



MLG20N-2240U10501

MLG-2

AUTOMATION LIGHT GRIDS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
MLG20N-2240U10501	1107373

Other models and accessories → www.sick.com/MLG-2

Detailed technical data

Features

Device version	ProNet - Replacement product (for MLG-1 with terminals)
Sensor principle	Sender/receiver
Minimum detectable object (MDO)	20 mm ¹⁾ 24 mm ²⁾ ³⁾
Beam separation	20 mm
Type of synchronization	Cable
Number of beams	113
Detection height	2,240 mm
Software features (default)	
Interface RS-485	Beam status
Baud rate RS-485	9.6 kbit/s
Q ₁	Presence detection
Q ₂	Presence detection inverted
Q ₃	Contamination warning
Q ₄	Presence detection
Q ₅	off
Q ₆	off
In ₁	Teach input

¹⁾ MDO min. detectable object at high measurement accuracy.

²⁾ MDO min. detectable object for standard measurement accuracy.

³⁾ Depending on beam separation without cross beam setting.

	In ₂	off
Operating mode	Standard	✓
	Transparent	✓
	Dust- and sunlight-resistant	✓
Function	Cross beam	✓
	Beam blanking	✓
	High-speed scan	✓
	High measurement accuracy	✓
Applications	Switching output	Object detection/object width Object recognition Height classification Hole detection/hole size Outside/inside dimension Object position Hole position Zone definition
	Data interface	Object detection Hole detection Object height measurement Measurement of the outside dimension Measurement of the inside dimension Measurement of the object position Measurement of the hole position
Included with delivery		1 × sender 1 × receiver 1 × Fieldbus module 4/6 × QuickFix brackets (6 × QuickFix brackets for monitoring heights above 2 m) 1 × Quick Start Guide

1) MDO min. detectable object at high measurement accuracy.

2) MDO min. detectable object for standard measurement accuracy.

3) Depending on beam separation without cross beam setting.

Mechanics/electronics

Light source	LED, Infrared light
Wave length	850 nm
Supply voltage V_s	DC 19.2 V ... 28.8 V ¹⁾
Power consumption sender	60.65 mA ²⁾
Power consumption receiver	142.6 mA ²⁾
Fieldbus module current consumption	115 mA
Ripple	< 5 V _{pp}
Output current I_{max.}	100 mA
Output load, capacitive	100 nF
Output load, Inductive	1 H

1) Without load.

2) Without load with 24 V.

3) Operating in outdoor condition only with a external protection housing.

Initialization time	< 1 s
Switching output	Push-pull: PNP/NPN
Connection type	Plug, M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m
Housing material	Aluminum
Display	LED
Enclosure rating	IP65, IP67 3)
Circuit protection	U _V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Protection class	III
Weight	4.749 kg
Front screen	PMMA
Option	None

1) Without load.

2) Without load with 24 V.

3) Operating in outdoor condition only with a external protection housing.

Performance

Maximum range	7 m ¹⁾
Minimum range	≥ 0 m
Operating range	5 m
Response time	10 ms ²⁾

1) No reserve for environmental issue and deterioration of the diode.

2) Without high speed.

Interfaces

Serial	✓, RS-485
Data transmission rate	1.2 kbit/s ...921.6 kbit/s
Inputs/outputs	RS-485 + 6 x Q + 2 x I/O
Digital output	Q ₁ ... Q ₆
Number	6
Digital input	In ₁ , In ₂
Number	2

Ambient data

Shock resistance	Continuous shocks 10 g, 16 ms, 1000 shocks Single shocks 15 g, 11 ms 3 per axle
Vibration resistance	Sinusoidal oscillation 10-150 Hz 5 g
EMC	EN 60947-5-2
Ambient light immunity	Direct: 150,000 lx ¹⁾ Indirect: 200,000 lx ²⁾
Ambient operating temperature	-30 °C ... +55 °C

1) Outdoor mode.

2) Light resistance indirect.

Ambient temperature, storage	-40 °C ... +70 °C
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1) Outdoor mode.

2) Light resistance indirect.

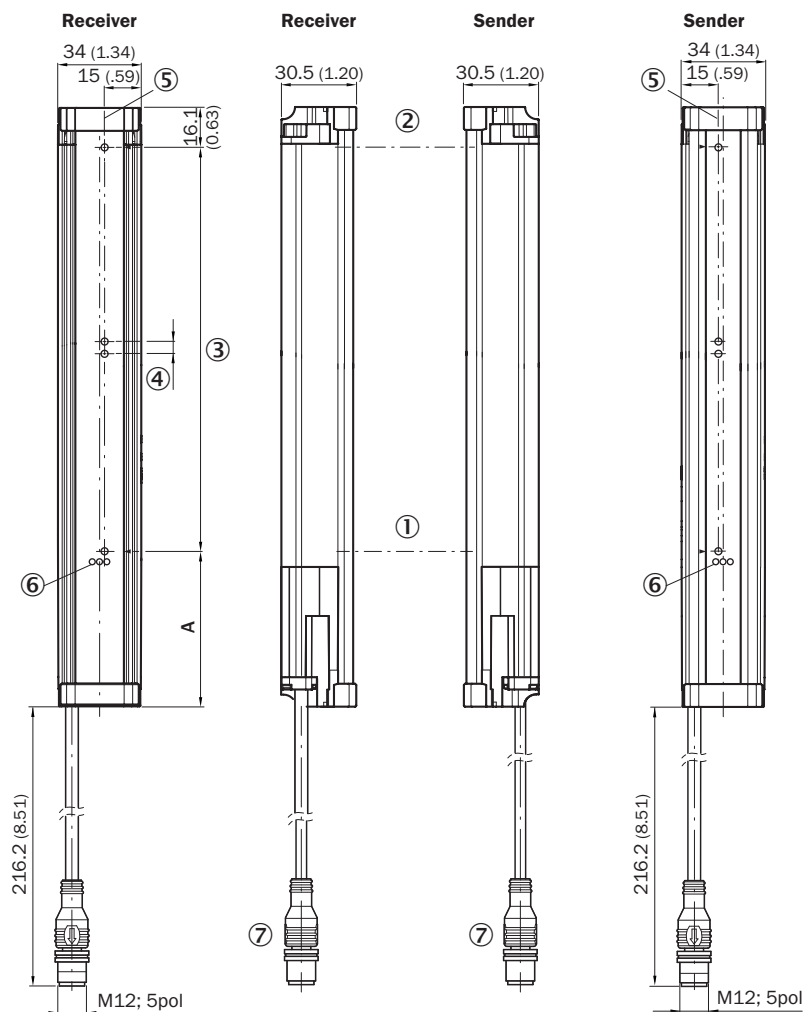
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Profinet certificate	✓
Photobiological safety (IEC EN 62471)	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Classifications

ECLASS 5.0	27270910
ECLASS 5.1.4	27270910
ECLASS 6.0	27270910
ECLASS 6.2	27270910
ECLASS 7.0	27270910
ECLASS 8.0	27270910
ECLASS 8.1	27270910
ECLASS 9.0	27270910
ECLASS 10.0	27270910
ECLASS 11.0	27270910
ECLASS 12.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
UNSPSC 16.0901	39121528

Dimensional drawing



A ¹⁾

Beam separation 5 mm	63.3 (2.49)
Beam separation 10 mm	68.3 (2.69)
Beam separation 20 mm	68.3 (2.69)/78.3 (3.08) ²⁾
Beam separation 25 mm	83.3 (3.28)
Beam separation 30 mm	88.3 (3.48)
Beam separation 50 mm	108.3 (4.26)

¹⁾ Distance: MLG edge - first beam

²⁾ MLG20x-xx**40**: 68.3 mm
MLG20x-xx**80**: 78.3 mm

Dimensions in mm (inch)

- ① First beam
- ② last beam
- ③ detection height (see technical data)
- ④ Beam separation
- ⑤ Optical axis
- ⑥ status indicator: green, yellow, red LEDs
- ⑦ Connection

Dimensional drawing: terminal connection box (AFB)



- Dimensions in mm (inch)
- ① female connector M12, 12-pin
 - ② Cable gland
 - ③ PG gland
 - ④ RJ45 (Ethernet)

Connection type and diagram



- | | | |
|-------|---|---------|
| ← brn | 1 | +(L+) |
| — wht | 2 | Sync A |
| — blu | 3 | -(M) |
| ← blk | 4 | Test in |
| — gra | 5 | Sync B |

① Connection to terminal connection box (AFB)

Pinouts Terminal connection box (AFB)



- ① Connection cable (6057015)
- ② female connector M12, 5-pin (6009719)
- ③ terminal connection box (AFB)
- ④ For connection to PLC / PIN assignment, see technical information (MLG-2 as upgrade product for MLG-1 and XLG)

Adjustments



- ① status indicator: green, yellow, red LEDs

Recommended accessories

Other models and accessories → www.sick.com/MLG-2

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Male connector, RJ45, 4-pin, straight • Connection type head B: Male connector, RJ45, 4-pin, straight • Signal type: Ethernet • Cable: 3 m, crossover, PVC • Description: Ethernet, unshielded 	Ethernet crossover cable	6026084
	<ul style="list-style-type: none"> • Description: Unshielded • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	DOS-1205-G	6009719
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, unshielded • Connection type head A: Female connector, M12, 5-pin, straight • Connection type head B: Male connector, M12, 8-pin, straight • Signal type: Sensor/actuator cable • Cable: 0.1 m, 5-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants 	DSL-1258-G0M1C	6057015
Mounting systems			
	<ul style="list-style-type: none"> • Description: Mounting bracket for external mounting of the fieldbus module, 1 × mounting bracket and 1 × M5 × 6 screw • Material: Stainless steel • Details: Stainless steel V2A (1.4301) 	BEF-WN-FBM-SET1	2082322

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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