

MLG50N-1900U10501

MLG-2

MEASURING AUTOMATION LIGHT GRIDS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|-------------------|----------|
| MLG50N-1900U10501 | 1221736 |

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

Detailed technical data

Features

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|------------------|-------------|------------------|------------|------------------------------|--------------------|----------------|-----------------------------|----------------|-----------------------|----------------|--------------------|----------------|-----|----------------|-----|-----------------|-------------|-----------------|-----|
| Device version | ProNet - Replacement product (for MLG-1 with terminals) | | | | | | | | | | | | | | | | | | | | |
| Sensor principle | Sender/receiver | | | | | | | | | | | | | | | | | | | | |
| Minimum detectable object (MDO) | 50 mm, 54 mm ^{1) 2) 3)} | | | | | | | | | | | | | | | | | | | | |
| Beam separation | 50 mm | | | | | | | | | | | | | | | | | | | | |
| Type of synchronization | Cable | | | | | | | | | | | | | | | | | | | | |
| Number of beams | 39 | | | | | | | | | | | | | | | | | | | | |
| Detection height | 1,900 mm | | | | | | | | | | | | | | | | | | | | |
| Software features (default) | <table border="0"> <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>Q₁</td> <td>Presence detection</td> </tr> <tr> <td>Q₂</td> <td>Presence detection inverted</td> </tr> <tr> <td>Q₃</td> <td>Contamination warning</td> </tr> <tr> <td>Q₄</td> <td>Presence detection</td> </tr> <tr> <td>Q₅</td> <td>off</td> </tr> <tr> <td>Q₆</td> <td>off</td> </tr> <tr> <td>In₁</td> <td>Teach input</td> </tr> <tr> <td>In₂</td> <td>off</td> </tr> </table> | Interface RS-485 | Beam status | Baud rate RS-485 | 9.6 kbit/s | Q ₁ | Presence detection | Q ₂ | Presence detection inverted | Q ₃ | Contamination warning | Q ₄ | Presence detection | Q ₅ | off | Q ₆ | off | In ₁ | Teach input | In ₂ | off |
| Interface RS-485 | Beam status | | | | | | | | | | | | | | | | | | | | |
| Baud rate RS-485 | 9.6 kbit/s | | | | | | | | | | | | | | | | | | | | |
| Q ₁ | Presence detection | | | | | | | | | | | | | | | | | | | | |
| Q ₂ | Presence detection inverted | | | | | | | | | | | | | | | | | | | | |
| Q ₃ | Contamination warning | | | | | | | | | | | | | | | | | | | | |
| Q ₄ | Presence detection | | | | | | | | | | | | | | | | | | | | |
| Q ₅ | off | | | | | | | | | | | | | | | | | | | | |
| Q ₆ | off | | | | | | | | | | | | | | | | | | | | |
| In ₁ | Teach input | | | | | | | | | | | | | | | | | | | | |
| In ₂ | off | | | | | | | | | | | | | | | | | | | | |
| Operating mode | <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 | ✓ | | | | | | | | | | | | | | |
| Standard | ✓ | | | | | | | | | | | | | | | | | | | | |
| Transparent | ✓ | | | | | | | | | | | | | | | | | | | | |
| Dust- and sunlight-resistant | ✓ | | | | | | | | | | | | | | | | | | | | |
| Function | | | | | | | | | | | | | | | | | | | | | |

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.

| | | |
|-------------------------------|---------------------------|---|
| | Cross beam | ✓ |
| | Beam blanking | ✓ |
| | High measurement accuracy | ✓ |
| Applications | 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 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 × Fieldbus module 4/6 × QuickFix brackets (6 × 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

| | |
|--|--|
| Light source | LED, Infrared light |
| Wave length | 850 nm |
| Supply voltage V_s | DC 19.2 V ... 28.8 V ¹⁾ |
| Power consumption sender | 56.95 mA ²⁾ |
| Power consumption receiver | 127.8 mA ²⁾ |
| Fieldbus module current consumption | 115 mA |
| Ripple | < 5 V _{pp} |
| 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 | 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⁾ |

1) Without load.

2) Without load with 24 V.

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

| | |
|---------------------------|--|
| Circuit protection | U _V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression |
| Protection class | III |
| Weight | 4.149 kg |
| Front screen | PMMA |
| Option | None |

¹⁾ Without load.

²⁾ Without load with 24 V.

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

Performance

| | |
|------------------------|----------------------|
| Maximum range | 7 m ¹⁾ |
| Minimum range | ≥ 0 m |
| Operating range | 5 m |
| Response time | 4.3 ms ²⁾ |

¹⁾ No reserve for environmental issue and deterioration of the diode.

²⁾ Without high speed.

Communication interface

| | |
|------------------------|-----------------------------------|
| Serial | ✓, RS-485 |
| Data transmission rate | 1.2 kbit/s ...921.6 kbit/s |
| Inputs/outputs | RS-485 + 6 x Q + 2 x I/O |
| Digital output | Q ₁ ... Q ₆ |
| Number | 6 |
| Digital input | In ₁ , In ₂ |
| Number | 2 |

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 ¹⁾ Indirect: 200,000 lx ²⁾ |
| Ambient operating temperature | -30 °C ... +55 °C |
| Ambient temperature, storage | -40 °C ... +70 °C |

¹⁾ Outdoor mode.

²⁾ Light resistance indirect.

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 |
| ETIM 7.0 | EC002549 |
| ETIM 8.0 | EC002549 |
| UNSPSC 16.0901 | 39121528 |

Dimensional drawing (Dimensions in mm (inch))

Dimensional drawing



A¹⁾

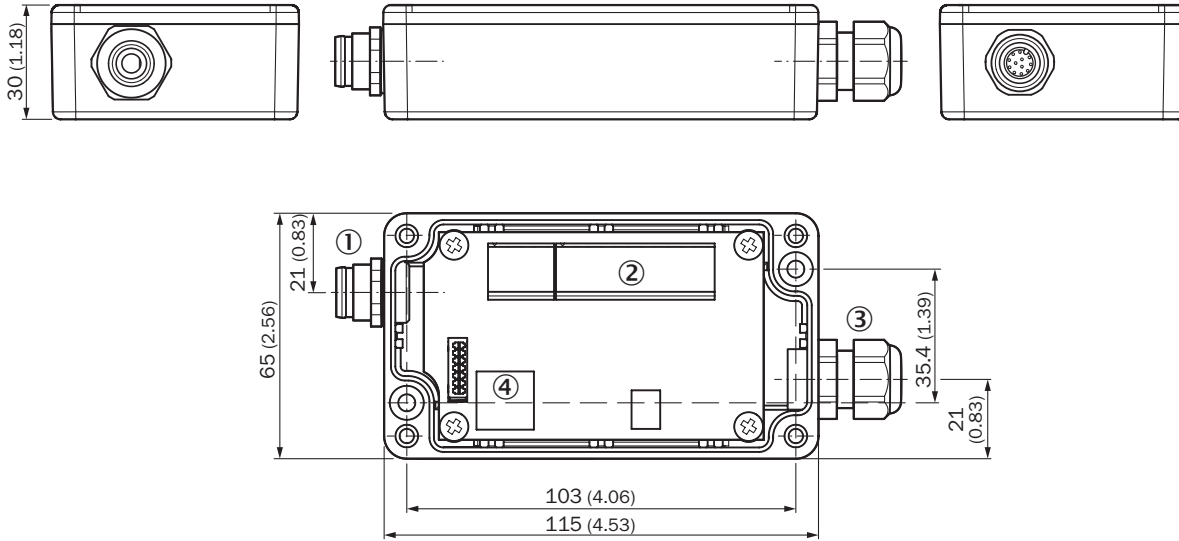
| | |
|------------------------------|--|
| Beam separation 5 mm | 63.3 (2.49) |
| Beam separation 10 mm | 68.3 (2.69) |
| Beam separation 20 mm | 68.3 (2.69)/78.3 (3.08) ⁽²⁾ |
| Beam separation 25 mm | 83.3 (3.28) |
| Beam separation 30 mm | 88.3 (3.48) |
| Beam separation 50 mm | 108.3 (4.26) |

¹⁾ Distance: MLG edge - first beam

²⁾ MLG20x-xx**40**: 68.3 mm
MLG20x-xx**80**: 78.3 mm

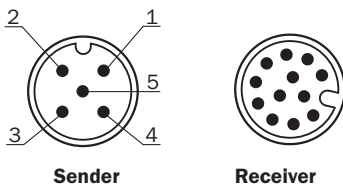
- ① First beam
- ② Last beam
- ③ Detection height (see technical data)
- ④ Beam separation
- ⑤ Optical axis
- ⑥ Status indicator: green, yellow, red LEDs
- ⑦ Connection

Dimensional drawing: terminal connection box (AFB)



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

Connection type and diagram

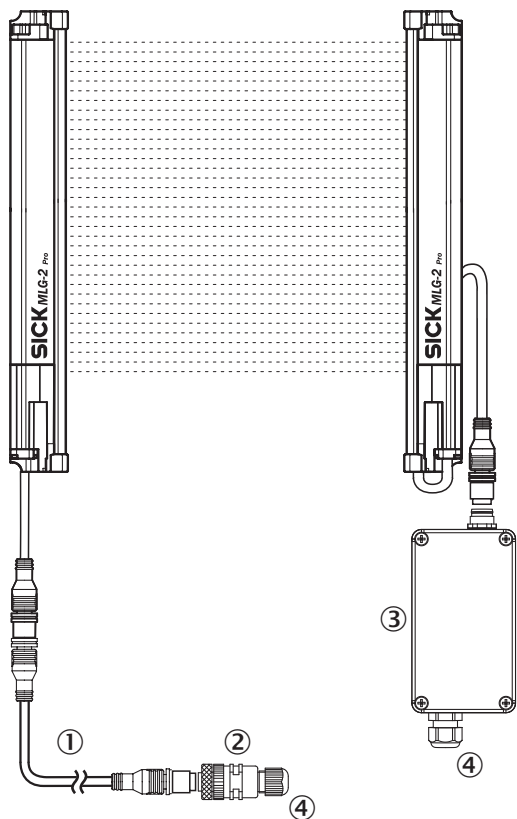


| | | |
|-----|---|---------|
| brn | 1 | +(L+) |
| wht | 2 | Sync A |
| blu | 3 | -(M) |
| blk | 4 | Test in |
| gra | 5 | Sync B |

① Connection to terminal connection box (AFB)

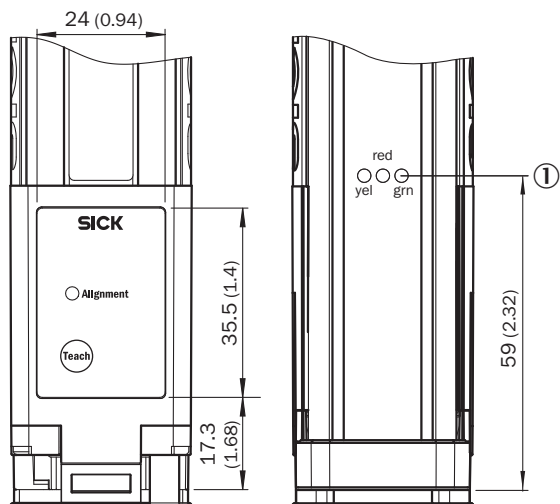
Pinouts

Terminal connection box (AFB)



- ① Connection cable (6057015)
- ② Female connector M12, 5-pin (6009719)
- ③ Terminal connection box (AFB)
- ④ For connection to PLC / PIN assignment, see technical information (MLG-2 as upgrade product for MLG-1 and XLG)





Adjustments



- ① Status indicator: green, yellow, red LEDs

Recommended accessories

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

| | Brief description | Type | Part no. |
|---|--|--------------------------|----------|
| 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 style="list-style-type: none"> • Connection type head A: Male connector, RJ45 • Connection type head B: Male connector, RJ45 • Signal type: Ethernet • Cable: 3 m, crossover • Description: Ethernet, unshielded | Ethernet crossover cable | 6026084 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Description: Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² | DOS-1205-G | 6009719 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight • Connection type head B: Male connector, M12, 8-pin, straight • Signal type: Sensor/actuator cable • Cable: 0.1 m, 5-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation | DSL-1258-G0M1C | 6057015 |

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Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

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