

Technical data sheet Safety sensor/receiver set

Part no.: 544031

MLC530R20-600-IP



For illustration purposes only

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Technical data

Basic data

Series	MLC 500
Device type	Receiver
Contains	2x BT-IP swivel mount
Application	Hand protection

Functions

Function package	Extended
Functions	Configuration by means of wiring

Characteristic parameters

Type	4, IEC/EN IEC 61496
SIL	3, IEC 61508
SIL	3, IEC/EN IEC 62061
Performance Level (PL)	e, EN ISO 13849-1
PFH _D	7.73E-09 per hour
Mission time T _M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

Protective field data

Resolution	20 mm
Protective field height	600 mm

Optical data

Synchronization	Optical between transmitter and receiver
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Electrical data

Performance data	
Supply voltage U _B	24 V, DC, -20 ... 20 %
Current consumption, max.	150 mA
Fuse	2 A semi time-lag

Inputs	
Number of digital switching inputs	1 Piece(s)

Switching inputs	
Type	Digital switching input
Voltage type	DC

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

Safety-related switching outputs	
Type	Safety-related switching output OSSD

Safety-related switching output 1	
Switching element	Transistor

Safety-related switching output 2	
Switching element	Transistor

Time behavior

Response time	12 ms
Restart delay time	100 ms

Connection

Number of connections	1 Piece(s)
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Connection 1

Type of connection	Cable with connector
Cable length	25,000 mm
Sheathing material	PVC
Thread size	M12
Material	Metal
No. of pins	8 -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 (Ø x L)	52.5 mm x 800 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic / PMMA
Net weight	750 g

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

Certifications

Degree of protection	IP 65
	IP 66
	IP 67
	IP 69K
Approvals	c TÜV NRTL US
	c UL US
	TÜV Süd
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 receiver
- e IP protective tube

- A Total height incl. mounting brackets = 820 mm
- L Spacing of drilled holes for mounting brackets = 800 mm
- H_{PFN} Effective protective field height = 600 mm

Electrical connection

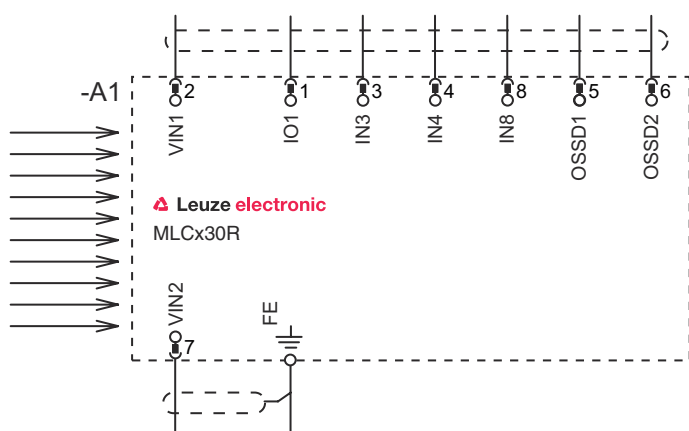
Connection 1

Type of connection	Cable with connector
Cable length	25,000 mm
Sheathing material	PVC
Cable color	Gray
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
Connector housing	FE/SHIELD

Pin	Pin assignment
1	IO1/RES
2	VIN1
3	IN3
4	IN4
5	OSSD1
6	OSSD2
7	VIN2
8	IN8

Circuit diagrams

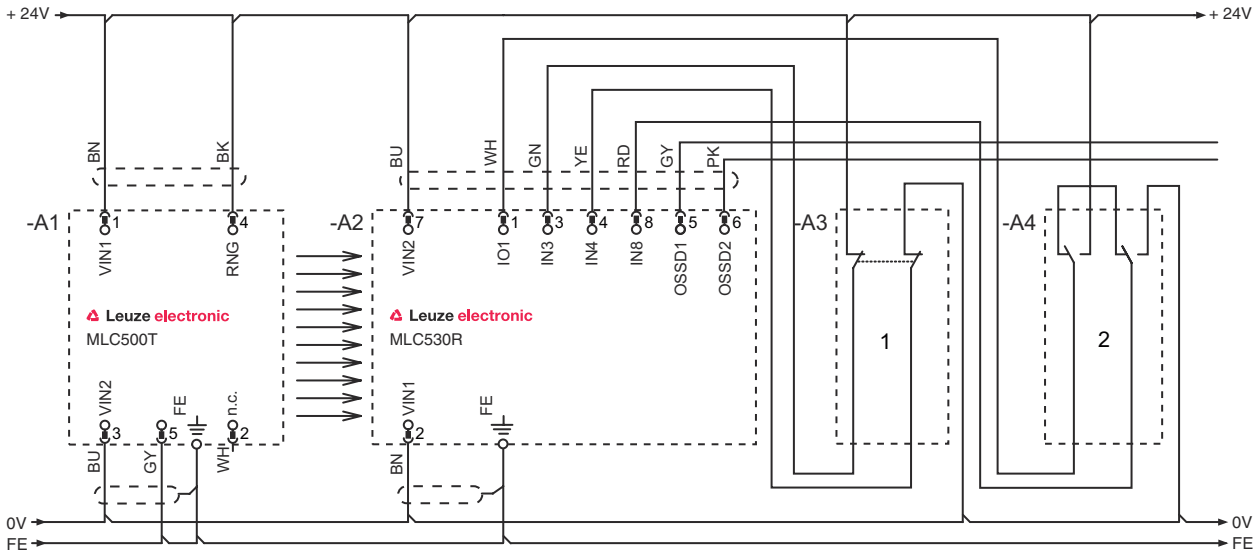
Connection diagram receiver



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

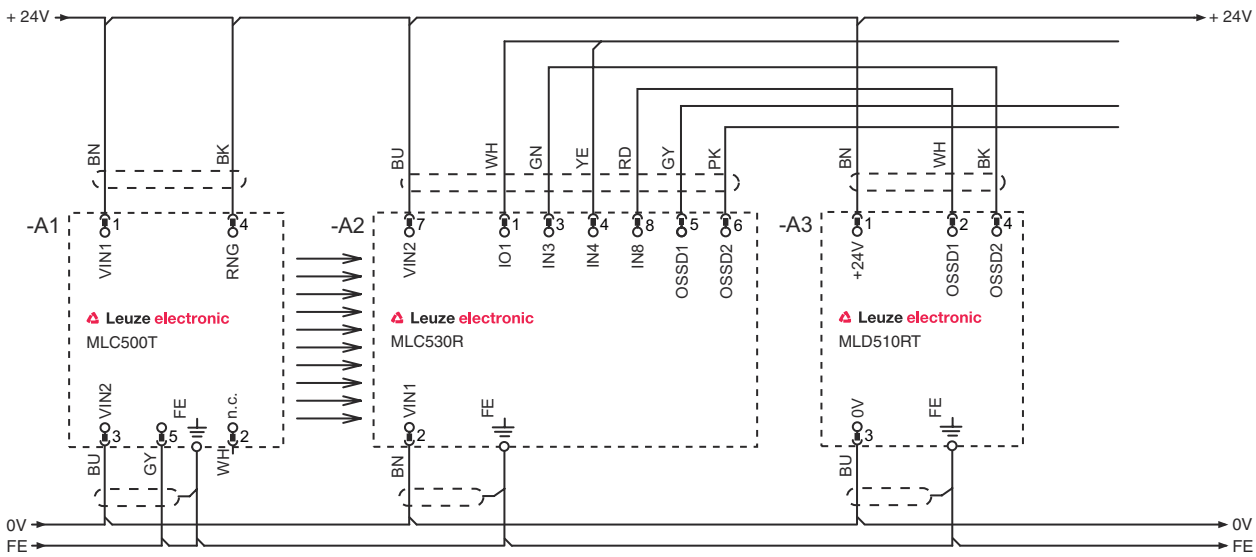
Circuit diagrams

Operating mode 1: connection example with Smart Process Gating (SPG)

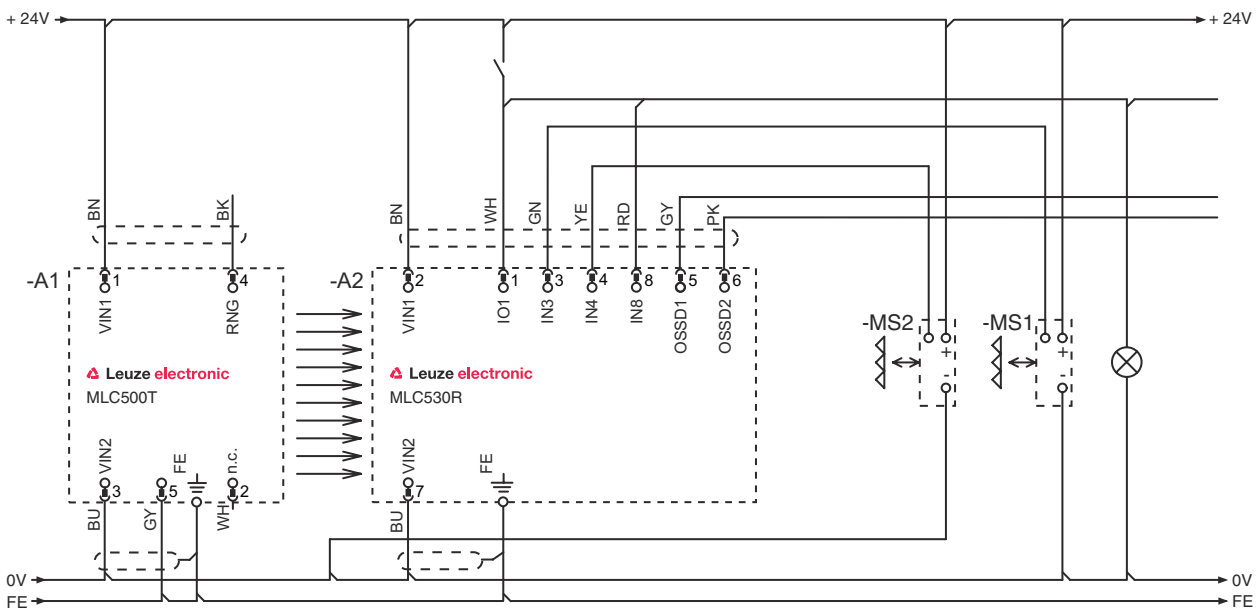
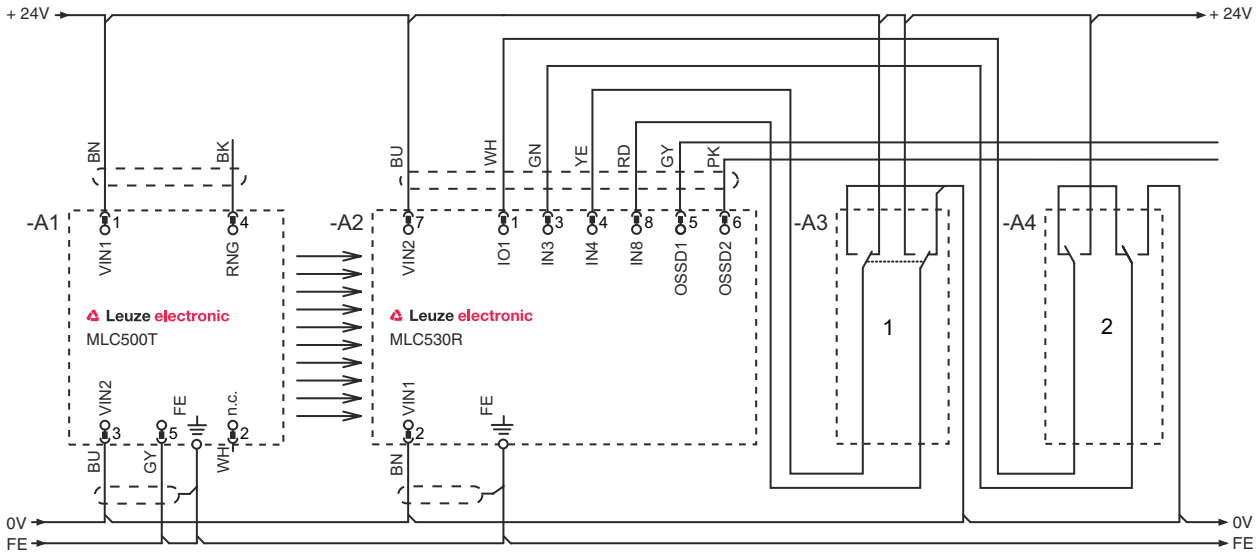


1 Linked safety sensor, e.g. safety door switch

Operating mode 2: circuit diagram example of linkage of electronic safety-related switching outputs for the combined monitoring of access points and areas



Circuit diagrams




Operation and display

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

Operation and display

LED	Display	Meaning
2	Off Red, continuous light	Transmission channel C1 OSSD off, transmission channel C2

Suitable transmitters

	Part no.	Designation	Article	Description
	544030	MLC500T20-600-IP	Safety sensor/transmitter set	Resolution: 20 mm Protective field height: 600 mm Operating range: 0 ... 4.8 m Connection: Cable with connector, M12, Metal, 5 -pin, 10,000 mm, PVC

Part number code

Part designation: MLCxyy-za-hhhh-ei-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
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.

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.

Note



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