



## Wire draw encoders HighLine

BTF08-A1NM0241

**Model Name** > [BTF08-A1NM0241](#)  
**Part No.** > [1068884](#)



**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 ... 2 m              |
| Repeatability:                     | ≤ 1 mm <sup>1)</sup>     |
| Linearity:                         | ≤ ± 2 mm <sup>2)</sup>   |
| Hysteresis:                        | ≤ 2 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):              | 1.42 kg   |
| Mass (mechanics):                      | 1.3 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), die-cast zinc                        |
| Spring return force:                   | 6 N ... 14 N <sup>1)</sup>                                |
| Life of wire draw mechanism:           | 1 million cycles <sup>2)</sup>                            |

|   |                      |
|---|----------------------|
| Actual length of cable extension:         | 2.2 m                |
| Wire acceleration:                        | 40 m/s <sup>2</sup>  |
| Operating speed:                          | 4 m/s                |
| Mounted encoder:                          | AHM36 SSI            |
| Mounted mechanic:                         | MRA-F080-102D2       |
| Part number mechanic:                     | 6028625              |
| Part number encoder:                      | 1068330              |
| Mass (measuring wire):                    | 7.1 g/m              |
| Length of wire pulled out per revolution: | 200 mm <sup>3)</sup> |
| 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

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|   |                        |
|---|------------------------|
| Initialization time:                    | 50 ms <sup>1)</sup>    |
| Supply voltage:                         | 10 V ... 32 V          |
| Code type:                              | Gray, binary           |
| Power consumption:                      | 1.5 W                  |
| MTTFd: mean time to dangerous failure:: | 270 a <sup>2) 3)</sup> |

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. <sup>3)</sup> The value applies to the mounted encoder

### Interfaces

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|                              |  |
|------------------------------|--|
| Electrical interface:        | SSI                                    |
| Electrical connection:       | Universal <sup>1)</sup>                |
| 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                      |

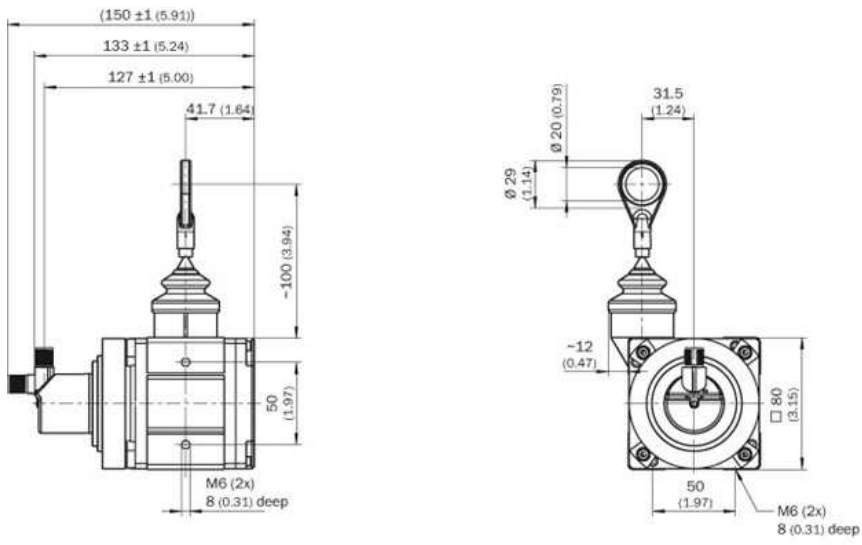
1)

### Ambient data

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|  |  |
|--|--|
| 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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