

# Technical data sheet Safety light curtain receiver

Part no.: 68017416

MLC510R40-1650H/A



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## **Technical data**



#### Basic data

Series	MLC 500
Device type	Receiver
Cascading	Host
Contains	2x BT-NC sliding block
Application	Access guarding
	Danger zone guarding
	Hand protection

## **Characteristic parameters**

Туре	4, IEC/EN 61496
SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
PFH <sub>D</sub>	7.73E-09 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

#### Protective field data

Resolution	40 mm
Protective field height	1,650 mm

#### **Optical data**

Number of beams	66 Piece(s)
Synchronization	Optical between transmitter and receiver

#### **Electrical data**

Protective circuit	Overvoltage protection
	Short circuit protected

## Performance data

Supply voltage U <sub>B</sub>	26.5 31.6 V
Current consumption from AS-i circuit	150 mA

#### Time behavior

	Response time	15 ms, plus response times of the Middle Guest/Guest devices
Restart delay time 100 ms	Restart delay time	100 ms

#### Interface

T	ype	AS-Interface Safety at Work
	AS-i	
	Function	Process
	AS-i profile	S-0.B.F
	Slave address	131 programmable, default=0
	Cycle time acc. to AS-i specifications	Max. 5 ms ms

#### Connection

**Number of connections** 

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

2 Piece(s)

Function	Cascade, Guest Out
	Cascade, Middle Guest Out
Type of connection	Cable with connector
Cable length	330 mm
Sheathing material	PUR
Thread size	M12
Material	Plastic
No. of pins	8 -pin

#### Cable properties

Permissible conductor cross section, type.	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 53 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	1,875 g
Housing color	Yellow, RAL 1021
Type of fastening	Groove mounting
	Mounting brackets
	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
Approvals	c TÜV NRTL US
	c UL 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**

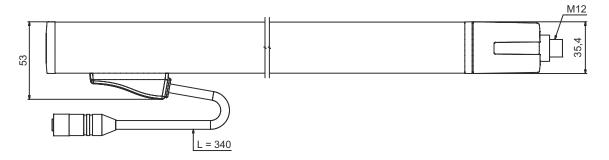


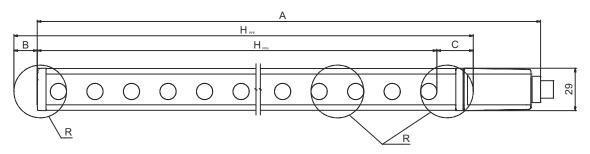
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ECLASS 8.0	27272704
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ECLASS 12.0	27272704
ECLASS 13.0	27272704
ECLASS 14.0	27272704
ECLASS 15.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
ETIM 9.0	EC002549
ETIM 10.0	EC002549

## **Dimensioned drawings**

All dimensions in millimeters

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





 $H_{\mathrm{PFE}}$  Effective protective field height = 1690 mm H<sub>PFN</sub> Nominal protective field height = 1650 mm

Total height = 1716 mm

25 mm

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

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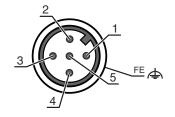
## **Electrical connection**



## **Connection 1**

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

Pin	Pin assignment
1	AS-i+
2	n.c.
3	AS-i-
4	n.c.
5	n.c.



## **Connection 2**

Function	Cascade, Guest Out	
	Cascade, Middle Guest Out	
Type of connection	Cable with connector	
Cable length	330 mm	
Sheathing material	PUR	
Cable color	Black	
Wire cross section	0.14 mm²	
Type of stranding	Pair stranding (twisted pair)	
Thread size	M12	
Туре	Female	
Material	Plastic	
No. of pins	8 -pin	
Encoding	A-coded	

## **Operation and display**

LED	Display	Meaning
1	Off	Device switched off
	Red, continuous light	Protective field interrupted
	Red, flashing, 1 Hz	External error
	Red, flashing, 10 Hz	Internal error
	Green, flashing, 1 Hz	Protective field free, weak signal
Green, continuous light		Protective field free
2	Off	No voltage
	On	OSSD off, transmission channel C2
	Green, continuous light	AS-i slave communicating with AS-i master
	Red, continuous light	AS-i slave not communicating with AS-i master
	Yellow, flashing	AS-i slave has invalid address 0
	Red, flashing	AS-i slave device error or AS-i connection defective
	Red/green, flashing alternately	Periphery error

## Suitable transmitters



P	Part no.	Designation	Article	Description
6	8016416	MLC500T40-1650H/A	Safety light curtain transmitter	Resolution: 40 mm Protective field height: 1,650 mm Operating range: 0 20 m Interface: AS-Interface Safety at Work Connection: Connector, M12, Metal, 5 -pin

## Part number code

Part designation: MLCxvv-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 or gating 35: Extended receiver – Gating
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  /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!



 $\ ^{\ \ }\ \$  Only use the product in accordance with its intended use.

## **Accessories**



## Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	429278	CB-M12-2000E-8TP	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 8 -pin Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR

## Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
P. Ca	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	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.



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

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