



DS500-P111

Dx500

LONG RANGE DISTANCE SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
DS500-P111	1026519

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
Connection type	Male connector, M12, 5-pin
Weight	1,000 g
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

Measuring range	0.2 m ... 30 m, 90 % remission ^{1) 2)} 0.8 m ... 15 m, 6 % remission ^{1) 2)}
Target	Natural objects
Resolution	≤ 1 mm
Repeatability	1 mm
Accuracy	± 3 mm
Response time	250 ms
Output time	250 ms
Light source	Laser, red ³⁾
Laser class	2, complies with 21 CFR 1040.10 and 1040.11 except for the tolerance 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⁾ Average service life of 50,000 h at $T_A = +25$ °C.

Interfaces

Digital output	Number	1 ¹⁾
	Type	PNP
	Maximum output current I_A	≤ 100 mA
Multifunctional input (MF)		< 2 V ^{2) 3)}
Hysteresis		± 6 %

¹⁾ PNP: HIGH = V_S - (< 2.5 V) / LOW = < 2.5 V; NPN: HIGH = < 2.5 V / LOW = V_S .

²⁾ Refer to function MF input.

³⁾ NPN < 2 V.

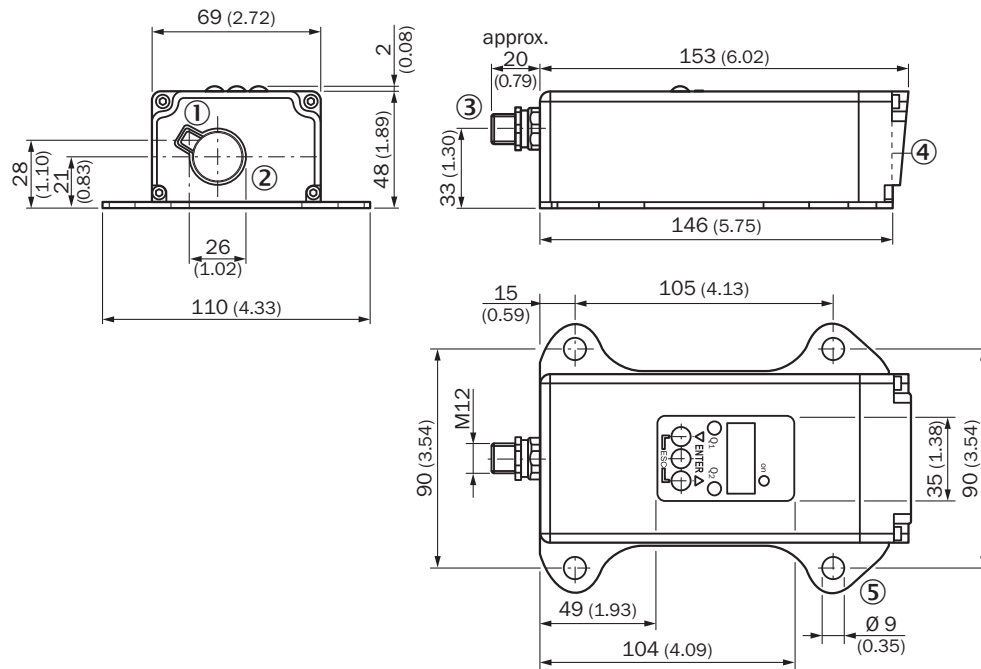
Ambient data

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 storage temperature	-25 °C ... +75 °C
Temperature drift	Typ. 0.05 mm/K
Typ. Ambient light immunity	$\leq 3,000$ lx
Mechanical load	Shock: (EN 600 68-2-27) Sine: (EN 600 68-2-6) Noise: (EN 600 68-2-64)

Classifications

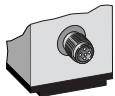
ECI@ss 5.0	27270801
ECI@ss 5.1.4	27270801
ECI@ss 6.0	27270801
ECI@ss 6.2	27270801
ECI@ss 7.0	27270801
ECI@ss 8.0	27270801
ECI@ss 8.1	27270801
ECI@ss 9.0	27270801
ETIM 5.0	EC001825
ETIM 6.0	EC001825
UNSPSC 16.0901	41111613

Dimensional drawing (Dimensions in mm (inch))

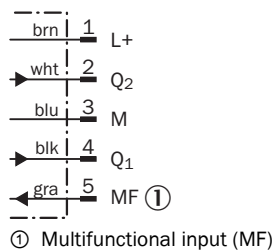


Connection type

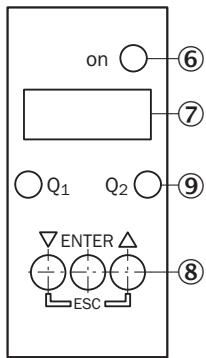
Male connector M12, 5-pin



Connection diagram



Adjustment possible



- ⑥ Operating indicator
- ⑦ Indicator panel, 7-segment display
- ⑧ Control panel
- ⑨ Digital output display

Functional principle

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

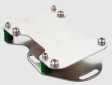
Function MF input

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 < ∞

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
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

Recommended services

Additional services → www.sick.com/Dx500

	Type	Part no.
Warranty extensions		
• Product area: Identification solutions, Vision, Distance sensors, Detection and ranging solutions • Range of services: The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase), Long-term protection for calculable lump sum. • Duration: Five-year warranty from date of purchase.	Five-year extended warranty	1680671

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