## Leuze

## **Technical data sheet** Safety light curtain receiver

Part no.: 68001409 MLC510R40-900



The Sensor People In der Braike 1, 73277 Owen

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### **Technical data**

#### Basic data

Series	MLC 500
Device type	Receiver
Contains	2x BT-NC sliding block
Application	Access guarding
	Danger zone guarding
	Hand protection

#### **Functions**

Function package	Basic
Functions	Automatic start/restart
	Transmission channel changeover

#### **Characteristic parameters**

Туре	4, IEC/EN 61496
SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
PFH <sub>D</sub>	7.73E-09 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

#### **Protective field data**

R	lesolution		40 mm
Ρ	rotective field h	eight	900 mm
0	Optical data		
S	ynchronization		Optical between transmitter and receiver
E	ectrical data		
Ρ	rotective circuit		Overvoltage protection
			Short circuit protected
	Performance	data	
	Supply voltage	U <sub>B</sub>	24 V, DC, -20 20 %
	Current consu	mption, max.	150 mA
	Fuse		2 A semi time-lag
	Outputs		
	Number of safe outputs (OSSD	ety-related switching (s)	2 Piece(s)
	Safety-rela	ted switching outp	uts
	Туре		Safety-related switching output OSSD
	Switching ve	oltage high, min.	18 V
	Switching ve	oltage low, max.	2.5 V

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 Switching element Connection 1, pin 2 Transistor, PNP

	Safety-related switching ou	itnut 2
	Assignment	Connection 1, pin 4
	Switching element	Transistor, PNP
Timing	1	
Respor	ise time	9 ms
Restart	delay time	100 ms
Conne	oction	
Numbe	r of connections	1 Piece(s)
Con	nection 1	
Fund	tion	Machine interface
Туре	of connection	Connector
	ad size	M12
Mate		Metal
No. o	of pins	5 -pin
Cab	le properties	
Pern	nissible conductor cross on, typ.	0.25 mm <sup>2</sup>
Leng	th of connection cable, max.	100 m
	nissible cable resistance to , max.	200 Ω
Mecha	nical data	
Dimens	sion (W x H x L)	29 mm x 966 mm x 35.4 mm
Housin	g material	Metal
Metal h	ousing	Aluminum
	over material	Plastic / PMMA
	l of end caps	Diecast zinc
Net wei	-	1,050 g
	g color fastening	Yellow, RAL 1021
Type of	lastening	Groove mounting Mounting bracket
		Mounting on Device Column
		Swivel mount
Opera	tion and display	
Type of	display	LED
	r of LEDs	2 Piece(s)
Enviro	nmental data	
Ambier	nt temperature, operation	-30 55 °C
Ambier	nt temperature, storage	-30 70 °C
Relativ	e humidity (non-condensing)	0 95 %
Certifi	cations	
Degree	of protection	IP 65
Protect	ion class	Ш
Certific	ations	c CSA US
		c TÜV NRTL US
		S Mark
		TÜV Süd
	on resistance	50 m/s <sup>2</sup>
	resistance	100 m/s <sup>2</sup>
US pate	ents	US 6,418,546 B

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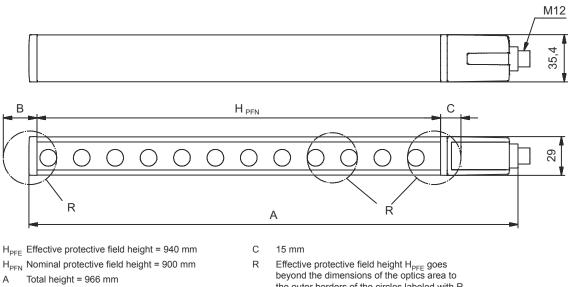
### **Technical data**

Customs tariff number	85365019
eCl@ss 5.1.4	27272704
eCl@ss 8.0	27272704
eCl@ss 9.0	27272704
eCl@ss 10.0	27272704
eCl@ss 11.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549

### **Dimensioned drawings**

All dimensions in millimeters

### Calculation of the effective protective field height $H_{PFF} = H_{PFN} + B + C$



В 25 mm the outer borders of the circles labeled with R.

### **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
Connector housing	FE/SHIELD

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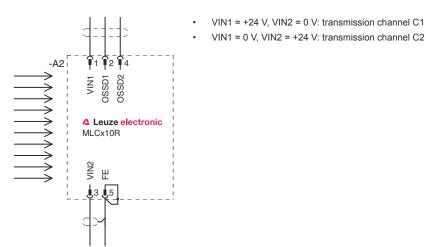
### **Electrical connection**

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

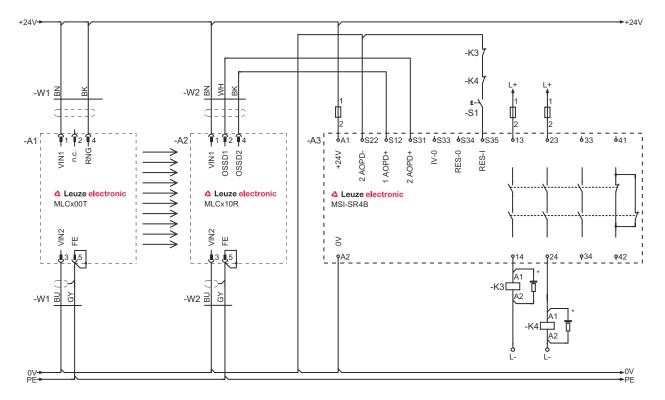
### **Circuit diagrams**

Connection diagram receiver

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Circuit diagram example with downstream MSI-SR4B safety relay



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### **Operation and display**

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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

### Suitable transmitters

Part no.	Designation	Article	Description
68000409	MLC500T40-900	Safety light curtain transmitter	Resolution: 40 mm Protective field height: 900 mm Operating range: 0 20 m Connection: Connector, M12, Metal, 5 -pin
68008409	MLC502T40-900	Safety light curtain transmitter	Resolution: 40 mm Protective field height: 900 mm Operating range: 0 20 m Connection: Connector, M12, Metal, 5 -pin

### Part number code

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

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

### Part number code

MLC	Safety light curtain
i	Interface (optional) /A: AS-i
000	Option /V: high Vibration-proof EX2: explosion protection (zones 2 + 22) SPG: Smart Process Gating Note
1	✤ A list with all available device types can be found on the Leuze website at www.leuze.com.

### Notes

Observe intended use!
<ul> <li>If the product may only be put into operation by competent persons.</li> <li>If the product in accordance with its intended use.</li> </ul>

### Accessories

### Connection technology - Connection cables

 Part no.	Designation	Article	Description
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

### Mounting technology - Swivel mounts

 Part no.	Designation	Article	Description
429393	BT-2HF	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

### Accessories

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