



Figure can vary

**Part no.: 68040210**  
**MLC500T20-1050-EX2**  
**Safety light curtain transmitter**



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## Technical data

<b>Basic data</b>	
Series	MLC 500
Device type	Transmitter
Contains	2x BT-NC sliding block
Application	Hand protection
<b>Functions</b>	
Functions	Range reduction Transmission channel changeover
<b>Characteristic parameters</b>	
Type	4 , IEC/EN 61496
SIL	3 , IEC 61508
SILCL	3 , IEC/EN 62061
Mission time $T_M$	20 years , EN ISO 13849-1
<b>Protective field data</b>	
Resolution	20 mm
Protective field height	1,050 mm
Operating range	0 ... 9 m
<b>Optical data</b>	
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
<b>Electrical data</b>	
Protective circuit	Overvoltage protection Short circuit protected
<b>Performance data</b>	
Supply voltage $U_B$	24 V , DC , -20 ... 20 %
Current consumption, max.	50 mA
Fuse	2 A semi time-lag
<b>Inputs</b>	
Number of digital switching inputs	1 Piece(s)
<b>Switching inputs</b>	
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
<b>Connection</b>	
Number of connections	1 Piece(s)

**Part no.: 68040210 – MLC500T20-1050-EX2 – Safety light curtain transmitter**
**Cable properties**

Permissible conductor cross section, typ.	0.25 mm <sup>2</sup>
Length of connection cable, max.	100 m

**Connection 1**

Function	Machine interface
Type of connection	Connector
Thread size	M12
Material	Metal
No. of pins	5 -pin

**Cable properties**

Permissible cable resistance to load, max.	200 Ω
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**Mechanical data**

Dimension (W x H x L)	30.7 mm x 1,116 mm x 40.3 mm
Housing material	Metal , Aluminum
Lens cover material	Plastic/PC
Material of end caps	Diecast zinc
Net weight	1,200 g
Housing color	Silver
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	0 ... 55 °C
Ambient temperature, storage	-30 ... 70 °C
Relative humidity (non-condensing)	0 ... 95 %

**Ex specification**

Ex device category	3D 3G
Ex-zone	2 22
Ex device group	II
Permissible surface temperature	T<85° (T4) °C
Ignition protection type	"nA" non-sparking "tc" protection through housing

**Certifications**

Degree of protection	IP 65
Protection class	III
Certifications	c TÜV NRTL US 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

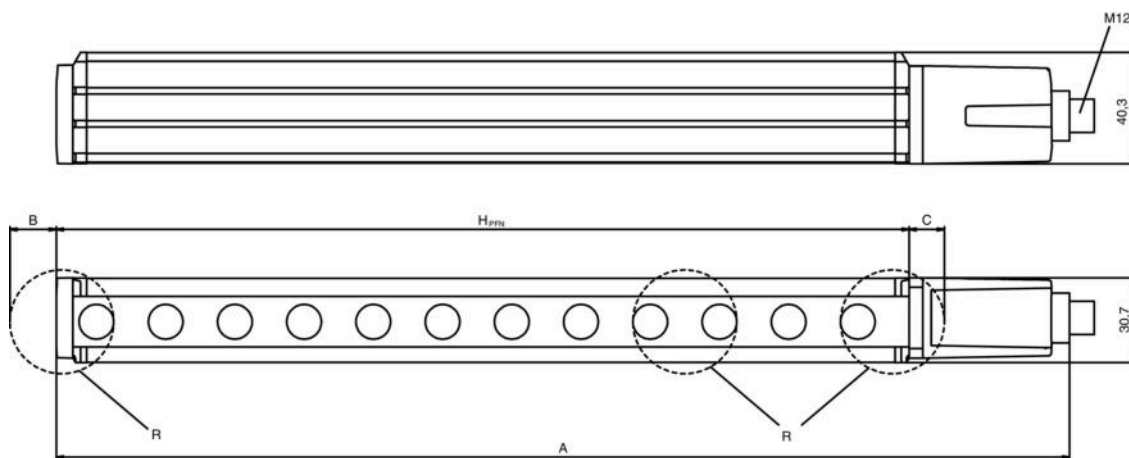
**Classification**

Customs tariff number	85365019
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  $H_{PFE} = H_{PFN} + B + C$



$H_{PFE}$  Effective protective field height = 1067 mm

$H_{PFN}$  Nominal protective field height = 1050 mm

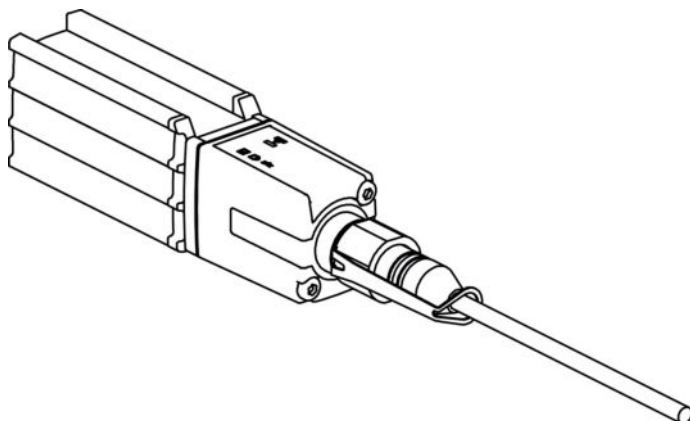
A Total height = 1116 mm

B 7 mm

C 10 mm

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

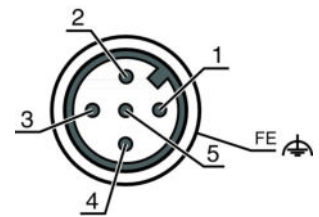
**K-VM12-Ex interlocking guard**



## Electrical connection

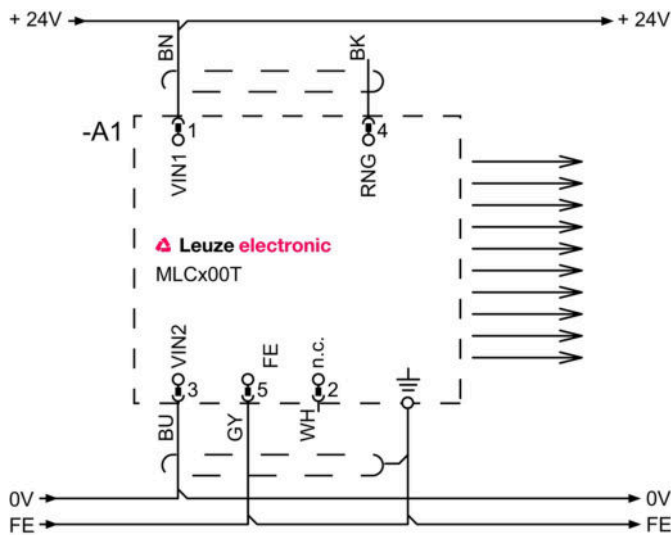
Connection 1	
Function	Machine interface
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded
Connector housing	FE/SHIELD

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



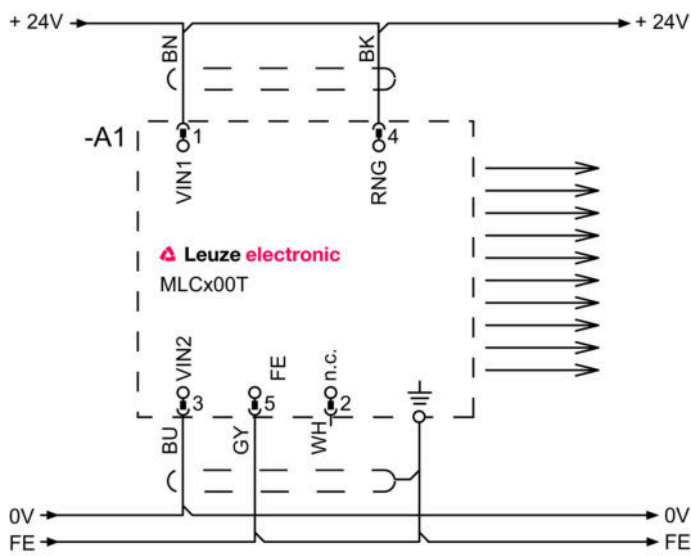
## Circuit diagrams

### Transmission channel C1, reduced range



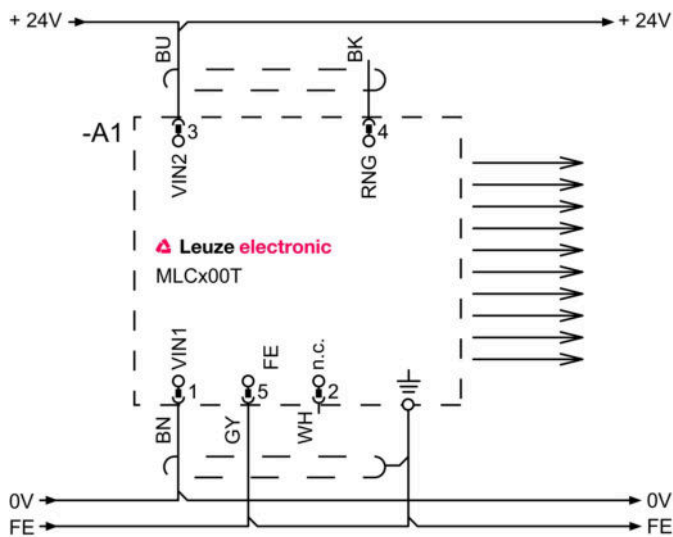
- 1 VIN1 = +24 V
- 3 VIN2 = 0 V
- 4 RNG = 0 V or open

Transmission channel C1, standard range



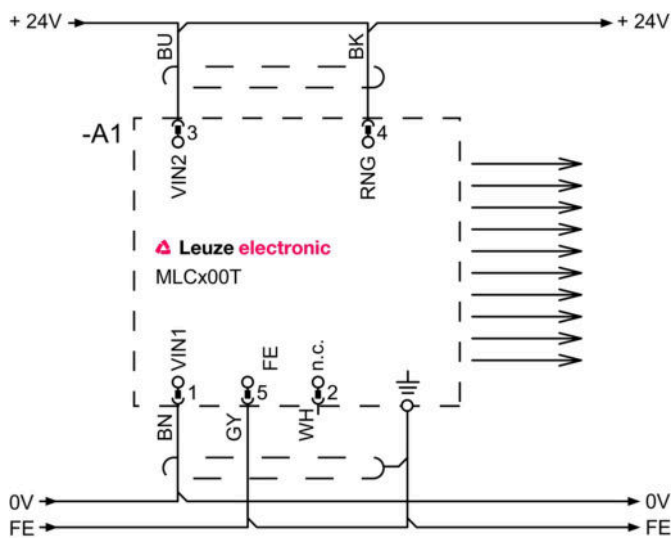
- 1 VIN1 = +24 V
- 3 VIN2 = 0 V
- 4 RNG = +24 V

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
	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
	68042210	MLC520R20-1050-EX2	Safety light curtain receiver	Resolution: 20 mm Protective field height: 1,050 mm Response time: 19 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard

## Part number code

Part designation: MLCxyy-za-hhhhei-ooo

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<b>MLC</b>	<b>Safety light curtain</b>
x	<b>Series:</b> 3: MLC 300 5: MLC 500
yy	<b>Function classes:</b> 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	<b>Device type:</b> T: transmitter R: receiver
a	<b>Resolution:</b> 14: 14 mm 20: 20 mm 30: 30 mm 40: 40 mm 90: 90 mm
hhhh	<b>Protective field height:</b> 150 ... 3000: from 150 mm to 3000 mm
e	<b>Host/Guest (optional):</b> H: Host MG: Middle Guest G: Guest
i	<b>Interface (optional):</b> /A: AS-i
ooo	<b>Option:</b> /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 website at [www.leuze.com](http://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**

	<b>Part no.</b>	<b>Designation</b>	<b>Article</b>	<b>Description</b>
	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




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## 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



## Alignment aids

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

## General

	Part no.	Designation	Article	Description
	50109217	K-V M12-Ex	Safety locking device	Housing material: Plastic, PA

## 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.