

# **Technical data sheet** Multiple light beam safety device receiver

Part no.: 66533200

MLD510-R3

# Figure can vary

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# **Technical data**



### Basic data

Series	MLD 500
Device type	Receiver

Functions	
Functions	Automatic restart
	Contactor monitoring (EDM), selectable
	Start/restart interlock (RES), selectable

### **Characteristic parameters**

Туре	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

### **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 U <sub>B</sub>	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 2 Piece(s) outputs (OSSDs)

### Safety-related switching outputs

Туре	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 μΗ
Load capacity	0.3 μF
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	
Function	Machine interface
Type of connection	Connector
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
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	
Certifications	c CSA US	
	c TÜV NRTL US	
	TÜV Süd	
US patents	US 6,418,546 B	
	US 7,741,595 B	

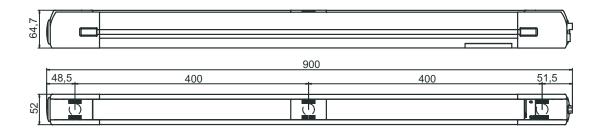
### Classification

Customs tariff number	85365019
eCl@ss 5.1.4	27272703
eCl@ss 8.0	27272703
eCl@ss 9.0	27272703
eCl@ss 10.0	27272703
eCl@ss 11.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832
FTIM 7.0	EC001832

# **Dimensioned drawings**



All dimensions in millimeters

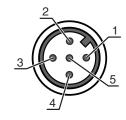


# **Electrical connection**

### Connection 1

Function	Machine interface
Type of connection	Connector
Thread size	M12
Туре	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**

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.

# Suitable transmitters

Part no.	Designation	Article	Description
66501200	MLD500-T3	Multiple light beam safety device transmitter	Operating range: 0.5 50 m Number of beams: 3 Piece(s) Beam spacing: 400 mm Connection: Connector, M12, Metal, 5 -pin

## Part number code



Part designation: MLDxyy-zab/t

MLD	Multiple light beam safety device
х	Series 3: MLD 300 5: MLD 500
уу	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)

### 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
	50133859	KD S-M12-5A-P1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 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
	50136146	KD S-M12-5A-P1-250	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: PVC

# **Accessories**



# 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
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

# Services

Part no.	Designation	Article	Description
S981050	CS40-I-140	Safety inspection "Safety light barriers"	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.  Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.
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.  Restrictions: Max. 2 h., no mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.

### Note



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