Installer manual

Condensation water pipe
KVR 10

IHB EN 2216-4
431740

Table of Contents

Important information

Safety information

This manual describes installation and service procedures for implementation by specialists.

The manual must be left with the customer.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

This is an original manual. It may not be translated without the approval of NIBE.

Rights to make any design or technical modifications are reserved.

Symbols

Explanation of symbols that may be present in this manual.

NOTE

This symbol indicates danger to person or machine.

Caution

This symbol indicates important information about what you should consider when installing or servicing the installation.

TIP

This symbol indicates tips on how to facilitate using the product.

Marking

Explanation of symbols that may be present on the product's label(s).

Read the Installer Manual.

General

The accessory KVR 10 is used to safely divert most of the condensation from the air/water heat pump to a frost-free collection point.

The accessory is suitable to following products from NIBE:

- F2016
- F2026
- F2030
- F2040
- F2050
- F2300
- NIBE SPLIT HBS 05
- NIBE SPLIT HBS 20

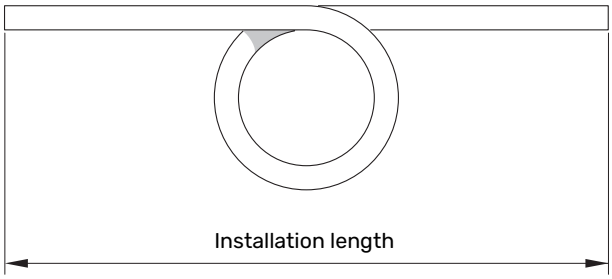
> **NOTE**
>
> It is important to the heat pump function that condensation water is led away and that the drain for the condensation water run off is not positioned so that it can cause damage to the house.

The heating cable starts automatically at an outdoor temperature of 1.5 °C. When the temperature exceeds 2 °C the heating cable switches off again.

> **NOTE**
>
> The installation of KVR 10 can affect the machine's function. Read the entire Installer Manual together with the main product's Installer Manual!

Different versions of KVR 10

KVR 10 is available in three lengths. Here you can see an example of the installation length.



F2016, F2026, F2030, F2040, F2050, F2300, NIBE SPLIT HBS 05 / HBS 20

	KVR 10	KVR 10 2x230V
	Part No.	Part No.
Hose length 1 metre (installation length 1 m without water seal)	067 614	067 615
Hose length 3 metres (installation length 1-2.2 m with water seal)	067 616	067 617
Hose length 6 metres (installation length 2.2-5.2 m with water seal)	067 618	067 619

CONTENTS

1 x	Insulated hose (inner diameter 40 mm)
1 x	Heating cable
1 x	Hose clamp
1 x	Fuse
1 x	Gasket
6 x	Cable ties
1 x	Screw
1 x	Nuts
2 x	Washers
1 x	Connection piece
1 x	Automatic protection (only used for F2040 / F2050 and AMS 10 / AMS 20)
14 x	Plug (only used for F2040 / F2050 and AMS 10 / AMS 20)
1 x	Connection plate (only used for AMS 10-6 / AMS 20-6)

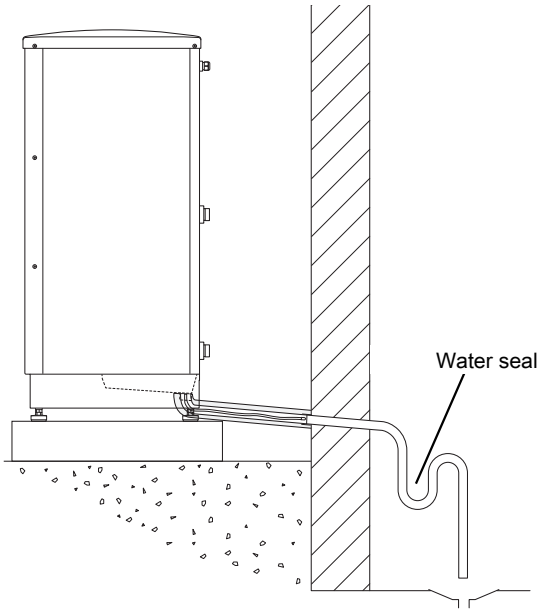
Pipe connections

General

Connect KVR 10 to the heat pump's condensation water trough using the supplied hose clamp.

- Pipe installation must be carried out in accordance with current norms and directives.
- We recommend three ways of leading off condensation water; to an indoor drain (subject to local rules and regulations), stone caisson, gutter drainage or other frost free collection point.
- When casting the base, the holes for KVR 10 must have an internal diameter of 110 mm.
- Route the pipe downward from the air/water heat pump.
- The insulation of KVR 10 must seal against the bottom of the product's condensation water trough.
- The drain from KVR 10 must be positioned at frost free depth or indoors (subject to local rules and regulations).
- The drain from KVR 10 must be able to receive up to 100 litres of condensation water per day.
- The installation must be equipped with a water seal where air circulation can occur in the condensation water pipe.

Drain indoors



The condensation water is lead to an indoor drain (subject to local rules and regulations).

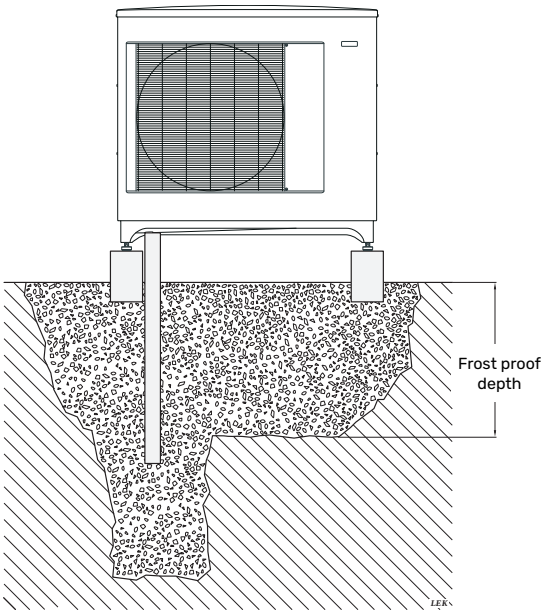
Route the pipe downward from the air/water heat pump.

The condensation water pipe must have a water seal to prevent air circulation in the pipe.

Pipe routing indoors is not included.

> **NOTE**
>
> Do not select this option, "Indoor drain", if you have an air/water heat pump with a flammable or easily combustible refrigerant.

Stone caisson

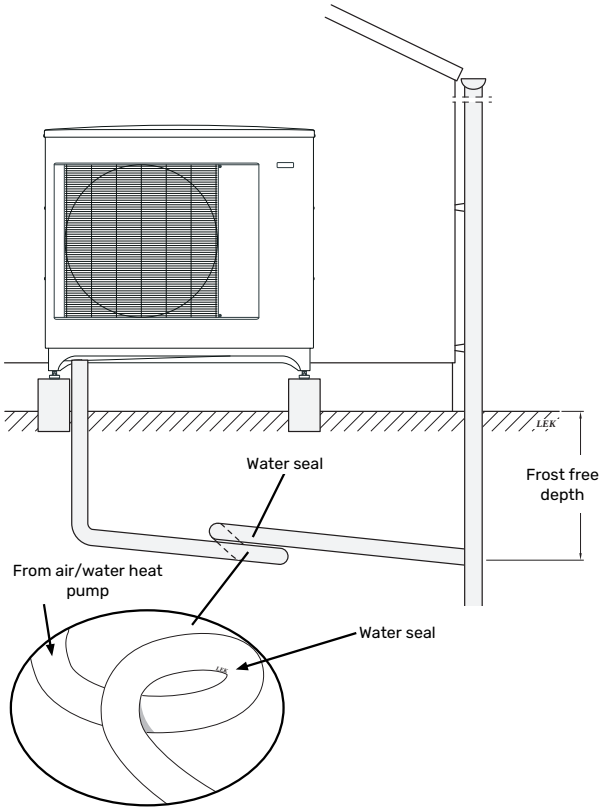


If the house has a cellar the stone caisson must be positioned so that condensation water does not affect the house. Otherwise the stone caisson can be positioned directly under the heat pump.

The outlet of the condensation water pipe must be at frost free depth.

Gutter drainage

> **NOTE**
> Bend the hose to create a water seal, see illustration.



- The outlet of the condensation water pipe must be at frost free depth.
- Route the pipe downward from the air/water heat pump.
- The condensation water pipe must have a water seal to prevent air circulation in the pipe.
- The installation length can be adjusted by the size of the water seal.

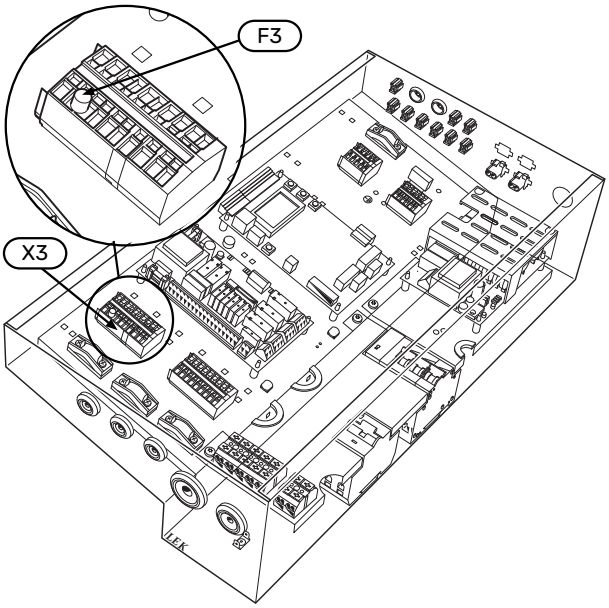
Electrical connection

> **NOTE**
> All electrical connections must be carried out by an authorised electrician.

F2016 / F2026

F2016 / F2026 is equipped with a terminal block (X3) for a heating cable. The connection is fitted with a 250 mA fuse at the factory.

FUSE LOCATION



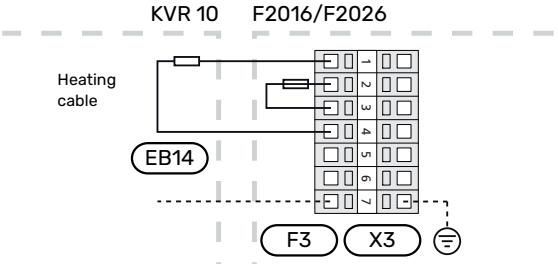
Fuse

Length, heating cable (m)	P_{tot} (W)	Fuse (F3)	Part No.
1	15	T100mA/250V	718 085
3	45	T250mA/250V	518 900*
6	90	T500mA/250V	718 086

*Fitted at the factory.

ELECTRICAL CONNECTION

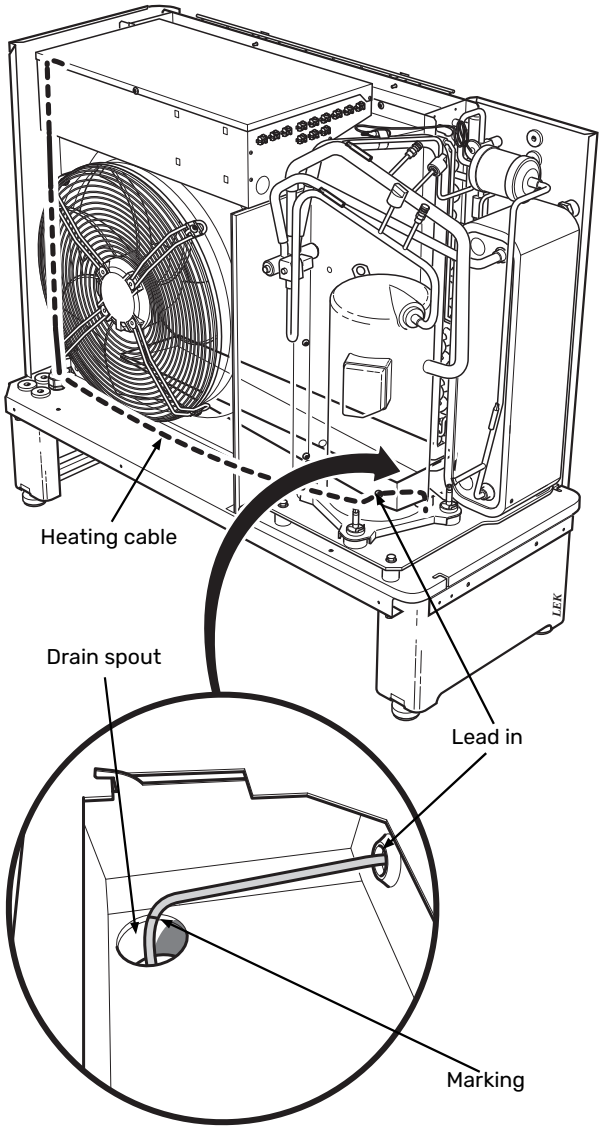
Connect external heating cable (EB14) to terminal block X3:1 and 4 as illustrated below:



Cable routing F2016 / F2026

The following image shows the recommended cable routing from distribution box to condensate drain pan in F2016 / F2026. Transition between electrical cable and heating cable must be as illustrated.

1. Remove cover.
2. Thread hose clamp on.
3. Route the heating cable through the condensation water pipe.
4. Remove the condensation water trough.
5. Route the heating cable through the condensation water connection and lead-in.
6. Pull the insulation down slightly, connect the hose to the condensation water connection and tighten the hose clamp.
7. Push the insulation up towards the trough and install it using cable ties.
8. Lay the heating cable so that the marking is as close to the condensation water connection as possible.
9. Route the cable to the distribution box as illustrated. (Extend the cable so that removal of the condensation water trough is possible, i.e. with some margin.)
10. Use factory fitted cable tie.
11. The distance between the distribution box and the lead-in to the condensation water trough is approx. 2,000 mm.
12. The length of the non heat conducting section of the cable needs adjusting. Roll the cable to the correct length (do not cut).
13. Connect the cable according to the "Electrical connection" image. (Check fuse according to table. See Fuse page 11.)
14. Reinstall the condensation water trough and cover.

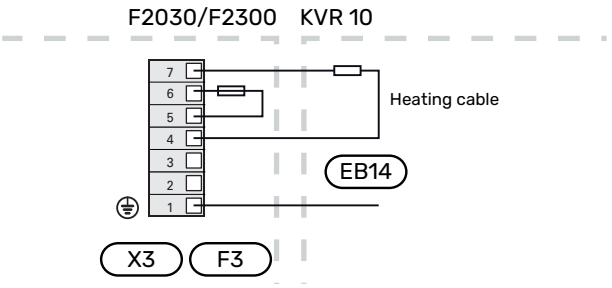


> **NOTE**
>
> Ensure that the marking on the cable is edge to edge with the drain (see image).

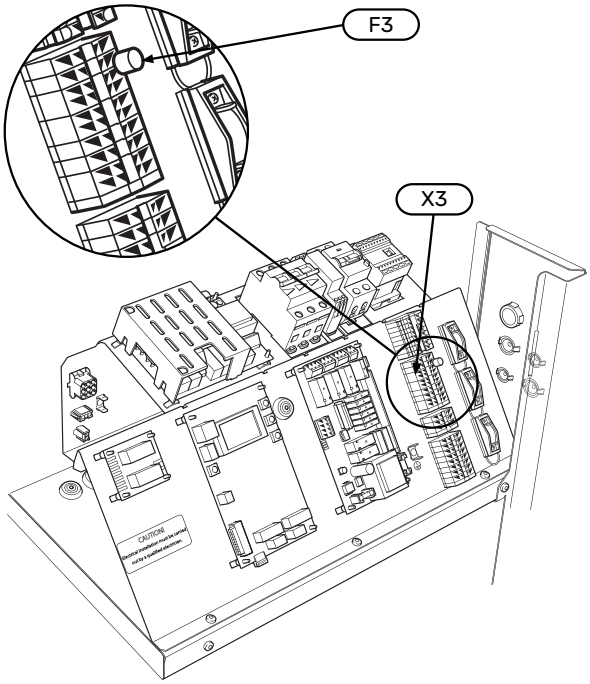
> **NOTE**
>
> Do not cut the heating cable!

F2030 / F2300

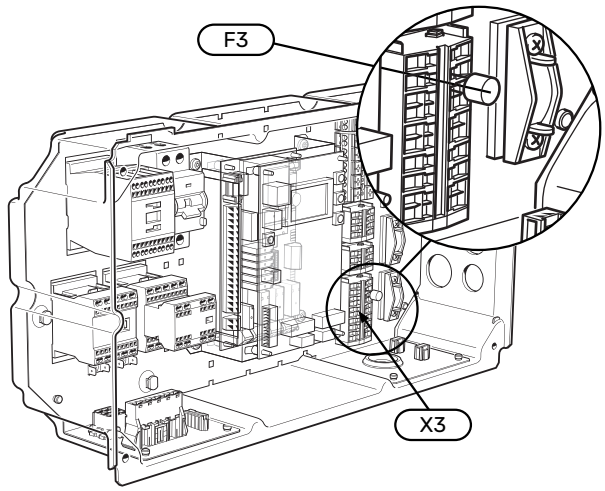
F2030 / F2300 is equipped with a terminal block (X3) for a heating cable. The connection is fitted with a 250 mA fuse at the factory.



FUSE LOCATION F2030



FUSE LOCATION F2300



Fuse

Length, heating cable (m)	P_{tot} (W)	Fuse (F3)	Part No.
1	15	T100mA/250V	718 085
3	45	T250mA/250V	518 900*
6	90	T500mA/250V	718 086

*Fitted at the factory.

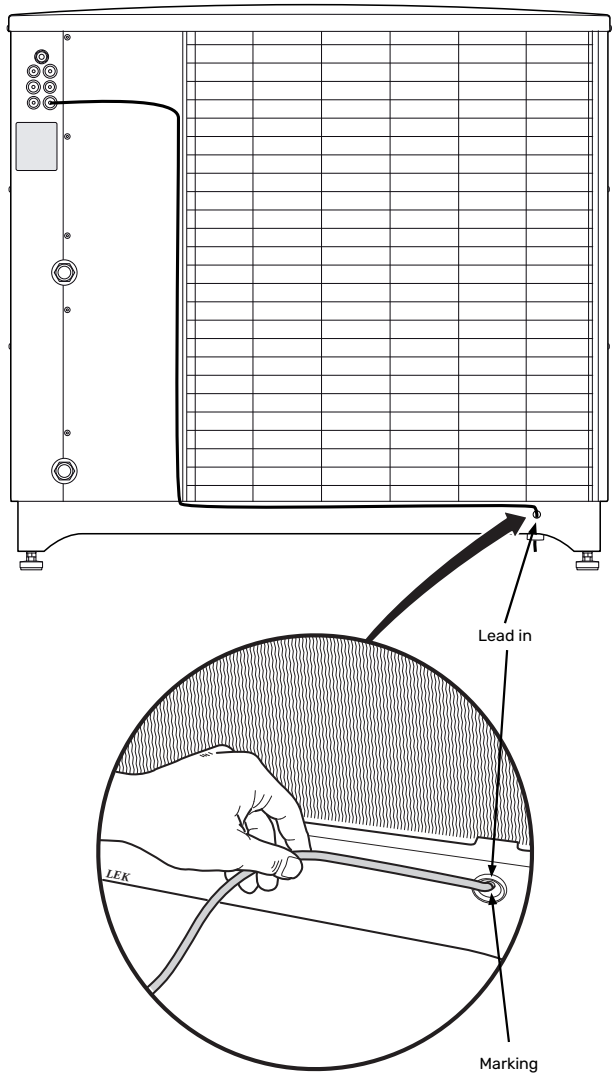
ELECTRICAL CONNECTION

Connect external heating cable (EB14) to terminal block X3:4 and 7 as illustrated below:

Cable routing F2030 / F2300

The following image shows recommended cable routing from distribution box to condensation water trough in F2030/F2300.. Transition between electrical cable and heating cable must occur according to image.

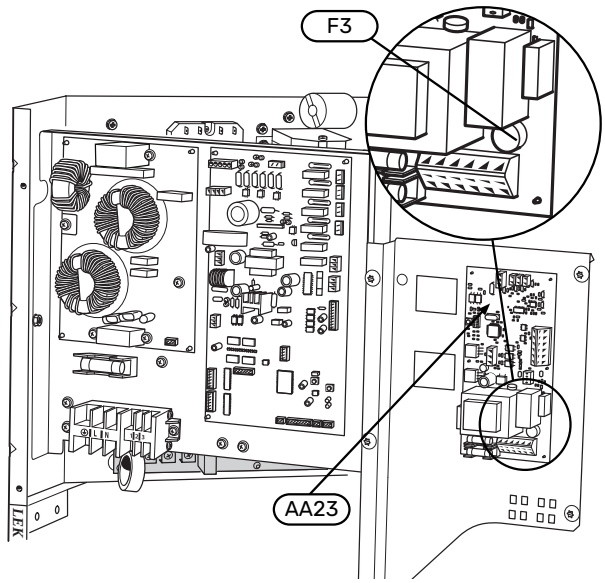
1. Remove side panel.
2. Thread hose clamp on.
3. Route the heating cable through the condensation water pipe.
4. Remove the condensation water trough.
5. Route the heating cable through the condensation water connection and lead-in.
6. Pull the insulation down slightly, connect the hose to the condensation water connection and tighten the hose clamp.
7. Push the insulation up towards the trough and install it using cable ties.
8. Reinstall condensation water trough.
9. Stretch the heating cable so that the mark is as illustrated.
10. Route the cable to the distribution box as illustrated. (Extend the cable so that removal of the condensation water trough is possible, i.e. with some margin.)
11. Use cable ties to secure the heating cable.
12. The distance between the distribution box and the lead-in to the condensation water trough is approx. 2,600 mm.
13. Connect the cable according to the "Electrical connection" image. (Check fuse according to table. See Fuse page 11.)
14. Reinstall side panel.



F2040

KVR 10 is connected to the communication board AA23-X1:4-6 in F2040. Communication board (AA23) is fitted with a 250 mA fuse.

FUSE LOCATION



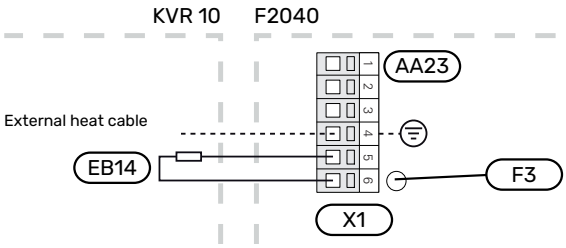
Fuse

Length, heating cable (m)	P_{tot} (W)	Fuse (F3)	Part No.
1	15	T100mA/250V	718 085
3	45	T250mA/250V	518 900*
6	90	T500mA/250V	718 086

*Fitted at the factory.

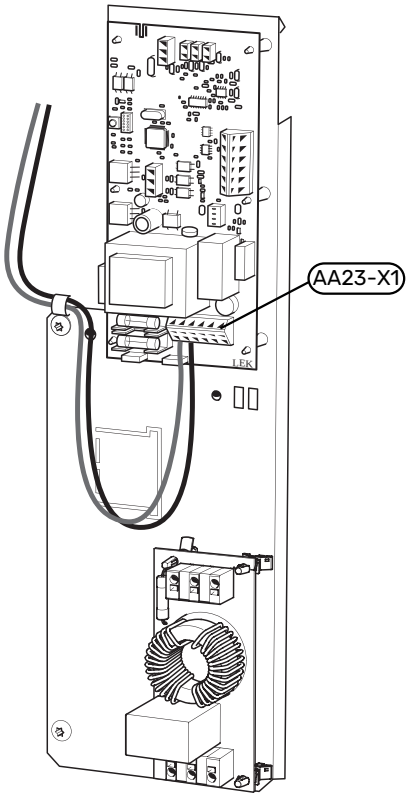
ELECTRICAL CONNECTION

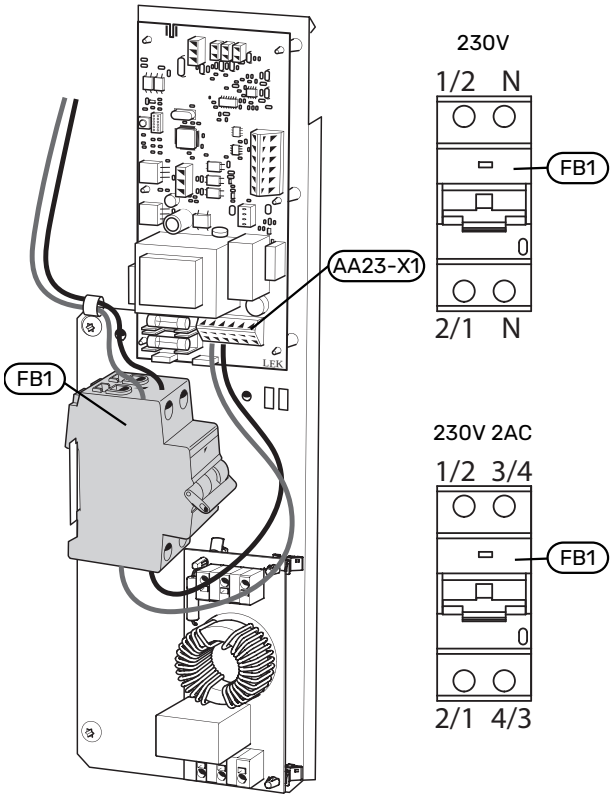
The external heating cable (EB14) is connected to terminal block (X1:4–6) as illustrated below:



F2040-6

Connection of residual current device RCD (FB1) between control board (PWB1) and communication board (AA23-X1:1-3).

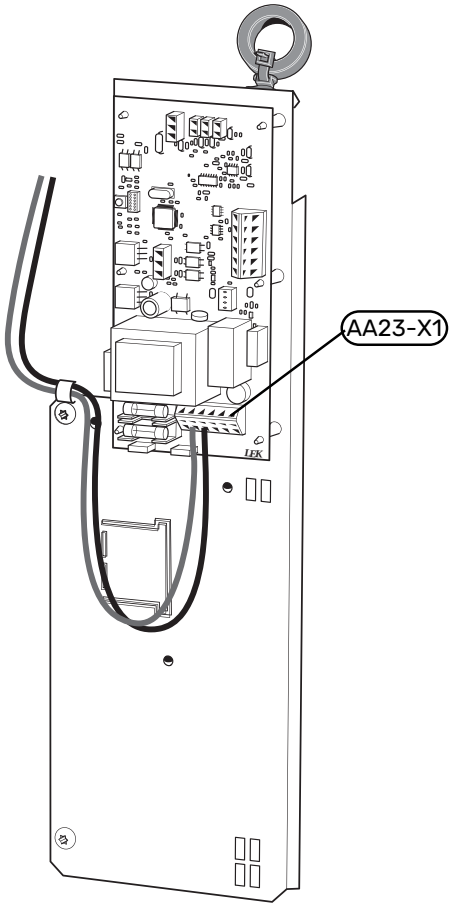


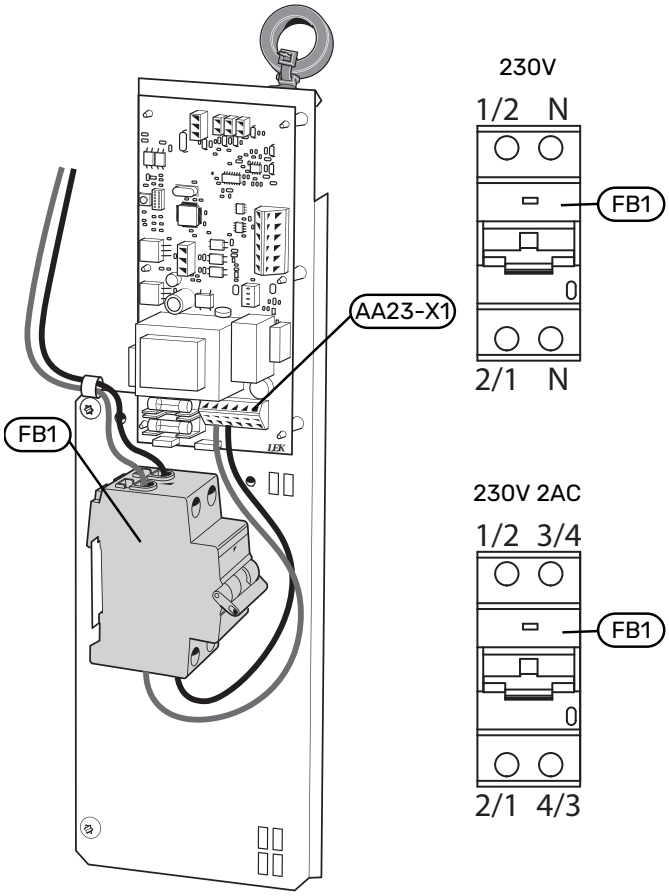


F2040-8

Connection of residual current device RCD (FB1) between control board (PWB1) and communication board (AA23-X1:1-3).

230V/230V 2 AC

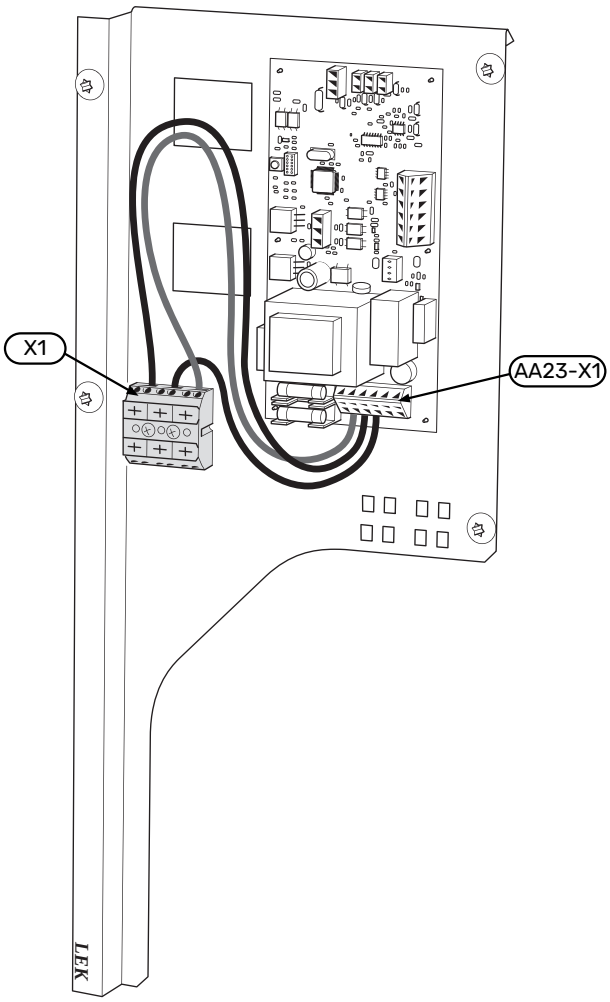


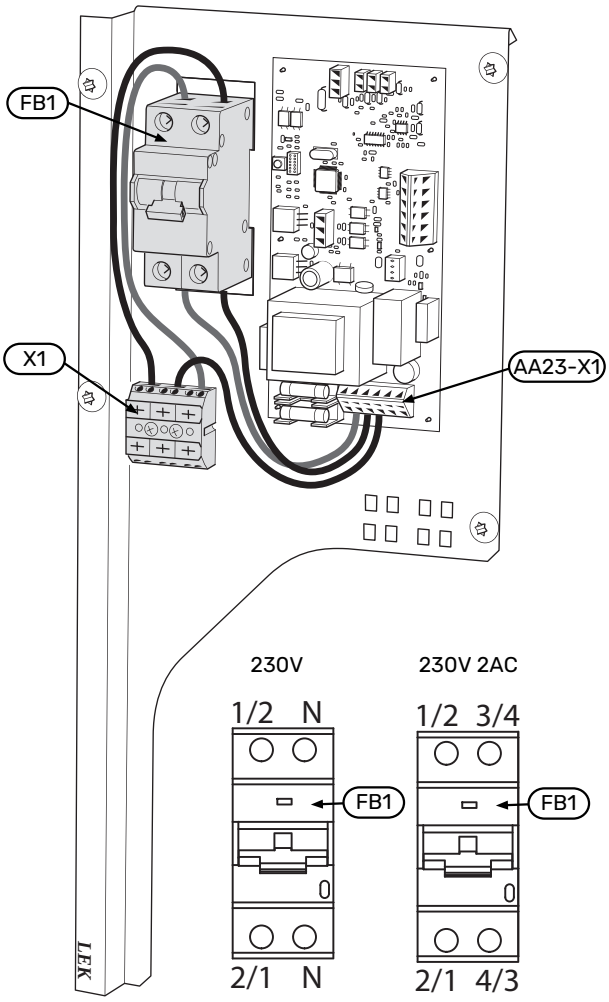


F2040-12, version 1

Connection of earth leakage circuit breaker (FB1) between terminal block (X1) and communication board (AA23-X1:1-3).

230V/230V 2 AC

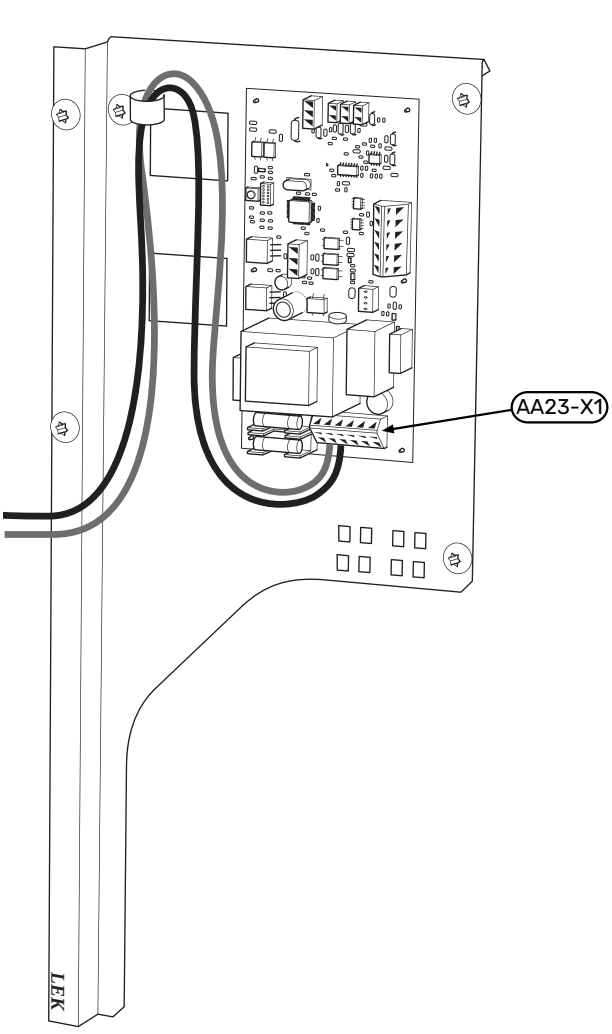


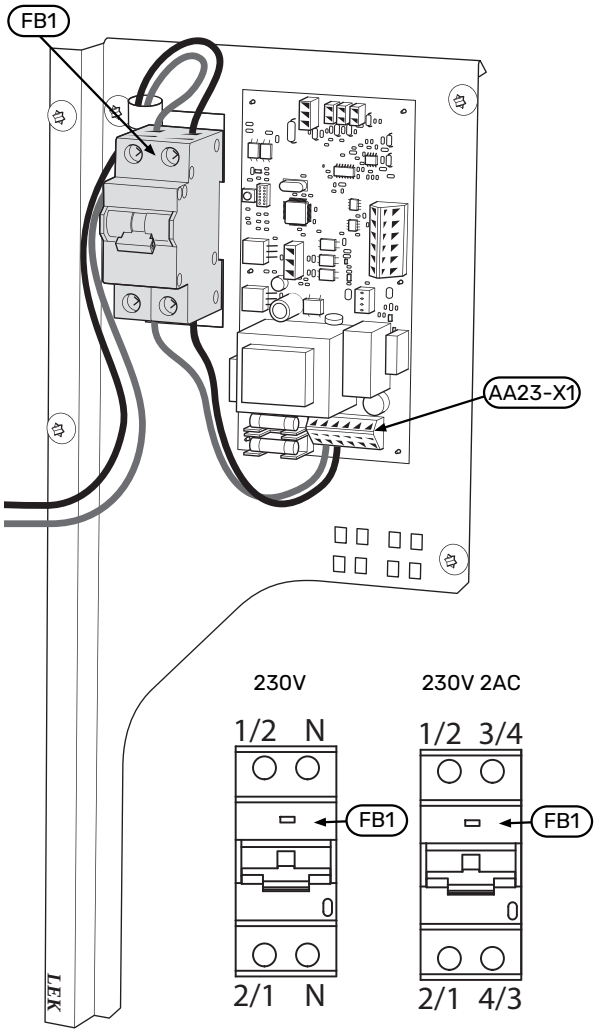


F2040-12, version 2

Connection of residual current device RCD (FB1) between control board (PWB1) and communication board (AA23-X1:1-3).

230V/230V 2 AC

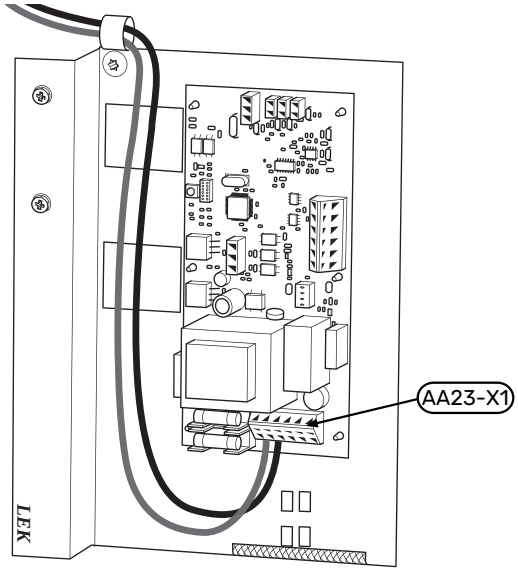


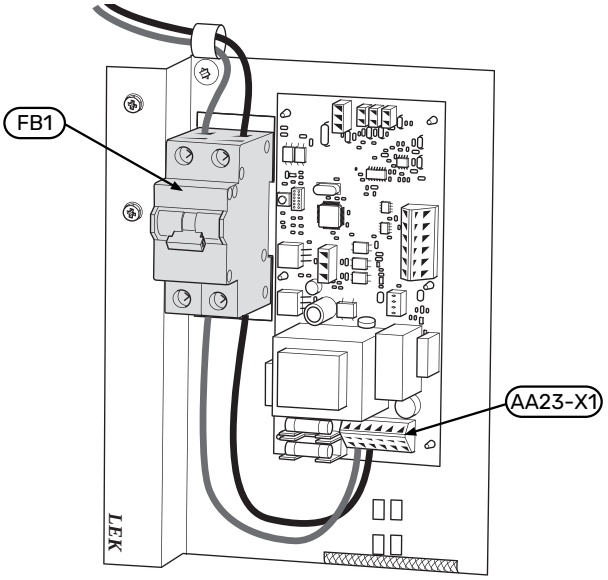


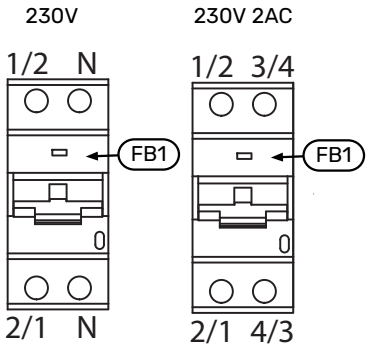
F2040-16

Connection of residual current device RCD (FB1) between control board (PWB1) and communication board (AA23-X1:1-3).

230V/230V 2 AC



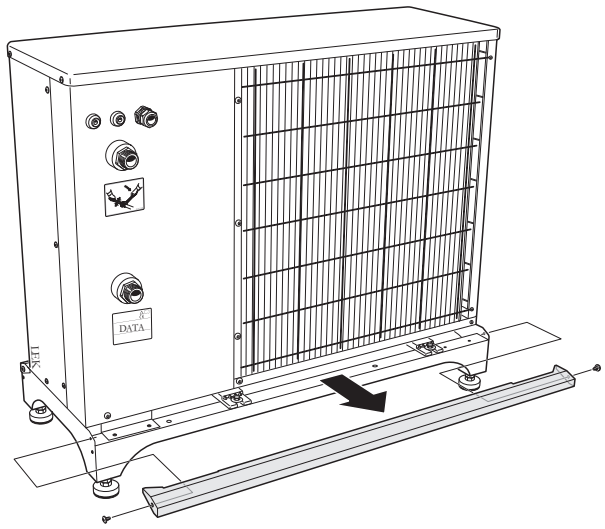




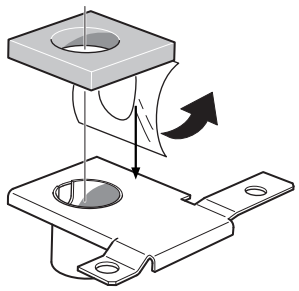
Cable routing F2040

The following image shows recommended cable routing from the electrical connection to the condensation water pipe. Route the heating cable (EB14) through the grommet on the underside and secure with two cable ties at the electrical connection. There is a transition between the cold and hot sections of the heating cable at the marking on the cable. The marking has to be edge to edge with the hole for the cable grommet.

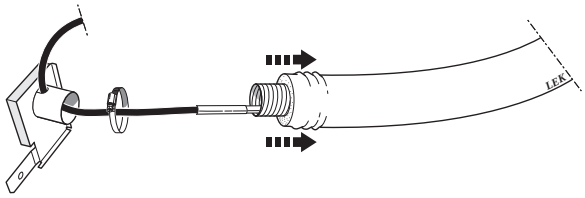
1. Remove the front and side panels.
2. Remove the rear cover plate from the stand.



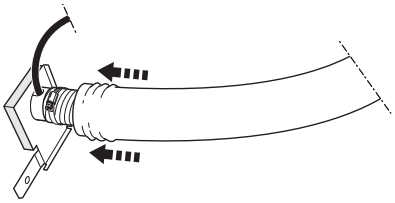
3. Pull off the protective paper and secure the gasket to the condensation water connection, see image.



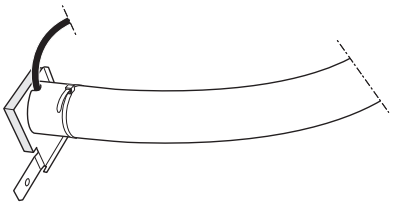
4. Thread hose clamp on.
5. Route the heating cable through the condensation water pipe.
6. Route the heating cable through the condensation water connection on the connection plate, as illustrated.



7. Pull the insulation down slightly, connect the hose to the condensation water connection and tighten the hose clamp, as illustrated.

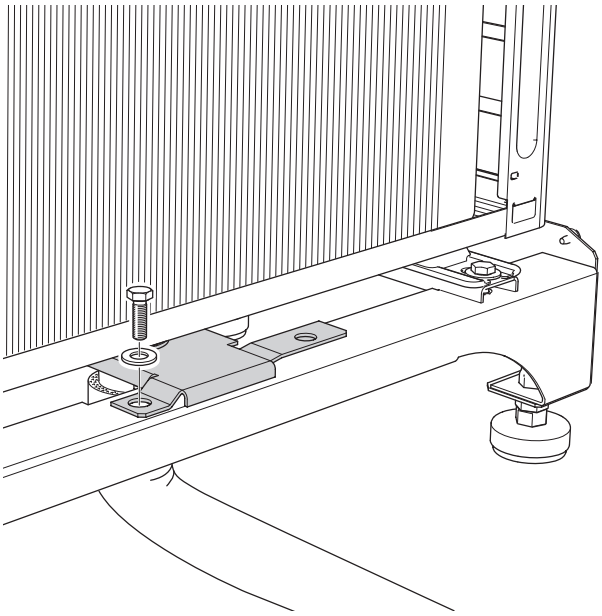


8. Push the insulation up towards the trough and secure it using cable ties, see image.



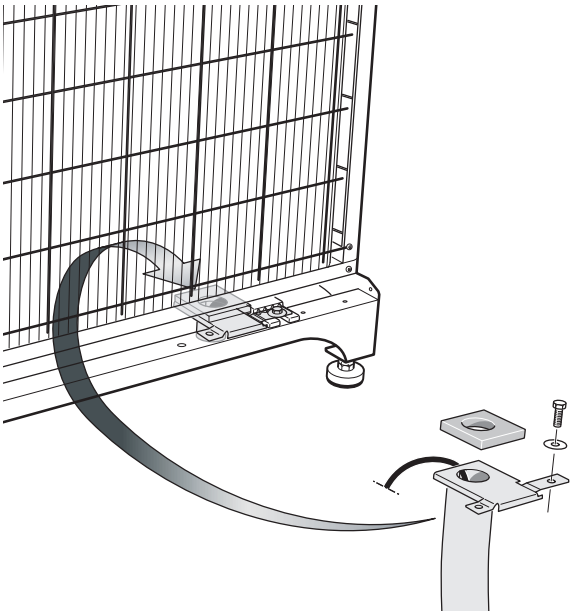
9. For F2040-6, screw the connection piece securely to the stand as illustrated using a screw and washer. Now clamp the gasket between the adapter and the bottom of the module.

F2040-6

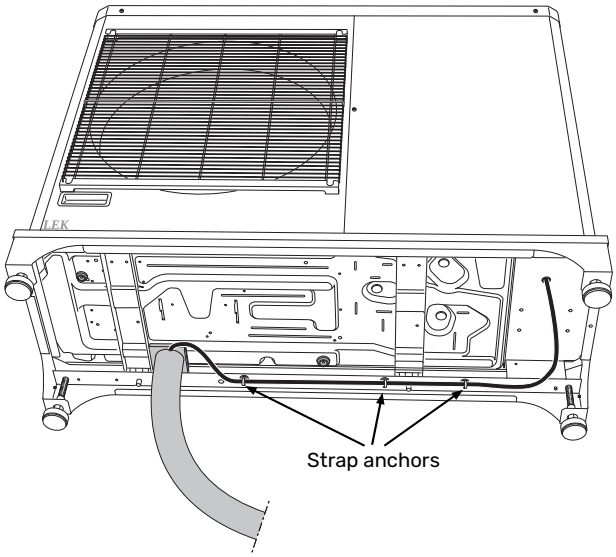


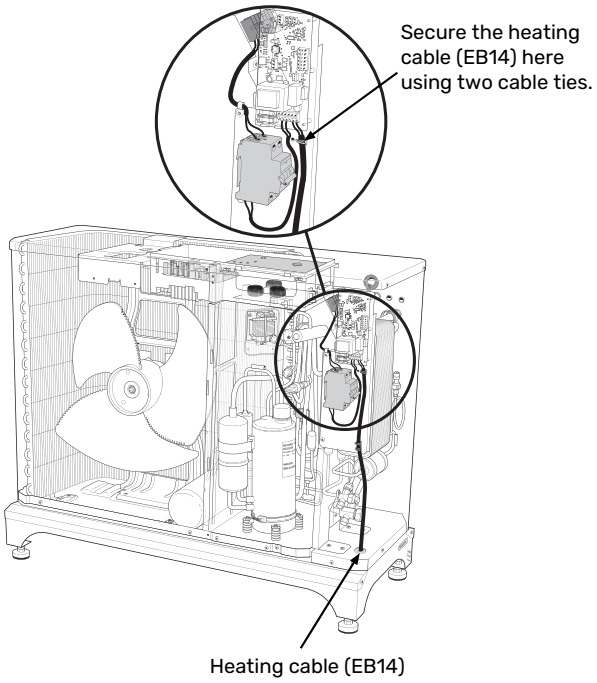
For F2040-8/12/16, loosen the nut and remove the washer securing the heat pump module to the stand. Fit the holder to the module's foot and reinstall the washer and nut. Now clamp the gasket between the adapter and the bottom of the module. When the drain holes have been adjusted above each other, tighten the nut.

F2040-8, F2040-12, F2040-16



10. Lay the heating cable and ensure that the marking on the heating cable is as close to the condensation water connection as possible.
11. Route the heating cable to the electrical connection.
12. Use cable ties and strap anchors to secure the heating cable, see images.

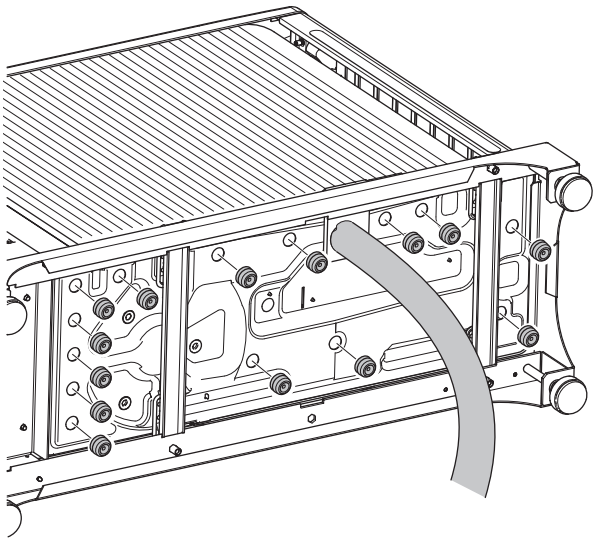




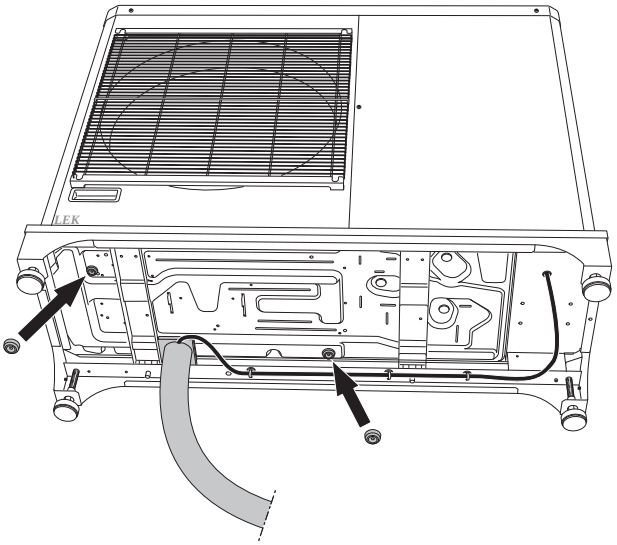
13. Connect the cable as illustrated in "Electrical connection", see page 13. (Check the fuse according to the table, see page 13.)
14. Reinstall the cover, front and side panels.

15. Install plugs, see image.

F2040-6



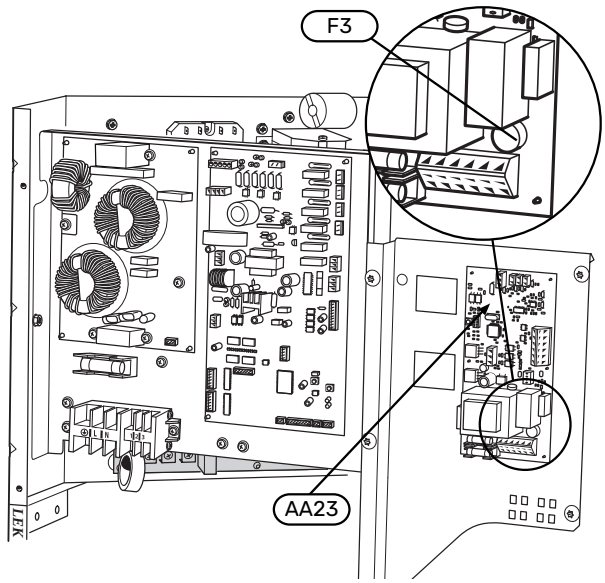
F2040-8, F2040-12, F2040-16



F2050

KVR 10 connects to the communication board (AA23-X1:4-6) in F2050. Communication board (AA23) is fitted with a 250 mA fuse.

FUSE LOCATION



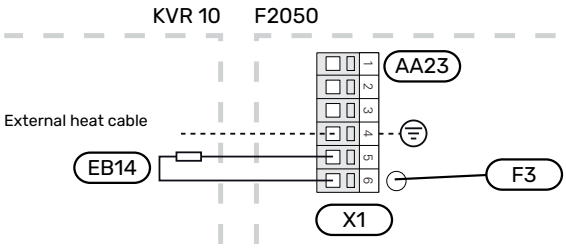
Fuse

Length, heating cable (m)	P_{tot} (W)	Fuse (F3)	Part No.
1	15	T100mA/250V	718 085
3	45	T250mA/250V	518 900*
6	90	T500mA/250V	718 086

*Fitted at the factory.

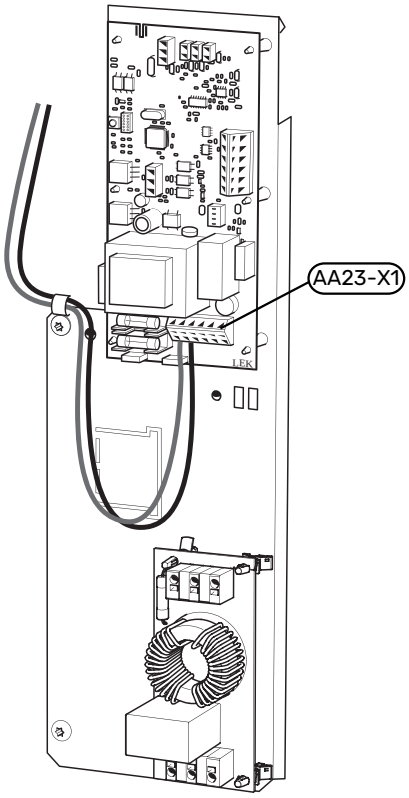
ELECTRICAL CONNECTION

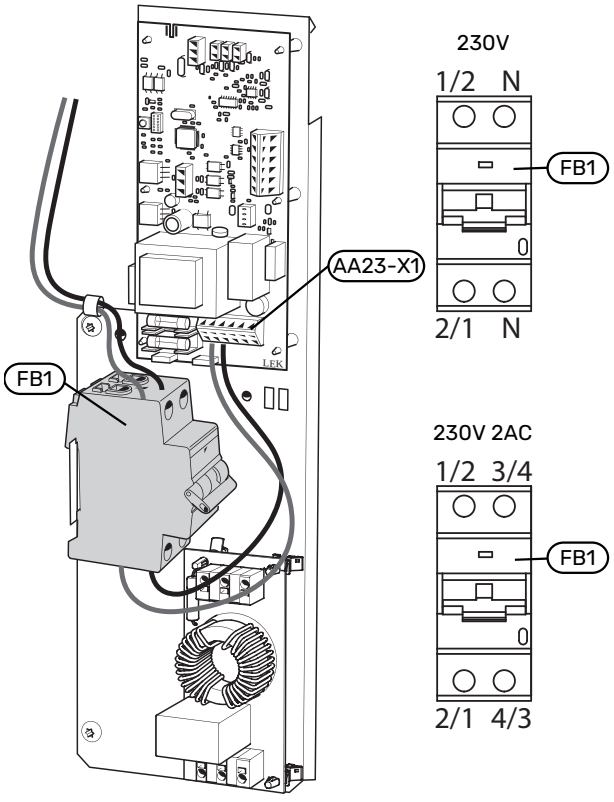
The external heating cable (EB14) is connected to terminal block (X1:4–6) as illustrated below:



F2050-6

Connection of residual current device RCD (FB1) between control board (PWB1) and communication board (AA23-X1:1-3).

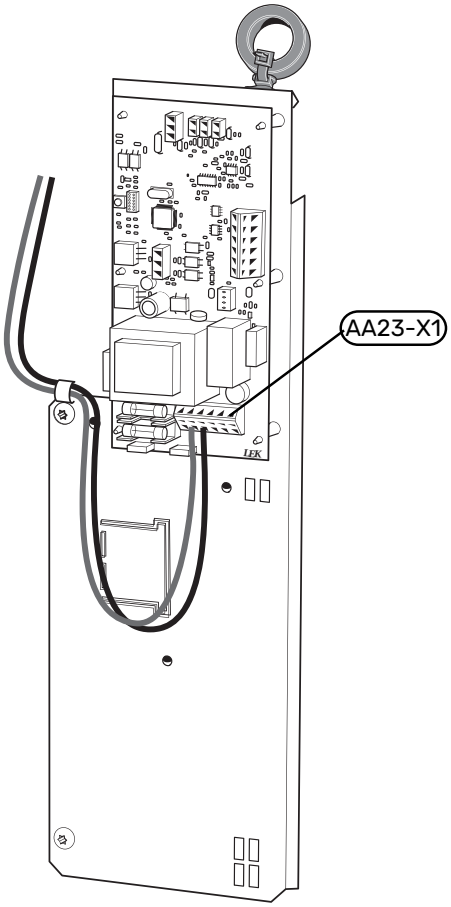


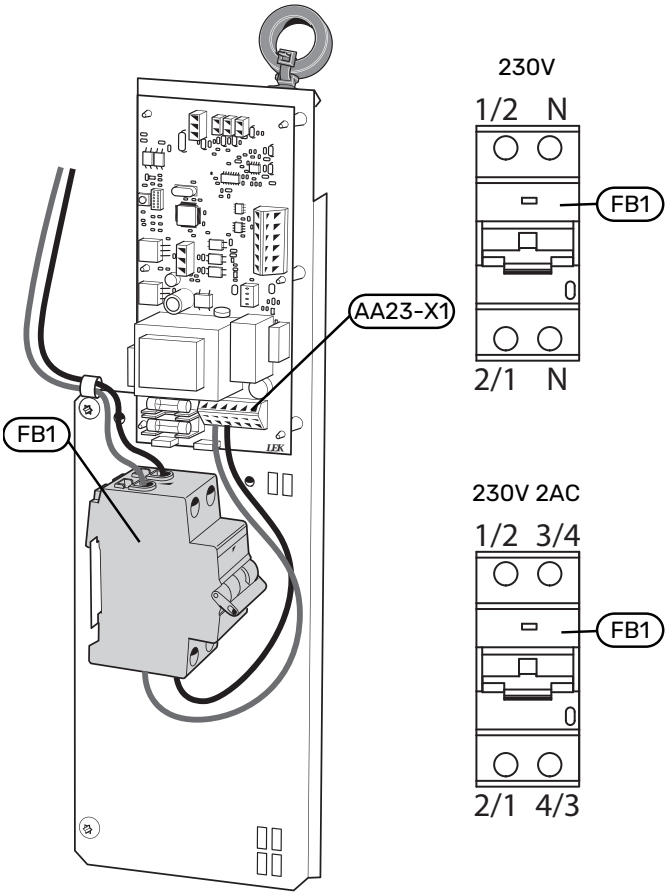


F2050-10

Connection of residual current device RCD (FB1) between control board (PWB1) and communication board (AA23-X1:1-3).

230V/230V 2 AC

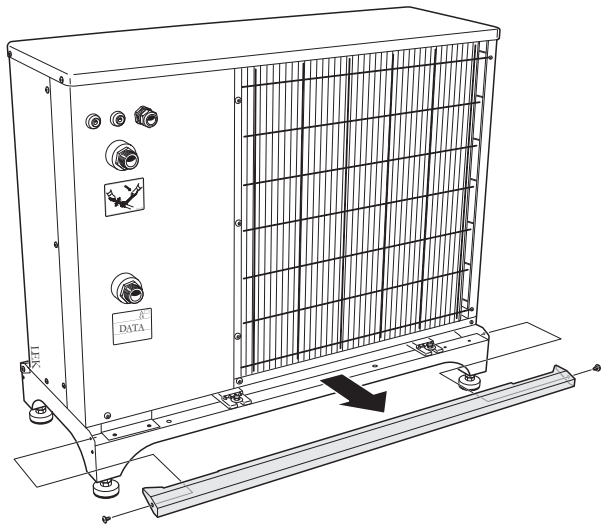




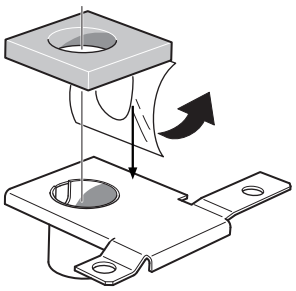
Cable routing F2050

The following image shows recommended cable routing from the electrical connection to the condensation water pipe. Route the heating cable (EB14) through the grommet on the underside and secure with two cable ties at the electrical connection. There is a transition between the cold and hot sections of the heating cable at the marking on the cable. The marking has to be edge to edge with the hole for the cable grommet.

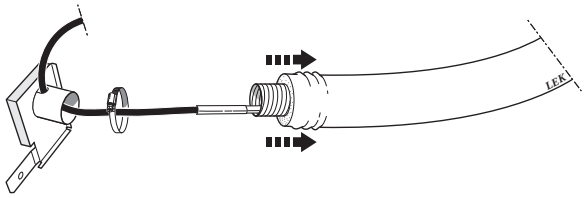
1. Remove the front and side panels.
2. Remove the rear cover plate from the stand.



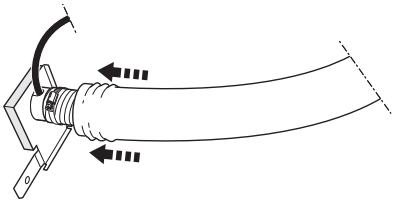
3. Pull off the protective paper and secure the gasket to the condensation water connection, see image.



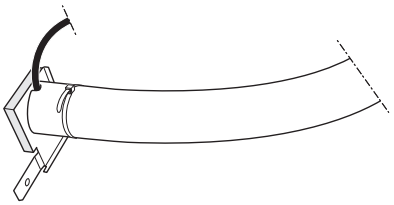
4. Thread hose clamp on.
5. Route the heating cable through the condensation water pipe.
6. Route the heating cable through the condensation water connection on the connection plate, as illustrated.



7. Pull the insulation down slightly, connect the hose to the condensation water connection and tighten the hose clamp, as illustrated.

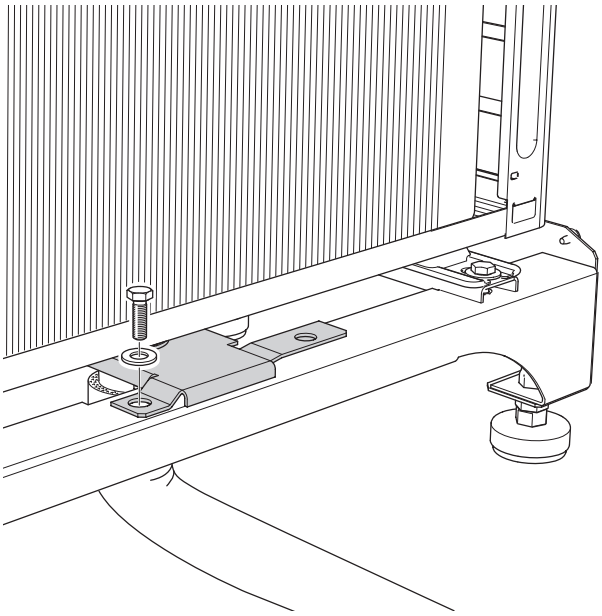


8. Push the insulation up towards the trough and secure it using cable ties, see image.



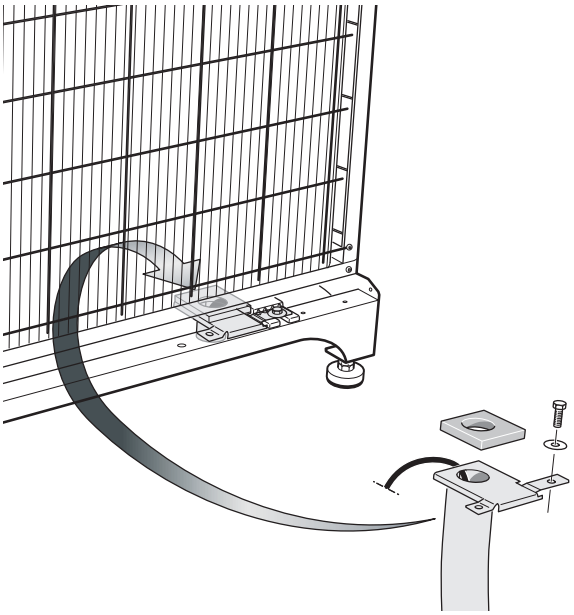
9. For F2050-6, screw the connection piece securely to the stand as illustrated using a screw and washer. Now clamp the gasket between the adapter and the bottom of the module.

F2050-6

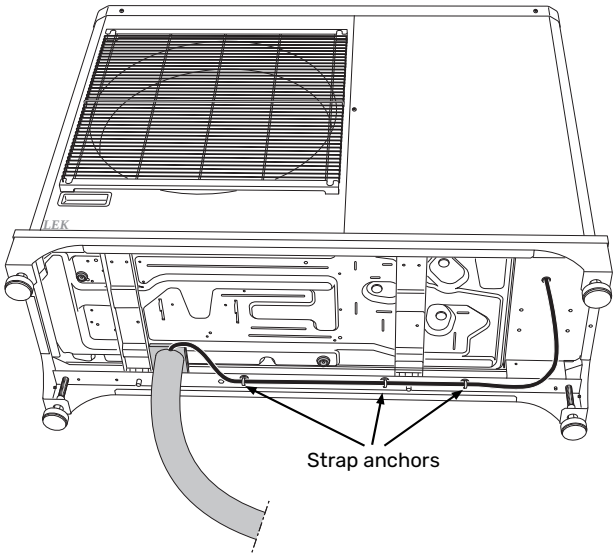


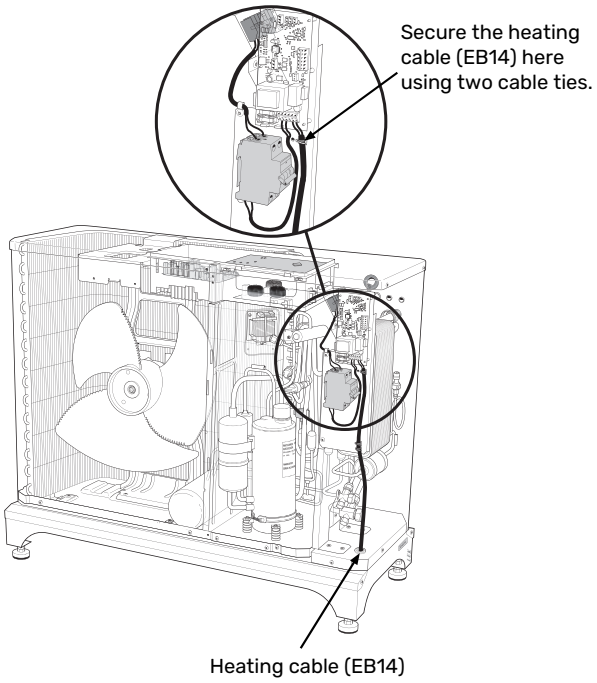
For F2050-8, undo the nut and remove the washer securing the heat pump module to the stand. Fit the holder to the module's foot and replace the washer and nut. Now clamp the gasket between the adapter and the bottom of the module. When the drain holes have been adjusted above one another, tighten the nut.

F2050-8



10. Lay the heating cable and ensure that the marking on the heating cable is as close to the condensation water connection as possible.
11. Route the heating cable to the electrical connection.
12. Use cable ties and strap anchors to secure the heating cable, see images.

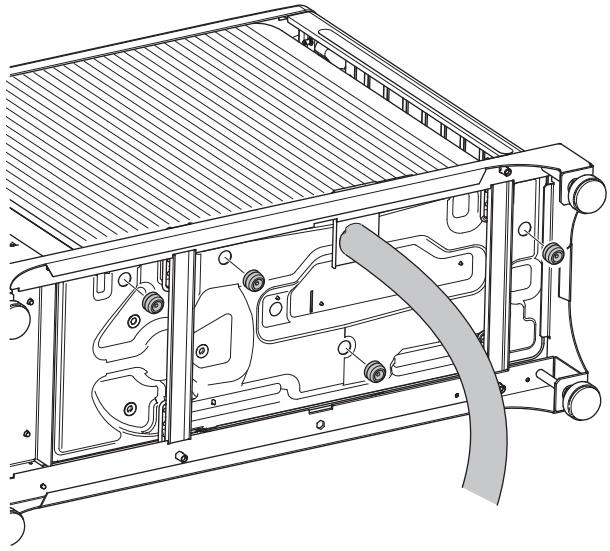




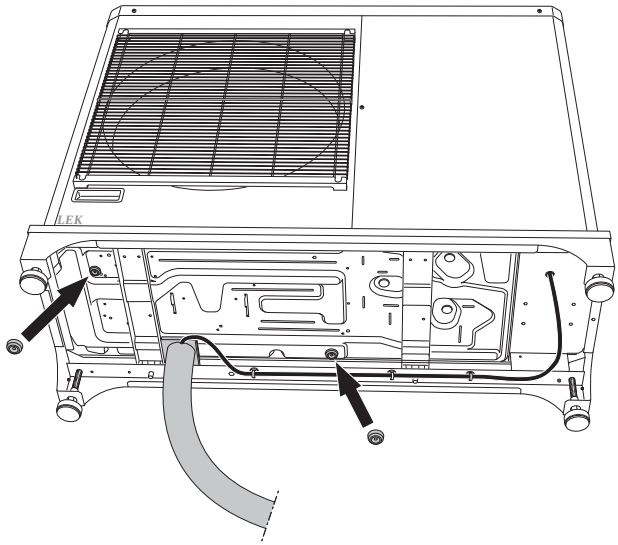
13. Connect the cable as illustrated in "Electrical connection", see page 13. (Check the fuse according to the table, see page 13.)
14. Reinstall the cover, front and side panels.

15. Install plugs, see image.

F2050-6

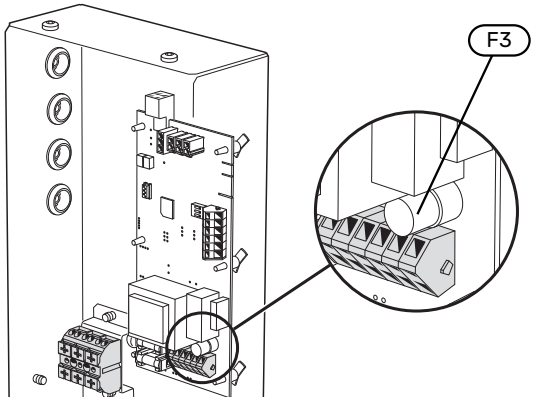


F2050-10



NIBE SPLIT HBS 05 / HBS 20

FUSE LOCATION, HBS 05 / HBS 20



Fuse

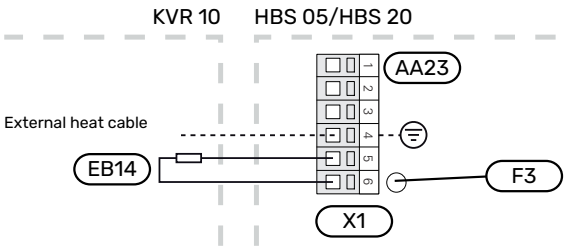
Length, heating cable (m)	P_{tot} (W)	Fuse (F3)	Part No.
1	15	T100mA/250V	718 085
3	45	T250mA/250V	518 900*
6	90	T500mA/250V	718 086

*Fitted at the factory.

ELECTRICAL CONNECTION

HBS 05 / HBS 20 is equipped with a terminal block for a heating cable (EB14). The connection is fused with 250 mA (F3 on the communication board AA23). If another cable is to be used, the fuse must be replaced with a suitable one (see table).

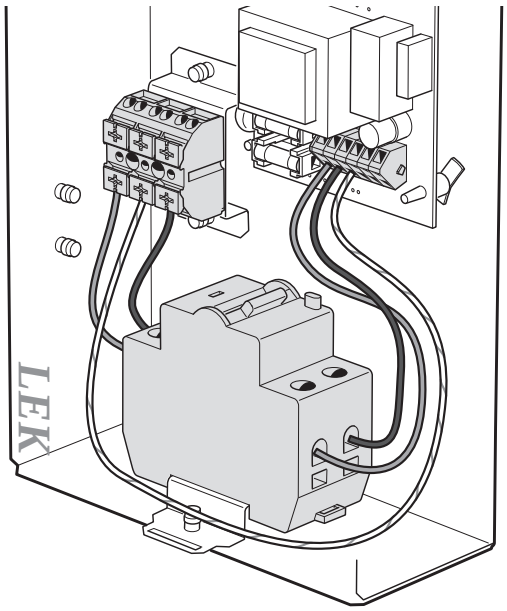
Connect external heating cable (EB14) to terminal block AA23-X1:4–6 according to following image:



Connecting automatic protection

Connection of earth leakage circuit breaker (FB1) between terminal block (X1) and communication board (AA23-X1:1-3). Cut off the brown and blue cores. Connect the brown core connected to X1:L1 to the automatic protection FB1:1/2 and the blue core connected to X1:N to FB1:N. The brown core that is connected to AA23-X1:1 must be connected to the automatic protection FB1:2/1 and the blue core connected to AA23-X1:2 must be connected to FB1:N.

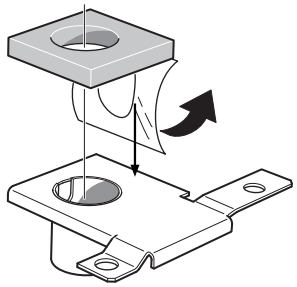
Strip 11 mm from cores that are to be connected to the automatic protection.



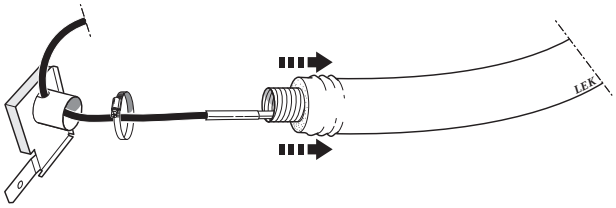
CABLE ROUTING, AMS 10 / AMS 20

Recommended cable routing from the junction box up to the condensation water hose connection to AMS 10 / AMS 20. There is a transition between the cold and hot sections of the heating cable at the marking on the cable. The marking should end up edge to edge with the hole for the cable grommet.

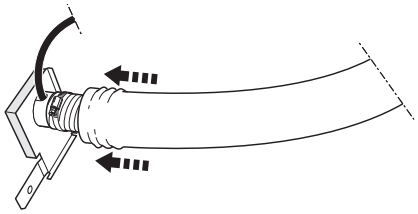
1. Pull off the protective paper and secure the gasket to the condensation water connection, see image.



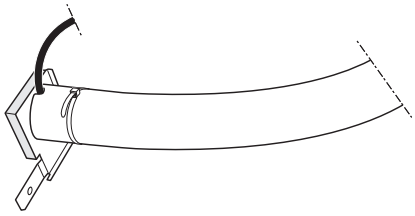
2. Thread hose clamp on.
3. Route the heating cable through the condensation water pipe.
4. Route the heating cable through the condensation water connection on the connection plate, as illustrated.



5. Pull the insulation down slightly, connect the hose to the condensation water connection and tighten the hose clamp, as illustrated.

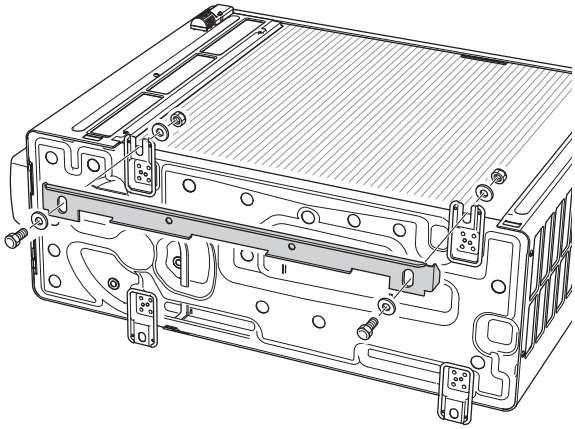


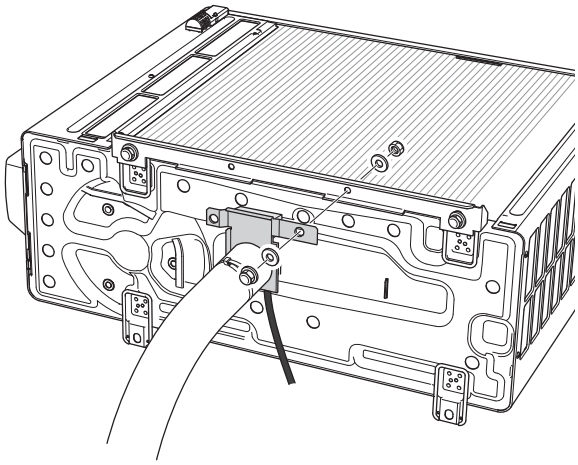
6. Push the insulation up towards the trough and secure it using cable ties, see image.



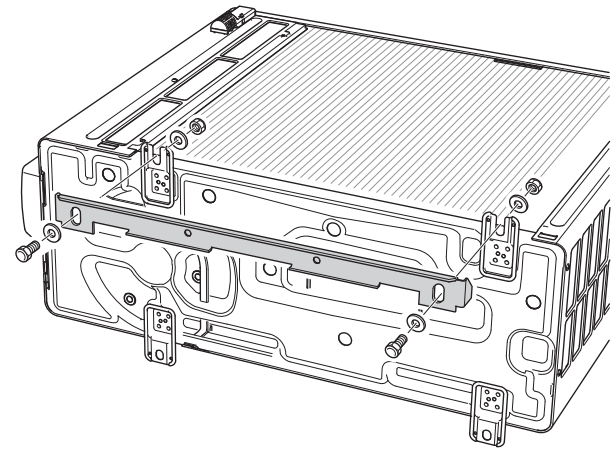
7. Lay the heating cable and ensure that the marking on the heating cable is as close to the condensation water connection as possible.
8. Install the connection plate on AMS 10 / AMS 20. Use the mounting bolt that is securing the heat pump. (See image of relevant AMS 10 / AMS 20 model.)

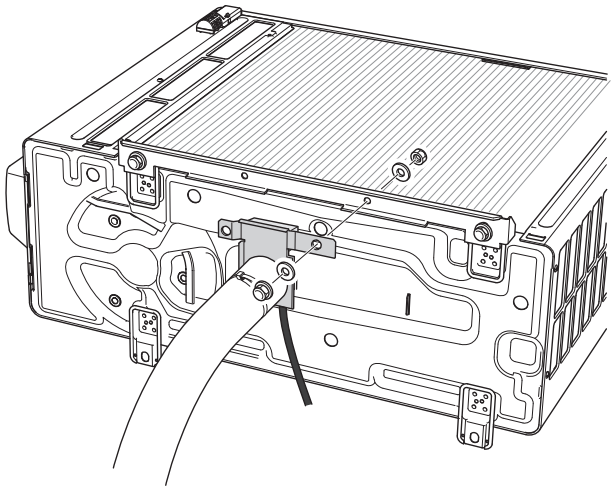
AMS 10-6



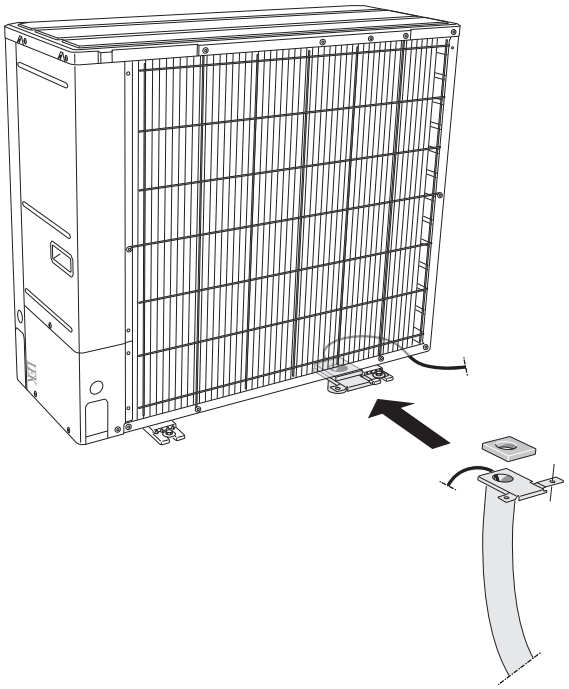


AMS 20-6

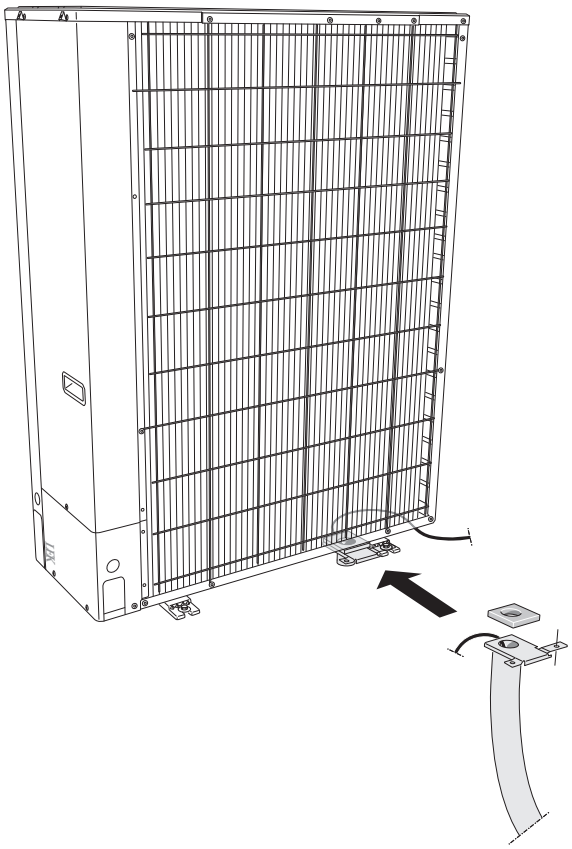




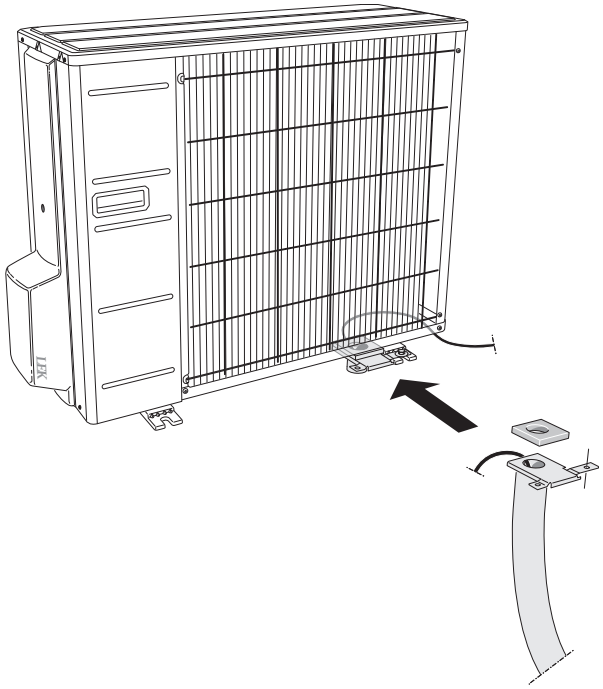
AMS 10-12



AMS 10-16

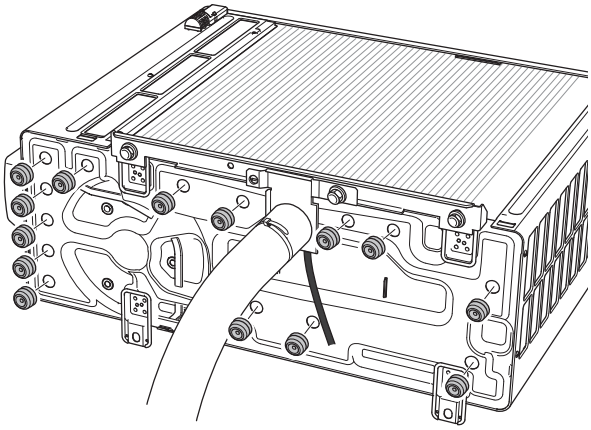


AMS 10-8, AMS 20-10

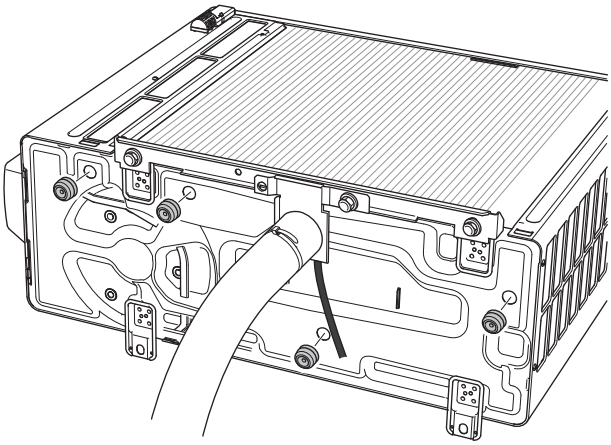


9. Install plugs on the underside of AMS 10 / AMS 20. (See image of relevant model.)

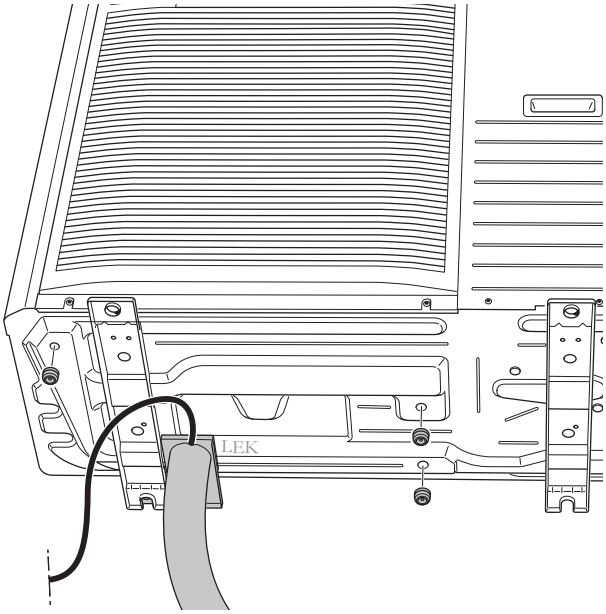
AMS 10-6



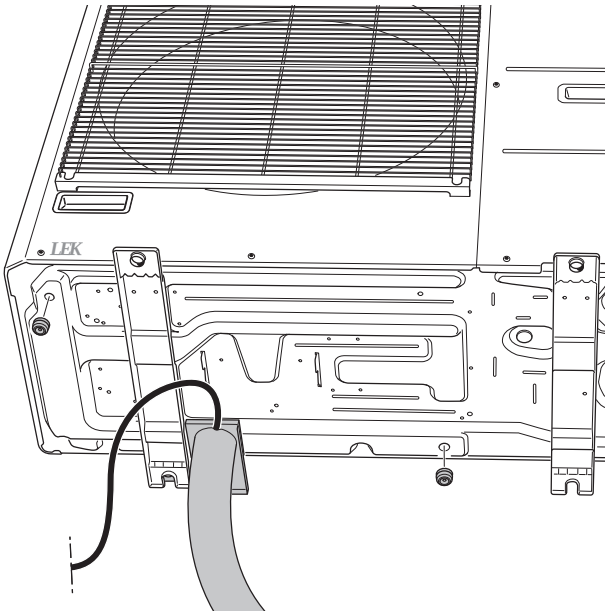
AMS 20-6



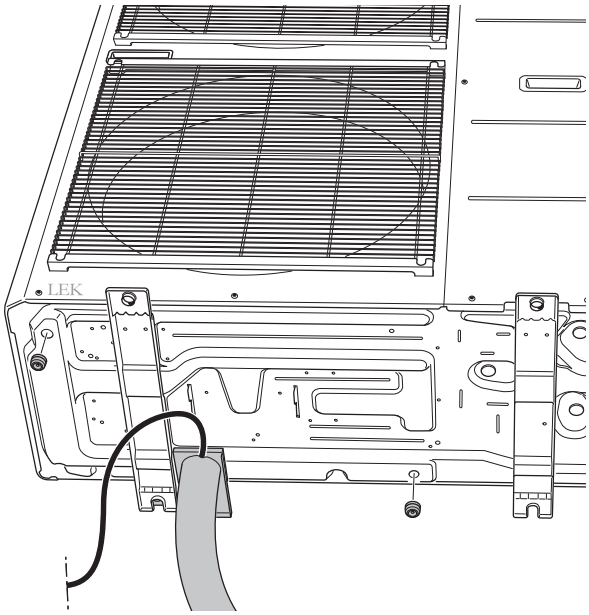
AMS 10-8, AMS 20-10



AMS 10-12

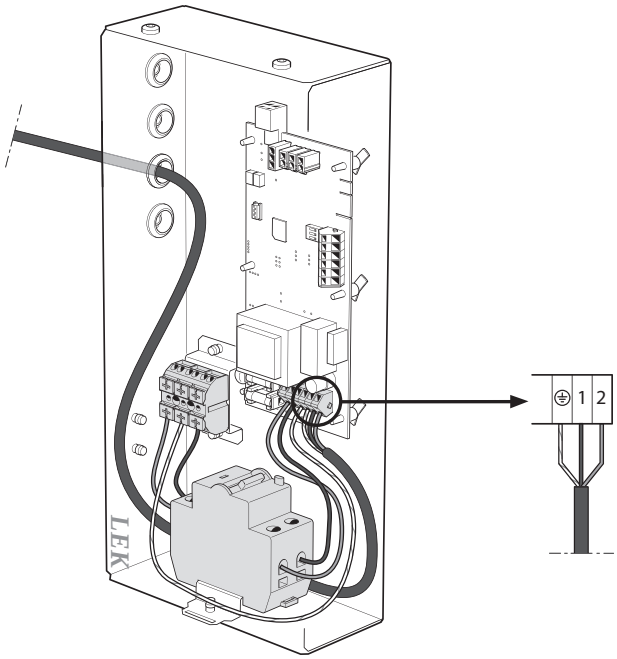


AMS 10-16



10. Mount the junction box on the wall close to AMS 10 / AMS 20.

11. Route the heating cable to the connection box and connect it to the cable from the electrical connection HBS 05 / HBS 20, as illustrated in "Electrical connection".



The figure shows the connection in HBS 05 / HBS 20.

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