

Rod NEX

SSI and analog

For ATEX applications

The transducer marked II 3 G Ex nA IIC T4 X and II 2 D Ex tb IIIC T135 °C X IP6x meets the requirements for electrical equipment in explosion hazard areas per the following standards:

- EN 60079-0: General requirements
- EN 60079-15: Ignition class "n"
- EN 60079-31: Ignition class "t"

In addition to the ATEX requirements the transducer was certified under IECEx EPS 13.0004 X.

Ignition class "na" and "tb"

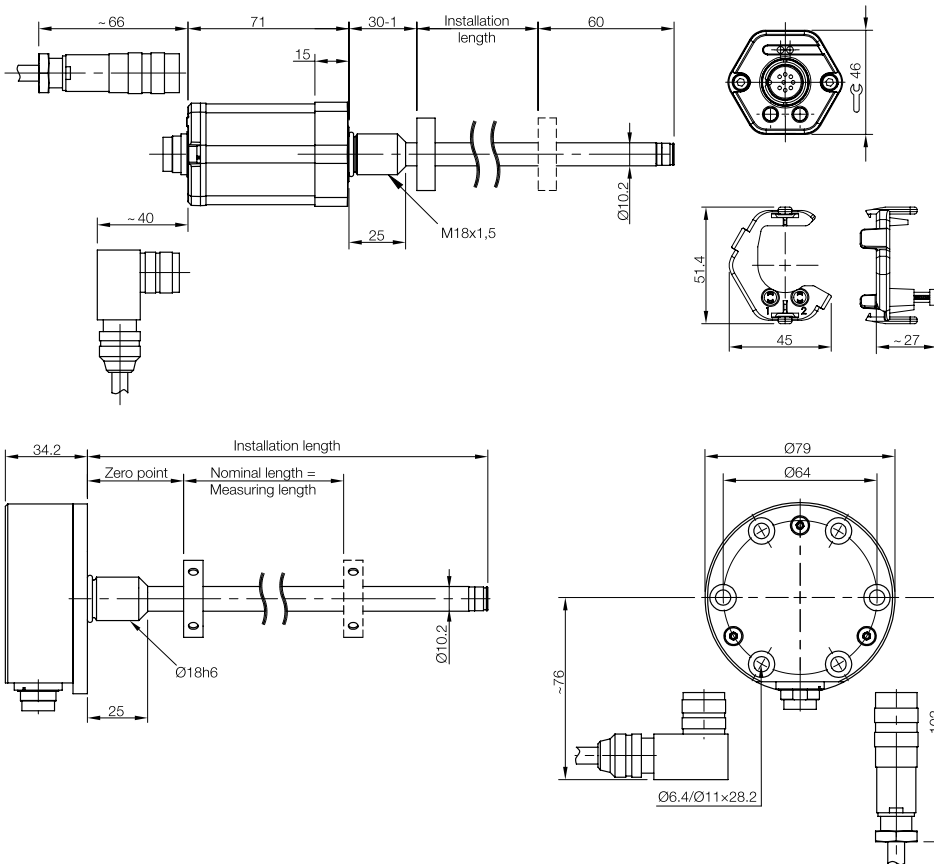
Devices in this category are intended for use in areas where an explosive atmosphere is not expected. The probability is extremely small. Even if an explosive atmosphere were to occur, it would be only for a short time. A manufacturer's declaration confirms that the indicated product meets the requirements for electrical equipment in potentially explosive areas.

Features

- Like transducer in Zone 2
- Absolute output signal
- Max. resolution of 1 µm (depending on the electronic processor unit)
- Pressure-resistant to 600 bar

Benefits

- Short housing saves valuable installation space
- Characteristic curve can be remotely set for fast startup
- CSA approval for the North American market



Version	D1	G	A	M	N	O
...-B-...	10.2 mm	M4 x4/6	0.5 mm	M18 x1,5	30 - 1 mm	15.4 x 2.1
...-Z-...			Ø 25 mm	3/4"-16 UNF	2" - 0.04"	15.3 x 2.4
...-A-...			0	M18 x1,5	30 - 1 mm	15.4 x 2.1
...-Y-...			3/4"-16 UNF	2" - 0.04"	15.3 x 2.4	
...-B8-...	8 mm		0.5 mm	M18 x1,5	30 - 1 mm	15.4 x 2.1
...-Z8-...			Ø 25 mm	3/4"-16 UNF	2" - 0.04"	15.3 x 2.4
...-A8-...			0	M18 x1,5	30 - 1 mm	15.4 x 2.1
...-Y8-...			3/4"-16 UNF	2" - 0.04"	15.3 x 2.4	
...-CD-...	12.7 mm	M4 x4/6	0.5 mm, Ø 25 mm	M22 x1,5	30 - 1 mm	19.3 x 2.2

Rod NEX SSI and analog

Style B/Z/CD



Style K



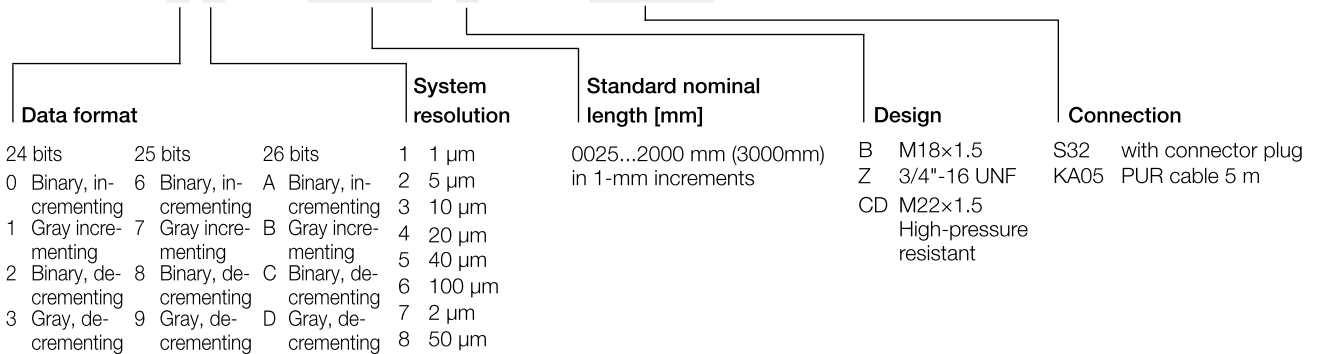
Micropulse transducers
Profile P
Rod B and Z
Rod NEX
Rod DEX
Rod J-DEXC

Series	Rod NEX BTL7		
Interface	SSI	Analog voltage	Analog current
		0...10 V -10...10 V	4...20 mA 0...20 mA
Special properties	Teach-in	Teach-in	Teach-in
	BTL7-S5_ -M_ - -NEX- BTL7-S5_ B-M_ - -NEX-	BTL7- -M_ - -NEX-	BTL7- -M_ - -NEX-
Standard nominal lengths	Style B/Z/K: 25...3000 mm Style CD: 25...2000 mm	25...3000 mm 25...2000 mm	25...3000 mm 25...2000 mm
Resolution	1 µm	≥ 5 µm	≥ 5 µm
Repeat accuracy	±2.5 µm	±10 µm	±5 µm
Linearity deviation	±30 µm	Nominal length ≤ 500 mm ±50 µm Nominal length > 500 mm ±0.01 % FS	Nominal length ≤ 500 mm ±50 µm Nominal length > 500 mm ±0.01 % FS
Max. sampling frequency	4 kHz	4 kHz	4 kHz
Temperature coefficient	≤ 30 ppm/K	≤ 30 ppm/K	≤ 30 ppm/K
Max. number of position encoders	1	1	1
Supply voltage	10...30 V DC	10...30 V DC	10...30 V DC
Reverse polarity/overvoltage protection	Yes/Yes	Yes/Yes	Yes/Yes
Ambient temperature	-20...+60 °C	-20...+60 °C	-20...+60 °C
Degree of protection	IP67	IP67	IP67
Shock load	150 g	150 g	150 g
Vibration	20 g	20 g	20 g
Housing material	Style B/Z/CD: Aluminum, stainless steel Style K: Stainless steel	Aluminum, stainless steel Stainless steel	Aluminum, stainless steel Stainless steel
Approvals	CE, CSA, IECEx	CE, CSA, IECEx	CE, CSA, IECEx
Connection	Connector, cable	Connector, cable	Connector, cable

Ordering example: SSI

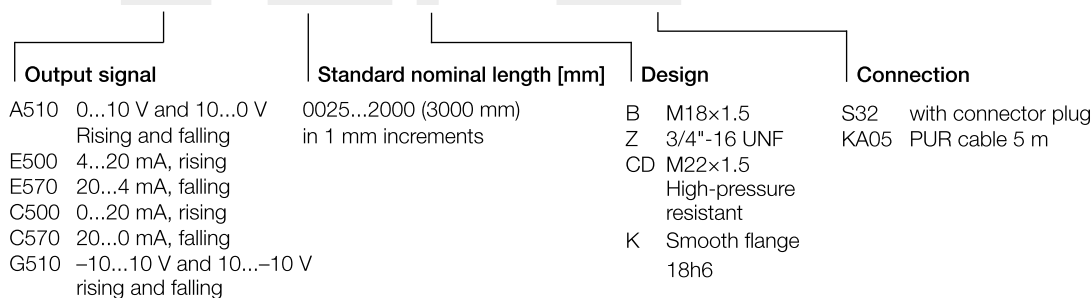
BTL7-S5 _ _ - **M** _ _ _ _ - - **NEX** - _ _ _ _ for asynchronous operation

BTL7-S5 _ _ **B-M** _ _ _ _ - - **NEX** - _ _ _ _ for synchronous operation



Ordering example: Analog voltage and analog current

BTL7 - _ _ _ _ - **M** _ _ _ _ - - **NEX** - _ _ _ _



For explosion hazard areas and flammable dust

Transducers designated Ex d IIC T5/ T6 Ga/Gb meet the requirements for electrical equipment in potentially explosive areas. In addition they meet the requirements for areas with flammable dust Category II 2D designated Ex tb IIIC T85 °C/T100 °C Db IP67.

When in use you must follow applicable safety regulations:

- Explosion protection guidelines (EX-RL)
- Constructing electrical equipment in potentially explosive atmospheres (EN 60079-14)
- Ignition protection type "d", flameproof encapsulation (EN 60079-1)

Features

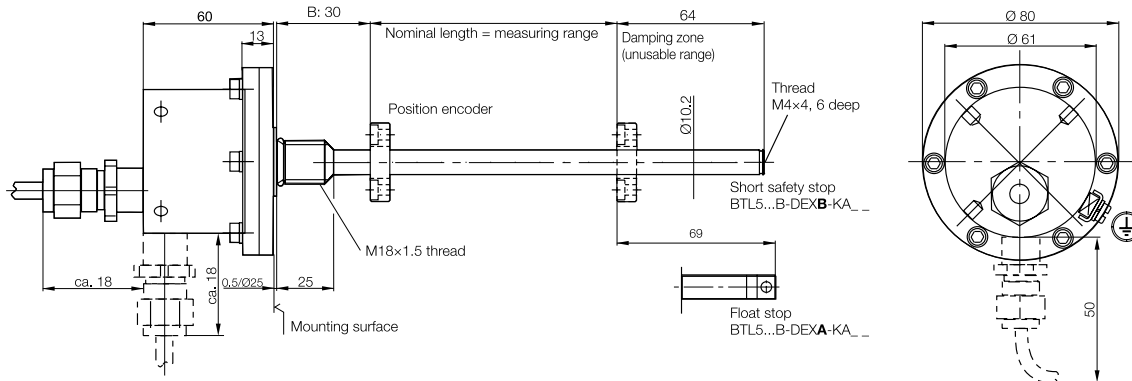
- Ex protection type "d" – flameproof encapsulation
- Filling Level Sensor in Zone 0/1
- Transducer in Zone 1
- For measuring ranges between 25 and 7620 mm
- Non-contact detection of the measuring position
- Insensitive to shock and vibration
- Insensitive to contamination
- Absolute output signal
- Max. resolution of 5 µm (depending on the electronic processor unit)
- Pressure-resistant to 350 bar

Benefits

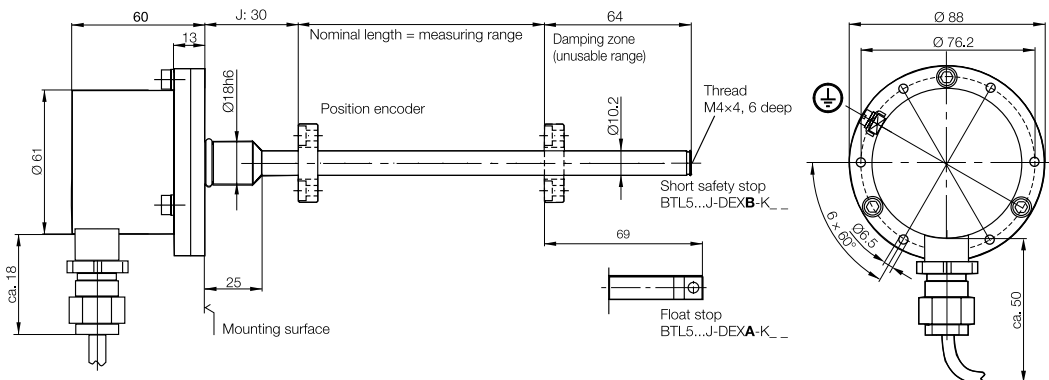
- Short housing saves valuable installation space
- Characteristic curve can be remotely set for fast startup
- IECEx, ATEX, EAC and many additional international approvals



Housing B, metric mounting thread Cable outlet axial, radial



Model J, flange Ø 18 mm, pitch circle Ø 76.2 mm, Cable outlet radial



Rod DEX

Analog voltage and analog current



Series	Rod DEX BTL7	Rod DEX BTL7
Interface	Analog voltage 0...10 V -10...10 V	Analog current 4...20 mA 0...20 mA
Special properties	Teach-in BTL7- -M- - -DEX- -	Teach-in BTL7- -M- - -DEX- -
Standard nominal lengths	25...7620 mm	25...7620 mm
Resolution	≥ 5 μm	≥ 5 μm
Repeat accuracy	±10 μm	±10 μm
Linearity deviation	Nominal length ≤ 500 mm ±50 μm Nominal length > 5500 mm ±0.01 % FS Nominal length > 5500 mm ±0.02 % FS	Nominal length ≤ 500 mm ±50 μm Nominal length > 5500 mm ±0.01 % FS Nominal length > 5500 mm ±0.02 % FS
Max. sampling frequency	4 kHz	4 kHz
Temperature coefficient	≤ 30 ppm/K	≤ 30 ppm/K
Max. number of position encoders	1	1
Supply voltage	10...30 V DC	10...30 V DC
Reverse polarity/overvoltage protection	Yes/Yes	Yes/Yes
Ambient temperature	-40...+80 °C	-40...+80 °C
Degree of protection	IP67	IP67
Shock load	150 g	150 g
Vibration	20 g	20 g
Housing material	Stainless steel	Stainless steel
Approvals	CE, ATEX, IECEx	CE, ATEX, IECEx
Connection	Cable	Cable



Micropulse transducers
Profile P
Rod B and Z
Rod NEX
Rod DEX
Rod J-DEXC

Ordering example:

BTL7 - -M- - -DEX- -

	Output signal	Standard nominal length [mm]	Design	Rod end	Connection
A510	0...10 V and 10...0 V Rising and falling	0025...7620 mm in 1 mm increments	B M18×1.5 J Ø18h6 Z 3/4"-16 UNF	A Float stop B Short safety stop	Axial cable outlet only for model B, Z KA02 PUR cable 2 m KA05 PUR cable 5 m KA10 PUR cable 10 m KA15 PUR cable 15 m
E500	4...20 mA, rising				
E570	20...4 mA, falling				
C500	0...20 mA, rising				
C570	20...0 mA, falling				
G510	-10...10 V and 10...-10 V rising and falling				Radial output K02 PUR cable 2 m K05 PUR cable 5 m K10 PUR cable 10 m K15 PUR cable 15 m

Rod J-DEXC

SSI and analog

Pressure encapsulated housing and quick-change electronics module

The transducer J-DEXC has been specially developed for use in potentially explosive atmospheres. The important demands of the oil and gas industry for high reliability and ease of servicing are combined in the J-DEXC system.

J-DEXC comprises a robust flameproof Ex housing and an electronics module that is easily accessible and replaceable for servicing.

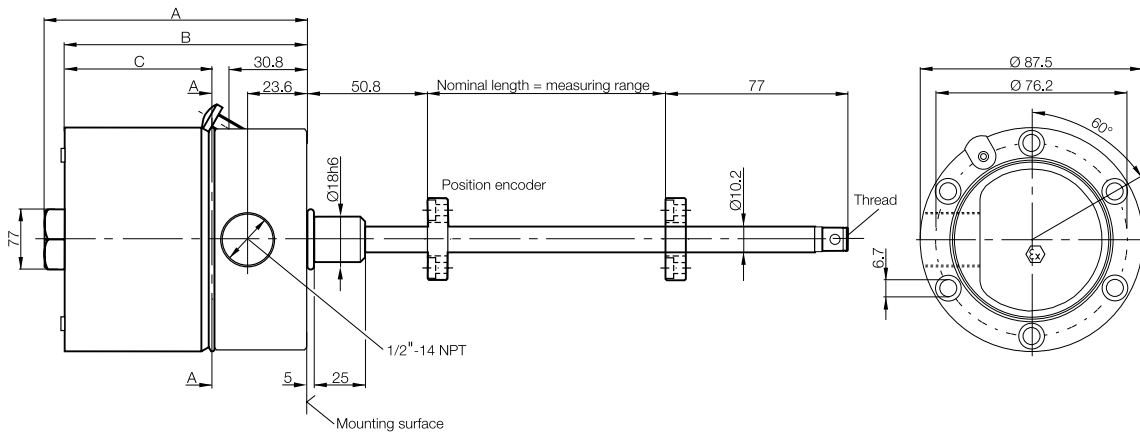
Features

- Ex protection type "d" – flameproof encapsulation
- Filling Level Sensor in Zone 0/1
- Transducer in Zone 1
- Corrosion-resistant housing available as an option
- Absolute output signal
- Max. resolution of 5 μm (depending on the electronic processor unit)
- Pressure-resistant to 600 bar

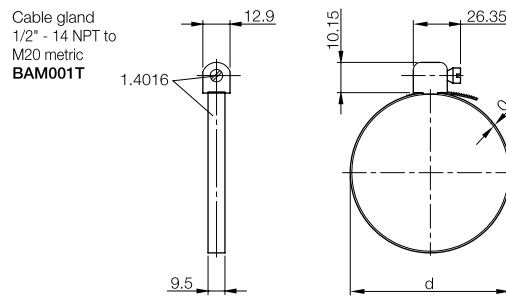
Benefits

- Replaceable electronics modules for simple field replacement
- Characteristic curve setting for rapid startup
- CSA approval for the North American market

Model J-DEXC, flange \varnothing 18 mm, pitch circle \varnothing 76.2 mm



Interface	A (mm)	B (mm)	C (mm)
Analog A, E, C	104,12	96,12	59,5
Digital SSI			



Ordering example: SSI

BTL7-S5 - **M** - **J-M01-TA** (replacement electronics module without pressure housing)

BTL7-S5 - **M** - **J-DEXC-TA12** for asynchronous operation (complete position sensor)

BTL7-S5 **B-M** - **J-DEXC-TA12** for synchronous operation

Data format			System resolution	Standard nominal length [mm]	Connection
24 bits	25 bits	26 bits	1 1 μm	0025...7620 mm	TA12 Internal thread 1/2"-14 NPT
0 Binary, in-crem-enting	6 Binary, in-crem-enting	A Binary, in-crem-enting	2 5 μm		
1 Gray incre-menting	7 Gray incre-menting	B Gray incre-menting	3 10 μm		
			4 20 μm		
			5 40 μm		
			7 2 μm		
			8 50 μm		

Rod J-DEXC

SSI and analog



Micropulse transducers
Profile P
Rod B and Z
Rod NEX
Rod DEX
Rod J-DEXC

Series	Rod J-DEXC BTL7	Rod J-DEXC BTL7	Rod J-DEXC BTL7
Interface	SSI	Analog voltage 0...10 V -10...10 V	Analog current 4...20 mA 0...20 mA
Special properties	Teach-in BTL7-S5 _ -M _ _ _ -J-M01-TA BTL7-S5 _ -M _ _ _ -J-DEXC-TA12 BTL7-S5 _ B-M _ _ _ -J-DEXC-TA12	Teach-in BTL7- _ 0-M _ -J-M01-TA BTL7- _ 0-M _ -J-DEXC-TA12	Teach-in BTL7- _ 0-M _ -J-M01-TA BTL7- _ 0-M _ -J-DEXC-TA12
Standard nominal lengths	25...7620 mm	25...7620 mm	25...7620 mm
Resolution	1 µm	±5 µm	±5 µm
Repeat accuracy	≤ ±5 µm	±10 µm	±5 µm
Linearity deviation	≤ ±30 µm at resolution ≤ 10 µm Nominal length 25...5500 mm, ≤ ±2 LSB at resolution > 10 µm Nominal length 25...5500 mm, Nominal length 5501...7620 mm ±0.02 % FS	Nominal length ≤ 500 mm ±50 µm Nominal length > 500 mm ±0.01 % FS Nominal length > 500 mm ±0.02 % FS	Nominal length ≤ 500 mm ±50 µm Nominal length > 500 mm ±0.01 % FS Nominal length > 500 mm ±0.02 % FS
Max. sampling frequency	4 kHz	4 kHz	4 kHz
Temperature coefficient	≤ 30 ppm/K	≤ 30 ppm/K	≤ 30 ppm/K
Max. number of position encoders	1	1	1
Supply voltage	10...30 V DC	10...30 V DC	10...30 V DC
Reverse polarity/overvoltage protection	Yes/Yes	Yes/Yes	Yes/Yes
Ambient temperature	-40...+80 °C	-40...+80 °C	-40...+80 °C
Degree of protection	IP68	IP68	IP68
Shock load	100 g	100 g	100 g
Vibration	12 g	12 g	12 g
Housing material	Stainless steel	Stainless steel	Stainless steel
Approvals	CE, CSA, IECEx	CE, CSA, IECEx	CE, CSA, IECEx
Connection	Screw terminals	Screw terminals	Screw terminals



Class I, Division 1, Groups A, B, C, and D
Class II, Division 1, Groups E, F, and G; Class III
T6 Ta=65°C, T5 Ta=80°C Type 4X/6P; IP 68
Class I, Zone 1 AEx d IIC T6 Ta=65°C, T5 Ta=80°C
Class I, Zone 1 Ex d IIC T6 Ta=65°C, T5 Ta=80°C

SIRA 11ATEX1104X
IECEx SIR 11.0048X



Ⓢ II 1/2GD
Ex d IIC T6/T5 Ga/Gb Ta +65°C (T6) +80°C (T5)
Ex t IIC T85/T100°C Da IP 68 Ta +65°C (T85) +80°C (T100)

CE 0518 Ⓢ

Ordering example: Analog voltage and analog current

BTL7 - _ _ _ 0 - M _ - J - M 0 1 - TA (replacement electronics module without pressure housing)

BTL7 - _ _ _ 0 - M _ - J - D E X C - TA12 (complete position sensor)

