

# MLG10N-0590P10502

MLG-2

**MEASURING AUTOMATION LIGHT GRIDS** 



#### MEASURING AUTOMATION LIGHT GRIDS



## Illustration may differ

### Ordering information

Туре	Part no.
MLG10N-0590P10502	1113357

MLG-2 replacement for plug and play of MLG-1 without changes to the PLC

(only MLG-1 functions available)

Other models and accessories → www.sick.com/MLG-2



Detailed technical data

#### **Features**

Device version	ProNet - Advanced functionality incl. fieldbus
Sensor principle	Sender/receiver
Minimum detectable object (MDO)	10 mm, 14 mm <sup>1) 2) 3)</sup>
Beam separation	10 mm
Type of synchronization	Cable
Number of beams	60
Detection height	590 mm
Software features (default)	
$Q_1$	Presence detection
Address	126 (SSA)
PROFIBUS DP	DPVO
Operating mode	
Standard	✓
Transparent	<b>√</b>
Dust- and sunlight-resistant	✓
Function	
Cross beam	✓
Beam blanking	<b>√</b>
High-speed scan	<b>√</b>
High measurement accuracy	<b>√</b>
Applications	
Switching output	Object recognition/object width Object recognition Height classification

 $<sup>^{1)}\,\</sup>mathrm{MDO}$  min. detectable object at high measurement accuracy.

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

 $<sup>^{</sup>m 3)}$  Depending on beam separation without cross beam setting.

Data interface	Hole detection/hole size Outside dimension/inside dimension Object position Hole position Zone definition Object detection Hole detection Object height measurement Measurement of external dimension Measurement of inside dimension Measurement of object position Measurement of 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

 $<sup>^{1)}\,\</sup>mathrm{MDO}$  min. detectable object at high measurement accuracy.

## Mechanics/electronics

Wave length  Supply voltage V <sub>s</sub> DC 19.2 V 28.8 V <sup>1)</sup> Power consumption sender  Fieldbus module current consumption  Ripple  58 mA <sup>2)</sup> 115 mA  Ripple  58 voltage V <sub>sp</sub> Output current I <sub>max</sub> .  100 mA  Output load, capacitive  100 nF  Output load, Inductive  1 H  Initialization time  58 witching output  Connection type  Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Aluminum  Indication  LED  Enclosure rating  Circuit protection  U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  Front screen  PMMA	•	
Supply voltage V <sub>s</sub> Power consumption sender  58 mA <sup>2)</sup> Fieldbus module current consumption  115 mA  Ripple  58 v <sub>pp</sub> Output current I <sub>max.</sub> 100 mA  Output load, capacitive  100 nF  Output load, Inductive  1 H  Initialization time  58 witching output  Connection type  Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Housing material  Indication  LED  Enclosure rating  IP65, IP67  3)  Circuit protection  U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  Front screen  PMMA	Light source	LED, Infrared light
Power consumption sender  Power consumption receiver  132 mA 2)  Fieldbus module current consumption  Ripple  115 mA  Ripple  Output current I <sub>max</sub> .  100 mA  Output load, capacitive  100 nF  Output load, Inductive  1 H  Initialization time  Switching output  Connection type  Male connector M12, 5-pin, 0.22 m  Connector M12, 12-pin, 0.21 m  Housing material  Indication  LED  Enclosure rating  IP65, IP67 3)  Circuit protection  U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Output Q short-circuit protected Interference pulse suppression  Weight  Front screen  PMMA	Wave length	850 nm
Power consumption receiver  132 mA <sup>2)</sup> Fieldbus module current consumption  Ripple  < 5 V <sub>pp</sub> Output current I <sub>max</sub> .  100 mA  Output load, capacitive  100 nF  Output load, Inductive  1 H  Initialization time  Switching output  Connection type  Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Housing material  Indication  LED  Enclosure rating  IP65, IP67  3)  Circuit protection  Uy connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  III  Weight  Front screen  PMMA	Supply voltage $V_{\rm s}$	DC 19.2 V 28.8 V <sup>1)</sup>
Fieldbus module current consumption  Ripple  < 5 V <sub>pp</sub> Output current I <sub>max</sub> .  100 mA  Output load, capacitive  100 nF  Output load, Inductive  1 H  Initialization time  < 1 s  Switching output  Connection type  Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Housing material  Indication  LED  Enclosure rating  IP65, IP67 3)  Circuit protection  U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  III  Weight  Front screen  PMMA	Power consumption sender	58 mA <sup>2)</sup>
Ripple < 5 V <sub>pp</sub> Output current I <sub>max</sub> . 100 mA  Output load, capacitive 100 nF  Output load, Inductive 1 H  Initialization time < 1 s  Switching output Push-pull: PNP/NPN  Connection type Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Housing material Aluminum  Indication LED  Enclosure rating IP65, IP67 3)  Circuit protection Uy connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class III  Weight 1.449 kg  Front screen PMMA	Power consumption receiver	132 mA <sup>2)</sup>
Output load, capacitive  100 nF  Output load, Inductive  1 H  Initialization time  Switching output  Connection type  Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Aluminum  Housing material  Indication  LED  Enclosure rating  IP65, IP67 3)  Circuit protection  Uv connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  Front screen  100 nA  100 mA  100 mA  100 mF  100	Fieldbus module current consumption	115 mA
Output load, capacitive Output load, Inductive 1 H Initialization time < 1 s Switching output Push-pull: PNP/NPN Connection type Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m Aluminum Indication LED Enclosure rating IP65, IP67 3) Circuit protection U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression Protection class III Weight 1.449 kg Front screen PMMA	Ripple	< 5 V <sub>pp</sub>
Output load, Inductive  Initialization time  < 1 s  Switching output  Push-pull: PNP/NPN  Connection type  Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Housing material  Indication  LED  Enclosure rating  IP65, IP67 3)  Circuit protection  Uy connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  1.449 kg  PMMA	Output current I <sub>max.</sub>	100 mA
Initialization time < 1 s  Switching output Push-pull: PNP/NPN  Connection type Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Housing material Aluminum  Indication LED  Enclosure rating IP65, IP67 3)  Circuit protection Uv connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight 1.449 kg  PMMA	Output load, capacitive	100 nF
Push-pull: PNP/NPN  Connection type  Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Aluminum  LED  Enclosure rating  IP65, IP67 3)  Circuit protection  U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  1.449 kg  PMMA	Output load, Inductive	1H
Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m  Housing material Aluminum  LED  Enclosure rating IP65, IP67 3)  Circuit protection Uv connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class III  Weight 1.449 kg  PMMA	Initialization time	<1s
Connector M12, 12-pin, 0.21 m  Housing material Indication LED  Enclosure rating IP65, IP67 3)  Circuit protection Uv connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class III  Weight 1.449 kg  Front screen PMMA	Switching output	Push-pull: PNP/NPN
Indication  LED  Protection  Uv connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Uv connections, reverse polarity protected Unterference pulse suppression  III  Uv connections, reverse polarity protected Unterference pulse suppression  Protection class  III  Veight  1.449 kg  PMMA	Connection type	
Enclosure rating  IP65, IP67 3)  Circuit protection  U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  1.449 kg  PMMA	Housing material	Aluminum
Circuit protection  U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  1.449 kg  PMMA	Indication	LED
Output Q short-circuit protected Interference pulse suppression  Protection class  III  Weight  1.449 kg  PMMA	Enclosure rating	
Weight 1.449 kg Front screen PMMA	Circuit protection	Output Q short-circuit protected
Front screen PMMA	Protection class	III
	Weight	1.449 kg
<b>Option</b> None	Front screen	PMMA
	Option	None

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

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

<sup>3)</sup> Depending on beam separation without cross beam setting.

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

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

UL File No.

1) Without load.

#### Performance

Maximum range	7 m <sup>1)</sup>
Minimum range	≥ 0 m
Operating range	5 m
Response time	5.9 ms <sup>2)</sup>

NRKH.E181493

#### Communication interface

PROFIBUS DP		<b>√</b> , DPV0
Data	transmission rate	Autobaud, 9,600 kbit/s12 Mbit/s
Digital output		$Q_1$
	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	-30 °C +55 °C
Ambient temperature, storage	-40 °C +70 °C

 $<sup>^{1)}</sup>$  Outdoor mode.

#### Classifications

ECLASS 5.0	27270910
ECLASS 5.1.4	27270910
ECLASS 6.0	27270910
ECLASS 6.2	27270910
ECLASS 7.0	27270910
ECLASS 8.0	27270910
ECLASS 8.1	27270910
ECLASS 9.0	27270910
ECLASS 10.0	27270910
ECLASS 11.0	27270910
ECLASS 12.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549

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

 $<sup>^{\</sup>mbox{\scriptsize 3)}}$  Operating in outdoor condition only with a external protection housing.

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

<sup>&</sup>lt;sup>2)</sup> Without high speed.

<sup>&</sup>lt;sup>2)</sup> Light resistance indirect.

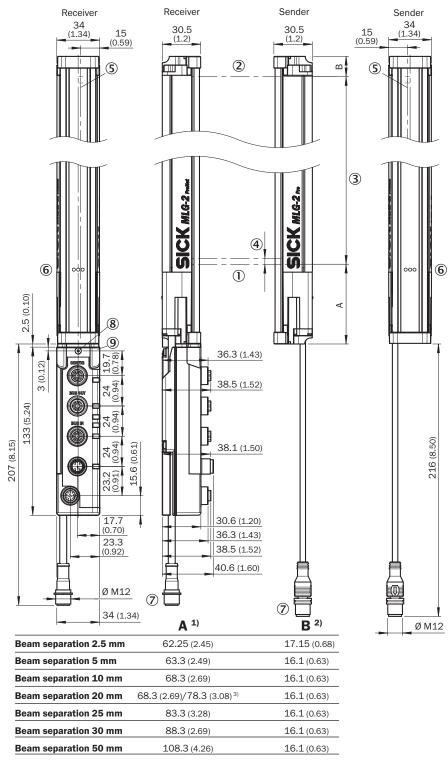
# MLG10N-0590P10502 | MLG-2

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ETIM 7.0	EC002549
ETIM 8.0	EC002549
UNSPSC 16.0901	39121528

#### Dimensional drawing (Dimensions in mm (inch))

#### Dimensional drawing



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

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

<sup>&</sup>lt;sup>3)</sup> MLG20x-xx**40**: 68.3 mm MLG20x-xx**80**: 78.3 mm

① First beam

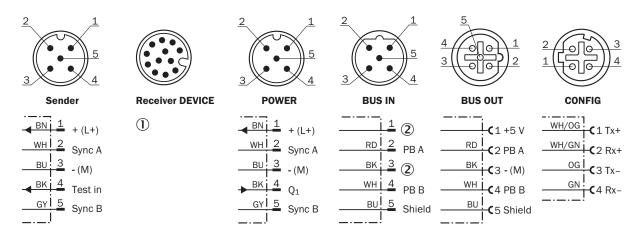
② Last beam

<sup>3</sup> Detection height (see technical data)

- ④ Beam separation
- ⑤ Optical axis
- Status indicator: green, yellow, red LEDs
- ⑦ Connection
- Safty screw M4; turning moment 0,5 Nm
- For thread bold M4; turning moment 0,5 Nm

#### Connection type and diagram

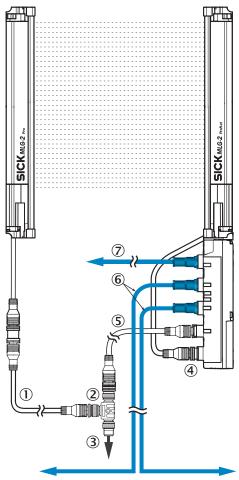
#### PROFIBUS



- ① Connection to fieldbus module
- 2 Not connected

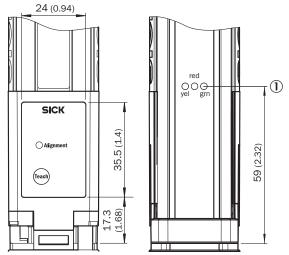
#### **Pinouts**

#### Ethernet



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

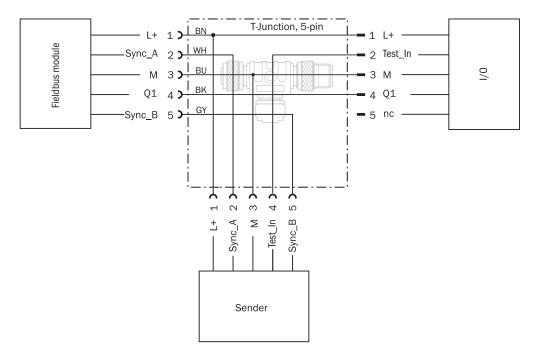
## Adjustments



① Status indicator: green, yellow, red LEDs

## Connection diagram

#### T-piece



#### Recommended accessories

Other models and accessories → www.sick.com/MLG-2

	Brief description	Туре	Part no.		
Terminal and	Terminal and alignment brackets				
	Mounting bracket for external mounting of the fieldbus module, 1 × mounting bracket and 1 × M5 × 6 screw, Stainless steel V2A (1.4301)	BEF-WN-FBM-SET1	2082322		
Others					
	<ul> <li>Connection type head A: Female connector, M12, 5-pin, A-coded</li> <li>Connection type head B: Female connector, M12, 5-pin, A-coded</li> <li>Connection type head C: Male connector, M12, 5-pin, A-coded</li> <li>Note: Master Interface - Type, Connector A - Pole Count, Ports - Pole Count</li> </ul>	SB0-02G12-SM	6029305		
1	<ul> <li>Connection type head A: Male connector, M12, 4-pin, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, D-coded</li> <li>Signal type: Ethernet</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, twisted pair, shielded</li> <li>Permitted cross-section: ≥ 0.25 mm²</li> <li>Application: Zones with oils and lubricants</li> </ul>	YM2D24- 050EA2M2D24	6034422		
	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 5-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals</li> </ul>	YF2A15- 050VB5XLEAX	2096240		
10 to	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 5-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A15- 050UB5M2A15	2096010		
10	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 050PN1MRJA4	2106184		

## 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

