

Technical data sheet Safety light curtain transmitter

Part no.: 68000409 MLC500T40-900



The Sensor People In der Braike 1, 73277 Owen

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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
	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 _M	20 years, EN ISO 13849-1

40 mm

900 mm 0 ... 20 m

Overvoltage protection

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

Short circuit protected Performance data 24 V, DC, -20 ... 20 % Supply voltage $\rm U_B$ Current consumption, max. 50 mA Fuse 2 A semi time-lag

Inputs

Number of digital switching inputs 1 Piece(s)

Switching inputs Type

ownering 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

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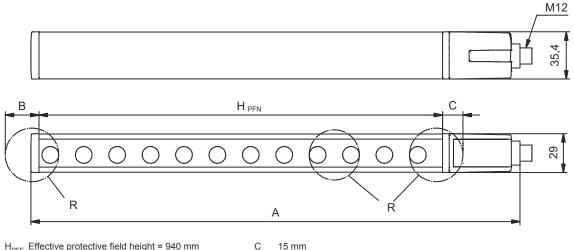
Permissible conductor cross	0.25 mm ²
section, typ.	
Length of connection cable, max.	100 m
Permissible cable resistance to load, max.	200 Ω
Mechanical data	
Dimension (W x H x L)	29 mm x 966 mm x 35.4 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	1,050 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, operation Ambient temperature, storage	-30 55 °C -30 70 °C
Ambient temperature, storage	-30 70 °C
Ambient temperature, storage Relative humidity (non-condensing)	-30 70 °C
Ambient temperature, storage Relative humidity (non-condensing) Certifications	-30 70 °C 0 95 %
Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection	-30 70 °C 0 95 % IP 65
Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection Protection class	-30 70 °C 0 95 % IP 65 III
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Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection Protection class	-30 70 °C 0 95 % IP 65 III c CSA US c TÜV NRTL US S Mark
Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection Protection class Certifications	-30 70 °C 0 95 % IP 65 III c CSA US c TÜV NRTL US S Mark TÜV Süd
Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection Protection class Certifications Vibration resistance	-30 70 °C 0 95 % IP 65 III c CSA US c TÜV NRTL US S Mark TÜV Süd 50 m/s²
Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection Protection class Certifications Vibration resistance Shock resistance	-30 70 °C 0 95 % IP 65 III c CSA US c TÜV NRTL US S Mark TÜV Süd 50 m/s ² 100 m/s ²
Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection Protection class Certifications Vibration resistance Shock resistance US patents	-30 70 °C 0 95 % IP 65 III c CSA US c TÜV NRTL US S Mark TÜV Süd 50 m/s ² 100 m/s ²
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Ambient temperature, storage Relative humidity (non-condensing) Certifications Degree of protection Protection class Certifications Vibration resistance Shock resistance US patents Classification Customs tariff number eCl@ss 5.1.4 eCl@ss 8.0	-30 70 °C 0 95 % IP 65 III c CSA US c TÜV NRTL US S Mark TÜV Süd 50 m/s ² 100 m/s ² US 6,418,546 B 85365019 27272704 27272704
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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 = 940 mm

15 mm

 H_{PFN} Nominal protective field height = 900 mm

А Total height = 966 mm

В 25 mm R

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

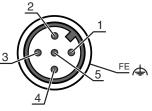
Connection 1

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**

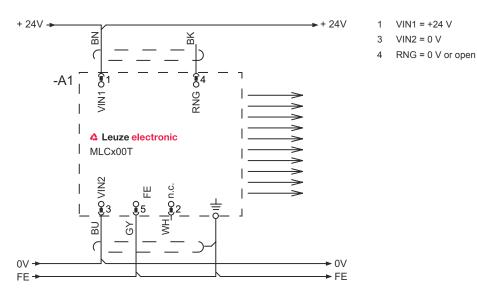
Conductor color

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



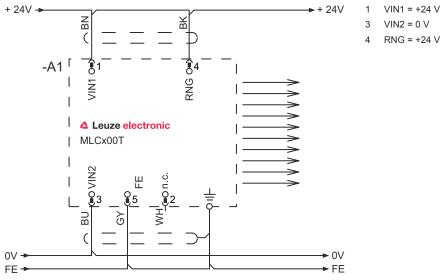
Circuit diagrams

Transmission channel C1, reduced range



Transmission channel C1, standard range

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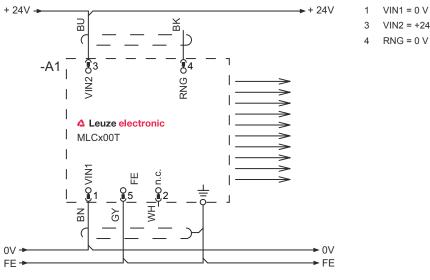
- VIN1 = +24 V
 - VIN2 = 0 V

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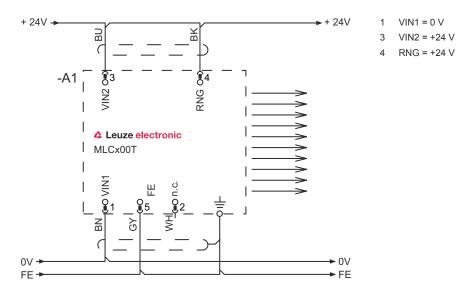
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Circuit diagrams

Transmission channel C2, reduced range



Transmission channel C2, standard range



Operation and display Dienlay

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

VIN1 = 0 V

- VIN2 = +24 V
- RNG = 0 V or open

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Suitable receivers

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Part no.	Designation	Article	Description
68001409	MLC510R40-900	Safety light curtain receiver	Resolution: 40 mm Protective field height: 900 mm Response time: 9 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic
68002409	MLC520R40-900	Safety light curtain receiver	Resolution: 40 mm Protective field height: 900 mm Response time: 9 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard
68003409	MLC530R40-900	Safety light curtain receiver	Resolution: 40 mm Protective field height: 900 mm Response time: 9 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended
68009409	MLC530R40-900- SPG	Safety light curtain receiver	Resolution: 40 mm Protective field height: 900 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
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
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.G.	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.
	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.