

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

Part no.: 68000909 MLC500T90-900



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We reserve the right to make technical changes eng • 2021-01-28

## **Technical data**

### **Basic data**

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

### **Functions**

Functions

Range reduction	
Transmission channel changeover	

### **Characteristic parameters**

Туре	4, IEC/EN 61496
SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1

90 mm

900 mm

0 ... 20 m

### **Protective field data**

Resolution Protective field height Operating range

### **Optical data**

Synchronization	Optical between transmitter and receiver
Light source	LED, Infrared
LED light wavelength	940 nm
Transmitted-signal shape	Pulsed
LED risk group	Exempt group (in acc. with EN 62471:2008)

### **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.	50 mA
Fuse	2 A semi time-lag

### Inputs

Number of digital switching inputs 1 Piece(s)

Switching inputs	
Туре	Digital switching input
Switching voltage high, min.	18 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	22.5 V
Voltage type	DC

### 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	
	Cable properties Permissible conductor cross section, typ.	0.25 mm <sup>2</sup>
	Length of connection cable, max.	100 m
	Permissible cable resistance to load, max.	200 Ω
N	lechanical data	
D	imension (W x H x L)	29 mm x 966 mm x 35.4 mm

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### Housing material Metal Metal housing Aluminum Plastic / PMMA Lens cover material Material of end caps Diecast zinc Net weight 1,050 g Housing color Yellow, RAL 1021 Type of fastening Groove mounting Mounting bracket Mounting on Device Column Swivel mount **Operation and display** Type of display LED

### Number of LEDs 2 Piece(s)

### **Environmental data**

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

### Certifications

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

### Classification

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	



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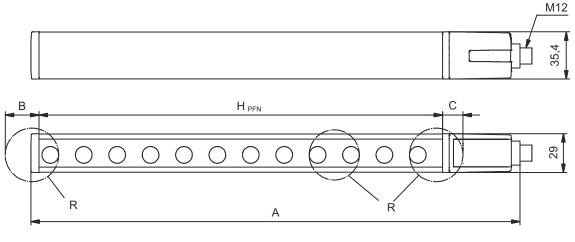
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## **Dimensioned drawings**



All dimensions in millimeters

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



 $H_{PFE}$  Effective protective field height = 990 mm

 $H_{PFN}$  Nominal protective field height = 900 mm

A Total height = 966 mm

B 50 mm

C 40 mm R Effective

Effective protective field height H<sub>PFE</sub> goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

## **Electrical connection**

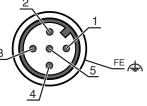
### **Connection 1**

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

### Pin Pin assignment

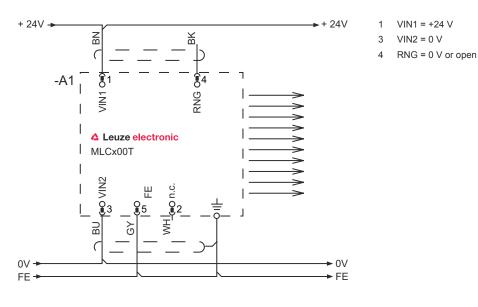
### **Conductor color**

1	VIN1	Brown	
2	n.c.	White	
3	VIN2	Blue	3
4	RNG	Black	
5	FE/SHIELD	Gray	
			4

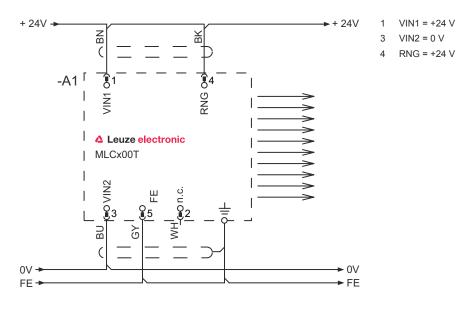


## **Circuit diagrams**

## Transmission channel C1, reduced range



Transmission channel C1, standard range

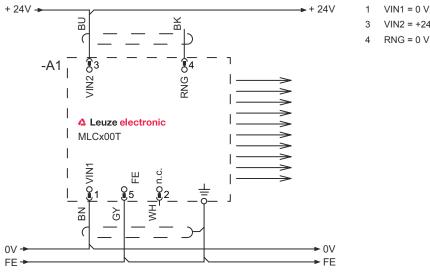


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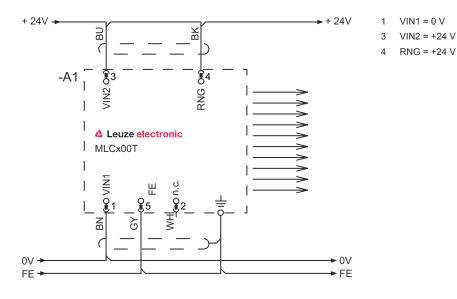
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## **Circuit diagrams**

## Transmission channel C2, reduced range



### Transmission channel C2, standard range



### **Operation and display** Dienlay

LED	Display	Meaning
1	Off	Device switched off
	Red, continuous light	Device error
	Green, continuous light	Normal operation
2	Green, flashing, 10 s long after switching on	Reduced range selected by the wiring of pin 4
	Off	Transmission channel C1
	Green, continuous light	Transmission channel C2

## VIN1 = 0 V

- VIN2 = +24 V
- RNG = 0 V or open

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## Suitable receivers

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Part no.	Designation	Article	Description
68001909	MLC510R90-900	Safety light curtain receiver	Resolution: 90 mm Protective field height: 900 mm Response time: 4 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic
68002909	MLC520R90-900	Safety light curtain receiver	Resolution: 90 mm Protective field height: 900 mm Response time: 4 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard
68003909	MLC530R90-900	Safety light curtain receiver	Resolution: 90 mm Protective field height: 900 mm Response time: 4 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended
68009909	MLC530R90-900- SPG	Safety light curtain receiver	Resolution: 90 mm Protective field height: 900 mm Response time: 100 ms Connection: Connector, M12, Metal, 8 -pin Function package: Smart Process Gating

## 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	<b>Option</b> /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>№ The product may only be put into operation by competent persons.</li> <li>№ Only use 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
P.G.	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

## Alignment aids

Alignment aid	Housing material: Plastic	

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## 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.
	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.