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DATA SHEET

WS/WE24-2B440

W24
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

WS/WE24-2B440

ORDERING INFORMATION

Type	part no.
WS/WE24-2B440	1017875

Further device versions and accessories at www.sick.com/W24

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
Special features	Front screen heating, permanent, in conjunction with plastic front screen

[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]
Power consumption, receiver	50 mA [3]
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 [4]
Switching frequency	1,000 Hz [5]
Angle of reception	Approx. 2.5°
Time functions	Switch-on delay Off delay
Delay time	Adjustable via time delay selector switch, 0.5 s ... 10 s
Connection type	Male connector M12, 4-pin
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	IP69K
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	2021418 WE24-2B440 2021465 WS24-2D440

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed 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.

[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.

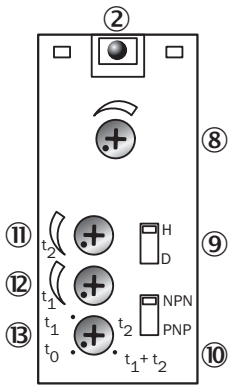
SAFETY-RELATED PARAMETERS

$MTTF_D$	392 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	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

ADJUSTMENTS WT24-2, WL24-2, WS/WE24-2, DC, WITH TIME FUNCTIONS

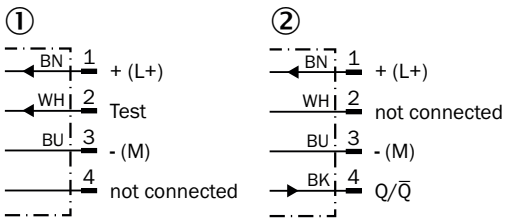


② LED signal strength indicator
⑧ sensitivity control
⑨ Light/dark selector
⑩ NPN/PNP changeover switch
⑪ time control t_2= OFF delay
⑫ time control t_1= ON delay
⑬ time delay selector switch

CONNECTION TYPE

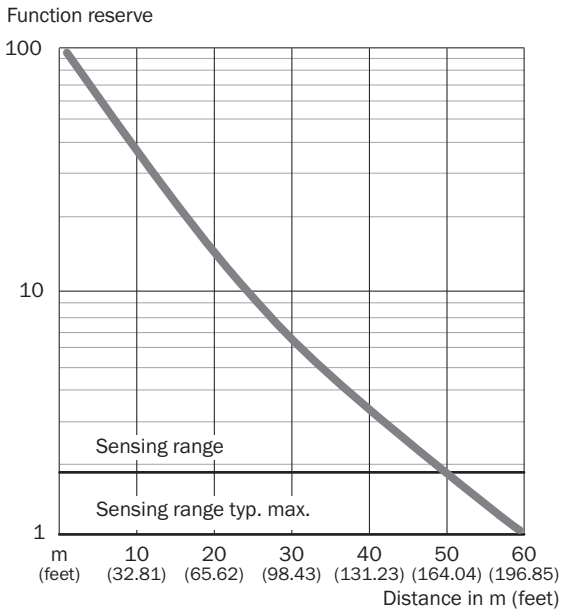


CONNECTION DIAGRAM CD-118

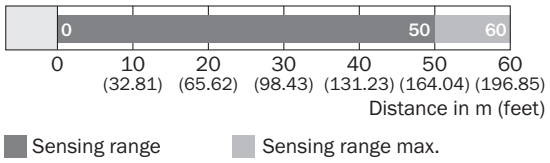


① sender
② receiver

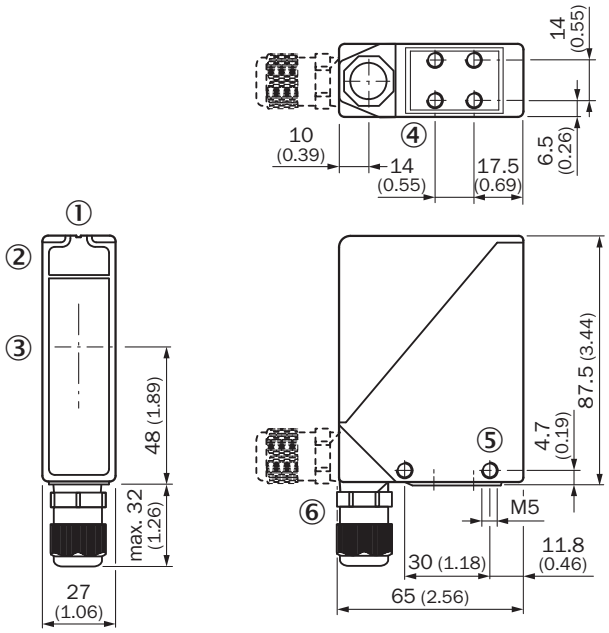
CHARACTERISTIC CURVE WS/WE24-2



SENSING RANGE DIAGRAM WS/WE24-2



DIMENSIONAL DRAWING WS/WE24-2



Dimensions in mm (inch)
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
⑥ M16 screw fixing and plug rotatable by 90°

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1017875

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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