MLG20N-2840C10594

MLG-2

AUTOMATION LIGHT GRIDS

SICK
Sensor Intelligence.

MLG20N-2840C10594 | MLG-2

AUTOMATION LIGHT GRIDS

Illustration may differ

Ordering information

Type	part no.
MLG20N-2840C10594	1138903

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

Detailed technical data

Features

Device version	ProNet – extended functionality including fieldbus
Sensor principle	Sender/receiver
Minimum detectable object (MDO)	20 mm [1] 24 mm [2] [3]
Beam separation	20 mm
Type of synchronization	Cable
Number of beams	143
Detection height	2,840 mm
Operating mode	
Standard	✓
Transparent	✓
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

[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.

	Data interface	Outside/inside dimension Object position Hole position Zone definition
		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 1 x Fieldbus module 4/6 x QuickFix brackets (6 x 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	63.1 mA [2]
Power consumption receiver	149.4 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	Plug, M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 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	5.949 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.

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

CANopen	✓
Data transmission rate	10 kbit/s ... 1 Mbit/s
Digital output	Q_1
Number	1

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.

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

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
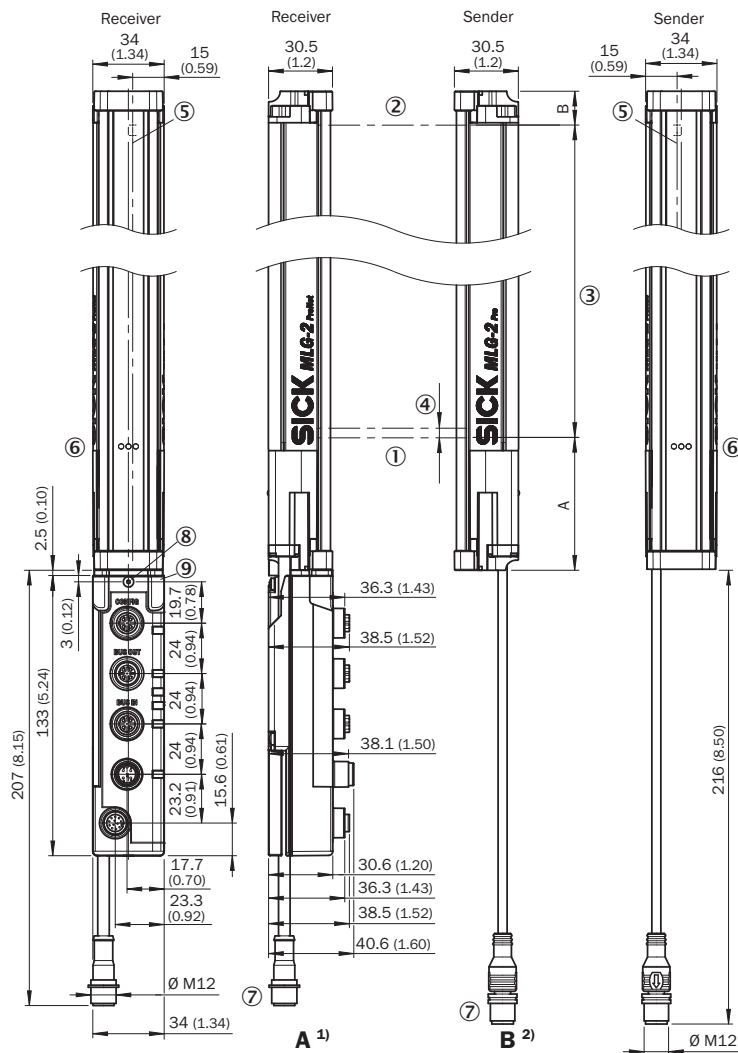
	A [1]	B [2]
Beam separation 2.5 mm	62.25 (2.45)	17.15 (0.68)
Beam separation 5 mm	63.3 (2.49)	16.1 (0.63)
Beam separation 10 mm	68.3 (2.69)	16.1 (0.63)
Beam separation 20 mm	68.3 (2.69)/78.3 (3.08) [3]	16.1 (0.63)
Beam separation 25 mm	83.3 (3.28)	16.1 (0.63)
Beam separation 30 mm	88.3 (2.69)	16.1 (0.63)
Beam separation 50 mm	108.3 (4.26)	16.1 (0.63)

[1] Distance: MLG-2 edge - first beam
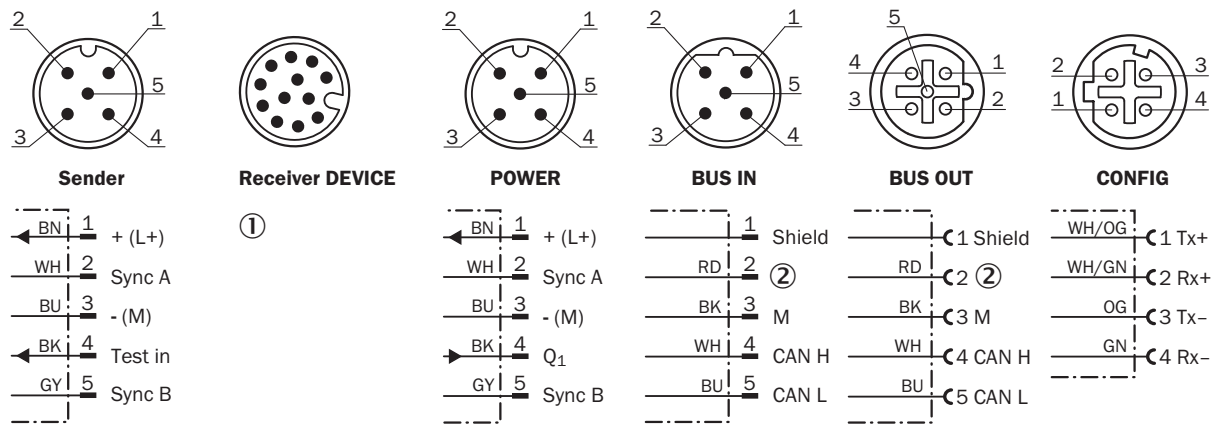[2] Distance: MLG-2 edge - last beam
[3] MLG20x-xx**40**: 68.3 mm
   MLG20x-xx**80**: 78.3 mm

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
⑧ safty screw M4; turning moment 0,5 Nm
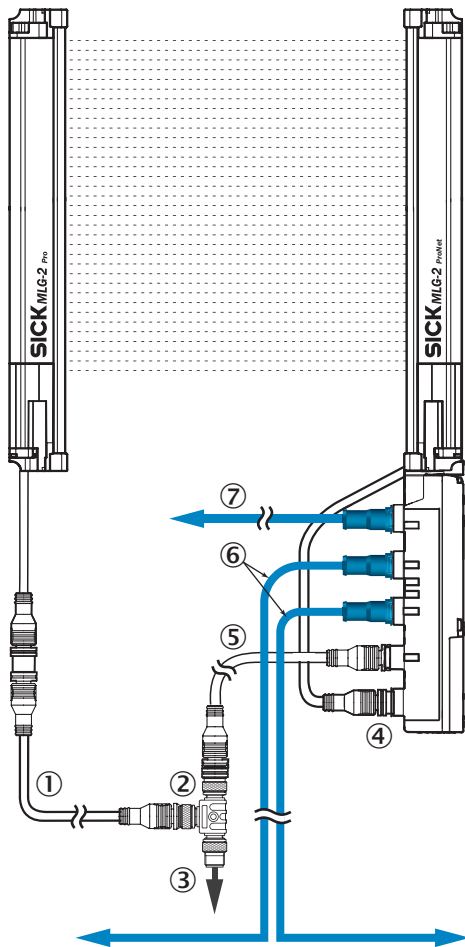⑨ for thread bold M4; turning moment 0,5 Nm

Connection type and diagram CANopen

Sender

BN	1	+ (L+)
WH	2	Sync A
BU	3	- (M)
BK	4	Test in
GY	5	Sync B

Receiver DEVICE

①

POWER

BN	1	+ (L+)
WH	2	Sync A
BU	3	- (M)
BK	4	Q₁
GY	5	Sync B

BUS IN

	1	Shield
RD	2	②
BK	3	M
WH	4	CAN H
BU	5	CAN L

BUS OUT

	1	Shield
RD	2	②
BK	3	M
WH	4	CAN H
BU	5	CAN L

CONFIG

WH/OG	1	Tx+
WH/GN	2	Rx+
OG	3	Tx−
GN	4	Rx−

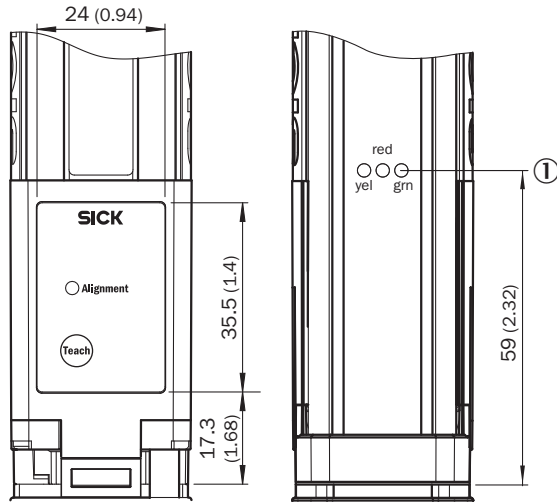① *Connection to fieldbus module*
② *Not connected*

Pinouts Ethernet

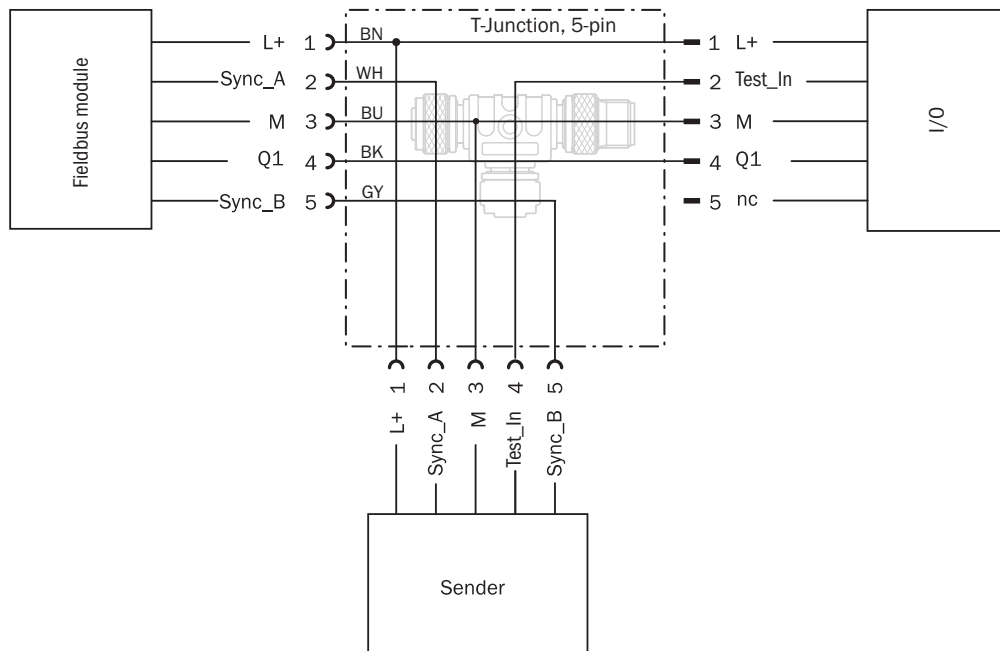① Connection cable receiver (2096010)
② T-piece
③ Connection cable (2096240)

④ connection receiver "DEVICE"
⑤ Connection cable "POWER" (2096010)
⑥ Ethernet Connection cable "BUS IN, BUS OUT"
⑦ Ethernet connection cable "CONFIG"

Adjustments

24 (0.94)

SICK

Alignment

Teach

35.5 (1.4)

17.3 (1.68)

red
yel grn

①

59 (2.32)

① status indicator: green, yellow, red LEDs

Connection diagram T-piece

Fieldbus module

L+	1	BN
Sync_A	2	WH
M	3	BU
Q1	4	BK
Sync_B	5	GY

T-Junction, 5-pin

1	L+
2	Test_In
3	M
4	Q1
5	nc

I/O

L+ 1
Sync_A 2
M 3
Test_In 4
Sync_B 5

Sender

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:

Contacts and other locations –**www.sick.com**

SICK AG | Waldkirch | Germany | www.sick.com

SICK
Sensor Intelligence.