

Magnetostrictive Sensors
BTL6 -A1- Series - VARAN

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

d Interface characteristic 2

V = Varan

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
-----------------------------	---------------

Electrical data

Current consumption max. at 24 V DC	75 mA
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.	5 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)	67 a
--------------	------

General data

Approval/Conformity	CE cULus EAC WEEE
Magnets, number (factory setting)	1
Magnets, number max.	4 minimum separation between magnets 65 mm.

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

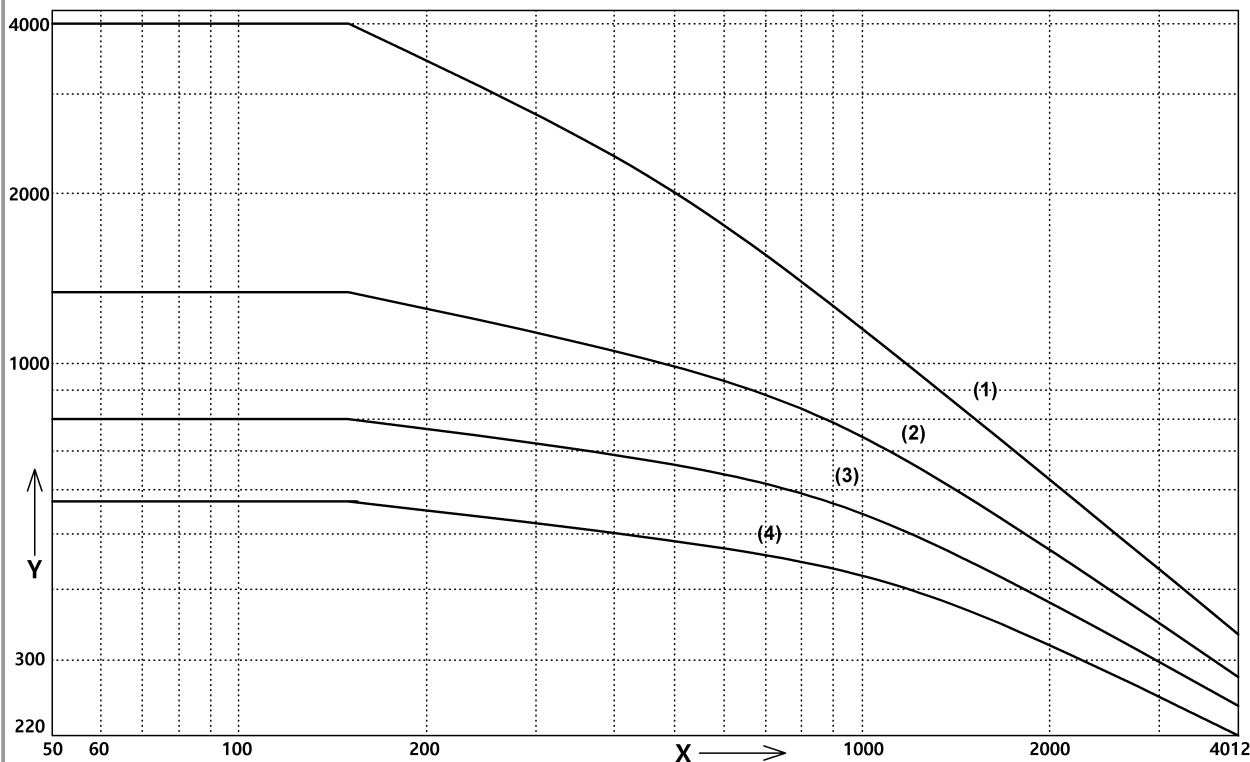
Output/Interface

Data format	32-bit signed
Interface	Varan

Range/Distance

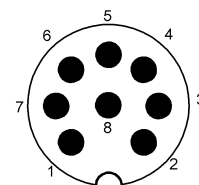
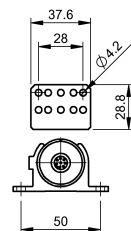
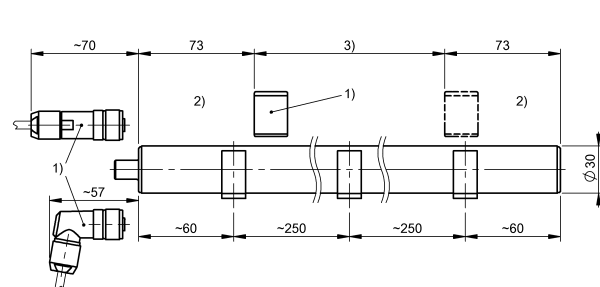
Linearity deviation	nnnn = 0050...0500: ± 200 µm nnnn > 0500: ± 0.04% FS
Measuring length	50...4012 mm
Repeat accuracy	≤ 30 µm
Resolution, position	6 µm
Sampling frequency max.	nnnn = 0050 ... 0500: 2000 Hz nnnn = 0501 ... 1200: 1000 Hz nnnn = 1201 ... 2600: 0500 Hz nnnn = 2601 ... 4012: 0333 Hz

Characteristic Diagram



- 1) 1 magnet
2) 2 magnets
3) 3 magnets
4) 4 magnets
x: Nominal length [mm]
y: fA,max Hz

BTL6-V11V-Mxxxx-A1-S115



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

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