



# Wire draw encoders EcoLine

BCG13-E1BM0599



**Model Name** > **BCG13-E1BM0599**  
**Part No.** > **1061038**



*Illustration may differ*

**At a glance**

- Measuring lengths of 1.25 m, 3 m, 5 m, and 10 m.
- Very small dimension (55 ... 190 mm)
- Modular system: encoder type, measuring length, and interface can be selected
- Programmable encoders: Resolution, interface and measuring range
- Light yet shock-proof and temperature-resistant plastic housing (Noryl)
- Space-saving and cost-effective design
- Analog interface with pushbutton teach at the encoder

**Your benefits**

- Easy to install thanks to pushbutton teach
- Suitable for tight installation spaces as a result of slim, compact design
- High precision due to the elimination of the coupling between the encoder and mechanism
- Wide range of applications thanks to the numerous encoders, interfaces, and measuring lengths
- The absolute analog output allows for the use of a cost-effective interface card
- Options for customization, such as programmability, reduce storage and downtime costs
- Greater vibration resistance thanks to the integration of the spring in the measuring drum



**Performance**

Measurement range:	0 m ... 5 m
Repeatability:	≤ 0.2 mm <sup>1)</sup>
Linearity:	≤ ± 2 mm <sup>2)</sup>
Hysteresis:	≤ 0.4 mm <sup>3)</sup>
Resolution (wire draw + encoder)::	0.001 mm <sup>4) 5)</sup>

<sup>1) 2) 3)</sup> Value refers to wire draw mechanism <sup>4) 5)</sup>

**Mechanical data**

Mass (including encoder):	1 kg
Mass (mechanics):	800 g
Measuring wire diameter:	0.55 mm
Measuring wire material:	Highly flexible stranded steel 1.4401 stainless steel V4A
Housing material, wire draw mechanism:	Plastic, Noryl
Spring return force:	Ca. 4.5 N ... ca. 7 N <sup>1)</sup>

Life of wire draw mechanism:	1 million cycles <sup>2)</sup>
Actual length of cable extension:	5.2 m
Wire acceleration:	4 m/s <sup>2</sup>
Operating speed:	4 m/s
Mounted encoder:	AFM60 EtherCAT
Mounted mechanic:	MRA-G130-105D3
Part number mechanic:	5322779
Part number encoder:	1059061
Mass (measuring wire):	1.2 g/m
Length of wire pulled out per revolution:	385 mm
Number of steps per revolution:	262,144

<sup>1)</sup> These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures. <sup>2)</sup>

### Electrical data

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Initialization time:	Ca. 12 s <sup>1)</sup>
Supply voltage:	10 V ... 30 V
Power consumption:	3 W
MTTFd: mean time to dangerous failure::	80 a <sup>2) 3)</sup>

<sup>1)</sup> Valid positional data can be read once this time has elapsed. <sup>2)</sup> 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. <sup>3)</sup> The value applies to the mounted encoder

### Interfaces

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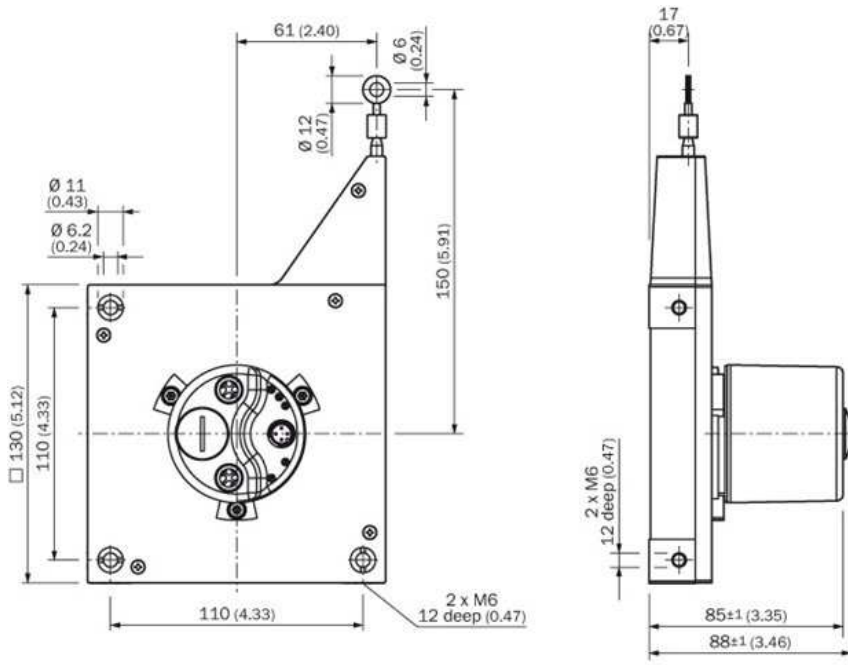
Electrical interface:	EtherCAT®
Connection type:	Connector 3 x M12, 4-pin, axial
Protocol:	EtherCAT, CoE (CiA DS-301)
SET (electronic adjustment):	Via PRESET push button or protocol
Encoder profile:	CiA DS-406
Encoder:	Absolute encoders

### Ambient data

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EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating encoder:	IP 67
Enclosure rating mechanic:	IP 50
Resistance to shocks:	100 g, 6 ms (according to EN 60068-2-27)
Resistance to vibration:	30 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)
Relative humidity/Condensation:	90 % (condensation of the optical scanning not permitted)
Working temperature range (encoder):	-30 °C ... +70 °C
Working temperature range (mechanics):	-30 °C ... +70 °C
Working temperature range (combination):	Wird definiert durch den höheren minimalen und niedrigeren maximalen Wert des Arbeitstemperaturbereichs von Encoder und Mechanik

Dimensional drawing



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