



# MLG05S-0145D10501

MLG-2

AUTOMATION LIGHT GRIDS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type              | part no. |
|-------------------|----------|
| MLG05S-0145D10501 | 1213494  |

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

Detailed technical data

Features

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Device version                  | Prime - Standard functionality    |
| Sensor principle                | Sender/receiver                   |
| Minimum detectable object (MDO) | 9 mm <sup>1)</sup>                |
| Beam separation                 | 5 mm                              |
| Type of synchronization         | Optical                           |
| Number of beams                 | 30                                |
| Detection height                | 145 mm                            |
| Software features (default)     |                                   |
| Q <sub>1</sub>                  | Auto-define height classification |
| Q <sub>2</sub> / IN             | Auto-define height classification |
| Q <sub>3</sub>                  | Auto-define height classification |
| inverted                        | —                                 |
| Teach                           | —                                 |
| key lock                        | off                               |
| Operating mode                  |                                   |
| Standard                        | ✓                                 |
| Function                        |                                   |
| Cross beam                      | ✓                                 |
| Beam blanking                   | ✓                                 |

<sup>1)</sup> Depending on beam separation without cross beam setting.

|                               |                                                                                                                                         |                                                                 |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>Applications</b>           | Switching output                                                                                                                        | Object detection<br>Object recognition<br>Height classification |
|                               | Data interface                                                                                                                          | Object detection<br>Object height measurement                   |
| <b>Included with delivery</b> | 1 × sender<br>1 × receiver<br>4/6 × QuickFix brackets (6 × QuickFix brackets for monitoring heights above 2 m)<br>1 × Quick Start Guide |                                                                 |

<sup>1)</sup> 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 19.2 V ... 28.8 V <sup>1)</sup>                                                                                           |
| <b>Power consumption sender</b>            | 56.5 mA <sup>2)</sup>                                                                                                        |
| <b>Power consumption receiver</b>          | 126 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>                     | Plug, M12, 5-pin, 0.22 m                                                                                                     |
| <b>Housing material</b>                    | Aluminum                                                                                                                     |
| <b>Display</b>                             | LED                                                                                                                          |
| <b>Enclosure rating</b>                    | IP65, IP67<br><sup>3)</sup>                                                                                                  |
| <b>Circuit protection</b>                  | U <sub>V</sub> connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| <b>Protection class</b>                    | III                                                                                                                          |
| <b>Weight</b>                              | 0.549 kg                                                                                                                     |
| <b>Front screen</b>                        | PMMA                                                                                                                         |
| <b>Option</b>                              | None                                                                                                                         |
| <b>UL File No.</b>                         | 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

|                        |                   |
|------------------------|-------------------|
| <b>Maximum range</b>   | 7 m <sup>1)</sup> |
| <b>Minimum range</b>   | ≥ 0.2 m           |
| <b>Operating range</b> | 5 m               |

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

|                      |        |
|----------------------|--------|
| <b>Response time</b> | 6.1 ms |
|----------------------|--------|

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

## Interfaces

|                        |                                   |
|------------------------|-----------------------------------|
| <b>IO-Link</b>         | ✓ , IO-Link V1.1                  |
| Data transmission rate | 38,4 kbit/s (COM2)                |
| Maximum cable length   | 20 m                              |
| Cycle time             | 6 ms                              |
| VendorID               | 26                                |
| DeviceID HEX           | 800067                            |
| DeviceID DEC           | 8388711                           |
| Process data length    | 6 Byte (TYPE_2_V) <sup>1)</sup>   |
| <b>Inputs/outputs</b>  | 3 x Q (IO-Link)                   |
| <b>Digital output</b>  | Q <sub>1</sub> ... Q <sub>3</sub> |
| Number                 | 3                                 |
| <b>Digital input</b>   | 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

|                                      |                                                                                    |
|--------------------------------------|------------------------------------------------------------------------------------|
| <b>Shock resistance</b>              | Continuous shocks 10 g, 16 ms, 1000 shocks<br>Single shocks 15 g, 11 ms 3 per axle |
| <b>Vibration resistance</b>          | Sinusoidal oscillation 10-150 Hz 5 g                                               |
| <b>EMC</b>                           | EN 60947-5-2                                                                       |
| <b>Ambient light immunity</b>        | Direct: 12,000 lx <sup>1)</sup><br>Indirect: 50,000 lx <sup>2)</sup>               |
| <b>Ambient operating temperature</b> | -30 °C ... +55 °C                                                                  |
| <b>Ambient temperature, storage</b>  | -40 °C ... +70 °C                                                                  |

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

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

## Smart Task

|                        |             |
|------------------------|-------------|
| <b>Smart Task name</b> | Base logics |
|------------------------|-------------|

## Certificates

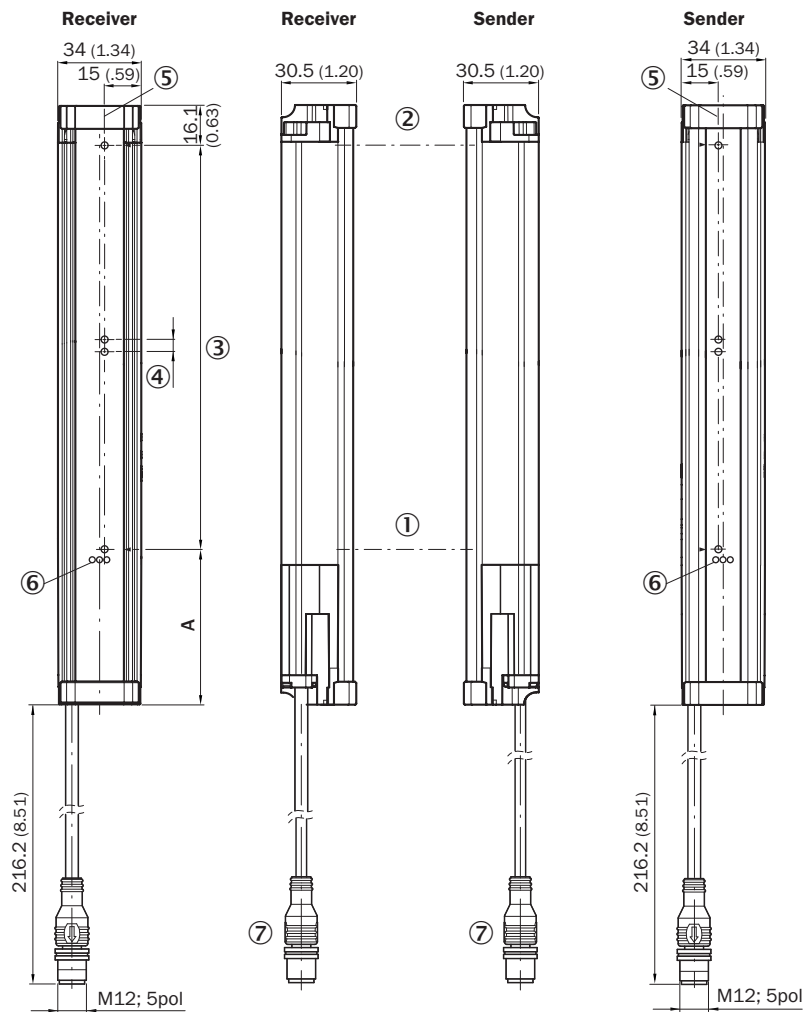
|                                              |   |
|----------------------------------------------|---|
| <b>EU declaration of conformity</b>          | ✓ |
| <b>UK declaration of conformity</b>          | ✓ |
| <b>ACMA declaration of conformity</b>        | ✓ |
| <b>Moroccan declaration of conformity</b>    | ✓ |
| <b>cULus certificate</b>                     | ✓ |
| <b>IO-Link certificate</b>                   | ✓ |
| <b>Photobiological safety (IEC EN 62471)</b> | ✓ |

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270910 |
| <b>ECLASS 5.1.4</b> | 27270910 |

|                       |          |
|-----------------------|----------|
| <b>ECLASS 6.0</b>     | 27270910 |
| <b>ECLASS 6.2</b>     | 27270910 |
| <b>ECLASS 7.0</b>     | 27270910 |
| <b>ECLASS 8.0</b>     | 27270910 |
| <b>ECLASS 8.1</b>     | 27270910 |
| <b>ECLASS 9.0</b>     | 27270910 |
| <b>ECLASS 10.0</b>    | 27270910 |
| <b>ECLASS 11.0</b>    | 27270910 |
| <b>ECLASS 12.0</b>    | 27270910 |
| <b>ETIM 5.0</b>       | EC002549 |
| <b>ETIM 6.0</b>       | EC002549 |
| <b>ETIM 7.0</b>       | EC002549 |
| <b>ETIM 8.0</b>       | EC002549 |
| <b>UNSPSC 16.0901</b> | 39121528 |

## Dimensional drawing


**A** <sup>1)</sup>

|                       |                                        |
|-----------------------|----------------------------------------|
| 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) <sup>(2)</sup> |
| Beam separation 25 mm | 83.3 (3.28)                            |
| Beam separation 30 mm | 88.3 (3.48)                            |
| Beam separation 50 mm | 108.3 (4.26)                           |

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

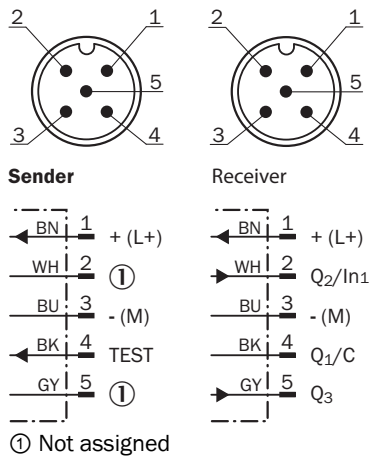
<sup>2)</sup> MLG20x-xx**40**: 68.3 mm

 MLG20x-xx**80**: 78.3 mm

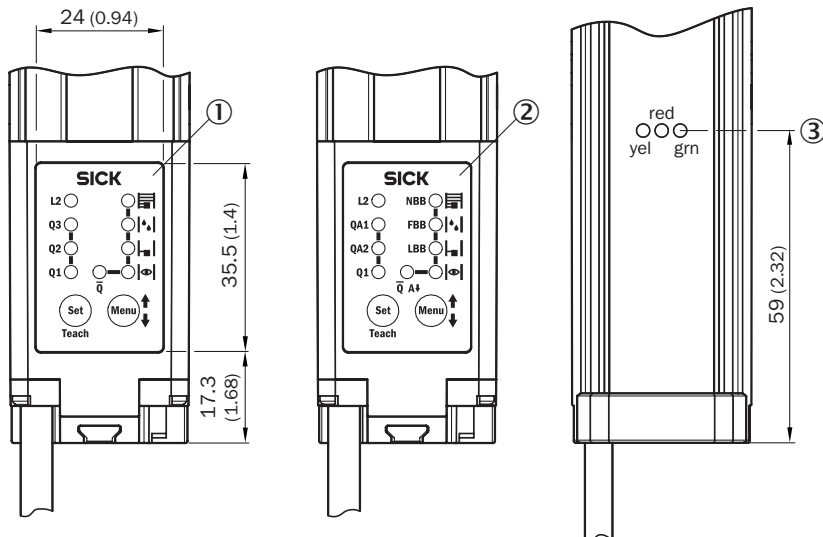
Dimensions in mm (inch)

- 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

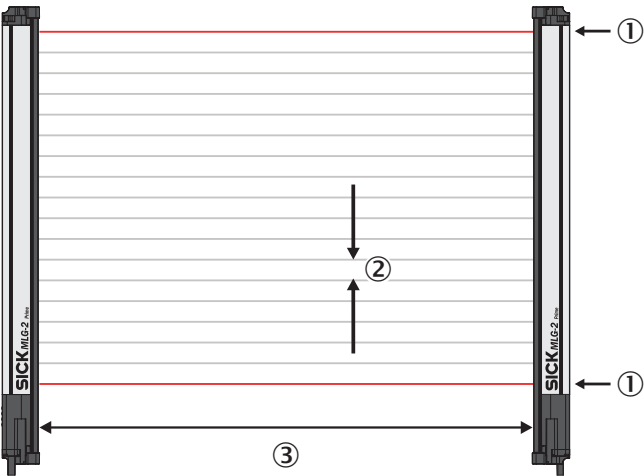
## Connection type and diagram Connector M12, 5-pin, switching outputs Q



## Adjustments



Functional principle Optical synchronization



The sender and receiver synchronize with each other optically, so no electrical connection is necessary. For this reason, either the first or the last beam of the automation light grid must remain clear. If both beams are interrupted, no measurements can be taken.

- ① Optical synchronization
- ② Beam separation
- ③ scanning range

Recommended accessories

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

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                            | Type               | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 5-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li></ul> | YF2A15-050VB5XLEAX | 2096240  |

|                                                                                   | Brief description | Type             | part no. |
|-----------------------------------------------------------------------------------|-------------------|------------------|----------|
| network devices                                                                   |                   |                  |          |
|  |                   | SIG350-0004AP100 | 6076871  |
|  |                   | SIG350-0005AP100 | 6076923  |
|  |                   | SIG350-0006AP100 | 6076924  |

## 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)