



1) not included in scope of delivery, 2) Non-usable area, 3) Nominal length = Measuring length, 4) Mounting surface, 5) Internal threads M4x4/6 deep, 6) for C-spanner  $\varnothing$  58-62, 10) Null point, 11) Installation length



### Basic features

|                                   |                       |
|-----------------------------------|-----------------------|
| Approval/Conformity               | CE<br>UKCA<br>WEEE    |
| Base type                         | BTL7-E...-M...-WB-F.. |
| Magnets, number (factory setting) | 1                     |
| Magnets, number max.              | 1                     |

### Electrical connection

|                                     |                            |
|-------------------------------------|----------------------------|
| Bending radius min., fixed cable    | 5 x D                      |
| Bending radius min., flexible cable | 15 x D                     |
| Cable diameter D                    | 6.4...7 mm                 |
| Cable length L                      | 5 m, drag chain compatible |
| Cable protection system             | M18x1.5                    |
| Connection                          | Cable                      |
| Connection version                  | radial                     |
| Polarity reversal protected         | Ub up to 36 V              |
| Short-circuit protection            | to GND and to 36 V DC      |

### Electrical data

|                                      |                          |
|--------------------------------------|--------------------------|
| Current consumption max. at 24 V DC  | 120 mA                   |
| Error signal Ia rising               | 3.6 mA                   |
| Error signal Ua falling              | ~ -0.25 V                |
| Error signal Ua rising               | ~ -0.25 V                |
| Galvanic isolation                   | no                       |
| Inrush current                       | ≤ 500 mA/10 ms           |
| Operating voltage Ub                 | 10...30 VDC              |
| Output signal adjustable             | using programming inputs |
| Overvoltage protection               | Ub up to 36 V            |
| Switch-on delay max.                 | 600 ms                   |
| Voltage-proof up to (GND to housing) | 500 V AC                 |

Magnetostrictive Sensors  
**BTL7-E500-M2108-WB-MA000-FA05**  
**Order Code: BTL3LR3**



**Environmental conditions**

|                                     |   |
|-------------------------------------|---|
| Ambient temperature                 | -40...85 °C                               |
| EN 55016-2-3, Radiation             | For industrial and residential use        |
| EN 60068-2-27, Continuous shock     | 100 g, 2 ms                               |
| EN 60068-2-27, Shock                | 100 g, 6 ms                               |
| EN 60068-2-6, Vibration             | 12 g, 10...2000 Hz                        |
| EN 61000-4-2, ESD                   | Severity Level 3                          |
| EN 61000-4-3, RFI                   | Severity Level 3                          |
| EN 61000-4-4, Burst                 | Severity Level 3                          |
| EN 61000-4-5, Surge                 | Severity Level 2                          |
| EN 61000-4-6, High-frequency fields | Severity Level 3                          |
| EN 61000-4-8 Magnetic fields        | Severity Level 4                          |
| IP rating                           | IP68/IP69K                                |
| Relative humidity                   | ≤ 90 %, non-condensing                    |
| Storage temperature                 | -40...100 °C                              |
| Temperature coefficient typ.        | ≤ 30 ppm/K at 50% of nominal stroke 500mm |

**Functional safety**

|              |      |
|--------------|------|
| MTTF (40 °C) | 90 a |
|--------------|------|

**Interface**

|               |                 |
|---------------|-----------------|
| Analog output | Analog, current |
|---------------|-----------------|

**Material**

|                          |  |
|--------------------------|--|
| Cable flame-resistant    | IEC 60332-1  |
| Cable jacket, material   | PTFE   |
| Cover material           | Aluminium, Die-cast, nickel plated   |
| Housing material         | 1.4305 stainless steel   |
| Material flange          | 1.4404 stainless steel<br>1.4429 stainless steel<br>1.4571 stainless steel |
| O-ring material          | FKM  |
| Protection tube material | 1.4571 stainless steel   |

**Mechanical data**

|  |                           |
|--|---------------------------|
| Housing diameter                         | 60 mm                     |
| Installation length from contact surface | 2219 mm                   |
| Mounting part                            | Threaded flange 3/4-16UNF |
| Null point                               | 50.8 mm                   |
| Pressure rating max.                     | 600 bar                   |
| Protection tube diameter                 | 10.2 mm                   |
| Tightening torque max.                   | 100 Nm                    |

**Range/Distance**

|                         |            |
|-------------------------|------------|
| Measuring length        | 2108 mm    |
| Non-linearity max.      | ±0.01 % FS |
| Repeat accuracy         | ± 10 µm    |
| Sampling frequency max. | 500 Hz     |

**Wiring Diagrams**

| colour |            |
|--------|------------|
| YE     | NC         |
| GY     | GND output |
| PK     | 10...0 V   |
| GN     | 0...10 V   |
| BU     | GND        |
| BN     | +24 V DC   |
| WH     | NC         |