

Magnetostrictive Sensors
BTL6 -A1- Series - EtherCAT

BALLUFF



BTL6-abcd-Mnnnn-f-lm

BTL6

Magnetostrictive linear position sensor Generation 6

a interface

V = EtherNet

b Operating voltage

1 = 20 ... 28 V

c Interface characteristic 1

1 = 1 magnet

2 = 2 magnets

d Interface characteristic 2

E = EtherCAT

Mnnnn Nominal length (4-position)

M0500 = metric in mm

(M0050...M4012)

f Style

A1 = Round profile

l Connection type

S = Connector

m Connection type characteristic 1

115 = M12x1 connector with 8 pins

Electrical connection

Polarity reversal protected	Ub up to 36 V
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Electrical data

Current consumption max. at 24 V DC	100 mA
Error value	all bits = 0
Inrush current	≤ 4A / 0.5ms
Operating voltage Ub	20...28 VDC
Output signal adjustable	no
Overvoltage protection	Ub up to 36 V
Switch-on delay max.	10 s
Voltage-proof up to (GND to housing)	500 V DC

Environmental conditions

Ambient temperature	0...70 °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.	≤ 20 ppm/K at 50% of nominal stroke 500mm

Functional safety

MTTF (40 °C)	187 a
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General data

Approval/Conformity	CE cULus EAC WEEE
Magnets, number (factory setting)	c = 1: 1 c = 2: 2
Magnets, number max.	c = 1: 1 c = 2: 2

Material

Cover material	Zinc, Die casting
Housing material	Aluminum
Housing material, surface protection	Anodized

Mechanical data

Installation length	nnnn + 146 mm
Speed detectable max.	10 m/s

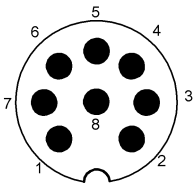
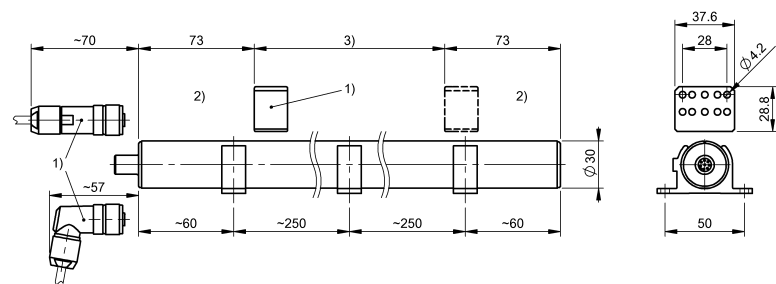
Output/Interface

Data format	32-bit signed
Interface	EtherCAT

Range/Distance

Linearity deviation	nnnn = 0050...0500: ± 200 µm nnnn > 500: ± 0.04% FS
Measuring length	50...4012 mm
Repeat accuracy	≤ 30 µm
Resolution, position	6 µm
Sampling frequency max.	c = 1: nnnn = 0050 ... 0500: 2000 Hz nnnn = 0501 ... 1200: 1000 Hz nnnn = 1201 ... 2600: 0500 Hz nnnn = 2601 ... 4012: 0333 Hz c = 2: nnnn = 0050 ... 0500: 1000 Hz nnnn = 0501 ... 1200: 0670 Hz nnnn = 1201 ... 2600: 0400 Hz nnnn = 2601 ... 4012: 0290 Hz

BTL6-V1xE-Mxxxx-A1-S115



Pin	
1	NC
2	TX+
3	TX-
4	NC
5	RX+
6	GND
7	+24V
8	RX-

- 1) not included in scope of delivery
2) Non-usable area
3) Nominal length = Measuring length