

# Technical data sheet Safety light curtain transmitter

Part no.: 68000312

MLC500T30-1200



### 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**

|  | Range reduction                 |
|--|---------------------------------|
|  | Transmission channel changeover |

### **Characteristic parameters**

| Туре           | 4, IEC/EN 61496          |
|----------------|--------------------------|
| SIL            | 3, IEC 61508             |
| SILCL          | 3, IEC/EN 62061          |
| Mission time T | 20 years. EN ISO 13849-1 |

#### Protective field data

| Resolution              | 30 mm    |
|-------------------------|----------|
| Protective field height | 1,200 mm |
| Operating range         | 0 10 m   |

#### **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

| r en onnance data             |                    |
|-------------------------------|--------------------|
| Supply voltage U <sub>B</sub> | 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                  |

DC

1 Piece(s)

## Connection

Voltage type

Number of connections

| Connection 1       |                   |
|--------------------|-------------------|
| Function           | Machine interface |
| Type of connection | Connector         |
| Thread size        | M12               |
| Material           | Metal             |
| No. of pins        | 5 -pin            |

| 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) | 29 mm x 1,266 mm x 35.4 mm |
|-----------------------|----------------------------|
| Housing material      | Metal, Aluminum            |
| Lens cover material   | Plastic / PMMA             |
| Material of end caps  | Diecast zinc               |
| Net weight            | 1,350 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 |
| Polative 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/s <sup>2</sup>  |
| Shock resistance     | 100 m/s <sup>2</sup> |
| US patents           | US 6,418,546 B       |
|                      |                      |

#### Classification

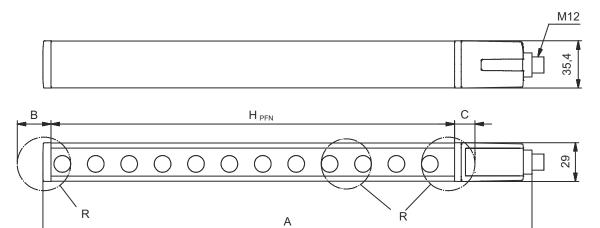
| Customs tariff number | 85365019 |
|-----------------------|----------|
| eCl@ss 8.0            | 27272704 |
| eCl@ss 9.0            | 27272704 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |

# **Dimensioned drawings**



All dimensions in millimeters

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



 $H_{\mathsf{PFE}}$  Effective protective field height = 1228 mm

 $H_{\mathrm{PFN}}$  Nominal protective field height = 1200 mm

Total height = 1266 mm

19 mm

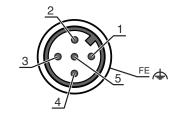
- С 9 mm
- Effective protective field height  $H_{\mathsf{PFE}}$  goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

## **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         |

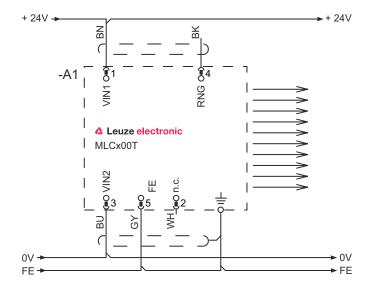
| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1   | VIN1           | Brown           |
| 2   | n.c.           | White           |
| 3   | VIN2           | Blue            |
| 4   | RNG            | Black           |
| 5   | FE/SHIELD      | Gray            |



# **Circuit diagrams**

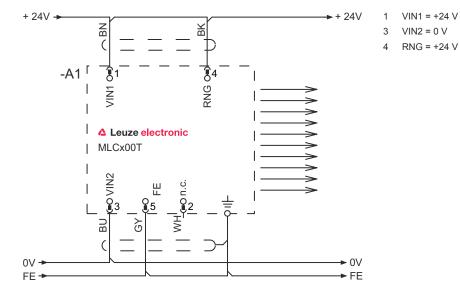


## Transmission channel C1, reduced range



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

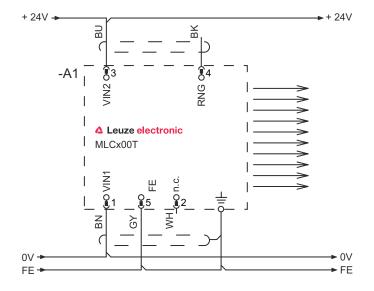
## Transmission channel C1, standard range



# **Circuit diagrams**

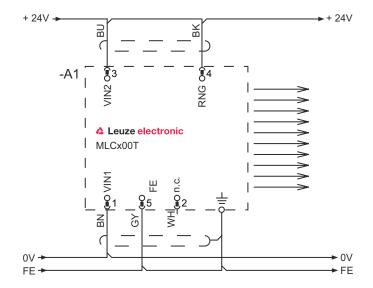


## Transmission channel C2, reduced range



- 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**

| 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                       |

Phone: +49 7021 573-0 • Fax: +49 7021 573-199

## Suitable receivers



| Part no. | Designation            | Article                          | Description                                                                                                                                                |
|----------|------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 68001312 | MLC510R30-1200         | Safety light curtain<br>receiver | Resolution: 30 mm Protective field height: 1,200 mm Response time: 12 ms Connection: Connector, M12, Metal, 5 -pin Function package: Basic                 |
| 68002312 | MLC520R30-1200         | Safety light curtain receiver    | Resolution: 30 mm Protective field height: 1,200 mm Response time: 12 ms Connection: Connector, M12, Metal, 8 -pin Function package: Standard              |
| 68003312 | MLC530R30-1200         | Safety light curtain receiver    | Resolution: 30 mm Protective field height: 1,200 mm Response time: 12 ms Connection: Connector, M12, Metal, 8 -pin Function package: Extended              |
| 68009312 | MLC530R30-1200-<br>SPG | Safety light curtain receiver    | Resolution: 30 mm Protective field height: 1,200 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                                                                                                                                                                                                                                 |
| 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                                                                                                                                                                                                               |
| е    | Host/Guest (optional) H: Host MG: Middle Guest G: Guest                                                                                                                                                                                                                |

## Part number code



| MLC | Safety light curtain                                                                               |  |  |  |
|-----|----------------------------------------------------------------------------------------------------|--|--|--|
| i   | Interface (optional)<br>/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 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<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

# Mounting technology - Swivel mounts

|        | Part no. | Designation | Article              | Description                                                                                                                                                 |
|--------|----------|-------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P. Car | 429393   | BT-2HF      | Mounting bracket set | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic |

# Alignment aids

|   | Part no. | Designation | Article       | Description               |
|---|----------|-------------|---------------|---------------------------|
| 1 | 520101   | AC-ALM-M    | Alignment aid | Housing material: Plastic |

## **Accessories**



## Services

| <br>Part no. | Designation | Article                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|-------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S981050      | CS40-I-140  | Safety inspection<br>"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 website in the Download tab of the article detailed page.