



# MLG50N-0550U10501

MLG-2

MEASURING AUTOMATION LIGHT GRIDS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type              | Part no. |
|-------------------|----------|
| MLG50N-0550U10501 | 1222130  |

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



### Detailed technical data

#### Features

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------|------------------|------------|------------------------------|--------------------|----------------|-----------------------------|----------------|-----------------------|----------------|--------------------|----------------|-----|----------------|-----|-----------------|-------------|-----------------|-----|
| <b>Device version</b>                  | ProNet - Replacement product (for MLG-1 with terminals)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Sensor principle</b>                | Sender/receiver                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Minimum detectable object (MDO)</b> | 50 mm, 54 mm <sup>1) 2) 3)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Beam separation</b>                 | 50 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Number of beams</b>                 | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Detection height</b>                | 550 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Software features (default)</b>     | <table> <tr> <td>Interface RS-485</td><td>Beam status</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></td><td>Presence detection inverted</td></tr> <tr> <td>Q<sub>3</sub></td><td>Contamination warning</td></tr> <tr> <td>Q<sub>4</sub></td><td>Presence detection</td></tr> <tr> <td>Q<sub>5</sub></td><td>off</td></tr> <tr> <td>Q<sub>6</sub></td><td>off</td></tr> <tr> <td>In<sub>1</sub></td><td>Teach input</td></tr> <tr> <td>In<sub>2</sub></td><td>off</td></tr> </table> | Interface RS-485 | Beam status | Baud rate RS-485 | 9.6 kbit/s | Q <sub>1</sub>               | Presence detection | Q <sub>2</sub> | Presence detection inverted | Q <sub>3</sub> | Contamination warning | Q <sub>4</sub> | Presence detection | Q <sub>5</sub> | off | Q <sub>6</sub> | off | In <sub>1</sub> | Teach input | In <sub>2</sub> | off |
| Interface RS-485                       | Beam status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Baud rate RS-485                       | 9.6 kbit/s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Q <sub>1</sub>                         | Presence detection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Q <sub>2</sub>                         | Presence detection inverted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Q <sub>3</sub>                         | Contamination warning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Q <sub>4</sub>                         | Presence detection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Q <sub>5</sub>                         | off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Q <sub>6</sub>                         | off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| In <sub>1</sub>                        | Teach input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| In <sub>2</sub>                        | off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Operating mode</b>                  | <table> <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 | ✓                  |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Standard                               | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Transparent                            | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Dust- and sunlight-resistant           | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| <b>Function</b>                        | <table> <tr> <td>Cross beam</td><td>✓</td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Cross beam       | ✓           |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |
| Cross beam                             | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |             |                  |            |                              |                    |                |                             |                |                       |                |                    |                |     |                |     |                 |             |                 |     |

<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.

|                               |                           |                                                                                                                                                                                                                        |
|-------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               | Beam blanking             | ✓                                                                                                                                                                                                                      |
|                               | High-speed scan           | ✓                                                                                                                                                                                                                      |
|                               | High measurement accuracy | ✓                                                                                                                                                                                                                      |
| <b>Applications</b>           | Switching output          | Object recognition/object width<br>Object recognition<br>Height classification<br>Hole detection/hole size<br>Outside dimension/inside dimension<br>Object position<br>Hole position<br>Zone definition                |
|                               | Data interface            | Object recognition<br>Object height measurement<br>Object height measurement<br>Measurement of external dimension<br>Measurement of inside dimension<br>Measurement of object position<br>Measurement of hole position |
| <b>Included with delivery</b> |                           | 1 × sender<br>1 × receiver<br>1 × Fieldbus module<br>4/6 x QuickFix brackets (6 x QuickFix brackets for monitoring heights above 2 m)<br>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>            | 55.6 mA <sup>2)</sup>                                              |
| <b>Power consumption receiver</b>          | 122.4 mA <sup>2)</sup>                                             |
| <b>Power consumption fieldbus module</b>   | 115 mA                                                             |
| <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<br>Connector M12, 12-pin, 0.21 m |
| <b>Housing material</b>                    | Aluminum                                                           |
| <b>Indication</b>                          | LED                                                                |
| <b>Enclosure rating</b>                    | IP65, IP67<br><sup>3)</sup>                                        |

1) Without load.

2) , Without load with 24 V.

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

|                           |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <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>             | 1.449 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>   | 7 m <sup>1)</sup>    |
| <b>Minimum range</b>   | ≥ 0 m                |
| <b>Operating range</b> | 5 m                  |
| <b>Response time</b>   | 3.5 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>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>6</sub> |
| Number                 | 6                                 |
| <b>Digital input</b>   | In <sub>1</sub> , In <sub>2</sub> |
| Number                 | 2                                 |

## 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><br>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<br>Single shocks 15 g, 11 ms 3 per axle |

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

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

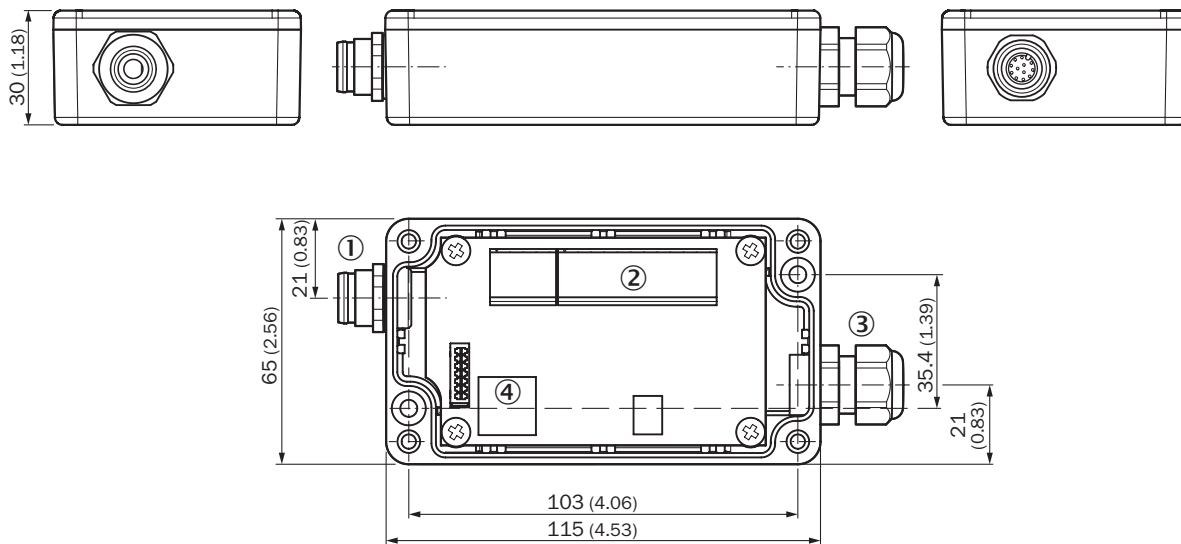
## Classifications

|                     |          |
|---------------------|----------|
| <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 |

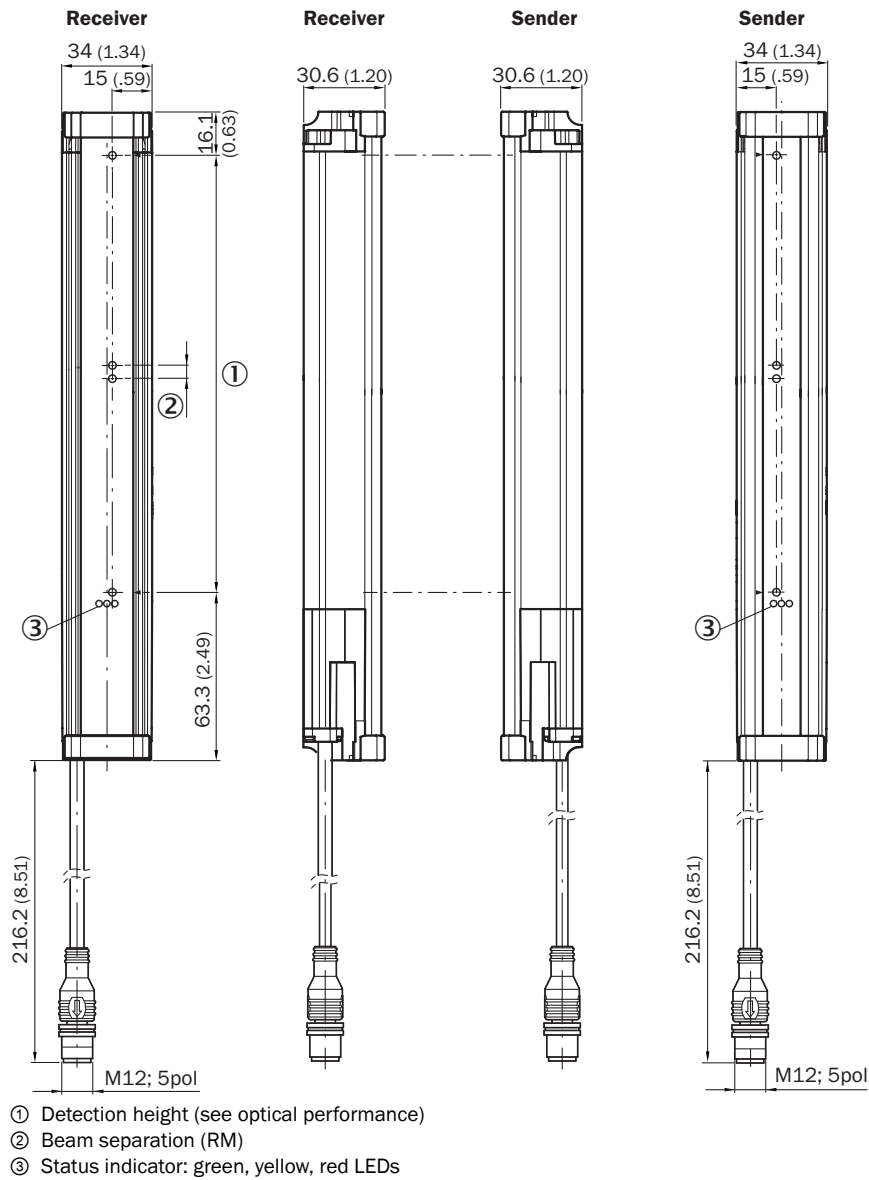
|                       |          |
|-----------------------|----------|
| <b>ECI@ss 8.1</b>     | 27270910 |
| <b>ECI@ss 9.0</b>     | 27270910 |
| <b>ECI@ss 10.0</b>    | 27270910 |
| <b>ECI@ss 11.0</b>    | 27270910 |
| <b>ETIM 5.0</b>       | EC002549 |
| <b>ETIM 6.0</b>       | EC002549 |
| <b>ETIM 7.0</b>       | EC002549 |
| <b>UNSPSC 16.0901</b> | 39121528 |

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

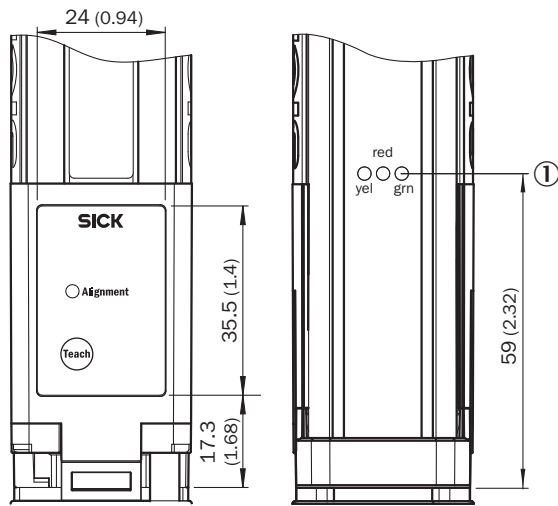
Dimensional drawing: terminal connection box (AFB)



- ① Female connector M12, 12-pin
- ② Cable gland
- ③ PG gland
- ④ RJ45 (Ethernet)

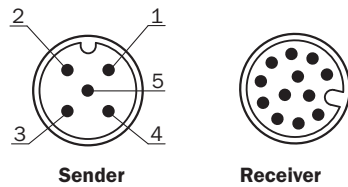


## Adjustments



① Status indicator: green, yellow, red LEDs

## Connection type and diagram



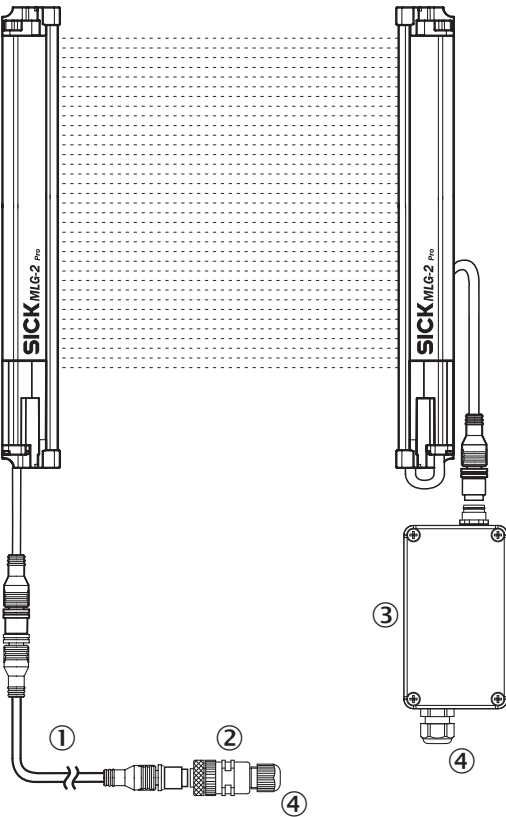
|     |   |         |
|-----|---|---------|
| brn | 1 | +(L+)   |
| wht | 2 | Sync A  |
| blu | 3 | -(M)    |
| blk | 4 | Test in |
| gra | 5 | Sync B  |

①

① Connection to terminal connection box (AFB)

Connection type

Terminal connection box (AFB)



- ① Connection cable (6057015)
- ② Female connector M12, 5-pin (6009719)
- ③ Terminal connection box (AFB)
- ④ Connecting to PLC / pin assignment see Technical Information (the MLG-2 as a replacement product for the MLG-1 and XLG)

Recommended accessories

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

|                                 | Brief description                                                                                                                                                    | Type                     | Part no. |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------|
| Terminal and alignment brackets |                                                                                                                                                                      |                          |          |
|                                 | Bracket for external mounting of the fieldbus module, 1 x angle holder and 1 x screw M5 x 6-8.8, Stainless steel V2A (1.4301)                                        | BEF-WN-FBM-SET1          | 2082322  |
| Plug connectors and cables      |                                                                                                                                                                      |                          |          |
|                                 | Head A: female connector, M12, 5-pin, straight<br>Head B: male connector, M12, 8-pin, straight<br>Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 0.1 m | DSL-1258-G0M1C           | 6057015  |
|                                 | Head A: male connector, RJ45<br>Head B: male connector, RJ45<br>Cable: Ethernet, unshielded, 3 m                                                                     | Ethernet crossover cable | 6026084  |

|                                                                                   | Brief description                                                   | Type       | Part no. |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|------------|----------|
|  | Head A: female connector, M12, 5-pin, straight<br>Cable: unshielded | DOS-1205-G | 6009719  |

## 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:

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