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Part no.: 66064300
MLD330-R4M
Multiple light beam safety device receiver

Contents

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Technical data

Basic data	
Series	MLD 300
Device type	Receiver
Special design	
Special design	Integrated muting indicator Integrated status indicator
Functions	
Functions	Alternative connection for second muting signal Contactor monitoring (EDM), selectable Muting enable function Muting-timeout extension Partial muting Sequence controlled 2-sensor muting Start/restart interlock (RES) Timing controlled 2-sensor muting
Characteristic parameters	
Type	2 , IEC/EN 61496
SIL	1 , IEC 61508
SILCL	1 , IEC/EN 62061
Performance Level (PL)	c , EN ISO 13849-1
$MTTF_d$	204 years , EN ISO 13849-1
PFH_D	1.2E-08 per hour
Mission time T_M	20 years , EN ISO 13849-1
Category	3 , EN ISO 13849
Optical data	
Number of beams	4 Piece(s)
Beam spacing	300 mm
Electrical data	
Selection of operating mode	Connection 1, pin 2: +24 V for operating mode 1, 2, 4 Connection 1, pin 2: 0 V for operating mode 3, 5, 6 Connection 1, pin 7: +24 V for operating mode 3, 5, 6 Connection 1, pin 7: 0 V for operating mode 1, 2, 4
Protective circuit	Overvoltage protection Short circuit protected
Performance data	
Supply voltage U_B	24 V , DC , -20 ... 20 %
Current consumption, max.	150 mA , Without external load
Fuse	External with max. 3 A

Inputs	
Number of digital switching inputs	4 Piece(s)
Switching inputs	
Type	Digital switching input
Switching voltage high, min.	18.2 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	23 V
Voltage type	DC
Switching current, max.	5 mA
Digital switching input 1	
Assignment	Connection 1, pin 1
Function	Control input for start/restart interlock (RES)
Digital switching input 2	
Assignment	Connection 1, pin 3
Function	Control input for contactor monitoring (EDM)
Digital switching input 3	
Assignment	Connection 1, pin 4
Function	Control input, second muting signal
Digital switching input 4	
Assignment	Connection 1, pin 8
Function	Control input, muting enable/ timeout

Part no.: 66064300 – MLD330-R4M – Multiple light beam safety device receiver

Outputs	
Number of safety-related switching outputs (OSSDs)	2 Piece(s)
Number of digital switching outputs	1 Piece(s)
Safety-related switching outputs	
Type	Safety-related switching output OSSD
Switching voltage high, min.	18.2 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	23 V
Voltage type	DC
Current load, max.	380 mA
Load inductivity	2,200,000 µH
Load capacity	0.3 µF
Residual current, max.	0.2 mA
Residual current, typ.	0.002 mA
Voltage drop	1 V
Safety-related switching output 1	
Assignment	Connection 1, pin 6
Switching element	Transistor , PNP
Safety-related switching output 2	
Assignment	Connection 1, pin 5
Switching element	Transistor , PNP
Switching outputs	
Type	Digital switching output
Switching voltage high, min.	18.2 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	23 V
Voltage type	DC
Switching output 1	
Assignment	Connection 1, pin 1
Switching element	Transistor , PNP

Timing	
Response time	50 ms
Restart delay time	100 ms

Connection	
Number of connections	2 Piece(s)
Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Material	Metal
No. of pins	8 -pin
Connection 2	
Type of connection	Connector
Function	Local interface
Thread size	M12
Material	Metal
No. of pins	5 -pin

Cable properties	
Permissible conductor cross section, typ.	0.25 mm²
Length of connection cable, max.	100 m
Permissible cable resistance to load, max.	200 Ω

Mechanical data	
Dimension (W x H x L)	52 mm x 1,000 mm x 64.7 mm
Housing material	Metal , Aluminum
Lens cover material	Plastic / PMMA
Material of end caps	Diecast zinc
Net weight	2,200 g
Housing color	Yellow, RAL 1021
Type of fastening	Groove mounting Swivel mount

Operation and display	
Type of display	Integrated muting indicator LED
Number of LEDs	2 Piece(s)

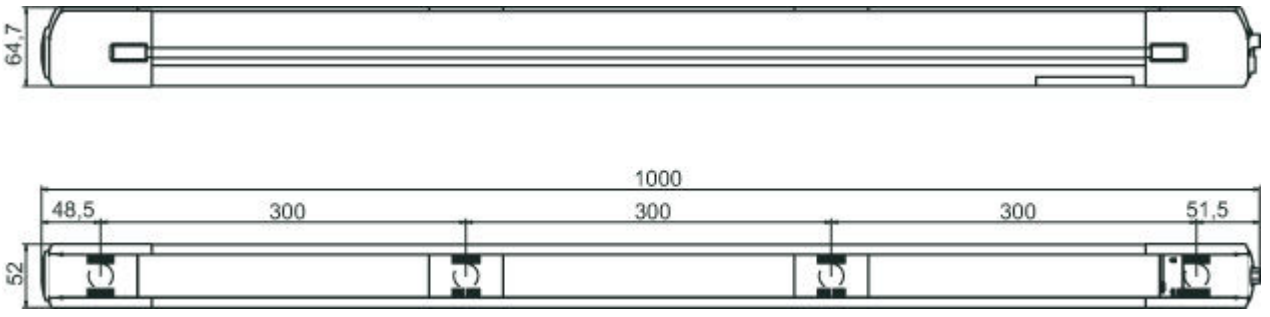
Environmental data	
Ambient temperature, operation	-30 ... 55 °C
Ambient temperature, storage	-40 ... 75 °C
Relative humidity (non-condensing)	0 ... 95 %

Certifications	
Degree of protection	IP 67
Protection class	III
Certifications	c CSA US c TÜV NRTL US TÜV Süd
US patents	US 6,418,546 B US 7,741,595 B

Classification	
Customs tariff number	85365019
eCl@ss 8.0	27272703
eCl@ss 9.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832

Dimensioned drawings

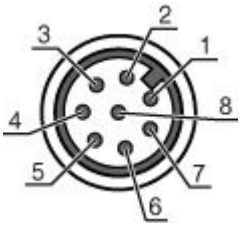
All dimensions in millimeters



Electrical connection

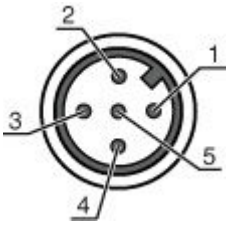
Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

Pin	Pin assignment	Conductor color
1	RES	White
2	VIN	Brown
3	EDM	Green
4	MS2	Yellow
5	OSSD2	Gray
6	OSSD1	Pink
7	VIN	Blue
8	M-EN/TO	Red



Connection 2	
Type of connection	Connector
Function	Local interface
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Pin	Pin assignment	Conductor color
1	+24V	Brown
2	MS2	White
3	0 V	Blue
4	MS1	Black
5	RES/LMP	Gray



Operation and display

LEDs

LED	Display	Meaning
1	Red, continuous light	OSSD off.
	Green, continuous light	OSSD on
	Red, flashing, 1 Hz	External error
	Red, flashing, 10 Hz	Internal error
	Green, flashing, 1 Hz	Weak signal, device not optimally aligned or soiled.
2	Yellow, continuous light	Start/restart interlock locked.

Suitable transmitters

	Part no.	Designation	Article	Description
	66001300	MLD300-T4	Multiple light beam safety device transmitter	Operating range: 0.5 ... 50 m Number of beams: 4 Piece(s) Beam spacing: 300 mm Connection: Connector, M12, Metal, 5 -pin

Part number code

Part designation: **MLDxyy-zab/t**

MLD	Multiple light beam safety device
x	**Series:** 3: MLD 300 5: MLD 500
yy	**Function classes:** 00: Transmitter 10: automatic restart 12: external testing 20: EDM/RES 30: muting 35: timing controlled 4-sensor muting
z	**Device type:** T: transmitter R: receiver RT: transceiver xT: transmitter with high range xR: receiver for high range
a	Number of beams
b	**Option:** L: integrated laser alignment aid (for transmitter/receiver) M: integrated status indicator (MLD 320, MLD 520) or integrated status and muting indicator (MLD 330, MLD 335, MLD 510/A, MLD 530, MLD 535) E: connection socket for external muting indicator (AS-i models only)
/t	**Safety-related switching outputs (OSSDs), connection technology:** -: transistor output, M12 plug A: integrated AS-i interface, M12 plug, (safety bus system)

Note
A list with all available device types can be found on the Leuze electronic website at www.leuze.com.

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

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.