

Technical data sheet Safety light curtain transmitter

Part no.: 68000916 MLC500T90-1650



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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 _M	20 years, EN ISO 13849-1

90 mm

1,650 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 _B	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	0.25 mm²
	section, typ.	0.25 11111-
	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 1,716 mm x 35.4 mm

Housing material Metal Metal housing Aluminum Plastic / PMMA Lens cover material Material of end caps Diecast zinc Net weight 1,800 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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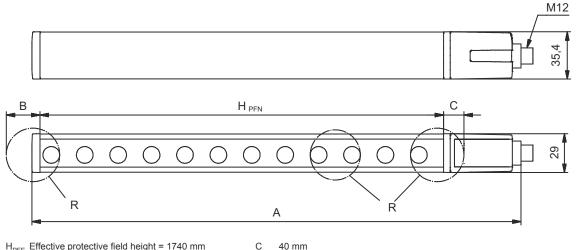
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Dimensioned drawings



All dimensions in millimeters

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



 H_{PFE} Effective protective field height = 1740 mm

40 mm

R

 H_{PFN} Nominal protective field height = 1650 mm

А Total height = 1716 mm

В 50 mm

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

Electrical connection

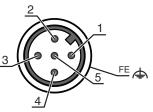
Connection 1

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**

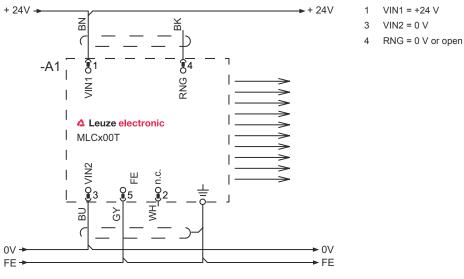
Conductor color

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



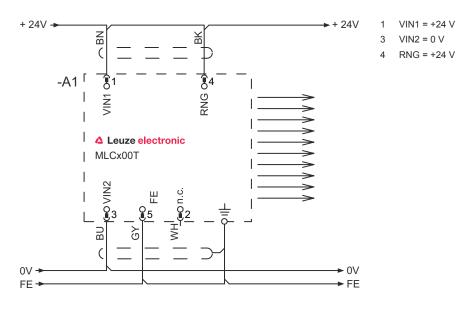
Circuit diagrams

Transmission channel C1, reduced range



Transmission channel C1, standard range

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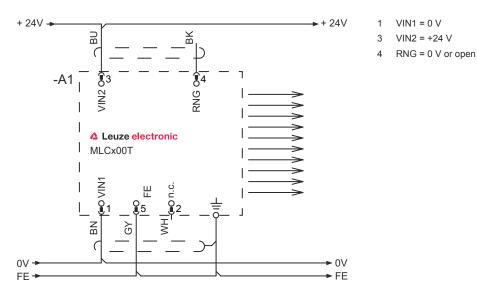
- VIN1 = +24 V

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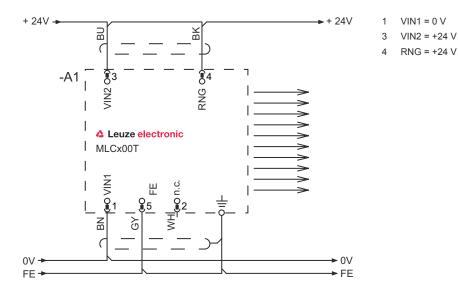
Circuit diagrams

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Transmission channel C2, reduced range



Transmission channel C2, standard range



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

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Part no.	Designation	Article	Description
68001916	MLC510R90-1650	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,650 mm Response time: 6 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic
68002916	MLC520R90-1650	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,650 mm Response time: 6 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard
68003916	MLC530R90-1650	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,650 mm Response time: 6 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended
68009916	MLC530R90-1650- SPG	Safety light curtain receiver	Resolution: 90 mm Protective field height: 1,650 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
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
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	Option /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!			
 № 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
P.a.	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.
ц. С	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.