



the sensor people





Part no.: 68000230 MLC500T20-3000 Safety light curtain transmitter















Figure can vary

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## **Technical data**

Basic data	
Series	MLC 500
Device type	Transmitter
Contains	2x BT-NC sliding block
Application	Hand protection
Application	Trana procedion
Functions	
Functions	Range reduction
	Transmission channel changeover
Observatoristic resonant con	
Characteristic parameters	4 IEC/EN 61406
Type SIL	4 , IEC/EN 61496 3 , IEC 61508
SILCL	3 , IEC/EN 62061
Mission time T <sub>M</sub>	20 years , EN ISO 13849-1
MISSION UNIE 1M	20 years , EN 150 13649-1
Protective field data	
Resolution	20 mm
Protective field height	3,000 mm
Operating range	0 15 m
operating range	5 16 III
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	Our allow water time
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 mm²		
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 3,066 mm x 35.4 mm		
Housing material	Metal , Aluminum		
Lens cover material	Plastic / PMMA		
Material of end caps	Diecast zinc		
Net weight	3,150 g		
Housing color	Yellow, RAL 1021		
Type of fastening	Groove mounting Mounting bracket Mounting on Device Column Swivel mount		
Operation and display	LED		
Type of display  Number of LEDs	2 Piece(s)		
Number of LEDS	Z Fiece(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		

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	

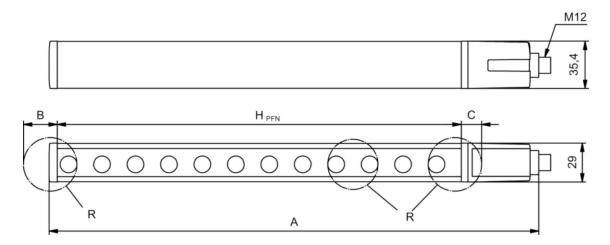
Classification	
Customs tariff number	85365019
eCl@ss 8.0	27272704
eCl@ss 9.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549



### **Dimensioned drawings**

All dimensions in millimeters

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



HPFE Effective protective field height = 3017 mm

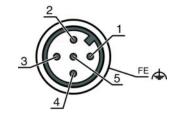
H<sub>PFN</sub> Nominal protective field height = 3000 mm

- A Total height = 3066 mm
- B 7 mm
- C 10 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	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

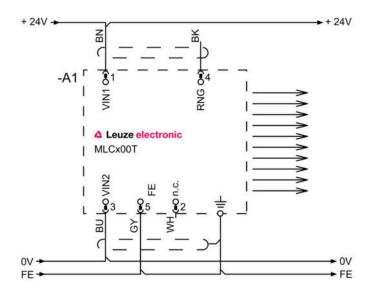


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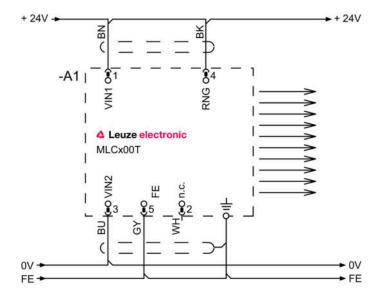
## **Circuit diagrams**

### Transmission channel C1, reduced range



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

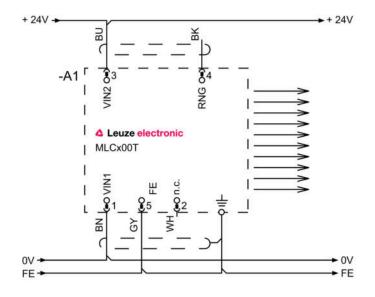
### Transmission channel C1, standard range



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

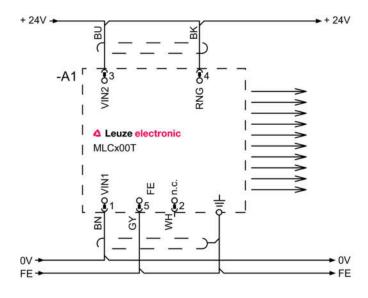


### Transmission channel C2, reduced range



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

### Transmission channel C2, standard range



- 1 VIN1 = 0 V
- 3 VIN2 = +24 V
- 4 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
68002230	MLC520R20-3000	Safety light curtain receiver	Resolution: 20 mm Protective field height: 3,000 mm Response time: 51 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard
68003230	MLC530R20-3000	Safety light curtain receiver	Resolution: 20 mm Protective field height: 3,000 mm Response time: 51 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended
68001230	MLC510R20-3000	Safety light curtain receiver	Resolution: 20 mm Protective field height: 3,000 mm Response time: 51 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic

#### 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
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



MLC	Safety light curtain
	Interface (optional): /A: AS-i
	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.

#### **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	Mounting bracket 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

## Alignment aids

	Part no.	Designation	Article	Description
1	520101	AC-ALM-M	Alignment aid	Housing material: Plastic

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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

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