

Magnetostrictive Sensors
BTL5 -J-DEX-A/B- Series - Digital

BALLUFF



EAC

BTL5-ab-Mnnnn-fg-ij-lm

BTL5

Magnetostrictive linear position sensor Generation 5

a interface

P = Digital pulse interface (falling edge stabilized)

M = Digital pulse interface (rising edge stabilized)

b Operating voltage

1 = 20 ... 28 V

Mnnnn Nominal length (4-position)

M0500 = metric in mm

(M0050...M4000)

f Style

J = Flange 18h6

g Form factor characteristic

- = Rod diameter 10.2 mm

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)

m Connection type characteristic 1

(length in meters)

02, 05, 10, 15, 20, 30

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Electrical connection

Polarity reversal protected Ub up to 28 V

Electrical data

Current consumption max. at 24 V DC 90 mA
Operating voltage Ub 20...26 VDC
Output signal adjustable no
Overvoltage protection Ub up to 28 V
Voltage-proof up to (GND to housing) 500 V DC

Environmental conditions

Ambient temperature -40...60 °C
Cable temperature, fixed routing I = K: -40 °C ... 90 °C
Cable temperature, flexible routing I = K: -5 °C ... 90 °C
EN 55016-2-3, Radiation Industrial areas
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 IP67
Relative humidity ≤ 90 %, non-condensing
Storage temperature -40...100 °C
Temperature coefficient typ. ≤ 35 ppm/K at 50% of nominal stroke 500mm

Functional safety

MTTF (40 °C) 100 a

General data

Approval/Conformity CE
EAC
IECEX
KC
PESO
WEEE
Ex marking ATEX: II 1/2 G Ex db IIB + H2 T6
Ga/Gb -40 °C < Ta < +60 °C
EAC: 1 Ex d IIB+H2 T6 Ga/Gb X
Ex ta IIIC T 85 °C Da X -40 °C < Ta < +60 °C
IECEX: Ex d IIB + H2 T6 Ga/Gb
-40 °C < Ta < +60 °C
KC: Ex d IIB + H2 T6
PESO: Ex d IIB + H2 T6 Ga/Gb
Magnets, number max. 4

Material

Cable flame-resistant I = K: IEC 60332-1
Cable jacket, material I = K: PUR
Cover material Stainless steel (1.4301)
Stainless steel (1.4305)
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. 6 Nm

Output/Interface

Interface Start/Stop

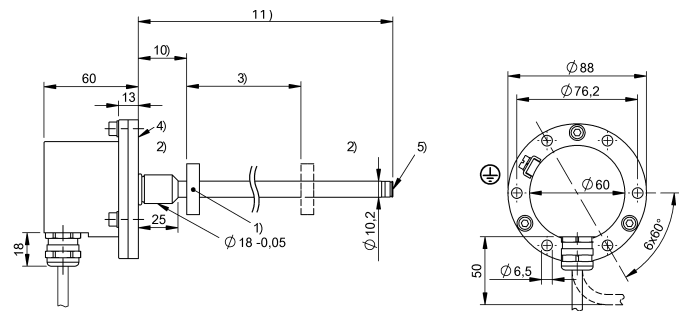
Range/Distance

Linearity deviation nnnn = 0025...0500: ± 100 µm
nnnn > 0500: ± 0.02% FS
Measuring length 25...4000 mm
Repeat accuracy 2 µm
Sampling frequency max. nnnn = 0025...1000: 2000 Hz
nnnn = 1001...2000: 1000 Hz
nnnn > 2000: 500 Hz

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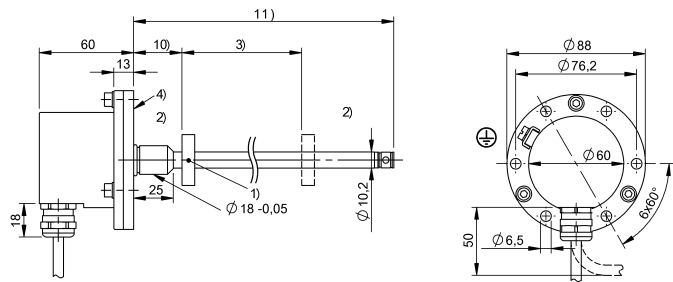
BTL5-Px-Mxxxx-J-DEXB-Kxx



colour	
YE	INIT
GY	START/STOP
PK	INIT
GN	START/STOP
BU	GND
BN	+24 V DC
WH	NC

- 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

BTL5-Px-Mxxxx-J-DEXA-Kxx



colour	
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