

ONLINE DATA SHEET
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Photoelectric sensors
W280L-2 Long Range, Photoelectric proximity sensor, Background suppression

WTT280L-2P2531



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Sensor Intelligence.

Photoelectric sensors
W280L-2 Long Range, Photoelectric proximity sensor, Background suppression

Model Name > WTT280L-2P2531
Part No. > 6048061





Illustration may differ

At a glance

- WTT280L-2 Long Range: Background suppression sensing distance up to 4 m
- Complete background suppression: very small black/white shift, insensitive against reflections from the background (e.g. shiny metal, window, safety vest)
- Ignores cross talk from adjacent sensors
- Visible red Class 1 laser
- Version 1: with 1 x switching output and light/dark switch, Version 2: with 2 x switching outputs and light/dark switch
- Reliable detection also in very fast production processes thanks to the switching frequency of 1,000 Hz
- Disable laser by wire

Your benefits

- Reliable target detection with difficult target colors, angles and color transitions (black/white shift)
- One sensor with two outputs and two status LEDs improves application flexibility and reduces the number of sensors needed
- Quick and easy commissioning with sensing range adjustment potentiometers and status LEDs - one for each output
- Quick and easy alignment with a red Class 1 laser
- Rotatable connector and light/dark switch for mounting and installation flexibility

CE

Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
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 ... 3,000 mm, 200 mm ... 4,000 mm [1) 2)]
Type of light:	Visible red light
Light source:	Laser [3)]
Laser class:	1, 1 (EN 60825-1:2008-5, IEC 60825-1:2007-03)
Adjustment:	Potentiometer
Light spot size (distance):	Ø 12 mm (3 m)

[1)] Object with 90 % reflectance (referred to standard white, DIN 5033) [2)] Objects to be sensed with 6 % reflectivity (based on black) [3)] Average service life of 100,000 h at T_A = +25 °C

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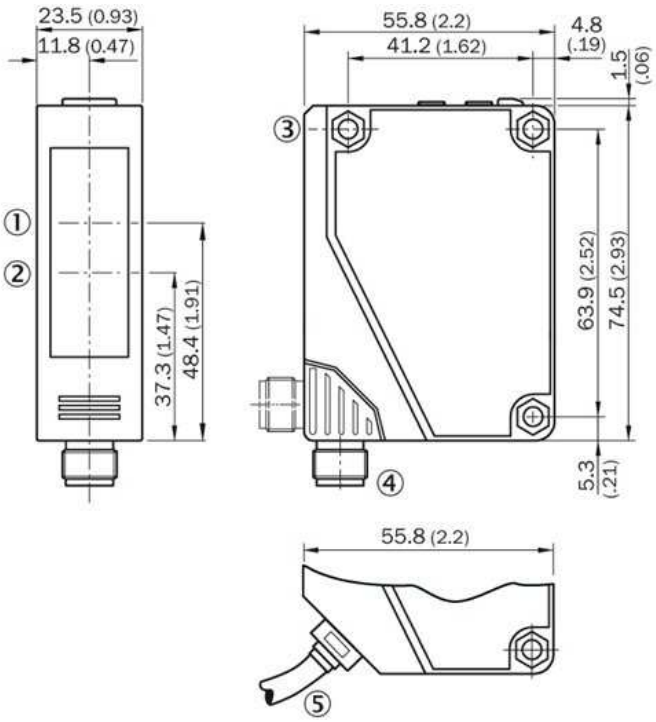
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC [1]
Residual ripple:	≤ 3 Vpp [2]
Power consumption:	≤ 70 mA [3]
Output type:	PNP, open collector
Switching mode:	Light/dark switching
Switching mode selector:	Selectable via light/dark rotary switch
Output current Imax.:	≤ 100 mA
Response time:	≤ 0.5 ms [4]
Switching frequency:	1,000 Hz [5]
Electrical connection:	Connector M12, 5-pin
Circuit protection::::	A, B, C, D [6] [7] [8] [9]
Protection class:	III
Weight:	120 g
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Mounting bracket BEF-W280
EMC:	EN 60947-5-2
Ambient temperature operation:	-10 °C ... +50 °C
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	NRKH2.E300503 & NRKH8.E300503
Housing material:	ABS, Plastic

[1] Limit values, operation in short-circuit protected network max. 8 A [2] May not exceed or fall short of V_S 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] B = output reverse-polarity protected [8] C = interference suppression [9] D = outputs overcurrent and short-circuit protected

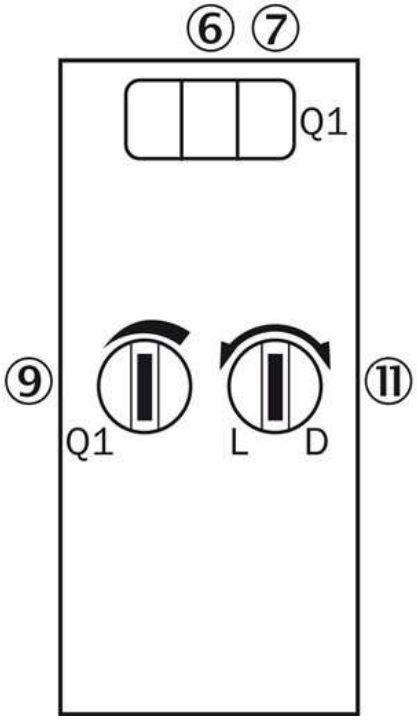
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Dimensional drawing



|1| Center of optical axis, receiver
|2| Center of optical axis, sender
|3| Mounting hole, Ø 4.3 mm
|4| Connector M12, 5-pin , rotatable by 90°
|5| Cable, 2 m, 5-wire, Ø 3.8 mm

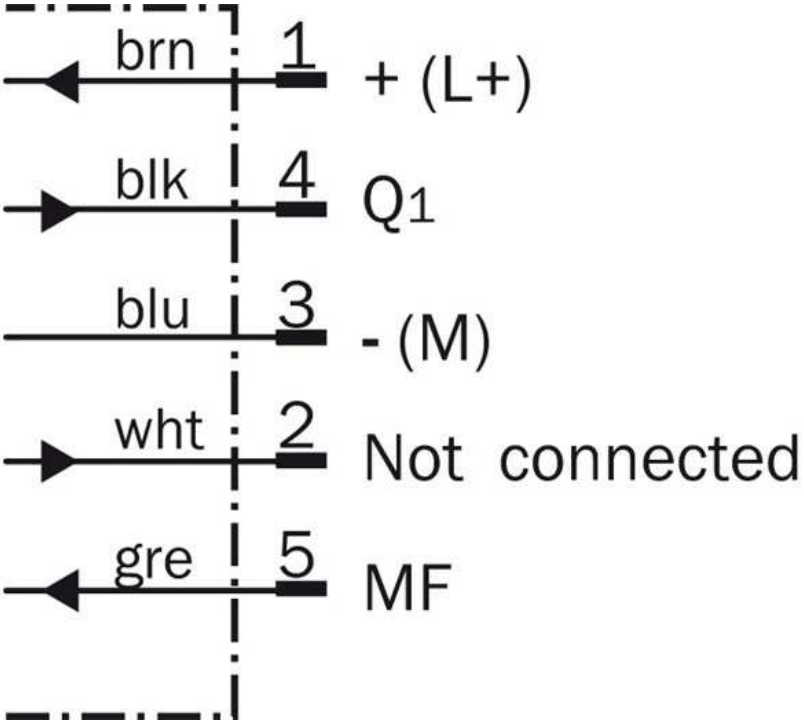
Adjustments possible



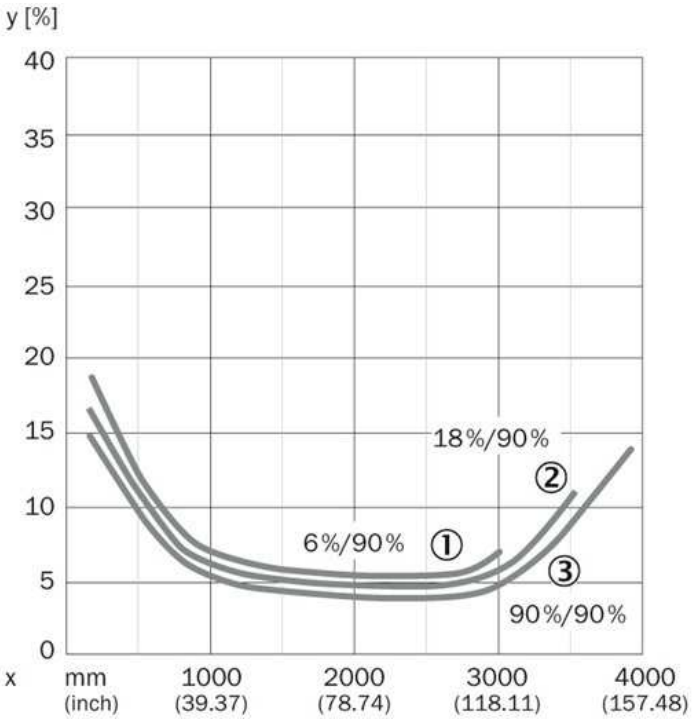
|6| LED indicator green: Stability indicator
|7| Status indicator LED,
yellow: Status of received light beam
|9| Sensing range adjustment: potentiometer
|11| Light/dark selector

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Connection diagram



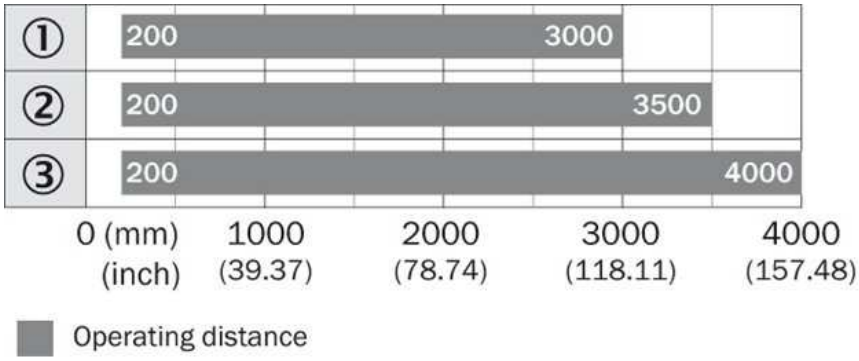
Characteristic curve



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

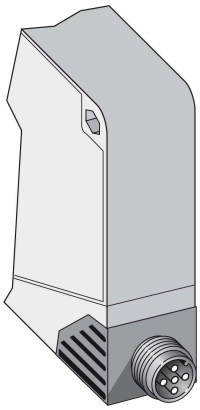
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Sensing range diagram



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

Connection type



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A4 4c int43

Australia
Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil
Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada
Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika
Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China
Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark
Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland
Phone +49 211 5301-301
E-Mail info@sick.de

España
Phone +34 93 480 31 00
E-Mail info@sick.es

France
Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain
Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India
Phone +91–22–4033 8333
E-Mail info@sick-india.com

Israel
Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia
Phone +39 02 27 43 41
E-Mail info@sick.it

Japan
Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország
Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland
Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge
Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich
Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska
Phone +48 22 837 40 50
E-Mail info@sick.pl

România
Phone +40 356 171 120
E-Mail office@sick.ro

Russia
Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz
Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore
Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija
Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa
Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea
Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi
Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige
Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan
Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye
Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates
Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México
Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at **www.sick.com**

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