

Technical data sheet

Multiple light beam safety device receiver

Part no.: 66554600

MLD520-XR3M

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- Technical data
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For illustration purposes only



c **UL** US



UK **CA**

Technical data

Basic data

Series	MLD 500
Device type	Receiver

Special version

Special version	Integrated status indicator
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Functions

Functions	Configuration by means of wiring Contactor monitoring (EDM), selectable Start/restart interlock (RES), selectable
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Reflective element for laser alignment aid	No
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Integrated muting indicator	No
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Integrated status indicator	Yes
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Characteristic parameters

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

Number of beams	3 Piece(s)
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Beam spacing	400 mm
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Electrical data

Protective circuit	Overvoltage protection Short circuit protected
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Performance data

Supply voltage U _B	24 V, DC, -20 ... 20 %
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Current consumption, max.	150 mA, Without external load
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Fuse	External with max. 3 A
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Inputs

Number of digital switching inputs	3 Piece(s)
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Switching inputs

Type	Digital switching input
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Switching voltage high, min.	18.2 V
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Switching voltage low, max.	2.5 V
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Switching voltage, type.	23 V
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Voltage type	DC
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Switching current, max.	5 mA
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Digital switching input 1

Assignment	Connection 1, pin 1
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Function	Control input for start/restart interlock (RES)
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Digital switching input 2

Assignment	Connection 1, pin 3
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Function	Control input for contactor monitoring (EDM)
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Digital switching input 3

Assignment	Connection 1, pin 4
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Function	Control input for start/restart interlock (RES)
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Outputs

Number of safety-related switching outputs (OSSDs)	2 Piece(s)
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Number of digital switching outputs	1 Piece(s)
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Safety-related switching outputs

Type	Safety-related switching output OSSD
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Switching voltage high, min.	18.2 V
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Switching voltage low, max.	2.5 V
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Switching voltage, type.	23 V
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Voltage type	DC
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Current load, max.	380 mA
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Load inductivity	2,200,000 µH
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Load capacity	0.3 µF
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Residual current, max.	0.2 mA
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Residual current, type.	0.002 mA
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Voltage drop	1 V
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Safety-related switching output 1

Assignment	Connection 1, pin 6
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Switching element	Transistor, PNP
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Switching outputs

Type	Digital switching output
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Switching voltage high, min.	18.2 V
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Switching voltage low, max.	2.5 V
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Switching voltage, type.	23 V
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Voltage type	DC
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Switching output 1

Assignment	Connection 1, pin 1
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Switching element	Transistor, PNP
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Function	"State of OSSDs" signal output
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Time behavior

Response time	25 ms
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Restart delay time	100 ms
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Connection

Number of connections	1 Piece(s)
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Connection 1

Function	Machine interface
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Type of connection	Connector
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Thread size	M12
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Material	Metal
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No. of pins	8 -pin
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Cable properties

Permissible conductor cross section, type.	0.25 mm ²
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Length of connection cable, max.	100 m
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Permissible cable resistance to load, max.	200 Ω
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We reserve the right to make technical changes
eng • 2025-04-07

Technical data

Mechanical data

Dimension (W x H x L)	52 mm x 900 mm x 64.7 mm
Housing material	Metal
Metal housing	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
Number of LEDs	1 Piece(s)

Environmental data

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

Certifications

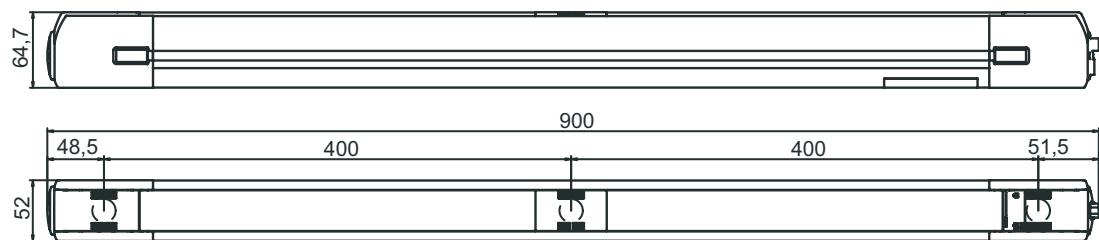
Degree of protection	IP 67
Protection class	III
Approvals	c TÜV NRTL US c UL US TÜV Süd
US patents	US 6,418,546 B US 7,741,595 B

Classification

Customs tariff number	85365019
ECLASS 5.1.4	27272703
ECLASS 8.0	27272703
ECLASS 9.0	27272703
ECLASS 10.0	27272703
ECLASS 12.0	27272703
ECLASS 13.0	27272703
ECLASS 14.0	27272703
ECLASS 15.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832
ETIM 7.0	EC001832
ETIM 8.0	EC001832
ETIM 9.0	EC001832
ETIM 10.0	EC001832

Dimensioned drawings

All dimensions in millimeters



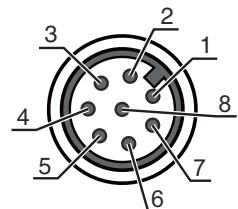
Electrical connection

Connection 1

Function	Machine interface
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

Electrical connection

Pin	Pin assignment	Conductor color
1	RES/OSSD status signal	White
2	+24 V	Brown
3	EDM	Green
4	MODE	Yellow
5	OSSD2	Gray
6	OSSD1	Pink
7	0 V	Blue
8	n.c.	Red



Operation and display

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.

Suitable transmitters

Part no.	Designation	Article	Description
	66501600 MLD500-XT3	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

Part number code

Part designation: **MLD^{xy}_{yz}^{ab}_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	

Part number code

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

Accessories

Connection technology - Connection cables

Part no.	Designation	Article	Description
	50135129	KD S-M12-8A-P1-100	Connection cable Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 10.000 mm Sheathing material: PUR
	50135130	KD S-M12-8A-P1-150	Connection cable Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 15.000 mm Sheathing material: PUR
	50135131	KD S-M12-8A-P1-250	Connection cable Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 25.000 mm Sheathing material: PUR
	50135132	KD S-M12-8A-P1-500	Connection cable Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 50.000 mm Sheathing material: PUR

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 Shock absorber: No

Accessories

Part no.	Designation	Article	Description
	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 Shock absorber: No

Services

Part no.	Designation	Article	Description
	S981050	CS40-I-140	Safety inspection 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.
	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.

Note

	↳ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.
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