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



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

Technical data

Basic data	
Series	MLD 500
Device type	Receiver
Special design	
Special design	Reflective element for laser alignment aid
Functions	
Functions	Automatic restart
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
Optical data	
Number of beams	3 Piece(s)
Beam spacing	400 mm
Electrical data	
Protective circuit	Overvoltage protection Short circuit protected
Performance data	
Supply voltage	24 V, DC, -20 ... 20 %
Current consumption, max.	150 mA, Without external load
Fuse	External with max. 3 A

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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 μ H

Load capacity 0.3 μ 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 mm²

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 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

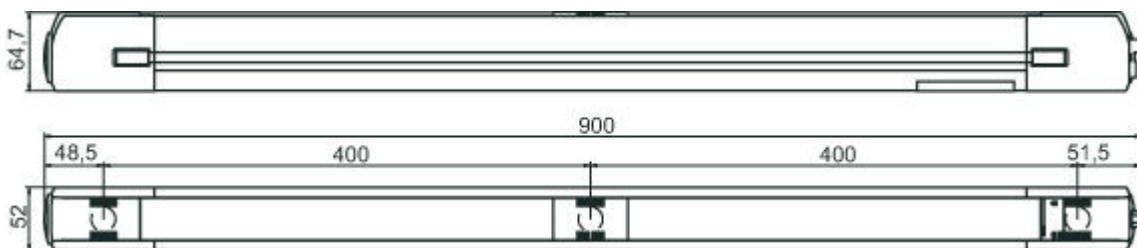
eCl@ss 8.0	27272703
eCl@ss 9.0	27272703
ETIM 5.0	EC001832

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

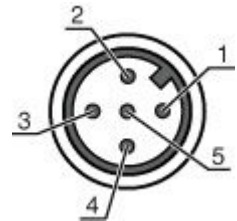
All dimensions in millimeters



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	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

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MLD	Multiple light beam safety device
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




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