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**Part no.: 50134398**
**DDLS 508i 40.4 H**
**Optical data transmission**

Ethernet

# Contents


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# Part no.: 50134398 – DDLS 508i 40.4 H – Optical data transmission

## Technical data

| | |
|---|---|
| ***Basic data*** | |
| Series | DDLS 500 |

| | |
|---|---|
| ***Special design*** | |
| Special design | Operation of parallel light axes<br>Not influenced by reflective surfaces<br>Remote maintenance via web server<br>Heating |

| | |
|---|---|
| ***Optical data*** | |
| Working range | 100 ... 40,000 mm |
| Light source | Laser |
| Usable opening angle, transmitter | 1 ° |

| | |
|---|---|
| ***Electrical data*** | |
| ***Performance data*** | |
| Supply voltage $U_B$ | 18 ... 30 V, DC |
| ***Inputs*** | |
| Number of digital switching inputs | 1 Piece(s) |
| ***Outputs*** | |
| Number of digital switching outputs | 1 Piece(s) |

| | |
|---|---|
| ***Interface*** | |
| Type | Ethernet |
| ***Ethernet*** | |
| Transmission speed | 100 Mbit/s |

| | |
|---|---|
| ***Connection*** | |
| Number of connections | 2 Piece(s) |
| ***Connection 1*** | |
| Type of connection | Connector |
| Designation on device | POWER |
| Thread size | M12 |
| Type | Male |
| No. of pins | 5 -pin |
| Encoding | A-coded |
| ***Connection 2*** | |
| Type of connection | Connector |
| Designation on device | BUS |
| Thread size | M12 |
| Type | Female |
| No. of pins | 4 -pin |
| Encoding | D-coded |

| | |
|---|---|
| ***Mechanical data*** | |
| Dimension (W x H x L) | 100 mm x 156 mm x 99.5 mm |
| Housing material | Metal |
| Net weight | 1,185 g |

| *Operation and display* | |
|---|---|
| Type of display | Bar graph<br>LED |
| Type of configuration | Software<br>Via web browser |

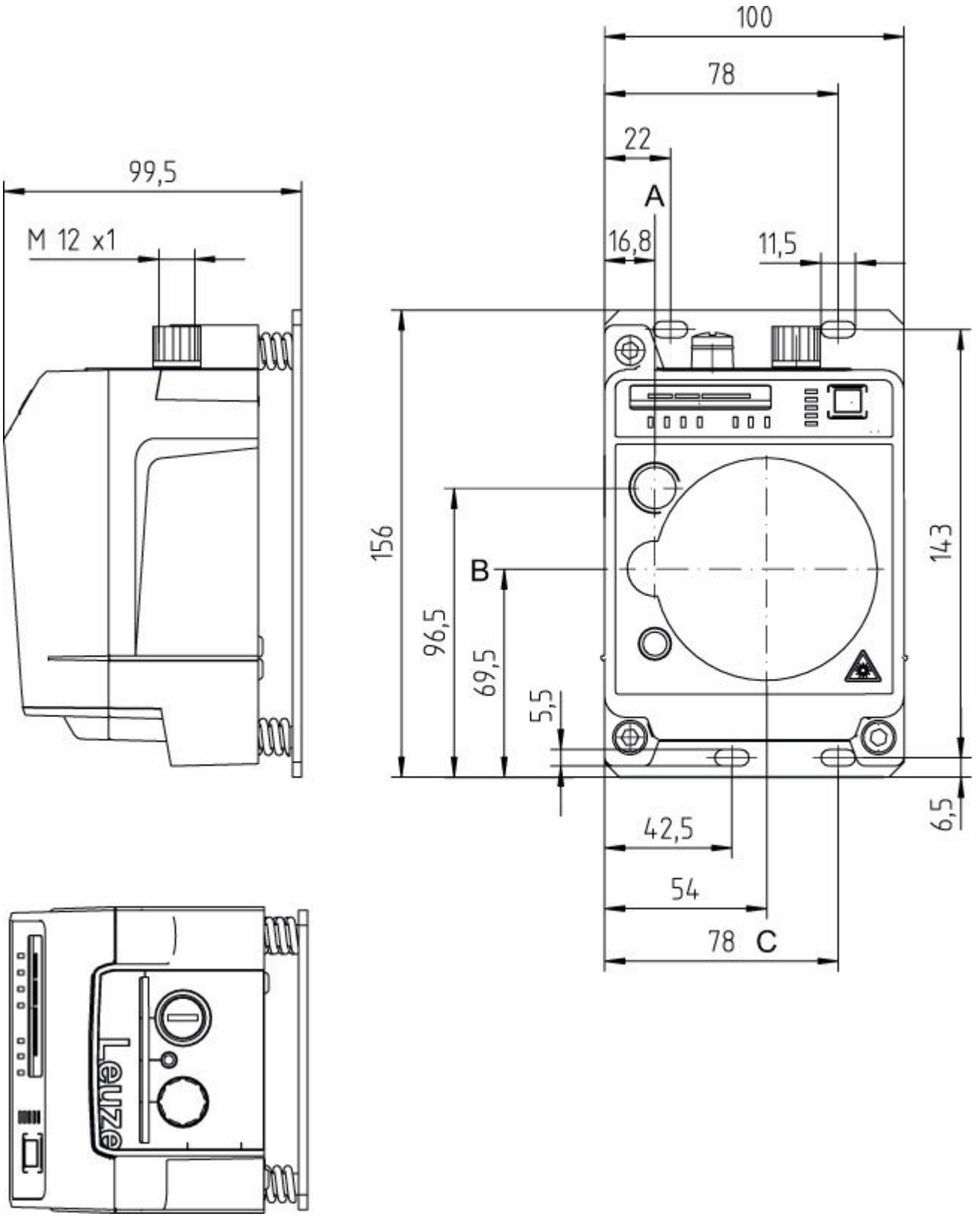
| *Environmental data* | |
|---|---|
| Ambient temperature, operation | -35 ... 50 °C |
| Ambient temperature, storage | -35 ... 70 °C |

| *Certifications* | |
|---|---|
| Degree of protection | IP 65 |
| Certifications | c UL US |
| Test procedure for EMC in accordance with standard | EN 61000-6-2<br>EN 1000-6-4 |
| Test procedure for noise in accordance with standard | EN 60068-2-64 |
| Test procedure for oscillation in accordance with standard | EN 60068-2-6 |
| Test procedure for shock in accordance with standard | EN 60068-2-27 |

| *Classification* | |
|---|---|
| eCl@ss 8.0 | 27100990 |
| eCl@ss 9.0 | 27100990 |

## Dimensioned drawings

All dimensions in millimeters

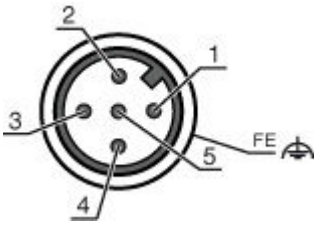



A Middleaxis Transmitter
B Center axis of transmitter and receiver
C Center axis of receiver

## Electrical connection

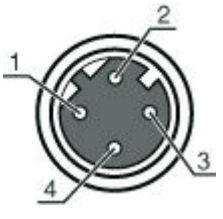
| Connection 1 | POWER |
|---|---|
| Type of connection | Connector |
| Function | Voltage supply<br>Signal IN<br>Signal OUT |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

| Pin | Pin assignment |
|---|---|
| 1 | VIN |
| 2 | IO1 |
| 3 | GND |
| 4 | IO2 |
| 5 | FE/SHIELD |




| Connection 2 | BUS |
|---|---|
| Type of connection | Connector |
| Function | BUS IN |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |

| Pin | Pin assignment |
|---|---|
| 1 | TD+ |
| 2 | RD+ |
| 3 | TD- |
| 4 | RD- |




## Operation and display

### LEDs

| LED | | Display | Meaning |
|---|---|---|---|
| 1 | AUT | Off | Operating mode not active |
| | | Green, continuous light | Operating mode 'Automatic' |
| 2 | MAN | Off | Operating mode not active |
| | | Green, continuous light | Operating mode 'Manual' |
| 3 | ADJ | Off | Operating mode not active |
| | | Green, continuous light | Operating mode 'Adjust' |
| 4 | LAS | Off | Operating mode not active |
| | | Green, continuous light | Operating mode 'Alignment-laser mounting support' |

| LED | | Display | Meaning |
|---|---|---|---|
| 5 | LLC | Off | Operating mode not active |
| | | Green, continuous light | LLC without interruption |
| | | Red, continuous light | LLC interrupted at least once |
| 6 | PWR | Off | No supply voltage |
| | | Green, flashing | Device ok, initialization phase |
| | | Green, continuous light | Data transmission active |
| | | Red, flashing | Data transmission interrupted |
| | | Red, continuous light | Device error |
| 7 | TMP | Off | Operating temperature OK |
| | | Orange, continuous light | Operating temperature critical |
| | | Red, continuous light | Operating temperature exceeded or not met |
| 8 | LSR | Off | With function reserve |
| | | Orange, continuous light | Device OK, warning set |
| 9 | BUS | Off | not active for the DDLS 508i |
| 10 | OLK | Off | Fault |
| | | Green, continuous light | No data transmission |
| | | Orange, continuous light | Data transmission active |
| 11 | ERL | Off | Link OK |
| | | Orange, continuous light | Missing link (Ethernet cable connection) on the second device |
| | | Red, continuous light | No cable-connected link to the connected device |
| 12 | LINK | Off | No cable-connected link to the connected device |
| | | Green, continuous light | Link OK |
| | | Orange, continuous light | Data transmission active |
| 13 | SIGNAL QUALITY | 2 red, 2 orange and 4 green | Received signal level |

## Suitable transmitters

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50134397 | DDLS 508i 40.3 H | Optical data transmission | Working range: 100 ... 40,000 mm<br>Interface: Ethernet<br>Connection: Connector, M12<br>Special design: Operation of parallel light axes, Heating, Not influenced by reflective surfaces, Remote maintenance via web server |

## Part number code

Part designation: **DDLS 5XXX YYY.Z A B C**

| | |
|---|---|
| DDLS | Optical transceiver for digital data transmission |
| 5XXX | **Series:**<br>508i: without integrated web server for remote diagnostics<br>508i: with integrated web server for remote diagnostics<br>548i: with integrated web server for remote diagnostics |
| YYY | Range for data transmission in m |
| Z | **Frequency of the transmitter:**<br>0: Frequency F0<br>1: Frequency F1<br>2: Frequency F2<br>3: Frequency F3<br>4: Frequency F4 |
| A | **Option:**<br>L: integrated laser alignment aid (for transmitter/receiver) |

| | |
|---|---|
| B | **Special equipment:**<br>H: with heating |
| C | **Special equipment:**<br>W: transmission optics with larger opening angle (on request) |

## Notes

**Observe intended use!**

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.

**For UL applications:**

- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).

**WARNING! INVISIBLE LASER RADIATION – LASER CLASS 1M**

- **Never observe directly using telescope optics!**
  The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product of **laser class 1M** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24, 2007.
- Looking into the beam path for extended periods using telescope optics may damage the eye's retina. Never look using telescope optics into the laser beam or in the direction of reflecting beams.
- CAUTION! The use of operating and adjusting devices other than those specified here or the carrying out of differing procedures may lead to dangerous exposure to radiation!
  The use of optical instruments or devices (e.g., magnifying glasses, binoculars) in combination with the device increases the danger of eye damage.
- Observe the applicable statutory and local laser protection regulations.
- The device must not be tampered with and must not be changed in any way.
  There are no user-serviceable parts inside the device.
  Repairs must only be performed by Leuze electronic GmbH + Co. KG.

## Accessories

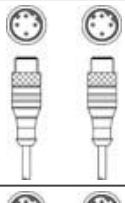
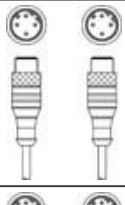
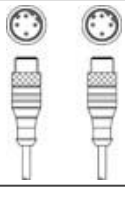
### Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50132077 | KD U-M12-5A-V1-020 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PVC |
|  | 50132079 | KD U-M12-5A-V1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC |

## Part no.: 50134398 – DDLS 508i 40.4 H – Optical data transmission

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50132080 | KD U-M12-5A-V1-100 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 10,000 mm<br>Sheathing material: PVC |
|  | 50135073 | KS ET-M12-4A-P7-020 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR |
|  | 50135074 | KS ET-M12-4A-P7-050 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |
|  | 50135075 | KS ET-M12-4A-P7-100 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 10,000 mm<br>Sheathing material: PUR |
|  | 50135076 | KS ET-M12-4A-P7-150 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 15,000 mm<br>Sheathing material: PUR |
|  | 50135077 | KS ET-M12-4A-P7-300 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 30,000 mm<br>Sheathing material: PUR |

## Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50137077 | KSS ET-M12-4A-M12-4A-P7-020 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Shielded: Yes<br>Cable length: 1,000 mm<br>Sheathing material: PUR |
|  | 50137078 | KSS ET-M12-4A-M12-4A-P7-050 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Shielded: Yes<br>Cable length: 1,000 mm<br>Sheathing material: PUR |
|  | 50137079 | KSS ET-M12-4A-M12-4A-P7-100 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Shielded: Yes<br>Cable length: 10,000 mm<br>Sheathing material: PUR |

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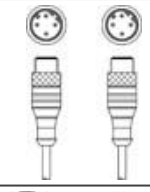
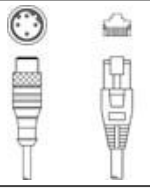
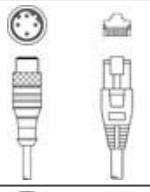
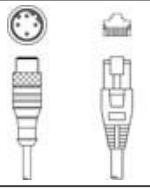
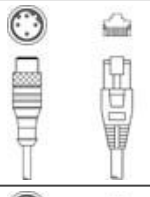
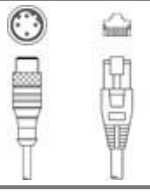
| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50137080 | KSS ET-M12-4A-M12-4A-P7-150 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Shielded: Yes<br>Cable length: 15,000 mm<br>Sheathing material: PUR |
|  | 50135080 | KSS ET-M12-4A-RJ45-A-P7-020 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR |
|  | 50135081 | KSS ET-M12-4A-RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |
|  | 50135082 | KSS ET-M12-4A-RJ45-A-P7-100 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 10,000 mm<br>Sheathing material: PUR |
|  | 50135083 | KSS ET-M12-4A-RJ45-A-P7-150 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 15,000 mm<br>Sheathing material: PUR |
|  | 50135084 | KSS ET-M12-4A-RJ45-A-P7-300 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 30,000 mm<br>Sheathing material: PUR |

## Connection technology - Connectors

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50108991 | D-ET1 | Connector | Suitable for interface: Ethernet<br>Connection: RJ45 |
|  | 50020501 | KD 095-5A | Connector | Connection: Connector, M12, Axial, Female, A-coded, 5 -pin |
|  | 50112155 | S-M12A-ET | Connector | Suitable for interface: Ethernet<br>Connection: Connector, M12, Axial, Male, D-coded, 4 -pin |

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## Connection technology - Adapters

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50109832 | KDS ET-M12 / RJ45 W-4P | Adapter | Suitable for: Ethernet<br>Number of connections: 2 Piece(s)<br>Connection 1: Connector, M12, Angled, Female, D-coded, 4 -pin<br>Connection 2: RJ45 |

## Mounting technology - Other

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50126757 | BTX 0500 M | Adapter plate | Design of mounting device: Adapter plate<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal |

## Services

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | S981001 | CS10-S-110 | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10 hours.<br>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.<br>Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment. |
|  | S981005 | CS10-T-110 | Product training | Details: Location and content to be agreed upon, duration: max. 10 hours.<br>Conditions: Price not including travel costs and, if applicable, accommodation expenses.<br>Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure. |