

Technical data sheet Safety sensor/transmitter set

Part no.: 544004

MLC500T14-900-IP



For illustration purposes only

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Technical data

Basic data

| | |
|-------------|-----------------------|
| Series | MLC 500 |
| Device type | Transmitter |
| Contains | 2x BT-IP swivel mount |
| Application | Finger protection |

Functions

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

Characteristic parameters

| | |
|--------------------|--------------------------|
| Type | 4, IEC/EN IEC 61496 |
| SIL | 3, IEC 61508 |
| SIL | 3, IEC/EN IEC 62061 |
| Mission time T_M | 20 years, EN ISO 13849-1 |

Protective field data

| | |
|-------------------------|-------------|
| Resolution | 14 mm |
| Protective field height | 900 mm |
| Operating range | 0 ... 4.8 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, type. | 22.5 V |
| Voltage type | DC |

Connection

| | |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

Connection 1

| | |
|--------------------|----------------------|
| Function | Machine interface |
| Type of connection | Cable with connector |
| Cable length | 10,000 mm |
| Sheathing material | PVC |
| Thread size | M12 |
| Material | Metal |
| No. of pins | 5 -pin |

Cable properties

| | |
|--|----------------------|
| Permissible conductor cross section, type. | 0.25 mm ² |
| Length of connection cable, max. | 100 m |
| Permissible cable resistance to load, max. | 200 Ω |

Mechanical data

| | |
|--------------------------------|--------------------|
| Dimension (\varnothing x L) | 52.5 mm x 1,100 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 | Swivel mount |

Protective tube

| | |
|--|------------------------------|
| Material | PMMA, clear |
| Material of end caps | V4A stainless steel (1.4404) |
| Material of clamping cylinder | PA 6 |
| Material of pressure-equalization membrane | PA 6 |
| Cable gland material | PA 6 |

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 IP 66 IP 67 IP 69K |
| Protection class | III |
| Approvals | c TÜV NRTL US c UL US S Mark TÜV Süd |
| Vibration resistance | 50 m/s ² |
| Shock resistance | 100 m/s ² |
| 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 |
| ECLASS 15.0 | 27272704 |
| ECLASS 16.0 | 27272704 |
| ETIM 5.0 | EC002549 |
| ETIM 6.0 | EC002549 |
| ETIM 7.0 | EC002549 |
| ETIM 8.0 | EC002549 |
| ETIM 9.0 | EC002549 |
| ETIM 10.0 | EC002549 |
| UNSPSC 26.08 | 46171620 |

Dimensioned drawings

All dimensions in millimeters

MLC safety light curtains pre-mounted in the IP protective tube



- a Connection cable
- b Mounting brackets for mounting
- c End caps, stainless steel V4A
- d MLC transmitter
- e IP protective tube

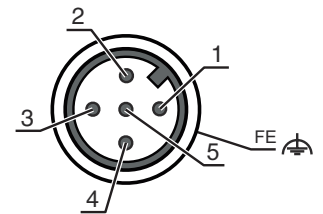
- A Total height incl. mounting brackets = 1120 mm
- L Spacing of drilled holes for mounting brackets = 1100 mm
- H_{PFN} Effective protective field height = 900 mm

Electrical connection

Connection 1

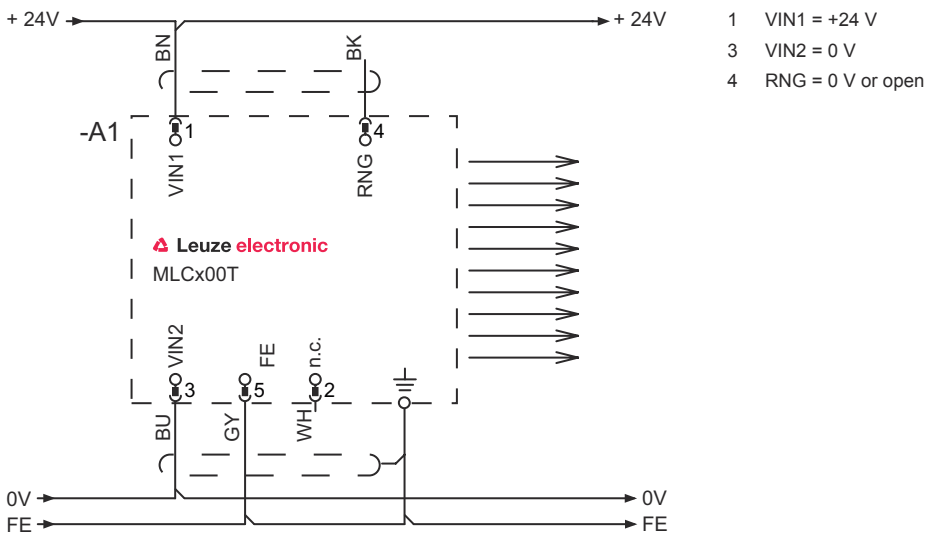
| | |
|--------------------|----------------------|
| Function | Machine interface |
| Type of connection | Cable with connector |
| Cable length | 10,000 mm |
| Sheathing material | PVC |
| Cable color | Black |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | 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 |



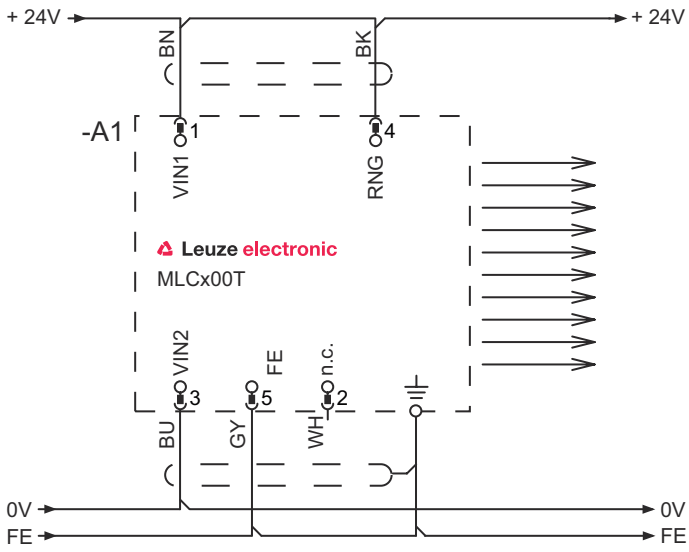
Circuit diagrams

Transmission channel C1, reduced range



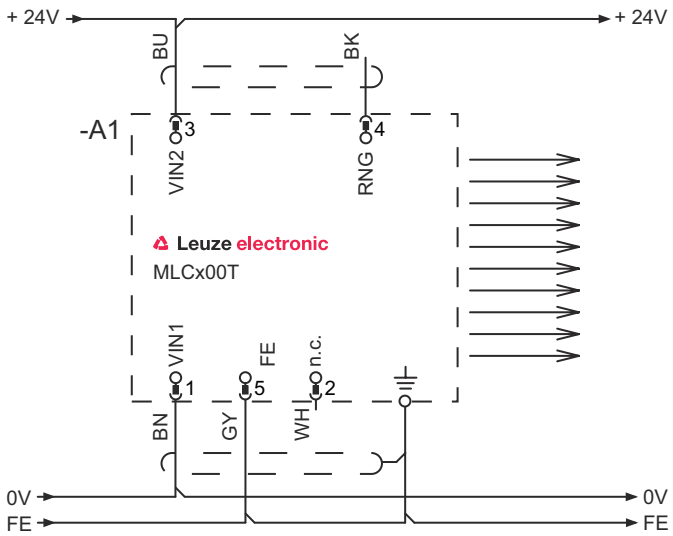
Circuit diagrams

Transmission channel C1, standard range



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

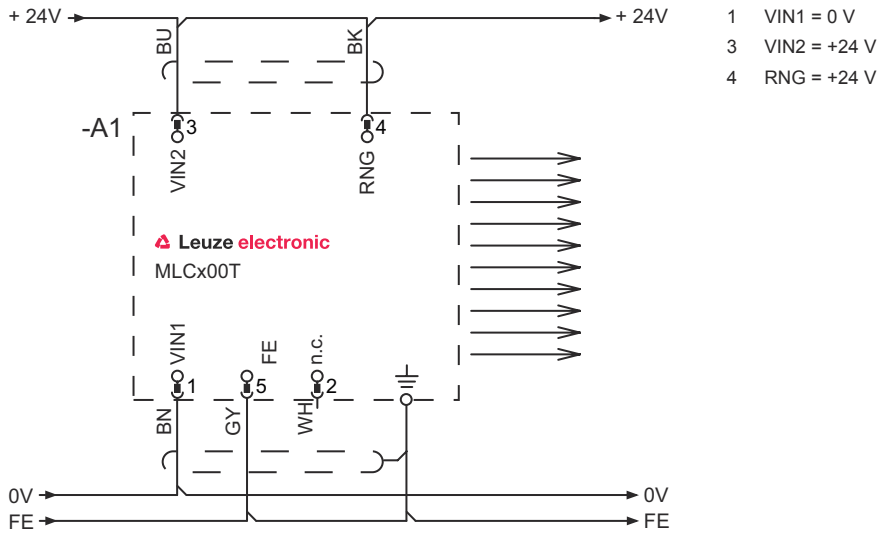
Transmission channel C2, reduced range



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

Circuit diagrams

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 |
|----------|------------------|----------------------------|---|
| 544011 | MLC510R14-900-IP | Safety sensor/receiver set | Function package: Basic Resolution: 14 mm Protective field height: 900 mm Response time: 20 ms Connection: Cable with connector, M12, Metal, 5 -pin, 10,000 mm, PVC |

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 or gating 35: Extended receiver – Gating |

Part number code

MLC Safety light curtain

| | |
|-------------|---|
| 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 SPG RR: Smart Process Gating – Reduced resolution |

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

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.