



the sensor people





Part no.: 68000416 MLC500T40-1650 Safety light curtain transmitter



















Figure can vary

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- Dimensioned drawings
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Technical data

Pagia data			
Basic data Series	MLC 500		
	Transmitter		
Device type Contains	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Application Application	2x BT-NC sliding block		
Application	Access guarding Danger zone guarding Hand protection		
Functions			
Functions	Range reduction		
Tandania	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		
Protective field data			
Resolution	40 mm		
Protective field height	1,650 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 _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 Dioco(s)		

1 Piece(s)

Number of connections



Commontion 4				
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 ² 100 m			
Length of connection cable, max.				
Permissible cable resistance to load, max.	200 Ω			
Mechanical data				
Dimension (W x H x L)	29 mm x 1,716 mm x 35.4 mm			
Housing material	Metal , Aluminum			
Lens cover material	Plastic / PMMA			
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			

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

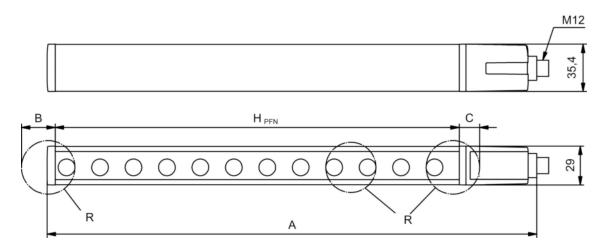
Classification	
Customs tariff number	85365019
eCl@ss 8.0	27272704
eCl@ss 9.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549



Dimensioned drawings

All dimensions in millimeters

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



HPFE Effective protective field height = 1690 mm

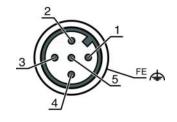
H_{PFN} Nominal protective field height = 1650 mm

- A Total height = 1716 mm
- B 25 mm
- C 15 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

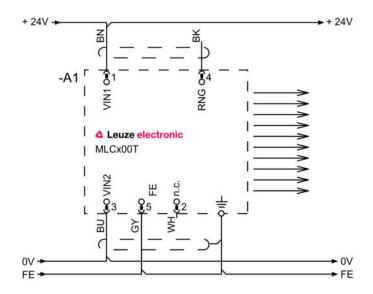


Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199



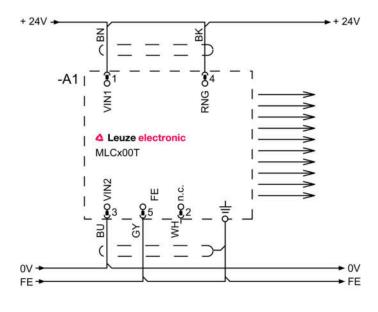
Circuit diagrams

Transmission channel C1, reduced range



- VIN1 = +24 V
- 3 VIN2 = 0 VRNG = 0 V or open

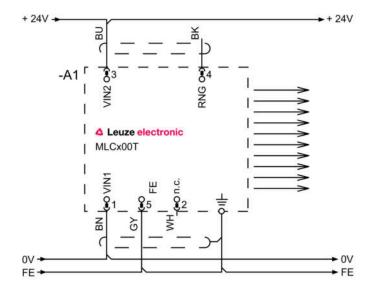
Transmission channel C1, standard range



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

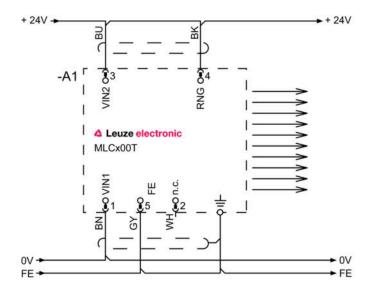


Transmission channel C2, reduced range



- 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
68001416	MLC510R40-1650	Safety light curtain receiver	Resolution: 40 mm Protective field height: 1,650 mm Response time: 15 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic
68002416	MLC520R40-1650	Safety light curtain receiver	Resolution: 40 mm Protective field height: 1,650 mm Response time: 15 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard
68003416	MLC530R40-1650	Safety light curtain receiver	Resolution: 40 mm Protective field height: 1,650 mm Response time: 15 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended
68009416	MLC530R40-1650-SPG	Safety light curtain receiver	Resolution: 40 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	
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: /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
Page 1	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

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Alignment aids

Part no.	Designation	Article	Description
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.