



Figure can vary

**Part no.: 66536301**  
**MLD510-R4L/A**  
**Multiple light beam safety device receiver**



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Part no.: 66536301 – MLD510-R4L/A – Multiple light beam safety device receiver

## 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
Reflective element for laser alignment aid	Yes
Integrated muting indicator	No
<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	4 Piece(s)
Beam spacing	300 mm
<b>Electrical data</b>	
<b>Performance data</b>	
Supply voltage	26.5 ... 31.6 V
Current consumption from AS-i circuit	140 mA
<b>Timing</b>	
Response time	30 ms
Restart delay time	100 ms
<b>Interface</b>	
Type	AS-Interface Safety at Work
<b>AS-i</b>	
Function	Process
AS-i profile	S-7.B.1
Slave address	1..31 programmable, default=0
Cycle time acc. to AS-i specifications	Max. 5 ms
<b>Connection</b>	
Number of connections	1 Piece(s)

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**Connection 1**

Type of connection	Connector
Function	Machine interface
Thread size	M12
Material	Metal
No. of pins	5 -pin

**Mechanical data**

Dimension (W x H x L)	52 mm x 1,000 mm x 64.7 mm
Housing material	Metal, Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	2,200 g
Housing color	Yellow, RAL 1021
Type of fastening	Groove mounting Swivel mount

**Operation and display**

Type of display	Integrated muting indicator 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 TÜV Süd c TÜV NRTL US
US patents	US 7,741,595 B US 6,418,546 B

**Classification**

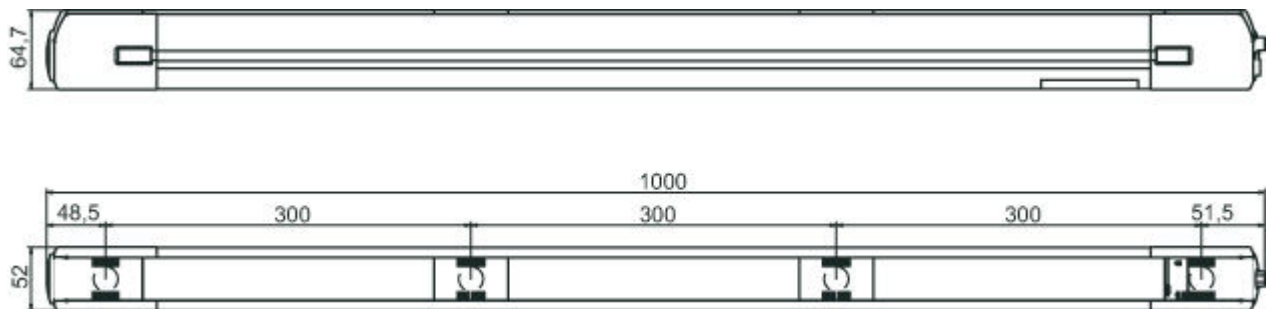
eCl@ss 8.0	27272703
eCl@ss 9.0	27272703
ETIM 5.0	EC001832

**Suitable transmitters**

	Part no.	Designation	Article	Description
	66502301	MLD500-T4L/A	Multiple light beam safety device transmitter	Operating range: 0.5 ... 50 m Number of beams: 4 Piece(s) Beam spacing: 300 mm Type of interface: AS-Interface Safety at Work Connection: Connector, M12, Metal, 5 -pin Special design: Integrated laser alignment aid

## Dimensioned drawings

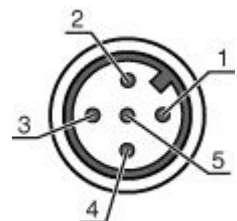
All dimensions in millimeters



## 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	AS-i+	Brown
2	n.c.	White
3	AS-i-	Blue
4	n.c.	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.
2	Yellow, continuous light	Start/restart interlock locked.
	Off	No voltage on AS-i cable.
	Red, continuous light	AS-i slave not communicating with AS-i master
	Yellow, flashing	AS-i slave has invalid address 0
	Red/green, flashing alternately	AS-i slave device error or AS-i connection defective
	Green, continuous light, flashing red at the same time	Periphery error
	Green, continuous light	AS-i slave communicating with AS-i master

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## 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
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

### 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
	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

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## 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
	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
	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