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DATA SHEET

MLG20N-3140U10501

MLG-2
Automation light grids

SICK Sensor Intelligence

AUTOMATION LIGHT GRIDS

ML- G20N-3140U10501

ORDERING INFORMATION

Type	part no.
MLG20N-3140U10501	1107372

Further device versions and accessories at www.sick.com/MLG-2



Illustration may differ



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	158	
Detection height	3,140 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
	Q5	off
	Q6	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 x Fieldbus module 4/6 x QuickFix brackets (6 x 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	62.9 mA ²⁾
Power consumption receiver	151.6 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
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

¹⁾ Without load.

²⁾ Without load with 24 V.

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

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	6.549 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	13.5 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
Ambient temperature, storage	-40 °C ... +70 °C

¹⁾ Outdoor mode.

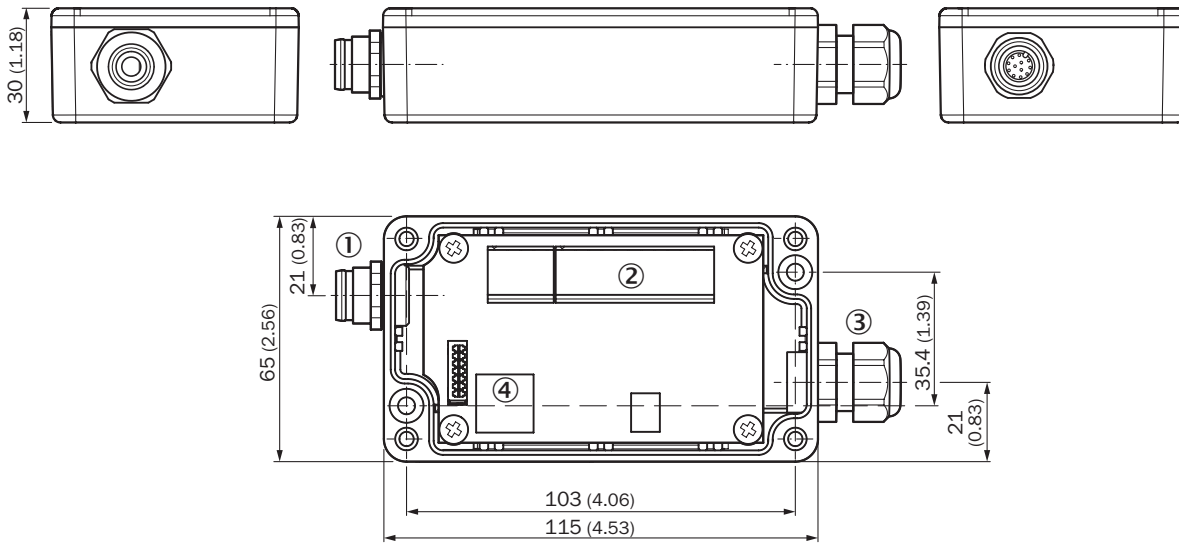
²⁾ Light resistance indirect.

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)	✓

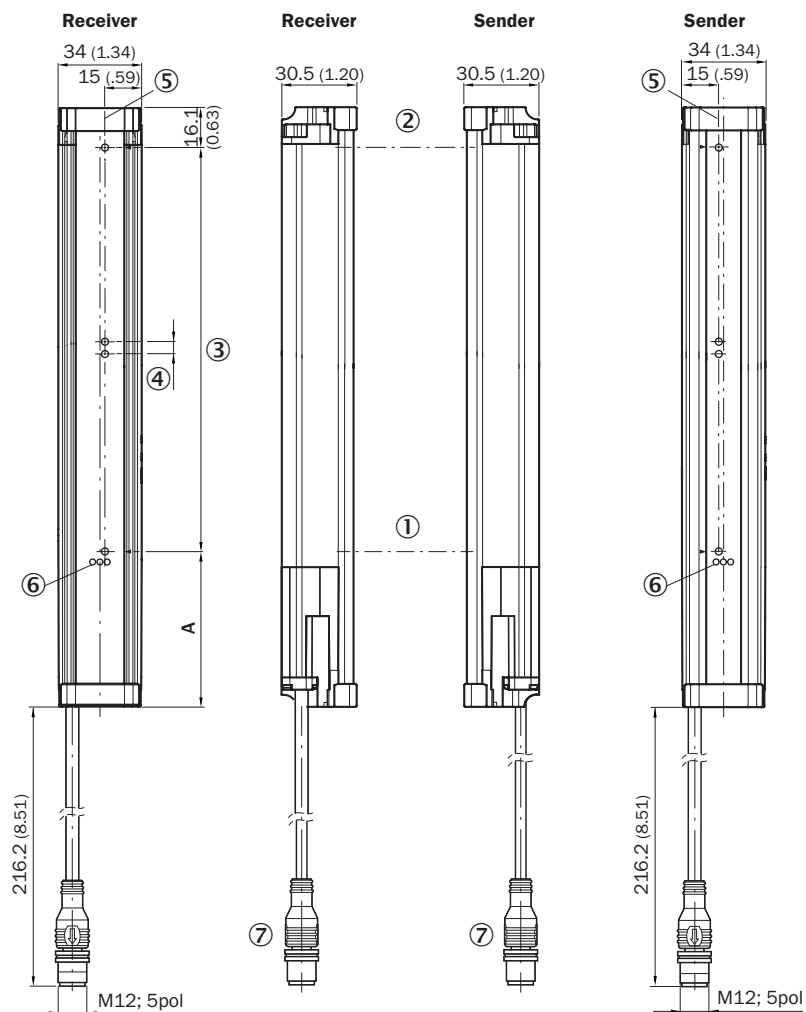
DIMENSIONAL DRAWING: TERMINAL CONNECTION BOX (AFB)



Dimensions in mm (inch)

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

DIMENSIONAL DRAWING



A¹⁾

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)

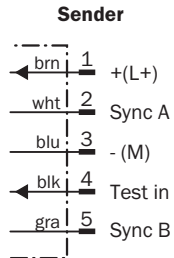
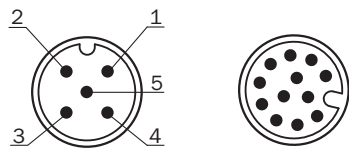
¹⁾ Distance: MLG edge - first beam

²⁾ MLG20x-xx40: 68.3 mm
MLG20x-xx80: 78.3 mm

Dimensions in mm (inch)

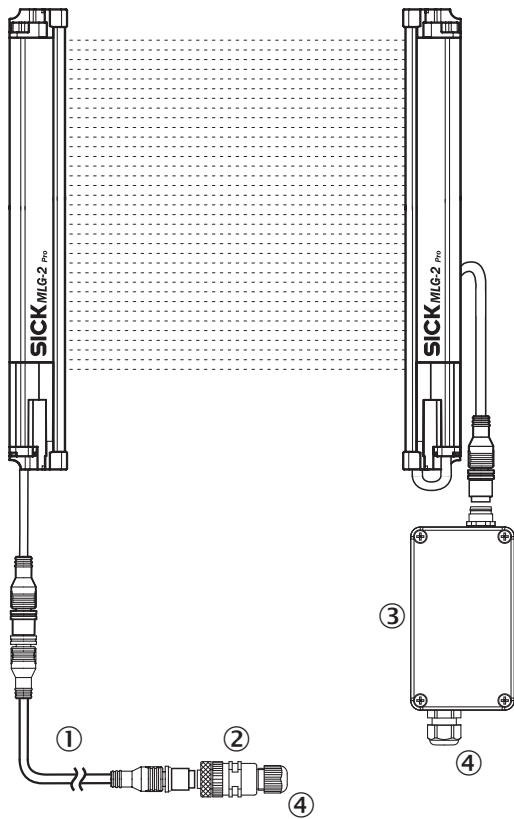
- ① First beam
- ② last beam
- ③ detection height (see technical data)
- ④ Beam separation
- ⑤ Optical axis
- ⑥ status indicator: green, yellow, red LEDs
- ⑦ Connection

CONNECTION TYPE AND DIAGRAM



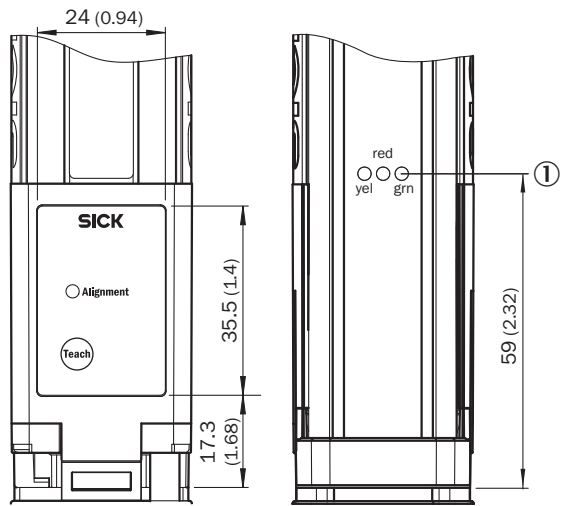
① Connection to terminal connection box (AFB)

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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1107372



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SICK AT A GLANCE

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