

# Technical data sheet Safety light curtain receiver

Part no.: 68091207

MLC310R20-750



#### Contents

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













## **Technical data**



#### Basic data

Series	MLC 300
Device type	Receiver
Contains	2x BT-NC sliding block
Application	Hand protection

#### **Functions**

Function package	Basic
Functions	Automatic start/restart
	Transmission channel changeover

#### **Characteristic parameters**

Туре	2, IEC/EN 61496
SIL	1, IEC 61508
SILCL	1, IEC/EN 62061
Performance Level (PL)	c, EN ISO 13849-1
PFH <sub>D</sub>	5.06E-08 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	2, EN ISO 13849

#### Protective field data

Resolution	20 mm
Protective field height	750 mm

#### **Optical data**

Synchronization	Optical between transmitter and receiver
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#### Electrical data

Protective circuit	Overvoltage protection
	Short circuit protected

Periormance data	
Supply voltage U <sub>B</sub>	24 V, DC, -20 20 %
Current consumption, max.	150 mA
Fuse	2 A semi time-lag

#### Outputs

Number of safety-related switching	2 Piece(s)
outputs (OSSDs)	

#### Safety-related switching outputs

Safety-related Switching Outputs	
Туре	Safety-related switching output OSSD
Switching voltage high, min.	18 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	22.5 V
Voltage type	DC
Current load, max.	380 mA
Load inductivity	2,000 μΗ
Load capacity	0.3 μF
Residual current, max.	0.2 mA
Residual current, typ.	0.002 mA
Voltage drop	1.5 V

#### Safety-related switching output 1

Assignment	Connection 1, pin 2
Switching element	Transistor, PNP

#### Safety-related switching output 2

Assignment	Connection 1, pin 4
Switching element	Transistor, PNP

#### **Timing**

Response time	14 ms
Restart delay time	100 ms

1 Piece(s)

#### Connection

**Number of connections** 

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

#### Cable properties

Cable propertion	
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 816 mm x 35.4 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	900 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	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	c CSA US
	c TÜV NRTL US
	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

## **Technical data**

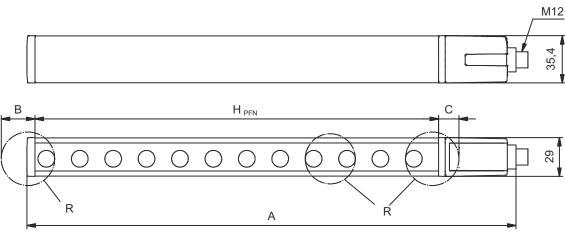


Customs tariff number	85365019
eCl@ss 5.1.4	27272704
eCI@ss 8.0	27272704
eCI@ss 9.0	27272704
eCI@ss 10.0	27272704
eCI@ss 11.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549

## **Dimensioned drawings**

All dimensions in millimeters

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



 $H_{\mathsf{PFE}}$  Effective protective field height = 767 mm  $H_{\mathrm{PFN}}$  Nominal protective field height = 750 mm

Total height = 816 mm

7 mm

- С 10 mm
- Effective protective field height H<sub>PFE</sub> goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

## **Electrical connection**

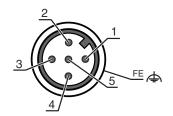
#### **Connection 1**

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

## **Electrical connection**

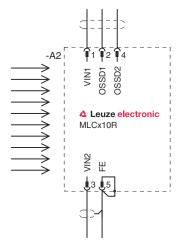


Pin	Pin assignment	Conductor color
1	VIN1	Brown
2	OSSD1	White
3	VIN2	Blue
4	OSSD2	Black
5	FE/SHIELD	Grav



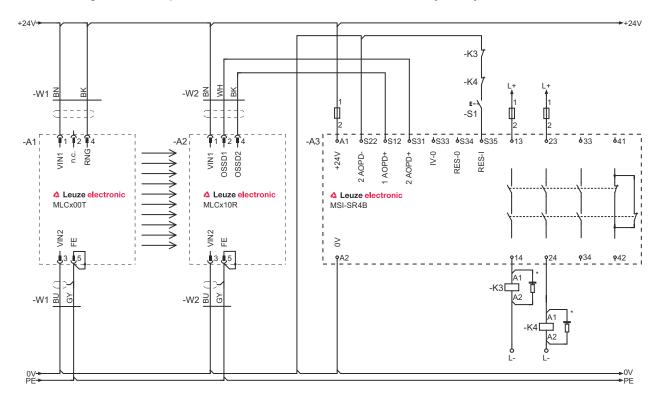
## **Circuit diagrams**

## Connection diagram receiver



- VIN1 = +24 V, VIN2 = 0 V: transmission channel C1
- VIN1 = 0 V, VIN2 = +24 V: transmission channel C2

Circuit diagram example with downstream MSI-SR4B safety relay







LED	Display	Meaning
1	Off	Device switched off
	Red, continuous light	OSSD off.
	Red, flashing, 1 Hz	External error
	Red, flashing, 10 Hz	Internal error
	Green, flashing, 1 Hz	OSSD on, weak signal
	Green, continuous light	OSSD on
2	Off	Transmission channel C1
	Red, continuous light	OSSD off, transmission channel C2

## Suitable transmitters

Part no.	Designation	Article	Description
68090207	MLC300T20-750	Safety light curtain transmitter	Resolution: 20 mm Protective field height: 750 mm Operating range: 0 15 m Connection: Connector, M12, Metal, 5 -pin

## 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
i	Interface (optional) /A: AS-i
000	Option  //: 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!



## **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
Paga	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

## 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



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