

A photograph of an industrial facility at night. Large, insulated pipes curve through the frame. A metal platform with railings is visible, illuminated by bright lights. The sky is dark blue. A red circle with a white 'B' is positioned near the platform, with a line pointing to it from the text 'innovating automation'.

**BALLUFF**

**B** *innovating automation*

Sensors and  
Linear Position  
Sensors

**FOR USE IN A POTENTIALLY  
EXPLOSIVE ENVIRONMENT**





# CONTENTS

**4**

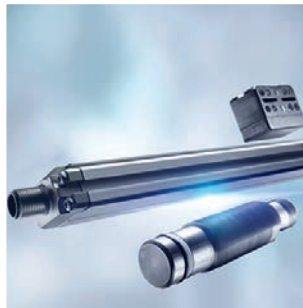
**EXPLOSION PROTECTION**



- 6 Reliable position feedback
- 6 Reliable position detection
- 7 Reliable detection of the piston position
- 8 Certification of equipment in hazardous areas
- 9 Country certification

**10**

**SENSORS**



- 12 Magnetostrictive Sensors
- 78 Inductive Sensors
- 96 Magnetic Field Sensors
- 98 Microwave Sensors

**100**

**CONNECTIVITY**



- 102 Single-Ended Cordsets

**106**

**ACCESSORIES**



- 108 Signal Converters and Communication Adapters
- 110 Magnets for Rod Style
- 114 Mechanical Accessories

Safety in potentially explosive areas

# EXPLOSION PROTECTION



*innovating automation*

In areas with a risk of explosion, many tasks can only be solved by reliable position detection. For example monitoring hydraulic or pneumatic cylinders, controlling hydraulic or pneumatically driven valves as well as level detection.

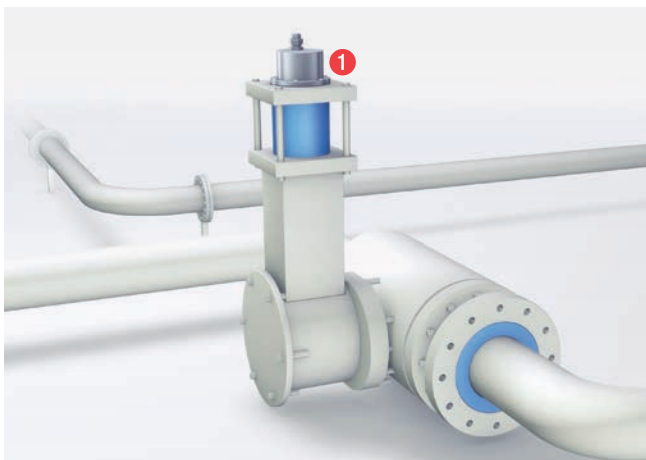
Balluff provides you with non-contact magnetostrictive linear position systems and sensors in a wide variety of designs. Learn about our range of solutions.











#### RELIABLE POSITION FEEDBACK

**With BTL magnetostrictive linear position sensors 1**

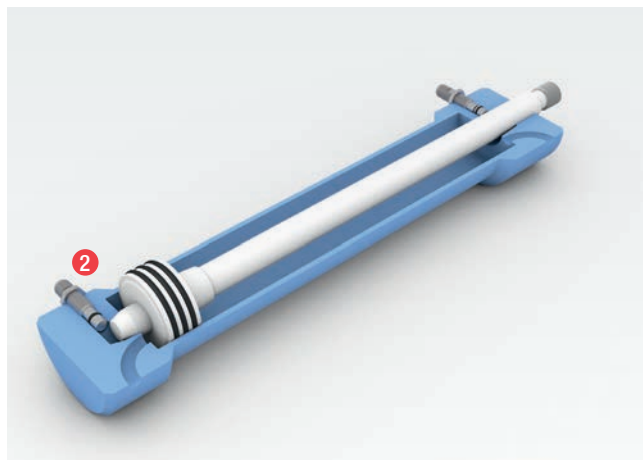
Many applications in explosion hazard areas require the use of position measurement systems for reliable position feedback. An example of this is the use of isolation and control valves used in oil and gas extraction in refineries and in petrochemical plants.

For the Ex zones 0 and 1, Balluff offers magnetostrictive linear position sensors in various rod-style designs. Our pressure-encapsulated designs have varying performance profiles, for example, for areas where there is a risk relating to gas or dust. There are also variants available to you for use in Ex zone 2, which can withstand the potentially explosive conditions there.

The housings of our magnetostrictive linear position sensors are robust and pressure-encapsulated. The electronics module in the BTL J-DEXC version can be changed quickly and easily. This means that all variants meet the requirements set by the oil and gas industries for high reliability and simple service.

#### Features

- IECEx, ATEX, NEC and many additional international certifications
- Approvals for zones 0 (1G), 1 (2G), 2 (3G), as well as 20 (1D), 21 (2D) and 22 (3D)
- Measurement ranges of up to 7620 mm
- Absolute output signal with high resolution of up to 5 µm
- Pressure rated to 600 bar
- Range of interfaces available
- Space-saving thanks to short housing
- Fast commissioning through characteristic curve adjustment



#### RELIABLE POSITION DETECTION

**With BES and BHS inductive sensors 2**

At Balluff you have access to a wide-ranging portfolio of inductive sensors for positioning and object detection in explosion hazard areas. For end-of-travel monitoring on hydraulic cylinders and for monitoring valve positions you can also choose from a broad range of high-pressure rated sensors. Our many different housing types and thread sizes fit in virtually any installation scenario.

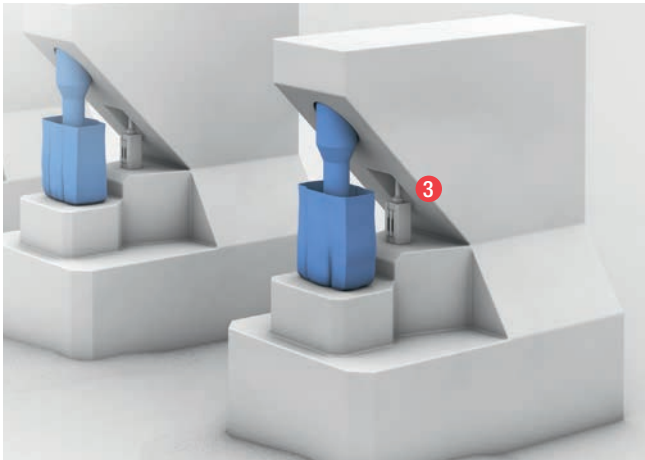
Some of these sensors are suitable for areas in which an explosive atmosphere is present continuously or very often. This requires sensors with special safety features. Whereas, intrinsically safe sensors are generally used here to form a safe unit in combination with the appropriate isolating amplifiers, Balluff also offers compact versions which do not require an additional amplifier while still providing the necessary safety.

In environments with only occasional or rare explosion hazards you can choose versions for various temperature ranges as well as full metal versions to provide an optimal solution for your application.

#### Features

- Approvals for zones 0 (1G), 1 (2G), 2 (3G), as well as 20 (1D), 21 (2D) and 22 (3D)
- Pressure-rated up to 500 bar
- High-temperature-resistant up to 100 °C
- Non-contacting and free from wear
- Impervious to contamination
- Short-circuit protected
- Wide range of common sensor housings
- Safe unit when using available isolation amplifiers and cable versions
- Versions for use in zones 0 and 20 with no isolation amplifier





### RELIABLE DETECTION OF THE PISTON POSITION

With **BMF magnetic field sensors 3**

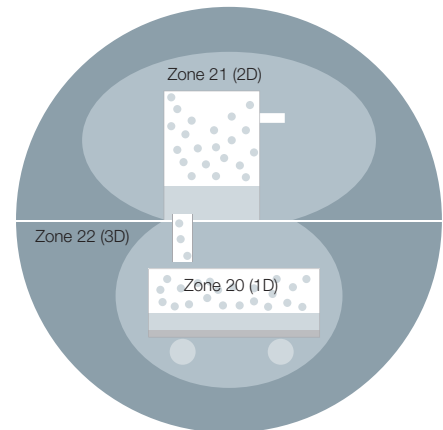
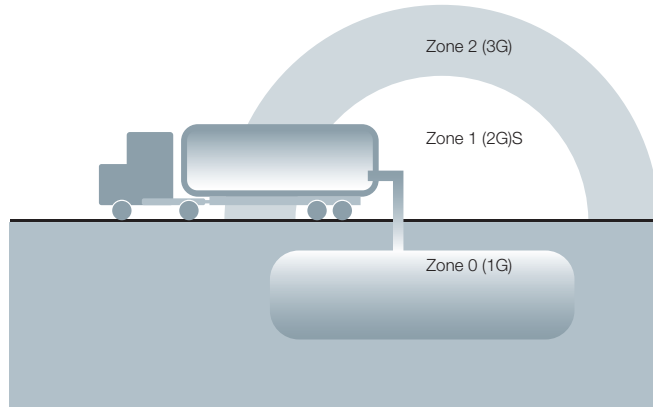
Our magnetic field sensors come in versions for environments where explosive dusts, gases and vapors are present continuously, often or over a long period – namely for Ex zones 0/20.

These sensors are easy to install. They are inserted into T-slots from above or installed on round cylinders and tie rod cylinders using suitable brackets.

A cable is used to connect each sensor quickly and conveniently to the appropriate isolation amplifier outside the Ex zone. Since the cable is potted into the sensor, safe integrity is ensured. The amplifier with relay output acts as an interface between electrical signals from the potentially explosive area and the safe zone. You can also get the isolation amplifier from Balluff – reliable quality from a single source.

### Features

- Approvals for zones 0 (1G) and 20 (1D)
- Can be quickly and easily inserted into the T-slot from above, with clamping fixture
- Sensor, mounting bracket and isolation amplifier from a single source













Zone/device categories per  
EC Directives 2014/34/EU (ATEX)

## CERTIFICATION OF EQUIPMENT IN HAZARDOUS AREAS

Industrial processes often need to be carried out in a hazardous atmosphere or when hazardous materials such as explosive gases, dust or flammable liquids are present. Such substances can be ignited by sufficient energy coming from sources like electrical sparks, open flames, and hot surfaces. The equipment installed in these areas must therefore be planned such that it does not represent an ignition source.

In most countries around the world, national and/or local governments enact electrical construction standards intended to prevent accidents and enhance the safety of people and property. To ensure that installed components have been designed and tested according to regulations and offer sufficient protection, testing agencies are used. They certify that a particular device meets the specifications of the special standards for hazardous locations.

### OVERVIEW OF PROTECTION CLASSES FOR ELECTRICAL DEVICES (ACCORDING TO EN 60079-...)

Type of Protection	Description
	Additional measures are applied to prevent the possibility of inadmissibly high temperatures and the occurrence of sparks or electric arcs within the enclosure or on exposed parts of electrical equipment, where such ignition sources would not occur in normal service.
	Parts which can ignite a potentially explosive atmosphere are surrounded by an enclosure which withstands the pressure of an explosive mixture exploding inside the enclosure and prevents the transmission of the explosion to the atmosphere surrounding the enclosure.
	The formation of a potentially explosive atmosphere inside an enclosure is prevented by maintaining a positive internal pressure of protective gas in relation to the surrounding atmosphere and by supplying the inside of the enclosure with a constant flow of protective gas which dilutes any combustible mixtures.
	Equipment only contains intrinsically safe electric circuits. An electric circuit is intrinsically safe if any spark or thermal effect produced under normal operation is not capable of causing ignition of a given explosive atmosphere.
	Equipment are immersed in a protective fluid (e. g. oil) in such a way that a potentially explosive atmosphere existing above the surface or outside of the encapsulation cannot be ignited.
	Filling the enclosure with a fine grained packing material has the effect of making it impossible for an electric arc created in the enclosure under normal operating conditions to ignite a potentially explosive atmosphere surrounding the enclosure. Ignition must neither be caused by flames nor by elevated temperatures on the enclosure surface.
	Parts that are capable of igniting an explosive atmosphere are enclosed in a compound in such a way that ignition of an explosive atmosphere is prevented.
	Additional measures are applied to prevent the occurrence of sparks or electric arcs within the enclosure, where such ignition sources would not occur in normal service.
	Tightness of the enclosure prevents ingress of dust or limits it to a nonhazardous amount. The surface temperature of the enclosure must not ignite the surrounding atmosphere.
	

Detailed table and explanations can be found on the accompanying poster.



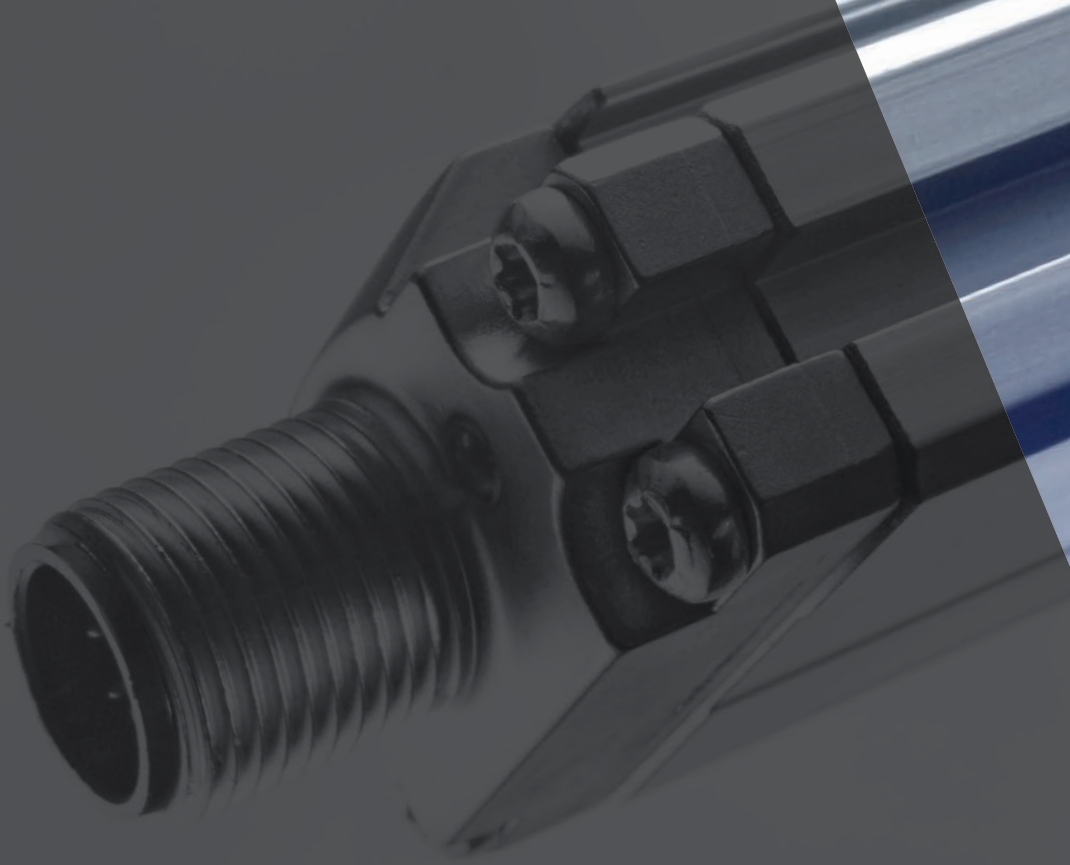
## COUNTRY CERTIFICATION

There are many types and categories of possible hazards in explosion hazard areas. How these areas are classified depends on in which country or region the equipment is being installed.

- In the European Union a harmonization scheme is used to eliminate technical trade barriers. The ATEX Directive 2014/34/EU is applied to devices and protection systems for proper use in explosion hazard areas. As part of a hazard assessment the operator divides the areas into zones and selects devices for the corresponding category.
- In the USA the NEC (National Electrical Code) uses two methods for classifying hazardous locations: these are based on both the class/division and the zone. Categorization into class/division is a long proven procedure in the USA. Division into zones is a newer alternate concept which is becoming more and more established. As soon as the decision is made as to which method will be used for certification, that method is consistently applied.
- Canada is similar to the US but follows the Canadian Standards Association (CSA) electrical codes.
- For the rest of the world various local regulations and standards apply. But more and more countries are turning to the uniform global standard IECEx (International Electro-technical Commission Explosive). It is however possible that a country specifies IECEx as the basic standard while requiring additional national certifications to meet country-specific regulations.



Please note the Ex approvals.  
Detailed information can be found in the data sheet, the manual and the product finder at [www.balluff.com](http://www.balluff.com).

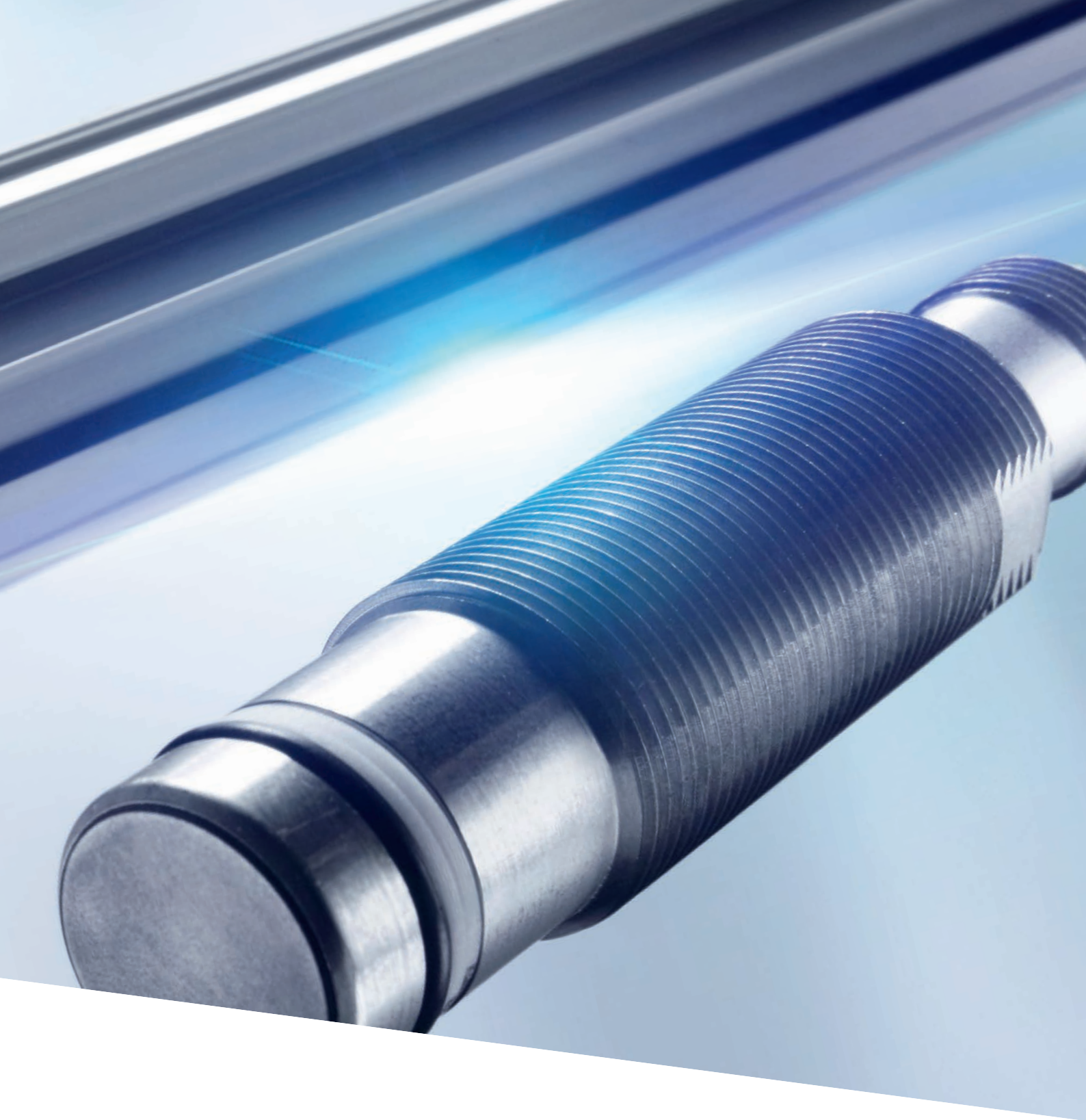


Comprehensive solutions for industrial automation

# SENSORS

 *innovating automation*





In the field of sensor technology, Balluff handles the entire range of technological diversity with its various operating principles. We provide you with high-quality sensors for any application or requirement: from distance measurement to object detection and level, temperature and pressure monitoring. For everyday industrial uses as well for tough applications in critical environments.

Our quality management regime is DIN EN ISO 9001:2015 certified. All Balluff sensors are tested in our in-house, accredited laboratory. Balluff sensors meet regional as well as international standards and are used throughout the world.

#### **Your Balluff solutions**

- Inductive Sensors
- Photoelectric Sensors
- Capacitive Sensors
- Magnetic Sensors
- Ultrasonic Sensors
- Mechanical Cam Switches
- Magnetostrictive Sensors
- Magnetically Coded Sensors
- Inclination Sensors
- Pressure Sensors
- Temperature Sensors
- Flow Sensors
- Microwave Sensors



	BTL7 -B-DEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening M18 threads
Protection degree	IP68
Approval/Conformity	CE IECEX EAC INMETRO
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

## BTL7-abcd-Mnnnn-f-ij-lm

### 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 M18 x 1.5,  
for O-Ring

#### i Variant

DEX = Ignition protection category „d“  
/ pressure-proof encapsulation

#### j Variant characteristic

A = Float plug  
B = short plug

#### l Connection type

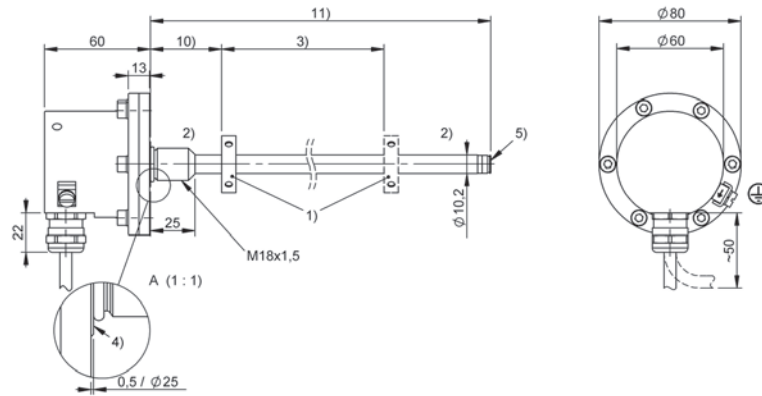
K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

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

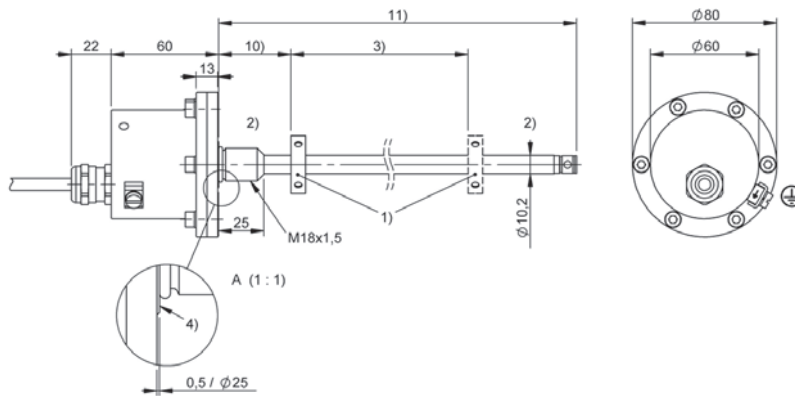


### BTL7-A510-Mxxxx-B-DEXB-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-G510-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

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Calibration box, page 114  
BAE00EF, BAE00EC



	BTL7 -B-DEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening M18 threads
Protection degree	IP68
Approval/Conformity	CE IECEX EAC INMETRO
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

## BTL7-abcd-Mnnnn-f-ij-lm

### 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...M7620: for Rod diameter  
10.2 mm)

#### f Style

B = Mounting threads M18 x 1.5,  
for O-Ring

#### i Variant

DEX = Ignition protection category „d“  
/ pressure-proof encapsulation

#### j Variant characteristic

A = Float plug  
B = short plug

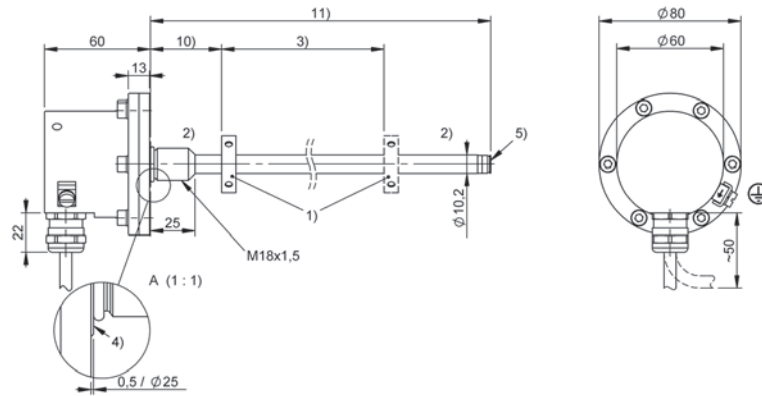
#### l Connection type

K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

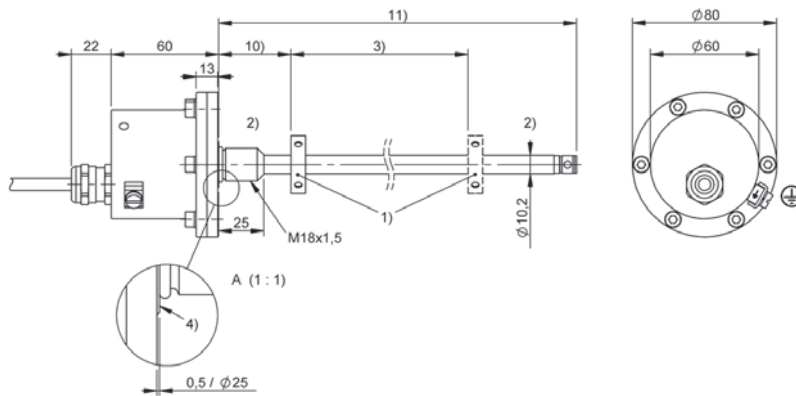
(length in meters)  
02, 05, 10, 15, 20, 50, 100

### BTL7-E500-Mxxxx-B-DEXB-K05



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-C570-Mxxxx-B-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

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Calibration box, page 114  
BAE00EF, BAE00EC





	BTL5 -B-DEX- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025...0500: ±100 µm, nnnn > 0500: ±0.02% FS
Operating voltage Ub	20...26 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening M18 threads
Protection degree	IP67
Approval/Conformity	CE IECEX EAC KC PESO
Ex category	ATEX: 1G, 2G, 3G, IECEX: EPL Ga, Gb, 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

B = Mounting threads M18 x 1.5,  
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

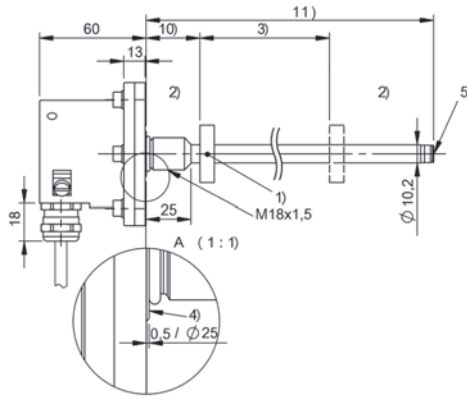
#### l Connection type

K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

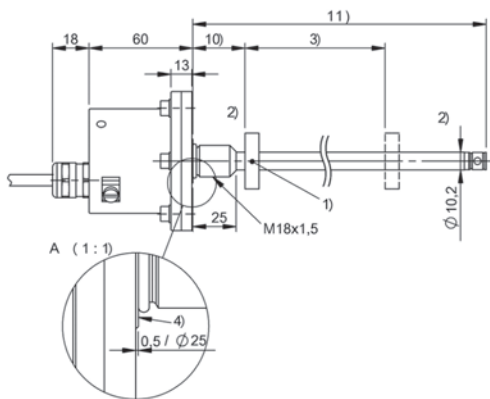
(length in meters)  
02, 05, 10, 15, 20, 30

### BTL5-Px-Mxxxx-B-DEXB-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 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

### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J



	BTL5 -B-DEX- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	±1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25...4000: ±30µm  d = 4, 5, 6, 8 nnnn = 25...4000: ±2 LSB
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Protection degree	IP67
Approval/Conformity	CE IECEX EAC KC PESO
Ex category	ATEX: 1G, 2G, 3G, IECEX: EPL Ga, Gb, Gc

## BTL5-abcde-Mnnnn-fg-ij-lm

### 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

#### d Interface characteristic 2

1 = 1 µm  
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

B = Mounting threads M18 x 1.5,  
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

#### l Connection type

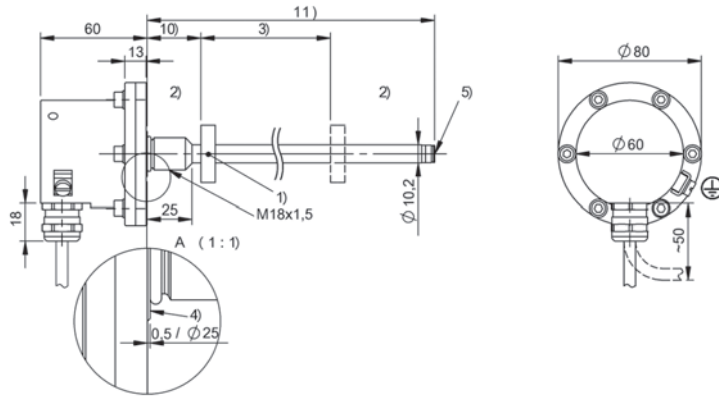
K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

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

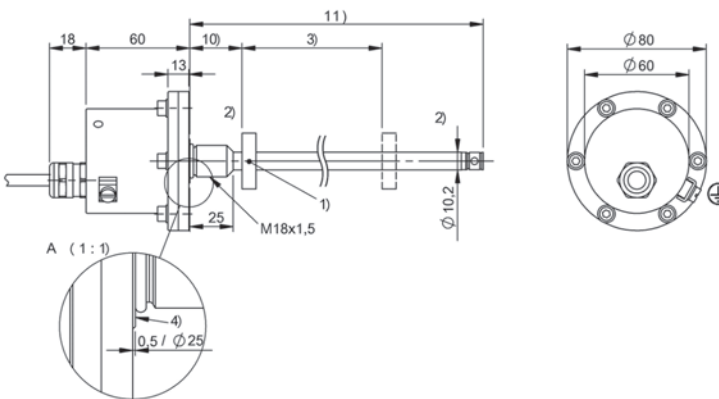


### BTL5-Sxxxx-Mxxxx-B-DEXB-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 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

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J



	BTL7 -B-DEX- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...7620 mm
Repeat accuracy	≤ ±10 µm
Linearity deviation	nnnn = 0050...5500: ±30 µm, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening M18 threads
Protection degree	IP68
Approval/Conformity	CE IECEX
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

**BTL7-abcd-Mnnnn-fg-ij-lm**

**BTL7**

Magnetostrictive linear position sensor  
Generation 7

- a Interface**  
T = PROFIBUS DP
- b Operating voltage**  
5 = 10...30 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 M18 x 1.5,  
for O-Ring

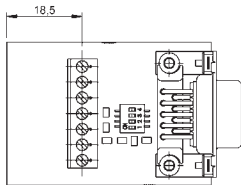
- g Form factor characteristic**  
- = Rod diameter 10.2 mm
- i Variant**  
DEX = Ignition protection category „d“  
/ pressure-proof encapsulation
- j Variant characteristic**  
A/D = Float plug  
B/E = short plug
- l Connection type**  
K = Cable out radial (PUR)/only for  
variant characteristic A 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

**Suitable accessories**

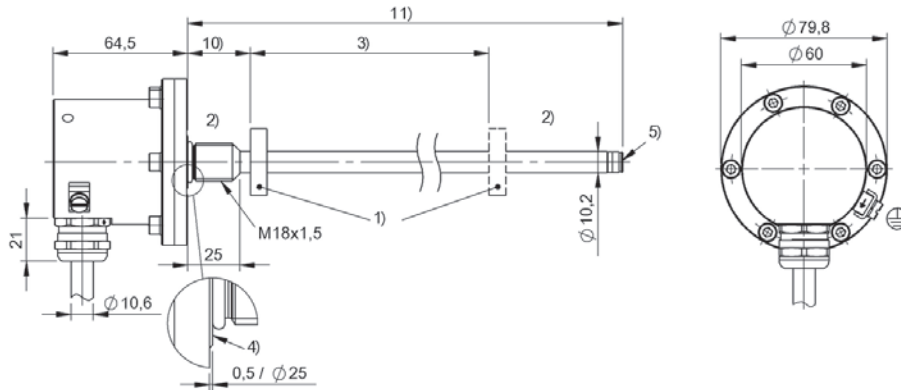
Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Adapter: BIU000N

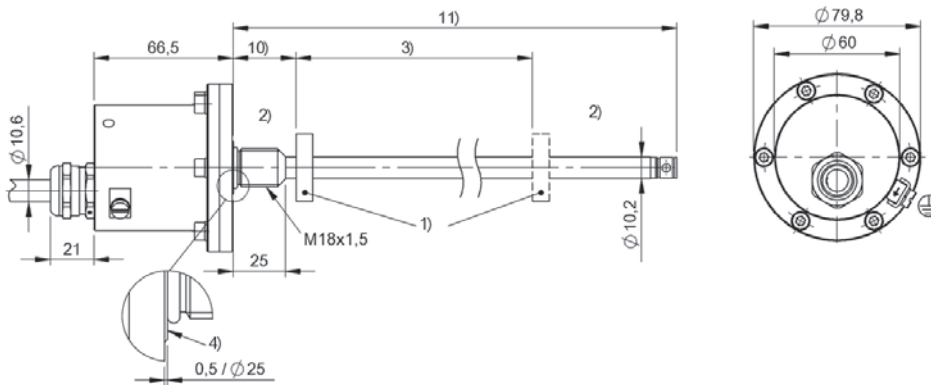


### BTL7-T500-Mxxxx-B-DEXB-Kxx



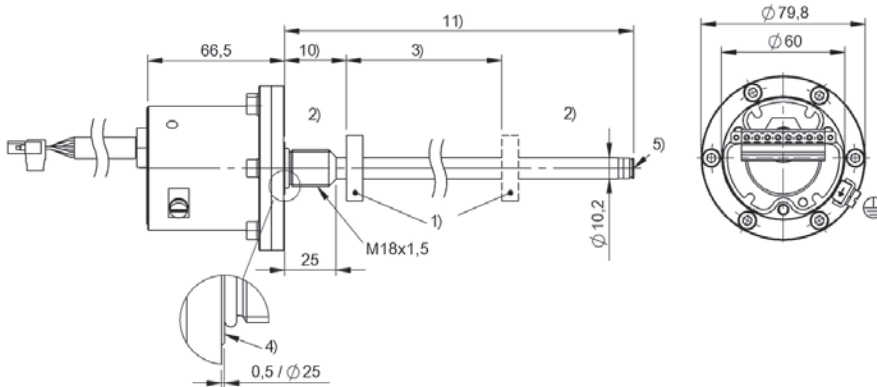
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-B-DEXA-KAxx



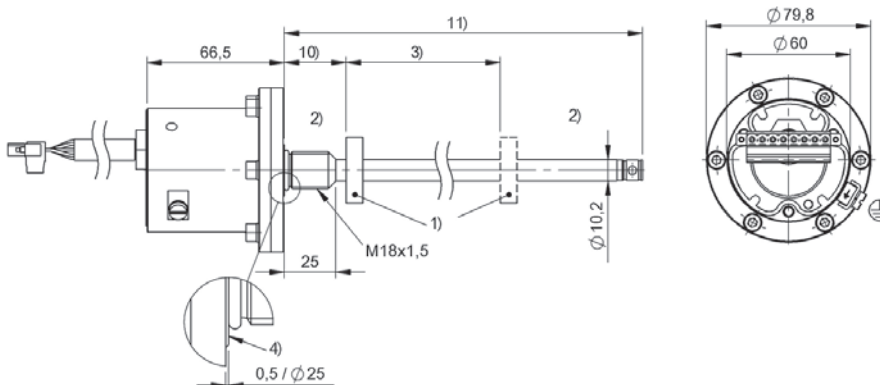
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-B-DEXE-ZA1K



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-B-DEXD-ZA1K



- 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

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.





	BTL7 -Z-DEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	–40...80 °C
Mechanical configuration	Fastening 3/4" threads
Protection degree	IP68
Approval/Conformity	CE IECEX EAC INMETRO
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

## BTL7-abcd-Mnnnn-f-ij-lm

### 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

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

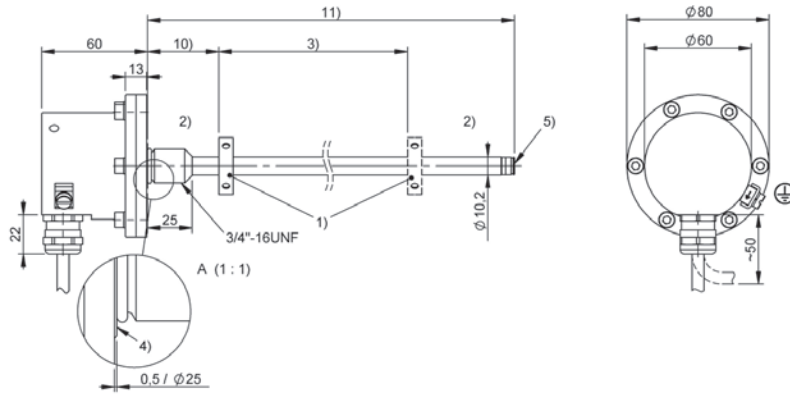
#### l Connection type

K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

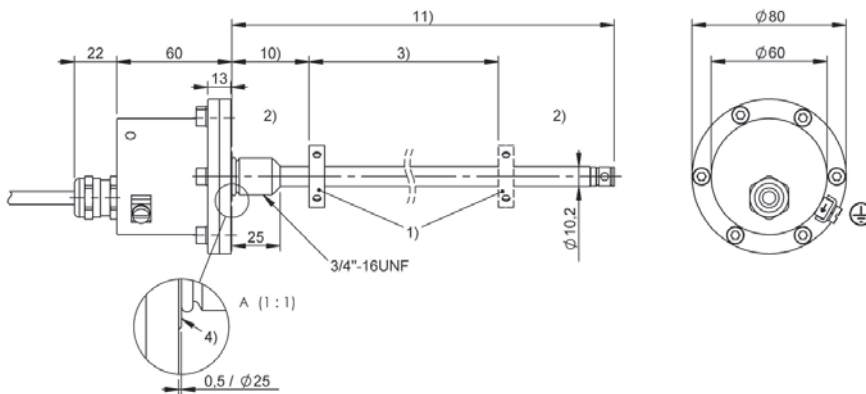
(length in meters)  
02, 05, 10, 15, 20, 30

### BTL7-A510-Mxxxx-Z-DEXB-K05



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) 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

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Calibration box, page 114  
BAE00EF, BAE00EC



	BTL7 -Z-DEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...80 °C
Mechanical configuration	Fastening 3/4" threads
Protection degree	IP68
Approval/Conformity	CE IECEX EAC INMETRO
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

## BTL7-abcd-Mnnnn-f-ij-lm

### 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...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

#### l Connection type

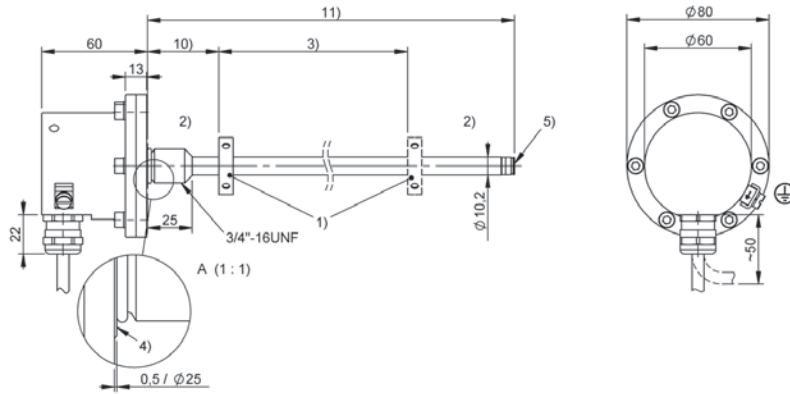
K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

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

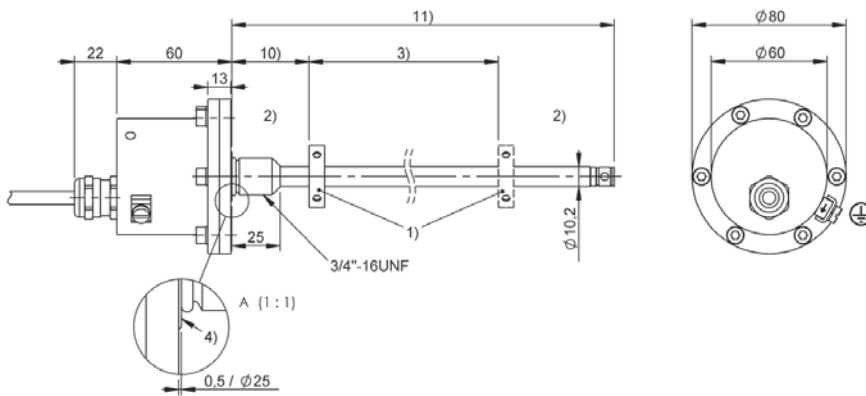


### BTL7-E500-Mxxxx-Z-DEXB-K05



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) 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

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Calibration box, page 114  
BAE00EF, BAE00EC



	BTL5 -Z-DEX- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025...0500: ±100 µm, nnnn > 0500: ±0.02% FS
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4" threads
Protection degree	IP67
Approval/Conformity	CE IECEX EAC KC PESO
Ex category	ATEX: 1G, 2G, 3G, IECEX: EPL Ga, Gb, 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

#### 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

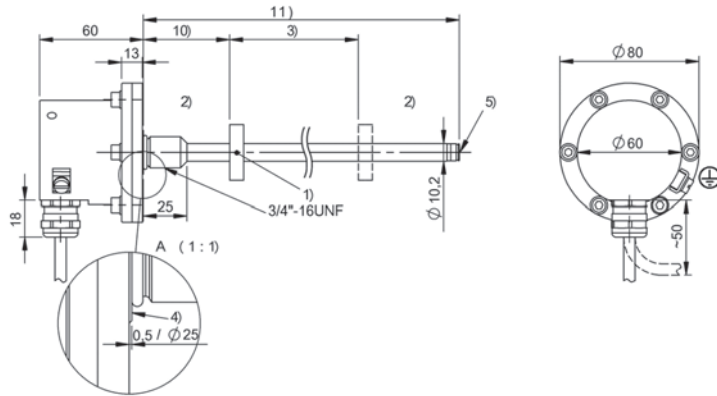
#### l Connection type

K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

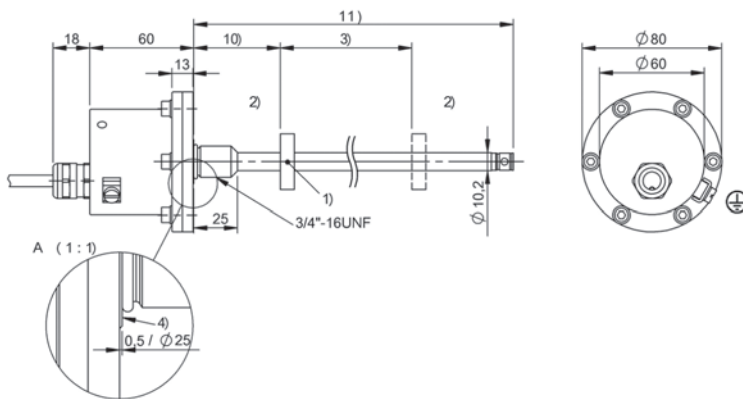
(length in meters)  
02, 05, 10, 15, 20, 30

### BTL5-Px-Mxxxx-Z-DEXB-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL5-Px-Mxxxx-Z-DEXA-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J





	BTL5 -Z-DEX- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	±1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25...4000: ±30µm  d = 4, 5, 6, 8 nnnn = 25...4000: ±2 LSB
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4" threads
Protection degree	IP67
Approval/Conformity	CE IECEX EAC KC PESO
Ex category	ATEX: 1G, 2G, 3G, IECEX: EPL Ga, Gb, Gc

## BTL5-abcde-Mnnnn-fg-ij-lm

### 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 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

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

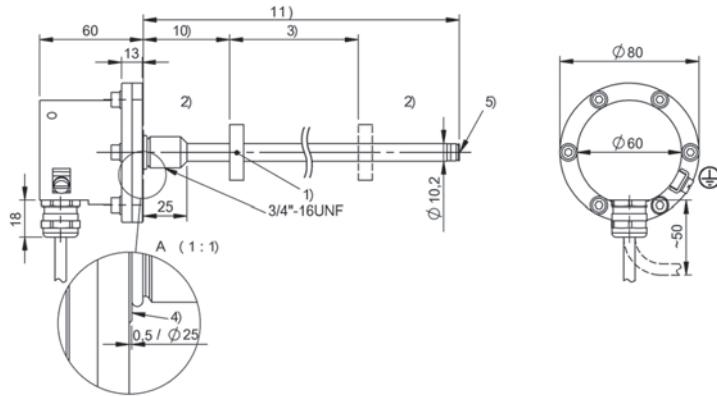
#### l Connection type

K = Cable out radial (PUR)  
KA = Cable out axial (PUR)

#### m Connection type characteristic 1

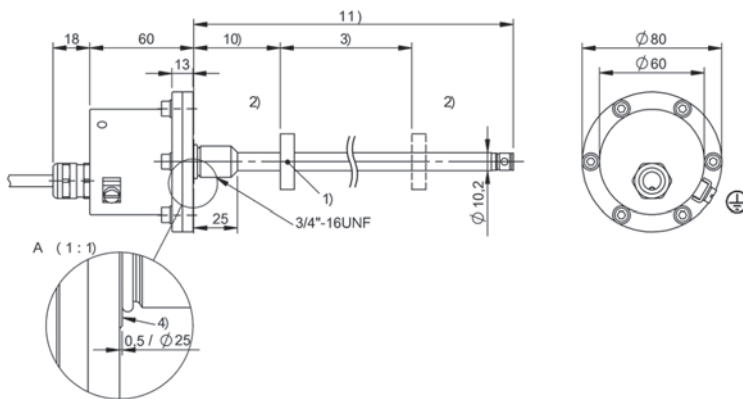
(length in meters)  
02, 05, 10, 15, 20, 30

### BTL5-Sxxxx-Mxxxx-Z-DEXB-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL5-Sxxxx-Mxxxx-Z-DEXA-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J



	BTL7 -Z-DEX- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...7620 mm
Repeat accuracy	≤ ±10 µm
Linearity deviation	nnnn = 0050...5500: ±30 µm, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening 3/4" threads
Protection degree	IP68
Approval/Conformity	CE IECEX
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

**BTL7-abcd-Mnnnn-fg-ij-lm**

**BTL7**

Magnetostriuctive linear position sensor  
Generation 7

**a Interface**

T = PROFIBUS DP

**b Operating voltage**

5 = 10...30 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

**l 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**

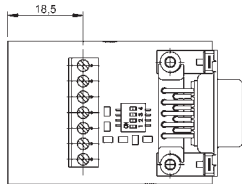
for cable (length in meters):  
02, 05, 10, 15, 20, 50

**Suitable accessories**

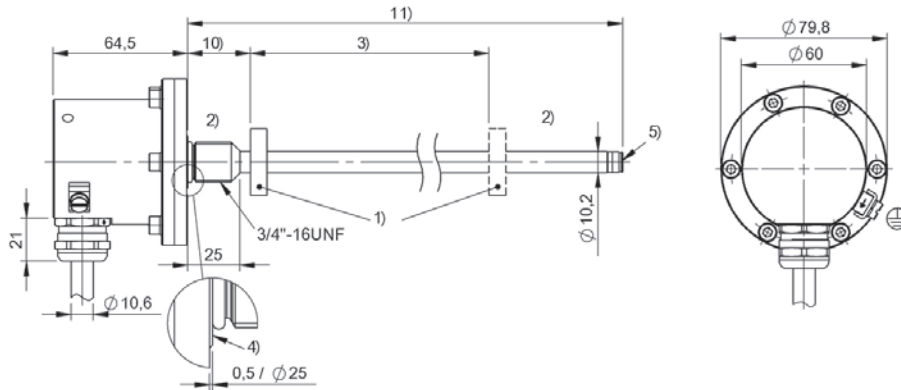
Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Adapter: BIU000N

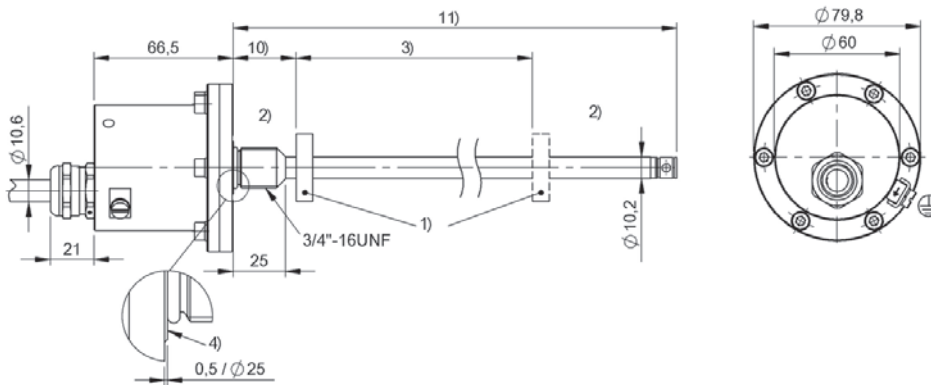


### BTL7-T500-Mxxxx-Z-DEXB-Kxx



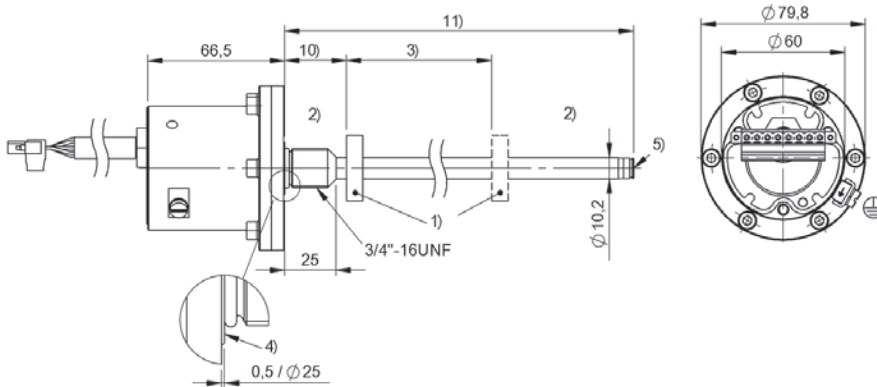
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-Z-DEXA-KAxx



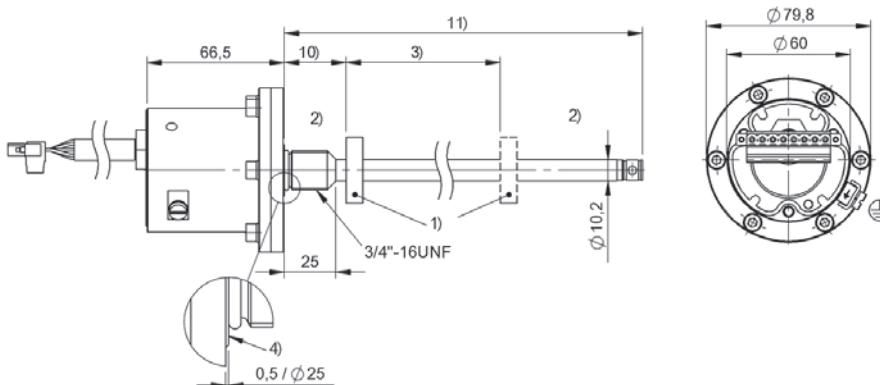
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-Z-DEXE-ZA1K



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-Z-DEXD-ZA1K



- 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

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.





	BTL7 -J-DEX-A/B- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...7620 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	–40...80 °C
Mechanical configuration	Fastening 18h6 fit
Protection degree	IP68
Approval/Conformity	CE IECEX EAC INMETRO
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

## BTL7-abcd-Mnnnn-f-ij-lm

### 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

J = Flange 18h6

#### i Variant

DEX = Ignition protection category „d“  
/ pressure-proof encapsulation

#### j Variant characteristic

A = Float plug  
B = short plug

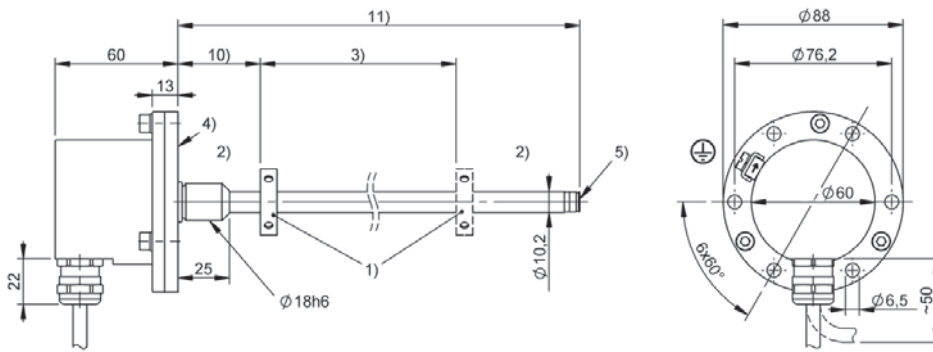
#### l Connection type

K = Cable out radial (PUR)

#### m Connection type characteristic 1

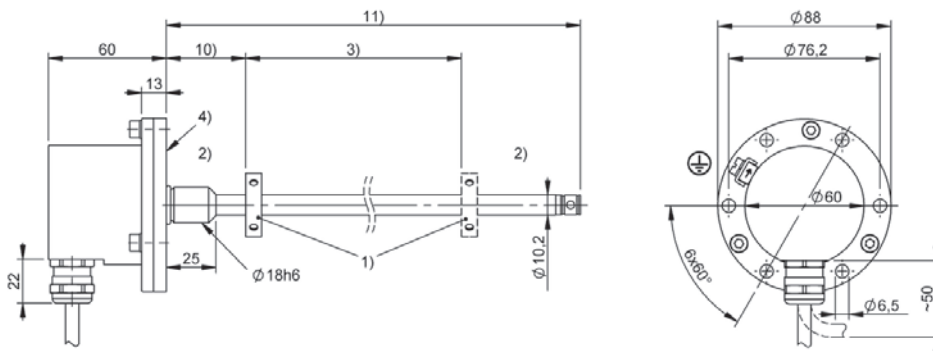
for cable (length in meters):  
02, 05, 10, 15, 20, 30

### BTL7-A510-Mxxxx-J-DEXB-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 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

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Calibration box, page 114  
BAE00EF, BAE00EC



	BTL7 -J-DEX-A/B- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...80 °C
Mechanical configuration	Fastening 18h6 fit
Protection degree	IP68
Approval/Conformity	CE IECEX EAC INMETRO
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

### BTL7-abcd-Mnnnn-f-ij-lm

#### f Style

J = Flange 18h6

#### BTL7

Magnetostrictive linear position sensor  
Generation 7

#### i Variant

DEX = Ignition protection category „d“  
/ pressure-proof encapsulation

#### a Interface

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

#### j Variant characteristic

A = Float plug  
B = short plug

#### b Operating voltage

5 = 10...30 V

#### l Connection type

K = Cable out radial (PUR)

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

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

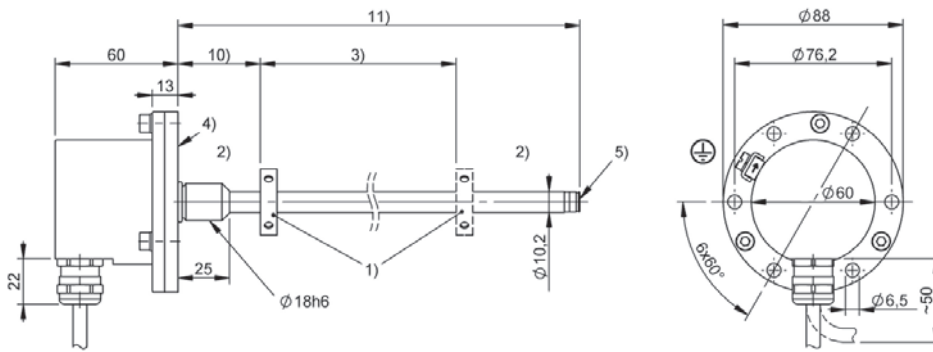
#### m Connection type characteristic 1

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

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

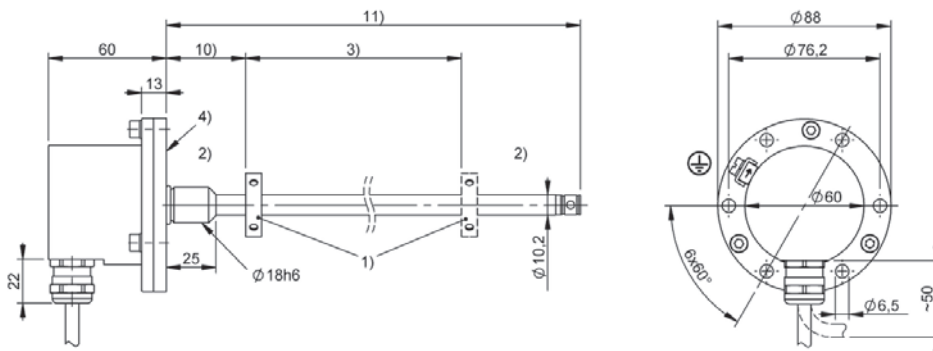
M0500 = metric in mm  
(M0025...M7620: for Rod diameter  
10.2 mm)

### BTL7-E500-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 M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-C570-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

#### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Calibration box, page 114  
BAE00EF, BAE00EC





	BTL5 -J-DEX-A/B- SERIES - SSI
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	±1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25...4000: ±30µm  d = 4, 5, 6, 8 nnnn = 25...4000: ±2 LSB
Operating voltage Ub	20...26 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Protection degree	IP67
Approval/Conformity	CE IECEX EAC KC PESO
Ex category	ATEX: 1G, 2G, 3G, IECEX: EPL Ga, Gb, Gc

## BTL5-abcde-Mnnnn-fg-ij-lm

### 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 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

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

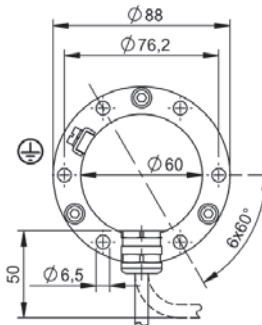
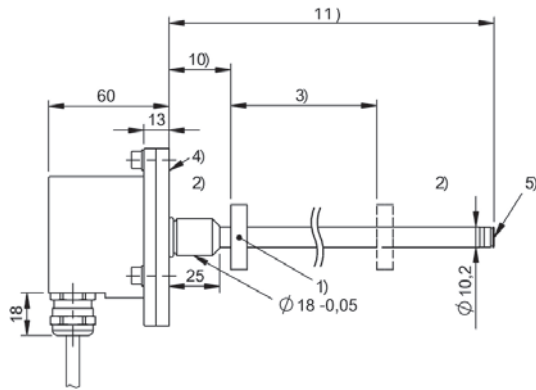
#### l Connection type

K = Cable out radial (PUR)

#### m Connection type characteristic 1

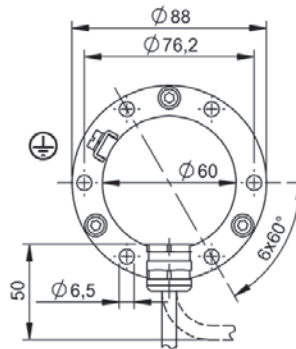
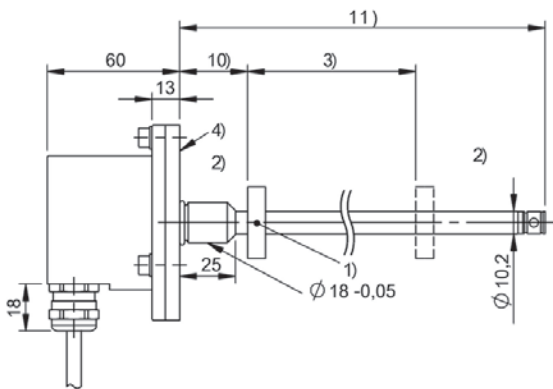
(length in meters)  
02, 05, 10, 15, 20, 30

### BTL5-Sxxxx-Mxxxx-J-DEXB-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL5-Sxxxx-Mxxxx-J-DEXA-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J



	BTL5 -J-DEX-A/B- SERIES - DIGITAL
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	nnnn = 0025...0500: ±100 µm, nnnn > 0500: ±0.02% FS
Operating voltage Ub	20...26 VDC
Ambient temperature	–40...60 °C
Mechanical configuration	Fastening 18h6 fit
Protection degree	IP67
Approval/Conformity	CE IECEX EAC KC PESO
Ex category	ATEX: 1G, 2G, 3G, IECEX: EPL Ga, Gb, 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

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

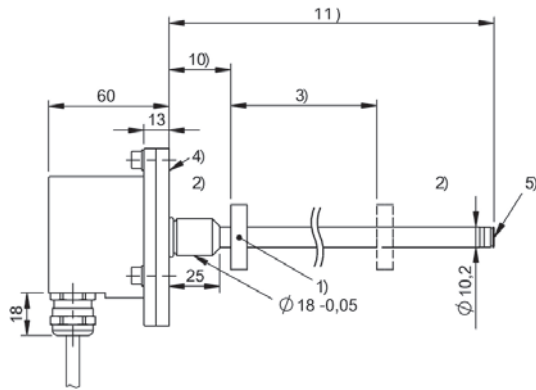
#### l Connection type

K = Cable out radial (PUR)

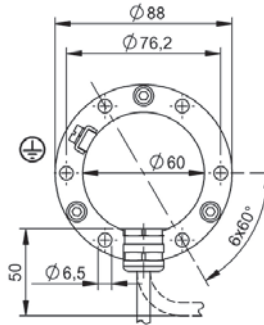
#### m Connection type characteristic 1

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

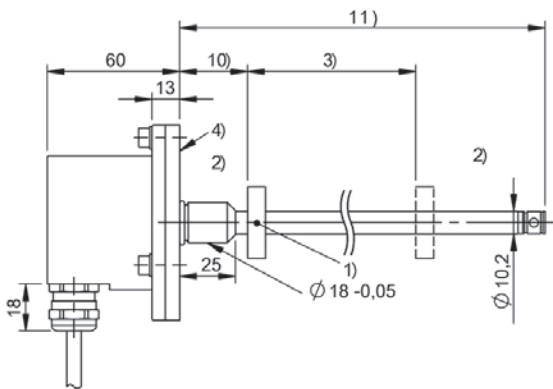
### BTL5-Px-Mxxxx-J-DEXB-Kxx



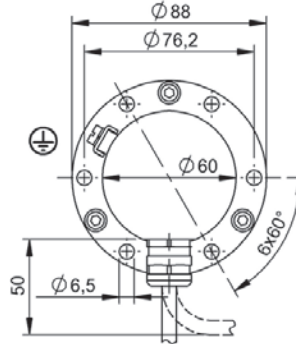
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep



### BTL5-Px-Mxxxx-J-DEXA-Kxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface



### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J





	BTL7 -J-DEX-A/B/D/E- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...7620 mm
Repeat accuracy	≤ ±10 µm
Linearity deviation	nnnn = 0050...5500: ±30 µm, nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening 18h6 fit
Protection degree	IP68
Approval/Conformity	CE IECEX
Ex category	ATEX: 1G, 2G, 3G, 2D, 3D IECEX: EPL Ga, Gb, Gc, Db, Dc

**BTL7-abcd-Mnnnn-fg-ij-lm**

**BTL7**

Magnetostrictive linear position sensor  
Generation 7

**a Interface**

T = PROFIBUS DP

**b Operating voltage**

5 = 10...30 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

**l 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**

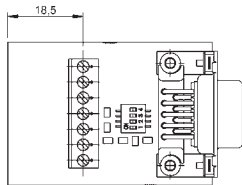
for cable (length in meters):  
02, 05, 10, 15, 20, 50

**Suitable accessories**

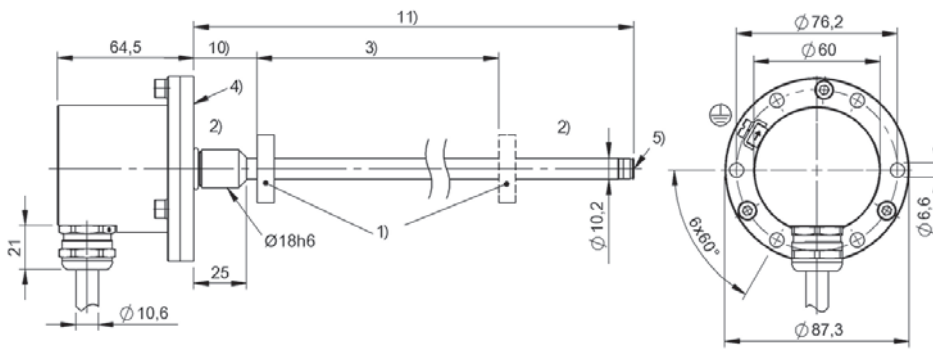
Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Adapter: BIU000N

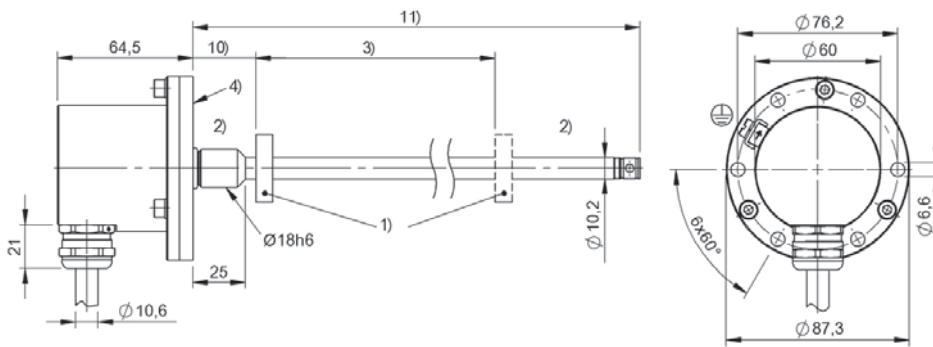


### BTL7-T500-Mxxxx-J-DEXB-Kxx



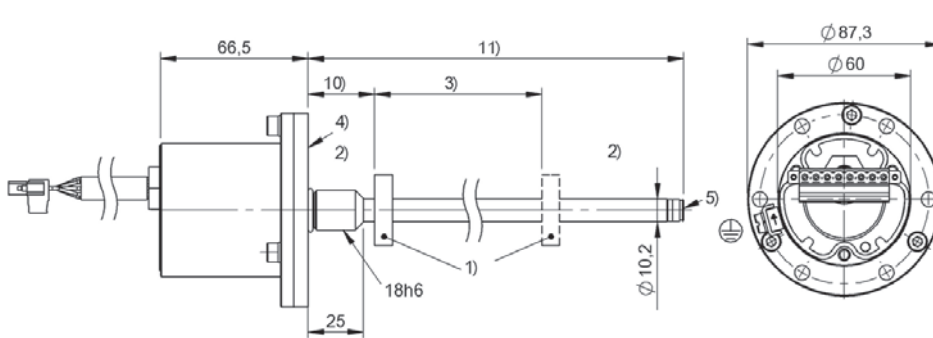
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-J-DEXA-Kxx



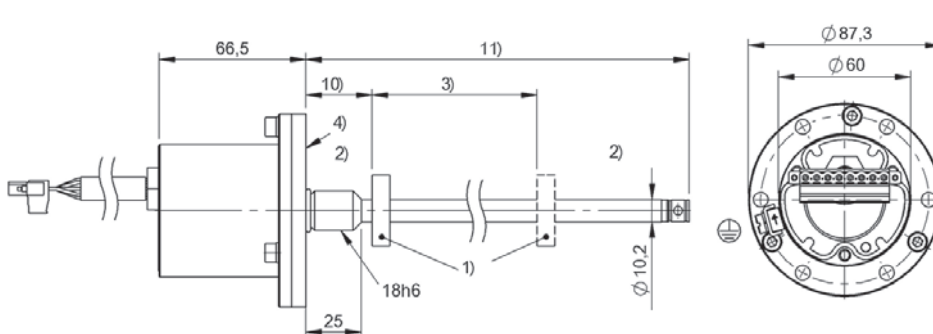
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-J-DEXE-ZA1K



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-T500-Mxxxx-J-DEXD-ZA1K



- 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



	BTL7 -J-DEXC- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...7620 mm
Repeat accuracy	$\leq \pm 5 \mu\text{m}$
Linearity deviation	nnnn = 0025...5500: $\pm 50 \mu\text{m}$ , nnnn > 5500: $\pm 0.02\%$ FS
Operating voltage $U_b$	10...30 VDC
Ambient temperature	$-40...80^\circ\text{C}$
Mechanical configuration	Fastening 18h6 fit
Protection degree	IP68
Approval/Conformity	CE IECEX EAC CSA
Ex category	ATEX: 1G, 2G, 3G, 1D, 2D, 3D IECEX: EPL Ga, Gb, Gc, Da, Db, Dc NEC 500: Class I, Division 1, Groups ABCD; Class II, Division 1, Groups EFG; Class III; Enclosure Type 4X/6P NEC 505: Class I, Zone 1, AEx d IIC T* Ga/Gb Ex d IIC T* Gb IP68

## BTL7-abcd-Mnnnn-f-ij-lm

### 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...M7620: for Rod diameter  
10.2 mm)

#### f Style

J = Flange 18h6

#### i Variant

DEX = Ignition protection category „d“  
/ pressure-proof encapsulation

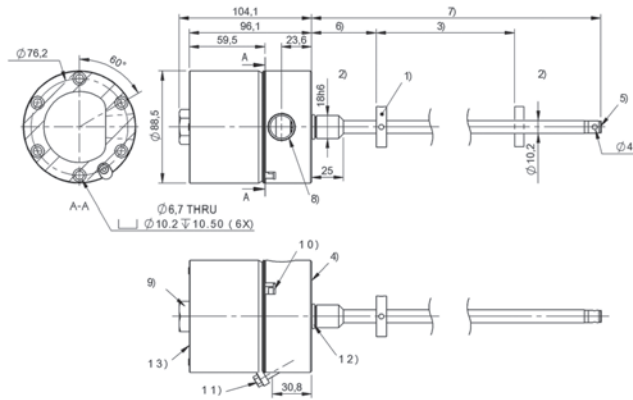
#### j Variant characteristic

C = Float plug

#### l + m connection type + connection type characteristic 1

TA12 = Clamp with 1/2"-14 NPT  
(cable entry)

## BTL7-P511-Mxxxx-J-DEXC-TA12



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 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

### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Mechanical accessories, page 115  
BAM011T, BAM011R, BAM02ME



	BTL7 -J-DEXC- SERIES - SSI
Interface	SSI
Measuring length	25...7620 mm
Repeat accuracy	≤ ±5 µm
Linearity deviation	d = 1, 2, 3, 7: nnnn = 50...5500: ±30µm  d = 4, 5, 6, 8 nnnn = 50...5500: ±2 LSB  nnnn > 5500: ±0.02% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...80 °C
Mechanical configuration	Fastening 18h6 fit
Protection degree	IP68
Approval/Conformity	CE IECEX EAC CSA
Ex category	ATEX: 1G, 2G, 3G, 1D, 2D, 3D IECEX: EPL Ga, Gb, Gc, Da, Db, Dc NEC 500: Class I, Division 1, Groups ABCD; Class II, Division 1, Groups EFG; Class III; Enclosure Type 4X/6P NEC 505: Class I, Zone 1, AEx d IIC T* Ga/Gb Ex d IIC T* Gb IP68

## BTL7-abcde-Mnnnn-f-ij-lm

### BTL7

Magnetostrictive linear position sensor  
Generation 7

#### a Interface

S = SSI

#### b Operating voltage

5 = 10...30 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 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  
(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

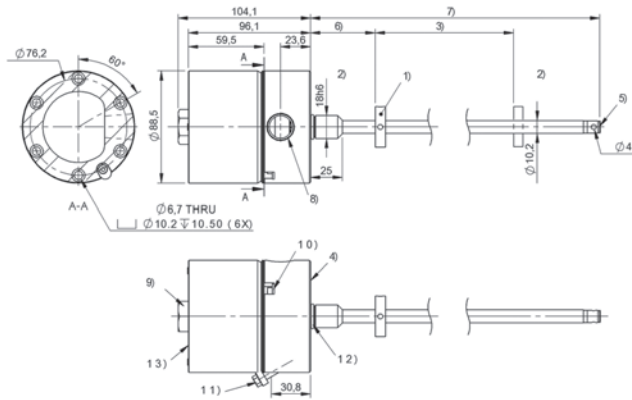
C = Float plug

#### l + m connection type + connection type characteristic 1

TA12 = Clamp with 1/2"-14 NPT  
(cable entry)



## BTL7-S5xxx-Mxxxx-J-DEXC-TA12



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 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

### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Communication box, page 114  
BAE0040, BAE0043

Mechanical accessories, page 115  
BAM011T, BAM011R, BAM02ME



	BTL5 -J-DEXC- SERIES - CANOPEN
Interface	CANopen
Measuring length	25...4000 mm
Repeat accuracy	±2 LSB
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	−40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4404)
Protection degree	IP68
Approval/Conformity	CE IECEX EAC CSA
Ex category	ATEX: 1G, 2G, 3G, 1D, 2D, 3D IECEX: EPL Ga, Gb, Gc, Da, Db, Dc NEC 500: Class I, Division 1, Groups ABCD; Class II, Division 1, Groups EFG; Class III; Enclosure Type 4X/6P NEC 505: Class I, Zone 1, AEx d IIC T* Ga/Gb Ex d IIC T* Gb IP68

### BTL5-abcd-Mnnnn-fg-ij-lm

#### 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

J = Flange 18h6

#### g Form factor characteristic

- = Rod diameter 10.2 mm

#### i Variant

DEX = Ignition protection category „d“  
/ pressure-proof encapsulation

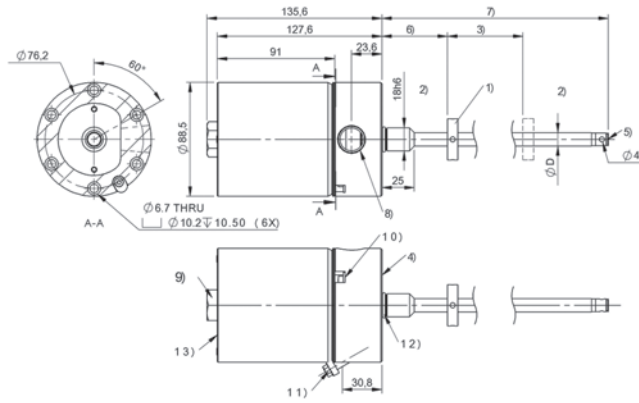
#### j Variant characteristic

C = Float plug

#### l + m connection type + connection type characteristic 1

TA12 = Clamp with 1/2"-14 NPT  
(cable entry)

## BTL5-Hxxx-Mxxxx-J-DEXC-TA12



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 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

### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Mechanical accessories, page 115  
BAM011T, BAM011R, BAM02ME



	BTL5 -J-DEXC- SERIES - PROFIBUS
Interface	Profibus
Measuring length	25...4000 mm
Repeat accuracy	±2 LSB
Linearity deviation	±30 µm
Operating voltage Ub	20...28 VDC
Ambient temperature	−40...80 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4404)
Protection degree	IP68
Approval/Conformity	CE IECEX EAC CSA
Ex category	ATEX: 1G, 2G, 3G, 1D, 2D, 3D IECEX: EPL Ga, Gb, Gc, Da, Db, Dc NEC 500: Class I, Division 1, Groups ABCD; Class II, Division 1, Groups EFG; Class III; Enclosure Type 4X/6P NEC 505: Class I, Zone 1, AEx d IIC T* Ga/Gb Ex d IIC T* Gb IP68

## BTL5-abcd-Mnnnn-fg-ij-lm

### f Style

J = Flange 18h6

### BTL5

Magnetostrictive linear position sensor  
Generation 5

### g Form factor characteristic

- = Rod diameter 10.2 mm

### a Interface

T = Profibus

### i Variant

DEX = Ignition protection category „d“  
/ pressure-proof encapsulation

### b Operating voltage

1 = 20...28 V

### j Variant characteristic

C = Float plug

### c + d Interface characteristic 1 + 2

10 = 1 magnet  
(1 – 4 magnets can be set)

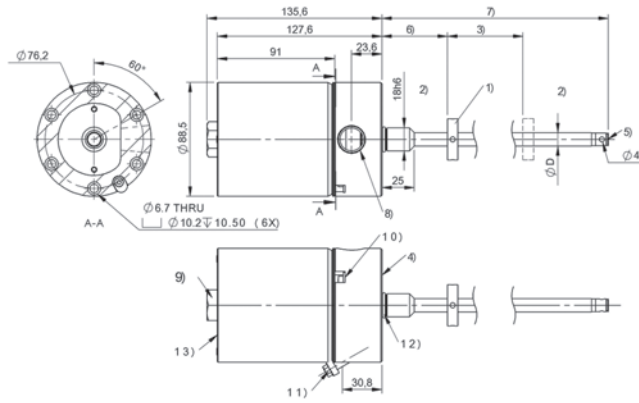
### l + m connection type + connection type characteristic 1

TA12 = Clamp with 1/2"-14 NPT  
(cable entry)

### Mnnnn Nominal length (4-position)

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

## BTL5-Txxx-Mxxxx-J-DEXC-TA12



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 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

### Suitable accessories

Magnet, float, page 110 and 111  
BAM0147, BAM0148, BAM014A, BAM014E

Magnet, rod, page 110 and 111  
BAM013L, BAM013P, BAM013J

Mechanical accessories, page 115  
BAM011T, BAM011R, BAM02ME





	BTL7 -B-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...5500 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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

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 M18 x 1.5,  
for flat seal  
B = Mounting threads M18 x 1.5,  
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“

#### l Connection type

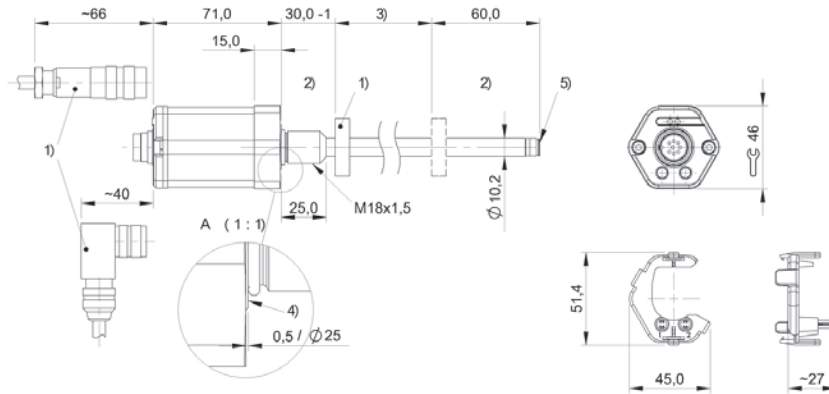
S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

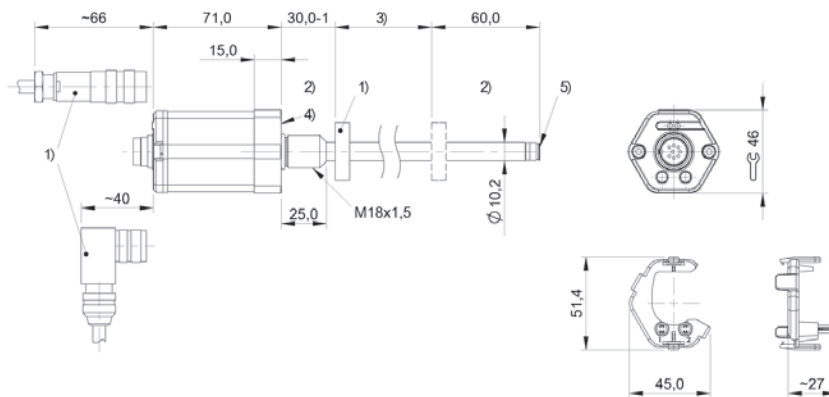
for cable (length in meters):  
02, 05, 10, 15, 20, 30

### BTL7-A501-Mxxxx-B-NEX-S32



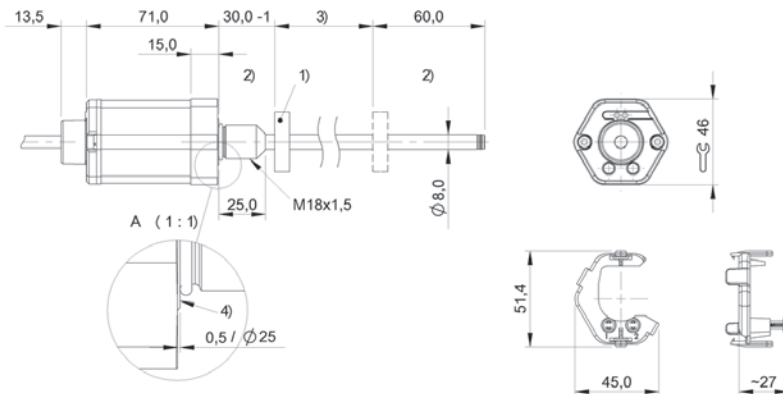
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### 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 M4 x 4/6 deep

### BTL7-A510-Mxxxx-B8-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Communication box, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



	BTL7 -B-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...5500 mm
Repeat accuracy	±5 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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

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 M18 x 1.5,  
for flat seal  
B = Mounting threads M18 x 1.5,  
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“

#### l Connection type

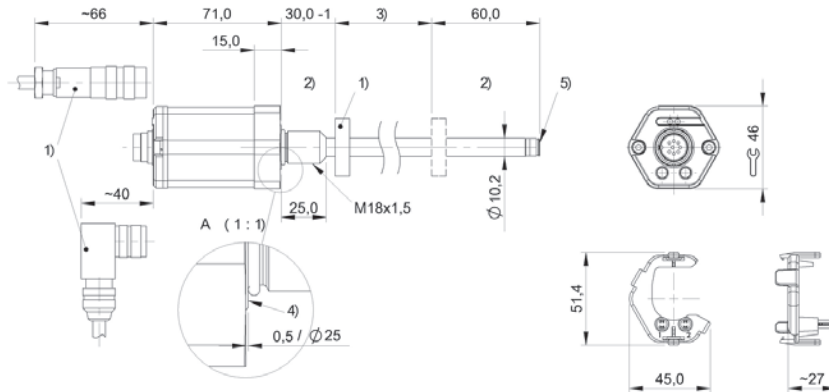
S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

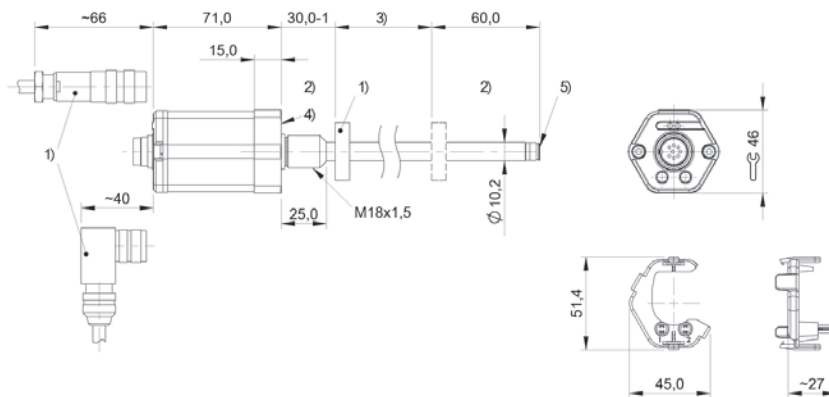
for cable (length in meters):  
02, 05, 10, 15, 20, 50, 100

### BTL7-E501-Mxxxx-B-NEX-S32



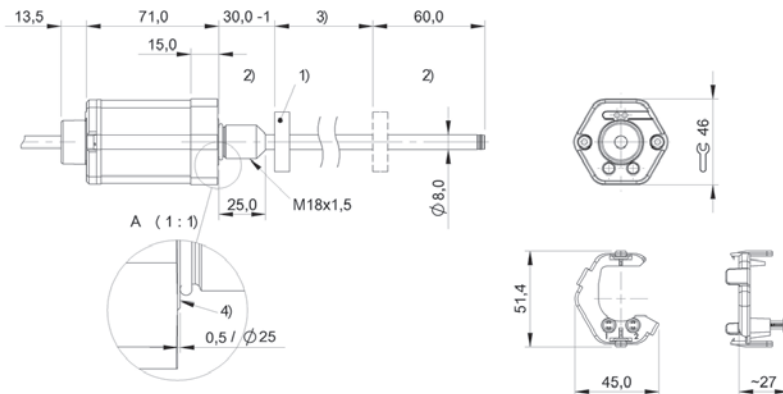
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### 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 M4 x 4/6 deep

### BTL7-E570-Mxxxx-B8-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Communication box, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



	BTL7 -B-NEX- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...5500 mm
Repeat accuracy	≤ ±5 µm
Linearity deviation	±50 µm
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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 M18 x 1.5, for flat seal

B = Mounting threads M18 x 1.5, 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“

#### l Connection type

S = Connector

KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:

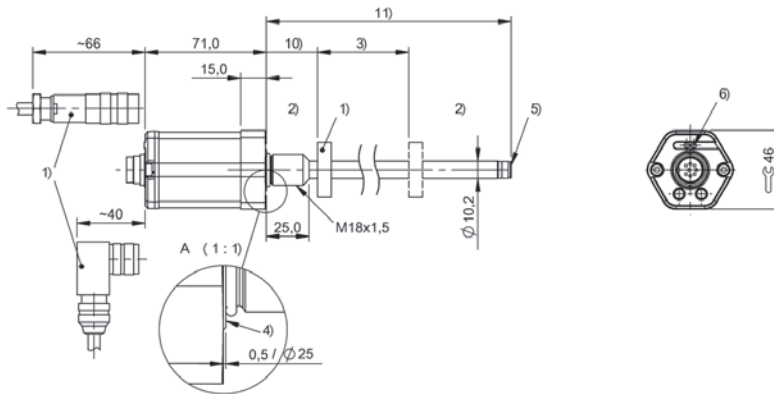
32 = M16 x 0.75 connector with 8 pins

for cable (length in meters):

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

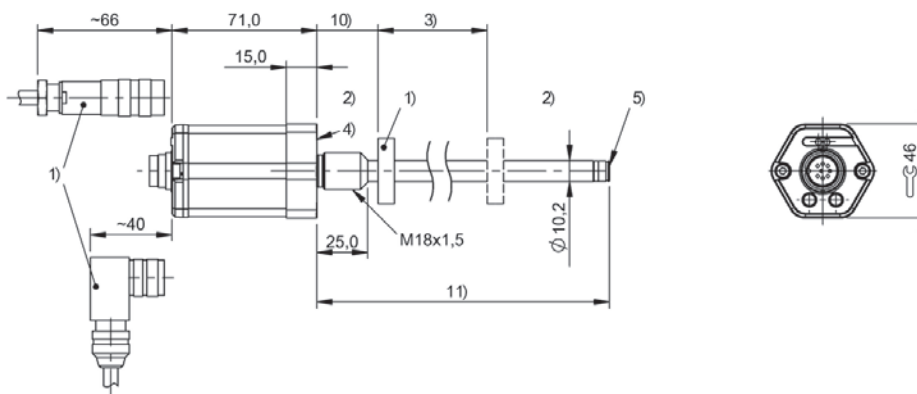


### BTL7-P511-Mxxxx-B-NEX-S32



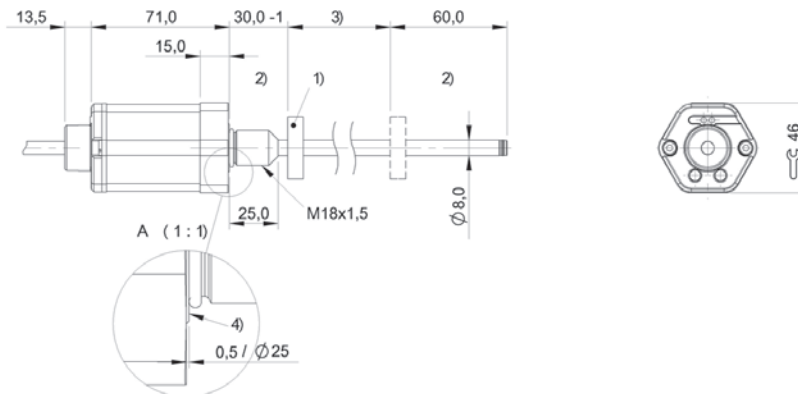
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

### BTL7-P511-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 M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-P511-Mxxxx-B8-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW



	BTL7 -B-NEX- SERIES - SSI
Interface	SSI
Measuring length	25...5500 mm
Repeat accuracy	$\leq \pm 5 \mu\text{m}$
Linearity deviation	d = 1, 2, 3, 7: $\pm 30 \mu\text{m}$ , d = 4, 5, 6, 8: $\pm 2 \text{ LSB}$
Operating voltage $U_b$	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcde-Mnnnn-fg-i-lm

### BTL7

Magnetostrictive linear position sensor  
Generation 7

#### a Interface

S = SSI

#### b Operating voltage

5 = 10...30 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  $\mu\text{m}$   
2 = 5  $\mu\text{m}$   
3 = 10  $\mu\text{m}$   
4 = 20  $\mu\text{m}$   
5 = 40  $\mu\text{m}$   
6 = 100  $\mu\text{m}$   
7 = 2  $\mu\text{m}$   
8 = 50  $\mu\text{m}$

#### 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...M5500: for Rod diameter 10.2 mm)

#### f Style

A = Mounting threads M18 x 1.5, for flat seal  
B = Mounting threads M18 x 1.5, 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“

#### l Connection type

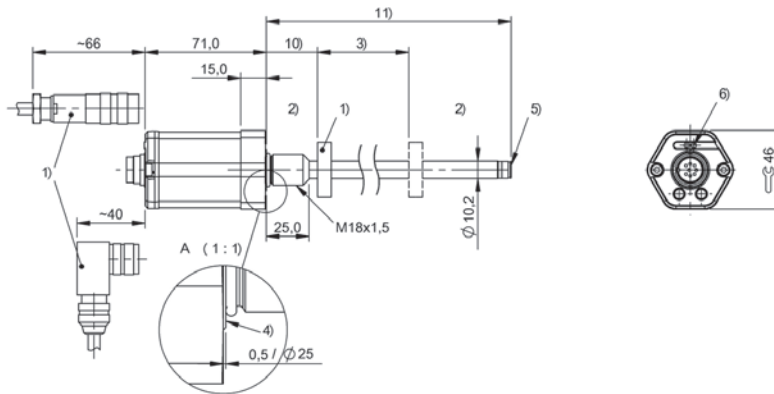
S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

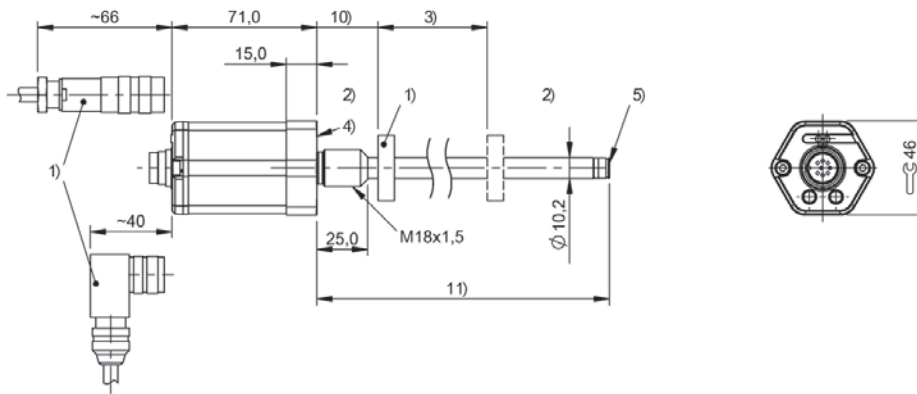
for cable (length in meters):  
02, 05, 10, 15, 20, 50, 100

### BTL7-S510x-Mxxxx-B-NEX-S32



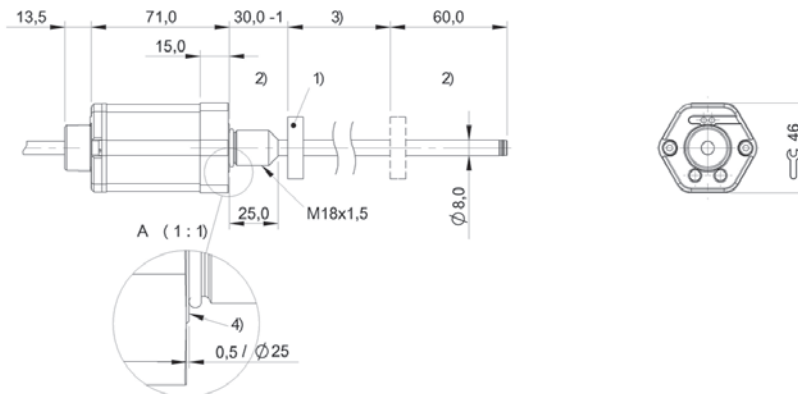
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

### BTL7-S5xxx-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 M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-S5xxx-Mxxxx-B8-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Communication box, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



	BTL7 -Z-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...5500 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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

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 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“

#### l Connection type

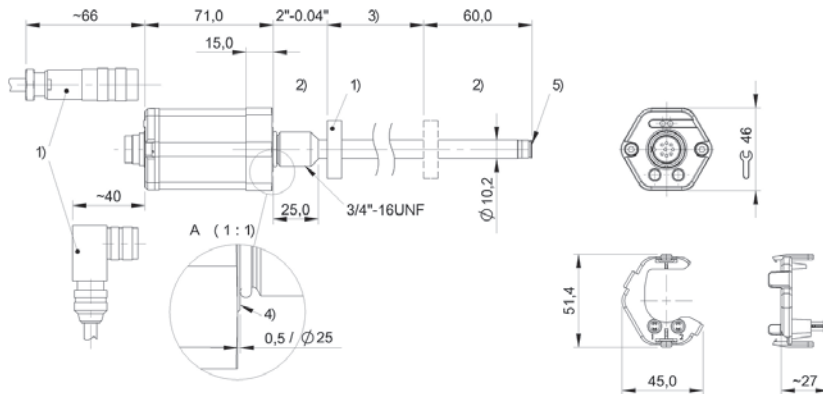
S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

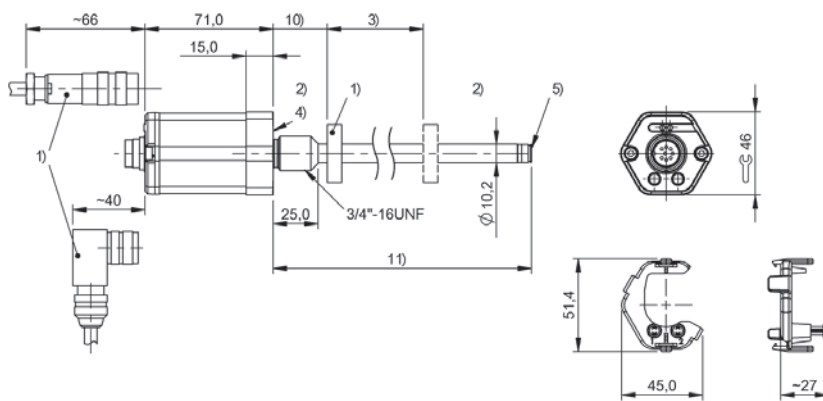
for cable (length in meters):  
02, 05, 10, 15, 20, 30

### BTL7-A501-Mxxxx-Z-NEX-S32



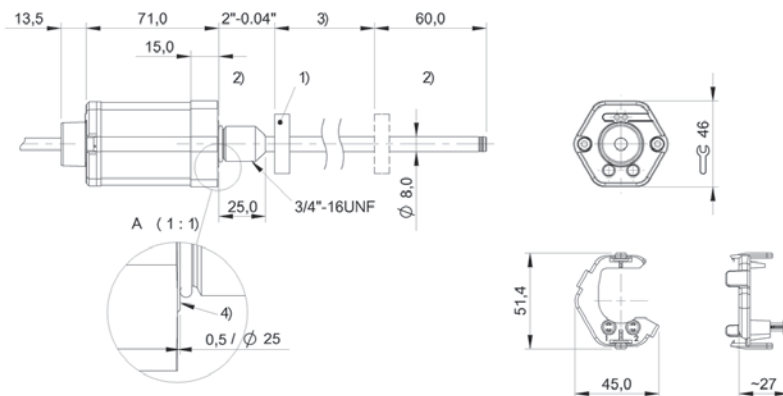
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL7-G510-Mxxxx-Y-NEX-S32



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL7-A510-Mxxxx-Z8-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Communication box, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



	BTL7 -Z-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...5500 mm
Repeat accuracy	±5 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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

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“

#### l Connection type

S = Connector  
KA = Cable (PUR)

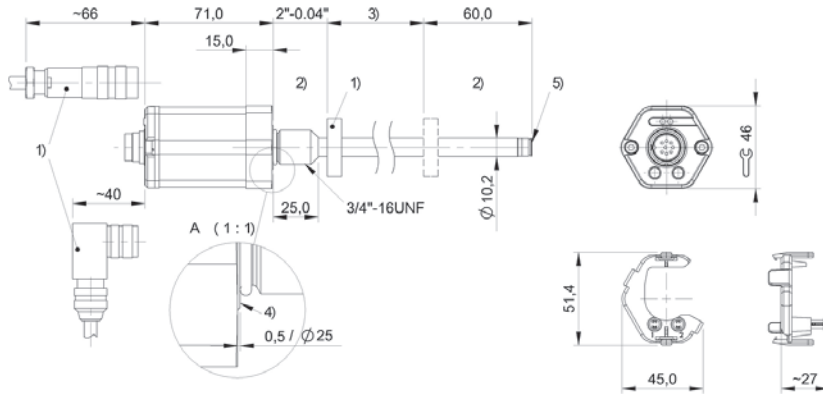
#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

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

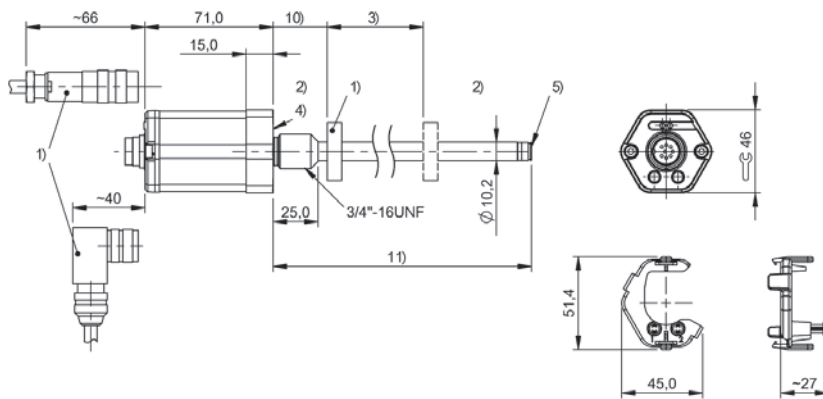


### BTL7-E501-Mxxxx-Z-NEX-S32



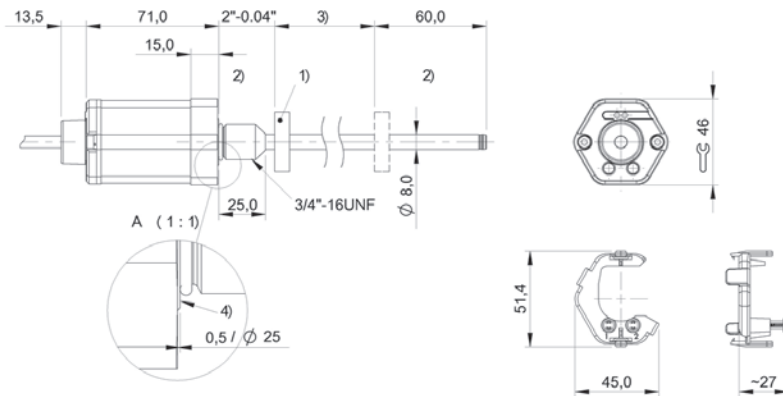
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL7-C500-Mxxxx-Y-NEX-S32



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

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



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Communication box, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



	BTL7 -Z-NEX- SERIES - DIGITAL
Interface	Digital pulse
Measuring length	25...5500 mm
Repeat accuracy	≤ ±5 µm
Linearity deviation	±50 µm
Operating voltage $U_b$	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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

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“

#### l Connection type

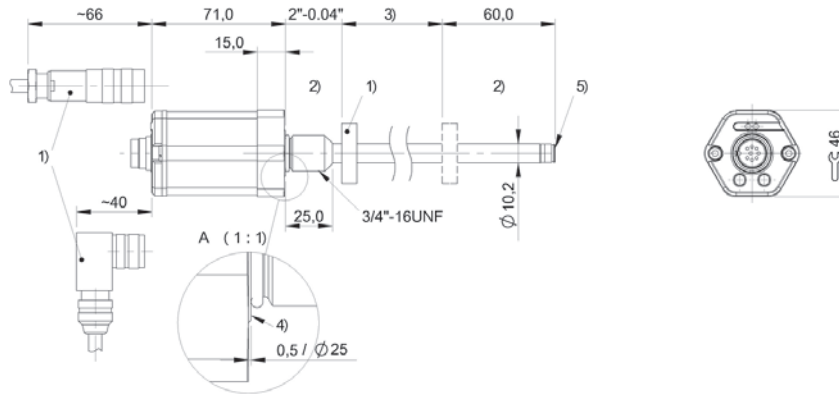
S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

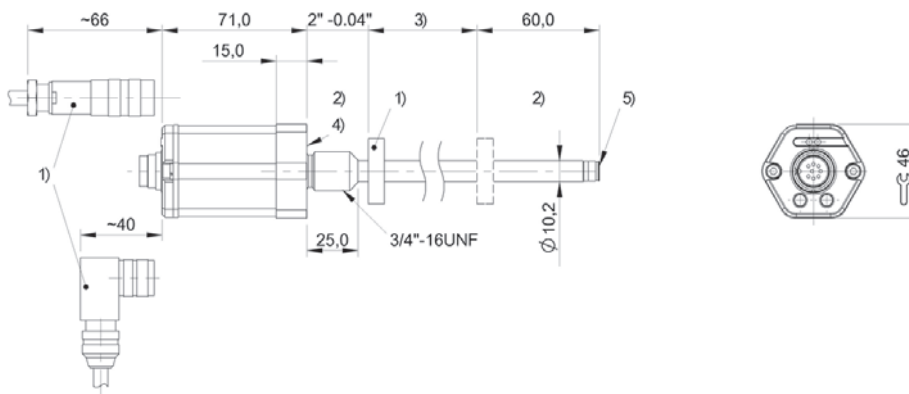
for cable (length in meters):  
02, 05, 10, 15, 20, 50, 100

### BTL7-P511-Mxxxx-Z-NEX-S32



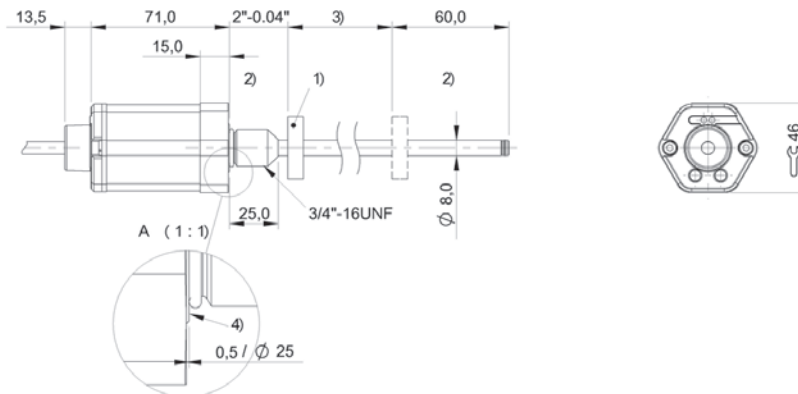
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL7-P511-Mxxxx-Y-NEX-S32



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL7-P511-Mxxxx-Z8-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW



	BTL7 -Z-NEX- SERIES - SSI
Interface	SSI
Measuring length	25...5500 mm
Repeat accuracy	≤ ±5 µm
Linearity deviation	d = 1, 2, 3, 7: ±30µm, d = 4, 5, 6, 8: ±2 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcde-Mnnnn-fg-i-lm

### BTL7

Magnetostrictive linear position sensor  
Generation 7

#### a Interface

S = SSI

#### b Operating voltage

5 = 10...30 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 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  
(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“

#### l Connection type

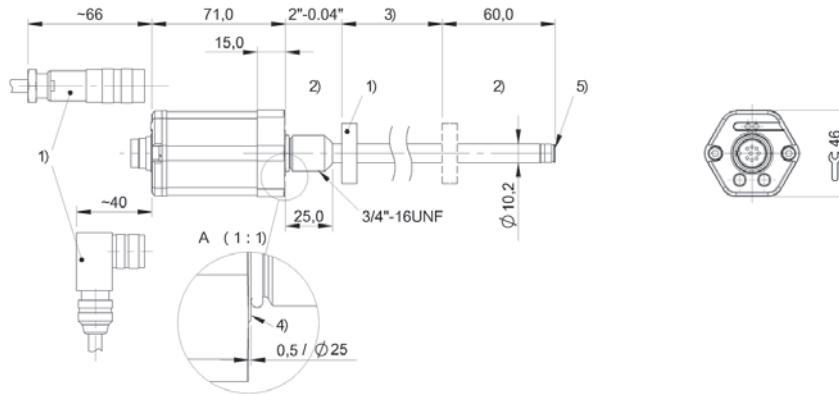
S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

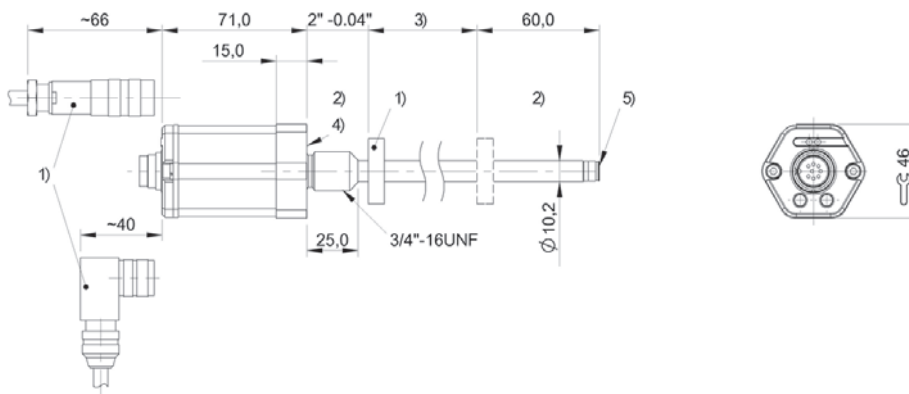
for cable (length in meters):  
02, 05, 10, 15, 20, 50, 100

### BTL7-S510x-Mxxxx-Z-NEX-S32



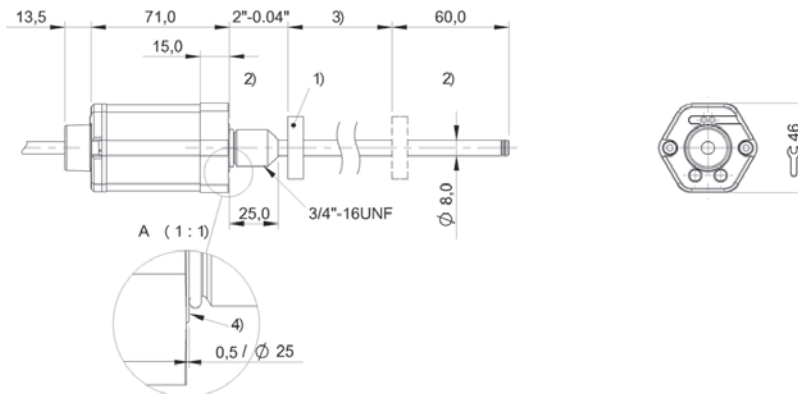
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL7-S5xxx-Mxxxx-Y-NEX-S32



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep

### BTL7-S5xxx-Mxxxx-Z8-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

EinstellBox, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



	BTL7 -CD-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...2000 mm
Repeat accuracy	±5 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...2000: ±0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	–40...60 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-f-i-lm

### 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

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 M22 x 1.5,  
for O-Ring

#### i Variant

NEX = Ignition class „nA“ and „tb“

#### l Connection type

S = Connector  
KA = Cable (PUR)

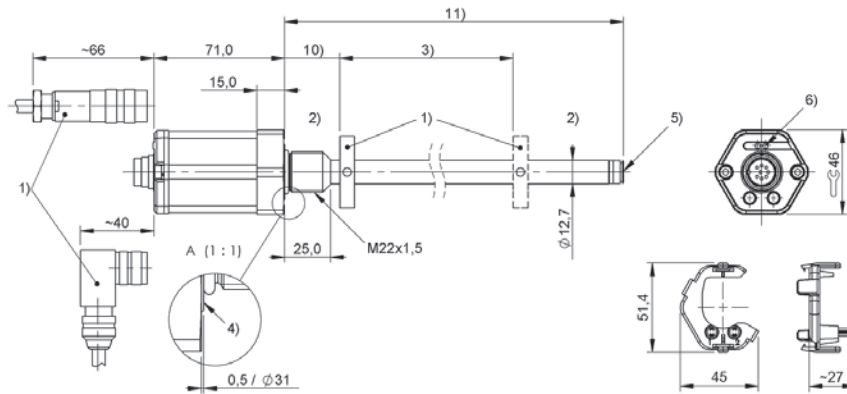
#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

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

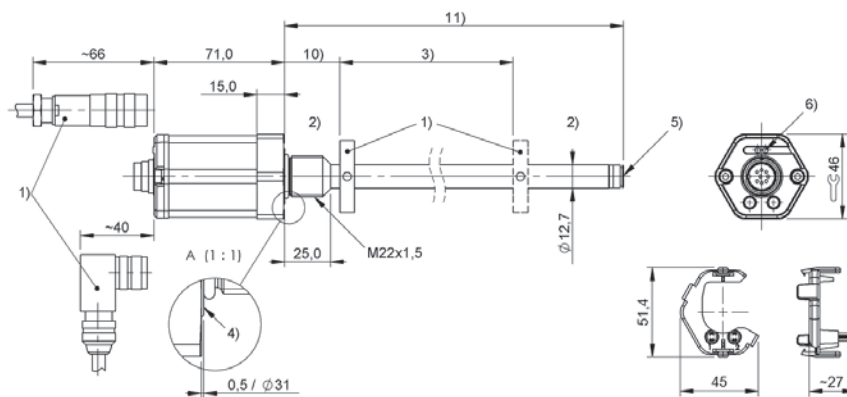


### BTL7-E501-Mxxxx-CD-NEX-S32



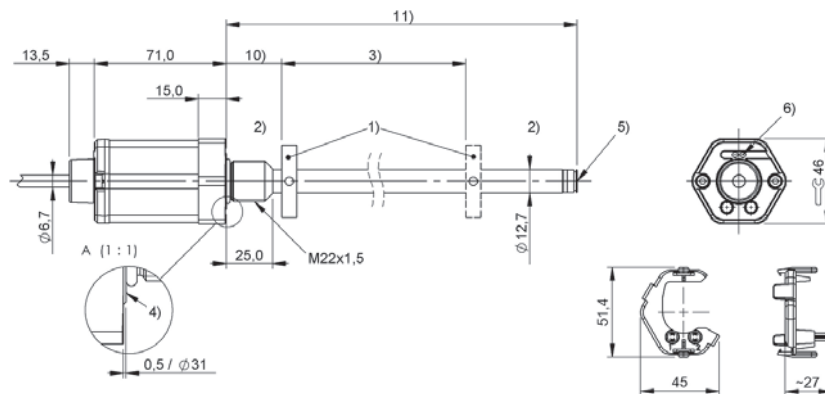
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

### BTL7-C500-Mxxxx-CD-NEX-S32



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

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



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

#### Suitable accessories and single-ended cordsets

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Communication box, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW



	BTL7 -CD-NEX- SERIES - SSI
Interface	SSI
Measuring length	25...2000 mm
Repeat accuracy	≤ ±5 µm
Linearity deviation	d = 1, 2, 3, 7: ±30µm, d = 4, 5, 6, 8: ±2 LSB
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening M22 threads
Housing material	Aluminum
Protection degree	I = S: IP67 with connector I = KA: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO TIIS
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcde-Mnnnn-f-i-lm

### BTL7

Magnetostrictive linear position sensor  
Generation 7

#### a Interface

S = SSI

#### b Operating voltage

5 = 10...30 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 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  
(M0025...M2000)

#### f Style

CD = Mounting threads M22 x 1.5,  
for O-Ring

#### i Variant

NEX = Ignition class „nA“ and „tb“

#### l Connection type

S = Connector

KA = Cable (PUR)

#### m Connection type characteristic 1

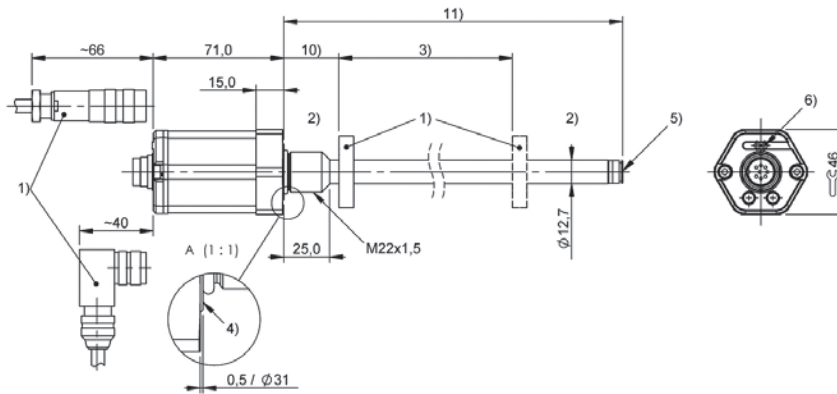
for connector:

32 = M16 x 0.75 connector with 8 pins

for cable (length in meters):

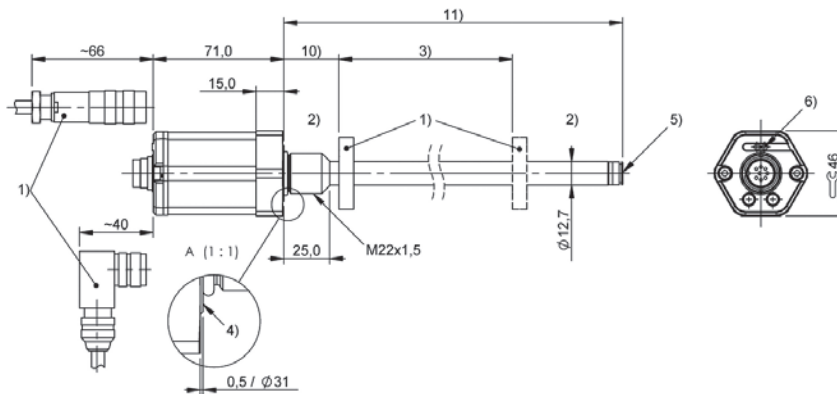
02, 05, 10, 15, 20, 30, 50, 100

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



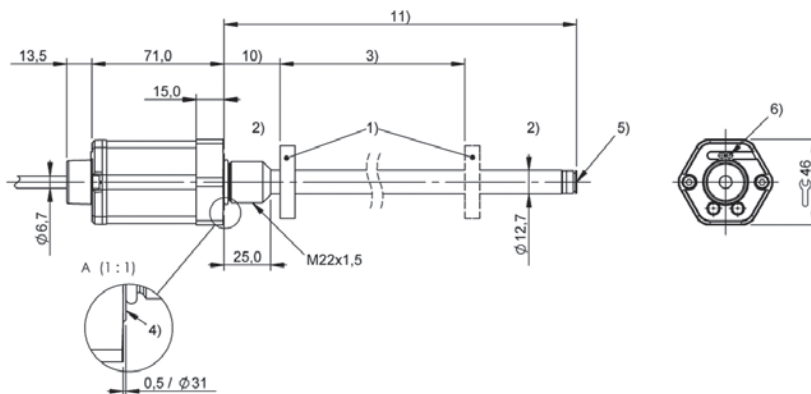
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

### BTL7-S5xxx-Mxxxx-CD-NEX-S32



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

### BTL7-S5xxx-Mxxxx-CD-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

#### Suitable accessories and single-ended cordsets

Magnet, rod, page 110 and 111  
 BAM013H, BAM013J, BAM013K, BAM013L,  
 BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
 BAE00EF, BAE00EC

Communication box, page 114  
 BAE0040, BAE0043

Single-ended cordsets, page 102–105  
 BCC00TU, BCC00TY, BCC00TZ,  
 BCC00UR, BCC00UU, BCC00UW



	BTL7 -K-NEX- SERIES - ANALOG VOLTAGE
Interface	Analog, voltage
Measuring length	25...5500 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
Protection degree	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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...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“

#### l Connection type

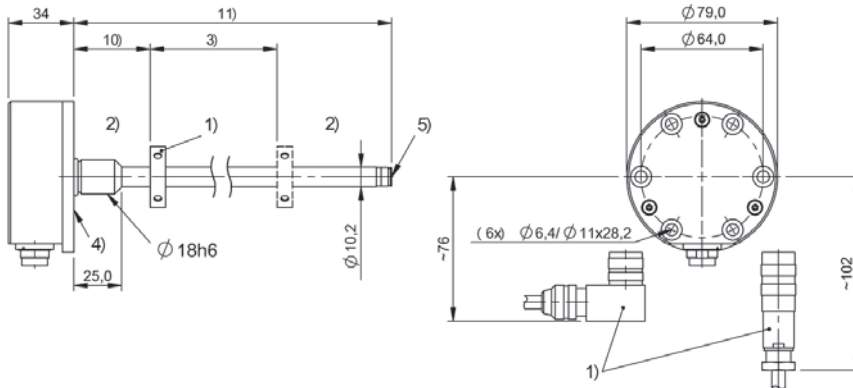
SR = Connector  
K = Cable out radial (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

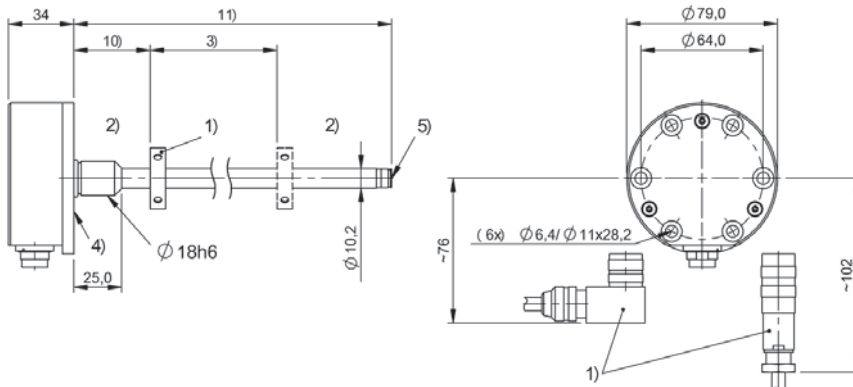
for cable (length in meters):  
02, 05, 10, 15, 20, 30

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



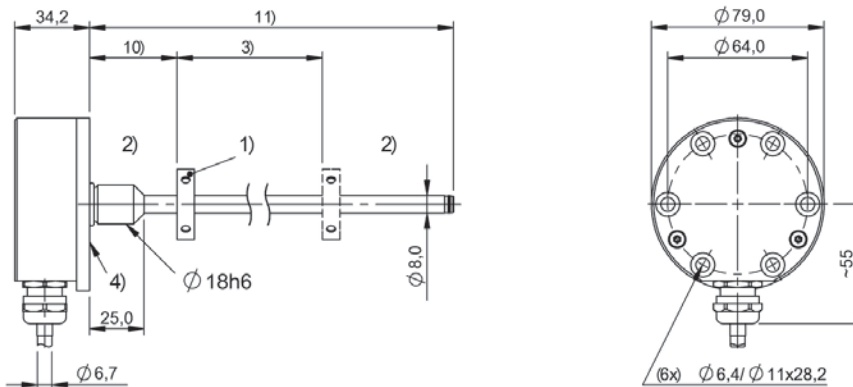
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-G510-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 M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-A510-Mxxxx-K8-NEX-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

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW



	BTL7 -K-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...5500 mm
Repeat accuracy	±10 µm
Linearity deviation	nnnn = 0050...0500: ±50 µm, nnnn = 0501...5500: ±0.01% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	-40...60 °C
Mechanical configuration	Fastening 18h6 fit
Housing material	Stainless steel (1.4305)
Protection degree	I = S: IP67 with connector I = K: IP68
Approval/Conformity	CE IECEX EAC CSA INMETRO
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc NEC 500: Class I, Division 2, Groups ABCD; Class II, Division 2, Groups EFG; T4 CSA C22.1: Class I, Zone 2, Ex nA IIC T4; Ex tb IIIC T135°C NEC 505: Class I, Zone 2, AEx nA IIC Gc T4; AEx tb IIIC Db T135°C

## BTL7-abcd-Mnnnn-fg-i-lm

### 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...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“

#### l Connection type

SR = Connector  
K = Cable out radial (PUR)

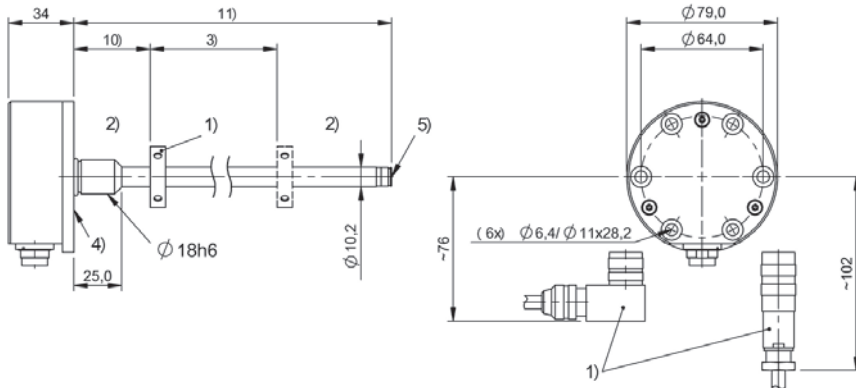
#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

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

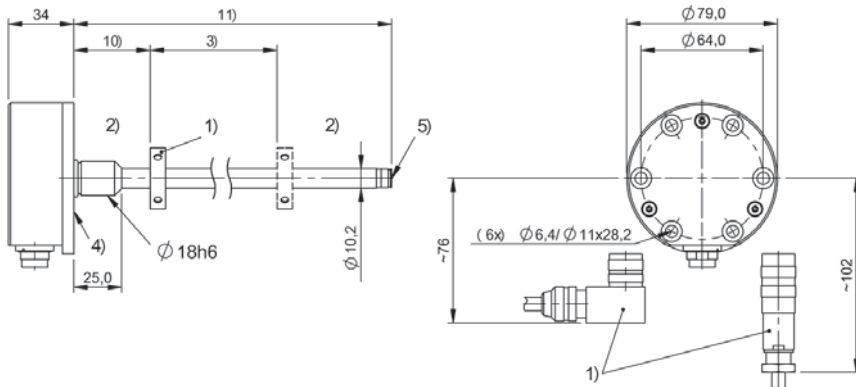


### BTL7-E500-Mxxxx-K-NEX-SR32



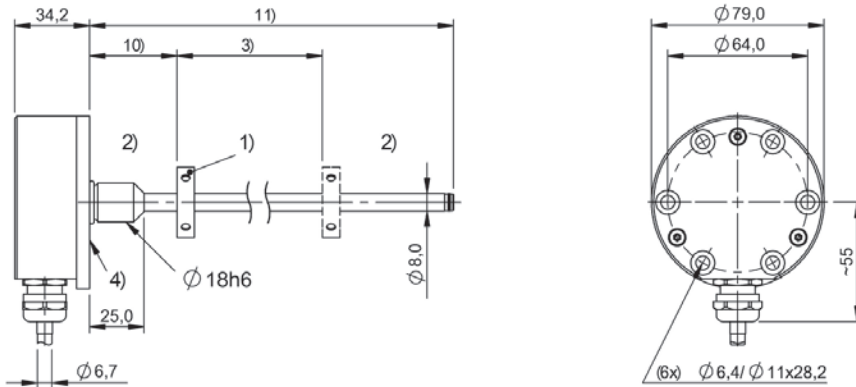
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-C570-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 M4 x 4/6 deep
- 10) Null point
- 11) Installation length

### BTL7-E570-Mxxxx-K8-NEX-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

#### Suitable accessories and single-ended cordsets

Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Calibration box, page 114  
BAE00EF, BAE00EC

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW



	BTL7 -TB-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	±5 µm
Linearity deviation	nnnn = 0050...0500: ±200 µm, nnnn > 0500: ±0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	−40...60 °C
Mechanical configuration	Fastening M18 threads
Housing material	Aluminum
Protection degree	IP67
Approval/Conformity	CE IECEX EAC
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc

## BTL7-abcd-Mnnnn-fh-i-lm

### 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

04 = 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 M18 x 1.5,  
for O-Ring

#### h Redundant

2 = 2 times redundant  
3 = 3 times redundant

#### i Variant

NEX = Ignition class „nA“ and „tb“

#### l Connection type

S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

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

### Suitable accessories and single-ended cordsets

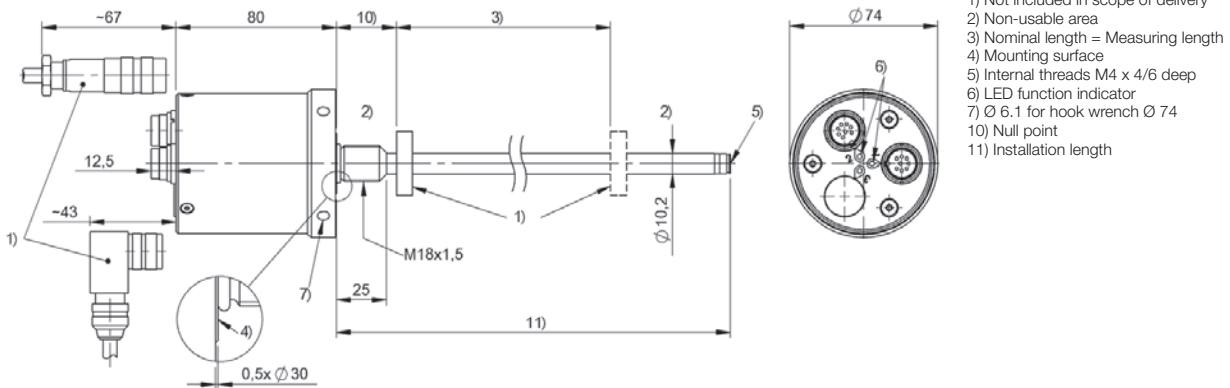
Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

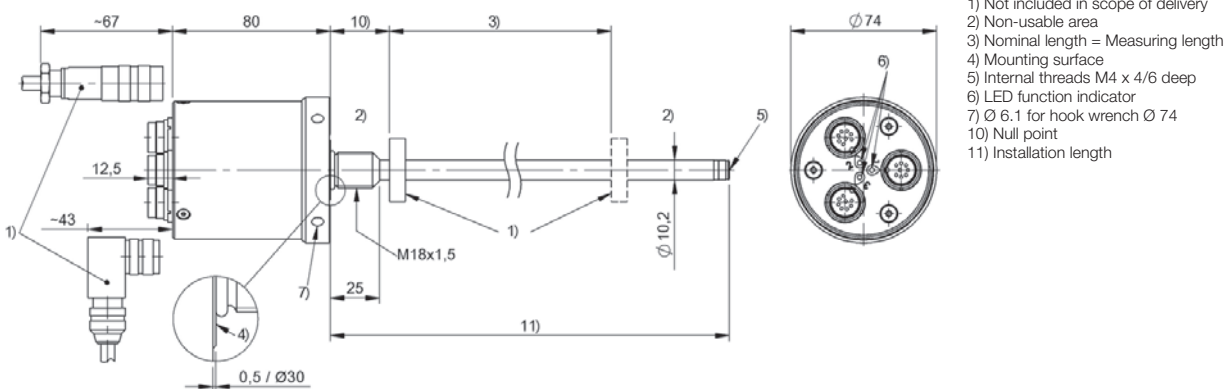
Communication box, page 114  
BAE0040, BAE0043

Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

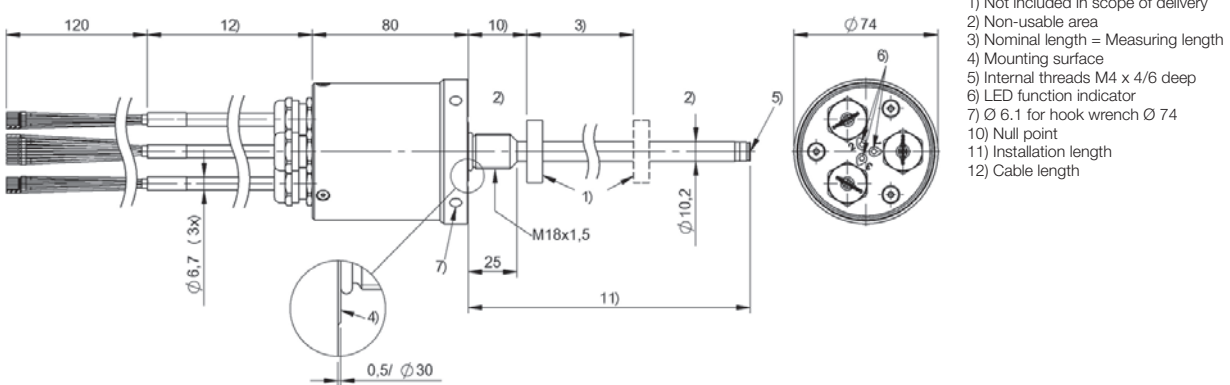
### BTL7-E504-Mxxxx-TB2-NEX-S32



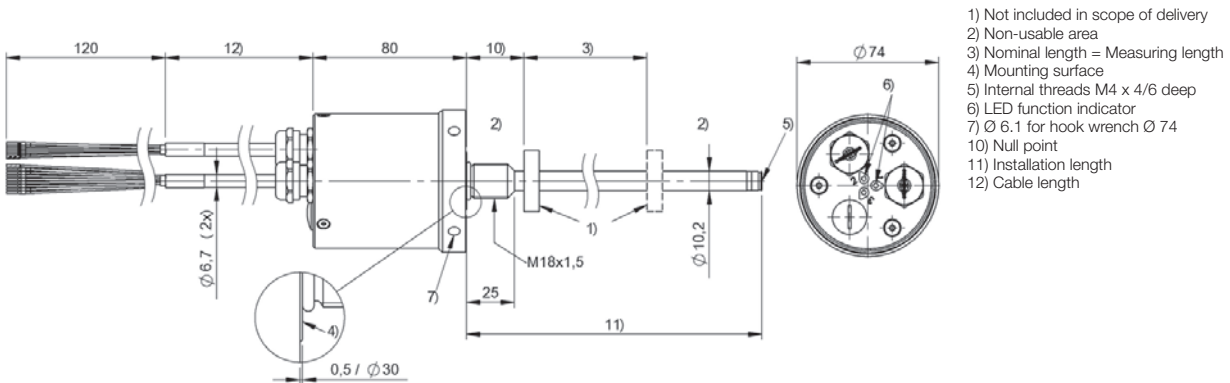
### BTL7-C505-Mxxxx-TB3-NEX-S32



### BTL7-E505-Mxxxx-TB3-NEX-KAxx



### BTL7-C504-Mxxxx-TB2-NEX-KAxx



Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



	BTL7 -TZ-NEX- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	±5 µm
Linearity deviation	nnnn = 0050...0500: ±200 µm, nnnn > 0500: ±0.04% FS
Operating voltage Ub	10...30 VDC
Ambient temperature	–40...60 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Aluminum
Protection degree	IP67
Approval/Conformity	CE IECEX EAC
Ex category	ATEX: 3G, 2D, 3D IECEX: EPL Gc, Db, Dc

## BTL7-abcd-Mnnnn-fh-i-lm

### 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

04 = 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“

#### l Connection type

S = Connector  
KA = Cable (PUR)

#### m Connection type characteristic 1

for connector:  
32 = M16 x 0.75 connector with 8 pins

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

### Suitable accessories and single-ended cordsets

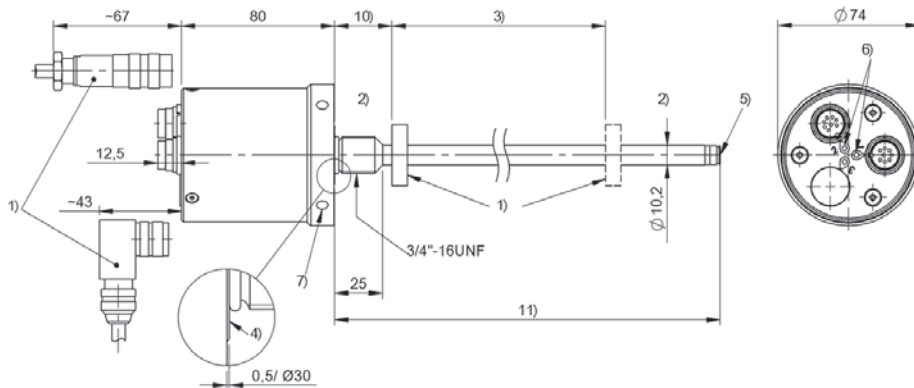
Magnet, float, page 110 and 111  
BAM024J, BAM0146, BAM0149, BAM014C

Magnet, rod, page 110 and 111  
BAM013H, BAM013J, BAM013K, BAM013L,  
BAM013M, BAM013P, BAM013R, BAM013Y

Communication box, page 114  
BAE0040, BAE0043

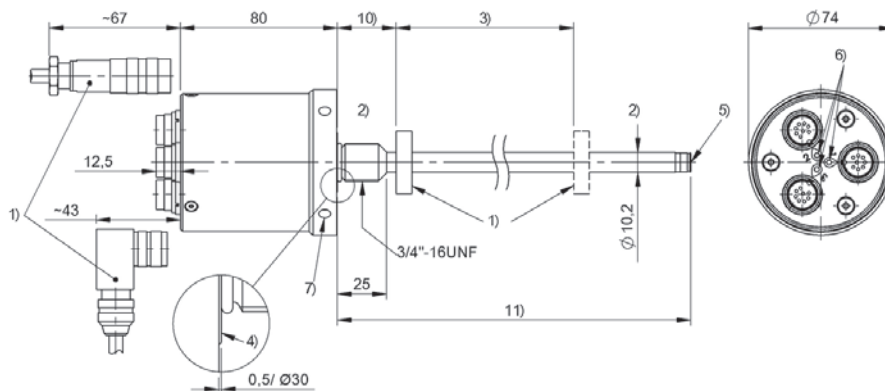
Single-ended cordsets, page 102–105  
BCC00TU, BCC00TY, BCC00TZ,  
BCC00UR, BCC00UU, BCC00UW

### BTL7-E504-Mxxxx-TZ2-NEX-S32



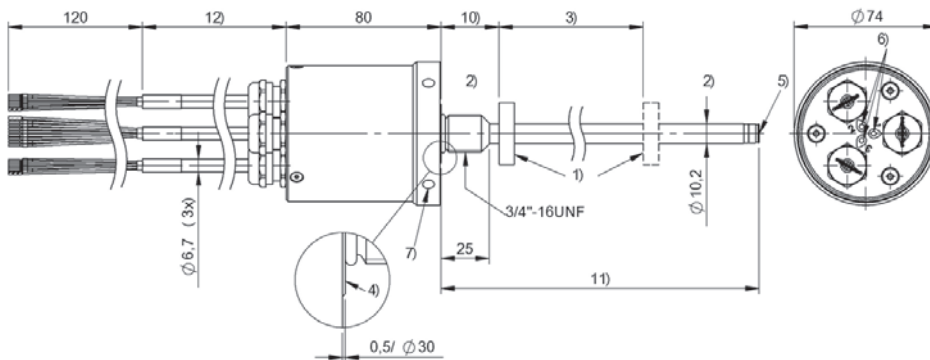
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 7) Ø 6.1 for hook wrench Ø 74
- 10) Null point
- 11) Installation length

### BTL7-C505-Mxxxx-TZ3-NEX-S32



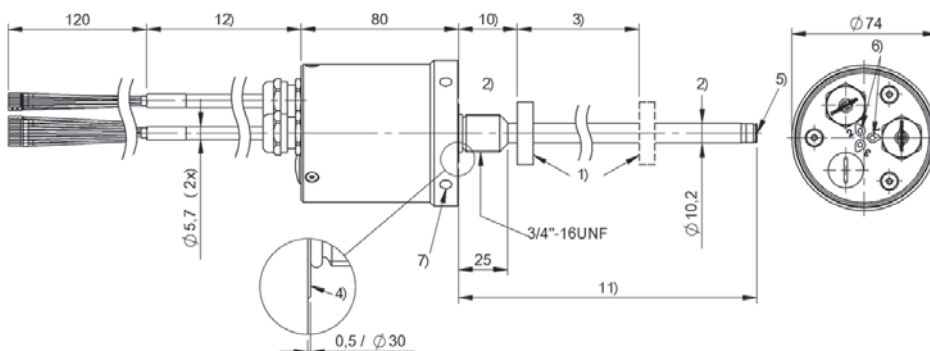
- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 7) Ø 6.1 for hook wrench Ø 74
- 10) Null point
- 11) Installation length

### BTL7-E505-Mxxxx-TZ3-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 7) Ø 6.1 for hook wrench Ø 74
- 10) Null point
- 11) Installation length
- 12) Cable length

### BTL7-C504-Mxxxx-TZ2-NEX-KAxx



- 1) Not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4 x 4/6 deep
- 6) LED function indicator
- 7) Ø 6.1 for hook wrench Ø 74
- 10) Null point
- 11) Installation length
- 12) Cable length

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



PNP normally open	<b>BES05L6</b> BES M12MF2-PSC20B-BV02-EXE	<b>BES05L7</b> BES M12MF2-PSC40F-BV02-EXE	<b>BES05L2</b> BES M18MF2-PSC50B-BV02-EXD	
Dimension	Ø 12 x 59 mm	Ø 12 x 61 mm	Ø 18 x 60 mm	
Style	M12 x 1	M12 x 1	M18 x 1	
Installation	For flush mounting	Non-flush	For flush mounting	
Range	2 mm	1.5 mm	5 mm	
Switching frequency	300 Hz	300 Hz	300 Hz	
Housing material	Stainless steel	Stainless steel	Brass	
Surface protection	—	—	Nickel plated	
Material sensing surface	LCP	LCP POM	PA	
Connection	Cable, PUR	Cable, PUR	Cable, PUR	
Operating voltage $U_b$	10...30 VDC	10...30 VDC	18...27 VDC	
Ambient temperature	-20...60 °C	-20...60 °C	-20...60 °C	
Ex category	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
Protection degree	IP67	IP67	IP67	
Approval/Conformity	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	
Productview	Page 90	Page 91	Page 92	

Suitable signal amplifier  
see page 108-109.



<b>BES05L8</b> BES M18MF2-PSC50B-BV02-EXE	<b>BES05L3</b> BES M18MF2-PSC80F-BV02-EXD	<b>BES05L9</b> BES M18MF2-PSC80F-BV02-EXE		
Ø 18 x 60 mm	Ø 18 x 69 mm	Ø 18 x 69 mm		
M18 x 1	M18 x 1	M18 x 1		
For flush mounting	Non-flush	Non-flush		
5 mm	5.5 mm	5.5 mm		
300 Hz	300 Hz	300 Hz		
Brass	Brass	Brass		
Nickel plated	Nickel plated	Nickel plated		
PA	PA POM	PA POM		
Cable, PUR	Cable, PUR	Cable, PUR		
10...30 VDC	18...27 VDC	10...30 VDC		
-20...60 °C	-20...60 °C	-20...60 °C		
ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc		
IP67	IP67	IP67		
CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX		
Page 92	Page 92	Page 92		





PNP normally open	<b>BES05L4</b> BES M30MF2-PSC10B-BV02-EXD	<b>BES05LA</b> BES M30MF2-PSC10B-BV02-EXE	<b>BES05L5</b> BES M30MF2-PSC15F-BV02-EXD	
Dimension	Ø 30 x 62 mm	Ø 30 x 62 mm	Ø 30 x 74 mm	
Style	M30 x 1.5	M30 x 1.5	M30 x 1.5	
Installation	For flush mounting	For flush mounting	Non-flush	
Range	10 mm	10 mm	12 mm	
Switching frequency	300 Hz	300 Hz	300 Hz	
Housing material	Brass	Brass	Brass	
Surface protection	Nickel plated	Nickel plated	Nickel plated	
Material sensing surface	PA	PA	PA POM	
Connection	Cable, PUR	Cable, PUR	Cable, PUR	
Operating voltage $U_b$	18...27 VDC	10...30 VDC	18...27 VDC	
Ambient temperature	-20...60 °C	-20...60 °C	-20...60 °C	
Ex category	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
Protection degree	IP67	IP67	IP67	
Approval/Conformity	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	
Productview	Page 93	Page 93	Page 93	

Suitable signal amplifier  
see page 108-109.



	<b>BES05LC</b> BES M30MF2-PSC15F-BV02-EXE	<b>BES05M3</b> BES M12EG2-PSC20B-BV02-EXF	<b>BES05M4</b> BES M18EG2-PSC50B-BV02-EXF	<b>BES05M5</b> BES M30EG2-PSC10B-BV02-EXF	
	Ø 30 x 74 mm	Ø 12 x 59 mm	Ø 18 x 57 mm	Ø 30 x 59 mm	
	M30 x 1.5	M12 x 1	M18 x 1	M30 x 1.5	
	Non-flush	For flush mounting	For flush mounting	For flush mounting	
	12 mm	2 mm	5 mm	10 mm	
	300 Hz	180 Hz	180 Hz	180 Hz	
	Brass	Stainless steel	Stainless steel	Stainless steel	
	Nickel plated	—	—	—	
	PA POM	Stainless steel	Stainless steel	Stainless steel	
	Cable, PUR	Cable, PUR	Cable, PUR	Cable, PUR	
	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
	-20...60 °C	-5...60 °C	-10...60 °C	-20...60 °C	
	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	ATEX: 3G (EPL Gc) ATEX: 3D (EPL Dc) IECEX: EPL Gc IECEX: EPL Dc	
	IP67	IP67	IP67	IP67	
	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	CE, EAC, IECEX, ATEX	
	Page 93	Page 90	Page 91	Page 91	



NAMUR	<b>BES02ZR</b> BES G06MD-GNX10B-EV02-EEEX	<b>BES02ZT</b> BES M08MD-GNX10B-EV02-EEEX	<b>BES05NE</b> BES M12MG2-GNX20B-BT02-EXA	
Dimension	Ø 6.5 x 30 mm	Ø 8 x 30 mm	Ø 12 x 62 mm	
Style	D6.5	M8 x 1	M12 x 1	
Installation	For flush mounting	For flush mounting	For flush mounting	
Range	1 mm	1 mm	2 mm	
Switching frequency	2000 Hz	2000 Hz	—	
Housing material	Brass	Brass	Stainless steel	
Surface protection	Nickel-free coated	Nickel-free coated	—	
Material sensing surface	PBT	PBT	PEEK	
Connection	Cable, 2 m, PVC	Cable, 2 m, PVC	Cable, FEP	
Operating voltage U <sub>b</sub>	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
Ambient temperature	–20...70 °C	–20...70 °C	–20...60 °C, depending on Ex category	
Ex category	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
Protection degree	IP67	IP67	IP68	
Approval/Conformity	CE, EAC, ATEX, cCSAus, FM	CE, EAC, ATEX, cCSAus, FM	CE, EAC, IECEx, ATEX	
Productview	Page 90	Page 90	Page 90	

Suitable signal amplifier  
see page 108-109.



<b>BES05NM</b> BES M12MG2-GNX20B-BT02-EXB	<b>BES05MW</b> BES M12MG2-GNX20B-S04G-EXC	<b>BES02ZU</b> BES M12ME-GNX40B-S04G-EEX	<b>BES05NF</b> BES M12MG2-GNX40F-BT02-EXA	<b>BES05NN</b> BES M12MG2-GNX40F-BT02-EXB
Ø 12 x 62 mm	Ø 12 x 65 mm	Ø 12 x 45 mm	Ø 12 x 66 mm	Ø 12 x 66 mm
M12 x 1	M12 x 1	M12 x 1	M12 x 1	M12 x 1
For flush mounting	For flush mounting	For flush mounting	Non-flush	Non-flush
2 mm	2 mm	4 mm	4 mm	4 mm
—	—	700 Hz	—	—
Stainless steel	Brass	Brass	Stainless steel	Stainless steel
—	Nickel plated	Nickel-free coated	—	—
PTFE	PA	PBT	PEEK	PTFE
Cable, FEP	Connector, M12 x 1 connector, 4-pin	Connector, M12 x 1 connector, 4-pin	Cable, FEP	Cable, FEP
7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC
–20...60 °C, depending on Ex category	–20...60 °C, depending on Ex category	–20...70 °C	–20...60 °C, depending on Ex category	–20...60 °C, depending on Ex category
ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)
IP68	IP67	IP67	IP68	IP68
CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, cCSAus, FM	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX
Page 90	Page 91	Page 91	Page 91	Page 91



NAMUR	<b>BES05MY</b> BES M12MG2-GNX40F-S04G-EXC	<b>BES05NH</b> BES M18MH2-GNX50B-BT02-EXA	<b>BES05NP</b> BES M18MH2-GNX50B-BT02-EXB	
Dimension	Ø 12 x 70 mm	Ø 18 x 67 mm	Ø 18 x 67 mm	
Style	M12 x 1	M18 x 1	M18 x 1	
Installation	Non-flush	For flush mounting	For flush mounting	
Range	4 mm	5 mm	5 mm	
Switching frequency	—	—	—	
Housing material	Brass	Stainless steel	Stainless steel	
Surface protection	Nickel plated	—	—	
Material sensing surface	PA	PEEK	PTFE	
Connection	Connector, M12 x 1 connector, 4-pin	Cable, FEP	Cable, FEP	
Operating voltage $U_b$	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
Ambient temperature	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	
Ex category	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
Protection degree	IP67	IP68	IP68	
Approval/Conformity	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	
Productview	Page 91	Page 92	Page 92	

Suitable signal amplifier  
see page 108-109.



	<b>BES05MZ</b> BES M18MH2-GNX50B-S04G-EXC	<b>BES02ZW</b> BES M18ME1-GNX80B-S04G-EEEX	<b>BES05NJ</b> BES M18MH2-GNX80F-BT02-EXA	<b>BES05NR</b> BES M18MH2-GNX80F-BT02-EXB	<b>BES05N0</b> BES M18MH2-GNX80F-S04G-EXC
	Ø 18 x 67 mm	Ø 18 x 46 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
	M18 x 1	M18 x 1	M18 x 1	M18 x 1	M18 x 1
	For flush mounting	For flush mounting	Non-flush	Non-flush	Non-flush
	5 mm	8 mm	8 mm	8 mm	8 mm
	—	400 Hz	—	—	—
	Brass	Brass	Stainless steel	Stainless steel	Brass
	Nickel plated	Nickel-free coated	—	—	Nickel plated
	PA	PBT	PEEK	PTFE	PA
	Connector, M12 x 1 connector, 4-pin	Connector, M12 x 1 connector, 4-pin	Cable, FEP	Cable, FEP	Connector, M12 x 1 connector, 4-pin
	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC
	-20...60 °C, depending on Ex category	-20...70 °C	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category
	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)
	IP67	IP67	IP68	IP68	IP67
	CE, EAC, IECEx, ATEX	CE, EAC, cCSAus, FM	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX
	Page 92	Page 90	Page 92	Page 92	Page 93

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

**Do you need more details?** Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



NAMUR	<b>BES05NK</b> BES M30MH2-GNX10B-BT02-EXA	<b>BES05NT</b> BES M30MH2-GNX10B-BT02-EXB	<b>BES05N1</b> BES M30MH2-GNX10B-S04G-EXC	
Dimension	Ø 30 x 68 mm	Ø 30 x 68 mm	Ø 30 x 68 mm	
Style	M30 x 1.5	M30 x 1.5	M30 x 1.5	
Installation	For flush mounting	For flush mounting	For flush mounting	
Range	10 mm	10 mm	10 mm	
Switching frequency	—	—	—	
Housing material	Stainless steel	Stainless steel	Brass	
Surface protection	—	—	Nickel plated	
Material sensing surface	PEEK	PTFE	PA	
Connection	Cable, FEP	Cable, FEP	Connector, M12 x 1 connector, 4-pin	
Operating voltage U <sub>b</sub>	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
Ambient temperature	–20...60 °C, depending on Ex category	–20...60 °C, depending on Ex category	–20...60 °C, depending on Ex category	
Ex category	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
Protection degree	IP68	IP68	IP67	
Approval/Conformity	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	
Productview	Page 93	Page 93	Page 93	

Suitable signal amplifier  
see page 108-109.





<b>BES02ZY</b> BES M30ME1-GNX15B-S04G-EEEX	<b>BES05NL</b> BES M30MH2-GNX15F-BT02-EXA	<b>BES05NU</b> BES M30MH2-GNX15F-BT02-EXB	<b>BES05N2</b> BES M30MH2-GNX15F-S04G-EXC	
Ø 30 x 50 mm	Ø 30 x 77 mm	Ø 30 x 77 mm	Ø 30 x 77 mm	
M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	
For flush mounting	Non-flush	Non-flush	Non-flush	
15 mm	15 mm	15 mm	15 mm	
100 Hz	—	—	—	
Brass	Stainless steel	Stainless steel	Brass	
Nickel-free coated	—	—	Nickel plated	
PBT	PEEK	PTFE	PA	
Connector, M12 x 1 connector, 4-pin	Cable, FEP	Cable, FEP	Connector, M12 x 1 connector, 4-pin	
7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
-20...70 °C	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	-20...60 °C, depending on Ex category	
ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)	
IP67	IP68	IP68	IP67	
CE, EAC, cCSAus, FM	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	CE, EAC, IECEx, ATEX	
Page 93	Page 94	Page 94	Page 94	

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

**Do you need more details?** Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



NAMUR	<b>BES02ZZ</b> BES Q40KFU-GNX20B-S92G-EEEX	<b>BES0300</b> BES Q40KFU-GNX35F-S92G-EEEX	<b>BHS004L</b> BES 516-300-S318-S4-N	
PNP normally open				
Dimension	40 x 40 x 66 mm	40 x 40 x 66 mm	Ø 12 x 56 mm	
Style	Block style	Block style	M12 x 1	
Installation	For flush mounting	Non-flush	For flush mounting	
Range	20 mm	35 mm	1.5 mm	
Switching frequency	200 Hz	100 Hz	1000 Hz	
Housing material	PPE PPS	PPE PPS	Stainless steel	
Surface protection	—	—	—	
Material sensing surface	PPE	PPE	POM	
Connection	Connector, M12 x 1 connector	Connector, M12 x1 connector	Connector, M12 x 1 connector, 4-pin	
Operating voltage U <sub>b</sub>	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
Ambient temperature	–20...70 °C	–20...70 °C	–25...70 °C	
Pressure rating max.	—	—	500 bar	
Ex category	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)	ATEX: 2G (EPL Gb) ATEX: 1D (EPL Da)	ATEX: 2G (EPL Gb)	
Protection degree	IP67	IP67	IP68	
Approval/Conformity	CE, EAC, cCSAus, FM	CE, EAC, cCSAus, FM	CE, EAC, IECEx, ATEX	
Productview	Page 94	Page 94	Page 93	

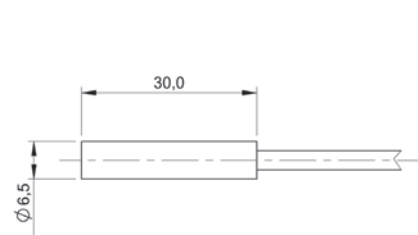
Suitable signal amplifier  
see page 108-109.



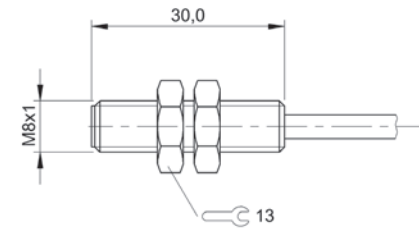
		<b>BHS0034</b> BES 516-300-S266-S4	<b>BHS004K</b> BES 516-300-S315-S4-N		
	<b>BHS002W</b> BES 516-300-S249-NEX-S4-D			<b>BHS005P</b> BHS B135V-PSD15-NEX-S04	<b>BHS004H</b> BES 516-300-S308-NEX-S4-D
	Ø 12 x 56 mm	Ø 12 x 56 mm	Ø 12 x 56 mm	Ø 12 x 78 mm	Ø 18 x 55 mm
	M12 x 1	M12 x 1	M12 x 1	M12 x 1	M18 x 1
	For flush mounting	For flush mounting	For flush mounting	For flush mounting	For flush mounting
	1.5 mm	1.5 mm	1.5 mm	1.5 mm	1.5 mm
	2000 Hz	1000 Hz	1000 Hz	400 Hz	2000 Hz
	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	—	—	—	—	—
	EP	POM	POM	Ceramic	EP
	Connector, M12 x 1 connector, 4-pin	Connector, M12 x 1 connector, 4-pin	Connector, M12 x 1 connector, 4-pin	Connector, M12 x 1 connector, 4-pin	Connector, M12 x 1 connector, 4-pin
	10...30 VDC	7.7...9 VDC	7.7...9 VDC	10...30 VDC	10...30 VDC
	–25...80 °C	–25...70 °C	–25...70 °C	–25...100 °C	–25...80 °C
	500 bar	500 bar	500 bar	500 bar	500 bar
	ATEX: 3G (EPL Gc)	ATEX: 2G (EPL Gb)	ATEX: 2G (EPL Gb)	ATEX: 3G (EPL Gc)	ATEX: 3G (EPL Gc)
	IP68	IP68	IP68	IP68	IP68
	CE, EAC, ATEX	CE, EAC	CE, EAC, IECEx, ATEX	CE, EAC, ATEX	CE, EAC, ATEX
	Page 92	Page 90	Page 90	Page 91	Page 92

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

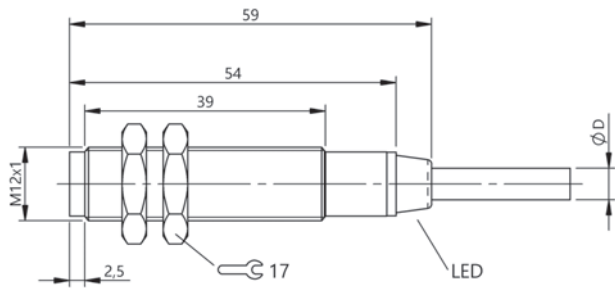
**Do you need more details?** Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



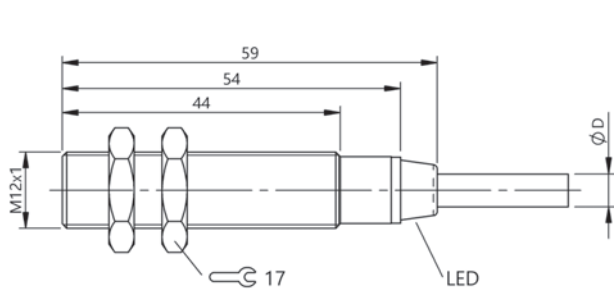
BES02ZR



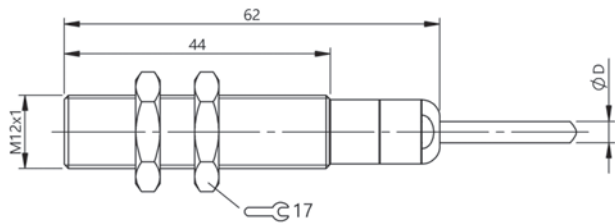
BES02ZT



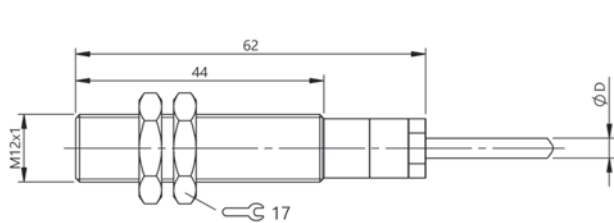
BES05M3



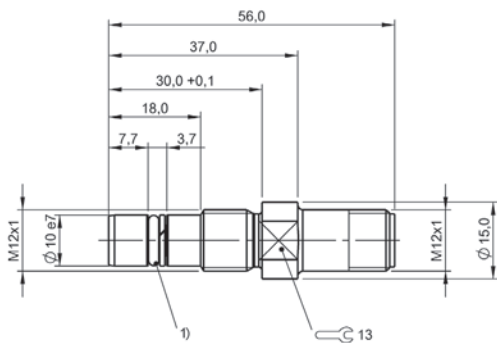
BES05L6



BES05NE

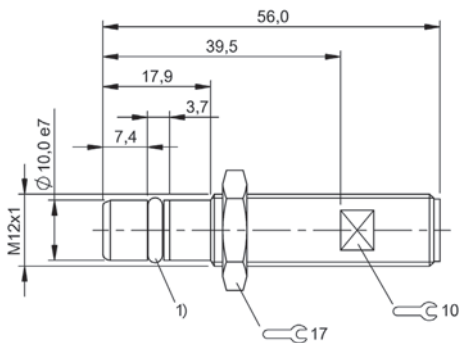


BES05NM



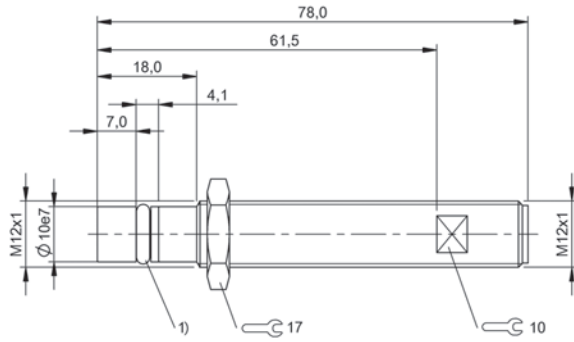
1) O-Ring with thrust ring

BHS004L



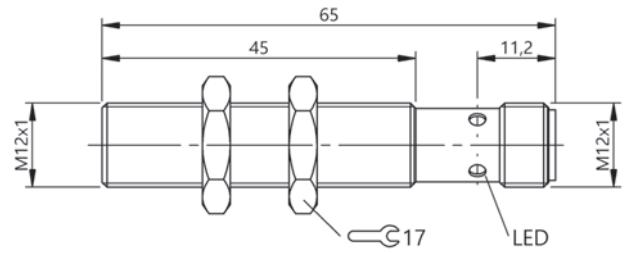
1) O-Ring with thrust ring

BHS002W, BHS0034, BHS004K

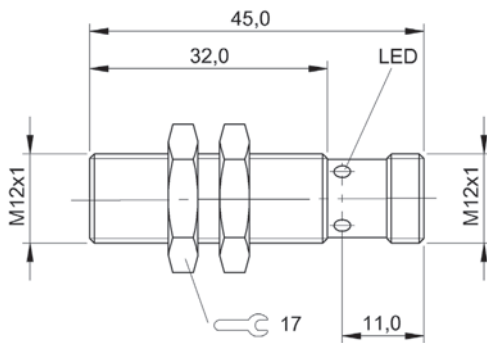


1) O-Ring with thrust ring

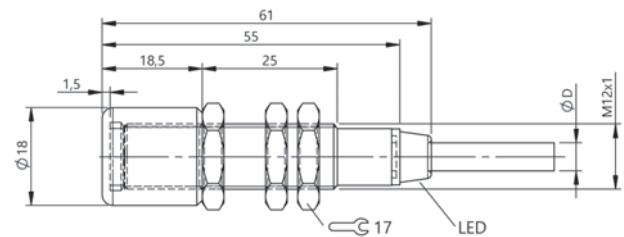
**BHS005P**



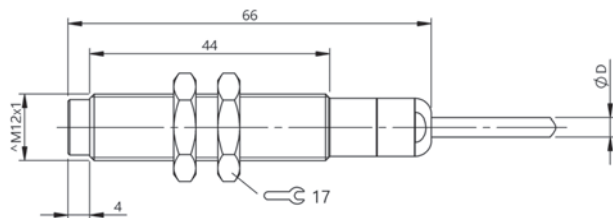
**BES05MW**



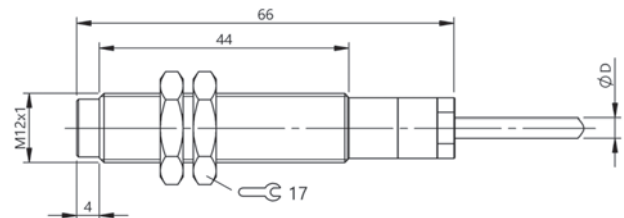
**BES02ZU**



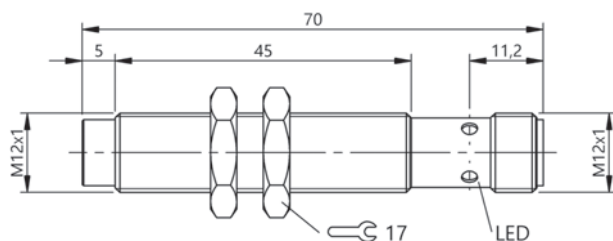
**BES05L7**



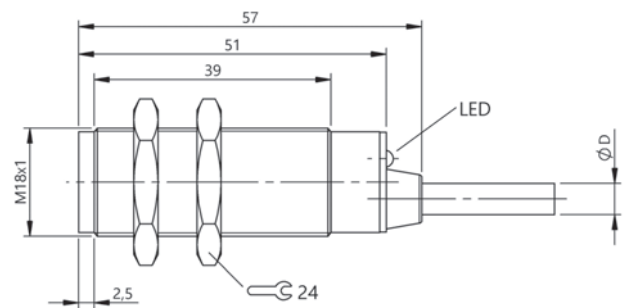
**BES05NF**



**BES05NN**



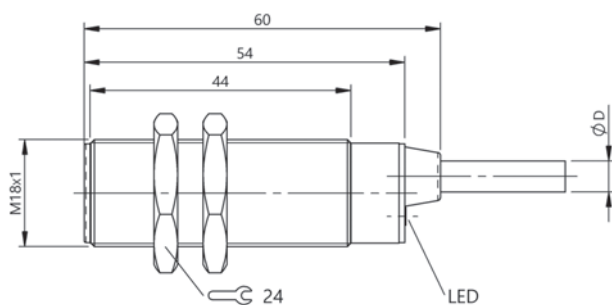
**BES05MY**



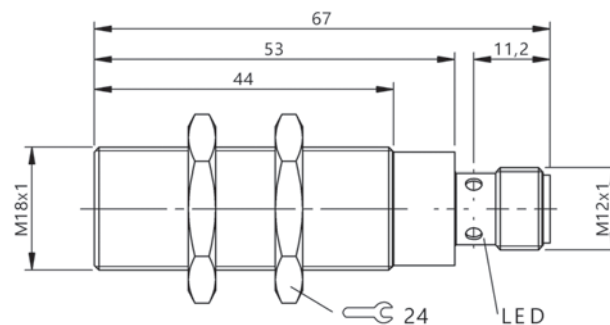
**BES05M4**

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

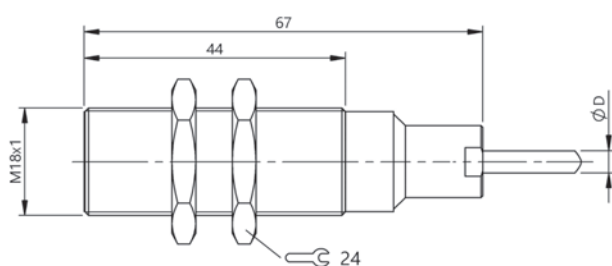
Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



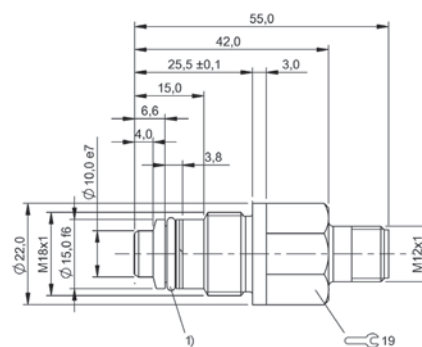
**BES05L2, BES05L8**



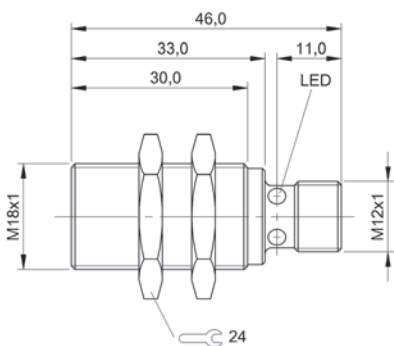
**BES05NH, BES05MZ**



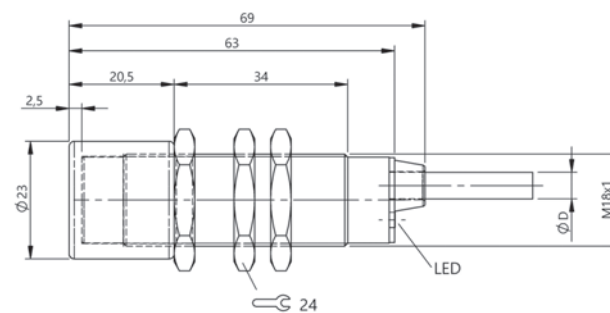
BES05NP



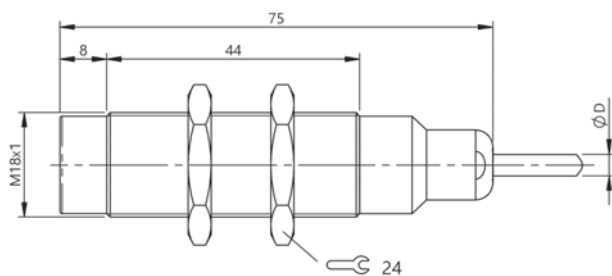
1) O-Ring with thrust ring



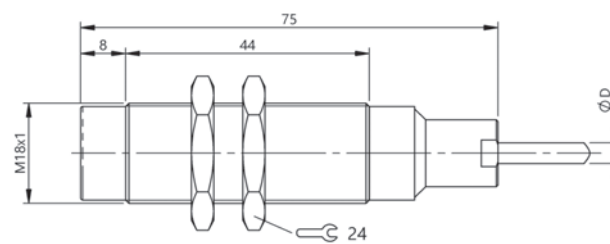
BHS004H



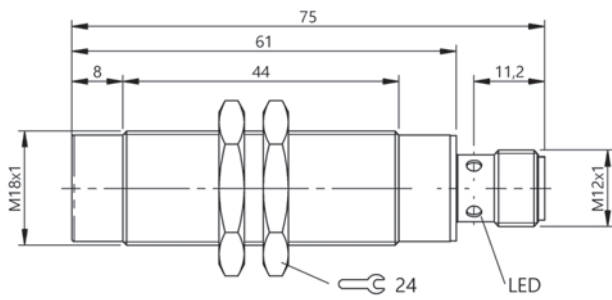
**BES02ZW**



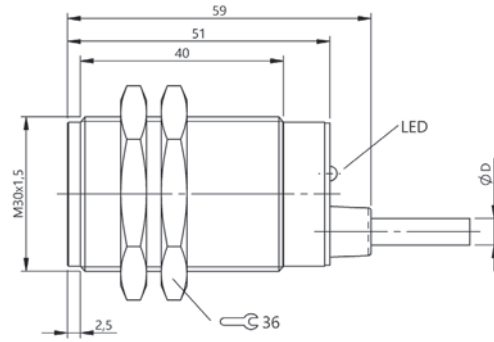
**BES05NJ**



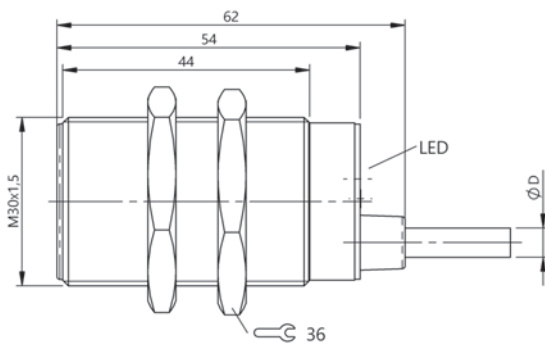
**BES05NR**



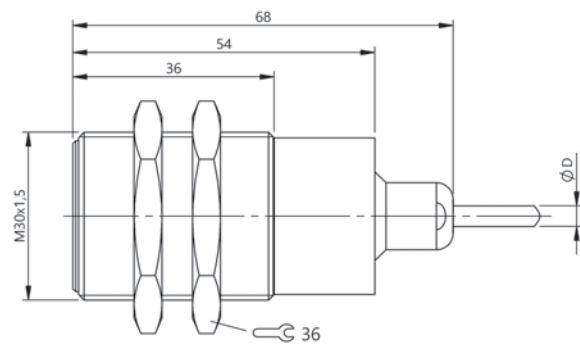
BES05N0



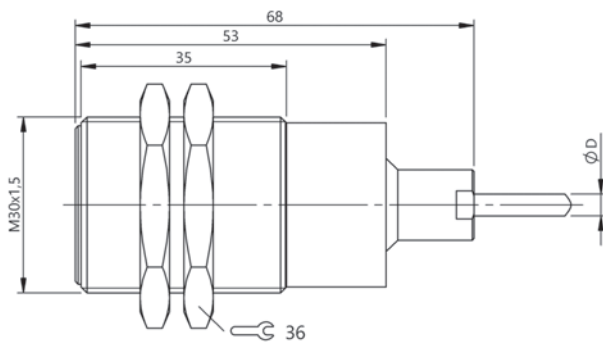
BES05M5



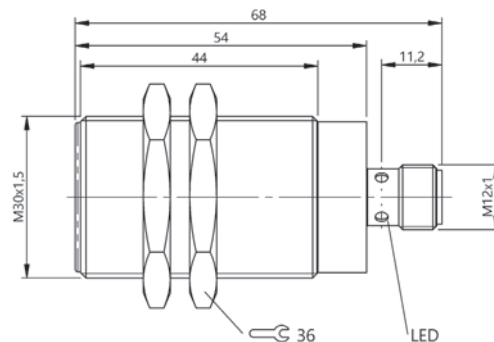
BES05L4, BES05LA



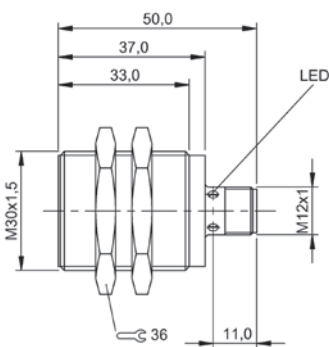
BES05NK



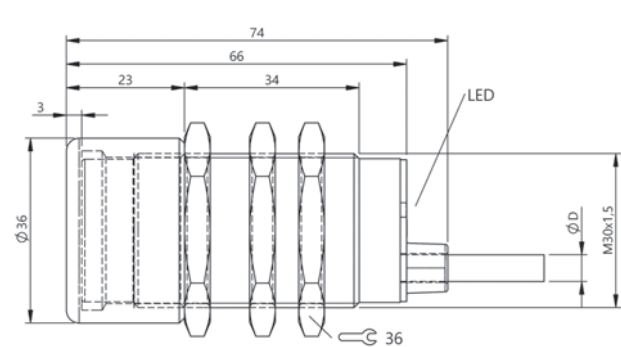
BES05NT



BES05N1



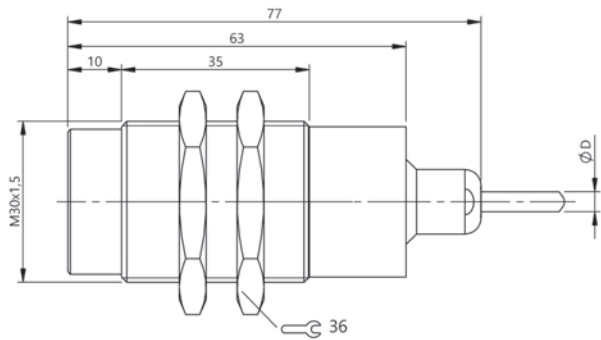
BES02ZY



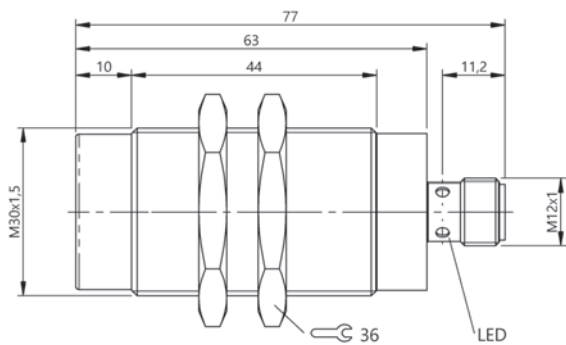
BES05L5, BES05LC

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

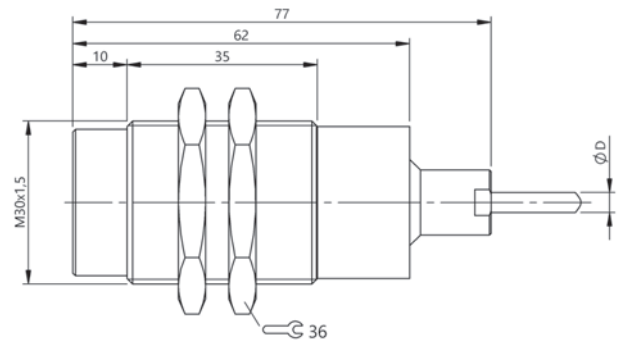
Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



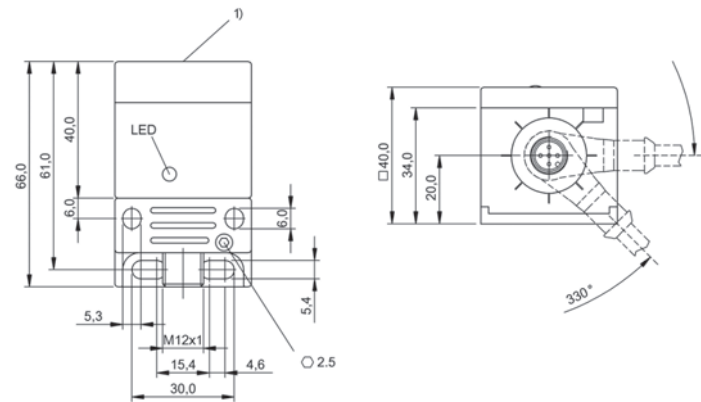
BES05NL



BES05N2



BES05NU



1) Sensing surface

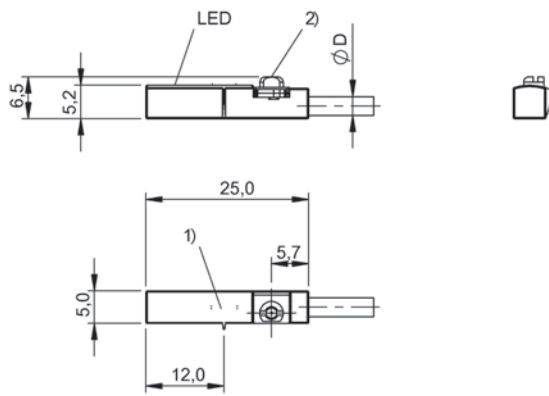
BES02ZZ, BES0300







NAMUR	<b>BMF00E4</b> BMF 255K-N-06-EEX
Dimension	25 x 5 x 5.1 mm
Cable	PVC, 6 m
Application	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view.
Mounting	Can be installed in T-slot from above
Housing material	PA
Interface	NAMUR
Switching frequency	2000 Hz
Ambient temperature	-25...70 °C
Protection degree	IP67
Approval/Conformity	CE, EAC
Ex categorie	ATEX: 1G (EPL Ga) ATEX: 1D (EPL Da)

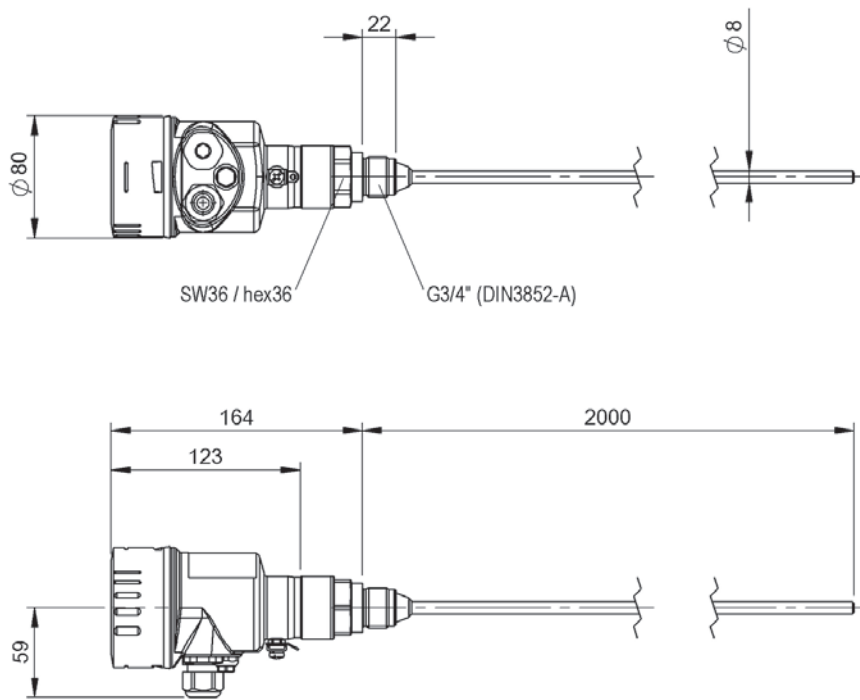


1) Sensing surface, 2) Mounting clamp

**BMF00E4**



	<b>BMD001Y</b> BMD 1LTA-2000/10A-AE520K-KM20K
Analog output	Analog, current 4...20 mA
Interface	HART
Reproducibility	≤ ±1 mm
Non-linearity max.	±2 mm
Cycle time min.	500 ms
Operating voltage Ub	16...35 VDC
Ambient temperature	-40...80 °C
Housing material	Stainless steel
Protection degree	IP66, IP68 (0.2 bar)
Connection	Terminal, M20 x 1.5-Introduction
Approval/Conformity	CE, EAC, ATEX, TÜV, IECEx



**BMD001Y**



Standardized and tailor-made connection components

# CONNECTIVITY.



*innovating automation*



At Balluff, you get everything from a single source, including a comprehensive range of connectivity components for every area of automation from a variety of materials, for various requirements and applications. Connectors and double-ended cordsets from Balluff are available for high temperatures up to 180 °C and for low temperatures down to -40 °C. Designs with Ecolab approval or in IP69K are especially suitable for sensitive fields such as the food industry. All products are suited for rugged use in the industrial environment. Common to all are simple installation and rapid integration for fast startup.

#### **Your Balluff solutions**

- Sensor Cables (single-ended cordsets, double-ended cordsets, bulk cables)
- Y-Splitters
- Tees
- Field Attachables
- Bulkhead Connectors
- Receptacles
- Adapters
- Terminating Resistors
- Passive Interfaces



	<b>BCC00TU</b> BKS-S 32M-02	<b>BCC00TY</b> BKS-S 32M-05	
Connection	M16 x 0.75 female, straight, 8-pole	M16 x 0.75 female, straight, 8-pole	
Cable	PUR Shielded black, 2 m, drag chain compatible	PUR Shielded black, 5 m, drag chain compatible	
Number of conductors	8	8	
Cable temperature, fixed routing	-50...80 °C	-50...80 °C	
Cable temperature, flexible routing	-25...80 °C	-25...80 °C	
Operating voltage $U_b$	60 VDC / 60 VAC	60 VDC / 60 VAC	
Rated current (40 °C)	5 A	5 A	
Protection degree	IP67	IP67	
Approval/Conformity	CE, EAC	CE, EAC	





# **BCC00TZ**

BKS-S 32M-10

M16 x 0.75 female, straight,  
8-pole

PUR Shielded black, 10 m,  
drag chain compatible

8

-50...80 °C

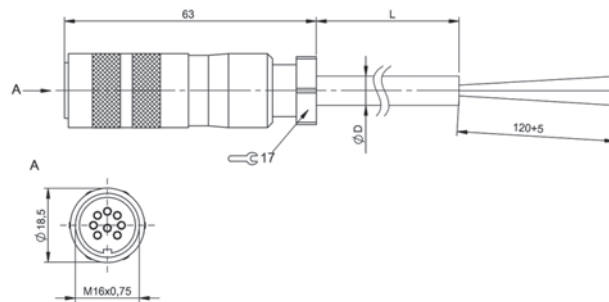
-25...80 °C

60 VDC / 60 VAC

5 A

IP67

CE, EAC

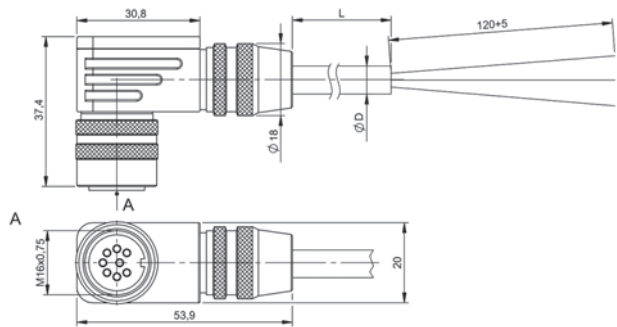




	<b>BCC00UR</b> BKS-S 33M-02	<b>BCC00UU</b> BKS-S 33M-05	
Connection	M16 x 0.75 female, angled, 8-pole	M16 x 0.75 female, angled, 8-pole	
Cable	PUR Shielded black, 2 m, drag chain compatible	PUR Shielded black, 5 m, drag chain compatible	
Number of conductors	8	8	
Cable temperature, fixed routing	-50...80 °C	-50...80 °C	
Cable temperature, flexible routing	-25...80 °C	-25...80 °C	
Operating voltage U <sub>b</sub>	60 VDC / 60 VAC	60 VDC / 60 VAC	
Rated current (40 °C)	5 A	5 A	
Protection degree	IP67	IP67	
Approval/Conformity	CE, EAC	CE, EAC	



	<b>BCC00UW</b> BKS-S 33M-10
	M16 x 0.75 female, angled, 8-pole
	PUR Shielded black, 10 m, drag chain compatible
	8
	-50...80 °C
	-25...80 °C
	60 VDC / 60 VAC
	5 A
	IP67
	CE, EAC



High-quality gear for virtually any application

# ACCESSORIES



*innovating automation*



Our great selection of high-quality accessories supports you in the optimum embedding of the sensor in machines and systems. Through easy assembly and installation, exact positioning and high machine availability. The wide Balluff product range offers the optimum gear for nearly every application.

#### **Your Balluff solutions**

- Fastening technology
- Lighting for Vision Systems
- Reflectors, fibers, optics
- Mechanical protection
- Signal converters and communication adapters
- Mechanical accessories



	BAE00ZU BAE SA-XE-051-XR	BAE00ZY BAE SA-XE-052-XR	
Operating voltage Ub	21.6...26.4 VDC	103.5...126.5 VAC	
Ambient temperature	-20...60 °C	-20...60 °C	
Protection degree	IP20	IP20	
Approval/Conformity	CE, EAC	CE, EAC	



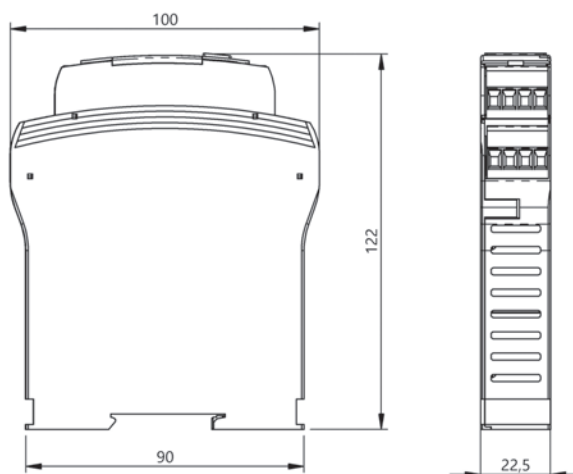
**BAE00ZW**  
BAE SA-XE-053-XR

207...253 VAC

-20...60 °C

IP20

CE, EAC



1) Sensing surface



	<b>BAM024J</b> BTL2-S-3212-4Z	<b>BAM0146</b> BTL2-S-4414-4Z	<b>BAM0147</b> BTL2-S-4414-4Z-EX	
Principle of operation	BTL magnet, float	BTL magnet, float	BTL magnet, float	
Version	NEX	NEX	DEX	
Material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Dimension	Ø 32 x 53 mm	Ø 44 x 49 mm	Ø 44 x 49 mm	
Inside diameter	11.7 mm	13 mm	13 mm	
Ambient temperature	-20...120 °C	-20...120 °C	-20...120 °C	
Productview	Page 112	Page 112	Page 112	



	<b>BAM013H</b> BTL-P-0814-GR-PAF	<b>BAM013J</b> BTL-P-1012-4R	<b>BAM013K</b> BTL-P-1012-4R-PA	
Principle of operation	BTL magnet, rod	BTL magnet, rod	BTL magnet, rod	
Version	NEX	NEX	NEX	
Material	PA 6	Aluminum	PA	
Dimension	Ø 17.2 x 5 mm	Ø 25 x 8 mm	Ø 25 x 8 mm	
Inside diameter	14 mm	12 mm	12 mm	
Ambient temperature	-40...60 °C	-40...100 °C	-40...100 °C	
Productview	Page 113	Page 113	Page 113	





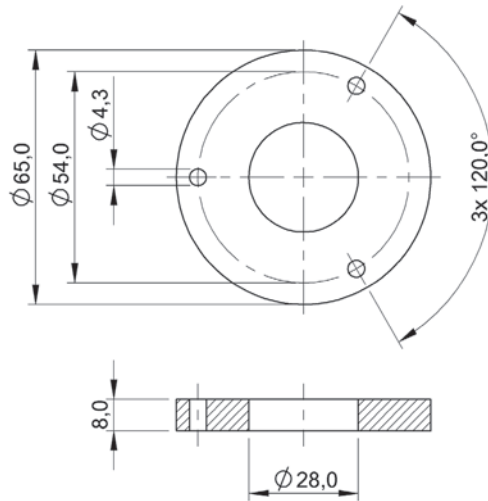
<b>BAM0148</b> BTL2-S-4414-4Z01-EX	<b>BAM014C</b> BTL2-S-6216-8P	<b>BAM014E</b> BTL2-S-6216-8P-EX	<b>BAM0149</b> BTL2-S-5113-4K	<b>BAM014A</b> BTL2-S-5113-4K-EX
BTL magnet, float	BTL magnet, float	BTL magnet, float	BTL magnet, float	BTL magnet, float
DEX	NEX	DEX	NEX	DEX
Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
Ø 44 x 49 mm	Ø 62 x 80 mm	Ø 62 x 80 mm	Ø 50.9 x 52 mm	Ø 50.9 x 52 mm
13 mm	16 mm	16 mm	13 mm	13 mm
-20...120 °C	-20...120 °C	-20...120 °C	-20...120 °C	-20...120 °C
Page 112	Page 112	Page 112	Page 112	Page 112



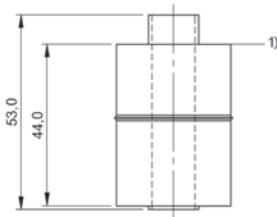
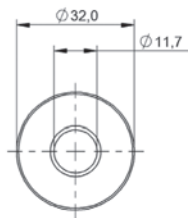
<b>BAM013L</b> BTL-P-1013-4R	<b>BAM013M</b> BTL-P-1013-4R-PA	<b>BAM013P</b> BTL-P-1013-4S	<b>BAM013R</b> BTL-P-1014-2R	<b>BAM013Y</b> BTL-P-1028-15R
BTL magnet, rod	BTL magnet, rod	BTL magnet, rod	BTL magnet, rod	BTL magnet, rod
DEX / NEX	NEX	DEX / NEX	NEX	NEX
Aluminum	PA	Aluminum	Aluminum	Aluminum
Ø 32 x 8 mm	Ø 32 x 8 mm	Ø 32 x 8 mm	Ø 21.9 x 8 mm	Ø 65 x 8 mm
13 mm	13 mm	13 mm	13.5 mm	28 mm
-40...100 °C	-40...100 °C	-40...100 °C	-40...100 °C	-40...85 °C
Page 113	Page 113	Page 113	Page 113	Page 112

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

**Do you need more details?** Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.

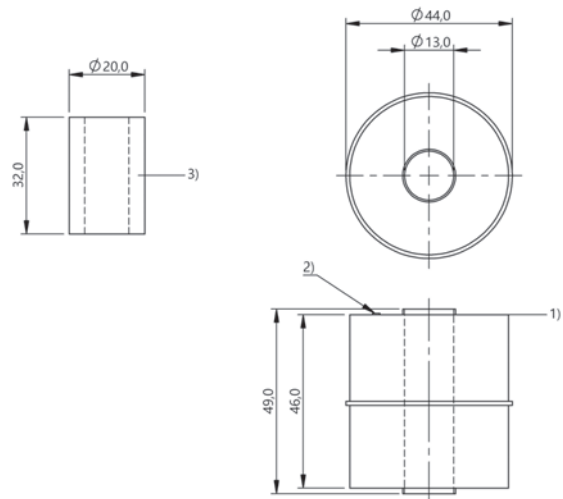


**BAM013Y**



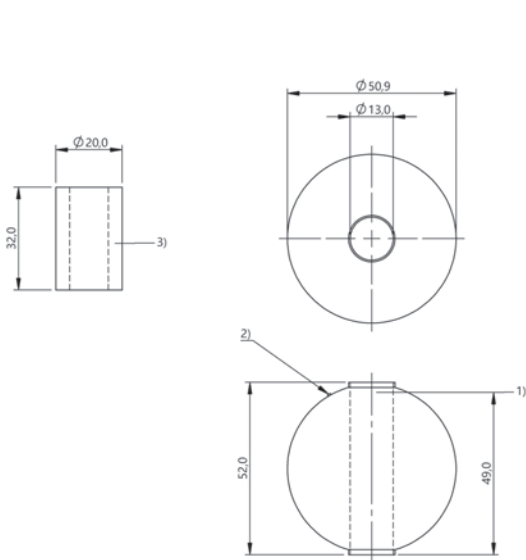
1) Reference point

**BAM024J**



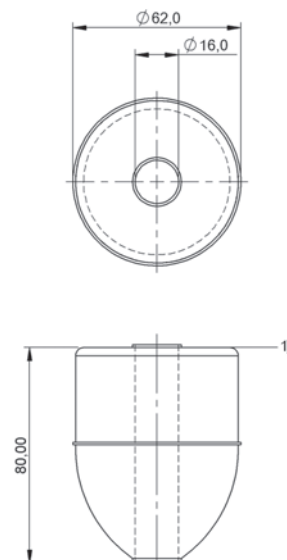
1) Reference point, 2) Designation for upper side, 3) Spacer

**BAM0146, BAM0147, BAM0148**



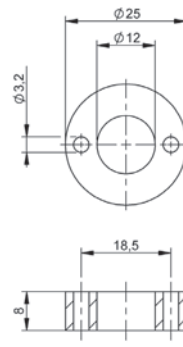
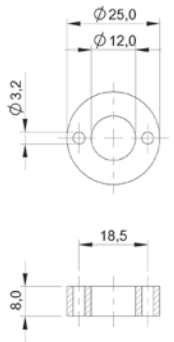
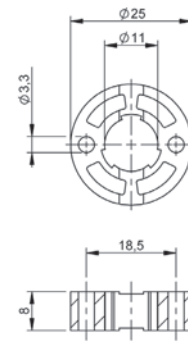
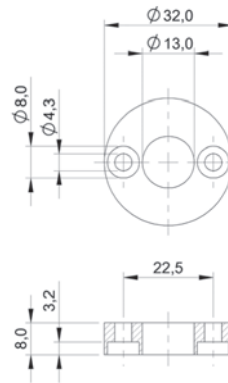
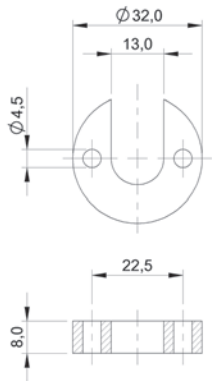
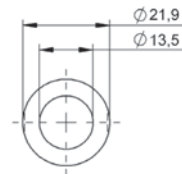
1) Reference point, 2) Designation for upper side

**BAM0149, BAM014A**



1) Reference point

**BAM014C, BAM014E**

**BAM013H****BAM013J****BAM013K****BAM013L, BAM013M****BAM013P****BAM013R**



	<b>BAE00EF</b> BTL7-A-CB02-K	<b>BAE00EC</b> BTL7-A-CB02-S32	
Principle of operation	Calibration box	Calibration box	
Use	For magnetostrictive sensors	For magnetostrictive sensors	
Material	ABS	ABS	
Dimension	61 x 25 x 732 mm	61 x 25 x 732 mm	
Ambient temperature	0...50 °C	0...50 °C	
Productview	Page 116	Page 116	



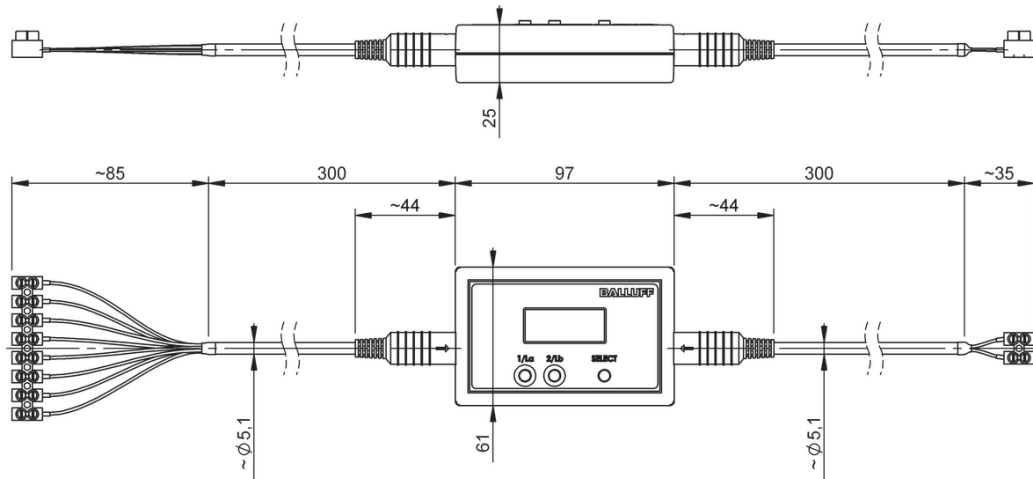
	<b>BAE0040</b> BTL7-A-CB01-USB-KA	<b>BAE0043</b> BTL7-A-CB01-USB-S32	
Principle of operation	Communication box	Communication box connection	
Use	BTL7-...-DEX-... Connection 1: M16 x 0.75, straight, 8-pole Connection 2: USB-A, straight Connection 3: M16 x 0.75, straight, 8-pole Connection type: Cable with connector, PVC		
Material	ABS, black	ABS, black	
Dimension	62 x 42 x 22 mm		
Productview	Page 116	Page 117	



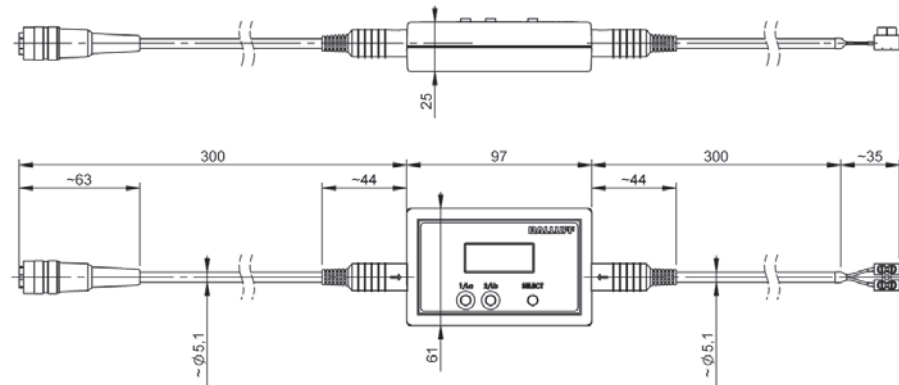
<b>BAM02U4</b> BAM PC-TL-020-K02-4	<b>BAM02Z6</b> BAM PC-TL-020-K05-4	<b>BAM02U3</b> BAM PC-TL-020-KA02-4	<b>BAM02Z5</b> BAM PC-TL-020-KA05-4
Connection hood	Connection hood	Connection hood	Connection hood
For magnetostrictive sensors BTL7-T500-...-DEX-...-ZA1K, Interface Profibus, 2 m cable PUR	For magnetostrictive sensors BTL7-T500-...-DEX-...-ZA1K, Interface Profibus, 5 m cable PUR	For magnetostrictive sensors BTL7-T500-...-DEX-...-ZA1K, Interface Profibus, 2 m cable PUR	For magnetostrictive sensors BTL7-T500-...-DEX-...-ZA1K, Interface Profibus, 5 m cable PUR
PUR	PUR	PUR	PUR
Ø 63 x 45 mm	Ø 63 x 45 mm	Ø 63 x 47 mm	Ø 63 x 47 mm
-40...60 °C	-40...60 °C	-40...60 °C	-40...60 °C
Page 117	Page 117	Page 117	Page 117



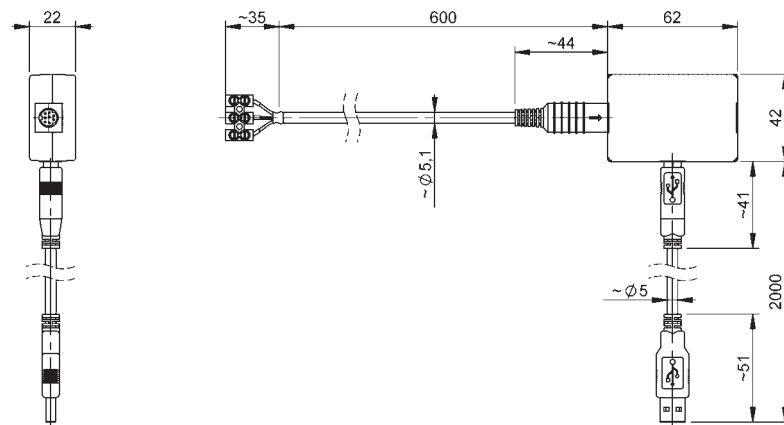
<b>BAM011R</b> BTL5-A-EH03	<b>BAM02ME</b> BTL7-A-EH03	<b>BAM01AK</b> BAM PC-TL-001-D10,4-4	<b>BAM011T</b> BTL-A-AD09-M-00-EX
Programming device	Programming device	Protective sleeve	Adapter
For magnetostrictive position measurement BTL 5-J-DEXC-TA12 Analog	For magnetostrictive position measurement BTL 7-J-DEXC-TA12 Analog	For B-stoppers	
Aluminum	Aluminum	Stainless steel (1.7225)	Brass, nickel plated
24 x 41 x 9.5 mm	60 x 25.4 x 199 mm	Ø 12.8 x 40 mm	Ø 16 x 43 mm
Page 117	Page 117	Page 117	Page 117



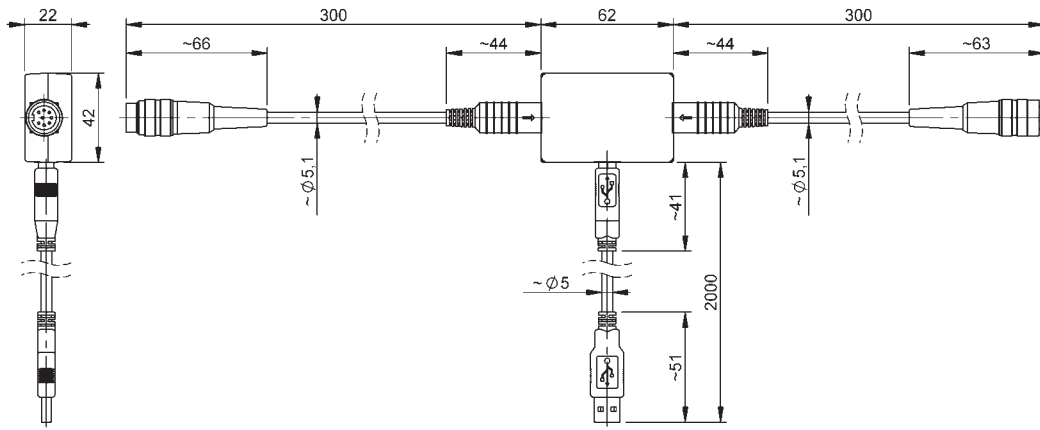
BAE00EF



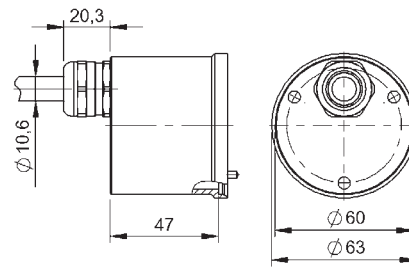
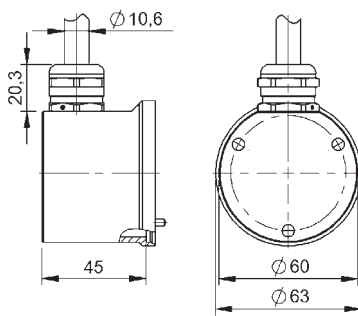
BAE00EC



BAE0040

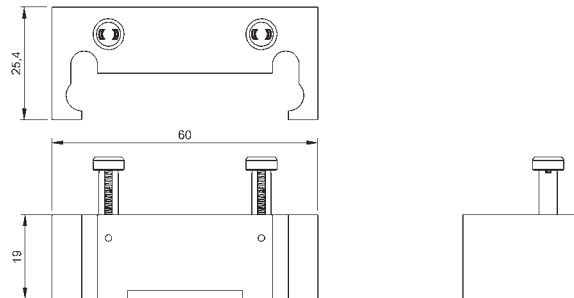
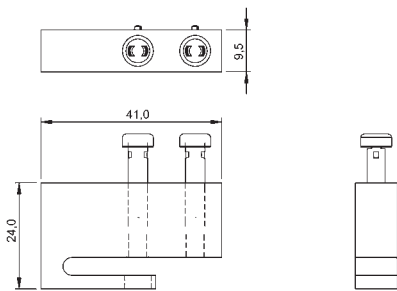


BAE0043



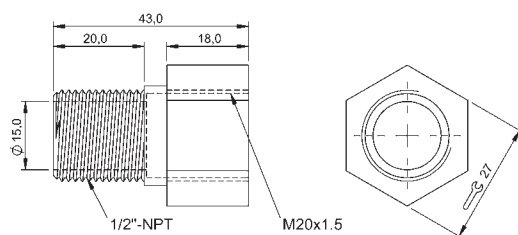
BAM02U4, BAM02Z6

BAM02U3, BAM02Z5

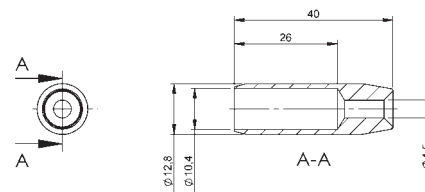


BAM011R

BAM02ME



BAM011T



BAM01AK

Before construction, installation and commissioning, please pay attention to the Ex certification and information in the operating instructions at [www.balluff.com](http://www.balluff.com)

Do you need more details? Our Product Finder at [www.balluff.com](http://www.balluff.com) provides all the product-specific details – including technical drawings, data sheets, user's guides etc. for each individual product – also for downloading.



 *innovating automation*



Balluff

# OPENING UP NEW PERSPECTIVES

Balluff is one of the leading suppliers of high-quality sensor, identification, network and software solutions for your automation requirements. Family-owned for more than 90 years, around 4000 employees worldwide in 37 wholly-owned subsidiaries for sales, production and development are dedicated to the highest quality.

We give our all to provide top services for innovative solutions that increase your competitive edge. Through years of experience we bring the competence of a manufacturer and high personal engagement.

We follow our motto "Innovating Automation" as pacemakers of automation, refiners and new developers, and technological trailblazers. In open exchange with associations, universities and research institutes, as well as in close contact with our customers, we create new industrial sector solutions for automation. With innovative Balluff solutions, you are well equipped for a successful future.

You can always count on us, our products and our scheduling and delivery reliability. In the spirit of a good partnership.

CONTACT  
OUR  
WORLDWIDE  
SUBSIDIARIES

**Headquarters**

Balluff GmbH  
Schurwaldstrasse 9  
73765 Neuhausen a. d. F.  
Germany  
Phone +49 7158 173-0  
Fax +49 7158 5010  
balluff@balluff.de

[www.balluff.com](http://www.balluff.com)