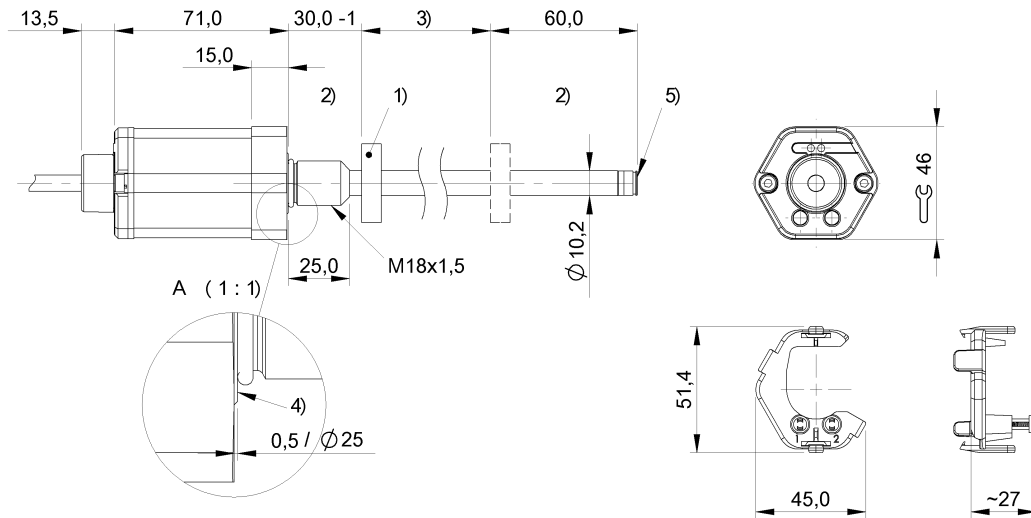


Magnetostrictive Sensors  
**BTL7-E501-M0250-B-SA316-KA05**  
**Order Code: BTL0HRM**

**BALLUFF**



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



**Basic features**

<b>Approval/Conformity</b>	CE UKCA cULus WEEE
<b>Base type</b>	BTL7-E501-M....-B-KA..
<b>Base type deviation</b>	Output 2 leading when adjusting
<b>Magnets, number (factory setting)</b>	1
<b>Magnets, number max.</b>	2

**Electrical connection**

<b>Bending radius min., fixed cable</b>	5 x D
<b>Bending radius min., flexible cable</b>	15 x D
<b>Cable diameter D</b>	6.4...7 mm
<b>Cable length L</b>	5 m, drag chain compatible
<b>Connection</b>	Cable, 5.00 m, PUR
<b>Connection version</b>	axial
<b>Polarity reversal protected</b>	Ub up to 36 V
<b>Short-circuit protection</b>	to GND and to 36 V DC

**Electrical data**

<b>Current consumption max. at 24 V DC</b>	180 mA
<b>Error signal Ia falling</b>	3.6 mA
<b>Error signal Ia rising</b>	3.6 mA
<b>Galvanic isolation</b>	no
<b>Inrush current</b>	≤ 500 mA/10 ms
<b>Operating voltage Ub</b>	10...30 VDC
<b>Output signal adjustable</b>	with calibration aid with software tool
<b>Overvoltage protection</b>	Ub up to 36 V
<b>Switch-on delay max.</b>	600 ms
<b>Voltage-proof up to (GND to housing)</b>	500 V AC

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**Environmental conditions**

Ambient temperature	-40...85 °C
Cable temperature, fixed routing	-40...90 °C
Cable temperature, flexible routing	-5...90 °C
EN 55016-2-3, Radiation	For industrial and residential use
EN 60068-2-27, Continuous shock	150 g, 2 ms
EN 60068-2-27, Shock	150 g, 6 ms
EN 60068-2-6, Vibration	20 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	-40...100 °C
Temperature coefficient typ.	≤ 30 ppm/K at 50% of nominal stroke 500mm

**Functional safety**

MTTF (40 °C)	58 a
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**Interface**

Analog output	Analog, current 4...20 mA Analog, current 20...4 mA
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**Material**

Cable flame-resistant	IEC 60332-1
Cable jacket, material	PUR
Cover material	Aluminium, Die-cast, nickel plated
Housing material	Aluminium, Anodized
Housing material, surface protection	Anodized
Material flange	1.3960 stainless steel
O-ring material	FKM
Plug material	1.4571 stainless steel
Protection tube material	1.4571 stainless steel

**Mechanical data**

Installation length from contact surface	340 mm
Minimum distance of the magnets	65 mm
Mounting part	Threaded flange M18x1.5
Null point	30.0 mm
Pressure rating max.	600 bar
Protection tube diameter	10.2 mm
Tightening torque max.	100 Nm

**Range/Distance**

Measuring length	250 mm
Non-linearity max.	±50 µm
Repeat accuracy	± 5 µm
Sampling frequency max.	4000 Hz

**Wiring Diagrams**

colour	
YE	4...20 mA
GY	0 V
PK	20...4 mA
RD	La
GN	NC
BU	GND
BN	+24 V DC
WH	Lb