

WL45-P660 W45

PHOTOELECTRIC SENSORS



Ordering information

Туре	part no.
WL45-P660	1008831

Other models and accessories → www.sick.com/W45

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
Dimensions (W x H x D)	60 mm x 105 mm x 105 mm
Housing design (light emission)	Rectangular
Sensing range max.	1 m 55 m ¹⁾
Sensing range	1 m 45 m ¹⁾
Type of light	Visible red light
Light source	LED ²⁾
Light spot size (distance)	Ø 230 mm (16 m)
Adjustment	Potentiometer

¹⁾ OP60-00.

Mechanics/electronics

Supply voltage U _B	10 V DC 60 V DC ¹⁾

¹⁾ Limit values.

 $^{^{2)}}$ Average service life: 100,000 h at T_U = +25 °C.

 $^{^{2)}\,\}mbox{May}$ not fall below or exceed $\mbox{U}_{\mbox{\scriptsize V}}$ 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.

 $^{^{10)}}$ Flashes at approx. 5 Hz, switch to VS.

 $^{^{11)}\,\}mathrm{Up}$ to 140 °C with cooling plates (see accessories).

Current consumption 50 mA 3) Switching output PNP Output function Complementary Switching mode Light/dark switching Output current I _{max.} < 200 mA Response time < 1.2 ms 4) Switching frequency 400 Hz 5) Time functions Switching Switch-on delay Off delay ON and OFF delay ON and OFF delay ON and OFF delay Delay time Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connection type Connector Hirschmann, 6-pin Circuit protection A 6) C 7) D 8) Protection class I 9) Weight 800 g Polarisation filter I 100 mA 10) Housing material Metal Enclosure rating P65 Test input sender off TE to 0 V Ambient operating temperature		
Switching output Output function Complementary Switching mode Light/dark switching Output current I _{max.} \$ 200 mA Response time \$ 1.2 ms 4) Switching frequency 400 Hz 5) Time functions Switch-on delay Off delay ON and OFF delay ON and OFF delay ON and OFF delay ON elay time Connection type Connector Hirschmann, 6-pin Circuit protection A 6) C 7) D 8) Protection class I 9) Weight 800 g Polarisation filter Alarm output Housing material Enclosure rating IP65 Test input sender off Ambient operating temperature -25 °C +55 °C 11)	Ripple	< 5 V _{pp} ²⁾
Output function Complementary Switching mode Light/dark switching Output current I _{max.} ≤ 200 mA Response time ≤ 1.2 ms ⁴) Switching frequency 400 Hz ⁵) Time functions Switch-on delay Off delay On and OFF delay Delay time Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connection type Connector Hirschmann, 6-pin Circuit protection A ⁶)	Current consumption	50 mA ³⁾
Switching mode Light/dark switching Output current I _{max.} ≤ 200 mA Response time ≤ 1.2 ms ⁴⁾ Switching frequency 400 Hz ⁵⁾ Time functions Switch-on delay Off delay Off delay ON and OFF delay Delay time Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connection type Connector Hirschmann, 6-pin Circuit protection A ⁶⁾ C ⁷⁾ D ⁸⁾ Protection class 1 ⁹⁾ Weight 800 g Polarisation filter ✓ Alarm output 100 mA ¹⁰⁾ Housing material Metal Enclosure rating IP65 Test input sender off TE to 0 V Amblent operating temperature -25 ° C +55 ° C ¹¹⁾	Switching output	PNP
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Response time ≤ 1.2 ms 4) Switching frequency 400 Hz 5) Time functions Switch-on delay Off delay On and OFF delay Delay time Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connection type Connector Hirschmann, 6-pin Circuit protection A 6 C T D B C 7 D B B Protection class I 9) Weight 800 g Polarisation filter ✓ Alarm output 100 mA 10) Housing material Metal Enclosure rating IP65 Test input sender off TE to 0 V Ambient operating temperature -25 °C +55 °C 11)	Switching mode	Light/dark switching
Switching frequency Time functions Switch-on delay Off delay ON and OFF delay Delay time Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connection type Circuit protection A 6) C 7) D 8) Protection class I 9) Weight 800 g Polarisation filter Alarm output Housing material Enclosure rating Test input sender off Ambient operating temperature Auo MTZ 5) Switch-on delay Off delay ON and OFF delay Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connector Hirschmann, 6-pin A 6) C 7) D 8) Protection class I 9) Weight Metal Enclosure rating P65 Test input sender off TE to 0 V -25 °C +55 °C 11)	Output current I _{max.}	≤ 200 mA
Time functions Switch-on delay Off delay ON and OFF delay Delay time Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connection type Connector Hirschmann, 6-pin A 6 c C 7 D B 8 Protection class I 9 Swo g Polarisation filter Alarm output Housing material Enclosure rating Test input sender off Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connector Hirschmann, 6-pin A 6 c C 7 D B S Swo G C 7 D B S Swo G C 7 D B S Swo G C 7 S Swo G C 7	Response time	\leq 1.2 ms $^{4)}$
Off delay ON and OFF delay Delay time Adjustable via time delay selector switch, 0.5 s, 0.015 s 12 s, 0.3 s Connection type Circuit protection A 6 C 7 C D 8 C 7 D 8 C	Switching frequency	400 Hz ⁵⁾
Connection type Circuit protection A 6) C 7) D 8) Protection class I 9) Weight 800 g Polarisation filter ✓ Alarm output Housing material Enclosure rating Test input sender off Ambient operating temperature Connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) C 7) D 8) For a connector Hirschmann, 6-pin A 6) For a connector Hirschmann, 6-pin A 7 For a connector Hirschmann, 6-pin A 7 For a connector Hirs	Time functions	Off delay
Circuit protection A 6) C 7) D 8) Protection class I 9) Weight 800 g Polarisation filter ✓ Alarm output Housing material Enclosure rating Test input sender off Ambient operating temperature A 6) C 7) D 8) I 9) Weight ✓ ✓ Authorized the sender off TE to 0 ∨ -25 °C +55 °C 11)	Delay time	Adjustable via time delay selector switch, 0.5s , 0.015s 12s , 0.3s
C 7) D 8) Protection class I 9) Weight 800 g Polarisation filter Alarm output 100 mA 10) Housing material Enclosure rating Test input sender off Ambient operating temperature C 7) D 8) Housing Metal I 100 mA 10) Test input sender off TE to 0 V -25 °C +55 °C 11)	Connection type	Connector Hirschmann, 6-pin
Weight 800 g Polarisation filter ✓ Alarm output 100 mA ¹⁰⁾ Housing material Enclosure rating IP65 Test input sender off TE to 0 V Ambient operating temperature Possible C 111 Ambient operating temperature	Circuit protection	C 7)
Polarisation filter Alarm output 100 mA ¹⁰⁾ Housing material Enclosure rating IP65 Test input sender off TE to 0 V Ambient operating temperature -25 °C +55 °C ¹¹⁾	Protection class	l _a)
Alarm output 100 mA ¹⁰⁾ Housing material Metal Enclosure rating IP65 Test input sender off TE to 0 V Ambient operating temperature -25 °C +55 °C ¹¹⁾	Weight	800 g
Housing material Enclosure rating IP65 Test input sender off TE to 0 V Ambient operating temperature -25 °C +55 °C ¹¹⁾	Polarisation filter	✓
Enclosure rating IP65 Test input sender off TE to 0 V Ambient operating temperature -25 °C +55 °C ¹¹⁾	Alarm output	100 mA ¹⁰⁾
Test input sender off TE to 0 V Ambient operating temperature $-25 ^{\circ}\text{C} \dots +55 ^{\circ}\text{C}^{11)}$	Housing material	Metal
Ambient operating temperature $-25 ^{\circ}\text{C} \dots +55 ^{\circ}\text{C}^{ 11)}$	Enclosure rating	IP65
20 0 100 0	Test input sender off	TE to 0 V
	Ambient operating temperature	-25 °C +55 °C ¹¹⁾
Ambient temperature, storage -40 °C +70 °C	Ambient temperature, storage	-40 °C +70 °C

¹⁾ Limit values.

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
Photobiological safety (DIN EN 62471) certificate	✓

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

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

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⁹⁾ Reference voltage: 50 V DC.

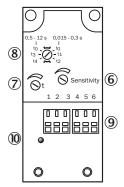
¹⁰⁾ Flashes at approx. 5 Hz, switch to VS.

 $^{^{11)}\,\}mbox{Up}$ to 140 °C with cooling plates (see accessories).

Classifications

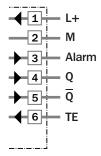
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Adjustments

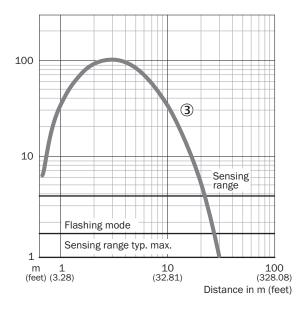


- 6 sensitivity control
- 7 Time control
- ® time delay selector switch
- erminal strip
- Status indicator

Connection diagram



Characteristic curve



Sensing range diagram

1	1							45	55	
2	0					28	35			
3	0				25	30				
4	0.1		15	18						
(5)	0	11	14							
6	0	9	11							
7	0.3	8	10							
()		0.81)	(65.		(98			.04)	60 (196.8

Distance in m (feet)

Sensing range

Sensing range typ. max.

Reflector type

① 0P60 ... ∞

② 4 x PL80

③ PL80A

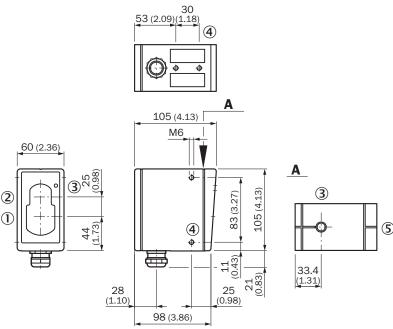
4 C110

⑤ PL50

@ PL30

Reflective tape Diamond Grade

Dimensional drawing



Dimensions in mm (inch)

- ① Center of optical axis, sender
- 2 Center of optical axis, receiver
- ③ LED signal strength indicator
- 4 M6 threaded mounting hole, 8 mm deep
- ⑤ Alignment sight

Recommended accessories

Other models and accessories → www.sick.com/W45

	Brief description	Туре	part no.					
Mounting systems								
	 Description: Mounting bracket Material: Steel Details: Steel, zinc coated Items supplied: Mounting hardware included 	BEF-WN-W45	2011480					
reflectors and	optics							
· ·	 Description: Rectangular, screw connection Dimensions: 84 mm 84 mm Ambient operating temperature: -30 °C +65 °C 	PL80A	1003865					

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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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