

# Technical data sheet Safety light curtain transmitter

Part no.: 68000203

MLC500T20-300



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### **Technical data**



#### Basic data

Series	MLC 500
Device type	Transmitter
Contains	2x BT-NC sliding block
Application	Hand protection

#### **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	20 years, EN ISO 13849-1

#### Protective field data

Resolution	20 mm
Protective field height	300 mm
Operating range	0 15 m

#### **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**

	Overvoltage protection	
	Short circuit protected	

#### Performance data

i citotiliance 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	
Type	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	nro	perties

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 366 mm x 35.4 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	450 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/s <sup>2</sup>
Shock resistance	100 m/s <sup>2</sup>
US patents	US 6,418,546 B

### Classification

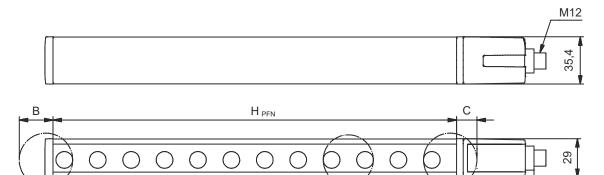
Customs tariff number	85365019	
eCI@ss 5.1.4	27272704	
eCI@ss 8.0	27272704	
eCI@ss 9.0	27272704	
eCl@ss 10.0	27272704	
eCl@ss 11.0	27272704	
ETIM 5.0	EC002549	
ETIM 6.0	EC002549	
ETIM 7.0	FC002549	

### **Dimensioned drawings**



All dimensions in millimeters

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



 $H_{\mathsf{PFE}}$  Effective protective field height = 317 mm

 $H_{\mathrm{PFN}}$  Nominal protective field height = 300 mm

Total height = 366 mm

R

7 mm

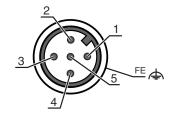
- С 10 mm
- Effective protective field height  $H_{\mathsf{PFE}}$  goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

### **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

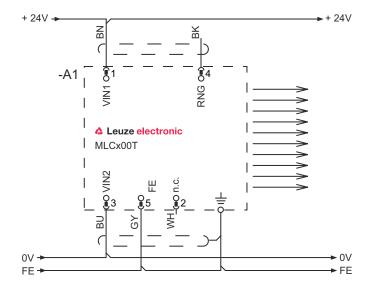
Pin	Pin assignment	Conductor color
1	VIN1	Brown
2	n.c.	White
3	VIN2	Blue
4	RNG	Black
5	FE/SHIELD	Gray



### **Circuit diagrams**

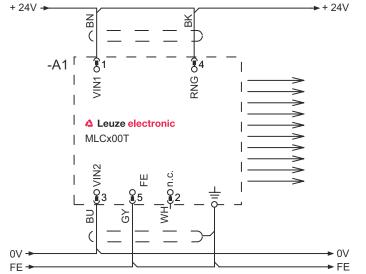


### Transmission channel C1, reduced range



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

### Transmission channel C1, standard range

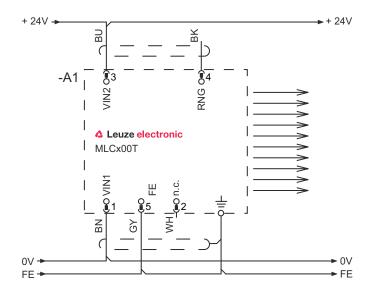


- 1 VIN1 = +24 V
- 3 VIN2 = 0 V
- 4 RNG = +24 V

### **Circuit diagrams**

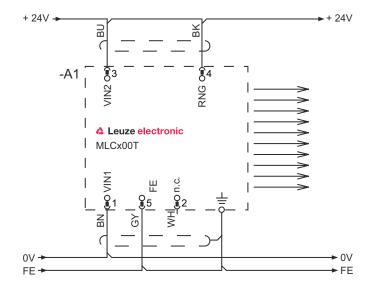


### Transmission channel C2, reduced range



- 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**

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

### Suitable receivers



Part no.	Designation	Article	Description
68001203	MLC510R20-300	Safety light curtain receiver	Resolution: 20 mm Protective field height: 300 mm Response time: 7 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic
68002203	MLC520R20-300	Safety light curtain receiver	Resolution: 20 mm Protective field height: 300 mm Response time: 7 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard
68003203	MLC530R20-300	Safety light curtain receiver	Resolution: 20 mm Protective field height: 300 mm Response time: 7 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended

### 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
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
е	Host/Guest (optional) H: Host MG: Middle Guest G: Guest
i	Interface (optional) /A: AS-i
000	Option  /V: high Vibration-proof  EX2: explosion protection (zones 2 + 22)  SPG: Smart Process Gating

### Note



### **Notes**





### Observe 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
Paga	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

	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.

### **Accessories**



#### Note



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