



Wire draw encoders
HighLine

BTF13-A1NM0524

Model Name > [BTF13-A1NM0524](#)
Part No. > [1068888](#)



At a glance

- Absolute wire draw encoders
- Modular measuring system with a wide selection of interfaces/measuring lengths
- Measuring lengths: 2 m ... 50 m
- Very rugged system (dirt wiper, integrated brushes), highly shock and vibration resistant
- High-quality winding mechanism and wire input
- Interfaces: - ANALOG, SSI, PROFIBUS, CANopen, DeviceNet, HIPERFACE®
- High enclosure rating
- High resolution possible

Your benefits

- Reliable solution in harsh environments
- Long service life due to rugged industrial housing
- Quick and easy installation without the need for precise linear guidance
- Low integration and maintenance costs
- Customization option reduces storage costs
- No reference run necessary thanks to the absolute measuring principle
- Teach-in function enables fast commissioning



Performance

Measuring range:	0 m ... 5 m
Repeatability:	$\leq 1 \text{ mm}$ ¹⁾
Linearity:	$\leq \pm 2 \text{ mm}$ ²⁾
Hysteresis:	$\leq 2 \text{ mm}$ ³⁾
Resolution (wire draw + encoder)::	0.04 mm ^{4) 5)}

^{1) 3)} Value refers to wire draw mechanism ^{2) 4) 5)}

Mechanical data

Mass (including encoder):	2.92 kg
Mass (mechanics):	2.8 kg
Measuring wire diameter:	1.35 mm
Measuring wire material:	Highly flexible stranded steel 1.4401 stainless steel V4A
Housing material, wire draw mechanism:	Aluminum (anodised), plastic
Spring return force:	15 N ... 20 N ¹⁾
Life of wire draw mechanism:	1 million cycles ²⁾

Actual length of cable extension:	5.2 m
Wire acceleration:	70 m/s ²
Operating speed:	4 m/s
Mounted encoder:	AFM60 SSI
Mounted mechanic:	MRA-F130-105D2
Part number mechanic:	6028626
Part number encoder:	1068330
Mass (measuring wire):	7.1 g/m
Length of wire pulled out per revolution:	334.1 mm ³⁾
Number of steps per revolution:	8,192

1) These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures. 2) 3)

Electrical data

Initialization time:	50 ms ¹⁾
Supply voltage:	10 V ... 32 V
Code type:	Gray, binary
Power consumption:	1.5 W
MTTFd: mean time to dangerous failure::	270 a ^{2) 3)}

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

Interfaces

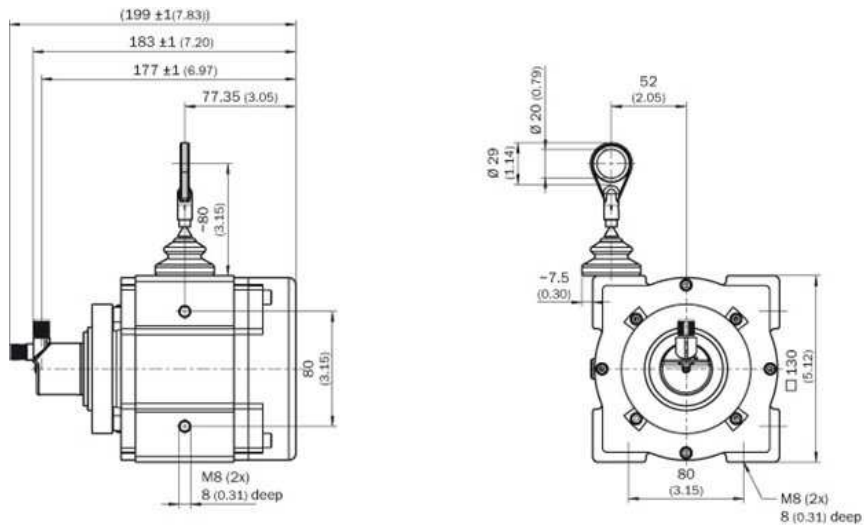
Electrical interface:	SSI
Electrical connection:	Universal ¹⁾
Clock frequency:	2 MHz
SET (electronic adjustment):	H-active (L = 0 - 3 V, H = 4,0 - Us V)
Interface signals:	Clock +, Clock -, Data +, Data-
Encoder:	Absolute encoders

1)

Ambient data

EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating encoder:	IP 66/IP 67 (according to IEC 60529), housing side, IP 66/IP 67 (according to IEC 60529), shaft side
Enclosure rating mechanic:	IP 64
Resistance to shocks:	100 g, 6 ms (according to EN 60068-2-27)
Resistance to vibration:	20 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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