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Part no.: 544007
MLC510R14-300-IP
Safety sensor/receiver set

Contents

Part no.: 544007 – MLC510R14-300-IP – Safety sensor/receiver set

Technical data

Basic data	
Series	MLC 500
Device type	Receiver
Contains	2x BT-IP swivel mount
Application	Finger protection

Functions	
Function package	Basic
Functions	Automatic start/restart Transmission channel changeover

Characteristic parameters	
Type	4, IEC/EN 61496
SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
PFH_D	7.73E-09 per hour
Mission time T_M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

Protective field data	
Resolution	14 mm
Protective field height	300 mm

Optical data	
Synchronization	Optical between transmitter and receiver

Electrical data	
Protective circuit	Overvoltage protection Short circuit protected

Performance data	
Supply voltage	24 V, DC, -20 ... 20 %
Current consumption, max.	150 mA
Fuse	2 A semi time-lag

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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 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	22.5 V
Voltage type	DC
Current load, max.	380 mA
Load inductivity	2,000 µH
Load capacity	0.3 µF
Residual current, max.	0.2 mA
Residual current, typ.	0.002 mA
Voltage drop	1.5 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	8 ms
Restart delay time	100 ms

Connection	
Number of connections	1 Piece(s)
Connection 1	
Type of connection	Cable with connector
Function	Machine interface
Cable length	15,000 mm
Sheathing material	PVC
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	500 mm52.5 mm
Housing material	Metal, Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	450 g
Housing color	Yellow, RAL 1021
Type of fastening	Swivel mount

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Protective tube	
Material	PMMA, clear
Material of end caps	V4A stainless steel (1.4404)
Material of clamping cylinder	PA 6
Material of pressure-equalization membrane	PA 6
Cable gland material	PA 6

Operation and display	
Type of display	LED
Number of LEDs	2 Piece(s)

Environmental data	
Ambient temperature, operation	0 ... 55 °C
Ambient temperature, storage	-30 ... 70 °C
Relative humidity (non-condensing)	0 ... 95 %

Certifications	
Degree of protection	IP 67 IP 66 IP 65 IP 69K
Protection class	III
Certifications	c TÜV NRTL US S Mark TÜV Süd c CSA US
Vibration resistance	50 m/s²
Shock resistance	100 m/s²
US patents	US 6,418,546 B

Classification	
eCl@ss 8.0	27272704
eCl@ss 9.0	27272704
ETIM 5.0	EC002549

Suitable transmitters

	Part no.	Designation	Article	Description
	544000	MLC500T14-300-IP	Safety sensor/ transmitter set	Resolution: 14 mm Protective field height: 300 mm Operating range: 0 ... 4.8 m Connection: Cable with connector, M12, Metal, 5 -pin, 15,000 mm, PVC

Dimensioned drawings

All dimensions in millimeters

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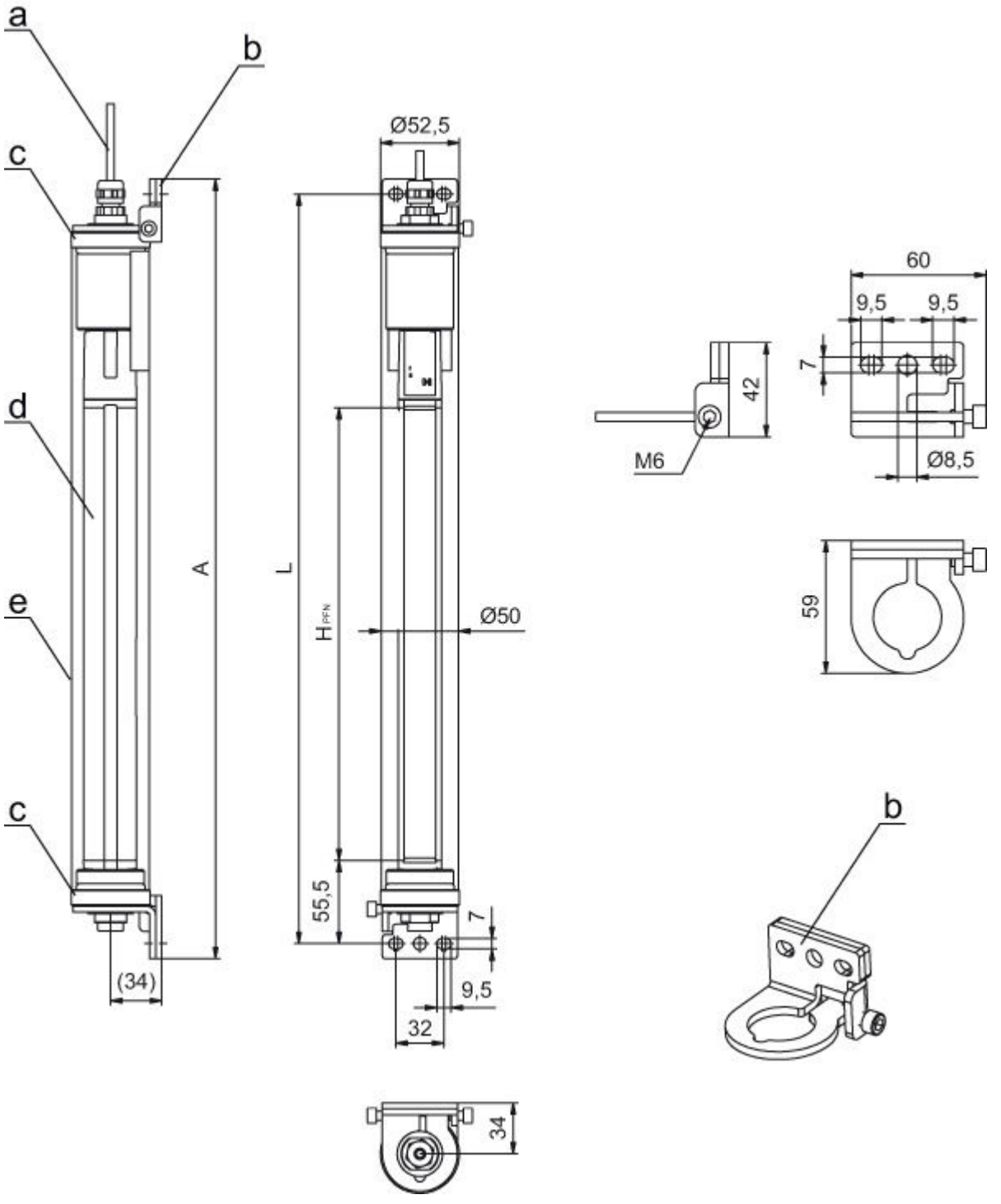
MLC safety light curtains pre-mounted in the IP protective tube

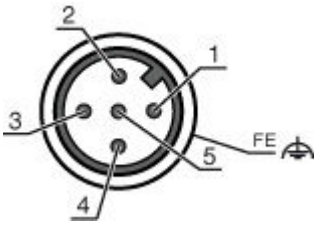


a	Connection cable
b	Mounting brackets for mounting
c	End caps, stainless steel V4A
d	MLC receiver
e	IP protective tube
A	Total height incl. mounting brackets = 520 mm
L	Spacing of drilled holes for mounting brackets = 500 mm
H_{PFN}	Effective protective field height = 300 mm

Electrical connection

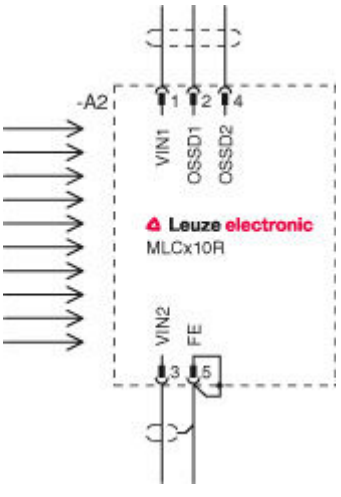
Connection 1	
Type of connection	Cable with connector
Function	Machine interface
Cable length	15,000 mm
Sheathing material	PVC
Cable color	Black
Wire cross section	
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded
Connector housing	FE/SHIELD

Pin	Pin assignment	Conductor color
1	VIN1	Brown
2	OSSD1	White
3	VIN2	Blue
4	OSSD2	Black
5	FE/SHIELD	Gray



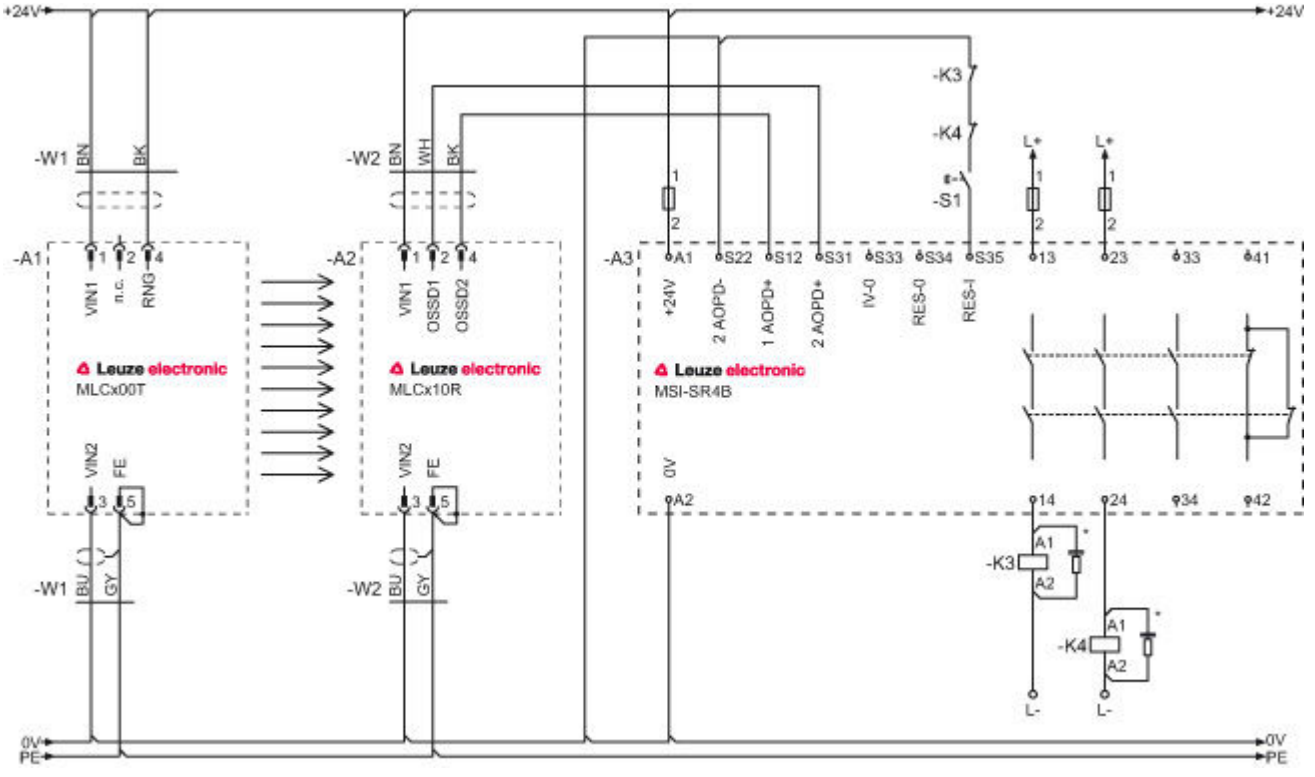
Circuit diagrams

Connection diagram receiver



- VIN1 = +24 V, VIN2 = 0 V: transmission channel C1
- VIN1 = 0 V, VIN2 = +24 V: transmission channel C2

Circuit diagram example with downstream MSI-SR4B safety relay



Operation and display

LEDs

LED	Display	Meaning
1	Off	Device switched off
	Red, continuous light	OSSD off.
	Red, flashing, 1 Hz	External error
	Red, flashing, 10 Hz	Internal error
	Green, flashing, 1 Hz	OSSD on, weak signal
	Green, continuous light	OSSD on
2	Off	Transmission channel C1
	Red, continuous light	OSSD off, transmission channel C2

Part number code

Part designation: **MLCxyy-za-hhhhei-ooo**

MLC	Safety light curtain
x	**Series:** 3: MLC 300 5: MLC 500

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MLC	Safety light curtain
yy	**Function classes:** 00: Transmitter 01: transmitter (AIDA) 02: Transmitter with test input 10: Basic receiver - automatic restart 11: basic receiver - automatic restart (AIDA) 20: Standard receiver - EDM/RES selectable 30: Extended receiver - blanking/muting
z	**Device type:** T: transmitter R: receiver
a	**Resolution:** 14: 14 mm 20: 20 mm 30: 30 mm 40: 40 mm 90: 90 mm
hhhh	**Protective field height:** 150 … 3000: from 150 mm to 3000 mm
e	**Host/Guest (optional):** H: Host MG: Middle Guest G: Guest
i	**Interface (optional):** /A: AS-i
ooo	**Option:** /V: high Vibration-proof EX2: explosion protection (zones 2 + 22) SPG: Smart Process Gating

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

Accessories

Test rods

	Part no.	Designation	Article	Description
	349945	AC-TR14/30	Test piece	Diameter 1: 14 mm Diameter 2: 30 mm Housing material: Plastic, ABS

Notes

Observe intended use!
• The product may only be put into operation by competent persons. • Only use the product in accordance with its intended use.