Product data sheet



BCG13-A1CM0511

EcoLine

WIRE DRAW ENCODERS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
BCG13-A1CM0511	1061031

Included in delivery: AFM60E-S1AC004096 (1), MRA-G130-105D3 (1)

Product is supplied fully assembled. See individual components for further technical data

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

Detailed technical data

Performance

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Measurement range	0 m ... 5 m
Encoder	Absolute encoders
Resolution (wire draw + encoder)	0.09 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

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Communication interface	SSI

Electrical data

BCG

Connection type	Male connector, M12, 8-pin, radial
Supply voltage	4.5 V DC ... 32 V DC
Power consumption	≤ 0.7 W (without load)
MTTFd: mean time to dangerous failure	250 years (EN ISO 13849-1) [1)]

[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.

Mechanical data

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Measuring wire material	Highly flexible stranded steel 1,4401 stainless steel V4A
Weight (measuring wire)	1.2 g/m
Housing material, wire draw mechanism	Plastic, Noryl
Spring return force	4.5 N ... 7 N [1]
Length of wire pulled out per revolution	385 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles [2] [3]
Actual wire draw length	5.2 m
Wire acceleration	4 m/s²
Operating speed	3 m/s
Mounted encoder	AFM60 SSI, AFM60E-S1AC004096, 1037649
Mounted mechanic	MRA-G130-105D3, 5322779

[1] These values were measred 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

BCG

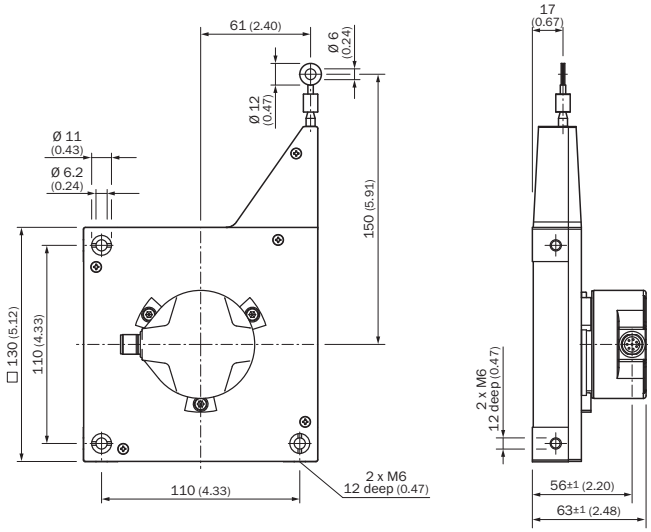
EMC	According to EN 61000-6-2 and EN 61000-6-3 [1]
Enclosure rating	IP50
Operating temperature range	0 °C ... +70 °C

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

Classifications

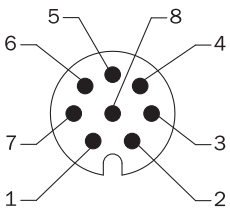
ECl@ss 5.0	27270590
ECl@ss 5.1.4	27270590
ECl@ss 6.0	27270590
ECl@ss 6.2	27270590
ECl@ss 7.0	27270590
ECl@ss 8.0	27270590
ECl@ss 8.1	27270590
ECl@ss 9.0	27270590
ECl@ss 10.0	27270613
ECl@ss 11.0	27270503
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing (Dimensions in mm (inch))



PIN assignment

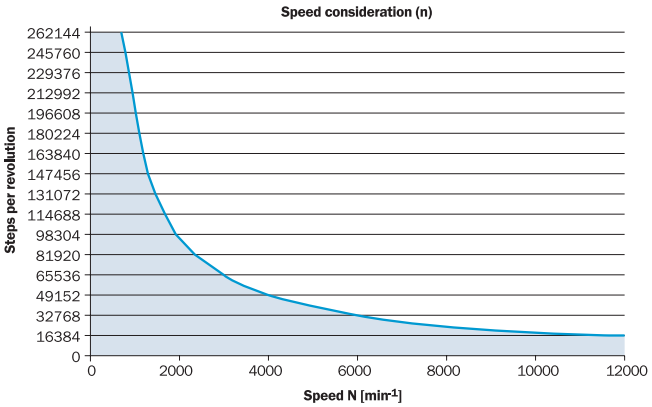
M12 male connector, 8-pin and cable, 8-wire, SSI/Gray



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.

Maximum revolution range



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.
Flanges			
	Flange adapter for EcoLine wire draw mechanisms, adaption of face mount flange with centering hub 20 mm to 50 mm servo flange, Aluminum, including 3 countersunk screws M4 x 10	BEF-FA-020-050-007	2073774
Plug connectors and cables			
	Head A: cable Head B: Flying leads Cable: SSI, Incremental, HIPERFACE®, PUR, halogen-free, shielded	LTG-2308-MWENC	6027529
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 2 m	DOL-1208-G02MAC1	6032866
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 5 m	DOL-1208-G05MAC1	6032867
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 10 m	DOL-1208-G10MAC1	6032868
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 20 m	DOL-1208-G20MAC1	6032869
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 25 m	DOL-1208-G25MAC1	6067859
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, SSI, shielded	DOS-1208-GA01	6045001

	Brief description	Type	Part no.
Wire draw mechanism			
	EcoLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 5 m	MRA-G130-105D3	5322779

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Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

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