

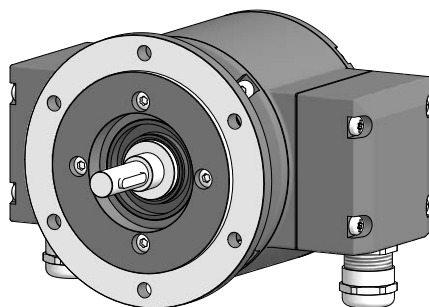
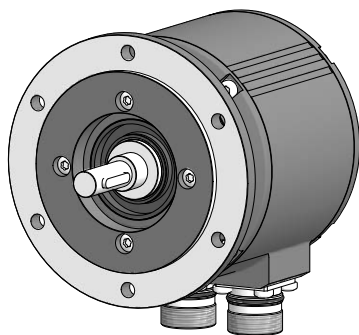
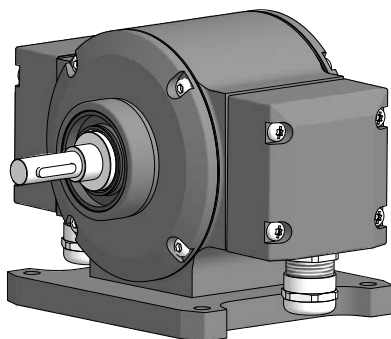


## Mounting and operating instructions

**SSI**

**microGen**

Energy Harvesting



**PMG10 • PMG10P**

**Absolute encoder SSI  
with magnetic sensing**

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## 1. IMPORTANT NOTES

### 1.1 Symbol guide



#### **Warning**

Disregarding could result in serious injury, death or damage to property



#### **Attention**

Disregarding could result in damage to property or damage/malfunction of the device



#### **Information**

Additional information and recommendations

### 1.2 Intended use

The encoder PMG10/PMG10P is a precision measurement device for the acquisition of speed/position information for the control of drive units and the provision of electronic output signals for downstream devices.

The device must not be used for any other purpose. The function of the device is described in this mounting instruction. The customer must check the suitability for the purpose intended.

Mounting and selection must be executed by authorized and qualified personnel. Mounting, electrical commissioning or any other work with the device or system is to be performed by appropriately qualified staff only.

Do not put the device into service if there is any visible evidence of damage.

Do not operate the device beyond the limit values stated in this mounting instruction.

Any risk of personal injury, damage of the system or company equipment due to failure or malfunction of the device must be eliminated by corresponding safety measures.



#### **Warning**

Disregarding intended use could result in serious injury or damage to property.

### 1.3 Exclusion from liability

The manufacturer is not liable for any damage to persons or property resulting from unintended use of the device.

#### 1.4 Maintenance and service life

The device may be only opened as described in this instruction. Repair or maintenance work that requires opening the device completely must be carried out by the manufacturer. Alterations of the device are not permitted.

The expected service life of the device depends on the ball bearings, which are equipped with a permanent lubrication.

In the event of queries or subsequent deliveries, the data on the device type label must be quoted, especially the type designation and the serial number.

#### 1.5 Approvals and warranty

EU Declaration of Conformity meeting to the European Directives.

We grant a 2-year warranty in accordance with the regulations of the Central Association of the German Electrical Industry (ZVEI).



warranty seal

Damaging the warranty seal on the device invalidates warranty.

#### 1.6 Operating and storage temperature range

The storage temperature range of the device is between  $-15\text{ °C}$  and  $+70\text{ °C}$  (caused by packing).

The operating temperature range of the device is between  $-40\text{ °C}$  and  $+95\text{ °C}$  (device with speed switch with solid state relay:  $-40\text{ °C}$  and  $+85\text{ °C}$ ), measured at the housing.

#### 1.7 Disposal (environmental protection)



Do not dispose of electrical and electronic equipment in household waste. The product contains valuable raw materials for recycling. Whenever possible, waste electrical and electronic equipment should be disposed locally at the authorized collection point. If necessary, Baumer gives customers the opportunity to dispose of Baumer products professionally. For further information see [www.baumer.com](http://www.baumer.com).

## 2. SAFETY AND ATTENTION INSTRUCTIONS

### 2.1 Safety instructions



#### **Explosion risk**

Spark formation can cause a fire or an explosion.

- » Do not use the device in areas with explosive and/or highly inflammable materials. They may explode and/or catch fire by possible spark formation.



#### **Risk of serious injuries due to rotating shafts**

Hair and clothes may become tangled in rotating shafts. Touching the rotating parts can cause extremely serious injuries.

- » Before all work switch off all voltage supplies and ensure machinery is stationary.
- » Prevent reconnection voltage supply by third parties.



#### **Risk of serious injuries due to consequential damages**

Plants can be deregulated due to malfunction or faulty signals of the device.

- » Damage caused by faulty operation or by a malfunction of the device must be eliminated by corresponding safety measures.



#### **Risk of burns due to formation of heat**

The device heats up at higher speed so there is a serious risk of burning shortly after the machine has been turned off.

- » Examine carefully whether the device overheats. Wear suitable gloves if necessary.

## 2.2 Attention instructions for mounting and operation



Risk of destruction due to electrostatic charge  
Electronic parts contained in the device are sensitive to high voltages.

- » Do not touch plug contacts or electronic components.
- » Protect output terminals against external voltages.
- » Do not exceed maximum voltage supply.



Risk of destruction due to mechanical overload  
Rigid mounting may give rise to constraining forces.

- » Never restrict the freedom of movement of the device. The mounting instructions must be followed.
- » It is essential that the specified clearances and/or angles are observed.



Risk of destruction due to mechanical shock  
Violent shocks, e. g. due to hammer impacts, can lead to the destruction of the sensing system.

- » Never use force. Mounting is simple when correct procedure is followed.
- » Use suitable puller for dismounting.



Risk of destruction due to contamination  
Dirt penetrating inside the device can cause short circuits and damage the sensing system.

- » Absolute cleanliness must be maintained when carrying out any work on the device.
- » Never allow lubricants to penetrate the device.

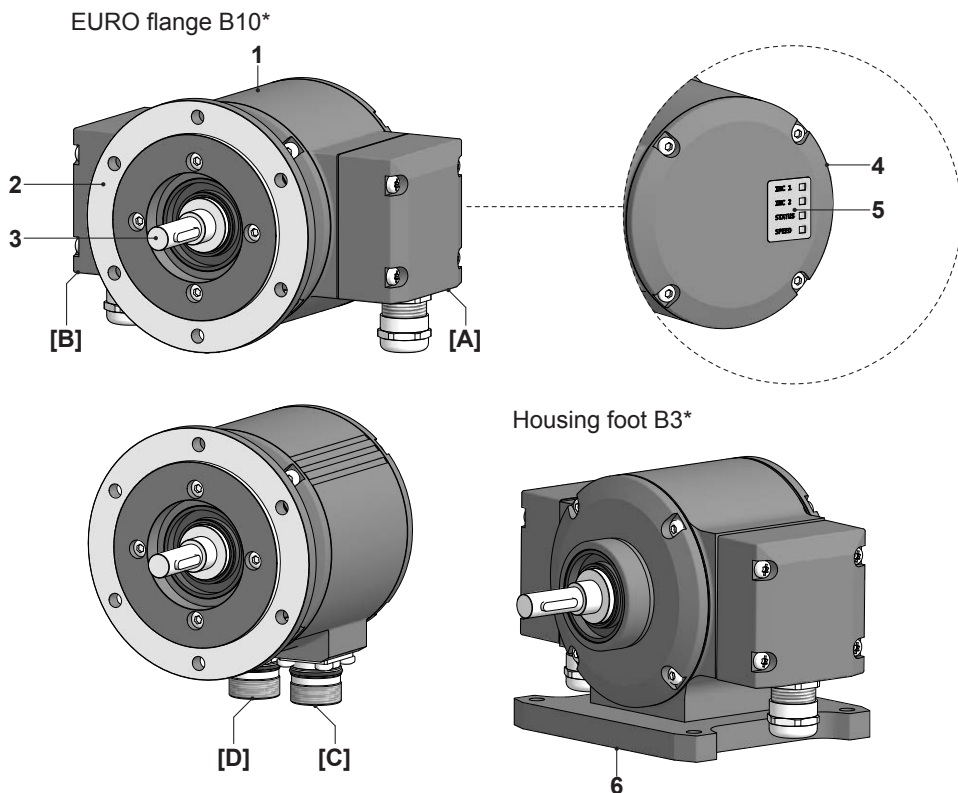


Risk of destruction due to adhesive fluids  
Adhesive fluids can damage the sensing system and the ball bearings. Dismounting a device, secured to a shaft by adhesive may lead to the destruction of the device.

- » Do not use adhesive fluids for fixing.

### 3. PREPARATION

#### 3.1 Scope of delivery



- 1 Housing
- 2 EURO flange B10\*
- 3 Solid shaft with key
- 4 Bearing shield
- 5 LED function indicators
- 6 Housing foot B3\*

#### Radial terminal boxes\* (see *section 5*):

- [A]** SSI  
Additional output incremental 1 (option)  
Programming interface (only PMG10P)
- [B]** Additional output incremental 2 (option)  
Speed switch (option)

#### Radial flange connectors\* (see *section 5*):

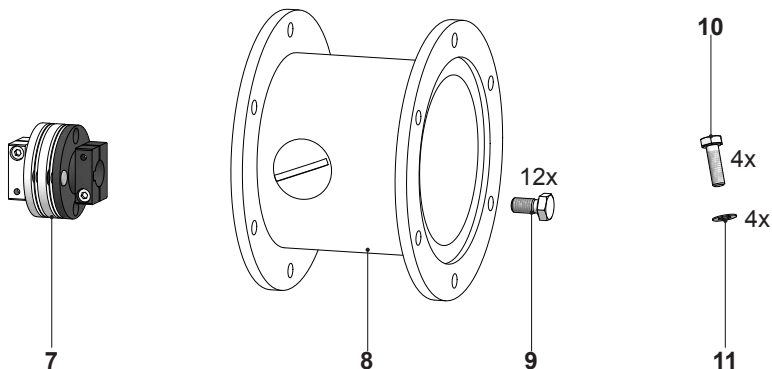
- [C]** SSI  
Additional output incremental 1 (option)  
Programming interface (only PMG10P)
- [D]** Additional output incremental 2 (option)  
Speed switch (option)

\* Depending on version



### 3.2 Required accessory for mounting (not included in scope of delivery)

**i** Connecting cables and respective mating connectors are required for the electrical connection. Details see *section 6.2, page 23*.



**7** Spring disk coupling K 35,  
available as accessory, see *section 4.3, page 11*.

For mounting with EURO flange B10

**8** Installation fitting, customized

**9** Fixing screw M6x16 mm for installation fitting, ISO 4017

For mounting with housing foot B3

**10** Fixing screw M6x20 mm for housing foot, ISO 4017

**11** Washer B6 for fixing the housing foot, DIN 137

### 3.3 Required tools (not included in scope of delivery)

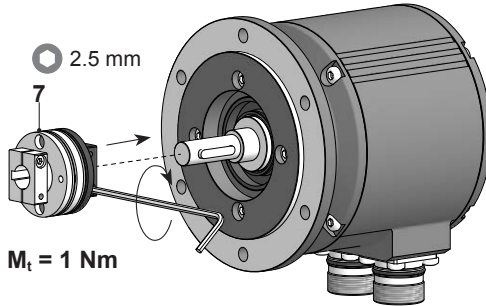
- ⊙ 2.5 mm
- 10 und 22 mm
- ★ TX 10, TX 20

## 4. MOUNTING

### 4.1 EURO flange B10

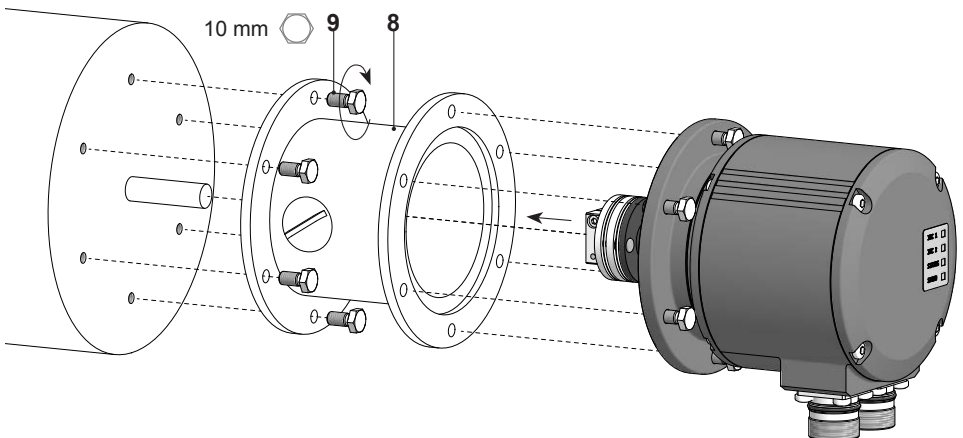
#### 4.1.1 Mounting the spring disk coupling to the device

We recommend using the Baumer Hübner spring disk coupling K 35, see *section 4.3, page 11*, available as accessory. When other couplings are used pay attention to manufacturer's notes.

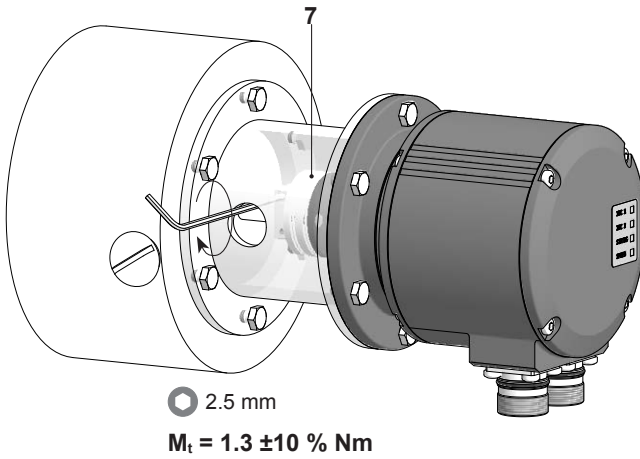


#### 4.1.2 Mounting to drive shaft

- ☞ Service life restrictions and angle error by runouts  
High runout of the drive shaft can cause device angle error.  
High runout of the drive shaft can cause vibrations, which can shorten the service life of the device.
- » Lubricate drive shaft!
- » Minimize drive shaft runout ( $\leq 0.2 \text{ mm}$ ;  $\leq 0.03 \text{ mm}$  recommended).
- i The device must be mounted with cable connection facing downward and not exposed to water.



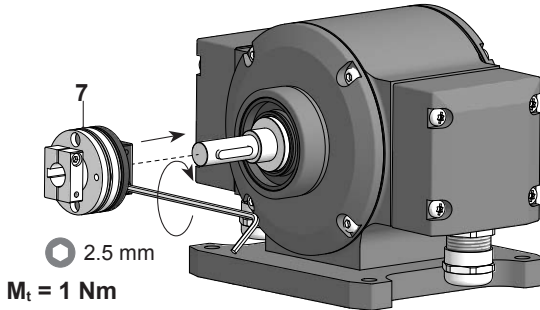
### 4.1.3 Mounting the spring disk coupling to drive shaft



## 4.2 Mounting with housing foot B3

### 4.2.1 Mounting the spring disk coupling to the device

We recommend using the Baumer Hübner spring disk coupling K 35, see *section 4.3, page 11*, available as accessory. When other couplings are used pay attention to manufacturer's notes.



### 4.2.2 Mounting to drive shaft



#### Service life restrictions and angle error by runouts

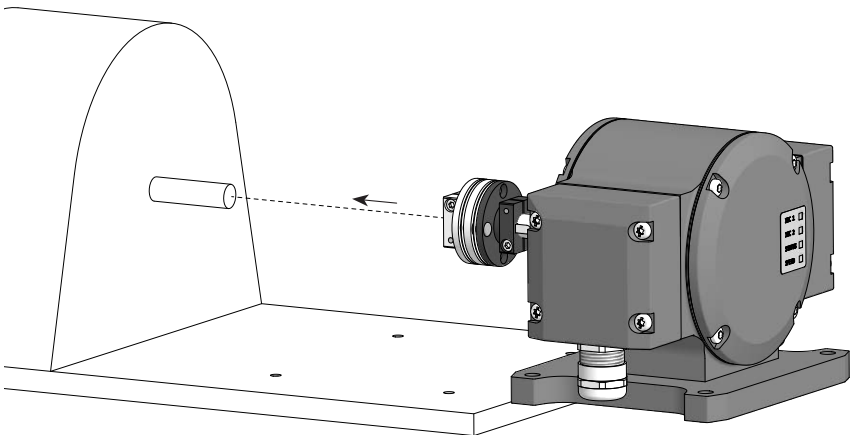
High runout of the drive shaft can cause device angle error.

High runout of the drive shaft can cause vibrations, which can shorten the service life of the device.

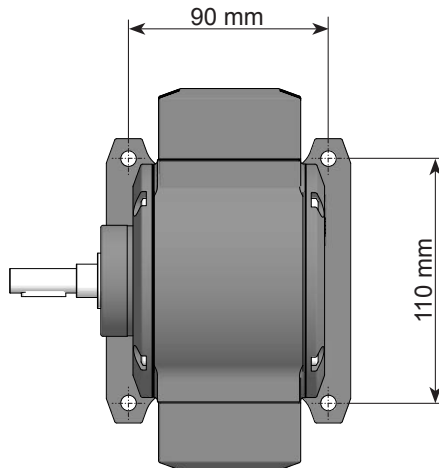
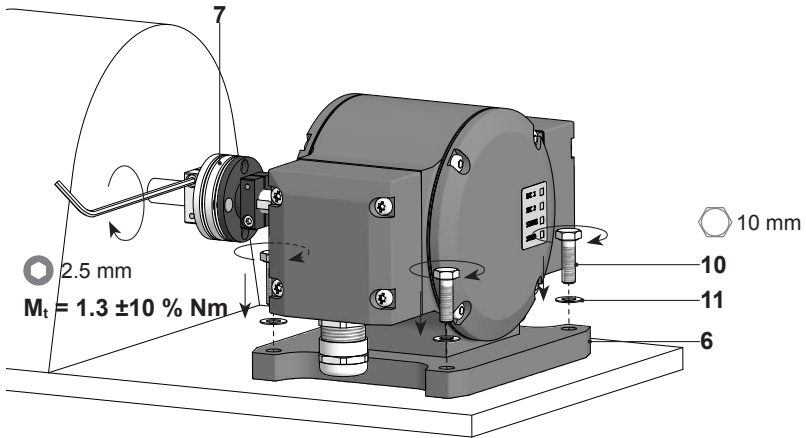
- » Lubricate drive shaft!
- » Minimize drive shaft runout ( $\leq 0.2 \text{ mm}$ ;  $\leq 0.03 \text{ mm}$  recommended).



The device must be mounted with cable connection facing downward and not exposed to water.



### 4.2.3 Mounting the housing foot and the spring disk coupling to drive shaft



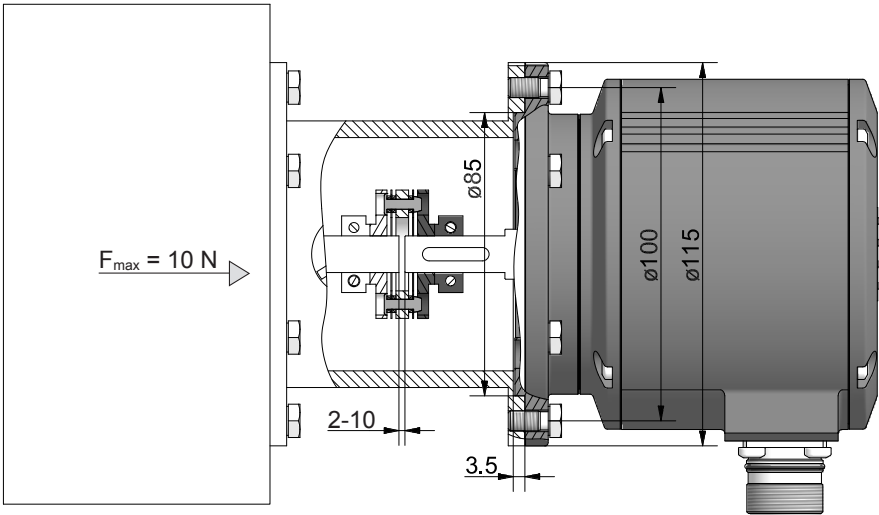
### 4.3 Maximum permissible mounting tolerance when the Baumer Hübner K 35 spring disk coupling is used

Devices with a solid shaft should be driven through the Baumer Hübner K 35 spring disk coupling (accessory), that can be pushed onto the shaft without axial loading.

**i** The figure below shows the device with EURO flange B10, the same maximum permissible mounting tolerances are valid with housing foot B3.

**☞** The device must be mounted on the drive with the least possible angular error and parallel misalignment.

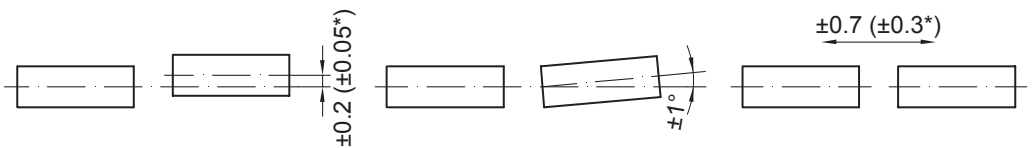
**☞** Risk of damaging the ball bearings  
Coupling components must not be driven onto the shaft with improper force (e. g. hammer impacts), because of the risk of damaging the ball bearings.



Admissible parallel misalignment

Admissible angular error

Admissible axial movement



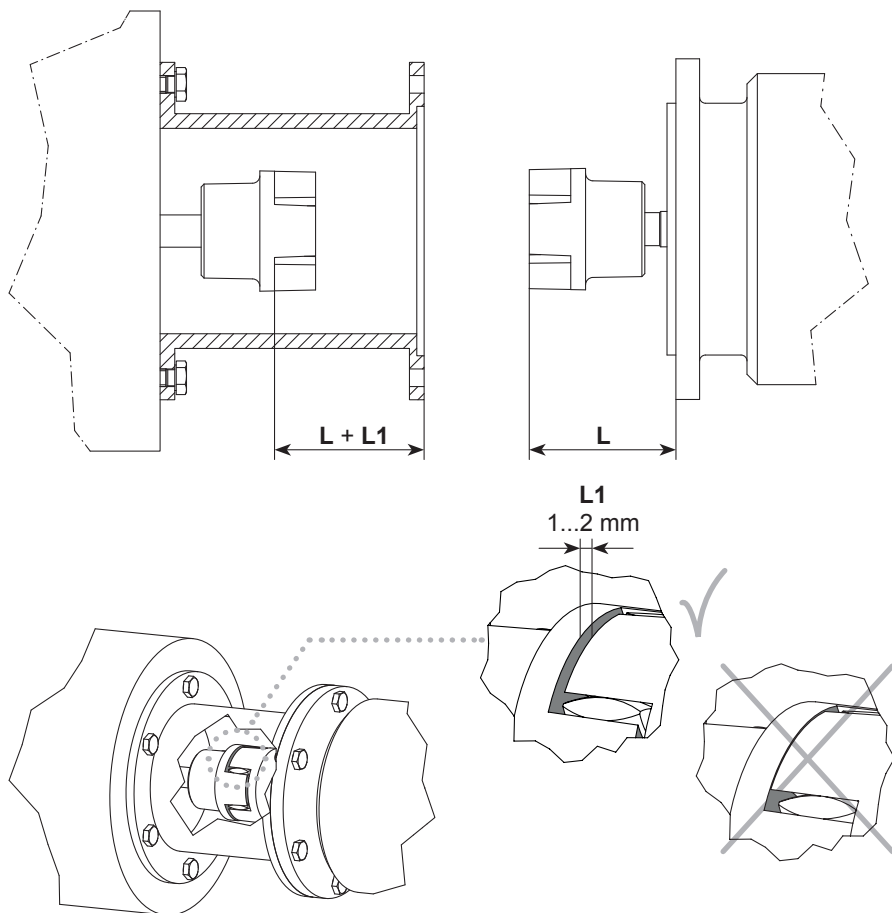
\* With insulated hub

All dimensions in millimeters, unless otherwise stated.

#### 4.4 Note when using a jaw-type coupling (for example „ROTEX®“)

✎ Incorrect mounting of the jaw-type coupling can damage the device.  
 Avoid blocking of both coupling halves (claws pressed together). The device shaft must not be subjected to direct axial shock.

- » Use a depth gauge to find and observe the correct distances (**L**, **L1**) for the device with EURO flange B10, see below.
- » For the device with housing foot B3 observe the distance **L1**.



## 5. ELECTRICAL CONNECTION

### 5.1 Terminal significance

Ub	Voltage supply
0V	Ground
A+ <sup>1)</sup>	Output signal channel 1
A- <sup>1)</sup>	Output signal channel 1 inverted
B+ <sup>1)</sup>	Output signal channel 2 (offset by 90° to channel 1)
B- <sup>1)</sup>	Output signal channel 2 inverted
R+ <sup>1)</sup>	Zero pulse (reference signal)
R- <sup>1)</sup>	Zero pulse inverted
nE+	System OK+ / error output
nE-	System OK- / error output inverted
PRE	RESET (see also <i>section 5.2.2</i> )
DIR	Rotating direction (see also <i>section 5.2.3</i> )
SP+ <sup>2)</sup>	DSL_OUT1 / speed switch (open collector* or solid state relay*)
SP- <sup>2)</sup>	DSL_OUT2 / speed switch (0V* or solid state relay*)
SA <sup>3)</sup>	RS485+ / programming interface
SB <sup>3)</sup>	RS485- / programming interface
D+	SSI data+
D-	SSI data-
C+	SSI clock+
C-	SSI clock-
dnu	Do not use

\* Depending on version

<sup>1)</sup> Additional output incremental (option)

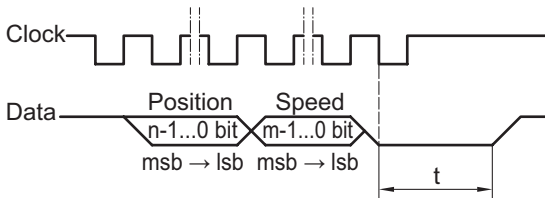
<sup>2)</sup> Speed switch (option)

<sup>3)</sup> Programming interface (only PMG10P)



## 5.2 SSI interface

### 5.2.1 Data transfer



Clock frequency 100 kHz...2 MHz  
 Monoflop time (t) 20  $\mu$ s (internal)  
 n, m Number of bits

*i* For continuous clocking, the SSI word is transmitted only once followed by zero values (no ring register operation).

### 5.2.2 Function „RESET“

With the function „RESET“ (RESET input) the position value of the SSI signal is set to 0 (factory setting, other values are possible on request).

» A voltage of 4...30 VDC must be applied to the RESET input for more than 100 ms to set the current position to 0.

*i* The RESET input has no influence on the incremental signals.  
 The RESET input has no influence on the speed switch.

*i* If a voltage of 4...30 VDC is applied to the RESET input during the initialization phase after switching on, the delay time of 100 ms does not begin until after the initialization phase.

### 5.2.3 Function „Rotating direction“

The function „rotating direction“ (DIR input) reverses the rotating direction of the SSI signal.

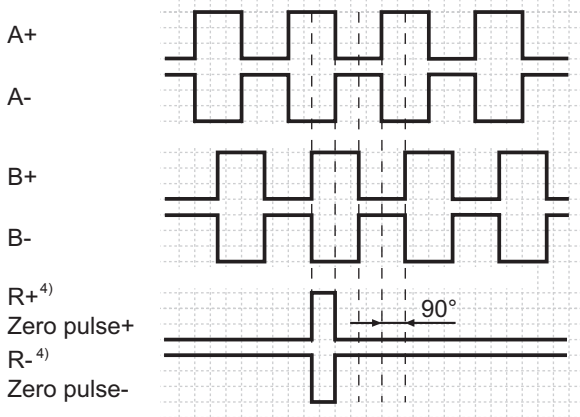
» A voltage of 4...30 VDC must be applied to the DIR input for more than 100 ms to reverse the current rotating direction of the SSI signal. For the duration of the applied voltage of 4...30 VDC, the rotating direction of the SSI signal is then reversed.

*i* The DIR input has no influence on the incremental signals.  
 The DIR input has no influence on the speed switch.

### 5.3 Additional output incremental (option)

#### 5.3.1 Output signals


At positive rotating direction



#### 5.3.2 Trigger level

Trigger level: TTL/RS422  
 High / Low:  $\geq 2.5 \text{ V} / \leq 0.5 \text{ V}$   
 Transmission length:  $\leq 550 \text{ m @ } 100 \text{ kHz}$   
 Output frequency:  $\leq 600 \text{ kHz}$

Trigger level: TTL/HTL ( $V_{in} = V_{out}$ )  
 High / Low:  $\geq 2.5 \text{ V} / \leq 0.5 \text{ V (TTL)} \mid \geq U_b - 3 \text{ V} / \leq 1.5 \text{ V (HTL)}$   
 Transmission length:  $\leq 550 \text{ m @ } 100 \text{ kHz (TTL)} \mid \leq 350 \text{ m @ } 100 \text{ kHz (HTL)}$   
 Output frequency:  $\leq 600 \text{ kHz (TTL)} \mid \leq 350 \text{ kHz (HTL)}$

 Electrically isolated: The output TTL/HTL ( $V_{in} = V_{out}$ ) at the additional output incremental 2 is electrically isolated and requires a separate power supply.

<sup>4)</sup> Only additional output incremental 2

#### 5.4 Programming interface (only PMG10P)

Encoder parameter like resolution singleturn and/or multiturn (SSI), binary or gray code (SSI), additional output 1 and 2, switch-off and switch-on speeds can get and set via the connections SA and SB. With the Z-PA.SDL.1 *WLAN adapter*, available as accessory, see *section 6.1*, it is possible to get access to the encoder via webbrowser.

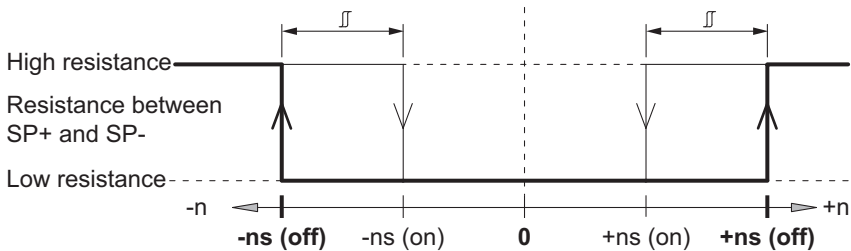
#### 5.5 LED function displays

LED	red	green
INC1 (additional output incremental 1)	Undervoltage, overload, over-temperature	OK
INC2 (additional output incremental 2)	Undervoltage, overload, over-temperature	OK
Status	Internal error	OK
Speed	Speed higher switching speed (overspeed)	Speed lower switching speed

## 5.6 Speed switch (option) - switching characteristics

*i* The factory setting of the switching speed for the PMG10P is 6000 rpm. The PMG10 without programming interface is delivered with the individually ordered fixed switching speed.

Event	State of the speed switch output
During initialisation	High resistance (overspeed)
After initialisation and speed $\leq -n_s$ (off)	High resistance (overspeed)
$-n_s$ (off) < speed $\leq -n_s$ (on)	State unchanged Low resistance (no overspeed) after initialisation if the device is rotating between the switching range during initialisation.
$-n_s$ (on) < speed < $+n_s$ (on)	Low resistance (no overspeed)
$+n_s$ (on) $\leq$ speed < $+n_s$ (off)	State unchanged Low resistance (no overspeed) after initialisation if the device is rotating between the switching range during initialisation.
$+n_s$ (off) $\leq$ speed	High resistance (overspeed)



$n$  = Speed

**+ns (off)** = Switch-off speed at shaft rotation in positive rotating direction\*

**-ns (off)** = Switch-off speed at shaft rotation in negative rotating direction\*

Switching hysteresis  $\sigma$ : 5...100 % (factory setting = 10 % min. 1 Digit)


**+ns (on)** = Switch-on speed at shaft rotation in positive rotating direction\*

**-ns (on)** = Switch-on speed at shaft rotation in negative rotating direction\*

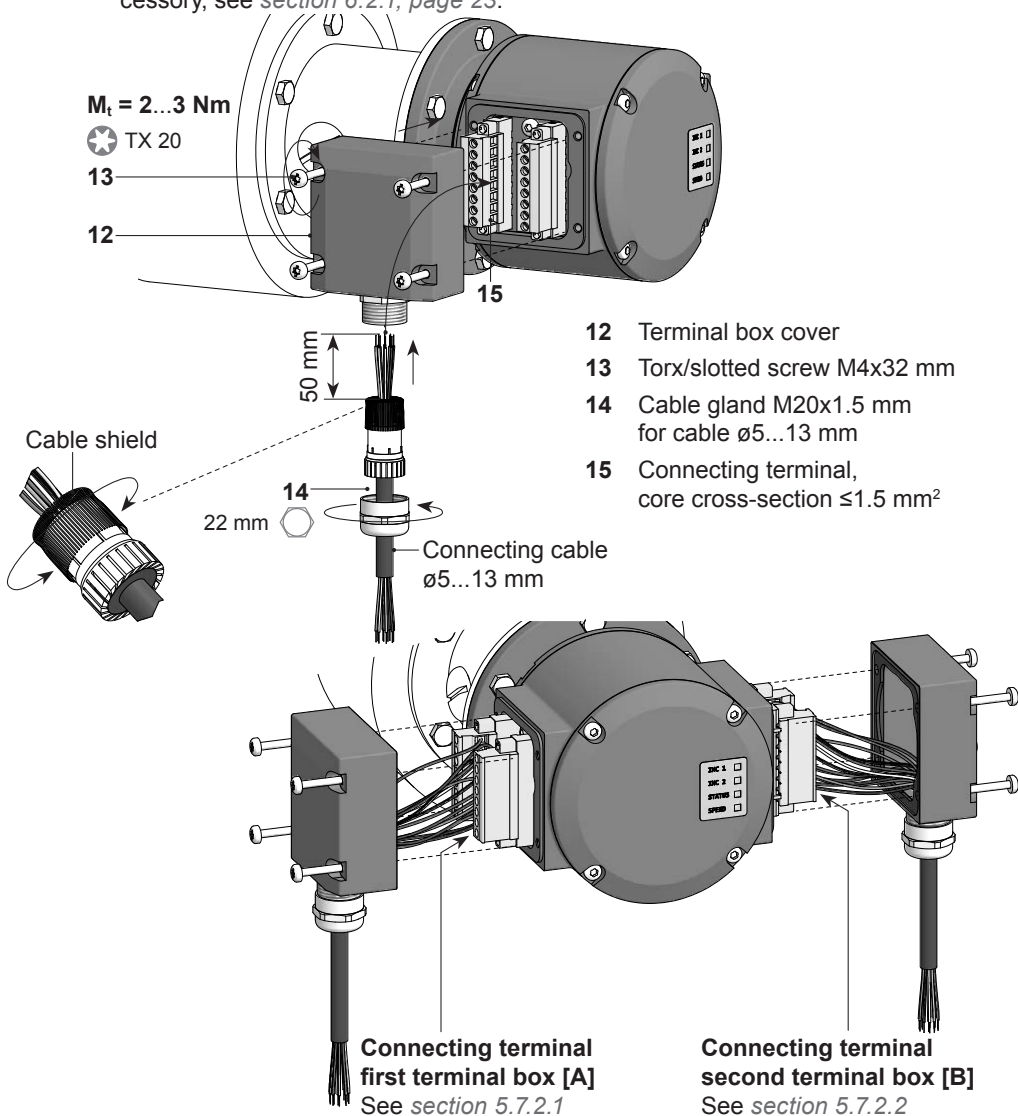
\* See section 7, page 26.

## 5.7 Electrical connection with radial terminal boxes


### 5.7.1 Cable connection

 To ensure the specified protection of the device the correct cable diameter must be used.

Connecting cables are not in scope of delivery and can be ordered separately as accessory, see [section 6.2.1, page 23](#).

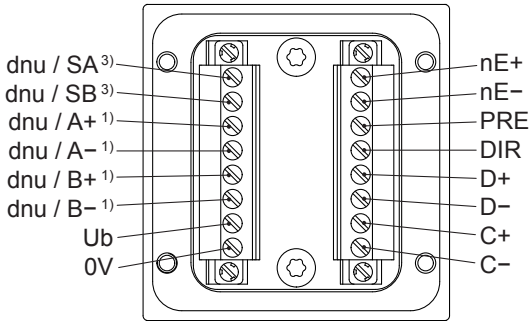


### 5.7.2 Assignment connecting terminal

 Do not connect voltage supply to outputs! Danger of damage!  
Please, beware of possible voltage drop in long cable leads (inputs and outputs)!


#### 5.7.2.1 Connecting terminal first terminal box [A]

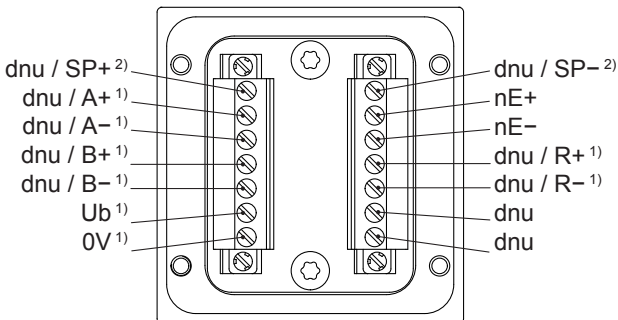
SSI  
Programming interface (only PMG10P)  
Additional output incremental 1 (option)



#### 5.7.2.2 Connecting terminal second terminal box [B]

Additional output incremental 2 (option)  
Speed switch (option)


 The TTL/HTL output at the additional output incremental 2 is electrically isolated and requires a separate power supply.



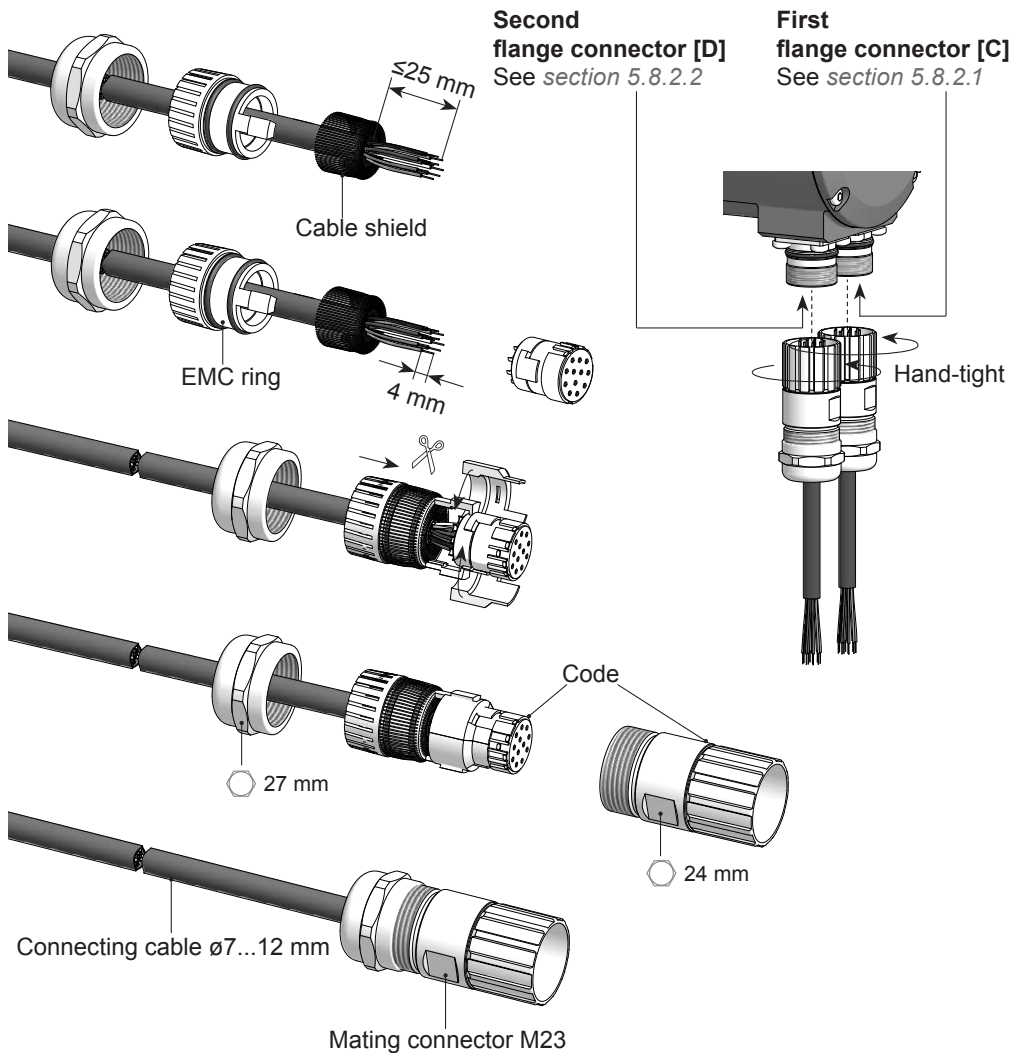
<sup>1)</sup> Additional output incremental (option)  
<sup>2)</sup> Speed switch (option)  
<sup>3)</sup> Programming interface (only PMG10P)

## 5.8 Electrical connection with radial flange connectors


### 5.8.1 Cable connection mating connector M23 (accessory)

 To ensure the specified protection of the device the correct cable diameter must be used.

Connecting cables and mating connectors are not in scope of delivery and can be ordered separately as accessory, see *section 6.2, page 23*.



## 5.8.2 Assignment flange connectors

-  Do not connect voltage supply to outputs! Danger of damage!  
Please, beware of possible voltage drop in long cable leads (inputs and outputs)!

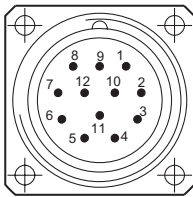
### 5.8.2.1 First flange connector [C]

SSI

Programming interface (only PMG10P)

Additional output incremental 1 (option)

Flange connector M23 (male, 17-pin, clockwise)




PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	nE-	10	0V
2	DIR	11	Internal shield
3	dnu / SB <sup>3)</sup>	12	dnu / B+ <sup>1)</sup>
4	nE+	13	dnu / B- <sup>1)</sup>
5	PRE	14	D+
6	dnu / SA <sup>3)</sup>	15	dnu / A+ <sup>1)</sup>
7	Ub	16	dnu / A- <sup>1)</sup>
8	C+	17	D-
9	C-		

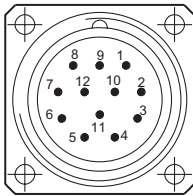
### 5.8.2.2 Second flange connector [D]

Additional output incremental 2 (option)

Speed switch (option)

-  The TTL/HTL output at the additional output incremental 2 is electrically isolated and requires a separate power supply.

Flange connector M23 (male, 12-pin, clockwise)



PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	dnu / B- <sup>1)</sup>	7	dnu / SP+ <sup>2)</sup>
2	nE-	8	dnu / B+ <sup>1)</sup>
3	dnu / R+ <sup>1)</sup>	9	dnu / SP- <sup>2)</sup>
4	dnu / R- <sup>1)</sup>	10	0V <sup>1)</sup>
5	dnu / A+ <sup>1)</sup>	11	nE+
6	dnu / A- <sup>1)</sup>	12	Ub <sup>1)</sup>

<sup>1)</sup> Additional output incremental (option)

<sup>2)</sup> Speed switch (option)

<sup>3)</sup> Programming interface (only PMG10P)



## 6. ACCESSORIES

### 6.1 Z-PA.SDL.1 *WLAN adapter*: Programming device for PMG10P

The Z-PA.SDL.1 *WLAN adapter* is a programming device for programming and monitoring HMG10P/PMG10P series encoders.

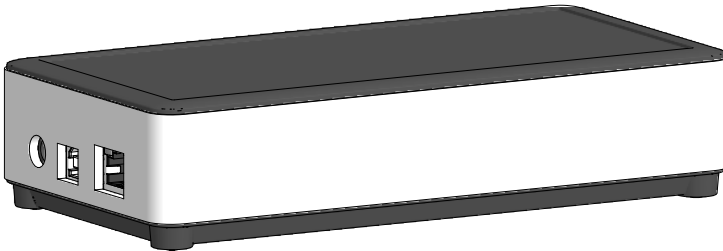
The following encoder parameters can be parameterized (depending on the version of the encoder):

- Resolution singleturn (SSI)
- Resolution multiturn (SSI)
- Binary or gray code (SSI)
- Additional output 1 and 2 (number of pulses per revolution)
- Switch-off and switch-on speeds

The programming device can be configured and operated via a web browser.

*i* A detailed description of all available functions can be find in the mounting and operating instructions of the *WLAN adapter*.

	<u>Part number</u>
Z-PA.SDL.1 <i>WLAN adapter</i>	11190106



## 6.2 Sensor cable and mating connector

### 6.2.1 Sensor cable

HEK 8 - Sensor cable with 10 wires for encoder  
 2 wires AWG21 (power supply), 4 twisted pair signal wires AWG24 (signal), cable length on request.

HEK 17 - Sensor cable with 16 wires for encoder  
 2 wires AWG 21 (power supply), 3 twisted pair signal wires AWG35 (signal), 4 wires AWG31 (data), cable length on request.

### 6.2.2 Mating connector M23

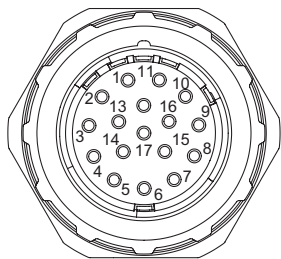
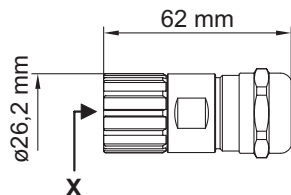
*i* Mating connectors are not in scope of delivery and can be ordered suitable to the ordered version free of charge (without connecting cable).

	<u>Part number</u>
Mating connector M23, 17-pin, solder version, female contacts, counter-clockwise (CCW)	11068551

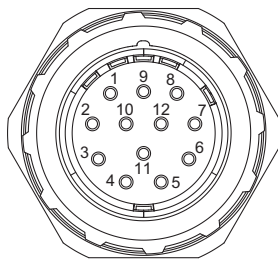
*i* Suitable for first flange connector [C], see *section 5.8.2.1*.

Mating connector M23, 12-pin, solder version, female contacts, counter-clockwise (CCW)	11068577
--	----------

*i* Suitable for second flange connector [D], see *section 5.8.2.2*.



**View X**  
17-pin



**View X**  
12-pin

## 6.2.3 Mating connector M23, 17-pin with sensor cable HEK 17

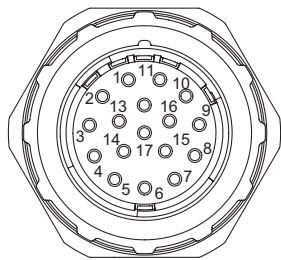
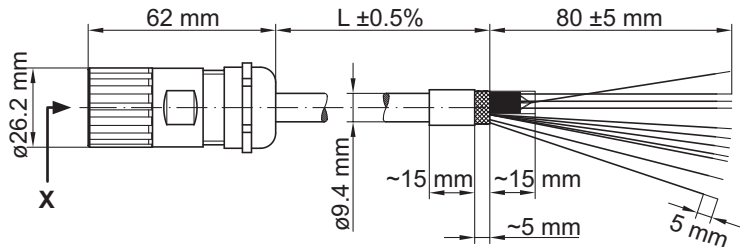
### 6.2.3.1 Without additional output incremental

Mating connector M23, 17-pin with sensor cable HEK 17, **11** pins assigned (2x power supply, 1x internal shield, 4x signal, 4x data), female contacts, counter-clockwise (CCW)

*i* Suitable for first flange connector [C], see *section 5.8.2.1*.

Cable length L                      Part number

1 m	11172482
3 m	11172481
5 m	11172499
10 m	11172580



View X

PIN	WIRE COLOUR	WIRE CROSS-SECTION	ASSIGNMENT PMG10
1	---	---	---
2	White/yellow	0.14 mm <sup>2</sup>	DIR
3	Black	0.14 mm <sup>2</sup>	SB <sup>3)</sup>
4	---	---	---
5	White/black	0.14 mm <sup>2</sup>	PRE
6	Brown	0.14 mm <sup>2</sup>	SA <sup>3)</sup>
7	Brown/red	0.5 mm <sup>2</sup>	Ub
8	Green/red	0.22 mm <sup>2</sup>	C+
9	Green/black	0.22 mm <sup>2</sup>	C-
10	Brown/blue	0.5 mm <sup>2</sup>	0V
11 <sup>5)</sup>	Black	0.5 mm <sup>2</sup>	---
12	---	---	---
13	---	---	---
14	Brown/yellow	0.22 mm <sup>2</sup>	D+
15	---	---	---
16	---	---	---
17	Brown/green	0.22 mm <sup>2</sup>	D-

<sup>3)</sup> Programming interface (only PMG10P)

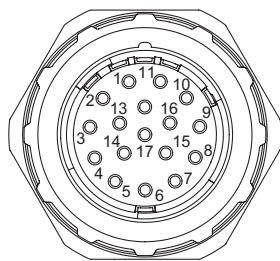
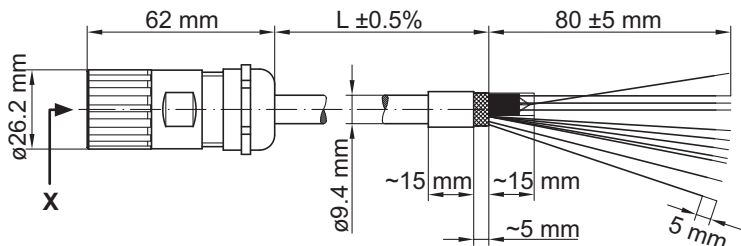
<sup>5)</sup> Internal shield, connected with all internal shields

**6.2.3.2 With additional output incremental**

Mating connector M23, 17-pin with sensor cable HEK 17, **17** pins assigned (2x power supply, 1x internal shield, 10x signal, 4x data), female contacts, counter-clockwise (CCW)

*i* Suitable for first flange connector [C], see *section 5.8.2.1*.

Cable length L                      Part number  
 3 m                                      11172463



**View X**

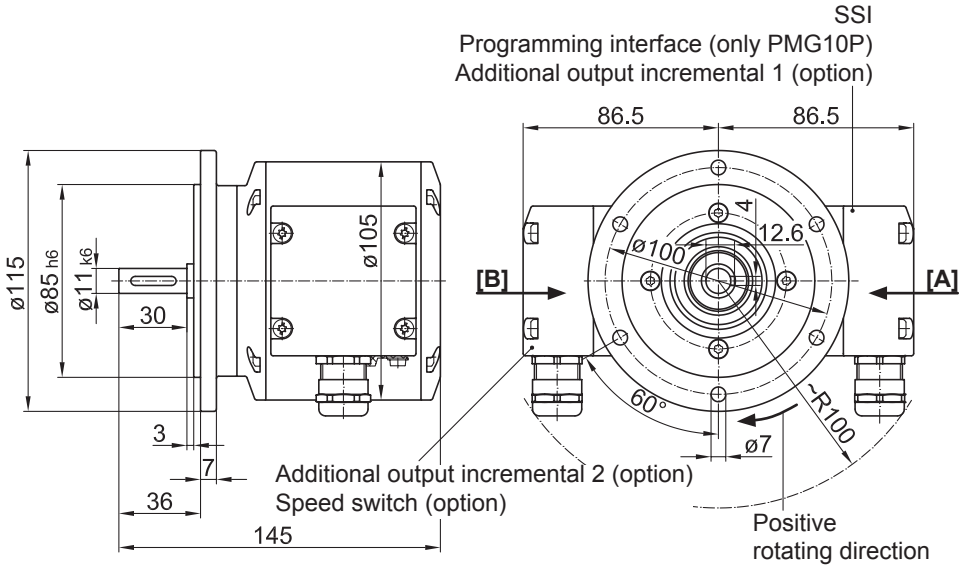
PIN	WIRE COLOUR	WIRE CROSS-SECTION	ASSIGNMENT PMG10
<b>1</b>	Grey	0.14 mm <sup>2</sup>	nE-
<b>2</b>	White/yellow	0.14 mm <sup>2</sup>	DIR
<b>3</b>	Black	0.14 mm <sup>2</sup>	SB <sup>3)</sup>
<b>4</b>	Blue	0.14 mm <sup>2</sup>	nE+
<b>5</b>	White/black	0.14 mm <sup>2</sup>	PRE
<b>6</b>	Brown	0.14 mm <sup>2</sup>	SA <sup>3)</sup>
<b>7</b>	Brown/red	0.5 mm <sup>2</sup>	Ub
<b>8</b>	Green/red	0.22 mm <sup>2</sup>	C+
<b>9</b>	Green/black	0.22 mm <sup>2</sup>	C-
<b>10</b>	Brown/blue	0.5 mm <sup>2</sup>	0V
<b>11</b> <sup>5)</sup>	Black	0.5 mm <sup>2</sup>	---
<b>12</b>	Red	0.14 mm <sup>2</sup>	B+
<b>13</b>	Orange	0.14 mm <sup>2</sup>	B-
<b>14</b>	Brown/yellow	0.22 mm <sup>2</sup>	D+
<b>15</b>	Green	0.14 mm <sup>2</sup>	A+
<b>16</b>	Yellow	0.14 mm <sup>2</sup>	A-
<b>17</b>	Brown/green	0.22 mm <sup>2</sup>	D-

<sup>3)</sup> Programming interface (only PMG10P)

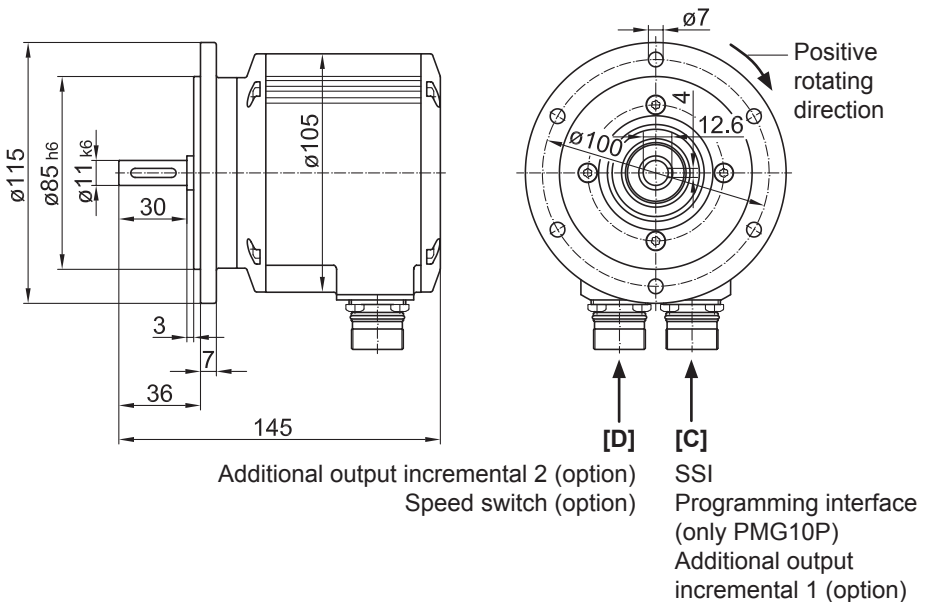
<sup>5)</sup> Internal shield, connected with all internal shields

## 7. DIMENSIONS

### 7.1 EURO flange B10 with radial terminal boxes

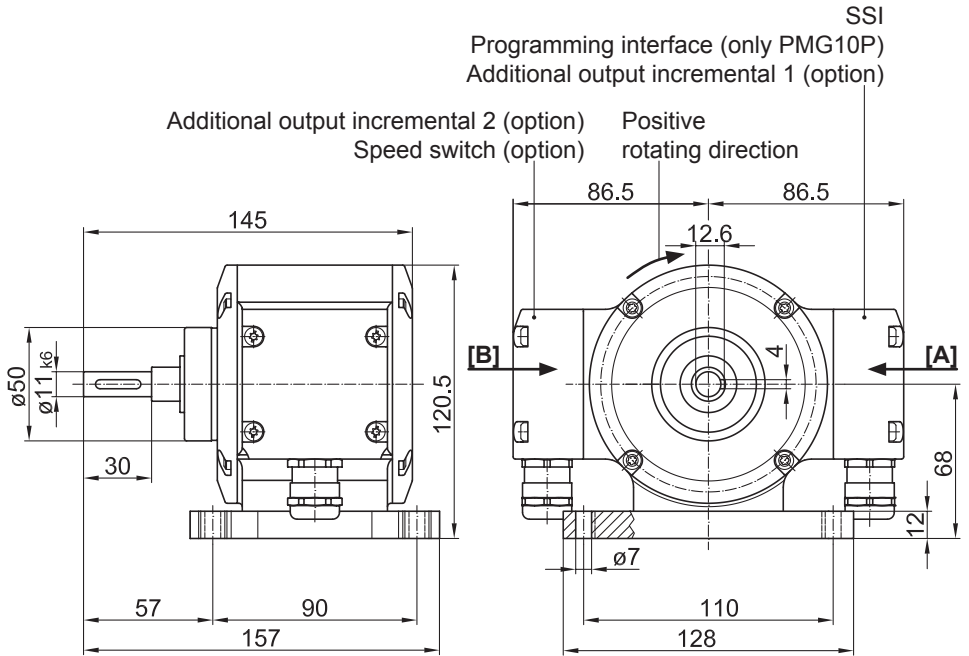


### 7.2 EURO flange B10 with radial flange connectors



All dimensions in millimeters, unless otherwise stated.

7.3 Housing foot B3



All dimensions in millimeters, unless otherwise stated.

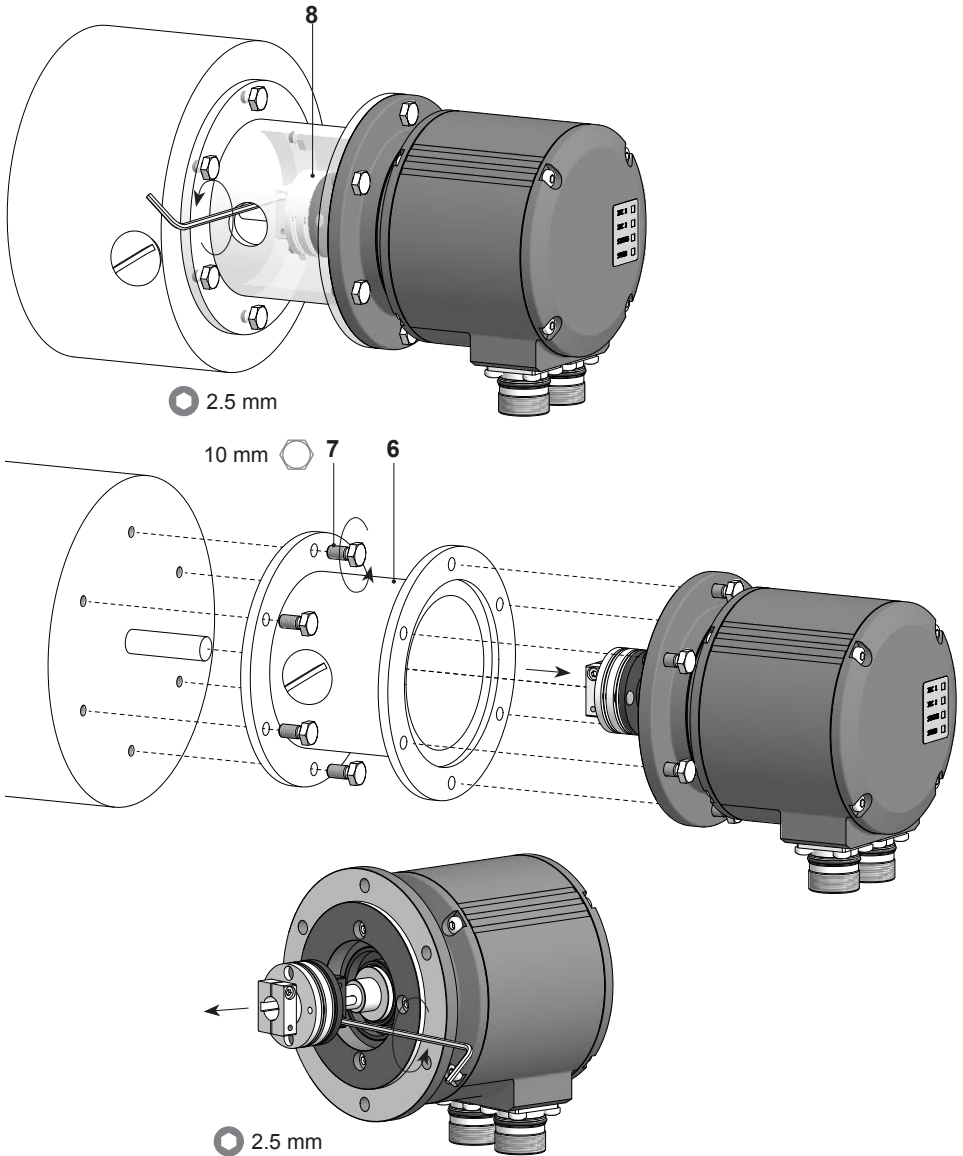
## 8. DISMOUNTING



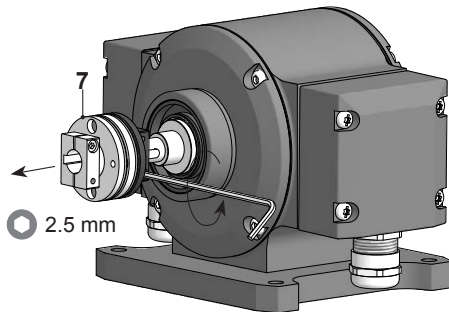
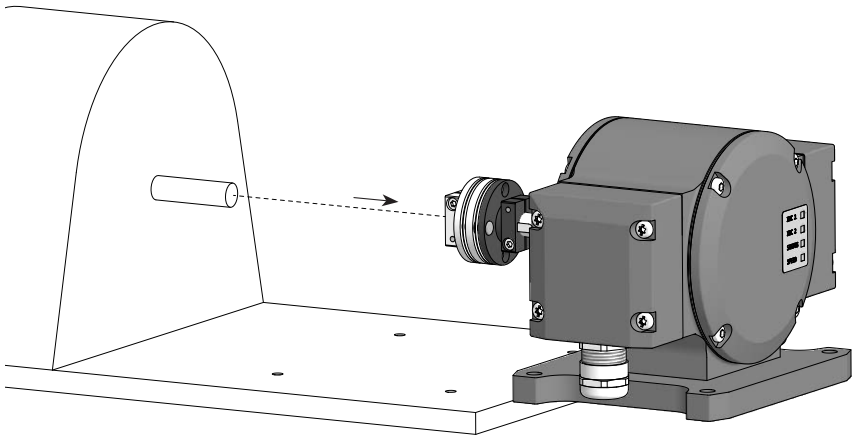
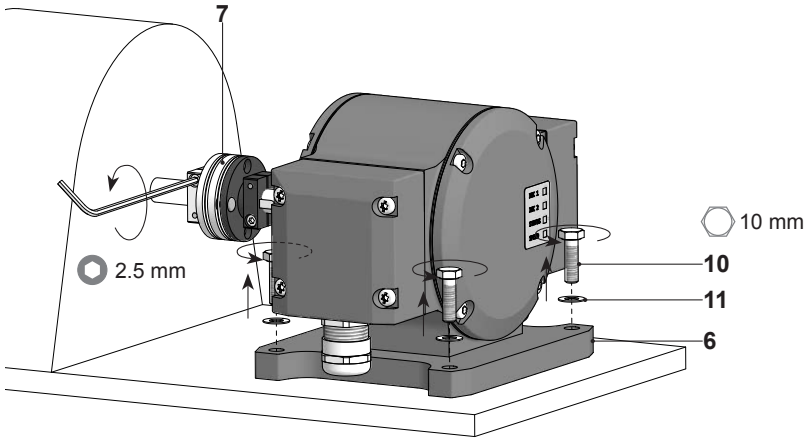
### Risk of serious injuries

Disconnect all electrical connections before dismounting.

### 8.1 EURO flange B10



## 8.2 Housing foot B3





## 9. TECHNICAL DATA

### 9.1 Technical data - electrical ratings

Voltage supply	4,75...30 VDC
Short-circuit proof	Yes
Consumption w/o load	≤100 mA (SSI)
Initializing time	≤500 ms after power on
Interface	SSI
Function	Multiturn
Steps per turn	1048576 / 20 Bit
Number of turns	1048576 / 20 Bit
Additional outputs	Square-wave TTL/HTL, TTL/RS422
Sensing method	Magnetic
Code	Gray (factory setting) or binary
Code sequence	CW (factory setting)
Input signals	SSI clock, PRESET, rotating direction
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Programming interface	RS485 (≤600 m) <sup>6)</sup>
Programmable parameters	Resolution singleturn and multiturn (SSI) <sup>6)</sup> , binary or gray code (SSI) <sup>6)</sup> , additional output (number of pulses) <sup>6)</sup> , switch-off and switch-on speeds <sup>6)</sup>
Diagnostic functions	Self-diagnosis
Status indicator	4 LEDs integrated in device back side
Approvals	CE

### 9.2 Technical data - electrical ratings (speed switch)

Switching accuracy	±2 % (or 1 Digit)
Switching outputs	1 output (Open collector* or solid state relay*)
Output switching capacity	30 VDC; ≤100 mA
Switching delay time	≤20 ms

\* Depending on version

<sup>6)</sup> Only PMG10P

### 9.3 Technical data - mechanical design

Size (flange)	ø115 mm
Shaft type	ø11 mm solid shaft
Flange	EURO flange B10
Protection DIN EN 60529	IP66/IP67
Operating speed	≤12000 U/min
Schaltdrehzahlbereich	ns (off) = ±2...12000 rpm, (PMG10P: factory setting 6000 rpm)
Operating torque typ.	10 Ncm
Rotor moment of inertia	1 kgcm <sup>2</sup>
Admitted shaft load	≤450 N axial ≤650 N radial
Materials	Housing: aluminium alloy Shaft: stainless steel
Operating temperature	-40...+95 °C -40...+85 °C (speed switch with solid state relay)
Relative humidity	95 % non-condensing
Resistance	IEC 60068-2-6 Vibration 30 g, 10-2000 Hz IEC 60068-2-27 Shock 400 g, 1 ms
Corrosion protection	IEC 60068-2-52 Salt mist complies to ambient conditions CX (C5-M) according to ISO 12944-2
Weight approx.	1.9 kg*
Connection	Terminal box (2x*) Flange connector M23 (2x*)

\* Depending on version





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