Leuze

Technical data sheet Optical data transmission

Part no.: 50131029 DDLS 508 40.0 L



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Technical data

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Basic data			
Series	DDLS 500		
Special version			
Special version	Integrated laser alignment aid		
Optical data			
Working range	100 40,000 mm		
Light source	Laser		
Transmission frequency	F0		
Usable opening angle transmitter	1 °		
Electrical data			

18 ... 30 V, DC

Electrical data

Performance data Supply voltage U_B

Inputs

Number of digital switching inputs 1 Piece(s)

Outputs Number of digital switching outputs 1 Piece(s)

Interface

Туре

No. of pins

Encoding

Туре	Ethernet, PROFIsafe over PROFINET
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
Туре	Male
No. of pins	5 -pin
Encoding	A-coded
Connection 2	
Type of connection	Connector
Designation on device	BUS
Thread size	M12

Female

4 -pin

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		
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 accordanc with standard	e 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		
Customs tariff number	85365019	
ECLASS 5.1.4	19039001	
ECLASS 8.0	19179090	
ECLASS 9.0	19179090	
ECLASS 10.0	19179090	
ECLASS 11.0	19179090	
	19179090	
ECLASS 12.0	19179090	
ECLASS 12.0 ECLASS 13.0	19179090	

EC000515

EC000310

EC000310

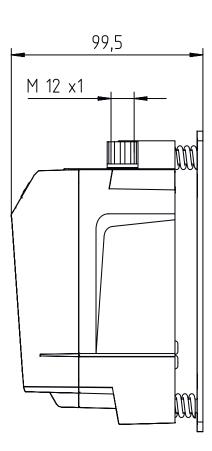
ETIM 6.0

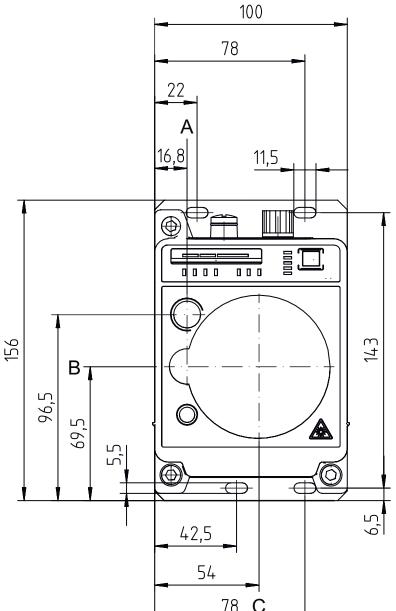
ETIM 7.0

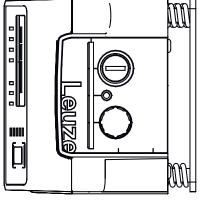
ETIM 8.0

Dimensioned drawings

All dimensions in millimeters



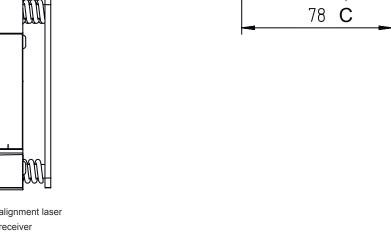




A Center axis of transmitter and alignment laser

B Center axis of transmitter and receiver

C Center axis of receiver



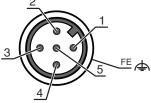


Electrical connection

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

Pin **Pin assignment**

1	VIN	
2	I01	
3	GND	3
4	102	
5	FE/SHIELD	4



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	

1 TD+ 2 RD+ 3 TD- 4 RD-	Pin	Pin assignment
3 TD-	1	TD+
	2	RD+
4 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 1	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"
1 1	LAS	Off	Operating mode not active
		Green, continuous light	Operating mode "Alignment-laser mounting support"
	LLC	Off	Operating mode not active
		Green, continuous light	LLC without interruption
		Red, continuous light	LLC interrupted at least once
	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
	ТМР	Off	Operating temperature OK
		Orange, continuous light	Operating temperature critical

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Operation and display



LED		Display	Meaning	
7 TN	MP	Red, continuous light	Operating temperature exceeded or not met	
8 LS	SR	Off	With function reserve	
		Orange, continuous light	Device OK, warning set	
9 FF	RE	Off	Transmission frequency F1 preselected	
		Green, continuous light	Transmission frequency F2 preselected (factory setting)	
10 OI	LK	Off	Fault	
		Green, continuous light	No data transmission	
		Orange, continuous light	Data transmission active	
11 EF	RL	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 LI	INK	Off	No cable-connected link to the connected device	
		Green, continuous light	Link OK	
		Orange, continuous light	Data transmission active	
	IGNAL UALITY	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 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
Not	e



♦ 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.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$ 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 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.
	bo 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.
	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 danger 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.

th 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.
- ^t 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
W D	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 with screw terminals, 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

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Services

	Part no.	Designation	Article	Description
y; 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. 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. Conditions: Price not including travel costs and, if applicable, accommodation expenses. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.

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