



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, 12) Cable length



### Basic features

Approval/Conformity	CE UKCA cULus WEEE
Base type	BTL7-P511-M...-B-KA..
Base type deviation	smaller lin. deviation max. measuring length 5500mm separate quick guide
Magnets, number max.	3

### Electrical data

Current consumption max. at 24 V DC	120 mA
Galvanic isolation	no
Inrush current	≤ 500 mA/10 ms
Operating voltage $U_b$	10...30 VDC
Output signal adjustable	no
Overvoltage protection	$U_b$ up to 36 V
Switch-on delay max.	100 ms
Voltage-proof up to (GND to housing)	500 V DC

### 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	15 m, drag chain compatible
Connection	Cable, 15.00 m, PUR
Connection version	axial
Polarity reversal protected	$U_b$ up to 36 V
Short-circuit protection	to GND and to 36 V DC

Magnetostrictive Sensors  
**BTL7-P511-M0180-BN-SA330-KA15**  
**Order Code: BTL1UPE**



**Environmental conditions**

Ambient temperature	-40...85 °C
Cable temperature, drag chain	-5...60 °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.	≤ 15 ppm/K at 50% of nominal stroke 500mm

**Functional safety**

MTTF (40 °C)	102 a
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**Interface**

Active flank	Rising/falling
DPI/IP protocol	yes
Interface	Start/Stop Start/Stop negative

**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	270 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	180 mm
Non-linearity max.	±30 µm
Repeat accuracy	≤ ± 5 µm (typical ± 2.5 µm)
Reproducibility	≤22 µm
Resolution, position	1 µm
Sampling frequency max.	3915 Hz

**Wiring Diagrams**

colour	
YE	+INIT
GY	+START/STOP
PK	-INIT
RD	NC
GN	-START/STOP
BU	GND
BN	10...30 V DC
WH	NC