



Figure can vary

**Part no.: 66536600**  
**MLD510-XR3L**  
**Multiple light beam safety device receiver**



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## Technical data

<b>Basic data</b>	
Series	MLD 500
Device type	Receiver
<b>Special design</b>	
Special design	Reflective element for laser alignment aid
<b>Functions</b>	
Functions	Automatic restart
<b>Characteristic parameters</b>	
Type	4, IEC/EN 61496
SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
MTTF <sub>d</sub>	204 years, EN ISO 13849-1
PFH <sub>D</sub>	6.6E-09 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	4, EN ISO 13849
<b>Optical data</b>	
Number of beams	3 Piece(s)
Beam spacing	400 mm
<b>Electrical data</b>	
Protective circuit	Overvoltage protection Short circuit protected
<b>Performance data</b>	
Supply voltage	24 V, DC, -20 ... 20 %
Current consumption, max.	150 mA, Without external load
Fuse	External with max. 3 A

**Outputs**

Number of safety-related switching outputs (OSSDs) 2 Piece(s)

**Safety-related switching outputs**

Type Safety-related switching output OSSD

Switching voltage high, min. 18.2 V

Switching voltage low, max. 2.5 V

Switching voltage, typ. 23 V

Voltage type DC

Current load, max. 380 mA

 Load inductivity 2,200,000  $\mu$ H

 Load capacity 0.3  $\mu$ F

Residual current, max. 0.2 mA

Residual current, typ. 0.002 mA

Voltage drop 1 V

**Safety-related switching output 1**

Assignment Connection 1, pin 2

Switching element Transistor, PNP

**Safety-related switching output 2**

Assignment Connection 1, pin 4

Switching element Transistor, PNP

**Timing**

Response time 25 ms

Restart delay time 100 ms

**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

**Cable properties**

 Permissible conductor cross section, typ. 0.25 mm<sup>2</sup>

Length of connection cable, max. 100 m

 Permissible cable resistance to load, max. 200  $\Omega$ 
**Mechanical data**

Dimension (W x H x L) 52 mm x 900 mm x 64.7 mm

Housing material Metal, Aluminum

Lens cover material Plastic / PMMA

Material of end caps Diecast zinc

Net weight 2,000 g

Housing color Yellow, RAL 1021

 Type of fastening Groove mounting  
Swivel mount

**Operation and display**

Type of display LED

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Number of LEDs	1 Piece(s)
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**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 TÜV NRTL US TÜV Süd c CSA US
US patents	US 6,418,546 B US 7,741,595 B

**Classification**

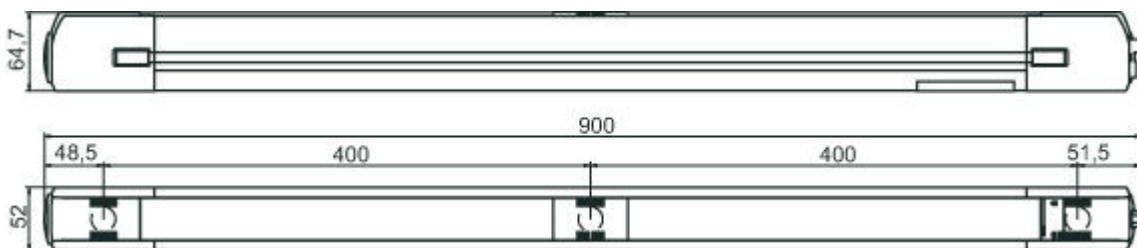
eCl@ss 8.0	27272703
eCl@ss 9.0	27272703
ETIM 5.0	EC001832

**Suitable transmitters**

	Part no.	Designation	Article	Description
	66502600	MLD500-XT3L	Multiple light beam safety device transmitter	Operating range: 20 ... 70 m Number of beams: 3 Piece(s) Beam spacing: 400 mm Connection: Connector, M12, Metal, 5 -pin Special design: Integrated laser alignment aid

**Dimensioned drawings**

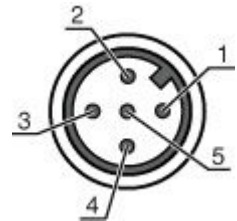
All dimensions in millimeters



## 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	OSSD1	White
3	0 V	Blue
4	OSSD2	Black
5	n.c.	Gray



## Operation and display

### LEDs

LED	Display	Meaning
1	Red, continuous light	OSSD off.
	Green, continuous light	OSSD on
	Red, flashing, 1 Hz	External error
	Red, flashing, 10 Hz	Internal error
	Green, flashing, 1 Hz	Weak signal, device not optimally aligned or soiled.

## Part number code

Part designation: MLDxyy-zab/t







MLD	Multiple light beam safety device
x	<b>Series:</b> 3: MLD 300 5: MLD 500
yy	<b>Function classes:</b> 00: Transmitter 10: automatic restart 12: external testing 20: EDM/RES 30: muting 35: timing controlled 4-sensor muting
z	<b>Device type:</b> T: transmitter R: receiver RT: transceiver xT: transmitter with high range xR: receiver for high range
a	Number of beams

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<b>MLD</b>	<b>Multiple light beam safety device</b>
b	<b>Option:</b> 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	<b>Safety-related switching outputs (OSSDs), connection technology:</b> -: transistor output, M12 plug A: integrated AS-i interface, M12 plug, (safety bus system)

## Accessories




### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	678057	CB-M12-15000E-5GF	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR
	678058	CB-M12-25000E-5GF	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 25,000 mm Sheathing material: PUR
	678059	CB-M12-50000E-5GF	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 50,000 mm Sheathing material: PUR
	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
	50133861	KD S-M12-5A-P1-100	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: PUR


### Mounting technology - Swivel mounts

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





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	Part no.	Designation	Article	Description
	540350	BT-SET-240BC-E	Mounting bracket set	Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240° Material: Metal, Plastic
	560342	BT-SET-240BCS	Mounting bracket set	Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240°, Shock absorber Material: Metal Shock absorber: Yes
	540352	BT-SET-240BCS-E	Mounting bracket set	Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Shock absorber, Turning, 240° Material: Metal, Plastic Shock absorber: Yes




**Mounting technology - Other**

	Part no.	Designation	Article	Description
	424417	BT-2P40	Mounting bracket set	Contains: 2x BT-P40 clamp bracket Design of mounting device: Mounting clamp Mounting bracket, at system: Groove mounting Mounting bracket, at device: Groove mounting Type of mounting device: Clampable Material: Metal

**Device columns**

	Part no.	Designation	Article	Description
	549879	UDC-1140-S2	Device column	Dimensions: 160 mm x 1,200 mm x 149 mm Column height without foot: 1,140 mm Functions: Adjustable, 3 directions, Mounting and protection of light curtains and multiple light beam devices
	549852	UDC-1300-S2	Device column	Dimensions: 160 mm x 1,360 mm x 149 mm Column height without foot: 1,300 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions
	549853	UDC-1600-S2	Device column	Dimensions: 160 mm x 1,660 mm x 149 mm Column height without foot: 1,600 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions
	549854	UDC-1900-S2	Device column	Dimensions: 160 mm x 1,960 mm x 149 mm Column height without foot: 1,900 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions

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	Part no.	Designation	Article	Description
	549867	UDC-2100-S2	Device column	Dimensions: 160 mm x 2,160 mm x 149 mm Column height without foot: 2,100 mm Functions: Adjustable, 3 directions, Mounting and protection of light curtains and multiple light beam devices
	549857	UDC-2500-S2	Device column	Dimensions: 160 mm x 2,560 mm x 149 mm Column height without foot: 2,500 mm Functions: Adjustable, 3 directions, Mounting and protection of light curtains and multiple light beam devices
	549865	UDC-3100-S2	Device column	Dimensions: 160 mm x 3,160 mm x 149 mm Column height without foot: 3,100 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions