

## Basic features

### Approval/Conformity

CE  
 UKCA  
 CSA  
 IECEx  
 WEEE  
 PESO

### Ex marking

ATEX: II 1/2GD Ex d IIC T6 Ga/  
 Gb Ex t IIIC T85°C Da IP68 -50°C  
 $\leq T_a \leq +70^\circ\text{C}$   
 II 1/2GD Ex d IIC T5 Ga/Gb Ex t  
 IIIC T100°C Da IP68 -50°C  $\leq T_a \leq$   
 $+80^\circ\text{C}$   
 IECEx: Ex d IIC T6 Ga/Gb Ex t  
 IIIC T85°C Da IP68 Tamb -50°C to  
 $+70^\circ\text{C}$   
 Ex d IIC T5 Ga/GbEx t IIIC  
 T100°C Da IP68 Tamb -50°C to  
 $+80^\circ\text{C}$   
 NEC: Class I, Division 1, Groups  
 ABCD  
 Class II, Division 1, Groups EFG  
 Class III  
 Enclosure Type 4X/6P  
 Class I, Zone 1, AEx d IIC T\* Ga/  
 Gb  
 Ex d IIC T\* Gb  
 IP68-50°C to  $+65^\circ\text{C}$  (T6) or -50°C  
 to  $+80^\circ\text{C}$  (T5)  
 PESO: Ex d IIC T6 Ga/Gb  
 ATEX: II 1/2GD Ex d IIC T6 Ga/  
 Gb Ex t IIIC T85°C Da IP68 -50°C  
 $\leq T_a \leq +70^\circ\text{C}$   
 II 1/2GD Ex d IIC T5 Ga/Gb Ex t  
 IIIC T100°C Da IP68 -50°C  $\leq T_a \leq$   
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 IECEx: Ex d IIC T6 Ga/Gb Ex t

IIIC T85°C Da IP68 Tamb -50°C to  
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 PESO: Ex d IIC T6 Ga/Gb

**Magnets, number (factory setting)**

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## Electrical connection

|                                    |                          |
|------------------------------------|--------------------------|
| <b>Connection</b>                  | Clamping terminal, 8-pin |
| <b>Connection version</b>          | radial                   |
| <b>Polarity reversal protected</b> | Ub up to 36 V            |

## Electrical data

|   |                                     |
|---|-------------------------------------|
| <b>Galvanic isolation</b>                   | no                                  |
| <b>Inrush current</b>                       | $\leq 500 \text{ mA}/10 \text{ ms}$ |
| <b>Operating voltage Ub</b>                 | 10...30 VDC                         |
| <b>Overvoltage protection</b>               | Ub up to 36 V                       |
| <b>Voltage-proof up to (GND to housing)</b> | 1000 V DC                           |

Magnetostrictive Sensors  
**BTL7-E500-M1000-J-M01-TA**  
**Order Code: BTL3HY0**



**Environmental conditions**

|                                     |   |
|-------------------------------------|---|
| Ambient temperature                 | -40...80 °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                                      |
| Relative humidity                   | ≤ 90 %, non-condensing                    |
| Storage temperature                 | -50...85 °C                               |
| Temperature coefficient typ.        | ≤ 30 ppm/K at 50% of nominal stroke 500mm |

**Functional safety**

|              |      |
|--------------|------|
| MTTF (40 °C) | 58 a |
|--------------|------|

**Interface**

|               |                           |
|---------------|---------------------------|
| Analog output | Analog, current 4...20 mA |
|---------------|---------------------------|

**Material**

|                                      |                        |
|--------------------------------------|------------------------|
| Housing material                     | Aluminium, Anodized    |
| Housing material, surface protection | Anodized               |
| Material flange                      | 1.4404 stainless steel |
| Protection tube material             | 1.4571 stainless steel |

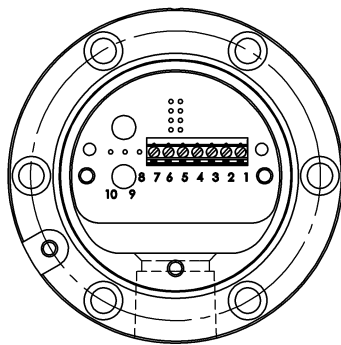
**Mechanical data**

|                          |                         |
|--------------------------|-------------------------|
| Housing diameter         | 88 mm                   |
| Mounting part            | Flange Ø18h6 plus holes |
| Null point               | 50.8 mm                 |
| Pressure rating max.     | 600 bar                 |
| Protection tube diameter | 10.2 mm                 |
| Tightening torque        | 3.5 Nm                  |

**Range/Distance**

|                  |           |
|------------------|-----------|
| Measuring length | 1000 mm   |
| Repeat accuracy  | ± 5 µm    |
| Reproducibility  | ≤5 µm     |
| Resolution       | ≤ 0.66 µA |

**Connector Drawings**



## Wiring Diagrams

| PIN |              |
|-----|--------------|
| 1   | 4...20mA     |
| 2   | GND Output   |
| 3   | NC           |
| 4   | GND          |
| 5   | 10...30 V DC |
| 6   | NC           |
| 7   | NC           |

## Help Views

