



DATA SHEET

# MLG20A-3140B10501

MLG-2  
Automation light grids

**SICK** Sensor Intelligence

## AUTOMATION LIGHT GRIDS

# ML- G20A-3140B10501

### ORDERING INFORMATION

Type	part no.
MLG20A-3140B10501	<a href="#">1138848</a>

Further device versions and accessories at [www.sick.com/MLG-2](http://www.sick.com/MLG-2)



Illustration may differ

## DETAILED TECHNICAL DATA

### FEATURES

Device version	Pro - Extended functionality
Sensor principle	Sender/receiver
Minimum detectable object (MDO)	20 mm <sup>1)</sup> 24 mm <sup>2)</sup> <sup>3)</sup>
Beam separation	20 mm
Type of synchronization	Cable
Number of beams	158
Detection height	3,140 mm
Software features (default)	<ul style="list-style-type: none"> <li>Q<sub>A1</sub> Number of broken beams/NBB</li> <li>Q<sub>A2</sub> Height measurement (last beam)/LBB</li> <li>Q<sub>1</sub> Presence detection</li> <li>Q2 / IN Teach input</li> <li>Teach Standard mode</li> </ul>
Operating mode	<ul style="list-style-type: none"> <li>Standard ✓</li> <li>Transparent ✓</li> </ul>

<sup>1)</sup> MDO min. detectable object at high measurement accuracy.

<sup>2)</sup> MDO min. detectable object for standard measurement accuracy.

<sup>3)</sup> 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 4/6 x QuickFix brackets (6 x QuickFix brackets for monitoring heights above 2 m) 1 × Quick Start Guide	

<sup>1)</sup> MDO min. detectable object at high measurement accuracy.

<sup>2)</sup> MDO min. detectable object for standard measurement accuracy.

<sup>3)</sup> 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 <sup>1)</sup>
Power consumption sender	63.85 mA <sup>2)</sup>
Power consumption receiver	152.4 mA <sup>2)</sup>
Ripple	< 5 V <sub>pp</sub>
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 Male connector M12, 8-pin, 0.27 m M12 female connector, 4-pin, D-coded, 0.19 m
Housing material	Aluminum
Display	LED
Enclosure rating	IP65, IP67 <sup>3)</sup>
Circuit protection	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression

<sup>1)</sup> Without load.

<sup>2)</sup> Without load with 24 V.

<sup>3)</sup> Operating in outdoor condition only with a external protection housing.

Protection class	III
Weight	6.549 kg
Front screen	PMMA
Option	None
UL File No.	NRKH.E181493

<sup>1)</sup> Without load.

<sup>2)</sup> Without load with 24 V.

<sup>3)</sup> Operating in outdoor condition only with a external protection housing.

## PERFORMANCE

Maximum range	7 m <sup>1)</sup>
Minimum range	≥ 0 m
Operating range	5 m
Response time	3.6 ms <sup>2)</sup>

<sup>1)</sup> No reserve for environmental issue and deterioration of the diode.

<sup>2)</sup> Without high speed.

## INTERFACES

IO-Link	✓, IO-Link V1.1
Data transmission rate	230,4 kbit/s (COM3)
Maximum cable length	20 m
Cycle time	2.3 ms
VendorID	26
DeviceID HEX	800068
DeviceID DEC	8388712
Process data length	32 Byte (TYPE_2_V) <sup>1)</sup>
-	✓, Current
Inputs/outputs	2 x analog + 2 x Q (IO-Link)
Analog output	Q <sub>A1</sub> , Q <sub>A2</sub>
Number	2
Type	Current output
Current	4 mA ... 20 mA
Digital output	Q <sub>1</sub> , Q <sub>2</sub>
Number	2
Digital input	In <sub>1</sub>
Number	1

<sup>1)</sup> For an IO-Link master with V1.0, reverts to interleaved mode (consisting of TYPE\_1\_1 (ProcessData) and TYPE\_1\_2 (on-request data)).

## 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 <sup>1)</sup> Indirect: 200,000 lx <sup>2)</sup>
Ambient operating temperature	-30 °C ... +55 °C
Ambient temperature, storage	-40 °C ... +70 °C

<sup>1)</sup> Outdoor mode.

<sup>2)</sup> Light resistance indirect.

**SMART TASK**

Smart Task name	Base logics
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**CERTIFICATES**

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (IEC EN 62471)	✓

**DIMENSIONAL DRAWING**



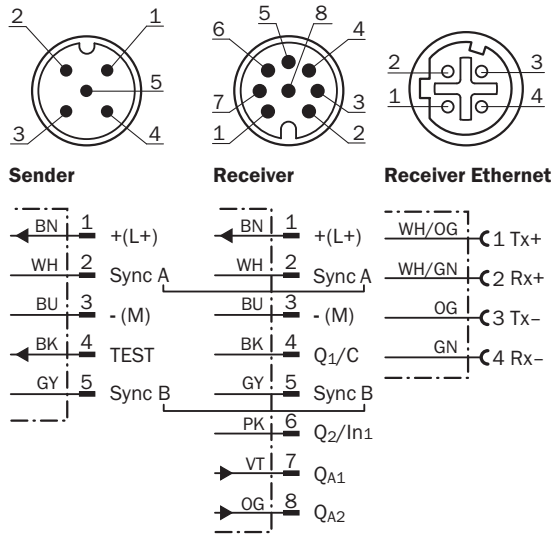
	<b>A</b> <sup>1)</sup>	<b>B</b> <sup>2)</sup>
<b>Strahlabstand 2,5 mm</b>	62,25	17,15
<b>Strahlabstand 5 mm</b>	63,3	16,1
<b>Strahlabstand 10 mm</b>	68,3	16,1
<b>Strahlabstand 20 mm</b>	68,3/78,3 <sup>3)</sup>	16,1
<b>Strahlabstand 25 mm</b>	83,3	16,1
<b>Strahlabstand 30 mm</b>	88,3	16,1
<b>Strahlabstand 50 mm</b>	108,3	16,1

<sup>1)</sup> Abstand: MLG-2 Kante - erster Strahl  
<sup>2)</sup> Abstand: MLG-2 Kante - letzter Strahl  
<sup>3)</sup> MLG20x-xx40: 68,3 mm  
 MLG20x-xx80: 78,3 mm

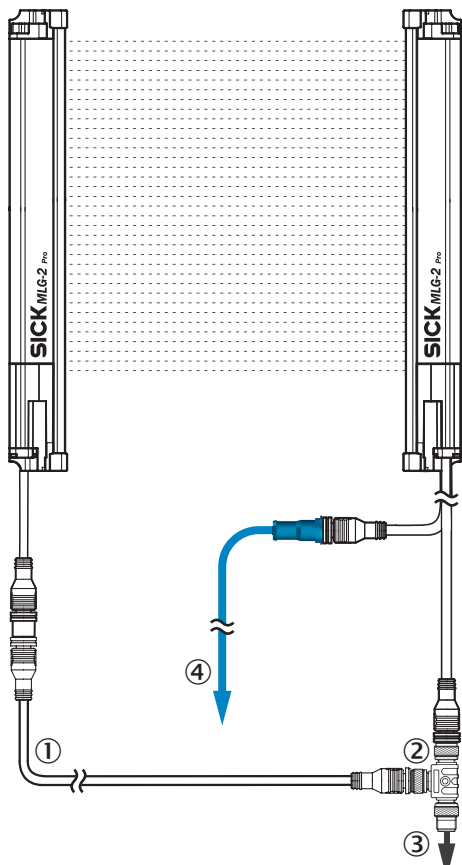
**Dimensions in mm (inch)**

- 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 CONNECTOR M12, 5/8-PIN, ANALOG OUTPUTS Q<SUB>A</SUB>**



**PINOUPS**



- ① Connection cable receiver (2096010)
- ② T-piece
- ③ Connection cable (6020664)
- ④ Ethernet Connection cable

**ADJUSTMENTS**



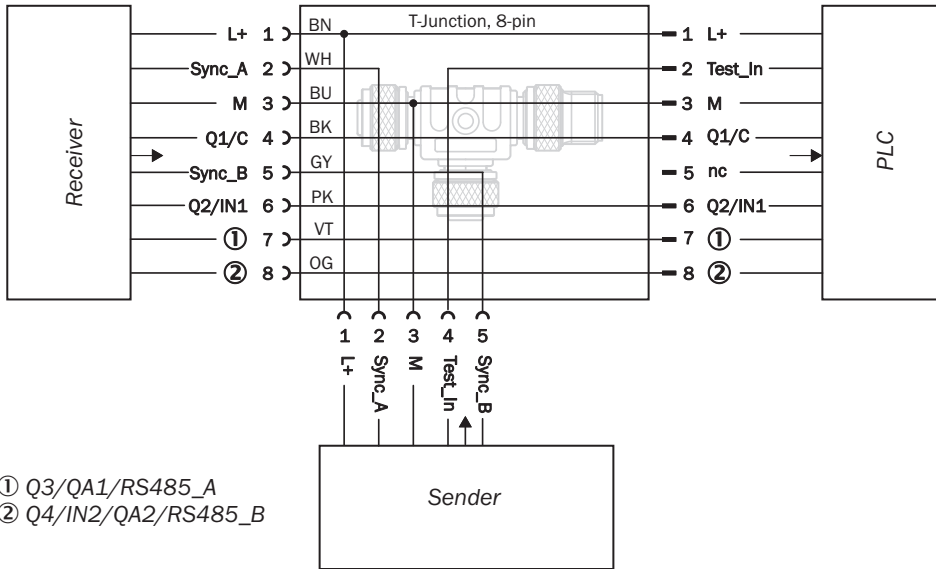
① status indicator: green, yellow, red LEDs

**CONNECTION DIAGRAM T-SPLITTER, IO-LINK MASTER**



① Q3/QA1/RS485\_A  
 ② Q4/IN2/QA2/RS485\_B

**CONNECTION DIAGRAM T-SPLITTER, PLC**



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/1138848](http://www.sick.com/1138848)



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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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