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Product data sheet



DT500-A311

Dx500

LONG RANGE DISTANCE SENSORS

SICK
Sensor Intelligence.

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DT500-A311 | Dx500

LONG RANGE DISTANCE SENSORS



Ordering information

Type	Part no.
DT500-A311	1040475

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 ≥ 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, 5-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.

Safety-related parameters

$MTTF_D$	101 years
DC_{avg}	0%

Performance

Measurement range min ... max:	0.2 m ... 7 m, 90% remission factor [1] [2] 0.8 m ... 7 m, 6% remission factor [1] [2]
Target	Natural objects
Resolution	12 bit
Repeatability	1 mm [3] [4]
Accuracy	± 3 mm

[1] In ambient light, max. 1 klx of constant light.

[2] Unique up to 7 m.

[3] 6% ... 90% remission factor.

[4] Statistical error 1 σ.

[5] Average service life of 50,000 h at T_A = +25 °C.

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Response time	150 ms
Output time	150 ms
Light source	Laser, red [5] visible red light
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 7 m.
[3] 6% ... 90% remission factor.
[4] Statistical error 1 σ.
[5] Average service life of 50,000 h at T_A = +25 °C.

Interfaces

Analog output	
Number	1
Type	Current output
Current	0 mA ... 20 mA [1]
Multifunctional input (MF)	PNP [2] [3]
Laser-off input	> 12 V

[1] Can be configured to the device: 0 mA ... 20 mA / 4 mA ... 20 mA (max. load resistance = U_V-2 V / 0.0205 A).
[2] Refer to function MF input.
[3] HIGH = UV - (< 2 V) / LOW = < 2 V; active HIGH.

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

eCl@ss 5.0	27270801
eCl@ss 5.1.4	27270801
eCl@ss 6.0	27270801
eCl@ss 6.2	27270801
eCl@ss 7.0	27270801
eCl@ss 8.0	27270801
eCl@ss 8.1	27270801
eCl@ss 9.0	27270801
eCl@ss 10.0	27270801

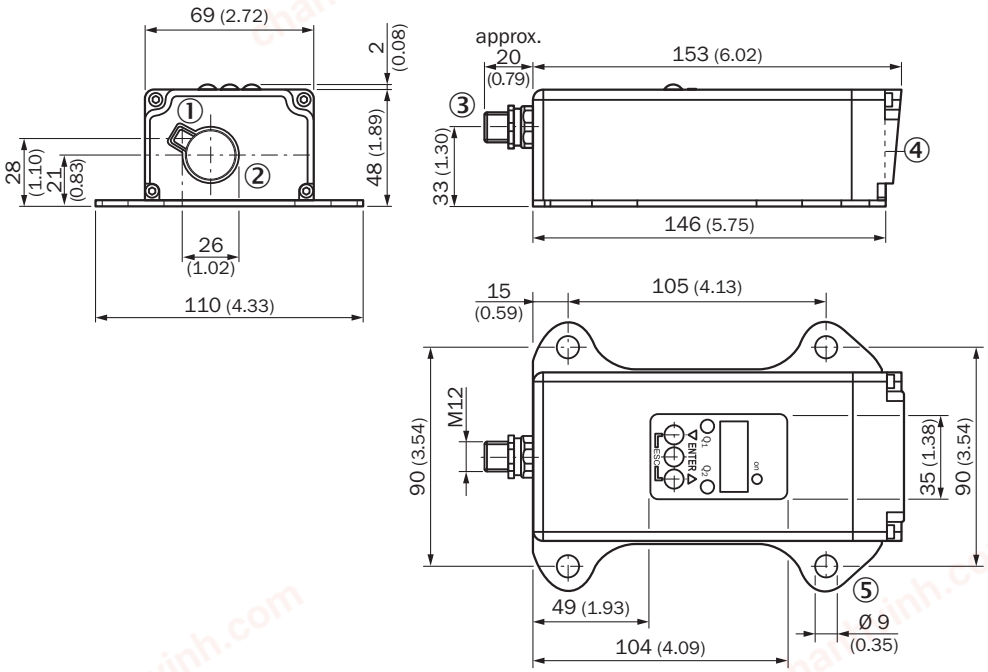
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eCl@ss 11.0	27270801
eCl@ss 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

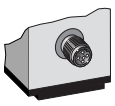
Dimensional drawing (Dimensions in mm (inch))



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

Connection type

Male connector M12, 5-pin



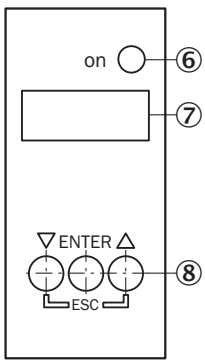
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Connection diagram



① Multifunctional input (MF)

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

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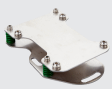
Function MF input

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.
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A15-020VB5XLEAX	2096239
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A15-050VB5XLEAX	2096240
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YF2A15-100VB5XLEAX	2096241
Terminal and alignment brackets			
	Alignment unit for DS/DT500, stainless steel (1.4541), incl. mounting material, mounting hardware included	BEF-DSDT	2031377

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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.

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