

# WTT280 PowerProx

## TIME-OF-FLIGHT SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WTT280L-2P1531	6048065

Included in delivery: BEF-W280 (1)  
Other models and accessories → [www.sick.com/WTT280\\_PowerProx](http://www.sick.com/WTT280_PowerProx)

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression, Optical time-of-flight
Housing design (light emission)	Rectangular
Sensing range max.	200 mm ... 4,000 mm <sup>1)</sup> 200 mm ... 3,000 mm <sup>2)</sup>
Sensing range	200 mm ... 4,000 mm <sup>1) 3)</sup> 200 mm ... 3,000 mm <sup>2) 3)</sup>
Type of light	Visible red light
Light source	Laser <sup>4)</sup>
Light spot size (distance)	Ø 12 mm (3 m)
Laser class	1 (EN 60825-1:2014, IEC 60825-1:2014)
Adjustment	Potentiometer (1 x)
Special applications	Detecting small objects
Items supplied	Mounting bracket BEF-W280
Safety-related parameters	
	MTTF <sub>D</sub> 201 years
	DC <sub>avg</sub> 0 %

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).  
<sup>2)</sup> Objects to be sensed with 6 % reflectivity (based on black).  
<sup>3)</sup> Einstellbar.  
<sup>4)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 3 V <sub>pp</sub>
<b>Current consumption</b>	70 mA <sup>2)</sup>
<b>Switching output</b>	PNP
<b>Number of switching outputs</b>	1 (Q <sub>1</sub> ) <sup>3)</sup>
<b>Switching mode</b>	Light/dark switching
<b>Switching mode selector</b>	Selectable via light/dark rotary switch
<b>Output current <math>I_{max}</math></b>	≤ 100 mA
<b>Response time</b>	≤ 0.5 ms <sup>4)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>5)</sup>
<b>Analog output</b>	-
<b>Input</b>	Sender off
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	III
<b>Enclosure rating</b>	IP67

<sup>1)</sup> Limit values. Operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> Without load.

<sup>3)</sup> Q<sub>1</sub> = 1 switching threshold, light/dark switching selectable via light/dark selector.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

## Mechanics

<b>Dimensions (W x H x D)</b>	23.5 mm x 76 mm x 55.8 mm
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Weight</b>	120 g
<b>Connection type</b>	Cable, 5-wire, 2 m
<b>Connection type Detail</b>	
Cable diameter	Ø 3.8 mm
Conductor cross section	0.18 mm <sup>2</sup>
Cable material	Plastic, PVC

## Ambient data

<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2

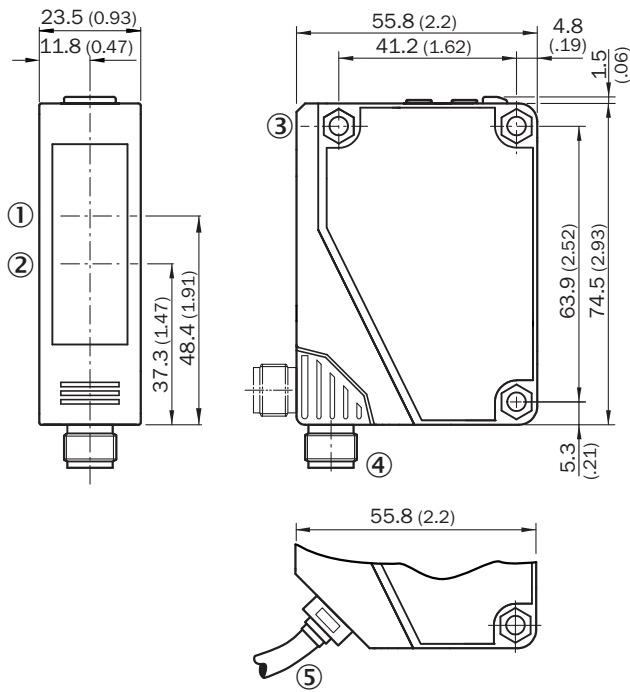
Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cRUus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓
Laser safety (IEC 60825-1) certificate	✓

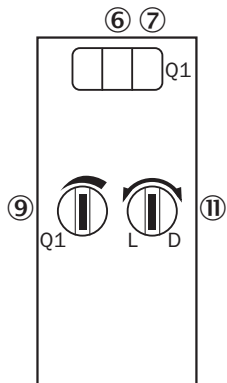
## Dimensional drawing



Dimensions in mm (inch)

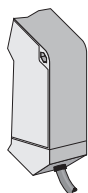
- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole,  $\varnothing$  4.3 mm
- ④ M12 plug connector, 5-pin, can be rotated through 90°
- ⑤ Cable, 2 m, 5-wire,  $\varnothing$  3.8 mm

## Adjustments WTT280L-2xxx1

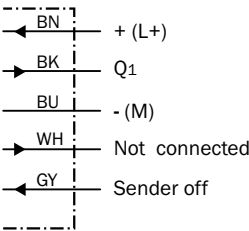


- ⑥ LED indicator green: Stability indicator
- ⑦ LED indicator yellow: Status of received light beam
- ⑨ Sensing range adjustment: potentiometer
- ⑪ Light/dark selector

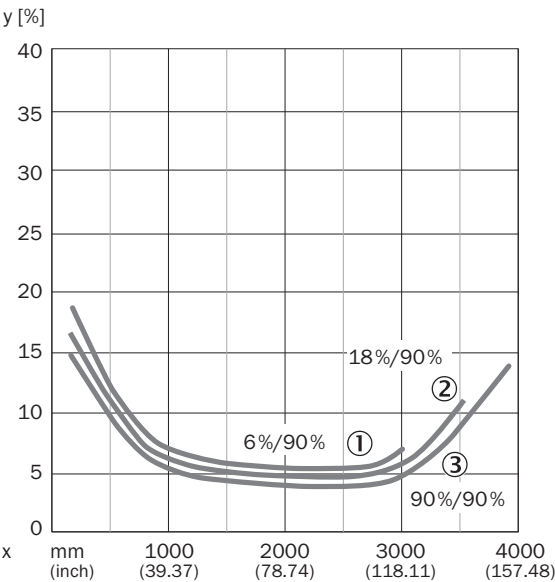
Connection type WTT280L-2x15xx WLT280L-2x15xx



Connection diagram Cd-209

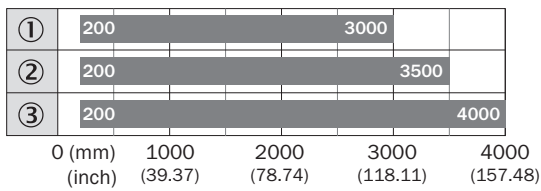


Characteristic curve



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

## Sensing range diagram





■ Sensing range max.

- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

## Recommended accessories

Other models and accessories → [www.sick.com/WTT280\\_PowerProx](http://www.sick.com/WTT280_PowerProx)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel V2A (1.4301)</li> <li><b>Items supplied:</b> 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor</li> <li><b>Suitable for:</b> W280-2, G20</li> </ul>	BEF-W280	5313885
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm²</li> <li><b>Note:</b> For field bus technology</li> </ul>	STE-1205-G	6022083

## 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.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)