Installer manual

NIBE™ F2040

8, 12, 16 kW

Air/water heat pump

IHB GB 1335-2
231844

Table of Contents

1 Important information

Safety information

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

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.

Symbols

NOTE
This symbol indicates danger to machine or person.

Caution
This symbol indicates important information about what you should observe when maintaining your installation.

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

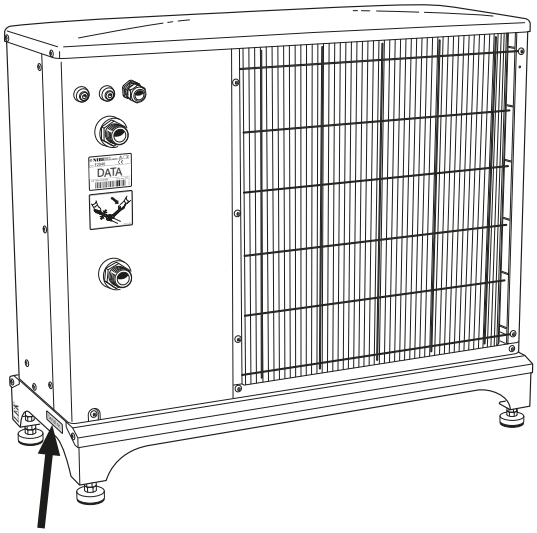
Marking

The CE marking means that NIBE ensures that the product meets all regulations that are placed on it based on relevant EU directives. The CE mark is obligatory for most products sold in the EU, regardless where they are made.

Serial number

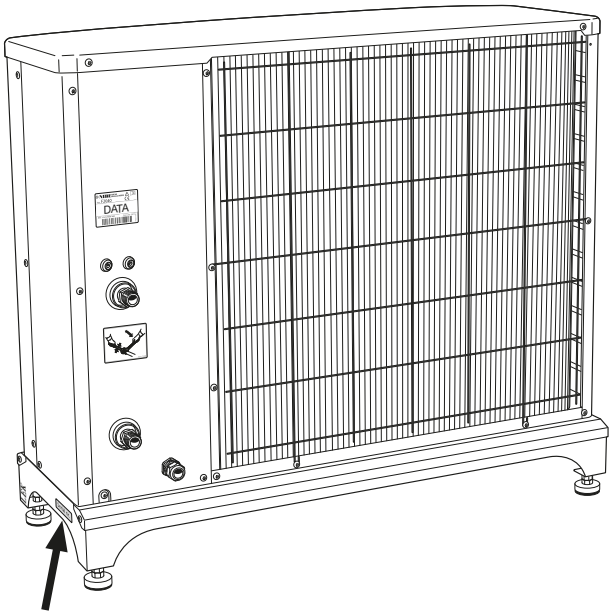
The serial number for F2040 can be found on the side of the foot.

F2040-8



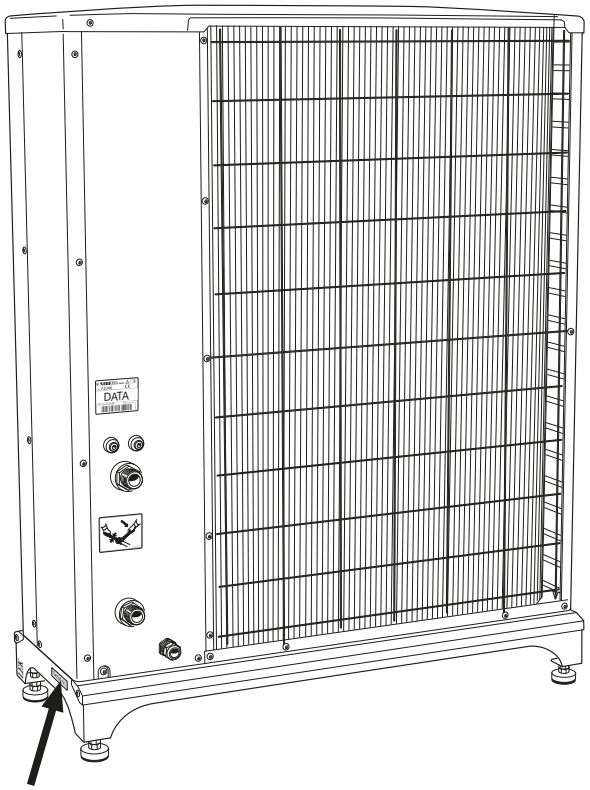
Serial number

F2040-12



Serial number

F2040-16



Serial number

Caution

Always give the product's serial number when reporting a fault.

Country specific information

Installer manual

This installer manual must be left with the customer.

Inspection of the installation

Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person. Fill in the page for information about installation data in the User manual.

✔	Description	Notes	Signature	Date
	System flushed			
	System vented			
	Particle filter			
	Shut-off and drain valve			
	Charge flow set			
	Fuses property			
	Safety breaker			
	Communication cable connected			
	F2040 addressed (only when cascade connection)			
Miscellaneous				

Contact information

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RU © **"EVAN"** 17, per. Boynovskiy, Nizhny Novgorod

Tel./fax +7 831 419 57 06 E-mail: info@evan.ru www.nibe-evan.ru

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For countries not mention in this list, please contact Nibe Sweden or check www.nibe.eu for more information.

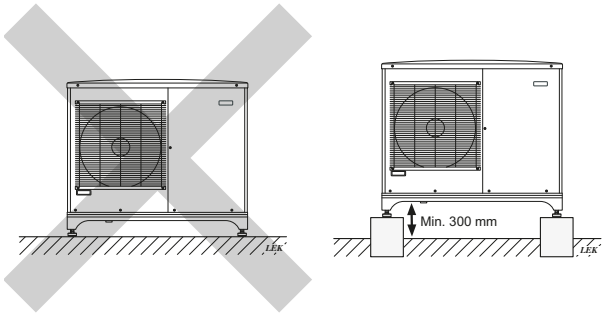
2 Delivery and handling

Transport and storage

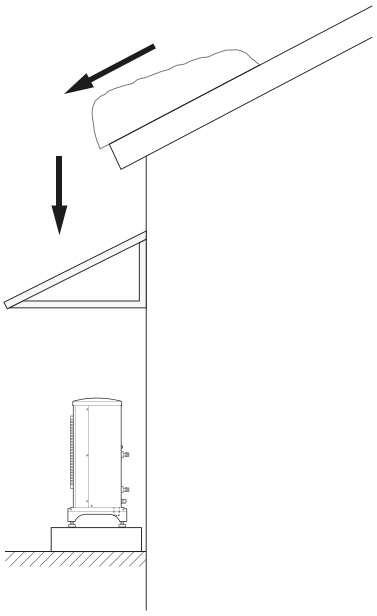
F2040 must be transported and stored vertically.

Assembly

- Place F2040 outdoors on a solid level base that can take the weight, preferably a concrete foundation. If concrete slabs are used they must rest on asphalt or shingle.
- The concrete foundation or slabs must be positioned so that the lower edge of the evaporator is at the level of the average local snow depth, although a minimum of 300 mm.
- The F2040 should not be positioned next to sensitive walls, for example, next to a bedroom.
- Also ensure that the placement does not inconvenience the neighbours.
- F2040 must not be placed so that recirculation of the outdoor air can occur. This causes lower output and impaired efficiency.
- The evaporator should be sheltered from direct wind. Place F2040 protected from wind against the evaporator.
- Large amounts of condensation water as well as melt water from defrosting can be produced. Condensation water must be led off to a drain or similar (see page 7).
- Care must be exercised so that the heat pump is not scratched during installation.



Do not place F2040 directly on the lawn or other non solid surface.



If there is a risk of snow slip from roof, a protective roof or cover must be erected to protect the heat pump, pipes and wiring.

Condensation run off

Condensation water trough

The condensation water trough is used to collect and lead away condensation water from the heat pump.

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.

NOTE

Pipe with heating cable for draining the condensation water trough are not included.

NOTE

To ensure this function the accessory KVR 10 should be used.

NOTE

The electrical installation and wiring must be carried out under the supervision of an authorised electrician.

NOTE

Self regulating heating cables must not be connected.

Caution

If none of the recommended alternatives is used good lead off of condensation water must be assured.

- The condensation water (up to 50 litres/day) collected in the trough should be routed by pipe to an appropriate drain, it is recommended that the shortest outdoor stretch possible is used.
- The section of the pipe that can be affected by frost must be heated by the heating cable to prevent freezing.
- Route the pipe downward from F2040.
- The outlet of the condensation water pipe must be at a depth that is frost free or alternatively indoors (with reservation for local ordinances and regulations).
- Use a water trap for installations where air circulation may occur in the condensation water pipe.
- The insulation must be tight against the bottom of the condensation water trough.

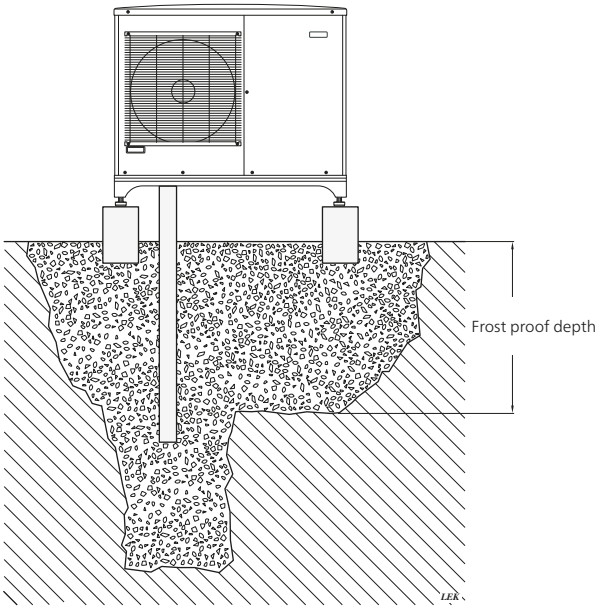
Drain pan heater, control

The drain pan heater is supplied with power when one of the following conditions is met:

1. Operating mode "Heating" or "Hot water" is activated.
2. The compressor has been in operation for at least 30 minutes after last start.
3. The ambient temperature is lower than 1 C.

Recommended alternatives

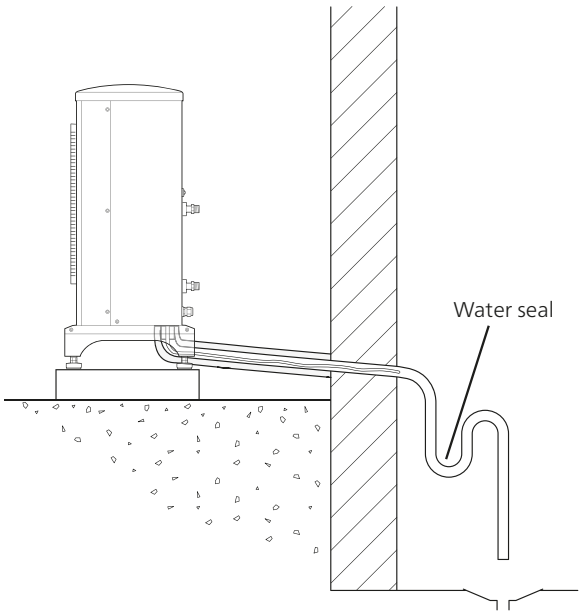
Stone caisson



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.

Drain indoors

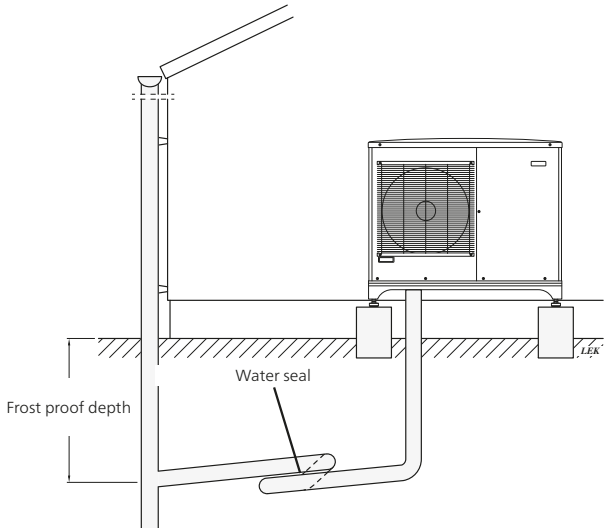


The condensation water is lead to an indoor drain (subject to local rules and regulations).

Route the pipe downward from F2040.

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

Gutter drainage



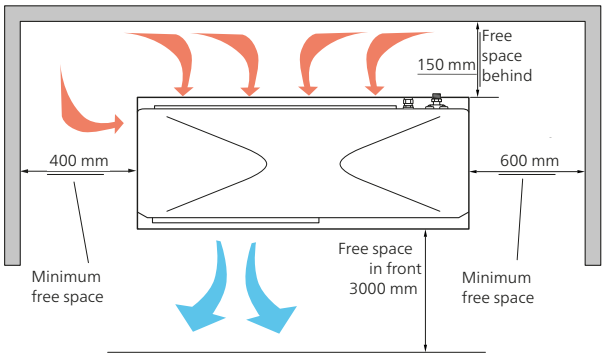
The outlet of the condensation water pipe must be at frost free depth.

Route the pipe downward from F2040.

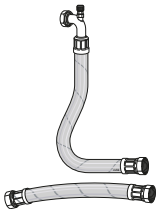
The condensation water pipe must have a water seal to prevent air circulation in the pipe.

Installation area

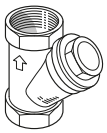
The distance between F2040 and the house wall must be at least 150 mm. Clearance in front of F2040 should be at least one metre.



Supplied components



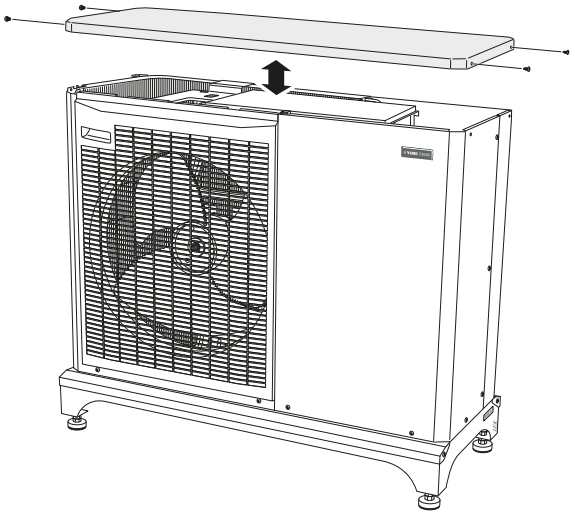
2 flexible hoses (R25) with 4 seals

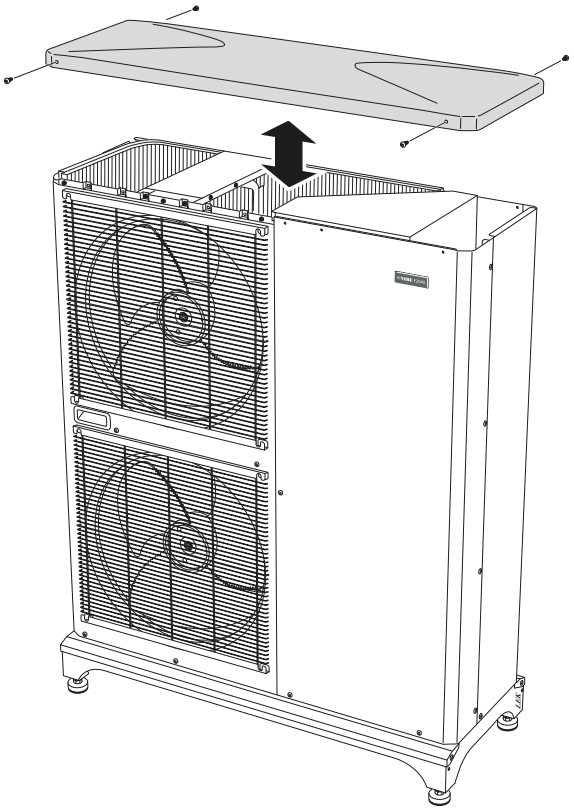


Particle filter R25 (HQ1).

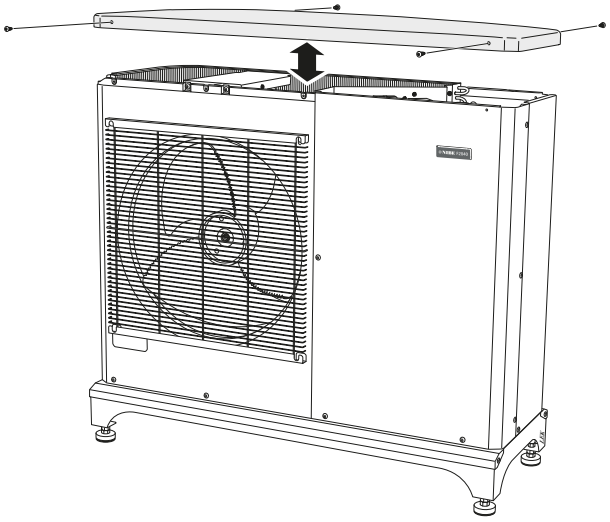
Removing the covers

F2040-8



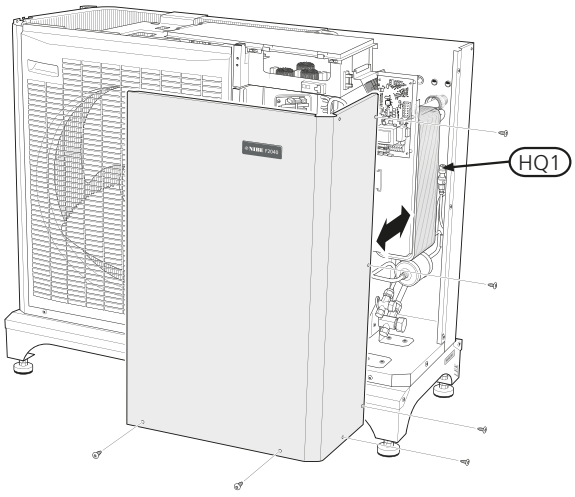


F2040-12/F2040-16



Removing the front panel

F2040-8



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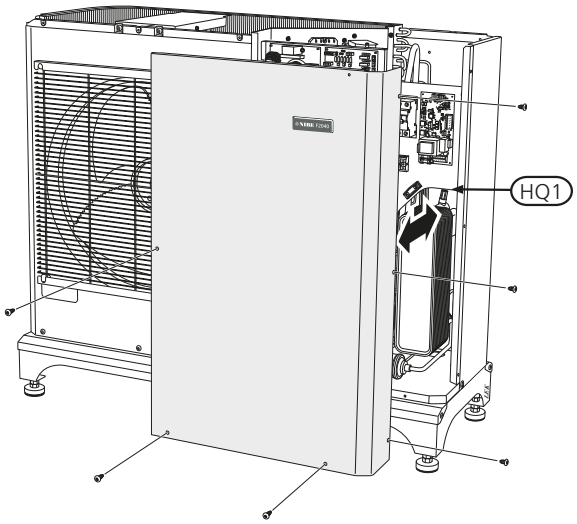

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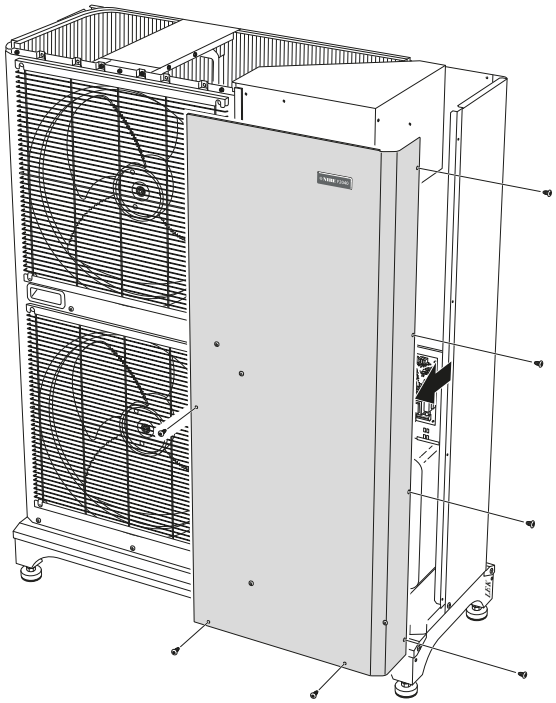
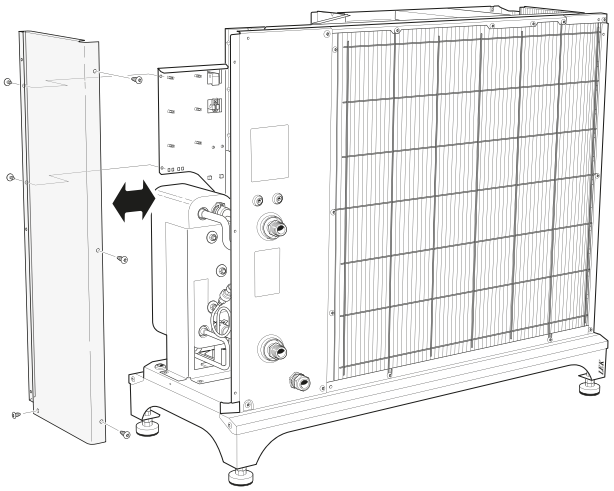


Removing the side panel

F2040-12



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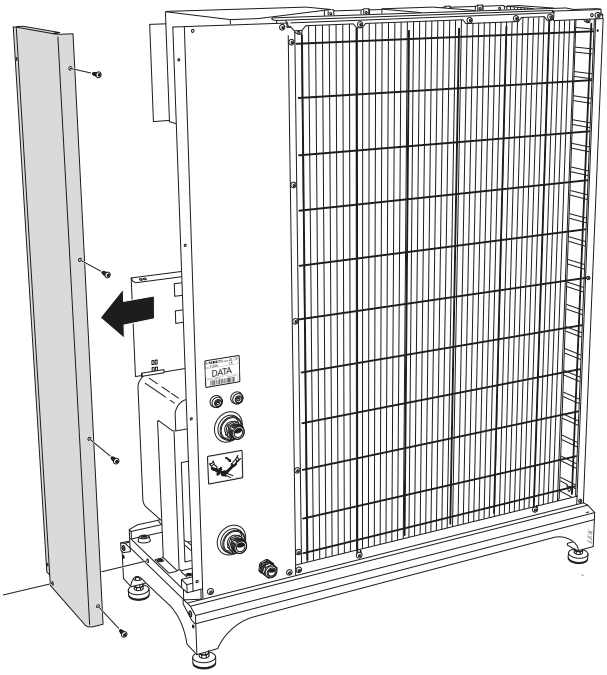
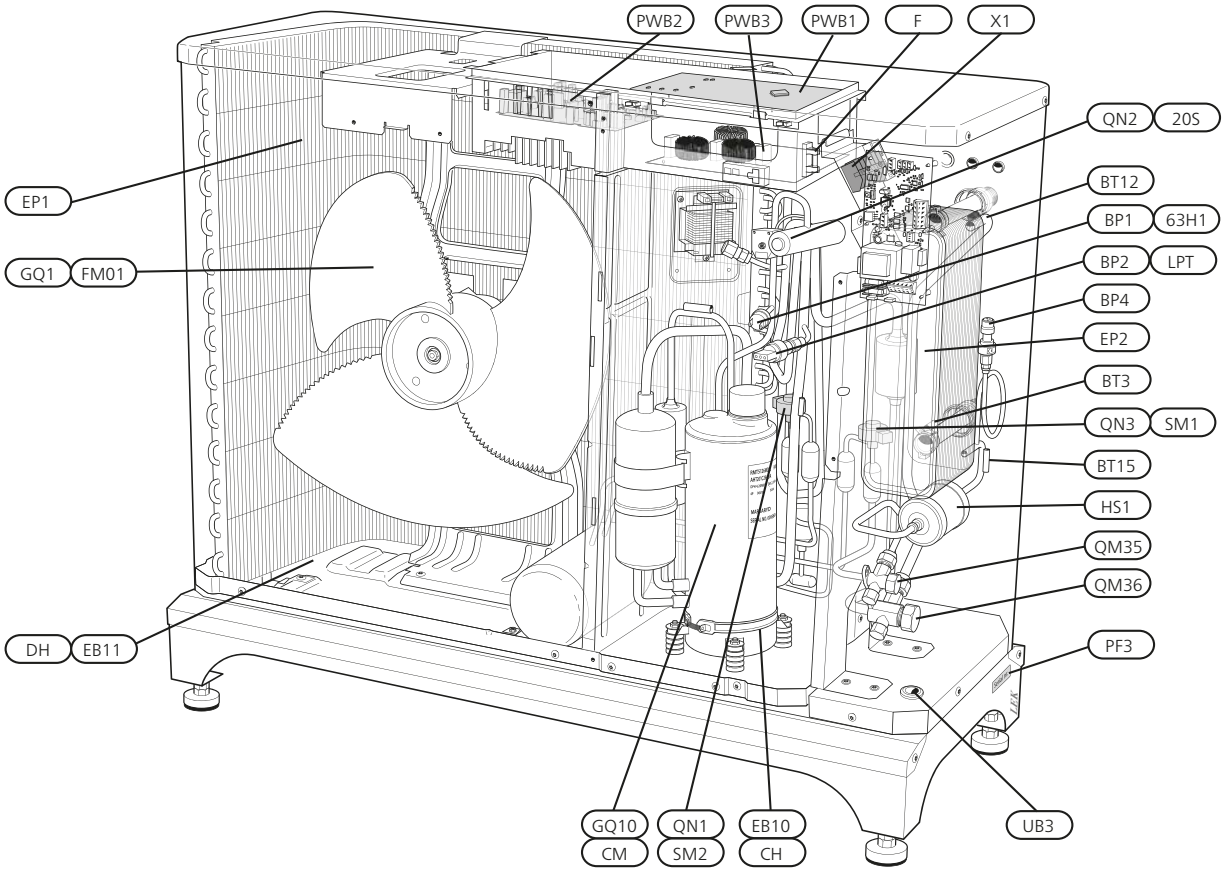
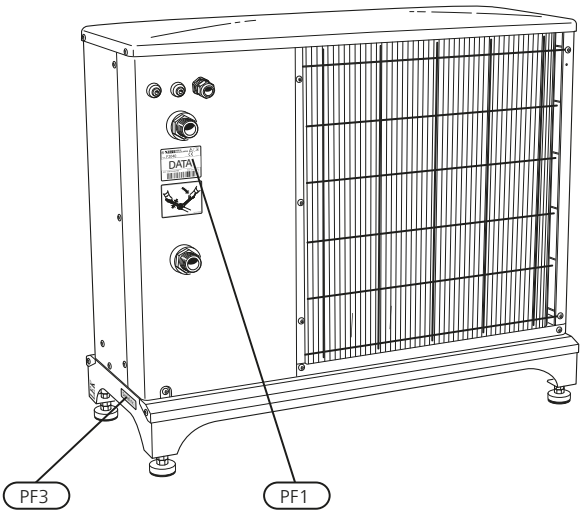


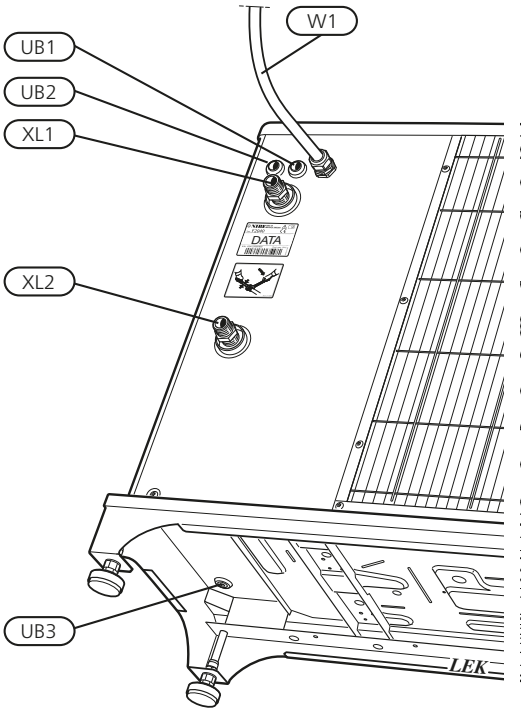
3 The heat pump design

General

F2040-8







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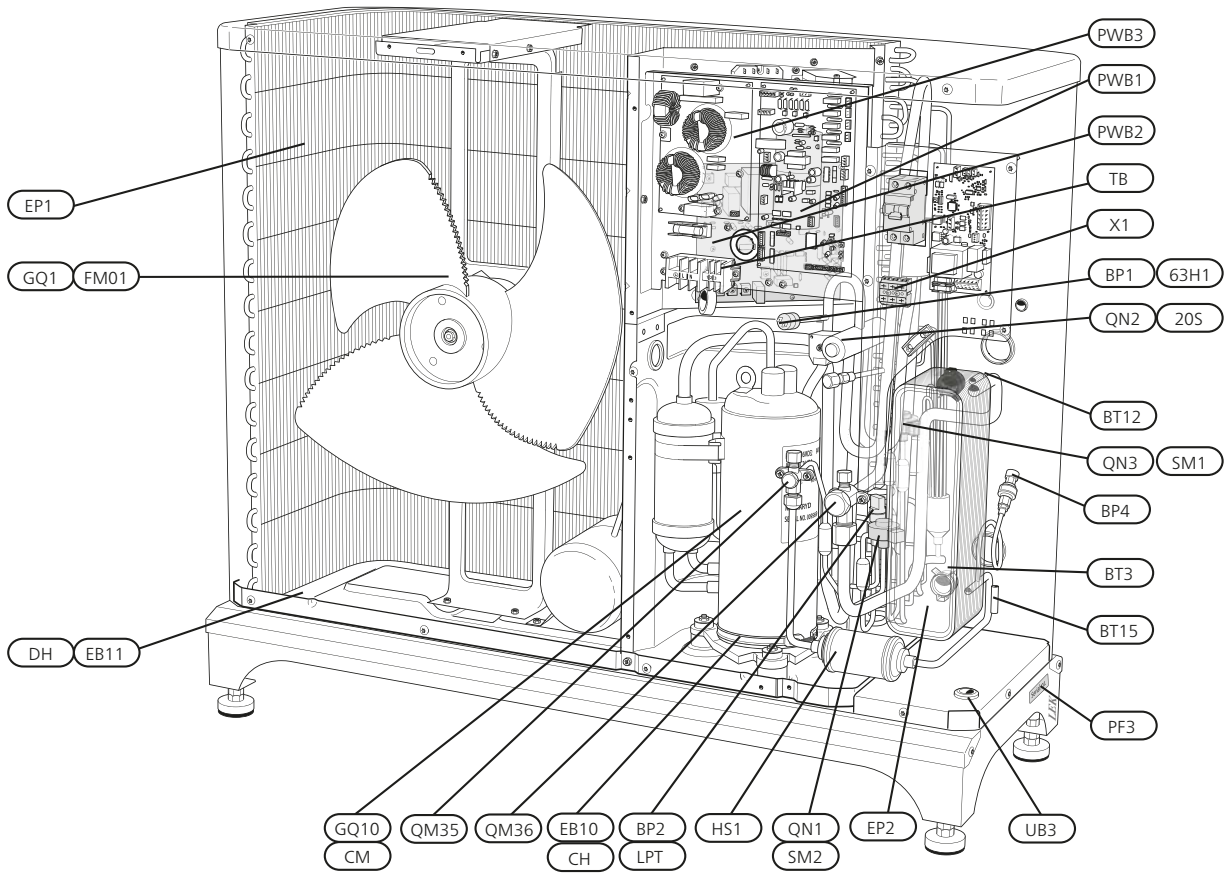
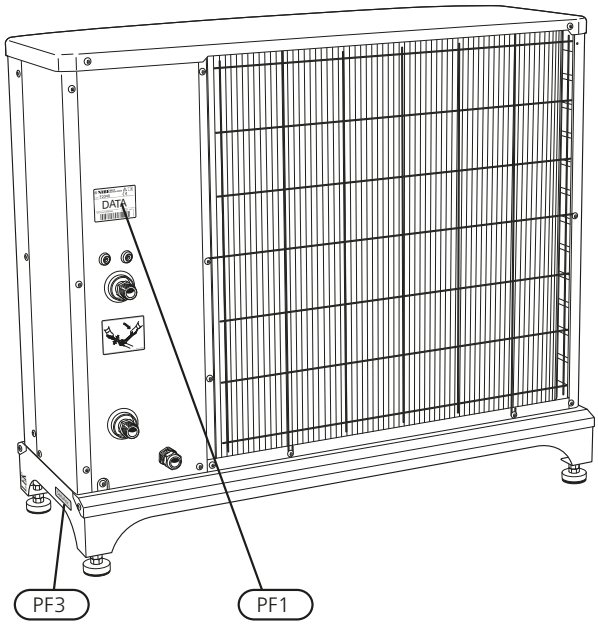

PWB3
PWB1
PWB2
TB
X1
BP1
63H1
QN2
20S
BT12
QN3
SM1
BP4
BT3
BT15
PF3
EP1
GQ1
FM01
DH
EB11
GQ10
CM
QM35
QM36
EB10
CH
BP2
LPT
HS1
QN1
SM2
EP2
UB3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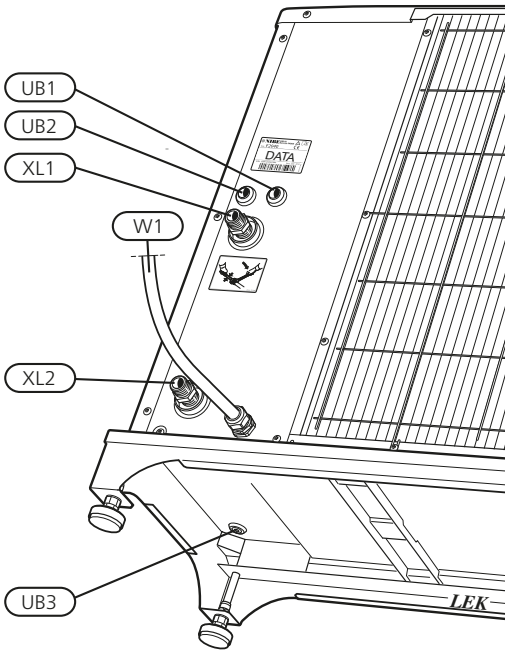
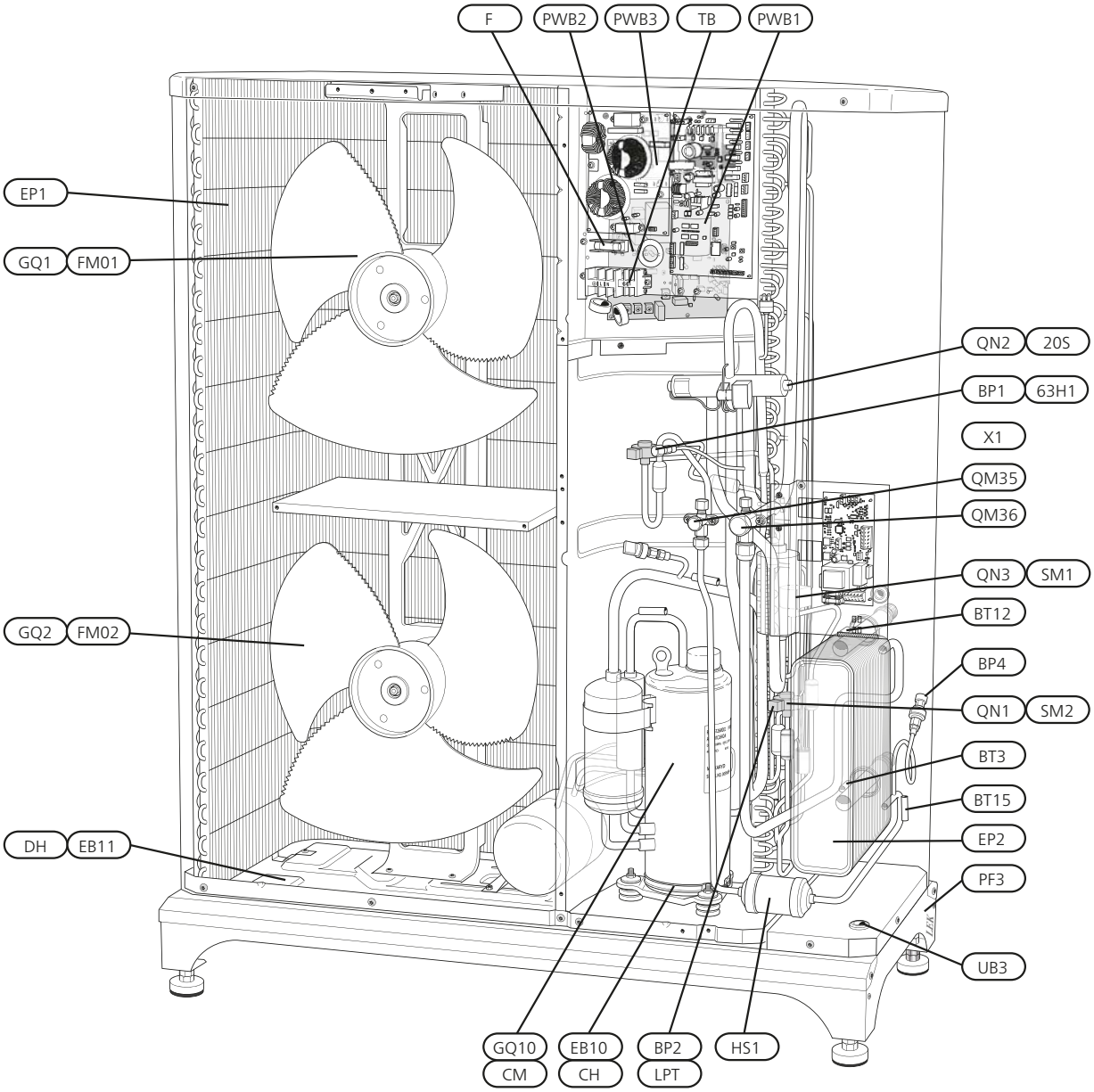
PF3
PF1


UB1
UB2
XL1
W1
XL2
UB3
DATA
LEK

F2040-16


F
PWB2
PWB3
TB
PWB1
EP1
GQ1
FM01
QN2
20S
BP1
63H1
X1
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QM36
QN3
SM1
BT12
GQ2
FM02
BP4
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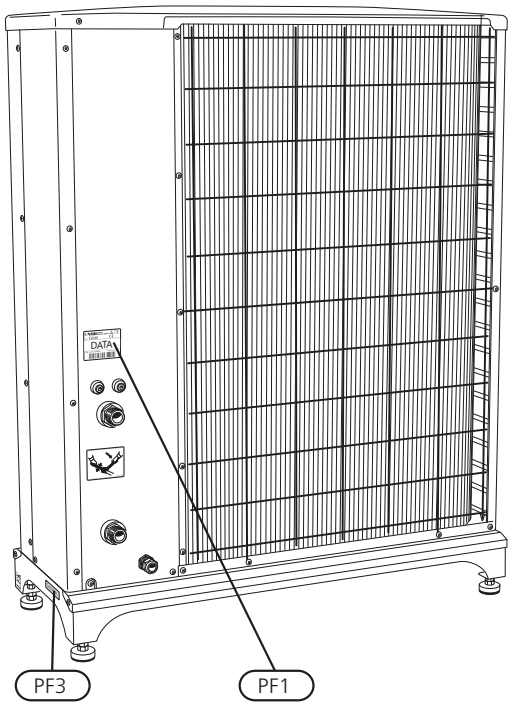
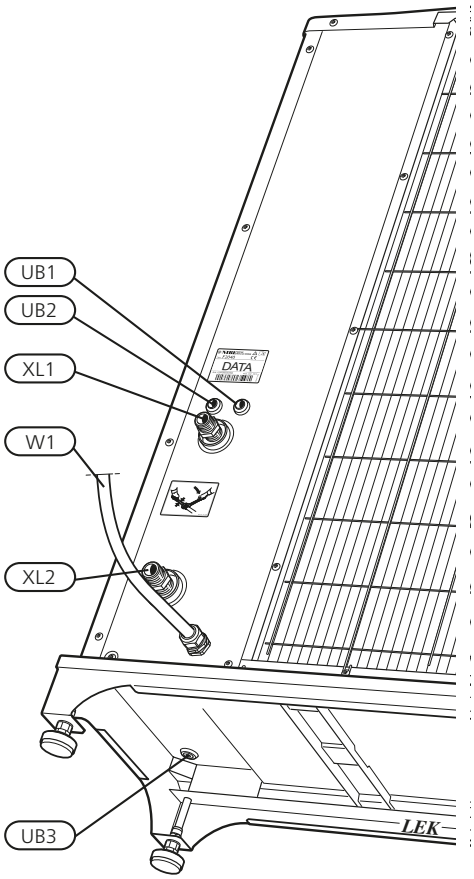
HS1


PF3
PF1


UB1
UB2
XL1
W1
XL2
UB3

List of components F2040-8, -12, -16

Pipe connections

QM35	Service valve, liquid side
QM36	Service valve, gas side
XL1	Connection, heating medium out of F2040, G3/4" (Ø22 mm)
XL2	Connection, heating medium in to F2040, G3/4" (Ø22 mm)

Sensors etc.

BP1 (63H1)	High pressure pressostat
BT3	Temperature sensor, heating medium return line
BT12	Temperature sensor, condenser supply line
BT15	Temperature sensor, fluid pipe
BP2 (LPT)	Low pressure transmitter
BP4	High pressure sensor

Electrical components

AA23	Communication board
AA23-S2	Dipswitch communication card
AA23-X1	Terminal block, incoming supply
AA23-X4	Terminal block, communication
EB10 (CH)	Compressor heater
EB11 (DH)	Drip tray heater
F	Main fuse compressor unit
F3	Fuse for external heating cable (250 mA), max 45 W.
GQ1 (FM01)	Fan
GQ2 (FM02)	Fan
PWB1	Control board
PWB2	Inverter board
PWB3	Filter board
TB	Terminal block, electricity and communication
X1	Terminal block incoming

Cooling components

QN2 (20S)	4-way valve
GQ10 (CM)	Compressor
QN3 (SM1)	Expansion valve, cooling
QN1 (SM2)	Expansion valve, heating
EP1	Evaporator (air coil, copper pipe with aluminium flange)
EP2	Condenser (ACH 30, copper/stainless steel)
HS1	Drying filter

Miscellaneous

PF1	Type plate
PF3	Serial number
UB1	Cable gland, incoming supply
UB2	Cable grommet, communication
UB3	Cable grommet, heating cable (EB14)
W1	Cable, incoming supply

Electrical connection

Electrical components

AA23	Communication board
AA23-S2	Dipswitch communication card
AA23-X1	Terminal block, incoming supply
AA23-X4	Terminal block, communication
EB10 (CH)	Compressor heater
EB11 (DH)	Drip tray heater
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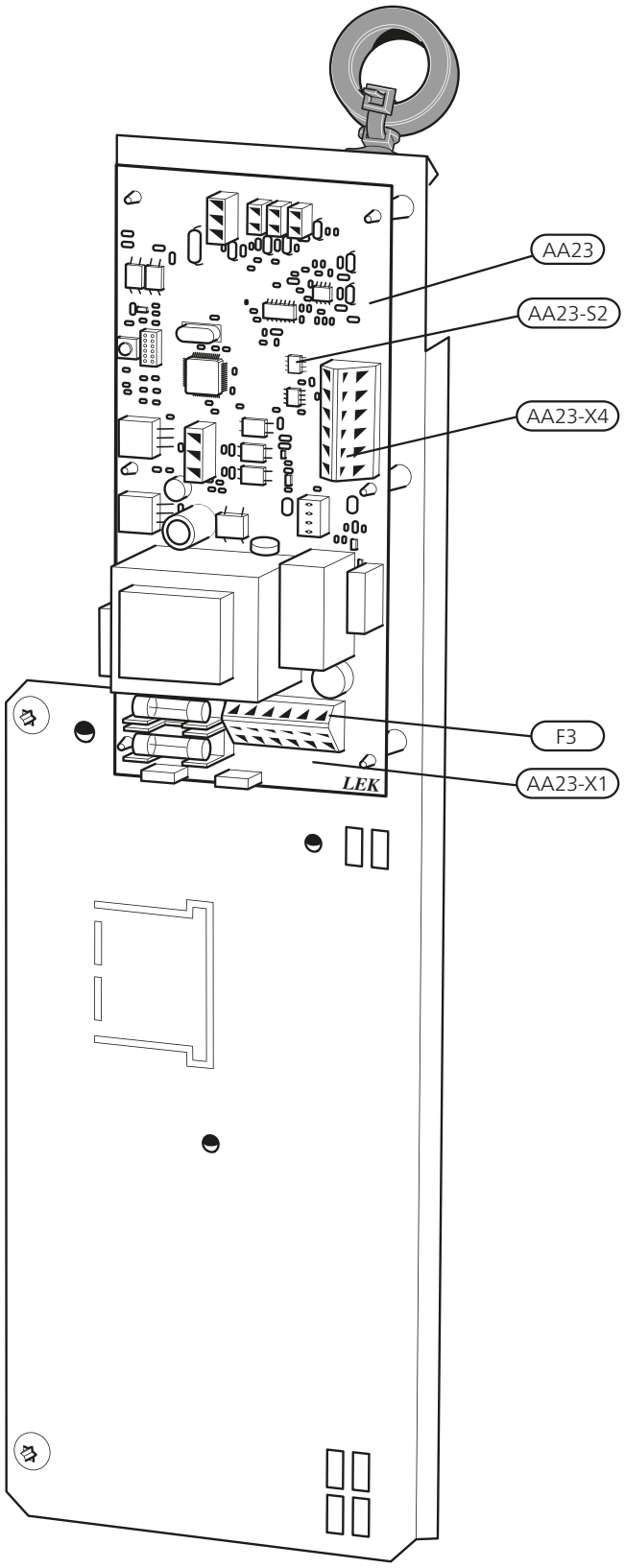
GQ2 (FM02)	Fan
PWB1	Control board
PWB2	Inverter board
PWB3	Filter board
TB	Terminal block, electricity and communication
X1	Terminal block incoming

F2040-8



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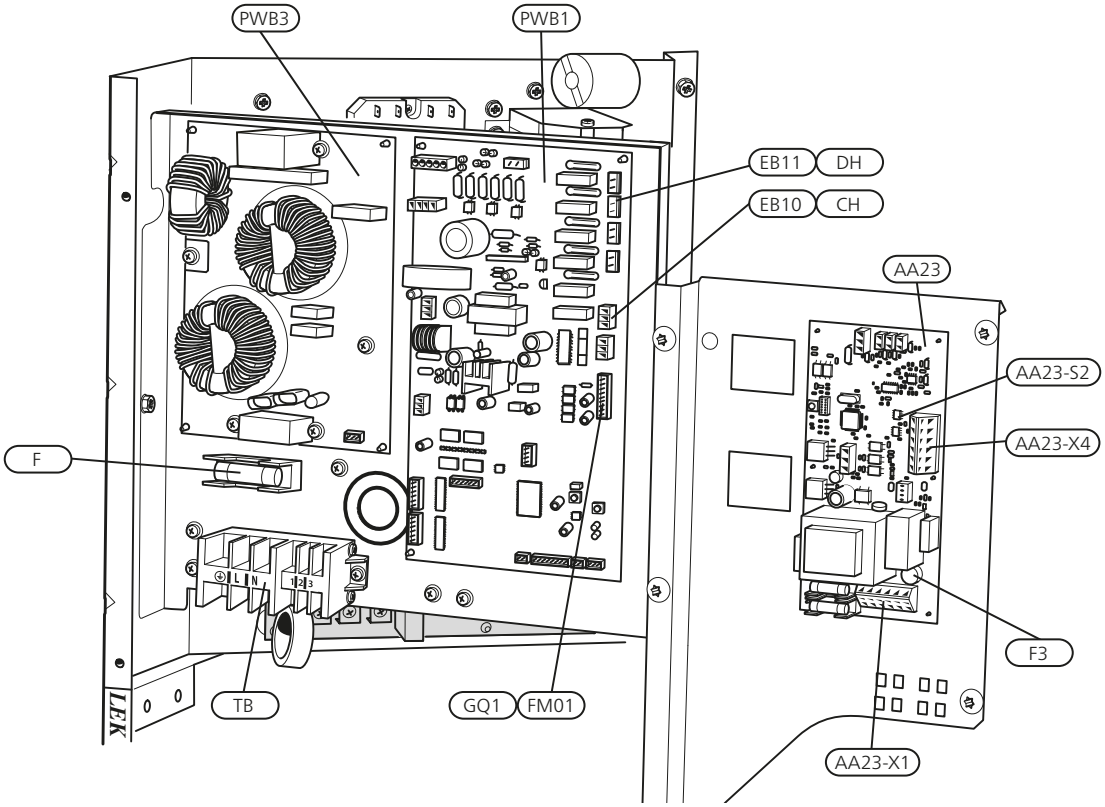
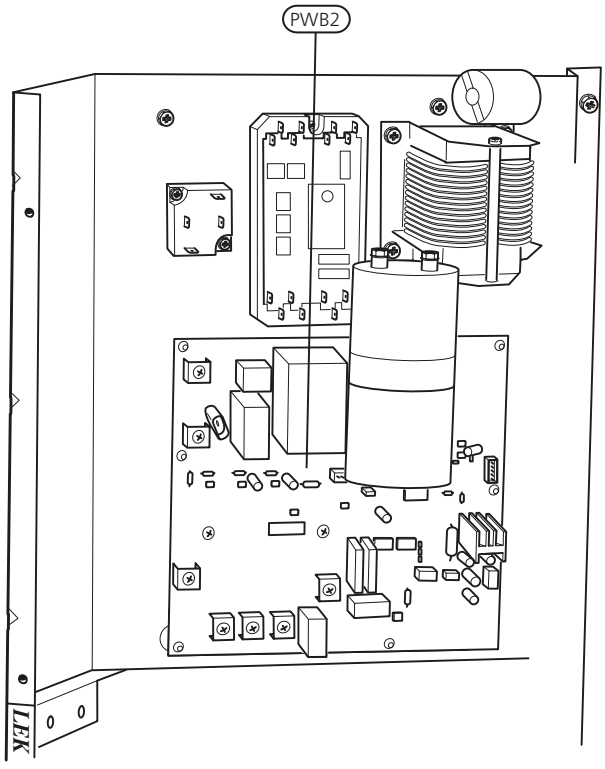

PWB3
PWB1
EB11
DH
EB10
CH
AA23
AA23-S2
AA23-X4
F
F3
TB
GQ1
FM01
AA23-X1
LIN
LEK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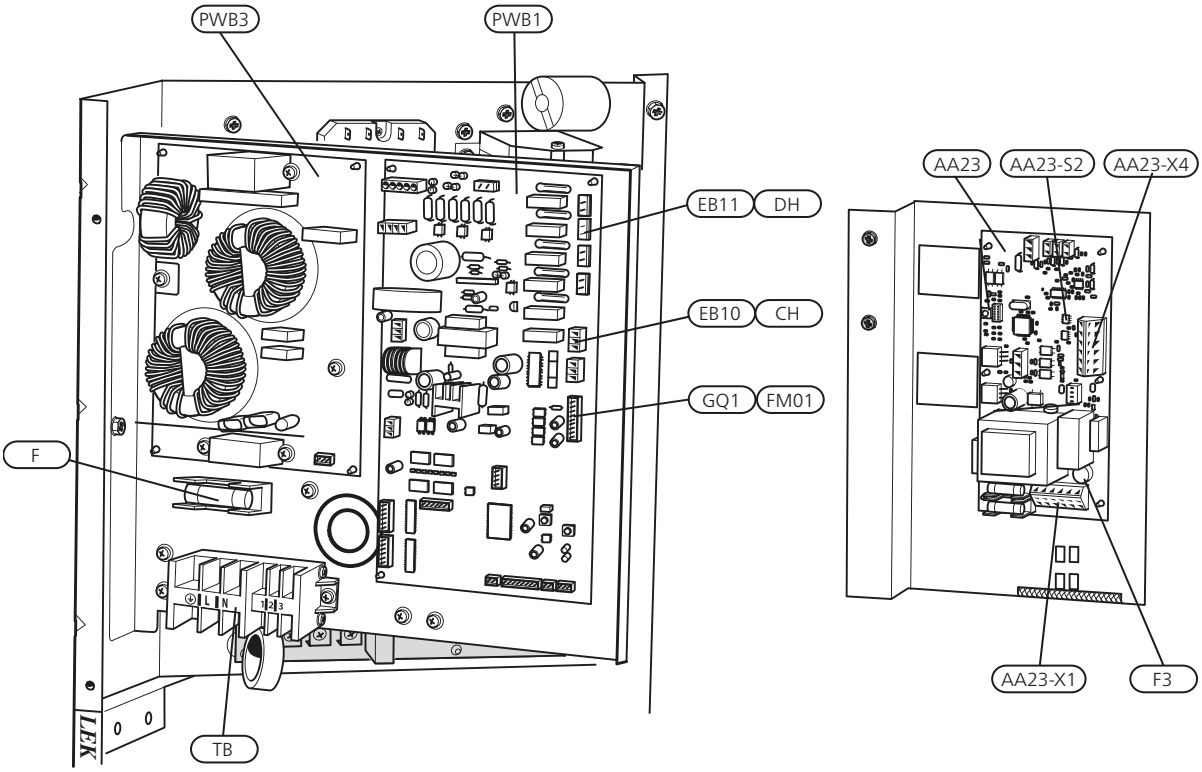
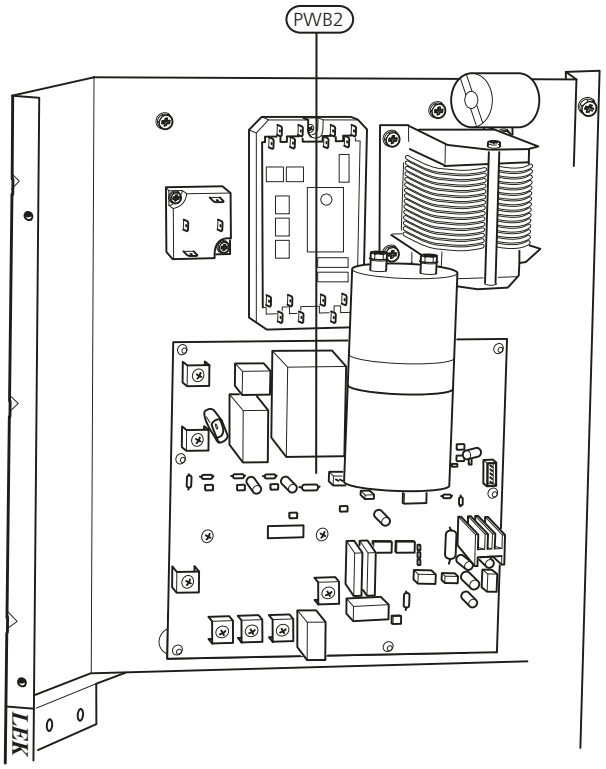
LEK

F2040-16


PWB3
PWB1
EB11
DH
EB10
CH
GQ1
FM01
F
TB
AA23
AA23-S2
AA23-X4
AA23-X1
F3


PWB2

4 Pipe connections

General

Pipe installation must be carried out in accordance with current norms and directives.

F2040 can only operate up to a return temperature of about 55 °C and an outgoing temperature of about 58 °C from the heat pump.

F2040 is not equipped with external shut off valves on the water side; these must be installed to facilitate any future servicing. The return temperature is limited by the return line sensor.

Water volumes

When docking with F2040 free flow in the climate system is recommended for correct heat transfer. This can be achieved by use of a bypass valve. If free flow cannot be ensured, it is recommended that a buffer tank (NIBE UKV) is installed.

Following water volumes are recommended

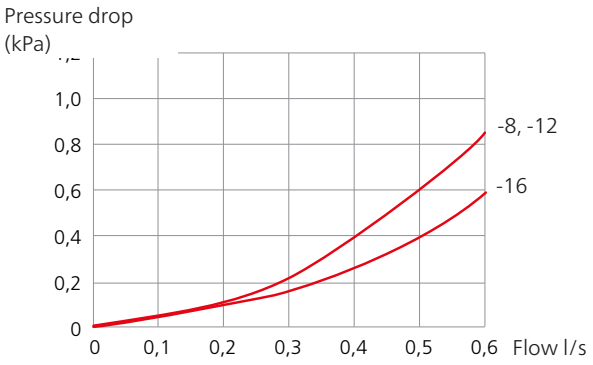
F2040	-8	-12	-16
Minimum volume, climate system during heating/cooling	50 l	80 l	150 l
Minimum volume, climate system during under floor cooling	80 l	100 l	150 l

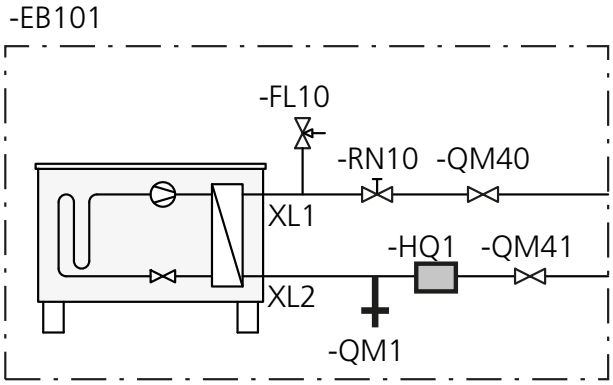
NOTE

The pipe work must be flushed before the heat pump is connected, so that any contaminants do not damage the components parts.

Pipe coupling heating medium circuit

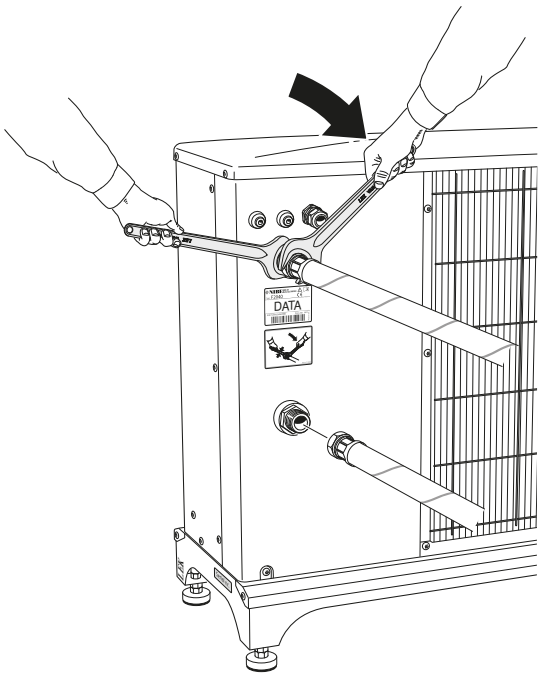
- F2040 can be connected directly to the heating system see the section "Docking" or according to one of the system solutions that can be downloaded from the website www.nibe.eu.
- The heat pump must be vented by the upper connection (QM20) using the venting nipple on the enclosed flexible hose.
- Install the supplied particle filter (HQ1) before the inlet, i.e. the connection (XL2, HM-in) on F2040.
- All outdoor pipes must be thermally insulated with at least 19mm thick pipe insulation.
- Install shutoff valves (QM31 and QM32) and drain valves (QM1) so that F2040 can be emptied in the event of prolonged power failures. Shutoff - (QM31 and QM32) and drain valve (QM31) are not part of the delivery



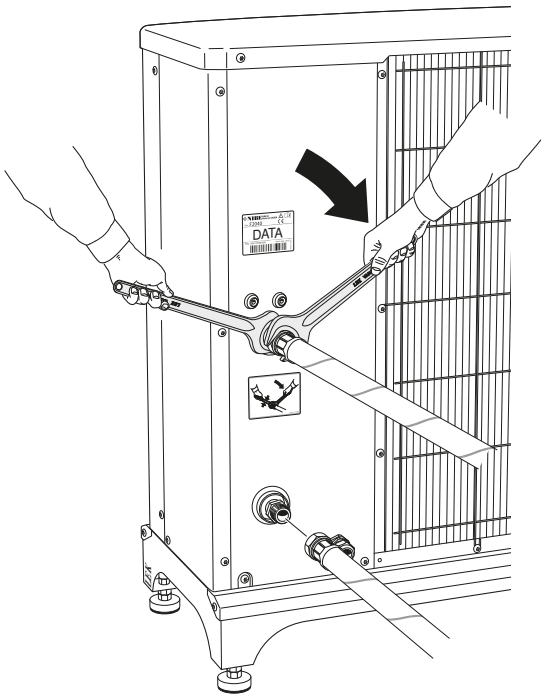


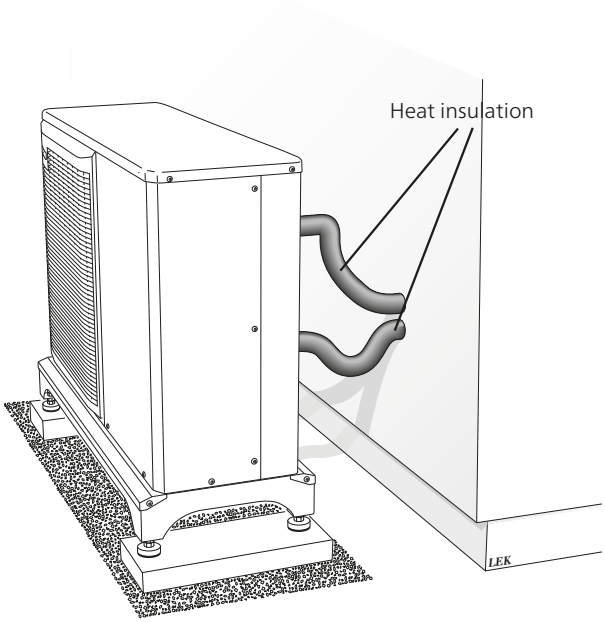
EB101	**Heat pump**
FL10	Safety valve
HQ1	Particle filter
RN10	Trim valve
QM1	Tapping valve
QM40	Shut-off valve
QM41	Shut-off valve

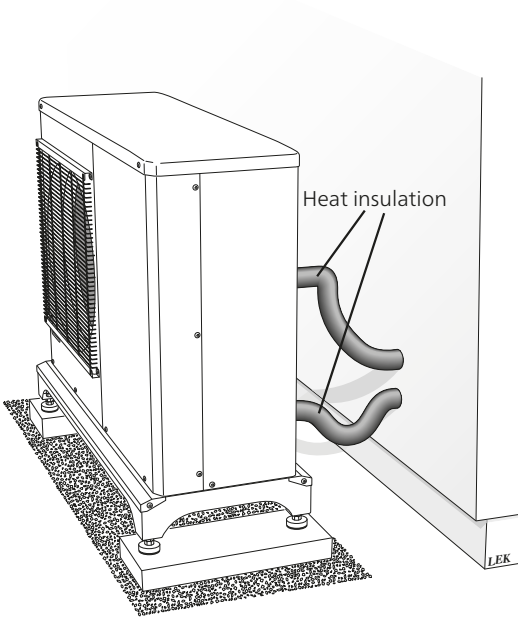
F2040-8



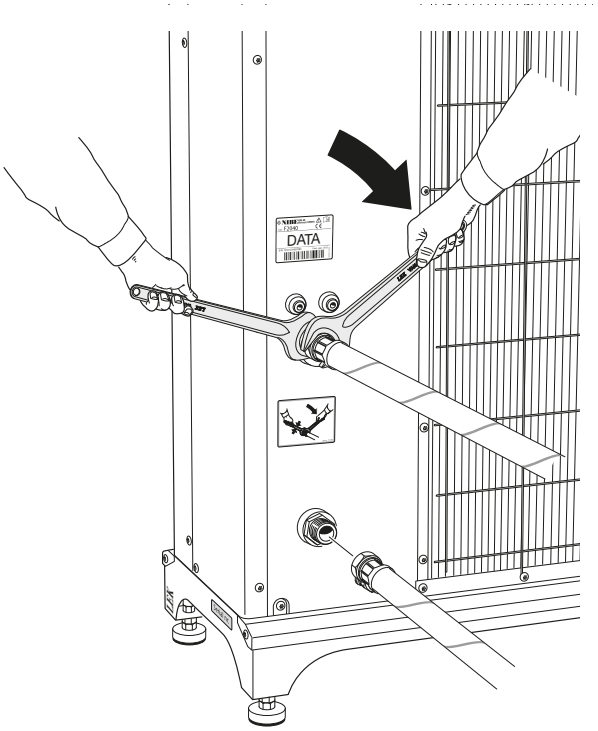
F2040-12

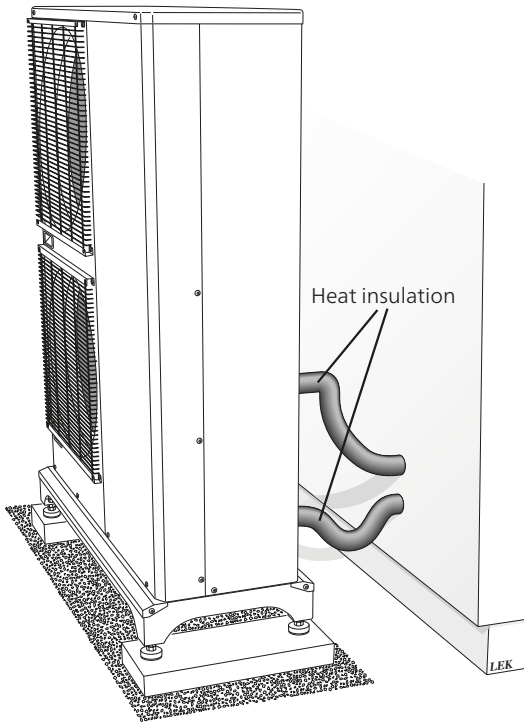






F2040-16





Docking alternatives

F2040 can be installed in several different ways. The requisite safety equipment must be installed in accordance with current regulations for all docked options.

See www.nibe.eu for more docking options.

Connecting accessories

Instructions for connecting accessories are in the installation instructions provided for the respective accessory. See page 38 for the list of the accessories that can be used with F2040.

5 Electrical connections

General

- A heat pump must not be connected without the permission of the electricity supplier and must be connected under the supervision of a qualified electrician.
- If a miniature circuit breaker is used this should have motor characteristic "C" (compressor operation). For MCB size see "Technical Specifications".
- F2040 does not include a circuit breaker on the incoming power supply. The heat pump's supply cable (W1) must be connected to a circuit-breaker with at least a 3 mm breaking gap. When the building is equipped with an earth-fault breaker the heat pump should be equipped with a separate one. Incoming supply must be 230 V 50Hz via distribution boards with fuses.
- If an insulation test is to be carried out in the building, disconnect the heat pump.
- Communication cable (W2) is inserted from the rear side through UB2.
- Connect communication cable (W2) from terminal block (AA23-X4) to the indoor section.

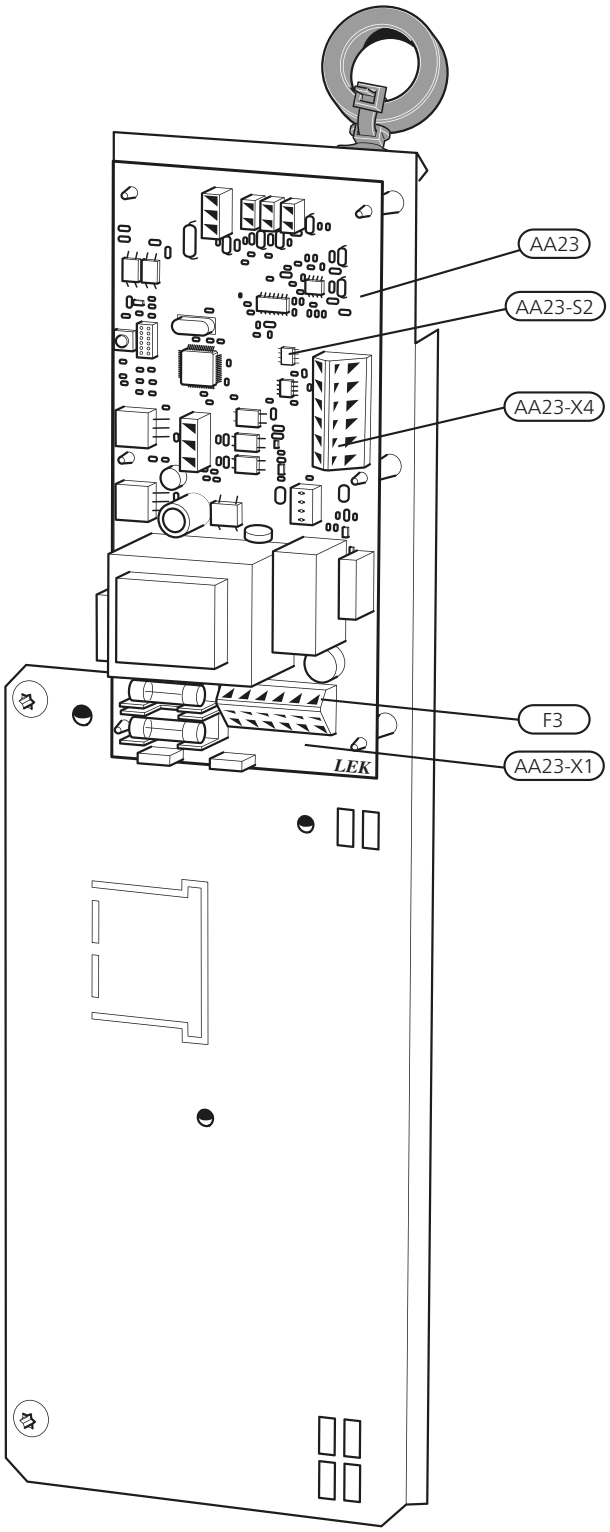
NOTE

Electrical installation and service must be carried out under the supervision of a qualified electrician. Electrical installation and wiring must be carried out in accordance with the stipulations in force.

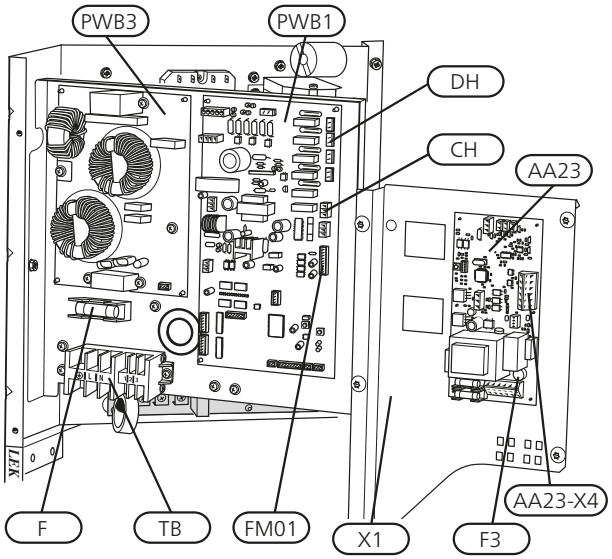
NOTE

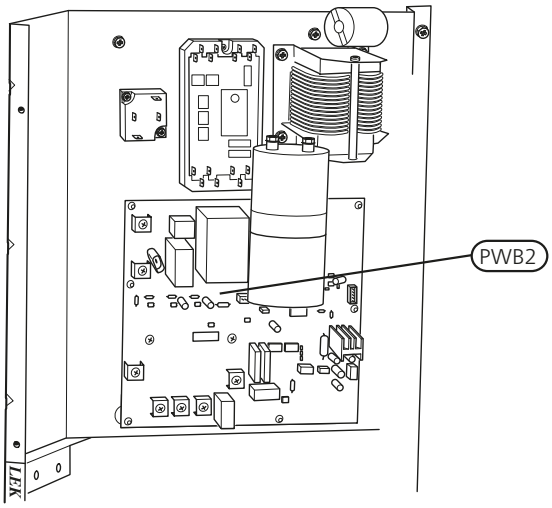
The external control must be taken into consideration when connecting.

F2040-8

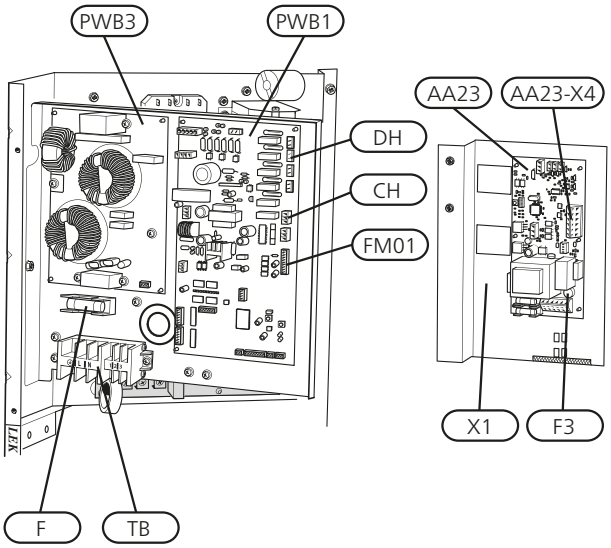


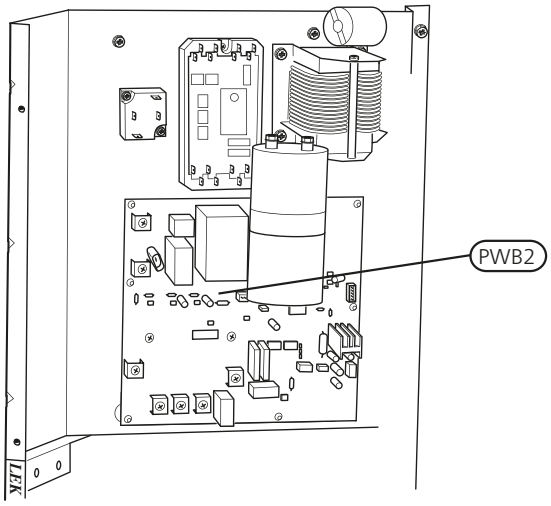
F2040-12





F2040-16





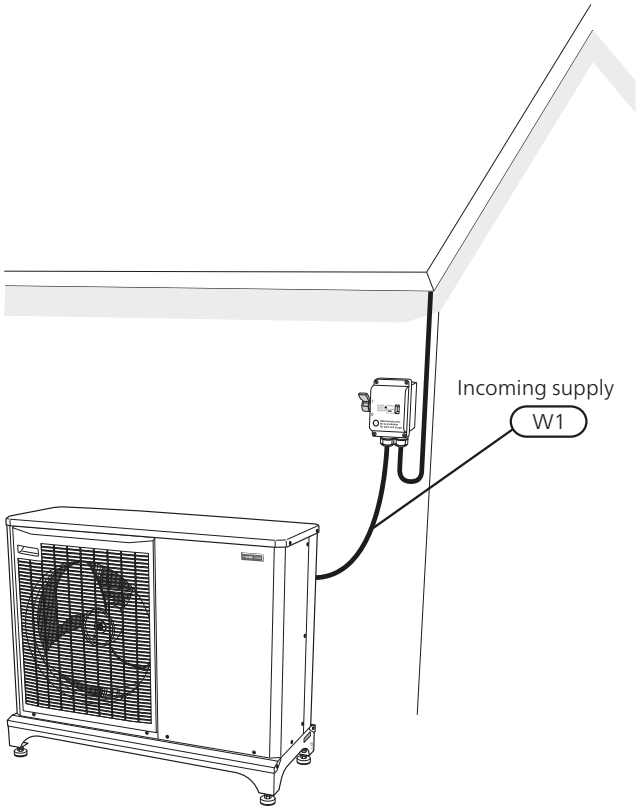
Connections

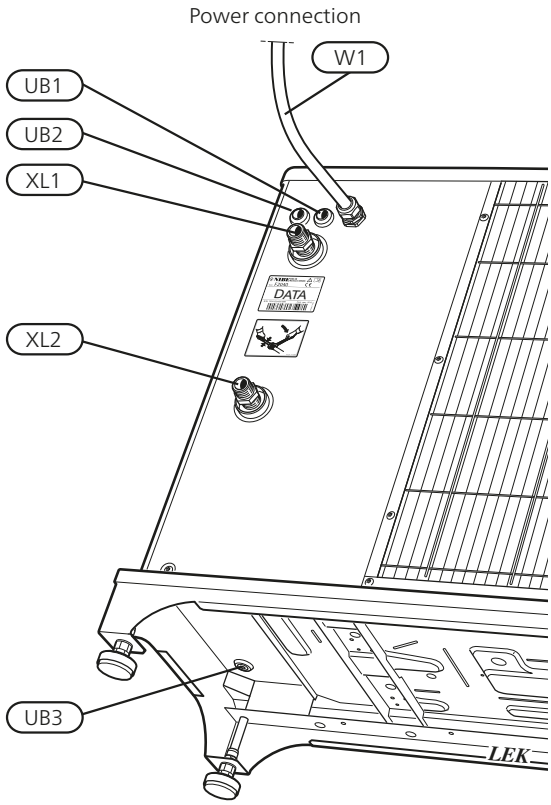
NOTE

To prevent interference, unscreened communication and/or sensor to external connections cables must not be laid closer than 20 cm to high voltage cables when cable routing.

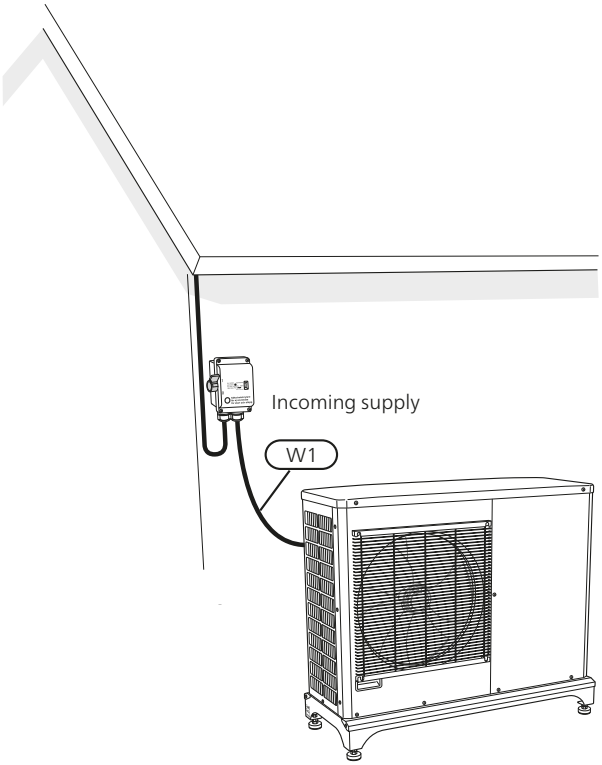
Power connection

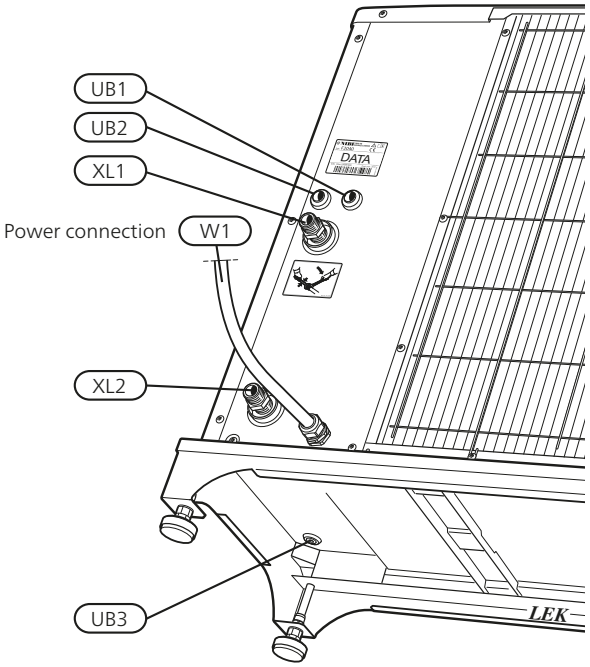
F2040-8



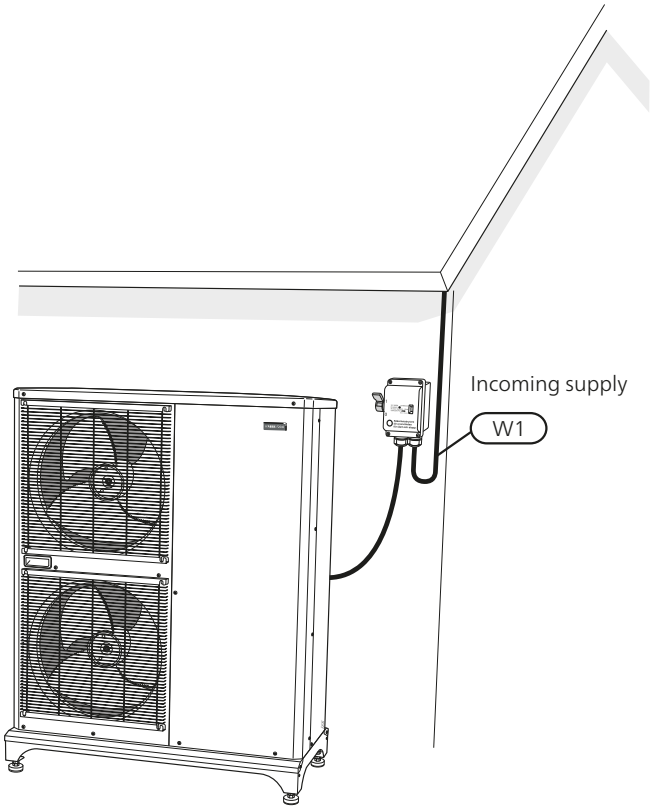


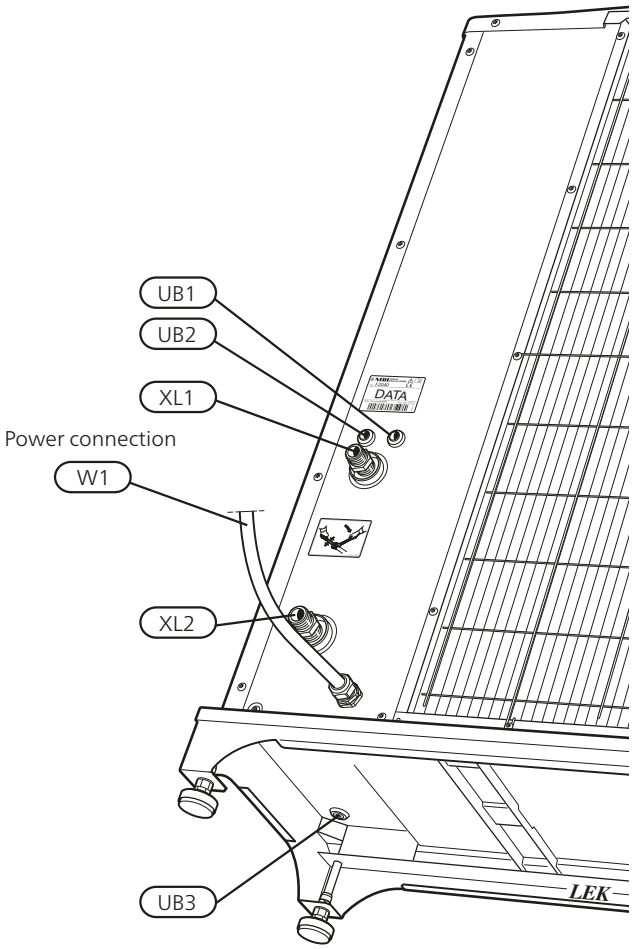
F2040-12


Incoming supply
W1


UB1
UB2
XL1
Power connection
W1
XL2
UB3
DATA
LEK

F2040-16





Incoming supply cable (W1) is supplied and factory connected to terminal block X1. Approx. 1.8 m cable is accessible outside the heat pump.

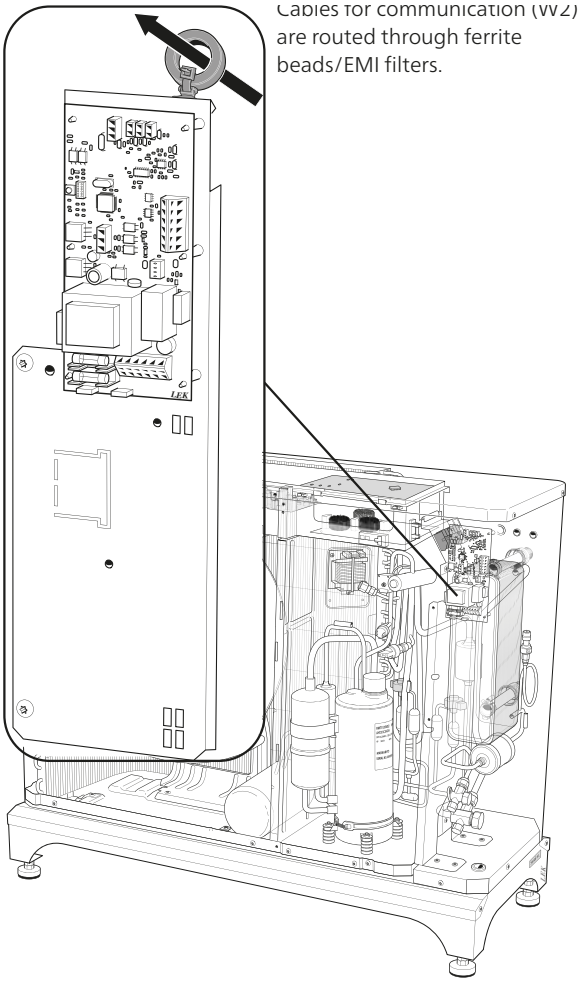
Connect communication cable (W2) (provided by installer) to terminal block AA23-X4 and secure with two cable ties, see image.

For connection of accessory KVR 10, heating cable (EB14) is connected via cable grommet UB3, see External heating cable KVR 10 (Accessory) on page 28.

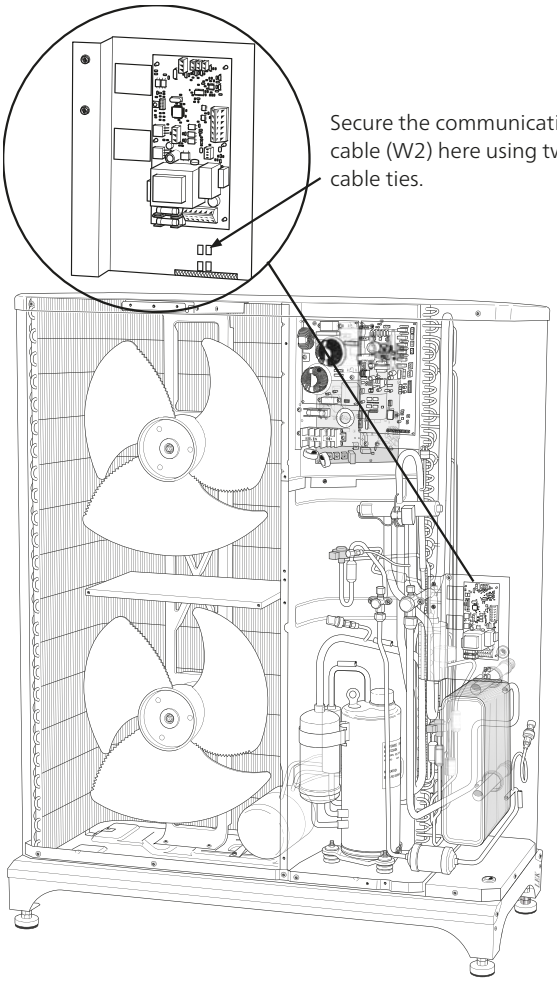
List of components

UB1	Cable grommet, cascade connection
UB2	Cable grommet, communication
UB3	Cable grommet, heating cable (EB14)
W1	Cable, incoming supply

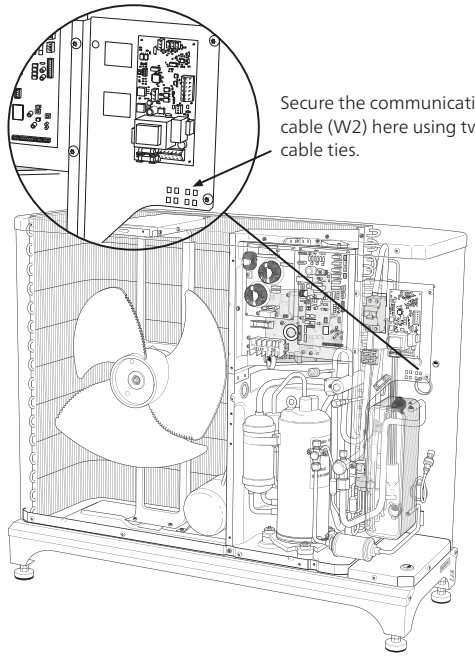
F2040-8



F2040-16



F2040-12



External heating cable KVR 10 (Accessory)

F2040 is equipped with a plinth for external heating cable EB14 not supplied). 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).

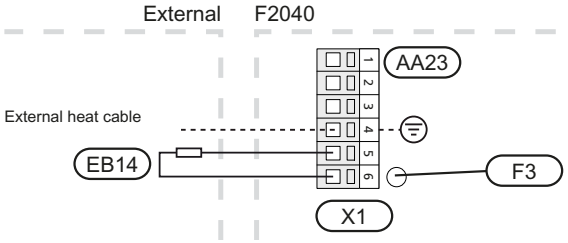
NOTE

Self regulating heating cables must not be connected.

Length (m)	Total power (W)	Fuse (F3)	NIBE Part no. Fuse
1	15	T100mA/250V	718085
3	45	T250mA/250V	518900*
6	90	T500mA/250V	718086

* Fitted at the factory.

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



NOTE

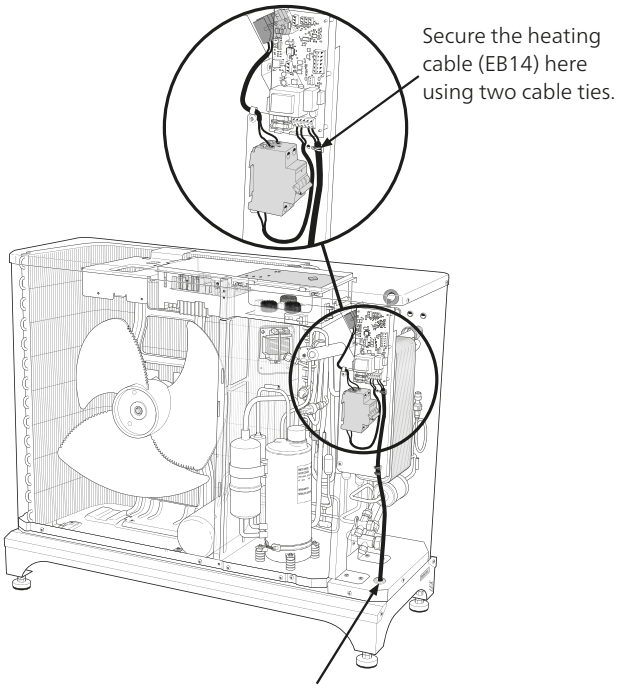
The pipe must be able to withstand the heat from the heating cable.

To ensure this function the accessory KVR 10 should be used.

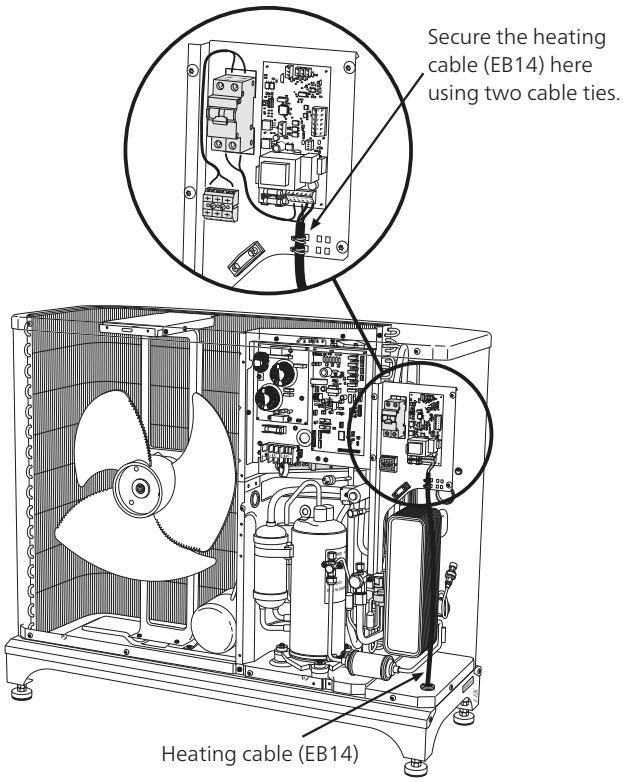
Cable routing

The following images show recommended cable routing from the distribution box to the condensation water pipe. Route the heating cable (EB14) through the grommet underneath and secure with two cable ties at the electrical connection. Transfer between electrical cable and heating cable must occur after the lead-in to the condensation water pipe.

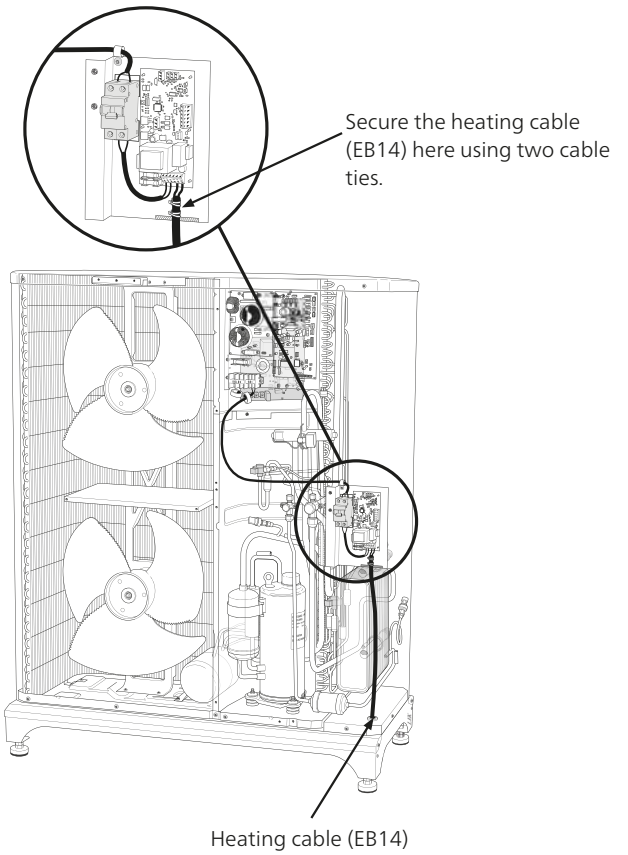
F2040-8



F2040-12



F2040-16

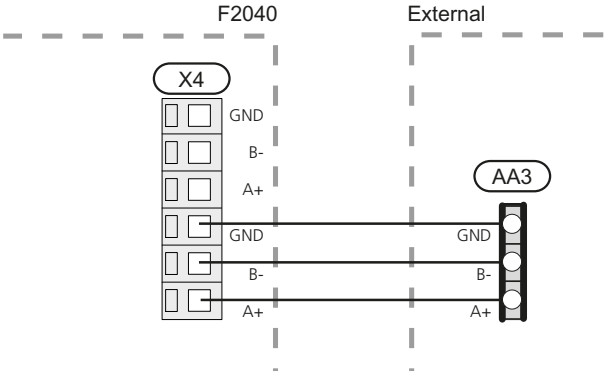


Ambient temperature sensor

An ambient temperature sensor (Tho-A) is located on the rear of F2040.

Communication

F2040 can communicate with NIBE indoor modules, by connecting the indoor module to the terminal block X4:4–6 according to the following image:



For connection of indoor module, see relevant manual on www.nibe.eu.

Addressing via cascade connection

On the communication card (AA23-S2) the communication address is selected for F2040 to NIBE control module. Default has F2040 address **1**. In a cascade connection all F2040 must have a unique address. The address is coded in binary.

Address	S2:1	S2:2	S2:3
1	OFF	OFF	OFF
2	On	OFF	OFF
3	OFF	On	OFF
4	On	On	OFF
5	OFF	OFF	On
6	On	OFF	On
7	OFF	On	On
8	On	On	On

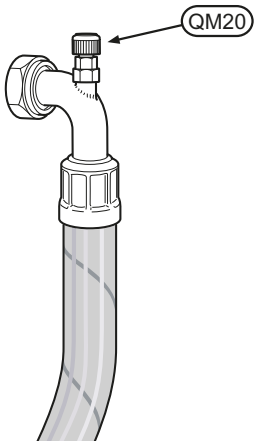
6 Commissioning and adjusting

Preparations

- Before commissioning, check that the charge circuit and climate system are filled and well vented.
- Check the pipe system for leaks.

Filling and venting the heating medium system

1. The heating medium system is filled with water to the required pressure.
2. Vent the system using the venting nipple (QM20) on the enclosed flexible hose and possibly the circulation pump.



Compressor heater

F2040 is equipped with a compressor heater that heats the compressor before start-up and when the compressor is cold.

NOTE

The compressor heater must have been connected for 6 – 8 hours before the first start, see the section “Start-up and inspection” in the installer manual for the indoor section

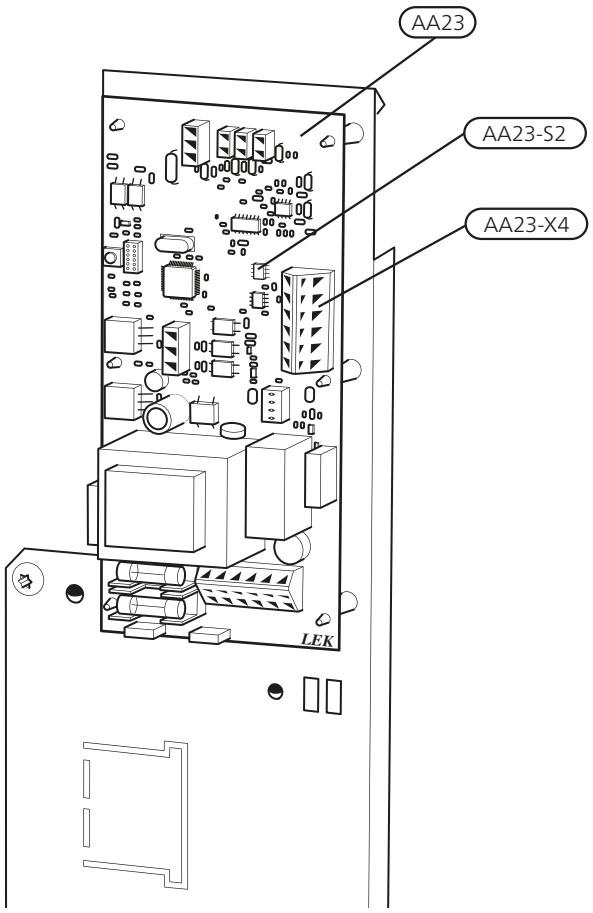
Start-up and inspection

1. The compressor heater (CH) must have been operational for at least 6 - 8 hours before the compressor start can be initiated. This is done by switching on the control voltage and disconnecting the communication cable.
2. F2040 must be addressed if it is to have another address than 1. See chapter Addressing via cascade connection, on page 29.
3. The communication cable on the terminal block AA23-X4 must not be connected.
4. Turn the isolator switch on.
5. Ensure that the F2040 is connected to the power source.
6. After 6 – 8 hours the communication cable (W2) is connected to terminal block AA23-X4.
7. Restart the indoor module. Follow the instructions for "Start-up and inspection" in the installation manual for the indoor module.

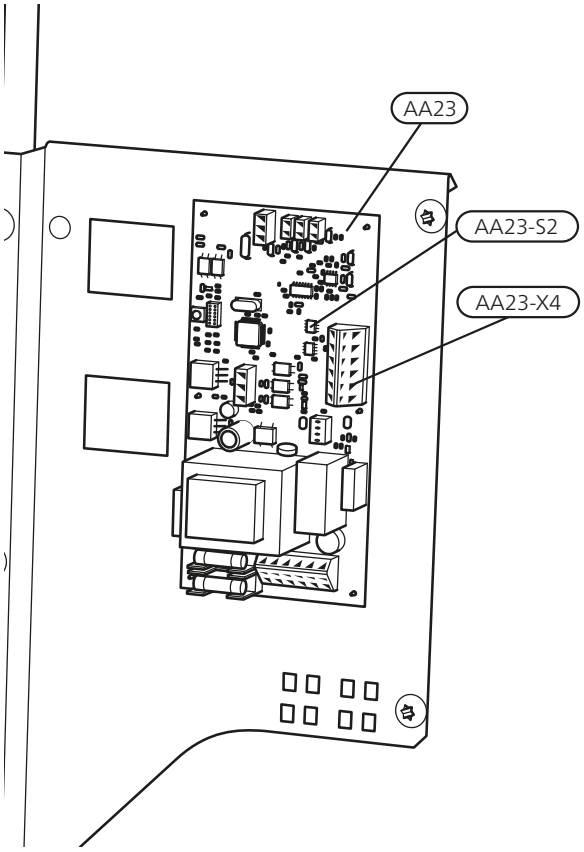
The heat pump starts 30 minutes after the outdoor unit is powered and the communication cable (W2) is connected, if necessary.

If scheduled**silent operation** is required, it must be scheduled in the inner section or control module.

F2040-8



F2040-12/F2040-16



Caution

Do not start any electrical work until at least two minutes after cutting the power.

Readjusting, heating medium side

Air is initially released from the hot water and venting may be necessary. If bubbling sounds can be heard from the heat pump, the circulation pump and radiators the entire system will require further venting. When the system is stable (correct pressure and all air eliminated) the automatic heating control system can be set as required.

Adjustment, charge flow

Instructions for adjusting hot water charging are in the installation manual for the respective indoor section. See page 38 for the list of the indoor sections and accessories that can be used with F2040.

7 Disturbances in comfort

Troubleshooting

NOTE

Work behind covers secured by screws may only be carried out by, or under the supervision of, a qualified installation engineer.

NOTE

As F2040 can be connected to a large number of external units, these should also be checked.

NOTE

In the event of action to rectify malfunctions that require work within screwed hatches the incoming electricity must isolated at the safety switch.

NOTE

Alarms are acknowledged on NIBE SMO or NIBE indoor module.

The following tips can be used to rectify comfort disruption:

Basic actions

Start by checking the following possible fault sources:

- That the heat pump is running or that the supply cable to F2040 is connected.
- Group and main fuses of the accommodation.
- The property's earth circuit breaker.
- The heat pump's motor circuit breaker (F).

Low hot water temperature or a lack of hot water

This part of the fault-tracing chapter only applies if the heat pump is docked to the hot water heater.

- Large hot water consumption.
  - Wait until the hot water has heated up.
- Incorrect settings in the NIBE indoor module.
  - See the manual for the indoor module.

Low room temperature

- Closed thermostats in several rooms.
  - Set the thermostats to max in as many rooms as possible.
- External switch for changing the room heating activated.
  - Check any external switches.
- Incorrect settings in NIBE SMO or NIBE indoor module
  - See the manual for the indoor module.

High room temperature

- External switch for changing the room heating activated.
  - Check any external switches.
- Incorrect settings in NIBE SMO or NIBE indoor module
  - See the manual for the indoor module.

F2040 is not operational

F2040 communicates all alarms to the indoor module.

- Ensure that the F2040 is connected to the power source.
- Check the indoor module. See section "Disturbances in comfort" in the installation manual for the indoor module.

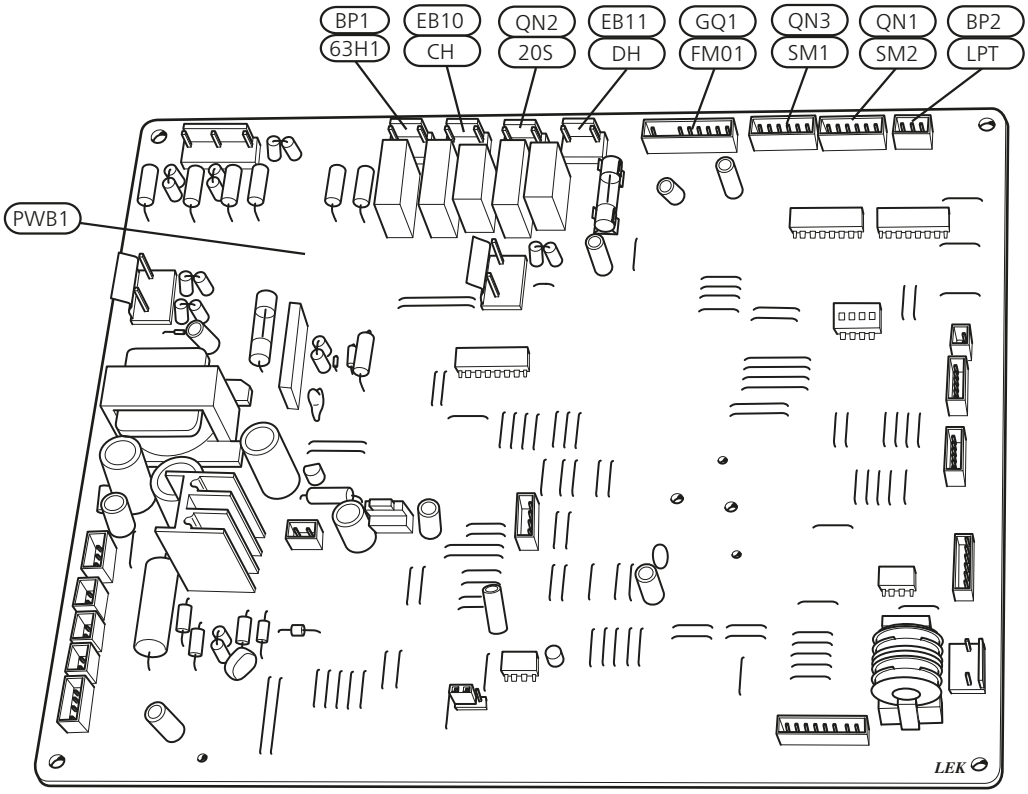
F2040 does not communicate

- Check that the addressing of F2040 is correct.
- Check that the communication cable has been connected.

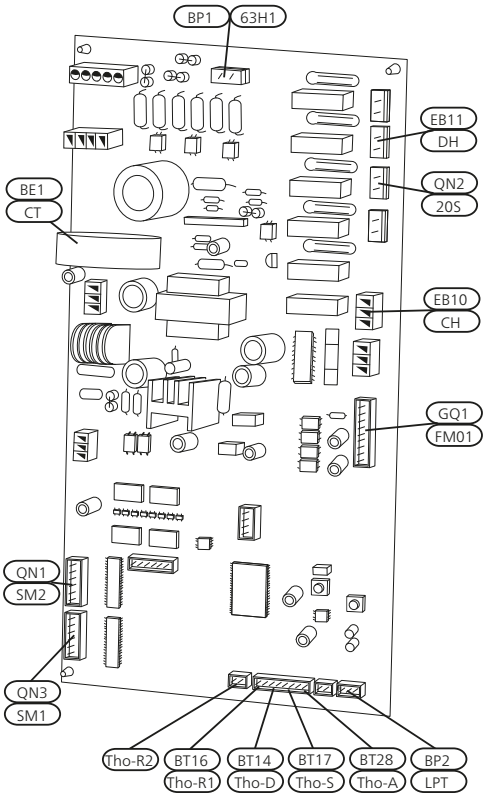
Sensor placement

F2040-8

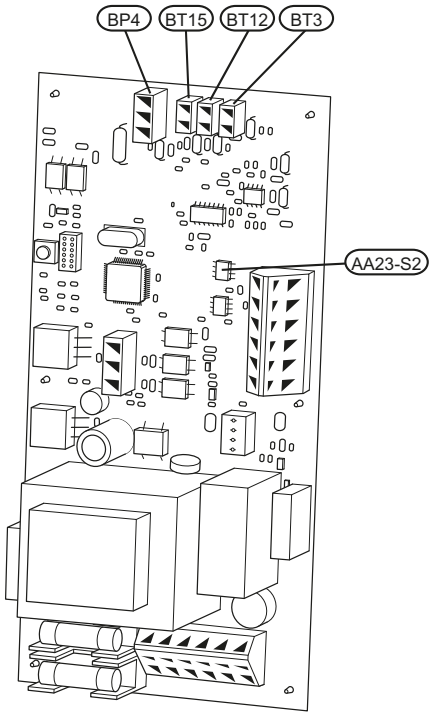
Connection to card (PWB1)



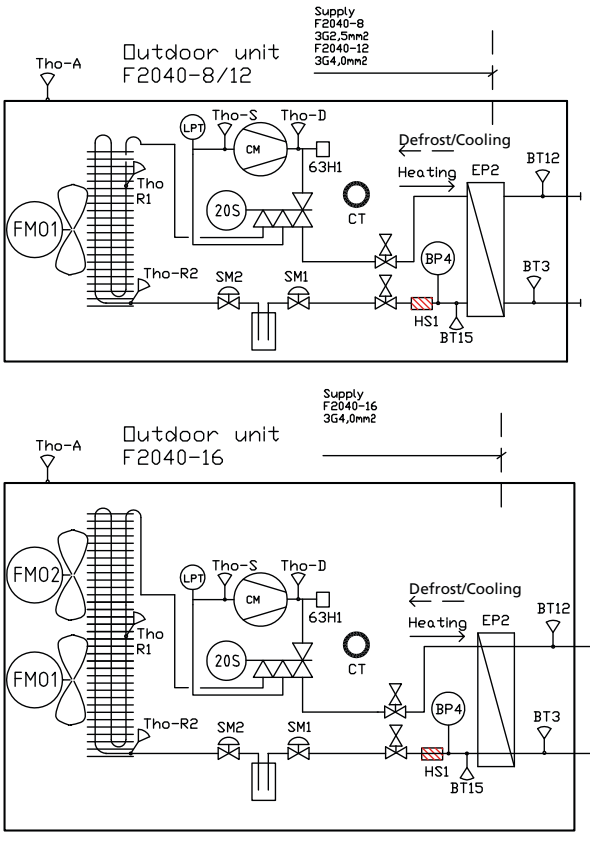
F2040-12/F2040-16



Connection to card (AA23)



Sensor placement in F2040

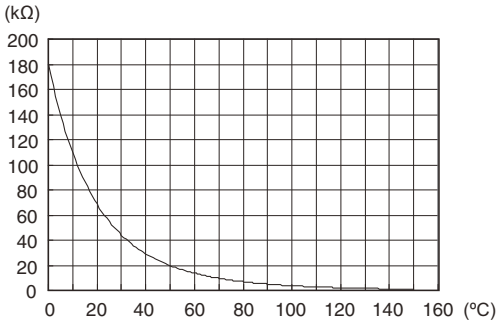


Sensors etc.

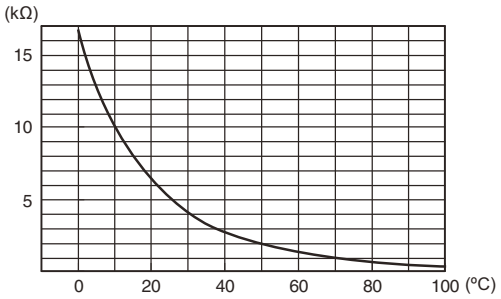
BE1 (CT)	Current sensor
BP1 (63H1)	High pressure pressostat
BP2 (LPT)	Low pressure transmitter
BP4	Pressure sensor, condenser
BT3	Temperature sensor, heating medium return line
BT12	Temperature sensor, condenser supply line
BT14 (Tho-D)	Temperature sensor, hot gas
BT15	Temperature sensor, fluid pipe
BT16 (Tho-R1)	Temperature sensor, heat exchanger, 1
BT17 (Tho-S)	Temperature sensor, suction gas
BT28 (Tho-A)	Temperature sensor, ambient
EB10 (CH)	Compressor heater
EB11 (DH)	Drip tray heater
EP2	Condenser
GQ1 (FM01)	Fan
GQ10 (CM)	Compressor
HS1	Drying filter
QN1 (SM2)	Expansion valve, heating
QN2 (20S)	4-way valve
QN3 (SM1)	Expansion valve, cooling
Tho-R2	Temperature sensor, heat exchanger, 2

Data for sensor in F2040

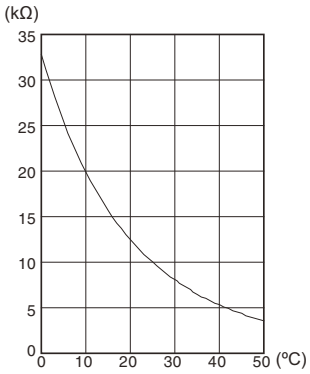
Tho-D



Tho-S, Tho-R1, Tho-R2



Tho-A



Data for return line temperature sensor (BT3), condensor supply (BT12) and fluid pipe (BT15)

Temperature (°C)	Resistance (kOhm)	Voltage (VDC)
-40	351.0	3.256
-35	251.6	3.240
-30	182.5	3.218
-25	133.8	3.189
-20	99.22	3.150
-15	74.32	3.105
-10	56.20	3.047
-5	42.89	2.976
0	33.02	2.889
5	25.61	2.789
10	20.02	2.673
15	15.77	2.541
20	12.51	2.399
25	10.00	2.245
30	8.045	2.083
35	6.514	1.916
40	5.306	1.752
45	4.348	1.587
50	3.583	1.426
55	2.968	1.278
60	2.467	1.136
65	2.068	1.007
70	1.739	0.891
75	1.469	0.785
80	1.246	0.691
85	1.061	0.607
90	0.908	0.533
95	0.779	0.469
100	0.672	0.414

8 Accessories

Condensation water pipe

Condensation water pipe,different lengths.

Earth circuit breaker 1-phase.

KVR 10-10 F2040

1 metre

Part no. 067 233

KVR 10-30 F2040

2.5 metres

Part no. 067 235

KVR 10-60 F2040

5 metres

Part no. 067 237

Ground stand

Ground stand F2040-8

Part no. 015 295

Ground stand F2040-12

Part no. 015 268

Ground stand F2040-16

Part no. 015 268

Indoor module

VVM 310

Part no. 069 430

VVM 310

With integrated EMK 310

Part no. 069 084

VVM320

Copper, 3 x 400 V

Part no. 069 108

Stainless Steel, 3 x 400 V

Part no. 069 109

Enamel, 3 x 400 V

With integrated EMK 300

Part no. 069 110

Stainless Steel, 3 x 230 V

Part no. 069 113

Stainless Steel, 1 x 230 V

Part no. 069 111

Stainless Steel, 1 x 230 V

With T&P valve

Part no. 069 112

VVM 500

Part no. 069 400

SMO 20

Control module

Part no. 067 224

RSK no. 625 10 06

SMO 40

Control module

Part no. 067 225

RSK no. 625 10 07

Wall mounting

Wall mounting F2040-8

Part no. 067 210

Wall mounting F2040-12

Part no. 067 210

Water heater/Accumulator tank

VPA 300/200

Water heater with double-jacketed vessel.

Copper Part no. 088 710

Enamel Part no. 088 700

VPA 450/300

Water heater with double-jacketed vessel.

Copper Part no. 088 660

Enamel Part no. 088 670

VPB 200

Hot water heater with charge coil

Copper Part no. 088 515

Enamel Part no. 088 517

Stainless steel Part no 088 518

VPB 300

Hot water heater with charge coil

Copper Part no. 083 009

Enamel Part no. 083 011

Stainless steel Part no 083 010

VPB 500

Hot water heater with charge coil

Copper Part no. 083 220

VPB 750-2

Hot water heater with charge coil

Copper Part no. 083 231

VPB 1000

Hot water heater with charge coil

Copper Part no. 083 240

VPAS 300/450

Water heater with double-jacketed vessel and solar coil.

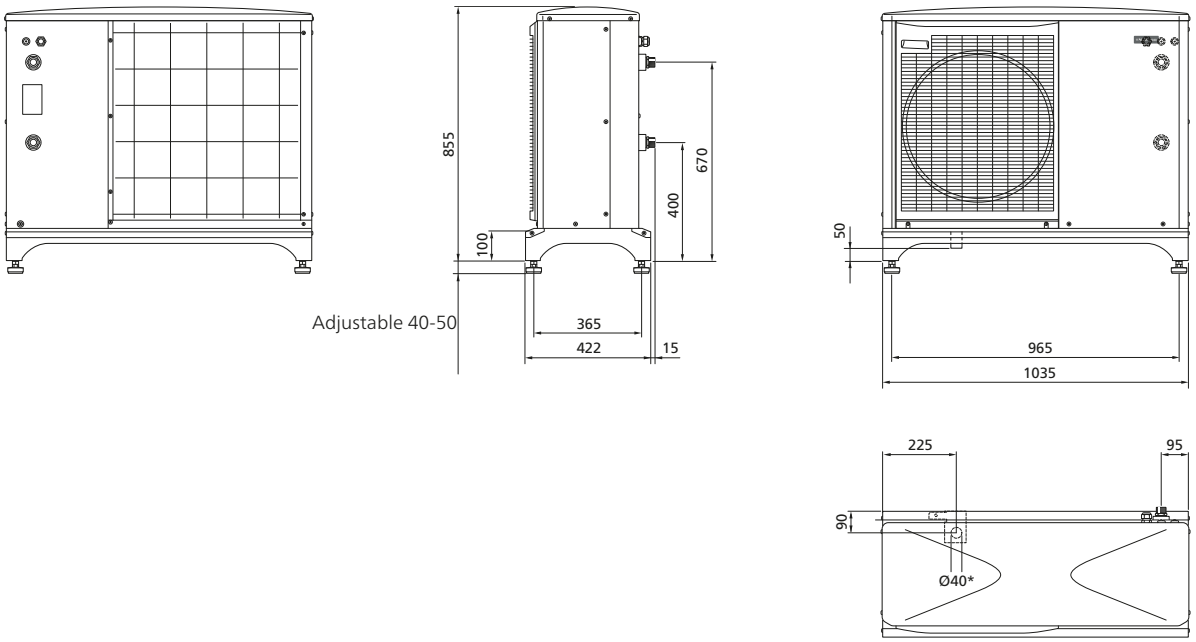
Copper Part no. 087 720

Enamel Part no. 087 710

9 Technical data

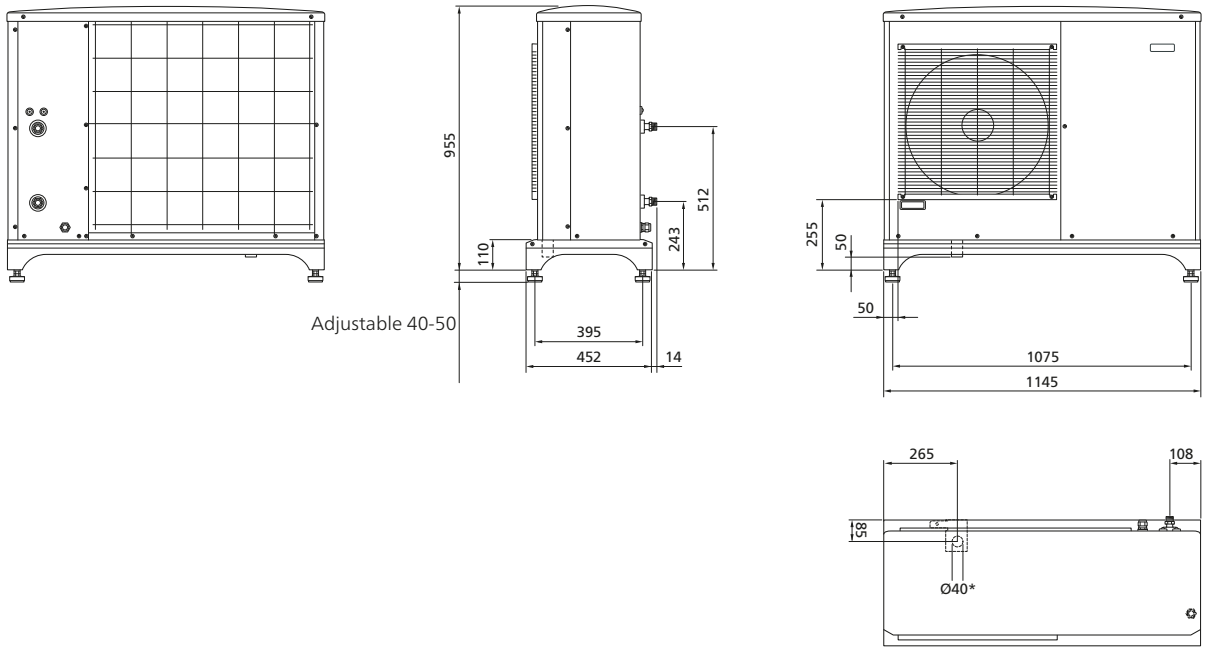
Dimensions and setting-out coordinates

F2040-8



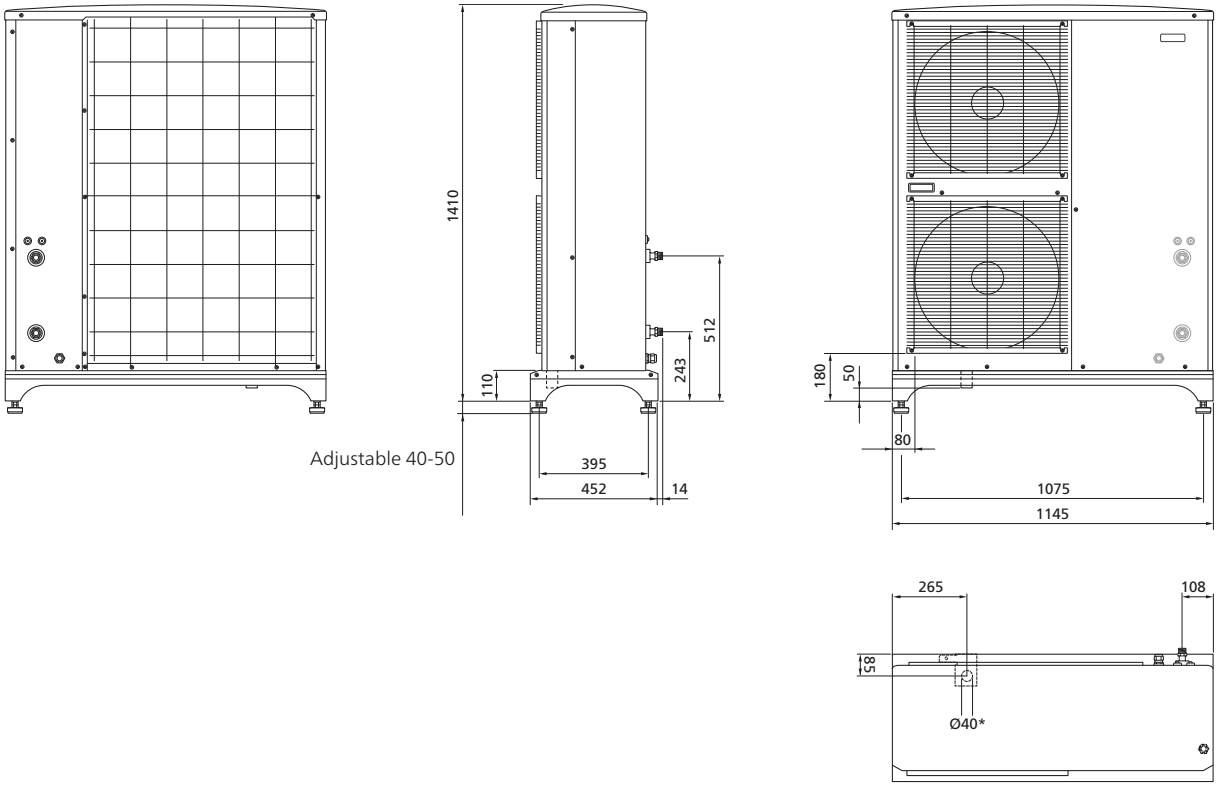
* Accessory KVR 10 is required.

F2040-12

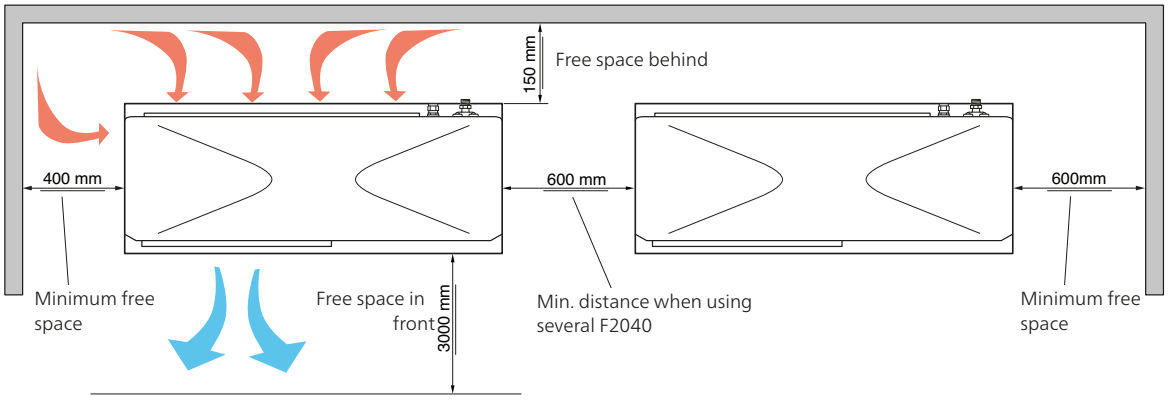


* Accessory KVR 10 is required.

F2040-16



* Accessory KVR 10 is required.

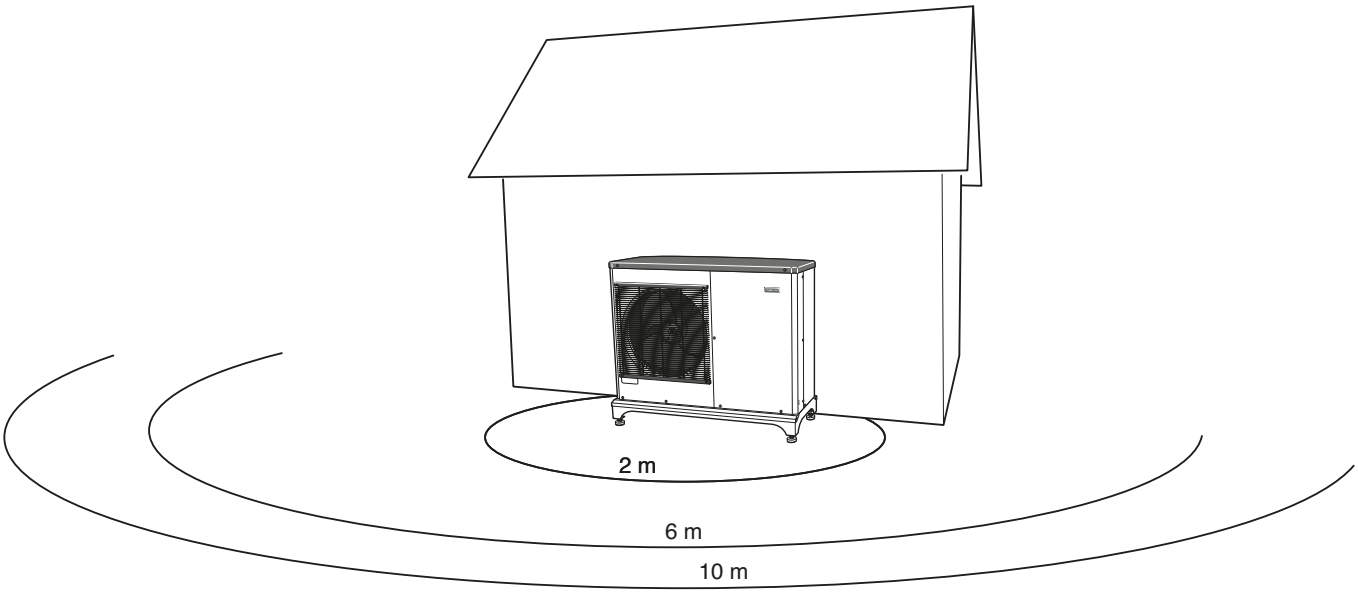


Sound pressure levels

F2040 is usually placed next to a house wall, which gives a directed sound distribution that should be considered. Accordingly, you should always attempt when positioning to choose the side that faces the least sound sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values.

F2040 adjusts the fan speed depending on the ambient temperature and evaporation temperature.



Air-water heat pump		F2040-8	F2040-12	F2040-16
Sound power level* According to EN12102 at 7/45 (nominal)	L_W(A)	54	57	68
Sound pressure level at 2 m free standing.*	dB(A)	40	43	54
Sound pressure level at 6 m free standing.*	dB(A)	30.5	33.5	44.5
Sound pressure level at 10 m free standing.*	dB(A)	26	29	40

* Free space.

Technical specifications

Air-water heat pump		F2040-8	F2040-12	F2040-16
Heating	Outd. temp: / Supply temp.	Nominal	Nominal	Nominal
Output data according to EN14511 ΔT5K Specified/supplied power/COP (kW/kW/-)	7/35 °C (floor)	3.85/0.84/4.60	5.12/1.08/4.74	7.22/1.55/4.66
	2/35 °C (floor)	6.03/1.59/3.79	6.77/1.74/3.89	9.58/2.53/3.78
	-7/35 °C (floor)	5.91/2.08/2.84	7.95/2.69/2.96	10.79/3.76/2.87
	2/55 °C	4.35/2.03/2.14	5.88/2.69/2.19	7.35/3.73/1.97
	7/45 °C	3.58/1.03/3.47	4.99/1.36/3.66	6.64/1.85/3.59
	2/45 °C	5.11/1.81/2.82	6.47/2.20/2.94	9.02/3.17/2.84
	-7/45 °C	5.61/2.27/2.47	7.78/3.14/2.48	10.98/4.52/2.43
	-15/45 °C	4.99/2.56/1.95	7.83/4.03/1.94	9.25/4.89/1.89
	7/55 °C	3.46/1.11/3.11	4.71/1.52/3.10	5.97/2.05/2.91
	-7/55 °C	4.58/2.36/1.94	6.02/2.98/2.02	8.06/4.05/1.99
Cooling	Outd. temp: / Supply temp.	Max	Max	Max
Output data according to EN14511 ΔT5K Specified/supplied power/EER	27/7 °C	7.52/2.37/3.17	9.87/3.16/3.13	13.30/3.99/3.33
	27/18 °C	11.20/3.20/3.50	11.70/3.32/3.52	17.70/4.52/3.91
	35/7 °C	7.10/2.65/2.68	9.45/3.41/2.77	13.04/4.53/2.88
	35/18 °C	9.19/2.98/3.08	11.20/3.58/3.12	15.70/5.04/3.12
Electrical data				
Rated voltage		230V 50 Hz, 230V 2AC 50Hz		
Max operating current, heat pump	A_{rms}	16	23	25
Max operating current, compressor	A_{rms}	15	22	24
Starting current	A_{rms}	5	5	5
Max permitted impedance at connection point [1]	Ohm	-	-	-
Nominal output, fan	W	86	86	2 x 86
Fuse [2]	A_{rms}	16	25	25
Refrigerant circuit				
Type of refrigerant		R410A		
Type of compressor		Twin Rotary		
Compressor oil		M-MA68		
Volume	kg	2.55	2.9	4.0
Cut-out value pressostat HP	MPa	4.15 (41.5 bar)		
Cut-out value pressostat LP	MPa	0.079 (0.79 bar)		
Brine				
Airflow	m^3/h	3000	4380	6000
Max/Min air temp	°C	-20/43		
Defrosting system		reverse cycle		
Heating medium				
Min/Max system pressure heating medium	MPa	0.05/0.25 (0.5/2.5bar)		
Min volume, climate system, heating/cooling	l	50	80	150
Min volume, climate system, under floor cooling	l	80	100	150
Max flow, climate system	l/s	0.38	0.57	0.79

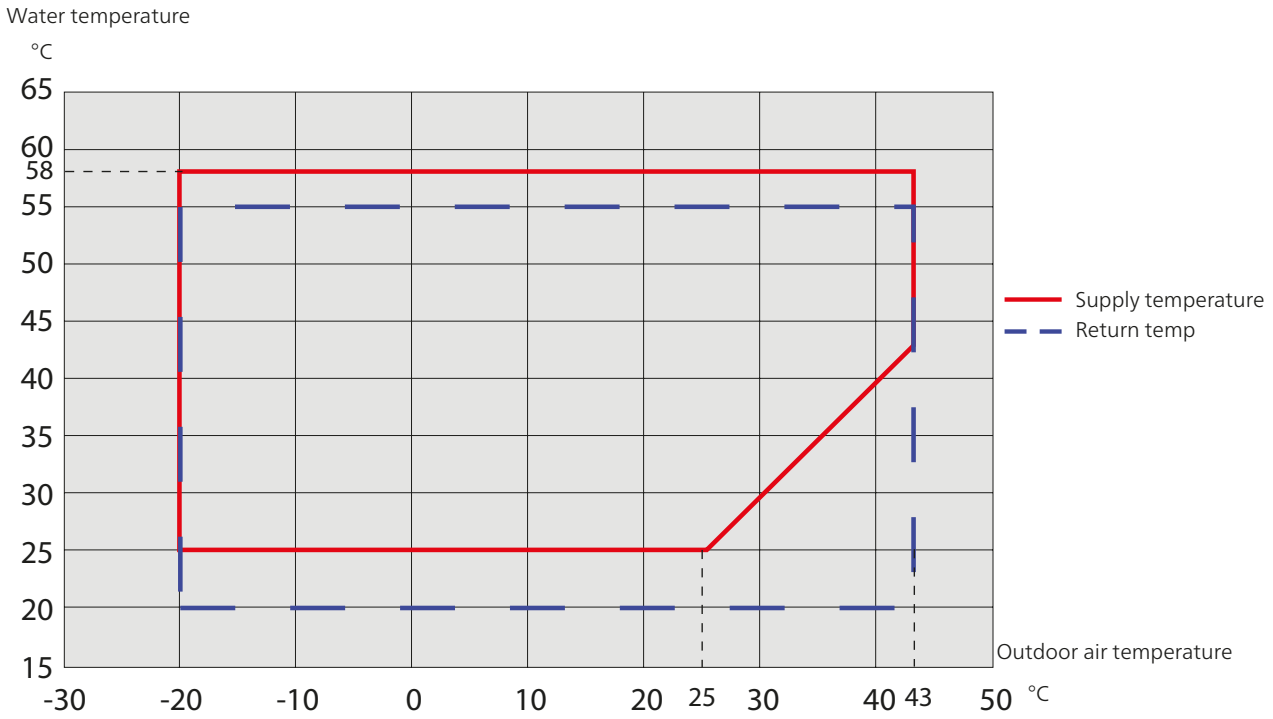
Air-water heat pump		F2040-8	F2040-12	F2040-16
Min flow, climate system, at 100% circulation pump speed (defrosting flow)	l/s	0.19	0.29	0.39
Min flow, heating	l/s	0.12	0.15	0.25
Min flow, cooling	l/s	0.15	0.20	0.32
Max/Min heating medium temp continuous operation	°C	58/25		
Connection heating medium ext thread		G1"		
Dimensions and weight				
Width	mm	1035	1145	1145
Depth	mm	422	452	452
Height with stand	mm	895 (+50/-0)	995 (+50/-0)	1450 (+50/-0)
Weight (excl. packaging)	kg	90	105	135
Miscellaneous				
Enclosure class		IP 24		
Colour		dark grey		
Part No.		064 109	064 092	064 108

1)Max. permitted impedance in the mains connected point in accordance with EN 61000-3-11. Start currents can cause short voltage dips that could affect other equipment in unfavourable conditions. If the impedance in the mains connection point is higher than that stated it is possible that interference will occur. If the impedance in the mains connection point is higher than that stated check with the power supplier before purchasing the equipment.

2)Specified output is limited with lower fusing.

Working range, compressor operation - heating

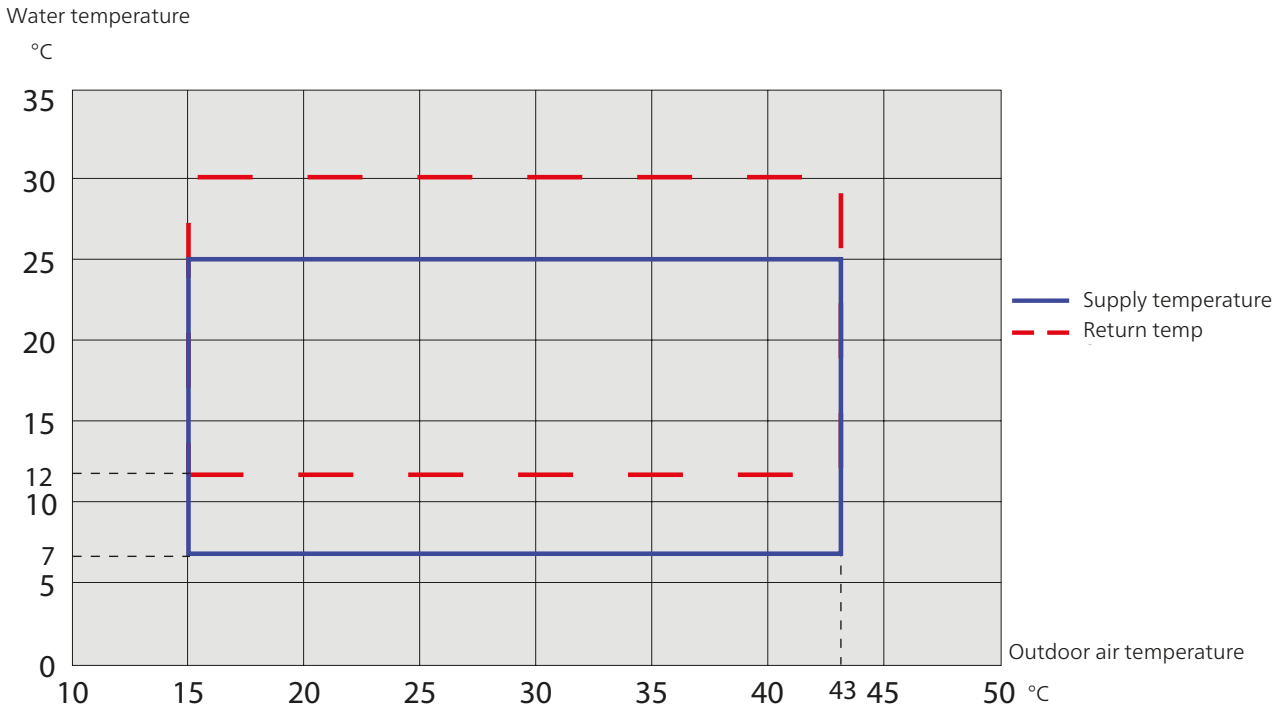
F2040-8, -12. -16



During shorter time it is allowed to have lower working temperatures on the water side, e.g. during start up.

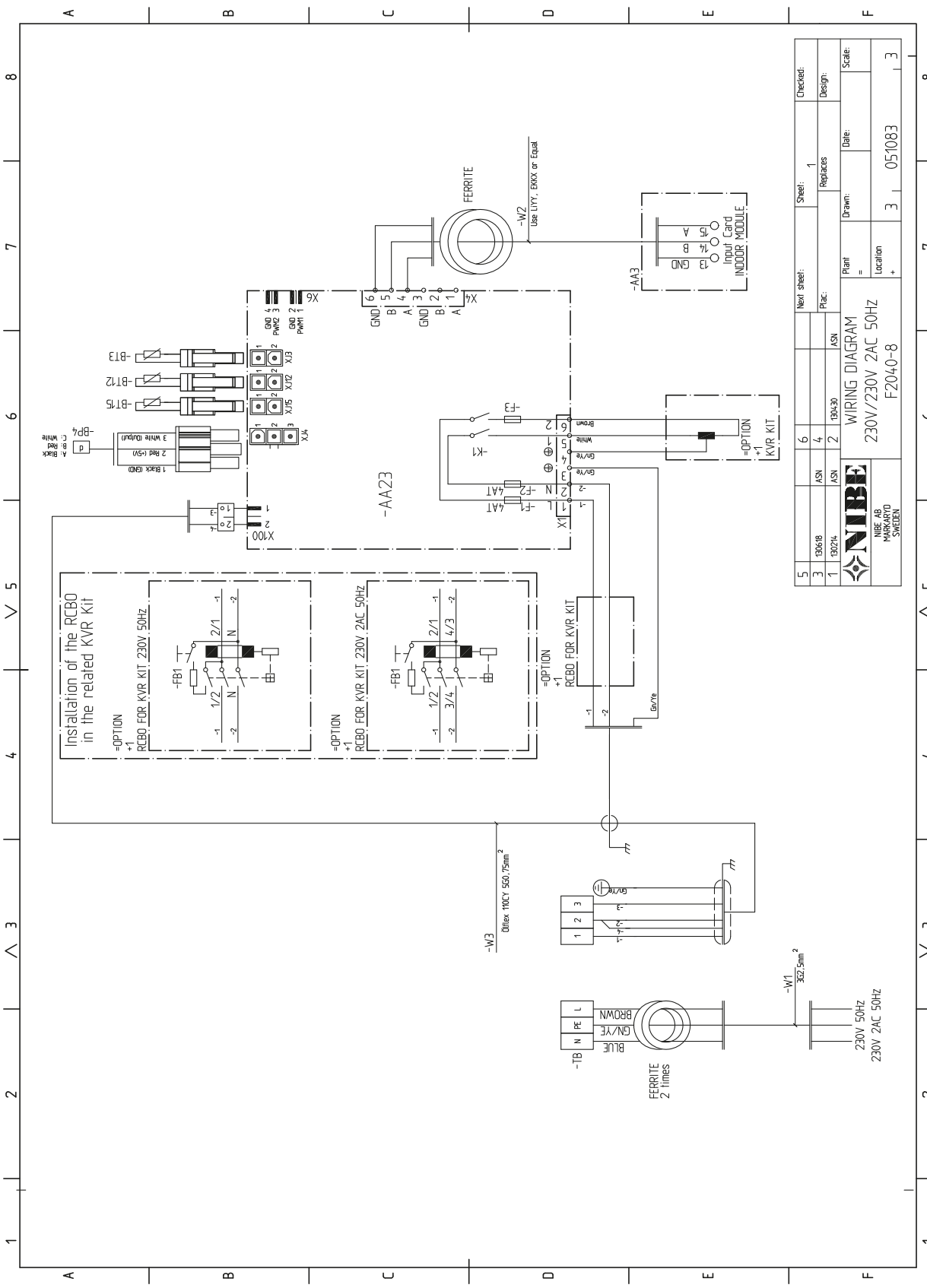
Working range, compressor operation - cooling

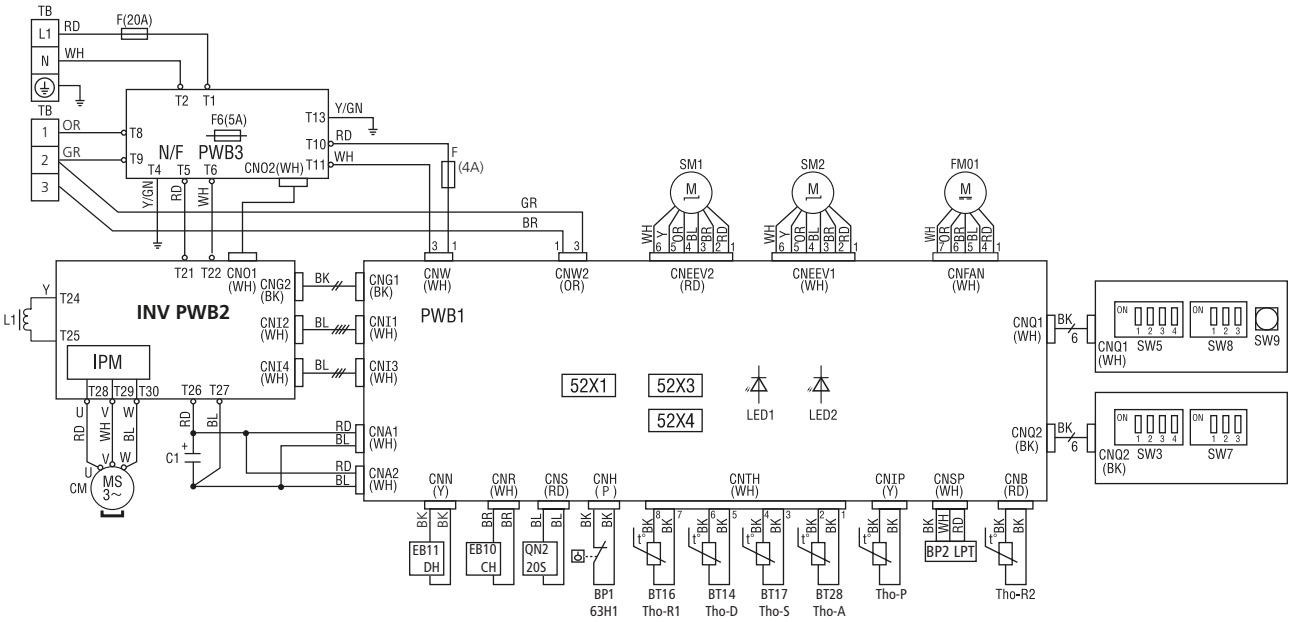
F2040-8, -12, -16



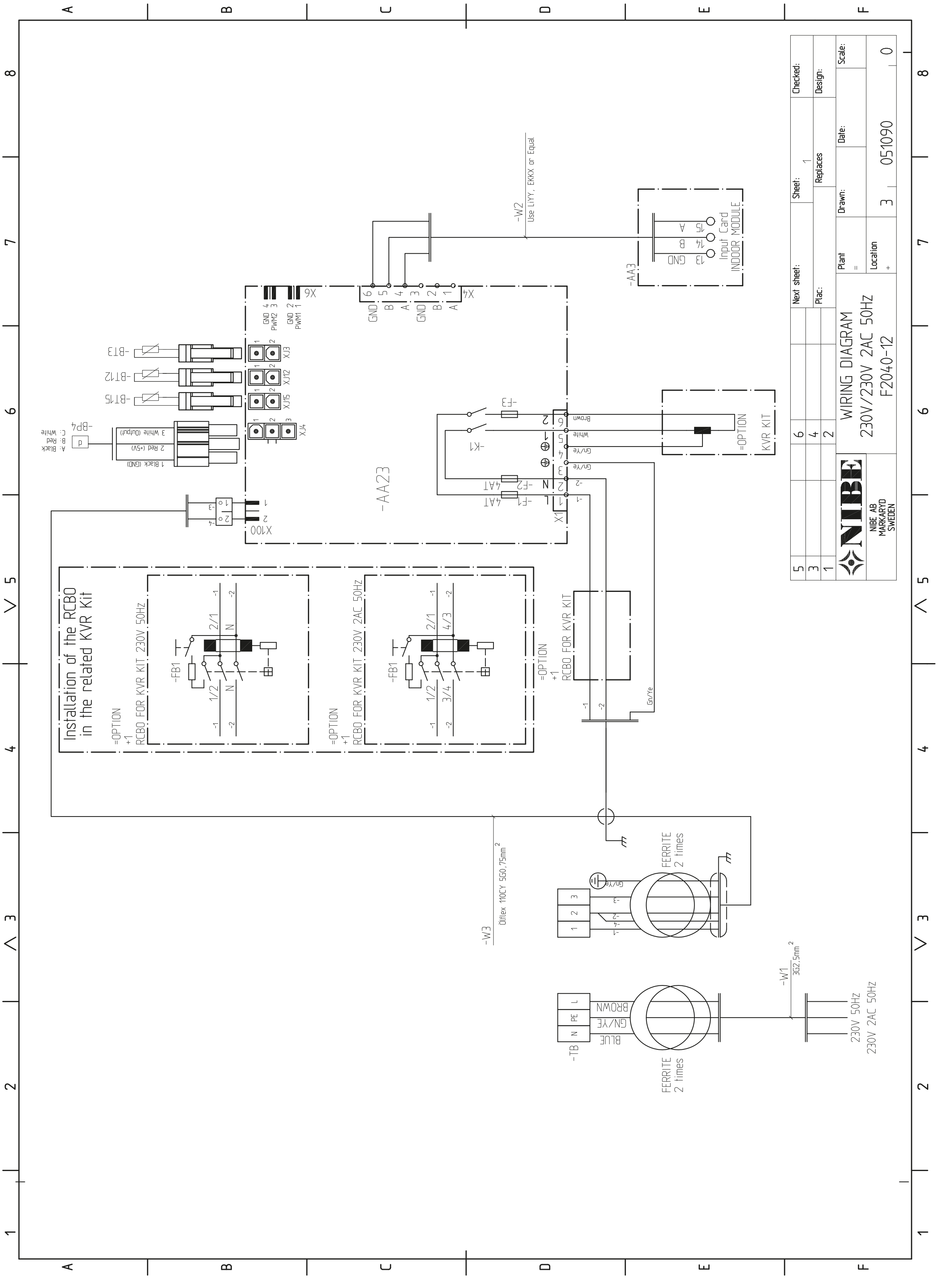
Electrical circuit diagram

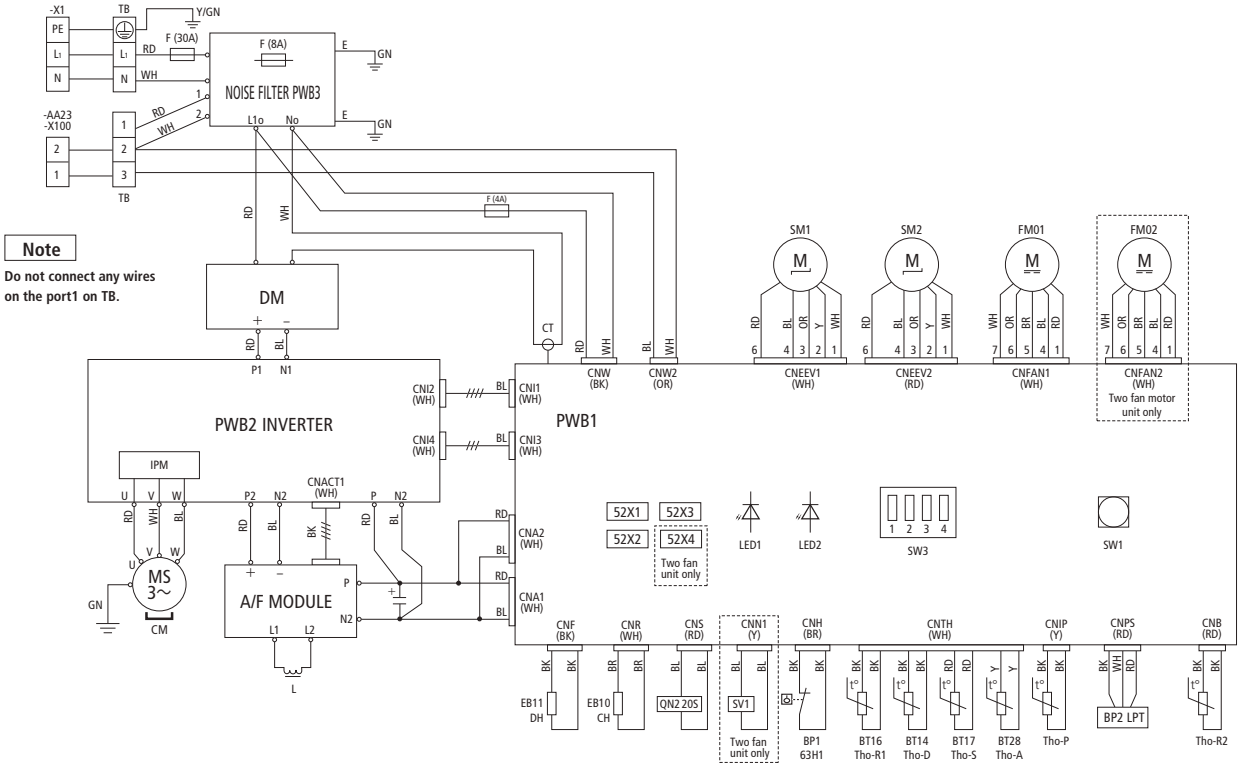
F2040-8



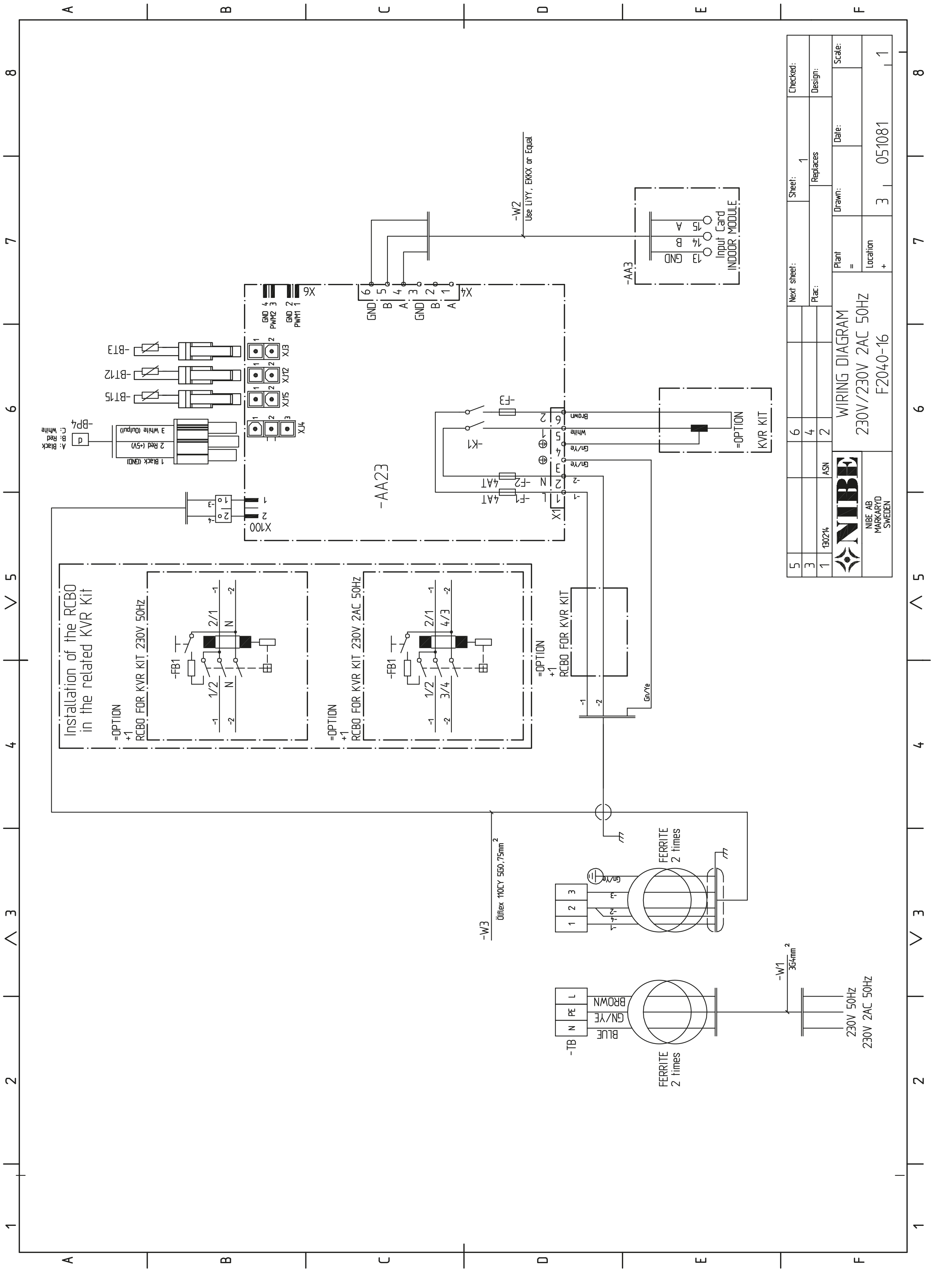

TB
L1
N
RD
WH
F(20A)
T2
T1
TB
1
2
3
OR
GR
T8
T9
F6(5A)
N/F
PWB3
T4
T5
T6
CNO2(WH)
T13
T10
T11
Y/GN
RD
WH
F
(4A)
Y/GN
RD
WH
GR
BR
SM1
SM2
FM01
M
WH
Y
OR
BL
BR
RD
T21
T22
CNO1
(WH)
CNW
(WH)
CNW2
(OR)
CNEEV2
(RD)
CNEEV1
(WH)
CNFAN
(WH)
Y
T24
L1
T25
INV PWB2
IPM
T28
T29
T30
T26
T27
U
V
W
MS
3~
CM
C1
CNG2
(BK)
CNI2
(WH)
CNI4
(WH)
CNA1
(WH)
CNA2
(WH)
CNG1
(BK)
CNI1
(WH)
CNI3
(WH)
PWB1
52X1
52X3
52X4
LED1
LED2
CNQ1
(WH)
CNQ2
(BK)
CNQ1
(WH)
SW5
SW8
SW9
CNQ2
(BK)
SW3
SW7
ON
CNN
(Y)
CNR
(WH)
CNS
(RD)
CNH
(P)
CNTH
(WH)
CNIP
(Y)
CNSP
(WH)
CNB
(RD)
EB11
DH
EB10
CH
QN2
20S
BP2 LPT
BP1
63H1
BT16
Tho-R1
BT14
Tho-D
BT17
Tho-S
BT28
Tho-A
Tho-P
Tho-R2

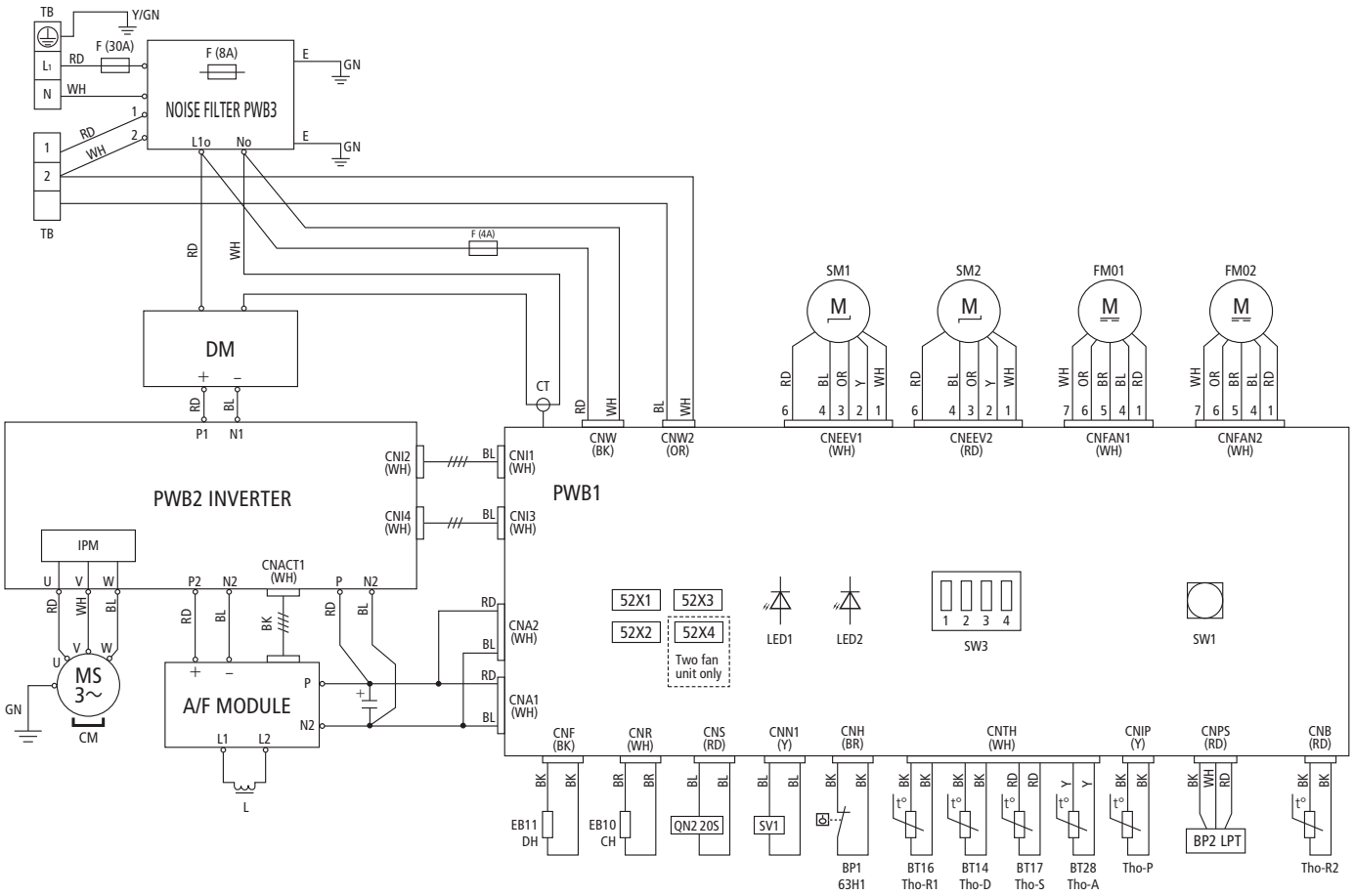
F2040-12


WIRING DIAGRAM
230V/230V 2AC 50Hz
F2040-12
NIBE AB
MARKARYD
SWEDEN
Installation of the RCBO
in the related KVR Kit
-AA23
-AA3
Input Card
INDOOR MODULE
=OPTION
KVR KIT
FERRITE
2 times


-X1
TB
Y/GN
PE
L1
N
F (30A)
RD
WH
F (8A)
NOISE FILTER PWB3
E
GN
-AA23
-X100
L1o
No
F (4A)
Note
Do not connect any wires on the port1 on TB.
DM
P1
N1
CT
SM1
SM2
FM01
FM02
CNW (BK)
CNW2 (OR)
CNEEV1 (WH)
CNEEV2 (RD)
CNFAN1 (WH)
CNFAN2 (WH)
Two fan motor unit only
PWB2 INVERTER
PWB1
CNI2 (WH)
CNI1 (WH)
CNI4 (WH)
CNI3 (WH)
IPM
CNACT1 (WH)
CNA2 (WH)
CNA1 (WH)
52X1
52X3
52X2
52X4
Two fan unit only
LED1
LED2
SW3
SW1
MS 3~
CM
A/F MODULE
L
CNF (BK)
CNR (WH)
CNS (RD)
CNN1 (Y)
CNH (BR)
CNTH (WH)
CNIP (Y)
CNPS (RD)
CNB (RD)
EB11 DH
EB10 CH
QN2 20S
SV1
Two fan unit only
BP1 63H1
BT16 Tho-R1
BT14 Tho-D
BT17 Tho-S
BT28 Tho-A
Tho-P
BP2 LPT
Tho-R2

F2040-16


WIRING DIAGRAM
230V/230V 2AC 50Hz
F2040-16
NIBE AB
MARKARYD
SWEDEN
=OPTION
KVR KIT
-AA23
-AA3
Input Card
INDOOR MODULE
Use LiYY, EKKX or Equal
Installation of the RCBO
in the related KVR Kit
RCBO FOR KVR KIT 230V 50Hz
RCBO FOR KVR KIT 230V 2AC 50Hz
FERRITE
2 times
230V 50Hz
230V 2AC 50Hz


TB
Y/GN
F (30A)
L1
RD
N
WH
F (8A)
NOISE FILTER PWB3
E
GN
1
2
L1o
No
TB
F (4A)
DM
P1
N1
CT
SM1
SM2
FM01
FM02
CNW (BK)
CNW2 (OR)
CNEEV1 (WH)
CNEEV2 (RD)
CNFAN1 (WH)
CNFAN2 (WH)
PWB2 INVERTER
PWB1
CNI2 (WH)
CNI1 (WH)
CNI4 (WH)
CNI3 (WH)
IPM
CNACT1 (WH)
CNA2 (WH)
CNA1 (WH)
52X1
52X3
52X2
52X4
Two fan unit only
LED1
LED2
SW3
SW1
MS 3~
CM
A/F MODULE
L
CNF (BK)
CNR (WH)
CNS (RD)
CNN1 (Y)
CNH (BR)
CNTH (WH)
CNIP (Y)
CNPS (RD)
CNB (RD)
EB11 DH
EB10 CH
QN2 20S
SV1
BP1 63H1
BT16 Tho-R1
BT14 Tho-D
BT17 Tho-S
BT28 Tho-A
Tho-P
BP2 LPT
Tho-R2

10 Item register

Item register

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info@nibe.se
www.nibe.eu

231844