

Technical data sheet

Optical data transmission

Part no.: 50131029

DDLS 508 40.0 L

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- Electrical connection
- Operation and display
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For illustration purposes only



Ethernet



Technical data

Basic data

Series	DDLS 500
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Special version

Special version	Integrated laser alignment aid
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Optical data

Working range	100 ... 40,000 mm
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Light source	Laser
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Transmission frequency	F0
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Opening angle	1 °
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Electrical data

Performance data

Supply voltage U_B	18 ... 30 V, DC
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Inputs

Number of digital switching inputs	1 Piece(s)
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Outputs

Number of digital switching outputs	1 Piece(s)
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Interface

Transmission protocol	EtherNET/IP
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PROFINET IO / RT

PROFINET IRT

PROFINET/PROFIsafe

TCP/IP 100 Mbit

Type	EtherNet TCP/ IP, PROFINET, PROFIsafe over PROFINET
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Ethernet

Architecture	Transparent
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Address assignment	None
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Transmission speed	100 Mbit/s
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Function	Process
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Switch functionality	None
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Transmission protocol	TCP/IP , UDP
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PROFINET

Function	Process
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Conformance class	B
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Switch functionality	None
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Transmission speed	100 Mbit/s
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Connection

Number of connections	2 Piece(s)
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Connection 1

Type of connection	Connector
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Designation on device	POWER
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Thread size	M12
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Type	Male
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No. of pins	5 -pin
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Encoding	A-coded
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Connection 2

Type of connection	Connector
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Designation on device	BUS
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Thread size	M12
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Type	Female
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No. of pins	4 -pin
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Encoding	D-coded
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Mechanical data

Dimension (W x H x L)	100 mm x 156 mm x 99.5 mm
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Housing material	Metal
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Net weight	1,255 g
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Operation and display

Type of display	Bar graph
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LED

Environmental data

Ambient temperature, operation	-5 ... 50 °C
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Ambient temperature, storage	-35 ... 70 °C
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Certifications

Degree of protection	IP 65
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Approvals	c UL US
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Test procedure for EMC in accordance with standard	EN 1000-6-4 EN 61000-6-2
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Test procedure for noise in accordance with standard	EN 60068-2-64
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Test procedure for oscillation in accordance with standard	EN 60068-2-6
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Test procedure for shock in accordance with standard	EN 60068-2-27
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Classification

Customs tariff number	84718000
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ECLASS 5.1.4	19039001
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ECLASS 8.0	19179090
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ECLASS 9.0	19179090
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ECLASS 10.0	19170506
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ECLASS 11.0	19170506
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ECLASS 12.0	19170506
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ECLASS 13.0	19170506
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ECLASS 14.0	19170506
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ECLASS 15.0	19170506
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ETIM 5.0	EC000515
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ETIM 6.0	EC000515
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ETIM 7.0	EC000515
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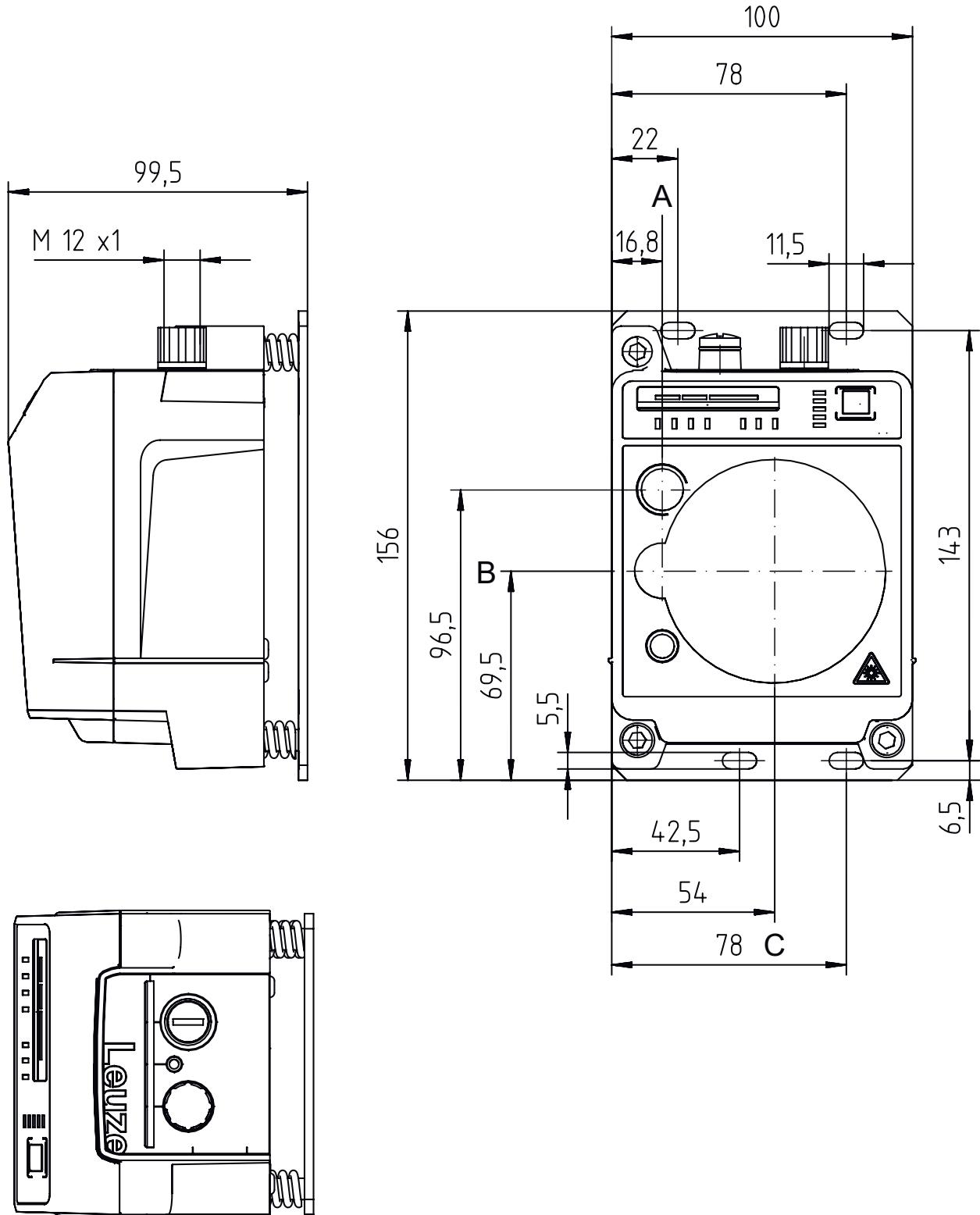
ETIM 8.0	EC000515
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ETIM 9.0	EC000515
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ETIM 10.0	EC000515
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Dimensioned drawings

All dimensions in millimeters



A Center axis of transmitter and alignment laser

B Center axis of transmitter and receiver

C Center axis of receiver

Electrical connection

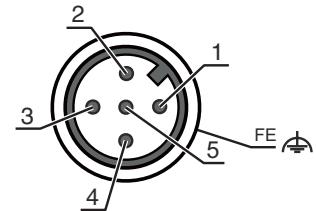
Connection 1

POWER

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
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



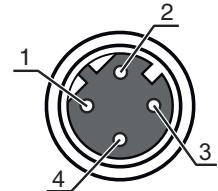
Connection 2

BUS

Function	BUS IN
Type of connection	Connector
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

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"
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

Operation and display

LED	Display	Meaning
7 TMP	Red, continuous light	Operating temperature exceeded or not met
8 LSR	Off	With function reserve
	Orange, continuous light	Device OK, warning set
9 FRE	Off	Transmission frequency F1 preselected
	Green, continuous light	Transmission frequency F2 preselected (factory setting)
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
	50131029 DDLS 508 40.0 L	Optical data transmission	Special version: Integrated laser alignment aid Working range: 100 ... 40,000 mm Transmission frequency: F0 Interface: EtherNet TCP/IP, PROFINET Connection: Connector, M12

Part number code

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

DDLS	Optical transceiver for digital data transmission
5XXX	Series 508i: without integrated web server for remote diagnostics 508i: with integrated web server for remote diagnostics 538: without integrated web server for remote diagnostics (EtherCAT) 548i: with integrated web server for remote diagnostics
YYY	Range for data transmission in m
Z	Frequency of the transmitter 0: Frequency F0 1: Frequency F1 2: Frequency F2 3: Frequency F3 4: Frequency F4
A	Option L: integrated laser alignment aid (for transmitter/receiver) n/a: standard
B	Special equipment H: with heating n/a: no special equipment
CC	Special equipment W: transmission optics with larger opening angle (on request) n/a: no special equipment

Note

	↳ A list with all available device types can be found on the Leuze website at www.leuze.com .
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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).



ATTENTION! INVISIBLE LASER RADIATION – CLASS 1M LASER PRODUCT



Do not expose users of telescopic 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.

⌚ Do not expose users of telescopic 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.



ATTENTION! LASER RADIATION – CLASS 1 LASER PRODUCT (alignment laser)



The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product of **laser class 1** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to Laser Notice No. 50 from June 24, 2007.

⌚ The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product of **laser class 1** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to Laser Notice No. 50 from June 24, 2007.

⌚ 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
 	50132079 KD U-M12-5A-V1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC
 	50135074 KS ET-M12-4A-P7-050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

Connection technology - Interconnection cables

Part no.	Designation	Article	Description
 	50137078 KSS ET-M12-4A-M12-4A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR
 	50135081 KSS ET-M12-4A-RJ45-A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

Connection technology - Connectors

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

Accessories

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. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.
	S981005	CS10-T-110	Product training Details: Location and content to be agreed upon, duration: max. 10 hours. Conditions: Price not including travel costs and, if applicable, accommodation expenses.

Note

↳ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.