



# DT500-A411

Dx500

**LONG RANGE DISTANCE SENSORS**

**SICK**  
Sensor Intelligence.



### Ordering information

| Type       | Part no. |
|------------|----------|
| DT500-A411 | 1040465  |

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



### Detailed technical data

#### Performance

|                                        |                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Measuring range</b>                 | 0.2 m ... 7 m, 90 % remission <sup>1) 2)</sup><br>0.8 m ... 7 m, 6 % remission <sup>1) 2)</sup> |
| <b>Resolution</b>                      | 12 bit                                                                                          |
| <b>Repeatability</b>                   | 1 mm <sup>3) 4)</sup>                                                                           |
| <b>Accuracy</b>                        | ± 3 mm <sup>3)</sup>                                                                            |
| <b>Output time</b>                     | 150 ms                                                                                          |
| <b>Light source</b>                    | Laser, red <sup>5)</sup>                                                                        |
| <b>Laser class</b>                     | 2 (EN 60825/21 CFR 1.040)                                                                       |
| <b>Typ. light spot size (distance)</b> | 10 mm (at 7 m)<br>45 mm (at 30 m)<br>100 mm (at 70 m)                                           |
| <b>Heating</b>                         | ✓                                                                                               |

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

<sup>2)</sup> Unique up to 7 m.

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

<sup>4)</sup> Statistical error 1  $\sigma$ .

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

#### Interfaces

|                                   |                                                                                        |
|-----------------------------------|----------------------------------------------------------------------------------------|
| <b>Analog output</b>              | 0 mA ... 20 mA / 4 mA ... 20 mA ( $V_S - 2\text{ V} / 0.0205\text{ A}$ ) <sup>1)</sup> |
| <b>Multifunctional input (MF)</b> | > 12 V <sup>2)</sup>                                                                   |
| <b>Laser-off input</b>            | > 12 V                                                                                 |
| <b>Data interface</b>             | Q <sub>A</sub>                                                                         |

<sup>1)</sup> Max. load =  $U_V - 2\text{ V} / 0.0205\text{ A}$ .

<sup>2)</sup> Refer to function MF input.

#### Mechanics/electronics

|                                        |                                                                                                            |
|----------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Supply voltage <math>V_S</math></b> | DC 10 V ... 30 V, reverse polarity protected<br>$U_V \geq \text{DC } 24\text{ V}$ for devices with heating |
| <b>Ripple</b>                          | 5 V <sub>pp</sub> <sup>1)</sup>                                                                            |

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

|                            |                            |
|----------------------------|----------------------------|
| <b>Power consumption</b>   | Typ. 22 W                  |
| <b>Initialization time</b> | 500 ms                     |
| <b>Connection type</b>     | Male connector, M12, 5-pin |
| <b>Weight</b>              | 1,000 g                    |

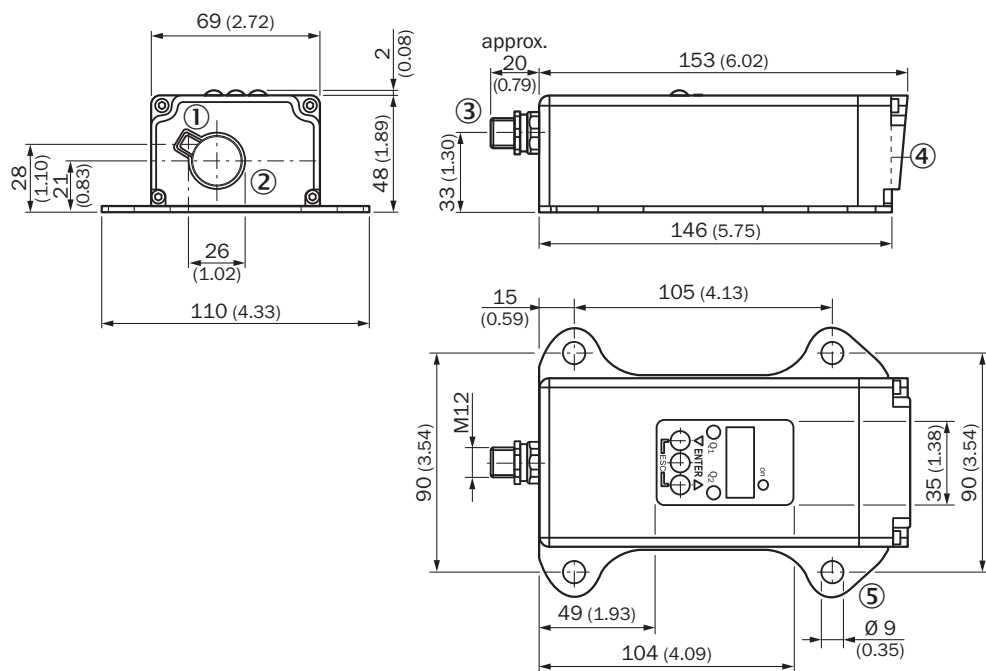
<sup>1)</sup> May not fall short of or exceed  $V_S$  tolerances.

### Ambient data

|                                            |                                                                                                                           |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Enclosure rating</b>                    | IP 65                                                                                                                     |
| <b>Protection class</b>                    | II <sup>1)</sup>                                                                                                          |
| <b>Electromagnetic compatibility (EMC)</b> | EN 61000-6-2, EN 55011<br>EN 60947-5-7: 2003-9                                                                            |
| <b>Ambient temperature</b>                 | Operation with heating: -40 °C ... +45 °C<br>Operation with cooling case: -40 °C ... +75 °C<br>Storage: -25 °C ... +75 °C |
| <b>Temperature drift</b>                   | Typ. 0.05 mm/K                                                                                                            |
| <b>Mechanical load</b>                     | Shock: EN 600 68-2-27 / -2-29<br>Sine: EN 600 68-2-6<br>Noise: EN 600 68-2-64                                             |

<sup>1)</sup> Reference voltage DC 32 V.

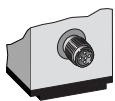
### Dimensional drawing (Dimensions in mm (inch))



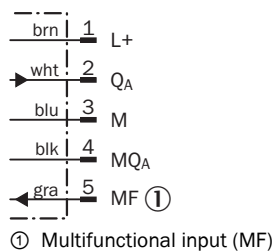
- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Male connector M12, 5-pin
- ④ Zero level
- ⑤ Fixing hole

## Connection type

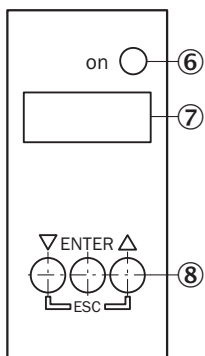
Male connector M12, 5-pin



## 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       |

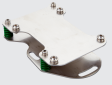

Function MF input

## 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](http://www.sick.com/Dx500)

|                                                                                     | Brief description                                                                                          | Type          | Part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------|----------|
| <b>Terminal and alignment brackets</b>                                              |                                                                                                            |               |          |
|  | Alignment unit for DS/DT500, stainless steel (1.4541), incl. mounting material, mounting hardware included | BEF-DSDT      | 2031377  |
| <b>Plug connectors and cables</b>                                                   |                                                                                                            |               |          |
|  | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, 2 m             | DOL-1205-G02M | 6008899  |
|                                                                                     | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, 5 m             | DOL-1205-G05M | 6009868  |

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|--|-------------------------------------------------------------------------------------------------|---------------|-----------------|
|  | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, 10 m | DOL-1205-G10M | 6010544         |

## 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)