



# WT24-2X400

## W24-2 Ex

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WT24-2X400	1040722

Other models and accessories → [www.sick.com/W24-2\\_Ex](http://www.sick.com/W24-2_Ex)

### Detailed technical data

#### Features

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

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Communication interface

<b>Communication interface</b>	-
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#### Mechanics/electronics

<b>Supply voltage</b>	5 V DC ... 15.5 V DC <sup>1)</sup>
<b>Ripple</b>	< 0.4 V <sub>pp</sub> <sup>2)</sup>
<b>Output type</b>	NAMUR
<b>Switching mode</b>	Light switching

<sup>1)</sup> Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm).

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> C = interference suppression.

<sup>7)</sup> Reference voltage: 50 V DC.

<sup>8)</sup> For connection to a separately certified intrinsically safe circuit only.

<b>Response time</b>	≤ 10 ms <sup>3)</sup>
<b>Switching frequency</b>	± 50 Hz <sup>4)</sup>
<b>Connection type</b>	Male connector M12, 4-pin
<b>Circuit protection</b>	A <sup>5)</sup> C <sup>6)</sup>
<b>Protection class</b>	II <sup>7)</sup>
<b>Weight</b>	330 g
<b>Housing material</b>	Metal, Zinc diecast
<b>Optics material</b>	Glass, glass
<b>Enclosure rating</b>	IP67
<b>EC Approval Certificate</b>	PTB 03 ATEX 2105
<b>Certificate (IECEX)</b>	IECEX PTB 14.0030
<b>ATEX marking</b>	II 2G Ex ia op is IIC T4 according to directive 2014/34/EX/EU
<b>Ex area category</b>	2G
<b>Input voltage U<sub>i</sub> max.</b>	≤ 15.5 V <sup>8)</sup>
<b>Input power P<sub>i</sub> max.</b>	≤ 100 mW <sup>8)</sup>
<b>Input current I<sub>i</sub> max.</b>	≤ 53 mA <sup>8)</sup>
<b>Internal capacitance C<sub>i</sub> max.</b>	80 nF <sup>8)</sup>
<b>Internal inductance L<sub>i</sub> max.</b>	0 μH <sup>8)</sup>
<b>Ambient operating temperature</b>	-20 °C ... +60 °C
<b>Ambient storage temperature</b>	-25 °C ... +70 °C

1) Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm).

2) May not exceed or fall below U<sub>v</sub> tolerances.

3) Signal transit time with resistive load.

4) With light/dark ratio 1:1.

5) A = V<sub>S</sub> connections reverse-polarity protected.

6) C = interference suppression.

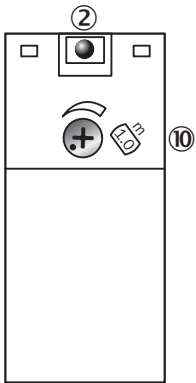
7) Reference voltage: 50 V DC.

8) For connection to a separately certified intrinsically safe circuit only.

## Classifications

<b>ECl@ss 5.0</b>	27270904
<b>ECl@ss 5.1.4</b>	27270904
<b>ECl@ss 6.0</b>	27270904
<b>ECl@ss 6.2</b>	27270904
<b>ECl@ss 7.0</b>	27270904
<b>ECl@ss 8.0</b>	27270904
<b>ECl@ss 8.1</b>	27270904
<b>ECl@ss 9.0</b>	27270904
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

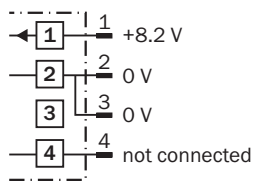
### Adjustments possible



- ② LED signal strength indicator
- ⑩ Adjustment of sensing range

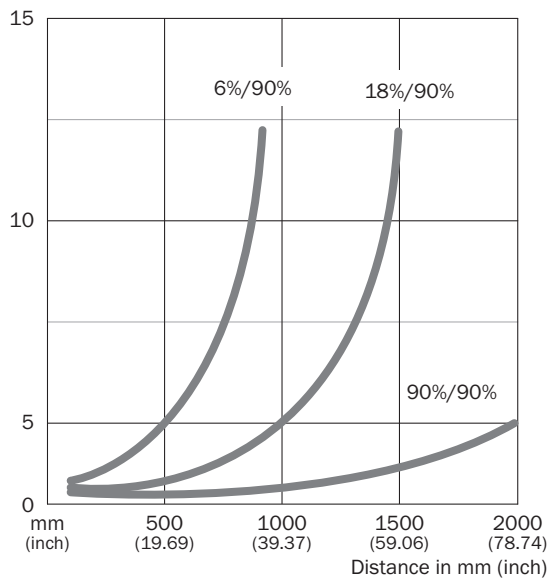
### Connection diagram

Cd-122



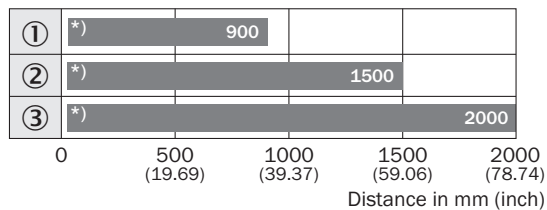
### Characteristic curve

WT24-2 EX



## Sensing range diagram

WT24-2



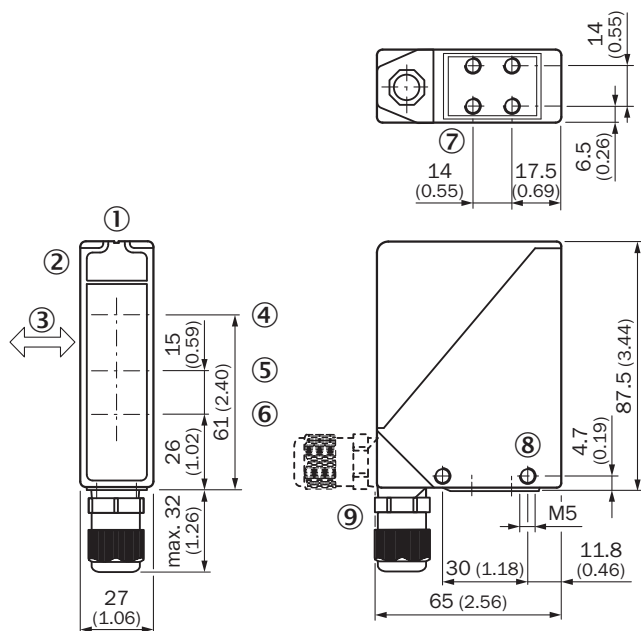
### Sensing range

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

- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18% remission
- ③ Sensing range on white, 90% remission

## Dimensional drawing (Dimensions in mm (inch))














WT24-2 EX



- 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°

### Recommended accessories

Other models and accessories → [www.sick.com/W24-2\\_Ex](http://www.sick.com/W24-2_Ex)

	Brief description	Type	Part no.
<b>Universal bar clamp systems</b>			
	Universal bar clamp for mounting bars with 12 mm diameter, Zinc diecast, without mounting plate and screws	BEF-KHS-KH3	5322626
	Plate N03 for universal clamp bracket, zinc coated, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N03	2051609
	Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N04	2051610
<b>Device protection (mechanical)</b>			
	Water cooling plate	BEF-KP-W24	2015071
	Dust protection tube, air-purged, Aluminum (anodised), mounting hardware included	OBS-W24	2015069
	Weather hood for universal clamp bracket, steel, zinc coated, mounting hardware included	OBW-KHS-M01	2023240
	Weather hood, Aluminum (anodised), mounting hardware included	OBW-W24	2015070
		WSG1-01	1018470
<b>Mounting brackets and plates</b>			
	Mounting bracket, small, Stainless steel, without mounting hardware	BEF-WK-W24	4027532
	Mounting bracket, Stainless steel (1.4301), mounting hardware included	BEF-WN-W24	2015248
<b>Modules and gateways</b>			
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 24 V ... 230 V, Voltage type: AC/DC	EN2-2EX1	6041096
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 19,2 V ... 30 V, Voltage type: DC	EN2-2EX3	6041095
<b>Alignment aids</b>			
	Adapter for alignment aid AR60	Adapter AR60 for W24-2	4032976

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

## WORLDWIDE PRESENCE:

Contacts and other locations – [www.sick.com](http://www.sick.com)