



## Wire draw encoders HighLine

BTF13-P1BM2025



**Model Name** > **BTF13-P1BM2025**  
**Part No.** > **1060997**



*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 ... 20 m
Repeatability:	≤ 2 mm <sup>1)</sup>
Linearity:	≤ ± 2 mm <sup>2)</sup>
Hysteresis:	≤ 5 mm <sup>3)</sup>
Resolution (wire draw + encoder)::	0.04 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):	5.28 kg (A3M60), 5.59 kg (A3M60)
Mass (mechanics):	5 kg
Measuring wire diameter:	0.81 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:	20.2 m
Wire acceleration:	30 m/s <sup>2</sup>
Operating speed:	4 m/s
Mounted encoder:	A3M60, ATM60 PROFIBUS
Mounted mechanic:	MRA-F130-120D1
Part number mechanic:	6028628
Part number encoder:	1051018
Mass (measuring wire):	2.6 g/m
Length of wire pulled out per revolution:	332.4 mm <sup>3)</sup>
Number of steps per revolution:	8,192

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

### Electrical data

Initialization time::	Ca. 1 s, A3M60, Ca. 12 s, ATM60 PROFIBUS <sup>1) 2)</sup>
Supply voltage:	10 V ... 32 V
Power consumption:	1.5 W (A3M60), 2 W (ATM60 PROFIBUS)
MTTFd: mean time to dangerous failure:::	150 a (ATM60 PROFIBUS), 60 a (A3M60) <sup>3) 4) 5) 6)</sup>

<sup>1) 2)</sup> Valid positional data can be read once this time has elapsed. <sup>3) 5)</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. <sup>4) 6)</sup> The value applies to the mounted encoder

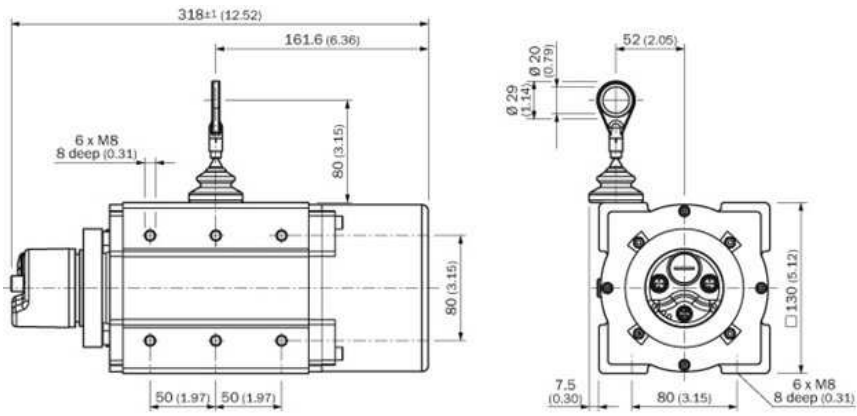
### Interfaces

Electrical interface:	PROFIBUS
Connection type:	Connector 3 x M12, 5-pin, axial
Address setting:	0 ... 127, DIP switch
Protocol:	PROFIBUS DP V0 (A3M60), Profil für Encoder (07hex) - Class 2 (ATM60 PROFIBUS)
Bus termination:	Via DIP switches
SET (electronic adjustment):	Via PRESET push button or protocol
Encoder profile:	Encoder profile version 1.1 class 1 and class 2 (A3M60), Profil für Encoder (07hex) - Class 2 (ATM60 PROFIBUS)
Encoder:	Absolute encoders

### Ambient data

EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating encoder:	IP 67
Enclosure rating mechanic:	IP 64
Resistance to shocks:	100 g, 6 ms (according to EN 60068-2-27)
Resistance to vibration:	30 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)
Relative humidity/Condensation:	95 % (A3M60, condensation of the optical scanning not permitted), 98 % (ATM60 PROFIBUS, condensation of the optical scanning not permitted)
Working temperature range (encoder):	-10 °C ... +70 °C, A3M60, -20 °C ... +70 °C, ATM60 PROFIBUS
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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