



WS/WE24-2B240 W24

COMPACT PHOTOELECTRIC SENSORS



Ordering information

Туре	Part no.
WS/WE24-2B240	1017862

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

Illustration may differ



Detailed technical data

Features

Functional principle	Through-beam photoelectric 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 60 m
Sensing range	0 m 50 m
Focus	Approx. 1°
Type of light	Visible red light
Light source	LED ¹⁾
Light spot size (distance)	Ø 700 mm (50 m)
Angle of dispersion	Approx. 1°
Adjustment	Potentiometer

 $^{^{1)}}$ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage U _B	10 V DC 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Power consumption, sender	50 mA ³⁾

 $^{^{1)}}$ Limit values when operated in short-circuit protected network: max. 8 A.

 $^{^{2)}}$ May not exceed or fall below U_{v} tolerances.

³⁾ Without load.

 $^{^{4)}}$ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ C = interference suppression.

 $^{^{\}rm 8)}$ D = outputs overcurrent and short-circuit protected.

⁹⁾ Reference voltage: 50 V DC.

 $^{^{10)}}$ Static, low heat output, use in +5 ° C ... +15 ° C.

Power consumption, receiver 50 mA ³¹ Switching output NPN, PNP Switching mode Light/dark switching Switching mode selector Selectable via PNP/NPN selector, selectable via light/dark selector Output current I _{max.} ≤ 100 mA Response time ≤ 500 μs ⁴¹ Switching frequency 1,000 Hz ⁵¹ Angle of reception Approx. 2.5 ° Time functions On delayoff delay Delay time Adjustable via time delay selector switch, 0.5 s 10 s Connection type Terminal connection with M16 gland Circuit protection A °¹ C °¹ D °° Protection class II °¹ Weight 660 g Front screen heating ✓ ¹¹0¹ Housing material Metal, zinc diecast Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off TE to 0 V Ambient operating temperature -40 °C +60 °C Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E181493 & NRKH7.E181493 Part number of individual components 2021157 WS24-		
Switching mode Light/dark switching Selectable via PNP/NPN selector, selectable via light/dark selector Output current I _{max.} ≤ 100 mA Response time ≤ 500 μs ⁴⁾ Switching frequency 1,000 Hz ⁵⁾ Angle of reception Approx. 2.5 ° Time functions On delayoff delay Delay time Adjustable via time delay selector switch, 0.5 s 10 s Connection type Terminal connection with M16 gland Circuit protection A ⁶⁾ C ⁷⁾ D ⁸⁾ Protection class II ⁹⁾ Weight 660 g Front screen heating Housing material Metal, zinc diecast Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off Te to 0 V Ambient operating temperature A0 ° C +60 ° C Ambient temperature, storage UL File No. NRKH.E181493 & NRKH7.E181493	Power consumption, receiver	50 mA ³⁾
Switching mode selector Output current I _{max} . \$ 100 mA Response time \$ 500 µs 4) \$ 1,000 Hz 5) Angle of reception Approx. 2.5° On delayoff delay Delay time Connection type Circuit protection Protection class II 9) Weight 660 g Front screen heating Housing material Optics material Delay time Plastic, PMMA Enclosure rating Test input sender off Ambient operating temperature A 100 mA \$ 100	Switching output	NPN, PNP
Output current I _{max} . ≤ 100 mA Response time ≤ 500 μs 4) Switching frequency 1,000 Hz 5) Angle of reception Approx. 2.5 ° Time functions On delayoff delay Delay time Adjustable via time delay selector switch, 0.5 s 10 s Connection type Terminal connection with M16 gland Circuit protection A 6) C 7) D 8) Protection class II 9) Weight 660 g Front screen heating ✓ 10) Housing material Metal, zinc diecast Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off TE to 0 V Ambient operating temperature -40 °C +60 °C Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E181493 & NRKH7.E181493	Switching mode	Light/dark switching
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Delay time Adjustable via time delay selector switch, 0.5 s 10 s Connection type Terminal connection with M16 gland Circuit protection A 6) C 7) D 8) Protection class II 9) Weight 660 g Front screen heating ✓ 10) Housing material Metal, zinc diecast Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off TE to 0 V Ambient operating temperature -40 °C +60 °C Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E181493 & NRKH7.E181493	Angle of reception	Approx. 2.5°
Connection type Circuit protection A 6 C C 7 D 8 Protection class II 9) Weight Front screen heating Housing material Optics material Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off Ambient operating temperature -40 ° C +60 ° C -40 ° C +75 ° C UL File No. NRKH.E181493 & NRKH7.E181493	Time functions	On delayoff delay
Circuit protection A 6) C 7) D 8) Protection class II 9) Weight 660 g Front screen heating ✓ 10) Housing material Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off Ambient operating temperature -40 °C +60 °C Ambient temperature, storage UL File No. A 6) C 7) D 8) Metal, zinc diecast Plastic, PMMA IP67 TE to 0 V Ambient temperature -40 °C +60 °C -40 °C +75 °C URKH.E181493 & NRKH7.E181493	Delay time	Adjustable via time delay selector switch, 0.5 s 10 s
C 7 D 8 D 8 D 8 D 8 D 8 D 8 D 8 D 8 D 8 D	Connection type	Terminal connection with M16 gland
Weight 660 g Front screen heating ✓ 10) Housing material Metal, zinc diecast Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off TE to 0 V Ambient operating temperature -40 °C +60 °C Ambient temperature, storage UL File No. NRKH.E181493 & NRKH7.E181493	Circuit protection	C 7)
Front screen heating √ 10) Housing material Metal, zinc diecast Optics material Plastic, PMMA Enclosure rating IP67 Test input sender off TE to 0 V Ambient operating temperature -40 °C +60 °C -40 °C +75 °C UL File No. NRKH.E181493 & NRKH7.E181493	Protection class	и ⁹⁾
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Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E181493	Test input sender off	TE to 0 V
UL File No. NRKH.E181493 & NRKH7.E181493	Ambient operating temperature	-40 °C +60 °C
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Part number of individual components 2021157 WS24-2D240 2021161 WE24-2B240	UL File No.	NRKH.E181493 & NRKH7.E181493
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 $^{^{1)}}$ Limit values when operated in short-circuit protected network: max. 8 A.

Safety-related parameters

MTTF _D	392 years
DC _{avg}	0 %
T _M (mission time)	20 years

Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901

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³⁾ Without load.

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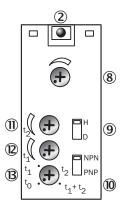
WS/WE24-2B240 | W24

COMPACT PHOTOELECTRIC SENSORS

ECLASS 6.2 27270901	
ECLASS 7.0 27270901	
ECLASS 8.0 27270901	
ECLASS 8.1 27270901	
ECLASS 9.0 27270901	
ECLASS 10.0 27270901	
ECLASS 11.0 27270901	
ECLASS 12.0 27270901	
ETIM 5.0 EC002716	
ETIM 6.0 EC002716	
ETIM 7.0 EC002716	
ETIM 8.0 EC002716	
UNSPSC 16.0901 39121528	

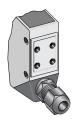
Adjustments

WT24-2, WL24-2, WS/WE24-2, DC, with time functions



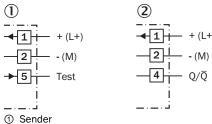
- ② LED signal strength indicator
- Sensitivity control
- Light/dark selector
- NPN/PNP changeover switch
- 1 Time control t_2 = OFF delay
- 2 Time control t_1 = ON delay
- Time delay selector switch

Connection type



Connection diagram

Cd-097

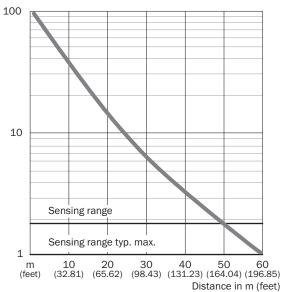


- ② Receiver

Characteristic curve

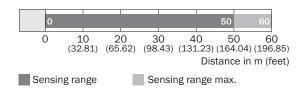
WS/WE24-2

Function reserve



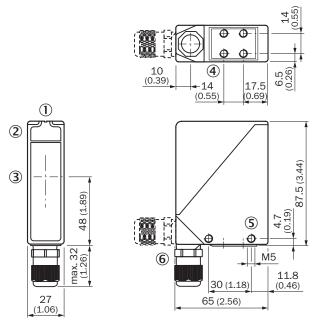
Sensing range diagram

WS/WE24-2



Dimensional drawing (Dimensions in mm (inch))

WS/WE24-2



- ① Alignment sight
- ② LED signal strength indicator
- 3 Center of optical axis
- ④ M5 threaded mounting hole, 6 mm deep
- ⑤ M5 threaded mounting hole, through-hole
- $\ \, \textbf{\textcircled{6}} \,\,$ M16 screw fixing and plug rotatable by 90 $^{\circ}$

Recommended accessories

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

	Brief description	Туре	Part no.
Mounting bra	ckets and plates		
1	Mounting bracket, large, stainless steel, without mounting hardware for the sensor	BEF-WG-W24	4026324

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.

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