



## Wire draw encoders HighLine

BTF19-P1HM5017



**Model Name** > BTF19-P1HM5017  
**Part No.** > 1034310



*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

|                  |                             |
|------------------|-----------------------------|
| Measuring range: | 0 m ... 50 m                |
| Repeatability:   | $\pm 0.1 \%$ <sup>1)</sup>  |
| Linearity:       | $\pm 0.1 \%$ <sup>2)</sup>  |
| Hysteresis:      | $\pm 0.05 \%$ <sup>3)</sup> |
| Resolution:      | 0.06 mm                     |

1) 2) 3) Value refers to wire draw mechanism

#### Mechanical data

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Mass (including encoder):              | 16.78 kg (A3M60), 17.09 kg (ATM60 PROFIBUS) |
| Mass (mechanics):                      | 16.5 kg                                     |
| Measuring wire diameter:               | 1.35 mm                                     |
| Housing material, wire draw mechanism: | Aluminum (anodised), die-cast zinc          |
| Drum extent:                           | 491.5 mm                                    |
| Spring return force:                   | 18 N ... 37 N <sup>1)</sup>                 |
| Life of wire draw mechanism:           | 1 million cycles                            |

|                                   |                       |
|-----------------------------------|-----------------------|
| Actual length of cable extension: | 50.2 m                |
| Wire acceleration:                | 18 m/s <sup>2</sup>   |
| Operating speed:                  | 4 m/s                 |
| Mounted encoder:                  | A3M60, ATM60 PROFIBUS |
| Mounted mechanic:                 | MRA-F190-150D2        |
| Part number mechanic:             | 6028630               |
| Part number encoder:              | 1030014               |

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

## Electrical data

|                                          |                                                             |
|------------------------------------------|-------------------------------------------------------------|
| Initialization time::                    | Ca. 1 s, A3M60, Ca. 12 s, ATM60 PROFIBUS <sup>1) 2)</sup>   |
| Power consumption:                       | A3M60<br>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

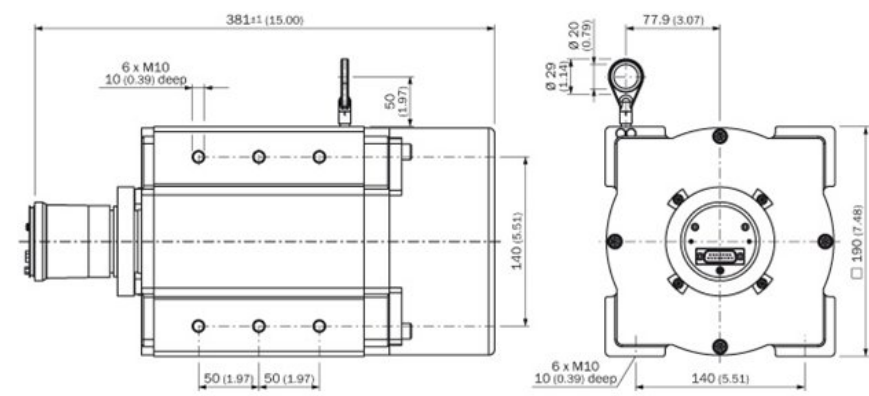
|                              |                                                                                                                |
|------------------------------|----------------------------------------------------------------------------------------------------------------|
| Electrical interface:        | PROFIBUS                                                                                                       |
| Connection type:             | Bus adaptor with cable screw fixings or connector, radial <sup>1)</sup>                                        |
| 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) |

<sup>1)</sup> Please order the bus adaptor separately

## Ambient data

|                                 |                                                                                                                                             |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| EMC:                            | (according to EN 61000-6-2 and EN 61000-6-3)                                                                                                |
| Enclosure rating encoder:       | IP 67                                                                                                                                       |
| Enclosure rating mechanic:      | IP 31                                                                                                                                       |
| 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)                                                                                        |
| Working temperature range:      | -10 °C ... 70 °C, A3M60, -20 °C ... 70 °C, ATM60 PROFIBUS                                                                                   |
| Relative humidity/Condensation: | 95 % (A3M60, condensation of the optical scanning not permitted), 98 % (ATM60 PROFIBUS, condensation of the optical scanning not permitted) |

Dimensional drawing



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