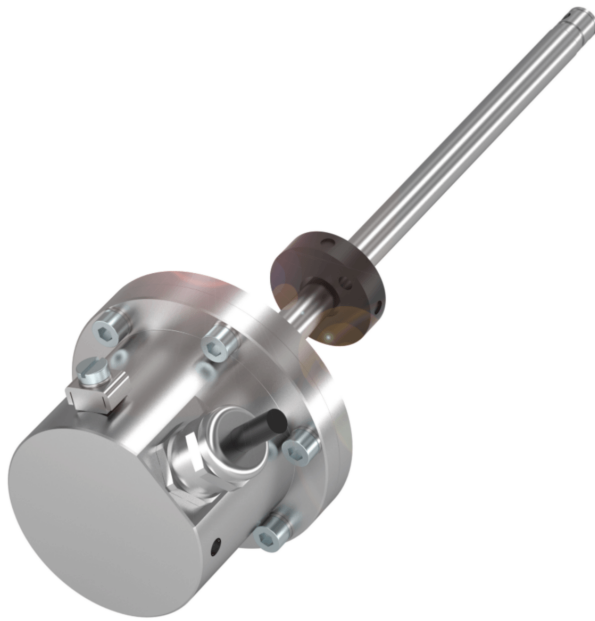




BTL7-abcd-Mnnnn-f-ij-lm

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...M7620: for rod diameter 10.2 mm)

f Style

B = Mounting threads M18x1.5, for O-Ring

i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

j Variant characteristic

A = float plug

B = short plug

l Connection type

K = Cable out radial (PUR)

KA = Cable out axial (PUR)

m Connection type characteristic 1

(length in meters)

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

Magnetostrictive Sensors

BTL7 -B-DEX- Series - Analog current

BALLUFF

Electrical connection

Polarity reversal protected	Ub up to 36 V
Short-circuit protection	to GND and to 36 V DC

Electrical data

Current consumption max. at 24 V DC	120 mA
Inrush current	≤ 500 mA/10 ms
Load resistance RL max.	500 Ohm
Operating voltage Ub	10...30 VDC
Output signal adjustable	using programming inputs
Overvoltage protection	Ub up to 36 V
Switch-on delay max.	nnnn < 1525: 600 ms nnnn ≥ 1525: 1000 ms
Voltage-proof up to (GND to housing)	500 V AC

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	-40...90 °C
Surface temperature max.	85 °C
Temperature coefficient typ.	≤ 30 ppm/K at 50% of nominal stroke 500mm

Functional safety

MTTF (40 °C)	90 a
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General data

Approval/Conformity	CE IECEX EAC WEEE
Ex marking	ATEX: II 1/2 G Ex d IIC T6/T5 Ga/ Gb II 2D Ex tb IIIC T85 °C/T100 °C Db IP67 -40°C to +65°C (T6) -40°C to +80°C (T5) EAC: 1 Ex d IIC T6 Ga/Gb X Ex tb IIIC T85 °C Db X IP67 -40°C ≤ TA ≤ +65°C 1 Ex d IIC T5 Ga/Gb X Ex tb IIIC T100 °C Db X IP67 -40°C ≤ TA ≤ +80°C IECEX: Ex d IIC T6 Ga/Gb Ex tb IIIC T85 °C Db XIP67 -40°C ≤ TA ≤ +65°C Ex d IIC T5 Ga/Gb Ex tb IIIC T100 °C Db IP67 -40°C ≤ TA ≤ +80°C
Magnets, number (factory setting)	1
Magnets, number max.	1

Material

Cable flame-resistant	I = K, KA: IEC 60332-1
Cable jacket, material	I = K, KA: PUR
Cover material	Stainless steel (1.4301) Stainless steel (1.4305) Stainless steel (1.4571)
Material flange	Stainless steel (1.4404) Stainless steel (1.4429) Stainless steel (1.4435) Stainless steel (1.4571)
Protection tube material	Stainless steel (1.4571)

Mechanical data

Installation length from contact surface	j = A: nnnn + 99 mm j = B: nnnn + 94 mm
Pressure rating max.	350 bar
Pressure rating, note	when installed in hydraulic cylinder
Speed detectable max.	10 m/s
Tightening torque max.	50 Nm

Output/Interface

Interface	Analog, current
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Magnetostrictive Sensors

BTL7 -B-DEX- Series - Analog current



Range/Distance

Linearity deviation	nnnn = 0050...0500: $\pm 50\ \mu\text{m}$
	nnnn = 0501...5500: $\pm 0.01\%$ FS
	nnnn > 5500: $\pm 0.02\%$ FS
Measuring length	25...7620 mm
Repeat accuracy	$\pm 10\ \mu\text{m}$

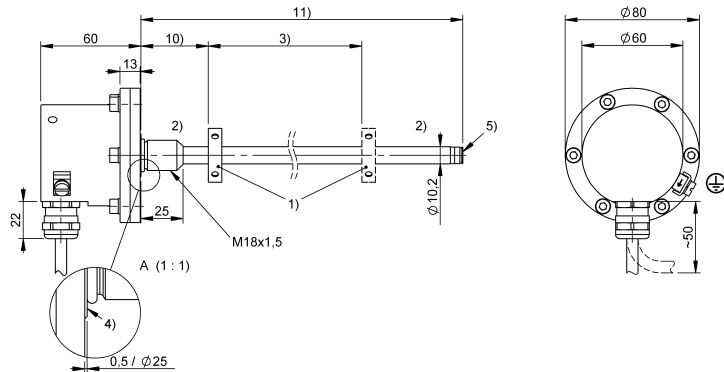
Sampling frequency max.

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

Magnetostrictive Sensors
BTL7 -B-DEX- Series - Analog current

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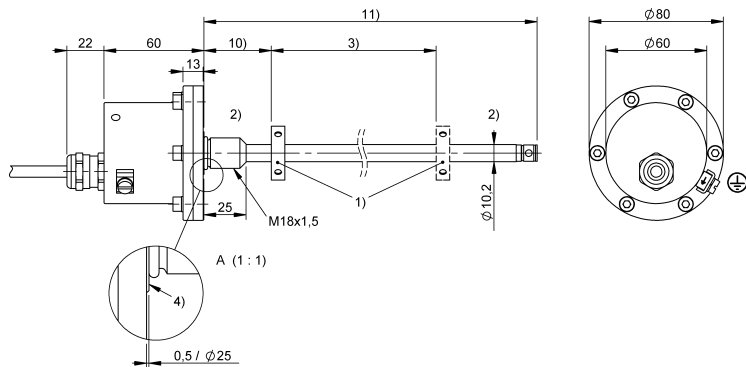
BTL7-E500-Mxxxx-B-DEXB-K05



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

- 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-B-DEXA-KA05



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

- 1) not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 10) Null point
- 11) Installation length