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DATA SHEET

MLG20N-1640U10501

MLG-2
Automation light grids

SICK Sensor Intelligence



Illustration may differ

AUTOMATION LIGHT GRIDS

MLG20N-1640U10501

ORDERING INFORMATION

Type	part no.
MLG20N-1640U10501	1137733

Further device versions and accessories at 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	83
Detection height	1,640 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
In_2	off
Operating mode	
Standard	✓
Transparent	✓

[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.

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
Part number of individual components	2097687 MLGT20A-1640F10101, 2138700 MLGR20N-1640U10201

[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	59.15 mA [2]
Power consumption receiver	136.6 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
Enclosure rating	IP65, IP67 [3]
Circuit protection	U_V connections, reverse polarity protected

[1] Without load.

[2] Without load with 24 V.

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

	Output Q short-circuit protected Interference pulse suppression
Protection class	III
Weight	3.549 kg
Front screen	PMMA
Option	None
UL File No.	NRKH.E181493

[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	7.7 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.

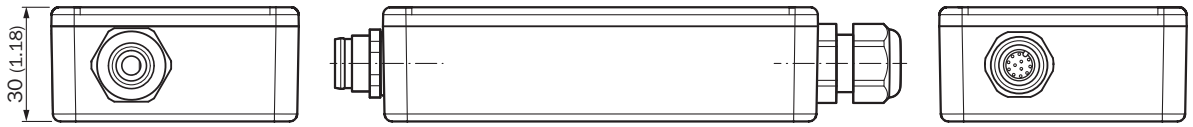
[2] Light resistance indirect.

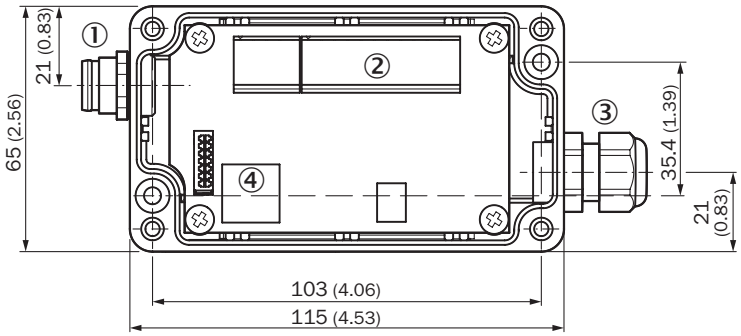
CERTIFICATES

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)	✓

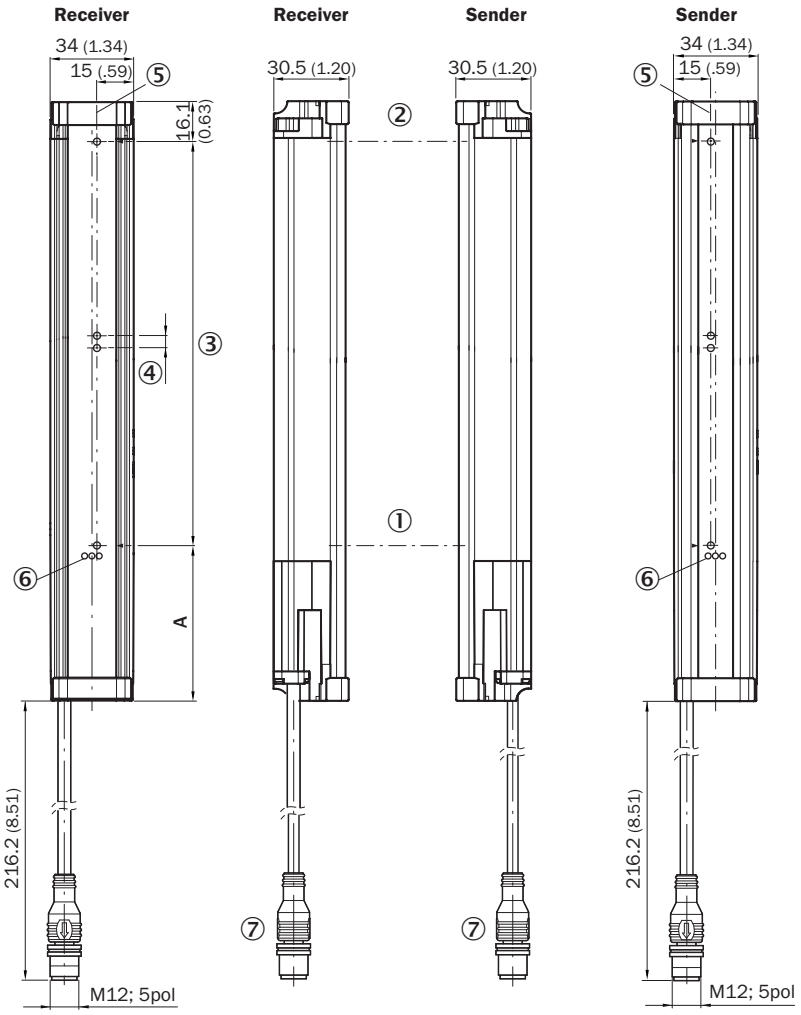
DIMENSIONAL DRAWING: TERMINAL CONNECTION BOX (AFB)





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

DIMENSIONAL DRAWING

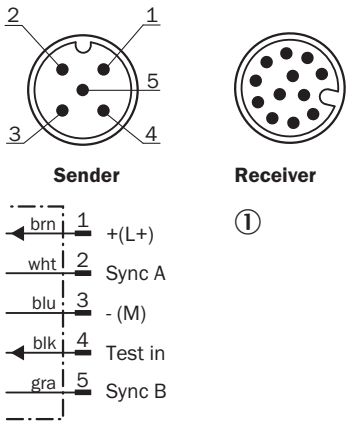


	A [1]
Beam separation 5 mm	63.3 (2.49)
Beam separation 10 mm	68.3 (2.69)
Beam separation 20 mm	68.3 (2.69)/78.3 (3.08) [2]
Beam separation 25 mm	83.3 (3.28)
Beam separation 30 mm	88.3 (3.48)
Beam separation 50 mm	108.3 (4.26)

[1] Distance: MLG edge - first beam
[2] MLG20x-xx**40**: 68.3 mm
MLG20x-xx**80**: 78.3 mm

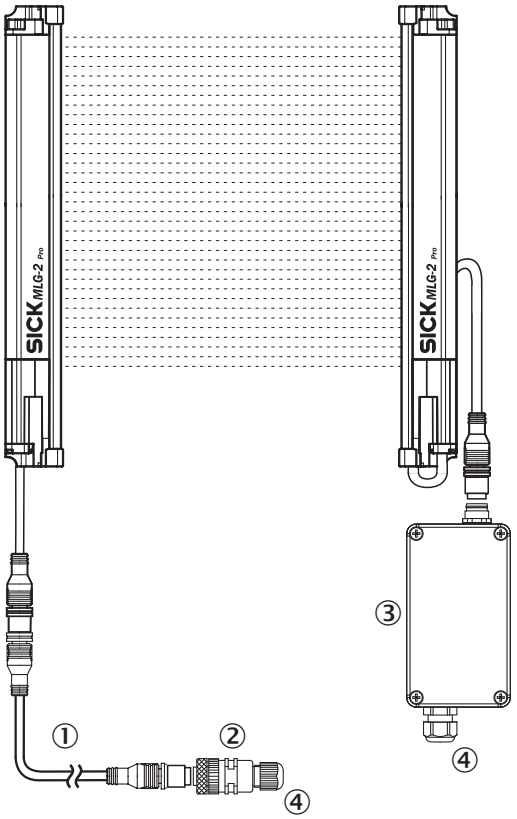
Dimensions in mm (inch)
① First beam
② last beam
③ detection height (see technical data)
④ Beam separation
⑤ Optical axis
⑥ status indicator: green, yellow, red LEDs
⑦ Connection

CONNECTION TYPE AND DIAGRAM



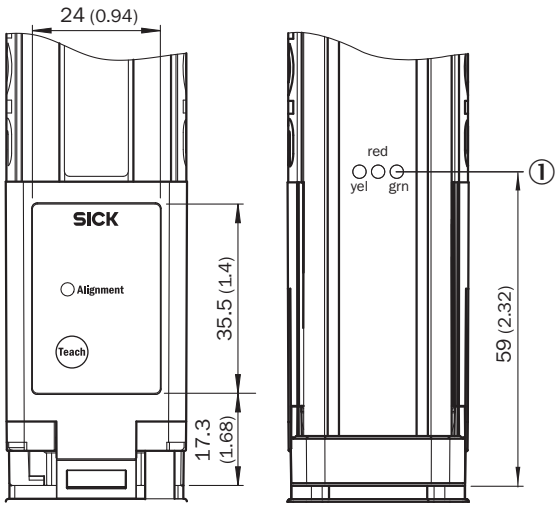
① Connection to terminal connection box (AFB)

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/1137733

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SICK AT A GLANCE

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