

# Installation Instructions

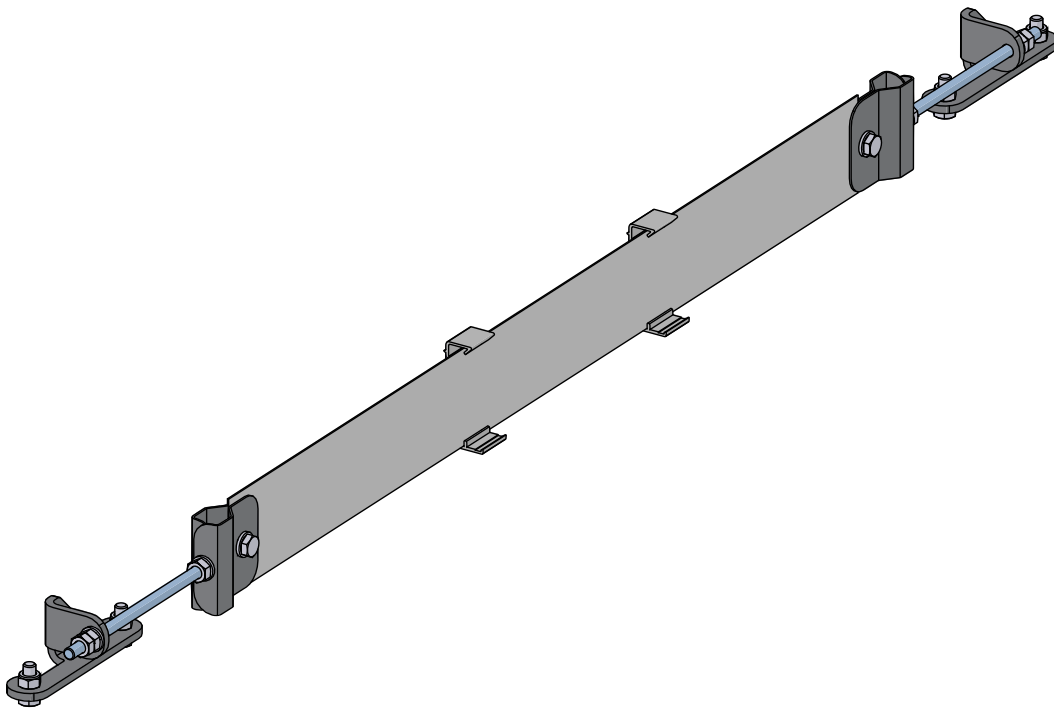


## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

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**Order number:**  
080243-1#



## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

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**NOTE!**

Conductix-Wampfler accepts no liability or responsibility for damages and production faults that result from failure to follow these assembly instructions.

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## 1 Terminology

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Positioning band profile = The support profile for different positioning bands. It consists of a thin stainless steel band 50 x 0.2 mm.

Positioning band = The information carrier for positioning systems. For example, it can be printed with QR codes or barcodes. Generally self-adhesive. It can be or is already affixed to the positioning band profile.

Code = A representation of data in binary symbols that is machine-read and then electronically processed (ex.: barcode or QR code).

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## 2 Conductor rail program 0832

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**First read operating instructions BAL0832-0001 and the system description it contains. This is included in the base module.**



**ATTENTION!**

**The positioning band profile must be free of excessive tension!**

When mounting and tensioning the tensioning unit with a holding plate, no waves may arise in the positioning band profile.

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## Positioning module

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### 2.1 Structure and product description

The positioning module in the "Conductor rail program 0832" variant consists of the following components:

Item	Name
1	Positioning band profile
2	Band holder
3	Clamping unit
4	Holding plate

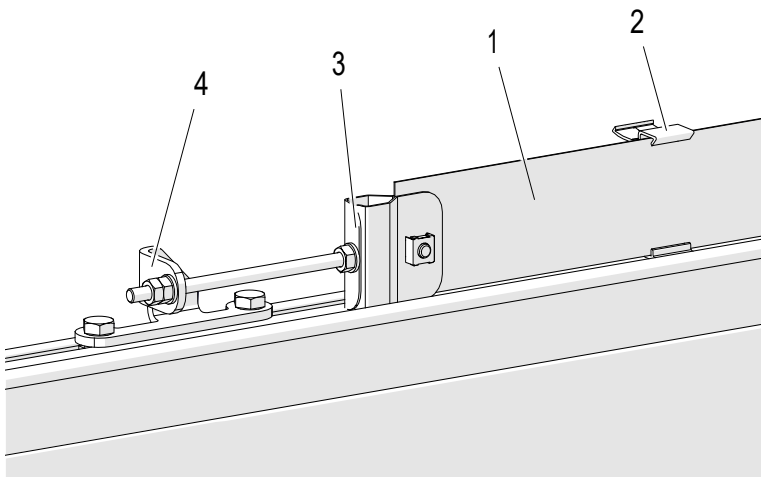


Fig. 1: Conductor rail program 0832 (Installation variant P0 top)

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## Positioning module

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## 2.2 Installation

### 2.2.1 Add-on variants

The positioning band profile is mounted at one of the positions provided, depending on the system specifications:

Band holder	Installation variant P0 (top)	Installation variant P0 (bottom)	Installation variant P7
08-H016-0257			
08-H016-0258	—	—	
08-H016-0259			—

The distance between the band holders should be between 500 and 1000 mm. The band holders should be positioned in such a way that they do not move during operation. Two installation variants are possible:

- Inserting/clipping the positioning band profile into the preassembled band holders
- Mounting the band holders with positioning band profile already inserted/clipped

## Positioning module

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### 2.2.2 Clipping in the band holder

#### 2.2.2.1 Installation in support profile

Fastening to the support profile is done by threading the band holder into the gap in the tubular profile area and then turning it until the hook clips into the area of the C-slot:

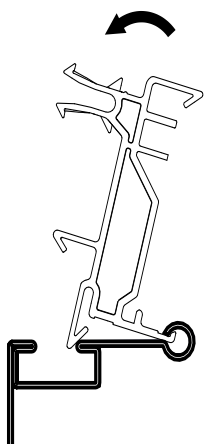


Fig. 2: Clipping the hook into the C-slot

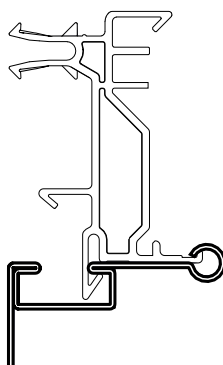


Fig. 3: Hook clipped into C-slot

#### 2.2.2.2 Installation on insulation profile

Fastening to the insulation profile is done by pressing the band holder into the lowest pole of the insulation profile. Make sure that the band holder does not cover the poles above it:

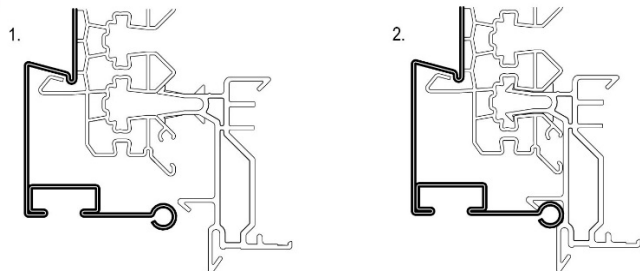


Fig. 4: 1. Insert band holder and 2. clip/press the band holder in

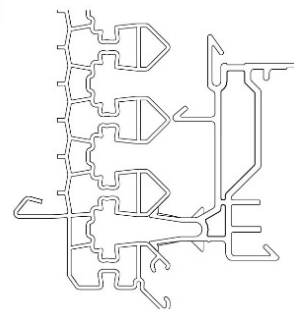


Fig. 5: Incorrect band holder arrangement

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### 2.2.3 Inserting/clipping the positioning band profile into the band holder



**CAUTION!**

#### Danger of cutting!

The following activities may result in injury due to cutting due to carelessness.

- Wear suitable protective clothing such as gloves and work safety shoes.
- The positioning band roller profile can "spring open" when unlocking. Avoid danger of injury when unlocking the positioning band roller profile!



**CAUTION!**

#### Make sure that the positioning band profile is correctly aligned in the lane!

Before inserting/clipping in the positioning band profile, check the alignment of the positioning band in the lane!

- If necessary, turn the positioning band in the lane: The positioning band must be aligned with the reader and the start code must be on the correct side of the Lane (see Chapter 6.3)

Installation variant  
P0 (top)

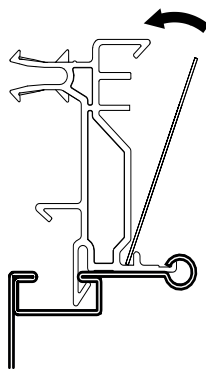


Fig. 6: Clip in the positioning band profile

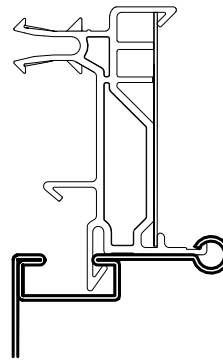


Fig. 7: The positioning band profile is attached

Installation variant  
P0  
(bottom)

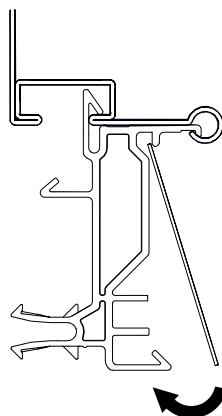


Fig. 8: Clip in the positioning band profile

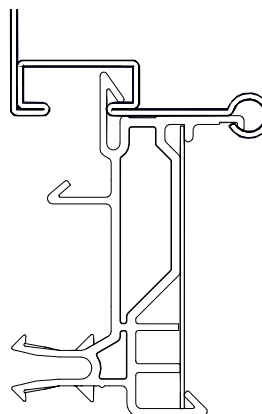
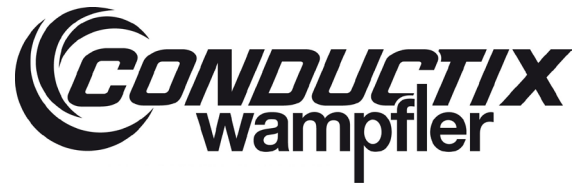


Fig. 9: The positioning band profile is attached

If the band holder has been clipped in at the bottom of the support profile, the positioning band profile must not be clipped in from above. This leads to a deformation of the lower clip of the band holder. The positioning band profile must be clipped in from below.

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## Positioning module

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After installation of the band holders and the positioning band profile, the positioning band profile must be easily and freely movable in the X direction in order to be able to set the desired positioning range and to avoid displacement when the temperature changes. Pre-drill the positioning band profile on both sides as shown in the illustration and then screw it to the tensioning unit.

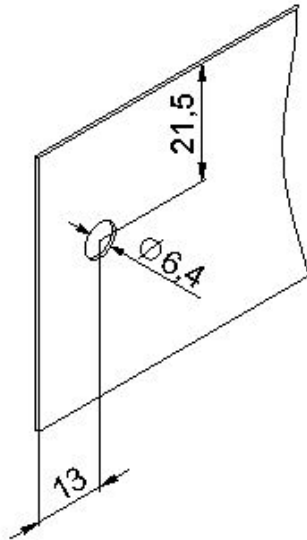


Fig. 10: Installation variant 1 or 2

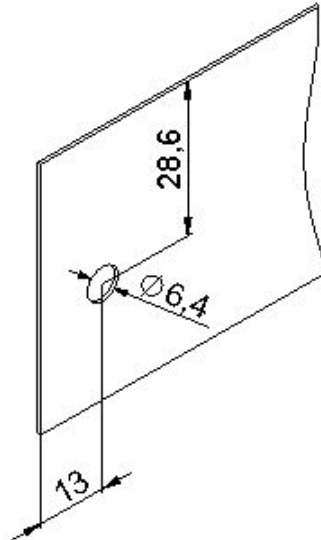


Fig. 11: Installation variant 3

The holding plates are screwed to the support profile depending on the intended position (for installation variants, see table in chapter 2.2.1). The tensioning units are connected to the holding plates in order to tension the positioning band profile in a straight line.



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## Positioning module

Conductor rail program 0832, C-rail,  
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### 3 C-rail

#### 3.1 Structure and product description

The positioning module in the "C-rail" variant consists of the following components:

Item	Name
1	Positioning band profile
2	Band holder
3, 4	Clamping unit with holding plate

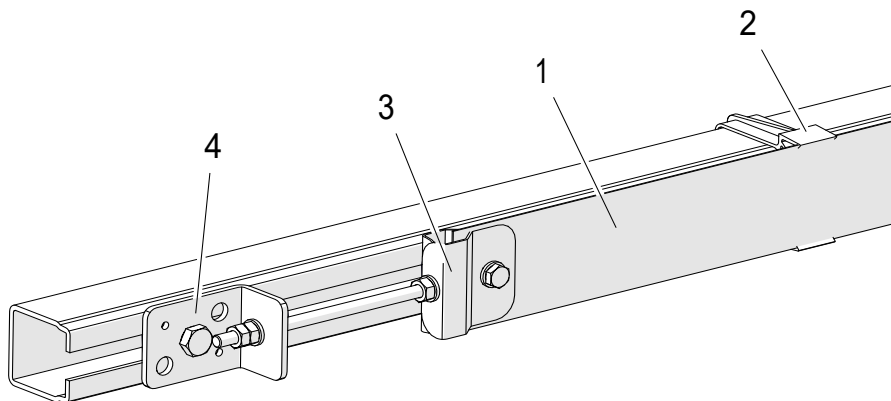


Fig. 12: C-rail

#### 3.2 Installation



**The positioning band profile must be free of excessive tension!**

When mounting and tensioning the tensioning unit with a holding plate, no waves may arise in the positioning band profile.

The distance between the band holders should be between 500 and 1000 mm. The band holders should be positioned in such a way that they do not move during operation. Two installation variants are possible:

- Inserting/clipping the positioning band profile into the preassembled band holders
- Mounting the band holders with positioning band profile already inserted/clipped

## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

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### 3.2.1 Clipping in the band holder

#### 3.2.1.1 Installation in support profile

Clip the band holder onto the C-rail:

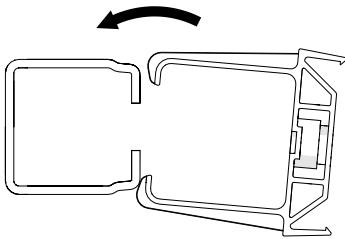


Fig. 13: Clipping in the band holder

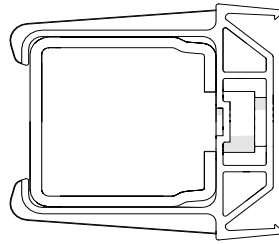


Fig. 14: Band holder after clipping in

### 3.2.2 Inserting/clipping the positioning band profile into the band holder



**CAUTION!**

#### **Danger of cutting!**

The following activities may result in injury due to cutting due to carelessness.

- Wear suitable protective clothing such as gloves and work safety shoes.
- The positioning band roller profile can "spring open" when unlocking. Avoid danger of injury when unlocking the positioning band roller profile!



**CAUTION!**

#### **Make sure that the positioning band profile is correctly aligned in the lane!**

Before inserting/clipping in the positioning band profile, check the alignment of the positioning band in the lane!

- If necessary, turn the positioning band in the lane: The positioning band must be aligned with the reader and the start code must be on the correct side of the aisle (see chapter 6.3)

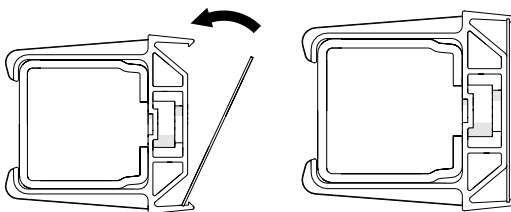


Fig. 15: Clipping in the positioning band profile and clipped-in positioning band profile

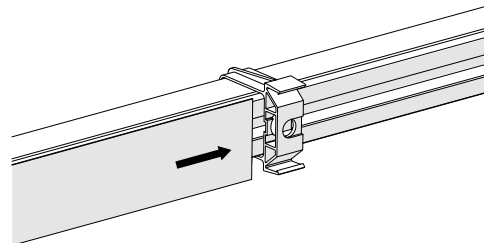


Fig. 16: Inserting the positioning band profile

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### Positioning module

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After installation of the band holders and the positioning band profile, the positioning band profile must be easily and freely movable in the X direction in order to be able to set the desired positioning range and to avoid displacement when the temperature changes.

Pre-drill the positioning band profile on both sides as shown in the illustration and then screw it to the tensioning unit.

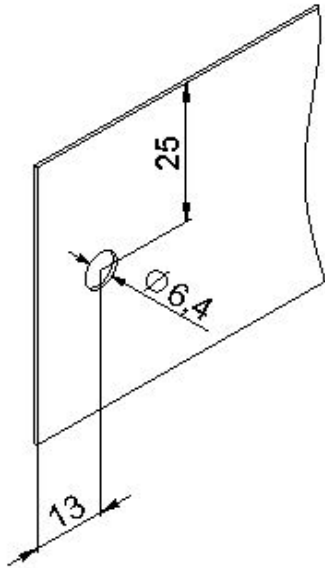


Fig. 17: Drilling the positioning band profile

The tensioning units are connected to the holding plates in order to tension the positioning band profile in a straight line.

# Installation Instructions



## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

### 4 Console

#### 4.1 Structure and product description

The positioning module in the "Console" variant consists of the following components:

Item	Name
1	Positioning band profile
2	Band holder
3, 4	Clamping unit with holding plate

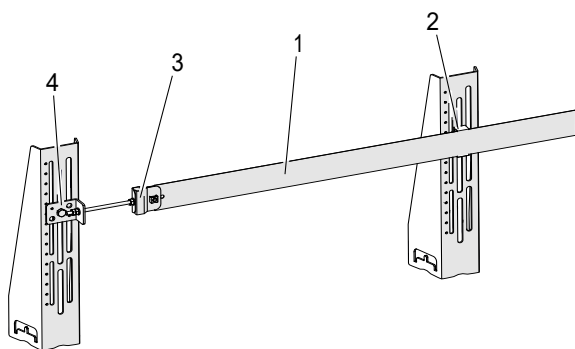


Fig. 18: Console

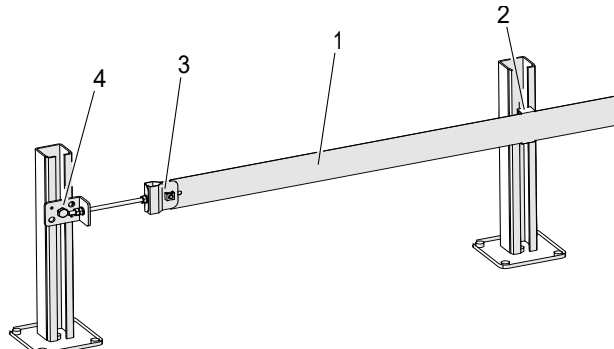


Fig. 19: C-rail

#### 4.2 Installation

##### 4.2.1 Screwing on the band holder



**ATTENTION!**

**The positioning band profile must be free of excessive tension!**

When mounting and tensioning the tensioning unit with a holding plate, no waves may arise in the positioning band profile.

# Installation Instructions



## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

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### 4.2.1.1 Installation onto console

Screw the band holder to the Console (DIN 912 cheese head screw, square nut):

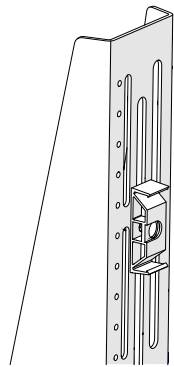


Fig. 20: Aligning the band holder

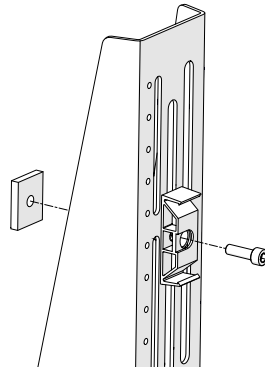


Fig. 21: Screwing on the band holder

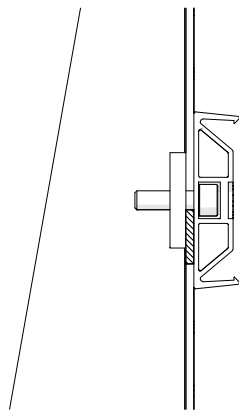


Fig. 22: Band holder screwed onto the console

### 4.2.2 Inserting/clipping the positioning band profile into the band holders



**CAUTION!**

#### **Danger of cutting!**

The following activities may result in injury due to cutting due to carelessness.

- Wear suitable protective clothing such as gloves and work safety shoes.
- The positioning band roller profile can "spring open" when unlocking. Avoid danger of injury when unlocking the positioning band roller profile!



**CAUTION!**

#### **Make sure that the positioning band profile is correctly aligned in the lane!**

Before inserting/clipping in the positioning band profile, check the alignment of the positioning band in the lane!

- If necessary, turn the positioning band in the lane: The positioning band must be aligned with the reader and the start code must be on the correct side of the aisle (see chapter 6.3)

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### Positioning module

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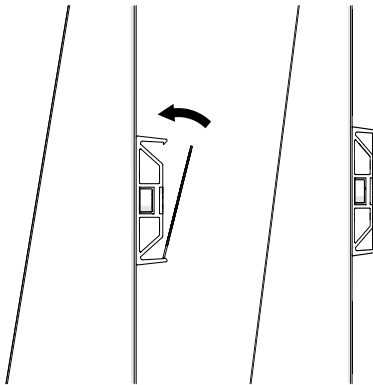


Fig. 23: Clipping in the positioning band profile

After installation of the band holders and the positioning band profile, the positioning band profile must be easily and freely movable in the X direction in order to be able to set the desired positioning range and to avoid displacement when the temperature changes. Pre-drill the positioning band profile on both sides as shown in the illustration and then screw it to the tensioning unit.

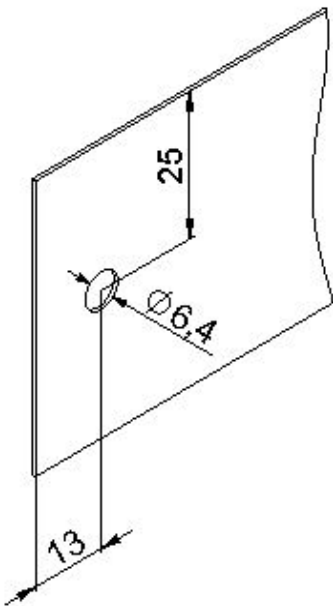


Fig. 24: Drilling the positioning band profile

The tensioning units are connected to the holding plates in order to tension the positioning band profile in a straight line.

# Installation Instructions



## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

### 5 ProShell

#### 5.1 Structure and product description

The positioning module in the "ProShell" variant consists of the following components:

Item	Name
1	Positioning band profile
2	Band holder
3	Clamping unit
4	Holding plate

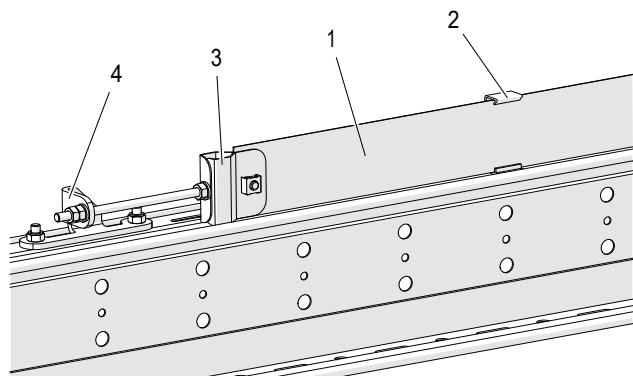


Fig. 25: ProShell (Positioning band profile top)

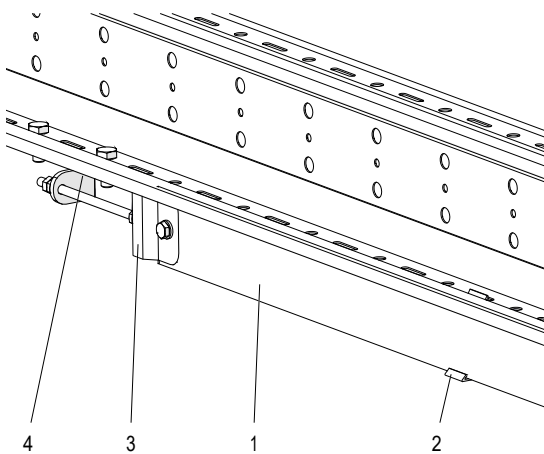


Fig. 26: ProShell (Positioning band profile bottom)

# Installation Instructions



## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

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### 5.2 Installation



**ATTENTION!**

**The positioning band profile must be free of excessive tension!**

When mounting and tensioning the tensioning unit with a holding plate, no waves may arise in the positioning band profile.

#### 5.2.1 Clipping in the band holder

##### 5.2.1.1 Installation into support profile

Fastening to the support profile is done by threading the band holder into the gap in the tubular profile area and then turning it until the clip is clipped into the area of the slot:

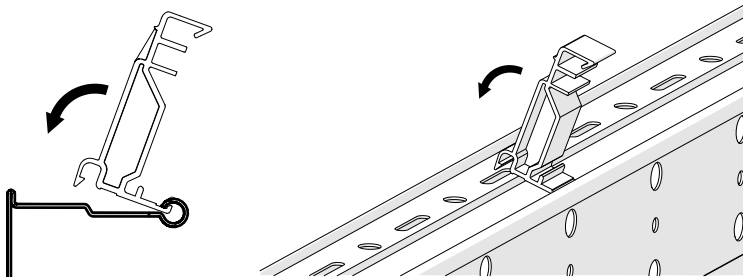


Fig. 27: Clipping in the band holder

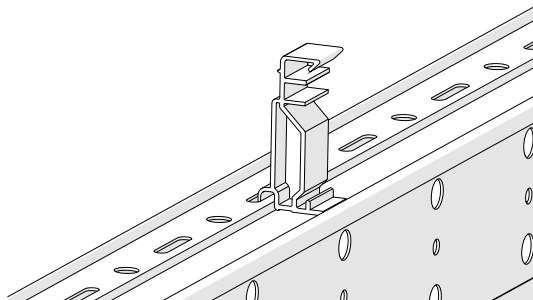


Fig. 28: Band holder is clipped in



## Positioning module

Conductor rail program 0832, C-rail,  
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### 5.2.2 Inserting/clipping the positioning band profile into the band holders



#### Danger of cutting!

The following activities may result in injury due to cutting due to carelessness.

- Wear suitable protective clothing such as gloves and work safety shoes.
- The positioning band roller profile can "spring open" when unlocking. Avoid danger of injury when unlocking the positioning band roller profile!



#### Make sure that the positioning band profile is correctly aligned in the lane!

Before inserting/clipping in the positioning band profile, check the alignment of the positioning band in the lane!

- If necessary, turn the positioning band in the lane: The positioning band must be aligned with the reader and the start code must be on the correct side of the aisle (see chapter 6.3)

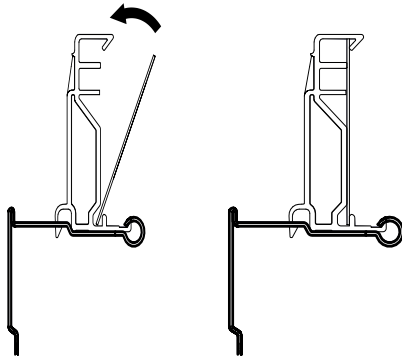


Fig. 29: Clip in the positioning band profile (band holder is attached at the top)

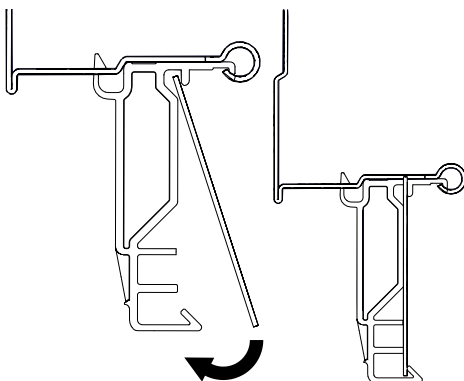


Fig. 30: Clip in the positioning band profile (band holder is attached at the bottom)

If the band holder has been clipped in at the bottom of the support profile, the positioning band profile must not be clipped in from the top. This leads to a deformation of the lower clip of the band holder.

The positioning band profile must be clipped in from the bottom.

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### Positioning module

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After installation of the band holders and the positioning band profile, the positioning band profile must be easily and freely movable in the X direction in order to be able to set the desired positioning range and to avoid displacement when the temperature changes. Pre-drill the positioning band profile on both sides as shown in the illustration and then screw it to the tensioning unit.

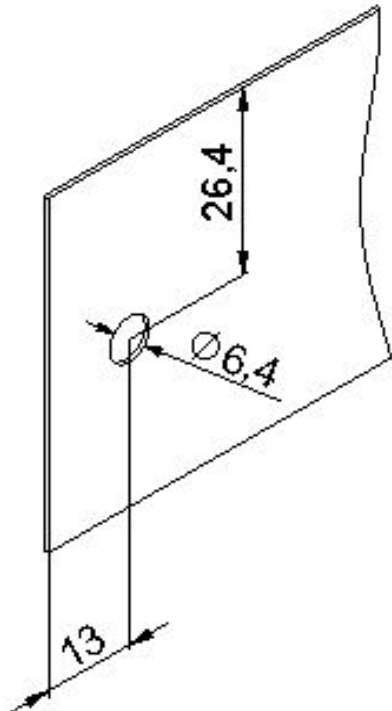


Fig. 31: Drilling the positioning band profile

The tensioning units are connected to the holding plates in order to tension the positioning band profile in a straight line.

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## 6 Positioning band

### 6.1 Operating principle of the BPS laser (BPS 34/BPS 37 and BPS 300 series)



The barcode readers are not included in the scope of delivery!

#### NOTE!

The laser reads several code labels depending on the distance between the positioning band and the optics. A distance of 150 mm yields a reading width of 130 mm (theoretically 3.25 labels). Taking the inclination into account, the laser therefore reads three of at least one required label.

**The laser needs a code label to calculate and provide the position.**

This means that the system has a high level of resilience to damage or contamination of the positioning band. Note that the reading head is slightly inclined. This causes oblique scanning which hides damage to the positioning band, such as grinding marks.

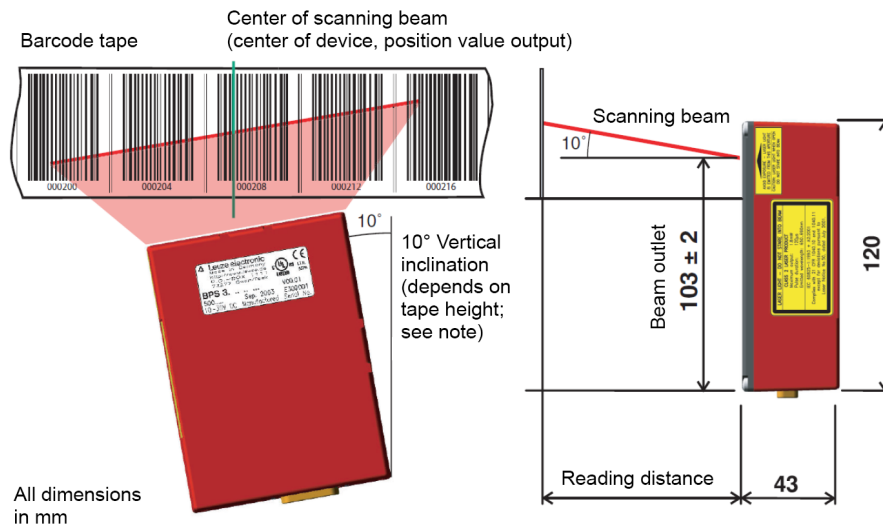


Fig. 32: Positioning band

## Positioning module

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### 6.2 Interruption of the positioning band at transition points, expansion points, etc.

If the positioning band has to be interrupted, it is recommended to cut out a complete code label, e.g. to cut the positioning band at an expansion point or for a screw head.

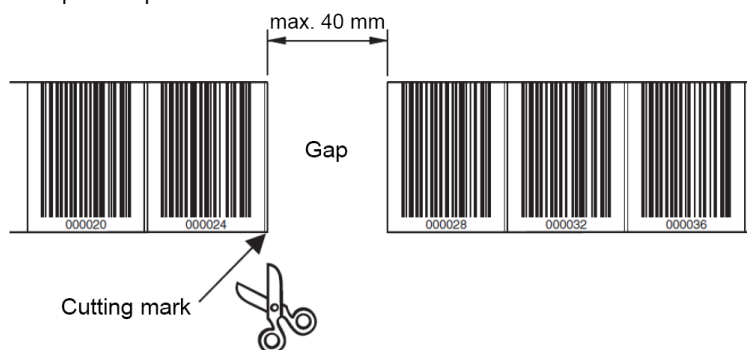


Fig. 33: Interrupting the positioning band

The separation must take place at the cut mark printed on the positioning band and must not be larger than 40 mm.

Notes for cutting:

- Expansion joints up to a width of several millimeters can simply be glued over. The positioning band may not be interrupted at this point.
- Glue over protruding screw heads. Cut out the code label covering the screw head at the cutting edges.
- If application results in a gap, it is recommended that the positioning band be affixed over this gap and then cut at the relevant cutting marks. If the gap is so small that the scanning beam can detect the code label either to the left or to the right of the gap, measured values will be supplied without interruption. If the scanning beam cannot scan a code label completely, the BPS 34 returns a value of "0". As soon as the BPS 34 can scan a complete code label again, it calculates the next position value.
- The maximum gap between two positioning band positions that will not affect the measured value is 40 mm.

## Positioning module

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### 6.3 Applying the positioning band

Observe the manufacturer's instructions (Leuze) when installing the positioning band. The positioning band profile can be supplied in the following variants:

- No positioning band
- With (loose) positioning band (not affixed in place)
- With positioning band profile (already affixed)

Stick the positioning band onto a clean, grease-free strip.

The following situations can occur at a defined starting point (start of lane / code 0) (in each case with a view to the conductor rail/positioning band):

#### 6.3.1 Lane start on left

Standard coding from 0 and ascending to the right. Labeling/numbering visible on bottom.

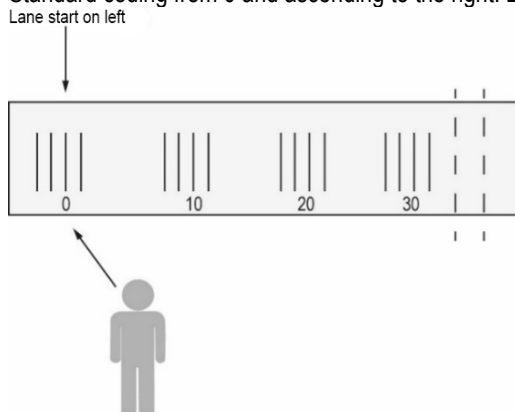


Fig. 34: Lane start on left

#### 6.3.2 Lane start on right

Positioning band reversed with the labeling/numbering on top → not readable, because upside down

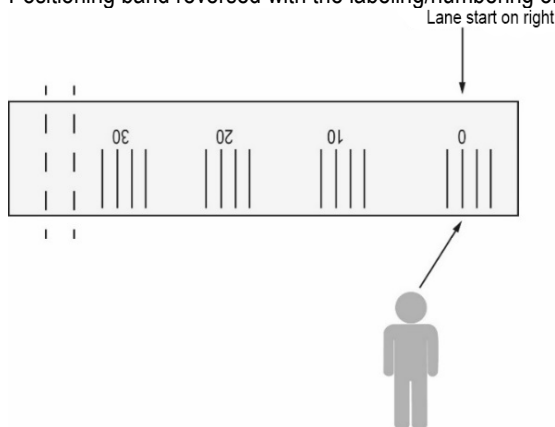


Fig. 35: Lane start on right

## Positioning module

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### 6.4 Repair

For further questions on maintenance or repair of the positioning band, see the Leuze documentation:

- [Barcode positioning system BPS 34 for the PROFIBUS DP](#) (For information on the positioning band profile, see Chapter 6.)
- [Reflectors for optoelectronic sensors](#)

#### 6.4.1 Picture of defect: Wrinkling of the positioning band on stainless steel positioning band profile

The positioning band profile consists of a steel carrier onto which the positioning band with code labels is mechanically affixed under constant tension. The positioning system is redundant and can reliably detect the positioning band even in the event of minor damage to the positioning. Due to environmental influences (higher temperatures) during transport and storage, small wrinkles may occur in individual cases. The wrinkles are physical and do not represent a technical defect. Their function is not affected.

##### 6.4.1.1 Correcting wrinkles

To remove wrinkles, the positioning band can be cut at the next cutting mark using a knife and a steel ruler, and the positioning band can be carefully detached from the carrier from the cutting mark to the wrinkle. The positioning band can then be pressed on again from the wrinkle (red area) to the cutting mark:

1. Cut positioning band at the cutting mark
2. Carefully loosen positioning band up to the wrinkle
3. Press positioning band back in place from the wrinkle to the cutting mark



Fig. 36: Cut positioning band at the cutting mark

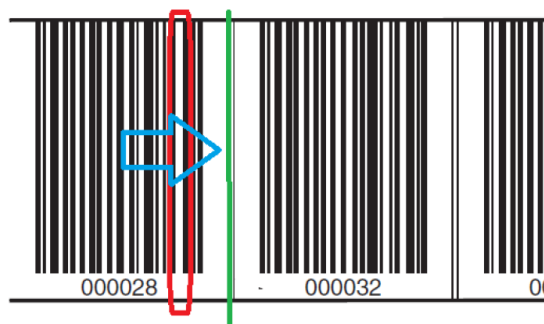


Fig. 37: Carefully loosen positioning band up to the wrinkle.

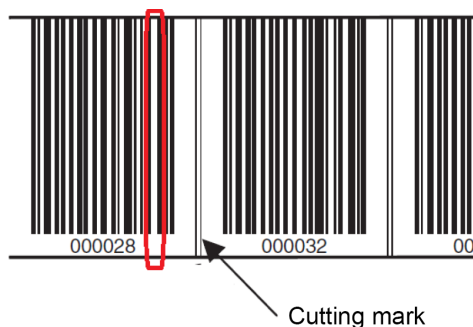


Fig. 38: Press positioning band back in place

# Installation Instructions



## Positioning module

Conductor rail program 0832, C-rail,  
Console, ProShell

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### 6.4.2 Repair kit

If the positioning band has been damaged (e.g. by falling parts), a repair kit can be downloaded from the Internet or ordered as a 1 m replacement section (available from [Leuze.de](http://Leuze.de): Starting page → Products → Measurement sensors → Sensors for positioning → Barcode positioning systems → BPS 34/37 → Heading "[Downloads](#)"). These files contain all the code label information for a positioning band from length 0...500 m to 9500 m...9999 m.

1 m of positioning band is shown on each DIN A4 page. This meter of band is divided into 5 lines of 20 cm each with 5 code labels of 4 cm each.

Steps to replace the defective area:

1. Determine the coding of the defective area.
2. Print the replacement range.
3. Stick the printed area over the defective area.

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