

Magnetostrictive Sensors
BTL6 -A/B- Series - IO-Link

BALLUFF



BTL6-abcd-Mnnnn-f-lm

BTL6

Magnetostrictive linear position sensor Generation 6

a interface

U = IO-Link

b Operating voltage

1 = 18 ... 30 V

c Interface characteristic 1

0 = Flexible Magnet Mode

d Interface characteristic 2

1 = COM3, 8 bytes inputs

Mnnnn Nominal length (4-position)

M0500 = metric in mm

(M0025...M4572)

f Style

A = Mounting threads M18x1.5, for flat seal

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

l Connection type

S = Connector

m Connection type characteristic 1

4 = M12x1 connector with 4 pins

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Display/Operation

Error value	0x7FFFFFFF
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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	150 mA
Inrush current	≤ 3 A/0.5 ms
Operating voltage Ub	18...30 VDC
Output signal adjustable	no
Overvoltage protection	Ub up to 36 V
Switch-on delay max.	300 ms
Voltage-proof up to (GND to housing)	500 V DC

Environmental conditions

Ambient temperature	-40...85 °C
EN 55016-2-3, Radiation	For industrial and residential use
EN 60068-2-27, Continuous shock	50 g, 2 ms
EN 60068-2-27, Shock	50 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 with connector
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)	162 a
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General data

Approval/Conformity	CE cULus EAC WEEE
Magnets, number max.	2 minimum separation between magnets 65 mm.

Material

Cover material	Aluminum, Die-cast, nickel plated
Housing material	Aluminum
Housing material, surface protection	Anodized
Material flange	Stainless steel (1.3960)
Protection tube material	Stainless steel (1.4571)

Mechanical data

Installation length from contact surface	nnnn + 90 mm
Pressure rating max.	600 bar
Pressure rating, note	when installed in hydraulic cylinder
Speed detectable max.	10 m/s
Tightening torque max.	100 Nm

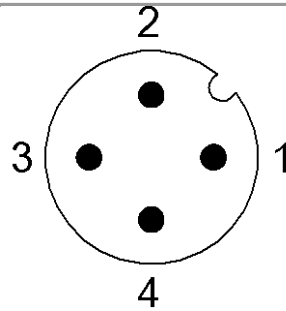
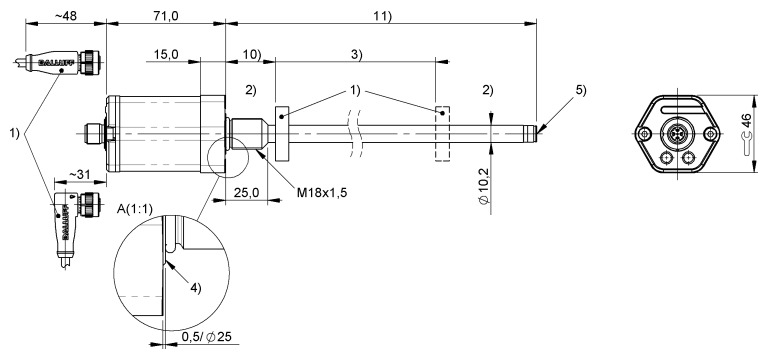
Output/Interface

Data format	32-bit signed
Interface	IO-Link

Range/Distance

Linearity deviation	nnnn = 0050...0500: ± 200 µm nnnn > 0500: ± 0.04% FS
Measuring length	25...4572 mm
Repeat accuracy	≤ 30 µm
Sampling frequency max.	nnnn = 0050...1300: 1000 Hz nnnn = 1301...2700: 500 Hz nnnn = 2701...4572: 250 Hz

BTL6-U1xx-Mxxxx-B-S4



Pin	
1	L+ (18...30V)
2	n.c.
3	L- (GND)
4	C/Q (communication line)

- 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