



Figure can vary

**Part no.: 68004316**  
**MLC501T30-1650**  
**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	Transmission channel changeover Range reduction
<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	30 mm
Protective field height	1,650 mm
Operating range	0 ... 10 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 group	Exempt group in acc. with EN 62471:2008
<b>Electrical data</b>	
Protective circuit	Short circuit protected Overvoltage protection
<b>Performance data</b>	
Supply voltage	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)

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**Connection 1**

Type of connection	Connector
Function	Machine interface
Thread size	M12
Material	Metal
No. of pins	4 -pin

**Cable properties**

Permissible conductor cross section, typ.	0.25 mm <sup>2</sup>
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 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	Mounting on Device Column Swivel mount Groove mounting Mounting bracket

**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 %


**Certifications**

Degree of protection	IP 65
Protection class	III
Certifications	TÜV Süd c CSA US c TÜV NRTL US
Vibration resistance	50 m/s <sup>2</sup>
Shock resistance	100 m/s <sup>2</sup>
US patents	US 6,418,546 B

**Classification**

eCl@ss 8.0	27272704
eCl@ss 9.0	27272704
ETIM 5.0	EC002549

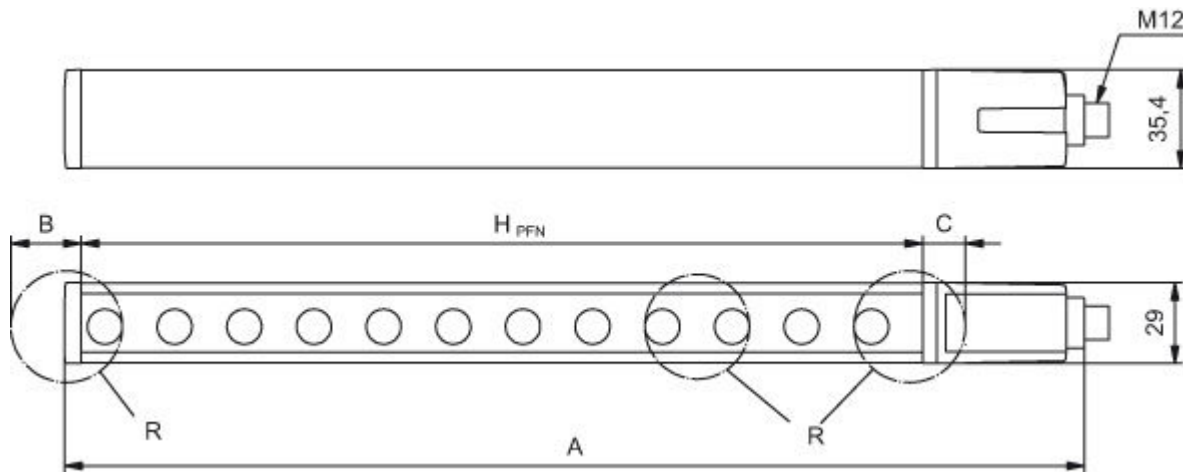
### Suitable receivers

	Part no.	Designation	Article	Description
	68005316	MLC511R30-1650	Safety light curtain receiver	Resolution: 30 mm Protective field height: 1,650 mm Response time: 15 ms Connection: Connector, M12, Metal, 4 -pin Function package: Basic

### Dimensioned drawings

All dimensions in millimeters

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

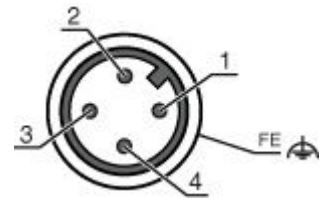


HPFE	Effective protective field height = 1678 mm
HPFN	Nominal protective field height = 1650 mm
A	Total height = 1716 mm
B	19 mm
C	9 mm
R	Effective protective field height $HPFE$ goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

### Electrical connection

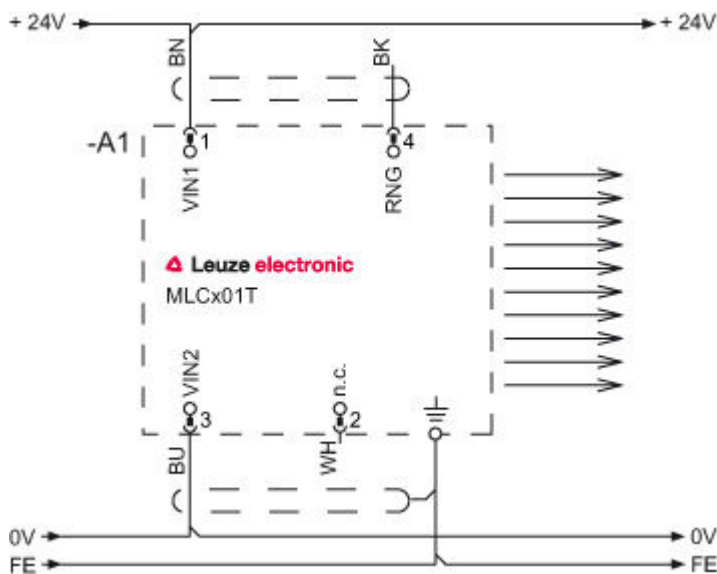
Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Type	Male
Material	Metal
No. of pins	4 -pin
Encoding	A-coded
Connector housing	FE/SHIELD

Pin	Pin assignment	Conductor color
1	VIN1	Brown
2	n.c.	White
3	VIN2	Blue
4	RNG	Black



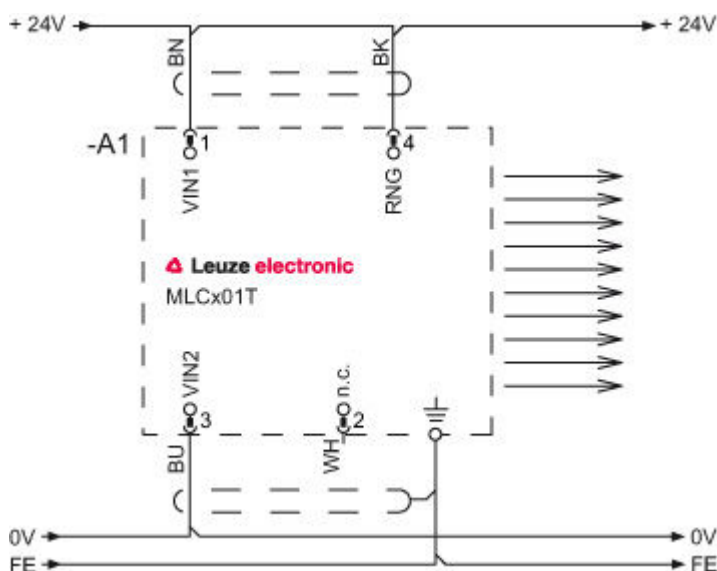
### Circuit diagrams

Transmission channel C1, reduced range



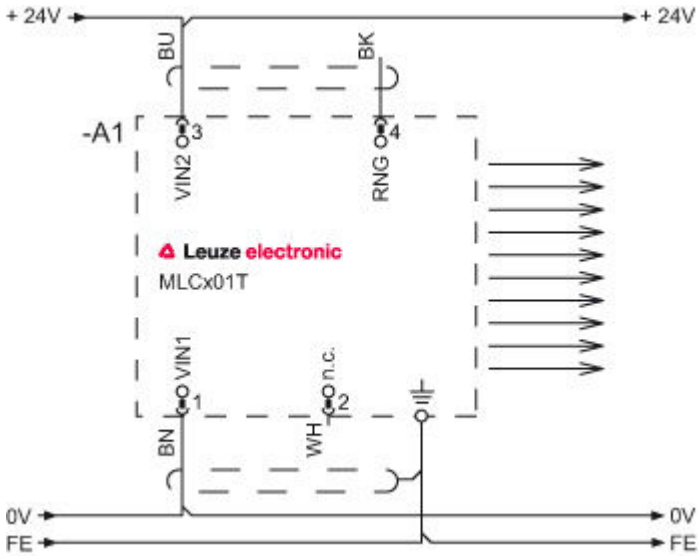
- 1 VIN1 = +24 V
- 3 VIN2 = 0 V
- 4 RNG = 0 V or open

Transmission channel C1, standard range



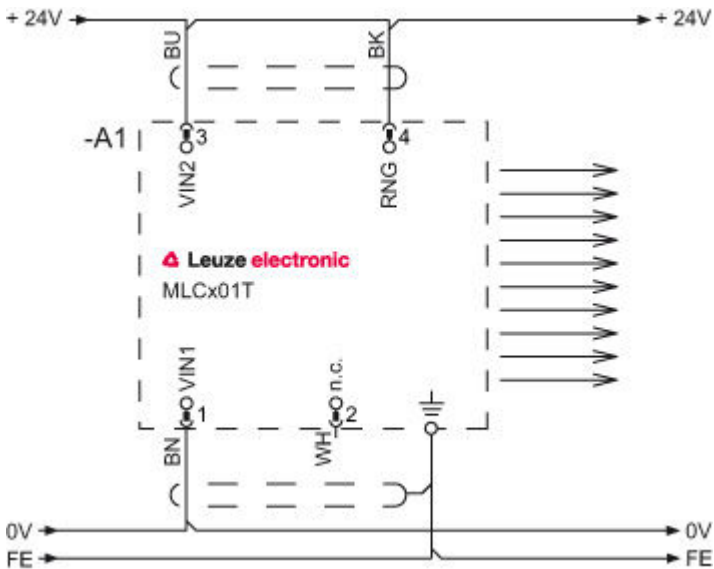
- 1 VIN1 = +24 V
- 3 VIN2 = 0 V
- 4 RNG = +24 V

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

## Part number code

Part designation: **MLCxyy-za-hhhhei-ooo**

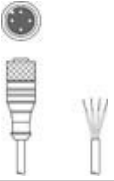

MLC	Safety light curtain
x	<b>Series:</b> 3: MLC 300 5: MLC 500
yy	<b>Function classes:</b> 00: Transmitter 01: transmitter (AIDA) 02: Transmitter with test input 10: Basic receiver - automatic restart 11: basic receiver - automatic restart (AIDA) 20: Standard receiver - EDM/RES selectable 30: Extended 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
hhh	<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 electronic website at [www.leuze.com](http://www.leuze.com).

## Accessories



### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130726	KD S-M12-4A-P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50130727	KD S-M12-4A-P1-100	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR


### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	429056	BT-2L	Mounting bracket set	Design of mounting device: Angle, L-shape Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Screw type Material: Metal
	429057	BT-2Z	Mounting bracket set	Design of mounting device: Angle, Z-shape Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Screw type Material: Metal






### Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
	429393	BT-2HF	Mounting bracket set	Contains: 2x BT-HF swivel mount, 1 cylinder for mounting on the light curtain Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic
	429394	BT-2HF-S	Mounting bracket set	Contains: 2x BT-HF swivel mount, 1 cylinder for mounting on the light curtain Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic Shock absorber: Yes


### Mounting technology - Other

	Part no.	Designation	Article	Description
	425740	BT-10NC60	Sliding block set	Contains: 10x BT-NC sliding block Bore hole 1: Ø 4.7 mm Bore hole 2: M6 Design of mounting device: Sliding block Mounting bracket, at system: Mounting thread Mounting bracket, at device: Groove mounting Material: Metal




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	Part no.	Designation	Article	Description
	425741	BT-10NC64	Sliding block set	Contains: 10x BT-NC-M4-M6 sliding block Bore hole 1: M4 Bore hole 2: M6 Design of mounting device: Sliding block Mounting bracket, at system: Mounting thread Mounting bracket, at device: Groove mounting Material: Metal
	425742	BT-10NC65	Sliding block set	Contains: 10x BT-NC-M5-M6 sliding block Bore hole 1: M5 Bore hole 2: M6 Design of mounting device: Sliding block Mounting bracket, at system: Mounting thread Mounting bracket, at device: Groove mounting Material: Metal
	424417	BT-2P40	Mounting bracket set	Contains: 2x BT-P40 clamp bracket Design of mounting device: Mounting clamp Mounting bracket, at system: Groove mounting Mounting bracket, at device: Groove mounting Type of mounting device: Clampable Material: Metal
	424422	BT-2SB10	Mounting bracket set	Contains: 2x BT-SB10 Design of mounting device: Mounting clamp Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable, an der seitlichen C-Nut Type of mounting device: Swiveling Swivel range: -8 ... 8 ° Material: Metal
	424423	BT-2SB10-S	Mounting bracket set	Contains: 2x BT-SB10-S Design of mounting device: Mounting clamp Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable, an der seitlichen C-Nut Swivel range: -8 ... 8 ° Material: Metal Shock absorber: Yes


**Test rods**

	Part no.	Designation	Article	Description
	349945	AC-TR14/30	Test piece	Diameter 1: 14 mm Diameter 2: 30 mm Housing material: Plastic, ABS



**Alignment aids**

	Part no.	Designation	Article	Description
	427300	AC-ALM	Alignment aid	Housing material: Plastic
	520101	AC-ALM-M	Alignment aid	Housing material: Plastic
	560020	LA-78U	Alignment aid	Light source: laser, Red Housing material: Metal


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	Part no.	Designation	Article	Description
	520004	LA-78UDC	Alignment aid	Light source: laser, Red Housing material: Metal




## Protective screens

	Part no.	Designation	Article	Description
	429039	MLC-3PSF	Mounting bracket set	Type of fastening: Clampable Mounting device material: Metal
	347081	MLC-PS1650	Protective screen	Protective field height: 1,650 mm Material: PMMA, clear


## Deflecting mirror

	Part no.	Designation	Article	Description
	529616	UM60-1650	Deflecting mirror	Dimensions: 25 mm x 1,720 mm x 68 mm Protected field height up to: 1,650 mm Mirror length: 1,710 mm

## Device columns

	Part no.	Designation	Article	Description
	549854	UDC-1900-S2	Device column	Dimensions: 160 mm x 1,960 mm x 149 mm Column height without foot: 1,900 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions
	549867	UDC-2100-S2	Device column	Dimensions: 160 mm x 2,160 mm x 149 mm Column height without foot: 2,100 mm Functions: Adjustable, 3 directions, Mounting and protection of light curtains and multiple light beam devices
	549857	UDC-2500-S2	Device column	Dimensions: 160 mm x 2,560 mm x 149 mm Column height without foot: 2,500 mm Functions: Adjustable, 3 directions, Mounting and protection of light curtains and multiple light beam devices

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	Part no.	Designation	Article	Description
	549865	UDC-3100-S2	Device column	Dimensions: 160 mm x 3,160 mm x 149 mm Column height without foot: 3,100 mm Functions: Mounting and protection of light curtains and multiple light beam devices, Adjustable, 3 directions

## 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.