



BTL abcdef-nnnn-ghijklmo-pqrstu

BTL

Magnetostrictive linear position sensor

a Mounting

P = Profile

b Housing geometry

A = Profile DM 30, alu, axial

c Detailed design 1

0 = no fixing clamp

2 = with mounting brackets profile 2: BTL6-A-MF01-A-43

3 = with mounting brackets profile 3: BTL6-A-MF01-A-50

4 = with mounting brackets profile 4: BTL6-A-MF03-K-50

d Detailed design 2

4 = zero point= 67 mm

ef Special design feature

00 = none

nnnn Measuring range

0500 = Specification in mm

(0025 ... 4000)

g Performance class

B = Platform Basic, Level 1

h Version Performance class

1

i Supply voltage

5 = 10 ... 30 V

j Interface group

A = Analog

k Characteristic Interface 1

A = 0..10 V increasing from zero point

E = 4..20 mA increasing from zero point

1 = 10..0 V decreasing from zero point

5 = 20..4 mA decreasing from zero point

l Characteristic Interface 2

0 = none

m Configuration Signals

1 = Signal 1 = Position, 1 Magnet fix

o Optional configuration

0 = none

p Cable/leads

0 = no cable/leads

qr Cable length

00 = no cable/leads

s Connector type

S = single connector

tu Connector model

92 = connector, M12, 5-pin

Magnetostrictive Sensors

BTL B1 - Profil PA - Analog

BALLUFF

Basic features

Approval/Conformity	CE UKCA cULus WEEE
Magnets, number (factory setting)	1
Magnets, number max.	1

Electrical connection

Polarity reversal protected	Ub up to 30 V DC
Short-circuit protection	Signal output against GND and against 30 V DC

Electrical data

Current consumption max. at 24 V DC	k = A, 1: 60 mA k = E, 5: 80 mA
Inrush current	≤ 3 A/0.5 ms
Operating voltage Ub	10...30 VDC
Overvoltage protection	Ub up to 36 V DC
Switch-on delay max.	500 ms
Voltage-proof up to (GND to housing)	500 V DC

Environmental conditions

Ambient temperature	-25...75 °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	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 with connector
Relative humidity	≤ 90 %, non-condensing
Storage temperature	-40...85 °C
Temperature coefficient typ.	≤ 30 ppm/K at 50% of nominal stroke 500mm

Functional safety

MTTF	k = A, 1: 143 a k = E, 5: 130 a
------	------------------------------------

Interface

Interface	k = A, 1: Analog, voltage k = E, 5: Analog, current
-----------	--

Material

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

Mechanical data

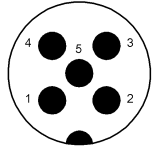
Overall Length	nnnn + 137 mm
Speed detectable max.	10 m/s

Range/Distance

Linearity deviation	nnnn = 0050...0500: ± 200 µm nnnn > 0500: ± 0.04% FS
Measuring length	25...4000 mm
Null point	67 mm
Repeat accuracy	nnnn ≤ 0500: ≤ ± 10 µm nnnn > 0500: ≤ ± 0.002% FS
Resolution, position	k = A, 1: 183 µV at least 4 µm k = E, 5: 351 nA at least 4 µm
Sampling frequency max.	o = A AND n = 25...240: 4000 Hz o = A AND n = 241...590: 2000 Hz o = A AND n = 591...1270: 1000 Hz o = 0 AND n = 25...1270: 1000 Hz o = 0, A AND n = 1271...2650: 500 Hz o = 0, A AND n = 2651...4000: 250 Hz

Connector Diagramm

stu = S92: M12 male, 5-pin



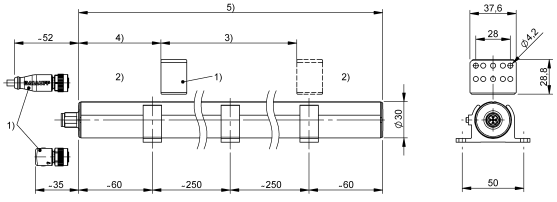
Wiring diagramm

M12 plug, 5 pole / 1 output

Pin	Signal
1	+UB
2	Output 1
3	GND
4	NC
5	0 V

Product View

ab = PA: Profile DM 30 + stu = S92



- 1) not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Null point
- 5) Overall length