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Product data sheet



BTF13-K1EM05PP

HighLine

WIRE DRAW ENCODERS

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WIRE DRAW ENCODERS



Ordering information

Type	Part no.
BTF13-K1EM05PP	1060982

Included in delivery: ACM60B-S1KE13x06 (1), MRA-F130-105D2 (1)

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

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

CE

Detailed technical data

Performance

Measurement range	0 m ... 5 m
Encoder	Absolute encoders
Resolution (wire draw + encoder)	0.04 mm [1) 2)]
Repeatability	≤ 1 mm [3)]
Linearity	≤ ± 2 mm [3)]
Hysteresis	≤ 2 mm [3)]

1) The values shown have been rounded.

2) Example calculation based on the BTF08 with PROFINET: 200 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

Programmable/configurable	✓

Electrical data

Connection type	Male connector, M12, 5-pin, radial
Supply voltage	18 V DC ... 33 V DC
Operating current	≤ 80 mA (without load)
MTTFd: mean time to dangerous failure	600 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

Weight	3.2 kg
Measuring wire material	Highly flexible stranded steel 1,4401 stainless steel V4A

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.

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Measuring wire diameter	1.35 mm
Weight (measuring wire)	7.1 g/m
Housing material, wire draw mechanism	Aluminum (anodised), plastic
Spring return force	15 N ... 20 N [1]
Length of wire pulled out per revolution	334.1 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles [2] [3]
Actual wire draw length	5.2 m
Wire acceleration	70 m/s²
Operating speed	8 m/s
Mounted encoder	ACM60, ACM60B-S1KE13X06, 6045312
Mounted mechanic	MRA-F130-105D2, 6028626

[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

EMC	According to EN 61000-6-2 and EN 61000-6-4
Enclosure rating	IP64, mounted mechanic IP67, Encoder (IEC 60529) [1]
Operating temperature range	–30 °C ... +70 °C

[1] With mating connector fitted.

Classifications

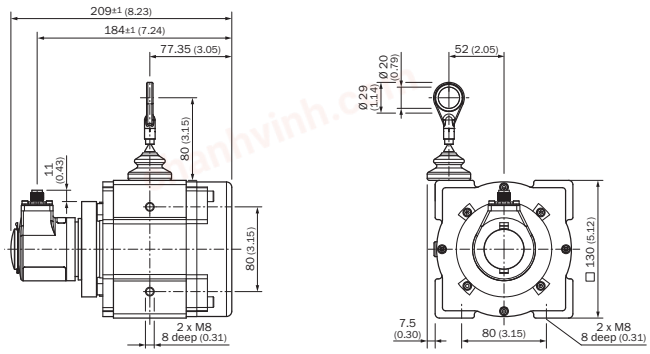
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eCl@ss 11.0	27270503
eCl@ss 12.0	27270503
ETIM 5.0	EC001486
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UNSPSC 16.0901	41112113

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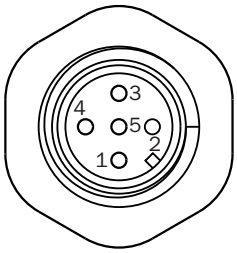
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Dimensional drawing (Dimensions in mm (inch))



PIN assignment

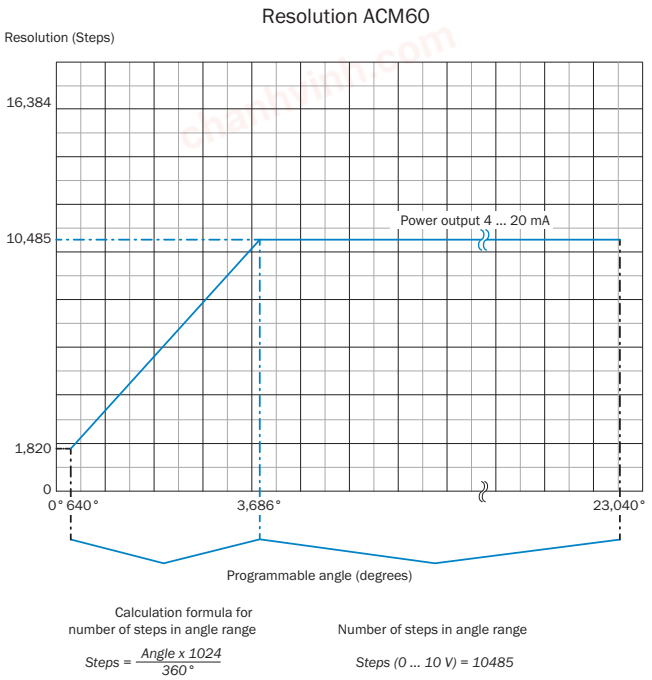


① GND
② + 24 V
③ Output signal GND
④ Output signal 4 ... 20 mA
⑤ N.C.

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Diagrams

Current output



Recommended accessories

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

	Brief description	Type	Part no.
Wire draw mechanism			
	HighLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 5 m	MRA-F130-105D2	6028626
Flanges			
	Flange adapter for HighLine wire draw mechanisms, adaption of face mount flange with centering hub 20 mm to 50 mm servo flange, Aluminum, including 3 countersunk screws M3 x 10	BEF-FA-020-050WDE	2073776
Other mounting accessories			
	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
	Compressed air attachment for MRA-F080... and MRA-F130... HighLine wire draw mechanism	MRA-F-P	6073769
	Additional brush attachment for wire draw mechanism MRA-F130 (5 m, 10 m, 20 m and 30 m from HighLine series)	MRA-F130-B	6038562

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WIRE DRAW ENCODERS

	Brief description	Type	Part no.
	Wire draw deflection pulley for wire draw mechanism MRA-F130 (5m, 10m, 20m and 30m from HighLine series)	MRA-F130-R	6028631

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