

PBM-200-E | PBM-200-E10



Installation Instructions

PBM-200-E | PBM-200-E10 Power entry / Splice connection kit
for up to three trace heaters
for use with BARTEC PSB, MSB, HSB+ or HTSB trace heaters

Origin Installation Instructions

Table of contents	
Overview	2
Certifications / Approvals	2
Technical data	2
Safety	3
Intended Use	3
Foreseeable Misuse	3
Personal Qualification	3
Kit contents	4
Accessories	5
End termination	7
Installation	8
Required tools / equipment	8
Cautions and warnings	8
Preparation of the trace heater(s)	9
Installation of the mounting stand	13
Cable connection	15
Wiring	19
Installation of the end seal	21
Application of the pipe insulation	22
Troubleshooting	23
EC Declaration of conformity	24
Limited Product warranty	26

Overview

This manual covers the installation of the BARTEC PBM-200-E | PBM-200-E10 Power entry / Splice connection kit. This kit may be used with up to three trace heaters, as power entry, splice connection, daisy chain or T-splice.

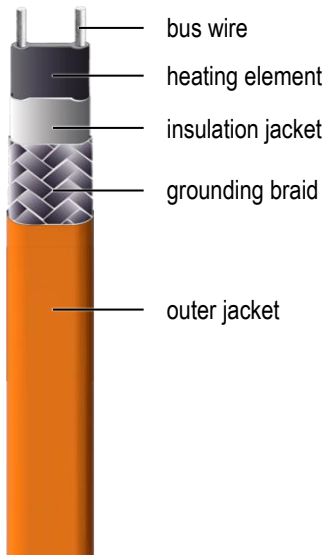


The trace heating system uses a self-regulating trace heater. It features a temperature-dependent resistive heating element that regulates and limits the heat according to the ambient temperature. If the ambient temperature rises, the power output of the trace heater is reduced. This self-regulating property prevents overheating which would cause damage to the trace heater. Crossing or overlapping with other parts of the same trace heating system is also possible.

The trace heaters are fixed equipment heating systems for pipes in ordinary and hazardous areas. Thanks to the parallel design the trace heater can be cut and installed to any required length (up to the maximum heating circuit length according to the design guide of the trace heating system).

The manual applies for enclosures made of polyester, aluminum and stainless steel material. Pictures in this manual shows polyester enclosures but are equivalent for all materials.

The following terms describe the parts of the trace heater within these instructions:



Certifications / Approvals

System certificate



IECEX DEK 20.0055X
DEKRA 20ATEX0093 X

PBM-200-E | PBM-200-E10 Power entry / Splice connection kit for BARTEC PSB, MSB trace heaters

IECEX DEK 20.0055X	
	Ex eb 60079-30-1 IIC T6...T3 ¹ Gb Ex tb 60079-30-1 IIIC T80 °C... T170 °C ¹ Db
DEKRA 20ATEX0093 X	
	II 2G Ex eb 60079-30-1 IIC T6...T3 ¹ Gb II 2D Ex tb 60079-30-1 IIIC T80 °C... T170 °C ¹ Db

Enclosure certificate



IECEX DEK 21.0074X
DEKRA 21ATEX0118 X

PBM-200-E | PBM-200-E10 Power entry / Splice connection kit for BARTEC PSB, MSB, HSB+ or HTSB trace heaters

IECEX DEK 21.0074X	
	Ex eb 60079-30-1 IIC T6...110 °C (T4) ¹ Gb Ex tb 60079-30-1 IIIC T _L 80 °C... T _L 110 °C ¹ Db
DEKRA 21ATEX0118 X	
	II 2G Ex eb 60079-30-1 IIC T6...110 °C (T4) ¹ Gb II 2D Ex tb 60079-30-1 IIIC T _L 80 °C... T _L 110 °C ¹ Db

Technical data

Junction box with mounting stand

Ambient temperature range	-55 °C to +55 °C
Min. Installation Temperature	-55 °C
Max. workpiece temperature mounting stand	240 °C
Power supply	max. 277 Vac
Max. circuit breaker size	32 A
Trace heater output²	10 W/m to 90 W/m
Max. power conductor size	<i>PBM-200-E</i> 6 mm ² (10 AWG) <i>PBM-200-E10</i> 10 mm ² (6 AWG)
Terminals	Spring clamp Ex e; 2x3 lines, 1x3 PE
Ingress Protection	IP 66

Connection Technology (CAK)

Maximum withstand temperature / max. service temperature end seal³	+200 °C
Min. installation temperature	-60 °C

¹ For maximum surface temperature, see heating system design documentation

² nominal heat output at 10 °C

³ observe the permissible temperature of the heating cable; for heating cable HSB+ and HTSB: install the end seal for protection of excessive heat above the insulation but below the outer cladding, if needed. Note the information and picture 39.

Safety

WARNING

Risk of fire or electrical shock due to electric trace heating system. Follow these guidelines to avoid personal injury or material damage.

For safe installation of the PBM-200-E | PBM-200-E10 Power entry / Splice connection kit the technical requirements and instructions given in this manual must be followed. Keep these instructions for future reference. If applicable, leave them with the end user.

All electrical systems and installations must comply with BARTEC GmbH requirements and be installed in accordance with the relevant electrical codes and any other applicable national and local codes.

Use the PBM-200-E | PBM-200-E10 kit in accordance with the intended use and strictly comply with the operational data specified in section Technical Data.

Install all components of the trace heating system carefully, especially the connection kit, trace heater and end seal.

Any defective component of the kit must be replaced before installation. Replace each defect component of the trace heating system.

This kit contains silicone adhesive. Keep out of reach of children. Store at below 25 °C. Follow the safety instructions given on the packaging.

Use only original BARTEC accessories and spare parts.

Note that the Applicable Documents listed below shows further important information and must be observed in addition to this manual.

Applicable Documents

DesignGuide System (for PSB and MSB)	21-1S00-7D0001
DesignGuide Enclosure (for HSB+ and HTSB)	21-5400-7D0001
Installation Instructions Self-regulating trace heating cables	01-5800-7D0003
Storage conditions	21-0000-7Q0001

Intended Use

The PBM-200-E | PBM-200-E10 Power entry / Splice connection kit is a connection kit including a junction box with mounting stand and connection technology (CAK).

It can be used in trace heating systems combined with BARTEC heating cable types

- BARTEC PSB (07-5853-*)
- BARTEC MSB (07-5854-*)
- BARTEC HSB+ (07-584B-*)
- BARTEC HTSB (07-584C-*)

The kit may only be operated with up to three heating cable and one kind of heating cable in each heating circuit.

The approval and marking of the respective heating system, the technical data of the PBM-200-E | PBM-200-E10 kit and the applicable documents must be observed.

For use with electrical systems, the relevant installation and operating conditions (e.g. according to ATEX Directive 2014/34/EU, EN 60079-0, EN 60079-14, EN 60079-17, EN 60079-30-2 and any other relevant national standards) must be observed.

Specific conditions of use

- All power and data line cable entries to the trace heater boxes shall be installed with Ex eb or Ex tb cable glands or blanking elements providing a minimum ingress protection of IP66
- Supply cables and power cable entry glands shall be selected per manufacturer's installation instructions for appropriate conductor size and temperature range (refer to DesignGuide, chapter "Checklist customized entry port")
- Trace heater boxes, Aluminium housing type 07-5180-****/*****
The enclosure must not be used in areas affected by charge-producing processes, mechanical friction and separation processes, electron emission (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust
- Trace heater boxes, Cable entries PS-120-* type 27-59G2-*
For the Box pedestal PS-120-* measures shall be taken to avoid electrostatic charging hazards

Foreseeable Misuse

The following activities are a misuse of the product and are not allowed:

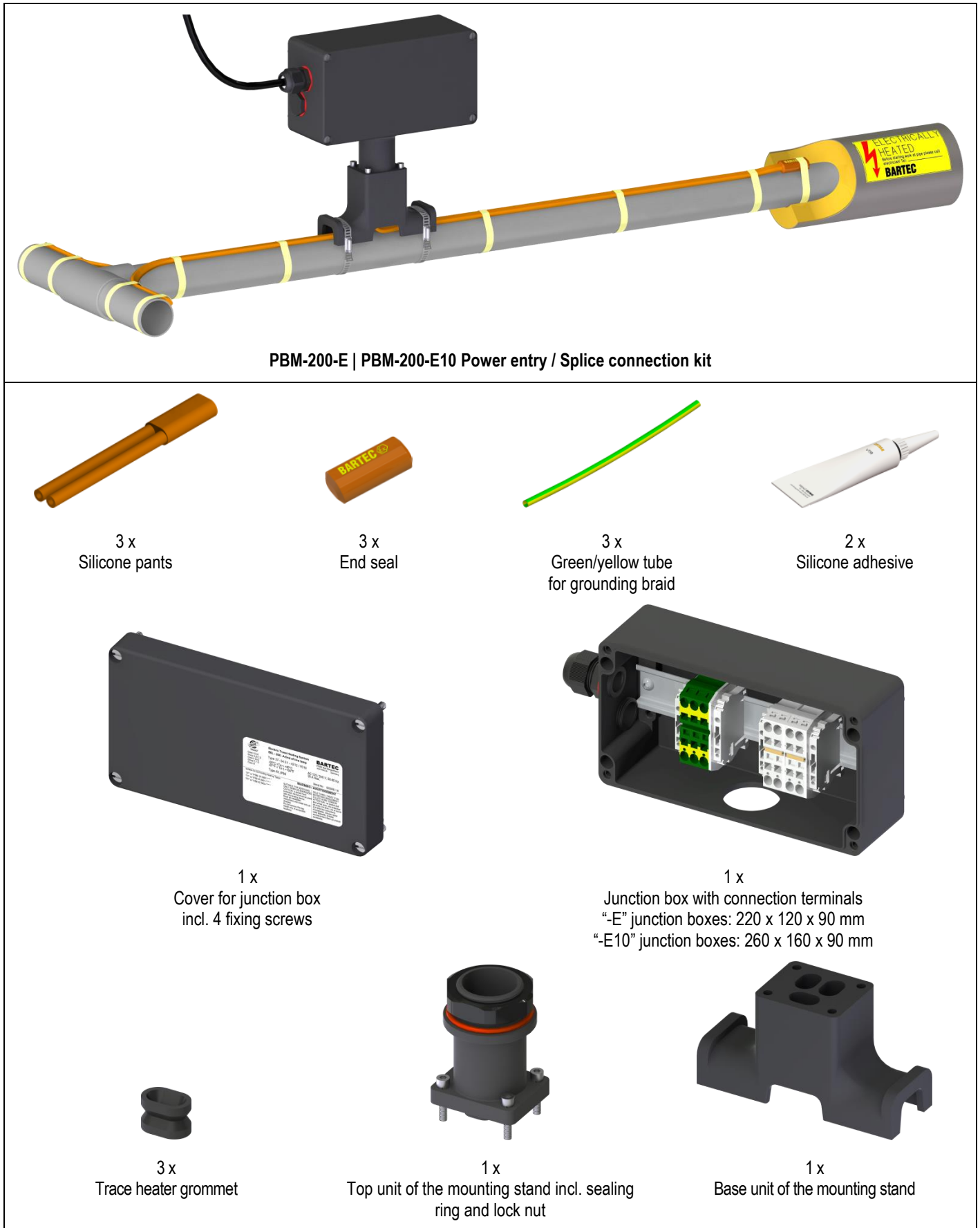
- Use of the PBM-200-E | PBM-200-E10 kit for purposes other than those described in the intended use
- Installation, commissioning, operation, maintenance or disposal by unauthorised or unqualified personnel
- Work on live parts or circuits without switching off the PBM-200-E | PBM-200-E10 kit or the system
- Commissioning of damaged or faulty system components or incomplete installation
- Unauthorized technical modification of the Power entry / Splice connection kit or its components

Personal Qualification

For system planning, installation, commissioning, operation and maintenance observe the requirements for personnel qualification according to DIN/EN 60079-14, note appendix A.

Kit contents

The following table lists the kit contents for the PBM-200-E | PBM-200-E10 Power entry / Splice connection kit⁴:



PBM-200-E | PBM-200-E10 Power entry / Splice connection kit

3 x
Silicone pants

3 x
End seal

3 x
Green/yellow tube
for grounding braid

2 x
Silicone adhesive

1 x
Cover for junction box
incl. 4 fixing screws

1 x
Junction box with connection terminals
“-E” junction boxes: 220 x 120 x 90 mm
“-E10” junction boxes: 260 x 160 x 90 mm

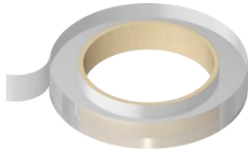
3 x
Trace heater grommet

1 x
Top unit of the mounting stand incl. sealing
ring and lock nut

1 x
Base unit of the mounting stand

⁴ Note that the illustrations might vary depending on whether you use the PBM-200-E or the PBM-200-E10 kit.

Accessories



Polyester adhesive tape

Used to fix the heating cable on pipes.

19 mm x 50 m per roll
Maximum withstand temperature: 100 °C

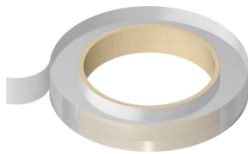
For heating cable PSB.

Gluing below 10 °C should be avoided. Observe processing instructions on datasheet.

Catalog No.: PT-164
Part No.: 02-5500-0005

Tip: Refer to the following table to estimate the required number of tape rolls for your installation:

Pipe diameter in inch (DN)	1/4" (DN8)	1/2" (DN15)	3/4" (DN20)	1" (DN25)	1 1/4" (DN32)	1 1/2" (DN40)	2" (DN50)	2 1/2" (DN65)	3" (DN80)	4" (DN100)	6" (DN150)	8" (DN200)	10" (DN250)	12" (DN300)	14" (DN350)	16" (DN400)	18" (DN450)	20" (DN500)	24" (DN600)
Required no. of tape rolls per 100 ft (30 m) of piping	1	1	1	1	1	1	2	2	2	3	4	5	6	7	7	8	9	10	12



Glass cloth tape

Used to fix the heating cable on pipes.

11 mm x 50 m per roll
Maximum withstand temperature: 180 °C
(short term (1h) 250 °C)

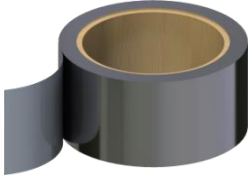
For heating cable PSB, MSB, HSB, HSB+, HTSB and EKL Light, EKL Medium and EKL Premium.


Gluing below 10 °C should be avoided. Observe processing instructions on datasheet.


Catalog No.: GT-164
Part No.: 02-5500-0047


Tip: Refer to the following table to estimate the required number of tape rolls for your installation:


Pipe diameter in inch (DN)	1/4" (DN8)	1/2" (DN15)	3/4" (DN20)	1" (DN25)	1 1/4" (DN32)	1 1/2" (DN40)	2" (DN50)	2 1/2" (DN65)	3" (DN80)	4" (DN100)	6" (DN150)	8" (DN200)	10" (DN250)	12" (DN300)	14" (DN350)	16" (DN400)	18" (DN450)	20" (DN500)	24" (DN600)
Required no. of tape rolls per 100 ft (30 m) of piping	1	1	1	1	1	1	2	2	2	3	4	5	6	7	7	8	9	10	12

	<p>Aluminum adhesive tape</p> <p>Used to fix the heating cable on pipes.</p> <p>AT80: 50 mm x 50 m per roll AT150: 50 mm x 55 m per roll AT230: 50 mm x 50 m per roll</p> <p>AT80: Maximum withstand temperature: 176 °F (80 °C) For heating cable PSB</p> <p>AT150: Maximum withstand temperature: 302 °F (150 °C) For heating cable MSB, HSB and EKL Light, EKL Medium and EKL Premium</p> <p>AT230: Maximum withstand temperature: 446 °F (230 °C) For heating cable HSB+ and HTSB, and EKL Light, EKL Medium and EKL Premium</p> <p>Gluing below 10 °C should be avoided. Observe processing instructions on datasheet.</p>	<p>AT80: Catalog No.: AT80-164 Part No.: 02-5500-0003</p> <p>AT150: Catalog No.: AT150-164 Part No.: 02-5500-0014</p> <p>AT230: Catalog No.: AT230-164 Part No.: 02-5500-0043</p>
---	--	---

	<p>Stainless steel pipe straps</p> <p>Stainless steel, for attaching mounting stands on pipes etc. No special tooling required.</p>	<p>for pipe ø up to DN80: Catalog No.: PC-1 Part No.: 03-6510-0228</p> <p>for pipe ø up to DN250: Catalog No.: PC-2 Part No.: 03-6510-0229</p>
--	--	--


	<p>On pipe cable gland kit and end seal</p> <p>Spare parts kit for use with heating cable PSB, MSB, HSB+, HTSB for replacement of damaged or lost parts.</p>	<p>Catalog No.: CAK-SRS Part No.: 27-59CX-9C010001</p> <p>Multi-kits available on request.</p>
---	---	---


	<p>Splice adaptor kit</p> <p>For above the insulation splice kit.</p> <p>CAK-M25 suitable for: PBS/PBM-*-E, provides M25x1.5 entry</p> <p>CAK-M32 suitable for: PBS/PBM-*-E10, provides M32x1.5 entry PBS/PBM-*-E16, provides M32x1.5 entry</p>	<p>Catalog No.: CAK-M25 Part No.: 27-59CX-0G010001</p> <p>Catalog No.: CAK-M32 Part No.: 27-59CX-0H010001</p>
---	---	---

	<p>Small pipe adaptor PBM</p> <p>Mounting stand adaptor for pipe diameters of less than 35 mm. For use in mounting stands when using 3 heating cable, e.g. PBM or PBTW junction boxes.</p>	<p>Catalog No.: PBM-SPA Part No.: 05-1105-0072</p>
---	---	--

	<p>Electrically traced warning label</p> <p>Warning label for trace heater circuits</p> <p><i>Recommended: electrical warning label every 3 m on the outside of the thermal cladding on a clearly visible place.</i></p>	<p><i>German:</i> Catalog No.: HTWL-DE Part No.: 05-2144-0046</p> <p><i>English:</i> Catalog No.: HTWL-EN Part No.: 05-2144-0047</p> <p><i>French:</i> Catalog No.: HTWL-FR Part No.: 05-2144-0703</p> <p><i>Russian:</i> Catalog No.: HTWL-RU Part No.: 05-2144-0860</p>
---	---	---

End termination

	<p>CAK-E5/E10 Cold applied end seal</p> <p>Silicone end seal for insulation of the end of the trace heater. Suitable to all Bartec parallel trace heating cable. Approved accordingly IECEx, ATEX, CSA (ordinary and hazardous locations)</p> <p>CAK-E5 5 pcs. CAK-E10 10 pcs.</p>	<p>CAK-E5: Catalog No.: CAK-E5 Part No.: 27-59CZ-90000005</p> <p>CAK-E10: Catalog No.: CAK-E10 Part No.: 27-59CZ-90000010</p>
---	--	---

	<p>ELS-200 high profile end seal</p> <p>End seal for access above the insulation.</p> <p><i>2 pipe straps per mounting stand required. For a complete list of kit contents and approvals see data sheet.</i></p>	<p>Catalog No.: ELS-200 Part No.: 27-54E2-AA12A000</p>
---	---	--

Installation

Required tools / equipment

The following tools and equipment are required for installation of the PBM-200-E | PBM-200-E10 Power entry / Splice connection kit:

- Wire cutters
- Flat screwdriver
- Electricians screwdriver
- 4 mm hex wrench
- Tape measure
- Utility knife
- Needle-nose pliers (2x)
- Adjustable wrench (2x)
- Tongue and groove pliers



1

Cautions and warnings

⚠ WARNING

Risk of fire or electrical shock due to electric trace heating system.
De-energize all power circuits before installation or servicing. Always use ground fault equipment protection with the trace heating system.
Keep the trace heater ends dry before and during installation. Observe the design guide of the trace heating system.

- Double-check that all power circuits are de-energized before you begin your work.
- Make sure that you do not exceed the maximum heating circuit length for the trace heater type you use.
- Observe the bending radius of each type of trace heater. Do not bend on the narrow axis.
- To avoid short circuits, do not connect the trace heater bus wires together. Installing the End seal properly.
- Keep all components and the trace heaters dry before and during installation.

2

⚠ CAUTION

Risk of injury and/or material damage. Never step on or drive over the trace heater. Do not use it as a loop for stepping on.

- Preferably install the trace heater in a straight line along the pipe. This saves time, helps to avoid installation mistakes and prevents damage to the trace heater during the thermal insulation work.



3

- Preferably install the trace heater in the lower half of the pipe, but not on the lowest point. This prevents mechanical damage and allows for better heat distribution. If you use multiple trace heaters, position them with an offset of 90°.



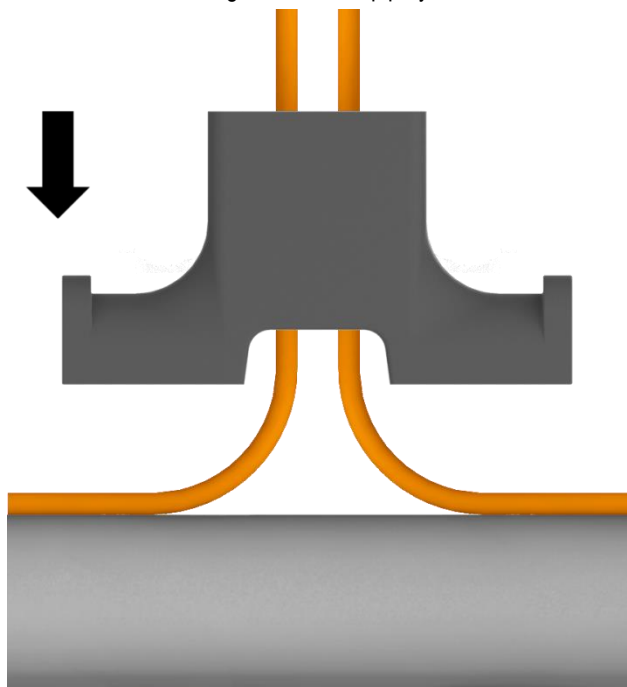
- Mount the mounting stand and junction box preferably on top of the workpiece, e.g. the pipe. If a different orientation of the junction box and mounting stand is necessary, there is a risk of water collecting in the mounting stand. Avoid water accumulation in the mounting stand! BARTEC recommends applying the pipe insulation immediately after installing the junction box and the mounting stand.

4

Preparation of the trace heater(s)

For 1 or 2 trace heaters only. For 3 trace heaters see step 5B on page 9.

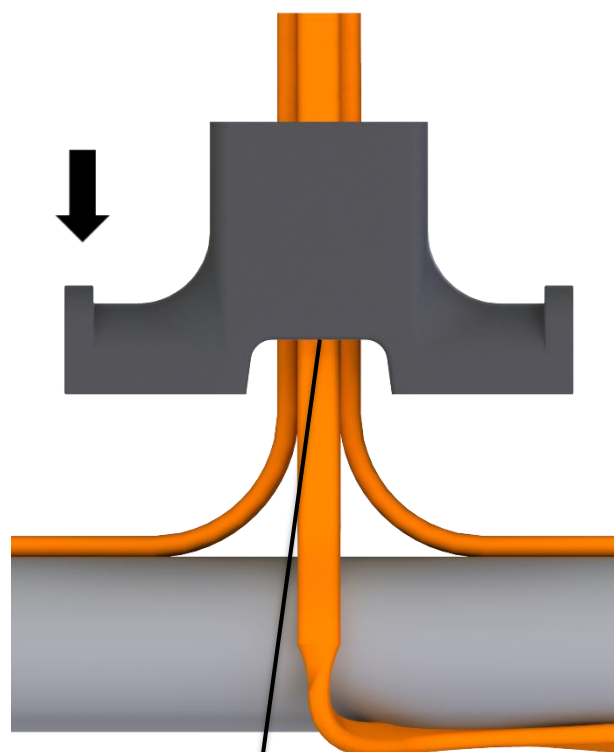
- Pass the trace heater(s) through the base unit of the mounting stand.
- Do not fix the mounting stand on the pipe yet.



5A

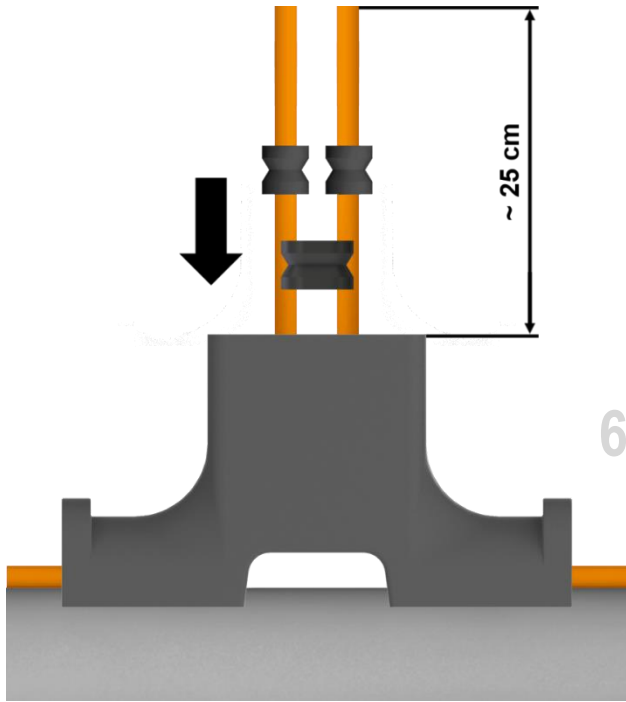
For 3 trace heaters only. For 1 or 2 trace heater(s) see step 5A on page 9.

- Pass the 3 trace heaters through the base unit of the mounting stand as shown.
- Do not fix the mounting stand on the pipe yet.

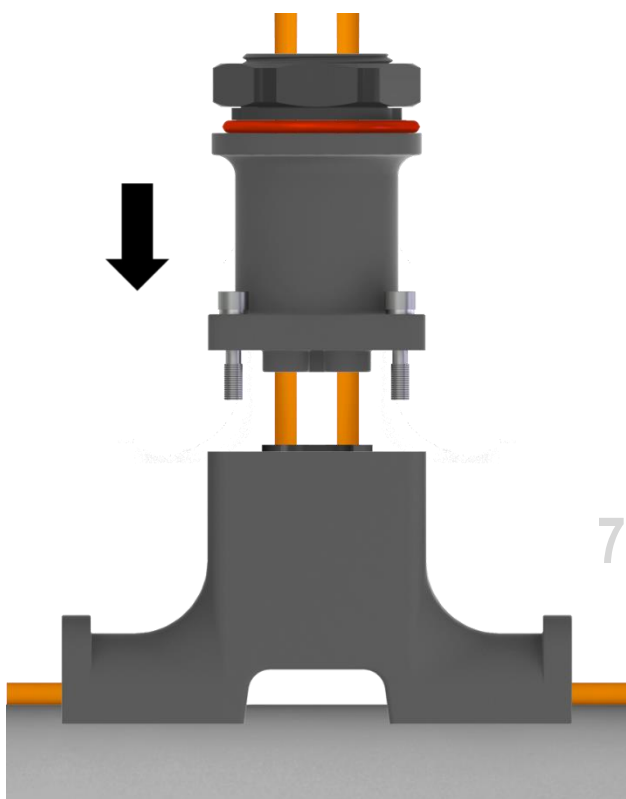


5B

- Slide a trace heater grommet onto the trace heater(s) and into the seal seat.
- Slide a trace heater grommet into the free seal seats, if any.
- Make sure that the trace heater(s) stand out approximately 25 cm. This makes cable preparation easier.

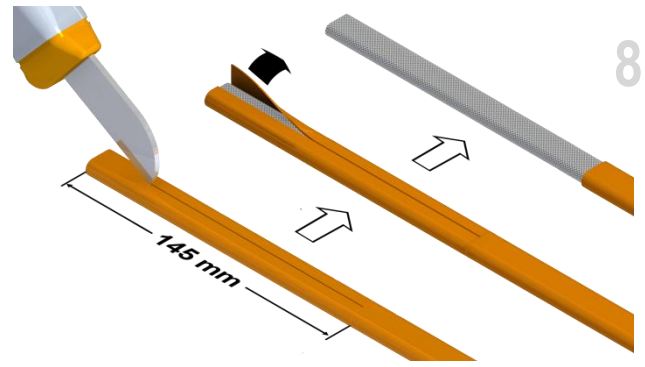


- Slide the top unit of the mounting stand over the trace heater(s) and onto the mounting stand.
- Slightly tighten the 4 fixing screws using a 4 mm hex wrench. Do not tighten them fully yet to allow the trace heater(s) to be moved.

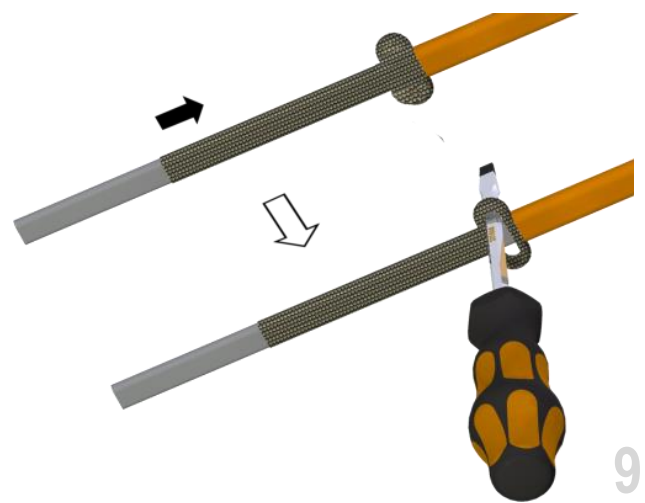


Repeat steps 8 to 21 for all trace heaters.

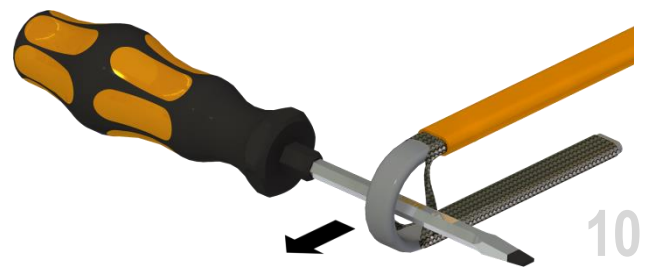
- Remove 145 mm of the outer jacket on the end of the trace heater.



- Push the grounding braid back. Use the screwdriver to form an eyelet. Be careful not to damage the internal insulation jacket.



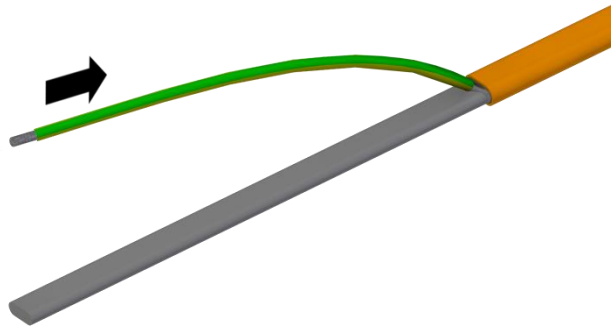
- Bend the trace heater and pull the heating element out of the grounding braid.



- Twist the grounding braid in order to form a pigtail.

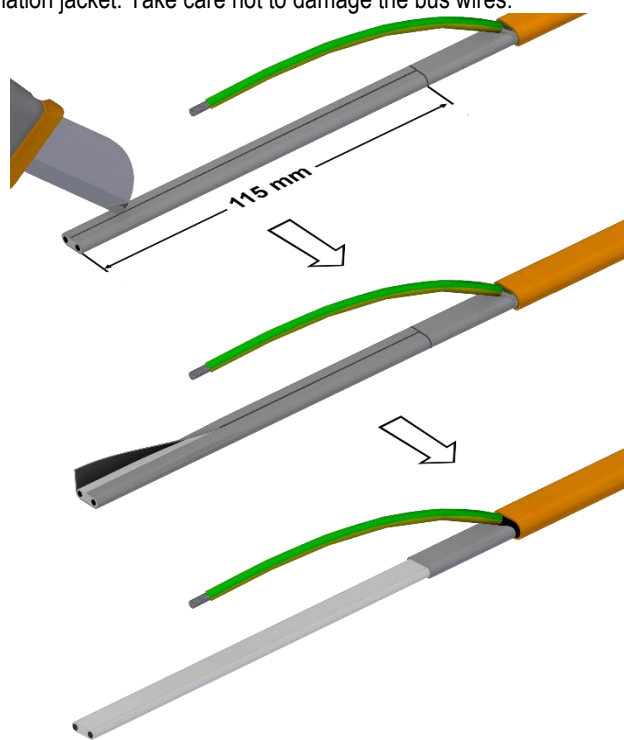


- Push the green/yellow tube onto the twisted grounding braid.



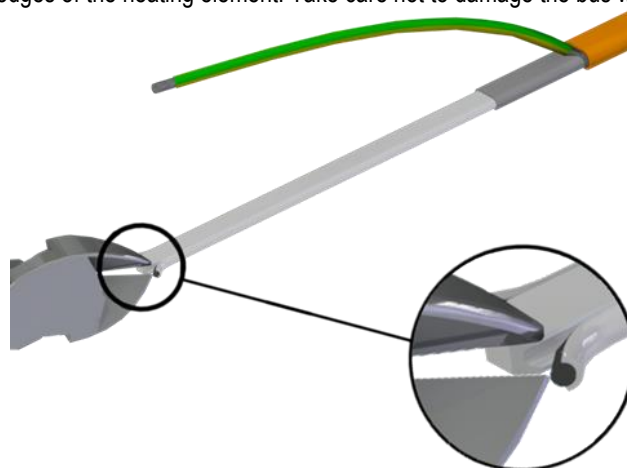
12

- Remove 115 mm of the internal insulation jacket. Take care not to damage the bus wires.



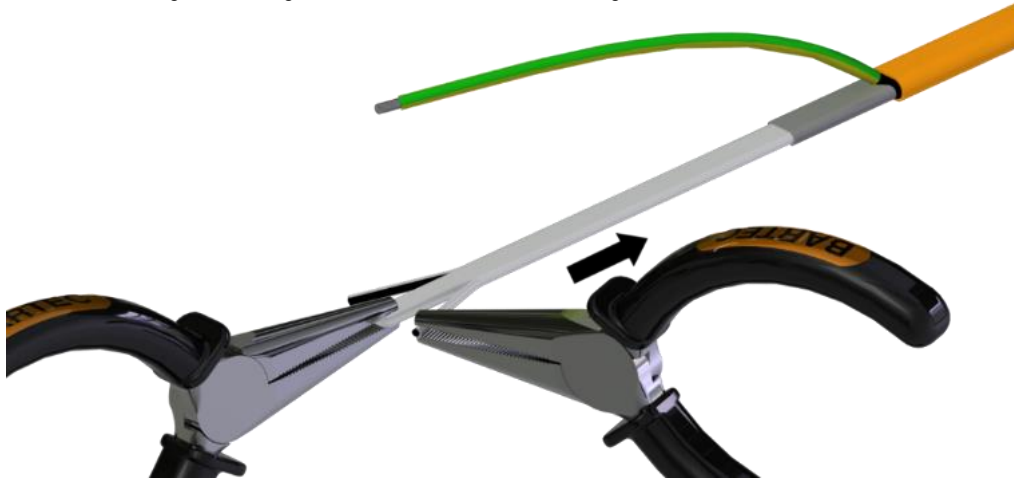
13

- Carefully make an incision into the edges of the heating element. Take care not to damage the bus wires.



14

- Pull off the bus wires while holding the heating element. Take care not to damage the bus wires.



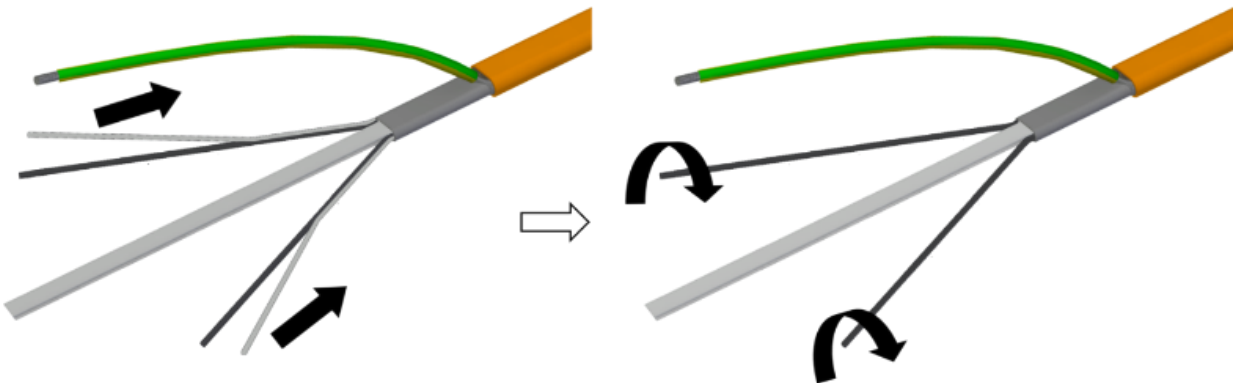
15

- Remove any remaining heating element that sticks to the bus wires.

⚠ CAUTION

Risk of malfunction of the heating system. Before you continue, make sure that the bus wires are intact and not nicked or damaged.

- Twist the bus wires.



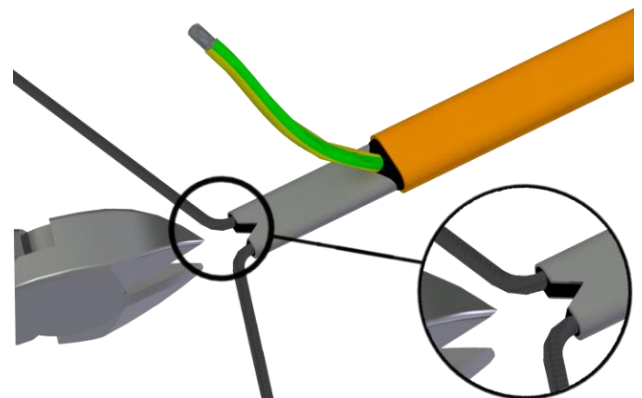
16

- Remove the remaining heating element. Take care not to damage the bus wires.



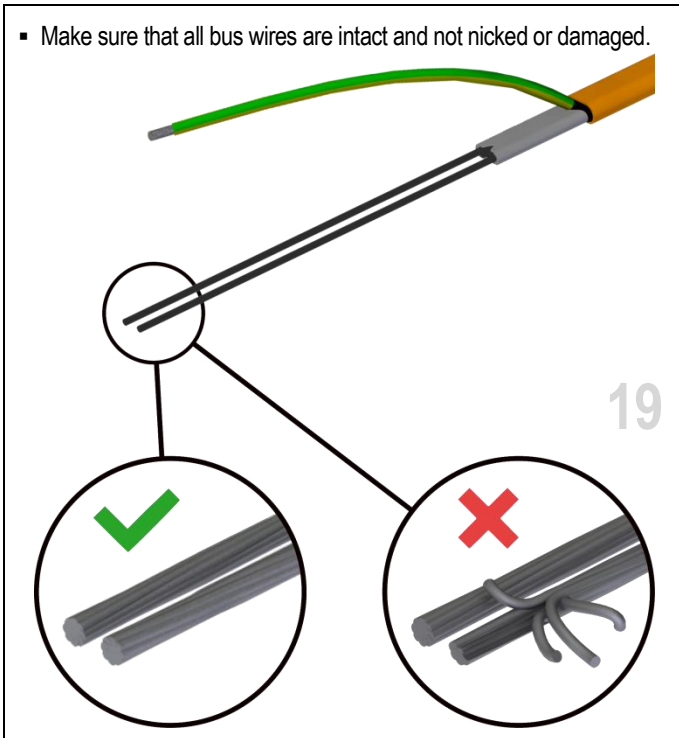
17

- Carefully cut in a triangle (5 mm) between the bus wires. Take care not to damage the bus wires.



18

- Make sure that all bus wires are intact and not nicked or damaged.

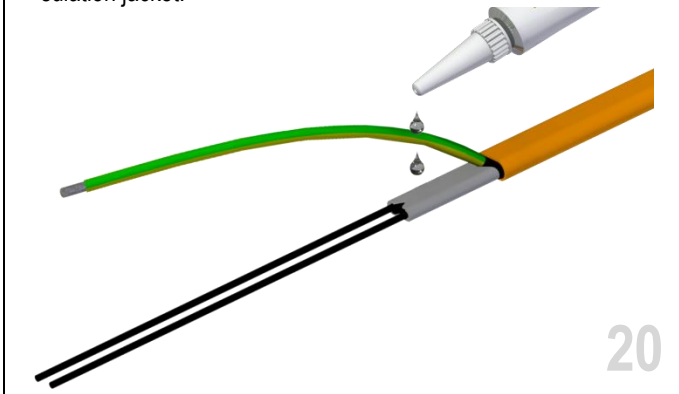


19

⚠ CAUTION

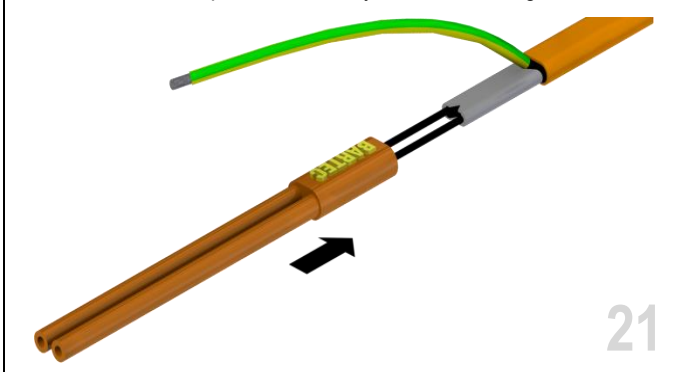
The silicone adhesive may cause irritation to skin and eyes. Avoid eye contact. Avoid repeated or prolonged skin contact. In case of contact with eyes, rinse with water and seek medical advice.

- Put silicone adhesive onto the exposed heating element and insulation jacket.



20

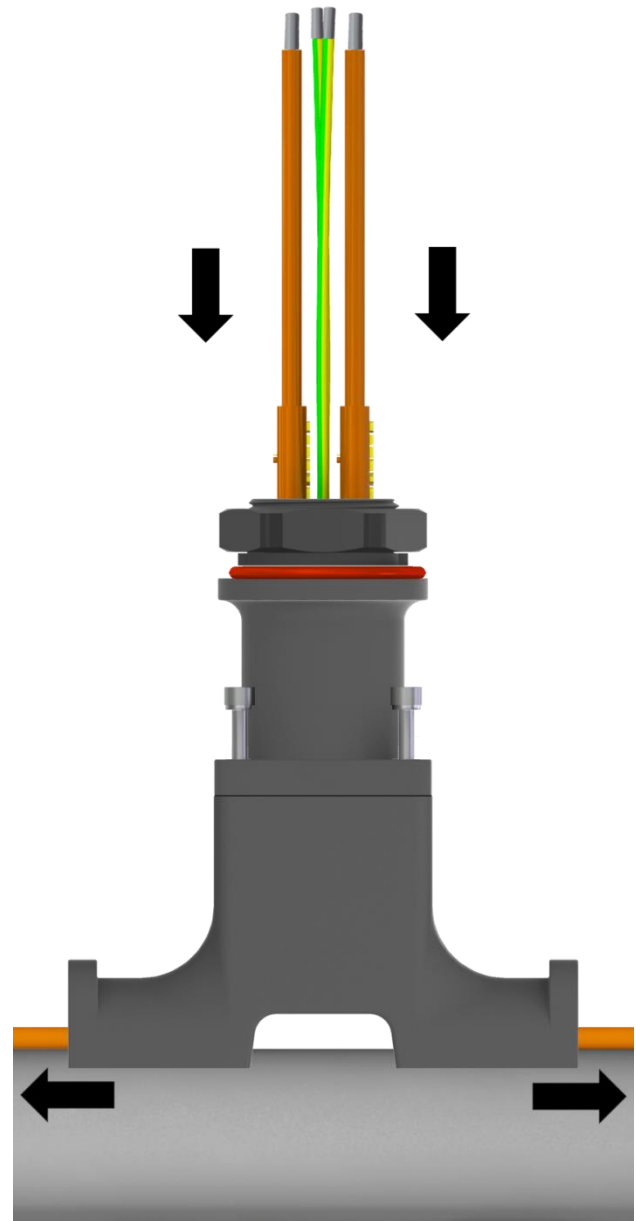
- Thread the bus wires into the silicone pants.
- You might add further silicone adhesive to ensure optimal sealing.
- Slide the silicone pants all the way onto the heating element.



21

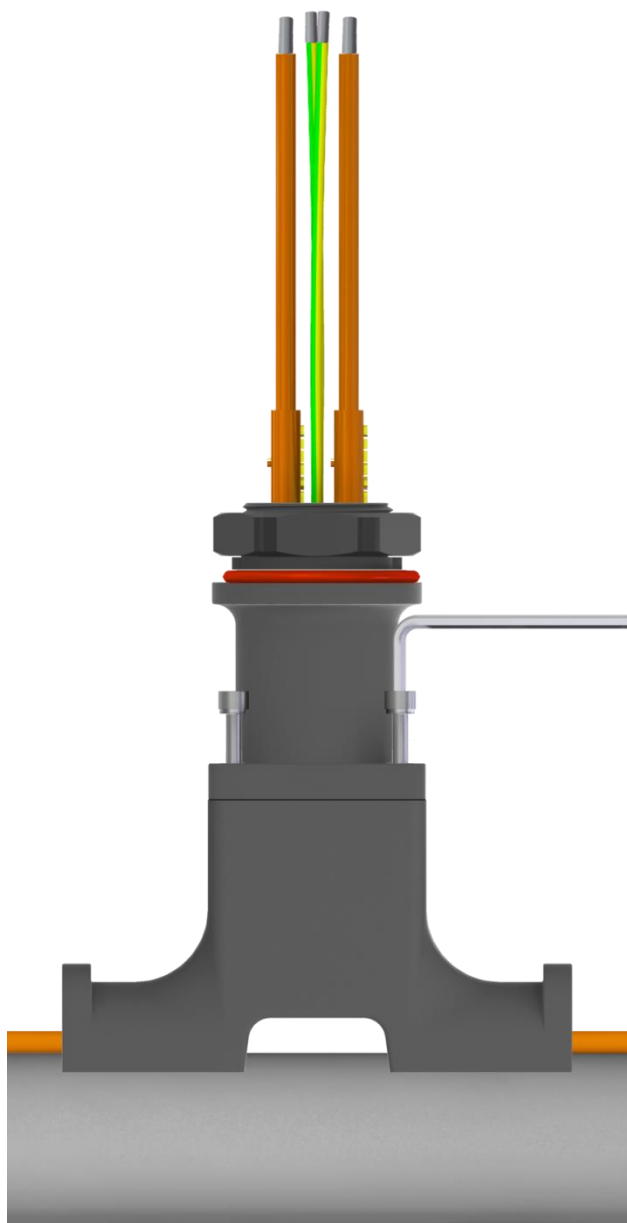
Installation of the mounting stand

- Pull back the trace heater. For easy cable connection it is enough when the silicone pants stands out of the mounting stand.



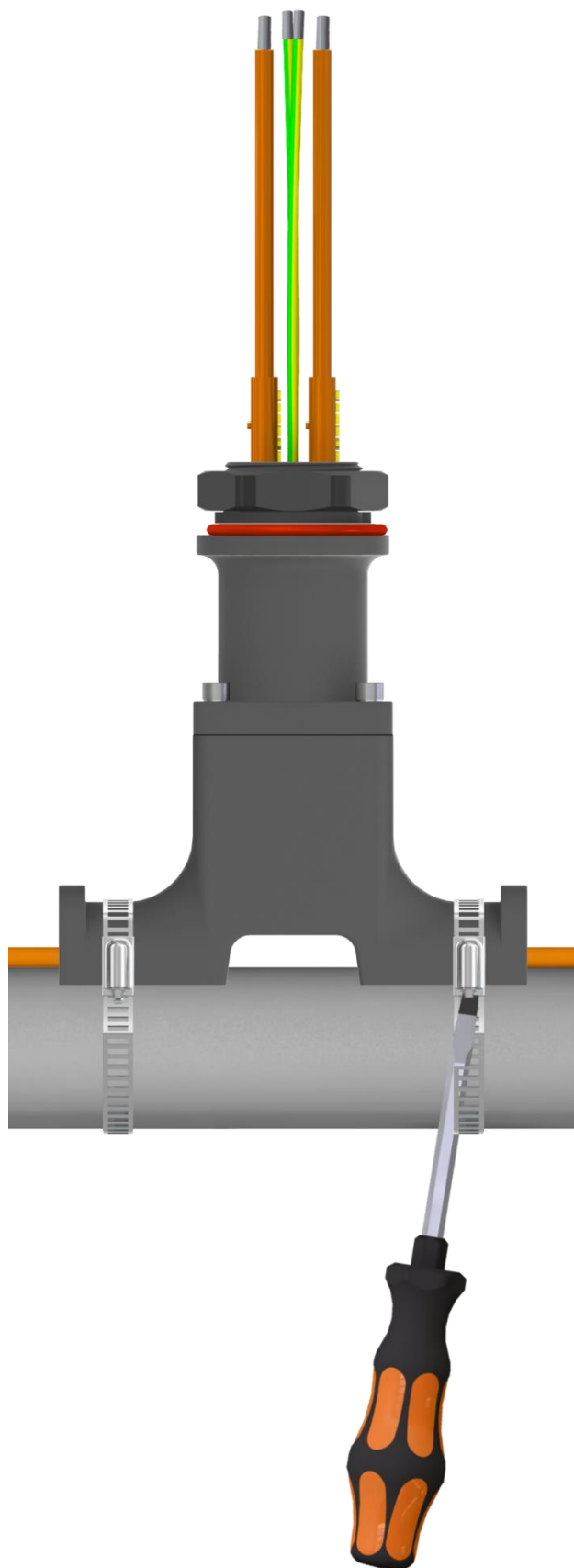
22

- Tighten the 4 fixing screws of the top unit of the mounting stand using a 4 mm hex wrench.



23

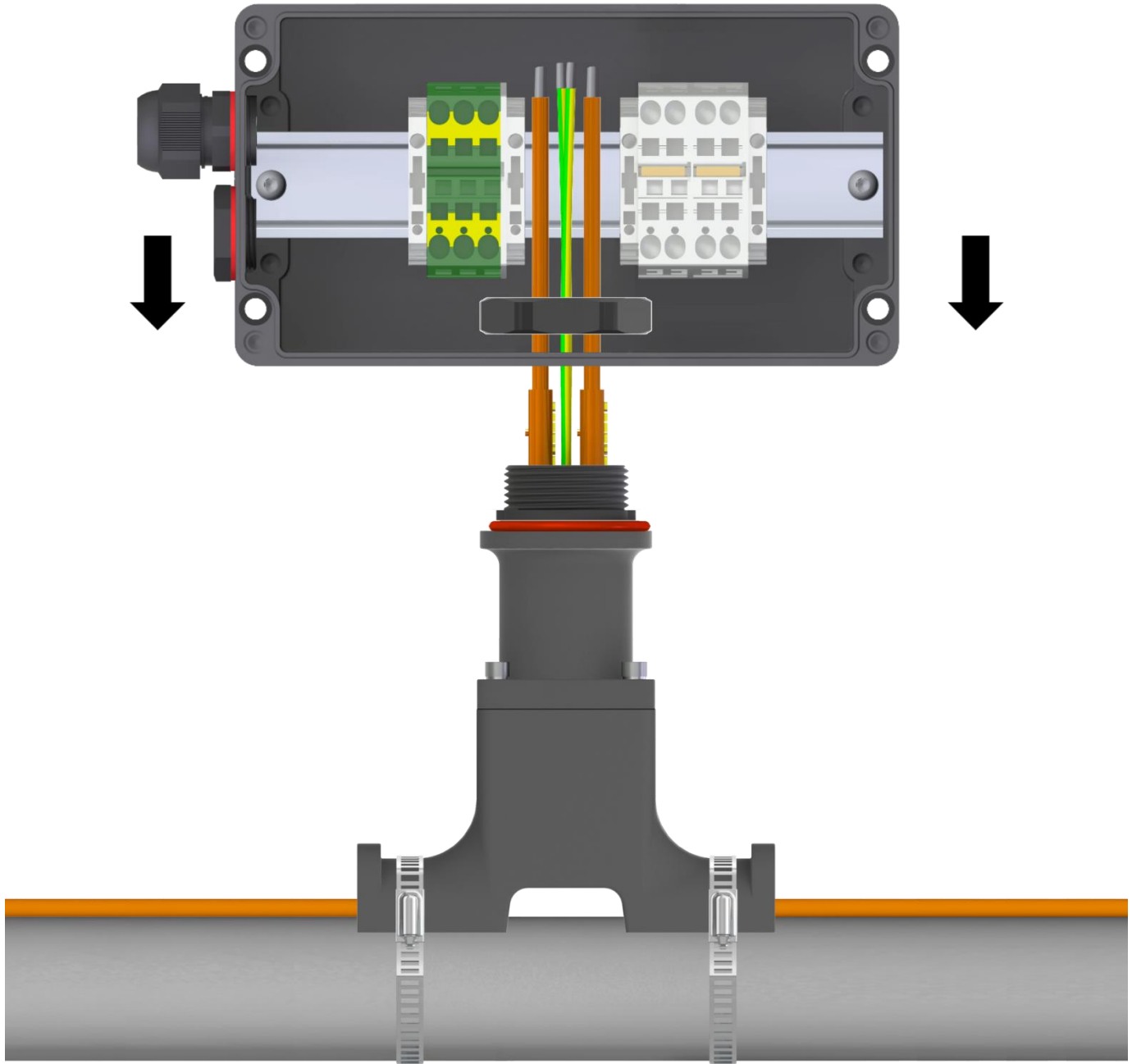
- Install the pipe straps and tighten them firmly to affix the stand to the pipe.



24

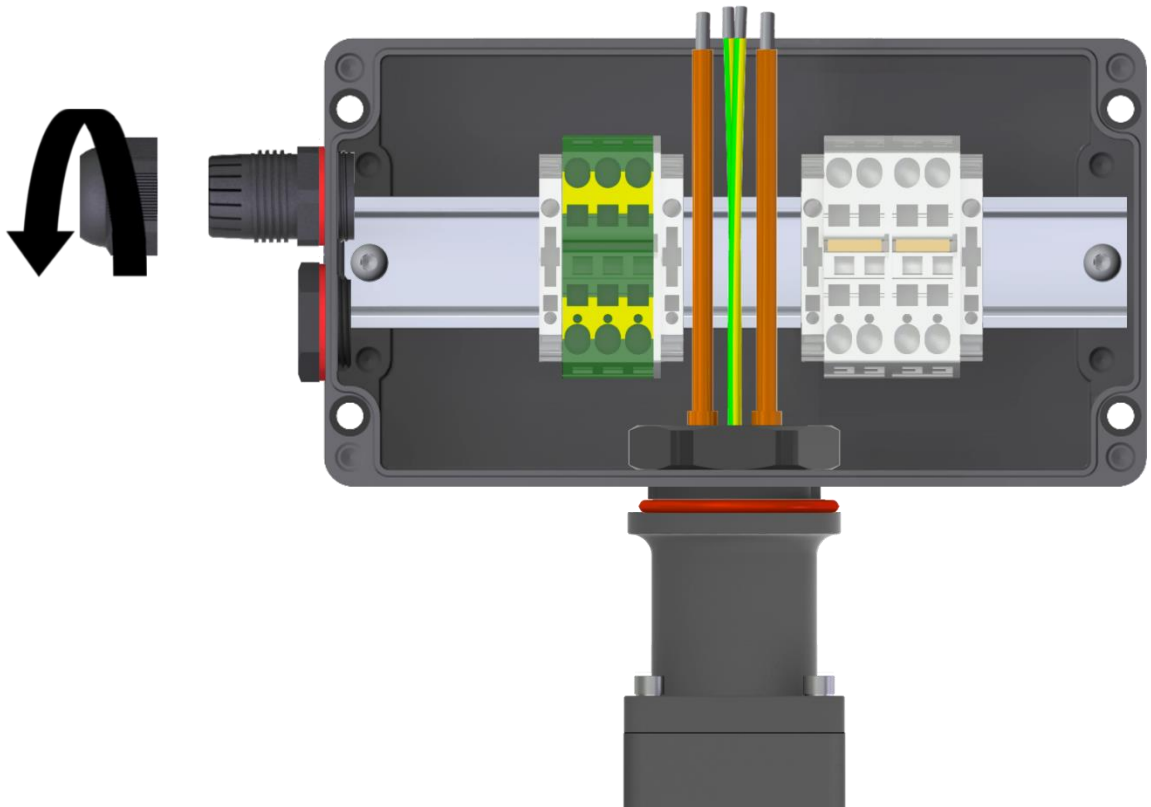
Cable connection

- Unscrew the lock nut of the top unit of the mounting stand.
- Feed the prepared trace heater into the junction box.
- Slide the junction box onto the top unit of the mounting stand.
- Install the lock nut and tighten it using an adjustable wrench.

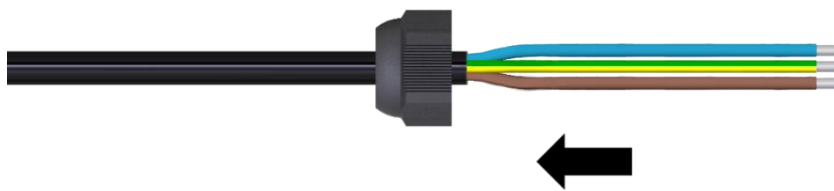


For T-connections refer to step 30 on page 18. For powered connections continue here:

- Unscrew the fixing nut from the gland body using an adjustable wrench.



- Slide the fixing nut onto power cable.



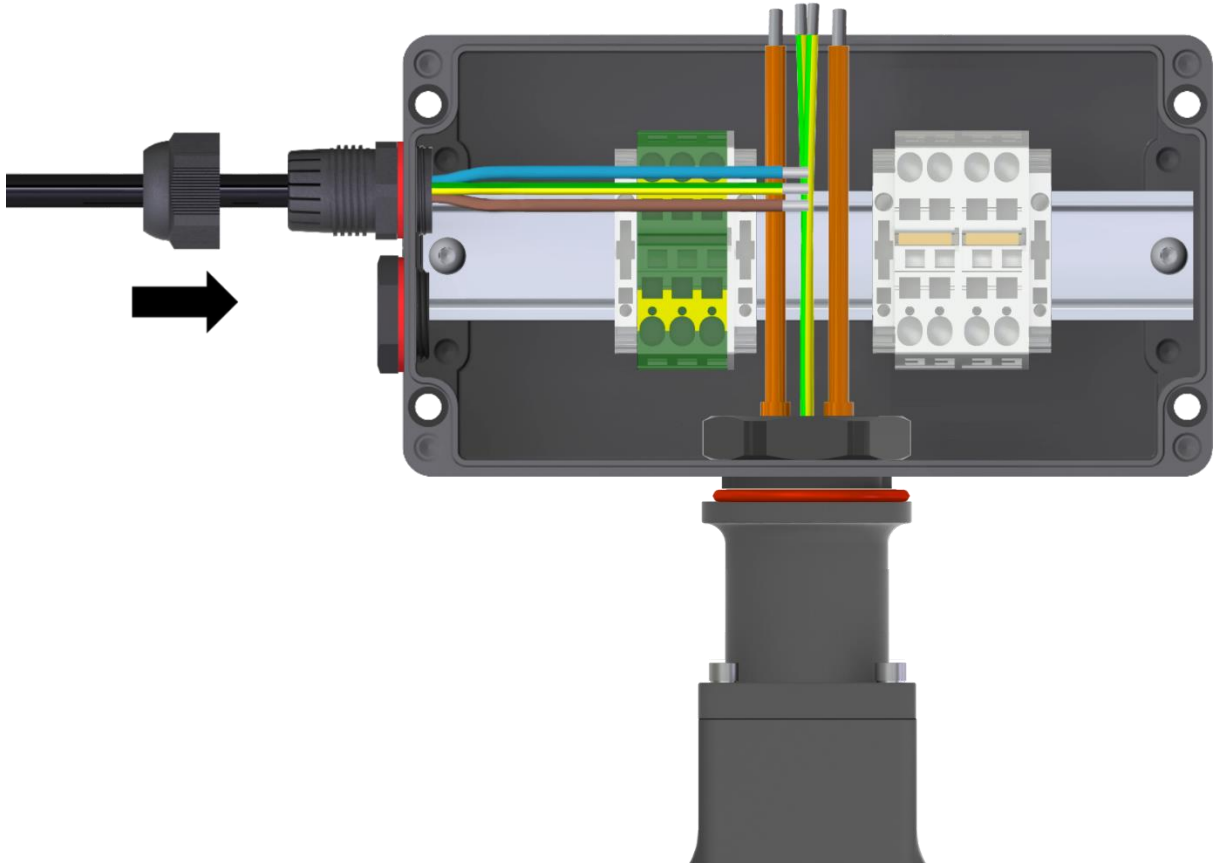
NOTICE

The supplied cable gland is suitable for the following cable diameters (outer jacket):

- 12 to 17 mm (PBM-200-E)
- 16 to 21 mm (PBM-200-E10)

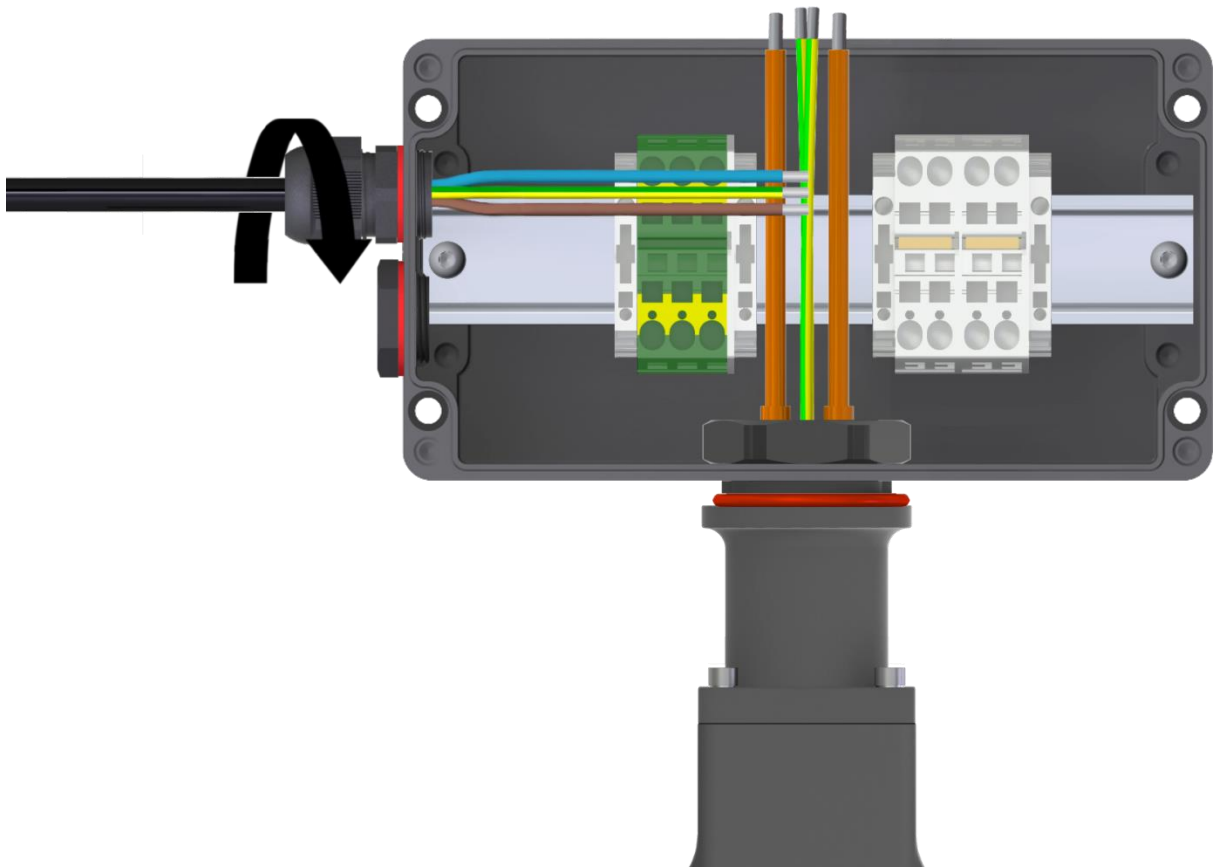
For larger cable diameters contact your local BARTEC representative.

- Feed the power cable through the cable gland and into the junction box.



28

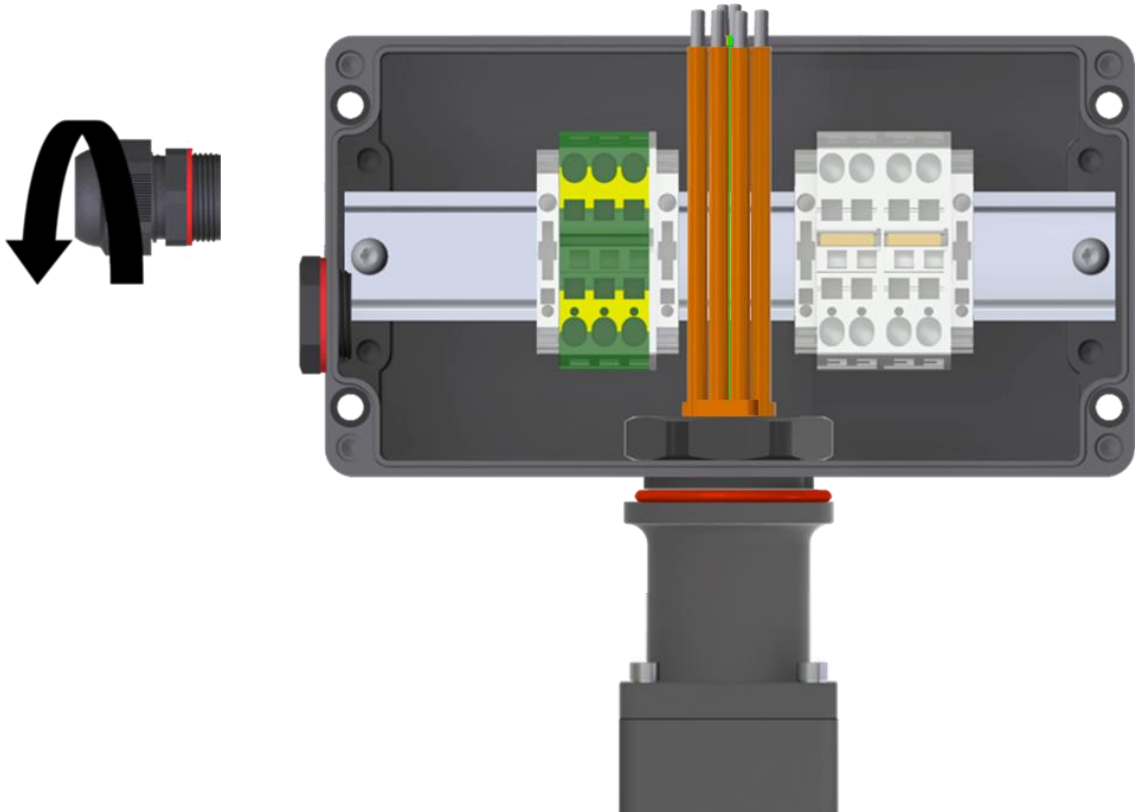
- Tighten the fixing nut. Make sure that the final tightening torque is 2 Nm.



29

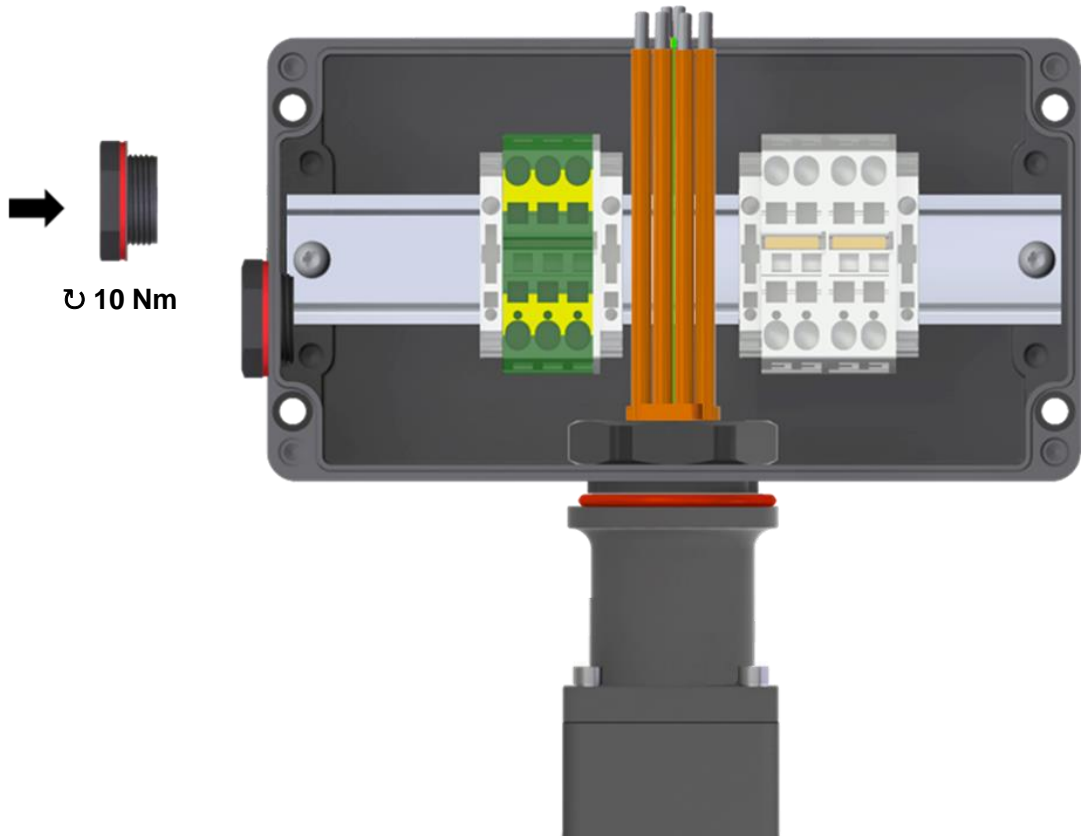
For T-connections continue here (PBM-200-E only). For powered connections refer to step 26 on page 16.

- Remove the pre-mounted cable gland from the junction box using an adjustable wrench.



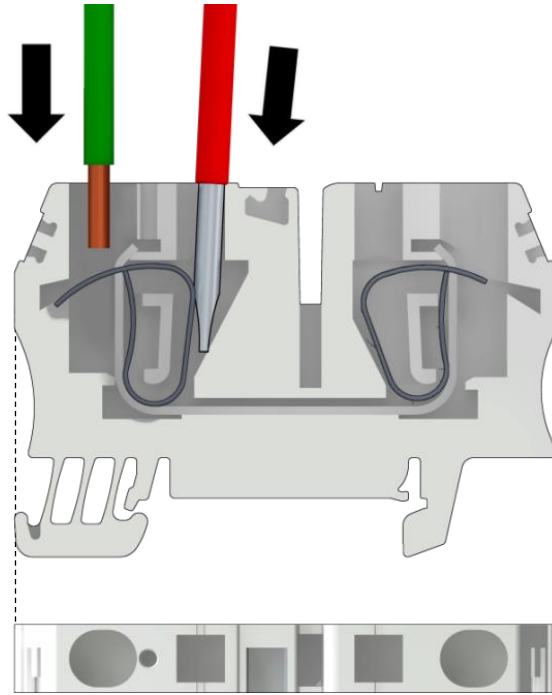
All required parts for T-connections are included in the splice adaptor kit CAK-M25 (see section *Accessories* on page 5).

- Screw the blind plug into the free cable entry. Make sure that the final tightening torque is 10 Nm.

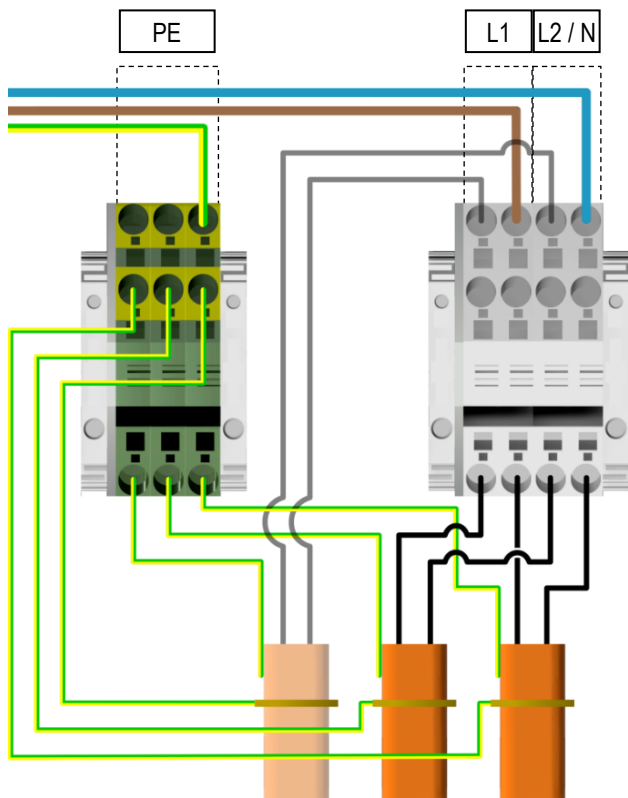


Wiring

- For wire connection at the terminals insert a small screwdriver into the screwdriver slot, then insert the wire.
- Connect all wires as shown.

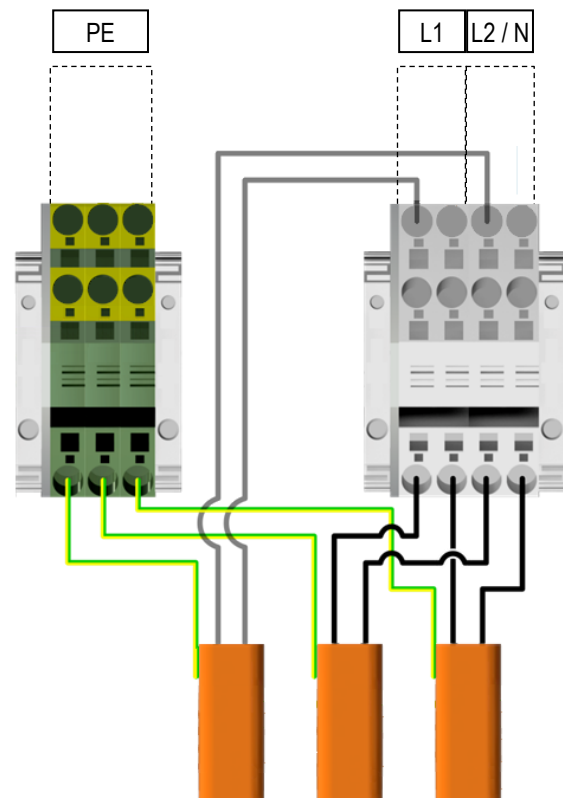


Power connection wiring



32A

T-connection wiring



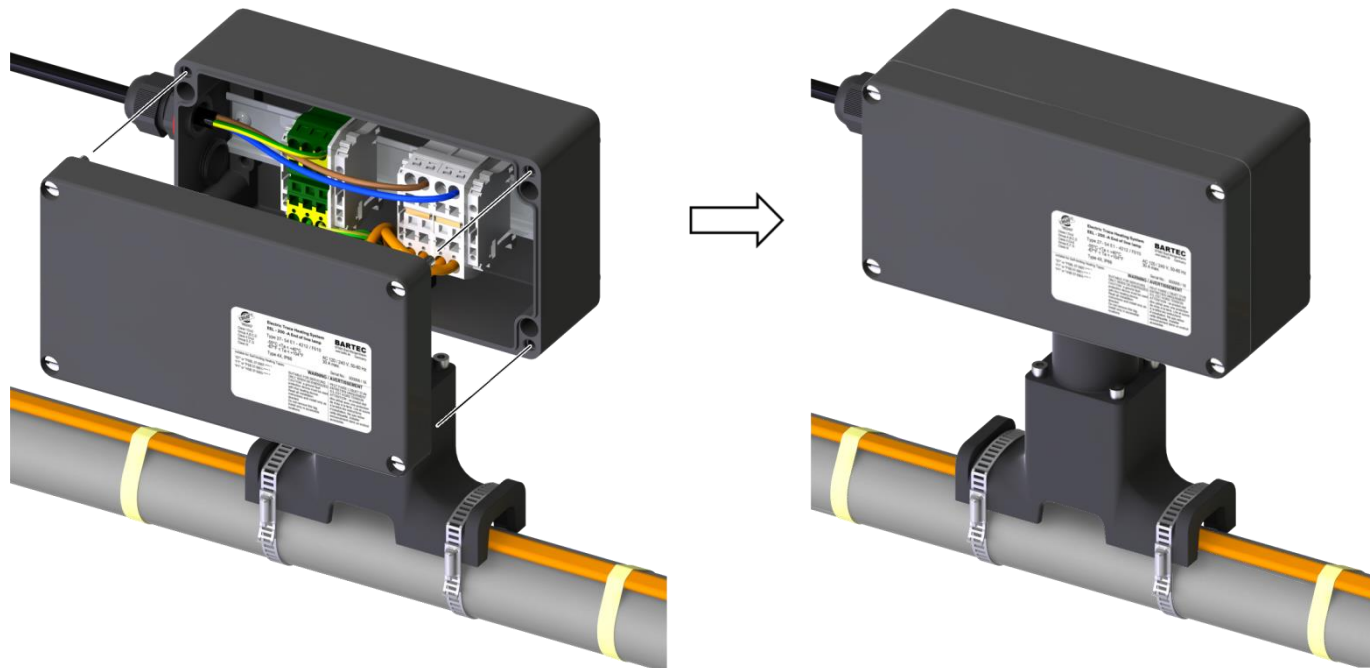
32B

NOTICE

Insulation resistance measurement is recommended at certain stages:

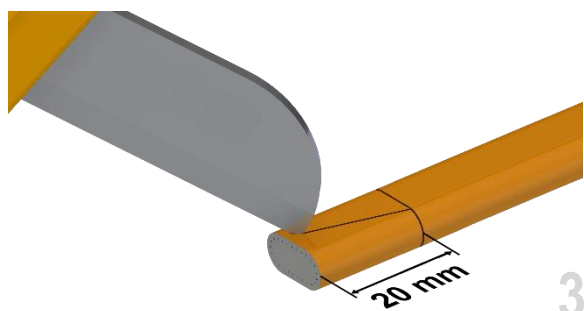
- Preliminary test (on the reel, before installation of the trace heater on the construction site)
- Acceptance test (after installation of the heating circuit and before installation of the thermal insulation)
- Final inspection (immediately after completion of work on the thermal insulation)
- Upon commissioning
- Before switching on the installation

- Mount the cover of the junction box and tighten the 4 fixing screws using a screwdriver.



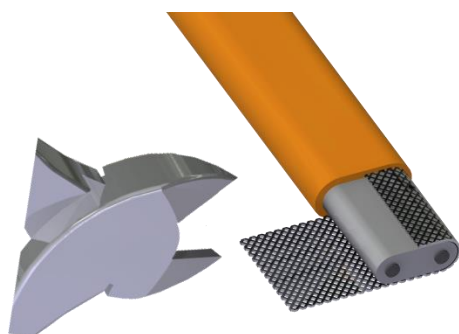
Installation of the end seal

- Cut the trace heater off straight.
- Remove 20 mm of the outer jacket.



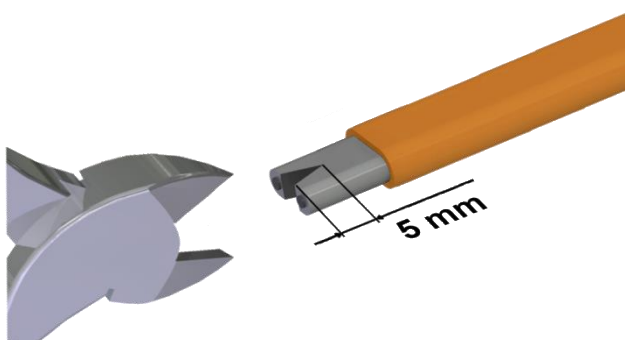
34

- Remove the exposed grounding braid. Make sure that the insulation jacket is not damaged.



35

- Cut in a triangle 5 mm between the bus wires.



36

⚠ CAUTION

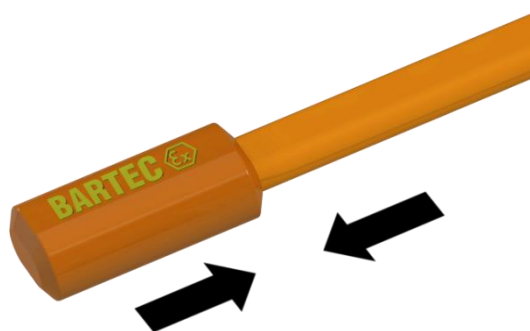
The silicone adhesive may cause irritation to skin and eyes. Avoid eye contact. Avoid repeated or prolonged skin contact. In case of contact with eyes, rinse with water and seek medical advice.

- Put silicone adhesive onto the exposed insulating jacket and into the end seal.



37

- Slide the end seal over the end of the trace heater.

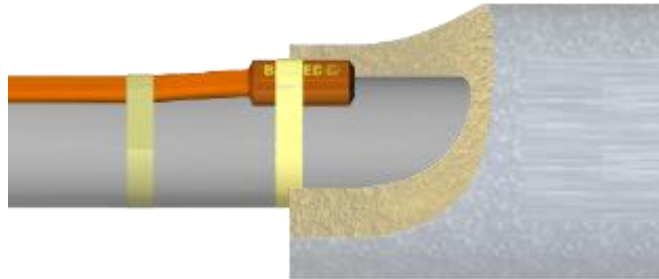


NOTICE

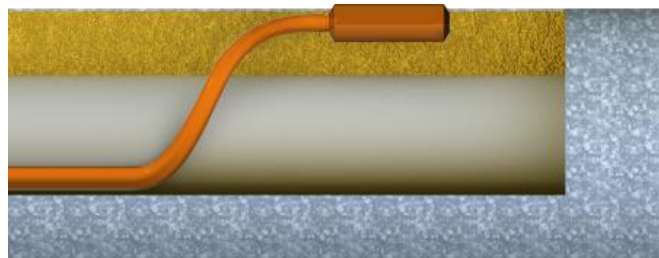
Allow the adhesive to cure for 20 minutes, then visually inspect. Full strength is reached after 24 hours.

38

- Observe the
Maximum withstand temperature / max. service temperature end seal and the
Max. continuous operating temperature, energized and
Max. continuous exposure temperature, de-energized of the heating cable
- Recommendation for use of heating cable PSB and MSB:
Installation of heating cable and end seal directly on the workpiece

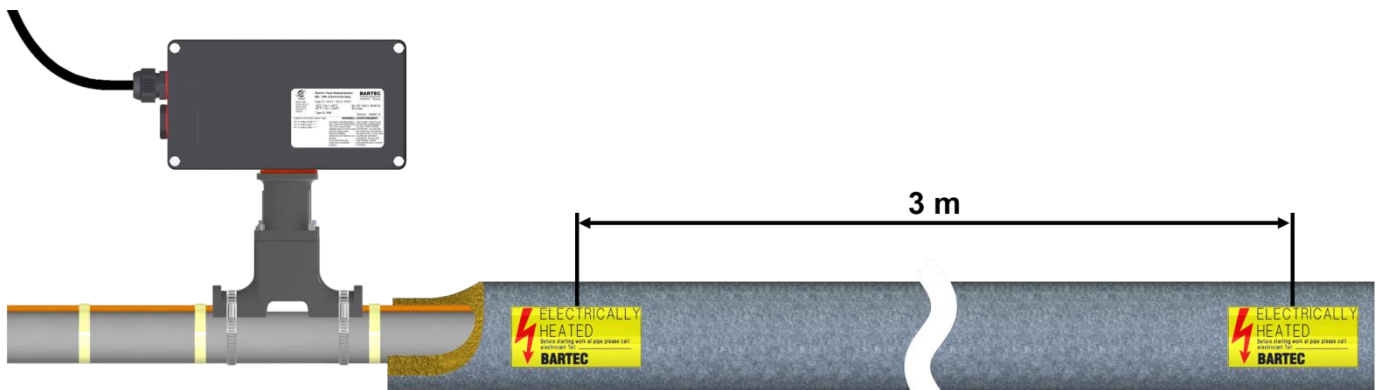


- Recommendation for use of heating cable HSB+ and HTSB:
install the end seal for protection of excessive heat above the insulation but below the outer cladding



Application of the pipe insulation

- Apply the pipe insulation according to the manufacturer's installation instructions.
- Apply an electrical warning label every 3 m on a clearly visible place.



NOTICE

Insulation resistance measurement is recommended at certain stages:

- Preliminary test (on the reel, before installation of the trace heater on the construction site)
- Acceptance test (after installation of the heating circuit and before installation of the thermal insulation)
- Final inspection (immediately after completion of work on the thermal insulation)
- Upon commissioning
- Before switching on the installation

Troubleshooting

Problem	Possible cause	Remedy
Trace heater remains cold	No power supply	Check the power wiring for continuity to circuit breaker.
	Trace heater bus wires or power wiring not properly connected	Connect the trace heater and power wiring according to the installation instructions.
	Control unit adjusted incorrectly	Adjust the control unit according to the installation instructions.
Automatic circuit breaker tripped	Automatic circuit breaker defective	Replace the automatic circuit breaker.
	Automatic circuit breaker has wrong tripping characteristics, e. g. "B" instead of "C"	Install an automatic circuit breaker with Type-C tripping characteristics or contact the factory for Type-B tripping characteristics.
	Nominal circuit breaker size is insufficient	Install an automatic circuit breaker with higher capacity. Observe the maximum amperage of all components of the trace heating circuit!
	Maximum heating circuit length has been exceeded	Split the heating circuit into separate circuits.
	End seal has not been installed	Install the end seal according to the installation instructions.
	Short circuit	Identify the cause and remedy the fault (e. g. ensure that trace heater bus wires are not twisted together).
Ground fault protection is disengaged	Trace heater damaged	Replace the trace heater at the point where it is damaged.
	Moisture in the components	Dry the components. For junction boxes, be sure that the cable gland is correctly installed and sealing properly.
	Ground fault protection defective	Replace the ground fault protection device(s).
Low or inconsistent insulation resistance	Trace heater damaged	Replace the trace heater at the point where it is damaged.
	Moisture in the components	Dry the components. For junction boxes, be sure that the cable gland is correctly installed and sealing properly.
	Arcing due to damaged trace heater insulation	Replace the trace heater at the point where it is damaged.
	Arcing due to inadequate stripping distance between heating element and grounding braid	Check the stripping distance between bus wires/heating element and grounding braid at all power, splice and end seal connections to ensure adequate separation.
	Short-circuit between the grounding braid and the heating element or the grounding braid and the pipe	Check for cut or damaged cable or inadequate stripping length.
	Test leads touching the junction box	Relocate test leads and retest.

Note: High pipe temperature may lower the insulation resistance reading relative to earlier readings on a cold pipe.

EC Declaration of conformity

EU Konformitätserklärung
 EU Declaration of Conformity
 Déclaration UE de conformité
 N° 21-1S00-7C0001



Wir	We	Nous
-----	----	------

BARTEC GmbH
 Max-Eyth-Straße 16
 97980 Bad Mergentheim
 Germany

erklären in alleiniger Verantwortung, dass das Produkt	declare under our sole responsibility that the product	attestons sous notre seule responsabilité que le produit
PSB / MSB Heizsystem	PSB / MSB Heating system	PSB / MSB Système de Chauffage

Typen 27-1S3*-**/****
 27-1S4*-****/******

auf das sich diese Erklärung bezieht den Anforderungen der folgen- den Richtlinien (RL) entspricht	to which this declaration relates is in accordance with the provision of the following directives (D)	se référant à cette attestation correspond aux dispositions des direc- tives (D) suivantes
ATEX-Richtlinie 2014/34/EU RoHS-Richtlinie 2011/65/EU EMV-Richtlinie 2014/30/EU RED-Richtlinie 2014/53/EU	ATEX-Directive 2014/34/EU RoHS-Directive 2011/65/EU EMC-Directive 2014/30/EU RED-Directive 2014/53/EU	Directive ATEX 2014/34/UE Directive RoHS 2011/65/UE Directive CEM 2014/30/UE Directive RED 2014/53/UE
und mit folgenden Normen oder nor- mativen Dokumenten übereinstimmt	and is in conformity with the following standards or other normative documents	et est conforme aux normes ou docu- ments normatifs ci-dessous

- | | |
|--|--|
| <p>EN IEC 60079-0:2018
 EN 60079-1 :2014
 EN 60079-7:2015/A1:2018
 EN 60079-30-1:2017
 EN 60079-31:2014
 EN 60079-11 :2012
 EN 60079-18:2015 + A1 :2017
 EN 60529:1991
 + A1:2000 + A2:2013/AC :2019
 EN 50495:2010</p> <p>EN 300328 V2.1.1
 EN 62395-1:2013</p> | <p>EN 60947-7-1 :2009
 EN 60947-7-2 :2009
 EN 60068-2-27 :2009
 EN 61000-6-2 :2005
 EN61000-6-4 :2007 + A1 :2001
 EN 60730-1:2011
 EN 60730-2-9:2010
 EN 61326-1:2013
 EN 61000-4-2:2009
 EN 61000-4-3:2006+A1:2007
 +A2:2010
 EN 61000-4-4:2012
 EN 61000-4-5:2014 +A1:2017
 EN 61000-4-6:2014
 EN 61000-4-8:2010
 EN 61000-4-11:2004+A1:2017</p> |
|--|--|

Verfahren der EU-Baumuster- prüfung / Benannte Stelle	Procedure of EU-Type Examination / Notified Body	Procédure d'examen UE de type / Organisme Notifié
--	---	--

DEKRA 20ATEX0093 X

0344, DEKRA Certification B.V., Meander 1051, 6825 MJ Arnhem, NL



Bad Mergentheim, 22.02.2023

i.V. Tobias Dold

Head of Business Unit EHT

i.A. Ulrich Mann

Certification Manager

EU Konformitätserklärung
 EU Declaration of Conformity
 Déclaration UE de conformité
 N° 21-54P2-7C0001

BARTEC

Wir	We	Nous
-----	----	------

BARTEC GmbH
 Max-Eyth-Straße 16
 97980 Bad Mergentheim
 Germany

erklären in alleiniger Verantwortung, dass das Produkt PBS / PBM Anschlussgehäuse und CAK An-/Abschlusstechnik	declare under our sole responsibility that the product PBS / PBM Installation Enclosure and CAK Power-/termination technique	attestons sous notre seule responsabilité que le produit PBS / PBM coffret d'alimentation et CAK Connexion-/termination technique
--	--	---

Typen 27-54P2-**/****; 27-59CX-****/******

auf das sich diese Erklärung bezieht den Anforderungen der folgenden Richtlinien (RL) entspricht ATEX-Richtlinie 2014/34/EU RoHS-Richtlinie 2011/65/EU und mit folgenden Normen oder normativen Dokumenten übereinstimmt	to which this declaration relates is in accordance with the provision of the following directives (D) ATEX-Directive 2014/34/EU RoHS-Directive 2011/65/EU and is in conformity with the following standards or other normative documents	se référant à cette attestation correspond aux dispositions des directives (D) suivantes Directive ATEX 2014/34/UE Directive RoHS 2011/65/UE et est conforme aux normes ou documents normatifs ci-dessous
--	--	---

EN IEC 60079-0:2018 EN 60079-7:2015/A1:2018 EN 60079-30-1:2017 EN 60079-31:2014	EN 60529:1991 + A1:2000 + A2:2013/AC :2019 EN 60947-1-1 :2009 EN 60947-7-2 :2009
--	---

Verfahren der EU-Baumusterprüfung / Benannte Stelle	Procedure of EU-Type Examination / Notified Body	Procédure d'examen UE de type / Organisme Notifié
---	--	---

DEKRA 21ATEX0118 X

0344, DEKRA Certification B.V., Meander 1051, 6825 MJ Arnhem, NL



Bad Mergentheim, 22.02.2023

i.V. Tobias Dold

Head of Business Unit EHT

i.A. Ulrich Mann

Certification Manager

Limited Product warranty

Scope

BARTEC warrants that all BARTEC products and accessories that are the subject of this manual will be free from defects in materials and workmanship from and after its date of purchase for a period of 12 (twelve) months.

For the avoidance of doubt, this limited product warranty will not cover any damage caused by:

- accidents,
- misuse, improper installation, operation, maintenance or repairs,
- neglect, or
- alteration.

Furthermore, BARTEC cannot be held liable under this warranty for:

- installation or removal costs,
- loss or damage to property,
- indirect, special, incidental or consequential damages (including, without limitation, loss of revenue or anticipated profits), or
- any other damages or costs directly or indirectly related to the warranty issue.

If all warranty conditions are met (as set forth below), BARTEC will, at its sole discretion:

- repair the product,
- replace the product, or
- refund the purchase price paid for the product.

This warranty gives you specific legal rights, and you may also have other rights which vary by country, state or province. Except as specifically provided otherwise in this limited product warranty, the BARTEC Group General Terms and Conditions shall apply.

General terms and conditions

BARTEC Global Terms and conditions are available at: <https://www.bartec.de/en/terms/>

Conditions

The limited product warranty is subject to the following conditions:

- proper installation, operation and maintenance in compliance with the state of the technology and the product documentation, and
- presence of completely filled in acceptance reports for all installation, maintenance and repairwork operations.

How to claim the warranty

To file a claim under the limited product warranty:

- Notify BARTEC or your local BARTEC representative by written correspondence or email within 30 days after identification of a possible warranty issue.
- If requested, you must provide any warranty-related information and documentation to BARTEC, including, without limitation:
 - project planning documents, and
 - acceptance reports for installation, operation, maintenance or repairwork.

