



Figure can vary

Part no.: 66537101
MLD510-RT2/A
Multiple light beam safety device
transmitter/receiver



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Part no.: 66537101 – MLD510-RT2/A – Multiple light beam safety device

Technical data

Basic data	
Series	MLD 500
Device type	Transceiver

Functions	
Functions	Automatic restart
Integrated laser alignment aid	No
Integrated muting indicator	No

Characteristic parameters	
Type	4, IEC/EN 61496
SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
MTTF _d	204 years, EN ISO 13849-1
PFH _D	6.6E-09 per hour
Mission time T _M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

Protective field data	
Operating range	0.5 ... 8 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	
Performance data	
Supply voltage	26.5 ... 31.6 V
Current consumption from AS-i circuit	140 mA

Timing	
Response time	30 ms
Restart delay time	100 ms

Interface	
Type	AS-Interface Safety at Work
AS-i	
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

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Connection

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 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	Swivel mount Groove mounting

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 7,741,595 B US 6,418,546 B

Classification

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

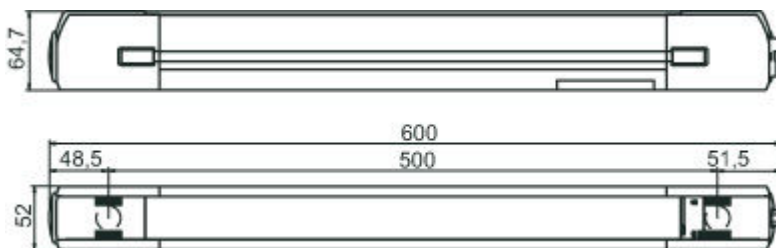
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Suitable deflecting mirrors

	Part no.	Designation	Article	Description
	66500100	MLD-M002	Deflecting mirror	Number of beams: 2 Piece(s) Beam spacing: 500 mm Type of fastening: Groove mounting, Swivel mount, Mounting on Device Column

Dimensioned drawings

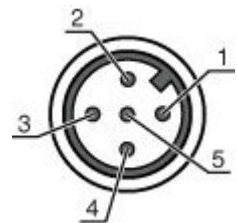
All dimensions in millimeters



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.

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LED	Display	Meaning
	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



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)

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



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	Part no.	Designation	Article	Description
	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








Alignment aids

	Part no.	Designation	Article	Description
	520023	LA-78M	Alignment aid	Light source: laser, Red Housing material: Metal
	520024	LA-78M-UDC	Alignment aid	Light source: laser, Red Housing material: Metal

Device columns

	Part no.	Designation	Article	Description
	549856	UDC-1000-S2	Device column	Dimensions: 160 mm x 1,060 mm x 149 mm Column height without foot: 1,000 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions
	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

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	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
	549855	UDC-900-S2	Device column	Dimensions: 160 mm x 960 mm x 149 mm Column height without foot: 900 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions