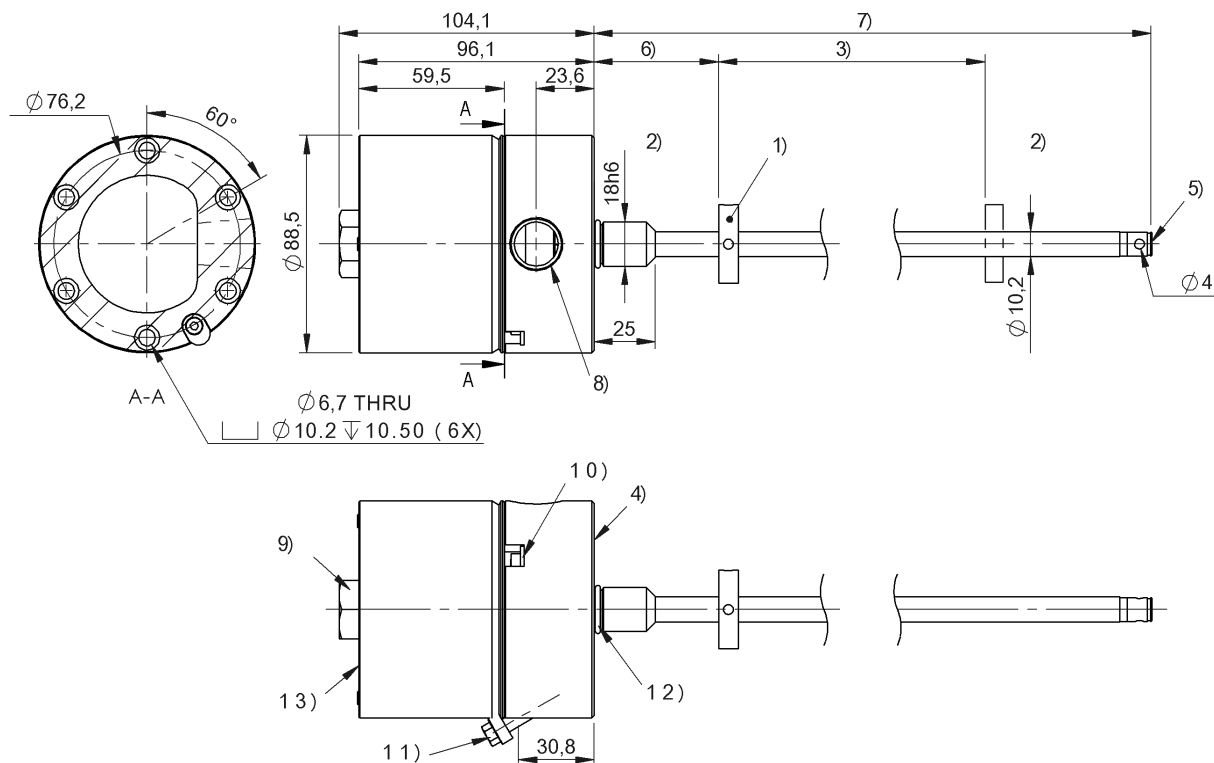




1) not included in scope of delivery, 2) Non-usable area, 3) Nominal length = Measuring length, 4) Mounting surface, 5) Internal threads M4x4/6 deep, 6) Null point, 7) Installation length, 8) 1/2" - 14 NPT (cable entry), 9) 15/16" or 24 mm wrench, 10) External Housing GND, 11) Cover fastening screw, 12) O-ring, 13) Part label, metal



## Basic features

### Approval/Conformity

CE  
CSA  
EAC  
IECEx  
WEEE

### Ex marking

ATEX: II 1/2GD Ex d IIC T6 Ga/Gb  
Ex t IIIC T85 °C Da IP68 -50 °C ≤  
Ta ≤ +65 °C  
II 1/2GD Ex d IIC T5 Ga/Gb Ex t  
IIIC T100 °C Da IP68 -50 °C ≤ Ta ≤  
+80 °C  
EAC: 1 Ex d IIC T6 Ga/Gb X Ex ta  
IIIC T85 °C Da X -20 °C ≤ Ta ≤  
+65 °C  
1 Ex d IIC T5 Ga/Gb X Ex ta IIIC  
T100 °C Da X -20 °C ≤ Ta ≤ +80 °C  
IECEx: Ex d IIC T6 Ga/Gb Ex t IIIC  
T85 °C Da IP68 Tamb -50 °C to  
+65 °C  
Ex d IIC T5 Ga/Gb Ex t IIIC T100 °C

Da IP68 Tamb -50 °C to +80 °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 °C (T6) or -50 °C  
to +80 °C (T5)  
1

Magnets, number max.

## Electrical connection

### Connection

Clamping terminal, 7-pin

### Connection version

radial

### Polarity reversal protected

Ub up to 28 V

Magnetostrictive Sensors  
BTL5-E50-M0077-J-DEXC-TA12  
Order Code: BTL08TN

**BALLUFF**

Electrical data

|                                      |                           |
|--------------------------------------|---------------------------|
| Current consumption max. at 24 V DC  | 150 mA                    |
| Error signal I <sub>a</sub> rising   | 3.6 mA                    |
| Galvanic isolation                   | no                        |
| Inrush current                       | ≤ 3 A/0.5 ms              |
| Operating voltage U <sub>b</sub>     | 10...30 VDC               |
| Overvoltage protection               | U <sub>b</sub> up to 28 V |
| Voltage-proof up to (GND to housing) | 500 V DC                  |

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...100 °C                              |
| Temperature coefficient typ.        | ≤ 35 ppm/K at 50% of nominal stroke 500mm |

Interface

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

Material

|                          |                          |
|--------------------------|--------------------------|
| Housing material         | Stainless steel (1.4404) |
| Material flange          | Stainless steel (1.4404) |
| O-ring material          | FKM                      |
| Protection tube material | Stainless steel (1.4571) |

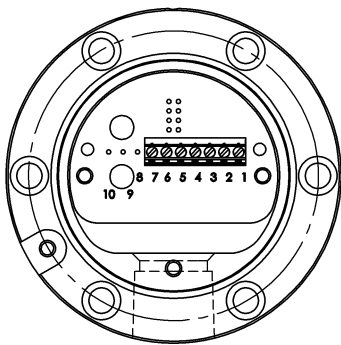
Mechanical data

|                                          |                         |
|------------------------------------------|-------------------------|
| Housing diameter                         | 88.00 mm                |
| Installation length from contact surface | 205 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

|                                 |                 |
|---------------------------------|-----------------|
| Non-linearity max.              | ±100 µm         |
| Repeat accuracy                 | ≤ ± 0.66 µA     |
| Repeatability                   | ≤5 µm           |
| Resolution                      | ≤ 0.66 µA       |
| Sampling rate, length-dependent | 1 kHz, standard |

Connector Drawings



Wiring Diagrams (Schematic)

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