



the sensor people





Part no.: 68000913 MLC500T90-1350 Safety light curtain transmitter

















Figure can vary

# **Contents**

- Technical data
- Dimensioned drawings
- Electrical connection
- Circuit diagrams
- Operation and display
- Suitable receivers
- · Part number code
- Notes
- Accessories



### **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
Protective field data	
Resolution	90 mm
Protective field height	1,350 mm
Operating range	0 20 m
Optical data	
Synchronization	Optical between transmitter and receiver
Light source	LED , Infrared
LED light wavelength	940 nm
Transmitted-signal shape	Pulsed
LED 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			
Type of connection	Connector		
Function	Machine interface		
Thread size	M12		
Material	Metal		
No. of pins	5 -pin		
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		
Mechanical data			
Dimension (W x H x L)	29 mm x 1,416 mm x 35.4 mm		
Housing material	Metal , Aluminum		
Lens cover material	Plastic / PMMA		
Material of end caps	Diecast zinc		
Net weight	1,500 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		
Cartifications	20010		

IP 65	
III	
c CSA US c TÜV NRTL US S Mark TÜV Süd	
50 m/s²	
100 m/s²	
US 6,418,546 B	
	III c CSA US c TÜV NRTL US S Mark TÜV Süd 50 m/s²

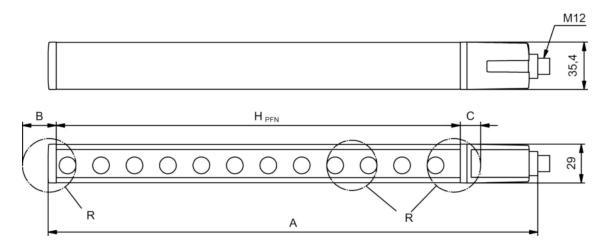
Classification		
Customs tariff number	85365019	
eCl@ss 8.0	27272704	
eCl@ss 9.0	27272704	
ETIM 5.0	EC002549	
ETIM 6.0	EC002549	



### **Dimensioned drawings**

All dimensions in millimeters

Calculation of the effective protective field height HPFE = HPFN + B + C



HPFE Effective protective field height = 1440 mm

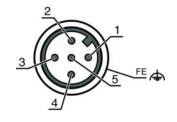
H<sub>PFN</sub> Nominal protective field height = 1350 mm

- A Total height = 1416 mm
- B 50 mm
- C 40 mm
- R Effective protective field height HPFE goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

### **Electrical connection**

Connection 1		
Type of connection	Connector	
Function	Machine interface	
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
4	RNG	Black
5	FE/SHIELD	Gray

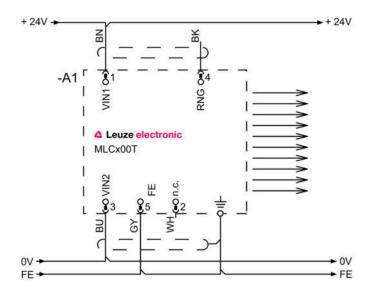


Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199



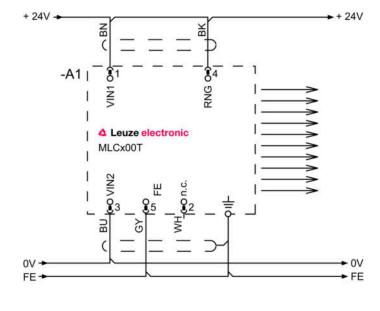
### **Circuit diagrams**

### Transmission channel C1, reduced range



- 1 VIN1 = +24 V
- 3 VIN2 = 0 V4 RNG = 0 V or open

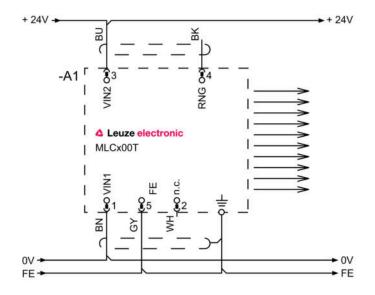
### Transmission channel C1, standard range



- 1 VIN1 = +24 V
- 3 VIN2 = 0 V
- 4 RNG = +24 V

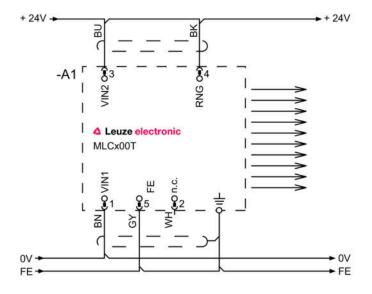


### Transmission channel C2, reduced range



- **VIN1 = 0 V** 1
- 3
- VIN2 = +24 V RNG = 0 V or open

### Transmission channel C2, standard range



- VIN1 = 0 V
- 3 VIN2 = +24 V
- RNG = +24 V

### **Operation and display**

#### **LEDs**

LED	Display	Meaning
1	Off	Device switched off



LED	Display	Meaning
	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

### Suitable receivers

Part no.	Designation	Article	Description
68001913	MLC510R90-1350	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,350 mm Response time: 5 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic
68002913	MLC520R90-1350	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,350 mm Response time: 5 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard
68003913	MLC530R90-1350	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,350 mm Response time: 5 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended
68009913	MLC530R90-1350-SPG	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,350 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	
Х	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	



MLC	Safety light curtain	
а	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	
е	Host/Guest (optional): H: Host MG: Middle Guest G: Guest	
i	Interface (optional): /A: AS-i	
000	Option:  N: 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.

#### **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.

#### **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	set	Contains: 2x BT-HF swivel mount, 1 cylinder for mounting on the light curtain Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199



### Alignment aids

	Part no.	Designation	Article	Description
1	520101	AC-ALM-M	Alignment aid	Housing material: 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 electronic website in the Download tab of the article detailed page.