

WLT280L-2P1536

PowerProx

MULTITASK PHOTOELECTRIC SENSORS





Ordering information

Туре	Part no.
WLT280L-2P1536	6048071

Included in delivery: P250 (1), BEF-W280 (1)

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

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression, Optical time-of-flight
Dimensions (W x H x D)	23.5 mm x 76 mm x 55.8 mm
Housing design (light emission)	Rectangular
Sensing range max.	200 mm 18,000 mm ¹⁾ 200 mm 18,000 mm ¹⁾
Sensing range	200 mm 18,000 mm ²⁾
Type of light	Visible red light
Light source	Laser ³⁾
Light spot size (distance)	Ø 50 mm (18 m)
Laser class	1 (EN 60825-1:2014, IEC 60825-1:2014)
Adjustment	Potentiometer (2 x)
Special applications	Detecting small objects
Special features	Detailed principle of operation of optical time-of-flight method Reflector on the object

¹⁾ Reflector P250.

²⁾ Einstellbar.

 $^{^{3)}}$ Average service life: 100,000 h at TU = +25 °C.

Mechanics/electronics

Supply voitage Ug 10 V DC 30 V DC	Supply voltage U _B	
Current consumption 70 mA ²¹ Switching output PNP Number of switching outputs 2 (Q₁, Q₂) ²¹) Switching mode Light/dark switching Switching mode selector Selectable via light/dark rotary switch Output current I _{max.} ≤ 100 mA Response time ≤ 0.5 ms ⁴¹ Switching frequency 1,000 Hz ⁵¹) Analog output - Input Sender off Connection type Cable, 5-wire, 2 m ⁶¹ Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A ⁷ ¹ mg *³ 8¹¹ g C ²¹ g C ²¹ g D ²² g Protection class III Weight 120 g Housing material Plastic, PMMA Enclosure rating IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) EN 60947-5-2 Ambient operating temperature -10 ° C +50 ° C Ambient temperatu		
Switching output PNP Number of switching outputs 2 (Q₁, Q₂) ³0 Switching mode Light/dark switching Switching mode selector Selectable via light/dark rotary switch Output current I _{max.} ≤ 100 mA Response time ≤ 0.5 ms ⁴0 Switching frequency 1,000 Hz ⁵0 Analog output - Input Sender off Connection type Cable, 5-wire, 2 m ⁶0 Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A ⁷⁾		
Number of switching outputs 2 (Q ₁ , Q ₂) 3) Switching mode Light/dark switching Selectable via light/dark rotary switch Output current I _{max} . Response time \$ 0.5 ms 4) Switching frequency 1,000 Hz 5) Analog output Input Sender off Connection type Cable, 5-wire, 2 m 6) Cable material PVC Conductor cross section 0.18 mm² Cable diameter 0 3.8 mm Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight 120 g Housing material Plastic, ABS Optics material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Electromagnetic compatibility (EMC) Ambient operating temperature -10 ° C +50 ° C Ambient temperature, storage	Current consumption	70 mA ²⁾
Switching mode Suitching mode selector Output current I _{max} . \$ 100 mA Response time \$ 0.5 ms 40 Switching frequency 1,000 Hz 50 Analog output Input Sender off Connection type Cable, 5-wire, 2 m 60 Cable material PVC Conductor cross section O.18 mm² Cable diameter O''s 3.8 mm Circuit protection A 70 B 80 C 90 D 100 Protection class III Weight 120 g Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Items supplied Electromagnetic compatibility (EMC) Ambient operating temperature Analog witch will big hight/dark rotary switch Selectable via light/dark rotary switch Selectable via light displayed and selectary switch Switching material Poor No material Selectable via light displayed and selectary switch Selectable via light displayed and selectary switch Selectable via light displayed and selectary switch Switch vi	Switching output	PNP
Switching mode selector Output current I _{max} . ≤ 100 mA Response time ≤ 0.5 ms ⁴⁾ Switching frequency 1,000 Hz ⁵⁾ Analog output Input Sender off Connection type Cable, 5-wire, 2 m ⁶⁾ Cable material PVC Conductor cross section O.18 mm² Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 120 g Housing material Piastic, ABS Optics material Piastic, PMMA Enclosure rating Items supplied Electromagnetic compatibility (EMC) Ambient operating temperature -10 °C +70 °C Ambient temperature, storage	Number of switching outputs	2 (Q ₁ , Q ₂) ³⁾
Output current I _{max} ≤ 100 mA Response time ≤ 0.5 ms ⁴⁾ Switching frequency 1,000 Hz ⁵⁾ Analog output - Input Sender off Connection type Cable, 5-wire, 2 m ⁶⁾ Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A ⁷⁾	Switching mode	Light/dark switching
Response time \$\(\) 0.5 ms \(^4\) Switching frequency 1,000 Hz \(^5\) Analog output - Input Sender off Connection type Cable, 5-wire, 2 m \(^6\) Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A \(^7\) B \(^8\) C \(^9\) D \(^{10}\) Protection class III Weight 120 g Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) EN 60947-5-2 Amblent operating temperature -10 °C +50 °C Amblent temperature, storage -40 °C +70 °C	Switching mode selector	Selectable via light/dark rotary switch
Switching frequency Analog output Input Sender off Connection type Cable, 5-wire, 2 m 6) Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight 120 g Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) Ambient operating temperature -10 ° C +50 ° C Ambient temperature, storage	Output current I _{max.}	≤ 100 mA
Analog output Input Sender off Connection type Cable, 5-wire, 2 m 8) Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight 120 g Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Items supplied Electromagnetic compatibility (EMC) Ambient operating temperature An0 °C +50 °C Ambient temperature, storage	Response time	\leq 0.5 ms $^{4)}$
Input Connection type Cable, 5-wire, 2 m 6) Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight 120 g Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Electromagnetic compatibility (EMC) Ambient operating temperature -10 °C +50 °C Ambient temperature, storage -40 °C +70 °C	Switching frequency	1,000 Hz ⁵⁾
Connection type Cable, 5-wire, 2 m 6) Cable material PVC Conductor cross section 0.18 mm² Cable diameter Ø 3.8 mm Circuit protection A ⁷ B ⁸ C ⁹ D ¹⁰ D ¹⁰ Protection class III Weight 120 g Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) Ambient operating temperature -10 °C +50 °C Ambient temperature, storage	Analog output	-
Cable material Conductor cross section Cable diameter Ø 3.8 mm Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight 120 g Housing material Optics material Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Electromagnetic compatibility (EMC) EN 60947-5-2 Ambient operating temperature Another temperature, storage PVC Ø 3.8 mm A 7) B 8) C 9) D 10) Protection class III Weight 120 g Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 EN 60947-5-2 Ambient operating temperature -10 ° C +50 ° C -40 ° C +70 ° C	Input	Sender off
Conductor cross section Cable diameter Ø 3.8 mm A 7) B 8) C 9) D 10) Protection class III Weight 120 g Housing material Optics material Optics material Plastic, ABS Optics material Plestic, PMMA Enclosure rating IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) EN 60947-5-2 Ambient operating temperature -10 °C +50 °C Ambient temperature, storage	Connection type	Cable, 5-wire, 2 m ⁶⁾
Cable diameter Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating Items supplied Electromagnetic compatibility (EMC) EN 60947-5-2 Ambient operating temperature -10 °C +70 °C	Cable material	PVC
Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Electromagnetic compatibility (EMC) Ambient operating temperature -10 ° C +50 ° C -40 ° C +70 ° C	Conductor cross section	0.18 mm ²
B 8 C 9 C 9 D 100 Protection class III Weight 120 g Housing material Optics material Plastic, ABS Optics material Plof7 Items supplied Electromagnetic compatibility (EMC) Ambient operating temperature -10 °C +50 °C -40 °C +70 °C	Cable diameter	Ø 3.8 mm
Weight 120 g Housing material Plastic, ABS Optics material Plastic, PMMA Enclosure rating IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) EN 60947-5-2 Ambient operating temperature -10 °C +50 °C -40 °C +70 °C	Circuit protection	B ⁸⁾ C ⁹⁾
Housing material Optics material Plastic, ABS Plastic, PMMA Enclosure rating IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) EN 60947-5-2 Ambient operating temperature -10 °C +50 °C -40 °C +70 °C	Protection class	III
Optics material Plastic, PMMA IP67 Items supplied Mounting bracket BEF-W280, Reflector P250 Electromagnetic compatibility (EMC) EN 60947-5-2 Ambient operating temperature -10 °C +50 °C -40 °C +70 °C	Weight	120 g
Enclosure ratingIP67Items suppliedMounting bracket BEF-W280, Reflector P250Electromagnetic compatibility (EMC)EN 60947-5-2Ambient operating temperature-10 °C +50 °CAmbient temperature, storage-40 °C +70 °C	Housing material	Plastic, ABS
Items suppliedMounting bracket BEF-W280, Reflector P250Electromagnetic compatibility (EMC)EN 60947-5-2Ambient operating temperature-10 °C +50 °CAmbient temperature, storage-40 °C +70 °C	Optics material	Plastic, PMMA
Electromagnetic compatibility (EMC) Ambient operating temperature -10 °C +50 °C -40 °C +70 °C	Enclosure rating	IP67
Ambient operating temperature -10 °C +50 °C Ambient temperature, storage -40 °C +70 °C	Items supplied	Mounting bracket BEF-W280, Reflector P250
Ambient temperature, storage -40 °C +70 °C	Electromagnetic compatibility (EMC)	EN 60947-5-2
, , ,	Ambient operating temperature	-10 °C +50 °C
UL File No. NRKH2.E300503 & NRKH8.E300503	Ambient temperature, storage	-40 °C +70 °C
	UL File No.	NRKH2.E300503 & NRKH8.E300503

 $^{^{1)}\,\}mathrm{Limit}$ values. Operated in short-circuit protected network: max. 8 A.

Safety-related parameters

MTTF _D 173.7 years	
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²⁾ Without load.

 $^{^{3)}}$ Q1, Q2 = 2 switching thresholds, light/dark switching selectable via light/dark selector.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

 $^{^{7)}}$ A = V_S connections reverse-polarity protected.

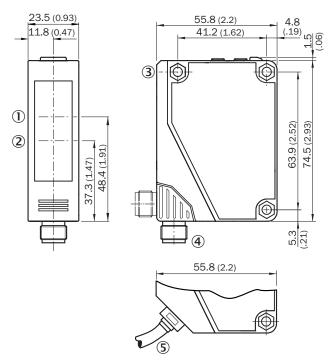
 $^{^{8)}}$ B = output reverse-polarity protected.

 $^{^{9)}}$ C = interference suppression.

 $^{^{10)}}$ D = outputs overcurrent and short-circuit protected.

DC _{avg}	0 %
Classifications	
eCl@ss 5.0	27270904
eCl@ss 5.1.4	27270904
eCl@ss 6.0	27270904
eCl@ss 6.2	27270904
eCl@ss 7.0	27270904
eCl@ss 8.0	27270904
eCl@ss 8.1	27270904
eCl@ss 9.0	27270904
eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

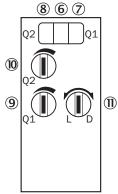
Dimensional drawing (Dimensions in mm (inch))



- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- 3 Mounting hole, Ø 4.3 mm
- 4~ M12 plug connector, 5-pin, can be rotated through 90 $^{\circ}$
- ⑤ Cable, 2 m, 5-wire, Ø 3.8 mm

Adjustments

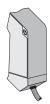
WxT280L-2xxxx6



- ⑥ LED indicator green: Stability indicator
- $\ensuremath{\textcircled{\textcircled{\scriptsize 7}}}$ Status indicator LED, yellow: Status of received light beam (switching output 1)
- ® Status indicator LED, yellow: Status of received light beam (switching output 2)
- Sensing range adjustment: potentiometer for switching output 1
- ® Sensing range adjustment: potentiometer for switching output 2
- ① Light/dark selector

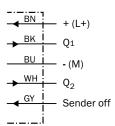
Connection type

WTT280L-2x15xx WLT280L-2x15xx



Connection diagram

Cd-208



MULTITASK PHOTOELECTRIC SENSORS

Recommended accessories

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

	Brief description	Туре	Part no.	
Mounting brackets and plates				
	Mounting bracket, Stainless steel V2A (1.4301), 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor	BEF-W280	5313885	
Plug connectors and cables				
	Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083	
Reflectors				
	Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812	

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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For us, that is "Sensor Intelligence."

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