### Leuze

### **Technical data sheet Optical data transmission**

Part no.: 50132925 DDLS 508 40.3 L



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Leuze electronic GmbH + Co. KG

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### **Technical data**

#### **Basic data** Series **DDLS 500 Special version** Special version Integrated laser alignment aid Not influenced by reflective surfaces Operation of parallel light axes **Optical data** 100 ... 40,000 mm Working range Laser Light source F3 Transmission frequency Opening angle 1 ° **Electrical data** Performance data 18 ... 30 V, DC Supply voltage U<sub>B</sub> Inputs Number of digital switching inputs 1 Piece(s) Outputs Number of digital switching outputs 1 Piece(s) Interface PROFINET IRT Туре EtherNET/IP **Transmission protocol** PROFINET IO / RT **PROFINET IRT** PROFINET/PROFIsafe TCP/IP 100 Mbit Туре EtherNet TCP/ IP, PROFINET, PROFIsafe over PROFINET Ethernet Architecture Transparent Address assignment None Transmission speed 100 Mbit/s Function Process Switch functionality None TCP/IP, UDP Transmission protocol PROFINET Function Process Conformance class В Switch functionality None Transmission speed 100 Mbit/s Connection Number of connections 2 Piece(s) **Connection 1**

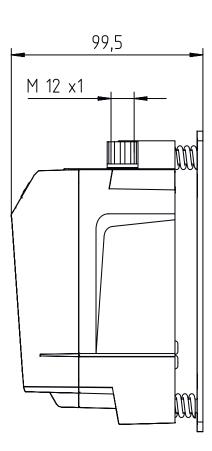
Type of connection	Connector
Designation on device	POWER
Thread size	M12
Туре	Male
No. of pins	5 -pin
Encoding	A-coded

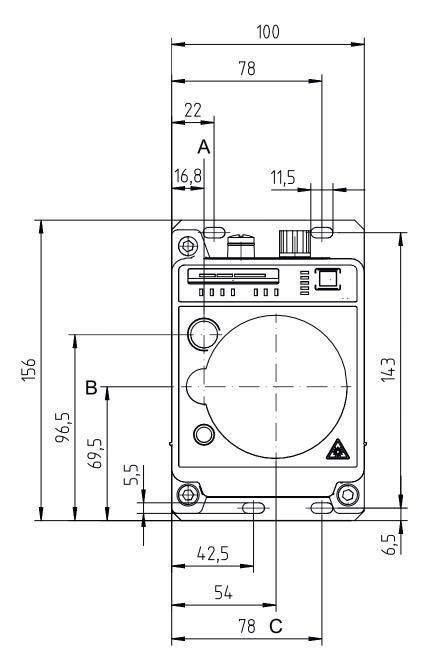
# Leuze

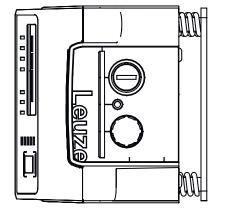
Connection 2			
Type of connection	Connector		
Designation on device	BUS		
Thread size	M12		
Туре	Female		
No. of pins	4 -pin		
Encoding	D-coded		
Mechanical data			
Dimension (W x H x L)	100 mm x 156 mm x 99.5 mm		
Housing material	Metal		
Net weight	1,255 g		
Operation and display			
Operation and display			
Type of display	Bar graph		
	LED		
Environmental data			
Ambient temperature, operation	-5 50 °C		
Ambient temperature, storage	-35 70 °C		
Certifications			
Degree of protection	IP 65		
Certifications	c UL US		
Test procedure for EMC in accordance	EN 1000-6-4		
with standard	EN 61000-6-2		
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	EN 60068-2-27		
accordance with standard			
Classification			
Customs tariff number	84718000		
ECLASS 5.1.4	19039001		
ECLASS 8.0	19179090		
ECLASS 9.0	19179090		
ECLASS 10.0	19170506		
ECLASS 11.0	19170506		
ECLASS 12.0	19170506		
ECLASS 13.0	19170506		
ECLASS 14.0	19170506		
ETIM 5.0	EC000515		
ETIM 6.0	EC000515		
ETIM 7.0	EC000515		
ETIM 8.0	E0000545		
	EC000515		
ETIM 9.0	EC000515		

### **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

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#### **Electrical connection**

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

#### Pin **Pin assignment**

1	VIN	()
2	IO1	
3	GND	3
4	102	
5	FE/SHIELD	4

# <sup>FE</sup>♠

#### **Connection 2**

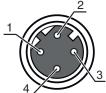
Connection 2	BUS	
Function	BUS IN	
Type of connection	Connector	
Thread size	M12	
Туре	Female	
Material	Metal	
No. of pins	4 -pin	
Encoding	D-coded	

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

### **Operation and display**

ED	Display	Meaning
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"
ADJ	Off	Operating mode not active
	Green, continuous light	Operating mode "Adjust"
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
<b>PWR</b>	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
TMP	Off	Operating temperature OK
	Orange, continuous light	Operating temperature critical

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### **Operation and display**

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LED	)	Display	Meaning
7	ТМР	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 508
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
	SIGNAL QUALITY	2 red, 2 orange and 4 green	Received signal level

#### Suitable receivers

 Part no.	Designation	Article	Description
50132926	DDLS 508 40.4 L	Optical data transmission	Special version: Operation of parallel light axes, Integrated laser alignment aid, Not influenced by reflective surfaces Working range: 100 40,000 mm Transmission frequency: F4 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
В	Special equipment H: with heating n/a: no special equipment
сс	Special equipment W: transmission optics with larger opening angle (on request) n/a: no special equipment

	Note
1	∜ A list with all available device types can be found on the Leuze website at www.leuze.com.

#### Notes

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#### Observe intended use!

✤ This product is not a safety sensor and is not intended as personnel protection.

b The product may only be put into operation by competent persons.



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 <b>laser class 1M</b> as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to Laser Notice No. 50 from June 24, 2007.
So 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.
S Looking into the beam path for extended periods using telescope optics may damage the eye's retina. Never look using telescope optics into the lase beam or in the direction of reflecting beams.
<ul> <li>CAUTION! The use of operating and adjusting devices other than those specified here or the carrying out of differing procedures may lead to danger exposure to radiation!</li> <li>The use of optical instruments or devices (e.g., magnifying glasses, binoculars) in combination with the device increases the danger of eye damage.</li> </ul>
to 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.

<sup>th</sup> 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.
- <sup>t</sup> 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

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### 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
Ŵ	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
Contraction of the second	50112155	S-M12A-ET	Connector	Suitable for interface: Ethernet Connection: Connector, M12, Axial, Male, D-coded, 4 -pin

#### Accessories

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#### Services

	Part no.	Designation	Article	Description
у. U	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
6	A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.