SICK.COM

DATA SHEET

MLG05A-0145B10501

MLG-2
Automation light grids

SICK Sensor Intelligence

Illustration may differ

AUTOMATION LIGHT GRIDS

MLG05A-0145B10501

ORDERING INFORMATION

Type	part no.
MLG05A-0145B10501	1213492

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	30
Detection height	145 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	✓
Beam blanking	✓

[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.

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 1 × receiver
Part number of individual components	2074689 MLGR05A-0145B10201, 2074690 MLGT05A-0145F10101

[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	56.5 mA [2]
Power consumption receiver	126 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, 0.22 m Male connector M12, 8-pin, 0.27 m M12 female connector, 4-pin, D-coded, 0.19 m
Housing material	Aluminum
Display	LED
Enclosure rating	IP65, IP67 [3]
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Protection class	III
Weight	0.549 kg
Front screen	PMMA
Option	None
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	7 m [1]
Minimum range	≥ 0 m
Operating range	5 m
Response time	3.6 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	80014B
	DeviceID DEC	8388939
	Process data length	32 Byte (TYPE_2_V) [1]
-		✓ , 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] 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	–30 °C ... +55 °C
Ambient temperature, storage	–40 °C ... +70 °C

[1] Outdoor mode.

[2] Light resistance indirect.

SMART TASK

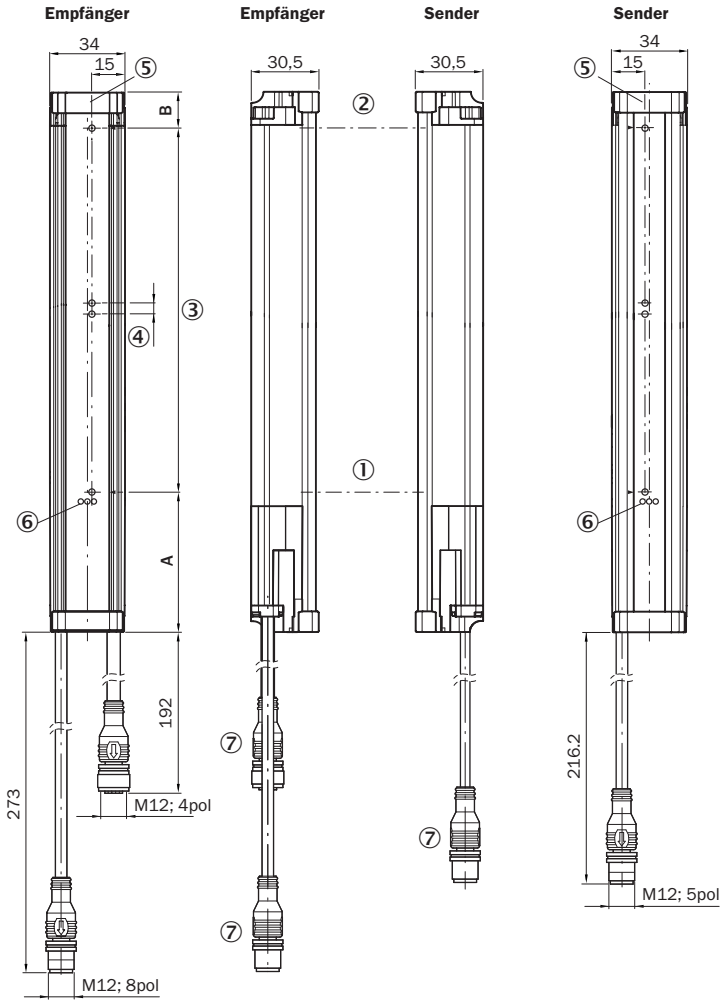
Smart Task name	Base logics

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

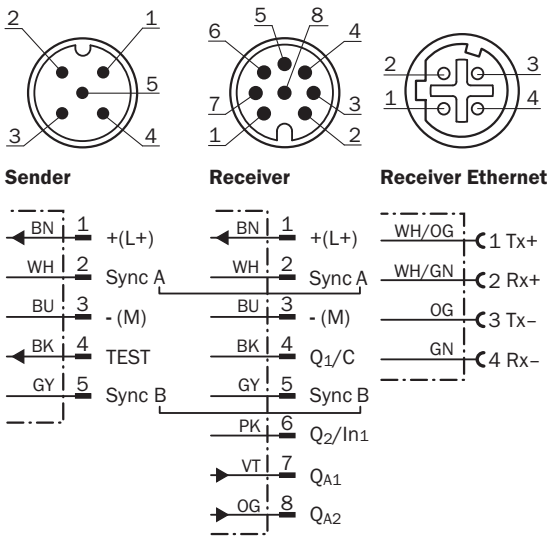


	A [1]	B [2]
Strahlabstand 2,5 mm	62,25	17,15
Strahlabstand 5 mm	63,3	16,1
Strahlabstand 10 mm	68,3	16,1
Strahlabstand 20 mm	68,3/78,3 [3]	16,1
Strahlabstand 25 mm	83,3	16,1
Strahlabstand 30 mm	88,3	16,1
Strahlabstand 50 mm	108,3	16,1

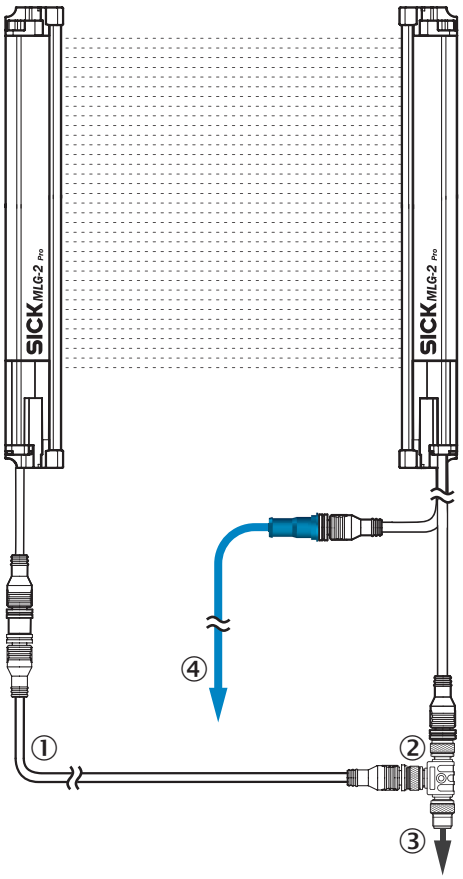
[1] Abstand: MLG-2 Kante - erster Strahl
[2] Abstand: MLG-2 Kante - letzter Strahl
[3] MLG20x-xx**40**: 68,3 mm
MLG20x-xx**80**: 78,3 mm

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, 5/8-PIN, ANALOG OUTPUTS Q_A

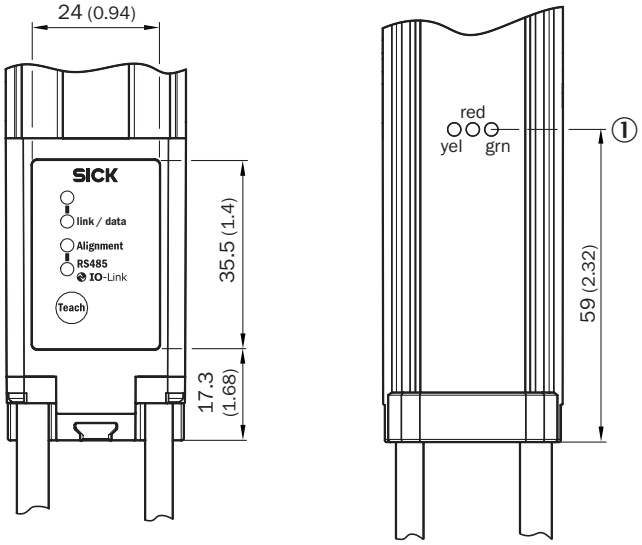


PINOUTS



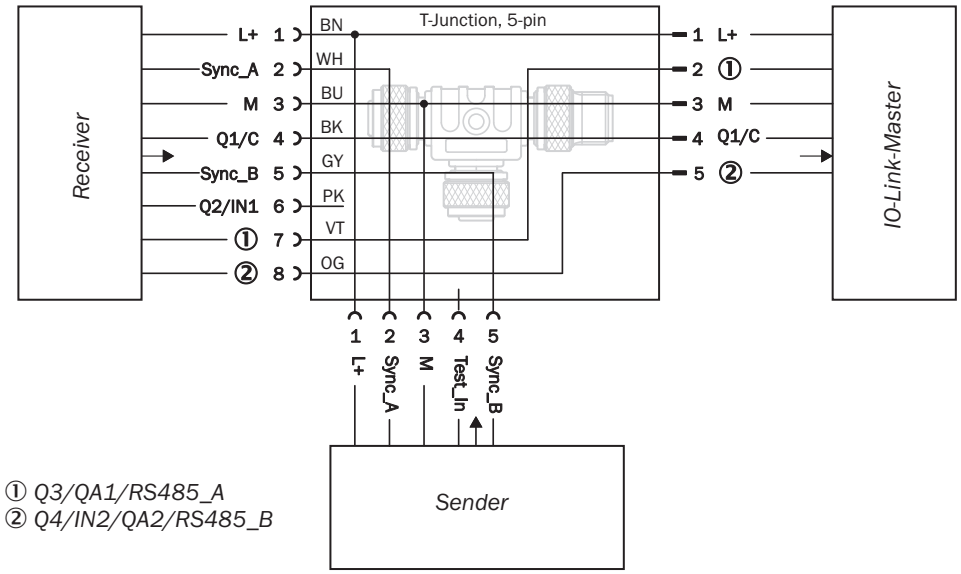
① Connection cable receiver (2096010)
② T-piece
③ Connection cable (6020664)
④ Ethernet Connection cable

ADJUSTMENTS



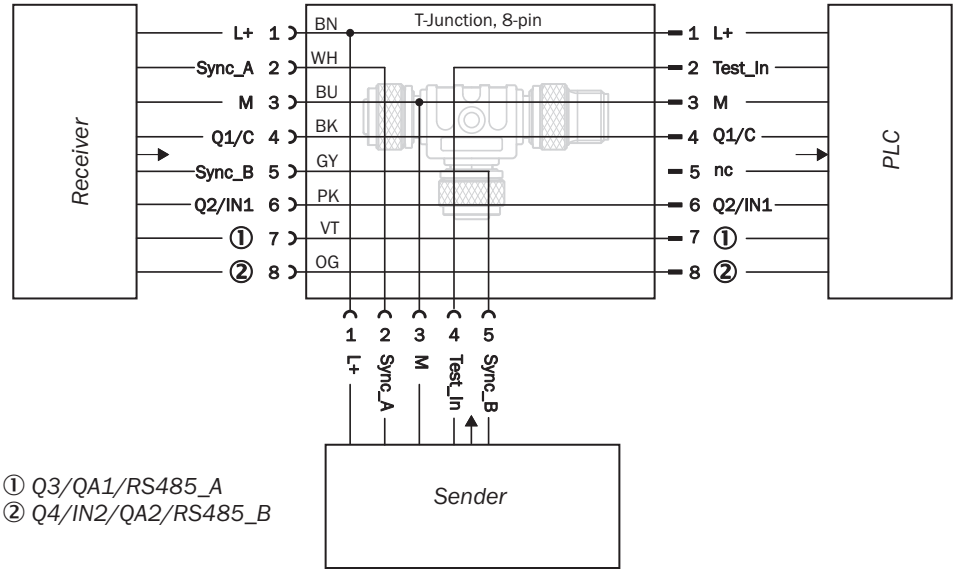
① status indicator: green, yellow, red LEDs

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/1213492

SICK AG
WALDKIRCH
GERMANY
SICK.COM

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

SICK

Sensor Intelligence