



## DT500-A523

Dx500

TIME-OF-FLIGHT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
DT500-A523	1040472

Other models and accessories → [www.sick.com/Dx500](http://www.sick.com/Dx500)



### Detailed technical data

#### Features

<b>Measuring range</b>	0.2 m ... 70 m, 90% remission factor <sup>1) 2)</sup> 0.2 m ... 30 m, 6% remission factor <sup>1) 2)</sup>
<b>Target</b>	Natural objects
<b>Resolution</b>	≤ 0.1 mm
<b>Repeatability</b>	1 mm <sup>3) 4)</sup>
<b>Measurement accuracy</b>	± 3 mm
<b>Response time</b>	≥ 150 ms
<b>Output time</b>	150 ms ... 6,000 ms
<b>Light source</b>	Laser, red <sup>5)</sup> visible red light
<b>Type of light</b>	Visible red light
<b>Laser class</b>	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)
<b>Typ. light spot size (distance)</b>	10 mm (at 7 m) 45 mm (at 30 m) 100 mm (at 70 m)
<b>Safety-related parameters</b>	MTTF <sub>D</sub> 101 years DC <sub>avg</sub> 0%

<sup>1)</sup> In ambient light, max. 1 klx of constant light.

<sup>2)</sup> Unique up to 150 m.

<sup>3)</sup> 6% ... 90% remission factor.

<sup>4)</sup> Statistical error 1 σ.

<sup>5)</sup> Average service life of 50,000 h at T<sub>A</sub> = +25 °C.

#### Interfaces

<b>CAN</b>	✓
Remark	Layer 2

<sup>1)</sup> Refer to function MF input.

<sup>2)</sup> HIGH = UV - (< 2 V) / LOW = < 2 V; active HIGH.

<b>Multifunctional input (MF)</b>	PNP <sup>1)</sup> <sup>2)</sup>
<b>Laser-off input</b>	> 12 V

<sup>1)</sup> Refer to function MF input.

<sup>2)</sup> HIGH = UV - (< 2 V) / LOW = < 2 V; active HIGH.

## Electronics

<b>Supply voltage <math>U_B</math></b>	DC 10 V ... 30 V, reverse polarity protected $U_V \geq$ DC 24 V for devices with heating
<b>Power consumption</b>	Typ. 3 W
<b>Ripple</b>	5 V <sub>pp</sub> <sup>1)</sup>
<b>Initialization time</b>	500 ms
<b>Enclosure rating</b>	IP65
<b>Protection class</b>	II <sup>2)</sup>

<sup>1)</sup> May not fall short of or exceed  $V_S$  tolerances.

<sup>2)</sup> Reference voltage DC 32 V.

## Mechanics

<b>Dimensions (W x H x D)</b>	69 mm x 50 mm x 153 mm
<b>Housing material</b>	Metal (Aluminum die cast)
<b>Window material</b>	Glass
<b>Weight</b>	1,000 g
<b>Connection type</b>	Male connector, M12, 8-pin

## Ambient data

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

## Certificates

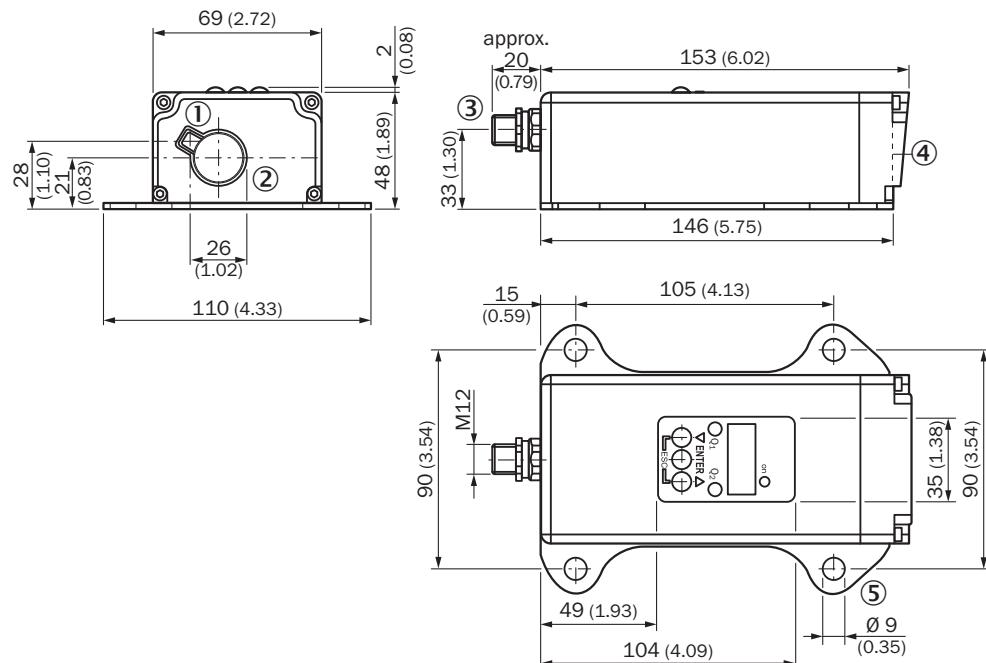
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270801
<b>ECLASS 5.1.4</b>	27270801

<b>ECLASS 6.0</b>	27270801
<b>ECLASS 6.2</b>	27270801
<b>ECLASS 7.0</b>	27270801
<b>ECLASS 8.0</b>	27270801
<b>ECLASS 8.1</b>	27270801
<b>ECLASS 9.0</b>	27270801
<b>ECLASS 10.0</b>	27270801
<b>ECLASS 11.0</b>	27270801
<b>ECLASS 12.0</b>	27270916
<b>ETIM 5.0</b>	EC001825
<b>ETIM 6.0</b>	EC001825
<b>ETIM 7.0</b>	EC001825
<b>ETIM 8.0</b>	EC001825
<b>UNSPSC 16.0901</b>	41111613

### Dimensional drawing



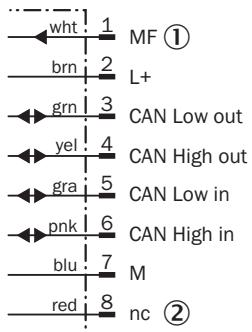
Dimensions in mm (inch)

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

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

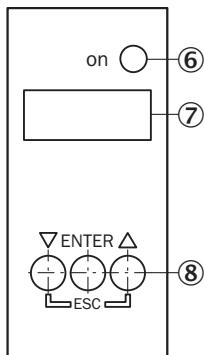


Connection diagram



① Multifunctional input (MF)  
② Not assigned

Adjustment possible



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

## 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 < $\infty$

## Recommended accessories

Other models and accessories → [www.sick.com/Dx500](http://www.sick.com/Dx500)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Shielded</li> </ul>	YF2A68-050XXXXLEAX	6032449
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Description:</b> Shielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> 0.25 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> </ul>	DOS-1208-GA	6028369

	Brief description	Type	part no.
Mounting systems	 <ul style="list-style-type: none"><li><b>Description:</b> Alignment unit for DS/DT500, stainless steel (1.4541), incl. mounting material</li><li><b>Items supplied:</b> Mounting hardware included</li></ul>	BEF-DSDT	2031377

## 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](http://www.sick.com)