



MLG02A-0295I13201

MLG-2

MEASURING AUTOMATION LIGHT GRIDS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
MLG02A-0295I13201	1215876

Other models and accessories → [www.sick.com/MLG-2](http://www.sick.com/MLG-2)



### Detailed technical data

#### Features

<b>Device version</b>	Pro - Advanced functionality										
<b>Sensor principle</b>	Sender/receiver										
<b>Minimum detectable object (MDO)</b>	2.5 mm, 4.5 mm <sup>1) 2) 3)</sup>										
<b>Beam separation</b>	2.5 mm										
<b>Number of beams</b>	119										
<b>Detection height</b>	295 mm										
<b>Software features (default)</b>	<table border="0"> <tr> <td>Interface RS-485</td> <td>System status, virtual outputs, number of broken beams, height control (last beam)/LBB, height control (first beam)/FBB, outside dimension, inside dimension</td> </tr> <tr> <td>Baud rate RS-485</td> <td>9.6 kbit/s</td> </tr> <tr> <td>Q<sub>1</sub></td> <td>Presence detection</td> </tr> <tr> <td>Q<sub>2</sub> / IN</td> <td>Teach input</td> </tr> <tr> <td>Teach</td> <td>Standard mode</td> </tr> </table>	Interface RS-485	System status, virtual outputs, number of broken beams, height control (last beam)/LBB, height control (first beam)/FBB, outside dimension, inside dimension	Baud rate RS-485	9.6 kbit/s	Q <sub>1</sub>	Presence detection	Q <sub>2</sub> / IN	Teach input	Teach	Standard mode
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<b>Operating mode</b>	<table border="0"> <tr> <td>Standard</td> <td>✓</td> </tr> <tr> <td>Transparent</td> <td>✓</td> </tr> <tr> <td>Dust- and sunlight-resistant</td> <td>✓</td> </tr> </table>	Standard	✓	Transparent	✓	Dust- and sunlight-resistant	✓				
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<b>Function</b>	<table border="0"> <tr> <td>Cross beam</td> <td>✓</td> </tr> <tr> <td>Beam blanking</td> <td>✓</td> </tr> <tr> <td>High-speed scan</td> <td>✓</td> </tr> </table>	Cross beam	✓	Beam blanking	✓	High-speed scan	✓				
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<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.

High measurement accuracy	✓
<b>Applications</b>	
Switching output	Object recognition/object width Object recognition Height classification Hole detection/hole size Outside dimension/inside dimension Object position Hole position Zone definition
Data interface	Object recognition Object height measurement Object height measurement Measurement of external dimension Measurement of inside dimension Measurement of object position Measurement of hole position
<b>Included with delivery</b>	1 × sender 1 × receiver 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

<b>Light source</b>	LED, Infrared light
<b>Wave length</b>	850 nm
<b>Supply voltage <math>V_s</math></b>	DC 18 V ... 30 V <sup>1)</sup>
<b>Power consumption sender</b>	60.95 mA <sup>2)</sup>
<b>Power consumption receiver</b>	143.8 mA <sup>2)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub>
<b>Output current <math>I_{max}</math></b>	100 mA
<b>Output load capacitive</b>	100 nF
<b>Output load inductive</b>	1 H
<b>Initialization time</b>	< 1 s
<b>Switching output</b>	Push-pull: PNP/NPN
<b>Connection type</b>	Male connector M12, 5-pin, 0.22 m Male connector M12, 8-pin, 0.27 m M12 female connector, 4-pin, D-coded, 0.19 m
<b>Housing material</b>	Aluminum
<b>Indication</b>	LED
<b>Enclosure rating</b>	IP65, IP67 <sup>3)</sup>
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Protection class</b>	III

1) Without load.

2) , Without load with 24 V.

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

<b>Weight</b>	0.849 kg
<b>Front screen</b>	PMMA
<b>Option</b>	None

- <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

<b>Maximum range</b>	2.8 m <sup>1)</sup>
<b>Minimum range</b>	≥ 0 m
<b>Operating range</b>	2 m
<b>Response time</b>	10.5 ms <sup>2)</sup>

- <sup>1)</sup> No reserve for environmental issue and deterioration of the diode.
- <sup>2)</sup> Without high speed.

### Communication interface

<b>IO-Link</b>	✓, 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>
<b>Serial</b>	✓, RS-485
Data transmission rate	1.2 kbit/s ...921.6 kbit/s
<b>Digital output</b>	Q <sub>1</sub> , Q <sub>2</sub>
Number	2
<b>Digital input</b>	In <sub>1</sub>
Number	1

- <sup>1)</sup> With an IO-Link master with V1.0, fall back to interleaved mode (consisting of TYPE\_1\_1 (ProcessData) and TYPE\_1\_2 (On-request Data)).

### Ambient data

<b>EMC</b>	EN 60947-5-2
<b>Ambient operating temperature</b>	-30 °C +55 °C
<b>Ambient storage temperature</b>	-40 °C +70 °C
<b>Ambient light immunity</b>	Direct: 150,000 lx <sup>1)</sup> Indirect: 200,000 lx <sup>2)</sup>
<b>Vibration resistance</b>	Sinusoidal oscillation 10-150 Hz 5 g
<b>Shock load</b>	Continuous shocks 10 g, 16 ms, 1000 shocks Single shocks 15 g, 11 ms 3 per axle
<b>UL File No.</b>	NRKH.E181493

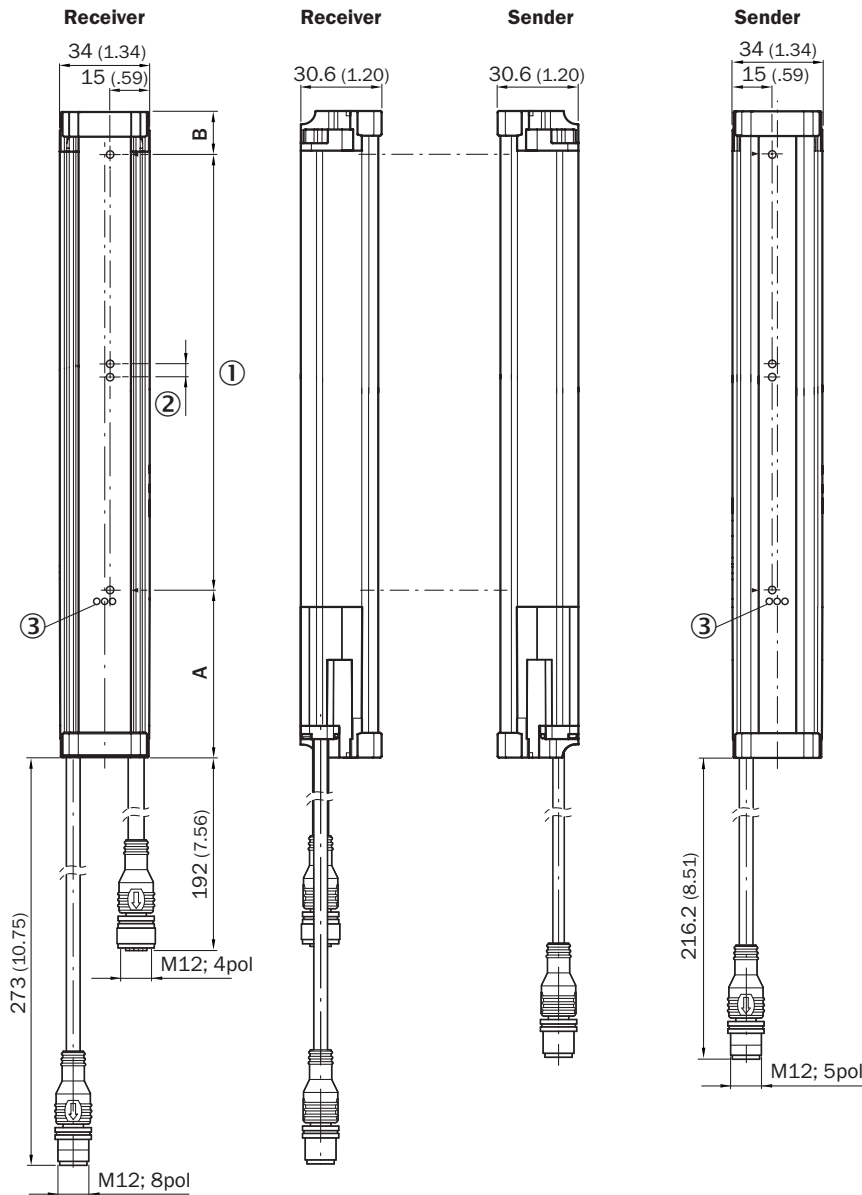
- <sup>1)</sup> Outdoor mode.
- <sup>2)</sup> Light resistance indirect.

Classifications

<b>ECl@ss 5.0</b>	27270910
<b>ECl@ss 5.1.4</b>	27270910
<b>ECl@ss 6.0</b>	27270910
<b>ECl@ss 6.2</b>	27270910
<b>ECl@ss 7.0</b>	27270910
<b>ECl@ss 8.0</b>	27270910
<b>ECl@ss 8.1</b>	27270910
<b>ECl@ss 9.0</b>	27270910
<b>ECl@ss 10.0</b>	27270910
<b>ECl@ss 11.0</b>	27270910
<b>ETIM 5.0</b>	EC002549
<b>ETIM 6.0</b>	EC002549
<b>ETIM 7.0</b>	EC002549
<b>UNSPSC 16.0901</b>	39121528

Dimensional drawing (Dimensions in mm (inch))

Dimensional drawing



	<b>A <sup>1)</sup></b>	<b>B <sup>2)</sup></b>
<b>Beam separation 2.5 mm</b>	62.25 (2.45)	17.15 (0.68)
<b>Beam separation 5 mm</b>	63.3 (2.49)	16.1 (0.63)
<b>Beam separation 10 mm</b>	68.3 (2.69)	16.1 (0.63)
<b>Beam separation 20 mm</b>	68.3 (2.69)/78.3 (3.08) <sup>3)</sup>	16.1 (0.63)
<b>Beam separation 25 mm</b>	83.3 (3.28)	16.1 (0.63)
<b>Beam separation 30 mm</b>	88.3 (2.69)	16.1 (0.63)
<b>Beam separation 50 mm</b>	108.3 (4.26)	16.1 (0.63)

<sup>1)</sup> Distance: MLG-2 edge - first beam

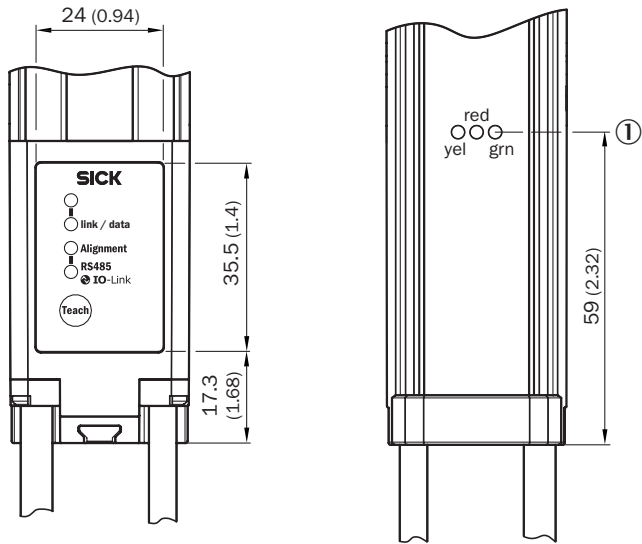
<sup>2)</sup> Distance: MLG-2 edge - last beam

<sup>3)</sup> MLG20x-xx40: 68.3 mm  
 MLG20x-xx80: 78.3 mm

- ① Detection height (see optical performance)
- ② Beam separation (RM)
- ③ Status indicator: green, yellow, red LEDs

## Adjustments

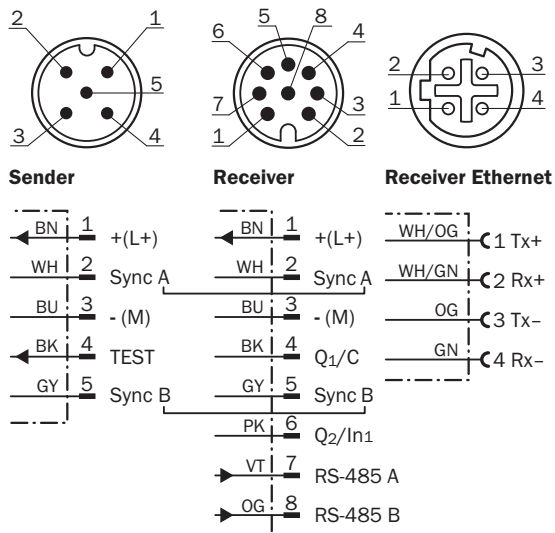
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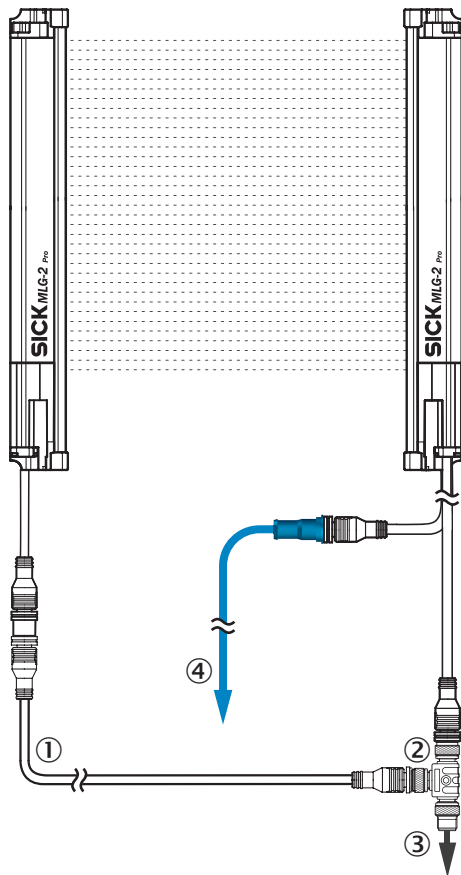
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## Connection type and diagram

Connector M12, 5/8-pin, RS-485 interface



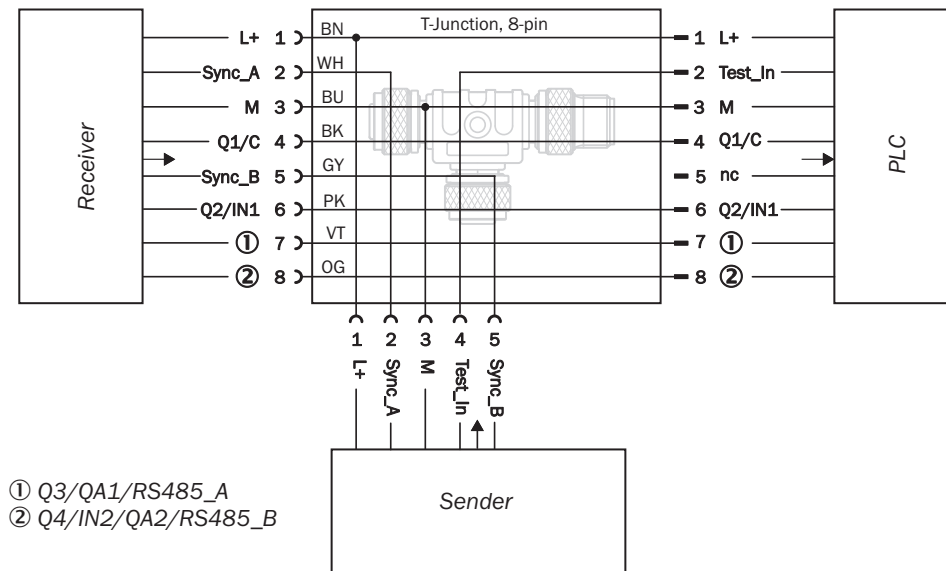
Connection type



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

## Connection diagram

Connection diagram T-junction



## Recommended accessories

Other models and accessories → [www.sick.com/MLG-2](http://www.sick.com/MLG-2)

	Brief description	Type	Part no.
SIG200			
	SIG200-0A0412200	SIG200-0A0412200	1089794
	SIG200-0A0G12200	SIG200-0A0G12200	1102605
Distributors			
	Head A: female connector, M12, 5-pin, A-coded Head B: female connector, M12, 8-pin, A-coded Male connector M12, 8-pin, to 1 x female connector M12, 8-pin, to 1 x female connector M12, 5-pin, for connecting of a PLC	SBO-02F12-SM1	6053172
Plug connectors and cables			
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Sensor/actuator cable, special color code, PVC, shielded, 5 m	DOL-1208-G05MF	6020664
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A15-050UB5M2A15	2096010
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, twisted pair, PUR, halogen-free, shielded, 5 m	YM2D24-050EA1MRJA4	6034415

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)