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DATA SHEET

MLG05A-0295B50501

MLG-2
Automation light grids

SICK Sensor Intelligence

Illustration may differ

AUTOMATION LIGHT GRIDS

ML-G05A-0295B50501

ORDERING INFORMATION

Type	part no.
MLG05A-0295B50501	1142443

Further device versions and accessories at www.sick.com/MLG-2

DETAILED TECHNICAL DATA

FEATURES

Device version	Pro - Extended functionality
Sensor principle	Sender/receiver
Minimum detectable object (MDO)	5 mm [1] 9 mm [2] [3]
Beam separation	5 mm
Type of synchronization	Cable
Number of beams	60
Detection height	295 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	✓

[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.

Dust- and sunlight-resistant	✓
Function	
Cross beam	✓
Beam blanking	✓
High-speed scan	✓
High measurement accuracy	✓
Applications	
Switching output	Object detection/object width Object recognition Height classification Hole detection/hole size Outside/inside dimension Object position Hole position Zone definition
Data interface	Object detection Hole detection Object height measurement Measurement of the outside dimension Measurement of the inside dimension Measurement of the object position Measurement of the 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	58 mA [2]
Power consumption receiver	132 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	Plug, 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)
Display	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	1.16 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	5.9 ms [2]

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

[2] Without high speed.

INTERFACES

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]
-		✓ , Current
Inputs/outputs		2 x analog + 2 x Q (IO-Link)
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] 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

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	–20 °C ... +55 °C

[1] Outdoor mode.

[2] Light resistance indirect.

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

[1] Outdoor mode.

[2] Light resistance indirect.

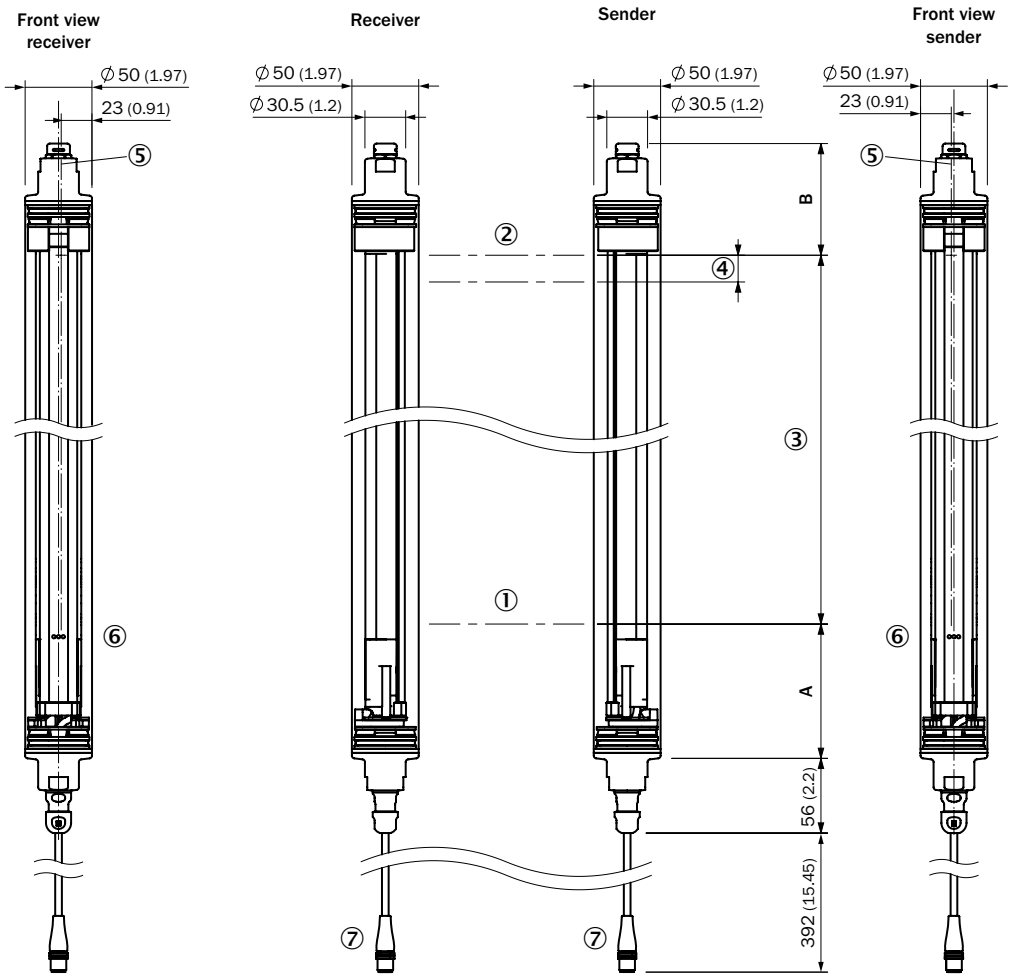
SMART TASK

Smart Task name	Base logics

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (IEC EN 62471)	✓

DIMENSIONAL DRAWING

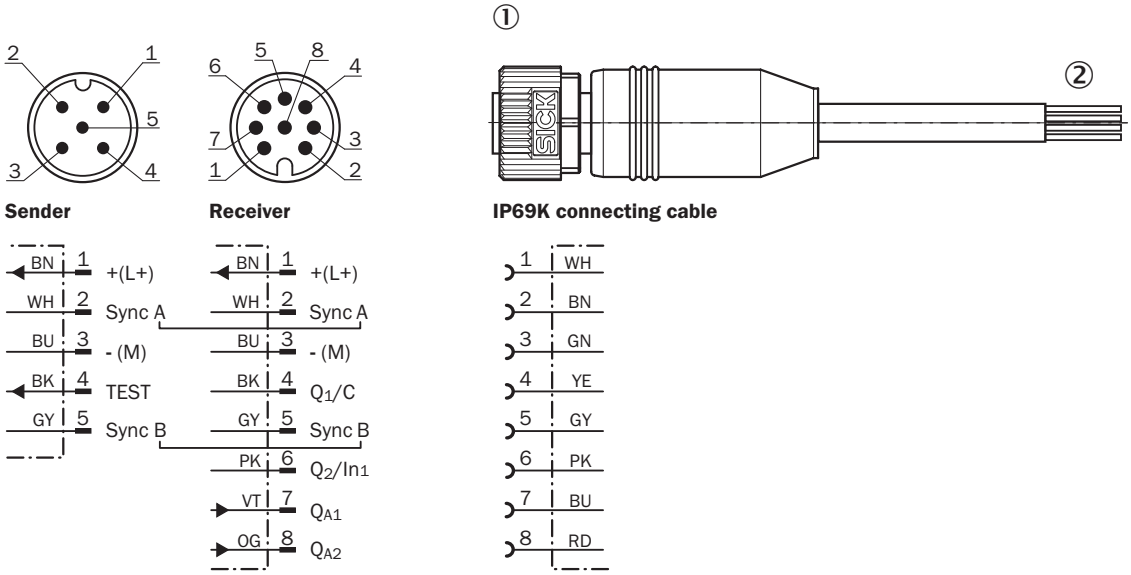


	A [1]	B [2]
Beam separation 2.5 mm	94.25 (3.71)	84.7 (3.33)
Beam separation 5 mm	95.5 (3.76)	83.6 (3.29)
Beam separation 10 mm	100.5 (3.96)	83.6 (3.29)
Beam separation 20 mm	100.5 (3.96)/110.5 (4.35) [3]	83.6 (3.29)
Beam separation 25 mm	115.5 (4.55)	83.6 (3.29)
Beam separation 30 mm	120.5 (4.74)	83.6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

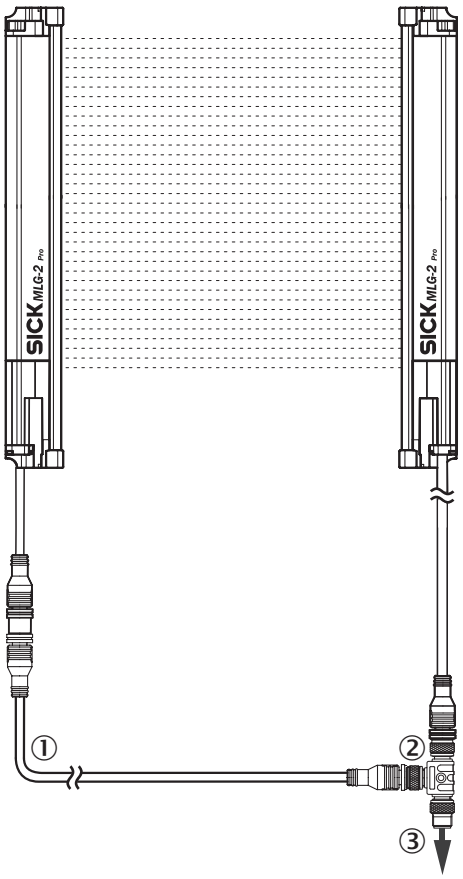
Dimensions in mm (inch)
① First beam
② last beam
③ detection height (see technical data)
④ Beam separation
⑤ Optical axis
⑥ status indicator: green, yellow, red LEDs
⑦ Connection

CONNECTION TYPE AND DIAGRAM M12 MALE CONNECTOR, 5/8-PIN, ANALOG OUTPUTS Q_A | YF2AP8-XXXPA4XLEAX (IP69K CONNECTING CABLE)



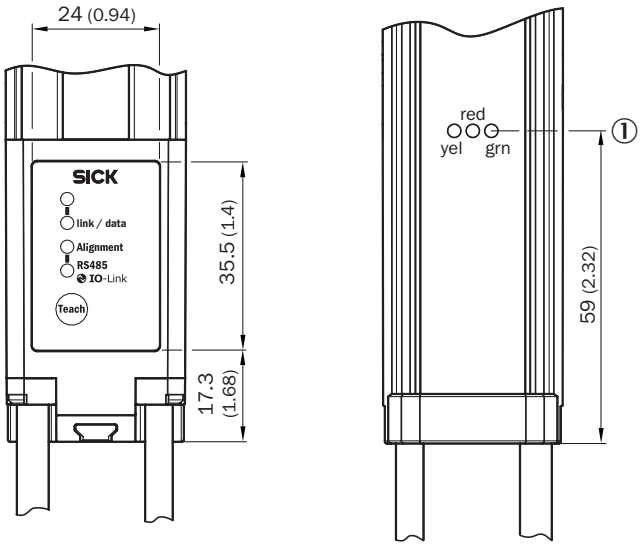
① Valid for: YF2AP8-250PA4XLEAX (2116447), YF2AP8-020PA4XLEAX (2111888)
② For 8-pin sensor-actuator cables, the wire colors are not standardized. Therefore, please observe the pin assignment of the sensor and the cable in the respective data sheet.

PINOUTS



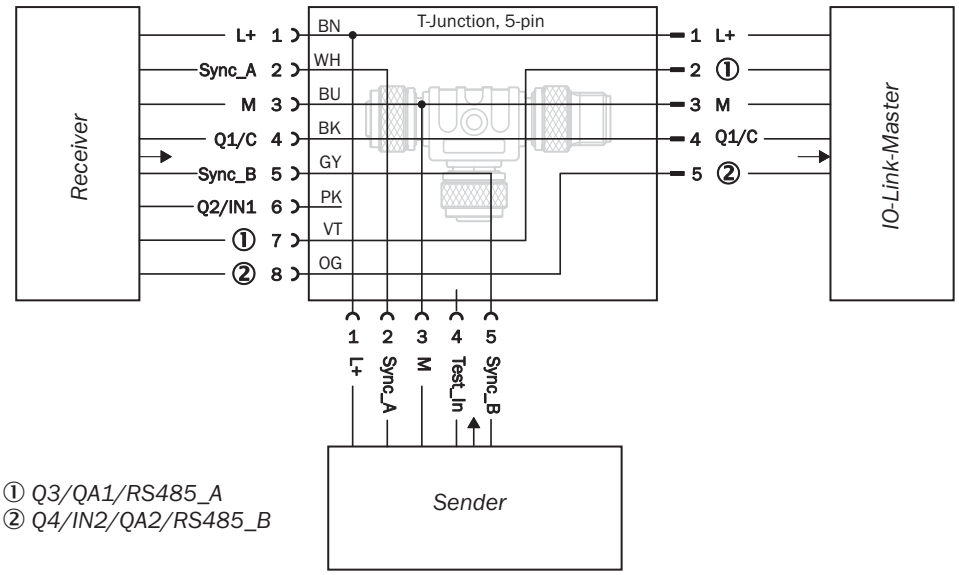
① Connection cable receiver (2096010)
② T-junctions
③ Connection cable (6020664)

ADJUSTMENTS



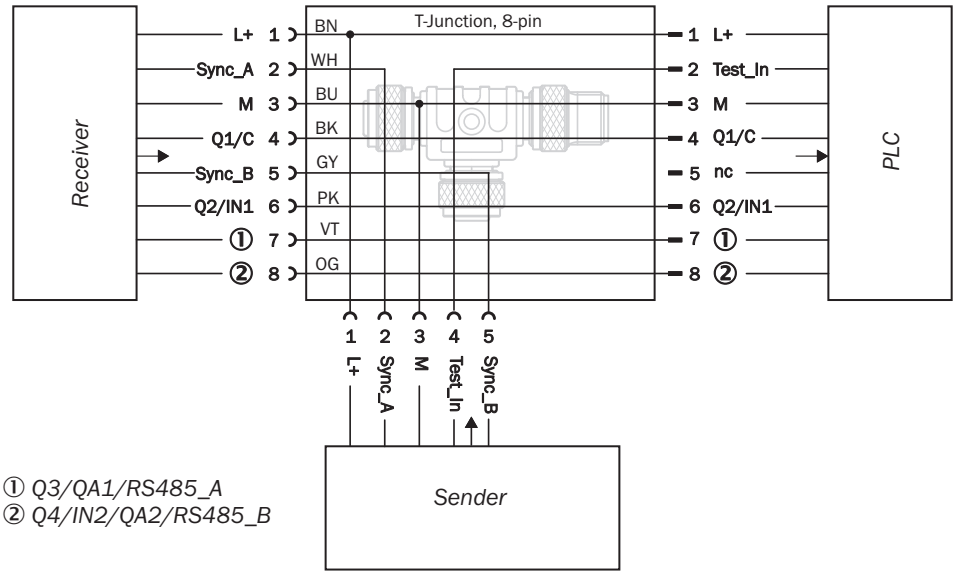
① status indicator: green, yellow, red LEDs

CONNECTION DIAGRAM T-SPLITTER, IO-LINK MASTER



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

CONNECTION DIAGRAM T-SPLITTER, PLC



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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1142443

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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