Product data sheet

MLG20A-0140B50501

MLG-2

MEASURING AUTOMATION LIGHT GRIDS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
MLG20A-0140B50501	1107786

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

Detailed technical data

Features

Device version	Pro - Advanced functionality
Sensor principle	Sender/receiver
Minimum detectable object (MDO)	20 mm, 24 mm [1) 2) 3)]
Beam separation	20 mm
Type of synchronization	Cable
Number of beams	8
Detection height	140 mm
Software features (default)	
Q_{A1}	Number of broken beams/NBB
Q_{A2}	Height measurement (last beam)/LBB
Q_1	Presence detection
Q2 / IN	Teach input
Teach	Standard mode
Operating mode	
Standard	✓
Transparent	✓
Dust- and sunlight-resistant	✓
Function	
Cross beam	✓

[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.

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 (in IP69K protective pipes) 1 × receiver (in IP69K protective pipes) 1 x IP69K mounting instructions 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	55.4 mA [2]
Power consumption receiver	121.6 mA [2]
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, 0.39 m Male connector M12, 8-pin, 0.39 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)
Indication	LED
Enclosure rating	IP69K [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	0.86 kg
Option	Protective housing IP69K
UL File No.	NRKH.E181493

[1] Without load.
[2] Without load with 24 V.
[3] Operating in outdoor condition only with a external protection housing.

Performance

Maximum range	5.25 m [1]
Minimum range	≥ 0 m
Operating range	3.75 m
Response time	3.5 ms [2]

[1] No reserve for environmental issue and deterioration of the diode.
[2] Without high speed.

Communication interface

IO-Link	✓, IO-Link V1.1
Data transmission rate	230,4 kbit/s (COM3)
Maximum cable length	20 m
Cycle time	2.3 ms
VendorID	26
DeviceID HEX	800068
DeviceID DEC	8388712
Process data length	32 Byte (TYPE_2_V) [1]
Analog	✓, Current
Inputs/outputs	2 x analog + 2 x Q (IO-Link)
Analog output (current)	4 mA ... 20 mA
Analog output	Q_{A1}, Q_{A2}
Number	2
Type	Current output
Current	4 mA ... 20 mA
Digital output	Q_1, Q_2
Number	2
Digital input	In_1
Number	1

[1] With an IO-Link master with V1.0, fall back to interleaved mode (consisting of TYPE_1_1 (ProcessData) and TYPE_1_2 (On-request Data)).

Ambient data

Shock resistance	Continuous shocks 10 g, 16 ms, 1000 shocks

[1] Outdoor mode.
[2] Light resistance indirect.

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

[1] Outdoor mode.
[2] Light resistance indirect.

Smart Task

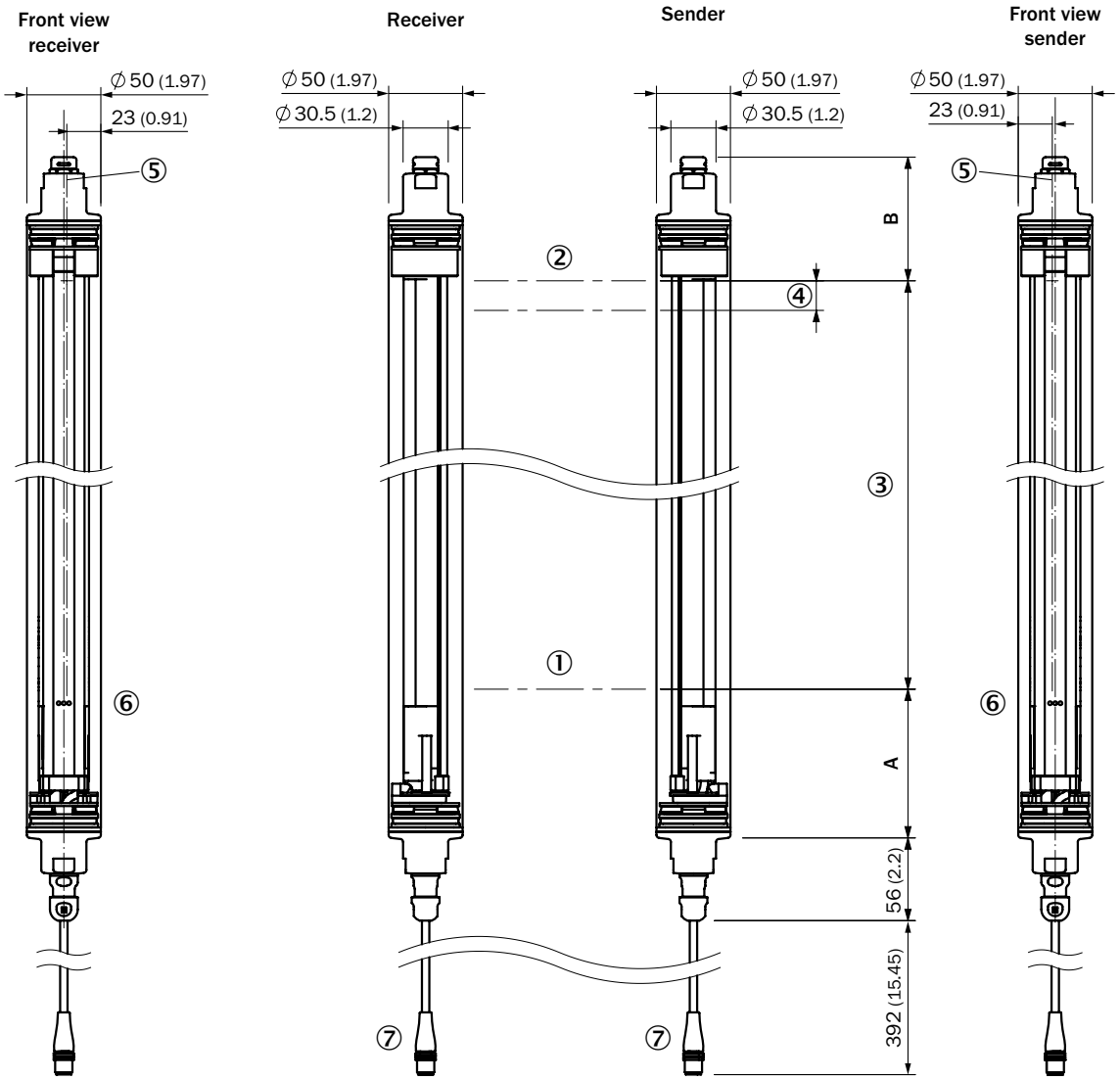
Smart Task name	Base logics

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



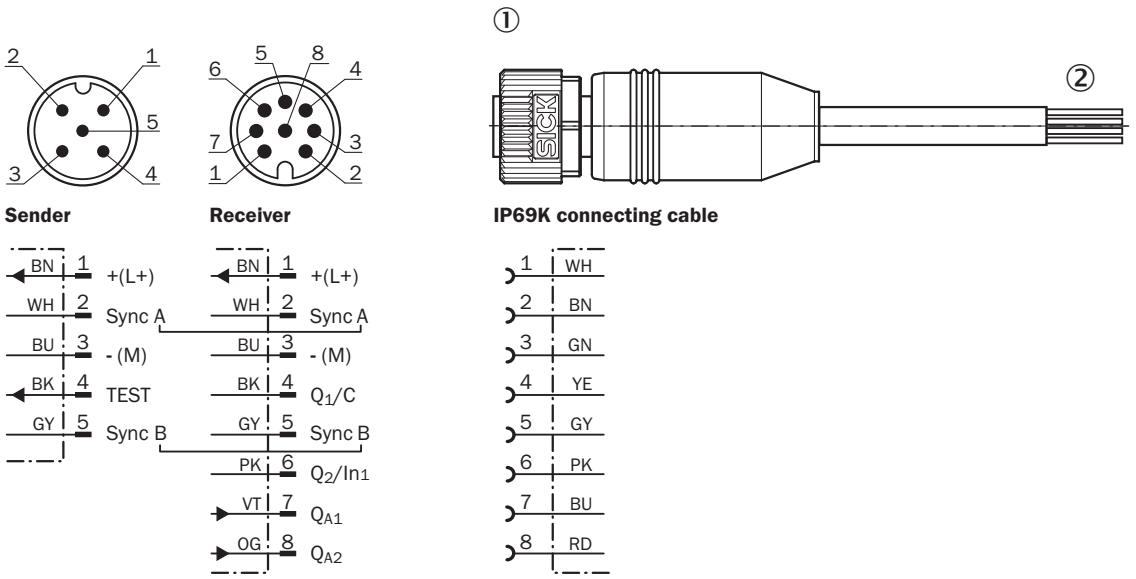
	A [1]	B [2]
Beam separation 2.5 mm	94.25 (3.71)	84.7 (3.33)
Beam separation 5 mm	95.5 (3.76)	83.6 (3.29)
Beam separation 10 mm	100.5 (3.96)	83.6 (3.29)
Beam separation 20 mm	100.5 (3.96)/110.5 (4.35) [3]	83.6 (3.29)
Beam separation 25 mm	115.5 (4.55)	83.6 (3.29)
Beam separation 30 mm	120.5 (4.74)	83.6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

[1] Distance: MLG-2 edge - first beam
[2] Distance: MLG-2 edge - last beam
[3] MLG20x-xx**40**: 100.5 mm
MLG20x-xx**80**: 110.5 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

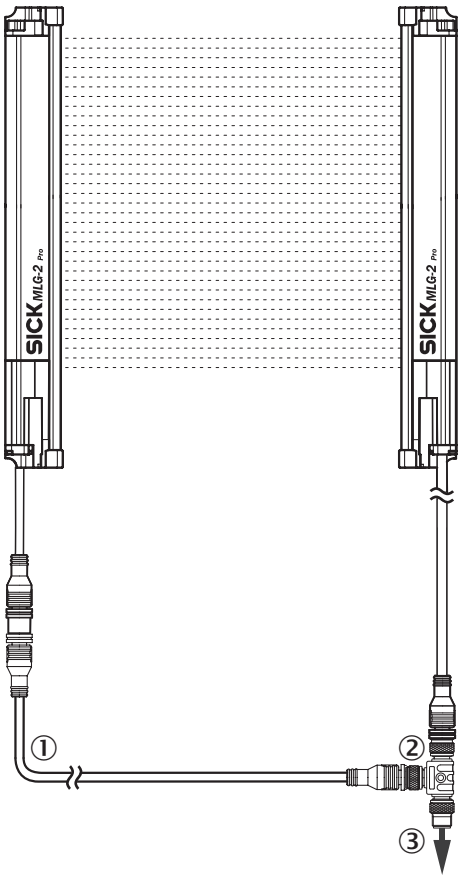
Connection type and diagram

M12 male connector, 5/8-pin, analog outputs Q_A | YF2AP8-xxxPA4XLEAX (IP69K connecting cable)



① Valid for: YF2AP8-250PA4XLEAX (2116447), YF2AP8-020PA4XLEAX (2111888)
② For 8-pin sensor-actuator cables, the wire colors are not standardized. Therefore, please observe the pin assignment of the sensor and the cable in the respective data sheet.

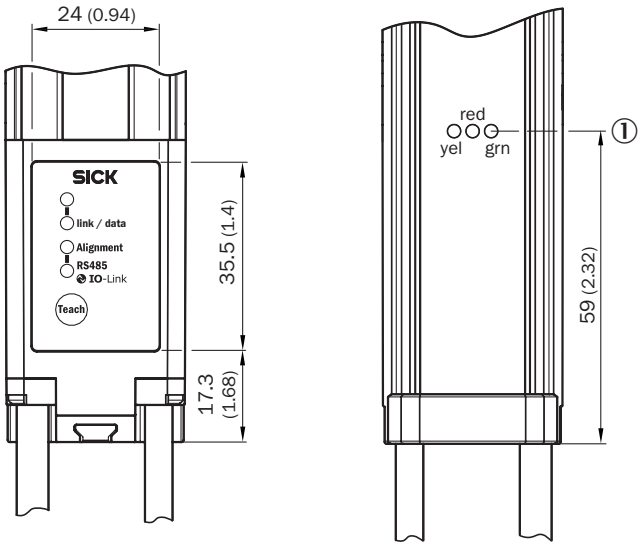
Pinouts



① Connection cable receiver (2096010)
② T-junctions
③ Connection cable (6020664)

Adjustments

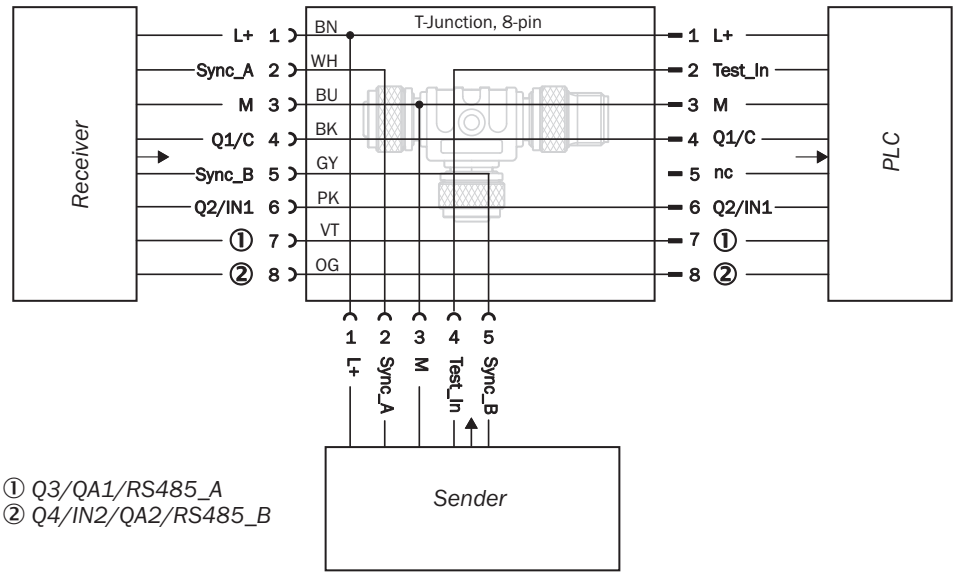
Adjustments



① Status indicator: green, yellow, red LEDs

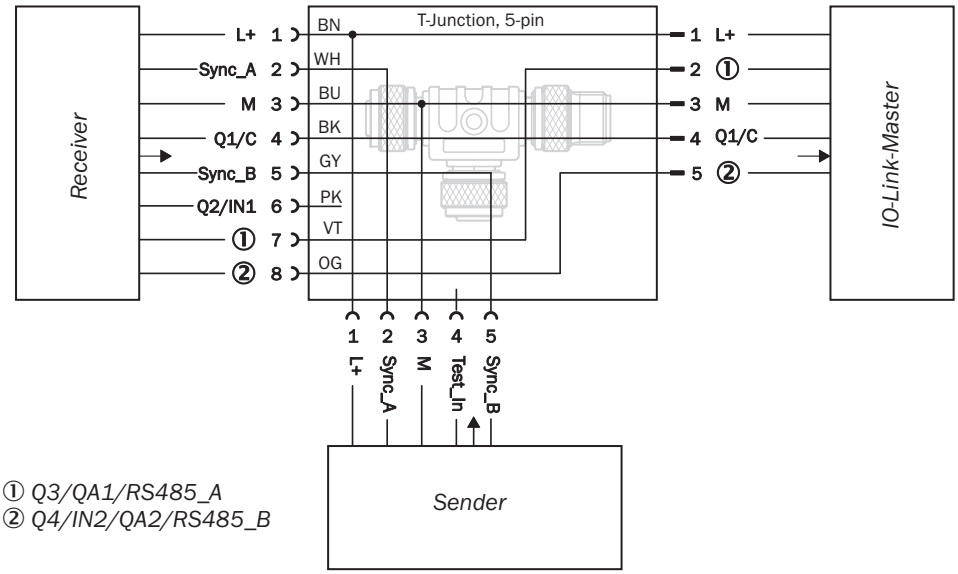
Connection diagram

T-junction, PLC



① *Q3/QA1/RS485_A*
② *Q4/IN2/QA2/RS485_B*

T-junction, IO-Link-Master



① *Q3/QA1/RS485_A*
② *Q4/IN2/QA2/RS485_B*

Recommended accessories

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

	Brief description	Type	Part no.
Terminal and alignment brackets			
	4 pieces, Stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301	BEF-2SMMEAES4	2023708
Others			
	YF2AP8-020PA4XLEAX	YF2AP8-020PA4XLEAX	2111888
	YF2AP8-250PA4XLEAX	YF2AP8-250PA4XLEAX	2116447
	• **Connection type head A:** Female connector, M12, 5-pin, A-coded • **Connection type head B:** Female connector, M12, 8-pin, A-coded • **Connection type head C:** Male connector, M12, 8-pin, A-coded • **Note:** Male connector M12, 8-pin, to 1 x female connector M12, 8-pin, to 1 x female connector M12, 5-pin, for connecting of a PLC	SBO-02F12-SM1	6053172
	• **Connection type head A:** Female connector, M12, 8-pin, straight • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 8-wire, PVC • **Description:** Sensor/actuator cable, special color code, shielded • **Connection systems:** Flying leads	DOL-1208-G05MF	6020664
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 5-pin, straight, A-coded • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 5-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with oils and lubricants, Drag chain operation, Robot	YF2A15-050UB5M2A15	2096010

	Brief description	Type	Part no.
Sensor Integration Gateway			
	• **Further functions:** Web server integrated, IIoT interface available (dual talk) • **Logic editor:** no • **Communication interface:** IO-Link, Ethernet, PROFINET, REST API, MQTT, OPC UA • **Product category:** IO-Link Master	SIG350-0004AP100	6076871
	• **Further functions:** Web server integrated, IIoT interface available (dual talk) • **Logic editor:** no • **Communication interface:** IO-Link, Ethernet, EtherNet/IP™, REST API, MQTT, OPC UA • **Product category:** IO-Link Master	SIG350-0005AP100	6076923
	• **Further functions:** Web server integrated, IIoT interface available (dual talk) • **Logic editor:** no • **Communication interface:** IO-Link, Ethernet, EtherCAT®, REST API, MQTT, OPC UA • **Product category:** IO-Link Master	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.”

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