



DT500-A111S02

Dx500

LONG RANGE DISTANCE SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
DT500-A111S02	1042561

Other models and accessories → www.sick.com/Dx500



Detailed technical data

Mechanics/electronics

Supply voltage V_s	DC 10 V ... 30 V, reverse polarity protected $U_V \geq$ DC 24 V for devices with heating
Ripple	5 V _{pp} ¹⁾
Power consumption	Typ. 3 W
Initialization time	500 ms
Housing material	Metal (Aluminum die cast)
Window material	Glass
Connection type	Male connector, M12, 8-pin
Weight	1,000 g
Dimensions (W x H x D)	69 mm x 50 mm x 153 mm
Enclosure rating	IP65
Protection class	II ²⁾

¹⁾ May not fall short of or exceed V_s tolerances.

²⁾ Reference voltage DC 32 V.

Performance

Measurement range min ... max:	0.2 m ... 30 m, 90% remission factor ^{1) 2)} 0.8 m ... 15 m, 6% remission factor ^{1) 2)}
Target	Natural objects
Resolution	12 bit
Repeatability	1 mm ^{3) 4)}
Measurement accuracy	± 3 mm
Response time	250 ms
Output time	250 ms
Light source	Laser, red ⁵⁾ visible red light

¹⁾ In ambient light, max. 1 klx of constant light.

²⁾ Unique up to 150 m.

³⁾ 6% ... 90% remission factor.

⁴⁾ Statistical error 1 σ .

⁵⁾ Average service life of 50,000 h at $T_A = +25^\circ\text{C}$.

Laser class	2, complies with 21 CFR 1040.10 and 1040.11 except for the conformance according to "Laser Notice No. 50" from June 24, 2007 (IEC 60825-1:2014, EN 60825-1:2014)
Typ. light spot size (distance)	10 mm (at 7 m) 45 mm (at 30 m) 100 mm (at 70 m)

- 1) In ambient light, max. 1 klx of constant light.
2) Unique up to 150 m.
3) 6% ... 90% remission factor.
4) Statistical error 1 σ .
5) Average service life of 50,000 h at $T_A = +25\text{ }^{\circ}\text{C}$.

Interfaces

Analog output	Number Type Current	1 Current output 0 mA ... 20 mA ¹⁾
Multifunctional input (MF)		PNP ^{2) 3)}
Laser-off input		Laser-off input inverted, HIGH laser on

- 1) Analog output I_{PNP} active when the object is located inside the valid switching range.
2) Laser-off input inverted, HIGH laser on.
3) No external teach possible, only via pushbuttons.

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2, EN 55011 EN 60947-5-7: 2003-9
Ambient temperature, operation	-10 °C ... +45 °C -10 °C ... +75 °C, operation with cooling case
Ambient temperature, storage	-25 °C ... +75 °C
Temperature drift	Typ. 0.05 mm/K
Typ. Ambient light immunity	≤ 3,000 lx
Mechanical load	Shock: (EN 600 68-2-27 / -2-29) Sine: (EN 600 68-2-6) Noise: (EN 600 68-2-64)

Classifications

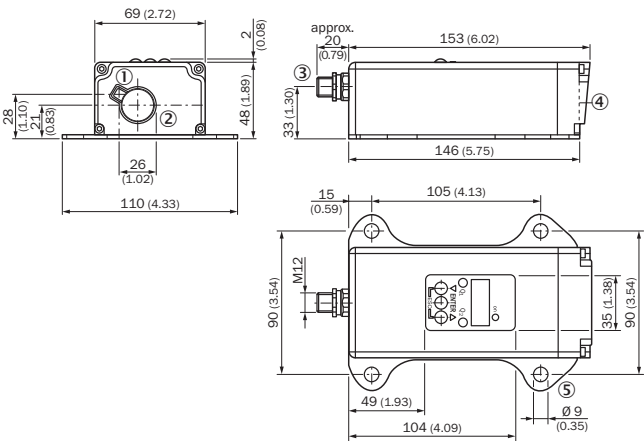
ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825

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ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

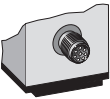
Dimensional drawing (Dimensions in mm (inch))



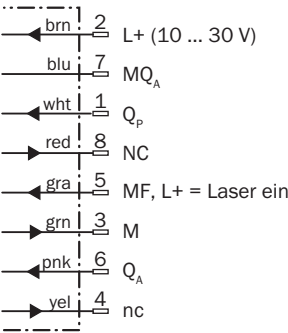
- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Male connector M12, 8-pin
- ④ Zero level
- ⑤ Fixing hole

Connection type

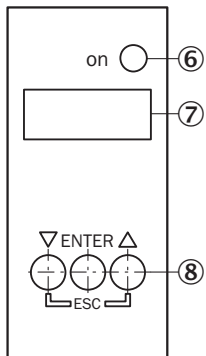
DT500-Axx3 CAN (Layer 2) Connector M12, 8-pin



Connection diagram



Adjustment possible



- ⑥ Operating indicator
- ⑦ Indicator panel, 7-segment display
- ⑧ Control panel

Functional principle

Additional information

Extern Teach ET via MF ①

Teach-in	MF active	Model
0 mA	100 ms	Current measurement value is used
4 mA	200 ms	
20 mA	300 ms	
Laser off	> 450 ms	

① Multi functional input.

Error performance or no object in measurement range

Measurement not possible

Measurement value output display	Analog interface	CAN Bus	Serial interface
0.000	0/3.5 mA	00000	00000 CRLF

No object in measurement range or laser off

Measurement value output display	Analog interface	CAN Bus	Serial interface
99.99	20.5 mA	99999	99999 CRLF

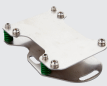
Function MF input

Function MF input

Teach in	0 mA	60 ms < MF < 150 ms
Teach in	4 mA	150 ms < MF < 250 ms
Teach in	20 mA	250 ms < MF < 350 ms
Laser off	–	450 ms < MF < ∞

Recommended accessories

Other models and accessories → www.sick.com/Dx500

	Brief description	Type	Part no.
Terminal and alignment brackets			
	Alignment unit for DS/DT500, stainless steel (1.4541), incl. mounting material, mounting hardware included	BEF-DSDT	2031377
Others			
	• Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals	YF2A15-020VB5XLEAX	2096239
	• Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals	YF2A15-050VB5XLEAX	2096240
	• Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals	YF2A15-100VB5XLEAX	2096241

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