



Long range distance sensors Dx500, DS500

DS500-P311



Model Name > DS500-P311
Part No. > 1040477

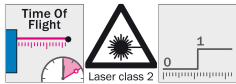


At a glance

- Measurement range 0.2 m ... 70 m
- Two switching outputs
- Highest measurement resolution, repeatability and accuracy without a reflector
- Simple adjustment using red laser light
- Metal housing with integrated heating option for cold store applications
- Weather protection housing optional
- Alignment bracket optional

Your benefits

- High-precision switching reliably indicates product position for exact machine control, reducing scrap and increasing throughput
- Red laser light as well as adjustable mounting brackets (optional accessory) enable fast and easy alignment, ensuring on-time and cost-effective installation
- A tough metal housing with internal heating ensures reliability in rough ambient conditions, such as cold store warehouses
- User-friendly display with easy-to-use menu along with external PC/PLC programming offers fast and cost-efficient setup
- Two individual programmable switching outputs offer flexible integration into application
- Wide measurement range of 0.2 m to 70 m enables automated measurement on natural targets where reflectors can't be used



Performance

Measurement range ¹⁾ :	0.2 m ... 7 m, 6 % ... 90 % remission
Resolution:	≤ 1 mm
Accuracy:	± 3 mm
Light source ²⁾ :	Laser, red
Typ. light spot size (distance):	10 mm (at 7 m) 100 mm (at 70 m) 45 mm (at 30 m)
Response time:	150 ms
Laser class:	2 (EN 60825/21 CFR 1.040)

¹⁾ Unique up to 7 m ²⁾ Average service life of 50,000 h at T_A = +25 °C

Interfaces

Output type ¹⁾ :	PNP (< 100 mA)
Hysteresis:	± 6 %
Multifunctional input (MF) ²⁾ , ³⁾ :	< 2 V

¹⁾ PNP: HIGH = $V_S - (< 2.5 \text{ V})$ /LOW = $< 2.5 \text{ V}$; NPN: HIGH = $< 2.5 \text{ V}$ /LOW = V_S ²⁾ Refer to function MF input ³⁾ NPN $< 2 \text{ V}$; PNP $> 2 \text{ V} < V_S$

Mechanics/electronics

Supply voltage V_S :	DC 10 V ... 30 V, reverse polarity protected, $U_S \geq \text{DC } 24 \text{ V}$ for devices with heating
Ripple ¹⁾ :	5 Vpp
Initialization time:	500 ms
Weight:	1,000 g
Power consumption:	Typ. 3 W
Connection type:	Male connector, M12, 5-pin

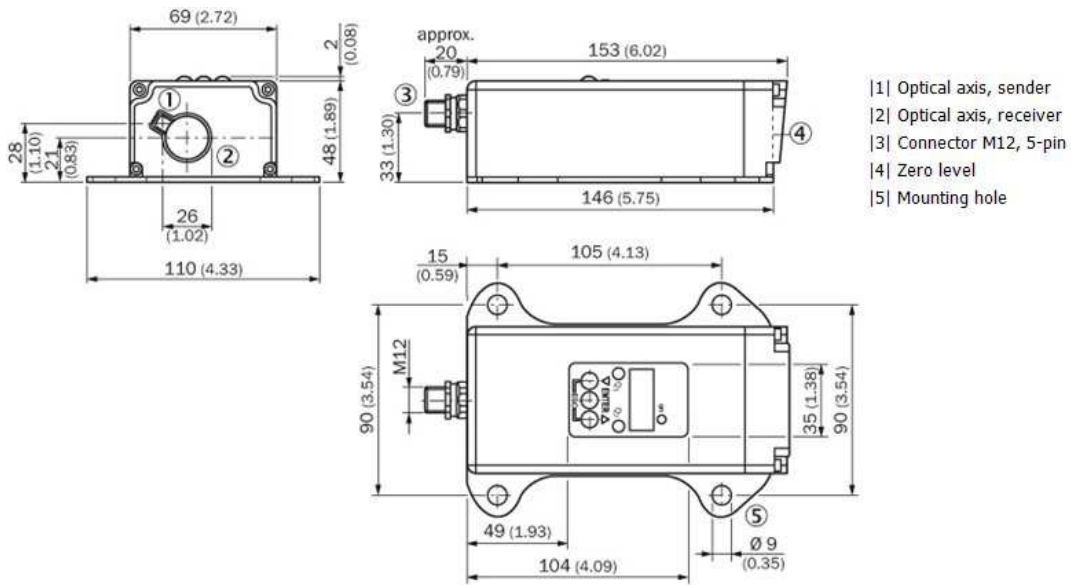
¹⁾ May not fall short of or exceed V_S tolerances

Ambient data

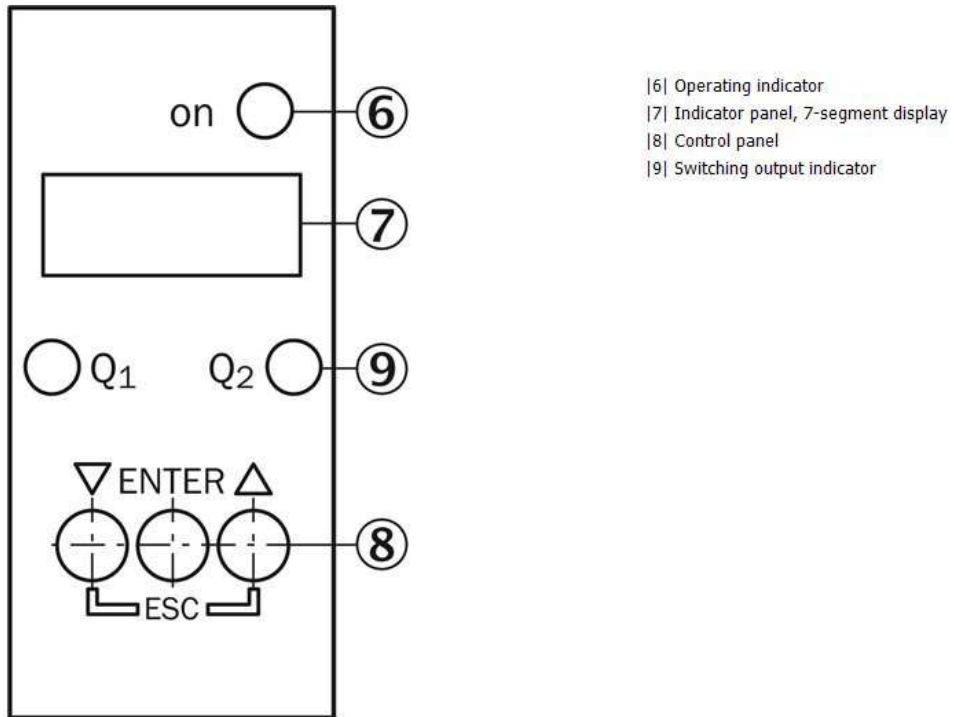
Enclosure rating:	IP 65
Protection class ¹⁾ :	II
Temperature drift:	Typ. 0.05 mm/K
Ambient temperature:	Operation: -10 ... +50 °C Operation with cooling case: -10 ... +75 °C Storage: -25 ... +75 °C
Mechanical load:	Noise: EN 600 68-2-64 Shock: EN 600 68-2-27 Sine: EN 600 68-2-6
Electromagnetic compatibility (EMC):	EN 61000-6-2, EN 55011/EN 60947-5-7: 2003-9

¹⁾ Reference voltage DC 32 V

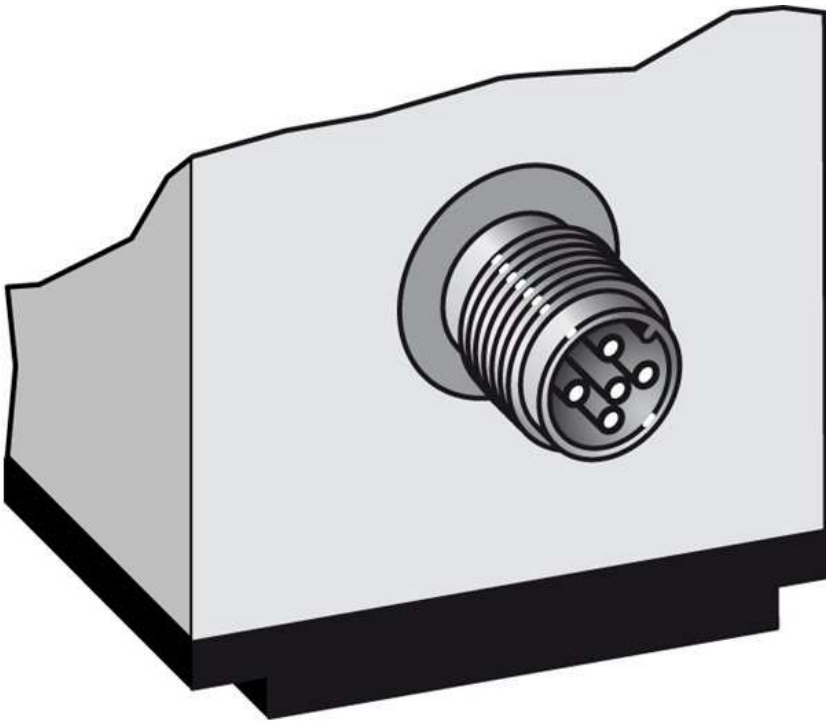
Dimensional drawing



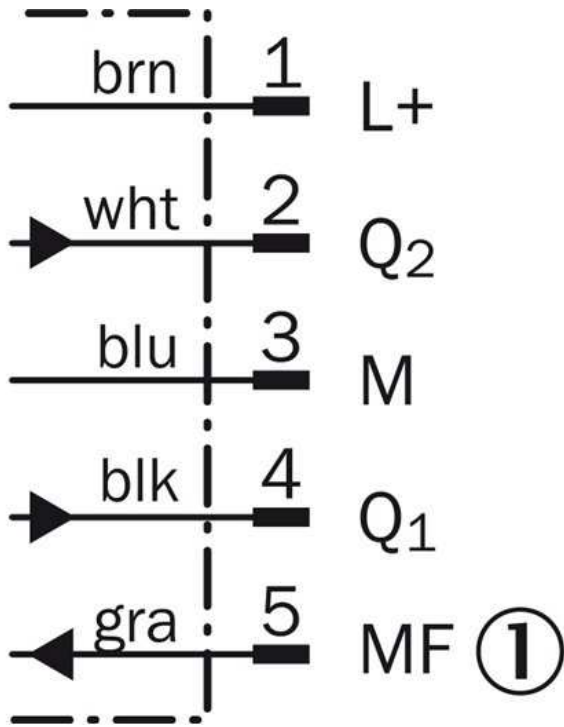
Adjustment possible



Connection type



Connection diagram



[1] Multifunctional input (MF)

Function MF input

Function MF input

Teach in	Q_1	60 ms < MF < 150 ms
Teach in	\bar{Q}_1	150 ms < MF < 250 ms
Teach in	Q_2	250 ms < MF < 350 ms
Teach in	\bar{Q}_2	350 ms < MF < 450 ms
Laser off	-	450 ms < MF < ∞

Additional information

Extern Teach ET via MF ①

Teach-In	MF active	Model
Q_1	100 ms	Current measurement value is used as switching threshold
\bar{Q}_1	200 ms	
Q_2	300 ms	
\bar{Q}_2	400 ms	
Laser off	> 450 ms	

① Multi functional input.

Error performance or no object in measurement range

Measurement not possible

Measurement value output display	Switching outputs
0.000	Switching stage $\hat{=}$ measurement value 0 m

No object in measurement range or laser off

Measurement value output display	Switching outputs
99.99	Switching stage $\hat{=}$ measurement value 99.99 m

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