WT24-2X400
W24

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
WT24-2X400	1040722

Other models and accessories ➔ www.sick.com/W24

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	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 [1]
Type of light	Infrared light
Light source	LED [2]
Light spot size (distance)	Ø 50 mm (2,000 mm)
Adjustment	Potentiometer
Special applications	Explosive areas

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage U_B	5 V DC ... 15.5 V DC

[1] May not fall below or exceed U_V tolerances.

[2] Signal transit time with resistive load.

[3] With light/dark ratio 1:1.

[4] A = V_S connections reverse-polarity protected.

[5] C = interference suppression.

[6] Reference voltage: 50 V DC.

[7] For connection to a separately certified intrinsically safe circuit only.

Ripple	< 0.4 V_{pp} [1]
Switching output	NAMUR
Switching mode	Light switching
Response time	≤ 10 ms [2]
Switching frequency	50 Hz [3]
Connection type	Male connector M12, 4-pin
Circuit protection	A [4] C [5]
Protection class	II [6]
Weight	330 g
Housing material	Metal, zinc diecast
Optics material	Glass, glass
Enclosure rating	IP67
Type approval certificate	PTB 03 ATEX 2105
Certificate (IECEx)	IECEx PTB 14.0030
ATEX marking	ATEX II 2G Ex ia op is IIC T4 Gb according to directive 2014/34/EU
Ex area category	2G
Input voltage U_i max.	15.5 V [7]
Input power P_i max.	100 mW [7]
Input current I_i max.	53 mA [7]
Internal capacitance C_i max.	80 nF [7]
Internal inductance L_i max.	0 µH [7]
Ambient operating temperature	–20 °C ... +60 °C
Ambient temperature, storage	–25 °C ... +70 °C

[1] May not fall below or exceed U_V tolerances.

[2] Signal transit time with resistive load.

[3] With light/dark ratio 1:1.

[4] A = V_S connections reverse-polarity protected.

[5] C = interference suppression.

[6] Reference voltage: 50 V DC.

[7] For connection to a separately certified intrinsically safe circuit only.

Safety-related parameters

$MTTF_D$	227 years
DC_{avg}	0 %
T_M (mission time)	20 years

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓

CCC certificate	✓
ATEX certificate	✓
IECEx certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Adjustments
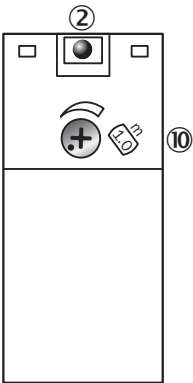
② LED signal strength indicator
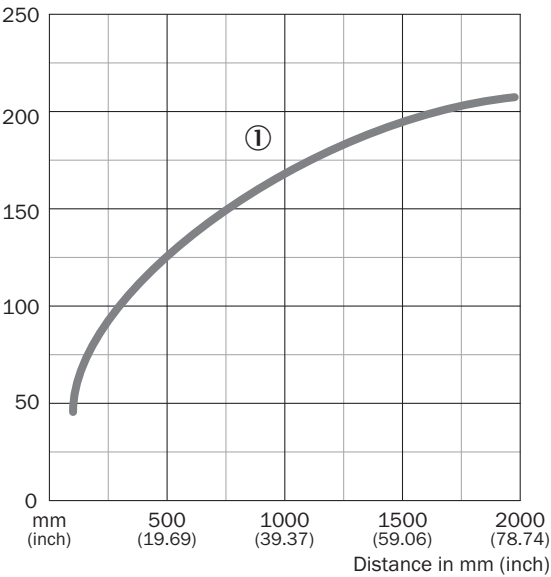⑩ Adjustment of sensing range

Connection type

Connection diagram Cd-122

1	1	+8.2 V
2	2	0 V
3	3	0 V
4	4	not connected

Characteristic curve WT24-2 EX

6%/90%   18%/90%

90%/90%

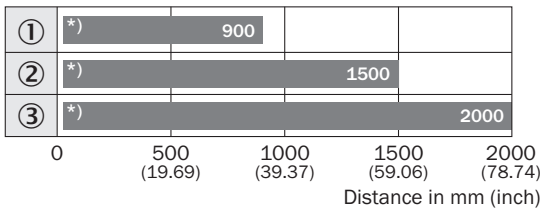| mm (inch) | 500 (19.69) | 1000 (39.37) | 1500 (59.06) | 2000 (78.74) |

Distance in mm (inch)
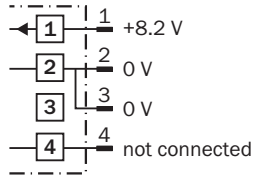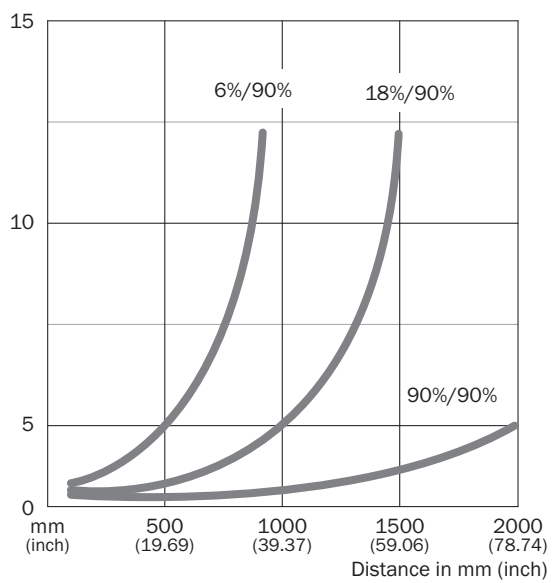
Characteristic curve WT24-2 EX

Field of view
① Sensing range on black, 6% remission factor

Sensing range diagram WT24-2

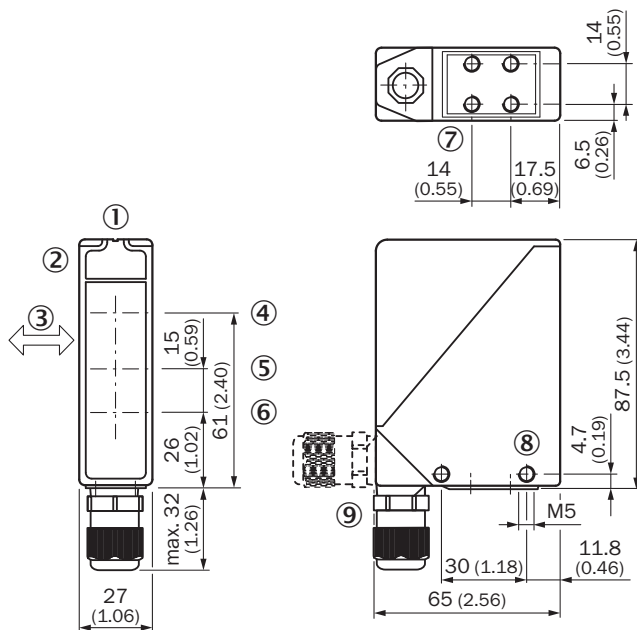
▓ Sensing range

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

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

Dimensional drawing WT24-2 EX

Dimensions in mm (inch)
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

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Mounting bracket, large • **Material:** Stainless steel • **Details:** Stainless steel • **Items supplied:** Without mounting hardware for the sensor • **Suitable for:** W24-2	BEF-WG-W24	4026324
	• **Description:** Mounting bracket • **Material:** Stainless steel • **Details:** Stainless steel (1.4301) • **Items supplied:** Mounting hardware included • **Suitable for:** W24-2, W34	BEF-WN-W24	2015248
	• **Description:** Plate N11N for universal clamp bracket • **Material:** Stainless steel • **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) • **Items supplied:** Universal clamp (5322627), mounting hardware • **Usable for:** DeltaPac, Glare, WTD20E	BEF-KHS-N11N	2071081

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.

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