

# BCG19-A1AM1007

EcoLine

**WIRE DRAW ENCODERS** 





#### Ordering information

Туре	part no.
BCG19-A1AM1007	1056983

Included in delivery: AFM60B-S1AA004096 (1), MRA-G190-110D3 (1)

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



#### Detailed technical data

#### Safety-related parameters

MTTF <sub>D</sub> (mean time to dangerous failure)	250 years (EN ISO 13849-1) 1)
	200 yours (2.1.100 200 10 2)

<sup>1)</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.

#### Performance

Measurement range	0 m 10 m
Encoder	Absolute encoders
Resolution (wire draw + encoder)	0.14 mm <sup>1) 2)</sup>
Repeatability	≤ 0.2 mm <sup>3)</sup>
Linearity	≤ ± 2 mm <sup>3)</sup>
Hysteresis	≤ 0.4 mm <sup>3)</sup>

 $<sup>^{1)}</sup>$  The values shown have been rounded.

#### Interfaces

Communication interface	SSI
Electronics	

Connection type	Male connector, M23, 12-pin, radial
Supply voltage	4.5 V DC 32 V DC
Power consumption	≤ 0.7 W (without load)

<sup>&</sup>lt;sup>2)</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).

 $<sup>^{</sup>m 3)}$  Value applies to wire draw mechanism.

#### 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 <sup>1)</sup>
Length of wire pulled out per revolution	555 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles <sup>2) 3)</sup>
Actual wire draw length	10.2 m
Wire acceleration	8 m/s <sup>2</sup>
Operating speed	3 m/s
Mounted encoder	AFM60 SSI, AFM60B-S1AA004096, 1037868
Mounted mechanic	MRA-G190-110D3, 5326242

 $<sup>^{1)}</sup>$  These values were measred at an ambient temperature of 25  $\,^{\circ}$  C. There may be variations at other temperatures.

#### Ambient data

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

 $<sup>^{1)}\,\</sup>mathrm{EMC}$  according to the standards quoted is achieved if shielded cables are used.

#### 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

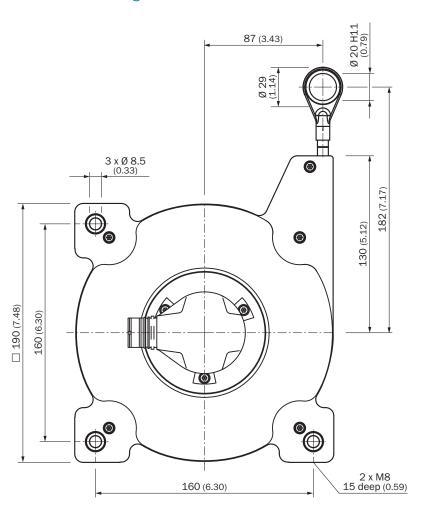
 $<sup>^{2)}</sup>$  Average values, which depend on the application.

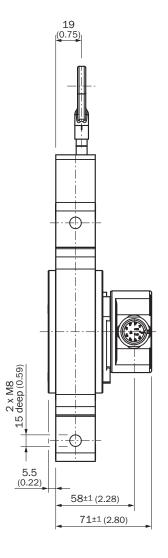
<sup>3)</sup> The service life depends on the type of load. This is influenced by environmental conditions, the installation location, the measuring range in use, the traversing speed, and acceleration.

 $<sup>^{\</sup>rm 2)}$  For devices with male connector: with mounted mating connector.

ECLASS 11.0	27270503
ECLASS 12.0	27270503
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

#### **Dimensional drawing**





Dimensions in mm (inch)

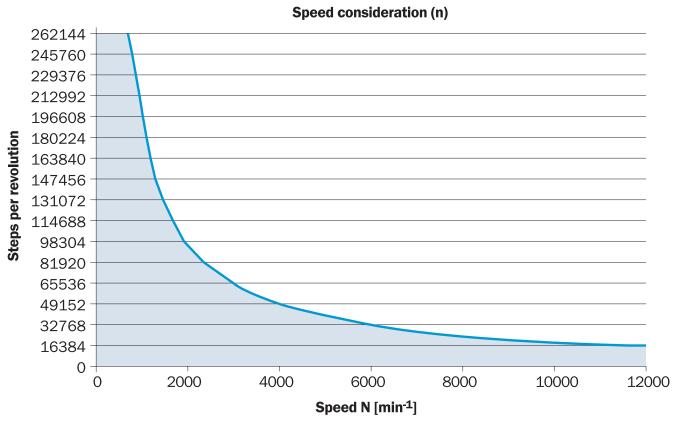
### Anschlussbelegung M23 male connector, 12-pin, SSI/Gray



view of M23 male device connector on encoder

PIN	Signal	Explanation	
1	GND	Ground connection	
2	Data +	Interface signals	
3	Clock +	Interface signals	
4	N.C.	Not assigned	
5	N.C.	Not assigned	
6	N.C.	Not assigned	
7	N.C.	Not assigned	
8	Us	Operating voltage	
9	SET	Electronic adjustment	
10	Data -	Interface signals	
11	Clock -	Interface signals	
12	V/R	Sequence in direction of rotation	
-	Shielding	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	Туре	part no.
Mounting syst	ems		
@ 000 0 III	Description: Spare mounting set for MRA-G190 (10 m EcoLine)	BEF-MK-MRA-G01	5326294
Wire draw med	chanism		
	<ul> <li>Product segment: Wire draw mechanism</li> <li>Product family: Wire draw mechanism for wire draw encoders</li> <li>Description: EcoLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m 10 m</li> <li>Items supplied: Without encoder</li> </ul>	MRA-G190-110D3	5326242

	Brief description	Туре	part no.
connectors and cables			
	<ul> <li>Connection type head A: Female connector, M23, 12-pin, straight</li> <li>Connection type head B: Flying leads</li> <li>Signal type: SSI</li> <li>Cable: 0.5 m, 8-wire, PUR, halogen-free</li> <li>Description: SSI, shielded</li> </ul>	DOL-2308-GOM5AA6	2048595
	<ul> <li>Connection type head A: Female connector, M23, 12-pin, straight</li> <li>Connection type head B: Flying leads</li> <li>Signal type: SSI</li> <li>Cable: 3 m, 8-wire, PUR, halogen-free</li> <li>Description: SSI, shielded</li> </ul>	DOL-2308-G03MAA6	2048597
	<ul> <li>Connection type head A: Female connector, M23, 12-pin, straight</li> <li>Connection type head B: Flying leads</li> <li>Signal type: SSI</li> <li>Cable: 5 m, 8-wire, PUR, halogen-free</li> <li>Description: SSI, shielded</li> </ul>	DOL-2308-G05MAA6	2048598
	<ul> <li>Connection type head A: Female connector, M23, 12-pin, straight</li> <li>Connection type head B: Flying leads</li> <li>Signal type: SSI</li> <li>Cable: 1.5 m, 8-wire, PUR, halogen-free</li> <li>Description: SSI, shielded</li> </ul>	DOL-2308-G1M5AA6	2048596
	<ul> <li>Connection type head A: Female connector, M23, 12-pin, straight</li> <li>Connection type head B: Flying leads</li> <li>Signal type: SSI</li> <li>Cable: 10 m, 8-wire, PUR, halogen-free</li> <li>Description: SSI, shielded</li> </ul>	DOL-2308-G10MAA6	2048599
	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, shielded, Incremental, HIPERFACE®	LTG-2308-MWENC	6027529
	<ul> <li>Connection type head A: Female connector, M23, 12-pin, straight, A-coded</li> <li>Signal type: HIPERFACE<sup>®</sup>, SSI, Incremental</li> <li>Description: HIPERFACE<sup>®</sup>, shieldedSSIIncremental</li> <li>Connection systems: Solder connection</li> </ul>	DOS-2312-G	6027538
	Connection type head A: Female connector, M23, 12-pin, straight, A-coded Signal type: HIPERFACE <sup>®</sup> , SSI, Incremental Description: HIPERFACE <sup>®</sup> , shieldedSSIIncremental Connection systems: Solder connection	DOS-2312-G02	2077057
(F)	Connection type head A: Female connector, M23, 12-pin, angled, A-coded Signal type: HIPERFACE <sup>®</sup> , SSI, Incremental Description: HIPERFACE <sup>®</sup> , shieldedSSIIncremental Connection systems: Solder connection	DOS-2312-W01	2072580
	Connection type head A: Female connector, M23, 9-pin, straight, A-coded Signal type: HIPERFACE®, SSI, Incremental Description: HIPERFACE®, shieldedSSIIncremental Connection systems: Solder connection	DOS-2309-G	6028533

## SICK AT A GLANCE

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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

