Reliable even over long stroke lengths and in harsh conditions

# MAGNETOSTRICTIVE SENSORS



Magnetostrictive sensors come into use wherever high reliability and precision is demanded in position and speed measurement. Also over long stroke lengths.

Our contact-free and absolute measuring systems are suitable for all industry-standard interfaces for a wide range of applications. Even under extreme surrounding conditions, they guarantee a high machine and system availability.

#### Features

- Precise, absolute measurement without a reference run
- Contact-free, so wear- and maintenance-free
- Resistant to shock, vibration and contamination
- Hermetically sealed housing
- Highly dynamic control applications through synchronizedeasurement data
- High durability and long service life
- Flexible installation and handling



	BTL7 -P- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	507620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 μm nnnn = 05015500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### b Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, each 1 x rising/falling settable/programmable

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M7620)

f Style P = Profile

#### I Connection type S = Connector KA = Cable (PUR)

#### m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters):

02, 05, 10, 15, 20, 30

#### BTL7-A501-Mxxxx-P-S32





1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) LED function indicator 10) Null point 11) Installation length

#### BTL7-G501-Mxxxx-P-S115





27 ±0,3

 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 LED function indicator 10) Null point 11) Installation length

1) not included in scope of delivery Non-usable area
 Nominal length = Measuring length
 LED function indicator

10) Null point 11) Installation length

Human Machine Interfaces

Machine Vision and Optical Identification

Sensors

Accessories

#### BTL7-A501-Mxxxx-P-KAxx



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	BTL7 -P- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	507620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 50 μm nnnn = 05015500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, each 1 x rising/falling settable/programmable

08 = 1 output, rising, 1 auxiliary output voltage, rising settable/programmable 09 = 1 output, rising, 1 auxiliary output

voltage, falling settable/programmable 12 = 1 output, falling, 1 auxiliary output

voltage, rising settable/programmable 13 = 1 output, falling, 1 auxiliary output

voltage, falling settable/programmable

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0050...M7620) f Style P = Profile

#### I Connection type S = Connector KA = Cable (PUR)

m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins

for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E501-Mxxxx-P-S32





Ø4,20

68

4

A (1:2)

21

ISO 4762 - M5x22

~80

1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) LED function indicator 10) Null point 11) Installation length

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 LED function indicator

10) Null point 11) Installation length

Sensors

Accessories

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#### BTL7-E508-Mxxxx-P-KAxx

BTL7-C501-Mxxxx-P-S115

ÐH

ŧ

15 Ð -30

10

2)



~250

1) not included in scope of delivery Non-usable area
 Nominal length = Measuring length
 LED function indicator 10) Null point 11) Installation length



	BTL7 -P- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	507620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 50 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

P = Digital pulse interface

## **b** Operating voltage $5 = 10 \dots 30 \text{ V}$

- c Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M7620)
- f Style P = Profile

#### I Connection type

- S = Connector KA = Cable (PUR)
- m Connection type characteristic 1 for connector:
   32 = M16x0.75 connector with 8 pins
   115 = M12x1 connector with 8 pins

115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

#### BTL7-P511-Mxxxx-P-S32





1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) LED function indicator 10) Null point 11) Installation length

#### BTL7-P511-Mxxxx-P-S115





 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 LED function indicator 10) Null point 11) Installation length

#### BTL7-P511-Mxxxx-P-KAxx



1) not included in scope of delivery Non-usable area
 Nominal length = Measuring length
 LED function indicator 10) Null point 11) Installation length



Safety

Sensors

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27 ±0,3



	BTL7 -P- SERIES - SSI
Interface	SSI
Measuring length	507620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 505500: ± 30µm d = 4, 5, 6, 8
	$nnn = 505500: \pm 2 LSB$
	nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- 3 = 10 µm
- 4 = 20 µm
- $5 = 40 \ \mu m$
- 6 = 100 µm
- $7 = 2 \ \mu m$
- $8 = 50 \ \mu m$
- $9 = 0.5 \, \mu m$

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M7620)
- f Style
  - P = Profile
- I Connection type S = Connector KA = Cable (PUR)
- m Connection type characteristic 1 for connector:
  - 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 147 = M16x0.75 connector with 7 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

#### BTL7-S510x-Mxxxx-P-S32





1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) LED function indicator 10) Null point 11) Installation length

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 LED function indicator

10) Null point 11) Installation length

#### BTL7-S5xxx-Mxxxx-P-S115





1) not included in scope of delivery

#### BTL7-S5xxx-Mxxxx-P-KAxx



2) Non-usable area
3) Nominal length = Measuring length
4) LED function indicator 10) Null point 11) Installation length

#### BTL7-S5xxx-Mxxxx-P-S147





27 ±0,3

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

4) LED function indicator
10) Null point
11) Installation length

Sensors

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	BTL5 -P- SERIES - CANOPEN
Interface	CANopen
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 μm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL5

Magnetostrictive linear position sensor Generation 5

#### a interface

H = CANopen

**b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 1 = 1 magnet
- 2 = 2 magnets
- 3 = 4 magnets

#### d Interface characteristic 2

Data transmission rate:

- 0 = 1 MBaud
- 1 = 800 MBaud
- 2 = 500 kBaud
- 3 = 250 kBaud 4 = 125 kBaud
- 4 = 125 kBaud5 = 100 kBaud
- 5 = 100 KBauc
- 6 = 50 kBaud 7 = 25 kBaud
- 7 = 25 KBaud
- 8 = 10 kBaud

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

#### f Style

P = Profile

I Connection type S = Connector

#### m Connection type characteristic

 $92 = 1 \times M12x1$  connector with 5 pins  $94 = 1 \times M12x1$  connector with 5 pins +  $1 \times M12x1$  female with 5 pins

#### BTL5-Hxxx-Mxxxx-P-S94



1) not included in scope of delivery 2) Non-usable area a) Nominal length = Measuring length
b) Null point
c) Installation length

#### BTL5-Hxxx-Mxxxx-P-S92



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Null point
 Installation length

7+0

0

35

RFID



	BTL7 -P- SERIES - PROFINET
Interface	Profinet
Measuring length	507620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

V = EtherNet

# **b** Operating voltage $5 = 10 \dots 30 \text{ V}$

c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2 T = Profinet

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M7620)

#### f Style

P = Profile

I Connection type C = Connector

m Connection type characteristic 003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

#### BTL7-V50T-Mxxxx-P-C003



1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 10) Null point 11) Installation length Sensors

RFID

Accessories





	BTL7 -P- SERIES - ETHERNET/IP
Interface	Ethernet/IP
Measuring length	507620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

V = EtherNet

# **b** Operating voltage $5 = 10 \dots 30 \text{ V}$

c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)

- d Interface characteristic 2 D = EtherNet IP
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M7620)

#### f Style

P = Profile

- I Connection type C = Connector
- **m** Connection type characteristic 003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

#### BTL7-V50D-Mxxxx-P-C003



1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 10) Null point 11) Installation length Sensors

RFID



	BTL7 -P- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	507620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

V = EtherNet

# **b** Operating voltage $5 = 10 \dots 30 \text{ V}$

c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)

- d Interface characteristic 2 E = EtherCAT
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M7620)

#### f Style

P = Profile

#### I Connection type C = Connector

m Connection type characteristic 003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

#### BTL7-V50E-Mxxxx-P-C003



1) not included in scope of delivery 2) Non-usable area a) Nominal length = Measuring length
b) Null point
c) Installation length Sensors

RFID



	BTL5 -P- SERIES - PROFIBUS
Interface	Profibus
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 μm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Block-style profile - 37 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL5

Magnetostrictive linear position sensor Generation 5

#### a interface

T = Profibus

### **b** Operating voltage $1 = 20 \dots 28 \text{ V}$

**c + d** Interface characteristic **1 + 2** 10 = 1 magnet (1 - 4 magnets can be set)

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

#### f Style

```
P = Profile
```

#### I Connection type

S = Connector

- **m** Connection type characteristic 103 = 1 x M8x1 connector with 3 pins
  - $+ 1 \times M12x1$  connector with 5 pins
  - $+ 1 \times M12x1$  female with 5 pins

#### BTL5-Txxx-Mxxxx-P-S103



1) not included in scope of delivery 2) Non-usable area a) Nominal length = Measuring length
b) Null point
c) Installation length

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	BTL6 -A1- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	504012 mm
Repeat accuracy	-
Linearity deviation	nnnn = 00500500: ± 200 µm, nnnn > 500: ± 0.04% FS
Operating voltage Ub	-
Ambient temperature	070 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL6

Magnetostrictive linear position sensor Generation 6

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### b Operating voltage

 $\begin{array}{l} 1 = 20 \ ... \ 28 \ V \\ 3 = 20 \ ... \ 28 \ V \ (\text{if } c + d = 10) \\ 3 = 18 \ ... \ 30 \ V \ (\text{if } c + d = 01) \end{array}$ 

#### c + d Interface characteristic 1 + 2

01 = 2 outputs, each 1 x rising/falling settable/programmable 10 = 2 outputs, 1 x rising/1x falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0050...M4012 when c+d = 10) (M0050...M1512 when c+d = 01)

#### f Style

A1 = Round profile

#### I Connection type

S = Connector

**m** Connection type characteristic 1 115 = M12x1 connector with 8 pins

37,6

28

6000

00 0 00

۲

37,6

28 <del>60 0 06</del>

00 0 00

C

#### BTL6-A110-Mxxxx-A1-S115



not included in scope of delivery
 Non-usable area

3) Nominal length = Measuring length

# Machine Vision and Optical Identification

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# Accessories

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not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length



	BTL6 -A1- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	504012 mm
Repeat accuracy	≤ 10 µm
Linearity deviation	nnnn = 00500500: ± 200 μm nnnn > 500: ± 0.04% FS
Operating voltage Ub	2028 VDC
Ambient temperature	070 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL6

- Magnetostrictive linear position sensor Generation 6
- a interface
  - P = Digital pulse interface
- **b Operating voltage** 1 = 20 ... 28 V
- c Interface characteristic 1 1 = Digital start/stop interface

#### d Interface characteristic 2

- 0 = No communication interface
- 1 = DPI/IP communication interface
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4012)
- f Style

A1 = Round profile

- I Connection type S = Connector
- **m** Connection type characteristic 1 115 = M12x1 connector with 8 pins

#### BTL6-P11x-Mxxxx-A1-S115





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length

Sensors



	BTL6 -A1- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	504012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 500: ± 0.04% FS
Operating voltage Ub	2028 VDC
Ambient temperature	070 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### 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

- I Connection type S = Connector
- **m** Connection type characteristic 1 115 = M12x1 connector with 8 pins

#### BTL6-V1xE-Mxxxx-A1-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length

Sensors

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	BTL6 -A1- SERIES - VARAN
Interface	Varan
Measuring length	504012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 00500500: ± 200 μm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	2028 VDC
Ambient temperature	070 °C
Mechanical configuration	Round profile, Ø30 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### 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
- I Connection type S = Connector
- **m** Connection type characteristic 1 115 = M12x1 connector with 8 pins

#### BTL6-V11V-Mxxxx-A1-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length

RFID

Sensors



	BTL6 -PF- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	505080 mm
Repeat accuracy	-
Linearity deviation	nnnn = 00500500: ± 200 μm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-2570 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL6

Magnetostrictive linear position sensor Generation 6

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### **b** Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic 1 + 2 00 = 1 output, rising

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M5080)

#### f Style

PF = Flat profile

#### I Connection type S = Connector

S = COIMECION

**m** Connection type characteristic 1 115 = M12x1 connector with 8 pins

#### BTL6-A500-Mxxxx-PF-S115

34,6 ~50 73 73 28 3) 2) 1) 2) 20,8 b ÐÐ ISO 4762-M5x25 ~34 ~250 80 50 80 ~250 68

#### BTL6-G500-Mxxxx-PF-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length



RFID



	BTL6 -PF- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	505080 mm
Repeat accuracy	-
Linearity deviation	nnnn = 00500500: ± 200 μm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-2570 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL6

Magnetostrictive linear position sensor Generation 6

#### a interface

C = Current output 0.1 ... 20 mA E = Current output 4 ... 20 mA

#### **b** Operating voltage

5 = 10 ... 30 V

c + d Interface characteristic 1 + 2 00 = 1 output, rising

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M5080)

#### f Style

PF = Flat profile

#### I Connection type S = Connector

m Connection type characteristic 1 115 = M12x1 connector with 8 pins

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length

#### BTL6-E500-Mxxxx-PF-S115

34,6 ~50 73 73 28 3) 2) 1) 2) 20,8 b ÐÐ ISO 4762-M5x25 ~34 ~250 80 50 80 ~250 68

#### BTL6-C500-Mxxxx-PF-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length



	BTL6 -PF- SERIES - IO-LINK
Interface	IO-Link
Measuring length	504572 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1830 VDC
Ambient temperature	-2570 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL6

Magnetostrictive linear position sensor Generation 6

#### a interface U = IO-Link

- b Operating voltage 1 = 18 ... 30 V
- c + d Interface characteristic 1 + 2 10 = 1 magnet
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4572)
- f Style PF = Flat profile
- I Connection type S = Connector
- m Connection type characteristic 1 4 = M12x1 connector with 4 pins

#### BTL6-U110-Mxxxx-PF-S4





50

68

1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 10) Null point 11) Installation length Sensors

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	BTL6 -PF- SERIES - VARAN
Interface	Varan
Measuring length	504572 mm
Repeat accuracy	≤ 10 µm
Linearity deviation	nnnn = 00500500: ± 150 μm nnnn > 0500: ± 0.03% FS
Operating voltage Ub	1030 VDC
Ambient temperature	085 °C
Mechanical configuration	Flat profile - 21 x 35 mm
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

#### BTL6

Magnetostrictive linear position sensor Generation 6

#### a interface V = EtherNet

#### b Operating voltage 5 = 10 ... 30 V

c Interface characteristic 1 1 = Device profile length measuring systems 5 = Device Profile EUROMAP 75

- d Interface characteristic 2 V = Varan
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4572)
- f Style PF = Flat profile

#### I Connection type

- S = Connector
- m Connection type characteristic 1 115 = M12x1 connector with 8 pins

1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Null point

5) Installation length6) LED function indicator

#### BTL6-V55V-Mxxxx-PF-S115



#### BTL6-V51V-Mxxxx-PF-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Null point
 Installation length
 LED function indicator

RFID


	BTL7 -A/B- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm nnnn = 05015500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	$I = S$ AND m $\neq$ 140: IP67 with connector I = S AND m = 140: IP65 with connector I = KA, FA: IP68
Approval/Conformity	$\begin{array}{l} nnnn \leq 500: \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500: \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

### b Operating voltage

1 = 20 ... 28 V 5 = 10 ... 30 V

### c + d Interface characteristic 1 + 2

01 = 2 outputs, each 1 x rising/falling settable/programmable 10 = 2 outputs, each 1 x rising/falling

# Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

# f Style

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

# g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

# I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 135 = M16x1 connector with 6 pins 140 = MS, 10-pin for cable (length in meters): 02, 05, 10, 15, 20, 30

1) not included in scope of delivery 2) Non-usable area

2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface

11) Installation length

# BTL7-A501-Mxxxx-B-S32



# BTL7-G510-Mxxxx-A-S115



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

# BTL7-A510-Mxxxx-B8-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

RFID



	BTL7 -A/B- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 50 µm nnnn = 05015500: ± 0.01% FS nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	$I = S AND m \neq 140$ : IP67 with connector I = S AND m = 140: IP65 with connector I = KA, FA: IP68
Approval/Conformity	$\begin{array}{l} nnnn \leq 500: \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500: \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

# b Operating voltage

5 = 10 ... 30 V

# **c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, each 1 x rising/falling settable/programmable 00 = 1 output, rising

70 = 1 output, falling

# Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

# f Style

 $A = Mounting threads M18x1.5, \\ for flat seal \\ B = Mounting threads M18x1.5, \\ for O-Ring$ 

# g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

# I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 135 = M16x1 connector with 6 pins 140 = MS, 10-pin for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

1) not included in scope of delivery 2) Non-usable area

2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface

11) Installation length



# BTL7-C500-Mxxxx-A-S115



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





1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

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	BTL7 -A/B- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00255500: ± 50 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA, FA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

- a interface P = Digital pulse interface
- **b** Operating voltage  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm)

(M0025...M7620: for rod diameter 10.2 mm)

f Style

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

# g Form factor characteristic

8 = Rod diameter 8 mm - = Rod diameter 10.2 mm

# I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 135 = M16x0.75 connector with 6 pins for cable (length in meters):

02, 05, 10, 15, 20, 30, 50, 100

1) not included in scope of delivery 2) Non-usable area

Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator

10) Null point 11) Installation length

14 14 14

1 46



# BTL7-P511-Mxxxx-A-S115



# BTL7-P511-Mxxxx-B8-KAxx





 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 latesticing length 11) Installation length

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

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	BTL7 -A/B- SERIES - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 505500: ± 30µm d = 4, 5, 6, 8 nnnn = 505500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S AND m $\neq$ 140: IP67 with connector I = S AND m = 140: IP65 with connector I = KA, FA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

# c Interface characteristic 1

- 0 = 24 bits, binary, rising 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

# d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- $4 = 20 \ \mu m$
- $5 = 40 \ \mu m$
- $6 = 100 \,\mu m$
- 7 = 2 µm
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

# f Style

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

# g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

# I Connection type

- S = Connector
- KA = Cable (PUR)
- FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 140 = MS, 10-pin 147 = M16x0.75 connector with 7 pinsfor cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100



### BTL7-S5xxx-Mxxxx-A-S115



# BTL7-S5xxx-Mxxxx-B8-KAxx







1) not included in scope of delivery 2) Non-usable area

Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator

10) Null point 11) Installation length

 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Instruction longth 11) Installation length

10 46

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6

10 46 11

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

6) LED function indicator
10) Null point
11) Installation length

Machine Vision and Optical Identification



	BTL6 -A/B- SERIES - IO-LINK
Interface	IO-Link
Measuring length	254572 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	± 50 µm
Operating voltage Ub	1830 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# 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

- I Connection type
  - S = Connector
- m Connection type characteristic 1
  - 4 = M12x1 connector with 4 pins

# BTL6-U101-Mxxxx-B-S4





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Accessories



	BTL5 -A/B- SERIES - CANOPEN
Interface	CANopen
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 µm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL5

Magnetostrictive linear position sensor Generation 5

# a interface H = CANopen

- .
- **b Operating voltage** 1 = 20 ... 28 V
- c Interface characteristic 1
  - 1 = 1 magnet
  - 2 = 2 magnets
  - 3 = 4 magnets

### d Interface characteristic 2 Data transmission rate:

- 0 = 1 MBaud
- 1 = 800 MBaud
- 2 = 500 kBaud
- 3 = 250 kBaud
- 4 = 125 kBaud
- 5 = 100 kBaud
- 6 = 50 kBaud
- 7 = 25 kBaud
- 8 = 10 kBaud

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

# f Style

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

# g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

I Connection type

S = Connector

# m Connection type characteristic

 $92 = 1 \times M12x1$  connector with 5 pins  $94 = 1 \times M12x1$  connector with 5 pins +  $1 \times M12x1$  female with 5 pins

1) not included in scope of delivery 2) Non-usable area

Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep



# BTL5-Hxxx-Mxxxx-B-S92



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

RFID



BTL7 -A/B- SERIES - PROFINET
Profinet
257620 mm
≤ ± 5 μm
nnnn = 00505500: ± 30 μm nnnn > 5500: ± 0.02% FS
1030 VDC
-4085 °C
Fastening M18 threads
Aluminum, Anodized
IP67 with connector
CE cULus EAC WEEE
-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface V = EtherNet

- **b Operating voltage**  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)
- d Interface characteristic 2 T = Profinet
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

### f Style

 $A = Mounting threads M18x1.5, for flat \\ seal \\ B = Mounting threads M18x1.5, for$ 

- O-Ring
- g Form factor characteristic
   8 = Rod diameter 8 mm
   = Rod diameter 10.2 mm
- I Connection type C = Connector
- m Connection type characteristic 003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

# BTL7-V50T-Mxxxx-B-C003



# BTL7-V50T-Mxxxx-A8-C003



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 LED function indicator
 Null point
 Installation length

RFID



	BTL7 -A/B- SERIES - ETHERNET/IP
Interface	Ethernet/IP
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface V = EtherNet

- **b Operating voltage**  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)
- d Interface characteristic 2 D = EtherNet IP
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

# f Style

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

- **g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- I Connection type C = Connector
- m Connection type characteristic 003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

# BTL7-V50D-Mxxxx-B-C003



# BTL7-V50D-Mxxxx-A8-C003



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface 5) LED function indicator 10) Null point 11) Installation length



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	BTL7 -A/B- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface V = EtherNet

- **b Operating voltage**  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)
- d Interface characteristic 2 E = EtherCAT
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

f Style

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

- **g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- I Connection type C = Connector
- m Connection type characteristic 003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

# BTL7-V50E-Mxxxx-B-C003



# BTL7-V50E-Mxxxx-A8-C003



1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 4) Mounting surface 5) LED function indicator 10) Null point

11) Installation length

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	BTL5 -A/B- SERIES - PROFIBUS
Interface	Profibus
Measuring length	254000 mm
Repeat accuracy	-
Linearity deviation	±30 μm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL5

Magnetostrictive linear position sensor Generation 5

### a interface T = Profibus

- **b Operating voltage** 1 = 20 ... 28 V
- **c + d** Interface characteristic 1 + 2 10 = 1 magnet (1 - 4 magnets can be set)
- Mnnnn Nominal length (4-position)
  - M0500 = metric in mm (M0050...M4000)
- f Style
  - A = Mounting threads M18x1.5, f or flat seal B = Mounting threads M18x1.5, for O-Ring

# g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm
- I Connection type S = Connector

# m Connection type characteristic 103 = 1 x M8x1 connector with 3 pins + 1 x M12x1 connector with 5 pins +

 $1 \times M12x1$  female with 5 pins



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

RFID

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	BTL6 -A/B- SERIES - VARAN
Interface	Varan
Measuring length	254012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	2028 VDC
Ambient temperature	070 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

### BTL6

Magnetostrictive linear position sensor Generation 6

### a interface V = EtherNet

- **b** Operating voltage  $1 = 20 \dots 28 V$
- c Interface characteristic 1 1 = 1 magnet

### d Interface characteristic 2 E = Varan Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025 M1016: for rod diameter

(M0025...M1016: for rod diameter 8 mm) (M0025...M4012: for rod diameter 10.2 mm)

# f Style

A = Mounting threads M18x1.5, for flat seal B = Mounting threads M18x1.5, for O-Ring **g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm

# I Connection type S = Connector

**m** Connection type characteristic 1 115 = M12x1 connector with 8 pins

# BTL-V11V-Mxxxx-B-S115





Sensors

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	BTL7 -BE/BF- SERIE - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤±5µm
Linearity deviation	nnnn = 00255500: ± 50 μm nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

- a interface P = Digital pulse interface
- **b** Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

- f Style
  A = Mounting threads M18x1.5, for flat seal
  B = Mounting threads M18x1.5, for O-Ring
- g Form factor characteristic
   8 = Rod diameter 8 mm
   = Rod diameter 10.2 mm
- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)
- $\begin{array}{ll} \textbf{m} & \textbf{Connection type characteristic 1} \\ for connector: \\ 32 = M16x0.75 \ connector \ with 8 \ pins \\ 115 = M12x1 \ connector \ with 8 \ pins \\ 135 = M16x0.75 \ connector \ with 6 \ pins \\ for \ cable \ (length \ in \ meters): \\ 02, \ 05, \ 10, \ 15, \ 20, \ 30, \ 50, \ 100 \end{array}$

### BTL7-P511-Mxxxx-BE-S32

BTL7-P511-Mxxxx-BE-S115

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2)

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5)

1)

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A (1:1)



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1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

RFID

# 3) 1) 2) 5) 46 Т



1) not included in scope of delivery

4) Mounting surface
5) Internal threads M4x4/6 deep

1) not included in scope of delivery

4) Mounting surface
5) Internal threads M4x4/6 deep

10) Null point 11) Installation length

2) Non-usable area3) Nominal length = Measuring length

10) Null point 11) Installation length

2) Non-usable area3) Nominal length = Measuring length

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Instruction longth

11) Installation length

# BTL7-P511-Mxxxx-BF-FA/KAxx



# BTL7-P511-Mxxxx-BE-FA/KAxx



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	BTL7 -BE/BF- SERIE - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 505500: ± 30µm
	d = 4, 5, 6, 8 nnnn = 505500: ± 2 LSB
	nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

# c Interface characteristic 1

- 0 = 24 bits, binary, rising 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling
- D 20 bits, gray, iailii

# d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \,\mu m$
- 3 = 10 µm
- 4 = 20 µm
- $5 = 40 \ \mu m$
- 6 = 100 µm
- $7 = 2 \ \mu m$
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)
- f Style

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

# g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

# I Connection type

- S = Connector
- KA = Cable (PUR)
- FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 140 = MS, 10-pin

147 = M16x0.75 connector with 7 pins

for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

BTL7-S5xx-Mxxxx-BE-S115

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BTL7-S5xx-Mxxxx-BF-FA/KAxx

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71,5

15

A (1:1)

71,5

15

A (1:1)



10)

2)

\_25

4)

0,5/Ø25

10)

2)

25

4) 0,5/Ø25 3)

M18x1.5

11)

3)

1)

2)

Ø10,2

5)

1)



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46

1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

RFID

# Accessories

Ø10,2 M18x1,5 11)

Т

2)

# BTL7-S5xx-Mxxxx-BE-FA/KAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Instruction longth 11) Installation length

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

- 4) Mounting surface
  5) Internal threads M4x4/6 deep
- 10) Null point 11) Installation length

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

10) Null point 11) Installation length

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	BTL7 -Y/Z- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S AND m $\neq$ 140: IP67 with connector I = S AND m = 140: IP65 with connector I = KA, FA: IP68
Approval/Conformity	$\begin{array}{l} nnnn \leq 500: \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500: \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

# **b** Operating voltage

1 = 20 ... 28 V 5 = 10 ... 30 V

# c + d Interface characteristic 1 + 2

01 = 2 outputs, each 1 x rising/falling settable/programmable 10 = 2 outputs, 1x each rising/falling

# Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

# f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

# g Form factor characteristic

8 = Rod diameter 8 mm - = Rod diameter 10.2 mm

# I Connection type

S = Connector KA = Cable (PUR) FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 135 = M16x1 connector with 6 pins 140 = MS, 10-pin

for cable (length in meters): 02, 05, 10, 15, 20, 30

1) not included in scope of delivery 2) Non-usable area

a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

# BTL7-A501-Mxxxx-Z-S32



# BTL7-G510-Mxxxx-Y-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

# BTL7-A510-Mxxxx-Z8-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

Industrial Networking

Safety

RFID Machine Vision and Optical Identification

Human Machine Interfaces



	BTL7 -Y/Z- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S AND m ≠ 140: IP67 with connector I = S AND m = 140: IP65 with connector I = KA, FA: IP68
Approval/Conformity	$\begin{array}{l} nnnn \leq 500; \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500; \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

### b Operating voltage

5 = 10 ... 30 V

# **c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, 1x each rising/falling settable/programmable 00 = 1 output, rising 70 = 1 output, falling

# Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

# f Style

$$\begin{split} Y &= \text{Inch threads } 3/4\text{``-16UNF, for flat}\\ &\text{seal}\\ Z &= \text{Inch threads } 3/4\text{``-16UNF, for} \end{split}$$

O-Ring

# g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

# I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 135 = M16x1 connector with 6 pins 140 = MS, 10-pin for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

1) not included in scope of delivery 2) Non-usable area

a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

# BTL7-E501-Mxxxx-Z-S32



# BTL7-C500-Mxxxx-Y-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

### BTL7-E570-Mxxxx-Z8-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface



	BTL7 -Y/Z- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 00255500: ± 50 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA, FA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

### BTL7

Magnetostrictive linear position sensor Generation 7

- a interface P = Digital pulse interface
- **b** Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

### f Style

- Y = Inch threads 3/4"-16UNF, for flat seal
- Z = Inch threads 3/4"-16UNF, for O-Ring
- g Form factor characteristic
  - 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)
- m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 135 = M16x0.75 connector with 6 pins

for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

# BTL7-P511-Mxxxx-Z-S32





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

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

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Sensors

# Accessories

BTL7-P511-Mxxxx-Y-S115



# BTL7-P511-Mxxxx-Z8-KAxx





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

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	BTL7 -Y/Z- SERIES - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 255500: ± 30µm d = 4, 5, 6, 8 nnnn = 255500: ± 2 LSB nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S AND m ≠ 140: IP67 with connector I = S AND m = 140: IP65 with connector I = KA, FA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

# d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- 4 = 20 µm
- 5 = 40 µm
- 6 = 100 µm
- $7 = 2 \ \mu m$
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)
- f Style
  - Y = Inch threads 3/4"-16UNF, for flat seal
  - Z = Inch threads 3/4"-16UNF, for O-Ring

# g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

# I Connection type

- S = Connector
- KA = Cable (PUR)
- FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 140 = MS, 10-pin 147 = M16x0.75 connector with 7 pinsfor cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

# BTL7-S510x-Mxxxx-Z-S32

BTL7-S5xxx-Mxxxx-Y-S115

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15,0

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13,5

BTL7-S5xxx-Mxxxx-Z8-KAxx

71,0

15,0

A (1:1)

1)



2"-0.04"

2)

4)

25,0

2"-0.04"

2)

25,0

4) 0,5 / Ø 25 3)

3/4"-16UNF

3)

3/4"-16UNF

1)

1)

60,0

2)

Ø10,2

60,0

2)

Ø 8,0

5)

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1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep

Sensors

# BTL7-S5xxx-Mxxxx-Y8-S140



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

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1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

- 6) LED function indicator
  10) Null point
  11) Installation length

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	BTL6 -Y/Z- SERIES - IO-LINK
Interface	IO-Link
Measuring length	254572 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	± 50 µm
Operating voltage Ub	1830 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# 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

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

I Connection type

S = Connector

- m Connection type characteristic 1
  - 4 = M12x1 connector with 4 pins

# BTL6-U101-Mxxxx-Z-S4



Safety

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	BTL5 -Y/Z- SERIES - CANOPEN
Interface	CANopen
Measuring length	254000 mm
Repeat accuracy	-
Linearity deviation	±30 μm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL5-abcd-Mnnnn-fg-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

#### a interface H = CANopen

- **b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 1 = 1 magnet
- 2 = 2 magnets
- 3 = 4 magnets

#### d Interface characteristic 2 Data transmission rate:

- 0 = 1 MBaud
- 1 = 800 MBaud
- 2 = 500 kBaud
- 3 = 250 kBaud
- 4 = 125 kBaud
- 5 = 100 kBaud
- 6 = 50 kBaud
- 7 = 25 kBaud
- 8 = 10 kBaud

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

#### f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

# g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

I Connection type

S = Connector

#### m Connection type characteristic

 $92 = 1 \times M12x1$  connector with 5 pins  $94 = 1 \times M12x1$  connector with 5 pins +  $1 \times M12x1$  female with 5 pins

1) not included in scope of delivery 2) Non-usable area

Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

#### BTL5-Hxxx-Mxxxx-Z-S94



#### BTL5-Hxxx-Mxxxx-Z-S92



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

RFID

Sensors



	BTL7 -Y/Z- SERIES - PROFINET
Interface	Profinet
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface V = EtherNet

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)
- d Interface characteristic 2 T = Profinet
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

- f Style
  Y = Inch threads 3/4"-16UNF,
  for flat seal
  Z = Inch threads 3/4"-16UNF,
  for O-Ring
- **g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- I Connection type C = Connector

# BTL7-V50T-Mxxxx-Z-C003



#### BTL7-V50T-Mxxxx-Y8-C003



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 LED function indicator
 Null point

11) Installation length



RFID



	BTL7 -Y/Z- SERIES - ETHERNET/IP
Interface	Ethernet/IP
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface V = EtherNet

- **b Operating voltage**  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 0 = Flexible Magnet Mode (1 - 16 magnets)
- d Interface characteristic 2 D = EtherNet IP
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

- f Style
  Y = Inch threads 3/4"-16UNF,
  for flat seal
  Z = Inch threads 3/4"-16UNF,
  for O-Ring
- **g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- I Connection type C = Connector

# BTL7-V50D-Mxxxx-Z-C003



#### BTL7-V50D-Mxxxx-Y8-C003



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 LED function indicator
 Null point

11) Installation length



RFID



	BTL7 -Y/Z- SERIES - ETHERCAT
Interface	EtherCAT
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00505500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface V = EtherNet

- **b Operating voltage**  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 0 = Flexible Magnet Mode ( 1 - 16 magnets)
- d Interface characteristic 2 E = EtherCAT

Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

**g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm

- I Connection type C = Connector
- m Connection type characteristic 1 003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

# BTL7-V50E-Mxxxx-Z-C003



### BTL7-V50E-Mxxxx-Y8-C003



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface 5) LED function indicator 10) Null point 11) Installation length

RFID

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Human Machine Interfaces

Safety

Industrial Networking

Software and System Solutions

Power Supply

Connectivity



	BTL5 -Y/Z- SERIES - PROFIBUS
Interface	Profibus
Measuring length	254000 mm
Repeat accuracy	-
Linearity deviation	±30 μm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL5-abcd-Mnnnn-fg-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

# a interface

T = Profibus

**b Operating voltage** 1 = 20 ... 28 V

#### **c + d** Interface characteristic **1 + 2** 10 = 1 magnet (1 - 4 magnets can be set)

Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0050...M4000)

#### f Style

Y = Inch threads 3/4"-16UNF, f or flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

#### **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

# I Connection type

S = Connector

#### m Connection type characteristic

- $103 = 1 \times M8x1$  connector with 3 pins
- + 1 x M12x1 connector with 5 pins +
- 1 x M12x1 female with 5 pins



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

RFID

Sensors



	BTL6 -Y/Z- SERIES - VARAN
Interface	Varan
Measuring length	254012 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	2028 VDC
Ambient temperature	070 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67 with connector
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL6-abcd-Mnnnn-fg-Im

#### 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 E = Varan Mnnnn Nominal length (4-position) M0500 = metric in mm

(M0025...M1016: for rod diameter 8 mm) (M0025...M4012: for rod diameter 10.2 mm)

# f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

# **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### I Connection type S = Connector

**m** Connection type characteristic 1 115 = M12x1 connector with 8 pins

### BTL-V11V-Mxxxx-Z-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length

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	BTL7 -ZE/ZF- SERIE - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 00255500: ± 50 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	_

# BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

g Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm

I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 135 = M16x0.75 connector with 6 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

not included in scope of delivery
 Non-usable area

a) Noninal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

#### BTL7-P511-Mxxxx-ZE-S32



#### BTL7-P511-Mxxxx-ZE-S115



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

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#### BTL7-P511-Mxxxx-ZE-KA/FAxx



#### 1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

- 4) Mounting surface
  5) Internal threads M4x4/6 deep

1) not included in scope of delivery

- 2) Non-usable area3) Nominal length = Measuring length
- 4) Mounting surface
  5) Internal threads M4x4/6 deep

#### BTL7-P511-Mxxxx-ZF-KA/FAxx



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Safety



	BTL7 -ZE/ZF- SERIE - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 255500: ± 30µm
	d = 4, 5, 6, 8 nnnn = 255500: ± 2 LSB
	nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcde-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling D = 26 bits, gray, falling
- D = 20 bits, gray, lailii

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- $4 = 20 \ \mu m$
- $5 = 40 \ \mu m$
- $6 = 100 \,\mu m$
- 7 = 2 µm
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)
- f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

#### g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

- S = Connector
- KA = Cable (PUR)
- FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins 140 = MS, 10-pin 147 = M16x0.75 connector with 7 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

1) not included in scope of delivery 2) Non-usable area

a) Noninal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

#### BTL7-S510x-Mxxxx-ZE-S32



#### BTL7-S5xxx-Mxxxx-ZE-S115





# 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

# BTL7-S5xxx-Mxxxx-ZE-KA/FAxx



#### 1) not included in scope of delivery

- 2) Non-usable area3) Nominal length = Measuring length
- 4) Mounting surface
  5) Internal threads M4x4/6 deep

# BTL7-S5xxx-Mxxxx-ZF-KA/FAxx



- 1) not included in scope of delivery
- 2) Non-usable area3) Nominal length = Measuring length
- 4) Mounting surface
  5) Internal threads M4x4/6 deep

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	BTL7 -CD- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	252000 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05012000: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### b Operating voltage

1 = 20 ... 28 V 5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, each 1 x rising/falling settable/programmable

10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M2000)

#### f Style

CD = Mounting threads M22x1.5, for O-Ring

#### I Connection type S = Connector

KA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30

#### BTL7-A501-Mxxxx-CD-S32



#### BTL7-G510-Mxxxx-CD-S115



#### BTL7-A510-Mxxxx-CD-KAxx



1) not included in scope of delivery 2) Non-usable area

Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator

10) Null point 11) Installation length

- not included in scope of delivery
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
   ED function indicator
   Null coint

- 10) Null point 11) Installation length

- 1) not included in scope of delivery
- Non-usable area
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep

- 6) LED function indicator
- 10) Null point
- 11) Installation length

Safety



	BTL7 -CD- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	252000 mm
Repeat accuracy	± 5 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05012000: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, each 1 x rising/falling settable/programmable

- 00 = 1 output, rising
- 70 = 1 output, falling

# Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M2000)

#### f Style

CD = Mounting threads M22x1.5, for O-Ring

#### I Connection type S = Connector

S = Connector KA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E501-Mxxxx-CD-S32



#### BTL7-C500-Mxxxx-CD-S115



#### BTL7-E570-Mxxxx-CD-KAxx



1) not included in scope of delivery 2) Non-usable area

Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator

10) Null point 11) Installation length

- not included in scope of delivery
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
   ED function indicator
   Null coint

- 10) Null point 11) Installation length

1) not included in scope of delivery

- 6) LED function indicator

Non-usable area
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

- 10) Null point
- 11) Installation length

Machine Vision and Optical Identification

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Power Supply

Connectivity



	BTL7 -CD- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	252000 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00252000: ± 50 μm
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M2000)

- f Style CD = Mounting threads M22x1.5, for O-Ring
- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

#### BTL7-P511-Mxxxx-CD-S32



#### BTL7-P511-Mxxxx-CD-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 Null coint

- 10) Null point 11) Installation length

#### BTL7-P511-Mxxxx-CD-KAxx



- 1) not included in scope of delivery Non-usable area
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep

- 6) LED function indicator
- 10) Null point 11) Installation length

Machine Vision and Optical Identification

Sensors



	BTL7 -CD- SERIES - SSI
Interface	SSI
Measuring length	252000 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7: $\pm$ 30µm, d = 4, 5, 6, 8: $\pm$ 2 LSB
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcde-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- 3 = 10 µm
- 4 = 20 µm
- 5 = 40 µm
- $6 = 100 \,\mu m$
- 7 = 2 µm
- 8 = 50 µm

e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M2000)

#### f Style

CD = Mounting threads M22x1.5, for O-Ring

#### I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

#### BTL7-S510x-Mxxxx-CD-S32



### BTL7-S5xxx-Mxxxx-CD-S115

BTL7-S5xxx-Mxxxx-CD-KAxx

A (1:1)

71.0

15,0

0,5/ Ø31

10

2)

25,0

13,5



11)

2)

\$12.7

5

31

M22x1.5

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 Null coint

10) Null point 11) Installation length

- - 1) not included in scope of delivery

  - Non-usable area
     Non-usable area
     Nominal length = Measuring length
     Mounting surface
     Internal threads M4x4/6 deep
  - 6) LED function indicator

  - 10) Null point 11) Installation length

Sensors

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	BTL7 -CE- SERIE - DIGITAL
Interface	Digital pulse
Measuring length	252000 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00252000: ± 50 μm
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M22 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	_

# BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M2000)
- f Style CD = Mounting threads M22x1.5, f or O-Ring

I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

1) not included in scope of delivery 2) Non-usable area

a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

#### BTL7-P511-Mxxxx-CE-S32



# BTL7-P511-Mxxxx-CE-S115





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Y

#### BTL7-P511-Mxxxx-CE-KA/FAxx



- 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





	BTL7 -CE- SERIE - SSI
Interface	SSI
Measuring length	252000 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7: $\pm$ 30µm, d = 4, 5, 6, 8: $\pm$ 2 LSB
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M22 threads
Housing material	Stainless steel (1.4404)
IP rating	IP69K
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	_

# BTL7-abcde-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

b Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- 3 = 10 µm
- 4 = 20 µm
- $5 = 40 \ \mu m$
- $6 = 100 \,\mu m$
- $7 = 2 \,\mu m$
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M2000)

#### f Style

CD = Mounting threads M22x1.5, for O-Ring

- I Connection type
  - S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)
- m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

1) not included in scope of delivery 2) Non-usable area

a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

#### BTL7-S510-Mxxxx-CE-S32





#### BTL7-S5xx-Mxxxx-CE-S115





#### BTL7-S5xx-Mxxxx-CE-KA/FAxx



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

1) not included in scope of delivery 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



	BTL7 -H- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	I = S, SR: IP67 with connector I = K, KA, F, FA: IP68
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

A = Voltage output 0 ... 10 V G = voltage output -10 ... 10 V

#### **b** Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic 1 + 2 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

H = Compact rod, mounting threads M18x1.5, for O-Ring

#### **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### I Connection type

- S = Connector
- K = Cable out radial (PUR)
- KA = Cable out axial (PUR)
- F = Cable out radial (PTFE)
- FA = Cable out axial (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30

#### BTL7-A510-Mxxxx-H-SR32



# 1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

#### BTL7-G510-Mxxxx-H-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Instruction longth

11) Installation length

#### BTL7-A510-Mxxxx-H8-Kxx



#### 1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point

11) Installation length

0

# BTL7-G510-Mxxxx-H8-FAxx



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	BTL7 -H- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	I = S, SR: IP67 with connector I = K, KA, F, FA: IP68
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

H = Compact rod, mounting threads M18x1.5, for O-Ring

#### **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### I Connection type

- S = Connector
- K = Cable out radial (PUR)
- KA = Cable out axial (PUR)
- F = Cable out radial (PTFE)
- FA = Cable out axial (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-H-SR32



# 1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

#### BTL7-C570-Mxxxx-H-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Instruction longth

11) Installation length

#### BTL7-E570-Mxxxx-H8-Kxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

#### BTL7-C500-Mxxxx-H8-FAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point

11) Installation length

0

Sensors

RFID



	BTL5 -H- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 $\mu m,$ nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL5-ab-Mnnnn-fg-Im

#### 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

H = Compact rod, mounting threads M18x1.5, for O-Ring

#### g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

S = Connector, axial SR = Connector, radial K = Cable out radial (PUR) KA = Cable out axial (PUR)

#### m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

#### BTL5-P1-Mxxxx-H-S32



#### BTL5-P1-Mxxxx-H-KAxx



Sensors

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Accessories



	BTL5 -H- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30µm d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

# BTL5-abcde-Mnnnn-fg-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

#### a interface

S = SSI

# b Operating voltage

1 = 20 ... 28 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- 2 = 5 µm
- 3 = 10 µm
- $4 = 20 \ \mu m$
- 5 = 40 µm
- 6 = 100 µm
- 7 = 2 µm
- $8 = 50 \ \mu m$

#### e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

#### f Style

H = Compact rod, mounting threads M18x1.5, for O-Ring

#### g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

S = Connector, axial SR = Connector, radial K = Cable out radial (PUR)KA = Cable out axial (PUR)

#### m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters):

02, 05, 10, 15, 20

#### BTL5-Sxxxx-Mxxxx-H-S32



#### BTL5-Sxxxx-Mxxxx-H-KAxx



Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces


	BTL5 -H- SERIES - CANOPEN
Interface	CANopen
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 µm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-abcd-Mnnnn-fg-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

## a interface

H = CANopen

**b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 1 = 1 magnet
- 2 = 2 magnets
- 3 = 4 magnets

## d Interface characteristic 2

Data transmission rate:

- 0 = 1 MBaud 1 = 800 MBaud
- 2 = 500 kBaud
- 3 = 250 kBaud
- 4 = 125 kBaud
- 5 = 100 kBaud
- 6 = 50 kBaud
- 7 = 25 kBaud
- 8 = 10 kBaud

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

#### f Style

H = Compact rod, mounting threads M18x1.5, for O-Ring

## g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

S = Connector, axial SR = Connector, radial K = Cable out radial (PUR) KA = Cable out axial (PUR)

# **m** Connection type characteristic for connector: 92 = M12x1 connector with 5 pins

for cable (length in meters): 02, 05, 10, 15, 20

#### BTL5-Hxxx-Mxxxx-H-SR92



## BTL5-Hxxx-Mxxxx-H-KAxx



**Do you need more details?** Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

Connectivity



	BTL7 -W- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	I = S, SR: IP67 with connector I = K, KA, F, FA: IP68
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic 1 + 2 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

W = Compact rod, threads 3/4"-16UNF, for O-Ring

## g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

 $\begin{array}{l} S = \text{Connector} \\ K = \text{Cable out radial (PUR)} \\ KA = \text{Cable out axial (PUR)} \\ F = \text{Cable out radial (PTFE)} \\ FA = \text{Cable out axial (PTFE)} \end{array}$ 

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30



## 1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

## BTL7-G510-Mxxxx-W-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Instruction longth

- 11) Installation length

#### BTL7-A510-Mxxxx-W8-Kxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

## BTL7-G510-Mxxxx-W8-FAxx





1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point

11) Installation length

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Safety

Industrial Networking

Software and System Solutions

Power Supply

Connectivity



	BTL7 -W- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	I = S, SR: IP67 with connector I = K, KA, F, FA: IP68
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c + d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

W = Compact rod, threads 3/4"-16UNF, for O-Ring

## **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### I Connection type

- S = Connector
- K = Cable out radial (PUR)
- KA = Cable out axial (PUR)
- F = Cable out radial (PTFE)
- FA = Cable out axial (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins

for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-W-SR32



## 1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

#### BTL7-C570-Mxxxx-W-S115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Instruction longth

- 11) Installation length

#### BTL7-E570-Mxxxx-W8-Kxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

## BTL7-C500-Mxxxx-W8-FAxx



- Ø65 φ
- 1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point
  - 11) Installation length



	BTL5 -W- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 $\mu m,$ nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-ab-Mnnnn-fg-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

W = Compact rod, threads 3/4"-16UNF, for O-Ring

#### g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### I Connection type

S = Connector, axial SR = Connector, radial K = Cable out radial (PUR) KA = Cable out axial (PUR)

## m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

#### BTL5-P1-Mxxxx-W-S32



## BTL5-P1-Mxxxx-W-KAxx





	BTL5 -W- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30µm d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-abcde-Mnnnn-fg-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

#### a interface S = SSI

5 = 551

#### **b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- 5 20 bits, gray, laining

## d Interface characteristic 2

- 1 = 1 µm
- 2 = 5 µm
- 3 = 10 µm
- 4 = 20 µm
- $5 = 40 \ \mu m$
- 6 = 100 µm
- 7 = 2 µm
- 8 = 50 µm

## e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

#### f Style

W = Compact rod, threads 3/4"-16UNF, for O-Ring

## g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

S = Connector, axial SR = Connector, radial K = Cable out radial (PUR) KA = Cable out axial (PUR)

## m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

#### BTL5-Sxxxx-Mxxxx-W-S32



#### BTL5-Sxxxx-Mxxxx-W-KAxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Nell opint



	BTL5 -W- SERIES - CANOPEN
Interface	CANopen
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	±30 μm
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-abcd-Mnnnn-fg-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

## a interface

H = CANopen

**b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 1 = 1 magnet
- 2 = 2 magnets
- 3 = 4 magnets

## d Interface characteristic 2

- Data transmission rate:
- 0 = 1 MBaud
- 1 = 800 MBaud 2 = 500 kBaud
- 2 = 500 kBaud3 = 250 kBaud
- 4 = 125 kBaud
- 5 = 100 kBaud
- 6 = 50 kBaud
- 6 = 50 kBaud7 = 25 kBaud
- 7 = 25 kBaud 8 = 10 kBaud

## Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0050...M4000)

#### f Style

W = Compact rod, threads 3/4"-16UNF, for O-Ring

#### g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

S = Connector, axial

- SR = Connector, radial
- K = Cable out radial (PUR)
- KA = Cable out axial (PUR)

## m Connection type characteristic 1 for connector:

92 = M12x1 connector with 5 pins for cable (length in meters): 02, 05, 10, 15, 20

# Human Machine Interfaces

# Accessories

## BTL5-Hxxx-Mxxxx-W-KAxx



Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

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 6) for C-spanner Ø 58-62 10) Null point 11) Installation length



	BTL7 -HB- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $\begin{array}{l} A = Voltage \ output \ 0 \ ... \ 10 \ V \\ G = voltage \ output \ -10 \ ... \ 10 \ V \\ \end{array}$ 

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic **1 + 2** 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

## I Connection type

 $K = Cable out radial (PUR) \\ KA = Cable out axial (PUR) \\ F = Cable out radial (PTFE) \\ FA = Cable out axial (PTFE)$ 

## m Connection type characteristic 1

(length in meters) 02, 05, 10, 15, 20, 30

#### BTL7-A510-Mxxxx-HB-KAxx



#### BTL7-G510-Mxxxx-HB-Fxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Ø 5.1 for face wrench
 Null point
 Installation length

RFID

Accessories



	BTL7 -HB- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

#### I Connection type

 $K = Cable out radial (PUR) \\ KA = Cable out axial (PUR) \\ F = Cable out radial (PTFE) \\ FA = Cable out axial (PTFE)$ 

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-HB-KAxx



#### BTL7-C570-Mxxxx-HB-Fxx



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 6) for C-spanner Ø 58-62 7) Ø 5.1 for face wrench 10) Null point 11) Installation length Sensors



	BTL5 -HB- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 $\mu m,$ nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-ab-Mnnnn-f-Im

#### 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

HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

#### I Connection type

 $K = Cable out radial (PUR) \\ KA = Cable out axial (PUR) \\ F = Cable out radial (PTFE) \\ FA = Cable out axial (PTFE)$ 

#### m Connection type characteristic 1

(length in meters) 02, 05, 10, 15, 20

1) not included in scope of delivery 2) Non-usable area

Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Net Market

10) Null point 11) Installation length

57,0

#### BTL5-P1-Mxxxx-HB-Fxx



## BTL5-P1-Mxxxx-HB-FAxx



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 6) for C-spanner Ø 58-62 10) Null point 11) Installation length

Sensors



	BTL5 -HB- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30µm
	d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-abcde-Mnnnn-f-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

a interface S = SSI

**b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling

#### d Interface characteristic 2

- $1 = 1 \, \mu m$
- 2 = 5 µm
- 3 = 10 µm
- 4 = 20 µm
- 5 = 40 µm
- 6 = 100 µm
- 7 = 2 µm
- 8 = 50 µm

## e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

f Style HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

#### I Connection type

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20

1) not included in scope of delivery 2) Non-usable area

Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Net Market

10) Null point 11) Installation length

57,0

#### BTL5-Sxxxx-Mxxxx-HB-Fxx



## BTL5-Sxxxx-Mxxxx-HB-FAxx



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 6) for C-spanner Ø 58-62 10) Null point 11) Installation length



	BTL7 -WB- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $\begin{array}{l} A = Voltage \ output \ 0 \ ... \ 10 \ V \\ G = voltage \ output \ -10 \ ... \ 10 \ V \\ \end{array}$ 

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic **1 + 2** 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

WB = Pro Compact inch threads 3/4"-16UNF, for O-Ring

## I Connection type

 $K = Cable out radial (PUR) \\ KA = Cable out axial (PUR) \\ F = Cable out radial (PTFE) \\ FA = Cable out axial (PTFE)$ 

m Connection type characteristic 1

(length in meters) 02, 05, 10, 15, 20, 30

#### BTL7-A510-Mxxxx-WB-KAxx



#### BTL7-G510-Mxxxx-WB-Fxx



- not included in scope of delivery
  Non-usable area
  Nominal length = Measuring length
  Mounting surface
  Internal threads M4x4/6 deep
  for C-spanner Ø 58-62
  Ø 5.1 for face wrench
  Null point
  Internation length
- 11) Installation length



	BTL7 -WB- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC + WEEE I = F, FA: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-f-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

C = Current output 0 ... 20 mA E = Current output 4 ... 20 mA

#### b Operating voltage

5 = 10 ... 30 V

#### c + d Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

WB = Pro Compact, inch threads 3/4"-16UNF, for O-Ring

#### I Connection type

K = Cable out radial (PUR) KA = Cable out axial (PUR) F = Cable out radial (PTFE) FA = Cable out axial (PTFE)

## m Connection type characteristic 1 (length in meters)

02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-WB-KAxx



#### BTL7-C570-Mxxxx-WB-Fxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Ø 5.1 for face wrench
 Null point
 Internal lation length

Sensors



	BTL5 -WB- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 $\mu m,$ nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-ab-Mnnnn-f-Im

#### 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

WB = Pro Compact, inch threads 3/4"-16UNF, for O-Ring

#### I Connection type

 $K = Cable out radial (PUR) \\ KA = Cable out axial (PUR) \\ F = Cable out radial (PTFE) \\ FA = Cable out axial (PTFE)$ 

#### m Connection type characteristic 1

(length in meters) 02, 05, 10, 15, 20

1) not included in scope of delivery 2) Non-usable area

Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Net Market

10) Null point 11) Installation length

57,0

#### BTL5-P1-Mxxxx-WB-Fxx



## BTL5-P1-Mxxxx-WB-FAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Nell opint 10) Null point 11) Installation length



	BTL5 -WB- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30µm
	d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
IP rating	IP68/IP69K
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-abcde-Mnnnn-f-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

a interface S = SSI

**b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- o zo bito, gray, lainig

#### d Interface characteristic 2

- 1 = 1 µm
- 2 = 5 µm
- $3 = 10 \ \mu m$
- 4 = 20 µm
- 5 = 40 µm
- $6 = 100 \ \mu m$
- 7 = 2 µm
- 8 = 50 µm
- e Interface characteristic 3
  - B = Synchronous mode
  - = Asynchronous mode

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

f Style WB = Pro Compact, inch threads 3/4"-16UNF, for O-Ring

#### I Connection type

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20

1) not included in scope of delivery 2) Non-usable area

Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 for C-spanner Ø 58-62
 Net Market

10) Null point 11) Installation length

57,0

#### BTL5-Sxxxx-Mxxxx-WB-Fxx



#### BTL5-Sxxxx-Mxxxx-WB-FAxx



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 6) for C-spanner (Ø 58-62 10) Null point 11) Installation length RFID

Accessories



	BTL7 -K- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00250500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	I = K: CE + cULus + EAC + WEEE I = F: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $\begin{array}{l} A = Voltage \ output \ 0 \ ... \ 10 \ V \\ G = voltage \ output \ -10 \ ... \ 10 \ V \\ \end{array}$ 

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic **1 + 2** 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

K = Compact rod, plug-in flange 18h6, for O-Ring

## g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

- SR = Connector
- K = Cable out radial (PUR)
- F = Cable out radial (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30

#### BTL7-A510-Mxxxx-K-SR32





## BTL7-G510-Mxxxx-K-SR115



- not included in scope of delivery
  Non-usable area
  Nominal length = Measuring length
  Mounting surface
  Internal threads M4x4/6 deep
  Null point
  latesticing length

- 11) Installation length

#### BTL7-A510-Mxxxx-K8-Kxx





2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

1) not included in scope of delivery

Software and System Solutions

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	BTL7 -K- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	I = K: CE + cULus + EAC + WEEE I = F: CE + EAC + WEEE
Ex category	-

## BTL7-abcd-Mnnnn-fg-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

## a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

K = Compact rod, plug-in flange 18h6, for O-Ring

## g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

## I Connection type

SR = Connector

- K = Cable out radial (PUR)
- F = Cable out radial (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins 115 = M12x1 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-K-SR32



## 1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

#### BTL7-C570-Mxxxx-K-SR115



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 latesticing length

- 11) Installation length

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

11) Installation length

## BTL7-E570-Mxxxx-K8-Kxx





4) Mounting surface 10) Null point

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	BTL5 -K- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 μm nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-ab-Mnnnn-fg-Im

#### 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

K = Compact rod, plug-in flange 18h6, for O-Ring

#### g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

SR = Connector, radial K = Cable out radial (PUR)

## m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

#### BTL5-A11-Mxxxx-K-SR32



#### BTL5-G11-Mxxxx-K8-Kxx



- not included in scope of delivery
  Non-usable area
  Nominal length = Measuring length
  Mounting surface
  Internal threads M4x4/6 deep
  Null point
  lasteriating length
- 11) Installation length



	BTL5 -K- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	±1LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30µm d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2028 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE cULus EAC WEEE
Ex category	-

## BTL5-abcde-Mnnnn-fg-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

#### a interface

S = SSI

#### b Operating voltage

1 = 20 ... 28 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- 2 = 5 µm
- 3 = 10 µm
- $4 = 20 \ \mu m$
- 5 = 40 µm
- 6 = 100 µm
- 7 = 2 µm
- $8 = 50 \ \mu m$

#### e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

#### f Style

K = Compact rod, plug-in flange 18h6, for O-Ring

## g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### I Connection type

SR = Connector, radial K = Cable out radial (PUR)

## m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

#### BTL5-Sxxxx-Mxxxx-K-Kxx



- 1) not included in scope of delivery 2) Non-usable area 2) Non-usable area
   3) Nominal length = Measuring length
   4) Mounting surface
   5) Internal threads M4x4/6 deep
   10) Null point
   41) Internation in the surface
- 11) Installation length

## BTL5-Sxxxx-Mxxxx-K8-SR32

L



- 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 6) Detail locating hole. (6x) 7) Lochwasher

- 7) Lockwasher 8) Ø9 DIN 6799

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Connectivity


	BTL7 -SF- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	502500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05012500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 1 1/2" Tri Clamp
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	CE 3-A EAC WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

# a interface A = Voltage output 0 ... 10 V

- **b** Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c + d** Interface characteristic **1 + 2** 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M2500: for rod diameter

(M0025...M2500: for rod diameter 10.2 mm)

- f Style SF = Level transducer, 1.5" Tri-Clamp
- I Connection type F = Cable out radial (PTFE)
- m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Installation length

Sensors

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	BTL7 -SF- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	502500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05012500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 1 1/2" Tri Clamp
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	CE 3-A EAC WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

# b Operating voltage

5 = 10 ... 30 V

# **c** + **d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

# Mnnnn Nominal length (4-position) M0500 = metric in mm

(M0025...M2500: for rod diameter 10.2 mm)

# f Style SF = Level transducer, 1.5" Tri-Clamp

# I Connection type F = Cable out radial (PTFE)

# m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 50, 100

66

g

# BTL7-E500-Mxxxx-SF-Fxx



# not included in scope of delivery Non-usable area Nominal length = Measuring length Installation length

# BTL7-C570-Mxxxx-SF-Fxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Installation length

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	BTL6 -E- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	502000 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 200 μm nnnn > 0500: ± 0.04% FS (typ.± 0.02% FS)
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 48h7 fit
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	I = KA: CE + cULus + EAC + WEEE I = LA: CE + EAC + WEEE
Ex category	-

# BTL6

Magnetostrictive linear position sensor Generation 6

# a interface

# **b** Operating voltage $5 = 10 \dots 30 \text{ V}$

# c + d Interface characteristic 1 + 2

00 = 1 output, rising

02 = 1 output, only if a = B, then 0.25 ... 4.75 V

03 = 1 output, only if a = B, then 0.5 ... 4.5 V

# Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0050...M1016: for rod diameter 8 mm) (M0050...M2000: for rod diameter 10.2 mm)

# f Style E2 = Mounting flange 18h6

# g Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm

I Connection type KA = Cable (PUR) LA = Leads (TPE-E)

# m Connection type characteristic 1

for leads (length in meters): 0,07, 0,15, 0,20, 0,30 for cable (length in meters): 02, 05, 10, 15, 20

# BTL6-A500-Mxxxx-E2-KAxx

BTL6-B500-Mxxxx-E28-LAxx

25,

7

21

10)

4) 2)

Ø24

25

0

3

12)

4

7,5



11)

2)

08

S

3)

1)

# Ø48 f7 Ø38,9

Ø48 f7

Ø38,9

1) not included in scope of delivery 2) Non-usable area Norn-usable area
 Nornial length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length
 Cable length

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Null point
 Installation length
 Cable length

12) Cable length

Sensors

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	BTL6 -E- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	502000 mm
Repeat accuracy	± 5 μm
Linearity deviation	nnnn = 00500500: ± 200 µm nnnn > 0500: ± 0.04% FS (typ.± 0.02% FS)
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 48h7 fit
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	I = KA: CE + cULus + EAC + WEEE I = LA: CE + EAC + WEEE
Ex category	-

# BTL6

Magnetostrictive linear position sensor Generation 6

a interface E = Current output 4 ... 20 mA

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** + **d** Interface characteristic 1 + 2 00 = 1 output, rising

#### **Mnnnn Nominal length (4-position)** M0500 = metric in mm

(M0050...M1016: for rod diameter 8 mm) (M0050...M2000: for rod diameter 10.2 mm)

- f Style E2 = Mounting flange 18h6
- **g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- I Connection type KA = Cable (PUR) LA = Leads (TPE-E)

m Connection type characteristic 1 for leads (length in meters): 0,07, 0,15, 0,20, 0,30 for cable (length in meters): 02, 05, 10, 15, 20, 30

# BTL6-E500-Mxxxx-E2-KAxx

BTL6-E500-Mxxxx-E28-LAxx

25,

7

21

10)

4)

3





Ø48 f7

Ø38,9

1) not included in scope of delivery 2) Non-usable area Norn-usable area
 Nornial length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length
 Cable length

# Accessories

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11)

3)

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Null point
 Installation length
 Cable length

12) Cable length



	BTL6 -E- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	502000 mm
Repeat accuracy	≤ 30 µm
Linearity deviation	nnnn = 00500500: ± 200 µm, nnnn > 0500: ± 0.04% FS (typ.± 0.02% FS)
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 48h7 fit
Housing material	Stainless steel (1.4404)
IP rating	IP67
Approval/Conformity	I = KA: CE + cULus + EAC + WEEE I = LA: CE + EAC + WEEE
Ex category	-

# BTL6

Magnetostrictive linear position sensor Generation 6

a interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c + d** Interface characteristic 1 + 2 10 = Digital start/stop interface

# Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0050...M1016: for rod diameter 8 mm) (M0050...M2000: for rod diameter 10.2 mm)

f Style

E2 = Mounting flange 18h6

- **g** Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- I Connection type KA = Cable (PUR) LA = Leads (TPE-E)
- m Connection type characteristic 1 for leads (length in meters): 0,07, 0,15, 0,20, 0,30 for cable (length in meters): 02, 05, 10, 15, 20, 30

# BTL6-P510-Mxxxx-E2-KAxx





1) not included in scope of delivery 2) Non-usable area Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

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BTL6-P510-Mxxxx-E28-LAxx





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface



	BTL7 -TB- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 200 μm nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	$\begin{array}{l} nnnn \leq 500: \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500: \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

A = Voltage output 0 ... 10 V G = voltage output -10 ... 10 V

# **b** Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025 M7620; for rod diameter

(M0025...M7620: for rod diameter 10.2 mm)

# f Form factor

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

# h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

# **Connection type characteristic 1** for connector: 32 = M16x0.75 connector with 8 pins

135 = M16x0.75 connector with 6 pins for cable (length in meters): 02, 05, 10, 15, 20

# BTL7-A504-Mxxxx-TB2-S32



1) not included in scope of delivery 2) Non-usable area Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74

7) Ø6.1 for hook wrench Ø74 10) Null point

11) Installation length

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# BTL7-G505-Mxxxx-TB3-S135



BTL7-A505-Mxxxx-TB3-KAxx

BTL7-G504-Mxxxx-TB2-FAxx

12

Ø5,7 (2x)

120



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

- 6) LED function indicator
  7) Ø6.1 for hook wrench Ø74

22
0
5
\$

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80

10

2) 0

25

3

M18x1.5

11)

2)

Ø 10,2

5

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ń

0,5/Ø30

- 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
  5) Internal threads M4x4/6 deep
- 5) Internal threads M4x4/6 dec 6) LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length

1) not included in scope of delivery

Ø74

6)

0

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	BTL7 -TB- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	$\begin{array}{l} nnnn \leq 500: \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500: \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

C = Current output 0 ... 20 mA E = Current output 4 ... 20 mA

#### b Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

# f Form factor

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

# h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 135 = M16x0.75 connector with 6 pins for cable (length in meters): 02, 05, 10, 15, 20

#### BTL7-E504-Mxxxx-TB2-S32



1) not included in scope of delivery 2) Non-usable area Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

61

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# BTL7-C505-Mxxxx-TB3-S135



- not included in scope of delivery
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
   LED function indicator
   Q61 if a book warpach Q74

- 7) Ø6.1 for hook wrench Ø74 10) Null point
- 11) Installation length

# BTL7-E505-Mxxxx-TB3-KAxx

BTL7-C504-Mxxxx-TB2-FAxx

12

Ø5,7 (2x)

120



# 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 5) Internal threads M4x4/6 deep

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

4) Mounting surface
5) Internal threads M4x4/6 deep

b) Internal threads M4x4/8 dec
 b) LED function indicator
 c) Ø6.1 for hook wrench Ø74
 n) Null point
 nstallation length
 cable length

- 6) LED function indicator
  7) Ø6.1 for hook wrench Ø74

Ø74

6)

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# Power Supply

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0,5/Ø30

80

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2) 0

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M18x1.5

11)

2)

Ø 10,2

5

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	BTL7 -TB- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 252000: ± 60 μm nnnn = 20015500: ± 200 μm nnnn > 5500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

a Interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

f Form factor TB = Mounting threads M18x1.5, for O-Ring

- h Redundancy 2 = 2 times redundant 3 = 3 times redundant
- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

**m** Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins

for cable (length in meters): 02, 05, 10, 15, 20 (only when h = 2 and Mnnnn < 2541 mm

# BTL7-P511-Mxxxx-TB2-S32



1) not included in scope of delivery 2) Non-usable area Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

Ø74

6)

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# BTL7-P511-Mxxxx-TB3-KAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 20 65 1 for book wranch 074 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length

# BTL7-P511-Mxxxx-TB3-FAxx



- 1) not included in scope of delivery Non-usable area
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep

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	BTL7 -TB- SERIES - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnn = 252000: ± 60 µm nnnn = 20015500: ± 200 µm d = 4, 5: nnnn = 252000: ± 4 LSB nnnn = 20015500: ± 200 µm d = 6, 8: nnnn = 255500: ± 4 LSB nnnn > 5500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SS

b Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

# d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- 3 = 10 µm
- 4 = 20 µm
- 5 = 40 µm
- 6 = 100 µm
- $7 = 2 \ \mu m$
- $8 = 50 \ \mu m$

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

# f Form factor

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

- g Form factor characteristic
  - = Rod diameter 10.2 mm

# h Redundant

- 2 = 2 times redundant 3 = 3 times redundant

# I Connection type

- S = Connector KA = Cable (PUR)
- FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

# BTL7-S5xxD-Mxxxx-TB2-S32





Ø74

6)

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# BTL7-S5xxD-Mxxxx-TB3-KAxx



# BTL7-S5xxD-Mxxxx-TB3-FAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 20 65 1 for book wranch 074 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length

- Non-usable area
   Noninal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep b) Internal threads M4X4/6 dee
   b) LED function indicator
   c) A6.1 for hook wrench Ø74
   c) Null point
   c) Null point
   c) Installation length
   c) Cable length

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	BTL7 -TZ- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	$\begin{array}{l} nnnn \leq 500: \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500: \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

A = Voltage output 0 ... 10 V G = voltage output -10 ... 10 V

# **b** Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

f Form factor TZ = Threads 3/4"-16UNF, for O-Ring

# h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 135 = M16x0.75 connector with 6 pins for cable (length in meters): 02, 05, 10, 15, 20

#### BTL7-A504-Mxxxx-TZ2-S32



1) not included in scope of delivery 2) Non-usable area Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

#### BTL7-G505-Mxxxx-TZ3-S135



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 7) Ø6.1 for hook wrench Ø74 10) Null point

11) Installation length

# BTL7-A505-Mxxxx-TZ3-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep 6) LED function indicator
7) Ø6.1 for hook wrench Ø74

- 10) Null point 11) Installation length
- 12) Cable length

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# BTL7-G504-Mxxxx-TZ2-FAxx



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	BTL7 -TZ- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 μm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	$\begin{array}{l} nnnn \leq 500: \\ I = S, KA: CE + cULus + EAC + GL + WEEE \\ I = FA: CE + EAC + GL + WEEE \\ nnnn > 500: \\ I = S, KA: CE + cULus + EAC + WEEE \\ I = FA: CE + EAC + WEEE \end{array}$
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

# b Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

# Mnnnn Nominal length (4-position) M0500 = metric in mm

(M0025...M7620: for rod diameter 10.2 mm)

f Form factor

TZ = Threads 3/4"-16UNF, for O-Ring

#### h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

#### m Connection type characteristic 1 for connector: 32 – M16x0 75 connector with 8 pins

32 = M16x0.75 connector with 8 pins 135 = M16x0.75 connector with 6 pins for cable (length in meters): 02, 05, 10, 15, 20

# BTL7-E504-Mxxxx-TZ2-S32



1) not included in scope of delivery 2) Non-usable area Non-Usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

# BTL7-C505-Mxxxx-TZ3-S135



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 7) Ø6.1 for hook wrench Ø74 10) Null point

11) Installation length

BTL7-E505-Mxxxx-TZ3-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

- 6) LED function indicator
  7) Ø6.1 for hook wrench Ø74
- 10) Null point 11) Installation length

12) Cable length

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# BTL7-C504-Mxxxx-TZ2-FAxx



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	BTL7 -TZ- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 252000: ± 60 μm nnnn = 20015500: ± 200 μm nnnn > 5500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

a Interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

f Form factor TZ = Threads 3/4""-16UNF, for O-Ring

- h Redundancy 2 = 2 times redundant 3 = 3 times redundant
- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20 (only when h = 2 and Mnnnn < 2541 mm

# BTL7-P511-Mxxxx-TZ2-S32



1) not included in scope of delivery 2) Non-usable area Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

# BTL7-P511-Mxxxx-TZ3-KAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length

# BTL7-P511-Mxxxx-TZ3-FAxx



1) not included in scope of delivery Non-usable area
 Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

- b) Internal threads M4X4/6 dee
   b) LED function indicator
   c) A6.1 for hook wrench Ø74
   c) Null point
   c) Null point
   c) Installation length
   c) Cable length



	BTL7 -TZ- SERIES - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤±5µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 252000: ± 60 µm nnnn = 20015500: ± 200 µm d = 4, 5: nnnn = 252000: ± 4 LSB nnnn = 20015500: ± 200 µm d = 6, 8: nnnn = 255500: ± 4 LSB nnnn > 5500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

b Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

# d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- 4 = 20 µm
- $5 = 40 \ \mu m$
- $6 = 100 \ \mu m$
- 7 = 2 µm
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)
- f Form factor

TZ = Threads 3/4"-16UNF, for O-Ring

**g** Form factor characteristic rod diameter 10.2 mm

# h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type

S = Connector KA = Cable (PUR) FA = Cable (PTFE)

# m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

# BTL7-S5xxD-Mxxxx-TZ2-S32



1) not included in scope of delivery 2) Non-usable area Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

# BTL7-S5xxD-Mxxxx-TZ3-KAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length

# BTL7-S5xxD-Mxxxx-TZ3-FAxx



1) not included in scope of delivery Non-usable area
 Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

- b) Internal threads M4X4/6 dee
   b) LED function indicator
   c) A6.1 for hook wrench Ø74
   c) Null point
   c) Null point
   c) Installation length
   c) Cable length



	BTL7 -TK- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

# b Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

f Form factor TK = plug-in flange 18h6,, for O-Ring

#### **g** Form factor characteristic - = Rod diameter 10.2 mm

# h Redundant

- 2 = 2 times redundant 3 = 3 times redundant
- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 135 = M16x0.75 connector with 6 pins for cable (length in meters): 02, 05, 10, 15, 20

# BTL7-A504-Mxxxx-TK2-S32



# BTL7-G505-Mxxxx-TK3-S135



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 11) Installation length 14) not installed

# BTL7-A505-Mxxxx-TK3-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

1) not included in scope of delivery

- 4) Mounting surface
  5) Internal threads M4x4/6 deep
- 5) internal threads M4X4/5 dee 6) LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length 14) not installed

7) Ø6.1 for hook wrench Ø74 10) Null point

BTL7-G504-Mxxxx-TK2-FAxx



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	BTL7 -TK- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 μm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	_

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

# **b** Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

f Form factor TK = plug-in flange 18h6,, for O-Ring

# h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins 135 = M16x0.75 connector with 6 pins for cable (length in meters): 02, 05, 10, 15, 20

# BTL7-E504-Mxxxx-TK2-S32



# BTL7-C505-Mxxxx-TK3-S135



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 14) not installed

# BTL7-E505-Mxxxx-TK3-KAxx

BTL7-C504-Mxxxx-TK2-FAxx

Ø5,7 (2x)

12

120



10)

14)

2)

4) 25

3

1)

11)

Ø18h6

2)

Ø10,2

1) not included in scope of delivery

- 2) Non-usable area3) Nominal length = Measuring length
- 4) Mounting surface
  5) Internal threads M4x4/6 deep
- 5) internal threads M4X4/5 dee 6) LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length 14) not installed

Ø74

6)

6

6

Ø**7**9

6

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

4) Mounting surface
5) Internal threads M4x4/6 deep

6) LED function indicator
7) Ø6.1 for hook wrench Ø74

10) Null point 11) Installation length

12) Cable length 14) not installed

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	BTL7 -TK- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 252000: ± 60 μm nnnn = 20015500: ± 200 μm nnnn > 5500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

#### BTL7

Magnetostrictive linear position sensor Generation 7

a Interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

# Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

f Form factor TK = plug-in flange 18h6,, for O-Ring

- h Redundancy 2 = 2 times redundant 3 = 3 times redundant
- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector:
32 = M16x0.75 connector with 8 pins for cable (length in meters):
02, 05, 10

# BTL7-P511-Mxxxx-TK2-S32



# BTL7-P511-Mxxxx-TK3-KAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length 14) not installed

# BTL7-P511-Mxxxx-TK3-FAxx



1) not included in scope of delivery

- Non-usable area
   Noninal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
- 5) internal threads M4X4/5 dee 6) LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length 14) not installed



	BTL7 -TK- SERIES - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 252000: ± 60 µm nnnn = 20015500: ± 200 µm d = 4, 5: nnnn = 252000: ± 4 LSB nnnn = 20015500: ± 200 µm d = 6, 8: nnnn = 255500: ± 4 LSB nnnn > 5500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

b Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

# c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- 3 = 10 µm
- $4 = 20 \ \mu m$
- 5 = 40 µm
- $6 = 100 \,\mu m$
- 7 = 2 µm
- 8 = 50 µm

e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

# f Form factor

TK = plug-in flange 18h6,, for O-Ring

g Form factor characteristic - = Rod diameter 10.2 mm

#### h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1

for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20

# BTL7-S5xxD-Mxxxx-TK2-S32



# BTL7-S5xxD-Mxxxx-TK3-KAxx



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator
 Q61 if a book warpach Q74 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length 14) not installed

# BTL7-S5xxD-Mxxxx-TK3-FAxx



1) not included in scope of delivery

- Non-usable area
   Noninal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
- 5) internal threads M4X4/5 dee 6) LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length 12) Cable length 14) not installed



	BTL7 -TT- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	253250 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 200 µm, nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	$\begin{split} & nnnn \leq 240; \\ & I = S, KA: CE + cULus + EAC + GL + WEEE \\ & I = FA: CE + EAC + GL + WEEE \\ & nnnn > 240; \\ & I = S, KA: CE + cULus + EAC + WEEE \\ & I = FA: CE + EAC + WEEE \end{split}$
Ex category	-

# BTL7

Magnetostrictive linear position sensor Generation 7

# a interface

 $\begin{array}{l} A = Voltage \ output \ 0 \ ... \ 10 \ V \\ G = voltage \ output \ -10 \ ... \ 10 \ V \\ \end{array}$ 

# b Operating voltage

5 = 10 ... 30 V

- **c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M3250)

# f Form factor

TT = Mounting threads M30x1.5, for O-Ring

- g Form factor characteristic
  - = Rod diameter 21 mm

#### h Redundant

2 = 2 times redundant 3 = 3 times redundant

# I Connection type S = Connector

KA = Cable (PUR) FA = Cable (PTFE)

**m** Connection type characteristic 1 for connector:
 32 = M16x0.75 connector with 8 pins

for cable (length in meters): 02, 05, 10

# BTL7-A504-Mxxxx-TT2-S32



# BTL7-G505-Mxxxx-TT3-S32



BTL7-A505-Mxxxx-TT3-KAxx



2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

1) not included in scope of delivery

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 Null coint

10) Null point 11) Installation length

- 6) LED function indicator
- 10) Null point
- 11) Installation length 12) Cable length

# BTL7-G504-Mxxxx-TT2-FAxx



1) not included in scope of delivery Non-usable area
 Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

- 6) LED function indicator
  10) Null point
  11) Installation length
  12) Cable length

Sensors

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	BTL7 -TT- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	253250 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	$\begin{split} & nnnn \leq 240; \\ & I = S, KA: CE + cULus + EAC + GL + WEEE \\ & I = FA: CE + EAC + GL + WEEE \\ & nnnn > 240; \\ & I = S, KA: CE + cULus + EAC + WEEE \\ & I = FA: CE + EAC + WEEE \end{split}$
Ex category	-

# BTL7-abcd-Mnnnn-fh-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

- **c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M3250)

f Form factor TT = Mounting threads M30x1.5,

for O-Ring

#### h Redundant

2 = 2 times redundant 3 = 3 times redundant

I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)

m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10

#### BTL7-E504-Mxxxx-TT2-S32



# 1) not included in scope of delivery 2) Non-usable area Non-Usable area Nominal length = Measuring length Mounting surface Internal threads M4x4/6 deep LED function indicator 10) Null point 11) Installation length

# BTL7-C505-Mxxxx-TT3-S32



# not included in scope of delivery Non-usable area Nominal length = Measuring length Mounting surface Internal threads M4x4/6 deep ED function indicator Null coint 10) Null point 11) Installation length

# BTL7-E505-Mxxxx-TT3-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

- 4) Mounting surface
  5) Internal threads M4x4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length 12) Cable length

# BTL7-C504-Mxxxx-TT2-FAxx



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5) Internal threads M4x4/6 deep

- 6) LED function indicator
  10) Null point
  11) Installation length
  12) Cable length

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	BTL7 -TT- SERIES - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7, 9: nnnn = 252000: ± 60 µm nnnn = 20013250: ± 200 µm d = 4, 5: nnnn = 252000: ± 4 LSB nnnn = 20013250: ± 200 µm d = 6, 8: nnnn = 253250: ± 4 LSB
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcde-Mnnnn-fh-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a Interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- 4 = 20 µm
- 5 = 40 µm
- 6 = 100 µm
- $7 = 2 \ \mu m$
- $8 = 50 \ \mu m$
- $9 = 0.5 \ \mu m$

- e Interface characteristic 3 D = Synchronous / configurable
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M3250)

#### f Form factor

TT = Mounting threads M30x1.5, for O-ring, rod diameter 21 mm

#### h Redundancy

2 = 2 times redundant 3 = 3 times redundant

#### I Connection type

S = ConnectorKA = Cable (PUR)FA = Cable (PTFE)

# m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10

#### BTL7-S5xxD-Mxxxx-TT2-S32



#### BTL7-S5xxD-Mxxxx-TT3-KAxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 Null coint

- 10) Null point11) Installation length12) Cable length

#### BTL7-S5xxD-Mxxxx-TT3-FAxx



- 1) not included in scope of delivery Non-usable area
   Noninal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
- 6) LED function indicator
- 10) Null point11) Installation length12) Cable length

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	BTL7 -TT- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	nnnn = 00252000: ± 60 μm nnnn = 20013250: ± 200 μm
Operating voltage Ub	1030 VDC
Ambient temperature	-4085 °C
Mechanical configuration	Fastening M30 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	I = S, KA: CE + cULus + EAC + WEEE I = FA: CE + EAC + WEEE
Ex category	-

# BTL7-abcd-Mnnnn-fh-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a Interface P = Digital pulse interface

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M3250)

f Form factor TT = Mounting threads M30x1.5, for O-ring, rod diameter 21 mm

# **Redundancy** 2 = 2 times redundant 3 = 3 times redundant

- I Connection type S = Connector KA = Cable (PUR) FA = Cable (PTFE)
- **Connection type characteristic 1** for connector:
   32 = M16x0.75 connector with 8 pins

for cable (length in meters): 02, 05, 10

#### BTL7-P511-Mxxxx-TT2-S32



# BTL7-P511-Mxxxx-TT3-KAxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 Null coint

- 10) Null point11) Installation length12) Cable length

#### BTL7-P511-Mxxxx-TT3-FAxx



- 1) not included in scope of delivery Non-usable area
   Noninal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
- 6) LED function indicator
- 10) Null point11) Installation length12) Cable length

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	BTL7 -B-DEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening M18 threads
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEX EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb. IECEX: EPL Gc. IECEX: EPL Db. IECEX: EPL Dc

# BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

A = Voltage output 0 ... 10 V G = voltage output -10 ... 10 V

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic **1 + 2** 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position) M0500 = metric in mm

(M0025...M7620: for rod diameter 10.2 mm)

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

i Variant DEX = Ignition protection category "d" / pressure-proof encapsulation

- j Variant characteristic A = float plug B = short plug
- I Connection type K = Cable out radial (PUR) KA = Cable out axial (PUR)
- m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

#### BTL7-A510-Mxxxx-B-DEXB-Kxx





0

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length

# BTL7-G510-Mxxxx-B-DEXA-KAxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Null point
 Installation length

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	BTL7 -B-DEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening M18 threads
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc, IECEX: EPL Db, IECEX: EPL Dc

# BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c + d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

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

#### i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

- j Variant characteristic A = float plug
  - B =short plug

#### I Connection type

K = Cable out radial (PUR) KA = Cable out axial (PUR)

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-B-DEXB-K05





0

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length

# BTL7-C570-Mxxxx-B-DEXA-KA05



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Null point
 Installation length

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	BTL5 -B-DEX- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 $\mu m,$ nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2026 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	-
IP rating	IP67
Approval/Conformity	CE EAC IECEX KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

# BTL5-ab-Mnnnn-fg-ij-Im

#### 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

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

# 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
- I Connection type K = Cable out radial (PUR) KA = Cable out axial (PUR)
- m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

#### BTL5-Px-Mxxxx-B-DEXB-Kxx





1) not included in scope of delivery 2) Non-usable area 2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface 11) Installation length

# BTL5-Px-Mxxxx-B-DEXA-KAxx





1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

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	BTL5 -B-DEX- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30µm d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2026 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	-
IP rating	IP67
Approval/Conformity	CE EAC IECEX KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc

# BTL5-abcde-Mnnnn-fg-ij-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

- a interface S = SSI
- **b Operating voltage** 1 = 20 ... 26 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- 5 20 bits, gray, laining

# d Interface characteristic 2

- 1 = 1 µm
- 2 = 5 µm
- $3 = 10 \ \mu m$
- 4 = 20 µm
- $5 = 40 \ \mu m$
- $6 = 100 \ \mu m$
- 7 = 2 µm
- 8 = 50 µm

# e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)
- f Style B = Mounting threads M18x1.5, for O-Ring
- **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

#### I Connection type

K = Cable out radial (PUR) KA = Cable out axial (PUR)

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

#### BTL5-Sxxxx-Mxxxx-B-DEXB-Kxx





1) not included in scope of delivery 2) Non-usable area 2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface 11) Installation length

# BTL5-Sxxxx-Mxxxx-B-DEXA-KAxx





1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

RFID



	BTL7 -B-DEX- SERIES - PROFIBUS
Interface	Profibus
Measuring length	257620 mm
Repeat accuracy	≤ ± 10 μm
Linearity deviation	nnnn = 00505500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEx WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb. IECEX: EPL Gc. IECEX: EPL Db. IECEX: EPL Dc

# BTL7-abcd-Mnnnn-fg-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

- a interface T = PROFIBUS DP
- **b** Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** + **d** Interface characteristic 1 + 2 00 = Flexible number of magnets

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

- f Style B = Mounting threads M18x1.5, for O-Ring
- **g** Form factor characteristic - = Rod diameter 10.2 mm
- i Variant DEX = Ignition protection category "d" / pressure-proof encapsulation

#### j Variant characteristic A/D = float plug B/E = short plug

I Connection type K = Cable out radial (PUR) / only for variant characteristic A or B KA = Cable out axial (PUR) / only for variant characteristic A or B ZA1K = Wiring chamber for attachment cover / only for variant characteristic D or E

m Connection type characteristic 1 for cable (length in meters): 02, 05, 10, 15, 20, 50

#### BTL7-T500-Mxxxx-B-DEXB-Kxx

BTL7-T500-Mxxxx-B-DEXA-KAxx

10)

2)

25

66,5

0

0

21

10,6

ė



Ø79,8 Ø60

Ø79,8

otin 60

Ø79.8

 not included in scope of delivery
 Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

1) not included in scope of delivery

4) Mounting surface
5) Internal threads M4x4/6 deep 10) Null point 11) Installation length

2) Non-usable area3) Nominal length = Measuring length

10) Null point 11) Installation length

Sensors

# Accessories

66.5 10)

BTL7-T500-Mxxxx-B-DEXE-ZA1K

4) 0,5/Ø25



11)

11)

2)

φ

Ø10,2

3)

1)

M18x1,5

#### BTL7-T500-Mxxxx-B-DEXD-ZA1K



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point

11) Installation length

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including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



	BTL7 -Z-DEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEX EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc, IECEX: EPL Db, IECEX: EPL Dc

# BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $\begin{array}{l} A = Voltage \ output \ 0 \ ... \ 10 \ V \\ G = voltage \ output \ -10 \ ... \ 10 \ V \\ \end{array}$ 

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic 1 + 2 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

Z = Inch threads 3/4"-16UNF, for O-Ring

#### i Variant

DEX = Ignition protection category ",d" / pressure-proof encapsulation

- j Variant characteristic A = float plug
  - B =short plug

#### I Connection type

K = Cable out radial (PUR) KA = Cable out axial (PUR)

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

### BTL7-A510-Mxxxx-Z-DEXB-K05





[i]

6

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length

# BTL7-G510-Mxxxx-Z-DEXA-KA05



1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length RFID

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	BTL7 -Z-DEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEX EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb. IECEX: EPL Gc. IECEX: EPL Db. IECEX: EPL Dc

# BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

- **c** + **d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

- f Style Z = Inch threads 3/4"-16UNF, for O-Ring
- i Variant DEX = Ignition protection category "d" / pressure-proof encapsulation
- j Variant characteristic A = float plug B = short plug
- I Connection type K = Cable out radial (PUR) KA = Cable out axial (PUR)
- m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-Z-DEXB-K05





[i]

6

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length

# BTL7-C570-Mxxxx-Z-DEXA-KA05



1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length RFID

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Connectivity



	BTL5 -Z-DEX- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 $\mu m,$ nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2026 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	_
IP rating	IP67
Approval/Conformity	CE EAC IECEX KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

# 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

Z = Inch threads 3/4"-16UNF, for O-Ring

#### Form factor characteristic g

- = Rod diameter 10.2 mm

#### i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

- j Variant characteristic
  - A = float plug
  - B = short plug

#### I Connection type

K = Cable out radial (PUR) KA = Cable out axial (PUR)

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

#### BTL5-Px-Mxxxx-Z-DEXB-Kxx





1) not included in scope of delivery 2) Non-usable area Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

# BTL5-Px-Mxxxx-Z-DEXA-KAxx





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

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	BTL5 -Z-DEX- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30µm d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2026 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	-
IP rating	IP67
Approval/Conformity	CE EAC IECEx KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEX: EPL Ga IECEX: EPL Gb IECEX: EPL Gc

# BTL5-abcde-Mnnnn-fg-ij-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

a interface S = SSI

**b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling

# d Interface characteristic 2

- 1 = 1 µm
- 2 = 5 µm
- $3 = 10 \ \mu m$
- 4 = 20 µm
- $5 = 40 \ \mu m$
- $6 = 100 \ \mu m$
- 7 = 2 µm
- 8 = 50 µm

# e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0050...M4000)

f Style Z = Inch threads 3/4"-16UNF, for O-Ring

- **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

#### I Connection type

K = Cable out radial (PUR) KA = Cable out axial (PUR)

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

#### BTL5-Sxxxx-Mxxxx-Z-DEXB-Kxx





1) not included in scope of delivery 2) Non-usable area Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

#### BTL5-Sxxxx-Mxxxx-Z-DEXA-KAxx





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

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	BTL7 -Z-DEX- SERIES - PROFIBUS
Interface	Profibus
Measuring length	257620 mm
Repeat accuracy	≤ ± 10 μm
Linearity deviation	nnnn = 00505500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	_
IP rating	IP68
Approval/Conformity	CE IECEx WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb. IECEX: EPL Gc. IECEX: EPL Db. IECEX: EPL Dc

# BTL7-abcd-Mnnnn-fg-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface T = PROFIBUS DP

- **b** Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** + **d** Interface characteristic 1 + 2 00 = Flexible number of magnets

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

- f Style Z = Inch threads 3/4"-16UNF, for O-Ring
- **g** Form factor characteristic - = Rod diameter 10.2 mm

#### i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

j Variant characteristic A/D = float plug B/E = short plug

#### I Connection type

K = Cable out radial (PUR) / only for variant characteristic A or B KA = Cable out axial (PUR) / only for variant characteristic A or B ZA1K = Wiring chamber for attachment cover / only for variant characteristic D or E

m Connection type characteristic 1 for cable (length in meters): 02, 05, 10, 15, 20, 50

#### BTL7-T500-Mxxxx-Z-DEXB-Kxx



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3/4"-16UNF

1) not include 2) Non-usable 3) Nominal ler 4) Mounting s 5) Internal thm 10) Null point 11) Installation

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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

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

1) not included in scope of delivery

4) Mounting surface10) Null point11) Installation length

2) Non-usable area3) Nominal length = Measuring length

10) Null point 11) Installation length n hriv

Sensors

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BTL7-T500-Mxxxx-Z-DEXA-KAxx

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#### BTL7-T500-Mxxxx-Z-DEXE-ZA1K



# BTL7-T500-Mxxxx-Z-DEXD-ZA1K



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Accessories



	BTL7 -J-DEX-A/B- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEX EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

# BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic 1 + 2 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

J = Flange 18h6

#### i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

j Variant characteristic A = float plug B = short plug

# I Connection type

K = Cable out radial (PUR)

m Connection type characteristic 1 for cable (length in meters): 02, 05, 10, 15, 20, 30

#### BTL7-A510-Mxxxx-J-DEXB-Kxx





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1) not included in scope of delivery 2) Non-usable area 2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface 11) Installation length

BTL7-G510-Mxxxx-J-DEXA-Kxx



1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

Sensors

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	BTL7 -J-DEX-A/B- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEX EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

# BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$ E = Current output 4 \ldots 20 mA

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 200 = 1 output, rising 70 = 1 output, falling

# Mnnnn Nominal length (4-position) M0500 = metric in mm

(M0025...M7620: for rod diameter 10.2 mm)

#### f Style

J = Flange 18h6

#### i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

- j Variant characteristic
  - A = float plug
  - B = short plug

# I Connection type

K = Cable out radial (PUR)

# m Connection type characteristic 1 for cable (length in meters):

02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-J-DEXB-Kxx





1) not included in scope of delivery 2) Non-usable area 2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface 11) Installation length

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Null point
 Installation length

# BTL7-C570-Mxxxx-J-DEXA-Kxx





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	BTL5 -J-DEX-A/B- SERIES - SSI
Interface	SSI
Measuring length	254000 mm
Repeat accuracy	±1LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 254000: ± 30μm d = 4, 5, 6, 8 nnnn = 254000: ± 2 LSB
Operating voltage Ub	2026 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP67
Approval/Conformity	CE EAC IECEX KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc

# BTL5-abcde-Mnnnn-fg-ij-Im

#### BTL5

Magnetostrictive linear position sensor Generation 5

a interface S = SSI

**b Operating voltage** 1 = 20 ... 28 V

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling

# d Interface characteristic 2

- 1 = 1 µm
- 2 = 5 µm
- $3 = 10 \ \mu m$
- 4 = 20 µm
- $5 = 40 \ \mu m$
- 6 = 100 µm
- 7 = 2 µm
- 8 = 50 µm

# e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

#### 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
- I Connection type
  - K = Cable out radial (PUR)
- m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

#### BTL5-Sxxxx-Mxxxx-J-DEXB-Kxx





1) not included in scope of delivery 2) Non-usable area Noninal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

# BTL5-Sxxxx-Mxxxx-J-DEXA-Kxx





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

RFID



	BTL5 -J-DEX-A/B- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	254000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 00250500: ± 100 $\mu m,$ nnnn > 0500: ± 0.02% FS
Operating voltage Ub	2026 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	_
IP rating	IP67
Approval/Conformity	CE EAC IECEX KC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc

# BTL5-ab-Mnnnn-fg-ij-Im

#### 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
- I Connection type K = Cable out radial (PUR)

m Connection type characteristic 1 (length in meters) 02, 05, 10, 15, 20, 30

#### BTL5-Px-Mxxxx-J-DEXB-Kxx

BTL5-Px-Mxxxx-J-DEXA-Kxx





# 1) not included in scope of delivery 2) Non-usable area Noninal length = Measuring length Mounting surface Internal threads M4x4/6 deep





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

RFID

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Software and System Solutions

Power Supply

Connectivity



	BTL7 -J-DEX-A/B/D/E- SERIES - PROFIBUS
Interface	Profibus
Measuring length	257620 mm
Repeat accuracy	≤ ± 10 µm
Linearity deviation	nnnn = 00505500: ± 30 µm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP68
Approval/Conformity	CE IECEx WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Ga, IECEx: EPL Gb, IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

# BTL7-abcd-Mnnnn-fg-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface T = PROFIBUS DP

- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c + d** Interface characteristic 1 + 2 00 = Flexible number of magnets

Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

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/D = float plug B/E = short plug

I Connection type

K = Cable out radial (PUR) / only for variant characteristic A or B ZA1K = Wiring chamber for attachment cover / only for variant characteristic D or E

m Connection type characteristic 1 for cable (length in meters): 02, 05, 10, 15, 20, 50

#### BTL7-T500-Mxxxx-J-DEXB-Kxx



#### 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

# BTL7-T500-Mxxxx-J-DEXA-Kxx



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length 4) Mounting surface
 Null point
 Installation length

#### BTL7-T500-Mxxxx-J-DEXE-ZA1K



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length

- 4) Mounting surface
  5) Internal threads M4x4/6 deep
- 10) Null point 11) Installation length

# BTL7-T500-Mxxxx-J-DEXD-ZA1K



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Null point

11) Installation length

Machine Vision and Optical Identification


	BTL7 -J-DEXC- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	257620 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc, IECEX: EPL Da, IECEX: EPL Db, IECEX: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

## BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $\begin{array}{l} A = Voltage \ output \ 0 \ ... \ 10 \ V \\ G = voltage \ output \ -10 \ ... \ 10 \ V \\ \end{array}$ 

#### b Operating voltage

5 = 10 ... 30 V

### c + d Interface characteristic 1 + 2

01 = 2 outputs, each 1 x rising/falling settable/programmable 10 = 2 outputs, each 1 x rising/falling

### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

#### f Style

J = Flange 18h6

#### i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

#### j Variant characteristic C = float plug

## I + m connection type + connection type characteristic 1

TA12 = Clamp with 1/2"-14 NPT (cable entry)

1) not included in scope of delivery 2) Non-usable area

2) Non-usable area
3) Nominal length = Measuring length
4) Mounting surface
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw
12) O-ring
13) Part label, metal

# Accessories

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

### BTL7-A501-Mxxxx-J-DEXC-TA12



<ol> <li>not included in scope of delivery</li> <li>Non-usable area</li> </ol>
3) Nominal length = Measuring length
<ol> <li>Mounting surface</li> <li>Internal threads M4x4/6 deep</li> </ol>
6) Null point
7) Installation length
<ol> <li>a) 1/2 - 14 NPT (cable entry)</li> <li>b) 15/16" or 24 mm wrench</li> </ol>
10) External Housing GND
11) Cover fastening screw
12) O-ring 13) Part label metal
roj r arciabol, motal

BTL7-G510-Mxxxx-J-DEXC-TA12



24 mm wrench Housing GND stening screw	
I, metal	



	BTL7 -J-DEXC- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc, IECEX: EPL Da, IECEX: EPL Db, IECEX: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500: Class II, Division 1, NEC 500: Class II, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

## BTL7-abcd-Mnnnn-f-ij-lm

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

### **b** Operating voltage

5 = 10 ... 30 V

#### **c + d** Interface characteristic **1 + 2** 01 = 2 outputs, each 1 x rising/falling settable/programmable

- 00 = 1 output, rising
- 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

## f Style

J = Flange 18h6

#### i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

**j** Variant characteristic C = float plug

## I + m connection type + connection type characteristic 1

TA12 = Clamp with 1/2"-14 NPT (cable entry)



## not included in scope of delivery Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep 6) Null point 7) Installation length 8) 1/2" - 14 NPT (cable entry) 9) 15/16" or 24 mm wrench 10) External Housing GND 11) Cover fastening screw 12) O-ring

13) Part label, metal

BTL7-E500-Mxxxx-J-DEXC-TA12



#### BTL7-E570-Mxxxx-J-DEXC-TA12



 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Instalficio length b) Null point
c) Installation length
c) 1/2" - 14 NPT (cable entry)
c) 15/16" or 24 mm wrench
c) External Housing GND
c) External Housing compute 11) Cover fastening screw

12) O-ring 13) Part label, metal

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

- 4) Mounting surface
  5) Internal threads M4x4/6 deep

- 5) Internal threads M4X4/b dee 6) Null point 7) Installation length 8) 1/2" 14 NPT (cable entry) 9) 15/16" or 24 mm wrench 10) External Housing GND 11) Cover fastening screw
- 12) O-ring 13) Part label, metal



	BTL7 -J-DEXC- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	257620 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	nnnn = 00255500: ± 50 μm, nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc, IECEX: EPL Da, IECEX: EPL Db, IECEX: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500/505: Class III, Division 1, NEC 500: Class II, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

## BTL7-abcd-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

- a interface P = Digital pulse interface
- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- **c** Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter 10.2 mm)

#### f Style J = Flange 18h6

i Variant

DEX = Ignition protection category "d" / pressure-proof encapsulation

j Variant characteristic C = float plug

I + m connection type + connection type characteristic 1 TA12 = Clamp with 1/2"-14 NPT (cable entry)

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- 1) not included in scope of delivery 2) Non-usable area 2) Non-usable area
  3) Nominal length = Measuring length
  4) Mounting surface
  5) Internal threads M4x4/6 deep
  6) Null point
  7) Installation length
  8) 1/2" - 14 NPT (cable entry)
  9) 15/16" or 24 mm wrench
  10) External Housing GND
  11) Cover fastening screw
  12) O-ring
  13) Part label, metal

Connectivity



	BTL7 -J-DEXC- SERIES - SSI
Interface	SSI
Measuring length	257620 mm
Repeat accuracy	≤±5µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 505500: ± 30µm
	d = 4, 5, 6, 8 nnnn = 505500: ± 2 LSB
	nnnn > 5500: ± 0.02% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4080 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	-
IP rating	IP68
Approval/Conformity	CE CSA IECEx EAC WEEE
Ex category	ATEX: 1G (EPL Ga), ATEX: 2G (EPL Gb), ATEX: 3G (EPL Gc), ATEX: 1D (EPL Da), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Ga, IECEX: EPL Gb, IECEX: EPL Gc, IECEX: EPL Da, IECEX: EPL Db, IECEX: EPL Dc, NEC 500: Class I, Division 1, NEC 500: Class I, Division 2, NEC 500: Class II, Division 1, NEC 500: Class II, Division 2, NEC 500/505: Class III, NEC 505: Class I, Zone 1

## BTL7-abcde-Mnnnn-f-ij-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising 1 = 24 bits, gray, rising 2 = 24 bits, gray, rising 3 = 24 bits, binary, falling 6 = 25 bits, binary, rising 7 = 25 bits, gray, rising 8 = 25 bits, gray, rising 9 = 25 bits, gray, falling A = 26 bits, binary, rising B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

#### d Interface characteristic 2

- $1 = 1 \ \mu m$
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- 4 = 20 µm
- 5 = 40 µm
- $6 = 100 \,\mu m$
- $6 = 100 \,\mu m$  $7 = 2 \,\mu m$
- $r = 2 \mu m$
- $8 = 50 \ \mu m$

## e Interface characteristic 3

- B = Synchronous mode
- = Asynchronous mode

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M7620: for rod diameter

10.2 mm)

f Style J = Flange 18h6

### i Variant

DEX = Ignition protection category ",d" / pressure-proof encapsulation

- j Variant characteristic
  - C = float plug

## I + m connection type + connection type characteristic 1

TA12 = Clamp with 1/2"-14 NPT (cable entry)



<ol> <li>not included in scope of delivery</li> </ol>
2) Non-usable area
3) Nominal length = Measuring length
<ol> <li>Mounting surface</li> </ol>
5) Internal threads M4x4/6 deep
6) Null point
7) Installation length
8) 1/2" - 14 NPT (cable entry)
9) 15/16" or 24 mm wrench
10) External Housing GND
11) Cover fastening screw

11) Cover fastening s
 12) O-ring
 13) Part label, metal

RFID

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Accessories



	BTL7 -B-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	255500 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### **b** Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic **1 + 2** 01 = 2 outputs, each 1 x rising/falling settable/programmable

10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

#### f Style

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

## **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

#### I Connection type S = Connector

KA = Cable (PUR)

#### m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins

for cable (length in meters): 02, 05, 10, 15, 20, 30

#### BTL7-A501-Mxxxx-B-NEX-S32



#### BTL7-G510-Mxxxx-A-NEX-S32



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

1) not included in scope of delivery 2) Non-usable area

2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface

11) Installation length

## BTL7-A510-Mxxxx-B8-NEX-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

Sensors



	BTL7 -B-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	255500 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-lm

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### c + d Interface characteristic 1 + 2

01 = 2 outputs, each 1 x rising/falling settable/programmable 00 = 1 output, rising

70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

## f Style

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

### g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

#### I Connection type

S = Connector KA = Cable (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins

for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E501-Mxxxx-B-NEX-S32



#### BTL7-C500-Mxxxx-A-NEX-S32



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

1) not included in scope of delivery 2) Non-usable area

2) Non-usable area
 3) Nominal length = Measuring length
 4) Mounting surface
 5) Internal threads M4x4/6 deep
 10) Null point
 41) Internation in the surface

11) Installation length





1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

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	BTL7 -B-NEX- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	255500 mm
Repeat accuracy	≤ ± 5 µm
Linearity deviation	± 50 µm
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

- a interface P = Digital pulse interface
- b Operating voltage 5 = 10 ... 30 V
- c Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

f Style

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

- g Form factor characteristic
  - 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- i Variant NEX = Ignition class "nA" and "tb"
- I Connection type S = Connector KA = Cable (PUR)
- m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

1) not included in scope of delivery 2) Non-usable area

Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator

10) Null point 11) Installation length

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## BTL7-P511-Mxxxx-A-NEX-S32



#### BTL7-P511-Mxxxx-B8-NEX-KAxx





not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 Installation length

10.46

not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface

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	BTL7 -B-NEX- SERIES - SSI
Interface	SSI
Measuring length	255500 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7: $\pm$ 30µm, d = 4, 5, 6, 8: $\pm$ 2 LSB
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Gc, IECEX: EPL Db, IECEX: EPL Dc

## BTL7-abcde-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- $4 = 20 \ \mu m$
- 5 = 40 µm
- 6 = 100 µm
- $7 = 2 \ \mu m$
- $8 = 50 \ \mu m$

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)
- f Style

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

#### g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

#### I Connection type

S = Connector KA = Cable (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

1) not included in scope of delivery 2) Non-usable area

Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator

10) Null point 11) Installation length

#### BTL7-S510x-Mxxxx-B-NEX-S32



#### BTL7-S5xxx-Mxxxx-A-NEX-S32



#### BTL7-S5xxx-Mxxxx-B8-NEX-KAxx





10.46

 not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 latesticing length 11) Installation length

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface

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	BTL7 -Z-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	255500 mm
Repeat accuracy	± 10 μm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### b Operating voltage

5 = 10 ... 30 V

**c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, each 1 x rising/falling settable/programmable

10 = 2 outputs, 1x each rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

#### f Style Y = Inch thread

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, f or O-Ring

## **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

#### I Connection type S = Connector

KA = Cable (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30

#### BTL7-A501-Mxxxx-Z-NEX-S32



#### BTL7-G510-Mxxxx-Y-NEX-S32



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

1) not included in scope of delivery 2) Non-usable area

a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

## BTL7-A510-Mxxxx-Z8-NEX-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

4) Mounting surface



	BTL7 -Z-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	255500 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

### **c** + **d** Interface characteristic 1 + 2 01 = 2 outputs, 1x each rising/falling

settable/programmable 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

#### f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

#### **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

### I Connection type

S = Connector KA = Cable (PUR)

#### **m** Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins

for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E501-Mxxxx-Z-NEX-S32



#### BTL7-C500-Mxxxx-Y-NEX-S32



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep

1) not included in scope of delivery 2) Non-usable area

a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep

## BTL7-E570-Mxxxx-Z8-NEX-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

4) Mounting surface

RFID



	BTL7 -Z-NEX- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	255500 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	± 50 µm
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

- a interface P = Digital pulse interface
- b Operating voltage  $5 = 10 \dots 30 \text{ V}$
- c Interface characteristic 1 1 = Digital start/stop interface
- d Interface characteristic 2 1 = DPI/IP communication interface

#### Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

- f Style
  Y = Inch threads 3/4"-16UNF,
  for flat seal
  Z = Inch threads 3/4"-16UNF,
  for O-Ring
- g Form factor characteristic 8 = Rod diameter 8 mm - = Rod diameter 10.2 mm
- i Variant NEX = Ignition class "nA" and "tb"
- I Connection type S = Connector KA = Cable (PUR)
- m Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

BTL7-P511-Mxxxx-Y-NEX-S32

E

~40

~66

더나

1)

.

71,0

15,0



2" -0.04"

2)

4)

25,0

3)

3/4"-16UNF

1)

60,0

2)

Ø10,2

5)

T



1) not included in scope of delivery 2) Non-usable area a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep Sensors

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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

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Y

1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length

4) Mounting surface



	BTL7 -Z-NEX- SERIES - SSI
Interface	SSI
Measuring length	255500 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7: $\pm$ 30µm, d = 4, 5, 6, 8: $\pm$ 2 LSB
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Gc, IECEX: EPL Db, IECEX: EPL Dc

## BTL7-abcde-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b Operating voltage**  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising 8 = 25 bits, binary, falling
- 9 = 25 bits, binary, failing 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling
- D = 26 bits, gray, falling

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- $3 = 10 \ \mu m$
- $4 = 20 \ \mu m$
- 5 = 40 µm
- 6 = 100 µm
- 7 = 2 µm
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnn Nominal length (4-position) M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)
- f Style

Y = Inch threads 3/4"-16UNF, for flat seal Z = Inch threads 3/4"-16UNF, for O-Ring

#### g Form factor characteristic

- 8 = Rod diameter 8 mm
- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

#### I Connection type

S = Connector KA = Cable (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-S510x-Mxxxx-Z-NEX-S32

BTL7-S5xxx-Mxxxx-Y-NEX-S32

E

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1)

.

71,0

15,0



2" -0.04"

2)

4)

25,0

3)

3/4"-16UNF

1)

60,0

2)

Ø10,2

5)

T



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Y

1) not included in scope of delivery 2) Non-usable area a) Nominal length = Measuring length
b) Mounting surface
c) Internal threads M4x4/6 deep Sensors

#### Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

1) not included in scope of delivery

4) Mounting surface

2) Non-usable area3) Nominal length = Measuring length

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

#### BTL7-S5xxx-Mxxxx-Z8-NEX-KAxx





Accessories



	BTL7 -CD-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	252000 mm
Repeat accuracy	± 5 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05012000: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-f-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

### b Operating voltage

5 = 10 ... 30 V

#### c + d Interface characteristic 1 + 2

01 = 2 outputs, each 1 x rising/falling settable/programmable

- 00 = 1 output, rising
- 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M2000)

#### f Style

CD = Mounting threads M22x1.5, for O-Ring

#### i Variant

NEX = Ignition class "nA" and "tb"

#### I Connection type

S = Connector KA = Cable (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E501-Mxxxx-CD-NEX-S32



#### BTL7-C500-Mxxxx-CD-NEX-S32



#### BTL7-E570-Mxxxx-CD-NEX-KAxx



1) not included in scope of delivery 2) Non-usable area

Xon-Usable area
 Xominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 LED function indicator

10) Null point 11) Installation length

- not included in scope of delivery
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
   ED function indicator
   Null coint
- 10) Null point 11) Installation length

1) not included in scope of delivery

- Non-usable area
   Noninal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
- 6) LED function indicator 10) Null point
- 11) Installation length



	BTL7 -CD-NEX- SERIES - SSI
Interface	SSI
Measuring length	252000 mm
Repeat accuracy	≤ ± 5 μm
Linearity deviation	d = 1, 2, 3, 7: $\pm$ 30µm, d = 4, 5, 6, 8: $\pm$ 2 LSB
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum, Anodized
IP rating	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Gc, IECEX: EPL Db, IECEX: EPL Dc

## BTL7-abcde-Mnnnn-f-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

a interface S = SSI

**b** Operating voltage  $5 = 10 \dots 30 \text{ V}$ 

#### c Interface characteristic 1

- 0 = 24 bits, binary, rising
- 1 = 24 bits, gray, rising
- 2 = 24 bits, binary, falling
- 3 = 24 bits, gray, falling
- 6 = 25 bits, binary, rising
- 7 = 25 bits, gray, rising
- 8 = 25 bits, binary, falling
- 9 = 25 bits, gray, falling
- A = 26 bits, binary, rising
- B = 26 bits, gray, rising
- C = 26 bits, binary, falling D = 26 bits, gray, falling
- D = 20 Dits, gray, failing

#### d Interface characteristic 2

- 1 = 1 µm
- $2 = 5 \ \mu m$
- 3 = 10 µm
- $4 = 20 \ \mu m$
- 5 = 40 µm
- 6 = 100 µm
- 7 = 2 µm
- 8 = 50 µm

- e Interface characteristic 3 B = Synchronous mode - = Asynchronous mode
- Mnnnn Nominal length (4-position) M0500 = metric in mm (M0025...M2000)
- f Style

CD = Mounting threads M22x1.5, for O-Ring

i Variant

NEX = Ignition class "nA" and "tb"

- I Connection type
  - S = Connector KA = Cable (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30, 50, 100

#### BTL7-S510x-Mxxxx-CD-NEX-S32



#### BTL7-S5xxx-Mxxxx-CD-NEX-S32



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 ED function indicator
 Null coint

- 10) Null point 11) Installation length

#### BTL7-S5xxx-Mxxxx-CD-NEX-KAxx





- Non-usable area
   Non-usable area
   Nominal length = Measuring length
   Mounting surface
   Internal threads M4x4/6 deep
- 6) LED function indicator
- 10) Null point 11) Installation length



	BTL7 -K-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	255500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $A = Voltage output 0 \dots 10 V \\ G = voltage output -10 \dots 10 V$ 

#### b Operating voltage

5 = 10 ... 30 V

**c + d** Interface characteristic 1 + 2 10 = 2 outputs, each 1 x rising/falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

#### f Style

K = Compact rod, plug-in flange 18h6, for O-Ring

### **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

## I Connection type

SR = Connector K = Cable out radial (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 30

#### BTL7-A510-Mxxxx-K-NEX-SR32



## 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

### BTL7-G510-Mxxxx-K-NEX-SR32



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 latesticing length



#### BTL7-A510-Mxxxx-K8-NEX-Kxx





2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

1) not included in scope of delivery



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	BTL7 -K-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	255500 mm
Repeat accuracy	± 10 µm
Linearity deviation	nnnn = 00500500: ± 50 µm, nnnn = 05015500: ± 0.01% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
IP rating	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE CSA IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEx: EPL Gc, IECEx: EPL Db, IECEx: EPL Dc

## BTL7-abcd-Mnnnn-fg-i-lm

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 2 00 = 1 output, rising 70 = 1 output, falling

#### Mnnnn Nominal length (4-position)

M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm) (M0025...M5500: for rod diameter 10.2 mm)

#### f Style

K = Compact rod, plug-in flange 18h6, for O-Ring

### **g** Form factor characteristic 8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

#### i Variant

NEX = Ignition class "nA" and "tb"

#### I Connection type

SR = ConnectorK = Cable out radial (PUR)

## m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20, 50, 100

#### BTL7-E500-Mxxxx-K-NEX-SR32





### BTL7-C570-Mxxxx-K-NEX-SR32



not included in scope of delivery
 Non-usable area
 Nominal length = Measuring length
 Mounting surface
 Internal threads M4x4/6 deep
 Null point
 latesticing length

- 11) Installation length

#### BTL7-E570-Mxxxx-K8-NEX-Kxx





1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface 10) Null point 11) Installation length

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	BTL7 -TB-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 μm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	CE IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Gc, IECEX: EPL Db, IECEX: EPL Dc

## BTL7-abcd-Mnnnn-fh-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

#### **Mnnnn** Nominal length (4-position) M0500 = metric in mm

(M0025...M7620: for rod diameter 10.2 mm)

### f Form factor

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

#### h Redundant

2 = 2 times redundant 3 = 3 times redundant

## i Variant

NEX = Ignition class ",nA" and ",tb"

#### I Connection type S = Connector KA = Cable (PUR)

**m** Connection type characteristic 1 for connector: 32 = M16x0.75 connector with 8 pins

for cable (length in meters): 02, 05, 10, 15, 20

#### BTL7-E504-Mxxxx-TB2-NEX-S32



1) not included in scope of delivery 2) Non-usable area 3) Nominal length = Measuring length4) Mounting surface 5) Internal threads M4x4/6 deep6) LED function indicator 7) Ø6.1 for hook wrench Ø74 10) Null point 11) Installation length

#### BTL7-C505-Mxxxx-TB3-NEX-S32



#### BTL7-E505-Mxxxx-TB3-NEX-KAxx



#### BTL7-C504-Mxxxx-TB2-NEX-KAxx



1) not included in scope of delivery 2) Non-usable area3) Nominal length = Measuring length 4) Mounting surface
5) Internal threads M4x4/6 deep

- 6) LED function indicator
  7) Ø6.1 for hook wrench Ø74
- 10) Null point11) Installation length12) Cable length

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	BTL7 -TZ-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	257620 mm
Repeat accuracy	± 5 μm
Linearity deviation	nnnn = 00500500: ± 200 $\mu m,$ nnnn > 0500: ± 0.04% FS
Operating voltage Ub	1030 VDC
Ambient temperature	-4060 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum, Anodized
IP rating	IP67
Approval/Conformity	CE IECEX EAC WEEE
Ex category	ATEX: 3G (EPL Gc), ATEX: 2D (EPL Db), ATEX: 3D (EPL Dc), IECEX: EPL Gc, IECEX: EPL Db, IECEX: EPL Dc

## BTL7-abcd-Mnnnn-fh-i-Im

#### BTL7

Magnetostrictive linear position sensor Generation 7

#### a interface

 $C = Current output 0 \dots 20 mA$  $E = Current output 4 \dots 20 mA$ 

#### b Operating voltage

5 = 10 ... 30 V

#### **c** + **d** Interface characteristic 1 + 204 = 1 output rising, configurable 05 = 1 output falling, configurable

## Mnnnn Nominal length (4-position) M0500 = metric in mm

(M0025...M7620: for rod diameter 10.2 mm)

## f Form factor

TZ = Threads 3/4"-16UNF, for O-Ring

### h Redundant

- 2 = 2 times redundant
- 3 = 3 times redundant

#### i Variant NEX = Ignition class "nA" and "tb"

#### I Connection type S = Connector KA = Cable (PUR)

m Connection type characteristic 1 for connector:

32 = M16x0.75 connector with 8 pins for cable (length in meters): 02, 05, 10, 15, 20