



Wire draw encoders  
HighLine

BTF13-L1EM10PP



**Model Name** > **BTF13-L1EM10PP**  
**Part No.** > **1060990**



*Illustration may differ*

**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**

Measurement range:	0 m ... 10 m
Repeatability:	≤ 1.5 mm <sup>1)</sup>
Linearity:	≤ ± 2 mm <sup>2)</sup>
Hysteresis:	≤ 3 mm <sup>3)</sup>
Resolution (wire draw + encoder)::	0.02 mm <sup>4) 5)</sup>

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

**Mechanical data**

Mass (including encoder):	3.9 kg
Mass (mechanics):	3.5 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:	10 N ... 20 N <sup>1)</sup>
Life of wire draw mechanism:	1 million cycles <sup>2)</sup>

Actual length of cable extension:	10.2 m
Wire acceleration:	40 m/s <sup>2</sup>
Operating speed:	4 m/s
Mounted encoder:	ACM60
Mounted mechanic:	MRA-F130-110D2
Part number mechanic:	6028627
Part number encoder:	6045313
Mass (measuring wire):	7.1 g/m
Length of wire pulled out per revolution:	334.1 mm <sup>3)</sup>

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

### Electrical data

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

1) Valid positional data can be read once this time has elapsed.

### Interfaces

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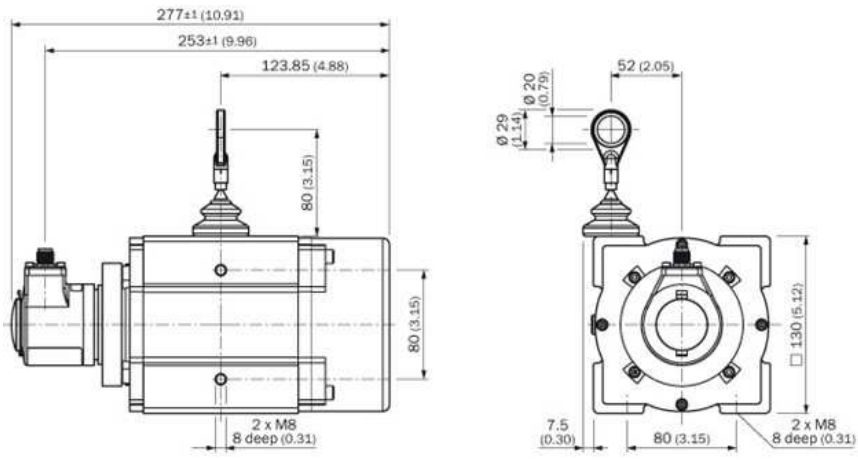
Electrical interface:	0 V ... 10 V, Analog
Connection type:	Connector 1 x M12, 5-pin, radial
Clock frequency:	32 kHz
SET (electronic adjustment):	Über Programmierfolie
Encoder:	Absolute encoders

### Ambient data

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EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating encoder:	IP 65
Enclosure rating mechanic:	IP 64
Resistance to shocks:	50 g, 6 ms (according to EN 60068-2-27)
Resistance to vibration:	4 g, Sinus 5 Hz ... 100 Hz (according to EN 60068-2-6)
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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