



the sensor people





Part no.: 68092316 MLC320R30-1650 Safety light curtain receiver











Figure can vary

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- Dimensioned drawings
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Technical data

Series MLC 300 Device type Receiver Contains 2x BT-NC Silding block Application Hand protection Functions Functions Functions Standard Functions Contacter monitoring (EDM) Surfrestant instructor (EES) Standard Functions Characteristic parameters Type 2, IEC/EN 81498 SIL 1, IEC/EN 82691 Performance Level (PL) 2, IEC/EN 81498 SIL 1, IEC/EN 82691 Performance Level (PL) 3, IEC/EN 82691 Performance Level (PL) 4, IEC/EN 82691 Performance Level (PL) 5, Soff-08 per hour Mission time Tix 20 years, EN ISO 13849-1 Category 2, EN ISO 13849 Protective field data Resolution 30 mm Protective field height 1, IEC/EN 82691 Performance data Synchronization Optical between transmitter and receiver Fiecrical data Performance data Supply voltage Us 24 V , DC , -20 20 % Current consumption, max. 150 mA Fuse 2 A semi time-lag Inputs Number of digital switching inputs 3 Piece(s) Switching voltage high, min. 18 V Switching voltage hyp. Digital switching input Switching voltage (pp.) Voltage type Digital switching input Switching voltage (pp.)	Basic data	
Device type		MI C 300
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Protective circuit Overvoltage protection Short circuit protected Performance data Supply voltage UB Current consumption, max. 150 mA Fuse 2 A semi time-lag Inputs Number of digital switching inputs Type Digital switching input Switching voltage high, min. Switching voltage low, max. Switching voltage, typ. 24 V , DC , -20 20 % 24 V , DC , -20 20 % Digital switching input Digital switching input 18 V Switching voltage low, max. 2.5 V Switching voltage, typ.		
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Short circuit protected Performance data Supply voltage UB	Protective circuit	Overvoltage protection
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Switching voltage high, min.18 VSwitching voltage low, max.2.5 VSwitching voltage, typ.22.5 V	Switching inputs	
Switching voltage low, max. 2.5 V Switching voltage, typ. 22.5 V	Туре	Digital switching input
Switching voltage, typ. 22.5 V	Switching voltage high, min.	18 V
	Switching voltage low, max.	2.5 V
Voltage type DC	Switching voltage, typ.	22.5 V
	Voltage type	DC



Outputs			
Number of safety-related switching outputs (OSSDs)	2 Piece(s)		
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 5		
Switching element	Transistor , PNP		
Safety-related switching output 2			
Assignment	Connection 1, pin 6		
Switching element	Transistor , PNP		
ning			
sponse time	15 ms		
at anti-dial action of	100 ms		
start delay time	100 1113		
start delay time	100 1113		
ennection	100 1113		
	1 Piece(s)		
onnection			
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onnection mber of connections Connection 1	1 Piece(s)		
onnection Imber of connections Connection 1 Type of connection	1 Piece(s) Connector		
connection Imper of connections Connection 1 Type of connection Function	1 Piece(s) Connector Machine interface		
mber of connections Connection 1 Type of connection Function Thread size	1 Piece(s) Connector Machine interface M12		
mber of connections Connection 1 Type of connection Function Thread size Material No. of pins	1 Piece(s) Connector Machine interface M12 Metal		
connection Imber of connections Connection 1 Type of connection Function Thread size Material	1 Piece(s) Connector Machine interface M12 Metal		
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mmber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ.	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm²		
mnection mber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max.	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m		
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mnection mber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max.	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω		
mmber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max.	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω		
mnection mber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max.	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω 29 mm x 1,716 mm x 35.4 mm Metal , Aluminum		
mmection mber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max. Pechanical data mension (W x H x L) susing material ms cover material	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω 29 mm x 1,716 mm x 35.4 mm Metal , Aluminum Plastic / PMMA		
mmber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max. Permissible cable resistance to load, max.	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω 29 mm x 1,716 mm x 35.4 mm Metal , Aluminum Plastic / PMMA Diecast zinc		
mmection mber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max. echanical data mension (W x H x L) susing material ms cover material aterial of end caps at weight	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω 29 mm x 1,716 mm x 35.4 mm Metal , Aluminum Plastic / PMMA Diecast zinc 1,800 g		
mmerction mber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max. Perhanical data mension (W x H x L) using material ms cover material aterial of end caps at weight using color	Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω 29 mm x 1,716 mm x 35.4 mm Metal , Aluminum Plastic / PMMA Diecast zinc 1,800 g Yellow, RAL 1021		
mmection mber of connections Connection 1 Type of connection Function Thread size Material No. of pins Cable properties Permissible conductor cross section, typ. Length of connection cable, max. Permissible cable resistance to load, max. echanical data mension (W x H x L) susing material ms cover material aterial of end caps at weight	1 Piece(s) Connector Machine interface M12 Metal 8 -pin 0.25 mm² 100 m 200 Ω 29 mm x 1,716 mm x 35.4 mm Metal , Aluminum Plastic / PMMA Diecast zinc 1,800 g		



Type of display	7-segment 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 %	

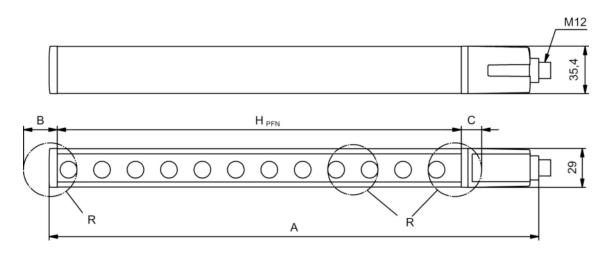
Certifications		
Degree of protection	IP 65	
Protection class	III	
Certifications	c CSA US c TÜV NRTL US TÜV Süd	
Vibration resistance	50 m/s²	
Shock resistance	100 m/s²	
US patents	US 6,418,546 B	

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 Hpfe = Hpfn + B + C



HPFE Effective protective field height = 1678 mm

HPFN Nominal protective field height = 1650 mm A Total height = 1716 mm

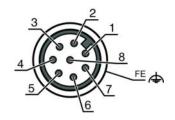
- B 19 mm
- C 9 mm
- R Effective protective field height HPFE goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.



Electrical connection

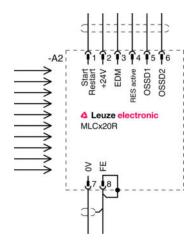
Connection 1		
Type of connection	Connector	
Function	Machine interface	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	8 -pin	
Encoding	A-coded	
Connector housing	FE/SHIELD	

Pin	Pin assignment	Conductor color
1	IO1	White
2	VIN1	Brown
3	IN3	Green
4	IN4	Yellow
5	OSSD1	Gray
6	OSSD2	Pink
7	VIN2	Blue
8	IN8	Red



Circuit diagrams

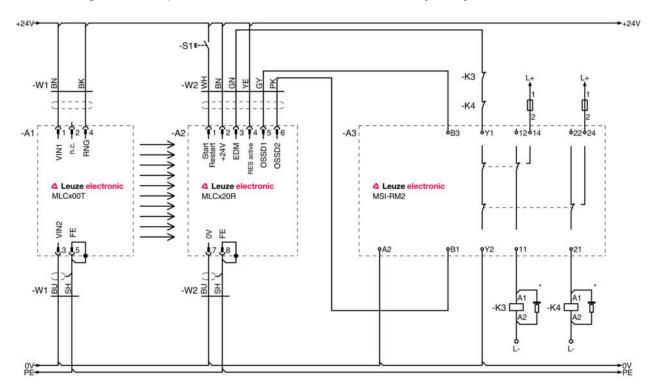
Connection diagram receiver



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



Circuit diagram example with downstream MSI-RM2 safety relay



Operation and display

LEDs

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 RES deactivated or RES activated ar protective field interrupted		RES deactivated or RES activated and enabled or RES blocked and protective field interrupted
	Yellow, continuous light	RES activated and blocked but ready to be unlocked - protective field free and linked sensor is enabled if applicable

Suitable transmitters

Part no.	Designation	Article	Description
68090316	MLC300T30-1650	transmitter	Resolution: 30 mm Protective field height: 1,650 mm Operating range: 0 10 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
а	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

Note

A list with all available device types can be found on the Leuze electronic 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
50135128	KD S-M12-8A- P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199



Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
P.C.	429393	BT-2HF	Mounting bracket set	Contains: 2x BT-HF swivel mount, 1 cylinder for mounting on the light curtain 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 electronic website in the Download tab of the article detailed page.