



# BCG19-K1EM10PP

EcoLine

WIRE DRAW ENCODERS

**SICK**  
Sensor Intelligence.

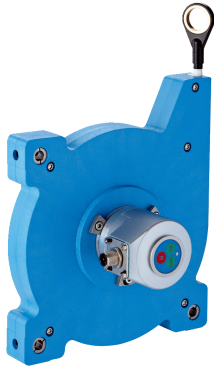


Illustration may differ



### Ordering information

Type	Part no.
BCG19-K1EM10PP	6048294

Other models and accessories → [www.sick.com/EcoLine](http://www.sick.com/EcoLine)

### Detailed technical data

#### Performance

<b>Measurement range</b>	0 m ... 10 m
<b>Reproducibility</b>	≤ 0.2 mm <sup>1)</sup>
<b>Linearity</b>	≤ ± 2 mm <sup>1)</sup>
<b>Hysteresis</b>	≤ 0.4 mm <sup>1)</sup>
<b>Resolution (wire draw + encoder)</b>	0.03 mm <sup>2) 3)</sup>

<sup>1)</sup> Value applies to wire draw mechanism.

<sup>2)</sup> The values shown have been rounded.

<sup>3)</sup> 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).

#### Interfaces

<b>Encoder</b>	Absolute encoders
<b>Electrical interface</b>	Analog / Current
<b>Connection type</b>	Male connector M12, 5-pin, radial
<b>Clock frequency</b>	32 kHz
<b>Set (electronic adjustment)</b>	Over membrane keyboard

#### Electrical data

<b>Initialization time</b>	≤ 2 ms <sup>1)</sup>
<b>Supply voltage</b>	18 V ... 33 V
<b>Power consumption</b>	2 W

<sup>1)</sup> Valid positional data can be read once this time has elapsed.

#### Mechanical data

<b>Weight (including encoder)</b>	2.3 kg
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<sup>1)</sup> These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures.

<sup>2)</sup> A cycle consists of the wire being pulled out and drawn in.

<sup>3)</sup> 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.

<b>Weight (mechanics)</b>	1.9 kg
<b>Measuring wire material</b>	Highly flexible stranded steel 1.4401 stainless steel V4A
<b>Weight (measuring wire)</b>	1.2 g/m
<b>Housing material, wire draw mechanism</b>	Plastic, Noryl
<b>Length of wire pulled out per revolution</b>	555 mm
<b>Spring return force</b>	Approx. 9 N ... approx. 12 N <sup>1)</sup>
<b>Life of wire draw mechanism</b>	Typ. 1 million cycles <sup>2) 3)</sup>
<b>Actual wire draw length</b>	10.2 m
<b>Measuring wire diameter</b>	0.55 mm
<b>Wire acceleration</b>	8 m/s <sup>2</sup>
<b>Operating speed</b>	4 m/s
<b>Mounted encoder</b>	ACM60
<b>Part number encoder</b>	6045312
<b>Mounted mechanic</b>	MRA-G190-110D3
<b>Part number mechanic</b>	5326242

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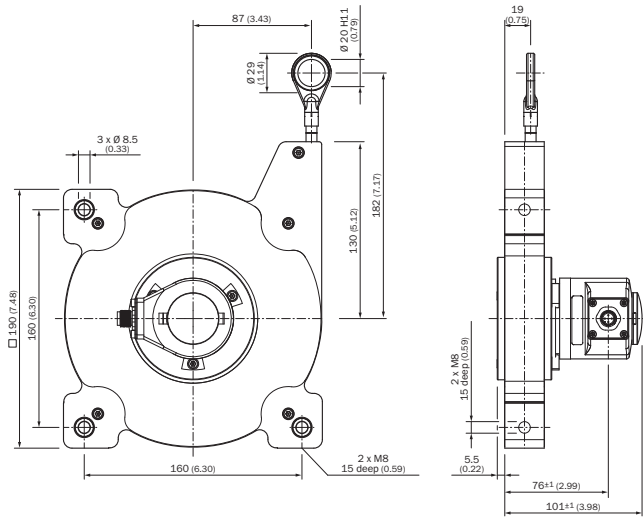
## Ambient data

<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3
<b>Enclosure rating encoder</b>	IP65
<b>Enclosure rating mechanic</b>	IP50
<b>Resistance to shocks</b>	50 g, 6 ms (according to EN 60068-2-27)
<b>Frequency range of resistance to vibrations</b>	4 g, Sinus 5 Hz ... 100 Hz (according to EN 60068-2-6)
<b>Working temperature range (encoder)</b>	-30 °C ... +70 °C
<b>Working temperature range (mechanics)</b>	-30 °C ... +70 °C
<b>Working temperature range (combination)</b>	Defined by the higher minimum and lower maximum value of the operating temperature of the encoder and the mechanism

## Classifications

<b>ECl@ss 5.0</b>	27270590
<b>ECl@ss 5.1.4</b>	27270590
<b>ECl@ss 6.0</b>	27270590
<b>ECl@ss 6.2</b>	27270590
<b>ECl@ss 7.0</b>	27270590
<b>ECl@ss 8.0</b>	27270590
<b>ECl@ss 8.1</b>	27270590
<b>ECl@ss 9.0</b>	27270590
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

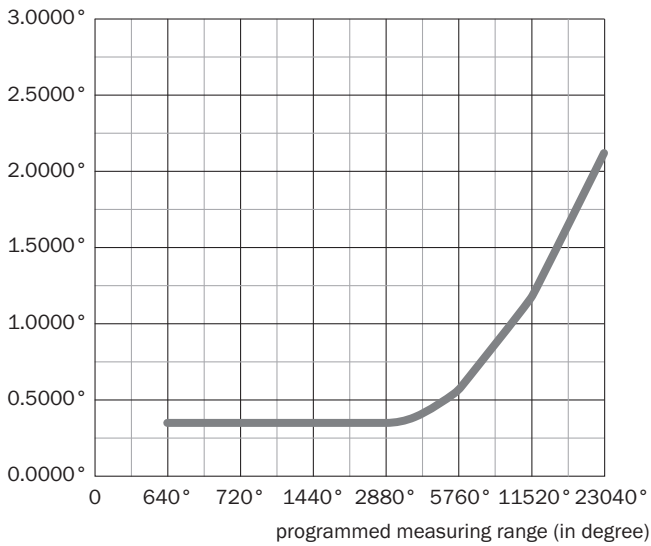
Dimensional drawing (Dimensions in mm (inch))



Maximum revolution range






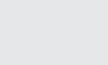
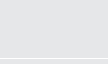







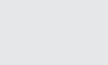
Power output





size of the measuring steps (in degree)



Recommended accessories

Other models and accessories → [www.sick.com/EcoLine](http://www.sick.com/EcoLine)

	Brief description	Type	Part no.
<b>Flanges</b>			
	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
<b>Other mounting accessories</b>			
	Joint ball for later insertion in wire end ring with 20 mm diameter. The use of this joint ball enables movement in multiple levels of freedom.	Joint protection for wire rope BTF/PRF/MRA	5318683
<b>Plug connectors and cables</b>			
	Head A: cable Head B: Flying leads Cable: SSI, PUR, halogen-free, shielded	LTG-2308-MWENC	6027529
		LTG-2612-MW	6028516
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: PROFIBUS DP, PUR, halogen-free, unshielded, 5 m Voltage supply	DOL-1202-W05MC	6042067
	Head A: female connector, M12, 5-pin, angled Head B: Flying leads Cable: PROFIBUS DP, PUR, halogen-free, unshielded, 10 m Voltage supply	DOL-1202-W10MC	6042068
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 3 m	DOL-1205-G03MACSCO	6049452
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Power, PUR, halogen-free, shielded, 5 m	DOL-1205-G05MAC	6036384
	Head A: female connector, M12, 5-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 10 m	DOL-1205-G10MAC	6036385
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 1.5 m	DOL-1205-G1M5ACSCO	6049451
	Head A: female connector, M12, 5-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 20 m	DOL-1205-G20MAC	6036386
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, Power, PUR, halogen-free, shielded, 3 m	DOL-1205-W03MACSCO	6049456
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, Power, PUR, halogen-free, shielded, 5 m	DOL-1205-W05MACSCO	6049457
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, Power, PUR, halogen-free, shielded, 10 m	DOL-1205-W10MACSCO	6049458
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, Power, PUR, halogen-free, shielded, 1.5 m	DOL-1205-W1M5ACSCO	6049455

	Brief description	Type	Part no.
	Head A: female connector, M12, 5-pin, angled, B-coded (B-reverse) Head B: - Cable: PROFIBUS DP, PROFIBUS DP, shielded	DOS-1205-WQ	6041429
	Head A: male connector, M12, 5-pin, straight, B-coded Head B: - Cable: PROFIBUS DP, shielded	STE-1205-GQ	6021354
Spare parts			
	Spare mounting set for MRA-G190 (10 m EcoLine)	BEF-MK-MRA-G01	5326294
Wire draw mechanism			
	EcoLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 10 m	MRA-G190-110D3	5326242

## 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](http://www.sick.com)