



DATA SHEET

# MLG02N-0145N53201

MLG-2  
Automation light grids

# SICK

Sensor Intelligence

## AUTOMATION LIGHT GRIDS

# ML- G02N-0145N53201

### ORDERING INFORMATION

Type	part no.
MLG02N-0145N53201	1124390

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	ProNet – extended functionality including fieldbus	
Sensor principle	Sender/receiver	
Minimum detectable object (MDO)	2.5 mm <sup>1)</sup> 4.5 mm <sup>2)</sup> <sup>3)</sup>	
Beam separation	2.5 mm	
Type of synchronization	Cable	
Number of beams	59	
Detection height	145 mm	
Software features (default)	Q <sub>1</sub>	Presence detection
Operating mode	Standard	✓
	Transparent	✓
	Dust- and sunlight-resistant	✓
Function	Cross beam	✓
	Beam blanking	✓

<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		✓
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 (in IP69K protective pipes) 1 × receiver (in IP69K protective pipes) 1 × Fieldbus module 1 × IP69K mounting instructions 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	57.95 mA <sup>2)</sup>
Power consumption receiver	131.8 mA <sup>2)</sup>
Fieldbus module current consumption	115 mA
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, 1.4 m Connector M12, 12-pin, 1.4 m
Housing material	Aluminum (light grid) PMMA Plexiglas XT Food Contact DoC (protective pipe) Polypropylene, stainless steel 1.4404 (cable) VA 1.4305 (pressure compensation element) Stainless steel 1.4404 (end caps) Stainless steel V4A 1.4404 DIN EN 1672-2 (cable gland)
Display	LED
Enclosure rating	IP69K <sup>3)</sup>
Circuit protection	$U_v$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Protection class	III

<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.

# AUTOMATION LIGHT GRIDS - MLG02N-0145N53201

Weight	0.86 kg
Option	Protective housing IP69K
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	2.1 m <sup>1)</sup>
Minimum range	≥ 0 m
Operating range	1.5 m
Response time	5.9 ms <sup>2)</sup>

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

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

## INTERFACES

PROFINET	✓
Digital output	Q <sub>1</sub>
Number	1

## 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	-20 °C ... +55 °C
Ambient temperature, storage	-40 °C ... +70 °C

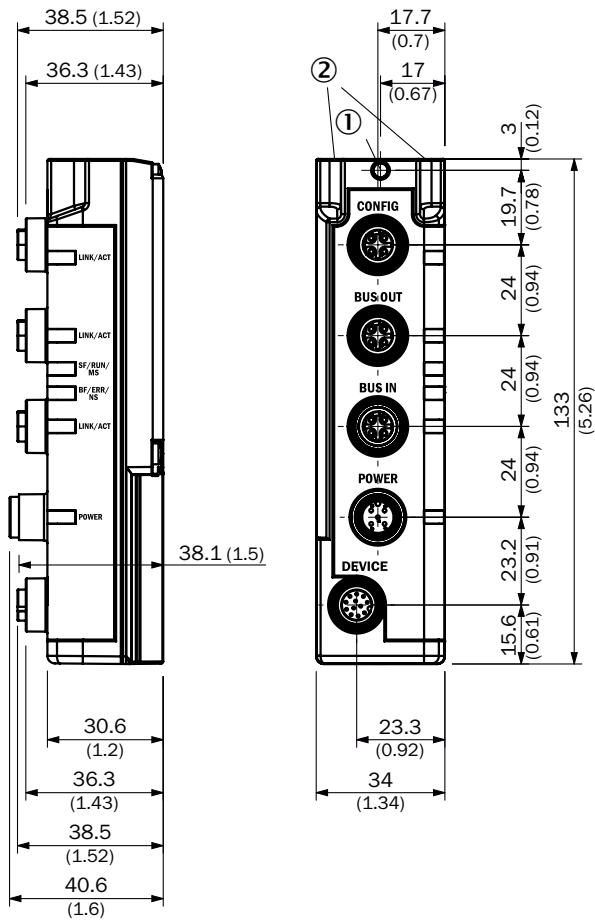
<sup>1)</sup> Outdoor mode.

<sup>2)</sup> 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 PROFINET, ETHERCAT®, ETHERNET/IP**

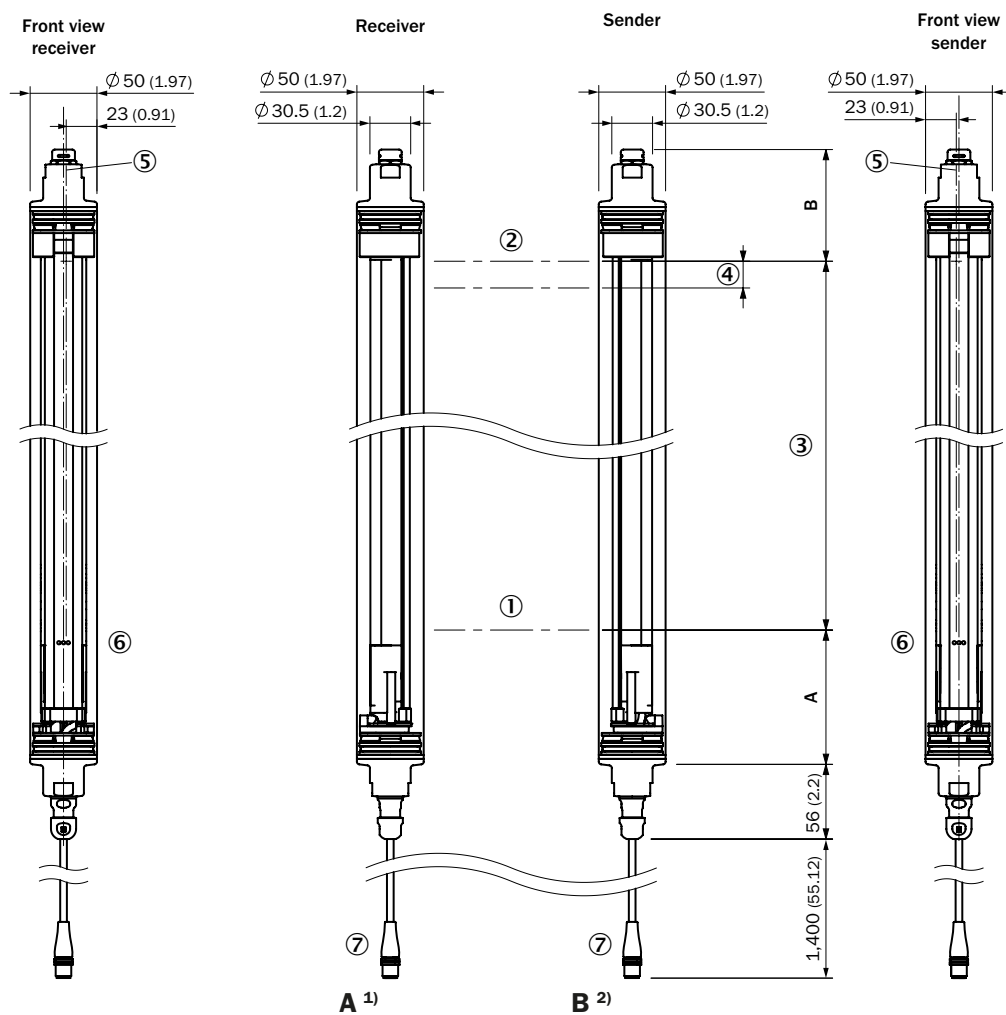


Dimensions in mm (inch)

① safety screw M4; turning moment 0,5 Nm

② for thread bold M4; turning moment 0,5 Nm

**DIMENSIONAL DRAWING**



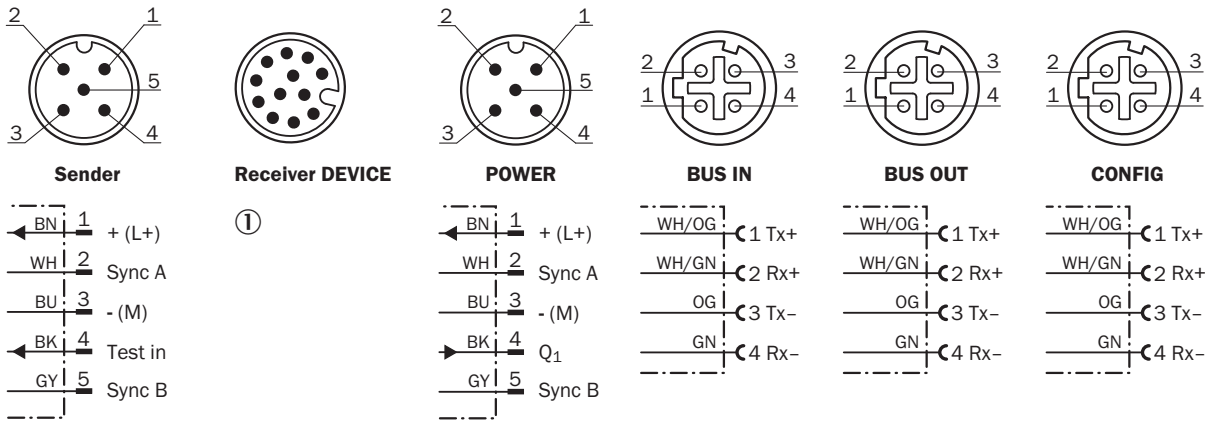
	A <sup>1)</sup>	B <sup>2)</sup>
<b>Beam separation 2.5 mm</b>	94.25 (3.71)	84.7 (3.33)
<b>Beam separation 5 mm</b>	95.5 (3.76)	83.6 (3.29)
<b>Beam separation 10 mm</b>	100.5 (3.96)	83.6 (3.29)
<b>Beam separation 20 mm</b>	100.5 (3.96)/110.5 (4.35) <sup>3)</sup>	83.6 (3.29)
<b>Beam separation 25 mm</b>	115.5 (4.55)	83.6 (3.29)
<b>Beam separation 30 mm</b>	120.5 (4.74)	83.6 (3.29)
<b>Beam separation 50 mm</b>	140.5 (5.53)	83.6 (3.29)

<sup>1)</sup> Distance: MLG-2 edge - first beam  
<sup>2)</sup> Distance: MLG-2 edge - last beam  
<sup>3)</sup> MLG20x-xx**40**: 100.5 mm  
 MLG20x-xx**80**: 110.5 mm

Dimensions in mm (inch)

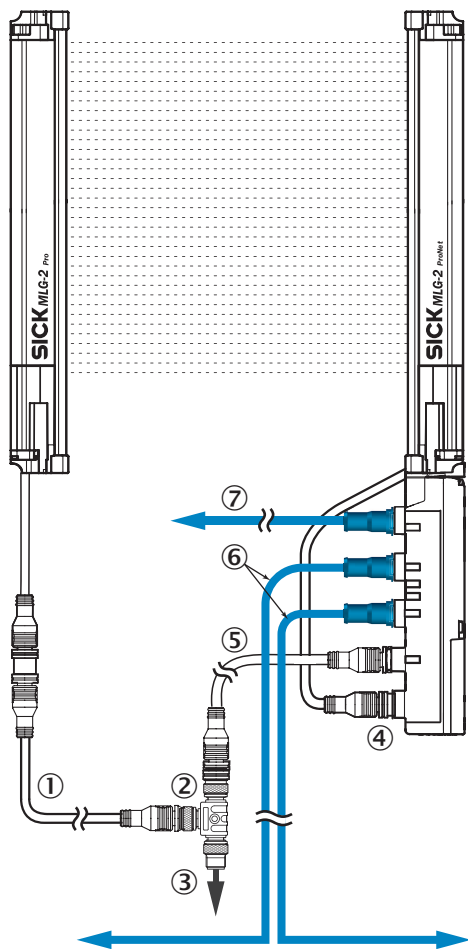
- ① First beam
- ② last beam
- ③ detection height (see technical data)
- ④ Beam separation
- ⑤ Optical axis
- ⑥ status indicator: green, yellow, red LEDs
- ⑦ Connection

**CONNECTION TYPE AND DIAGRAM PROFINET, ETHERCAT®, ETHERNET/IP**



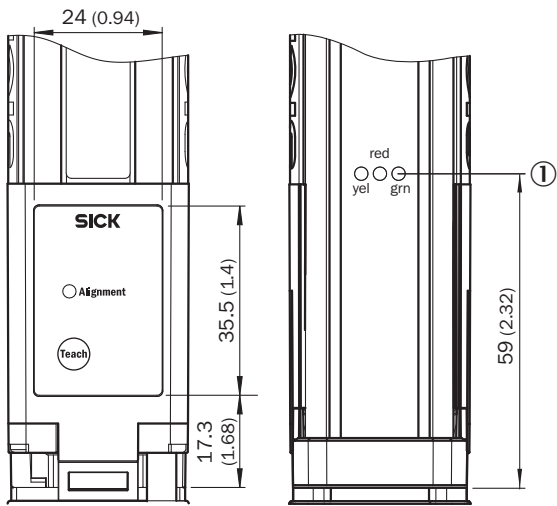
① Connection to fieldbus module

**PINOUTS ETHERNET**



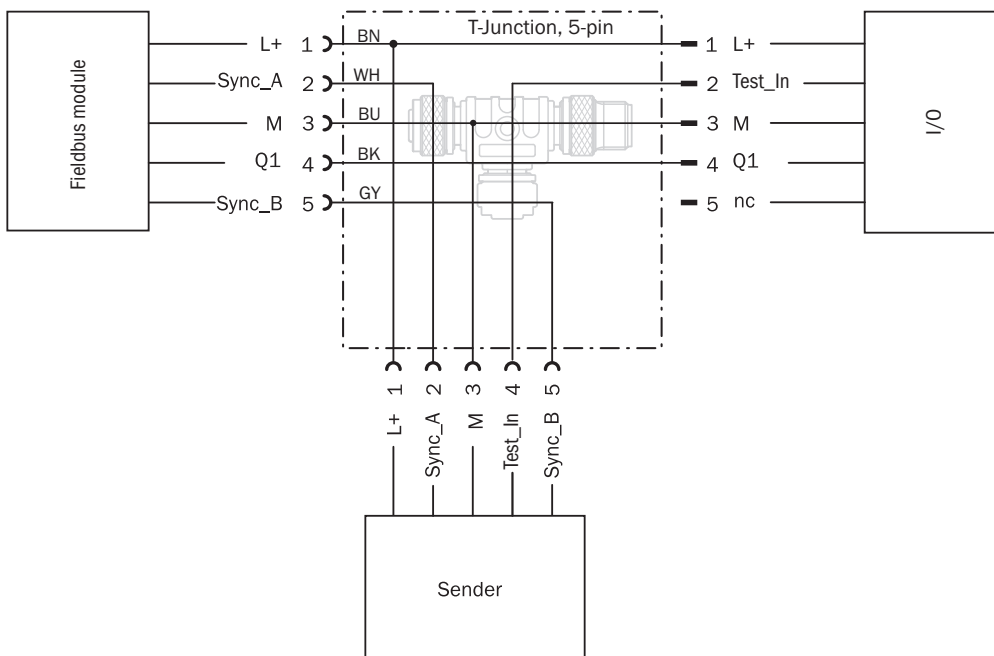
- ① Connection cable receiver (2096010)
- ② T-piece
- ③ Connection cable (2096240)
- ④ connection receiver "DEVICE"
- ⑤ Connection cable "POWER" (2096010)
- ⑥ Ethernet Connection cable "BUS IN, BUS OUT"
- ⑦ Ethernet connection cable "CONFIG"

**ADJUSTMENTS**



① status indicator: green, yellow, red LEDs

**CONNECTION DIAGRAM T-PIECE**



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/1124390](http://www.sick.com/1124390)



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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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