



**BTL7-abcd-Mnnnn-fg-lm**

**BTL7**

Magnetostrictive linear position sensor Generation 7

**a interface**

C = Current output 0 ... 20 mA

E = Current output 4 ... 20 mA

**b Operating voltage**

5 = 10 ... 30 V

**c + d Interface characteristic 1 + 2**

00 = 1 output, rising

70 = 1 output, falling

**Mnnnn Nominal length (4-position)**

M0500 = metric in mm

(M0025...M1016: for rod diameter 8 mm)

(M0025...M7620: for rod diameter 10.2 mm)

**f Style**

K = Compact rod, plug-in flange 18h6, for O-Ring

**g Form factor characteristic**

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

**l Connection type**

SR = Connector

K = Cable out radial (PUR)

F = Cable out radial (PTFE)

**m Connection type characteristic 1**

for connector:

32 = M16x0.75 connector with 8 pins

115 = M12x1 connector with 8 pins

for cable (length in meters):

02, 05, 10, 15, 20, 50, 100

# Magnetostrictive Sensors

## BTL7 -K- Series - Analog current

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### Basic features

<b>Approval/Conformity</b>	I = K: CE + cULus + EAC + WEEE I = F: CE + EAC + WEEE
<b>Magnets, number (factory setting)</b>	1
<b>Magnets, number max.</b>	1

### Electrical connection

<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>	120 mA
<b>Inrush current</b>	≤ 500 mA/10 ms
<b>Load resistance RL max.</b>	500 Ohm
<b>Operating voltage Ub</b>	10...30 VDC
<b>Output signal adjustable</b>	using programming inputs
<b>Overvoltage protection</b>	Ub up to 36 V
<b>Switch-on delay max.</b>	nnnn < 1525: 600 ms nnnn ≥ 1525: 1000 ms
<b>Voltage-proof up to (GND to housing)</b>	500 V AC

### Environmental conditions

<b>Ambient temperature</b>	-40...85 °C
<b>Cable temperature, fixed routing</b>	I = K: -40 °C ... 90 °C I = F: -40 °C ... 200 °C
<b>Cable temperature, flexible routing</b>	I = KA: -5 °C ... 90 °C
<b>EN 55016-2-3, Radiation</b>	For industrial and residential use
<b>EN 60068-2-27, Continuous shock</b>	150 g, 2 ms
<b>EN 60068-2-27, Shock</b>	150 g, 6 ms
<b>EN 60068-2-6, Vibration</b>	20 g, 10...2000 Hz
<b>EN 61000-4-2, ESD</b>	Severity Level 3
<b>EN 61000-4-3, RFI</b>	Severity Level 3
<b>EN 61000-4-4, Burst</b>	Severity Level 3
<b>EN 61000-4-5, Surge</b>	Severity Level 2
<b>EN 61000-4-6, High-frequency fields</b>	Severity Level 3
<b>EN 61000-4-8 Magnetic fields</b>	Severity Level 4
<b>Protection degree</b>	I = S: IP67 with connector I = K: IP68
<b>Relative humidity</b>	≤ 90 %, non-condensing
<b>Storage temperature</b>	-40...100 °C
<b>Temperature coefficient typ.</b>	≤ 30 ppm/K at 50% of nominal stroke 500mm

### Functional safety

<b>MTTF (40 °C)</b>	90 a
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### Material

<b>Cable flame-resistant</b>	I = K, F: IEC 60332-1
<b>Cable jacket, material</b>	I = K: PUR I = F: PTFE
<b>Housing material</b>	Stainless steel (1.4305)
<b>Material flange</b>	Stainless steel (1.4404) Stainless steel (1.4429) Stainless steel (1.4435) Stainless steel (1.4571)
<b>Protection tube material</b>	Stainless steel (1.4571)

### Mechanical data

<b>Installation length from contact surface</b>	nnnn + 100 mm
<b>Pressure rating max.</b>	g ≠ 8: 600 bar g = 8: 250 bar
<b>Pressure rating, note</b>	when installed in hydraulic cylinder
<b>Speed detectable max.</b>	10 m/s
<b>Tightening torque max.</b>	3.5 Nm

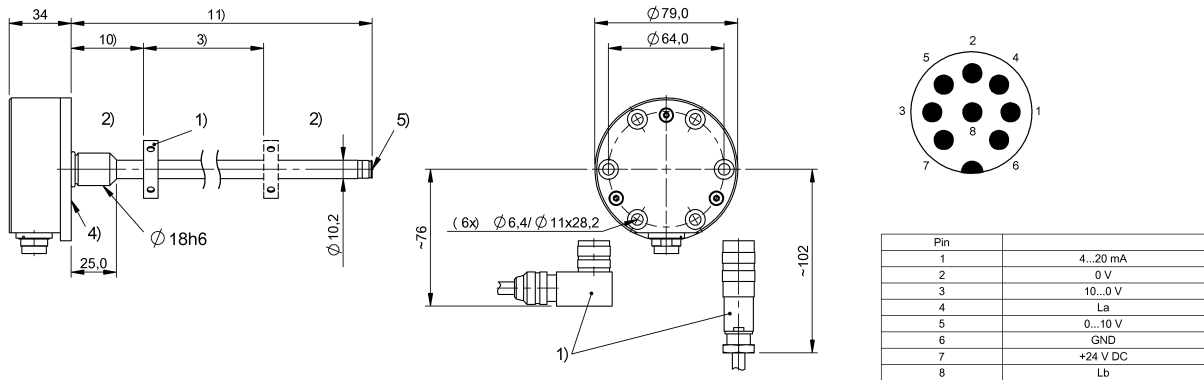
### Output/Interface

<b>Interface</b>	Analog, current
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### Range/Distance

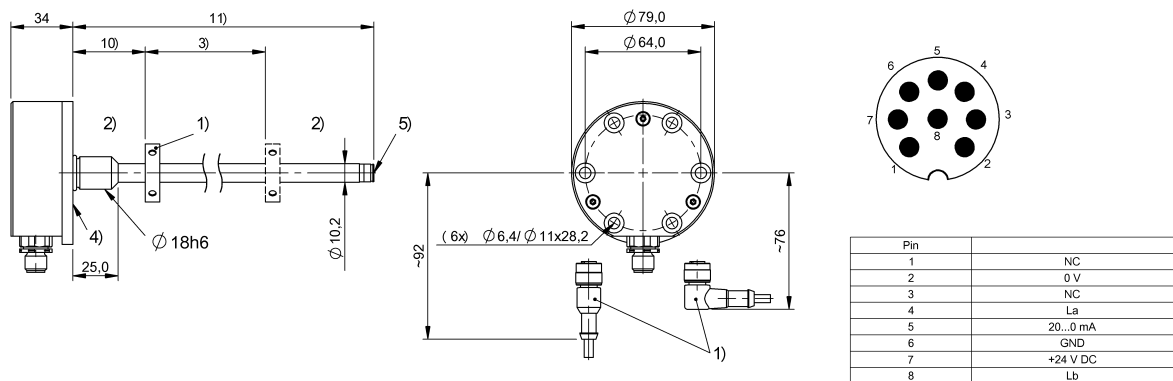
<b>Linearity deviation</b>	nnnn = 0050...0500: ± 50 µm nnnn = 0501...5500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
<b>Measuring length</b>	25...7620 mm
<b>Repeat accuracy</b>	± 10 µm
<b>Sampling frequency max.</b>	nnnn = 0050...0250: 4000 Hz nnnn = 0251...0600: 2000 Hz nnnn = 0601...1300: 1000 Hz nnnn = 1301...2700: 500 Hz nnnn = 2701...5500: 250 Hz nnnn > 5500: 180 Hz

**BTL7-E500-Mxxxx-K-SR32**



- 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
- 10) Null point
- 11) Installation length

**BTL7-C570-Mxxxx-K-SR115**

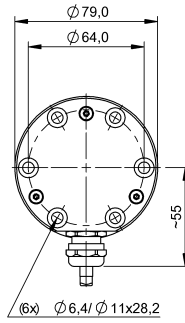
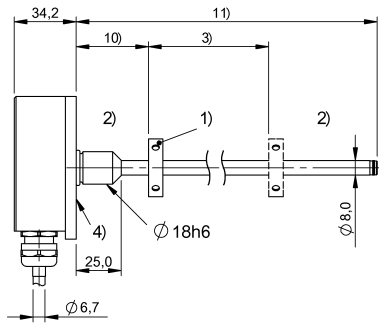


- 1) not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4x4/6 deep
- 10) Null point
- 11) Installation length

Magnetostrictive Sensors  
**BTL7 -K- Series - Analog current**

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**BTL7-E570-Mxxxx-K8-Kxx**



colour	
YE	20...4 mA
GY	0 V
PK	10...0 V
RD	La
GN	0...10 V
BU	GND
BN	+24 V DC
WH	Lb

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