

BCG19-A1CM1007

EcoLine

WIRE DRAW ENCODERS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
BCG19-A1CM1007	1061039

Included in delivery: AFM60B-S1AC004096 (1), MRA-G190-110D3 (1)

Other models and accessories → www.sick.com/EcoLine



Detailed technical data

Safety-related parameters

MTTF_D (mean time to dangerous failure)	250 years (EN ISO 13849-1) ¹⁾
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¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40 °C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

Performance

Measurement range	0 m ... 10 m
Encoder	Absolute encoders
Resolution (wire draw + encoder)	0.14 mm ^{1) 2)}
Repeatability	≤ 0.2 mm ³⁾
Linearity	≤ ± 2 mm ³⁾
Hysteresis	≤ 0.4 mm ³⁾

¹⁾ The values shown have been rounded.

²⁾ Example calculation based on the BCG08 with PROFINET: 230 mm (wire draw length per revolution - see Mechanical data): 262,144 (number of steps per revolution) = 0.001 mm (resolution of wire draw + encoder combination).

³⁾ Value applies to wire draw mechanism.

Interfaces

Communication interface	SSI
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Electronics

Connection type	Male connector, M12, 8-pin, radial
Supply voltage	4.5 V DC ... 32 V DC
Power consumption	≤ 0.7 W (without load)

Mechanics

Weight	2.2 kg
Measuring wire material	Highly flexible stranded steel 1,4401 stainless steel V4A
Measuring wire diameter	0.55 mm
Weight (measuring wire)	7.1 g/m
Housing material, wire draw mechanism	Plastic, Noryl
Spring return force	9 N ... 12 N ¹⁾
Length of wire pulled out per revolution	555 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles ²⁾ ³⁾
Actual wire draw length	10.2 m
Wire acceleration	8 m/s ²
Operating speed	3 m/s
Mounted encoder	AFM60 SSI, AFM60B-S1AC004096, 1037869
Mounted mechanic	MRA-G190-110D3, 5326242

¹⁾ These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures.

²⁾ Average values, which depend on the application.

³⁾ The service life depends on the type of load. This is influenced by environmental conditions, the installation location, the measuring range in use, the traversing speed, and acceleration.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3 ¹⁾
Enclosure rating	IP50, mounted mechanic IP67, Encoder (IEC 60529) ²⁾
Operating temperature range	-30 °C ... +70 °C

¹⁾ EMC according to the standards quoted is achieved if shielded cables are used.

²⁾ For devices with male connector: with mounted mating connector.

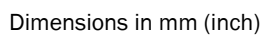
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓

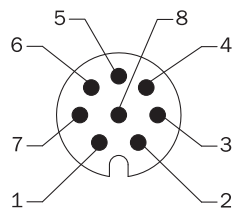
Classifications

ECLASS 5.0	27270590
ECLASS 5.1.4	27270590
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270590
ECLASS 8.0	27270590
ECLASS 8.1	27270590
ECLASS 9.0	27270590
ECLASS 10.0	27270613

Dimensional drawing



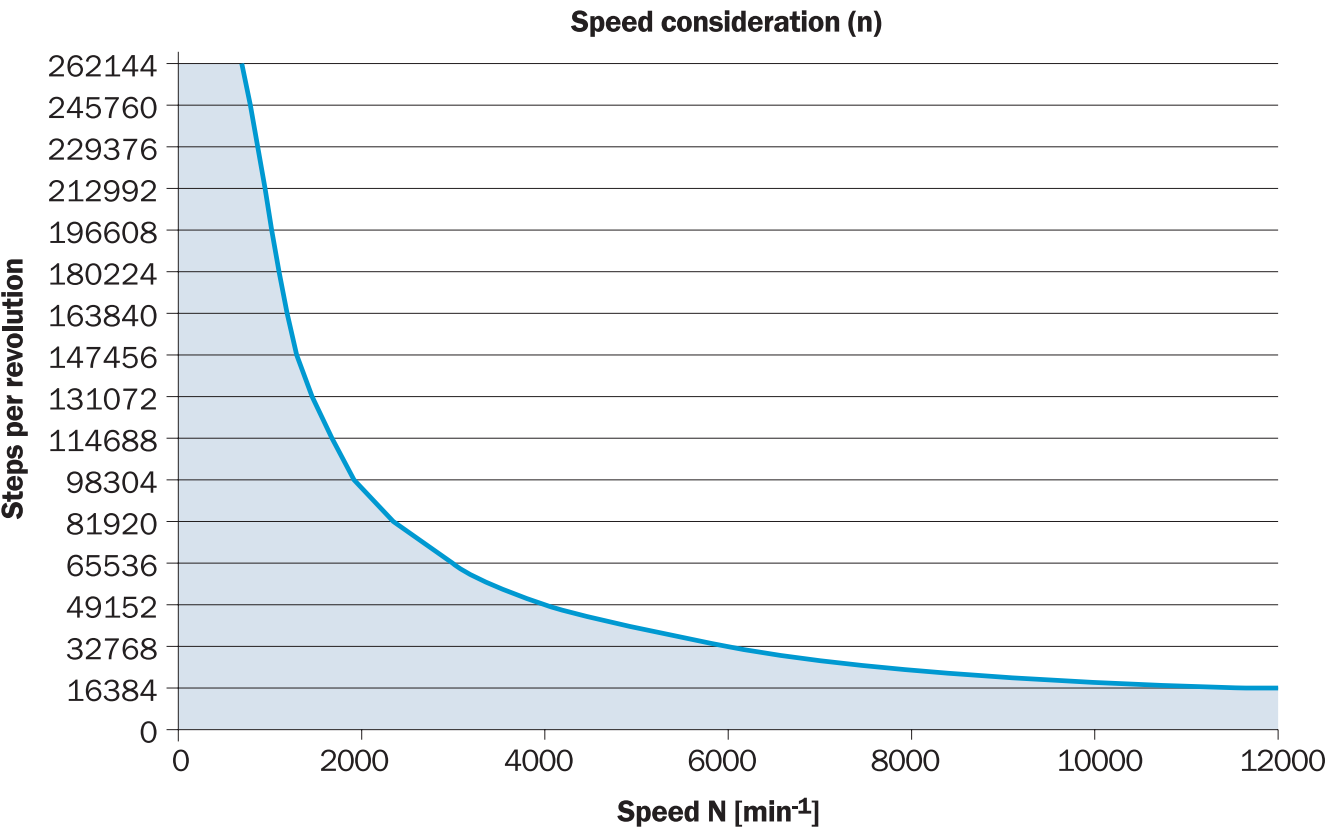
PIN assignment M12 male connector, 8-pin and cable, 8-wire, SSI/Gray



view of M12 male device connector on encoder

PIN	Wire colors (cable connection)	Signal	Explanation
1	Brown	Data -	Interface signals
2	White	Data +	Interface signals
3	Black	V/R	Sequence in direction of rotation
4	Pink	SET	Electronic adjustment-Interface signals
5	Yellow	Clock +	Interface signals
6	Purple	Clock -	Interface signals
7	Blue	GND	Ground connection
8	Red	U _S	Operating voltage
-	-	Screen	Screen connected to housing on encoder side. Connected to ground on control side.



Diagrams



The maximum speed is also dependent on the shaft type.

Recommended accessories

Other models and accessories → www.sick.com/EcoLine

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none">Description: Spare mounting set for MRA-G190 (10 m EcoLine)	BEF-MK-MRA-G01	5326294
Wire draw mechanism			
	<ul style="list-style-type: none">Product segment: Wire draw mechanismProduct family: Wire draw mechanism for wire draw encodersDescription: EcoLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 10 mItems supplied: Without encoder	MRA-G190-110D3	5326242

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Signal type: Incremental, SSI • Cable: CAT5, CAT5e • Description: Incremental, shieldedSSI • Connection systems: IDC quick connection • Permitted cross-section: 0.14 mm² ... 0.34 mm² 	DOS-1208-GA01	6045001
	<ul style="list-style-type: none"> • Connection type head A: Flying leads • Connection type head B: Flying leads • Signal type: SSI, Incremental, HIPERFACE® • Items supplied: By the meter • Cable: 8-wire, PUR, halogen-free • Description: SSI, shieldedIncrementalHIPERFACE® 	LTG-2308-MWENC	6027529
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Cable: 2 m, 8-wire, PUR, halogen-free • Description: Incremental, shieldedSSI • Connection systems: Flying leads 	DOL-1208-G02MAC1	6032866
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Cable: 5 m, 8-wire, PUR, halogen-free • Description: Incremental, shieldedSSI • Connection systems: Flying leads 	DOL-1208-G05MAC1	6032867
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Cable: 10 m, 8-wire, PUR, halogen-free • Description: Incremental, shieldedSSI • Connection systems: Flying leads 	DOL-1208-G10MAC1	6032868
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Cable: 20 m, 8-wire, PUR, halogen-free • Description: Incremental, shieldedSSI • Connection systems: Flying leads 	DOL-1208-G20MAC1	6032869
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Cable: 25 m, 8-wire, PUR, halogen-free • Description: Incremental, shieldedSSI • Connection systems: Flying leads 	DOL-1208-G25MAC1	6067859

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