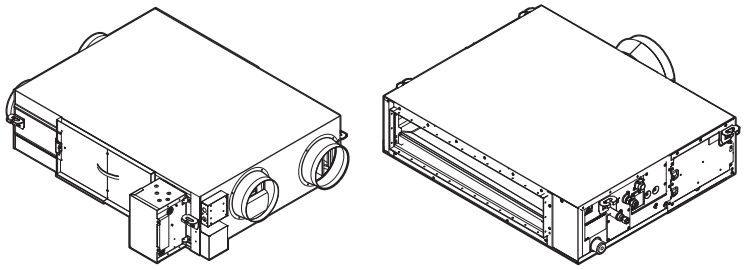
Service manual

VRV system air conditioner



VAM350J8VEB
VAM500J8VEB
VAM650J8VEB
VAM800J8VEB
VAM1000J8VEB
VAM1500J8VEB
VAM2000J8VEB

EKVDX32A2VEB
EKVDX50A2VEB
EKVDX80A2VEB
EKVDX100A2VEB

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Version log

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1 Safety precautions

The precautions described in this document cover very important topics, follow them carefully.

All activities described in the service manual must be performed by an authorized person.

If you are NOT sure how to install, operate or service the unit, contact your dealer.

In accordance with the applicable legislation, it might be necessary to provide a logbook with the product containing at least:

information on maintenance, repair work, results of tests, stand-by periods, …

Also, at least, following information must be provided at an accessible place at the product:

- Instructions for shutting down the system in case of an emergency
- Name and address of fire department, police and hospital
- Name, address and day and night telephone numbers for obtaining service

In Europe, EN378 provides the necessary guidance for this logbook.

1.1 Meaning of warnings and symbols



DANGER

Indicates a situation that results in death or serious injury.



DANGER: RISK OF ELECTROCUTION

Indicates a situation that could result in electrocution.



DANGER: RISK OF BURNING/SCALDING

Indicates a situation that could result in burning/scalding because of extreme hot or cold temperatures.



DANGER: RISK OF EXPLOSION

Indicates a situation that could result in explosion.



WARNING

Indicates a situation that could result in death or serious injury.



WARNING: FLAMMABLE MATERIAL



CAUTION

Indicates a situation that could result in minor or moderate injury.



NOTICE

Indicates a situation that could result in equipment or property damage.

INFORMATION

Indicates useful tips or additional information.

1.2 Dangers

DANGER: RISK OF BURNING/SCALDING

- Do NOT touch the refrigerant piping, water piping or internal parts during and immediately after operation. It could be too hot or too cold. Give it time to return to normal temperature. If you MUST touch it, wear protective gloves.
- Do NOT touch any accidental leaking refrigerant.

DANGER: RISK OF ELECTROCUTION

- Turn OFF all power supply before removing the switch box cover, connecting electrical wiring or touching electrical parts.
- Where applicable, stop the equipment's operation first and allow (refrigerant) pressure to equalize, before turning OFF the power.
- Disconnect the power supply for more than 10 minutes, and measure the voltage at the terminals of main circuit capacitors or electrical components before servicing. The voltage MUST be less than 50 V DC before you can touch electrical components. For the location of the terminals, see the wiring diagram. If the measured voltage is still higher than 50 V DC, discharge the capacitors in a safe manner by using a dedicated capacitor discharge pen to avoid possibility of sparking.
- Do NOT touch electrical components with wet hands.
- Do NOT leave the unit unattended when the service cover is removed.
- Protect electric componennts from getting wet while the service cover is opened.

1.3 Warnings

WARNING

Improper installation or attachment of equipment or accessories could result in electrical shock, short-circuit, leaks, fire or other damage to the equipment. ONLY use accessories, optional equipment and spare parts made or approved by Daikin.

WARNING

Do NOT apply any permanent inductive or capacitance loads to the circuit without ensuring that this will NOT exceed the permissible voltage and current permitted for the equipment in use.

WARNING

If a fault exists that could compromise safety, Do NOT connect electrical supply to the circuit until it is satisfactorily dealt with. If the fault CANNOT be corrected immediately but it is necessary to continue operation, an adequate temporary solution MUST be used. This MUST be reported to the owner of the equipment so all parties are advised.

Initial safety checks MUST include that:

- capacitors are discharged: this MUST be done in a safe manner to avoid possibility of sparking,
- NO live electrical components and wiring are exposed while charging, recovering or purging the system.

WARNING

Make sure that the refrigerating piping and components are installed in a position where they are unlikely to be exposed to any corroding substance.

WARNING

Make sure installation, testing and applied materials comply with applicable legislation (on top of the instructions described in the Daikin documentation).

WARNING

Make sure the work site environment is clean and safe to work in. Beware of spilled fluids, like water, oil or other substances.

Protect bystanders from injury and property from possible damage cause by service works.

WARNING

If any work is to be conducted on the refrigerating equipment or any associated parts which involves brazing, an appropriate dry powder or CO_2 fire extinguisher MUST be present.

When charging the unit, an appropriate dry powder or CO_2 fire extinguisher MUST be present.

WARNING

No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, MUST be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs MUST be displayed.

WARNING

Tear apart and throw away plastic packaging bags so that nobody, especially children, can play with them. Possible risk: suffocation.

WARNING

During tests, NEVER pressurise the product with a pressure higher than the maximum allowable pressure (as indicated on the nameplate of the unit).

WARNING

Make sure the total refrigerant charge is in accordance with the room size in which the unit is installed: please consult the detailed instructions on charging and allowed room sizes in the installation manual.

WARNING

- NEVER mix different refrigerants or allow air to enter the refrigerant system.
- NEVER charge recovered refrigerant from another unit. Use recovered refrigerant only on the same unit where it was recovered from, or have it recycled at a certified facility.

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

WARNING

ALWAYS recover the refrigerant. Do NOT release them directly into the environment. Use a vacuum pump to evacuate the installation.

WARNING

Removal of refrigerant MUST be according to the following:

When breaking into the refrigerant circuit to make repairs, be sure to remove the refrigerant from the system first. The refrigerant charge MUST be recovered into the correct recovery cylinders.

WARNING

Take sufficient precautions in case of refrigerant leakage. If refrigerant gas leaks, ventilate the area immediately. Possible risks:

- Excessive refrigerant concentrations in a closed room can lead to oxygen deficiency.
- Toxic gas might be produced if refrigerant gas comes into contact with fire.

WARNING

- Under no circumstances, potential sources of ignition SHALL be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) MUST NOT be used.
- Ensure that the detector is NOT a potential source of ignition and is suitable for the detection of R32.
- If a leak is suspected, all naked flames MUST be removed or extinguished.
- Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine MUST be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
- If a leakage of refrigerant is found which requires brazing, all of the refrigerant MUST be recovered from the system, or isolated (by means of shut-off valves) in a part of the system remote from the leak.
- Only use the electronic leak tester for R32. The old flame leak tester CANNOT be used on a system with HFC refrigerant because there is no chlorine component in the refrigerant. In case of R32 (HFC) refrigerant, any flame in contact with (leaking) refrigerant is extremely dangerous.

WARNING

- In order to prevent oxygen deficiency and R32 combustion, keep the room well-ventilated for a healthy work environment. Do NOT work in a confined space. If a refrigerant leak is detected in a confined room or an inadequately ventilated location, do NOT start the work until the area has been ventilated appropriately.
- If the work area is NOT located in the open air, make sure the work area is adequately ventilated before breaking into the system or conducting any brazing. The ventilation MUST continue to operate during the period that the work is carried out to prevent accumulation of refrigerant in the work area. The ventilation should safely disperse any released refrigerant and preferably ventilate to the open air.

WARNING

Ensure that no external live wiring is exposed while charging, recovering or purging the system. Sparks created when live wiring is short-circuited might ignite the refrigerant if it is leaked into the room while charging, recovering or purging the system.

WARNING

Ensure that the unit is properly earthed prior to conducting maintenance or service or charging the system with refrigerant. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earthing may cause electrical shock.

WARNING

- ONLY use copper wires.
- Make sure the field wiring complies with the applicable legislation.
- All field wiring MUST be performed in accordance with the wiring diagram supplied with the product.
- NEVER squeeze bundled cables and make sure they do NOT come in contact with the piping and sharp edges. Make sure no external pressure is applied to the terminal connections.
- Make sure to install earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to install the required fuses or circuit breakers.
- Make sure to install an earth leakage protector. Failure to do so may cause electrical shock or fire.
- When installing the earth leakage protector, make sure it is compatible with the inverter (resistant to high frequency electric noise) to avoid unnecessary opening of the earth leakage protector.

WARNING

Make sure the markings on the unit remain visible and legible after inspection or repair work. Markings and signs that are illegible shall be corrected.

WARNING

- After finishing the electrical work, confirm that each electrical component and terminal inside the electrical components box is connected securely.
- Make sure all covers are closed before starting up the unit.

WARNING

- The area MUST be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres.
- Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.
- Prior to and during work, the area MUST be checked with an appropriate refrigerant detector capable of detecting R32 refrigerant, to ensure a work environment free of refrigerant.

WARNING

- Equipment MUST be labelled stating that it has been de-commissioned and emptied of refrigerant.
- The label MUST be dated and signed.
- For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

WARNING

Before carrying out refrigerant recovery procedure, it is essential that the technician is completely familiar with the equipment and all its details. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample MUST be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

- Become familiar with the equipment and its operation.
- Isolate system electrically.
- Ensure that mechanical handling equipment is available, if required, for handling refrigerant cylinders.
- Ensure that all personal protective equipment is available and is used correctly.
- Ensure that the recovery process is supervised at all times by a competent person.
- Ensure that recovery equipment and cylinders are conform to the appropriate standards.
- If a vacuum is NOT possible, make a manifold so that refrigerant can be removed from various parts of the system.
- Make sure that cylinder is situated on the scales before recovery takes place.
- Start the recovery machine and operate in accordance with instructions.
- Do NOT overfill cylinders (no more than 60% volume liquid charge).
- Do NOT exceed the maximum working pressure of the cylinder, NOT even temporarily.
- When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed.
- Recovered refrigerant MUST NOT be charged into another refrigerating system unless it has been cleaned and checked.

WARNING

All maintenance staff and others working in the local area MUST be instructed on the nature of work being carried out.

WARNING

Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.

WARNING

Prior to start working on systems containing flammable refrigerant, safety checks are necessary to ensure that the risk of ignition is minimised. Therefore, some instructions should be followed.

Please refer to the service manual for more information.

WARNING

- In case refrigerant recovery is required, use the appropriate service ports.
- If applicable for your unit, use the appropriate recovery mode or field setting to smoothly recover the refrigerant.
- ONLY use leak free hoses, couplings and manifolds in good working condition.
- ONLY use recovery cylinders designated and labelled to recover R32. Note that thread connection to the cylinder is counter clock.
- Always use a calibrated scale in good condition prior and during the refrigerant recovery process to determine the weight of the recovered refrigerant into the external refrigerant cylinder.
- Read the operation instructions of the recovery unit prior to connecting the recovery unit. Verify the recovery unit is suited for R32 refrigerant, check that it is in good working condition, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
- Do NOT overfill the refrigerant cylinder, confirm with the supplier of the refrigerant cylinder about maximum filling ratio if NOT mentioned on the refrigerant cylinder itself. Generally the maximum filling amount should be limited to 60% of the maximum volume of the cylinder.
- Do NOT exceed the maximum working pressure of the refrigerant cylinder, NOT even temporarily.
- When the cylinders have been filled correctly, and the refrigerant recovery process is completed, make sure that the cylinders and the equipment are removed from site promptly and all stop valves on the equipment are (kept) closed.
- The recovered refrigerant MUST be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do NOT mix refrigerants in recovery units and especially NOT in cylinders.
- Recovered refrigerant MUST NOT be charged into another refrigerant system unless it has been cleaned and checked.

WARNING

If compressor is to be removed, ensure that the compressor has been evacuated to an acceptable level to make sure that flammable refrigerant does NOT remain within the lubricant. The evacuation process MUST be carried out prior to returning the compressor to the supplier. During the refrigerant recovery, confirm that the crankcase heater of the compressor body is energized to accelerate this process. When oil is drained from a system, it MUST be carried out safely.

1.4 Cautions



CAUTION

Wear adequate personal protective equipment (protective gloves, safety glasses,...) when installing, maintaining or servicing the system.



CAUTION

To avoid injury, do NOT touch the air inlet or aluminium fins of the unit.



CAUTION

- Do NOT place any objects or equipment on top of the unit.
- Do NOT sit, climb or stand on the unit.

1.5 Notices



NOTICE

- Make sure water quality complies with EU directive 2020/2184.
- Check the system for leaks after each repair/modification of the water side.
- Check drainage system(s) after repairs.
- Be careful when tilting units as water may leak.



NOTICE

Make sure refrigerant piping installation complies with applicable legislation. In Europe, EN378 is the applicable standard.



NOTICE

Make sure the field piping and connections are NOT subjected to stress.

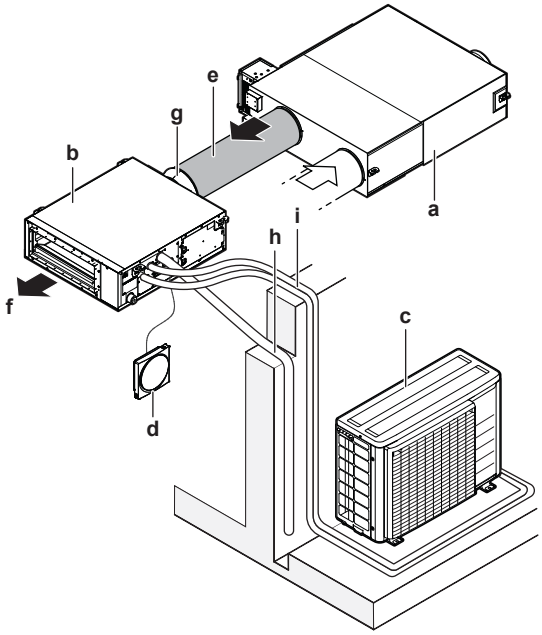
2 General operation

The EKVDX is an airconditioning unit for pretreatment of incoming supply air from a VAM heat reclaim ventilation unit. For comfort temperature control, it is still required to install a normal indoor unit.

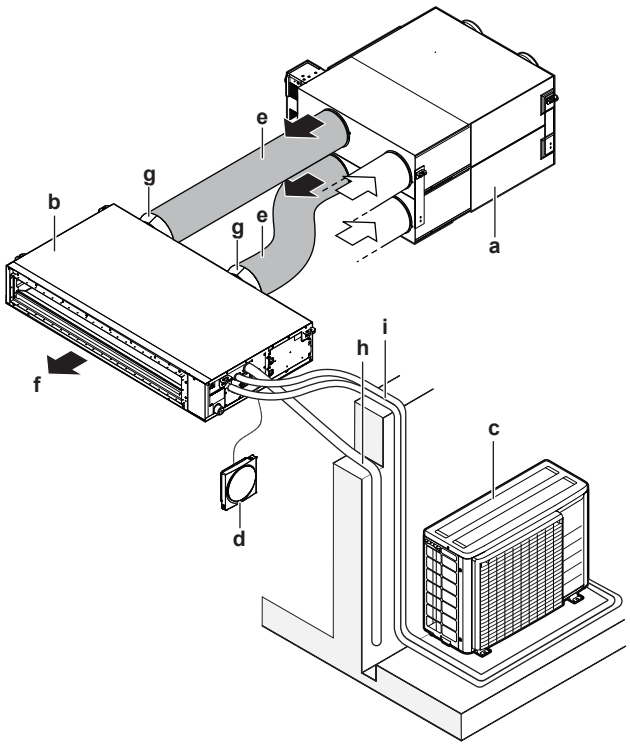
Do not place the EKVDX before the heat reclaim ventilation unit.

INFORMATION

The following figures are just examples and may NOT completely match your system layout.



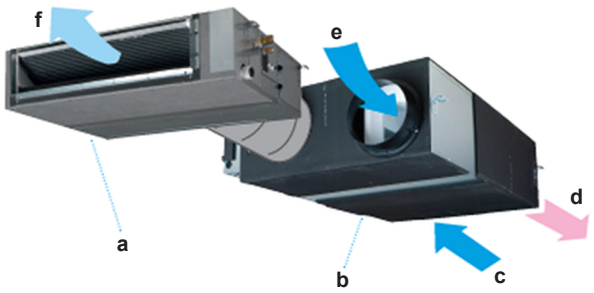
2–1 For VAM500~1000 and EKVDX32~80



2–2 For VAM1500+2000 and EKVDX100

- **a** Heat reclaim ventilation unit (VAM)
- **b** EKVDX indoor unit
- **c** Outdoor unit
- **d** User interface
- **e** Air inlet duct for EKVDX indoor unit
- **f** Discharge air
- **g** Duct flange(s)
- **h** Drain pipe
- **i** Refrigerant piping + transmission cable

The EKVDX-A DX coil module is a unit based on the FXSA-A VRV indoor unit (without its fan). The new VAM-J8 range is mechanically the same as the current VAM-J series but upgraded from PCB and control software point of view to allow cooperation with the DX coil module. The two units are connected with a field supplied duct and with necessary wiring for the control.

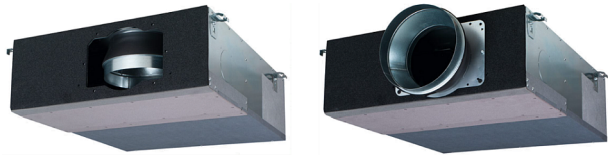


- **a** EKVDX unit
- **b** VAM-J8 unit
- **c** Fresh air
- **d** Exhaust air
- **e** Return air
- **f** Supply air

EKVDX-A/VAM-J8 is a fresh air pre-treatment solution. Please keep in mind that this is NOT a comfort solution. It CAN be connected to a VRV IV, VRV IV+ or VRV5 Outdoor Unit. There are some exception for combinations due to R32 safety, such as VAM350J8 and EKVDX32A2 combination is NOT allowed, these combination rules are present in the Databook. The unit is delivered by default for VRV5 connection.

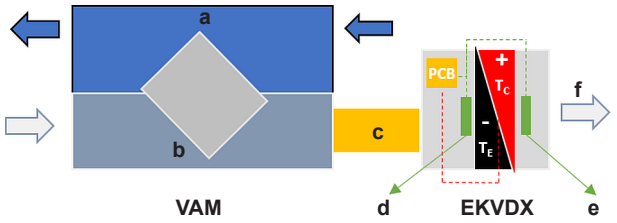
VAM-J8 is flexible for installation: CAN be installed horizontally, vertically or upside down and it is also possible to choose the connecting duct length in function of installation and available ESP conditions. EKVDX-A however, is NOT flexible for installation as you might expect, because it is a DX unit. See installer reference guide for more details.

VAM-J8 unit CAN be installed stand-alone as a Heat Recovery Ventilator while EKVDX-A CANNOT be installed stand-alone.



The two units are connected to each other with the use of field supplied ducts. Depending on the combination of units a duct reducer may be required in order to match the diameter of the duct connection of the two units. The reducer is placed inside the EKVDX-A unit for easier transportation.

Operation logic



a Return side
b Supply side
c Duct
d Suction thermistor R1T
e Discharge thermistor R5T
f Target temperature
Measurement
Control

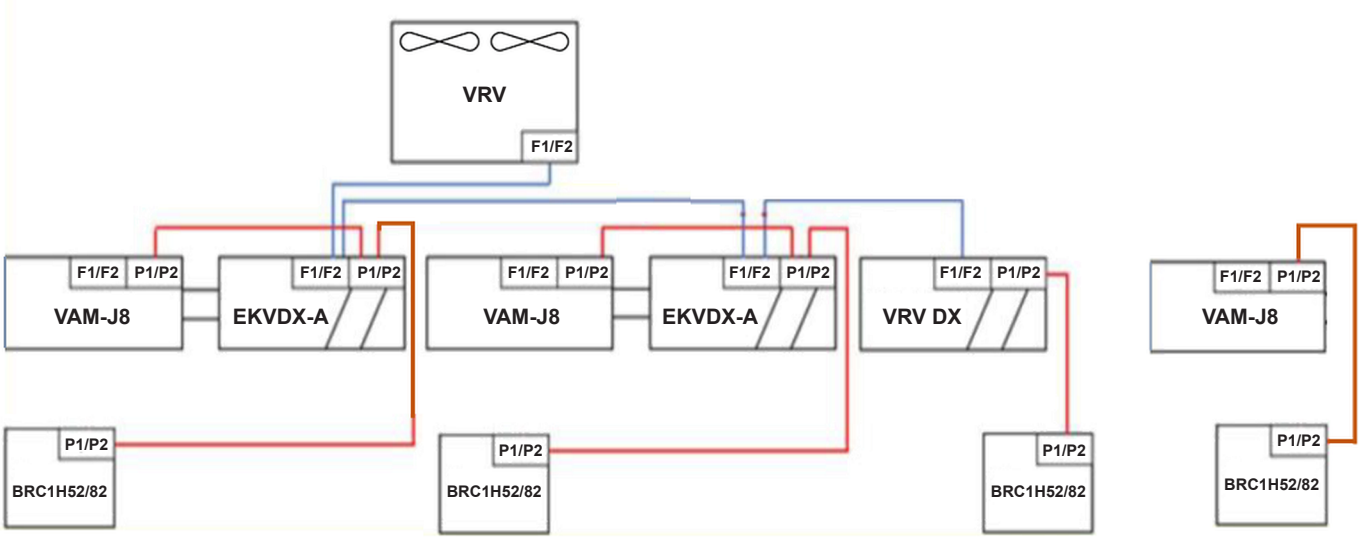
When combining VAM + EKVDX-A, the setpoint on the remote controller will be the target temperature that supply air should have at the end of the duct (just before the ventilated room). Achieving the target temperature will be done indirectly via the measurement of R5T (temperature after coil) and a correction factor (CF) functionality available on the remote controller:

- If ducting is long or NOT well insulated or R5T does NOT correspond to the average supply air temperature, target temperature will be different than R5T. In these cases CF CAN be applied to increase/reduce evaporation/condensation temperature to achieve such R5T which will result to the required target temperature.
  In cooling, target temperature = R5T + CF
  In heating, target temperature = R5T – CF
- If ducting is short or well insulated, the installer can consider that R5T= target temperature, so NO need to set any CF (CF=0 by default).

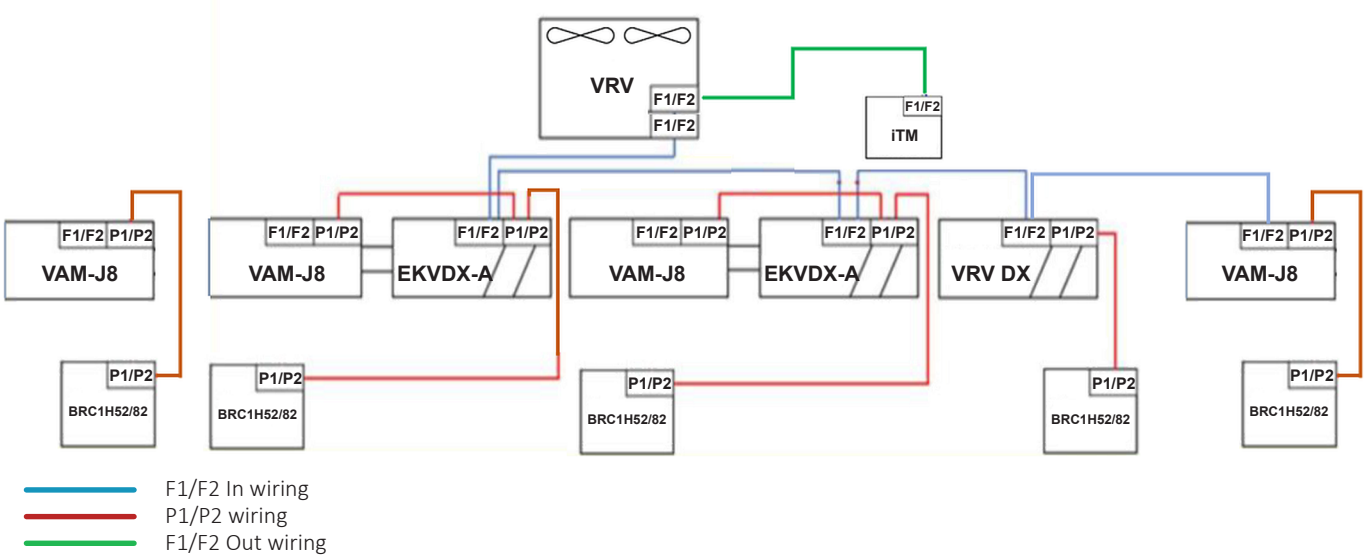
- Correction factor CAN be set by field setting 20-13. Default setting is 0. CF CAN be set in range 0~7 with increments of 0.5.
- Example: Remote controller is set to Cooling and temperature is set to 19°C. R5T (discharge temperature) is 19°C but we expect that air will reach the room at 21°C due to heat losses in the ducting. In this case, you MUST use of correction factor 21-13=5 [it means CF=2]. Then the unit tries to achieve R5T = 17°C which will result to target temperature = 19°C.

Wiring

INDEPENDENT SYSTEM



CENTRALIZED SYSTEM



F1/F2 wiring should ONLY be connected to EKVDX-A in case of EKVDX-A/VAM pair. Upon communication initialization of F1/F2 communication circuit via VRV outdoor unit, if EKVDX-A is detected alone (due to installation mistake or issues at P1/P2 wiring between EKVDX-A and VAM etc) then UJ-35 error will be triggered. If F1/F2 is connected to VAM as well, then UJ-36 error will be triggered.

BRC1H52/82* is the dedicated remote controller for R32 units. In case of VRV R32 and BRC1H51/81 is used, U5-04 error will be triggered. No more than 1 pair of EKVDX-A/VAM CAN be connected through P1/P2 wiring. EKVDX-A/VAM is ALSO compatible with VRV IV and VRV IV+, in this case a field setting is required at VAM and EKVDX-A unit to indicate system is R410A. In this case BRC1H51/81 can be used.

VAM CAN be installed standalone as well. In this case it should have a separate remote controller. If centralized control is to be used, then F1/F2 In wiring will include the standalone VAM. In this case VAM will NOT be registered as a unit via VRV, but it will be visible through the central controller.

3 Troubleshooting

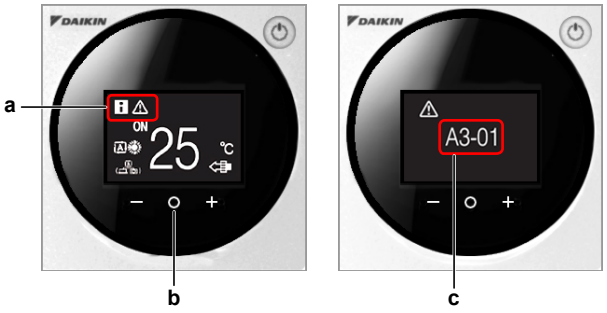
3.1 To retrieve error codes and check error history

3.1.1 Via the indoor unit remote controller BRC1H

> **INFORMATION**
>
> Images are in English and for reference ONLY. For more details on the Madoka Assistant please refer to the BRC1H training course material which is available on the Daikin Business Portal.

To retrieve the error code

To indicate a system error, the controller displays ⚠ on the messages zone of the home screen.



a Messages zone
b Middle button
c Error screen

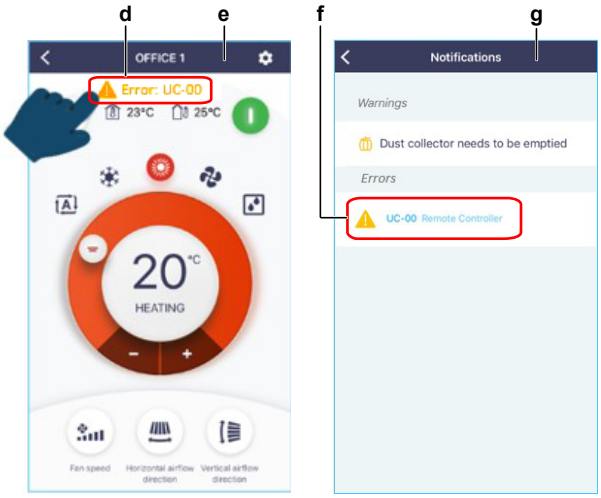
1. Press the middle button to enter the main menu from the home screen.

   Result: An error screen is displayed.

2. Press the middle button to return to the home screen.

Active error codes are also accessible through the Madoka Assistant for BRC1H.

The active error is shown on the home screen.



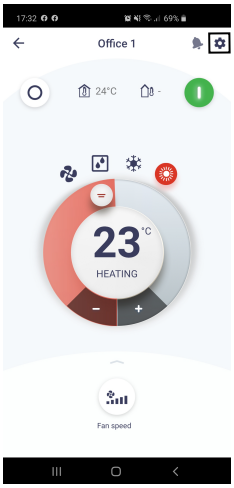
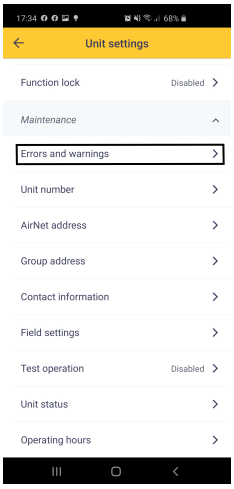
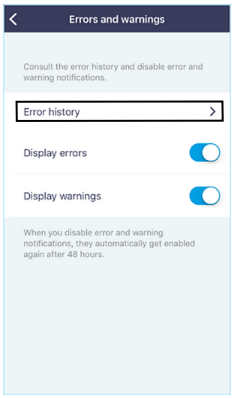
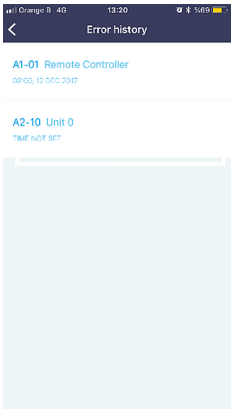
d Active error
e Home screen
f Error(s) details
g Notifications screen

3 Tap the active error.

Result: The detail(s) of the error(s) are shown on the Notifications screen.

To check the error history

To check the error history with the Madoka Assistant for BRC1H:

#	Action	Image for reference	Result
1	Tap the settings icon.		The Unit settings screen is displayed.
2	Tap Errors and warnings.		The Errors and warnings screen is displayed.
3	Tap Error history.	 	The Error history screen is displayed.

3.2 Error based troubleshooting

3.2.1 A0-00 – External protection device activated

EKVDX-A units

Trigger	Effect	Reset
T1-T2 input is ON and field setting 22-1=3.	Unit will stop operating	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check if the field setting 22-1 is correctly set according to the following wiring situations on T1-T2 of X1M terminal of the indoor unit. See "7.8 Field settings" [▸ 197]. Correct as needed.

- No wiring connected: Field setting 22-1=1
- Wiring connected to a window or door contact: Field setting 22-1=1
- Wiring connected to a remote operation switch: Field setting 22-1=2
- Wiring connected to an external protection device (fire alarm, R32 leak detection sensor,...): Field setting 22-1=3
  Possible cause: Incorrect field setting.

2 If wiring connected to T1-T2 of X1M terminal of the indoor unit, check correct connection and continuity of the wiring. See "7.2 Wiring diagram" [▸ 177].

Possible cause: Faulty or damaged wiring between T1-T2 of X1M terminal of the indoor unit and external device.

3 If wiring is connected, measure on T1-T2 of X1M terminal of the indoor unit to check for the correct functioning of the external device:

- Wiring connected to a window or door contact: Open circuit (unit continues previous operation, remote controller enabled) when window / door is closed, short-circuit (forced stop, remote controller buttons disabled) when window / door is open. Replace window / door contact if incorrect measurement.
  Possible cause: Faulty window / door contact.
- Wiring connected to a remote operation switch: Open circuit when OFF command to the unit, short-circuit when ON command to the unit. Replace remote operation switch if incorrect measurement.
  Possible cause: Faulty remote operation switch.
- Wiring connected to an external protection device (fire alarm, R32 leak detection sensor,...): Short-circuit when normal operation, open circuit (forced stop with error code A0-00) when external protection device is active. If open circuit is detected, check and eliminate the root cause why the protection device is activated. Do NOT try to run the unit until the root cause is eliminated. If NO root cause was found, protection device may be faulty. Replace as needed.
  Possible cause: Root cause of external protection device activation or faulty external protection device.

4 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

5 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

> **INFORMATION**
>
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.2 A0-11 – R32 leakage detection

EKVDX-A units

Trigger	Effect	Reset
The R32 sensor indoor unit detected a refrigerant leak while fan of indoor unit is switched ON.	Indoor unit will stop operating after end of automatic refrigerant recovery to the outdoor unit.	▪ Power reset of the indoor unit. ▪ Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit. ▪ Outdoor unit shows error “UA-55”. Set field setting 2-47 to 1 on the outdoor unit.

To solve the error code

> **INFORMATION**
>
> It is recommended to perform the checks in the listed order.

1 Check the field piping for refrigerant leak. Check saturation pressure of the field piping via the liquid service port and gas stop valve.

2 If saturation pressure (gas and/or liquid) <outdoor ambient temperature, refrigerant leak is present. Perform as follows to repair the refrigerant leak:

- Recover the refrigerant, see "5.2 Refrigerant circuit" [▸ 169].
- Repair the field piping.
- Perform a pressure test of the field piping.
- Replace the R32 leak detection sensor of the indoor unit with error code A0-11. After replacement, indoor unit will display error code CH-10.
- Recharge the refrigerant at the outdoor unit. Consult amount sticker. See installation manual of the outdoor unit for correct refrigerant charge procedure.
- Fill in the logbook.

  Possible cause: Refrigerant leak at indoor unit side.

3 If saturation pressure (gas and/or liquid) = outdoor ambient temperature, NO refrigerant leak is present. Perform as described below.

4 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See "4.11 R32 leak detection sensor" [▸ 146].

Possible cause: Faulty R32 leak detection sensor.

5 Check if any external (foreign) vapor substance influenced the functioning of the R32 leak detection sensor. Repair as needed.

Possible cause: External (foreign) vapor substance reacted with R32 leak detection sensor.

6 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.3 A1-00 – Main PCB abnormality

EKVDX-A and VAM-J8 units

INFORMATION

In case of EKVDX-A + VAM-J8 combination: check via the remote controller which indoor unit generates this error. Perform procedures described below for the applicable indoor unit.

Trigger	Effect	Reset
Data read error from EEPROM.	Unit will stop operating.	Power reset of indoor unit.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.4 A3-00 – Drain water level abnormality

EKVDX-A units

Trigger	Effect	Reset
Float switch is open circuit during normal operation.	Unit willl stop operating.	Remote controller reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Check for excess water level in the drain pan. Empty the drain pan and correct installation of drain piping as needed. See indoor unit installation manual for more detailed information.

Possible cause: Excess water in the drain pan and/or incorrect installation of drain piping.

3 Perform a check of the float switch. See "4.4 Float switch" [▸ 84].

Possible cause: Faulty float switch.

4 Perform a check of the drain pump. See "4.2 Drain pump" [▸ 74].

Possible cause: Faulty drain pump.

5 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.5 A3-08 – Drain pump connector open

EKVDX-A units

Trigger	Effect	Reset
Drain pump NOT detected.	Unit willl stop operating.	Power reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Perform a check of the drain pump. See "4.2 Drain pump" [▸ 74].

Possible cause: Faulty drain pump.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.6 A6-01-02-05-06 – Fan motor abnormality - motor lock

VAM-J8 units

Trigger	Effect	Reset
Fan speed does NOT rise when PCB command fan ON.	Units will stop operating.	Remote controller reset.

Sub code	Unit	Fan motor		Fan PCB
01	VAM350~650J8	Supply air	M1F	A2P
	VAM800+1000J8	Supply air	M2F	A3P
	VAM1500+2000J8	Supply air (bottom)	M2F	A3P
02	VAM350~650J8	Exhaust air	M2F	A2P
	VAM800+1000J8	Exhaust air	M1F	A2P
	VAM1500+2000J8	Exhaust air (bottom)	M1F	A2P
05	VAM1500+2000J8	Supply air (top)	M4F	A5P
06	VAM1500+2000J8	Exhaust air (top)	M3F	A4P

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Depending on your unit, perform a check of the appropriate indoor unit fan motor (see table above). See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

3 Depending on your unit, perform a check of the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.7 A6-10-12-14-16 – Fan motor abnormality - overcurrent or IPM protection

VAM-J8 units

Trigger	Effect	Reset
PCB detects too high current.	Units will stop operating.	Remote controller reset.

Sub code	Unit	Fan motor		Fan PCB
10	VAM350~650J8	Supply air	M1F	A2P
	VAM800+1000J8	Supply air	M2F	A3P
	VAM1500+2000J8	Supply air (bottom)	M2F	A3P
12	VAM350~650J8	Exhaust air	M2F	A2P
	VAM800+1000J8	Exhaust air	M1F	A2P
	VAM1500+2000J8	Exhaust air (bottom)	M1F	A2P
14	VAM1500+2000J8	Supply air (top)	M4F	A5P
16	VAM1500+2000J8	Exhaust air (top)	M3F	A4P

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Depending on your unit, perform a check of the appropriate indoor unit fan motor (see table above). See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

3 Depending on your unit, perform a check of the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.8 A6-11-13-15-17 – Fan motor abnormality - position detection error

VAM-J8 units

Trigger	Effect	Reset
While unit is running: actual rotation speed by Hall IC sensor on fan motor <fan step command by PCB or no position signal from Hall IC sensor.	Units will stop operating.	Remote controller reset.

Sub code	Unit	Fan motor		Fan PCB
11	VAM350~650J8	Supply air	M1F	A2P
	VAM800+1000J8	Supply air	M2F	A3P
	VAM1500+2000J8	Supply air (bottom)	M2F	A3P
13	VAM350~650J8	Exhaust air	M2F	A2P
	VAM800+1000J8	Exhaust air	M1F	A2P
	VAM1500+2000J8	Exhaust air (bottom)	M1F	A2P
15	VAM1500+2000J8	Supply air (top)	M4F	A5P
17	VAM1500+2000J8	Exhaust air (top)	M3F	A4P

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Depending on your unit, perform a check of the appropriate indoor unit fan motor (see table above). See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

3 Depending on your unit, perform a check of the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.9 A6-22 – Unstable fan rpm

VAM-J8 units

Trigger	Effect	Reset
Fan PCB detects irregular fan rpm signals.	Unit will NOT stop operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Perform a check of the indoor unit fan motors. See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

3 Perform a check of the indoor unit fan PCBs. See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.10 A6-28 – Airflow rate below critical threshold

VAM-J8 units

Trigger	Effect	Reset
The airflow is lower than the legal limit.	VAM and EKVDX unit will stop operating. Outdoor unit connected to EKVDX unit will stop operating.	Power reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 This error can ONLY occur if VAM-J8 and EKVDX-A are installed together where field settings are 28-10=2 and 29-15=2. If it's a standalone VAM-J8 make sure to perform correct field settings. See "7.8 Field settings" [▸ 197].

Possible cause: Incorrect field settings.

2 Check that the ducting is compliant with the installation limits. See installer reference guide.

Possible cause: Ducting is incorrect, too long or has incorrect size.

3 Clean the air filter of the indoor unit(s). See "6 Maintenance" [▸ 171].

Possible cause: Faulty or dirty air filter.

4 Perform a check of the indoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty indoor air thermistor.

5 Perform a check of the outdoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty outdoor air thermistor.

6 Perform a check of the indoor unit fan motors. See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

7 Perform a check of the indoor unit fan PCBs. See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

8 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.11 A6-29 – Airflow rate too low

VAM-J8 units

Trigger	Effect	Reset
The airflow is lower than the threshold level.	VAM and EKVDX unit will stop operating.	Power reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 This error can ONLY occur if VAM-J8 and EKVDX-A are installed together where field settings are 28-10=2 and 29-15=2. If it's a standalone VAM-J8 make sure to perform correct field settings. See "7.8 Field settings" [▸ 197].

Possible cause: Incorrect field settings.

2 Check that the ducting is compliant with the installation limits. See installer reference guide.

Possible cause: Ducting is incorrect, too long or has incorrect size.

3 Clean the air filter of the indoor unit(s). See "6 Maintenance" [▸ 171].

Possible cause: Faulty or dirty air filter.

4 Perform a check of the indoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty indoor air thermistor.

5 Perform a check of the outdoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty outdoor air thermistor.

6 Perform a check of the indoor unit fan motors. See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

7 Perform a check of the indoor unit fan PCBs. See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

8 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.12 A6-30 – Airflow rate lower than normal

VAM-J8 units

Trigger	Effect	Reset
The airflow is lower than the threshold level.	Unit will NOT stop operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 This error can ONLY occur if VAM-J8 and EKVDX-A are installed together where field settings are 28-10=2 and 29-15=2. If it's a standalone VAM-J8 make sure to perform correct field settings. See "7.8 Field settings" [▸ 197].

Possible cause: Incorrect field settings.

2 Check that the ducting is compliant with the installation limits. See installer reference guide.

Possible cause: Ducting is incorrect, too long or has incorrect size.

3 Clean the air filter of the indoor unit(s). See "6 Maintenance" [▸ 171].

Possible cause: Faulty or dirty air filter.

4 Perform a check of the indoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty indoor air thermistor.

5 Perform a check of the outdoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty outdoor air thermistor.

6 Perform a check of the indoor unit fan motors. See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

7 Perform a check of the indoor unit fan PCBs. See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

8 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.13 A8-01 – Fan motor abnormality - power supply abnormality

VAM-J8 units

Trigger	Effect	Reset
Input voltage detected by PCB too low or too high.	Units will stop operating.	Remote controller reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Perform a check of the indoor unit fan PCBs. See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

3 Perform a check of the indoor unit fan motors. See "4.5 Indoor unit fan motor" [▸ 87].

Possible cause: Faulty indoor unit fan motor.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.14 A9-01 – Y1E Expansion valve coil abnormality

EKVDX-A units

Trigger	Effect	Reset
Upon power reset, Y1E expansion valve coil is NOT detected.	Unit will stop operating.	Power reset of indoor unit.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

3 Perform a check of the indoor unit expansion valve. See "4.3 Expansion valve" [▸ 77].

Possible cause: Faulty expansion valve.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.15 A9-02 – Y1E Expansion valve body abnormality

EKVDX-A units

Trigger	Effect	Reset
Difference between gas temperature and liquid temperature too high or liquid temperature too low during cooling operation, thermostat OFF.	The indoor unit with this error will stop refrigerant flow (expansion valve OFF) and VAM unit will resume fan operation (fan ON). All other indoor units and outdoor unit will continue operating.	Power reset of indoor unit.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

3 Perform a check of the indoor unit refrigerant gas thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty refrigerant gas thermistor or connector fault.

4 Perform a check of the indoor unit refrigerant liquid thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty refrigerant liquid thermistor.

5 Perform a check of the indoor unit expansion valve. See "4.3 Expansion valve" [▸ 77].

Possible cause: Faulty expansion valve.

6 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.16 AF-00 – Drain back flow

EKVDX-A units

Trigger	Effect	Reset
During drain pump OFF, float switch opens, drain pump recovery operation starts for 10 minutes. When drain pump recovery restarted 5 times, error code AF-00 is displayed.	Unit will stop thermostat during drain pump recovery operation.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check for excess water level in the drain pan. Check drain connector to the common drain pipe, and make sure minimum height is respected. Empty the drain pan and correct installation of drain piping as needed. See indoor unit installation manual for more detailed information.

Possible cause: Excess water in the drain pan and/or incorrect installation of drain piping. Drain water from other operating indoor unit may run into the indoor unit with non-operating drain pump.

2 Perform a check of the float switch. See "4.4 Float switch" [▸ 84].

Possible cause: Faulty float switch.

3 Perform a check of the drain pump. See "4.2 Drain pump" [▸ 74].

Possible cause: Faulty drain pump.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.17 AJ-01 – A1P Capacity setting error

EKVDX-A and VAM-J8 units

INFORMATION

In case of EKVDX-A + VAM-J8 combination: check via the remote controller which indoor unit generates this error. Perform procedures described below for the applicable indoor unit.

Trigger	Effect	Reset
Capacity class CANNOT be read by indoor unit main PCB.	Unit will stop operating.	Power reset of indoor unit.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

3 Check if the correct spare part is installed for the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112]. Check that the correct capacity setting adapter is connected to X23A of the PCB.

Possible cause: Incorrect spare part PCB or incorrect capacity setting adapter.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.18 AJ-02 – A1P Setting error for Y1E expansion valve

EKVDX-A units

Trigger	Effect	Reset
Y1E expansion valve type CANNOT be read by PCB A1P.	Unit will stop operating.	Power reset of indoor unit.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the power supply to the indoor unit. See "5.1 Electrical circuit" [▸ 164].

Possible cause:
- Faulty or disturbance of the power supply (imbalance),
- Phase missing,
- Power drop,
- Short circuit.

2 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

3 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.19 C1-00 – Communication abnormality between main PCB and fan PCB

Trigger	Effect	Reset
When normal transmission between main PCB and fan PCB is NOT conducted for a certain duration (15 seconds or more).	Unit will stop operating.	Power reset.

To solve the error code

1 Perform power reset. If error is NOT resolved:

- Perform a check of the indoor unit fan PCBs. See "4.6 Indoor unit fan PCB" [▸ 97].
  Possible cause: Faulty indoor unit fan PCB.
  Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].
  Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.20 C4-00 – Liquid thermistor abnormality

EKVDX-A units

Trigger	Effect	Reset
Indoor unit liquid thermistor read-out is out of range.	Unit will stop operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Perform a check of the indoor unit refrigerant liquid thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty refrigerant liquid thermistor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.21 C5-00 – Gas thermistor abnormality

EKVDX-A units

Trigger	Effect	Reset
Indoor unit gas thermistor read-out is out of range.	Unit will stop operating.	Auto reset.

To solve the error code

> **INFORMATION**
> It is recommended to perform the checks in the listed order.

1 Perform a check of the indoor unit refrigerant gas thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty refrigerant gas thermistor or connector fault.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

> **INFORMATION**
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.22 C6-01-11-21-31 – Compatibility error between main PCB and fan PCB

VAM-J8 units

Trigger	Effect	Reset
Incompatibility detected between main PCB and fan PCB.	Units will stop operating.	Power reset.

Sub code	Unit	Fan PCB
01	VAM350~650J8	A2P
	VAM800+1000J8	A3P
	VAM1500+2000J8	A3P
11	VAM350~650J8	A2P
	VAM800+1000J8	A2P
	VAM1500+2000J8	A2P
21	VAM1500+2000J8	A5P
31	VAM1500+2000J8	A4P

To solve the error code

> **INFORMATION**
> It is recommended to perform the checks in the listed order.

1 Depending on your unit, check if the correct spare part is installed for the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Incorrect spare part PCB.

2 Check if the correct spare part is installed for the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112]. Check that the correct capacity setting adapter is connected to X23A of the PCB.

Possible cause: Incorrect spare part PCB or incorrect capacity setting adapter.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.23 C6-02-12-22-32 – Setting error between main PCB and fan PCB

VAM-J8 units

Trigger	Effect	Reset
Setting error detected between main PCB and fan PCB.	Units will stop operating.	Power reset.

Sub code	Unit	Fan PCB
02	VAM350~650J8	A2P
	VAM800+1000J8	A3P
	VAM1500+2000J8	A3P
12	VAM350~650J8	A2P
	VAM800+1000J8	A2P
	VAM1500+2000J8	A2P
22	VAM1500+2000J8	A5P
32	VAM1500+2000J8	A4P

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Depending on your unit, check if the correct spare part is installed for the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Incorrect spare part PCB.

2 Check if the correct spare part is installed for the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112]. Check that the correct capacity setting adapter is connected to X23A of the PCB.

Possible cause: Incorrect spare part PCB or incorrect capacity setting adapter.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.24 C6-05-15-25-35 – Fan PCB EEPROM error

VAM-J8 units

Trigger	Effect	Reset
EEPROM error detected on fan PCB.	Units will stop operating.	Power reset.

Sub code	Unit	Fan PCB
05	VAM350~650J8	A2P
	VAM800+1000J8	A3P
	VAM1500+2000J8	A3P
15	VAM350~650J8	A2P
	VAM800+1000J8	A2P
	VAM1500+2000J8	A2P
25	VAM1500+2000J8	A5P
35	VAM1500+2000J8	A4P

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Depending on your unit, check if the correct spare part is installed for the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Incorrect spare part PCB.

2 Check if the correct spare part is installed for the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112]. Check that the correct capacity setting adapter is connected to X23A of the PCB.

Possible cause: Incorrect spare part PCB or incorrect capacity setting adapter.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.25 C6-06-16-26-36 – Fan PCB fin thermistor malfunction

VAM-J8 units

Trigger	Effect	Reset
Fan PCB fin thermistor is open or short-circuit.	Units will stop operating.	Power reset.

Sub code	Unit	Fan PCB
06	VAM350~650J8	A2P
	VAM800+1000J8	A3P
	VAM1500+2000J8	A3P
16	VAM350~650J8	A2P
	VAM800+1000J8	A2P
	VAM1500+2000J8	A2P
26	VAM1500+2000J8	A5P
36	VAM1500+2000J8	A4P

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Depending on your unit, perform a check of the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.26 C6-07-17-27-37 – Fan PCB fin thermistor abnormality

VAM-J8 units

Trigger	Effect	Reset
Fan PCB fin thermistor read-out is abnormal.	Units will stop operating.	Power reset.

Sub code	Unit	Fan PCB
07	VAM350~650J8	A2P
	VAM800+1000J8	A3P
	VAM1500+2000J8	A3P
17	VAM350~650J8	A2P
	VAM800+1000J8	A2P
	VAM1500+2000J8	A2P
27	VAM1500+2000J8	A5P
37	VAM1500+2000J8	A4P

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Depending on your unit, perform a check of the appropriate indoor unit fan PCB (see table above). See "4.6 Indoor unit fan PCB" [▸ 97].

Possible cause: Faulty indoor unit fan PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.27 C9-00 – Air thermistor abnormality

EKVDX-A units

Trigger	Effect	Reset
Indoor unit air thermistor read-out is out of range.	Unit will stop operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Perform a check of the indoor unit air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty indoor unit air thermistor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.28 CA-00 – Discharge thermistor abnormality

EKVDX-A units

Trigger	Effect	Reset
Indoor unit discharge thermistor read-out is out of range.	Unit will stop operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Perform a check of the indoor unit discharge thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty indoor unit discharge thermistor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

> **INFORMATION**
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.29 CH-00 – CO2 sensor alarm

VAM-J8 units

Trigger	Effect	Reset
Optional CO_2 sensor is disconnected or short-circuit.	Unit will continue operating. Fan speed is NO more adjusted according to CO_2 level.	Auto reset.

To solve the error code

> **INFORMATION**
> It is recommended to perform the checks in the listed order.

1 Perform a check of the optional CO_2 sensor. See "4.10.2 Heat reclaim ventilation unit" [▸ 143].

Possible cause: Faulty CO_2 sensor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

> **INFORMATION**
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.30 CH-01 – R32 leak detection sensor failure or disconnected

EKVDX-A units

Trigger	Effect	Reset
The R32 sensor NOT connected to indoor unit main PCB.	Unit will stop operating.	Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit.
R32 sensor PCB failure		

To solve the error code

> **INFORMATION**
> It is recommended to perform the checks in the listed order.

1 Check wiring (insertion and continuity) on connector X41A on the indoor unit main PCB and connector CN1 on the PCB of the R32 leak detection sensor. See "7.2 Wiring diagram" [▸ 177].

Possible cause: Faulty or damaged wiring between indoor unit main PCB and R32 leak detection sensor.

2 Check the error history for error code A0-11, see "3 Troubleshooting" [▸ 20]. If A0-11 is found, R32 leak detection sensor was replaced after this error and power reconnected. Check if field setting 25-14=02. Correct if needed, see "7.8 Field settings" [▸ 197].

Possible cause: R32 leak detection sensor was replaced without adjusting field setting 25-14.

3 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See "4.11 R32 leak detection sensor" [▸ 146].

Possible cause: Faulty R32 leak detection sensor.

4 Check if any external (foreign) vapor substance influenced the functioning of the R32 leak detection sensor. Repair as needed.

Possible cause: External (foreign) vapor substance reacted with R32 leak detection sensor.

5 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.31 CH-02 – R32 leak detection sensor life time is exceeded

EKVDX-A units

Trigger	Effect	Reset
The R32 sensor detected operation of 10 years or more.	Indoor unit will stop operating.	▪ Power reset of the indoor unit. ▪ Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the error history to see if R32 leak detection sensor was replaced, see "3 Troubleshooting" [▸ 20]. If replaced, check if timer was reset during sensor replacement. Reset as needed.

Possible cause: R32 leak detection sensor was replaced without timer reset.

2 Check the operation time of the R32 leak detection sensor of the faulty indoor unit. If operation time is 10 years, replace the R32 leak detection sensor. See "4.11 R32 leak detection sensor" [▸ 146].

Possible cause: R32 leak detection sensor operation time reached maximum value (10 years).

3 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See "4.11 R32 leak detection sensor" [▸ 146].

Possible cause: Faulty R32 leak detection sensor.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.32 CH-05 – R32 leak detection sensor life time <6 months

EKVDX-A units

Trigger	Effect	Reset
The R32 sensor detected operation of 9.5 years or more.	Unit will continue operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the error history to see if R32 leak detection sensor was replaced, see "3 Troubleshooting" [▸ 20]. If replaced, check if timer was reset during sensor replacement. Reset as needed.

Possible cause: R32 leak detection sensor was replaced without timer reset.

2 Check the operation time of the R32 leak detection sensor of the faulty indoor unit. If operation time approaches 10 years, order a new R32 leak detection sensor and replace at the next maintenance interval.

Possible cause: R32 leak detection sensor operation time approaches maximum value (10 years).

3 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See "4.11 R32 leak detection sensor" [▸ 146].

Possible cause: Faulty R32 leak detection sensor.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.33 CH-10 – R32 leak detection sensor replacement to confirm

EKVDX-A units

Trigger	Effect	Reset
The R32 sensor detected disconnection between indoor unit main PCB and R32 sensor.	Indoor unit will stop operating.	▪ Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit.
R32 sensor replaced and power reset after error A0-11		

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check wiring (insertion and continuity) on connector X41A on the indoor unit main PCB and connector CN1 on the PCB of the R32 leak detection sensor. See "7.2 Wiring diagram" [▸ 177].

Possible cause: Faulty or damaged wiring between indoor unit main PCB and R32 leak detection sensor.

2 Check the error history for error code A0-11, see "3 Troubleshooting" [▸ 20]. If A0-11 is found, R32 leak detection sensor was replaced after this error and power reconnected. Check if field setting 25-14=02. Correct if needed, see "7.8 Field settings" [▸ 197].

Possible cause: R32 leak detection sensor was replaced without adjusting field setting 25-14.

3 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See "4.11 R32 leak detection sensor" [▸ 146].

Possible cause: Faulty R32 leak detection sensor.

4 Check if any external (foreign) vapor substance influenced the functioning of the R32 leak detection sensor. Repair as needed.

Possible cause: External (foreign) vapor substance reacted with R32 leak detection sensor.

5 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.34 CJ-00 – Remote controller air thermistor abnormality

EKVDX-A units

Trigger	Effect	Reset
Remote controller air thermistor read-out is out of range.	Indoor unit will continue operating, using indoor unit air thermistor as input.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Clear the error history of the remote controller. See operation manual of the remote controller for detailed information.

2 If error is still active, replace the remote controller. See "4.13 Remote controller user interface" [▸ 152].

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.35 U5-04 – Communication abnormality between indoor unit main PCB and remote controller

EKVDX-A and VAM-J8 units

Trigger	Effect	Reset
Transmission abnormality between indoor unit main PCB and remote controller.	Unit will stop operating.	Auto reset.

To solve the error code

INFORMATION

EKVDX-A + VAM-J8 pair can ONLY have 1 remote controller. In this setup sub remote controllers and/or supervisor remote controllers are NOT allowed. Make sure remote controller is set to normal mode. slave mode or supervisor mode is NOT allowed.

VAM-J8 stand-alone installation can have master and slave remote controllers.

EKVDX-A unit CANNOT be installed stand-alone.

INFORMATION

It is recommended to perform the checks in the listed order.

- IN CASE OF VAM-J8 STAND-ALONE

1 Check if multiple remote controllers are wired to the same indoor unit. One remote controller needs to be set to main while all other remote controllers need to be set to sub. Also check that the remote controllers are correctly wired. See installer reference guide of the remote controller for detailed information.

Possible cause: No main remote controller set when multiple units are wired to the same indoor unit.

2 Perform a check of the remote controller. See "4.13 Remote controller user interface" [▸ 152].

Possible cause: Faulty remote controller or faulty transmission wiring between remote controller and indoor unit.

3 If possible, switch the faulty remote controller with a remote controller from another indoor unit.

- If error transfers to the other indoor unit, replace the remote controller. See "4.13 Remote controller user interface" [▸ 152].
  Possible cause: Faulty remote controller.
- If error is still present on the indoor unit, Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].
  Possible cause: Faulty indoor unit main PCB.

- IN CASE OF EKVDX-A + VAM-J8 COMBINATION

1 Perform a check of the remote controller. See "4.13 Remote controller user interface" [▸ 152].

Possible cause: Faulty remote controller or faulty transmission wiring between remote controller and indoor unit.

2 If possible, switch the faulty remote controller with a remote controller from another indoor unit.

- If error transfers to the other indoor unit, replace the remote controller. See "4.13 Remote controller user interface" [▸ 152].
  Possible cause: Faulty remote controller.
- If error is still present on the indoor unit, Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].
  Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.36 U5-06 – Supervisor remote controller not connected/not set

EKVDX-A units

INFORMATION

This error code is NOT generated by the EKVDX-A unit or VAM unit, but by another DX indoor unit in the F1/F2 transmission circuit of the system. The error code is ALSO shown on the remote controller of the EKVDX-A unit.

Supervisor remote controller is NOT possible for EKVDX-A + VAM pair.

Trigger	Effect	Reset
Faulty supervisor remote controller or faulty setting in the system.	Unit will stop operating.	Power reset.

To solve the error code

1 See "Error based troubleshooting" in the outdoor unit service manual and proceed with the troubleshooting of this error code.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.37 U8-00 – Transmission error between Master and Slave remote controller

VAM-J8 units

Trigger	Effect	Reset
Main PCB detects abnormal/missing signal on remote controller transmission line.	Unit will stop operating.	Power reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check if multiple remote controllers are wired to the same indoor unit. One remote controller needs to be set to main while all other remote controllers need to be set to sub. Also check that the remote controllers are correctly wired. See installer reference guide of the remote controller for detailed information.

Possible cause: No main remote controller set when multiple units are wired to the same indoor unit.

2 Perform a check of the remote controller. See "4.13 Remote controller user interface" [▸ 152].

Possible cause: Faulty remote controller or faulty transmission wiring between remote controller and indoor unit.

3 If possible, switch the faulty remote controller with a remote controller from another indoor unit.

- If error transfers to the other indoor unit, replace the remote controller. See "4.13 Remote controller user interface" [▸ 152].
  Possible cause: Faulty remote controller.
- If error is still present on the indoor unit, Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].
  Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.38 U9-01 – Other indoor unit has error

EKVDX-A units

Trigger	Effect	Reset
System mismatch, non-compatible indoor units.	Unit will continue operation.	Auto reset.
At least one other indoor unit on same F1-F2 wiring has an error.		

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1. Check the indoor units for error codes other than U9-01. See "3.2 Error based troubleshooting" [▸ 22] to solve the error code(s).
2. See "Error based troubleshooting" in the outdoor unit service manual and proceed with the troubleshooting of this error code.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.39 U9-02 – Other indoor unit has error

EKVDX-A units

Trigger	Effect	Reset
At least one other indoor unit on same F1-F2 wiring has an error.	Unit will stop operating.	Depends on the error type at other indoor unit.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1. Check the indoor units for error codes other than U9-02. See "3.2 Error based troubleshooting" [▸ 22] to solve the error code(s).
2. See "Error based troubleshooting" in the outdoor unit service manual and proceed with the troubleshooting of this error code.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.40 UA-00 – Wrong remote controller

EKVDX-A and VAM-J8 units

Trigger	Effect	Reset
Wrong type of remote controller detected.	Unit will stop operating.	Power reset.

To solve the error code

> **INFORMATION**
> It is recommended to perform the checks in the listed order.

1 Check the databook for compatible remote controllers. Connect compatible remote controller.

Possible cause: Incompatible remote controller.

> **INFORMATION**
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.41 UC-00 – Central address duplication error

EKVDX-A and VAM-J8 units

Trigger	Effect	Reset
Same central address is assigned to multiple indoor units.	Central controller CANNOT communicate.	Auto reset.

To solve the error code

> **INFORMATION**
> It is recommended to perform the checks in the listed order.

1 Consult remote controller manual and assign dedicated addresses to each indoor unit.

Possible cause: Incorrect address setting.

> **INFORMATION**
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.42 UE-00 – Communication abnormality with central controller

EKVDX-A and VAM-J8 units

Trigger	Effect	Reset
Transmission abnormality with central controller.	Unit will stop operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

If all indoor units display error UE-00

1 See "Error based troubleshooting" in the outdoor unit service manual and proceed with the troubleshooting of this error code.

If ONLY 1 indoor unit displays error UE-00

1 Check if the indoor unit has an assigned group address. Set a group address as needed. See installation manual of the remote controller for procedure to set group address.

Possible cause: No group address assigned to indoor unit.

2 Perform a power reset on the central controller and check if error is resolved.

3 Using the service monitoring tools, check the communication registers.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.43 UJ-34 – Capacity mismatch between VAM and DX module

EKVDX-A units

Trigger	Effect	Reset
Incompatible VAM and EKVDX capacities are installed together.	Unit will NOT operate.	Power reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check for improper combination of units. See the combination table in the Databook for more information. Change the installation with ONLY compatible type units.

2 Check if the correct spare part is installed for the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112]. Check that the correct capacity setting adapter is connected to X23A of the PCB.

Possible cause: Incorrect spare part PCB or incorrect capacity setting adapter.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.44 UJ-35 – Abnormality at VAM unit

EKVDX-A units

Trigger	Effect	Reset
Malfunction detected at VAM unit.	Unit will stop operating.	Power reset.

To solve the error code

1 Check the error code at the VAM-J8 indoor unit. See "3.2 Error based troubleshooting" [▸ 22] to solve the error code.

2 Check the software and EEPROM version on the user interface and PCB. See "4.15 User interface" [▸ 160].

Possible cause: Mismatch between the software ID and EEPROM on the PCB or user interface.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.45 UJ-36 – Transmission error between VAM and EKVDX

EKVDX-A units

Trigger	Effect	Reset
Error detected in transmission between the units.	Unit will stop operating.	Power reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check the transmission wiring between the VAM unit and the DX unit. See "7.2 Wiring diagram" [▸ 177]. Field wiring F1-F2 is ONLY required at DX unit. If F1-F2 wiring is present between VAM unit and DX unit, remove this loop.

Possible cause: Faulty transmission wiring.

2 Check the field settings for VAM unit and DX unit pair application. Make sure to perform the correct settings. See "7.8 Field settings" [▸ 197].

Possible cause: Incorrect field setting.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.46 UJ-37 – VAM unit has A6-28 error

EKVDX-A units

Trigger	Effect	Reset
VAM unit has A6-28 error.	Unit will stop operating.	Power reset.

To solve the error code

1 Check the VAM-J8 indoor unit for error code A6-28. See "3.2 Error based troubleshooting" [▸ 22] to solve the error code.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.47 UJ-38 – VAM unit has A6-29 error

EKVDX-A units

Trigger	Effect	Reset
VAM unit has A6-29 error.	Unit will stop operating.	Power reset.

To solve the error code

1 Check the VAM-J8 indoor unit for error code A6-29. See "3.2 Error based troubleshooting" [▸ 22] to solve the error code.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.48 60-00 – External protection device activated

VAM-J8 units

Trigger	Effect	Reset
Input signal JC-J1 on terminal X2M is closed and field setting 28-8=2 or 28-8=3.	Unit will continue operating	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 If wiring connected to JC-J1 of X2M terminal of the indoor unit, check correct connection and continuity of the wiring. See "7.2 Wiring diagram" [▸ 177].

Possible cause: Faulty or damaged wiring between JC-J1 of X2M terminal of the indoor unit and external device.

2 Check if the field setting 28-8 is correctly set according to the installation. See "7.8 Field settings" [▸ 197]. Correct as needed.

Possible cause: Incorrect field setting.

3 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

> **INFORMATION**
>
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.49 64-01 – Indoor air thermistor malfunction

VAM-J8 units

Trigger	Effect	Reset
Indoor air thermistor open or short-circuit.	Unit will continue operating.	Auto reset.

To solve the error code

> **INFORMATION**
>
> It is recommended to perform the checks in the listed order.

1 Perform a check of the indoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty indoor air thermistor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

> **INFORMATION**
>
> If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.50 64-02 – Indoor air thermistor out of range

VAM-J8 units

Trigger	Effect	Reset
Indoor air thermistor read-out is out of range.	Unit will continue operating.	Auto reset.

To solve the error code

> **INFORMATION**
>
> It is recommended to perform the checks in the listed order.

1 Perform a check of the indoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty indoor air thermistor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.51 65-01 – Outdoor air thermistor malfunction

VAM-J8 units

Trigger	Effect	Reset
Outdoor air thermistor open or short-circuit.	Unit will continue operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Perform a check of the outdoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty outdoor air thermistor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.52 65-02 – Outdoor air thermistor out of range

VAM-J8 units

Trigger	Effect	Reset
Outdoor air thermistor read-out is out of range.	Unit will continue operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Perform a check of the outdoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty outdoor air thermistor.

2 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.53 65-03 – Low outdoor air temperature

VAM-J8 units

Trigger	Effect	Reset
Low outdoor ambient temperature detected during filter contamination inspection function.	Unit will stop operating.	Auto reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

1 Check that the field setting 29-0 is NOT set as 29-0=4 or 29-0=5. See "7.8 Field settings" [▸ 197].

Possible cause: Faulty field setting (filter contamination inspection function NOT available at low ambient temperature).

2 Perform a check of the outdoor air thermistor. See "4.14 Thermistors" [▸ 154].

Possible cause: Faulty outdoor air thermistor.

3 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.2.54 6A-00 – Damper related malfunction

VAM-J8 units

Trigger	Effect	Reset
Limit switch of the damper motor did NOT detect damper movement after motor was energized.	Unit will continue operating.	Power reset.

To solve the error code

INFORMATION

It is recommended to perform the checks in the listed order.

INFORMATION

VAM1500+2000J8 units have 2 damper motors and limit switches. Make sure to check both damper motors and limit switches.

1 Perform a check of the limit switch. See "4.9 Limit switch" [▸ 127].

Possible cause: Faulty limit switch.

2 Perform a check of the damper motor. See "4.1 Damper motor" [▸ 65].

Possible cause: Faulty damper motor.

3 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "5.4 External factors" [▸ 170].

Possible cause: External source may cause interference.

4 Perform a check of the indoor unit main PCB. See "4.8 Indoor unit main PCB" [▸ 112].

Possible cause: Faulty indoor unit main PCB.

INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

3.3 Symptom based troubleshooting

3.3.1 Symptom: The system does not operate

- The air conditioner does not start immediately after the ON/OFF button on the user interface is pressed. If the operation lamp lights, the system is in normal condition. To prevent overloading of the compressor motor, the air conditioner starts 5 minutes after it is turned ON again in case it was turned OFF just before. The same starting delay occurs after the operation mode selector button was used.
- The system does not start immediately after the power supply is turned on. Wait one minute until the micro computer is prepared for operation.

3.3.2 Symptom: White mist comes out of a unit (Indoor unit)

- When humidity is high during cooling operation (in oily and dusty places). If the interior of an indoor unit is extremely contaminated, the temperature distribution inside a room becomes uneven. It is necessary to clean the interior of the indoor unit. Ask your dealer for details on cleaning the unit. This operation requires a qualified service person.
- When the air conditioner is changed over to heating operation after defrost operation. Moisture generated by defrost becomes steam and exits.

3.3.3 Symptom: White mist comes out of a unit (Indoor unit, outdoor unit)

When the system is changed over to heating operation after defrost operation. Moisture generated by defrost becomes steam and is exhausted.

3.3.4 Symptom: The user interface reads "U4" or "U5" and stops, but then restarts after a few minutes

This is because the user interface is intercepting noise from electric appliances other than the air conditioner. The noise prevents communication between the units, causing them to stop. Operation automatically restarts when the noise ceases. A power reset may help to remove this error.

3.3.5 Symptom: Noise of air conditioners (Indoor unit)

- A "zeen" sound is heard immediately after the power supply is turned on. The electronic expansion valve inside an indoor unit starts working and makes the noise. Its volume will reduce in about one minute.
- A continuous low "shah" sound is heard when the system is in cooling operation or at a stop. When the drain pump (NOT available on wall mounted IU) is in operation, this noise is heard.
- A "pishi-pishi" squeaking sound is heard when the system stops after heating operation. Expansion and contraction of plastic parts caused by temperature change make this noise.

3.3.6 Symptom: Noise of air conditioners (Indoor unit, outdoor unit)

- A continuous low hissing sound is heard when the system is in cooling or defrost operation. This is the sound of refrigerant gas flowing through both indoor and outdoor units.

- A hissing sound which is heard at the start or immediately after stopping operation or defrost operation. This is the noise of refrigerant caused by flow stop or flow change.

3.3.7 Symptom: Dust comes out of the unit

When the unit is used for the first time in a long time. This is because dust has gotten into the unit.

3.3.8 Symptom: The units can give off odours

The unit can absorb the smell of rooms, furniture, cigarettes, etc., and then emit it again.

3.3.9 Symptom: Unit operation problems

Symptom	Possible failure	Root cause	Repair
Unit(s) do not operate	Unit(s) do not operate	Missing or abnormal power supply (reverse phase, missing phase, abnormal voltage...) to the outdoor unit	Check Power Supply. See outdoor unit service manual.
		Indoor unit(s) do not receive power supply	Check power supply to the indoor unit(s), check if HAP Led blinks, check fuse(s) on indoor unit board. Also check BPMKs in case indoor unit is of RA type.
		Mismatch of combination of outdoor unit and indoor unit	Check error codes. Check compatibility
		Out of operation range	Check operation range on databook
	All indoor units show  icon blinking continuously	No Cool/Heat master is set	Select Cool/Heat Master by pressing Operating Mode button on the desired unit. The symbol will fade-away for Cool/Heat Master and will be fixed (not blinking) for the remaining indoor units
	Indoor unit(s) show  icon blinking temporarily when ON button is pressed	The unit(s) are either under Centralized Control and prohibited to operate or under Forced OFF operation by T1/T2 input	Release prohibitions from central controller or check T1/T2 contact status or check indoor unit field setting for forced off
	Indoor units show fan-only mode	Transmission initialization not completed	See "To check F1-F2 transmission" [▶ 165]. Perform transmission re-initialization
			Check transmission wiring
			Check indoor unit PCBs
			Check outdoor unit main PCB, see outdoor unit service manual.
Operation sometimes stops	Power failure	A power failure consecutively more than 2 cycles may stop the air conditioner operation	Restore power supply. See outdoor unit service manual.

Symptom	Possible failure	Root cause	Repair
Operation stops and then restarts after 3 minutes.	Outdoor unit performing 'retry' operation	Retry mode triggered by an error	Check field setting 1-23, 1-24, 1-25 for latest retry content. See Field settings in outdoor unit service manual. Refer to error code found for further troubleshooting.
Unit operates but does not cool or does not heat	Piping or wiring mismatch	Transmission or piping problem	Correct piping, wiring
	Abnormal refrigerant amount	Outdoor unit may be overcharged or lacking refrigerant	Check refrigerant amount. See outdoor unit service manual.
	Incorrect thermistor values	Thermistors not in their location, miswiring or faulty thermistor	Check thermistors, see "4.14 Thermistors" [▸ 154] for indoor unit thermistors and see outdoor unit service manual for outdoor unit thermistors.
	Incorrect expansion valve operation	Expansion valve not operating correctly	Check expansion valves. See "4.3 Expansion valve" [▸ 77] for indoor unit valves and see outdoor unit service manual for outdoor unit valves.
	Cross piping/wiring among different outdoor unit systems	Indoor unit transmission line and piping is not connected to the same outdoor unit system	Correct piping, wiring

Symptom	Possible failure	Root cause	Repair
Disturbing operation noise and vibration	Faulty Inverter circuit output on main PCB	Instable output voltage from inverter circuit (on main PCB) to compressor(s)	Check Power Supply, see outdoor unit service manual. Restore the power supply in conform with the requirements. Check inverter circuit on main PCB and check compressor(s), see outdoor unit service manual.
	Installation faults	Unit not installed according to installation manual	Check installation manual. Correct necessary items. Leave required space to outdoor unit for operation
	Wet operation	Liquid compression	Check thermistors. Check for refrigerant overcharge, see outdoor unit service manual. Check expansion valves for heat exchanger that run as evaporator. Check superheat. Recover refrigerant and weigh. Charge refrigerant to the correct amount
	Flash gas on liquid piping	Expansion valve fault of refrigerant shortage	Check expansion valves for heat exchangers that run as evaporator. Check superheat. Recover refrigerant and weigh. Charge refrigerant to the correct amount

3.3.10 Other symptoms

Mode: Cooling	Low pressure	High pressure	Running current
Dirty air filters	Lower than normal	Lower than normal	Lower than normal
Air by-pass between air inlet/outlet @indoor unit	Lower than normal	Lower than normal	Lower than normal
Non condensables (i.e air) in refrigerant	Higher than normal	Higher than normal	Higher than normal
Moisture in refrigerant *1	Lower than normal	Lower than normal	Lower than normal
Impurities (dust, burr, ...) in refrigerant *2	Lower than normal	Lower than normal	Lower than normal
Refrigerant shortage	Lower than normal	Lower than normal	Lower than normal
Insufficient compression *3	Higher than normal	Lower than normal	Lower than normal

Mode: Heating	Low pressure	High pressure	Running current
Dirty air filters	Higher than normal	Higher than normal	Higher than normal

Mode: Heating	Low pressure	High pressure	Running current
Air by-pass between air inlet/outlet @indoor unit	Higher than normal	Higher than normal	Higher than normal
Non condensables (i.e air) in refrigerant	Higher than normal	Higher than normal	Higher than normal
Moisture in refrigerant [*1]	Lower than normal	Lower than normal	Lower than normal
Impurities (dust, burr, …) in refrigerant [*2]	Lower than normal	Lower than normal	Lower than normal
Refrigerant shortage	Lower than normal	Lower than normal	Lower than normal
Insufficient compression [*3]	Higher than normal	Lower than normal	Lower than normal

[*1] Water in the refrigerant freezes inside the electronic expansion valve and is basically the same phenomenon as pump-down.

[*2] Dust, burr in refrigerant clogs refrigerant filters and results with symptoms of pump-down operation.

[*3] Pressure difference between high and low pressure decreases.

4 Components

CAUTION

When replacing a component ALWAYS make sure the correct spare part for your unit is installed.

4.1 Damper motor

4.1.1 Checking procedures

To perform an electrical check of the damper motor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

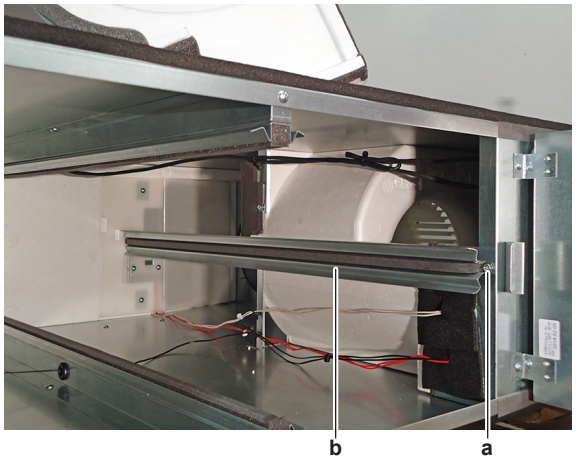
1 Disconnect the damper motor connector X22A (for damper motor M1D) or X28A (for damper motor M2D) from the indoor unit main PCB.

2 Measure the resistance between the wires of the damper motor connector.

Result: The measured resistance MUST be 12.3 kΩ ± 10%.

Damper motor resistance measurements are correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

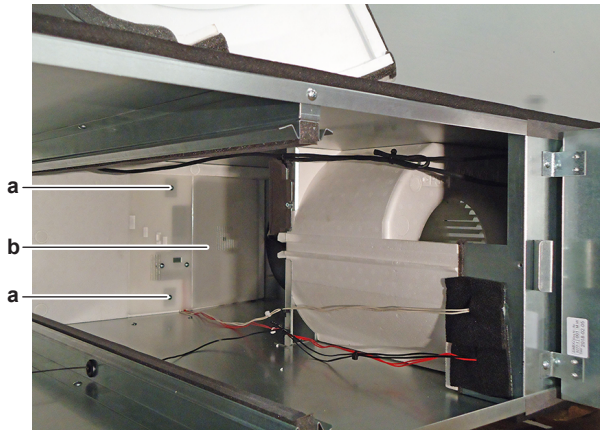
3 Remove the screw from the side rail (supply air fan).



a Screw
b Side rail (supply air fan)

4 Remove the side rail from the unit.

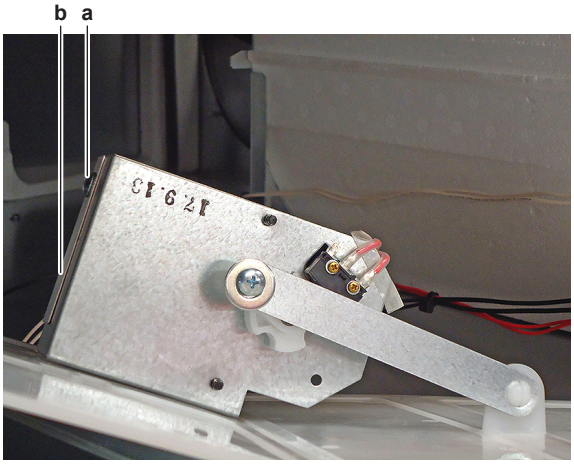
5 Remove the 2 screws from the damper assembly.



a Screw
b Damper assy

6 Carefully pull back the damper assembly.

7 Remove the screw and open (turn over) the damper motor cover.



a Screw
b Cover (damper motor)

8 Disconnect the wiring (Faston connectors) from the damper motor.

9 Measure the resistance between the pins of the connector on the damper motor.

Result: The measured resistance MUST be 12.3 kΩ ± 10%.

Damper motor resistance measurements are correct?	Action
Yes	Replace the damper motor wiring harness, see "4.1.2 Repair procedures" [▸ 66].
No	Replace the damper motor, see "4.1.2 Repair procedures" [▸ 66].

4.1.2 Repair procedures

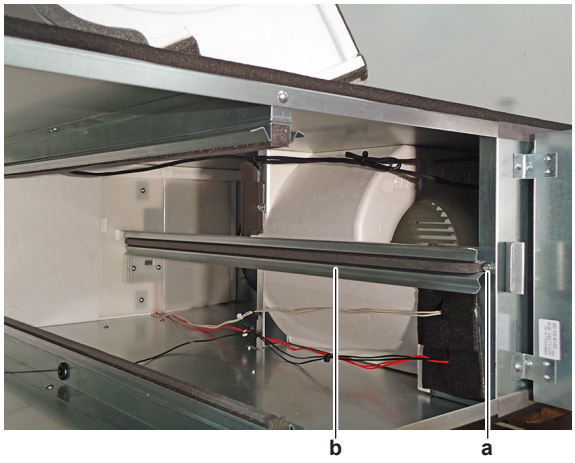
To remove the damper motor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

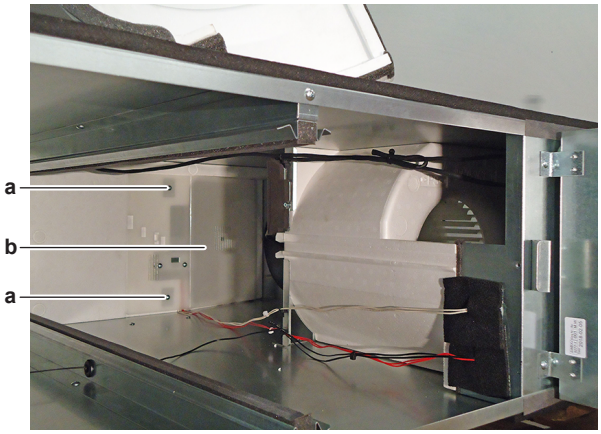
1 Remove the screw from the side rail (supply air fan).



a Screw
b Side rail (supply air fan)

2 Remove the side rail from the unit.

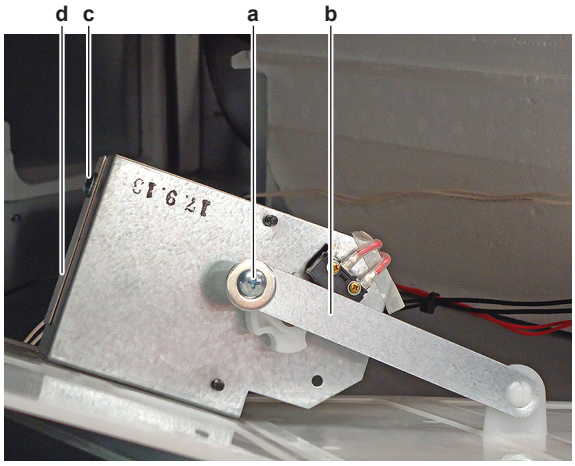
3 Remove the 2 screws from the damper assembly.



a Screw
b Damper assy

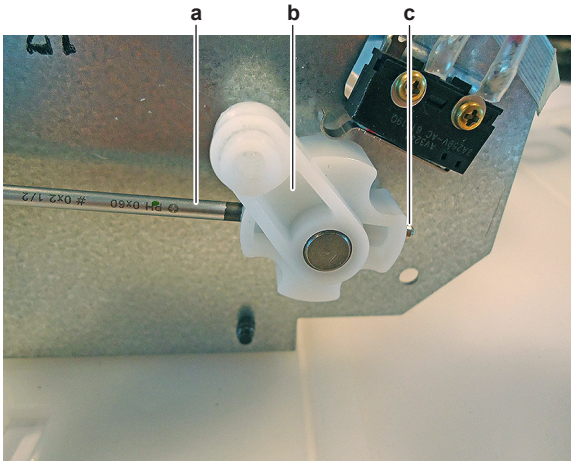
4 Carefully pull back the damper assembly.

5 Remove the screw and remove the damper arm from the cam.



a Screw (damper arm)
b Damper arm
c Screw (damper motor cover)
d Damper motor cover

6 Insert a screwdriver in the cam to push out the retaining spring.

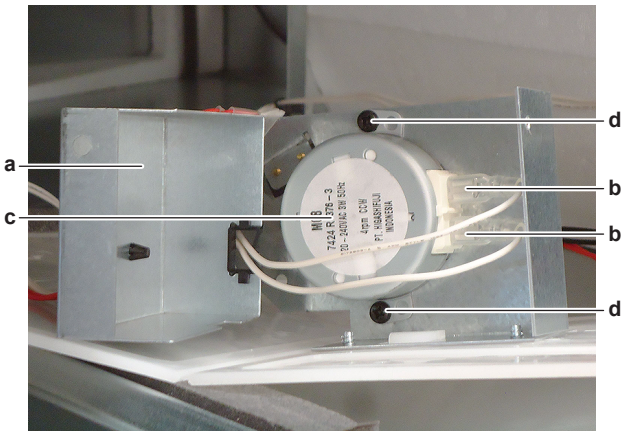


a Screwdriver
b Cam
c Retaining spring

7 Remove the cam from the damper motor shaft.

8 Remove the screw and open (turn over) the damper motor cover.

9 Disconnect the wiring (Faston connectors) from the damper motor.



a Damper motor cover
b Faston connector
c Damper motor
d Screw

10 Remove the 2 screws from the damper motor.

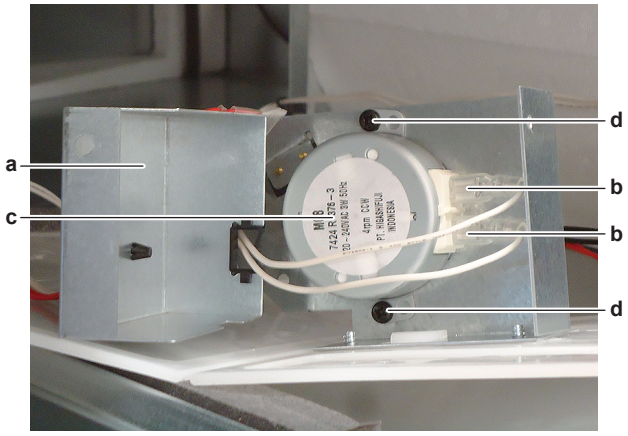
11 Remove the damper motor.

12 To install the damper motor, see "4.1.2 Repair procedures" [▸ 66].

To install the damper motor

1 Install the damper motor in the correct location on its mounting plate.

2 Install and tighten the 2 screws to fix the damper motor.



a Damper motor cover
b Faston connector
c Damper motor
d Screw

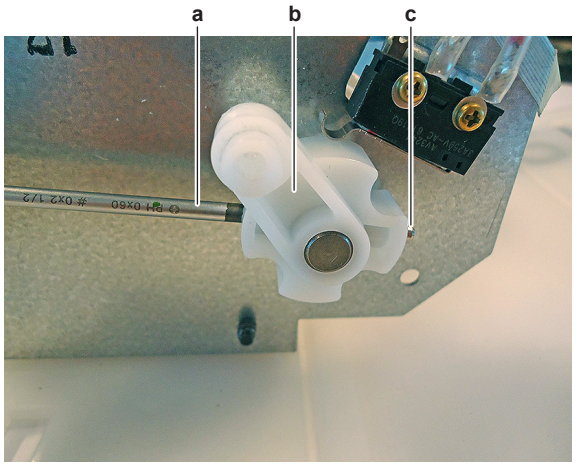
3 Connect the wiring (Faston connectors) to the damper motor.

4 Route the wiring harness through the slot in the damper motor cover.

5 Install the damper motor cover in the correct location on the damper assembly. Make sure the wiring harnesses (damper motor, limit switch are correctly routed).

6 Install and tighten the screw to fix the damper motor cover.

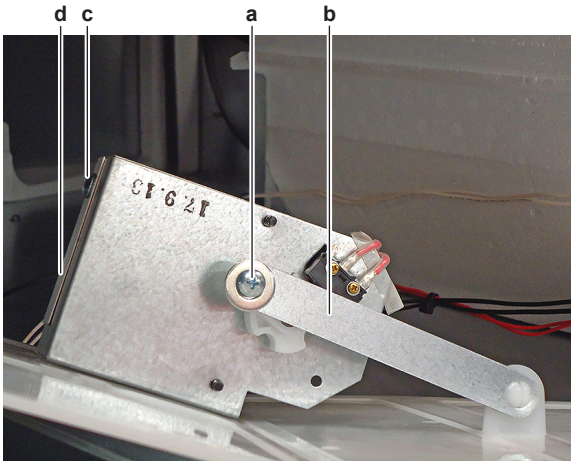
7 Install the cam on the damper motor shaft. Align the hole in the cam with the hole in the damper motor shaft.



a Screwdriver
b Cam
c Retaining spring

8 Carefully insert the retaining spring in the holes. Use a screwdriver to push the retaining spring to the correct position to fix the cam to the damper motor shaft.

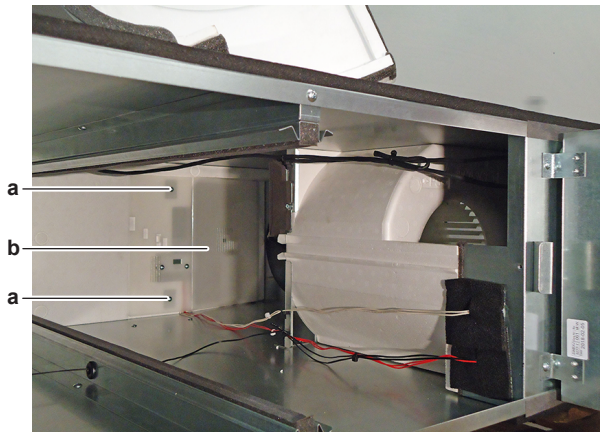
9 Connect the damper arm to the cam. Install and tighten the screw to fix the damper arm.



a Screw (damper arm)
b Damper arm
c Screw (damper motor cover)
d Damper motor cover

10 Install the damper assembly in the correct location on the unit. Make sure the wiring harnesses (damper motor, limit switch) are correctly routed.

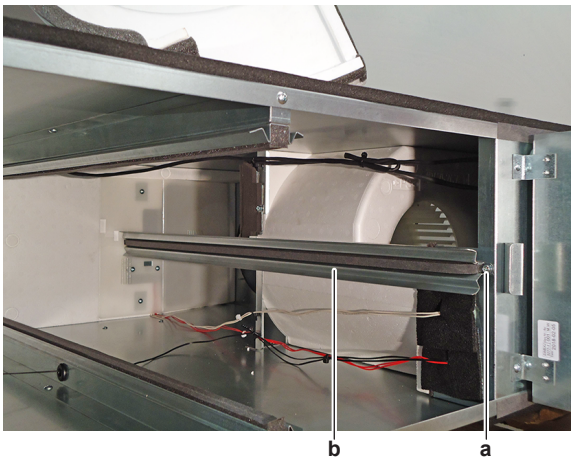
11 Install and tighten the 2 screws to fix the damper assembly.



a Screw
b Damper assy

12 Install the side rail (supply air fan) in the correct location on the unit.

13 Install and tighten the screw to fix the side rail.



a Screw
b Side rail (supply air fan)

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

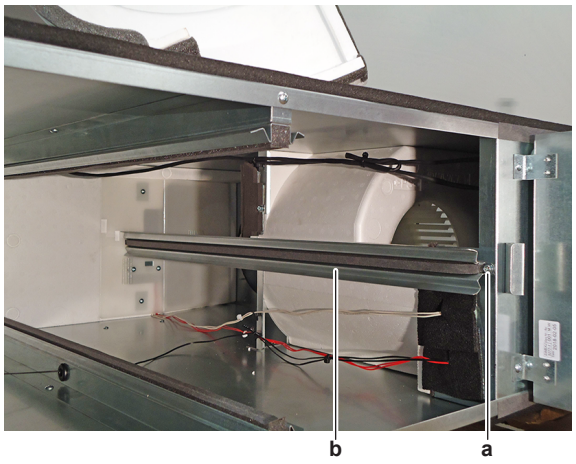
To remove the damper motor wiring harness

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

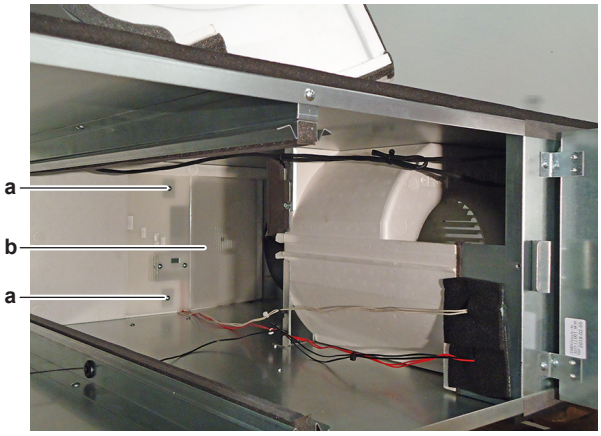
1 Remove the screw from the side rail (supply air fan).



a Screw
b Side rail (supply air fan)

2 Remove the side rail from the unit.

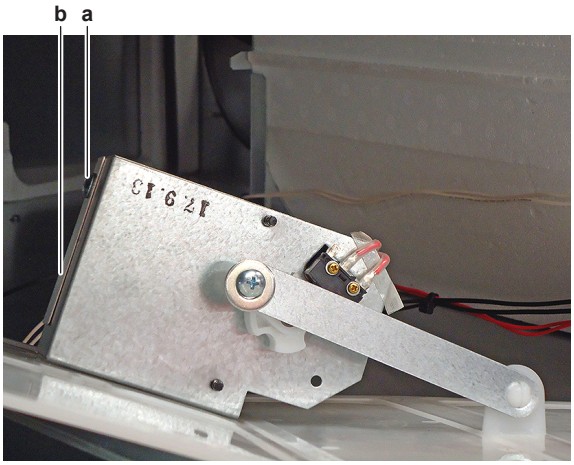
3 Remove the 2 screws from the damper assembly.



a Screw
b Damper assy

4 Carefully pull back the damper assembly.

5 Remove the screw and open (turn over) the damper motor cover.



a Screw
b Cover (damper motor)

6 Disconnect the wiring (Faston connectors) from the damper motor.

7 Disconnect the damper motor connector from the indoor unit main PCB.

8 Route the damper motor wiring harness out of the switch box and out of the appropriate retainers.

9 Cut all tie straps (if applicable) that fix the wiring harness.

10 Remove the damper motor wiring harness from the unit.

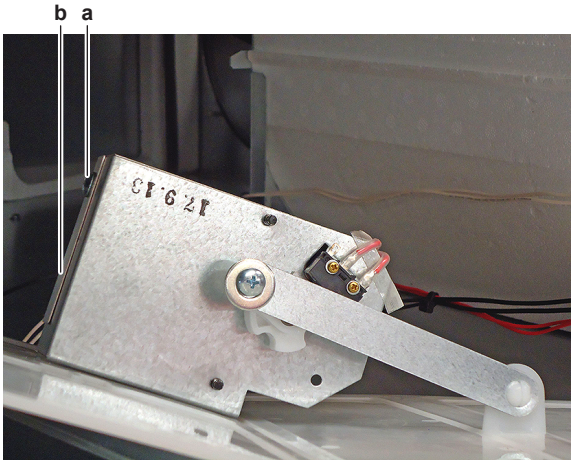
11 To install the damper motor wiring harness, see "4.1.2 Repair procedures" [▸ 66].

To install the damper motor wiring harness

1 Connect the wiring (Faston connectors) to the damper motor.

2 Route the wiring harness through the slot in the damper motor cover.

3 Install the damper motor cover in the correct location on the damper assembly. Make sure the wiring harnesses (damper motor, limit switch are correctly routed).

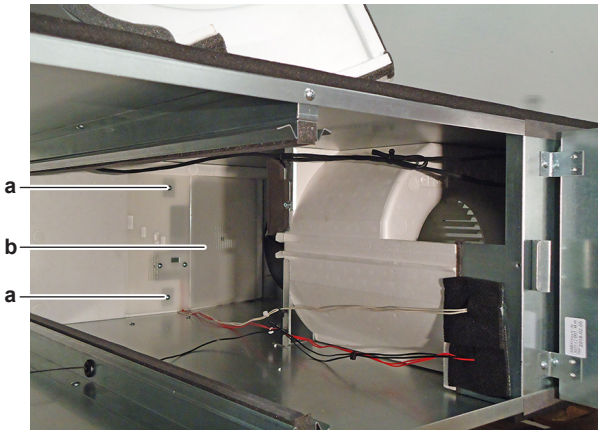


a Screw
b Cover (damper motor)

4 Install and tighten the screw to fix the damper motor cover.

5 Install the damper assembly in the correct location on the unit. Make sure the wiring harnesses (damper motor, limit switch) are correctly routed.

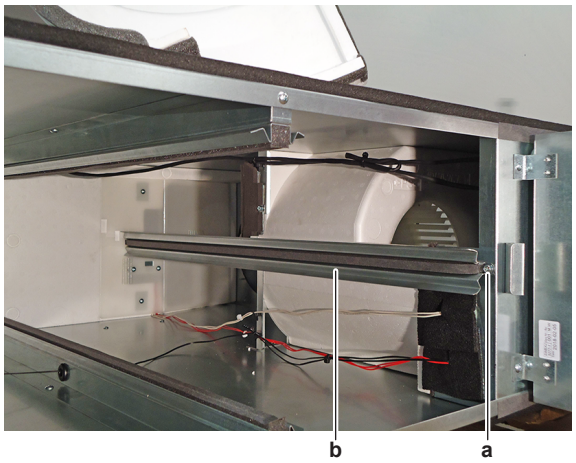
6 Install and tighten the 2 screws to fix the damper assembly.



a Screw
b Damper assy

7 Install the side rail (supply air fan) in the correct location on the unit.

8 Install and tighten the screw to fix the side rail.



a Screw
b Side rail (supply air fan)

9 Route the damper motor wiring harness through the appropriate retainers inside the switch box.

10 Connect the damper motor connector to the indoor unit main PCB.

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

11 Install new tie straps (as needed) to fix the damper motor wiring harness.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.2 Drain pump

4.2.1 Checking procedures

To perform an electrical check of the drain pump

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

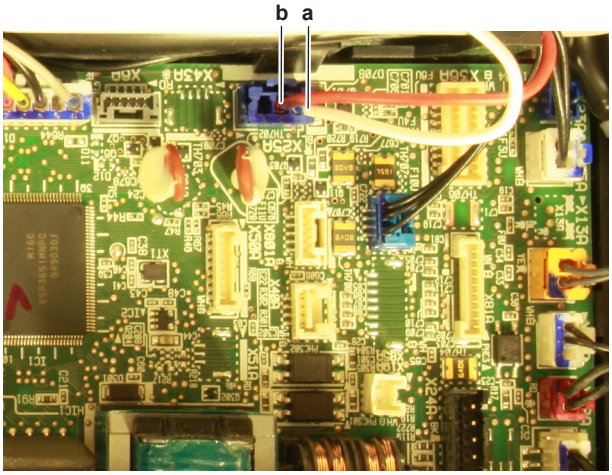
1 Remove the required plate work, see "4.10 Plate work" [▶ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Disconnect the drain pump connector X25A from the indoor unit main PCB.

3 Using a multimeter in diode check, measure in reference with the image and the table below.



a White wire
b Red wire

VDC	COM	REF
a	b	0.9~1.1 V
b	a	0.495~0.605 V

Measured values are correct?	Action
Yes	Continue with the next step.
No	Replace the drain pump, see "4.2.2 Repair procedures" [▶ 75].

4 Connect the drain pump connector to the indoor unit main PCB.

5 Turn ON the power using the respective circuit breaker.

6 Start the unit operation via the user interface.

7 Activate Cooling operation via the user interface.

8 The drain pump is operational on a timer basis (ONLY when Cooling operation is active). Check that the drain pump is operating on a regular time basis.

Drain pump is operating correctly?	Action
Yes	Drain pump is OK. Return to troubleshooting of the specific error code and continue with the next procedure.
No	Continue with the next step.



DANGER: RISK OF ELECTROCUTION

Do NOT touch any live parts or PCB's.

9 Measure the power supply voltage between the white and red wire of the drain pump connector X25A on the indoor unit main PCB.

Result: When the PCB commands the drain pump to run, 13 V DC MUST be measured.

Is the measured voltage correct?	Action
Yes	Replace the drain pump, see "4.2.2 Repair procedures" [▸ 75].
No	Perform a check of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

4.2.2 Repair procedures

To remove the drain pump

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Remove the drain pan, see "4.10 Plate work" [▸ 134].

2 Disconnect the drain pump connector from the indoor unit main PCB.



INFORMATION

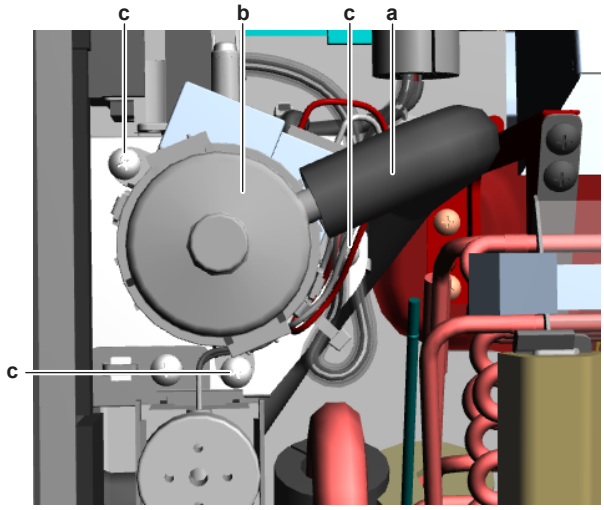
ALSO disconnect ALL connectors (from the indoor unit main PCB) of any other wiring harness that is wrapped in the same insulation as the drain pump wiring harness.

3 Route the disconnected wiring harness(es) out of the switch box and route them away (through any holes if applicable) until they are completely free.

4 Cut all tie straps that fix the wiring harness(es).

5 Remove insulation from the wiring harness(es) if needed.

6 Remove the drain outlet pipe from the drain pump.



a Drain outlet pipe
b Drain pump
c Screw

7 Remove the 3 screws from the drain pump.

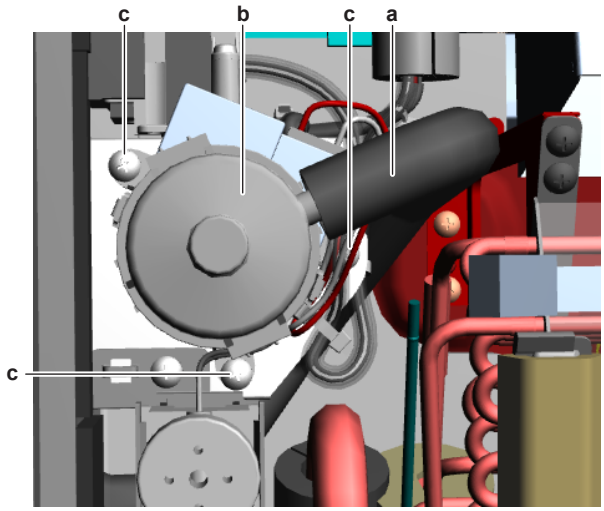
8 Remove the drain pump from the indoor unit.

9 To install the drain pump, see "4.2.2 Repair procedures" [▸ 75].

To install the drain pump

1 Install the drain pump in the correct location on the indoor unit.

2 Install and tighten the 3 screws to fix the drain pump.



a Drain outlet pipe
b Drain pump
c Screw

3 Install the drain outlet pipe on the drain pump.

4 Install new insulation on the wiring harness(es) if needed.

5 Route the wiring harness(es) through the holes (if applicable) towards the indoor unit main PCB.

6 Connect the drain pump connector (and if applicable all other disconnected connectors) to the indoor unit main PCB.

7 Install new tie straps to fix the wiring harness(es).

INFORMATION

Replace all cable ties that were cut during removal.

8 Install the drain pan, see "4.10 Plate work" [▸ 134].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.3 Expansion valve

4.3.1 Checking procedures

INFORMATION

It is recommended to perform the checks in the listed order.

To perform a mechanical check of the expansion valve

Prerequisite: Power OFF the unit for 3 minutes. Then turn ON the unit and listen to the expansion valve assembly. If the expansion valve does NOT make a latching sound, continue with the electrical check of the expansion valve, see "4.3.1 Checking procedures" [▸ 77].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Remove the expansion valve insulation (if applicable) and visually check:

- For oil drops around the expansion valve. Locate and fix as necessary.
- Pipes for signs of damage. Replace pipes as needed.
- Coil wires for signs of damage. Replace expansion valve coil as needed. See "4.3.2 Repair procedures" [▸ 80].

2 Remove the expansion valve coil from the expansion valve body, see "4.3.2 Repair procedures" [▸ 80].

3 Slide the expansion valve magnet over the expansion valve body and gently rotate the magnet clockwise/counterclockwise to manually close/open the expansion valve. Listen to check if the valve is closing/opening and manually close the valve when check is done.

INFORMATION

After the check, remove the magnet from the expansion valve body and install the expansion valve coil on the expansion valve body. Make sure that the expansion valve coil is correctly installed on the expansion valve body.

INFORMATION

It is highly recommended to perform a power reset after checking the valve using a magnet.

Does the expansion valve open?	Action
Yes	Perform an electrical check of the expansion valve, see "4.3.1 Checking procedures" [▸ 77].
No	Replace the expansion valve body, see "4.3.2 Repair procedures" [▸ 80].

To perform an electrical check of the expansion valve

1 First perform a mechanical check of the expansion valve, see "4.3.1 Checking procedures" [▸ 77].

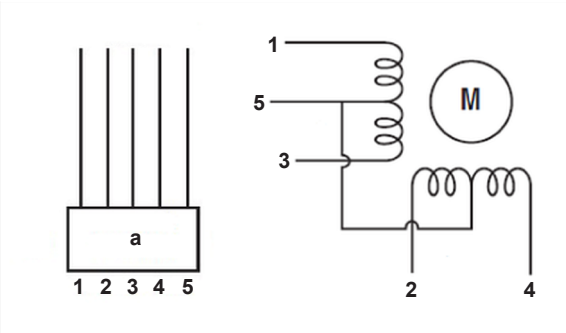
2 Disconnect the electrical connector of the expansion valve coil from the appropriate PCB and measure the resistance of all windings (between the pins of each phase (wire) and the common wire) using a multi meter. All measurements MUST be approximately the same.

Name	Symbol	Location (PCB)	Connector	Winding resistance
Main expansion valve	Y1E	Indoor unit main PCB	X7A	46±3 Ω

INFORMATION

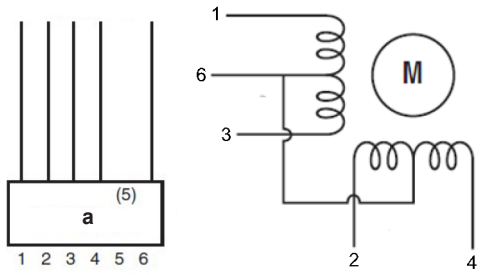
Below are shown examples of the resistance measurements in which the common wire is connected to pin 5 or to pin 6 of the expansion valve coil connector. Connections may differ according to the type of expansion valve.

- Connector pin 1-5,
- Connector pin 2-5,
- Connector pin 3-5,
- Connector pin 4-5.



a Connector

- Connector pin 1-6,
- Connector pin 2-6,
- Connector pin 3-6,
- Connector pin 4-6.



a Connector

3 Check the insulation resistance of the coil by measuring the resistance between the pins of each phase (1, 2, 3, 4) and GND on the unit.

Result: None of the measurements should be short-circuit.

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

Is the measured resistance correct?	Action
Yes	Perform an operation check of the expansion valve, see "4.3.1 Checking procedures" [▸ 77].
No	Replace the expansion valve coil, "4.3.2 Repair procedures" [▸ 80].

To perform an operation check of the expansion valve

Prerequisite: First perform an electrical check of the expansion valve, see "4.3.1 Checking procedures" [▸ 77].

1 Turn ON the power of the unit.

INFORMATION

When power is switched ON, PCB checks all expansion valve coil windings by current check. If winding is short or open, expansion valve error is triggered.

2 Start the unit operation via the user interface.

3 With the unit operating, connect the service monitoring tool to the unit.

4 When the expansion valve is closed according to the service monitoring tool, check the inlet and outlet of the valve with a contact thermometer or use an expansion valve stethoscope to see if refrigerant flows through the expansion valve. Check that the valve is NOT bleeding.

Result: There MUST be NO flow through the expansion valve.

5 When the expansion valve is open according to the service monitoring tool, check the inlet and outlet of the valve with a contact thermometer or use an expansion valve stethoscope to see if refrigerant flows through the expansion valve.

Result: Refrigerant MUST flow through the expansion valve.

6 Wait for the PCB to command the expansion valve to open (when closed) or to close (when open) (pulse output to expansion valve visible on service monitoring tool).

INFORMATION

If the PCB does NOT command the expansion valve to open or close (when it is supposed to), perform a check of the appropriate thermistors and pressure sensors (as their measurements control the operation of the expansion valve(s)).

7 While in opening or closing sequence each expansion valve winding (Φ1, 2, 3, 4) is supplied with 12 V DC from the PCB. You will need a good multimeter, where its range is set to about 20 V DC, and during opening or closing sequence you may be able to measure the supply voltage for a short time. If you set the multimeter range to Auto, then most likely you may NOT read a value between switching ranges. The best way to check is to feel the movement of the valve by touching, rather than trying to measure the driving voltage.

8 When the expansion valve was commanded to close, check the inlet and outlet of the valve with a contact thermometer or use an expansion valve stethoscope to see if refrigerant flows through the expansion valve. Check that the valve is NOT bleeding.

Result: There MUST be NO flow through the expansion valve.

9 When the expansion valve was commanded to open, check the inlet and outlet of the valve with a contact thermometer or use an expansion valve stethoscope to see if refrigerant flows through the expansion valve.

Result: Refrigerant MUST flow through the expansion valve.

Is the flow through the expansion valve correct?	Action
Yes	Component is OK. Return to the troubleshooting of the specific error and continue with the next step.
No	Replace the expansion valve, see "4.3.2 Repair procedures" [▶ 80].

Problem solved?

After all checking procedures listed above have been performed:

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.3.2 Repair procedures

To remove the expansion valve coil

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▶ 134].

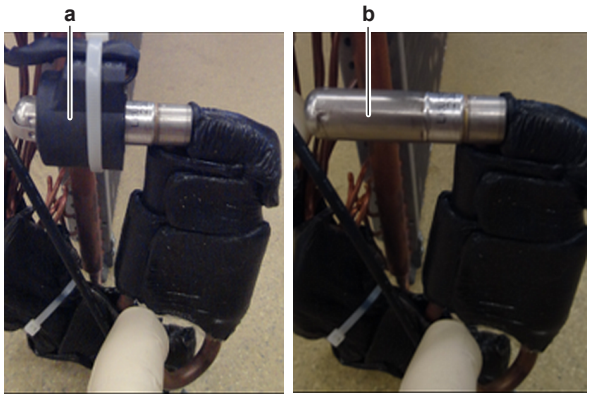
1 If needed, remove any parts or insulation to create more space for the removal.

2 Cut the tie strap that fixes the expansion valve coil and wiring harness.

3 Pull up the expansion valve coil to remove it from the expansion valve body.

INFORMATION

It may be needed to turn the expansion valve coil 1/8 turn counter clockwise to unlock it. Make sure to note the correct orientation (position) of the expansion valve coil before removal.



a Expansion valve coil
b Expansion valve body

4 Cut all tie straps that fix the expansion valve coil wiring harness.

5 Disconnect the expansion valve coil connector from the indoor unit main PCB.

6 Route the expansion valve wiring harness out of the appropriate harness retainers.

7 Remove the expansion valve coil (and harness) from the unit.

8 To install the expansion valve coil, see "4.3.2 Repair procedures" [▸ 80].

To remove the expansion valve body

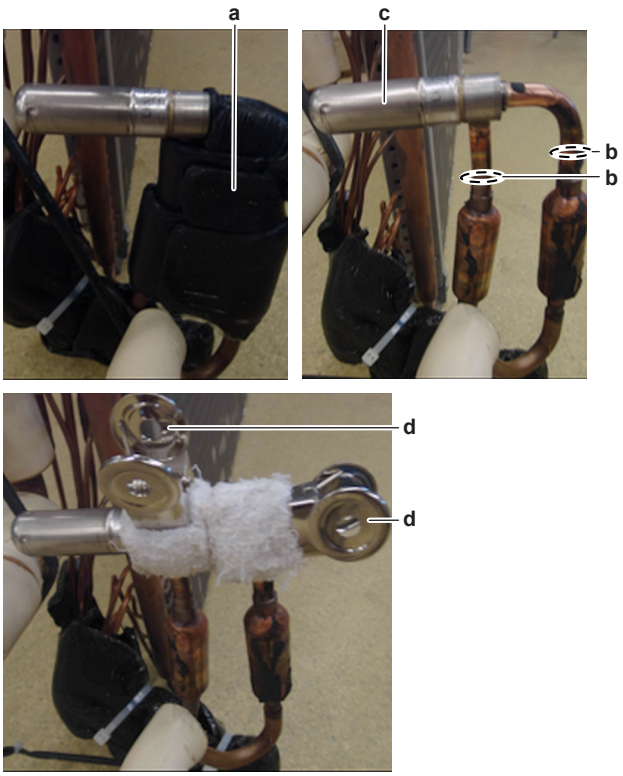
1 Remove the indoor unit heat exchanger, see "4.7.2 Repair procedures" [▸ 110].

2 Remove the putty (if applicable). Keep for re-use.

3 Using a valve magnet, open the expansion valve.

4 Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.

5 Wrap a wet rag around the components near the expansion valve pipes and/or use (local purchased) cooling-clamps. Heat the brazing points of the expansion valve pipes using an oxygen acetylene torch and remove the expansion valve pipes from the refrigerant pipes using pliers.



a Putty
b Expansion valve pipe
c Expansion valve body
d Cooling-clamps

6 Stop the nitrogen supply when the piping has cooled down.

7 Remove the expansion valve body.

> **INFORMATION**
>
> It is ALSO possible to cut the component pipe(s) using a pipe cutter. Make sure to remove the remaining component pipe end(s) from the refrigerant pipes by heating the brazing point(s) of the component pipe(s) using an oxygen acetylene torch.

8 Install plugs or caps on the open pipe ends of the refrigerant piping to avoid dirt or impurities from entering the piping.

9 To install the expansion valve body, see "4.3.2 Repair procedures" [▸ 80].

To install the expansion valve body

1 Remove the plugs or caps from the refrigerant piping and make sure they are clean.

2 Remove the expansion valve coil from the spare part expansion valve body.

3 Install the expansion valve body in the correct location and correctly oriented. Insert the pipe ends in the pipe expansions.

4 Open the expansion valve using a valve magnet.

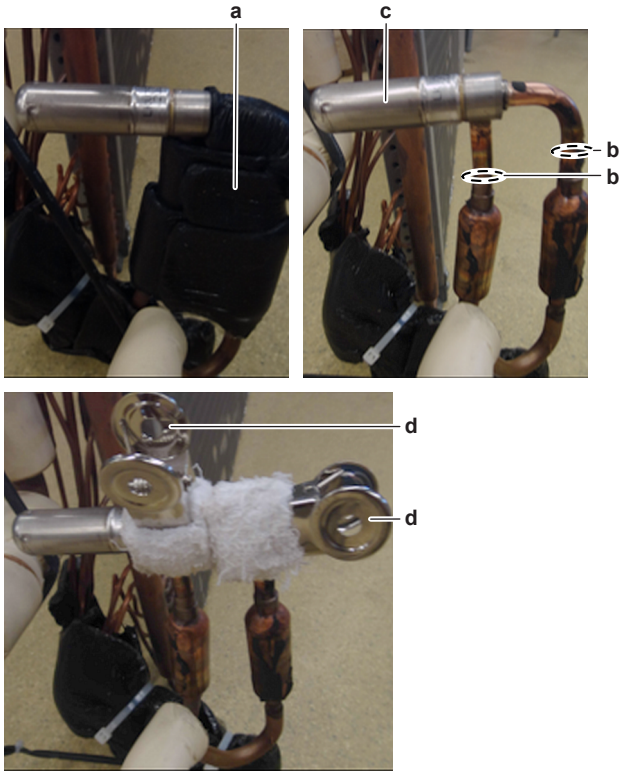
5 Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.

6 Wrap a wet rag around the expansion valve body and any other components near the expansion valve and/or use (local purchased) cooling-clamps and solder the expansion valve pipes to the refrigerant pipes.

CAUTION

Overheating the valve will damage or destroy it.

7 After soldering is done, stop the nitrogen supply after the component has cooled-down.



a Putty
b Expansion valve pipe
c Expansion valve body
d Cooling-clamps

8 Reinstall the putty (if applicable).

9 Perform a pressure test, see "5.2.1 Checking procedures" [▸ 169].

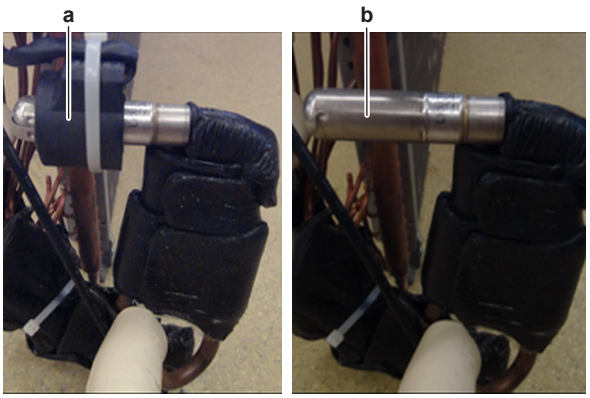
10 Install the indoor unit heat exchanger in the unit, see "4.7.2 Repair procedures" [▸ 110].

11 Add refrigerant to the refrigerant circuit, see "5.2.2 Repair procedures" [▸ 169].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.3.1 Checking procedures" [▸ 77] of the expansion valve and continue with the next procedure.

To install the expansion valve coil

1 Correctly install the expansion valve coil on the expansion valve body.



a Expansion valve coil
b Expansion valve body

2 Route the expansion valve coil wiring harness through the appropriate harness retainers towards the indoor unit main PCB.

3 Connect the expansion valve coil connector to the appropriate PCB.

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

4 Fix the expansion valve coil wiring harness using new tie straps.

5 Install a new tie strap to fix the expansion valve coil and wiring harness.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.3.1 Checking procedures" [▸ 77] of the expansion valve and continue with the next procedure.

4.4 Float switch

4.4.1 Checking procedures

To perform an electrical check of the float switch

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Disconnect the float switch connector X15A from the indoor unit main PCB.

3 Turn ON the power using the respective circuit breaker.

4 Measure the voltage on connector X15A on the indoor unit main PCB.

Result: The measured voltage MUST be 5 V DC.

Is the measured voltage correct?	Action
Yes	Continue with the next step.
No	Perform a check of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

5 Turn OFF the respective circuit breaker.

6 Check that the float switch freely moves up and down and is NOT blocked.

7 Slide the float switch to the upwards (activated) position and measure the resistance between pins 1-2 of the float switch connector.

Result: The measurement MUST be open circuit.

8 Slide the float switch back to the downwards (default = NOT activated) position and measure the resistance between pins 1-2 of the float switch connector.

Result: The measurement MUST be short circuit.

Does the float switch function correctly?	Action
Yes	Return to troubleshooting of the specific error code and continue with the next procedure.
No	Replace the float switch, see "4.4.2 Repair procedures" [▸ 85].

4.4.2 Repair procedures

To remove the float switch

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Remove the drain pan, see "4.10 Plate work" [▸ 134].

2 Disconnect the float switch connector from the indoor unit main PCB.

INFORMATION

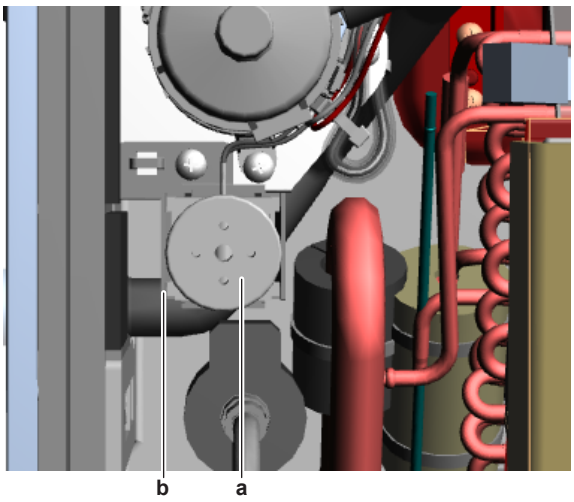
ALSO disconnect ALL connectors (from the indoor unit main PCB) of any other wiring harness that is wrapped in the same insulation as the float switch wiring harness.

3 Route the disconnected wiring harness(es) out of the switch box and route them away (through any holes if applicable) until they are completely free.

4 Cut all tie straps that fix the wiring harness(es).

5 Remove insulation from the wiring harness(es) if needed.

6 Carefully pull the sides of the support bracket to the outside and pull the float switch upwards to remove it from the support bracket.



a Float switch
b Support bracket

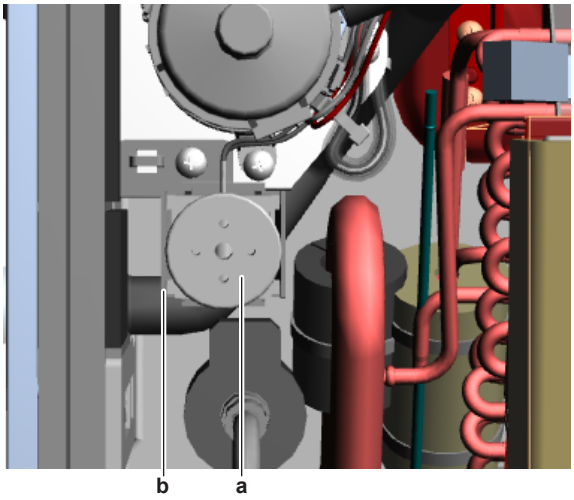
7 Remove the float switch from the indoor unit.

8 To install the float switch, see "4.4.2 Repair procedures" [▸ 85].

To install the float switch

1 Install the float switch in the correct location on the indoor unit.

2 Click the float switch on the support bracket.



a Float switch
b Support bracket

3 Install new insulation on the wiring harness(es) if needed.

4 Route the wiring harness(es) through the holes (if applicable) towards the indoor unit main PCB.

5 Connect the float switch connector (and if applicable all other disconnected connectors) to the indoor unit main PCB.

6 Install new tie straps to fix the wiring harness(es).

INFORMATION

Replace all cable ties that were cut during removal.

7 Install the drain pan, see "4.10 Plate work" [▸ 134].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.5 Indoor unit fan motor

4.5.1 Checking procedures

INFORMATION

It is recommended to perform the checks in the listed order.

To perform a mechanical check of the fan assembly

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Remove the screw from the appropriate side rail (supply air fan or exhaust fan).

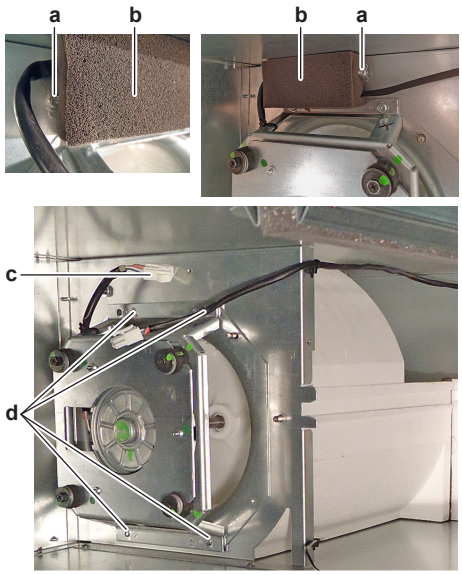


a Screw
b Side rail (supply air fan)
c Side rail (exhaust air fan)
d Polystyrene blind plate

2 Remove the side rail from the unit.

3 Remove the polystyrene blind plate.

4 Remove the screws and remove the fan motor connector box.



a Screw (connector box)
b Fan motor connector box
c Fan motor connector
d Screw (fan motor assy)

5 Disconnect the fan motor connector.

6 Remove the 4 screws from the fan motor assembly.

7 Carefully remove (pull out) the fan motor assembly (including fan) from the unit.

8 Check for the presence of foreign material around the fan assembly. Remove if found.

9 Check if the fan motor is correctly mounted on its base, see "4.5.2 Repair procedures" [▸ 94].

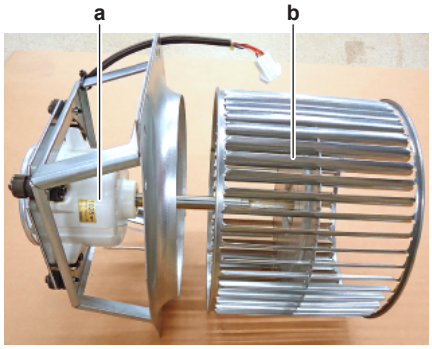
10 Check the state of the fan assembly for damage, deformations and cracks.

Is the fan assembly damaged?	Action
Yes	Replace the fan assembly, see "4.5.2 Repair procedures" [▸ 94].
No	Perform a mechanical check of the DC fan motor assembly, see "4.5.1 Checking procedures" [▸ 87].

To perform a mechanical check of the indoor unit fan motor

Prerequisite: First perform a mechanical check of the fan assembly, see "4.5.1 Checking procedures" [▸ 87].

1 Visually check the fan motor for any damage or burnt-out components. If any damage is found, replace the fan motor, see "4.5.2 Repair procedures" [▸ 94].



a Fan motor
b Fan assy

2 Slowly rotate the fan assembly. Check that it rotates smoothly.

3 Check the friction of the DC fan motor shaft bearing.

Is the DC fan motor shaft friction normal?	Action
Yes	Perform an electrical check of the DC fan motor assembly, see "4.5.1 Checking procedures" [▸ 87].
No	Replace the DC fan motor assembly, see "4.5.2 Repair procedures" [▸ 94].

To perform an electrical check of the indoor unit fan motor

VAM350~650

1 First perform a mechanical check of the DC fan motor assembly, see "4.5.1 Checking procedures" [▸ 87].

2 Correctly reinstall the fan motor assembly on the unit. Install and tighten the screws to fix the fan motor assembly.

3 Connect the fan motor connector.

INFORMATION

Check the DC fan motor power supply (voltage) circuit on the PCB.

INFORMATION

The DC fan motor connector MUST be plugged into the appropriate PCB.

4 Turn ON the power of the unit.

5 Activate Fan ONLY operation via the user interface.

6 Check the functioning of the indoor unit fan.

Indoor unit fan ...	Action
Rotates continuously (without interruption)	DC fan motor assembly is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
Does not rotate or rotates for a short time	Continue with the next step.

7 Turn OFF the unit via the user interface.

8 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

INFORMATION

Make sure that the wiring between the DC fan motor connector and the connector on the PCB is properly connected and NOT damaged (check continuity), see "7.2 Wiring diagram" [▶ 177].

9 Disconnect the DC fan motor connector (X8A for supply air fan motor and X9A for exhaust air fan motor) from the indoor unit fan PCB and perform a diode check between the connector wires shown below.

Result: The measurements MUST be:

VDC	Comm	Ref	VDC	Comm	Ref
Red	Blue	0.87 V	Brown	Orange	1.1 V
Red	Brown	1.35 V	Brown	White	OL
Red	Orange	1.84 V	Orange	Red	1.4 V
Red	White	OL	Orange	Blue	1.12 V
Blue	Red	OL	Orange	Brown	1.44 V
Blue	Brown	0.75 V	Orange	White	OL
Blue	Orange	1.4 V	White	Red	OL
Blue	White	OL	White	Blue	1.55 V
Brown	Red	0.75 V	White	Brown	1.82 V
Brown	Blue	0.48 V	White	Orange	OL

DC fan motor measurements are correct?	Action
Yes	Continue with the next step.
No	Replace the indoor unit fan motor, see "4.5.2 Repair procedures" [▶ 94].

10 Connect the DC fan motor connector (X8A for supply air fan motor and X9A for exhaust air fan motor) to the indoor unit fan PCB.

11 Turn ON the power of the unit.

CAUTION

Ensure that the system CANNOT start the fan. Disable all modes (heating, cooling, ...) on the unit. The unit MUST be kept powered.

DANGER: RISK OF ELECTROCUTION

Do NOT touch any live parts or PCB's.

12 Measure the voltage between the connector wires Blue-Red (= fan motor power supply) on the indoor unit fan PCB.

Result: The voltage MUST be 288~352 V DC.

13 Measure the voltage between the connector wires Blue-Brown (= fan motor control) on the indoor unit fan PCB.

Result: The voltage MUST be 15±10% V DC.

Are both measured voltages correct?	Action
Yes	Continue with the next step.
No	Perform a check of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].

14 Operate the indoor unit in Fan ONLY mode.

15 Measure the voltage between the connector wires Blue-Orange (= rotation command) on the indoor unit fan PCB.

Result: The measured voltage should NOT be 0 V DC. It MUST be 0~4.5 V DC.

Is the measured voltage 0 V DC?	Action
Yes	Perform a check of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].
No	Continue with the next step.

16 Stop the unit operation via the user interface.

CAUTION

Ensure that the system CANNOT start the fan. Disable all modes (heating, cooling, ...) on the unit. The unit MUST be kept powered.

17 Manually (slowly) rotate the shaft of the indoor unit fan motor 1 turn and measure the voltage between the DC fan motor connector wires Blue-White.

Result: 4 pulses MUST be measured.

Pulses are measured during propeller fan rotation?	Action
Yes	Perform a check of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].
No	Replace the DC fan motor, see "4.5.2 Repair procedures" [▸ 94].

VAM800~2000

1 First perform a mechanical check of the DC fan motor assembly, see "4.5.1 Checking procedures" [▸ 87].

2 Correctly reinstall the fan motor assembly on the unit. Install and tighten the screws to fix the fan motor assembly.

3 Connect the fan motor connector.

INFORMATION

Check the DC fan motor power supply (voltage) circuit on the PCB.

INFORMATION

The DC fan motor connector MUST be plugged into the appropriate PCB.

4 Turn ON the power of the unit.

5 Activate Fan ONLY operation via the user interface.

6 Check the functioning of the indoor unit fan.

Indoor unit fan ...	Action
Rotates continuously (without interruption)	DC fan motor assembly is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
Does not rotate or rotates for a short time	Continue with the next step.

7 Turn OFF the unit via the user interface.

8 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

INFORMATION

Make sure that the wiring between the DC fan motor connector and the connector on the PCB is properly connected and NOT damaged (check continuity), see "7.2 Wiring diagram" [▸ 177].

9 Disconnect the DC fan motor connector X1A from the indoor unit fan PCB and measure the resistance between the connector wires Red-White, Red-Black and White-Black.

Result: ALL measurements MUST be 7.2 Ω ± 10%.

10 Disconnect the DC fan motor connector X2A from the indoor unit fan PCB and perform a diode check between the connector wires shown below.

Result: The measurements MUST be:

VDC	Comm	Ref	VDC	Comm	Ref
Grey	Pink	0.74 V	Orange	Blue	1.81 V
Grey	Orange	1.34 V	Orange	Yellow	1.81 V
Grey	Blue	1.34 V	Blue	Grey	1.14 V
Grey	Yellow	1.34 V	Blue	Pink	1.3 V
Pink	Grey	0.59 V	Blue	Orange	1.81 V
Pink	Orange	1.2 V	Blue	Yellow	1.81 V
Pink	Blue	1.2 V	Yellow	Grey	1.41 V
Pink	Yellow	1.2 V	Yellow	Pink	1.3 V
Orange	Grey	1.14 V	Yellow	Orange	1.81 V
Orange	Pink	1.3 V	Yellow	Blue	1.81 V

DC fan motor measurements are correct?	Action
Yes	Continue with the next step.
No	Replace the indoor unit fan motor, see "4.5.2 Repair procedures" [▸ 94].

11 Connect the DC fan motor connectors X1A and X2A to the indoor unit fan PCB.

12 Turn ON the power of the unit.

CAUTION

Ensure that the system CANNOT start the fan. Disable all modes (heating, cooling, ...) on the unit. The unit MUST be kept powered.

DANGER: RISK OF ELECTROCUTION

Do NOT touch any live parts or PCB's.

13 On connector X1A, measure the voltage between the connector wires Red-White, Red-Black and White-Black (= fan motor power supply) on the indoor unit fan PCB.

Result: ALL measured voltages MUST be 50~120 V DC.

14 On connector X2A, measure the voltage between the connector wires Pink-Grey (= fan motor control) on the indoor unit fan PCB.

Result: The voltage MUST be 15±10% V DC.

Are the measured voltages correct?	Action
Yes	Continue with the next step.
No	Perform a check of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].

15 Operate the indoor unit in Fan ONLY mode.

16 Measure the voltage between the connector wires Yellow-Grey (= rotation command) on the indoor unit fan PCB.

Result: The measured voltage should NOT be 0 V DC. It MUST be 0~4.5 V DC.

Is the measured voltage 0 V DC?	Action
Yes	Perform a check of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].
No	Continue with the next step.

17 Stop the unit operation via the user interface.

CAUTION

Ensure that the system CANNOT start the fan. Disable all modes (heating, cooling, ...) on the unit. The unit MUST be kept powered.

18 Manually (slowly) rotate the shaft of the indoor unit fan motor 1 turn and on connector X2A, measure the voltage between the DC fan motor connector wires Orange-Grey and Blue-Grey.

Result: 4 pulses MUST be measured.

Pulses are measured during propeller fan rotation?	Action
Yes	Perform a check of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].

Pulses are measured during propeller fan rotation?	Action
No	Replace the DC fan motor, see "4.5.2 Repair procedures" [▸ 94].

Problem solved?

After all checking procedures listed above have been performed:

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.5.2 Repair procedures

To remove the indoor unit fan motor and fan assembly

INFORMATION

Below procedure describes how to remove the fan motor and fans. It is possible to replace ONLY fan motor or fans. Keep other part for reuse.

Prerequisite: Stop the unit operation via the user interface.

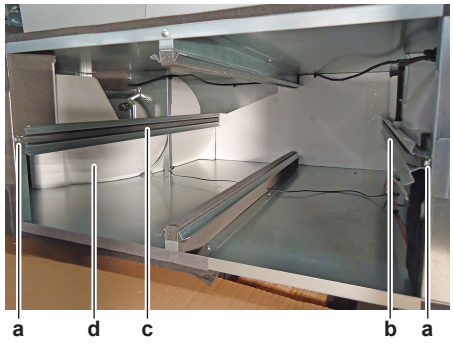
Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Remove the screw from the appropriate side rail (supply air fan or exhaust fan).

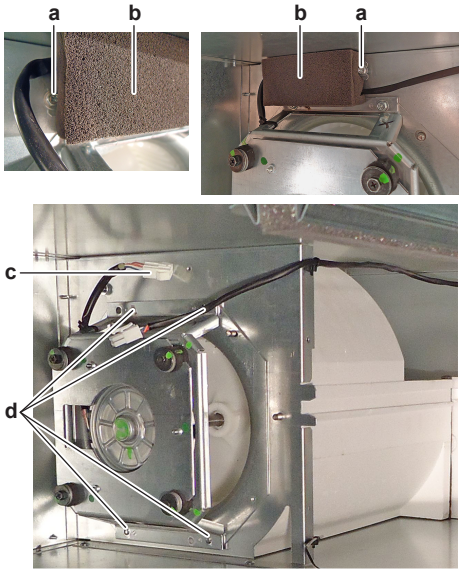


a Screw
b Side rail (supply air fan)
c Side rail (exhaust air fan)
d Polystyrene blind plate

3 Remove the side rail from the unit.

4 Remove the polystyrene blind plate.

5 Remove the screws and remove the fan motor connector box.



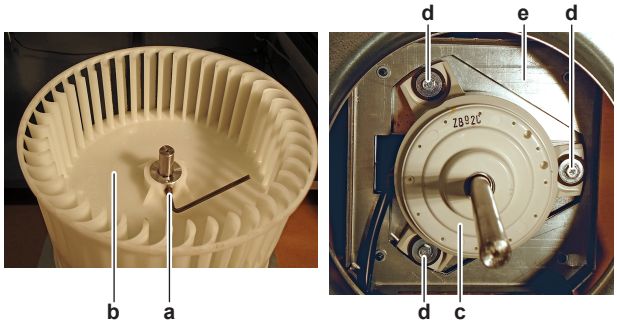
a Screw (connector box)
b Fan motor connector box
c Fan motor connector
d Screw (fan motor assy)

6 Disconnect the fan motor connector.

7 Remove the 4 screws from the fan motor assembly.

8 Carefully remove (pull out) the fan motor assembly (including fan) from the unit.

9 Remove the set screw and remove the fan from the fan motor. Keep the set screws for reuse.



a Set screw
b Fan
c Fan motor
d Screw (fan motor)
e Motor base

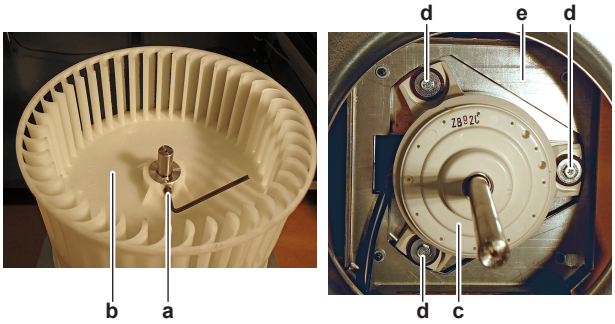
10 Remove the 3 screws and remove the fan motor from the motor base.

11 To install the indoor unit fan motor and fan assembly, see "4.5.2 Repair procedures" [▸ 94].

To install the indoor unit fan motor and fan assembly

1 Install the fan motor in the correct location on the motor base.

2 Install and tighten the 3 screws to fix the fan motor.



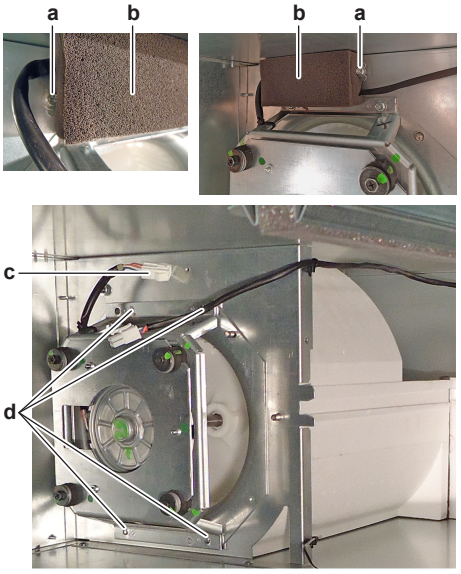
a Set screw
b Fan
c Fan motor
d Screw (fan motor)
e Motor base

3 Install the fan in the correct location on the fan motor shaft.

4 Install and tighten the set screws to fix the fan.

5 Install the fan motor assembly (including fan) in the correct location on the unit. Make sure the fan is correctly installed in the fan housing.

6 Install and tighten the 4 screws to fix the fan motor assembly.



a Screw (connector box)
b Fan motor connector box
c Fan motor connector
d Screw (fan motor assy)

7 Connect the fan motor connector.

8 Install the fan motor connector box in the correct location on the unit.

9 Install and tighten the 2 screws to fix the connector box.

10 Install the polystyrene blind plate in the correct location on the unit. Make sure it is correctly fitted.



a Screw
b Side rail (supply air fan)
c Side rail (exhaust air fan)
d Polystyrene blind plate

11 Install the appropriate side rail in the correct location on the unit.

12 Install and tighten the screw to fix the side rail.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.5.1 Checking procedures" [▸ 87] of the DC fan motor and continue with the next procedure.

4.6 Indoor unit fan PCB

4.6.1 Checking procedures

INFORMATION

It is recommended to perform the checks in the listed order.

To perform a power check of the indoor unit fan PCB

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

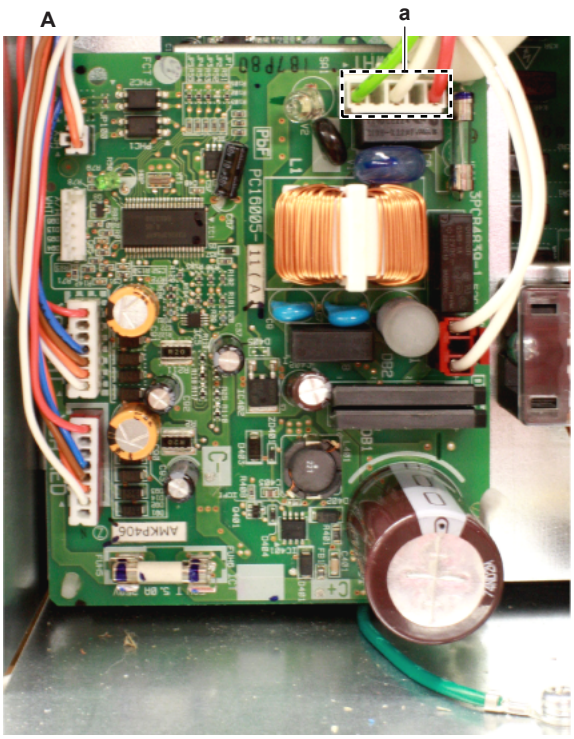
1 Visually check the PCB for damage and burnt-out components. If any damage found, replace the PCB, see "4.6.2 Repair procedures" [▸ 107].

2 Turn ON the power of the unit.

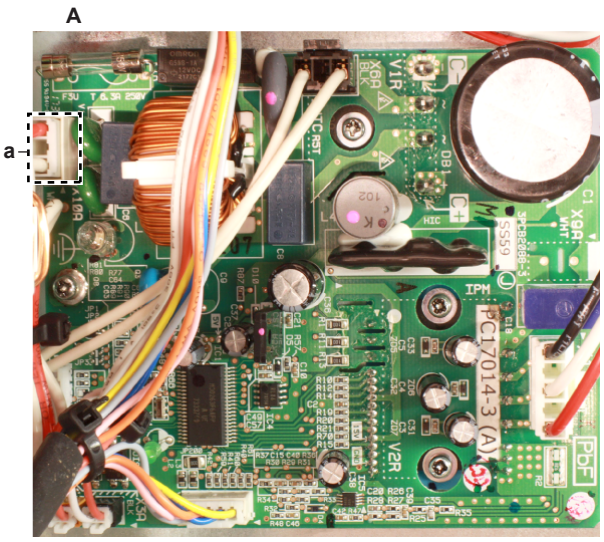
3 Check that the ground wire is properly connected to the indoor unit fan PCB and the switchbox.

4 Measure the voltage between pins 1-3 of connector X10A of the indoor unit fan PCB.

Result: The voltage MUST be 230 V AC±10%.



A VAM350~650
a Connector X10A



A VAM800~2000
a Connector X10A

Does the indoor unit fan PCB receive power?	Action
Yes	Return to "4.6.1 Checking procedures" [▸ 97] of the indoor unit fan PCB and continue with the next procedure.
No	Continue with the next step.

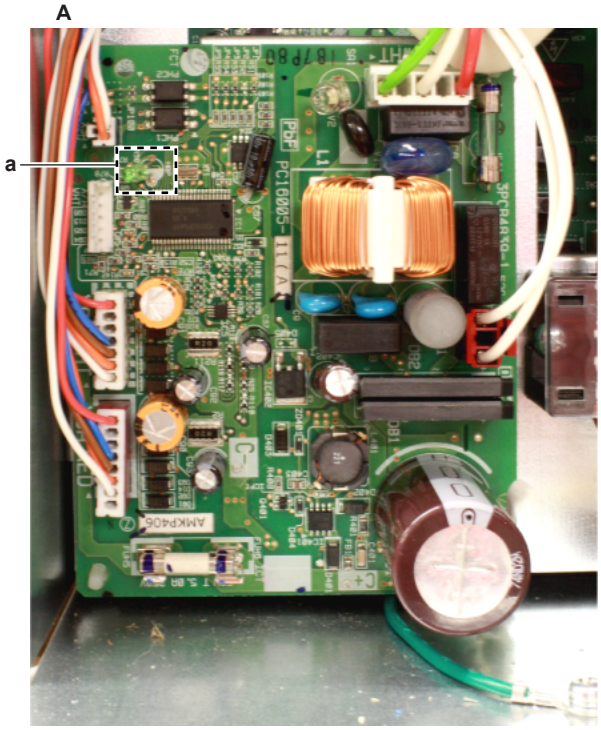
5 Check the power supply to the indoor unit, see "5.1.1 Checking procedures" [▸ 164].

Is the power supply to the indoor unit correct?	Action
Yes	Correct the wiring between the power supply terminal of the indoor unit and the indoor unit fan PCB, see "4.6.2 Repair procedures" [▸ 107].
No	Adjust the power supply to the unit, see "5.1.2 Repair procedures" [▸ 167].

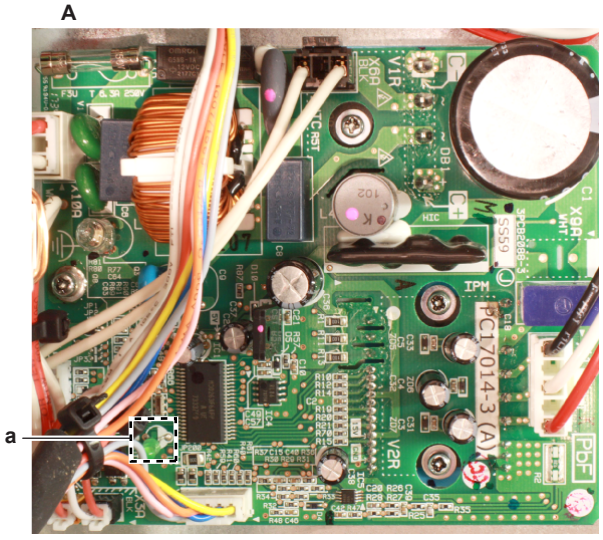
To check the HAP LED of the indoor unit fan PCB

Prerequisite: First perform a power check of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].

1 Locate the HAP LED on the indoor unit fan PCB.



A VAM350~650
a HAP LED



A VAM800~2000
a HAP LED

Does the HAP LED blink in regular intervals (approximately 1 Hz)?	Action
Yes	Return to "4.6.1 Checking procedures" [▶ 97] of the indoor unit fan PCB and continue with the next procedure.
No	Replace the indoor unit fan PCB, see "4.6.2 Repair procedures" [▶ 107].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▶ 97].

1 Visit your local spare parts webbank.

2 Enter the model name of your unit and check if the installed spare part number corresponds with the spare part number indicated in the webbank.

Is the correct spare part for the indoor unit fan PCB installed?	Action
Yes	Return to "4.6.1 Checking procedures" [▶ 97] of the indoor unit fan PCB and continue with the next procedure.
No	Replace the indoor unit fan PCB, see "4.6.2 Repair procedures" [▶ 107].

To check the wiring of the indoor unit fan PCB

Prerequisite: First perform all earlier checks of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▶ 97].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Check that all wires are properly connected and that all connectors are fully plugged-in.

2 Check that no connectors or wires are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "7.2 Wiring diagram" [▶ 177].

INFORMATION

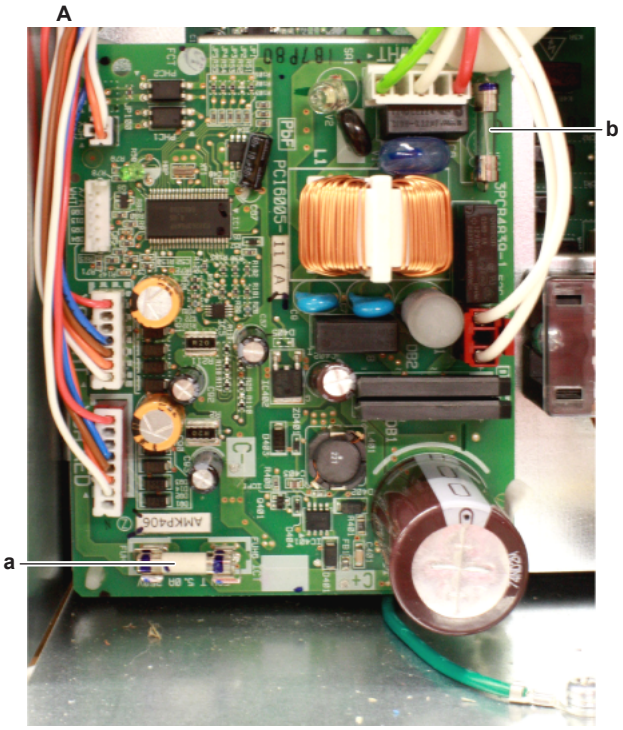
Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.6.1 Checking procedures" [▶ 97] of the indoor unit fan PCB and continue with the next procedure.

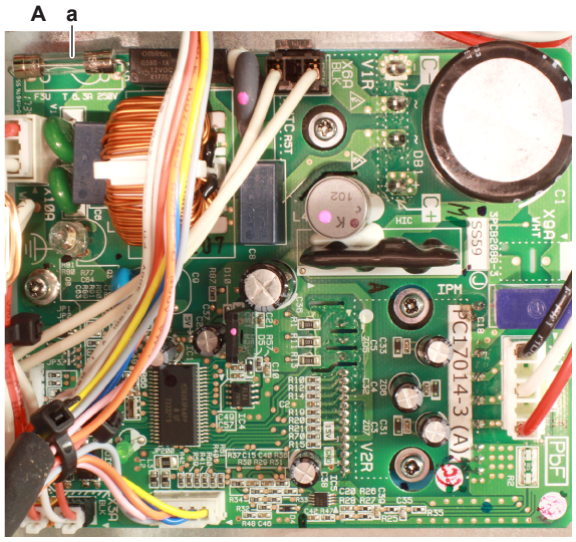
To check the fuse of the indoor unit fan PCB

Prerequisite: First perform all earlier checks of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▶ 97].

1 Measure the continuity of the fuse. If no continuity is measured, the fuse has blown.



A VAM350~650
a Fuse F2U
b Fuse F4U



A VAM800~2000
a Fuse F3U

Blown fuse on the indoor unit fan PCB?	Action
Yes	Replace the indoor unit fan PCB, see "4.6.2 Repair procedures" [▸ 107].
No	Return to "4.6.1 Checking procedures" [▸ 97] of the indoor unit fan PCB and continue with the next procedure.

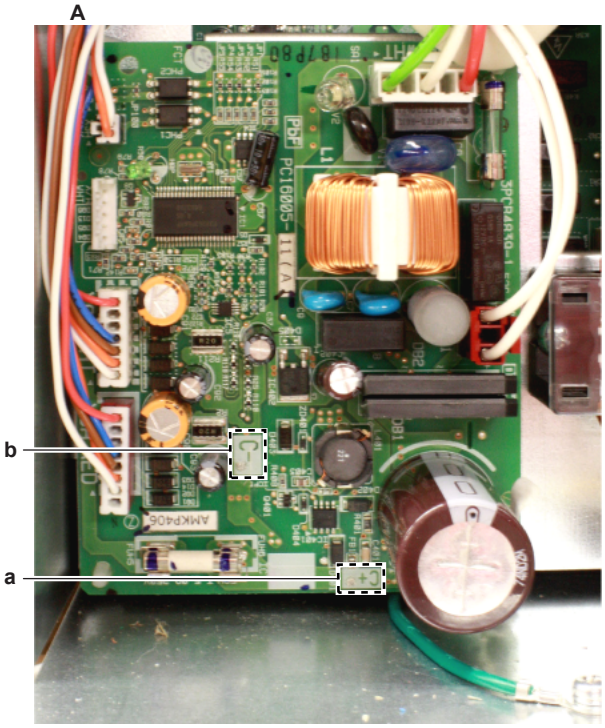
To check the rectifier voltage of the indoor unit fan PCB

Prerequisite: First perform all earlier checks of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].

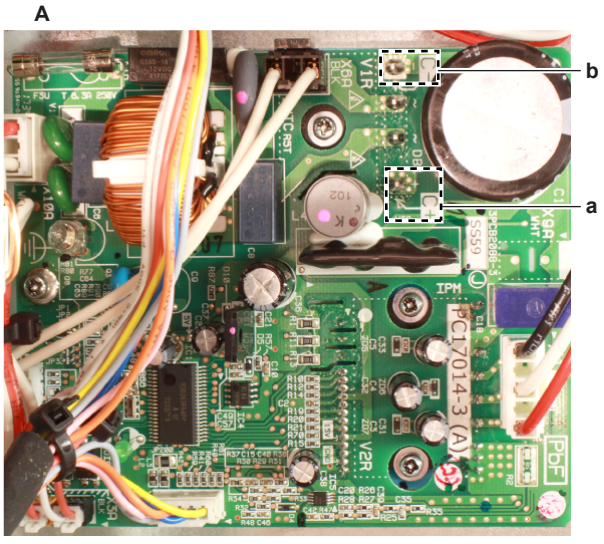
1 Turn ON the power of the unit.

2 Measure the voltage on the rectifier voltage check terminals (C+ and C-) on the indoor unit fan PCB.

Result: The measured voltage MUST be approximately 324 V DC.



A VAM350~650
a C+ terminal
b C- terminal



A VAM800~2000
a C+ terminal
b C- terminal

Is the measured rectifier voltage correct?	Action
Yes	Return to "4.6.1 Checking procedures" [▶ 97] of the indoor unit fan PCB and continue with the next procedure.
No	Continue with the next step.

3 Perform a check of the reactor, see "4.12.1 Checking procedures" [▶ 150].

Is the reactor OK?	Action
Yes	Replace the indoor unit fan PCB, see "4.6.2 Repair procedures" [▶ 107].
No	Replace the reactor, see "4.12.2 Repair procedures" [▶ 151].

To perform a diode module check

VAM350~650 units

1 First check the rectifier voltage of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▶ 97].

INFORMATION

If the rectifier voltage is OK, the diode module is OK. If rectifier voltage is NOT OK, proceed as described in the rectifier voltage check procedure.

Below procedure describes how to check the diode module itself.

Prerequisite: Stop the unit operation via the user interface.

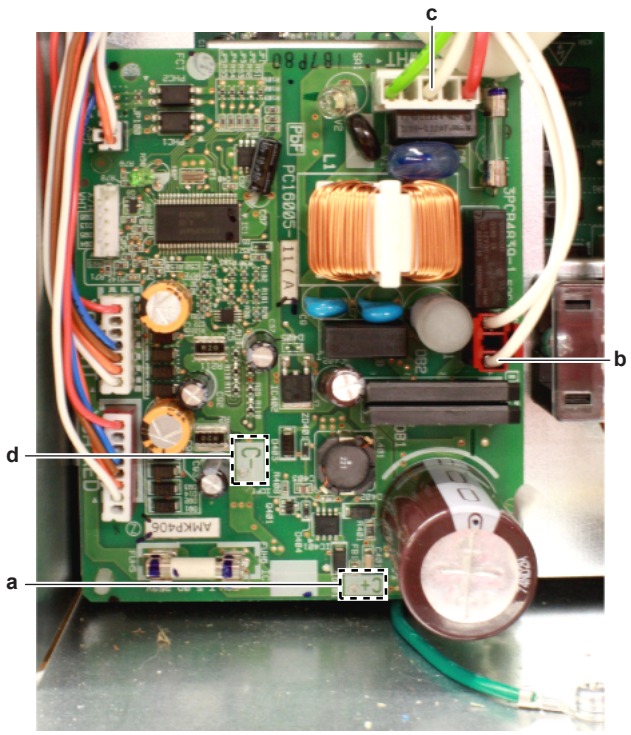
2 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

3 Disconnect the reactor connector and the power supply connector X10A from the indoor unit fan PCB.

4 Check the diode module in reference with the image and the table below.



a V DC out (+)
b V AC in
c V AC in
d V DC out (–)

> **INFORMATION**
>
> When measuring on the front of the main PCB, make sure to locally remove the protective varnish with the test leads of the multi meter.

VDC	Com	Ref	VDC	Com	Ref
d	b	0.45~0.55 V	b	d	O.L
b	a	0.45~0.55 V	a	b	O.L
d	c	0.45~0.55 V	c	d	O.L
c	a	0.45~0.55 V	a	c	O.L

5 If the diode module is NOT OK, replace the indoor unit fan PCB, see "4.6.2 Repair procedures" [▸ 107].

VAM350~650 units

1 First check the rectifier voltage of the indoor unit fan PCB, see "4.6.1 Checking procedures" [▸ 97].

> **INFORMATION**
>
> If the rectifier voltage is OK, the diode module is OK. If rectifier voltage is NOT OK, proceed as described in the rectifier voltage check procedure.
>
> Below procedure describes how to check the diode module itself.

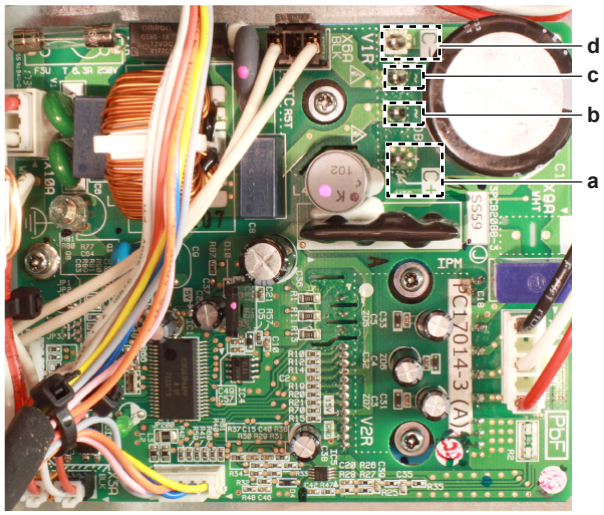
Prerequisite: Stop the unit operation via the user interface.

2 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

3 Check the diode module in reference with the image and the table below.



a V DC out (+)
b V AC in
c V AC in
d V DC out (–)

INFORMATION

When measuring on the front of the main PCB, make sure to locally remove the protective varnish with the test leads of the multi meter.

VDC	Com	Ref	VDC	Com	Ref
d	b	0.51~0.63 V	b	d	O.L
b	a	0.51~0.63 V	a	b	O.L
d	c	0.51~0.63 V	c	d	O.L
c	a	0.51~0.63 V	a	c	O.L

4 If the diode module is NOT OK, replace the indoor unit fan PCB, see "4.6.2 Repair procedures" [▸ 107].

To perform a power module check

VAM350~650 units

Prerequisite: First check the rectifier voltage of the main PCB, see "4.6.1 Checking procedures" [▸ 97].

Prerequisite: Stop the unit operation via the user interface.

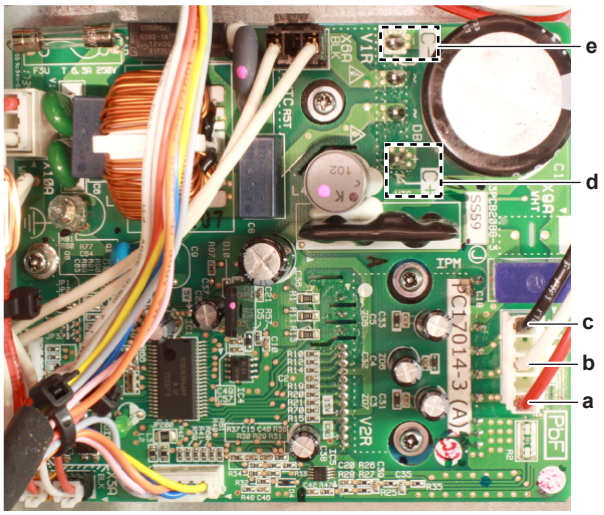
1 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Disconnect the fan motor connector X1A from the indoor unit fan PCB.

3 Check the power module V2R in reference with the image and the table below.



a U
b V
c W
d C+
e C-

> **INFORMATION**
>
> When measuring on the front of the main PCB, make sure to locally remove the protective varnish with the test leads of the multi meter.

VDC	Com	Ref	VDC	Com	Ref
U	C+	0.405~0.495 V	C+	U	O.L
V	C+	0.405~0.495 V	C+	V	O.L
W	C+	0.405~0.495 V	C+	W	O.L
C-	U	0.405~0.495 V	U	C-	O.L
C-	V	0.405~0.495 V	V	C-	O.L
C-	W	0.405~0.495 V	W	C-	O.L

Are the test results OK?	Action
Yes	Power module is OK. Return to "4.6.1 Checking procedures" [▸ 97] of the indoor unit fan PCB and continue with the next procedure.
No	Replace the indoor unit fan PCB, see "4.6.2 Repair procedures" [▸ 107].

Problem solved?

After all checking procedures listed above have been performed:

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.6.2 Repair procedures

To correct the wiring from the indoor unit power supply terminal to the indoor unit fan PCB

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Correct the wiring from the indoor unit power supply terminal to the PCB, see "7.2 Wiring diagram" [▸ 177].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.6.1 Checking procedures" [▸ 97] of the indoor unit fan PCB and continue with the next procedure.

To remove the indoor unit fan PCB

VAM350~650 units

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

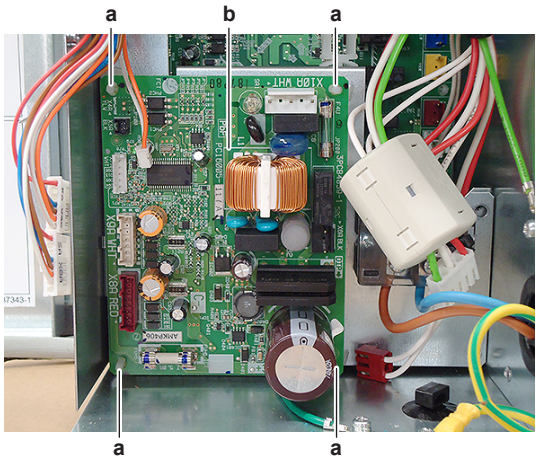
1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Unlatch all cable clamps of the connector wires and disconnect all connectors from the indoor unit fan PCB.

3 Carefully pull the indoor unit fan PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.



a PCB support
b Indoor unit fan PCB

4 Remove the indoor unit fan PCB from the switch box.

5 To install the indoor unit fan PCB, see "4.6.2 Repair procedures" [▸ 107].

VAM350~650 units

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

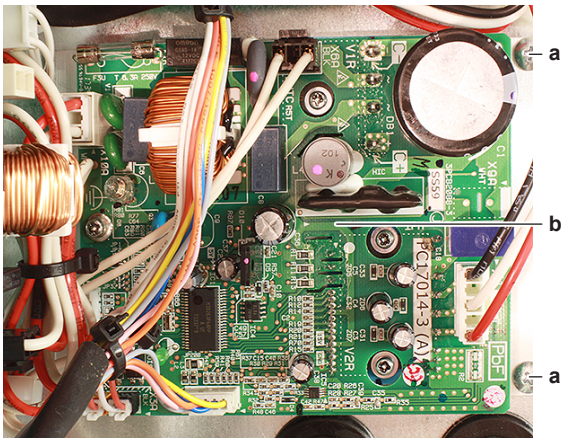
1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Unlatch all cable clamps of the connector wires and disconnect all connectors from the indoor unit fan PCB.

3 Loosen and remove the 4 screws from the indoor unit fan PCB heat sink plate.



a Screw (heat sink plate)
b Indoor unit fan PCB

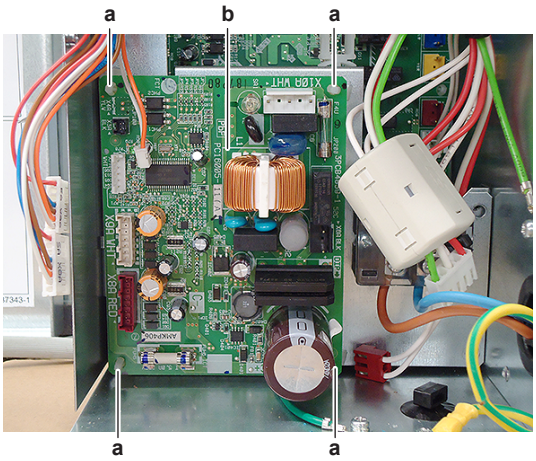
4 Remove the indoor unit fan PCB (including heat sink plate) from the switch box.

5 To install the indoor unit fan PCB, see "4.6.2 Repair procedures" [▸ 107].

To install the indoor unit fan PCB

VAM350~650 units

1 Align the indoor unit fan PCB on the PCB supports, firmly latch the PCB supports to fix the indoor unit fan PCB.



a PCB support
b Indoor unit fan PCB

2 Connect all connectors to the indoor unit fan PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "7.2 Wiring diagram" [▶ 177].

WARNING

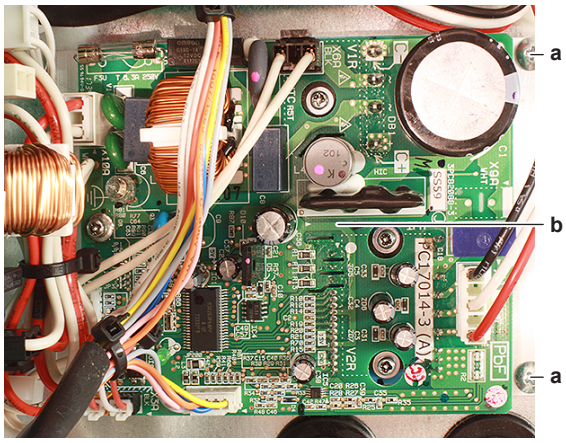
When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

3 Route the wiring inside the cable clamps to secure the wiring.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.6.1 Checking procedures" [▶ 97] of the indoor unit fan PCB and continue with the next procedure.

VAM350~650 units

1 Install the indoor unit fan PCB heat sink plate in the correct location on the switch box.



a Screw (heat sink plate)
b Indoor unit fan PCB

2 Install and tighten the 4 screws to fix the heat sink plate.

3 Connect all connectors to the indoor unit fan PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "7.2 Wiring diagram" [▶ 177].

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

4 Route the wiring inside the cable clamps to secure the wiring.

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to "4.6.1 Checking procedures" [▸ 97] of the indoor unit fan PCB and continue with the next procedure.

4.7 Indoor unit heat exchanger

4.7.1 Checking procedures

To perform a mechanical check of the indoor unit heat exchanger

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Visually check:
   - For any signs of damage or corrosion. Replace the heat exchanger as needed, see "4.7.2 Repair procedures" [▸ 110].
   - For bended hair fins. Straighten as needed.

2 Check the heat exchanger for leaks. Use and electronic leak tester or soap test method.

CAUTION

Do NOT use soap containing Chlorine or Sulfide as this may result in corrosion of the copper piping.

Any leaks found?	Action
Yes	Replace the indoor unit heat exchanger, see "4.7.2 Repair procedures" [▸ 110].
No	Heat exchanger is OK. Return to the troubleshooting of the specific error and continue with the next step.

4.7.2 Repair procedures

To remove the indoor unit heat exchanger

Prerequisite: First perform pump down operation. Close the refrigerant circuit stop valves when done.

Prerequisite: Recuperate the refrigerant from the refrigerant circuit.

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

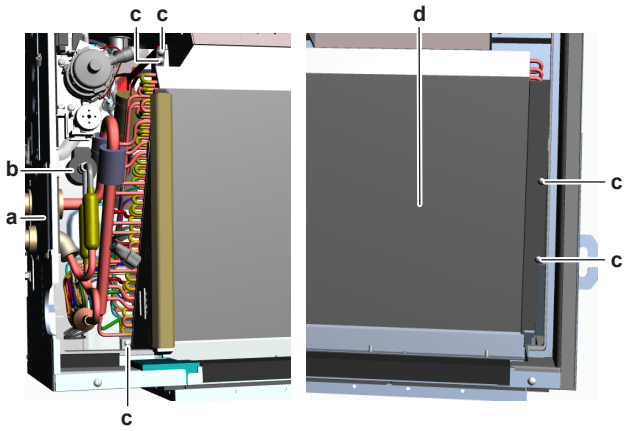
1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

2 Remove the 2 screws and remove the refrigerant pipe hold plate.

3 Remove the insulation from the liquid and gas pipes.

4 Release the flared joint of the (refrigerant) liquid pipe and the gas pipe. Disconnect the liquid and gas pipes from the refrigerant field piping. Plug the refrigerant field pipes to prevent dirt from entering the pipes.

5 Cut the tie strap and remove the expansion valve coil from the expansion valve body.



a Refrigerant pipe hold plate
b Expansion valve coil
c Screw
d Heat exchanger

6 Remove the refrigerant liquid and gas thermistors from their holder or clip. If needed, remove the insulation.

7 If applicable, cut all tie straps that fix the thermistor wiring harnesses to the heat exchanger.

8 Disconnect the ground wire from the heat exchanger.

9 Remove the 5 screws that fix the heat exchanger to the unit.

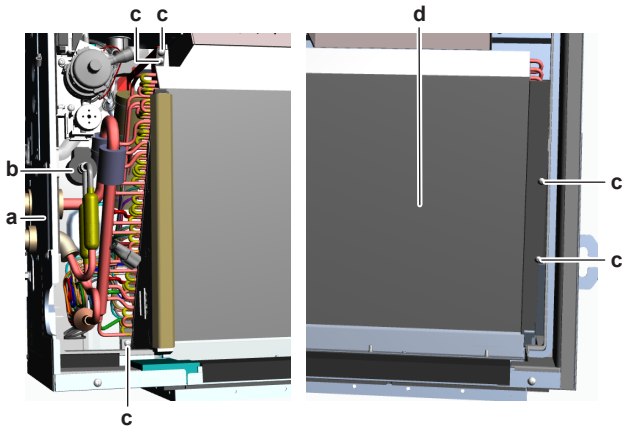
10 Remove the heat exchanger from the unit.

11 To install the indoor unit heat exchanger, see "4.7.2 Repair procedures" [▸ 110].

To install the indoor unit heat exchanger

1 Install the indoor unit heat exchanger in the correct location on the indoor unit.

2 Install and tighten the 5 screws to fix the heat exchanger.



a Refrigerant pipe hold plate
b Expansion valve coil
c Screw
d Heat exchanger

3 Connect the ground wire to the heat exchanger.

4 Install the refrigerant liquid and gas thermistors in their holder or clip. Install new insulation as needed.

5 Install the expansion valve coil on the expansion valve body. Install a new tie strap to fix the coil and wiring harness.

6 If applicable, install new tie straps to fix the wiring harnesses.

7 Make sure that the refrigerant field piping connections are clean and not damaged. Remove the caps and properly connect the field piping to the liquid and gas pipes of the indoor unit. Tighten the flared joints.

8 If needed, correctly install the insulation on the liquid and gas pipes.

9 Install the refrigerant pipe hold plate in the correct location.

10 Install and tighten the 2 screws to fix the refrigerant pipe hold plate.

11 Perform a pressure test on the piping of the indoor unit and vacuüm. Open the stop valves when done.

12 Add refrigerant to the refrigerant circuit, see "5.2.2 Repair procedures" [▸ 169].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.8 Indoor unit main PCB

4.8.1 Checking procedures

INFORMATION

It is recommended to perform the checks in the listed order.

To perform a power check of the indoor unit main PCB

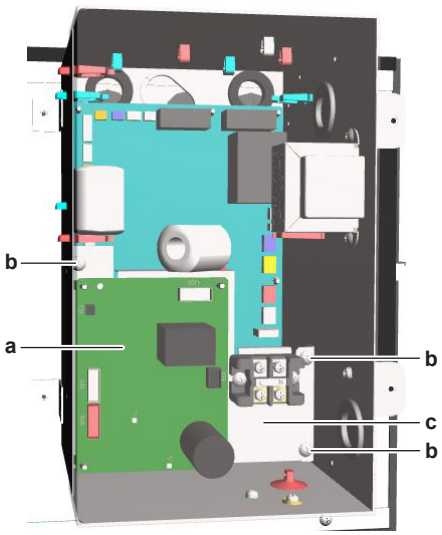
Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

2 For VAM350~650J8 units ONLY: Perform the following steps to create access to the indoor unit main PCB:

- Disconnect the connectors X8A, X9A and X10A from the indoor unit fan PCB.
- Remove the 3 screws from the indoor unit fan PCB mounting plate.
- Turn the mounting plate to the right side.



a Indoor unit fan PCB
b Screw
c Mounting plate

3 Visually check the PCB for damage and burnt-out components. If any damage found, replace the PCB, see "4.8.2 Repair procedures" [▸ 120].

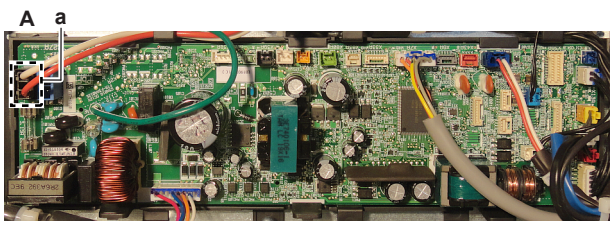
4 Turn ON the power of the unit.

5 Measure the voltage between the pins 1-3 of the connector X27A on the indoor unit main PCB.

Result: The measured voltage MUST be 230 V AC.



A VAM-J8
a Connector X27A



A EKVDX-A
a Connector X27A

Is the measured voltage on the indoor unit main PCB correct?	Action
Yes	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.
No	Continue with the next step.

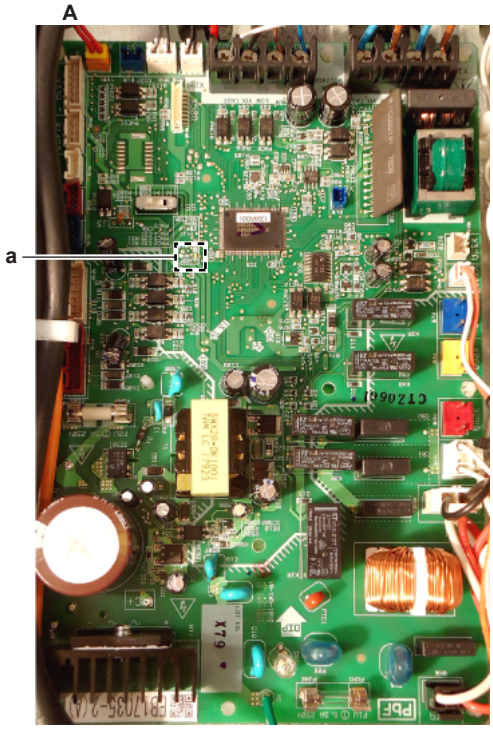
6 Check the power supply to the indoor unit, see "5.1.1 Checking procedures" [▸ 164].

Is the power supply to the indoor unit correct?	Action
Yes	Correct the wiring between the power supply terminal of the indoor unit and the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].
No	Adjust the power supply to the unit, see "5.1.2 Repair procedures" [▸ 167].

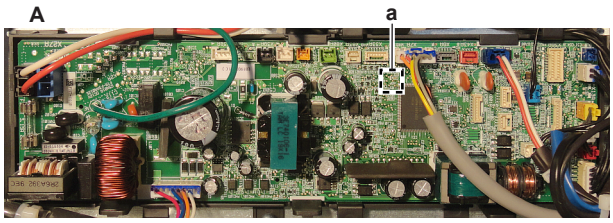
To check the HAP LED of the indoor unit main PCB

Prerequisite: First perform a power check of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

1 Locate the HAP LED on the indoor unit main PCB.



A VAM-J8
a HAP LED



A EKVDX-A
a HAP LED

INFORMATION

Make sure the correct software is available on the PCB. If NOT, update using the updater tool.

Does the HAP LED blink in regular intervals (1 second ON/1 second OFF)?	Action
Yes	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.
No	Proceed with the next step.

2 Stop the unit operation via the user interface.

3 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

4 Disconnect all component connectors from the indoor unit main PCB.

5 Turn ON the power using the respective circuit breaker.

6 Again check the HAP LED of the indoor unit main PCB.

Does the HAP LED blink in regular intervals (1 second ON/1 second OFF)?	Action
Yes	Perform a check of all components connected to the indoor unit main PCB, see "4 Components" [▸ 65].
No	Replace the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

1 Visit your local spare parts webbank.

2 Enter the model name of your unit and check if the installed spare part number corresponds with the spare part number indicated in the webbank.

3 Check that the correct capacity setting adapter is installed on connector X23A of the spare part indoor unit main PCB.

Indoor unit size	Capacity setting adapter
EKVDX32A2VEB	J36

Indoor unit size	Capacity setting adapter
EKVDX50A2VEB	J56
EKVDX80A2VEB	J90
EKVDX100A2VEB	J112

Indoor unit	Capacity setting adapter
VAM350J8VEB	350
VAM500J8VEB	500
VAM650J8VEB	650
VAM800J8VEB	800
VAM1000J8VEB	1000
VAM1500J8VEB	1500
VAM2000J8VEB	2000

Is the correct spare part for the indoor unit main PCB installed?	Action
Yes	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.
No	Replace the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].

To check the wiring of the indoor unit main PCB

Prerequisite: First perform all earlier checks of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1. Check that all wires are properly connected and that all connectors are fully plugged-in.
2. Check that no connectors or wires are damaged.
3. Check that the wiring corresponds with the wiring diagram, see "7.2 Wiring diagram" [▸ 177].

INFORMATION

Correct the wiring as needed.

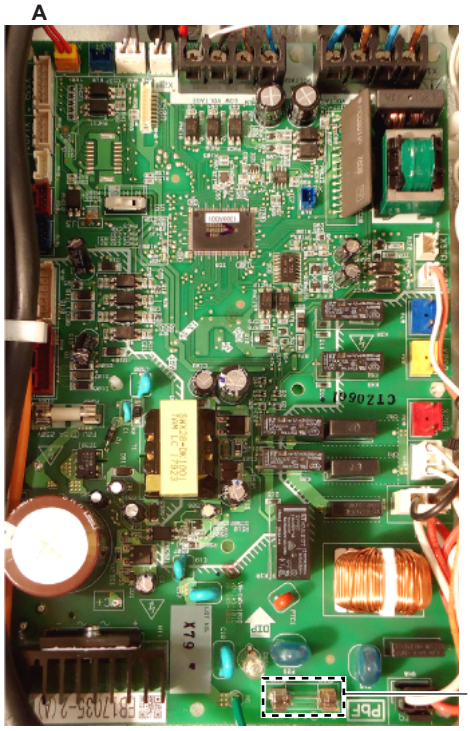
Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.

To check the fuse of the indoor unit main PCB

Prerequisite: First perform all earlier checks of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

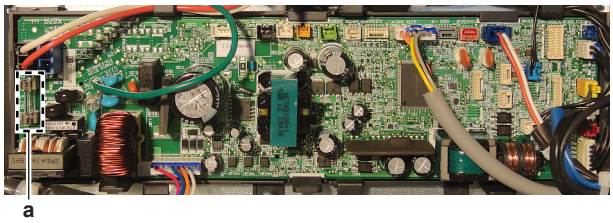
1 Measure the continuity of the fuse. If no continuity is measured, the fuse has blown.

A



A VAM-J8
a Fuse F1U

A



A EKVDX-A
a Fuse F1U

Blown fuse on the indoor unit main PCB?	Action
Yes	Replace the blown fuse, see "4.8.2 Repair procedures" [▸ 120].
No	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.

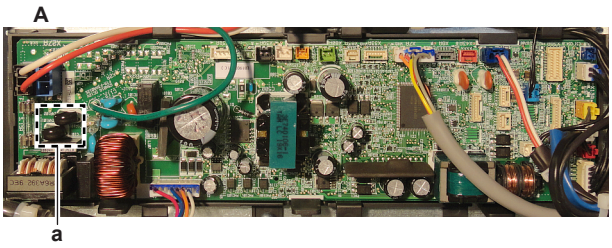
To check the varistors of the indoor unit main PCB

Prerequisite: First perform all earlier checks of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

1 Measure the resistance of the varistor. If the reading is nearly infinite, the varistor is still good.



A VAM-J8
a Varistors



A EKVDX-A
a Varistors

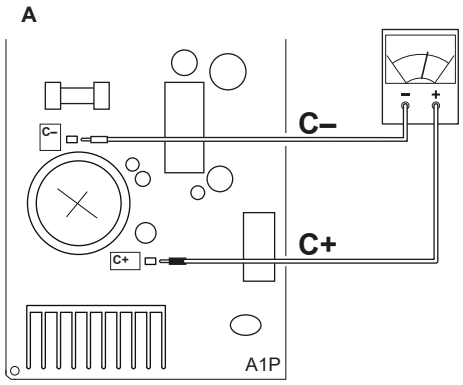
Any broken varistors on the indoor unit main PCB?	Action
Yes	Replace the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].
No	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.

To check the rectifier voltage of the indoor unit main PCB

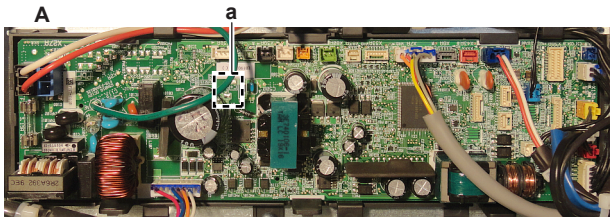
Prerequisite: First perform all earlier checks of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

1. Turn ON the power of the unit.
2. Measure the voltage on the rectifier voltage check terminals (C+ and C-) on the indoor unit main PCB.

   Result: The measured voltage MUST be approximately 324 V DC.



A VAM-J8
C+ C+ terminal
C- C- terminal



A EKVDX-A
a C+ and C- terminal

Is the rectifier voltage on the indoor unit main PCB correct?	Action
Yes	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.
No	Replace the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].

To perform a diode module check

1 First check the rectifier voltage of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

INFORMATION

If the rectifier voltage is OK, the diode module is OK. If rectifier voltage is NOT OK, proceed as described in the rectifier voltage check procedure.

Below procedure describes how to check the diode module itself.

Prerequisite: Stop the unit operation via the user interface.

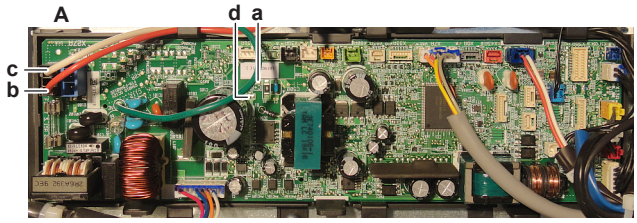
2 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

3 Disconnect the power connector X27A from the indoor unit main PCB.

4 Check the diode module in reference with the image and the table below.



A EKVDX-A
a V DC out (C+)
b V AC in (X27A - pin 1)
c V AC in (X27A - pin 3)
d V DC out (C-)

INFORMATION

When measuring on the front of the main PCB, make sure to locally remove the protective varnish with the test leads of the multi meter.

VDC	Com	Ref	VDC	Com	Ref
d	b	0.58 V	b	d	O.L
b	a	0.58 V	a	b	O.L
d	c	0.50 V	c	d	O.L
c	a	0.50 V	a	c	O.L

5 If the diode module is NOT OK, replace the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].

Problem solved?

After all checking procedures listed above have been performed:

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.8.2 Repair procedures

To correct the wiring from the indoor unit power supply terminal to the indoor unit main PCB

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Correct the wiring from the indoor unit power supply terminal to the PCB, see "7.2 Wiring diagram" [▸ 177].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.

To remove the indoor unit main PCB

VAM-J8 units

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

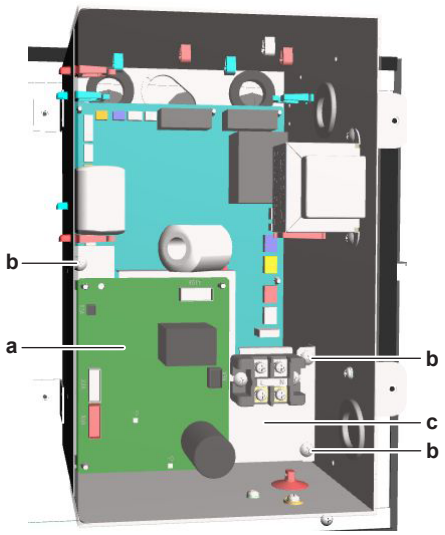
1 Remove the required plate work, see "4.10 Plate work" [▶ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

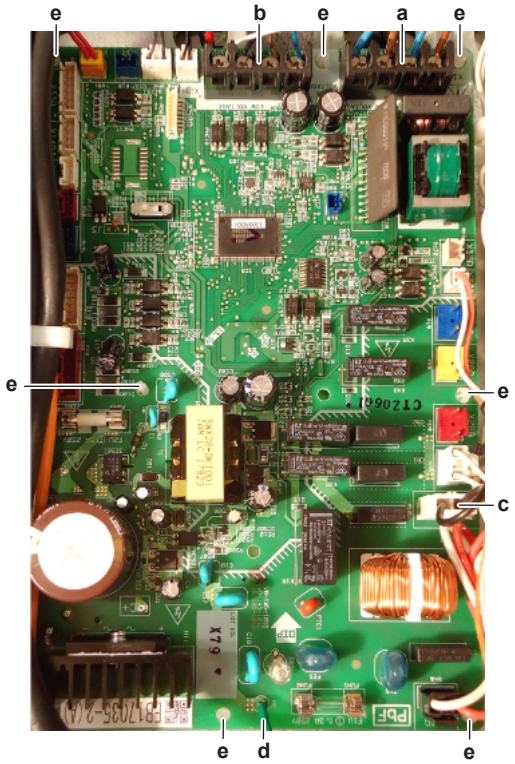
2 For VAM350~650J8 units ONLY: Perform the following steps to create access to the indoor unit main PCB:

- Disconnect the connectors X8A, X9A and X10A from the indoor unit fan PCB.
- Remove the 3 screws from the indoor unit fan PCB mounting plate.
- Turn the mounting plate to the right side.



a Indoor unit fan PCB
b Screw
c Mounting plate

3 Loosen the screws and disconnect the wiring from the wire terminals X1M and X2M.



a Wire terminal X1M
b Wire terminal X2M
c Jumper X29A
d Ground wire
e PCB support

4 Remove the jumper from the connector X29A of the indoor unit main PCB. Keep for reuse.

5 Disconnect all other connectors from the indoor unit main PCB.

6 Remove the screw and disconnect the PCB ground wire from the switch box.

7 Carefully pull the PCB at the side and unlatch all PCB supports one by one using small pliers.

8 Remove the indoor unit main PCB from the indoor unit.

9 To install the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].

EKVDX-A units

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

10 Remove the required plate work, see "4.10 Plate work" [▸ 134].

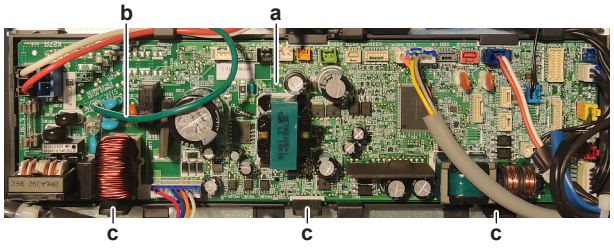
DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

11 Unlatch all cable clamps of the connector wires and disconnect all connectors from the indoor unit main PCB.

12 Remove the screw and disconnect the PCB ground wire from the switch box.

13 Carefully pull the PCB at the side and unlatch the PCB holders one by one.



a Indoor unit main PCB
b Ground wire
c PCB holder

14 Remove the indoor unit main PCB from the indoor unit.

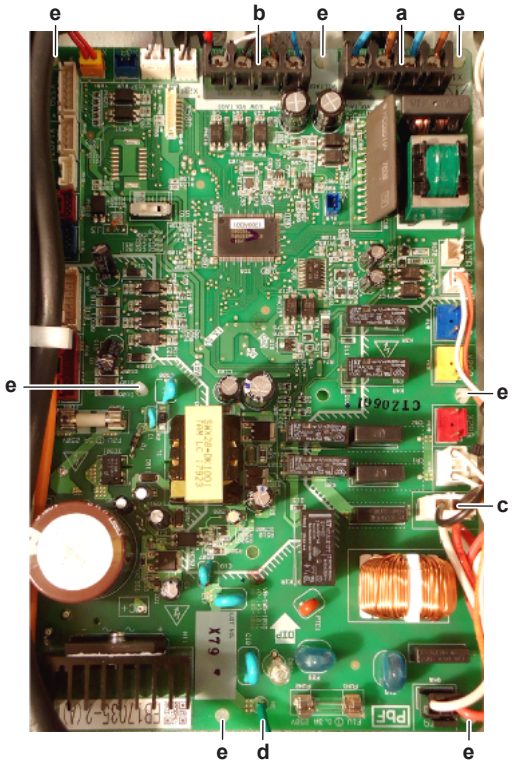
15 To install the indoor unit main PCB, see "4.8.2 Repair procedures" [▸ 120].

To install the indoor unit main PCB

VAM-J8 units

1 Install the indoor unit main PCB in the correct location in the switch box.

2 Correctly install the indoor unit main PCB on the PCB supports.



a Wire terminal X1M
b Wire terminal X2M
c Jumper X29A
d Ground wire
e PCB support

3 Connect the PCB ground wire to the switch box. Install and tighten the screw to fix the ground wire.

4 Install the jumper on the connector X29A of the indoor unit main PCB.

5 Connect all other connectors to the indoor unit main PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "7.2 Wiring diagram" [▸ 177].

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

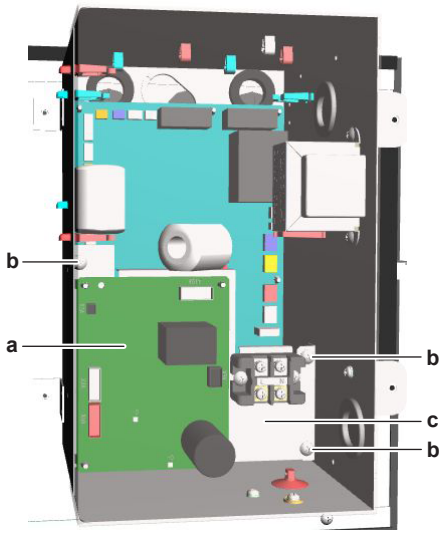
6 Connect the wiring to the wire terminals X1M and X2M. Tighten the screws to fix the wiring.

7 Check that the correct capacity setting adapter is installed on connector X23A of the spare part indoor unit main PCB.

Indoor unit	Capacity setting adapter
VAM350J8VEB	350
VAM500J8VEB	500
VAM650J8VEB	650
VAM800J8VEB	800
VAM1000J8VEB	1000
VAM1500J8VEB	1500
VAM2000J8VEB	2000

8 For VAM350~650J8 units ONLY: Perform the following steps to install the indoor unit fan PCB mounting plate:

- Install the mounting plate in the correct location in the switch box.
- Install and tighten the 3 screws to fix the indoor unit fan PCB mounting plate
- Connect the connectors X8A, X9A and X10A to the indoor unit fan PCB.



a Indoor unit fan PCB
b Screw
c Mounting plate

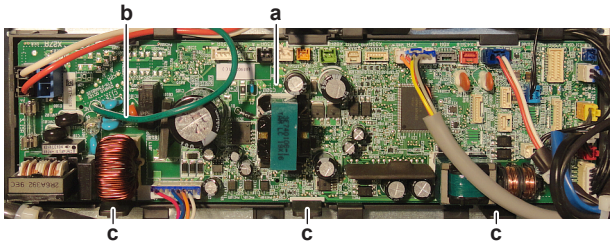
Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.8.1 Checking procedures" [▶ 112] of the indoor unit main PCB and continue with the next procedure.

EKVDX-A units

INFORMATION

When replacing the indoor unit main PCB, R32 leak detection sensor PCB ALSO MUST be replaced. See "4.11.2 Repair procedures" [▸ 147] and replace R32 leak detection sensor.

9 Install the indoor unit main PCB in the correct location. Firmly latch the PCB holders to fix the PCB.



a Indoor unit main PCB
b Ground wire
c PCB holder

10 Connect the PCB ground wire to the switch box. Install and tighten the screw to fix the ground wire.

11 Connect all connectors to the indoor unit main PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "7.2 Wiring diagram" [▸ 177].

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

12 Route the wiring inside the cable clamps to secure the wiring.

13 Check that the correct capacity setting adapter is installed on connector X23A of the spare part indoor unit main PCB.

Indoor unit size	Capacity setting adapter
EKVDX32A2VEB	J36
EKVDX50A2VEB	J56
EKVDX80A2VEB	J90
EKVDX100A2VEB	J112

14 Locate the DIP switches (if available) on the indoor unit main PCB. Both DIP switches (if available) MUST be set to normal.

15 After indoor unit main PCB replacement, perform F1-F2 communication reset. When NOT done, the newly installed PCB is NOT recognized in the transmission system. See "5.1.2 Repair procedures" [▸ 167].

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.

To remove a fuse of the indoor unit main PCB

Prerequisite: Stop the unit operation via the user interface.

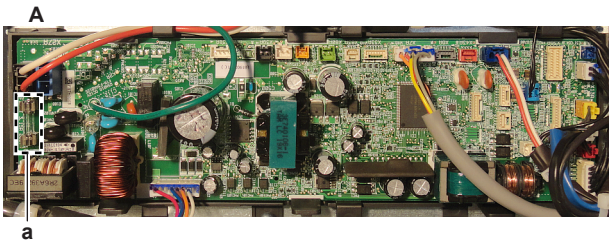
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Remove the fuse from the PCB.



A VAM-J8
a Fuse F1U



A EKVDX-A
a Fuse F1U

2 To install a fuse on the indoor unit PCB, see "4.8.2 Repair procedures" [▸ 120].

To install a fuse on the indoor unit main PCB

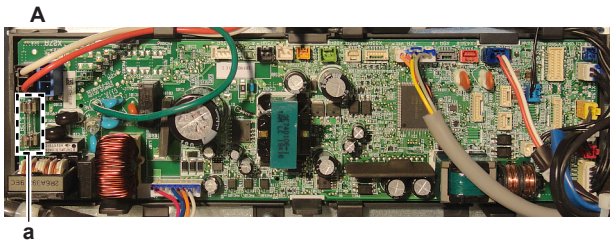
1 Install the fuse on the correct location on the PCB.

CAUTION

Make sure the fuse is plugged-in correctly (contact with the fuse holder).



A VAM-J8
a Fuse F1U



A EKVDX-A
a Fuse F1U

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "4.8.1 Checking procedures" [▸ 112] of the indoor unit main PCB and continue with the next procedure.

4.9 Limit switch

4.9.1 Checking procedures

To perform an electrical check of the limit switch

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Disconnect the limit switch connector from the indoor unit main PCB.

2 Turn ON the power of the unit.

3 Measure the voltage between the pins of connector X5A (for limit switch S1C) or X6A (for limit switch S2C) on the indoor unit main PCB.

Result: The measured voltage MUST be 16 V DC.

Is the measured voltage correct?	Action
Yes	Continue with the next step.
No	Perform a check of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

4 Turn OFF the respective circuit breaker.

5 Remove the limit switch, but leave the wiring (Faston connectors) connected to the limit switch, see "4.9.2 Repair procedures" [▸ 128].

6 With the limit switch in normal open position, measure the resistance between the pins of the limit switch connector (that was disconnected from the indoor unit main PCB).

Result: The measured resistance MUST be OL (switch open).

7 Manually close the limit switch and again measure the resistance between the pins of the limit switch connector.

Result: The measured resistance MUST be 0 Ω (switch closed).

Limit switch resistance measurements are correct?	Action
Yes	Limit switch is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

8 Disconnect the wiring (Faston connectors) from the limit switch.

9 With the limit switch in normal open position, measure the resistance between the Faston connections of the limit switch.

Result: The measured resistance MUST be OL (switch open).

10 Manually close the limit switch and again measure the resistance between the Faston connections of the limit switch.

Result: The measured resistance MUST be 0 Ω (switch closed).

Limit switch resistance measurements are correct?	Action
Yes	Replace the limit switch wiring harness, see "4.9.2 Repair procedures" [▸ 128].
No	Replace the limit switch, see "4.9.2 Repair procedures" [▸ 128].

4.9.2 Repair procedures

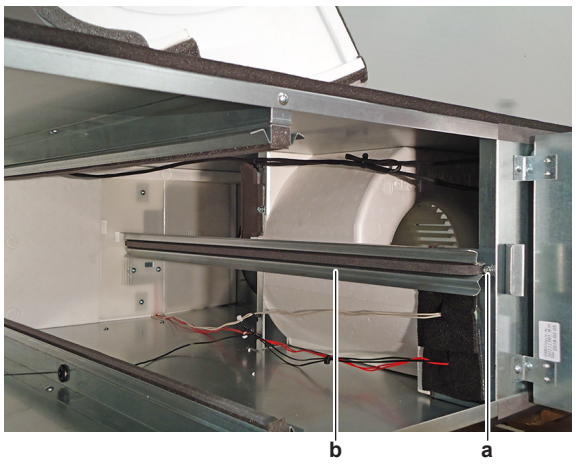
To remove the limit switch

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

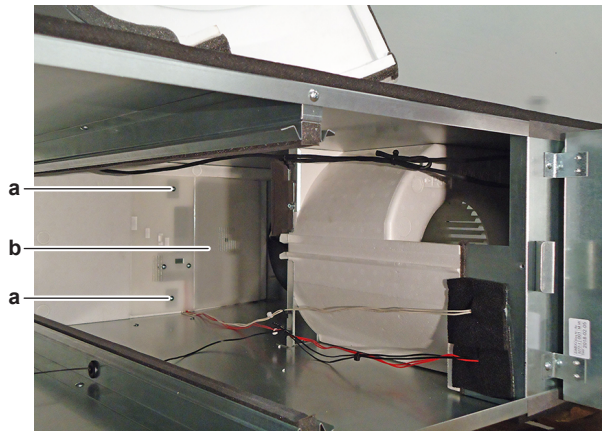
1 Remove the screw from the side rail (supply air fan).



a Screw
b Side rail (supply air fan)

2 Remove the side rail from the unit.

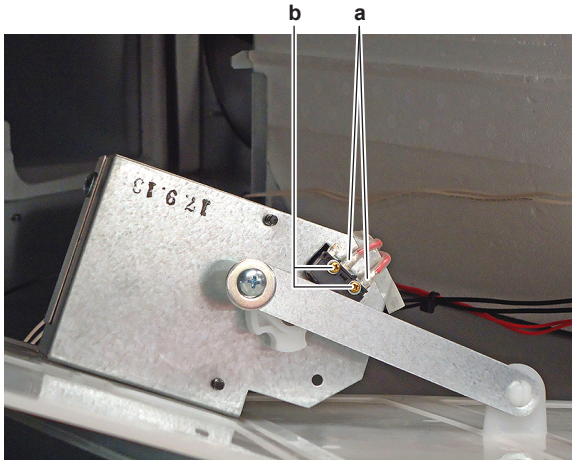
3 Remove the 2 screws from the damper assembly.



a Screw
b Damper assy

4 Carefully pull back the damper assembly.

5 Disconnect the wiring (Faston connectors) from the limit switch.



a Faston connector
b Screw

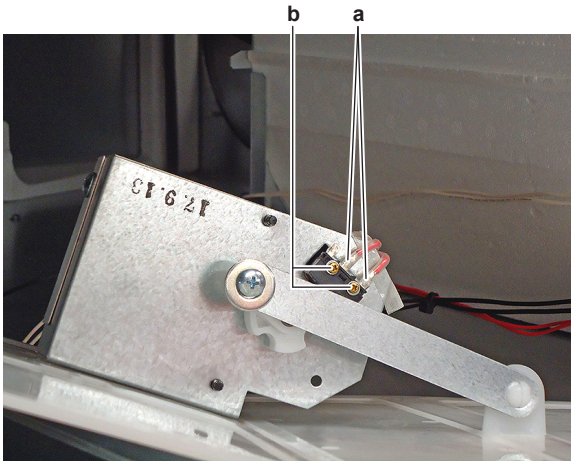
6 Remove the 2 screws from the limit switch.

7 Remove the limit switch from the damper assembly.

8 To install the limit switch, see "4.9.2 Repair procedures" [▸ 128].

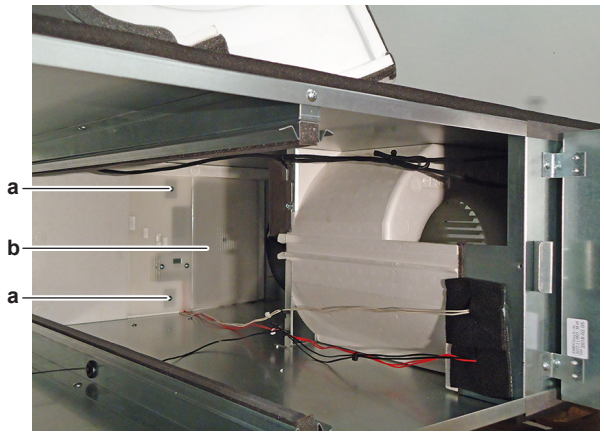
To install the limit switch

1. Install the limit switch on the correct location on the damper assembly.
2. Install and tighten the 2 screws to fix the limit switch.



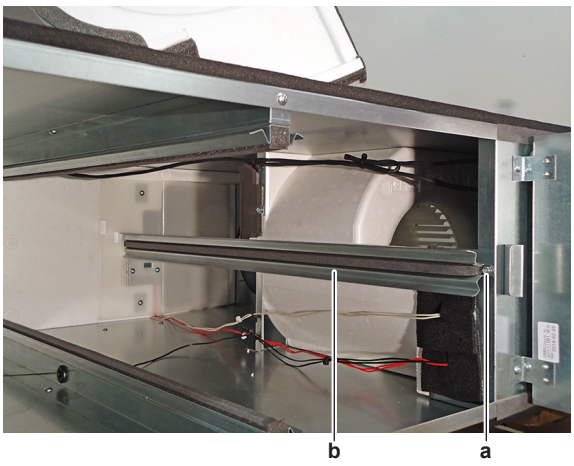
a Faston connector
b Screw

3. Connect the wiring (Faston connectors) to the limit switch.
4. Install the damper assembly in the correct location on the unit. Make sure the wiring harnesses (damper motor, limit switch) are correctly routed.
5. Install and tighten the 2 screws to fix the damper assembly.



a Screw
b Damper assy

6. Install the side rail (supply air fan) in the correct location on the unit.
7. Install and tighten the screw to fix the side rail.



a Screw
b Side rail (supply air fan)

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

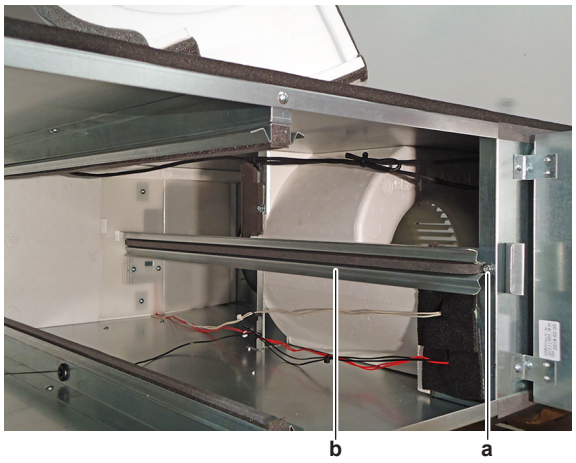
To remove the limit switch wiring harness

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

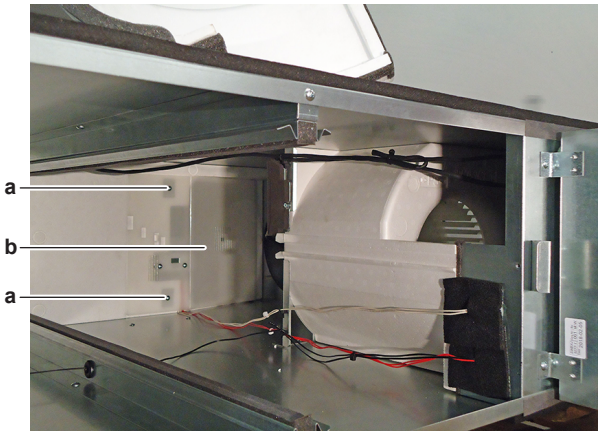
1 Remove the screw from the side rail (supply air fan).



a Screw
b Side rail (supply air fan)

2 Remove the side rail from the unit.

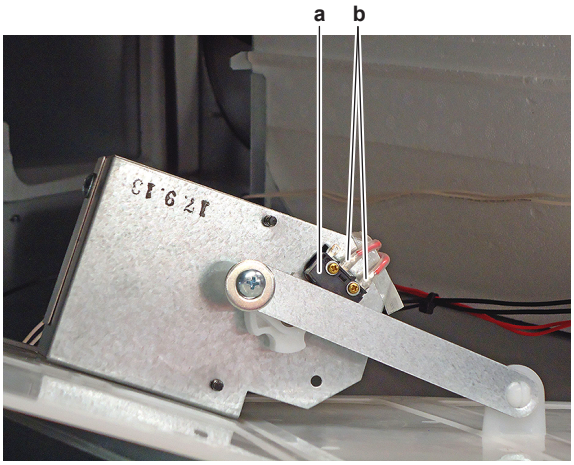
3 Remove the 2 screws from the damper assembly.



a Screw
b Damper assy

4 Carefully pull back the damper assembly.

5 Disconnect the wiring (Faston connectors) from the limit switch.



a Limit switch
b Faston connector

6 Disconnect the limit switch connector from the indoor unit main PCB.

7 Route the limit switch wiring harness out of the switch box and out of the appropriate retainers.

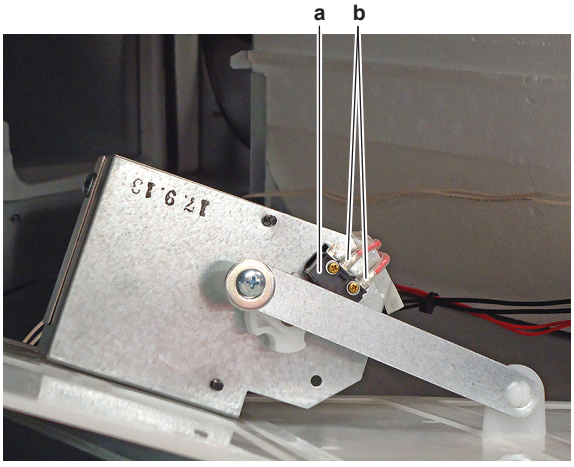
8 Cut all tie straps (if applicable) that fix the wiring harness.

9 Remove the limit switch wiring harness from the unit.

10 To install the limit switch wiring harness, see "4.9.2 Repair procedures" [▸ 128].

To install the limit switch wiring harness

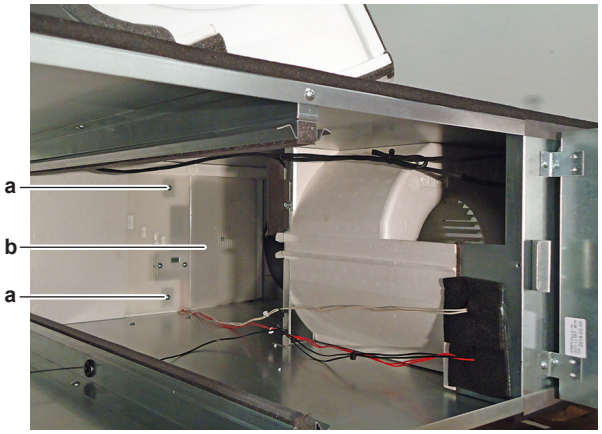
1 Connect the wiring (Faston connectors) to the limit switch.



a Limit switch
b Faston connector

2 Install the damper assembly in the correct location on the unit. Make sure the wiring harnesses (damper motor, limit switch) are correctly routed.

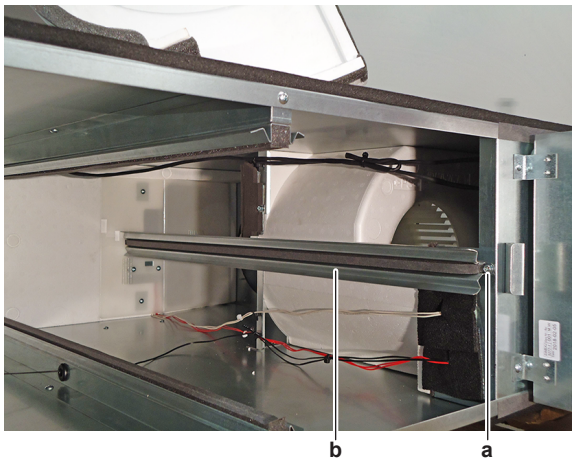
3 Install and tighten the 2 screws to fix the damper assembly.



a Screw
b Damper assy

4 Install the side rail (supply air fan) in the correct location on the unit.

5 Install and tighten the screw to fix the side rail.



a Screw
b Side rail (supply air fan)

6 Route the limit switch wiring harness through the appropriate retainers inside the switch box.

7 Connect the limit switch connector to the indoor unit main PCB.

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

8 Install new tie straps (as needed) to fix the limit switch wiring harness.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.10 Plate work

4.10.1 DX units

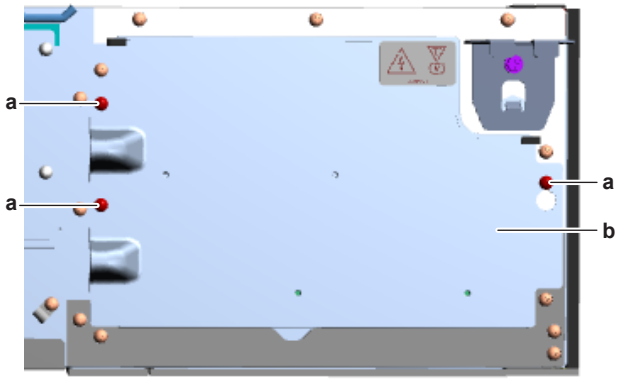
To remove the switch box cover

Prerequisite: Stop the unit operation via the user interface.

1 Turn OFF the respective circuit breaker.

> **DANGER: RISK OF ELECTROCUTION**
>
> Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Remove the screws from the switch box cover.



a Screw
b Switch box cover

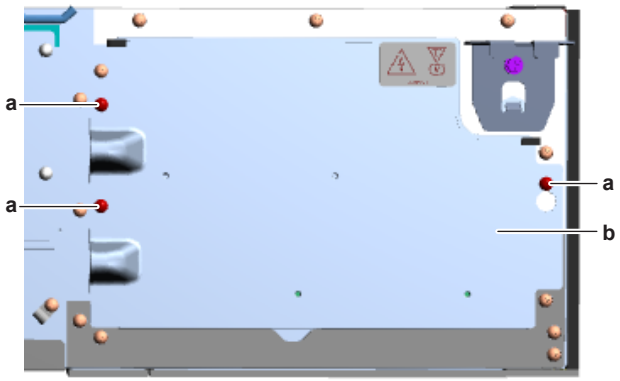
3 Remove the switch box cover from the unit.

4 To install the switch box cover, see "4.10 Plate work" [▸ 134].

To install the switch box cover

1 Install the switch box cover in the correct location on the unit.

2 Install and tighten the screws to fix the switch box cover.

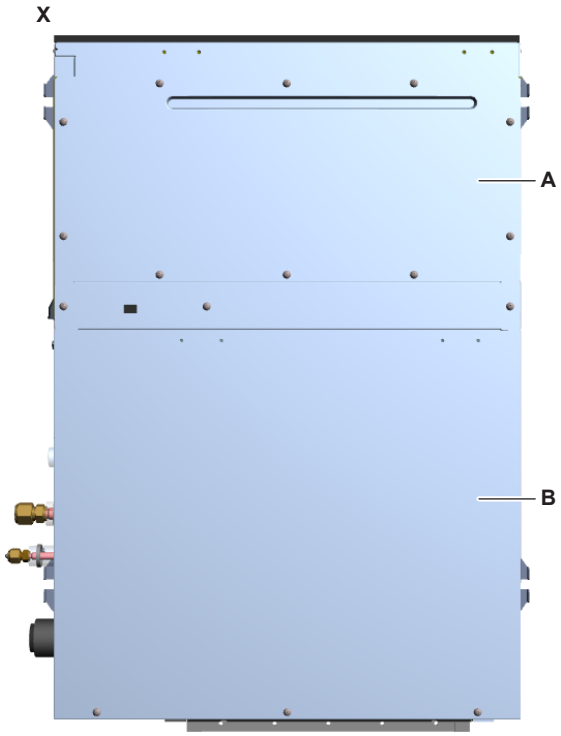


a Screw
b Switch box cover

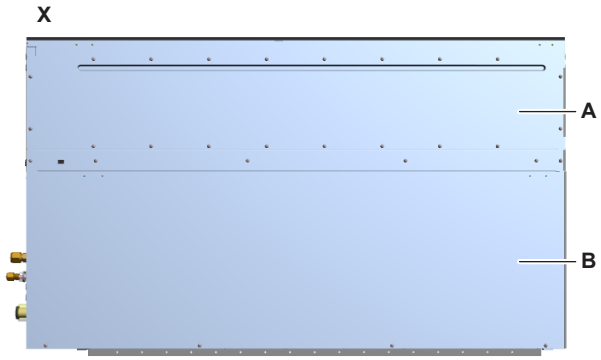
To remove the bottom plates

The indoor unit has 2 bottom plates:

- Bottom plate A: provides access to the discharge air chamber
- Bottom plate B: provides access to the drain pump, float switch, and refrigerant components



X EKVDX32A2VEB
A Bottom plate A
B Bottom plate B



X EKVDX100A2VEB
A Bottom plate A
B Bottom plate B

- TO REMOVE BOTTOM PLATE A

Prerequisite: Stop the unit operation via the user interface.

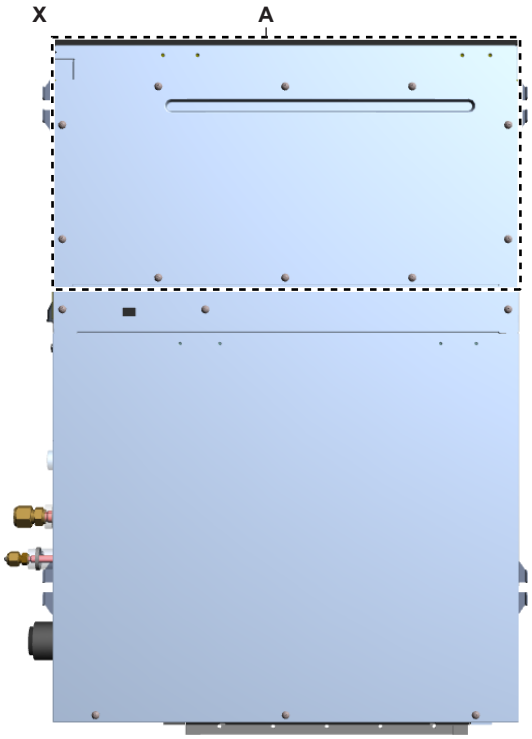
1 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

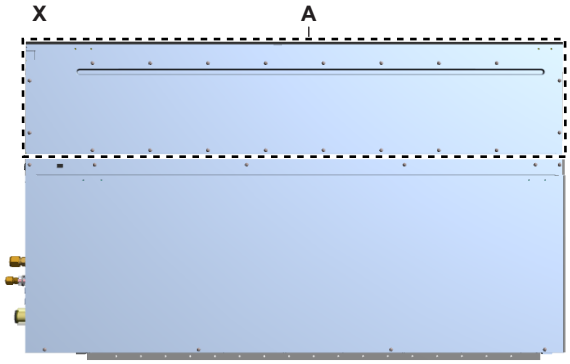
Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Empty the drain pan.

3 Remove the screws and remove the bottom plate A.



X EKVDX32A2VEB
A Bottom plate A

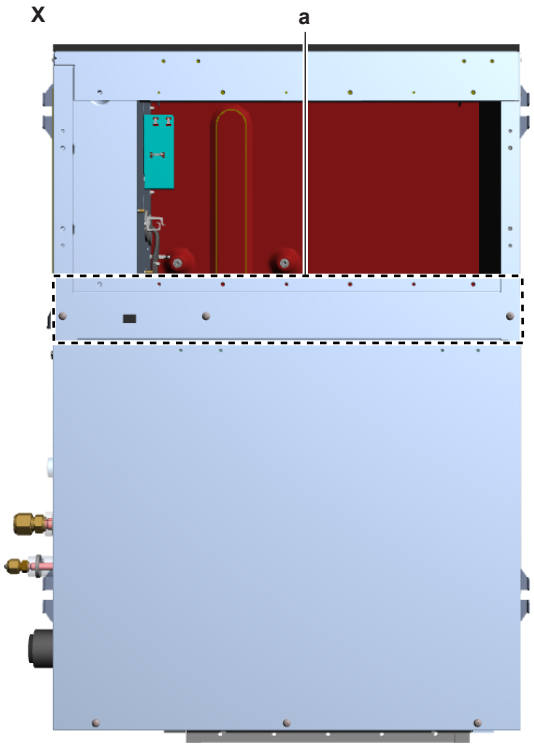


X EKVDX100A2VEB
A Bottom plate A

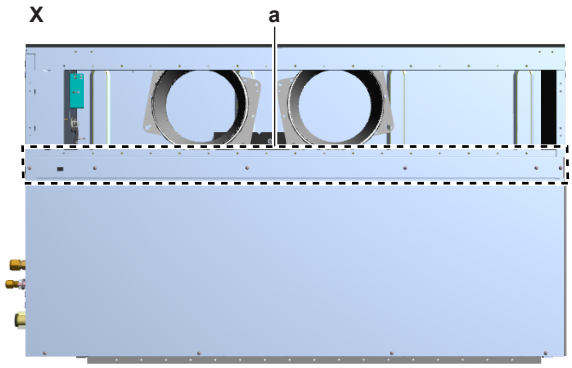
- TO REMOVE BOTTOM PLATE B

Prerequisite: First remove bottom plate A.

1 Remove the screws and remove the middle plate.

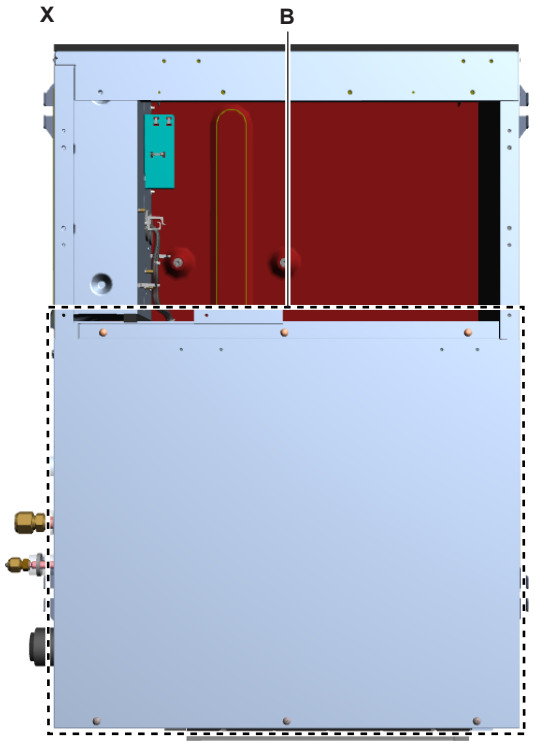


X EKVDX32A2VEB
a Middle plate

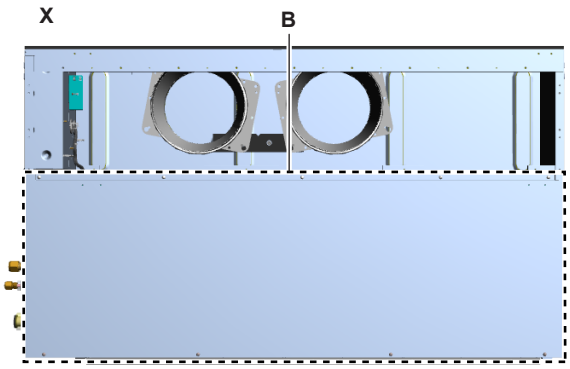


X EKVDX100A2VEB
a Middle plate

2 Remove the screws from the bottom plate B.



X EKVDX32A2VEB
B Bottom plate B



X EKVDX100A2VEB
B Bottom plate B

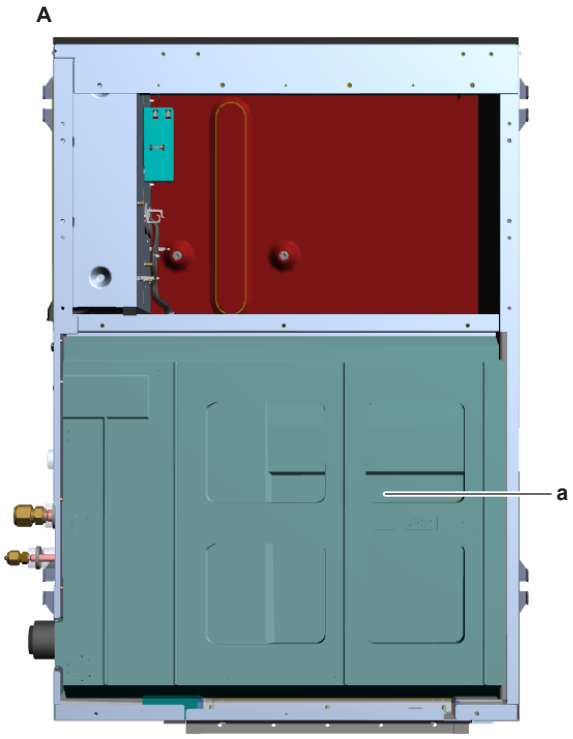
3 Slide the bottom plate B in the direction of the discharge air outlet and remove the plate.

4 To install the bottom plates, see "4.10 Plate work" [▸ 134].

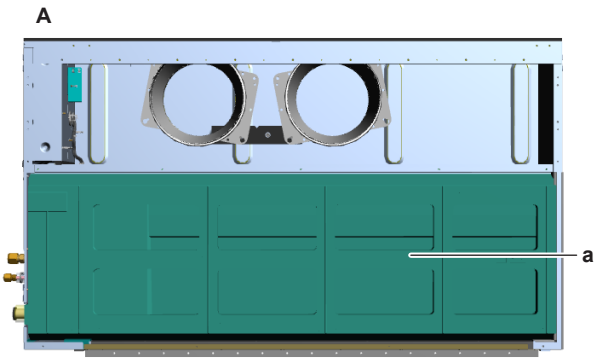
To remove the drain pan

1 Remove the bottom plates.

2 Slightly pull the drain pan downwards and remove it from the unit.



A EKVDX32A2VEB
a Drain pan

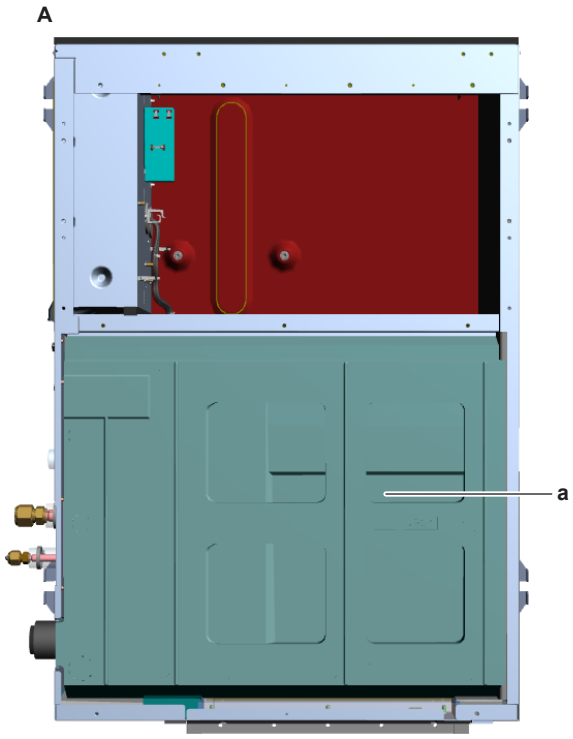


A EKVDX100A2VEB
a Drain pan

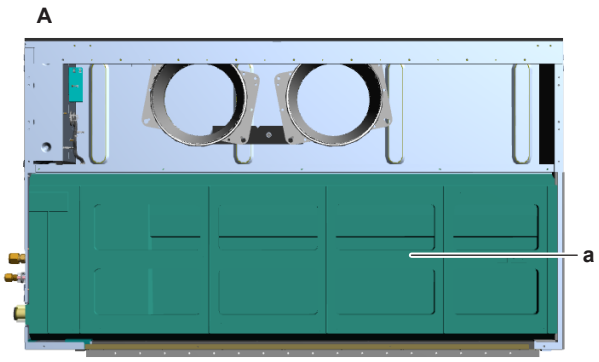
3 To install the drain pan, see "4.10 Plate work" [▸ 134].

To install the drain pan

1 Install the drain pan in the correct location on the indoor unit.
2 Slightly push the drain pan upwards to correctly fix it.



A EKVDX32A2VEB
a Drain pan



A EKVDX100A2VEB
a Drain pan

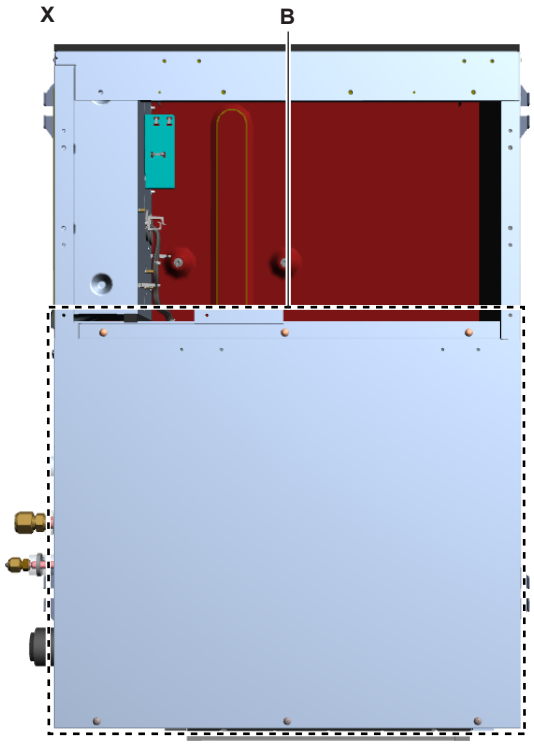
3 Install the bottom plates, see "4.10 Plate work" [▸ 134].

To install the bottom plates

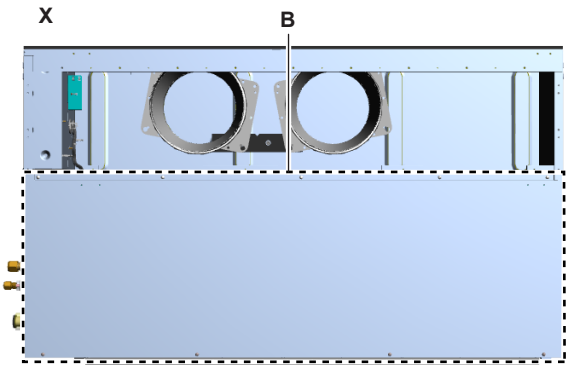
- TO INSTALL BOTTOM PLATE B

1 Slide the bottom plate B in the correct location on the indoor unit.

2 Install and tighten the screws to fix the bottom plate B.



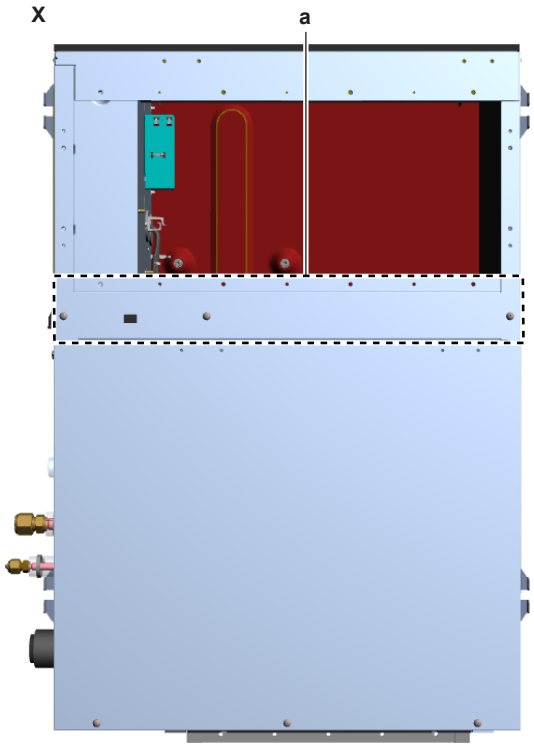
X EKVDX32A2VEB
B Bottom plate B



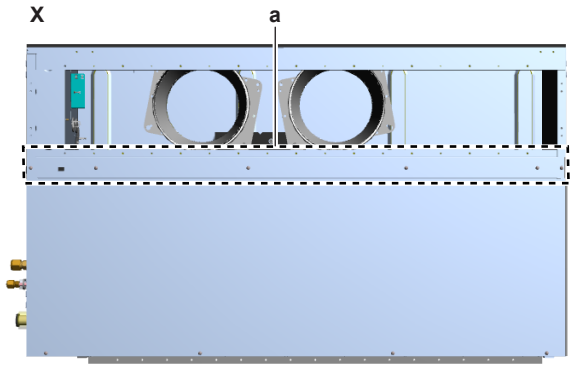
X EKVDX100A2VEB
B Bottom plate B

3 Install the middle plate in the correct location.

4 Install and tighten the screws to fix the middle plate.



X EKVDX32A2VEB
a Middle plate

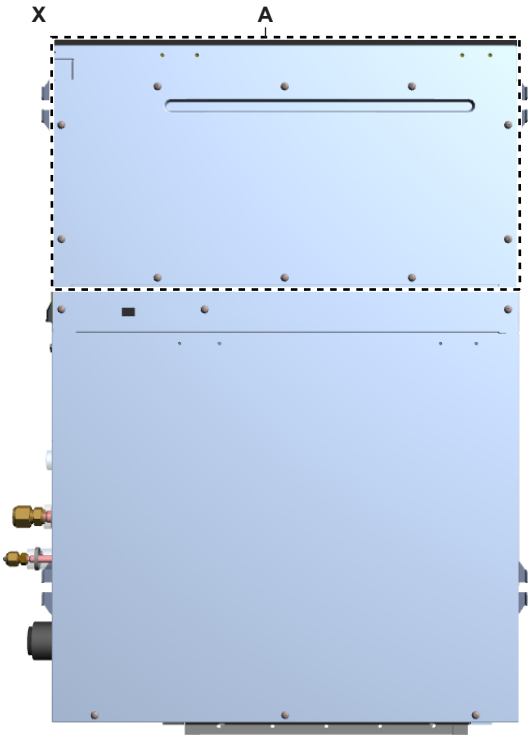


X EKVDX100A2VEB
a Middle plate

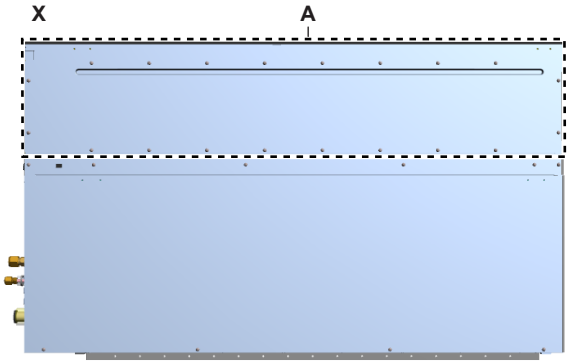
- TO INSTALL BOTTOM PLATE A

Prerequisite: First install bottom plate B.

1. Install the bottom plate A in the correct location on the indoor unit.
2. Install and tighten the screws to fix the bottom plate A.



X EKVDX32A2VEB
A Bottom plate A



X EKVDX100A2VEB
A Bottom plate A

4.10.2 Heat reclaim ventilation unit

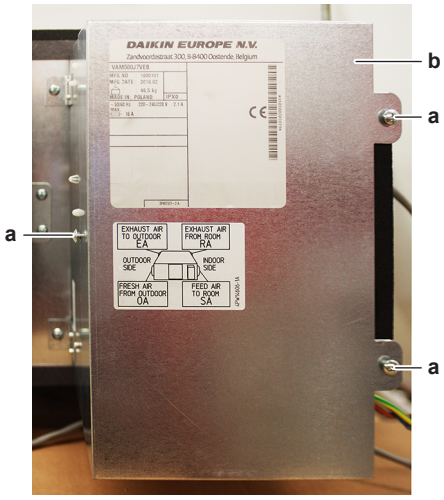
To remove the switch box cover

Prerequisite: Stop the unit operation via the user interface.

1 Turn OFF the respective circuit breaker.

> **DANGER: RISK OF ELECTROCUTION**
>
> Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Remove the 3 screws from the switch box cover.



a Screw
b Switch box cover

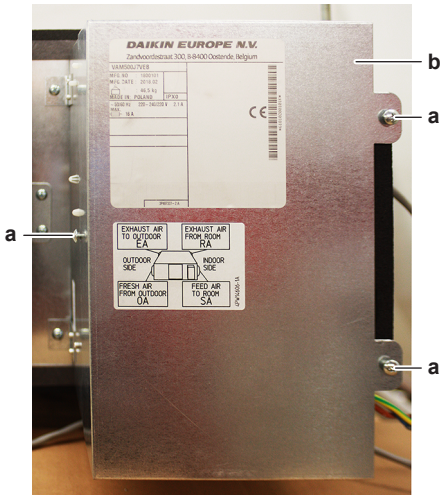
3 Remove the switch box cover from the unit.

4 To install the switch box cover, see "4.10 Plate work" [▸ 134].

To install the switch box cover

1 Install the switch box cover in the correct location on the unit.

2 Install and tighten the 3 screws to fix the switch box cover.



a Screw
b Switch box cover

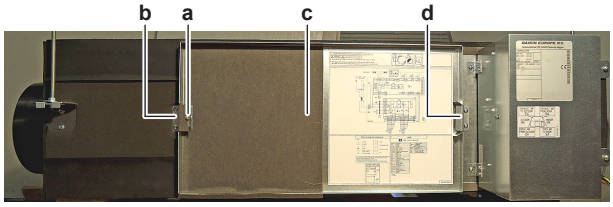
To remove the maintenance cover

Prerequisite: Stop the unit operation via the user interface.

1 Turn OFF the respective circuit breaker.

> **DANGER: RISK OF ELECTROCUTION**
> Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Loosen the screw of the hinge mechanism.



a Screw
b Hinge mechanism
c Maintenance cover
d Hanging metal

3 Turn the hinge mechanism to the left.

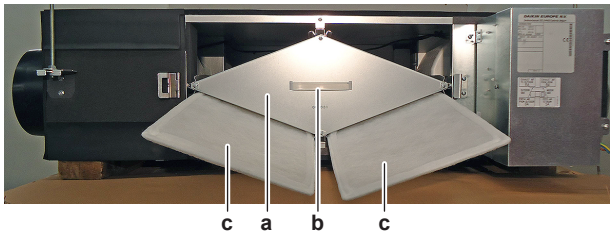
4 Rotate the maintenance cover around the vertical axis of the hanging metal and remove the maintenance cover.

5 To install the maintenance cover, see "4.10 Plate work" [▸ 134].

To remove the heat exchanger and air filter

Prerequisite: Remove the maintenance cover, see "4.10 Plate work" [▸ 134].

1 Pull out the paper heat exchangers by the handle.

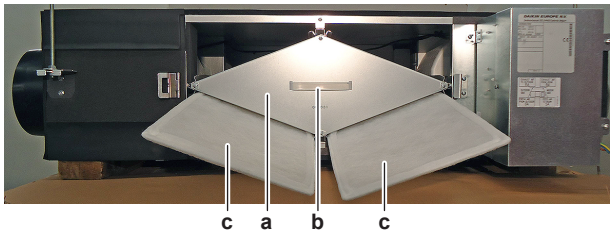


a Paper heat exchanger
b Handle
c Air filter

2 To install the paper heat exchanger and air filters, see "4.10 Plate work" [▸ 134].

To install the heat exchanger and air filter

1 Slide the air filters in the correct location on the paper heat exchanger. Make sure they are correctly installed.



a Paper heat exchanger
b Handle
c Air filter

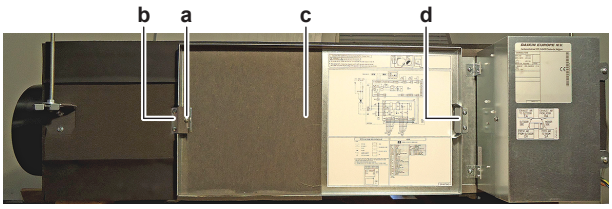
2 Install the paper heat exchanger on the rails of the unit.

3 Slide the paper heat exchanger to the correct location.

4 Install the maintenance cover, see "4.10 Plate work" [▸ 134].

To install the maintenance cover

1 Install the right side of the maintenance cover on the hanging metal.



a Screw
b Hinge mechanism
c Maintenance cover
d Hanging metal

2 Rotate the maintenance cover around the vertical axis of the hanging metal and put it in the correct location.

3 Turn the hinge mechanism to the right.

4 Tighten the screw to fix the hinge mechanism to the maintenance cover.

4.11 R32 leak detection sensor

4.11.1 Checking procedures

To perform an electrical check of the R32 leak detection sensor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

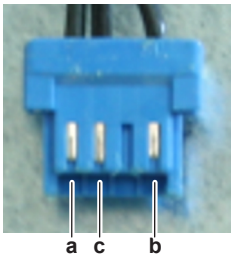
1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Disconnect the R32 leak detection sensor connector X41A from the indoor unit main PCB.

3 Using a multimeter in diode check, measure in reference with the image and the table below.



a Measuring point
b Measuring point
c Measuring point

VDC	COM	REF	VDC	COM	REF
a	b	1.269~1.551 V	b	a	0.414~0.506 V
a	c	OL	c	a	OL
b	c	1.053~1.287 V	c	b	OL

Measured values are correct?	Action
Yes	Continue with the next step.

Measured values are correct?	Action
No	Replace the R32 leak detection sensor, see "4.11.2 Repair procedures" [▸ 147].

4 Connect the R32 leak detection sensor connector to the indoor unit main PCB.

5 Turn ON the power using the respective circuit breaker.

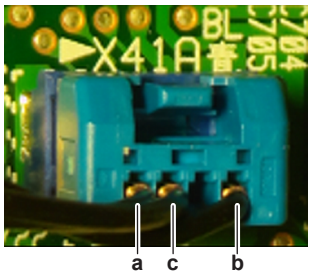
6 Start the unit operation via the user interface.

7 Activate Cooling operation via the user interface.

8 Wait until the unit is operating properly and make sure NO R32 leak is present.

9 Measure the voltage between N wire and power supply wire on connector X41A on the indoor unit main PCB.

Result: The measured voltage MUST be 5 V DC.



a Power supply
b N
c R32 leak detection

Is the measured voltage correct?	Action
Yes	Continue with the next step.
No	Perform a check of the indoor unit main PCB, see "4.8.1 Checking procedures" [▸ 112].

10 Measure the voltage between N wire and R32 leak detection wire on connector X41A on the indoor unit main PCB.

Result: The measured voltage MUST be 0.5~4.5 V DC.

Does the leak detection sensor function correctly?	Action
Yes	Return to troubleshooting of the specific error code and continue with the next procedure.
No	Replace the leak detection sensor, see "4.11.2 Repair procedures" [▸ 147].

4.11.2 Repair procedures

To remove the R32 leak detection sensor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Remove the drain pan, see "4.10 Plate work" [▸ 134].

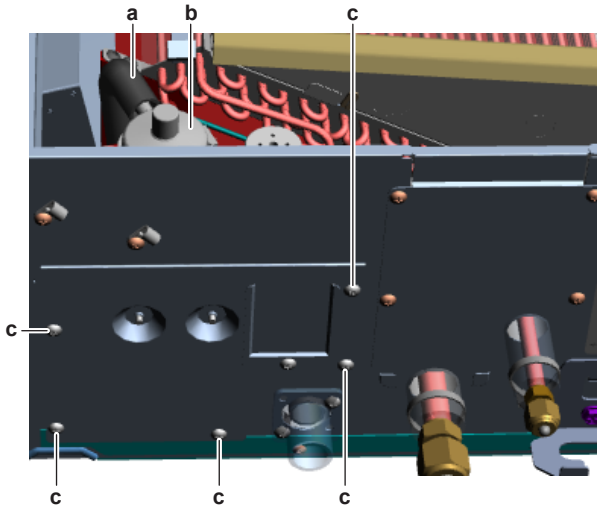
2 Disconnect the drain pump connector, float switch connector and R32 leak detection sensor connector from the indoor unit main PCB.

3 Route the disconnected wiring harnesses out of the switch box and route them away (through any holes if applicable) until they are completely free.

4 Cut all tie straps that fix the wiring harnesses.

5 Remove insulation from the wiring harnesses if needed.

6 Remove the drain outlet pipe from the drain pump.

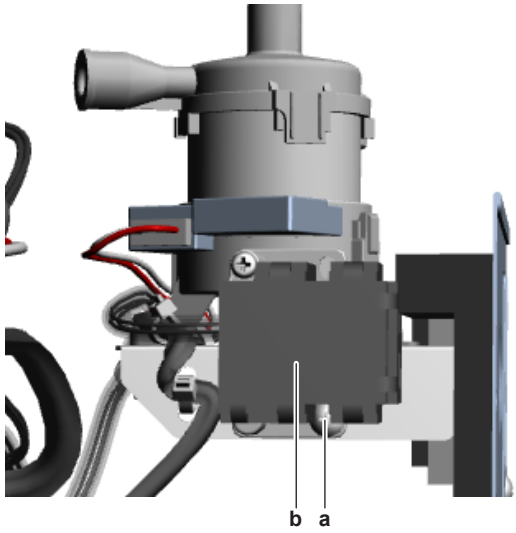


a Drain outlet pipe
b Drain pump assy
c Screw (drain pump assy)

7 Remove the 5 screws from the drain pump assembly mounting plate.

8 Remove the drain pump assembly (including float switch and R32 leak detection sensor) from the indoor unit.

9 Remove the screw and remove the R32 leak detection sensor.



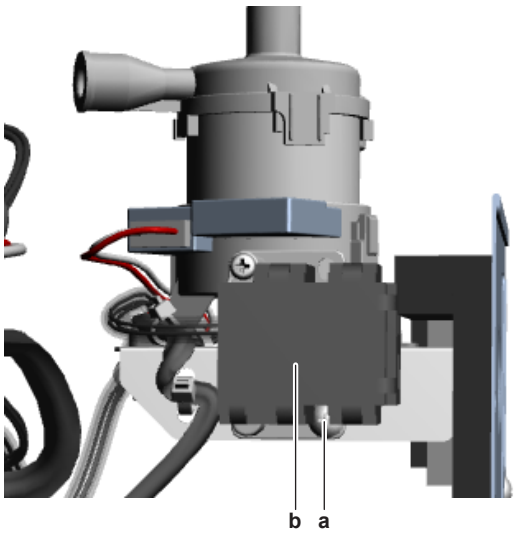
a Screw
b R32 leak detection sensor

10 To install the R32 leak detection sensor, see "4.11.2 Repair procedures" [▸ 147].

To install the R32 leak detection sensor

1 Install the R32 leak detection sensor in the correct location on the drain pump assembly.

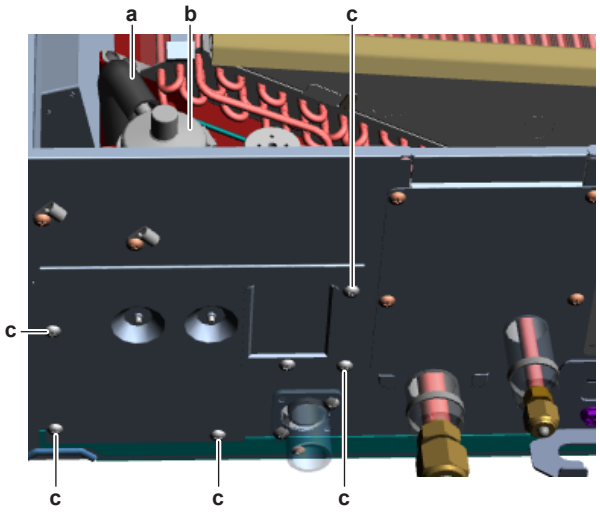
2 Install and tighten the screw to fix the R32 leak detection sensor.



a Screw
b R32 leak detection sensor

3 Install the drain pump assembly in the correct location on the indoor unit.

4 Install and tighten the 5 screws on the drain pump assembly mounting plate.



a Drain outlet pipe
b Drain pump assy
c Screw (drain pump assy)

5 Install the drain outlet pipe on the drain pump.

6 Install new insulation on the wiring harnesses if needed.

7 Route the wiring harnesses through the holes (if applicable) towards the indoor unit main PCB.

8 Connect the drain pump connector, float switch connector and R32 leak detection sensor connector to the indoor unit main PCB.

9 Install new tie straps to fix the wiring harnesses.

INFORMATION

Replace all cable ties that were cut during removal.

10 Install the drain pan, see "4.10 Plate work" [▸ 134].

INFORMATION

Upon power supply to the indoor unit, set the field setting 25-14 = 02 to reset the timer of the R32 leak detection sensor.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.12 Reactor

4.12.1 Checking procedures

To perform an electrical check of the reactor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Visually check the reactor for any damage or burnt-out components. If any damage is found, replace the reactor, see "4.12.2 Repair procedures" [▸ 151].

3 Disconnect the reactor connector from the indoor unit fan PCB.

4 Using a megger device of 500 V DC, check the insulation resistance. Make sure there is no earth leakage.

Is the measured insulation resistance correct?	Action
Yes	Continue with the next step.
No	Replace the reactor, see "4.12.2 Repair procedures" [▸ 151].

5 Measure the inductance of the reactor using an LCR meter.

Result: The inductance MUST be:

Unit	Measured inductance
VAM350~650	8.5 mH
VAM800~2000	14.8 mH

Is the inductance measurement correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next step.
No	Replace the reactor, see "4.12.2 Repair procedures" [▸ 151].

4.12.2 Repair procedures

To remove the reactor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

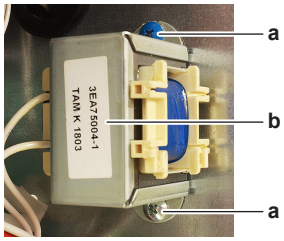
1 Remove the required plate work, see "4.10 Plate work" [▸ 134].

DANGER: RISK OF ELECTROCUTION

Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Disconnect the reactor connector from the indoor unit fan PCB.

3 Remove the 2 screws that fix the reactor to the switch box.



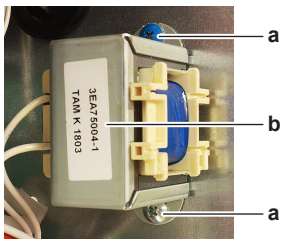
a Screw
b Reactor

4 Remove the reactor.

5 To install the reactor, see "4.12.2 Repair procedures" [▸ 151].

To install the reactor

1 Install the reactor on the correct location on the switch box.



a Screw
b Reactor

2 Install and tighten the 2 screws that fix the reactor to the switch box.

3 Connect the reactor connector to the indoor unit fan PCB.

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.13 Remote controller user interface

4.13.1 Checking procedures

> **INFORMATION**
>
> It is recommended to perform the checks in the listed order.

To check the correct functioning of the remote controller user interface

1 Check the display for the following items:

- Pinhole, bright spot, black spot, white spot, black line, white line, foreign particle, bubble:
  The color of a small area is different from the remainder. The phenomenon does NOT change with voltage.
- Contrast variation:
  The color of a small area is different from the remainder. The phenomenon changes with voltage.
- Polarizer defect:
  Scratch, dirt, particle, bubble on polarizer or between polarizer and glass.
- Dot defect:
  The pixel appears bright or dark abnormally.
- Functional defect:
  No display, abnormal display, open or missing segment, short circuit, false viewing direction.
- Glass defect:
  Glass cracks, shaved corner of glass, surplus glass.

2 Check that information is shown correctly and can be navigated through on the display of the remote controller user interface.

3 Check that settings can be changed and saved, see "4.13.2 Repair procedures" [▸ 154].

Does the remote controller user interface function correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

4 Perform a check of the communication wiring between the remote controller and the unit PCB.

Communication wiring is correct?	Action
Yes	Replace the remote controller user interface, see "4.13.2 Repair procedures" [▸ 154].
No	Correct the wiring between the remote controller and the unit PCB, see "7.2 Wiring diagram" [▸ 177].

To check the settings

1 See the relevant documentation (installer reference guide, remote controller manual, …) to check if the specific setting is correct.

Is the setting correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the specific setting see "4.13.2 Repair procedures" [▸ 154].

To check the software and EEPROM version

1 Compare the software ID and EEPROM version of the remote controller user interface and the PCB with the ones provided in the Updater Tool. Re-install the software with the Updater Tool if versions do NOT match.

Is the installed software and EEPROM version correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Re-install the software with the Updater Tool see "4.13.2 Repair procedures" [▸ 154].

To check the communication wiring between the remote controller and the unit PCB

EKVDX-A units

1 Make sure that all wires between the remote controller user interface P1/P2 and the connector X30A: 5-6 on the indoor unit PCB are firmly and correctly connected, see "7.2 Wiring diagram" [▸ 177].

2 Check the continuity of all wires.

3 Replace any damaged or broken wires.

INFORMATION

Correct the wiring as needed.

VAM-J8 units

4 Make sure that all wires between the remote controller user interface P1/P2 and the wire terminal X1M: P1/P2 on the indoor unit PCB are firmly and correctly connected, see "7.2 Wiring diagram" [▸ 177].

5 Check the continuity of all wires.

6 Replace any damaged or broken wires.

INFORMATION

Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.13.2 Repair procedures

To remove the user interface

1 See relevant manual of the user interface (remote controller) for the correct procedure.

2 To install the user interface, see "4.13.2 Repair procedures" [▸ 154].

To install the user interface

1 See relevant manual of the user interface (remote controller) for the correct procedure.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To adjust the settings

1 See the relevant documentation (installer reference guide, remote controller manual, ...) to adjust the specific setting.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To install the software

1 Install the software using the Updater Tool. See the Business Portal (http://www.mydaikin.eu) for more information about the Updater Tool.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.14 Thermistors

4.14.1 Checking procedures

INFORMATION

It is recommended to perform the checks in the listed order.

To perform a mechanical check of the specific thermistor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Locate the thermistor and remove the insulation if needed. Check that the thermistor is correctly installed and that there is thermal contact between the thermistor and the piping or ambient (for air thermistor).

Is the thermistor correctly installed (thermal contact between the thermistor and the piping)?	Action
Yes	Perform an electrical check of the specific thermistor, see "4.14.1 Checking procedures" [▸ 154].
No	Correctly install the thermistor, see "4.14.2 Repair procedures" [▸ 157].

To perform an electrical check of the specific thermistor

1 First perform a mechanical check of the thermistor, see "4.14.1 Checking procedures" [▸ 154].

2 Locate the thermistor.

INFORMATION

Remove the thermistor from its holder if not reachable with a contact thermometer.

3 Measure the temperature using a contact thermometer.

VAM-J8

Name	Symbol	Location (PCB)	Connector (pins)	Reference (table)
Indoor air thermistor	R1T	A1P	X12A:1-2	B
Outdoor air thermistor	R2T	A1P	X11A:1-2	B

EKVDX

Name	Symbol	Location (PCB)	Connector (pins)	Reference (table)
Suction air thermistor	R1T	A1P	X16A:1-2	A
Refrigerant liquid thermistor	R2T	A1P	X18A:1-2	B
Gas thermistor	R3T	A1P	X17A:1-3	C
Discharge air thermistor	R5T	A1P	X13A:1-2	A

4 Determine the thermistor resistance that matches the measured temperature.

Thermistor – Table A

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
–30	361.8	5	51.0	40	10.6	75	2.9
–25	265.5	10	39.1	45	8.7	80	2.5
–20	196.6	15	31.5	50	7.2	85	2.1
–15	147.6	20	25.0	55	5.9	90	1.8
–10	111.7	25	20.0	60	4.9		
–5	85.3	30	16.1	65	4.1		
0	65.7	35	13.0	70	3.5		

Thermistor – Table B

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
–30	364.4	5	51.1	40	10.6	75	3.0
–25	267.0	10	39.1	45	8.7	80	2.5
–20	197.8	15	31.5	50	7.2	85	2.1
–15	148.1	20	25.0	55	6.0	90	1.8
–10	112.0	25	20.0	60	5.0		
–5	85.5	30	16.1	65	4.2		
0	65.8	35	13.0	70	3.5		

Thermistor – Table C

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
–30	352.1	5	51.2	40	10.7	75	3.0
–25	261.2	10	39.3	45	8.8	80	2.5
–20	195.4	15	31.6	50	7.3	85	2.2
–15	147.3	20	25.2	55	6.0	90	1.9
–10	111.8	25	20.1	60	5.0		
–5	85.5	30	16.2	65	4.2		
0	65.8	35	13.2	70	3.5		

5 Disconnect the thermistor connector from the appropriate PCB.

6 Measure the resistance between the appropriate pins of the thermistor connector.

7 Check that the measured resistance value matches the resistance determined through the measured temperature (earlier step in the procedure).

- E.g. R1T thermistor:
- Measured temperature with contact thermometer: 23.1°C,
- Resistance value determined through temperature (using the thermistor table A):
  Resistance at 23°C: 21.90 kΩ,
  Resistance at 24°C: 20.90 kΩ,
- Disconnect connector X16A and measure resistance between the thermistor wires:
  Measured resistance: 21.86 kΩ,
- Measured resistance value is inside the range. R1T thermistor passes the check.

INFORMATION

All thermistors have a resistance tolerance of 3%.

INFORMATION

Connect the service monitoring tool to the unit or use field settings mode 1 (see service manual of the outdoor unit) to monitor the thermistors.

If the measured resistance value matches the resistance determined through the measured temperature, but the temperature for the corresponding thermistor via service monitoring tool or field settings mode 1 is NOT correct, replace the applicable PCB.

Does the measured resistance of the thermistor match with the temperature determined resistance?	Action
Yes	Thermistor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the specific thermistor, see "4.14.2 Repair procedures" [▸ 157].

4.14.2 Repair procedures

To remove the thermistor

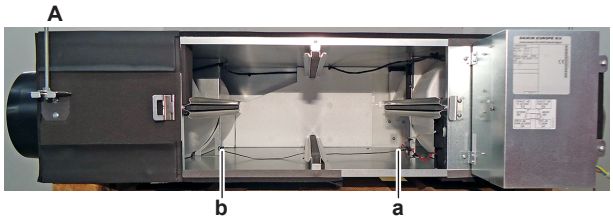
Indoor unit air thermistor

Prerequisite: Stop the unit operation via the user interface.

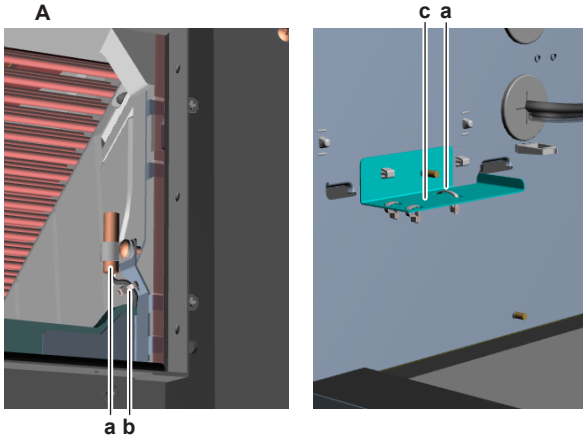
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Cut the tie strap(s) and remove the thermistor from its location or holder.



A VAM-J8 unit
a Indoor air thermistor
b Outdoor air thermistor



A EKVDX-A unit
a Tie strap
b Discharge air thermistor
c Suction air thermistor mounting plate

2 Cut all tie straps that fix the thermistor harness and route the harness out of the retainers (if applicable).

3 Disconnect the thermistor connector from the indoor unit main PCB and remove the thermistor.

Other refrigerant side thermistors

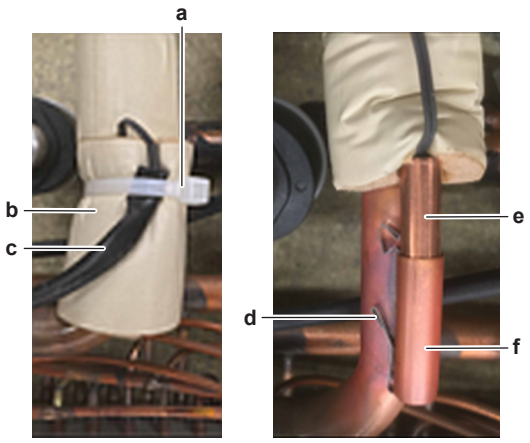
Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Locate the thermistor that needs to be removed.

2 If applicable, cut the tie strap(s) that fix the insulation and the thermistor wire.



a Tie strap
b Insulation
c Thermistor wire
d Clip
e Thermistor
f Thermistor holder

3 If applicable, cut and remove the insulation.

4 Pull the clip that fixes the thermistor.

5 Remove the thermistor from the thermistor holder.

6 Cut all tie straps that fix the thermistor wiring harness.

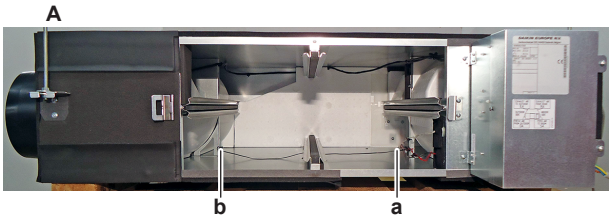
7 Disconnect the thermistor connector from the indoor unit main PCB and remove the thermistor.

8 To install the thermistor, see "4.14.2 Repair procedures" [▸ 157].

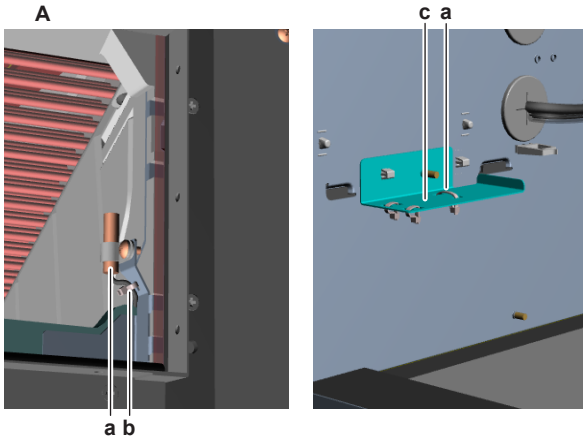
To install the thermistor

Indoor unit air thermistor

1 Install the air thermistor in the correct location or holder.



A VAM-J8 unit
a Indoor air thermistor
b Outdoor air thermistor



A EKVDX-A unit
a Tie strap
b Discharge air thermistor
c Suction air thermistor mounting plate

2 Fix the air thermistor using new tie strap(s).

3 Route the thermistor harness through the appropriate retainers (if applicable) towards the indoor unit main PCB.

4 Connect the thermistor harness to the indoor unit main PCB.

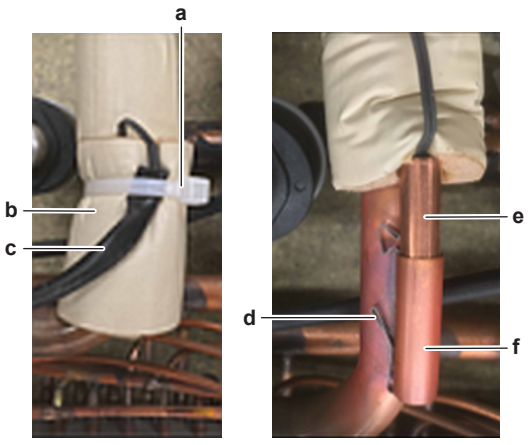
WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

5 Fix the thermistor harness using new tie straps.

Other refrigerant side thermistors

1 Pull the clip and install the thermistor in the specific thermistor holder. Make sure the clip is in the correct position (blocking the thermistor).



a Tie strap
b Insulation
c Thermistor wire
d Clip
e Thermistor
f Thermistor holder

2 Route the thermistor harness through the appropriate retainers (if applicable) towards the indoor unit main PCB.

3 Connect the thermistor connector to the indoor unit main PCB.

WARNING

When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

4 Fix the thermistor wiring harness using new tie straps.

5 If applicable, install the insulation around the thermistor and fix it using new tie straps.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.15 User interface

4.15.1 Checking procedures

INFORMATION

It is recommended to perform the checks in the listed order.

To check the correct functioning of the remote controller user interface

1 Check the display for the following items:

- Pinhole, bright spot, black spot, white spot, black line, white line, foreign particle, bubble:
  The color of a small area is different from the remainder. The phenomenon does NOT change with voltage.
- Contrast variation:
  The color of a small area is different from the remainder. The phenomenon changes with voltage.
- Polarizer defect:
  Scratch, dirt, particle, bubble on polarizer or between polarizer and glass.
- Dot defect:
  The pixel appears bright or dark abnormally.
- Functional defect:
  No display, abnormal display, open or missing segment, short circuit, false viewing direction.
- Glass defect:
  Glass cracks, shaved corner of glass, surplus glass.

2 Check that information is shown correctly and can be navigated through on the display of the remote controller user interface.

3 Check that settings can be changed and saved, see "4.15.2 Repair procedures" [▸ 162].

Does the remote controller user interface function correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

4 Perform a check of the communication wiring between the remote controller and the unit PCB.

Communication wiring is correct?	Action
Yes	Replace the remote controller user interface, see "4.15.2 Repair procedures" [▸ 162].
No	Correct the wiring between the remote controller and the unit PCB, see "7.2 Wiring diagram" [▸ 177].

To check the settings

1 See the relevant documentation (installer reference guide, remote controller manual, ...) to check if the specific setting is correct.

Is the setting correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the specific setting see "4.15.2 Repair procedures" [▸ 162].

To check the software and EEPROM version

1 Compare the software ID and EEPROM version of the remote controller user interface and the PCB with the ones provided in the Updater Tool. Re-install the software with the Updater Tool if versions do NOT match.

Is the installed software and EEPROM version correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Re-install the software with the Updater Tool see "4.15.2 Repair procedures" [▸ 162].

To check the communication wiring between the remote controller and the unit PCB

EKVDX-A units

1 Make sure that all wires between the remote controller user interface P1/P2 and the connector X30A: 5-6 on the indoor unit PCB are firmly and correctly connected, see "7.2 Wiring diagram" [▸ 177].

2 Check the continuity of all wires.

3 Replace any damaged or broken wires.

INFORMATION

Correct the wiring as needed.

VAM-J8 units

4 Make sure that all wires between the remote controller user interface P1/P2 and the wire terminal X1M: P1/P2 on the indoor unit PCB are firmly and correctly connected, see "7.2 Wiring diagram" [▸ 177].

5 Check the continuity of all wires.

6 Replace any damaged or broken wires.

INFORMATION

Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.15.2 Repair procedures

To remove the user interface

1 See relevant manual of the user interface (remote controller) for the correct procedure.

2 To install the user interface, see "4.15.2 Repair procedures" [▸ 162].

To install the user interface

1 See relevant manual of the user interface (remote controller) for the correct procedure.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To adjust the settings

1 See the relevant documentation (installer reference guide, remote controller manual, ...) to adjust the specific setting.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To install the software

1 Install the software using the Updater Tool. See the Business Portal (http://www.mydaikin.eu) for more information about the Updater Tool.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

5 Third party components

5.1 Electrical circuit

5.1.1 Checking procedures

To check the power supply to the indoor unit

EKVDX-A units

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1. Check that the power supply cables and earth connection are firmly fixed to the indoor unit power supply terminal X2M.
2. Measure the insulation resistance between each power supply terminal and the ground using a megger device of 500 V DC. All measurements MUST be >1MΩ. If insulation resistance is <1MΩ, earth leakage is present.
3. Turn ON the power using the respective circuit breaker.
4. Measure the voltage between L and N on the indoor unit power supply terminal X2M.

   Result: The voltage MUST be 230 V AC ± 10%.

Is the measured voltage (power supply) correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "5.1.2 Repair procedures" [▸ 167].

VAM-J8 units

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

5. Check that the power supply cables and earth connection are firmly fixed to the indoor unit power supply terminal X3M.
6. Measure the insulation resistance between each power supply terminal and the ground using a megger device of 500 V DC. All measurements MUST be >1MΩ. If insulation resistance is <1MΩ, earth leakage is present.
7. Turn ON the power using the respective circuit breaker.
8. Measure the voltage between L and N on the indoor unit power supply terminal X3M.

   Result: The voltage MUST be 230 V AC ± 10%.

Is the measured voltage (power supply) correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "5.1.2 Repair procedures" [▸ 167].

To check if the power supply is compliant with the regulations

1 Check that the power source is in line with the requirements described in the databook.

Is the power supply compliant with the regulations?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "5.1.2 Repair procedures" [▸ 167].

To check F1-F2 transmission

To check the F1-F2 wiring

1 Check that the wiring:

- is within installation length limits,
- is of the proper wire type,
- is of the proper wire thickness,
- is properly fixed to the terminals,
- is executed according to the installation manual, with no star connections.

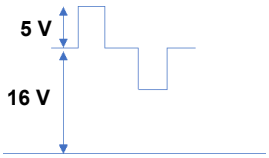
2 Check that no shielded cables are used or that shielded cables are grounded only on one side of the cable.

3 Check that F1-F2 wiring has continuity all over.

Is the wiring correctly executed, as indicated in the installation manual?	Action
Yes	Continue with the next step in this checking procedure.
No	Modify the wiring, see the installation manual.

To measure the F1-F2 transmission

F1-F2 transmission is a D3Net rectangular waveform, 16 VDC ± 5 V with 16-5V amplitude that appears on the 16V base line:



F1-F2 terminals on indoor units, outdoor units and central controllers are all possible measurement points. Use as many points as you can and take the time necessary for measurement if analyzing with an oscilloscope.

On outdoor units, measurement should be done either at F1-F2 IN or F1-F2 OUT. If the F1-F2 OUT terminal is not used, then measure at the F1-F2 IN terminal.

You can conduct the measuring with a multimeter or an oscilloscope.

To measure the F1-F2 transmission with a multimeter:

4 Set the multimeter to DC Voltage measurement.

5 Measure on the F1 and F2 terminals.

Result: 16 V DC should be read.

To measure the F1-F2 transmission with an oscilloscope:

INFORMATION

Ensure that probes are securely connected to F1-F2 terminals. Otherwise, distortions will be generated resulting in misinterpretation of data. It is recommended to connect temporary cables to the probes and then connect the cables to the terminals securely.

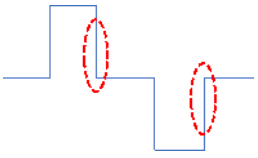
6 Measure at as many points as you can, this can help to determinate the problem.

For example: if the measurements at the indoor unit side are distorted while central controller and outdoor unit seem OK, you can suppose that the failure in transmission is related to the indoor unit side.

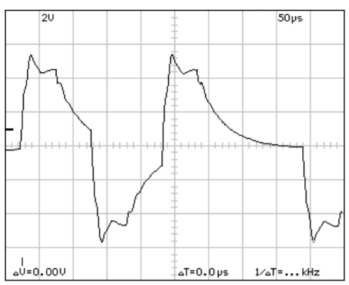
7 Set time base (horizontal) to 50 µs/div to 100 µs. Voltage axis (vertical) should be set to 2V/div to 5V. Set position properly, otherwise the data may appear outside the screen. In AC mode, which is a sampling mode in oscilloscopes, waveforms appear in the middle of the screen. So, it is recommended to use AC mode if possible.

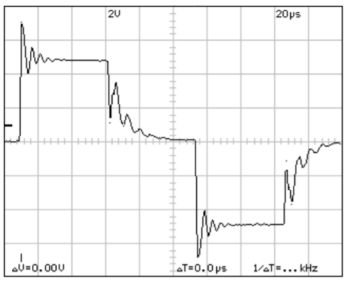
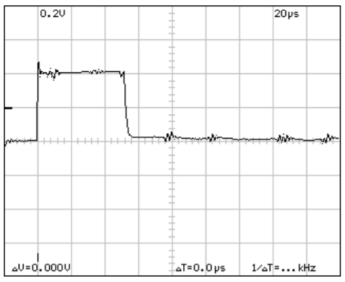
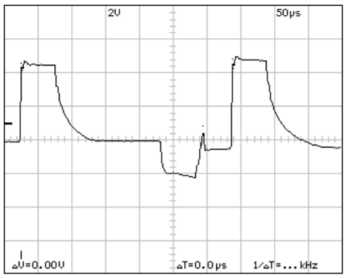
8 Set the triggering mode of the oscilloscope to "Normal". If "Auto" mode is selected, observed waveforms may be cleared instantaneously leading to misinterpretation of data.

9 Ignore very short-time pulses of 1V amplitude or less, or overshooting at the rising edge may be ignored. Focus on the shown points of the waveform below:



Examples of waveform distortions on D3Net and possible causes:

	**Rounded waveforms at falling edges.** Possible reasons: ▪ Excessive wire length, ▪ Excessive number of connected devices, ▪ Branching (star connections).

	**Ringing.** Possible reasons: ▪ Transmission wiring very close to high voltage cables, ▪ Use of multi-conductor type wires.
	**Noise.** Possible reasons: ▪ Transmission wiring very close to high voltage cables, ▪ Transmission wiring effected from external equipment causing noise.
	**Faulty Waveform.** Possible reasons: ▪ Transmission circuit failure on a PCB.

After checking and correcting possible causes of F1-F2 transmission problems, perform a communication reset (see "5.1.2 Repair procedures" [▸ 167]).

To check the wiring between the outdoor unit and the indoor unit

1 Check that all wires are properly connected and that all connectors are fully plugged-in.

2 Check that no connectors or wires are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "7.2 Wiring diagram" [▸ 177].

INFORMATION

Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

5.1.2 Repair procedures

To adjust the power supply

1 Make sure that the power source is in line with the requirements described in the databook.

2 Adjust the power supply within 50 Hz ± 3%.

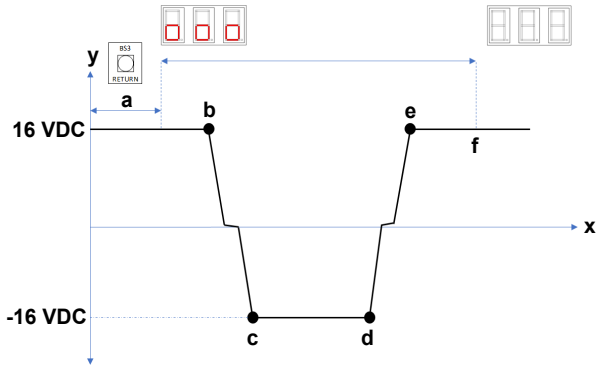
Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To perform a communication reset

NOTICE

If an indoor unit is powered OFF when communication reset is performed, the outdoor unit will delete this indoor unit information since this unit will not be identified during re-initialization. If so, this unit will not be recognized by the outdoor unit upon power restore to this indoor unit.

1 Set multimeter to V DC measurement. The example below is performed while COM-F1 and V DC-F2, the polarity will be opposite than the graph below if connected otherwise (which is not a problem).



a Y: Voltage (VDC)
b X: Time

2 Push BS3 (RETURN) and hold it for 5 seconds until the 7-segment display shows "000". Then release BS3.

Result: After a while, voltage will drop to almost 0 V DC. At this stage it means that re-initialization has started.

Result: Depending on the system size, voltage will rise to 16 V DC and hit 0 V back again several times.

Result: When finished, 7-Segment Display will turn OFF. This indicates that re-initialization has completed.

The time this procedure takes, depends on the amount of indoor units.

To correct the wiring between PCB's

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "4.10 Plate work" [▸ 134].

1 Make sure that all wires are firmly and correctly connected, see "7.2 Wiring diagram" [▸ 177].

2 Check the continuity of all wires.

3 Replace any damaged or broken wires.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

5.2 Refrigerant circuit

5.2.1 Checking procedures

INFORMATION

Depending on the combination between the indoor unit and outdoor unit, these procedures may differ. See the service manual of the appropriate outdoor unit for the correct procedures.

INFORMATION

It is recommended to perform the checks in the listed order.

5.2.2 Repair procedures

INFORMATION

Depending on the combination between the indoor unit and outdoor unit, these procedures may differ. See the service manual of the appropriate outdoor unit for the correct procedures.

5.3 Manufacturer components

5.3.1 Checking procedures

To check the correct operation / setting of the manufacturer component

1 See the specific dealer manual to check for the correct installation, operation or setting of your component.

Does the component function correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the specific component, see "5.3.2 Repair procedures" [▶ 169].

5.3.2 Repair procedures

To adjust the manufacturer component

1 See the specific dealer manual to adjust your component.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

5.4 External factors

5.4.1 Checking procedures

To check for objects that may block the airflow

1 Check for the presence of object(s) near the indoor unit that may block the airflow. Remove the object(s) as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To check for an external power source

1 Check for the presence of an external power source. This might cause electrical interference (electrical noise disturbance).

2 If an external power source was found, remove it.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

6 Maintenance

NOTICE

General maintenance/inspection checklist. Next to the maintenance instructions in this chapter, a general maintenance/inspection checklist is also available on the Daikin Business Portal (authentication required).

The general maintenance/inspection checklist is complementary to the instructions in this chapter and can be used as a guideline and reporting template during maintenance.

6.1 Maintenance for heat reclaim ventilation units

CAUTION

See "User safety instructions" in the installer reference guide to acknowledge all related safety instructions.

NOTICE

Maintenance MUST be done by an authorised installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.

NOTICE

We recommend to clean at least once every 2 years (for general office use). If necessary, shorter maintenance intervals might be required.

NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO_2 equivalent.

Formula to calculate the quantity in CO_2 equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

6.1.1 Maintenance safety precautions

DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING/SCALDING

NOTICE: Risk of electrostatic discharge

Before performing any maintenance or service work, touch a metal part of the unit in order to eliminate static electricity and to protect the PCB.

6.1.2 Checklist for maintenance of the heat reclaim ventilation unit

☐	Check the air filters at least once a year. The air filters can get blocked due to dust, dirt, leaves, etc. It is recommended to clean the air filters yearly. A blocked air filter can cause an excessive pressure drop and reduced performance. See "Maintenance of the air filter" [▸ 172].
☐	Check the heat exchange element at least once every 2 years. The heat exchange element can get blocked due to dust, dirt, etc. It is recommended to clean the heat exchange element once every 2 years. A blocked heat exchange element can cause excessive pressure and reduced performance. See "Maintenance of the heat exchange element" [▸ 174].

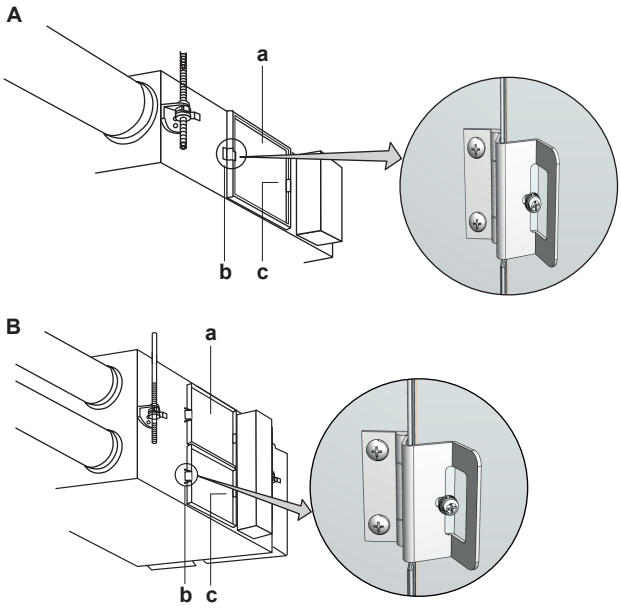
6.1.3 Maintenance of the air filter

NOTICE

- Do NOT wash the air filter in hot water.
- Do NOT dry the air filter over a fire.
- Do NOT subject the air filter to direct sunlight.
- Do NOT use organic solvents, such as gasoline or thinner, on the air filter.
- Make sure to install the air filter after servicing (missing air filter causes clogged heat exchange element). Replacement air filters are available.

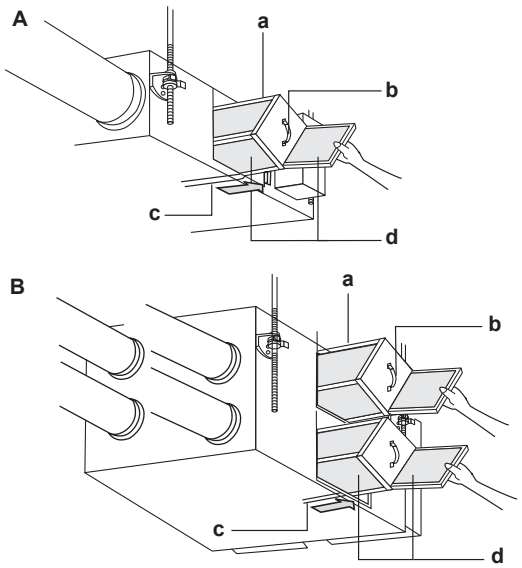
To clean the air filters

1 Go into the ceiling through the inspection hole, loosen the screw of the hinge mechanism (on the left side) to open the service cover. Take the service cover off by rotating it around the vertical axis of the hanging metal.



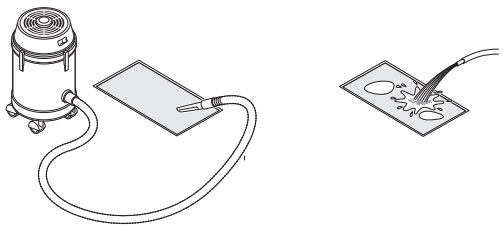
a Service cover
b Hinge mechanism
c Hanging metal
A Models 350~1000
B Models 1500+2000

2 Take out the air filters from the unit body.



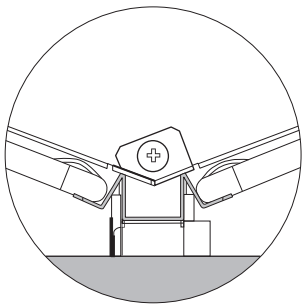
a Heat exchange element
b Handle
c Rail
d Air filter
A Models 350~1000
B Models 1500+2000

3 To clean the air filter, lightly pat it with your hand or remove dust with a vacuum cleaner. If excessively dirty, wash it in water.



4 If the air filter is washed, remove water completely and allow to dry for 20 to 30 minutes in the shade.

5 When dried completely, install the air filter back in place after the installation of the heat exchange element. Make sure the air filter is orientated correctly, as shown in the figure.



6 Install the service cover securely in place.

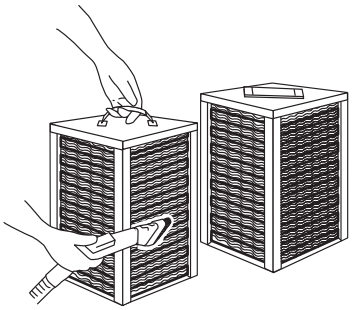
6.1.4 Maintenance of the heat exchange element

NOTICE

- NEVER wash the heat exchange element with water.
- NEVER touch the heat exchange element paper because it can be damaged if it is forced.
- Do NOT crush the heat exchange element.

To clean the heat exchange element

1. Take out the heat exchange elements. Refer to "6.1.3 Maintenance of the air filter" [▸ 172].
2. Equip a vacuum cleaner with a brush on the end of the suction nozzle.
3. Use the vacuum cleaner and lightly apply the brush to the surface of the heat exchange element to remove dust.



4. Place the heat exchange element on the rail and insert it in the unit.
5. Install the air filters in the unit.
6. Install the service cover.

6.2 Maintenance for DX units

NOTICE

Maintenance MUST be done by an authorised installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.

NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO_2 equivalent.

Formula to calculate the quantity in CO_2 equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

INFORMATION

During a test run of the system or during maintenance, the R32 safety needs to be deactivated. Refer to "To deactivate the R32 safety system" in the installer reference guide.

6.2.1 Checklist for yearly maintenance of the indoor unit

Check the following at least once a year:

- Heat exchanger
- Drain pan

Instructions

The heat exchanger and drain pan of the indoor unit can get contaminated and blocked up. It is recommended to clean the heat exchanger and drain pan yearly. A blocked heat exchanger can lead to too low pressure or too high pressure leading to worse performance.

When cleaning the indoor unit heat exchanger and drain pan make sure to:

- Use proper field supply cleaning agent which is suitable for cleaning heat exchangers and drain pans.
- Clearly follow the instructions of local supply cleaning agent and to NOT use household cleaning agents.
- Rinse the heat exchanger and drain pan with water after the cleaning process.

CAUTION

Rinse out the cleaning agent until there is NO cleaning agent left. Otherwise, the corrosion of heat exchanger and drain pan may occur. Pay attention to the cleaning agent that may also corrode other materials of the indoor unit (Aluminium, copper, plastic, ABS, ...).

6.2.2 Cleaning the air outlet

CAUTION

Turn off the unit before cleaning the air outlet.

To clean the air outlet

WARNING

Do NOT let the indoor unit get wet. **Possible consequence:** Electrical shock or fire.

Clean with a soft cloth. If it is difficult to remove stains, use water or a neutral detergent.

6.2.3 Maintenance before a long stop period

E.g., at the end of the season.

- Let the indoor units run in fan only operation for about half a day in order to dry the interior of the units.
- Clean casings of indoor units (see "6.2.2 Cleaning the air outlet" [▸ 175]).
- Remove the batteries from the user interface (if applicable).

6.2.4 Maintenance after a long stop period

E.g., at the beginning of the season.

- Check and remove everything that might be blocking inlet and outlet vents of indoor units and outdoor units.
- Clean casings of indoor units (see "6.2.2 Cleaning the air outlet" [▸ 175]).
- Insert batteries in the user interface (if applicable).

7 Technical data

7.1 Detailed information setting mode

7.1.1 Detailed information setting mode: Indoor unit

See the installer reference guide on business portal for more information.

7.1.2 Detailed information setting mode: Remote controller

See the installer reference guide on business portal for more information.

7.2 Wiring diagram

7.2.1 Wiring diagram: VAM-J8

The wiring diagram can be found on the outside of the service cover.

Legend for wiring diagrams:

A1P	Printed circuit board
A2P	Printed circuit board assy (fan) (VAM350~650)
A2P-A3P	Printed circuit board assy (fan) (VAM800+1000)
A2P~A5P	Printed circuit board assy (fan) (VAM1500+2000)
C7	Capacitor (M1F)
F1U (A1P)	Fuse (250 V, 6.3 A, T)
F2U (A2P)	Fuse (250 V, 5 A, T) (VAM350~650)
F3U	Fuse (250 V, 6.3 A, T) (VAM800~2000)
F4U (A2P)	Fuse (250 V, 6.3 A, T) (VAM350~650)
HAP	Pilot lamp (service monitor - green)
K*R	Magnetic relay
L*R	Reactor
M1D	Motor (damper)
M2D	Motor (damper) (VAM1500+2000)
M1F	Supply air fan
M2F	Exhaust air fan
M3F	Motor (exhaust air fan) (top) (VAM1500+2000)
M4F	Motor (supply air fan) (top) (VAM1500+2000)
PS	Switching power supply
Q1DI	Field earth leak detector (≤300 mA)
R*	Resistance
R1T	Thermistor (indoor air)
R2T	Thermistor (outdoor air)
R3T	Thermistor (PTC)
S1C	Limit switch damper motor
S2C	Limit switch damper motor (VAM1500+2000)
V1R	Diode bridge
X1M (A1P)	Terminal
X2M (A1P)	Terminal (outside input)
X3M	Terminal (power supply)
Z1F	Noise filter
Z*C	Noise filter (ferrite core)

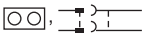
Remote controller

SS1	Selector switch

Connector for option

X14A	Connector (CO_2 sensor)
X24A	Connector (outside damper)
X33A	Connector (contact printed circuit board)
X35A	Connector (power supply printed circuit board)

Symbols:

	Field wiring
	Terminals
	Connectors
	Protective earth
	Noiseless earth

Colours:

BLK	Black
BLU	Blue
BRN	Brown
GRN	Green
ORG	Orange
RED	Red
WHT	White
YLW	Yellow

Translation of text on wiring diagram

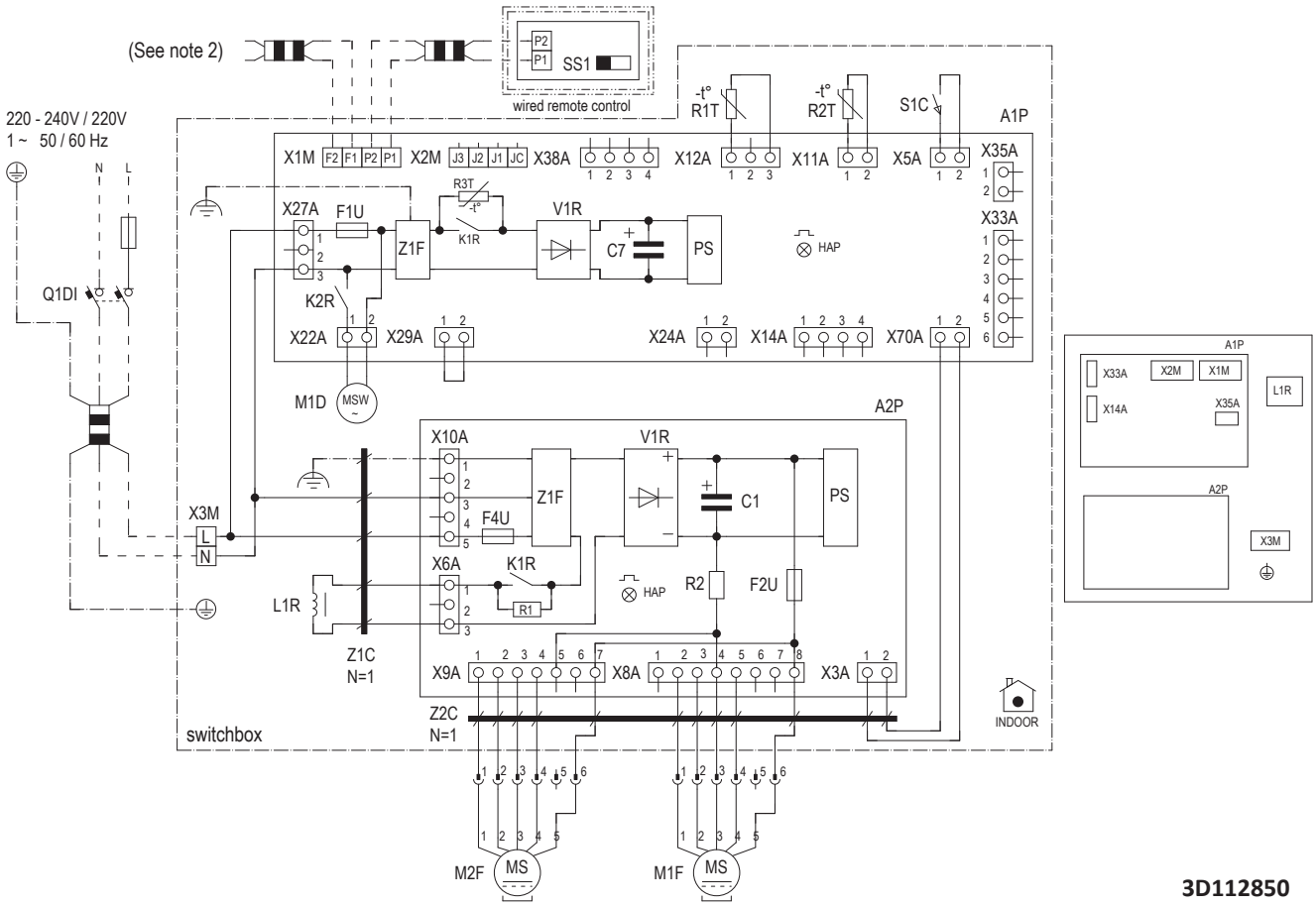
English	Translation
Notes	Notes
X35A is connected when optional accessories are being used, see wiring diagram of this accessory	X35A is connected when optional accessories are being used, see wiring diagram of this accessory
An EKVDX unit and its corresponding VAM-J8 unit should be connected to a common power supply. Refer to the installation manual of the EKVDX unit for further details.	An EKVDX unit and its corresponding VAM-J8 unit should be connected to a common power supply. Refer to the installation manual of the EKVDX unit for further details.
Transmission wiring	Transmission wiring
Ext. output - error state	External output - error state
Ext. output - R32 alarm	External output – R32 alarm
Caution when performing service inside the el. compo. box	Caution when performing service inside the electrical component box.

English	Translation
Caution for ELECTRIC SHOCK	Caution for ELECTRIC SHOCK
Do not open the el. compo. box cover for 10 minutes after the power supply is turned off.	Do not open the electrical component box cover for 10 minutes after the power supply is turned off.
After opening the el. compo. box, measure (on A1P~A5P) the points shown at the right with a tester and confirm that the voltage of the capacitor in the main circuit is less than DC50V.	After opening the electrical component box, measure (on A1P~A5P) the points shown at the right with a tester and confirm that the voltage of the capacitor in the main circuit is less than DC50V.
Measuring points for voltage	Measuring points for voltage
Printed circuit board	Printed circuit board

Wiring diagram VAM350~650J8

INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.

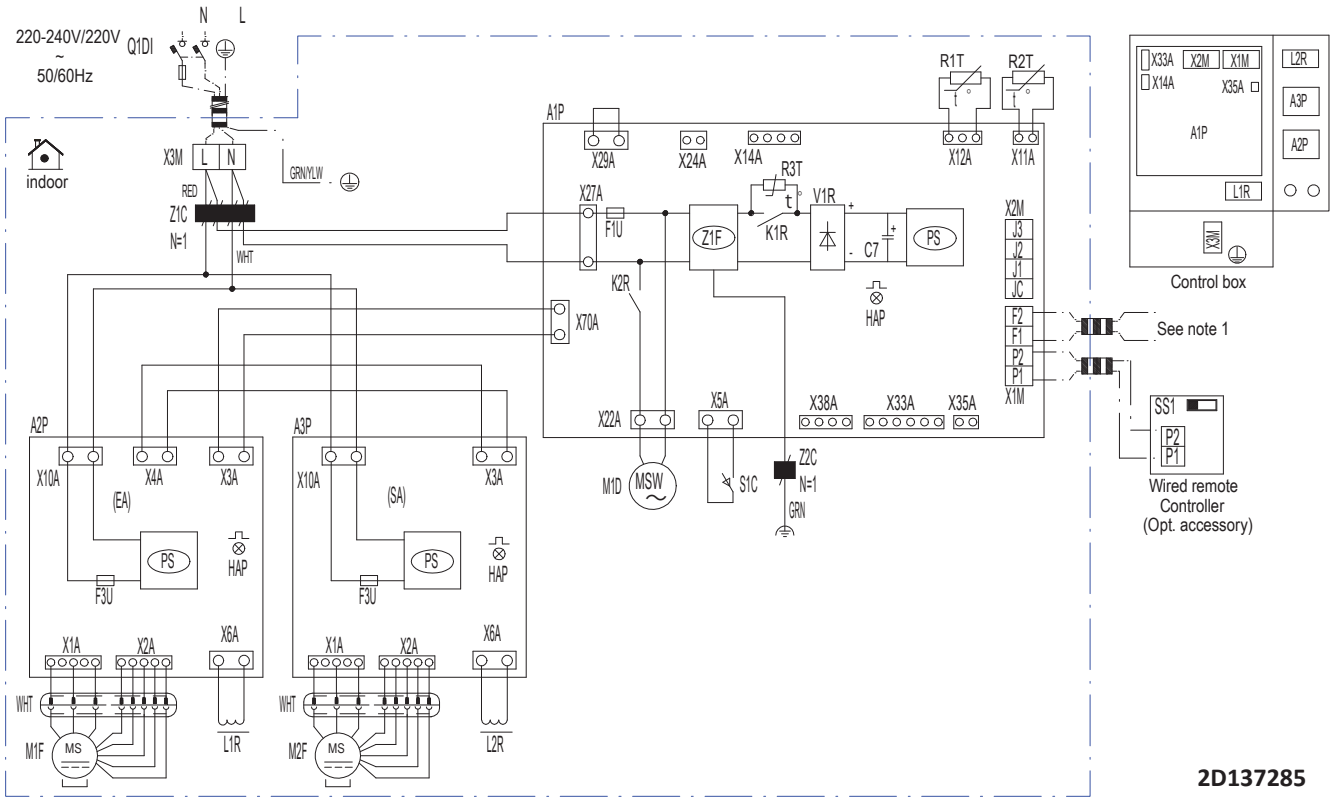


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Wiring diagram VAM800+1000J8

INFORMATION

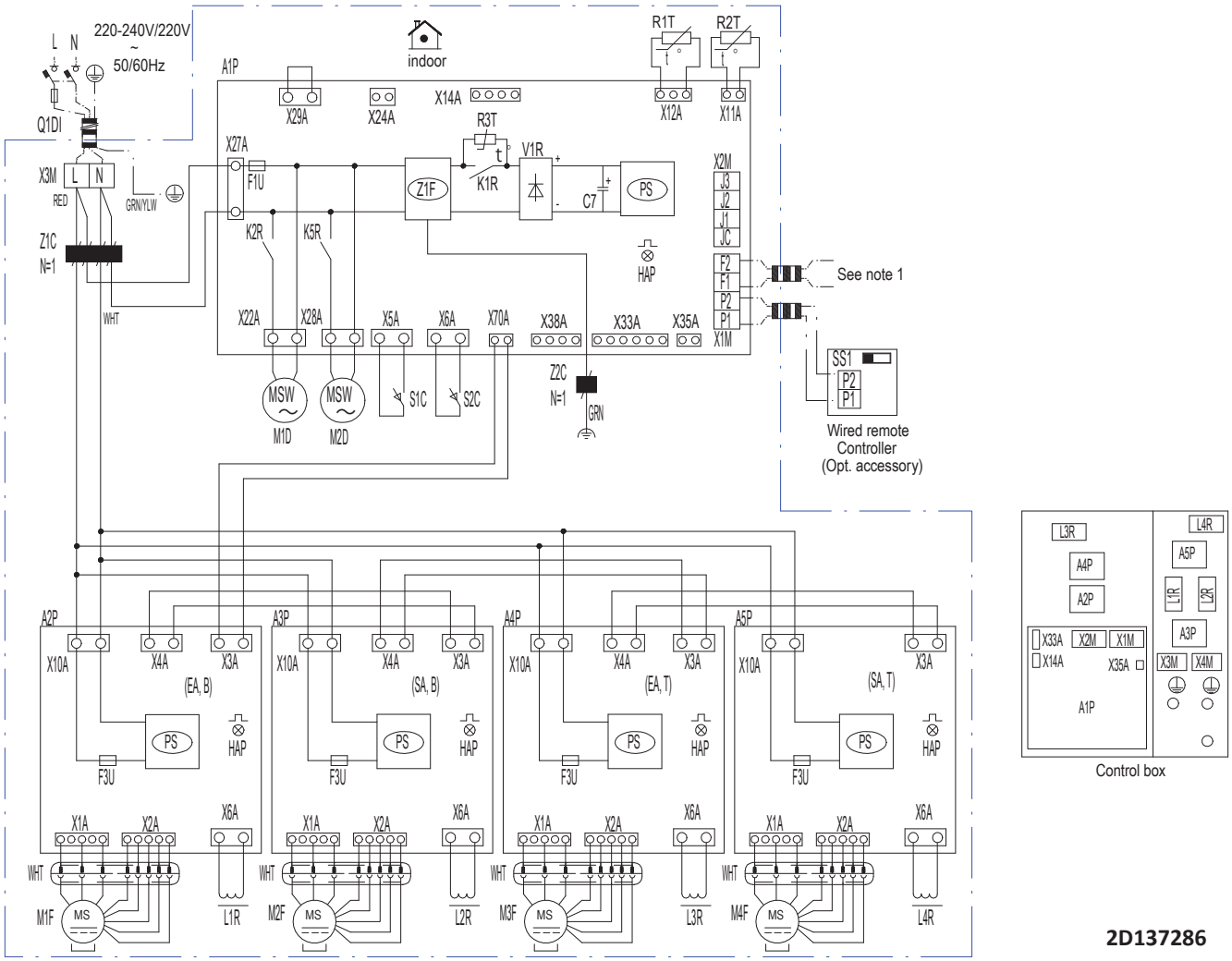
The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.



Wiring diagram VAM1500+2000J8

INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.

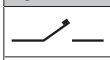
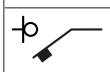


7.2.2 Wiring diagram: EKVDX

See the internal wiring diagram supplied with the unit (on the inside of the indoor unit switch box cover). The abbreviations used are listed below.

Unified legend

For applied parts and numbering, refer to the wiring diagram on the unit. Part numbering is by Arabic numbers in ascending order for each part and is represented in the overview below by "*" in the part code.

Symbol	Meaning	Symbol	Meaning
  	Circuit breaker		Protective earth
	Connection		Protective earth (screw)
	Connector		Rectifier
	Earth		Relay connector
	Field wiring		Short-circuit connector
	Fuse		Terminal
	Indoor unit		Terminal strip
	Outdoor unit		Wire clamp
	Residual current device		

Symbol	Colour	Symbol	Colour
BLK	Black	ORG	Orange
BLU	Blue	PNK	Pink
BRN	Brown	PRP, PPL	Purple
GRN	Green	RED	Red
GRY	Grey	WHT	White
		YLW	Yellow

Symbol	Meaning
A*P	Printed circuit board
BS*	Pushbutton ON/OFF, operation switch
BZ, H*O	Buzzer
C*	Capacitor
AC*, CN*, E*, HA*, HE*, HL*, HN*, HR*, MR*_A, MR*_B, S*, U, V, W, X*A, K*R_*, NE	Connection, connector
D*, V*D	Diode
DB*	Diode bridge
DS*	DIP switch

Symbol	Meaning
E*H	Heater
FU*, F*U, (for characteristics, refer to PCB inside your unit)	Fuse
FG*	Connector (frame ground)
H*	Harness
H*P, LED*, V*L	Pilot lamp, light emitting diode
HAP	Light emitting diode (service monitor green)
HIGH VOLTAGE	High voltage
IES	Intelligent eye sensor
IPM*	Intelligent power module
K*R, KCR, KFR, KHuR, K*M	Magnetic relay
L	Live
L*	Coil
L*R	Reactor
M*	Stepper motor
M*C	Compressor motor
M*F	Fan motor
M*P	Drain pump motor
M*S	Swing motor
MR*, MRCW*, MRM*, MRN*	Magnetic relay
N	Neutral
n=*, N=*	Number of passes through ferrite core
PAM	Pulse-amplitude modulation
PCB*	Printed circuit board
PM*	Power module
PS	Switching power supply
PTC*	PTC thermistor
Q*	Insulated gate bipolar transistor (IGBT)
Q*C	Circuit breaker
Q*DI, KLM	Earth leak circuit breaker
Q*L	Overload protector
Q*M	Thermo switch
Q*R	Residual current device
R*	Resistor
R*T	Thermistor
RC	Receiver
S*C	Limit switch

Symbol	Meaning
S*L	Float switch
S*NG	Refrigerant leak detector
S*NPH	Pressure sensor (high)
S*NPL	Pressure sensor (low)
S*PH, HPS*	Pressure switch (high)
S*PL	Pressure switch (low)
S*T	Thermostat
S*RH	Humidity sensor
S*W, SW*	Operation switch
SA*, F1S	Surge arrester
SR*, WLU	Signal receiver
SS*	Selector switch
SHEET METAL	Terminal strip fixed plate
T*R	Transformer
TC, TRC	Transmitter
V*, R*V	Varistor
V*R	Diode bridge, Insulated-gate bipolar transistor (IGBT) power module
WRC	Wireless remote controller
X*	Terminal
X*M	Terminal strip (block)
Y*E	Electronic expansion valve coil
Y*R, Y*S	Reversing solenoid valve coil
Z*C	Ferrite core
ZF, Z*F	Noise filter

Translation of text on wiring diagram

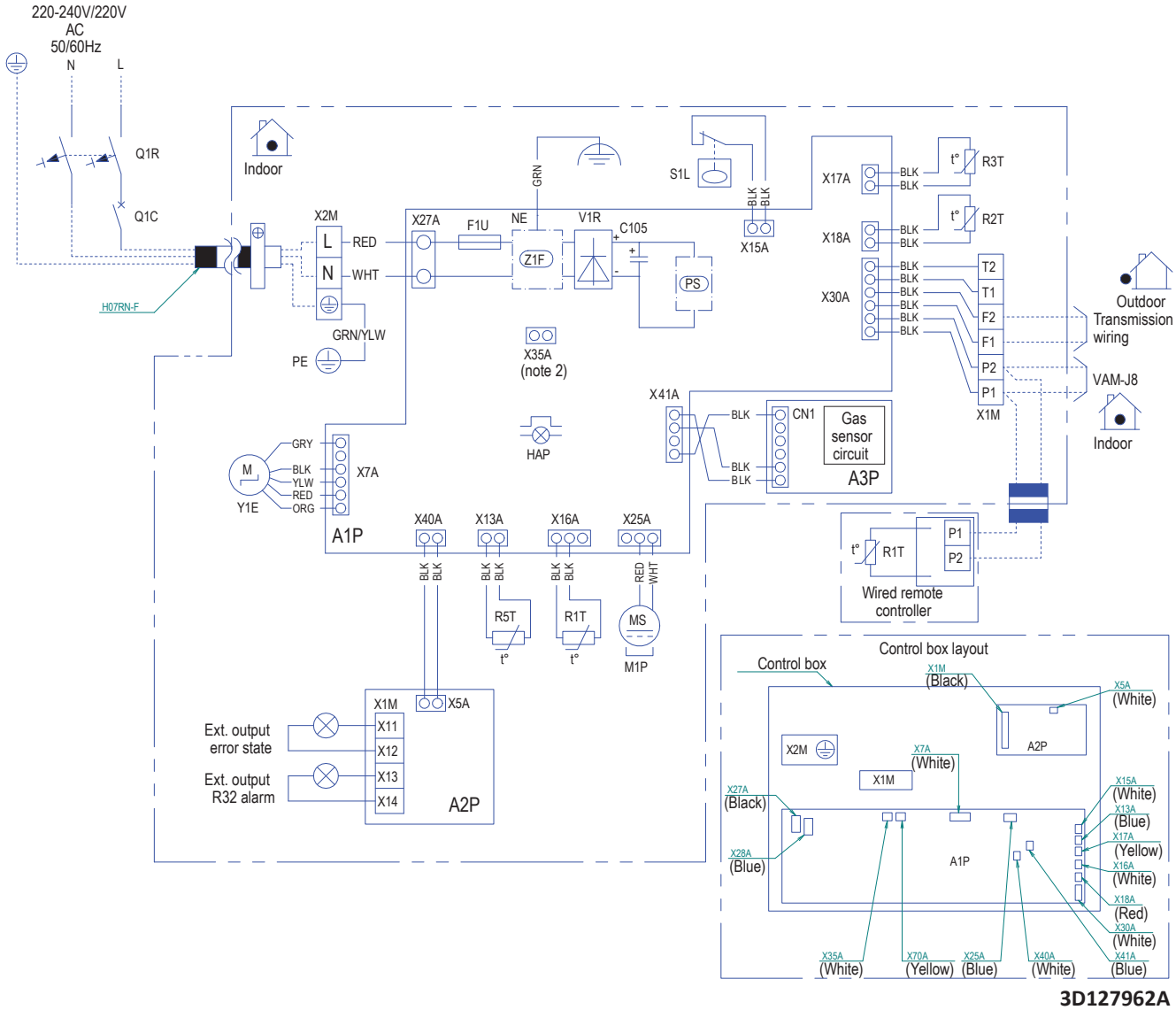
English	Translation
Notes	Notes
X35A is connected when optional accessories are being used, see wiring diagram of this accessory	X35A is connected when optional accessories are being used, see wiring diagram of this accessory
An EKVDX unit and its corresponding VAM-J8 unit should be connected to a common power supply. Refer to the installation manual of the EKVDX unit for further details.	An EKVDX unit and its corresponding VAM-J8 unit should be connected to a common power supply. Refer to the installation manual of the EKVDX unit for further details.
Transmission wiring	Transmission wiring
Ext. output - error state	External output - error state
Ext. output - R32 alarm	External output – R32 alarm

English	Translation
Gas sensor circuit	Gas sensor circuit
Wired remote controller	Wired remote controller
Control box layout	Control box layout

Wiring diagram

INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.



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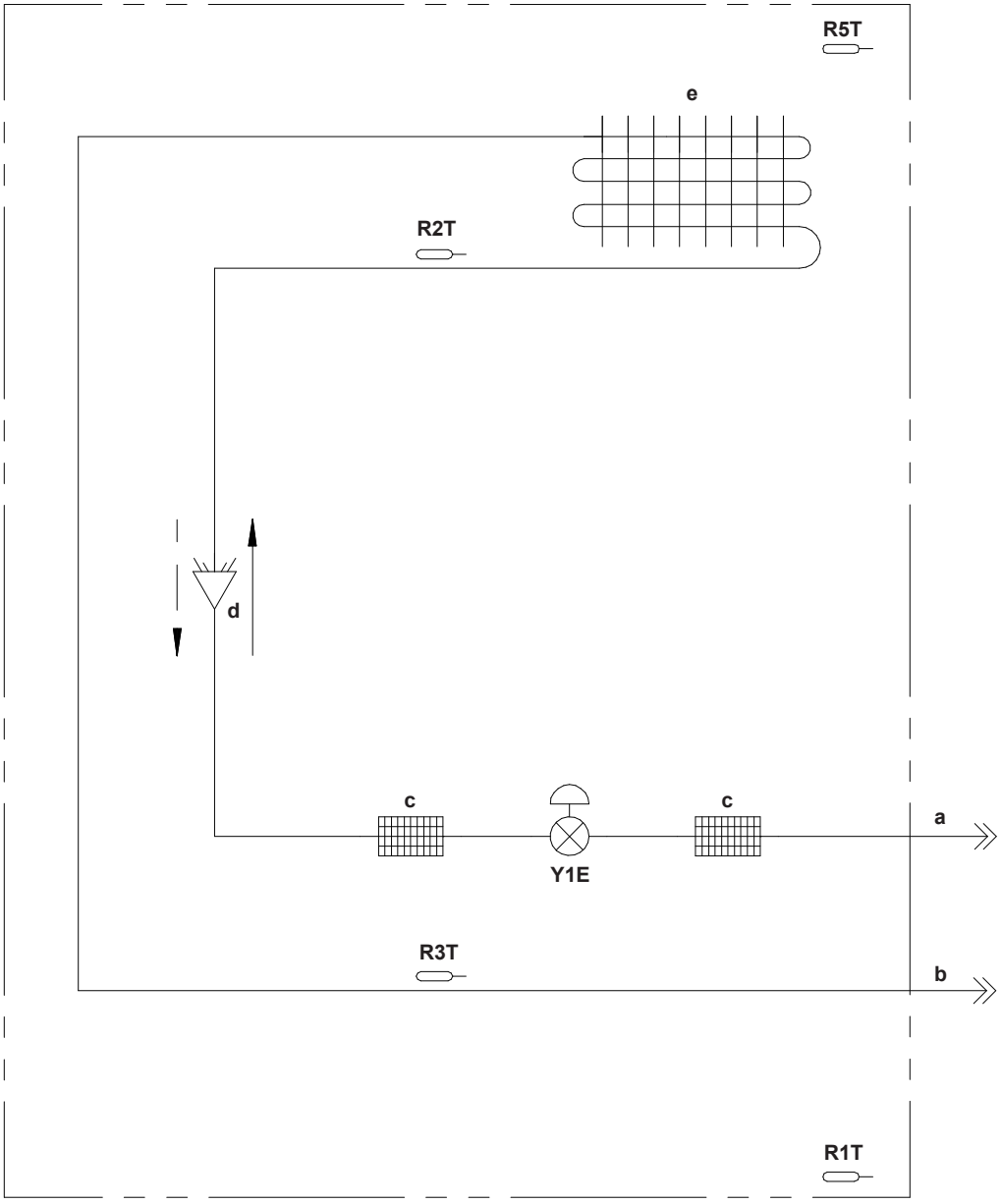
7.3 Piping diagram

7.3.1 Piping diagram: Indoor unit

EKVDX

INFORMATION

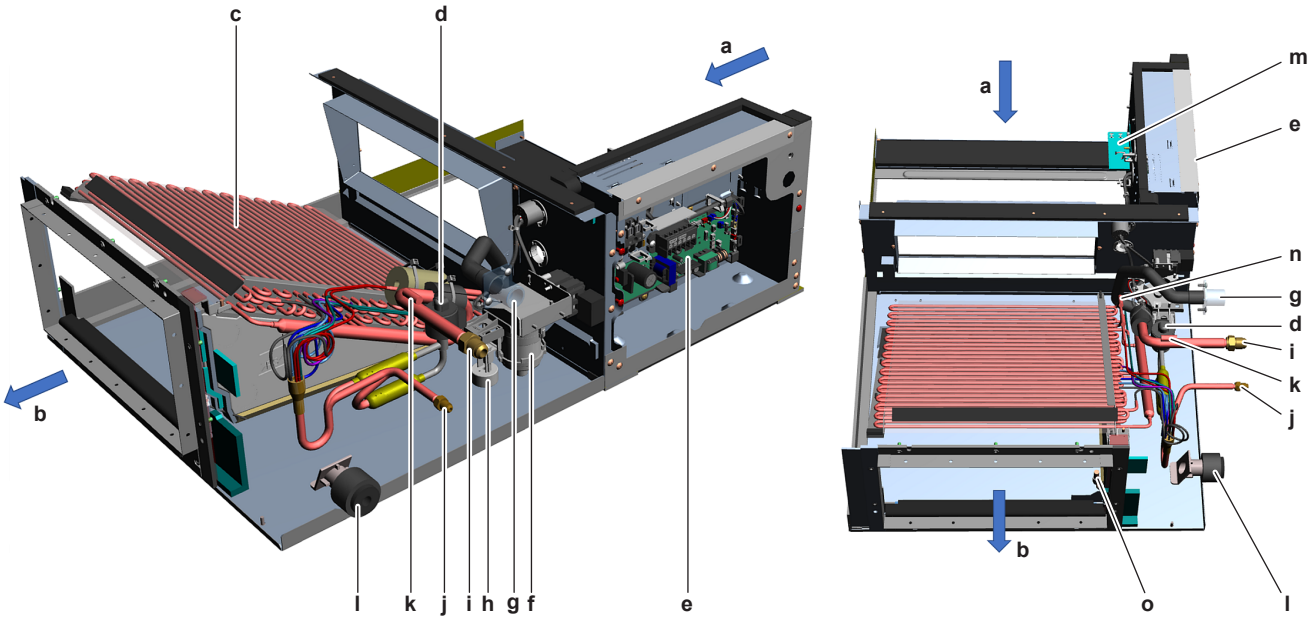
The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.



a Liquid pipe connection port
b Gas pipe connection port
c Filter
d Distributor
e Heat exchanger
R1T Air thermistor
R2T Refrigerant liquid thermistor
R3T Gas thermistor
R5T Discharge air thermistor
Y1E Electronic expansion valve
--► Heating
—► Cooling

7.4 Component overview

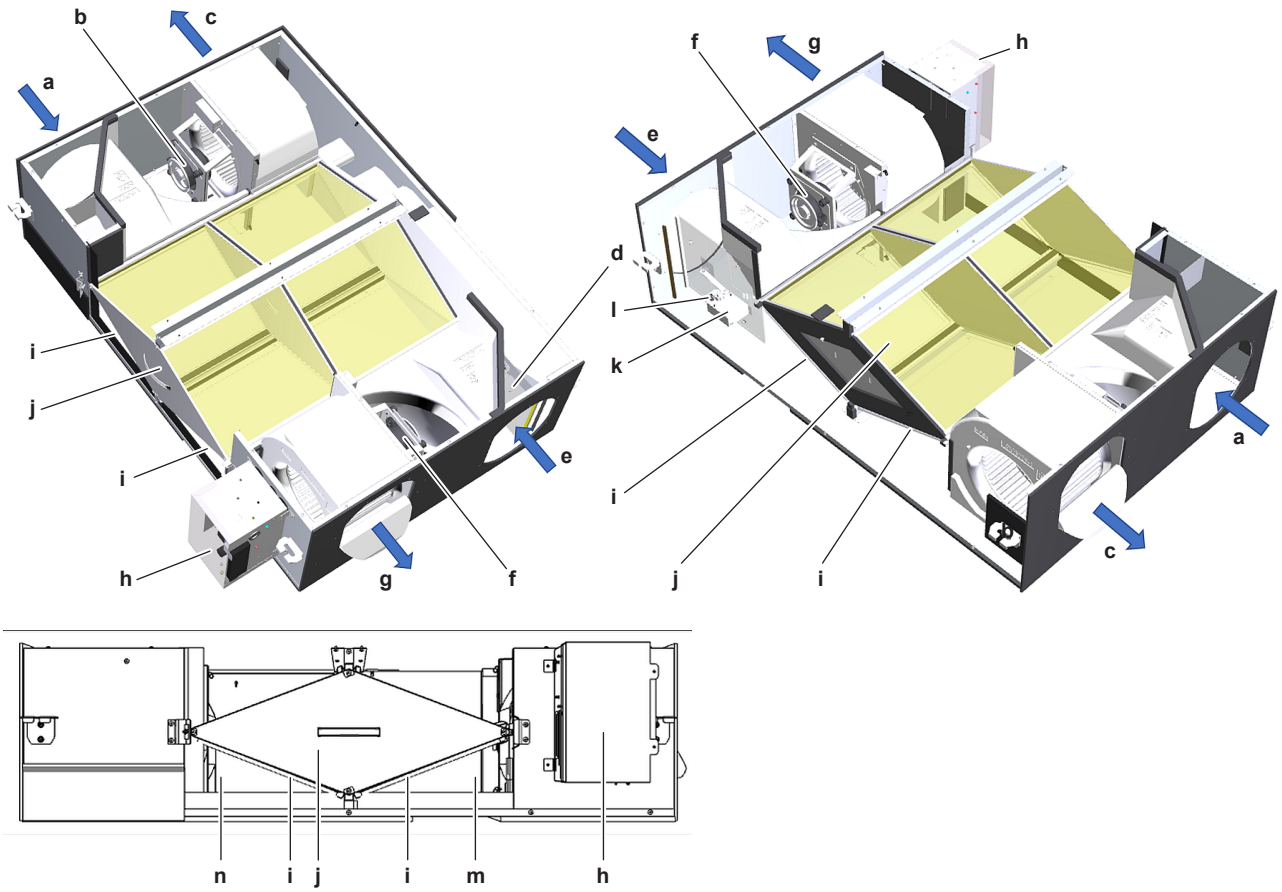
7.4.1 Component overview: DX unit



a Supply air
b Discharge air
c Heat exchanger
d Electronic expansion valve Y1E
e Switch box
f Drain pump M1P
g Drain outlet
h Float switch S1L
i Gas pipe
j Liquid pipe
k Gas thermistor R3T
l Drain plug
m Air thermistor R1T (mounting plate)
n Refrigerant liquid thermistor R2T
o Discharge air thermistor R5T

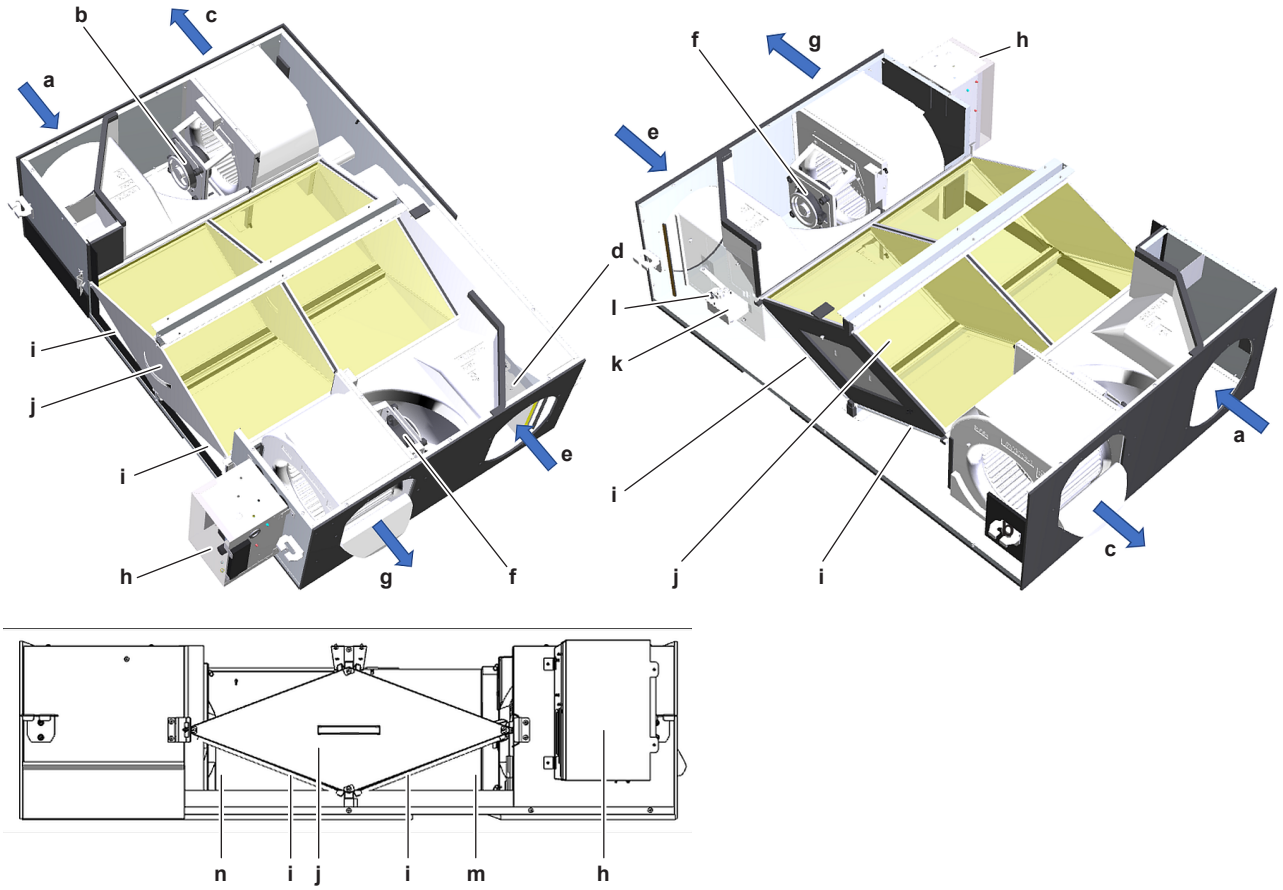
7.4.2 Component overview: Heat reclaim ventilation unit

VAM350~650J8



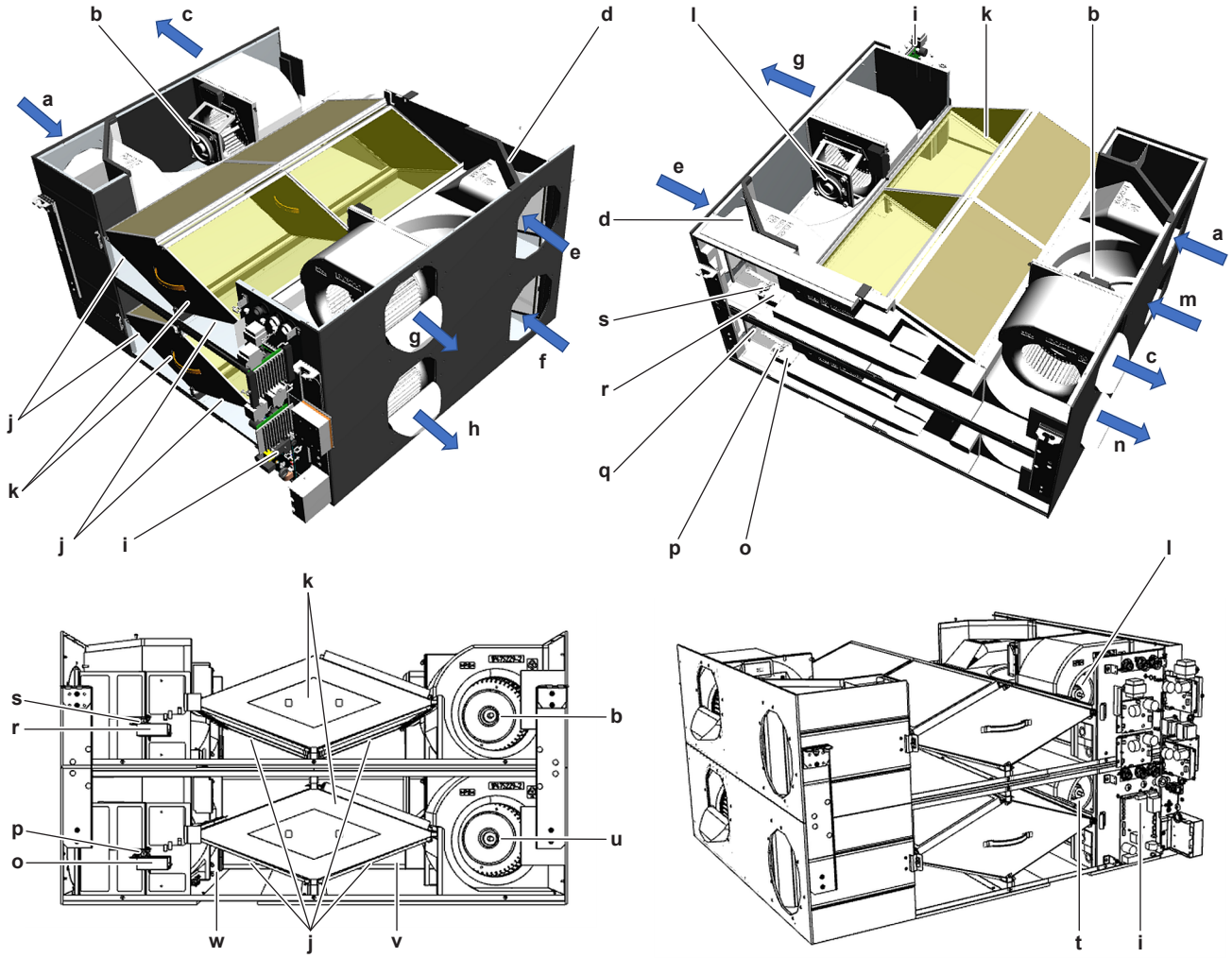
a	Air inlet
b	Exhaust air fan M2F
c	Exhaust air
d	Bypass damper
e	Air return
f	Supply air fan M1F
g	Air supply
h	Switch box
i	Air filter
j	Crossflow paper heat exchanger
k	Damper motor M1D
l	Limit switch S1C
m	Indoor air thermistor R1T
n	Outdoor air thermistor R2T

VAM800+1000J8



a Air inlet
b Exhaust air fan M1F
c Exhaust air
d Bypass damper
e Air return
f Supply air fan M2F
g Air supply
h Switch box
i Air filter
j Crossflow paper heat exchanger
k Damper motor M1D
l Limit switch S1C
m Indoor air thermistor R1T
n Outdoor air thermistor R2T

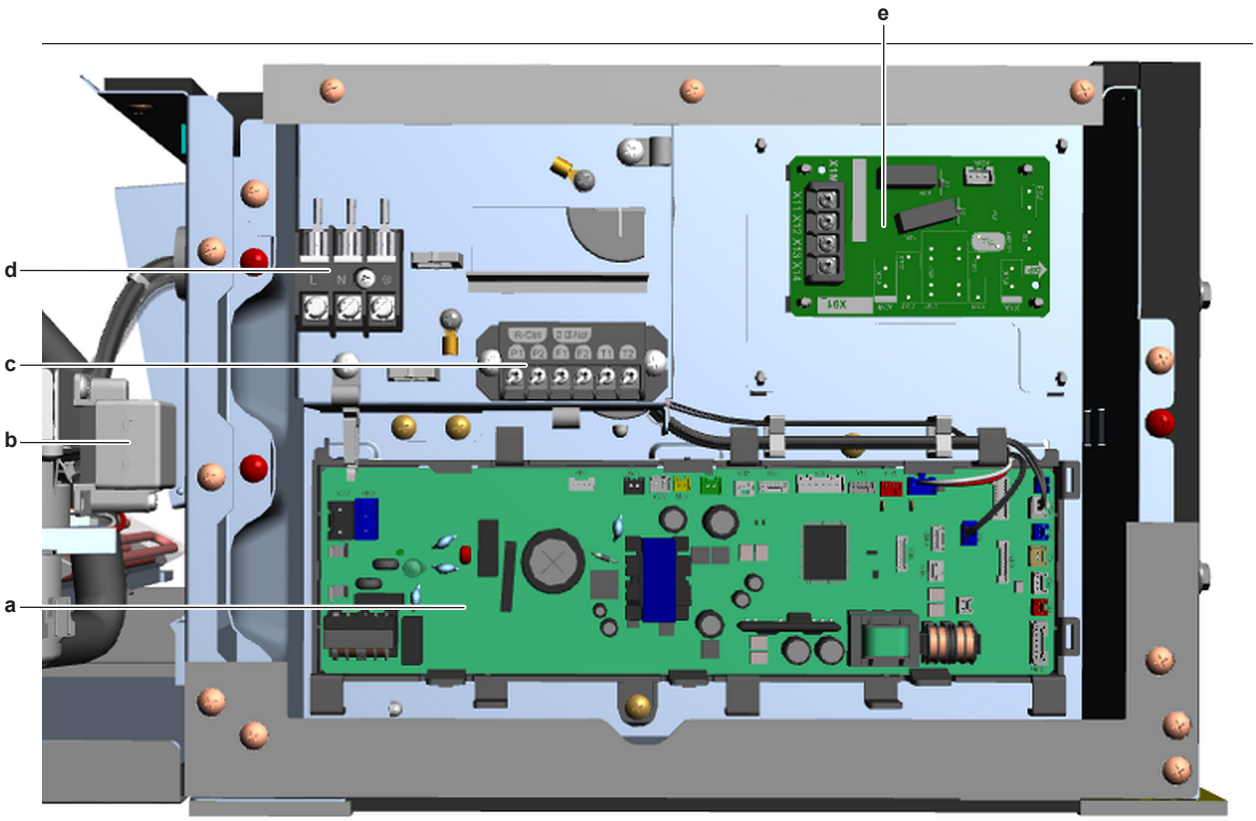
VAM1500+2000J8



a	Air inlet (top)
b	Exhaust air fan (top) M3F
c	Exhaust air (top)
d	Bypass damper (top)
e	Air return (top)
f	Air return (bottom)
g	Air supply (top)
h	Air supply (bottom)
i	Switch box
j	Air filter
k	Crossflow paper heat exchanger
l	Supply air fan (top) M4F
m	Air inlet (bottom)
n	Exhaust air (bottom)
o	Damper motor (bottom) M1D
p	Limit switch (bottom) S1C
q	Bypass damper (bottom)
r	Damper motor (top) M2D
s	Limit switch (top) S2C
t	Supply air fan (bottom) M2F
u	Exhaust air fan (bottom) M1F
v	Outdoor air thermistor R2T
w	Indoor air thermistor R1T

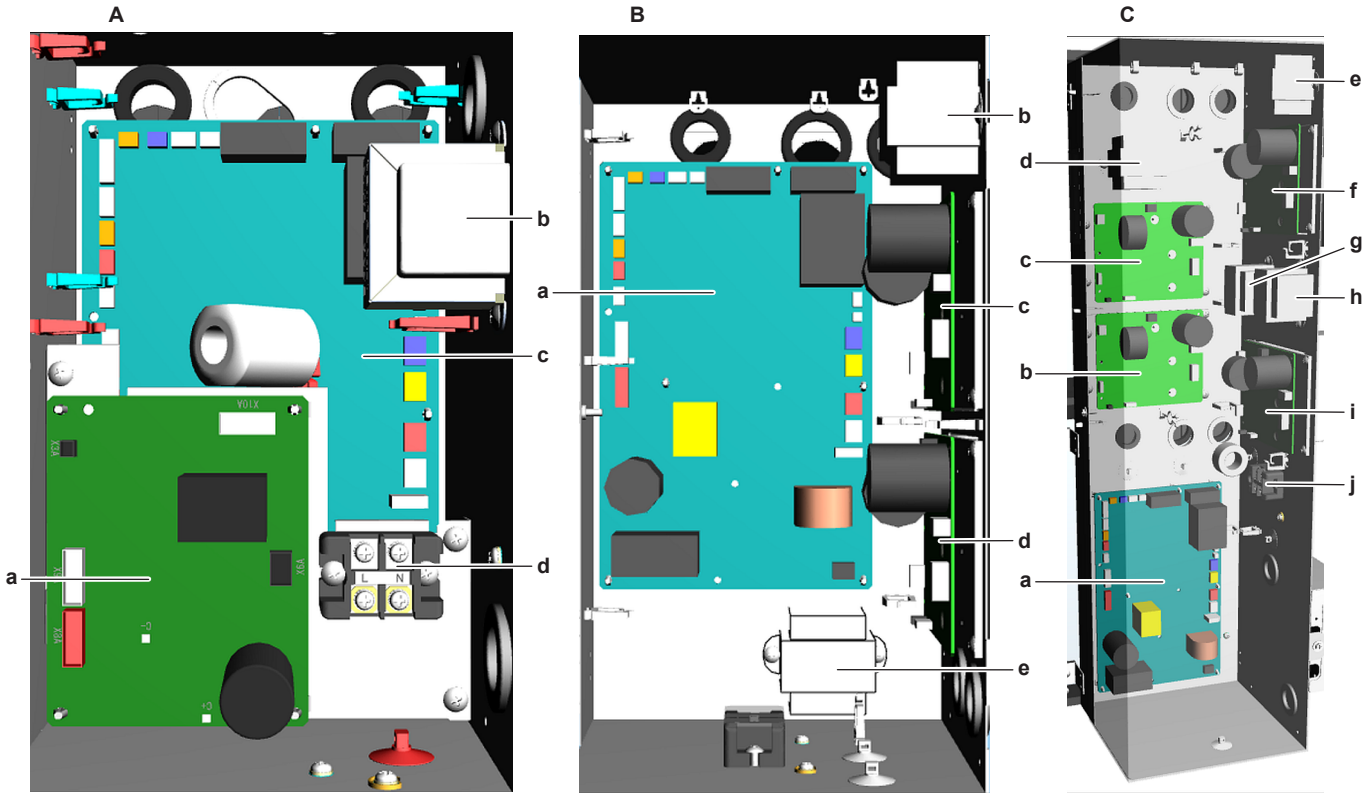
7.5 Switchbox overview

EKVDX-A



a Main PCB A1P
b R32 leak sensor PCB A3P
c Transmission wiring terminal X1M
d Power supply wiring terminal X2M
e External output PCB A2P

VAM-J8



A VAM350~650J8
a Fan PCB A2P
b Reactor L1R
c Main PCB A1P
d Power supply wiring terminal X3M

B VAM800+1000J8
a Main PCB A1P
b Reactor L2R
c Fan PCB A3P
d Fan PCB A2P

e Reactor L1R
f Power supply wiring terminal X3M

C VAM1500+2000J8
a Main PCB A1P
b Fan PCB A2P
c Fan PCB A4P
d Reactor L3R

e Reactor L4R
f Fan PCB A5P

g Reactor L1R
h Reactor L2R
i Fan PCB A3P
j Power supply wiring terminal X3M

7.6 Field information report

See next page.

In case a problem occurred on the unit which could not be resolved by using the content of this service manual or in case you have a problem which could be resolved but of which the manufacturer should be notified, we advise you to contact your distributor.
To facilitate the investigation, additional information is required. Please fill out the following form before contacting your distributor.

FIELD INFORMATION REPORT	
Key person information	
Name:	Company name:
Your contact details Phone number:	E-mail address:
Site address:	
Your reference:	Date of visit:
Claim information	
Title:	
Problem description:	
Error code:	Trouble date:
Problem frequency:	
Investigation steps done:	
Insert picture of the trouble.	
Current situation (solved, not solved,…):	
Countermeasures taken:	
Comments and proposals:	
Part available for return (if applicable):	

Application information
Application (house, apartment, office,…):
New project or reimbursement:
Piping layout / Wiring layout (simple schematic):

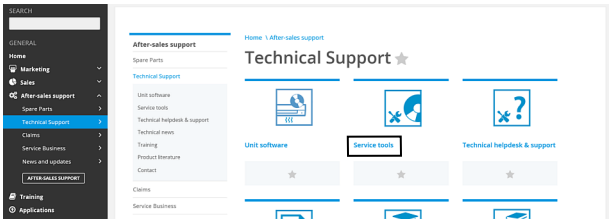
Unit / Installation information	
Model name:	Serial number:
Installation / commissioning date:	Software version user interface:
Software version outdoor PCB:	

Provide pictures of the field settings overview (viewable on the user interface).

7.7 Service tools

1 For an overview of the available service tools, check the Daikin Business Portal (authentication required).

2 Go to the tab After-sales support on the left navigation pane and select Technical support.



3 Click the button Service tools. An overview of the available service tools for the different products is shown. Also additional information on the service tools (instruction, latest software) can be found here.

7.8 Field settings

7.8.1 To retrieve the field settings

Via the indoor unit remote controller BRC1H

BRC1H remote controller

See the installer and user reference guide of the Madoka wired remote controller for correct procedure.

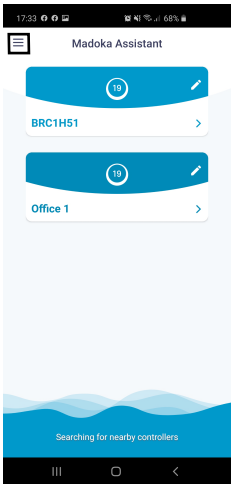
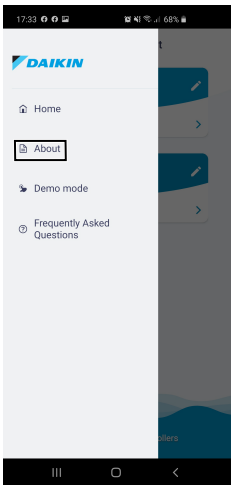
Madoka Assistant for BRC1H

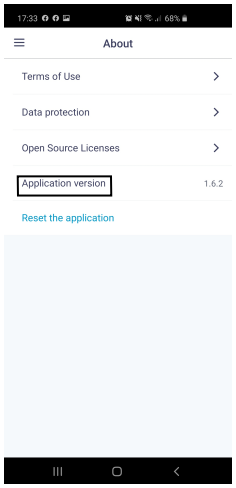
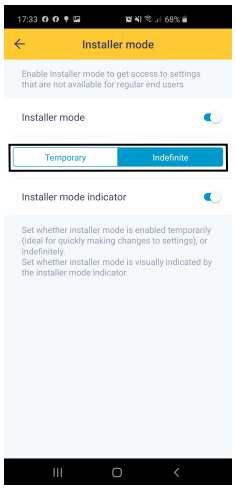
INFORMATION

Images are in English and for reference ONLY. For more details on the Madoka Assistant please refer to the BRC1H training course material which is available on the Daikin Business Portal.

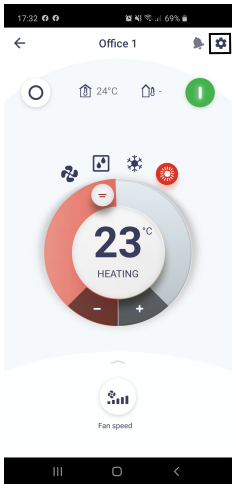
To set as installer mode

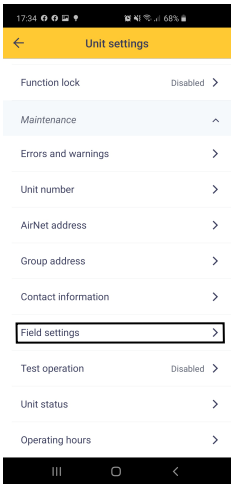
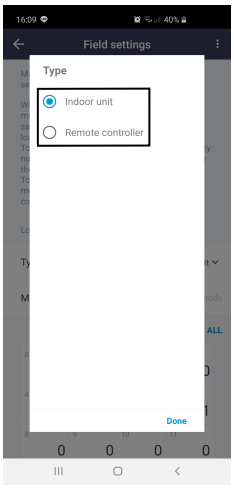
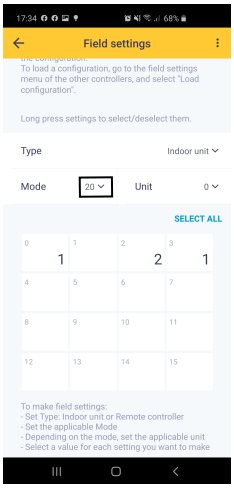
In order to retrieve the field settings, the Madoka Assistant app has to be set as installer mode. If already set as, skip to "To retrieve field settings".

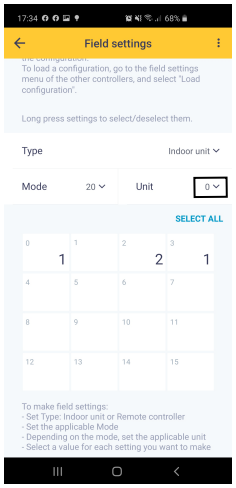
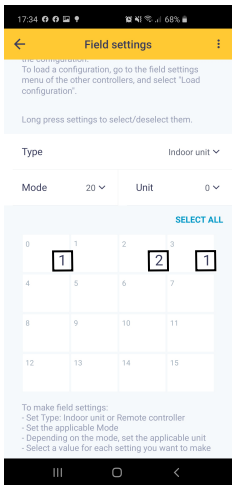
#	Action	Image	Result
1	Tap the menu icon.		The menu screen is diaplyed.
2	Tap About in the menu screen.		The About menu screen is displayed.

#	Action	Image	Result
3	Tap Application version 5 times.		Installer mode screen is displayed.
4	Select (tap) the length of time the Madoka Assistant app is set as installer mode: ▪ Temporary for 30 minutes ▪ Indefinite for unlimited time		The Madoka Assistant app is set as installer mode.

To retrieve field settings

#	Action	Image	Result
1	Tap the settings icon.		The Unit settings screen is displayed.

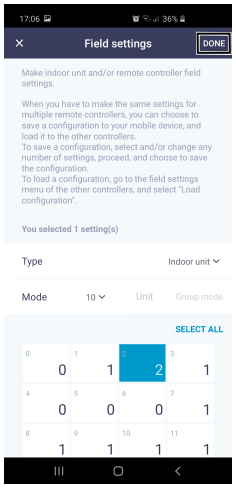
#	Action	Image	Result
2	Tap Field settings.		The Field settings screen is displayed.
3	Tap and select the type for which you want to set the field settings: ▪ Indoor unit ▪ Remote controller		Field settings can now be set for the selected type.
4	Tap and select the desired Mode No. from the drop down list.		The field setting mode is now selected.

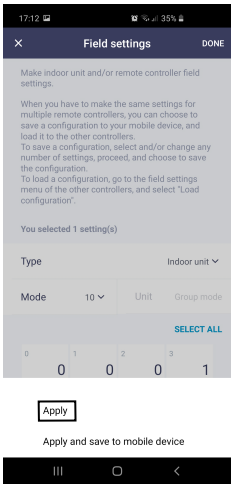
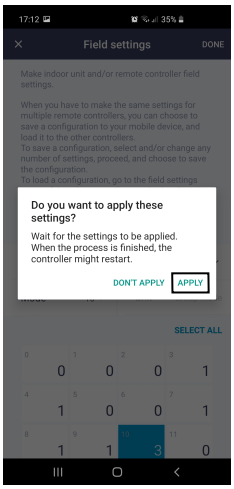
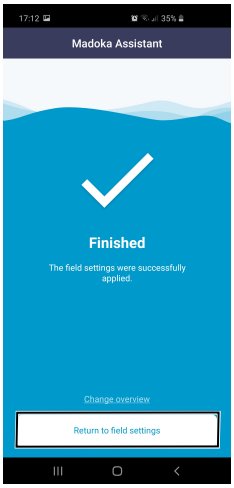
#	Action	Image	Result
5	In the case of setting per indoor unit during group control (When Mode No. such as 20, 21, 22, 23, 25 are selected), tap and select the Indoor unit No. which is required to set. In the case of group total setting, this operation is NOT needed.		▪ In the case of individual setting per indoor unit, current settings are displayed. ▪ In the case of group total setting, all of Second Code No. which may be set are displayed as “*”. ▪ Second Code No. “-” means no function.
6	Tap the Second Code No. of the First Code No. to be changed. Select the desired Second Code No. Multiple identical mode number settings are available.		Field settings are now set as desired, but still need to be saved.

INFORMATION

In case of multiple settings, repeat previous steps to change the settings.

To save field settings

#	Action	Image	Result
1	Tap Done.		The screen to apply the field settings is displayed.

#	Action	Image	Result
2	Tap Apply to remote controller.		Changes are applied to the field settings.
3	Tap Apply.		Changes to the field settings are confirmed.
4	Tap Return to field settings.		Field settings are saved.

7.8.2 Overview of field settings for DX units

EKVDX field settings (user interface: indoor unit 0)

Mode	SW	SW description	SW position[a]														
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
10 (20)[b]	13	Discharge temperature correction factor (°C)	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
12(22)[c]	1	External input switching (T1 T2)	Forced stop (default)	External Input (ON:OFF operation)	Protective device input	Forced stop B (multi-tenant setting)	—	—	—	—	—	—	—	—	—	—	—
14 (24)[d]	10	Cooling blowout temperature setpoint	13°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	28°C	30°C
14 (24)[d]	11	Heating blowout temperature setpoint	24°C	26°C	27°C	28°C	29°C	30°C	31°C	32°C	33°C	35°C	37°C	39°C	41°C	43°C	45°C
15 (25)	00	Drain pump output when cooling thermo OFF	Drain pump OFF	Drain pump ON	—	—	—	—	—	—	—	—	—	—	—	—	—
	13	R32 safety system[e]	OFF	ON	OFF for 24 hours	—	—	—	—	—	—	—	—	—	—	—	—
	14	Sensor replacement completion setting	Normal	Reset	—	—	—	—	—	—	—	—	—	—	—	—	—
	15	External contact output settings[f]	Disable	Enable	—	—	—	—	—	—	—	—	—	—	—	—	—

(a) Factory settings are marked with a grey background.
(b) This field setting cannot be modified via the remote controller menu.
(c) In case of R32 refrigerant, terminal connections T1 T2 are for fire alarm input ONLY.
(d) The VAM field setting 18(28)-13/-14 (see table below) MUST be identical to the EKVDX field setting. Set the EKVDX first (EKVDX=primary, VAM=secondary)
(e) In case R410A is used, set to 15(25)-13-1.
(f) 15(25)-15-2 is required when R32 refrigerant is used.

VAM field settings (user interface: indoor unit 1)

Mode	SW	SW description	SW position														
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
17(27)	4	Initial fan speed[a]	High	Ultra-high	—	—	—	—	—	—	—	—	—	—	—	—	—
	5[b]	Yes/No setting for duct connection with VRV system	Without duct	With duct	Without duct		With duct		Without duct		With duct	—	—	—			
		Setting for cold areas when heater thermostat is OFF)[c]	—	—	Stop/Stop	Low/Low	Stop/stop	Low/Low	—	—	—	—	—	—	—	—	—
		Fan operation when defrost/oil return/hot start[c]	—	—	Stop/Stop	Stop/Stop	Stop/Stop	Stop/Stop	Stop/—	Stop/Stop	Stop/—	—	—	—	—	—	—
	6	Nighttime free cooling (fan settings)[d]	High	Ultra-high	—	—	—	—	—	—	—	—	—	—	—	—	—
18(28)	0	External signal[e] JC/J2	Last command	Priority on external input	Priority on operation	Disable nighttime free cooling / Perform forced stop	—	24 hours ventilation ON/OFF	Disable JC/J2	—	—	—	—	—	—	—	—
	1	Direct power ON[f]	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—
	2	Auto restart[f]	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—
	8	External input terminal function selection[g] (JC/J1)	Fresh-up	Error output	Error output and stop operation	Forced off	Fan forced off	Air-flow up	—	—	—	—	—	—	—	—	—
	10	EKVDX connected?[h]	No	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—
	13	Cooling set point (with EKVDX)	13°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	28°C	30°C
	14	Heating set point (with EKVDX)	24°C	26°C	27°C	28°C	29°C	30°C	31°C	32°C	33°C	35°C	37°C	39°C	41°C	43°C	45°C
19(29)	15	R32 safety system[i]	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—

[a] When connected to an EKVDX, set to 2 or 4.
[b] When connected to an EKVDX, 17(27)-5 can be set to 1, 3, 4, 7 or 8.
[c] (Supply air/Exhaust air), e.g. Low/Low means: Supply air low/Exhaust air low.
[d] In case VAM and EKVDX are combined and the R32 safety system of the VAM is active, the nighttime free cooling is disabled.
[e] When connected to an EKVDX, JC/J2 cannot be used. Set to 18(28)-0-7. Instead, use T1 T2 of the EKVDX. See the EKVDX Installation and operation manual.
[f] When connected to an EKVDX, do not change the default settings.
[g] When connected to an EKVDX, JC/J1 cannot be used. Instead, use T1 T2 of the EKVDX. See the EKVDX Installation and operation manual.
[h] When connected to an EKVDX, set to 18(28)-10-2.
[i] When connected to an EKVDX, setting 2 (safety ON) is required in case R32 refrigerant is used. Setting 1 (safety OFF) is required in case R410A refrigerant is used.

7.8.3 Overview of field settings for heat reclaim ventilation units

Mode	SW	SW description	SW position[a]														
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
17(27)	0	Filter cleaning time	±2500 hours	±1250 hours	—	—	—	—	—	—	—	—	—	—	—	—	—
	1	Nighttime free cooling timer (after stop)[b]	OFF	ON after 2 hours	ON after 4 hours	ON after 6 hours	ON after 8 hours	—	—	—	—	—	—	—	—	—	—
	2	Precool/preheat[c]	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	Precool/preheat duration[c]	30 minutes	45 minutes	60 minutes	—	—	—	—	—	—	—	—	—	—	—	—
	4	Initial fan speed[d]	High	Ultra-high	—	—	—	—	—	—	—	—	—	—	—	—	—
	5[e]	Yes/No setting for duct connection with VRV system	Without duct	With duct	Without duct		With duct		Without duct		With duct	—	—	—	—	—	—
		Setting for cold areas (fan operation when heater thermostat is OFF)[f]	—	—	Stop/Stop	Low/Low	Stop/stop	Low/Low	—	—	—	—	—	—	—	—	—
		Fan operation during defrost/oil return/hot start[f]	—	—	Stop/Stop	Stop/Stop	Stop/Stop	Stop/Stop	Stop/—	Stop/Stop	Stop/—	—	—	—	—	—	—
17(27)	6	Nighttime free cooling (fan settings)[b]	High	Ultra-high	—	—	—	—	—	—	—	—	—	—	—	—	—
	7	Target temperature for independent nighttime free cooling[b]	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C	—	—
	8	Central zone link	No	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—
	9	Preheat time extension[c]	0 minutes	30 minutes	60 minutes	90 minutes	—	—	—	—	—	—	—	—	—	—	—
18(28)	0	External signal[g] JC/J2	Last command	Priority on external input	Priority on operation	Disable nighttime free cooling/Perform forced stop	—	24 hours ventilation ON/OFF	Disable JC/J2	—	—	—	—	—	—	—	—
	1	Direct power ON	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—
	2	Auto restart[h]	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	Output signal to external damper (X24A)	—	—	Damper output (fan operation)	Damper output (fan operation)	—	—	—	—	—	—	—	—	—	—	—
	4	Indication of ventilation mode	ON	OFF	—	—	—	—	—	—	—	—	—	—	—	—	—
18(28)	6	Automatic ventilation air flow mode	Linear	—	Fixed A	Fixed B	—	—	—	—	—	—	—	—	—	—	—
	7	Fresh-up mode	Supply – no indication	Exhaust – no indication	Supply – indication	Exhaust – indication	—	—	—	—	—	—	—	—	—	—	—
	8	External input terminal function selection[i] (JC/J1)	Fresh-up	Error output	Error output and stop operation	Forced off	Fan forced off	Air-flow up	—	—	—	—	—	—	—	—	—
	9	BRP4A50A output switching selection (between X3 and X4)	Heater output	Error output	Fan output (Low/ High/Ultra-high)	Fan output (High/Ultra-high)	Fan output (Ultra-high)	Fan output (Low/High/Ultra-high)		—	—	—	—	—	—	—	—
		(between X1 and X2)	Operation output	Operation output				—	—	—	—	—	—	—	—	—	—
	10	EKVDX connected?[i]	No	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—
18(28)	11	Filter contamination check	No action	Reset filter check	Force filter check	—	—	—	—	—	—	—	—	—	—	—	—
	13	Cooling set point (with EKVDX)	13°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	28°C	30°C
	14	Heating set point (with EKVDX)	24°C	26°C	27°C	28°C	29°C	30°C	31°C	32°C	33°C	35°C	37°C	39°C	41°C	43°C	45°C

Mode	SW	SW description	SW position[a]													
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
19(29)	0	Filter contamination inspection[k]	Pressure-based check with fan step 1-15	Pressure-based check with new fan step	Timer based check	Filter contamination target detection with fan step 1-15	Auto ESP selection and filter contamination target detection with new fan step	—	—	—	—	—	—	—	—	—	—
	1	Low tap[l]	OFF	Run 1/15 (28 min. OFF/2 min. ON)	Run 1/10 (27 min. OFF/3 min. ON)	Run 1/6 (25 min. OFF/5 min. ON)	Run 1/4 (22.5 min. OFF/7.5 min. ON)	Run 1/3 (20 min. OFF/10 min. ON)	Run 1/2 (15 min. OFF/15 min. ON)	Continuous operation							
										Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
	2	Supply fan step[m]	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12	Step 13	Step 14	Step 15
	3	Exhaust fan step[m]	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12	Step 13	Step 14	Step 15
	4	24-hour ventilation[f]	OFF	Run 1/15 (28 min. OFF/2 min. ON)	Run 1/10 (27 min. OFF/3 min. ON)	Run 1/6 (25 min. OFF/5 min. ON)	Run 1/4 (22.5 min. OFF/7.5 min. ON)	Run 1/3 (20 min. OFF/10 min. ON)	Run 1/2 (15 min. OFF/15 min. ON)	Continuous operation							
										Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
19(29)	5	Humidification ON/OFF setting	ON	OFF	—	—	—	—	—	—	—	—	—	—	—	—	—
	7	Reference concentration shift for ventilation air flow control (ppm)	0	+200	+400	+600	–200	–400	–600	—	—	—	—	—	—	—	—
	8	Stop ventilation by automatic ventilation air flow control	Allowed	NOT allowed	Allowed	NOT allowed	—	—	—	—	—	—	—	—	—	—	—
	8	Fan residual operation	OFF	OFF	Heater operation	Heater operation	—	—	—	—	—	—	—	—	—	—	—
	9	Normal ventilation tap on automatic ventilation air flow control	—	—	—	—	Control by CO_2 sensor	—	—	—	—	—	—	—	—	—	—
	15	R32 safety system[n]	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—
1A	0	Fresh-up operation[k]	OFF	ON	—	—	—	—	—	—	—	—	—	—	—	—	—

[a] Factory settings are marked with a grey background.
[b] In case VAM and EKVDX are combined and the R32 safety system of the VAM is active, the nighttime free cooling is disabled.
[c] The preheating/precooling function of the heat reclaim ventilation unit is disabled when it is connected to an EKVDX.
[d] When connected to an EKVDX, set to 2 or 4.
[e] When connected to an EKVDX, 17(27)-5 can be set to 1, 3, 4, 7 or 8.
[f] (Supply air/Exhaust air), e.g. Low/Low means: Supply air low/Exhaust air low.
[g] When connected to an EKVDX, JC/J2 cannot be used. Set to 18(28)-0-7. Instead, use T1 T2 of the EKVDX. See the EKVDX Installation and operation manual.
[h] When connected to an EKVDX, do not change the default settings.
[i] When connected to an EKVDX, JC/J1 cannot be used. Instead, use T1 T2 of the EKVDX. See the EKVDX Installation and operation manual.
[j] When connected to an EKVDX, set to 18(28)-10-2.
[k] When connected to an EKVDX, a filter contamination check is performed automatically and is timer based. This setting CANNOT be done with BRC301B61
[l] When connected to an EKVDX, this field setting will always be OFF.
[m] See the technical data book for pressure drop curves and selection of fan curves (step 1 to 15).
[n] When connected to an EKVDX, setting 2 (safety ON) is required in case R32 refrigerant is used. Setting 1 (safety OFF) is required in case R410A refrigerant is used.

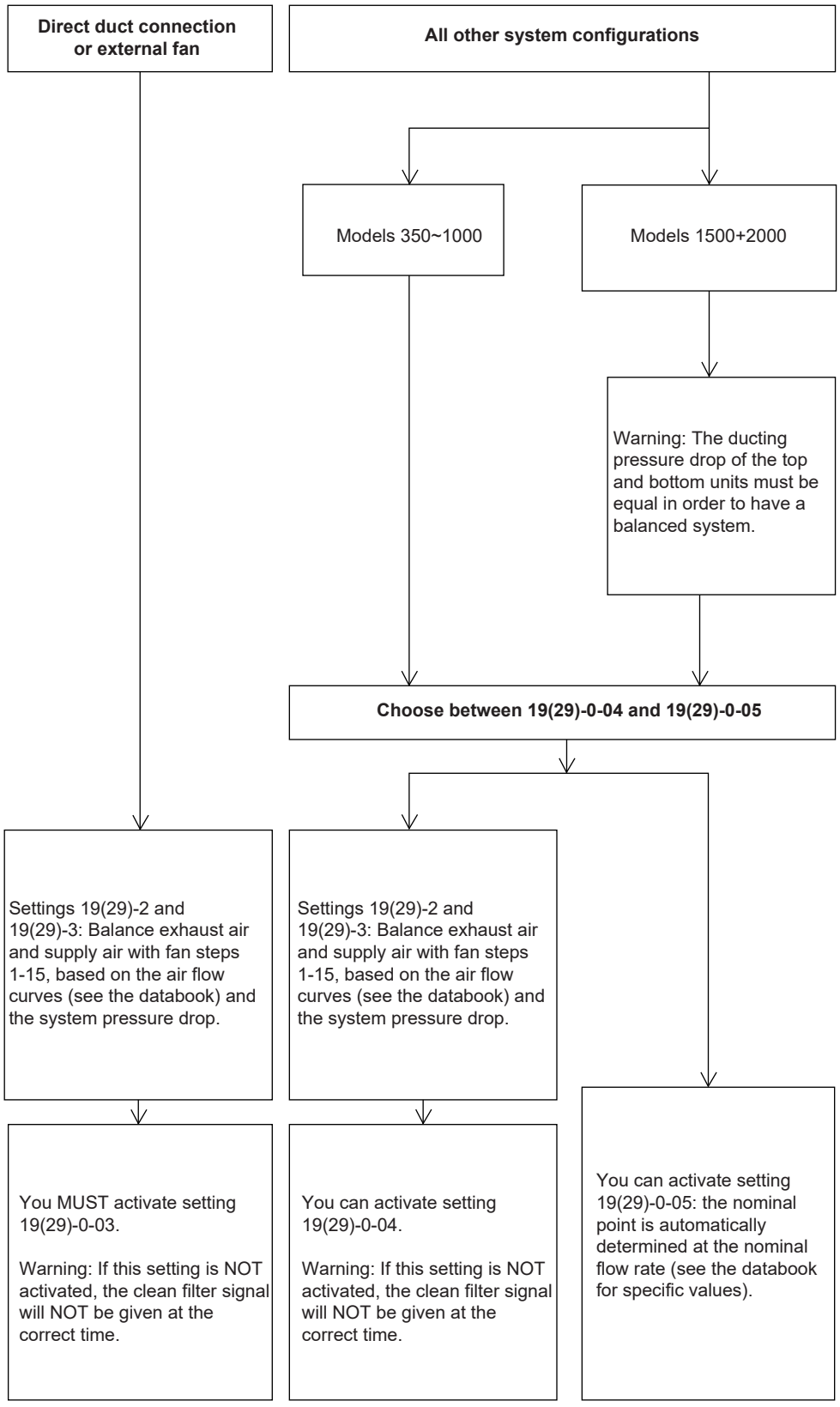
Note: When connected to an EKVDX, SS1 cannot be used. Instead, use T1 T2 of the EKVDX. See the EKVDX Installation and operation manual.

Note: The setting modes are mentioned as group settings, between parentheses are the setting modes for individual unit control or when connected to the EKVDX option. Group number setting for central controller: mode 00=group controller / mode 30=individual controller. For the setting procedure, see "Group number setting for central control" in the operation manual of either the ON/OFF controller or the central controller.

Settings for all configurations

Setting 17(27)-4: First choose the fan speed. Set it to high or ultra-high.

Flow "All other system configurations" is not applicable when combining VAM with EKVDX. Check the field settings for both units to make sure the combination of VAM and EKVDX is operational



About setting 19(29)-0-04 and 19(29)-0-05

- When you have configured setting 19(29)-0-04 successfully, the system automatically changes it to setting 19(29)-0-01.
- When you have configured setting 19(29)-0-05 successfully, the system automatically changes it to setting 19(29)-0-02.

NOTICE

If the ducting is changed, install clean filters and reconfigure setting 19(29)-0-04 or 19(29)-0-05. Otherwise the signal to clean the filters will come too soon. Do NOT adjust the dampers when setting 19(29)-0-04 or 05 is activated.

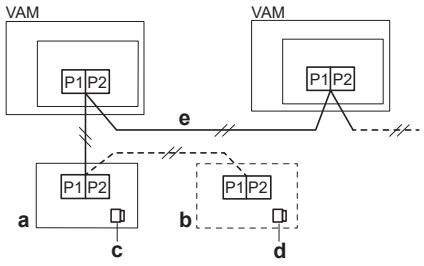
- If the controller is switched off while activating setting 19(29)-0-04 or 19(29)-0-05, configuration is aborted. When you switch the controller back on, the function starts from the beginning.
- Setting 19(29)-0-04 takes between 1 and 6 minutes to complete. You can check if the setting was completed successfully by checking if the field setting is changed to 0-01.
- Setting 19(29)-0-05 takes between 3 and 35 minutes to complete. You can check if the setting was completed successfully by checking if the field setting is changed to 0-02.

INFORMATION

While activating setting 19(29)-0-04 and 19(29)-0-05, the unit is set to heat recovery and the fan is on high or ultra high. After configuration, the settings are returned to what they were before the configuration.

- These settings can ONLY be activated with clean filters.
- For models 1500+2000, make sure that the ducting pressure drop of the top and bottom units is balanced.
- The function starts as soon as it is selected and the controller is on.
- Setting 19(29)-0-04 CANNOT be configured if the outside temperature is ≤–10°C, which is out of the operation range.
- Setting 19(29)-0-05 CANNOT be configured if the outside temperature is ≤5°C. In this case, error 65-03 is shown and the unit stops working. Change the setting to 19(29)-0-04.
- The setting CANNOT be configured if there are alerts or errors present.
- If booster fans are used, you can ONLY configure setting 19(29)-0-03.
- Settings 19(29)-0-04 and 19(29)-0-05 can be configured for multiple units with 1 controller.

Independent system



a Master controller for VAM
b Slave controller for VAM
c Switch position: Master
d Switch position: Slave

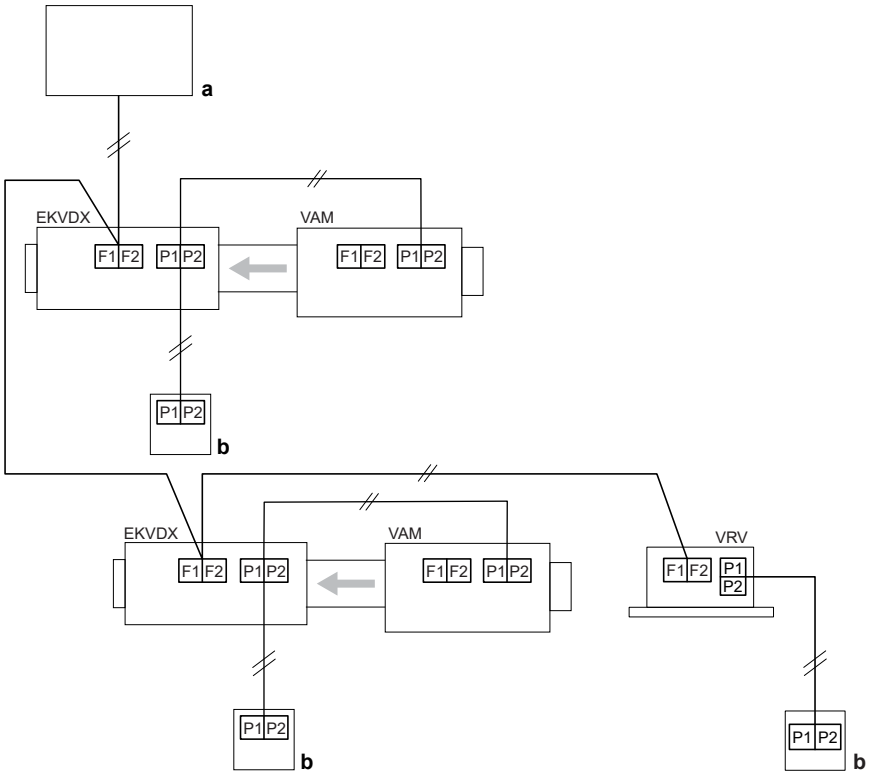
e Maximum length of connection line: 500 m
VAM VAM heat reclaim ventilation unit

NOTICE

Factory settings: Do NOT change the switch settings when a controller is connected. SS1 is a setting switch to operate the unit without controller. Changing the switch setting when a controller is connected will stop the unit from operating normally. Keep the switch on the PCB in the factory setting position.

NOTICE

Group control connection is NOT allowed.



a Outdoor unit
b Controller
VRV VRV indoor unit
EKVDX EKVDX indoor unit
VAM VAM heat reclaim ventilation unit

NOTICE

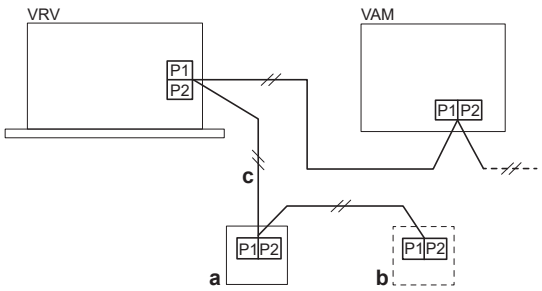
Group control connection is NOT allowed.

1-group linked-control system

NOTICE

Group control connection is NOT allowed with EKVDX indoor units.

- The air conditioner's controller can be used to control up to 16 units, a combination of indoor air conditioner units and heat reclaim ventilation units.
- You can configure initial settings for the functions of the VAM units. These functions are precool/preheat, ventilation air flow, ventilation mode, and fresh-up. Use the air conditioner's controller to configure the initial settings for the VAM units. See "7.8 Field settings" [▸ 197].



a Controller for air conditioner
b Controller for air conditioner
c Maximum length of connection line: 500 m
VRV VRV indoor unit
VAM VAM heat reclaim ventilation unit

Linked control with more than 2 groups

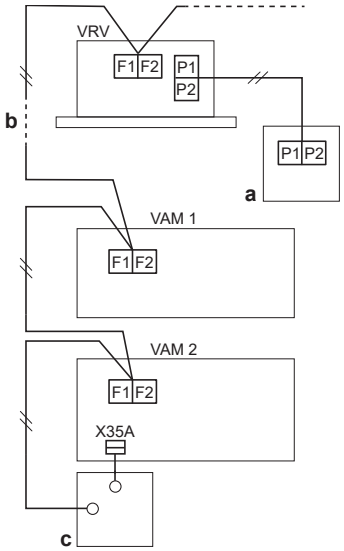
NOTICE

Group control connection is NOT allowed with EKVDX indoor units.

To change the settings, P1/P2 of the controller MUST be connected to the VAM units. The controller can be removed after the settings are changed.

If the unit is supposed to operate without controller, do NOT switch it on with the controller connected. Otherwise, the unit will give an error once the controller is removed, because it will keep on searching for the controller signal. To resolve the error, perform a power reset without the controller connected.

- The optional adapter PCB (KRP2A51) must be connected to 1 unit that is part of the F1/F2 loop. This unit can be an air conditioner or a VAM unit.
- Up to 64 units, a combination of air conditioners and VAM units, can be connected to the F1 and F2 terminals.
- KRP2A51 ONLY has ON/OFF control. If the VAM units run in automatic mode, they have a fixed setpoint. If P1/P2 is NOT connected, the setpoint of the air conditioner is unknown.
- Use the air conditioner's controller to configure the initial settings.



a Controller for air conditioner
b Maximum length of connection line: 1000 m
c Adapter PCB for remote control (KRP2A51)
VRV VRV indoor unit
VAM 1 VAM heat reclaim ventilation unit 1
VAM 2 VAM heat reclaim ventilation unit 2

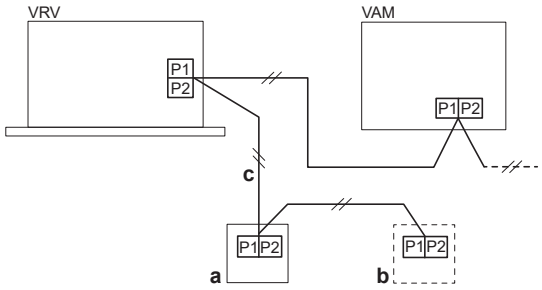
Activate setting 17-8-02 to set the central zone link to ON. No further settings are required.

Direct duct connection

NOTICE

Direct duct connection is NOT allowed with EKVDX indoor units.

The line connections are the same as for the 1-group linked-control system.



a Controller for air conditioner
b Controller for air conditioner
c Maximum length of connection line: 500 m
VRV VRV indoor unit
VAM VAM heat reclaim ventilation unit

Initial settings

Activate below setting for direct duct connection. This direct duct configuration ONLY works if P1/P2 is connected.

- Mode number: 17
- Switch number: 5
- Position number: 07

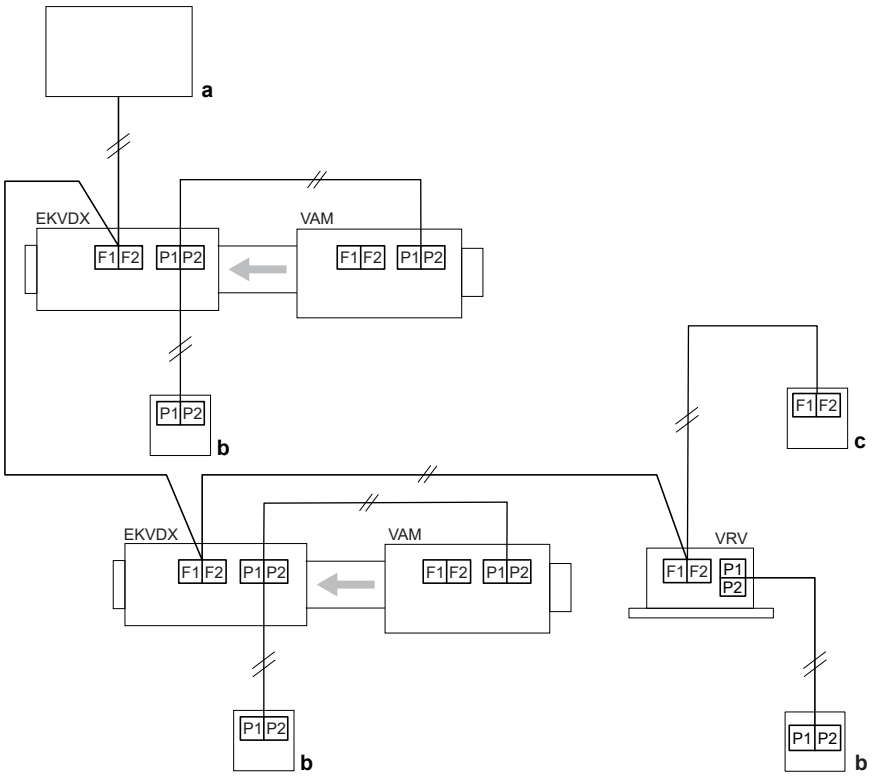
Other functions

Like in a 1-group linked-control system, other VAM functions can also be configured.

Central control system

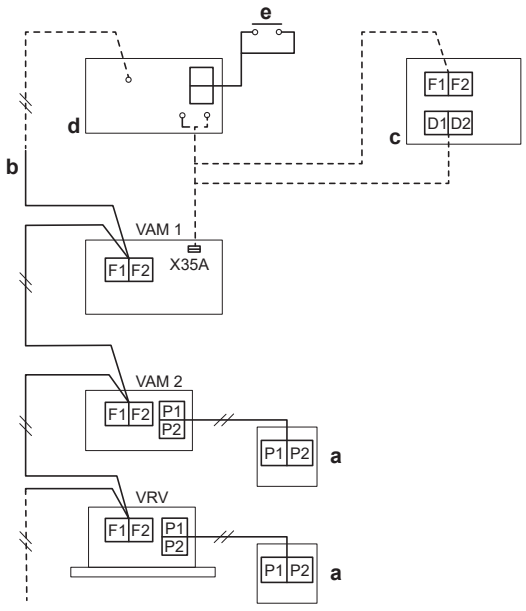
To change the settings, P1/P2 of the controller MUST be connected to the heat reclaim ventilation units. The controller can be removed after the settings are changed.

If the unit is supposed to operate without controller, do NOT switch it on with the controller connected. Otherwise, the unit will give an error once the controller is removed, because it will keep on searching for the controller signal. To resolve the error, perform a power reset without the controller connected.



a Outdoor unit
b Controller
c Central controller for all units
VRV VRV indoor unit
EKVDX EKVDX indoor unit
VAM VAM heat reclaim ventilation unit

All control

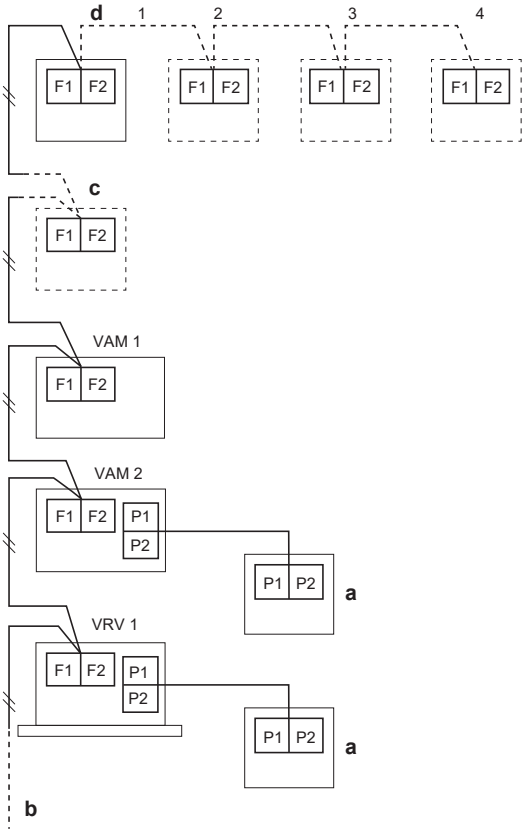


a Controller for air conditioner
b Maximum length of connection line: 1000 m
c Schedule timer (DST301B51)
d Adapter PCB for remote control (KRP2A51)
e On/Off signal
VAM 1 VAM heat reclaim ventilation unit 1
VAM 2 VAM heat reclaim ventilation unit 2
VRV VRV indoor unit

If you use the adapter PCB (KRP2A51) or schedule timer (DST301B51), the following is valid:

- Up to 64 units, a combination of air conditioners and VAM units, can be connected to the F1 and F2 terminals.
- This system does NOT require group number setting for central control (auto-address system). The central control group number is automatically assigned if the adapter PCB (KRP2A51) or schedule timer (DST301B51) is connected.
- The adapter PCB and the schedule timer CANNOT be used together. The adapter PCB allows on/off control. The schedule timer allows on/off control with a weekly schedule.
- The adapter PCB can be connected to the electric component mounting base of either the VAM unit or the air conditioner.

All/individual control



a Controller for air conditioner
b Maximum length of connection line: 1000 m
c Schedule timer
d ON/OFF controller
VAM 1 VAM heat reclaim ventilation unit 1
VAM 2 VAM heat reclaim ventilation unit 2
VRV 1 VRV indoor unit 1

If the ON/OFF controller (DCS301B51) is used, the following is valid:

- Up to 64 units, a combination of air conditioners and VAM units, can be connected to the F1 and F2 terminals.
- Up to 4 ON/OFF controllers can be connected.
- A central control group number must be assigned to each VAM unit and air conditioner. See "The central control group number setting" in the operation manual of the ON/OFF controller for information about setting the group number.
- Use the air conditioner's controller to configure the initial settings.

Example

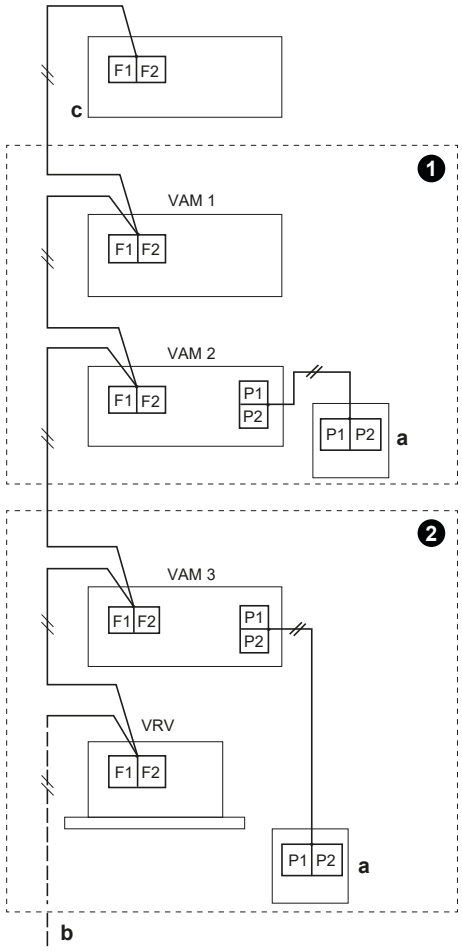
Setting the central control group number 2-05 to 1:

Use the local setting on the controller to set the central control group number.

Mode number: 00

Central control group number: 2-05

Zone control



1 Zone 1
2 Zone 2
a Controller for air conditioner
b Maximum length of connection line: 1000 m
c Central controller (DCS302C51 or DCS601C51 or DCM601A51)
VAM 1 VAM heat reclaim ventilation unit 1
VAM 2 VAM heat reclaim ventilation unit 2
VAM 3 VAM heat reclaim ventilation unit 3
VRV VRV indoor unit

- Up to 64 units, a combination of air conditioners and VAM units, can be connected to the F1 and F2 terminals.
- Zone 1 and 2 can be controlled independently with the central controller.

Zone 2

The VAM units operate in the zone-linked mode, as described in "Linked control with more than 2 groups" [▸ 209].

Initial settings:

- A central control group number must be assigned to each VAM unit and air conditioner. See "The central control group number setting" in "All/individual control" [▸ 212] for information about setting the group number.

- For the ventilation air flow setting, follow the procedure described in "All control" [▶ 211].
- For zone setting using the central controller, see the operation manual of the central controller.
- The central controller can be used to control individual units in the zone for ventilation.

EKVDX option - extra settings

In case of a EKVDX +VAM combination, the following specific VAM settings can be made:

Automatic cool-heat switching function

The automatic cool-heat switching function, in case the EKVDX option is used, is only possible using the user interface.

To use this function, do the following:

1 Choose setting 1c-01-02.

2 The Auto operation mode logic depends on the set setpoint logic via the Madoka app.

- Single set point (shared set point heating and cooling).
- Dual set point (set point for heating and cooling).

3 Choose guard timer duration using setting 1e-11.

4 To switch the temperature

- with the guard timer (=SP C1): choose setting 1c-14.
- immediately (=C1 C2): choose setting 1c-15.

Mode	SW	SW description	01	02	03	04
1c	01	Which thermistor to show on user interface	Indoor unit (R1T)	User interface	—	—
1c	14	User interface auto mode: switching temperature with guard timer	0.5°C	1°C	1.5°C	2°C
1c	15	User interface auto mode: immediate switching temperature	0.5°C	1°C	1.5°C	2°C
1e	11	User interface auto mode: guard timer duration	15 min	30 min	60 min	90 min

Fan tap/air flow rate

In case the heat reclaim ventilation unit is combined with an EKVDX, the airflow rates in the L-tap are the same as in the H-tap. No action from the user is needed.

To determine the heat reclaim ventilation unit fan tap/airflow rate in case of combination with EKVDX:

Via user interface:

- Weak (L/H tap)
- Strong (UH tap)

Onsite setting:

Mode	SW	SW position	Description
17(27)	4	1	L/H-tap
		2	UH-tap

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