Light source:	LED ³⁾
Adjustment:	Potentiometer
Light spot size (distance):	Ø 50 mm (2,000 mm)

^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

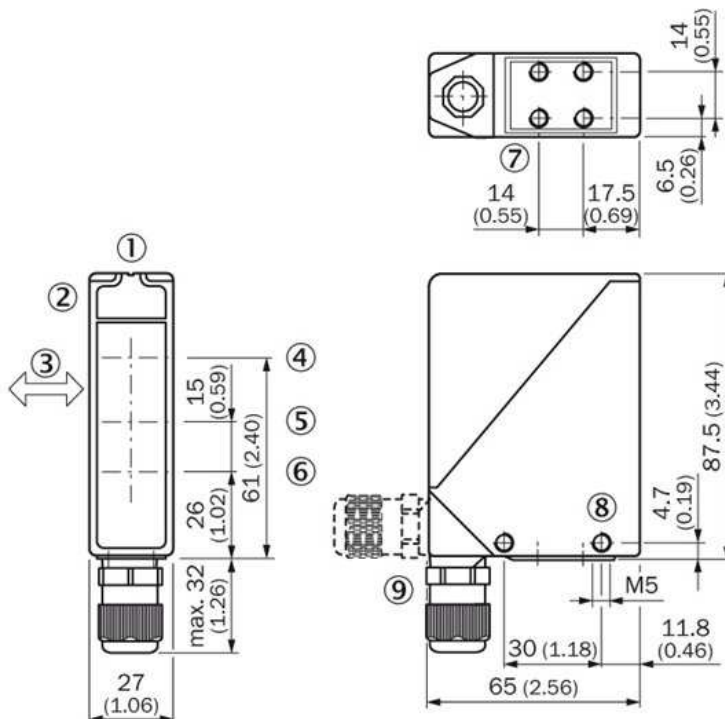
Mechanics/electronics

Supply voltage:	5 V DC ... 15.5 V DC ¹⁾
Ripple:	< 0.4 Vpp ²⁾
Output type:	NAMUR
Switching mode:	Light switching
Response time:	≤ 10 ms ³⁾
Switching frequency:	± 50 Hz ⁴⁾
Connection type:	Connector M12, 4-pin ⁵⁾

Circuit protection::	A, C ^{6), 7)}
Protection class:	II ⁸⁾
Weight:	330 g
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.:	$\leq 15.5 \text{ V}$ ⁹⁾
Input power P_i max.:	$\leq 100 \text{ mW}$ ¹⁰⁾
Input current I_i max.:	$\leq 53 \text{ mA}$ ¹¹⁾
Internal capacitance C_i max.:	80 nF ¹²⁾
Internal inductance L_i max.:	$0 \mu\text{H}$ ¹³⁾
Ambient operating temperature:	$-20 \text{ }^\circ\text{C} \dots +60 \text{ }^\circ\text{C}$
Ambient storage temperature:	$-25 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$

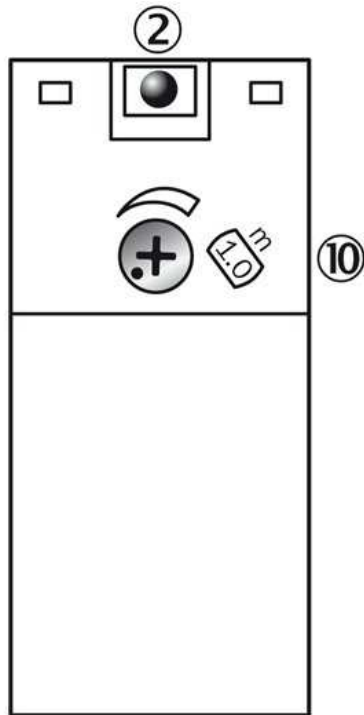
¹⁾ Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm) ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Signal transit time with resistive load ⁴⁾ With light/dark ratio 1:1 ⁵⁾ Connection rotatable by 90° ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ C = interference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

Dimensional drawing



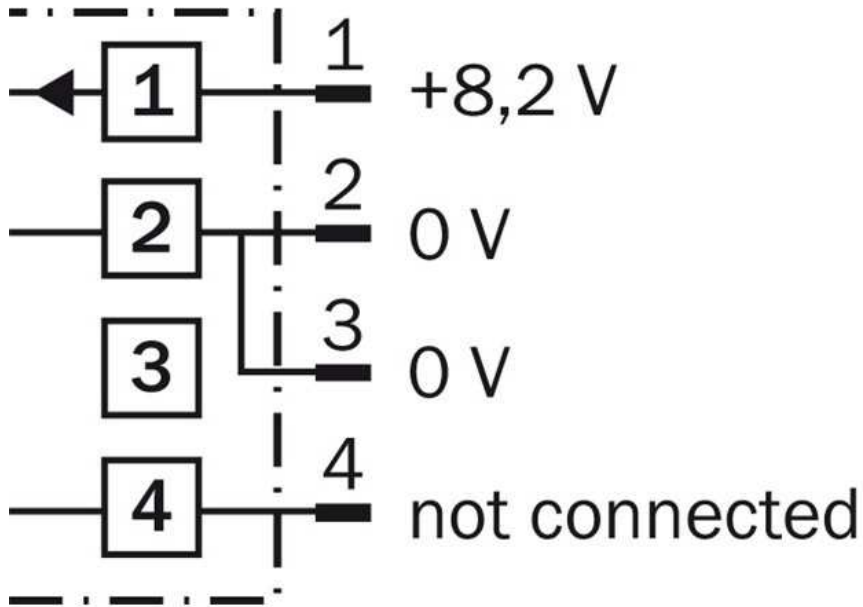
- [1] Alignment sight
- [2] LED signal strength indicator
- [3] Standard direction of the material being detected
- [4] Center of optical axis, sender
- [5] Center of optical axis, receiver (close range)
- [6] Center of optical axis, receiver (far range)
- [7] M5 threaded mounting hole, 6 mm deep
- [8]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

Adjustments possible

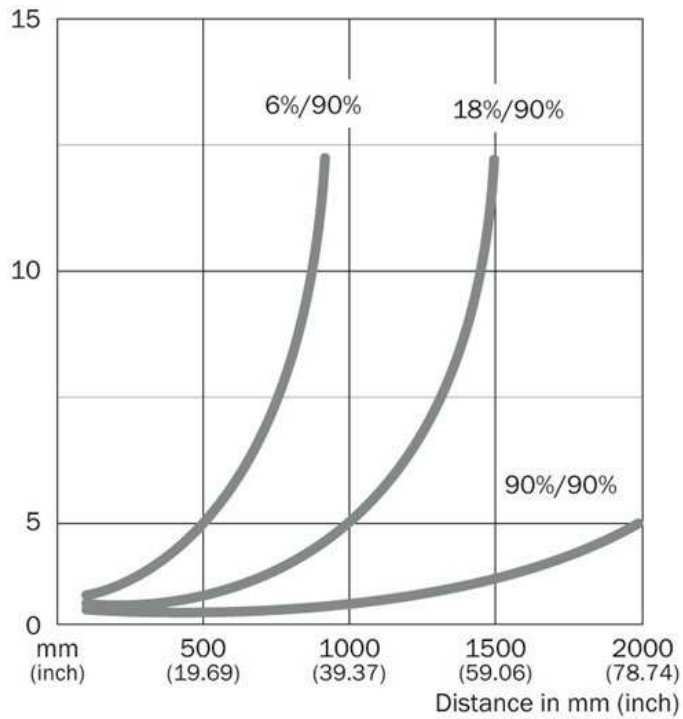


|2| LED signal strength indicator
|10| Sensing range adjustment

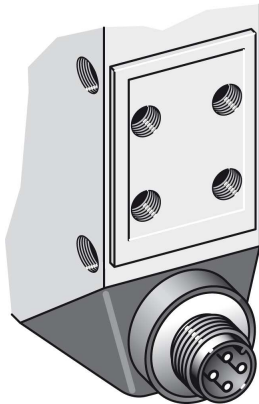
Connection diagram



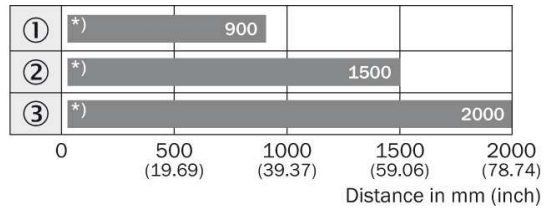
Characteristic curve



Connection type



Sensing range diagram



■ Sensing range

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

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