

WL23-2S3730

W23-2

COMPACT PHOTOELECTRIC SENSORS

SICKSensor Intelligence.



Ordering information

Туре	Part no.
WL23-2S3730	1027789

Other models and accessories → www.sick.com/W23-2

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Dual lens
Dimensions (W x H x D)	24.6 mm x 80.6 mm x 54 mm
Housing design (light emission)	Rectangular
Sensing range max.	$0.1\mathrm{m}$ $10\mathrm{m}^{1)}$
Sensing range	0.3 m 7 m ¹⁾
Focus	1.5°
Type of light	Visible red light
Light source	LED ²⁾
Light spot size (distance)	Ø 45 mm (2.7 m)
Angle of dispersion	1.5°
Wave length	660 nm
Adjustment	None

¹⁾ Reflector PL80A.

Mechanics/electronics

Supply voltage	90 V AC 265 V AC ¹⁾

¹⁾ Limit values.

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

 $^{^{2)}}$ Provide suitable spark suppression for inductive or capacitive loads.

 $^{^{3)}}$ With light/dark ratio 1:1.

 $^{^{4)}}$ Do not bend below 0 °C.

 $^{^{5)}}$ A = V_S connections reverse-polarity protected.

⁶⁾ C = interference suppression.

 $^{^{7)}}$ Reference voltage: 250 V AC.

⁸⁾ UL: 0 °C ... +60 °C.

Switching output Relay, electrically isolated ²⁾ Output function Change-over contacts Switching mode Light switching ²⁾ Switching current (switching voltage) 3 A (230 V AC) 0.11 A (230 V DC) 3.4 (244 V DC) Response time Switching frequency 10 Hz ³⁾ Connection type Cable material PVC Circuit protection A ⁵⁾ C ⁶⁾ Protection class II ⁷⁾ Weight Polarisation filter ✓ Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 ° C +60 ° C ⁸⁾ Ambient temperature, storage -40 ° C +70 ° C	Switching output Relay, electrically isolated ²¹ Output function Change-over contacts Switching mode Light switching ²¹ Switching current (switching voltage) 3 A (230 V AC) 0.11 A (230 V DC) 3 A (24 V DC) 3 A (230 V DC) 3 A (24 V DC) 3 A (24 V DC) Response time ≤ 10 ms Switching frequency 10 Hz ³¹ Connection type Cable with cubic connector, 7-pin, 150 mm ⁴¹ Cable material PVC Circuit protection A ⁵¹ C ° ° Protection class II ¹¹ Weight 140 g Polarisation filter ✓ Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +60 °C ⁸⁾	Power consumption	≤ 2.5 VA
Output function Switching mode Light switching 2 Switching current (switching voltage) A (230 V AC) 0.11 A (230 V DC) 3 A (24 V DC) 3 A (24 V DC) 4 Connection type Cable with cubic connector, 7-pin, 150 mm 4 Cable material Croult protection A 5 C 6 Protection class II 7 Weight Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature Change-over contacts Light switching 2 A (230 V AC) 0.11 A (230 V AC) 0.	Output function Change-over contacts Switching mode Light switching 2) 3 A (230 V AC) 0.11 A (230 V DC) 3 A (24 V DC) 3 A (24 V DC) Response time \$ 10 ms Switching frequency 10 Hz 3) Connection type Cable with cubic connector, 7-pin, 150 mm 4) Cable material PVC Circuit protection A 5) C 6) Protection class II 7) Weight 140 g Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +60 °C 8) Ambient temperature, storage	•	AV C.2 2
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Switching frequency Connection type Cable with cubic connector, 7-pin, 150 mm ⁴⁾ PVC Circuit protection A ⁵⁾ C ⁶⁾ Protection class II ⁷⁾ Weight 140 g Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature 10 Hz ³⁾ Acable with cubic connector, 7-pin, 150 mm ⁴⁾ PVC Able with cubic connector, 7-pin, 150 mm ⁴⁾ PVC Able with cubic connector, 7-pin, 150 mm ⁴⁾ A bient cubic connector, 7-pin, 150 mm ⁴⁾ PVC Able with cubic connector, 7-pin, 150 mm ⁴⁾ PVC By Call with cubic connector, 7-pin, 150 mm ⁴⁾ PVC Able with cubic connector, 7-pin, 150 mm ⁴⁾ PVC By Call with cubic connector, 7-pin, 150 mm ⁴ PVC By Call with cubic connector, 7-pin, 150 mm ⁴ PVC By Call with cubic connector, 7-pin, 150 mm ⁴ PVC By Call with cubic connector, 7-pin, 150 mm ⁴ PVC By Call with cubic connector, 7-pin, 150 mm ⁴ PVC By Call with cubic connector, 7-pin, 150 mm ⁴ PVC By Call with cubic connector, 7-pin, 150 mm ⁴ PVC By	Switching frequency Connection type Cable with cubic connector, 7-pin, 150 mm 4) PVC Circuit protection A 5) C 6) Protection class II 7) Weight Polarisation filter Housing material Optics material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature Ambient temperature, storage 10 Hz 3) Cable with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) PVC A 5 C 6) PVC A 6 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 7 C 8 A 8 A 7 C 8	Switching current (switching voltage)	0.11 A (230 V DC)
Connection type Cable with cubic connector, 7-pin, 150 mm 4) Cable material Circuit protection A 5 C 6 Protection class II 7) Weight 140 g Polarisation filter Housing material Optics material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature Cable with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) Able with cubic connector, 7-pin, 150 mm 4) Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) PVC Able with cubic connector, 7-pin, 150 mm 4) Able with cubic c	Connection type Cable with cubic connector, 7-pin, 150 mm 4) Cable material PVC Circuit protection A 5) C 6) Protection class II 7) Weight 140 g Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 ° C +60 ° C 8) Ambient temperature, storage Cable with cubic connector, 7-pin, 150 mm 4) PVC A 5) C 6) PVC A 5) C 6) Protection class II 7) Housing material Plastic, ABS Plastic, PMMA Plastic, PMMA -25 ° C +60 ° C 8) -40 ° C +70 ° C	Response time	≤ 10 ms
Cable material PVC A 5) C 6) Protection class II 7) Weight Polarisation filter Housing material Plastic, ABS Plastic, PMMA Enclosure rating Ambient operating temperature PVC A 5) C 6) Plastic, ABS Plastic, PMMA IP67 -25 °C +60 °C 8)	Cable material Circuit protection A 5) C 6) Protection class II 7) Weight Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 ° C +60 ° C 8) -40 ° C +70 ° C	Switching frequency	10 Hz ³⁾
Circuit protection A 5) C 6) Protection class II 7) Weight 140 g Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature A 5) C 6) Protection class II 7) A 5) C 6) Plastic, ABS Plastic, ABS Plastic, PMMA IP67 -25 °C +60 °C 8)	Circuit protection A ⁵⁾ C ⁶⁾ Protection class II ⁷⁾ Weight Polarisation filter Housing material Optics material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +60 °C ⁸⁾ Ambient temperature, storage -40 °C +70 °C	Connection type	Cable with cubic connector, 7-pin, 150 mm ⁴⁾
C 6) Protection class II 7) Weight 140 g Polarisation filter Housing material Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature C 6) II 7) Autor C 6) IV 7 Plastic, ABS Plastic, PMMA IP67 -25 °C +60 °C 8)	C 6) Protection class II 7) Weight 140 g Polarisation filter Housing material Optics material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +60 °C 8) -40 °C +70 °C	Cable material	PVC
Weight 140 g Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature Plastic, PMMA Plastic, PMMA Plastic, PMMA	Weight 140 g Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature −25 °C +60 °C 8) Ambient temperature, storage −40 °C +70 °C	Circuit protection	
Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +60 °C 8)	Polarisation filter Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +60 °C 8) -40 °C +70 °C	Protection class	II ⁷⁾
Housing material Optics material Plastic, ABS Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +60 °C 8)	Housing material Optics material Plastic, ABS Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +60 °C ⁸⁾ -40 °C +70 °C	Weight	140 g
Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +60 °C 8)	Optics material Plastic, PMMA IP67 Ambient operating temperature -25 °C +60 °C ⁸⁾ Ambient temperature, storage -40 °C +70 °C	Polarisation filter	√
Enclosure rating IP67 Ambient operating temperature -25 °C +60 °C ⁸⁾	Enclosure rating IP67 Ambient operating temperature $-25 ^{\circ}\text{C} \dots +60 ^{\circ}\text{C}^{ 8)}$ Ambient temperature, storage $-40 ^{\circ}\text{C} \dots +70 ^{\circ}\text{C}$	Housing material	Plastic, ABS
Ambient operating temperature -25 °C +60 °C ⁸⁾	Ambient operating temperature $-25 ^{\circ}\text{C} \dots +60 ^{\circ}\text{C}^{ 8)}$ Ambient temperature, storage $-40 ^{\circ}\text{C} \dots +70 ^{\circ}\text{C}$	Optics material	Plastic, PMMA
20 0 20 0	Ambient temperature, storage -40 °C +70 °C	Enclosure rating	IP67
Ambient temperature, storage -40 °C +70 °C		Ambient operating temperature	-25 °C +60 °C ⁸⁾
	UL File No. NRKH.E181493 & NRKH7.E181493	Ambient temperature, storage	-40 °C +70 °C
UL File No. NRKH.E181493 & NRKH7.E181493		UL File No.	NRKH.E181493 & NRKH7.E181493

¹⁾ Limit values.

Safety-related parameters

MTTFD	1,393 years
DC _{avg}	0 %
B _{10d}	65,693 Switching cycles ¹⁾

 $^{^{1)}}$ Only for devices containing electro-mechanical components. In this case, the MTTF_D value of the entire device must be calculated from the given B_{10D} value, the number of switching cycles and the given MTTF_D value.

Classifications

eCl@ss 5.0	27270902
eCl@ss 5.1.4	27270902
eCl@ss 6.0	27270902
eCl@ss 6.2	27270902
eCl@ss 7.0	27270902
eCl@ss 8.0	27270902

 $^{^{2)}}$ Provide suitable spark suppression for inductive or capacitive loads.

 $^{^{}m 3)}$ With light/dark ratio 1:1.

⁴⁾ Do not bend below 0 °C.

 $^{^{5)}}$ A = V $_{S}$ connections reverse-polarity protected.

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⁷⁾ Reference voltage: 250 V AC.

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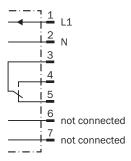
eCl@ss 8.1	27270902
eCl@ss 9.0	27270902
eCl@ss 10.0	27270902
eCl@ss 11.0	27270902
eCl@ss 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection type



Connection diagram

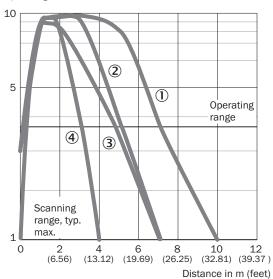
Cd-193



Characteristic curve

WL23-2

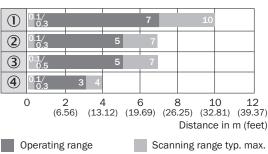
Operating reserve



- ① Reflector PL80A
- ② Reflector PL40A
- 3 Reflector C110A
- 4 Reflector PL20A

Sensing range diagram

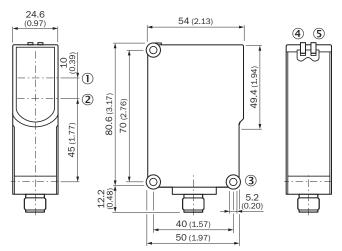
WL23-2



- ① Reflector PL80A
- ② Reflector PL40A
- 3 Reflector C110A
- ④ Reflector PL20A

Dimensional drawing (Dimensions in mm (inch))

WL23-2



- ① Optical axis, sender
- ② Optical axis, receiver
- 3 Mounting hole ø 5.2 mm
- 4 LED indicator green: Supply voltage active
- (5) LED indicator yellow: Status of received light beam

Recommended accessories

Other models and accessories → www.sick.com/W23-2

	Brief description	Туре	Part no.	
Mounting bra	Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574	
Reflectors				
	Rectangular, screw connection, 84 mm x 84 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL80A	1003865	

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."

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