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Part no.: 66502100
MLD500-T2L
Multiple light beam safety device
transmitter



Contents

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Technical data

Basic data	
Series	MLD 500
Device type	Transmitter
Special design	
Special design	Integrated laser alignment aid
Functions	
Functions	Range reduction
Characteristic parameters	
Type	4 , IEC/EN 61496
SIL	3 , IEC 61508
SILCL	3 , IEC/EN 62061
MTTF _d	204 years , EN ISO 13849-1
Mission time T _M	20 years , EN ISO 13849-1
Protective field data	
Operating range	0.5 ... 50 m
Optical data	
Number of beams	2 Piece(s)
Beam spacing	500 mm
Light source	LED , Infrared
LED light wavelength	850 nm
Mean power of transmitter diode	1.369 μW
Transmitted-signal shape	Pulsed
LED group	Exempt group in acc. with EN 62471:2008
Electrical data	
Protective circuit	Overvoltage protection Short circuit protected
Performance data	
Supply voltage U _B	24 V , DC , -20 ... 20 %
Current consumption, max.	50 mA , Without external load
Fuse	External with max. 3 A
Connection	
Number of connections	1 Piece(s)
Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Material	Metal
No. of pins	5 -pin

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Cable properties

Permissible conductor cross section, typ.	0.25 mm ²
Length of connection cable, max.	100 m
Permissible cable resistance to load, max.	200 Ω

Mechanical data

Dimension (W x H x L)	52 mm x 600 mm x 64.7 mm
Housing material	Metal , Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	1,400 g
Housing color	Yellow, RAL 1021
Type of fastening	Groove mounting Swivel mount

Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)

Environmental data

Ambient temperature, operation	-30 ... 55 °C
Ambient temperature, storage	-40 ... 75 °C
Relative humidity (non-condensing)	0 ... 95 %

Certifications

Degree of protection	IP 67
Protection class	III
Certifications	c CSA US c TÜV NRTL US TÜV Süd
US patents	US 6,418,546 B US 7,741,595 B

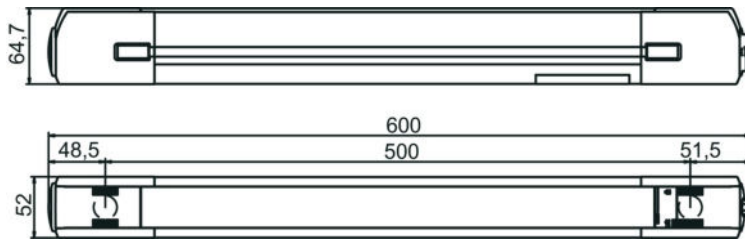
Classification

Customs tariff number	85365019
eCl@ss 8.0	27272703
eCl@ss 9.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832

Dimensioned drawings

All dimensions in millimeters

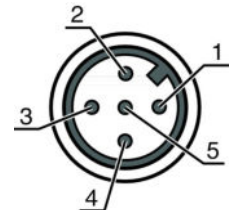
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Electrical connection

Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Pin	Pin assignment	Conductor color
1	+24V	Brown
2	n.c.	White
3	0 V	Blue
4	n.c.	Black
5	n.c.	Gray




Operation and display



LEDs

LEDs per light axis	Meaning
Green, continuous light	Transmitted beam active
Off	Transmitted beam not active

Suitable receivers

	Part no.	Designation	Article	Description
	66536100	MLD510-R2L	Multiple light beam safety device receiver	Number of beams: 2 Piece(s) Beam spacing: 500 mm Response time: 25 ms Connection: Connector, M12, Metal, 5 -pin Special design: Reflective element for laser alignment aid

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	Part no.	Designation	Article	Description
	66556100	MLD520-R2L	Multiple light beam safety device receiver	Number of beams: 2 Piece(s) Beam spacing: 500 mm Response time: 25 ms Connection: Connector, M12, Metal, 8 -pin Special design: Reflective element for laser alignment aid
	66566100	MLD530-R2L	Multiple light beam safety device receiver	Number of beams: 2 Piece(s) Beam spacing: 500 mm Response time: 50 ms Connection: Connector, M12, Metal, 8 -pin Special design: Reflective element for laser alignment aid
	66565100	MLD530-R2LM	Multiple light beam safety device receiver	Number of beams: 2 Piece(s) Beam spacing: 500 mm Response time: 50 ms Connection: Connector, M12, Metal, 8 -pin Special design: Integrated muting indicator, Integrated status indicator, Reflective element for laser alignment aid
	66576100	MLD535-R2L	Multiple light beam safety device receiver	Number of beams: 2 Piece(s) Beam spacing: 500 mm Response time: 50 ms Connection: Connector, M12, Metal, 8 -pin Special design: Reflective element for laser alignment aid
	66555100	MLD520-R2LM	Multiple light beam safety device receiver	Number of beams: 2 Piece(s) Beam spacing: 500 mm Response time: 25 ms Connection: Connector, M12, Metal, 8 -pin Special design: Integrated status indicator, Reflective element for laser alignment aid

Part number code

Part designation: **MLDxyy-zab/t**

MLD	Multiple light beam safety device
x	Series: 3: MLD 300 5: MLD 500
yy	Function classes: 00: transmitter 10: automatic restart 12: external testing 20: EDM/RES 30: muting 35: timing controlled 4-sensor muting
z	Device type: T: transmitter R: receiver RT: transceiver xT: transmitter with high range xR: receiver for high range
a	Number of beams
b	Option: L: integrated laser alignment aid (for transmitter/receiver) M: integrated status indicator (MLD 320, MLD 520) or integrated status and muting indicator (MLD 330, MLD 335, MLD 510/A, MLD 530, MLD 535) E: connection socket for external muting indicator (AS-i models only)
/t	Safety-related switching outputs (OSSDs), connection technology: -: transistor output, M12 plug A: integrated AS-i interface, M12 plug, (safety bus system)

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Note

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

Notes

WARNING! LASER RADIATION – LASER CLASS 2

Never look directly into the beam!

The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product of **laser class 2** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24, 2007.

- Never look directly into the laser beam or in the direction of reflected laser beams! If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- Do not point the laser beam of the device at persons!
- Interrupt the laser beam using a non-transparent, non-reflective object if the laser beam is accidentally directed towards a person.
- When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- CAUTION! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.
- 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.

NOTE


Affix laser information and warning signs!

Laser information and warning signs are affixed to the device. In addition, self-adhesive laser information and warning signs (stick-on labels) are supplied in several languages.

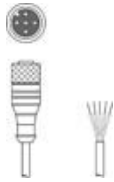

- Affix the laser information sheet to the device in the language appropriate for the place of use. When using the device in the US, use the stick-on label with the "Complies with 21 CFR 1040.10" note.
- Affix the laser information and warning signs near the device if no signs are attached to the device (e.g. because the device is too small) or if the attached laser information and warning signs are concealed due to the installation position.
- Affix the laser information and warning signs so that they are legible without exposing the reader to the laser radiation of the device or other optical radiation.

Accessories



Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50133859	KD S-M12-5A-P1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR

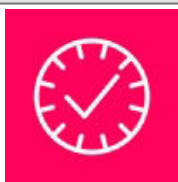
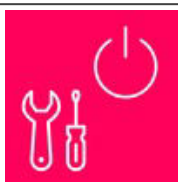
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	Part no.	Designation	Article	Description
	50133860	KD S-M12-5A-P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50136146	KD S-M12-5A-P1-250	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PVC

Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
	560340	BT-SET-240BC	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240° Material: Metal
	540350	BT-SET-240BC-E	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240° Material: Metal, Plastic

Services

	Part no.	Designation	Article	Description
	S981050	CS40-I-140	Safety inspection "Safety light barriers"	Details: Checking of a safety light barrier application in accordance with current standards and guidelines. Inclusion of the device and machine data in a database, production of a test log per application. Conditions: It must be possible to stop the machine, support provided by customer's employees and access to the machine for Leuze employees must be ensured. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.
	S981046	CS40-S-140	Start-up support	Details: For safety devices including stopping time measurement and initial inspection. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. Restrictions: Max. 2 h., no mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.