

Technical data sheet

Safety light curtain transmitter

Part no.: 68040209
MLC500T20-900-EX2



For illustration purposes only

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Circuit diagrams
- Operation and display
- Suitable receivers
- Part number code
- Notes
- Accessories



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

Type	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	20 mm
Protective field height	900 mm
Operating range	0 ... 9 m

Optical data

Synchronization	Optical between transmitter and receiver
Light source	LED, Infrared
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

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 properties

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)	30.7 mm x 966 mm x 40.3 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic/PC
Material of end caps	Diecast zinc
Net weight	1,050 g
Housing color	Silver
Type of fastening	Groove mounting
	Mounting brackets
	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
	c UL US
	TÜV Süd
Vibration resistance	50 m/s²
Shock resistance	100 m/s²
US patents	US 6,418,546 B

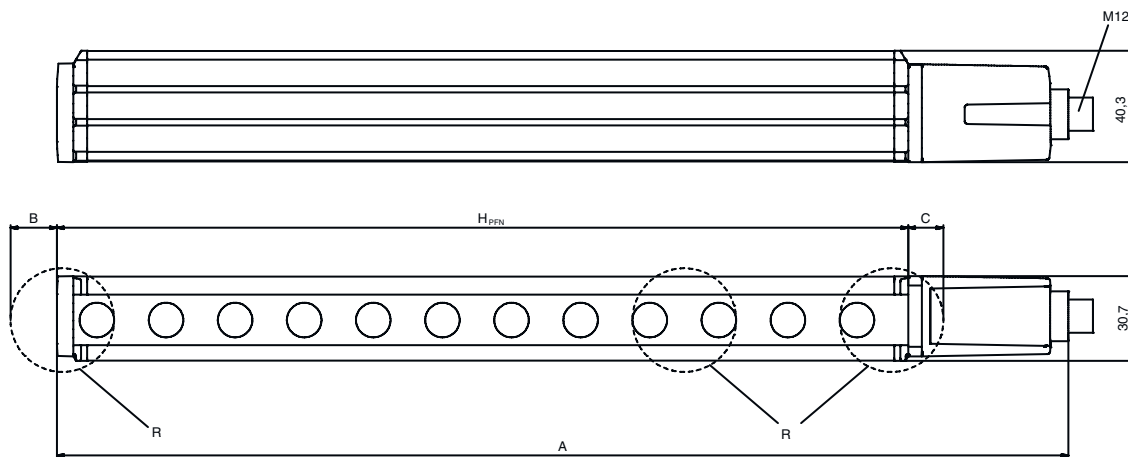
Technical data

Customs tariff number	85365019
ECLASS 5.1.4	27272704
ECLASS 8.0	27272704
ECLASS 9.0	27272704
ECLASS 10.0	27272704
ECLASS 11.0	27272704
ECLASS 12.0	27272704
ECLASS 13.0	27272704
ECLASS 14.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
ETIM 9.0	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 = 917 mm

H_{PFN} Nominal protective field height = 900 mm

A Total height = 966 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.

Dimensioned drawings

K-VM12-Ex interlocking guard



Electrical connection

Connection 1

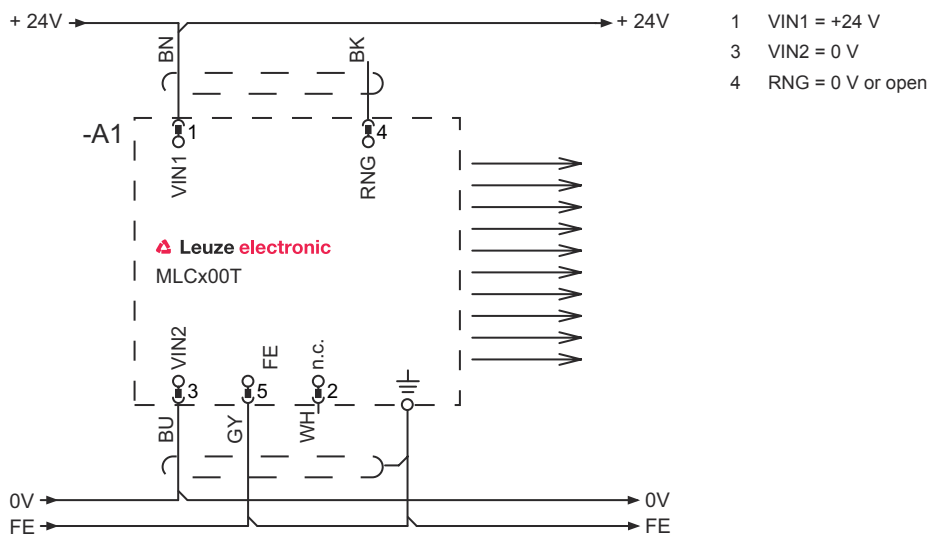
Function	Machine interface
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded
Connector housing	FE/SHIELD

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

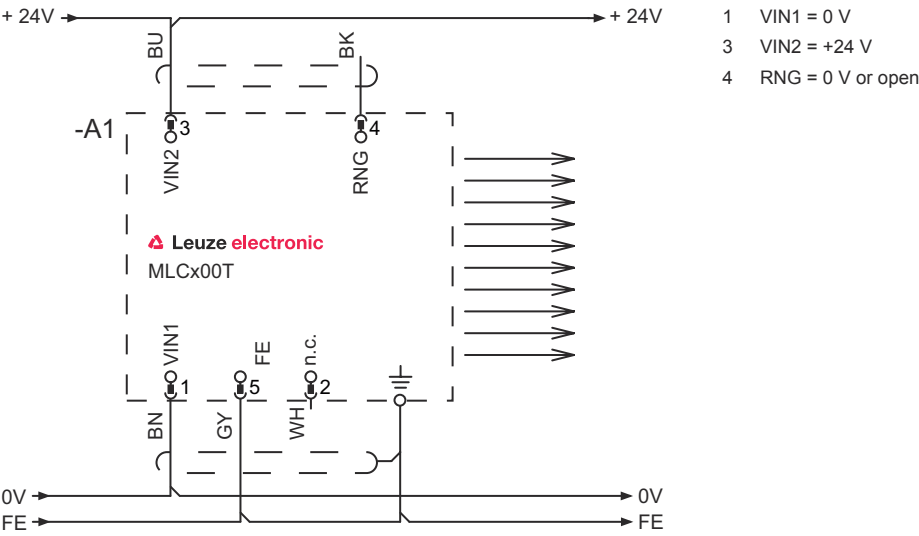


Transmission channel C1, standard range

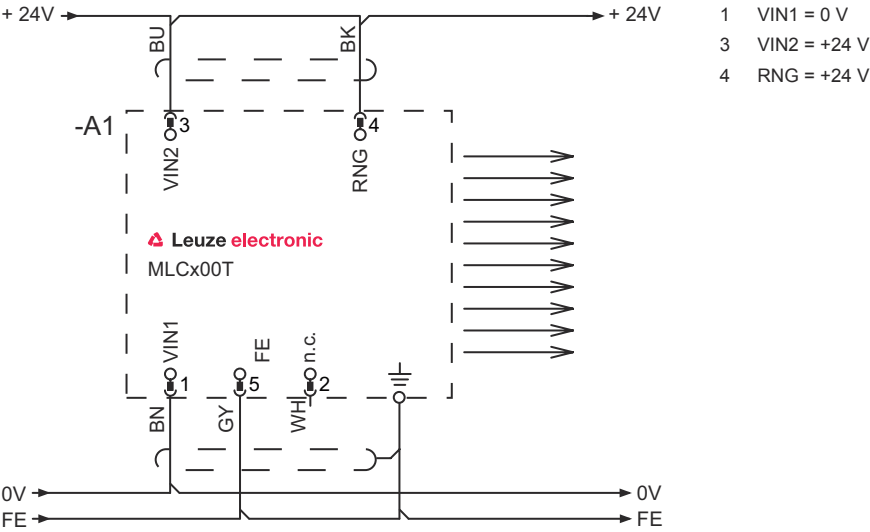


Circuit diagrams

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

	Part no.	Designation	Article	Description
	68042209	MLC520R20-900-EX2	Safety light curtain receiver	Function package: Standard Resolution: 20 mm Protective field height: 900 mm Response time: 17 ms Connection: Connector, M12, Metal, 8 -pin

Part number code

Part designation: MLCxyy-za-hhhhei-ooo

MLC Safety light curtain

x	Series 3: MLC 300 5: MLC 500
yy	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
i	Interface (optional) /A: AS-i
ooo	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 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 Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

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	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.
	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.

Accessories

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