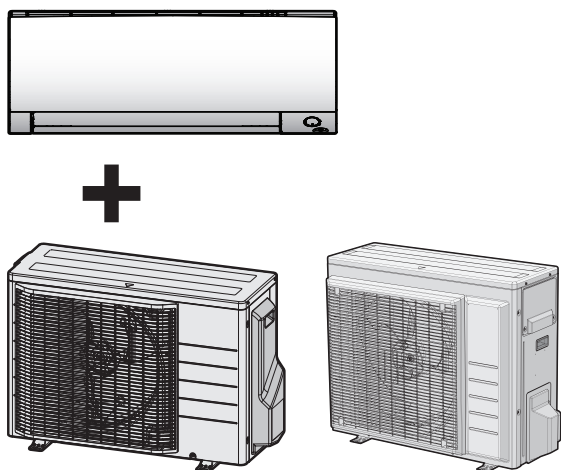


Service manual  
Perfera R32



RXM20~50A  
ARXM25~50A

FTXM20~50A  
ATXM20~50A

CTXM15A

**draft – 21/12/2023 13:09**

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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 components 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 unless otherwise specified.

**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<sub>2</sub> fire extinguisher MUST be present.

When charging the unit, an appropriate dry powder or CO<sub>2</sub> 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 NOT children, can play with them. **Possible consequence:** 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 switch 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 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.



### WARNING

Make sure the ventilation machinery and outlets are operating adequately and are NOT obstructed.



## 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.

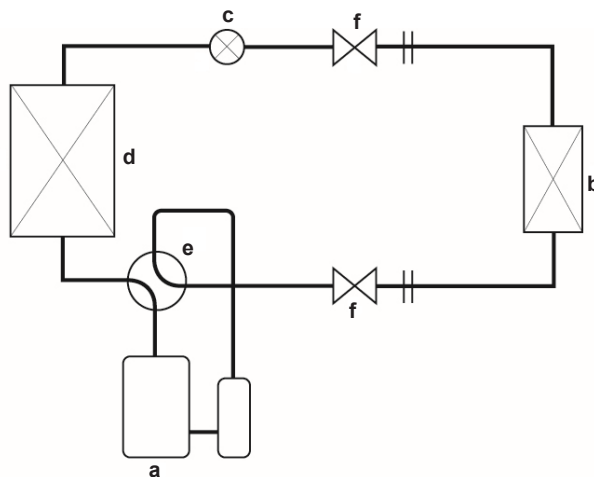
**NOTICE**

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

## 2 General operation

The Split Perfera ZETA is typically used for cooling or heating in residential applications.

The medium which is used to transfer the heat from inside to outside or vice versa, is refrigerant R32.



- a** Compressor
- b** Indoor heat exchanger
- c** Expansion valve
- d** Outdoor heat exchanger
- e** 4-way valve
- f** Stop valves

In case of cooling, the compressor builds up pressure and hence the temperature of the refrigerant is increased. The hot refrigerant is carried to the outdoor heat exchanger which will cool down the hot refrigerant by the fan.

The temperature of the refrigerant is further decreased by expansion through the expansion valve. The cold refrigerant flows into the indoor unit and is capable of taking up heat again. This is enabled by a fan that sucks indoor air over the heat exchanger.

This refrigerant is then transported to the compressor where temperature is built up again and the cycle restarts.

For heating, it's just the other way round.






### INFORMATION

Some of the indoor unit models CAN be used as Multi application as well. For further general operation, please consult Multi Split service manual.


## 3 Troubleshooting

### 3.1 To display the error code on the wireless remote controller

- 1 Hold  for about 5 seconds.  
**Result:**  blinks in the temperature display section.
- 2 Press  repeatedly until a continuous beep is heard.  
**Result:** The code is now displayed on the display.



#### INFORMATION

- A short beep and 2 consecutive beeps indicate non-corresponding codes.
- To cancel the code display, hold  for 5 seconds. The code will also disappear from the display if the button is NOT pressed within 1 minute.

### 3.2 To reset the error code via remote controller

**Prerequisite:** Problem is solved.

- 1 Press the ON/OFF button of the remote controller to reset the error.

### 3.3 To reset the error code via outdoor unit

**Prerequisite:** Problem is solved.

- 1 Perform a power reset to reset the error code.

### 3.4 To perform a test run




**Prerequisite:** The power supply MUST be in the specified range.

**Prerequisite:** Test run may be performed in cooling or heating mode.

**Prerequisite:** Refer to the operation manual of the indoor unit for setting temperature, operation mode....

- 1 In cooling mode, select the lowest programmable temperature. In heating mode, select the highest programmable temperature. The test run can be disabled if necessary.
- 2 When the test run is finished, set the temperature to a normal level. In cooling mode: 26~28°C, in heating mode: 20~24°C.
- 3 Make sure that all functions and parts are working properly.
- 4 The system stops operating 3 minutes after the unit is turned OFF.

#### 3.4.1 To perform a test run using the wireless remote control

- 1 Press  to switch the system on.
- 2 Press  and  simultaneously.

- 3 Press , select **7** and press .

**Result:** Test run operation will stop automatically after about 30 minutes.

- 4 To stop operation sooner, press .

### 3.5 Error based troubleshooting

#### 3.5.1 A1-00 – PCB abnormality

Trigger	Effect	Reset
The system CANNOT set the internal settings.	Unit will stop operating.	Power reset via outdoor unit.

#### To solve the error code



#### INFORMATION

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

- 1 Check for improper combination of the indoor unit and the outdoor unit. See the combination table in the Databook for more information.
- 2 Perform a check of the power supply, connections, wiring,... between the outdoor unit and the indoor unit. See ["4.1 Electrical circuit" \[▶ 51\]](#).

**Possible cause:** Faulty wiring between the outdoor unit and the indoor unit.

- 3 Check if the power supply is compliant with the regulations. See ["4.1 Electrical circuit" \[▶ 51\]](#).

**Possible cause:**

- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
- Power drop,
- Short circuit.

- 4 Perform a check of the indoor unit main PCB. See Indoor unit PCB.

**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.

## 3.5.2 A5-00 – Outdoor unit: High pressure peak cut / freeze protection problem

Trigger	Effect	Reset
During cooling operation, indoor heat exchanger temperature is below 0°C (freeze-up protection control).	Unit will stop operating.	Automatic reset when temperature is within range.
During heating operation, indoor heat exchanger temperature is above 65°C (heating peak-cut control).		

## To solve the error code

**INFORMATION**

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

**INFORMATION**

It is possible to analyse the data history by DCS.

- 1 Check for objects near the indoor unit that may block the airflow. See "4.3 External factors" [▶ 62].

**Possible cause:** Airflow of the indoor unit is blocked.

- 2 Clean the air filter of the indoor unit(s). See "5 Maintenance" [▶ 64].

**Possible cause:** Faulty or dirty air filter.

- 3 Clean the indoor unit heat exchanger. See "5 Maintenance" [▶ 64].

**Possible cause:** Dirty indoor unit heat exchanger.

- 4 Perform a check of the indoor unit heat exchanger thermistor. See Thermistors.

**Possible cause:** Faulty indoor unit heat exchanger thermistor.

- 5 Perform a check of the indoor unit main PCB. See Indoor unit PCB.

**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.

## 3.5.3 A6-00 – Indoor unit fan motor abnormality

Trigger	Effect	Reset
The rotation speed of the fan motor is NOT detected while the output voltage to the fan is at its maximum.	Unit will stop operating.	Power reset via the outdoor unit.

## 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 main PCB. See Indoor unit PCB.  
**Possible cause:** Faulty indoor unit main PCB.
- 2 Perform a check of the indoor unit fan motor. See Indoor unit fan motor.  
**Possible cause:** Faulty indoor unit fan motor.

**INFORMATION**

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

## 3.5.4 AH-00 – Streamer unit abnormality

Trigger	Effect	Reset
Streamer unit starts electric discharge when operation starts after approximately 90 to 180 seconds.	Unit will NOT stop operating.	Manual reset via user interface.

## To solve the error code

**INFORMATION**

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

- 1 Perform a check of the streamer unit. See Streamer unit.  
**Possible cause:** Faulty streamer unit.

**INFORMATION**

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

## 3.5.5 C4-00 – Heat exchanger temperature sensor problem

Trigger	Effect	Reset
Refrigerant liquid thermistor detects an open or short circuit during compressor operation.	Unit will 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 indoor unit heat exchanger thermistor. See Thermistors.  
**Possible cause:** Faulty indoor unit heat exchanger thermistor.
- 2 Perform a check of the indoor unit main PCB. See Indoor unit PCB.  
**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.

## 3.5.6 C9-00 – Room thermistor abnormality

Trigger	Effect	Reset
Resistance value is out of range. Temperature measured $\leq -43.6^{\circ}\text{C}$ or $>90^{\circ}\text{C}$ .	Unit will stop operating.	Automatic reset when resistance is within range.

## 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 (room) thermistor. See Thermistors.  
**Possible cause:** Faulty indoor unit air (room) thermistor.
- 2 Perform a check of the indoor unit main PCB. See Indoor unit PCB.  
**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.

## 3.5.7 E1-00 – Outdoor unit: PCB defect

Trigger	Effect	Reset
Main PCB detects that EEPROM is abnormal.	Unit will stop operating.	Manual reset via user interface.
		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 main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.
- 2 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 51].

**Possible cause:**

- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
- Power drop,
- Short circuit.

**3** Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.

**Possible cause:** Faulty outdoor unit fan motor.

**4** Perform a check of the compressor. See Compressor.

**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

**5** Wait until the rectifier voltage is below 10 V DC.


**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.

**6** Check that the thermal interface grease is applied properly on the (PCB or refrigerant piping) contact surface of the heat sink. Adjust if needed.

**Possible cause:** Thermal interface grease NOT applied properly on the heat sink.


**INFORMATION**

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

### 3.5.8 E3-00 – Outdoor unit: Actuation of high pressure switch

Trigger	Effect	Reset
High pressure switch opens due to measured pressure above high pressure switch operating point.	Unit will stop operating.	Manual reset via user interface.
High pressure control (measured pressure just below high pressure switch operating point) occurs 16 times within 300 minutes.		

#### To solve the error code


**INFORMATION**

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



**INFORMATION**

It is possible to analyse the data history by DCS. To judge if there is refrigerant overcharge, clogged refrigerant circuit, ....

- 1 Check that all stop valves of the refrigerant circuit are open. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Closed stop valve in the refrigerant circuit.
- 2 Perform a check of the high pressure switch. See High pressure switch.  
**Possible cause:** Faulty high pressure switch.
- 3 Perform a check of the main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.
- 4 Check if the refrigerant circuit is correctly charged. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Refrigerant overcharge.
- 5 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.
- 6 Check if the refrigerant circuit is clogged. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Clogged refrigerant circuit.
- 7 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.  
**Possible cause:** Faulty outdoor unit fan motor.

**INFORMATION**

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

## 3.5.9 E5-00 – Outdoor unit: Overheat of inverter compressor motor

Trigger	Effect	Reset
Compressor overload is detected.	Unit will NOT stop operating.	Automatic reset if the unit runs without warning for 60 seconds.

**To solve the error code****INFORMATION**

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

**INFORMATION**

It is possible to analyse the data history by DCS. To judge if there is refrigerant shortage, clogged refrigerant circuit, ....

- 1 Check that all stop valves of the refrigerant circuit are open. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Closed stop valve in the refrigerant circuit.
- 2 Perform a check of the discharge pipe thermistor. See Thermistors.

**Possible cause:** Faulty discharge pipe thermistor or connector fault.

- 3 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.

**Possible cause:** Faulty outdoor unit fan motor.

- 4 Perform a check of the compressor. See Compressor.

**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.

- 5 Perform a check of the expansion valve. See Expansion valve.

**Possible cause:** Faulty expansion valve.

- 6 Perform a check of the 4-way valve. See 4-way valve.

**Possible cause:** Faulty 4-way valve.

- 7 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 8 Check if the refrigerant circuit is correctly charged. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Refrigerant shortage.

- 9 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.

- 10 Check if the refrigerant circuit is clogged. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Clogged refrigerant circuit.



#### INFORMATION

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

### 3.5.10 E6-00 – Outdoor unit: Compressor startup defect

Trigger	Effect	Reset
The motor rotor does NOT rotate when the compressor is energized.	Unit will NOT stop operating.	Automatic reset after a continuous run for 10 minutes.
	Unit will stop operating	Manual reset via user interface.

#### To solve the error code



#### INFORMATION

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

- 1 Perform a check of the discharge pipe thermistor. See Thermistors.  
**Possible cause:** Faulty discharge pipe thermistor or connector fault.
- 2 Check that all stop valves of the refrigerant circuit are open. See ["4.2 Refrigerant circuit"](#) [▶ 53].  
**Possible cause:** Closed stop valve in the refrigerant circuit.
- 3 Check if the refrigerant circuit is clogged. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Clogged refrigerant circuit.

- 4 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 53].

**Possible cause:** Refrigerant overcharge or shortage.

- 5 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 53].

**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.

- 6 Perform a check of the compressor. See Compressor.

**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.

- 7 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 8 Perform a check of the 4-way valve. See 4-way valve.

**Possible cause:** Faulty 4-way valve.

- 9 Perform a check of the expansion valve. See Expansion valve.

**Possible cause:** Faulty expansion valve.



#### INFORMATION

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

### 3.5.11 E7-00 – Outdoor unit: Malfunction of outdoor unit fan motor

Trigger	Effect	Reset
<p>Fan does NOT start 15~30 seconds after ON signal.</p> <p>It can occur that the error code is triggered when the fan motor is running caused by a faulty rotating sensor signal.</p>	Unit will stop operating.	Manual reset via user interface.

#### To solve the error code



#### INFORMATION

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

- 1 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.

**Possible cause:** Faulty outdoor unit fan motor.

- 2 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.



#### INFORMATION

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

#### 3.5.12 E8-00 – Outdoor unit: Power input overvoltage

Trigger	Effect	Reset
Compressor running current exceeds standard value for 2.5 seconds.	Unit will stop operating.	Manual reset via user interface.

##### To solve the error code



##### INFORMATION

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



##### INFORMATION

It is possible to analyse the data history by DCS. To judge if outdoor ambient temperature is out of range.

- 1 Check the outdoor temperature. See "[4.3 External factors](#)" [▶ 62].  
**Possible cause:** Outdoor temperature is out of operation range.
- 2 Perform a check of the compressor. See Compressor.  
**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.
- 3 Perform a check of the main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.
- 4 Check if the power supply is compliant with the regulations. See "[4.1 Electrical circuit](#)" [▶ 51].  
**Possible cause:**
  - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
  - Power drop,
  - Short circuit.



##### INFORMATION

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

#### 3.5.13 EA-00 – Outdoor unit: Cool/heat switchover problem

Trigger	Effect	Reset
Room thermistor is NOT functioning within operation range.	Unit will NOT stop operating.	Automatic reset after a continuous operation for some time.
	If the error occurs too soon: unit will stop operating.	Manual reset via user interface.

##### To solve the error code



##### INFORMATION

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

**INFORMATION**

It is possible to analyse the data history by DCS. To know the temperature data on both heat exchangers.

To trigger the error code:

- In cooling mode; Indoor heat exchanger temperature is higher than outdoor heat exchanger temperature.
- In heating mode; Outdoor heat exchanger temperature is higher than indoor heat exchanger temperature.

- 1 Perform a check of the 4-way valve. See 4-way valve.

**Possible cause:** Faulty 4-way valve.

- 2 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 3 Perform a check of the indoor unit air (room) thermistor. See Thermistors.

**Possible cause:** Faulty indoor unit air (room) thermistor.

- 4 Perform a check of the indoor unit main PCB. See Indoor unit PCB.

**Possible cause:** Faulty indoor unit main PCB.

- 5 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 53].

**Possible cause:** Closed stop valve in the refrigerant circuit.

- 6 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 53].

**Possible cause:** Clogged refrigerant circuit.

- 7 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 53].

**Possible cause:** Refrigerant overcharge or shortage.

- 8 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 53].

**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.

**INFORMATION**

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

### 3.5.14 F3-00 – Outdoor unit: Malfunction of discharge pipe temperature

Trigger	Effect	Reset
Discharge pipe thermistor detects a too high temperature.	Unit will NOT stop operating.	Automatic reset when temperature drops normal level.
	If the error re-occurs too soon: unit will stop operating.	Manual reset via user interface.

## To solve the error code

**INFORMATION**

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

- 1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Closed stop valve in the refrigerant circuit.
- 2 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Refrigerant overcharge or shortage.
- 3 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.
- 4 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Clogged refrigerant circuit.
- 5 Perform a check of the 4-way valve. See 4-way valve.  
**Possible cause:** Faulty 4-way valve.
- 6 Perform a check of the expansion valve. See Expansion valve.  
**Possible cause:** Faulty expansion valve.
- 7 Perform a check of the main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.
- 8 Perform a check of all refrigerant side thermistors. See Thermistors.  
**Possible cause:** Faulty refrigerant side thermistor(s).

**INFORMATION**

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

## 3.5.15 F6-00 – Outdoor unit: Abnormal high pressure in cooling

Trigger	Effect	Reset
Outdoor heat exchanger thermistor measures a too high temperature.	Unit will NOT stop operating.	Automatic reset when temperature drops.

## To solve the error code

**INFORMATION**

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

- 1 Clean the outdoor heat exchanger. See "5 Maintenance" [▶ 64].  
**Possible cause:** Dirty outdoor heat exchanger.
- 2 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Closed stop valve in the refrigerant circuit.

- 3 Perform a check of the heat exchanger thermistor. See Thermistors.  
**Possible cause:** Faulty heat exchanger thermistor.
- 4 Perform a check of the expansion valve. See Expansion valve.  
**Possible cause:** Faulty expansion valve.
- 5 Perform a check of the main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.
- 6 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Refrigerant overcharge.
- 7 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.
- 8 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Clogged refrigerant circuit.
- 9 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.  
**Possible cause:** Faulty outdoor unit fan motor.

**INFORMATION**

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

### 3.5.16 F8-00 – System shutdown due to compressor internal temperature abnormality

Trigger	Effect	Reset
Temperature discharge pipe thermistor exceeds the determined limit.	Unit will stop operating.	Manual reset via user interface.

#### To solve the error code

**INFORMATION**

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

- 1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Closed stop valve in the refrigerant circuit.
- 2 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Refrigerant overcharge.
- 3 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.
- 4 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Clogged refrigerant circuit.
- 5 Perform a check of the discharge pipe thermistor. See Thermistors.

**Possible cause:** Faulty discharge pipe thermistor or connector fault.



#### INFORMATION

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

### 3.5.17 H0-00 – Outdoor unit: Voltage/current sensor problem

Trigger	Effect	Reset
Compressor voltage (DC) is out of range before start-up.	Unit will stop operating.	Manual reset via user interface.

#### To solve the error code



#### INFORMATION

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

- 1 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 2 Check if the power supply is compliant with the regulations. See ["4.1 Electrical circuit"](#) [► 51].

**Possible cause:**

- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
- Power drop,
- Short circuit.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

- 3 Wait until the rectifier voltage is below 10 V DC.



#### 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 Check that the thermal interface grease is applied properly on the (PCB or refrigerant piping) contact surface of the heat sink. Adjust if needed.

**Possible cause:** Thermal interface grease NOT applied properly on the heat sink.



#### INFORMATION

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



## 3.5.18 H3-00 – Outdoor unit: Malfunction of high pressure switch

Trigger	Effect	Reset
High pressure switch is activated when compressor is off.	Unit will stop operating.	Manual reset via user interface.

## To solve the error code

**INFORMATION**

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

- 1 Perform a check of the high pressure switch. See High pressure switch.  
**Possible cause:** Faulty high pressure switch.
- 2 Perform a check of the main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.
- 3 Check if the power supply is compliant with the regulations. See ["4.1 Electrical circuit" \[ 51\]](#).  
**Possible cause:**
  - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
  - Power drop,
  - Short circuit.

**INFORMATION**

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

## 3.5.19 H6-00 – Outdoor unit: Malfunction of position detection sensor

Trigger	Effect	Reset
Compressor fails to start within 15 seconds after the compressor run command signal is sent.	Unit will NOT stop operating.	Automatic reset after a continuous operation of 10 minutes.
	If the error re-occurs within 8 minutes: unit will stop operating.	Manual reset via user interface.

## To solve the error code

**INFORMATION**

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

- 1 Perform a check of the compressor. See Compressor.  
**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.
- 2 Perform a check of the main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.

- 3 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Closed stop valve in the refrigerant circuit.
- 4 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Clogged refrigerant circuit.
- 5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Refrigerant overcharge or shortage.
- 6 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 53].  
**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.
- 7 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 51].  
**Possible cause:**
  - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
  - Power drop,
  - Short circuit.



#### INFORMATION

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

### 3.5.20 H8-00 – Outdoor unit: Malfunction of compressor input system

Trigger	Effect	Reset
DC voltage or current sensor abnormality based on the compressor running frequency and the input current.	Unit will NOT stop operating.	Automatic reset when compressor runs normally for 60 minutes.
	If the error re-occurs too soon: unit will stop operating.	Manual reset via user interface.

#### To solve the error code



#### INFORMATION

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

- 1 Perform a check of the main PCB. See Main PCB.  
**Possible cause:** Faulty main PCB.
- 2 Perform a check of the compressor. See Compressor.  
**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.
- 3 Perform a check of the reactor. See Reactor.  
**Possible cause:** Faulty reactor.

**INFORMATION**

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

## 3.5.21 H9-00 – Outdoor unit: Malfunction of outdoor air thermistor

Trigger	Effect	Reset
Outdoor air thermistor input is out of range.	Unit will stop operating.	Manual reset via user interface.

**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 Thermistors.

**Possible cause:** Faulty ambient air thermistor.

- 2 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

**INFORMATION**

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

## 3.5.22 J3-00 – Outdoor unit: Malfunction of discharge pipe thermistor

Trigger	Effect	Reset
Discharge pipe thermistor input is out of range.	Unit will stop operating.	Manual reset via user interface.

**To solve the error code****INFORMATION**

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

- 1 Perform a check of the discharge pipe thermistor. See Thermistors.

**Possible cause:** Faulty discharge pipe thermistor or connector fault.

- 2 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

**INFORMATION**

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

#### 3.5.23 J6-00 – Outdoor unit: Malfunction of heat exchanger thermistor

Trigger	Effect	Reset
Outdoor heat exchanger thermistor input is out of range.	Unit will stop operating.	Manual reset via user interface.

##### To solve the error code



##### INFORMATION

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

- 1 Perform a check of the heat exchanger thermistor. See Thermistors.

**Possible cause:** Faulty heat exchanger thermistor.

- 2 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.



##### INFORMATION

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

#### 3.5.24 L3-00 – Outdoor unit: Electrical box temperature rise problem

Trigger	Effect	Reset
Switch box temperature is too high.	Unit will stop operating.	Manual reset via remote controller.

##### To solve the error code



##### INFORMATION

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

- 1 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 2 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.

**Possible cause:** Faulty outdoor unit fan motor.

- 3 Check if the power supply is compliant with the regulations. See ["4.1 Electrical circuit"](#) [▶ 51].

**Possible cause:**

- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
- Power drop,
- Short circuit.

- 4 Clean the outdoor heat exchanger. See ["5 Maintenance"](#) [▶ 64].

**Possible cause:** Dirty outdoor heat exchanger.



##### INFORMATION

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

## 3.5.25 L4-00 – Outdoor unit: Malfunction of inverter radiating fin temperature rise

Trigger	Effect	Reset
Radiating fin thermistor measures a too high temperature.	Unit will stop operating.	Manual reset via user interface.

## To solve the error code

**INFORMATION**

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

- 1 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.  
**Possible cause:** Faulty outdoor unit fan motor.
- 2 Check if the power supply is compliant with the regulations. See "[4.1 Electrical circuit](#)" [▶ 51].  
**Possible cause:**
  - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
  - Power drop,
  - Short circuit.

- 3 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

- 4 Wait until the rectifier voltage is below 10 V DC.

**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.

- 5 Check that the thermal interface grease is applied properly on the (PCB or refrigerant piping) contact surface of the heat sink. Adjust if needed.  
**Possible cause:** Thermal interface grease NOT applied properly on the heat sink.

**INFORMATION**

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

## 3.5.26 L5-00 – Outdoor unit: Inverter instantaneous overcurrent

Trigger	Effect	Reset
An output overcurrent is detected by checking the current that flows in the inverter DC section.	Unit will stop operating.	Manual reset via user interface.

## To solve the error code

**INFORMATION**

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

- 1 Check that all stop valves of the refrigerant circuit are open. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Closed stop valve in the refrigerant circuit.

- 2 Check if the refrigerant circuit is clogged. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Clogged refrigerant circuit.

- 3 Check if the refrigerant circuit is correctly charged. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Refrigerant overcharge or shortage.

- 4 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See ["4.2 Refrigerant circuit"](#) [▶ 53].

**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.

- 5 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 6 Perform a check of the compressor. See Compressor.

**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.

- 7 Check if the power supply is compliant with the regulations. See ["4.1 Electrical circuit"](#) [▶ 51].

**Possible cause:**

- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
- Power drop,
- Short circuit.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

- 8 Wait until the rectifier voltage is below 10 V DC.

**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.

- 9 Check that the thermal interface grease is applied properly on the (PCB or refrigerant piping) contact surface of the heat sink. Adjust if needed.

**Possible cause:** Thermal interface grease NOT applied properly on the heat sink.

**INFORMATION**

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

## 3.5.27 P4-00 – Outdoor unit: Malfunction of radiating fin temperature sensor

Trigger	Effect	Reset
Radiating fin thermistor input is out of range.	Unit will stop operating.	Manual reset via user interface.

## To solve the error code

**INFORMATION**

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

- 1 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

**INFORMATION**

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

## 3.5.28 U0-00 – Outdoor unit: Shortage of refrigerant

Trigger	Effect	Reset
Refrigerant shortage detected.	Unit will stop operating.	Automatic reset.
		Power reset via outdoor unit.

## To solve the error code

**INFORMATION**

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

**INFORMATION**

It is possible to analyse the data history by DCS. To judge if there is refrigerant shortage, clogged refrigerant circuit, ...

- 1 Perform a check of all refrigerant side thermistors. See Thermistors.  
**Possible cause:** Faulty refrigerant side thermistor(s).
- 2 Check that all stop valves of the refrigerant circuit are open. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Closed stop valve in the refrigerant circuit.
- 3 Check if the refrigerant circuit is clogged. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Clogged refrigerant circuit.
- 4 Check if the refrigerant circuit is correctly charged. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Refrigerant shortage.
- 5 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See ["4.2 Refrigerant circuit" \[▶ 53\]](#).  
**Possible cause:** Non-condensables and/or humidity in the refrigerant circuit.
- 6 Perform a check of the compressor. See Compressor.

**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.

- 7 Perform a check of the expansion valve. See Expansion valve.

**Possible cause:** Faulty expansion valve.

- 8 Check for leaks in the refrigerant circuit. Look for oil traces on the unit(s). Check the brazing points on the field piping. Perform a pressure test, see "4.2 Refrigerant circuit" [▶ 53].

**Possible cause:** Leak in the refrigerant circuit.



#### INFORMATION

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

### 3.5.29 U2-00 – Outdoor unit: Defect of power supply voltage

Trigger	Effect	Reset
Power supply abnormality or instant power failure is detected.	Unit will stop operating.	Power reset via outdoor unit.

#### To solve the error code



#### INFORMATION

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

- 1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 51].

**Possible cause:**

- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
- Power drop,
- Short circuit.

- 2 Perform a check of the compressor. See Compressor.

**Possible cause:** Faulty compressor or miswiring of the compressor power supply cable.

- 3 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.

**Possible cause:** Faulty outdoor unit fan motor.

- 4 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 5 Wait until the compressor restarts.

**Possible cause:**

- Momentary drop of voltage,
- Momentary power failure.

- 6 Perform a check of the indoor unit main PCB. See Indoor unit PCB.

**Possible cause:** Faulty indoor unit main PCB.

- 7 Perform a check of the indoor unit power PCB. See Indoor unit power PCB.

**Possible cause:** Faulty indoor unit power PCB.



**INFORMATION**

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

## 3.5.30 U4-00 – Indoor/outdoor unit communication problem

Trigger	Effect	Reset
Communication failure between outdoor and indoor unit.	Unit will stop operating.	Power reset via outdoor unit.

**To solve the error code****INFORMATION**

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

- 1 Check if the power supply is compliant with the regulations. See "[4.1 Electrical circuit](#)" [► 51].

**Possible cause:**

- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage  $\pm 4\%$ ),
- Power drop,
- Short circuit.

- 2 Perform a check of the power supply, connections, wiring,... between the outdoor unit and the indoor unit. See "[4.1 Electrical circuit](#)" [► 51].

**Possible cause:** Faulty wiring between the outdoor unit and the indoor unit.

- 3 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 4 Perform a check of the outdoor unit fan motor. See Outdoor unit fan motor.

**Possible cause:** Faulty outdoor unit fan motor.

- 5 Perform a check of the indoor unit main PCB. See Indoor unit PCB.

**Possible cause:** Faulty indoor unit main PCB.

- 6 Perform a check of the indoor unit power PCB. See Indoor unit power PCB.

**Possible cause:** Faulty indoor unit power PCB.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

- 7 Wait until the rectifier voltage is below 10 V DC.

**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.

- 8 Check that the thermal interface grease is applied properly on the (PCB or refrigerant piping) contact surface of the heat sink. Adjust if needed.

**Possible cause:** Thermal interface grease NOT applied properly on the heat sink.

**INFORMATION**

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

## 3.5.31 UA-00 – Indoor unit, outdoor unit mismatching problem

Trigger	Effect	Reset
Signal transmission between outdoor and indoor unit abnormality. Improper combination of outdoor and indoor unit.	Unit will stop operating.	Power reset via outdoor unit.

**To solve the error code****INFORMATION**

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

**INFORMATION**

It is possible to analyse the data history by DCS. To check the model names of the units.

- 1 Check for improper combination of the indoor unit and the outdoor unit. See the combination table in the Databook for more information.
- 2 Perform a check of the power supply, connections, wiring,... between the outdoor unit and the indoor unit. See "[4.1 Electrical circuit](#)" [▶ 51].

**Possible cause:** Faulty wiring between the outdoor unit and the indoor unit.

- 3 Perform a check of the main PCB. See Main PCB.

**Possible cause:** Faulty main PCB.

- 4 Perform a check of the indoor unit main PCB. See Indoor unit PCB.

**Possible cause:** Faulty indoor unit main PCB.

- 5 Perform a check of the indoor unit power PCB. See Indoor unit power PCB.

**Possible cause:** Faulty indoor unit power PCB.

**INFORMATION**

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

## 3.5.32 UH-00 – Malfunction of system

Trigger	Effect	Reset
In case of connection with multi indoor units, when error UA, U0 or A5 occurs in other indoor unit.	Unit will stop operating.	Auto reset.

## To solve the error code

**INFORMATION**

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

**INFORMATION**

It is possible to analyse the data history by DCS. To check if there are A5, U0, and UA errors on other units.

- 1 Check all other indoor units for the following error codes. If found, see ["3.5 Error based troubleshooting"](#) [▶ 16] to solve the specific error.
  - A5-00 – Outdoor unit: High pressure peak cut / freeze protection problem
  - U0-00 – Outdoor unit: Shortage of refrigerant
  - UA-00 – Indoor unit, outdoor unit mismatching problem

**Possible cause:** Error on other indoor unit.
- 2 Perform a check of the indoor unit main PCB. See Indoor unit PCB.
 

**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.

## 3.6 Symptom based troubleshooting

### 3.6.1 Operation does not start

Check	Detail	Possible to be checked by DCS Residential
When the operation lamp is off, there is a power failure. Check the power supply.	<ul style="list-style-type: none"> <li>Is the power supply breaker ON?</li> <li>Do other electrical appliances work?</li> <li>Is the rated voltage (<math>\pm 10\%</math>) supplied?</li> <li>Check the insulation of the electric system.</li> </ul>	No
Check the type of the indoor unit.	Is the indoor unit type compatible with the outdoor unit?	Yes
Check the transmission between indoor and outdoor.	<ul style="list-style-type: none"> <li>Connection wires.</li> </ul>	No
Check the outdoor temperature.	<ul style="list-style-type: none"> <li>Heating operation cannot be used when the outdoor temperature is 18°C WB or higher.</li> <li>Cooling operation cannot be used when the outdoor temperature is below -10°C DB.</li> </ul>	Yes
When the operation lamp blinks, there may be an error code, activating the protection device. Diagnose with remote controller indication.	See "3.5 Error based troubleshooting" [▶ 16].	Yes
Check the remote controller addresses.	Are the address settings for the remote controller and indoor unit correct?	No
Check the operation circuit.	<ul style="list-style-type: none"> <li>Is the thermal fuse blown.</li> <li>Are wire size and wire connections OK?.</li> </ul>	No
Check fan motor.	<ul style="list-style-type: none"> <li>Is the magnetic switch defective?</li> <li>Is the overcurrent relay defective?</li> </ul>	No
Check compressor.	<ul style="list-style-type: none"> <li>Is the contact defective?</li> <li>Is the protection thermostat defective?</li> <li>Is the compressor itself defective?</li> </ul>	No
Check remote controller.	<ul style="list-style-type: none"> <li>Are the batteries LOW?</li> <li>Are there incorrect settings?</li> </ul>	No

### 3.6.2 Operation sometimes stops

Check	Detail	Possible to be checked by DCS Residential
When the operation lamp is off, there is a power failure. Check the power supply.	<ul style="list-style-type: none"> <li>A power failure of 2 to 10 cycles stops air conditioner operation.</li> </ul>	No

Check	Detail	Possible to be checked by DCS Residential
Check the outdoor temperature.	<ul style="list-style-type: none"> <li>Heating operation cannot be used when the outdoor temperature is 18°C WB or higher.</li> <li>Cooling operation cannot be used when the outdoor temperature is below -10°C DB.</li> </ul>	Yes
When the operation lamp blinks, there may be an error code, activating the protection device. Diagnose with remote controller indication.	See "3.5 Error based troubleshooting" [▶ 16].	Yes

### 3.6.3 Operation starts but the unit does not cool/heat

Check	Detail	Possible to be checked by DCS Residential
Check the operation mode of the air conditioner	Check the operation mode. It should be COOL or AUTO in cooling. It should be HEAT or AUTO in heating.	Yes
Check the electrical power supply.	Is the rated voltage ( $\pm 10\%$ ) supplied?	No
Check for piping and wiring errors in the connection between the indoor unit and outdoor unit.	<ul style="list-style-type: none"> <li>Refrigerant piping is too long; is the length within specified range?</li> <li>Field piping is defective; is there a refrigerant leakage?</li> <li>Is there capacity loss over the condensor, saturation pressure or sound because of air mixed in to the circuit?</li> <li>Incorrect size of connection wiring.</li> </ul>	No
When the operation lamp blinks, there may be a thermistor detection error code, activating the protection device.	<ul style="list-style-type: none"> <li>Check the resistance of all thermistors.</li> <li>Check the connection of all thermistors.</li> <li>Is there a malfunction in the room temperature thermistor or outdoor temperature thermistor?</li> </ul>	No
Check for faulty operation of the electronic expansion valve.	Set the unit to cooling operation, and check the temperature of the liquid pipe to see if the electronic expansion valve works.	No

Check	Detail	Possible to be checked by DCS Residential
Check for refrigerant shortage	<p>Diagnosis by service port pressure and operating current .</p> <ul style="list-style-type: none"> <li>Is the unit filled with the specified refrigerant volume?</li> <li>Is there a flushing noise due to refrigerant shortage?</li> </ul>	No
	<p>If the difference between room air and indoor heat exchanger temperature is less than 4K, there is a possibility of refrigerant shortage.</p> <p>If the difference between compressor discharge temperature and condenser temperature is too much (range 30~50K), there is a possibility of refrigerant shortage.</p>	Yes See details on the left.
Check if the set temperature is appropriate.	thermostat "off" can be activated, set the appropriate temperature.	Yes
Check the type of the indoor and outdoor units.	Is the indoor unit type compatible with the outdoor unit?	Yes
Check if the air filter/heat exchanger is clogged.	Check if the air filter/heat exchanger is clean by visual inspection.	No
	If the difference between room air temperature and the indoor heat exchanger temperature is more than 20°C and indoor fan frequency is more than 1000 rpm, the filter/heat exchanger is possibly clogged.	Yes See details on the left.
Check the flap position.	<p>In cooling:</p> <ul style="list-style-type: none"> <li>If it is upward, this is good for cooling the room but the customer may not feel the cold air. So, the flap angle can be changed to mid position or AUTO.</li> <li>If it is downward, there are two possibilities. The indoor ambient will not be cold homogeneously and the customer will complain due to cold air. So, the flap angle can be changed to higher position or Auto.</li> </ul> <p>In heating:</p> <ul style="list-style-type: none"> <li>If it is upward, the indoor ambient will not be heated homogeneously and the customer will complain due to cold temperature. So, the flap angle can be changed to lower position or Auto.</li> </ul>	Yes
Check the fan speed.	It should be auto ot manual setting lower than HIGH for cold air preference.	Yes

Check	Detail	Possible to be checked by DCS Residential
Check the defrost operation frequency in Heat mode	Check if the defrost operation frequency is normal according to the outdoor ambient temperature and outdoor heat exchanger temperature (Values depend on the models).	Yes See details on the left.
	<ul style="list-style-type: none"> <li>▪ If the product goes to defrost frequently:               <ul style="list-style-type: none"> <li>- Possible problem: Low amount of refrigerant.</li> <li>- Check refrigerant amount and add more if necessary.</li> </ul> </li> <li>▪ If the product does NOT go to defrost frequently:               <ul style="list-style-type: none"> <li>- Possible problem: Sensor broken.</li> <li>- Check thermistors.</li> </ul> </li> </ul>	No

### 3.6.4 Operating noise and vibrations

Check	Detail	Possible to be checked by DCS Residential
Check the installation conditions (specified in the installation manual).	<ul style="list-style-type: none"> <li>▪ Use general vibration prevention where needed.</li> <li>▪ If the mounting wall is too thin, you must use cushion material or rubber, or change the installation place.</li> <li>▪ Refrigerant piping is too short; is the length within specified range?</li> <li>▪ Due to bad installation or general conditions there may be deformation of the unit.</li> <li>▪ Are all the screws installed and tightened properly?</li> <li>▪ Is all piping secured, fixed and supported by inserting a cushion material where needed?</li> <li>▪ Install piping weights or correct by hand if any piping is in contact with other parts.</li> <li>▪ Is the fan in contact with other parts? If so separate the fan from the other parts.</li> </ul>	No

Check	Detail	Possible to be checked by DCS Residential
Check for refrigerant shortage	Diagnosis by service port pressure and operating current . <ul style="list-style-type: none"> <li>Is the unit filled with the specified refrigerant volume?</li> <li>Is there a flushing noise due to refrigerant shortage?</li> </ul>	No
	If the difference between room air and indoor heat exchanger temperature is less than 4K, there is a possibility of refrigerant shortage.  If the difference between compressor discharge temperature and condenser temperature is too much (range 30~50K), there is a possibility of refrigerant shortage.	Yes See details on the left.
Check the expansion valve.	If a passing sound is heard from the pressure reducing valve, apply sound insulation sheets of putty to reduce the valve noise.	No
Check for the impurities in the refrigerant pipes.	Usually happens on the new installations. Not good vacuuming, there are nitrogen, air and other contaminants.	No

## 3.6.5 Abnormal high pressure

## In cooling mode

Check item	Detail	Possible to be checked by DCS Residential
Does the outdoor unit fan run normally?	Visual inspection	No
Is the outdoor unit heat exchanger clogged?	Check if the outdoor unit heat exchanger is clean by visual inspection.	No
	If the difference between outdoor ambient temperature and the outdoor unit heat exchanger temperature is more than 20°C and outdoor fan is working, the outdoor unit heat exchanger is possibly clogged.	Yes See details on the left
Is there clogging before or after the expansion valve (capillary)?	<ul style="list-style-type: none"> <li>Check if there is a temperature difference before and after expansion valve (capillary).</li> <li>Check if the main valve unit of expansion valve operates (by noise, vibration).</li> </ul>	No
Is the High Pressure Switch normal?	Check continuity by using a tester.	No
Is the outdoor unit installed under such conditions that short circuit easily occurs?	Visual inspection	No
Is the piping length ≤5 m?	Visual inspection	No



Check item	Detail	Possible to be checked by DCS Residential
Check for refrigerant overcharge.	Check both heat exchanger temperatures. If evaporator and condenser temperatures are too high, there might be overcharge.	Yes See details on the left
	Loud squealing might be heard due to the excess pressure in the pipes.	No
Check for impurities in the refrigerant pipes.	Usually happens on the new installations. Not good vacuuming, there are nitrogen, air and other contaminants.	No

#### In heating mode

Check item	Detail	Possible to be checked by DCS Residential
Does the indoor unit fan run normally?	Visual inspection	No
Check if the air filter/heat exchanger is clogged.	Check if the air filter/heat exchanger is clean by visual inspection.	No
	If the difference between room air temperature and the indoor heat exchanger temperature is more than 20°C and indoor fan frequency is more than 1000 rpm, the filter/heat exchanger is possibly clogged.	Yes See details on the left.
Is the indoor unit installed under such conditions that short circuit easily occurs?	Visual inspection	No
Is there clogging before or after the expansion valve (capillary)?	<ul style="list-style-type: none"> <li>Check if there is a temperature difference before and after expansion valve (capillary).</li> <li>Check if the main valve unit of expansion valve operates (by noise, vibration).</li> </ul>	No
Is the High Pressure Switch normal?	Check continuity by using a tester.	No
Is the minimum piping length respected?	Visual inspection	No
Check for refrigerant overcharge.	Check both heat exchanger temperatures. If evaporator and condenser temperatures are too high, there might be overcharge.	Yes See details on the left.
	Loud squealing might be heard due to the excess pressure in the pipes.	No
Check for impurities in the refrigerant pipes.	Usually happens on the new installations. Not good vacuuming, there are nitrogen, air and other contaminants.	No

#### 3.6.6 Abnormal low pressure

Abnormally low pressure level is mostly caused by the evaporator side. The following contents are provided based on field checking of service engineer. Further, the number is listed in the order of degree of influence.

## In cooling mode

Check item	Detail	Possible to be checked by DCS Residential
Does the indoor unit fan run normally?	Visual inspection	No
Check if the air filter/heat exchanger is clogged.	Check if the air filter/heat exchanger is clean by visual inspection.	No
	If the difference between room air temperature and the indoor heat exchanger temperature is more than 20°C and indoor fan frequency is more than 1000 rpm, the filter/heat exchanger is possibly clogged.	Yes See details on the left.
Is the indoor unit installed under such conditions that short circuit easily occurs?	Visual inspection	No
Is there clogging before or after the expansion valve (capillary)?	<ul style="list-style-type: none"> <li>Check if there is a temperature difference before and after expansion valve (capillary).</li> <li>Check if the main valve unit of expansion valve operates (by noise, vibration).</li> </ul>	No
Is the check valve (if applicable) clogged?	Check if there is a temperature difference before and after check valve. If YES, the check valve is clogged.	No
Check for refrigerant shortage.	Diagnosis by service port pressure and operating current <ul style="list-style-type: none"> <li>Is the unit filled with the specified refrigerant volume?</li> <li>Is there a flushing noise due to refrigerant shortage?</li> </ul>	No
	If the difference between room air and indoor heat exchanger temperature is less than 4K, there is a possibility of refrigerant shortage.  If the difference between compressor discharge temperature and condenser temperature is too much (range 30~50K), there is a possibility of refrigerant shortage.	Yes See details on the left.

## In heating mode

Check item	Detail	Possible to be checked by DCS Residential
Does the outdoor unit fan run normally?	Visual inspection	No
the outdoor unit heat exchanger clogged?	Check if the outdoor unit heat exchanger is clean by visual inspection.	No
	If the difference between outdoor ambient temperature and the outdoor unit heat exchanger temperature is more than 20°C and outdoor fan is working, the outdoor unit heat exchanger is possibly clogged.	Yes See details on the left

Check item	Detail	Possible to be checked by DCS Residential
Is there clogging before or after the expansion valve (capillary)?	<ul style="list-style-type: none"> <li>Check if there is a temperature difference before and after expansion valve (capillary).</li> <li>Check if the main valve unit of expansion valve operates (by noise, vibration).</li> </ul>	No
Is the check valve (if applicable) clogged?	Check if there is a temperature difference before and after check valve. If YES, the check valve is clogged.	No
Is the outdoor unit installed under such conditions that short circuit easily occurs?	Visual inspection	No
Check for refrigerant shortage.	Diagnosis by service port pressure and operating current <ul style="list-style-type: none"> <li>Is the unit filled with the specified refrigerant volume?</li> <li>Is there a flushing noise due to refrigerant shortage?</li> </ul>	No
	If the difference between room air and indoor heat exchanger temperature is less than 4K, there is a possibility of refrigerant shortage.  If the difference between compressor discharge temperature and condenser temperature is too much (range 30~50K), there is a possibility of refrigerant shortage.	Yes See details on the left.

### 3.6.7 Indoor fan starts operating but the compressor does not operate

Check	Detail	Possible to be checked by DCS Residential
Check the power supply.	<ul style="list-style-type: none"> <li>Is the rated voltage (<math>\pm 10\%</math>) supplied?</li> <li>Check the insulation of the electric system.</li> </ul>	No
Check the thermistor.	<ul style="list-style-type: none"> <li>Connection with PCB.</li> <li>Output.</li> </ul>	No
Check PCB's HAP LED's (if applicable).	<ul style="list-style-type: none"> <li>if green led on the control PCB is not blinking, then the microprocessor is not working.</li> <li>if the green led on the main PCB is not blinking, then the microprocessor is not working.</li> <li>if first green LED on the service monitor PCB is not blinking, then the microprocessor is not working.</li> </ul>	No
Check the magnetic switch.		No
Check the power transistor.		No

Check	Detail	Possible to be checked by DCS Residential
Check the compressor.	<ul style="list-style-type: none"> <li>Defective contact.</li> <li>Defective compressor.</li> <li>Defective protection thermostat.</li> </ul>	No
Check the outdoor temperature.	<ul style="list-style-type: none"> <li>Heating operation cannot be used when the outdoor temperature is 18°C WB or higher.</li> <li>Cooling operation cannot be used when the outdoor temperature is below -10°C DB.</li> </ul>	Yes

## 3.6.8 Operation starts and the unit stops immediately

Check	Detail	Possible to be checked by DCS Residential
Check the power supply.	<ul style="list-style-type: none"> <li>Is the capacity of the safety breaker as specified?</li> <li>If the earth leakage breaker is too sensitive, then increase the set value of the earth leakage current of the breaker or replace the breaker.</li> <li>Is the circuit exclusive?</li> <li>Is the rated voltage (<math>\pm 10\%</math>) supplied?</li> <li>Is there an incorrect size of connection wiring?</li> </ul>	No
Check for refrigerant overcharge.	Check both heat exchanger temperatures. If evaporator and condenser temperatures are too high, there might be overcharge.	Yes See details on the left
	Loud squealing might be heard due to the excess pressure in the pipes.	No
Check for impurities in the refrigerant pipes.	Usually happens on the new installations. Not good vacuuming, there are nitrogen, air and other contaminants.	No
Check the fan motor.	<ul style="list-style-type: none"> <li>Check the magnetic switch.</li> <li>Check the overcurrent relay.</li> </ul>	No
Check the four way valve coil.	<ul style="list-style-type: none"> <li>Is there a short circuit?</li> <li>Is the four way valve coil broken?</li> </ul>	No
Check the outdoor PCB.	<ul style="list-style-type: none"> <li>Is there a short circuit?</li> <li>Is the outdoor PCB broken?</li> </ul>	No
Check the refrigerant circuit.	Soiled heat exchanger, obstruction in the refrigerant pipe.	No
Check the airflow.	Soiled air filter, obstruction, installation space.	No

## 3.6.9 Operation stops, unit cannot start for a while

Check	Detail	Possible to be checked by DCS Residential
Check if standby function is activated.	<ul style="list-style-type: none"> <li>Compressor delay timer is counting.</li> <li>Wait for minimum 3 minutes.</li> </ul>	Yes
Check the power supply.	<ul style="list-style-type: none"> <li>Low voltage?</li> <li>Is the size of the power cable sufficient?</li> </ul>	No
Check for refrigerant shortage.	Diagnosis by service port pressure and operating current <ul style="list-style-type: none"> <li>Is the unit filled with the specified refrigerant volume?</li> <li>Is there a flushing noise due to refrigerant shortage?</li> </ul>	No
	If the difference between room air and indoor heat exchanger temperature is less than 4K, there is a possibility of refrigerant shortage.  If the difference between compressor discharge temperature and condenser temperature is too much (range 30~50K), there is a possibility of refrigerant shortage.	Yes See details on the left.
Check compressor.	<ul style="list-style-type: none"> <li>Overcurrent relay.</li> <li>Protection thermostat.</li> </ul>	No

## 3.6.10 Indoor unit discharges white mist

Check	Detail	Possible to be checked by DCS Residential
Check installation conditions.	<ul style="list-style-type: none"> <li>Humid site.</li> <li>Dirty site.</li> <li>Oil mist.</li> </ul>	No
Check installation conditions.	Dirty heat exchanger.	No
Check if the air filter/heat exchanger is clogged.	Check if the air filter/heat exchanger is clean by visual inspection.	No
	If the difference between room air temperature and the indoor heat exchanger temperature is more than 20°C and indoor fan frequency is more than 1000 rpm, the filter/heat exchanger is possibly clogged.	Yes See details on the left.
Check indoor fan motor.	See the chapter of component check in the manual.	No

### 3 | Troubleshooting

#### 3.6.11 Humidifying problem

Check	Detail	Possible to be checked by DCS Residential
Check the installation conditions.	<ul style="list-style-type: none"> <li>Insufficient heat insulation of duct.</li> <li>Ceiling too high for the floor size.</li> <li>Short circuit air flow caused by insufficient installation space.</li> </ul>	No
Check the installation.	<ul style="list-style-type: none"> <li>Is the proper humidification hose, specified by Daikin, used?</li> <li>Breakage or blockage of the humidification hose.</li> <li>Is the length of the humidification hose correct (within specified length)?</li> <li>Is setting correct for the humidification hose length?</li> </ul>	No
Check the outdoor temperature and humidity.	In case of extremely low outdoor temperature or extremely low humidity, the air outlet must be set at the height of 1.8m.	Yes
Check if the set temperature is appropriate.	Thermostat "off" can be activated, set the appropriate temperature.	Yes
Check if the air filter/heat exchanger is clogged.	Check if the air filter/heat exchanger is clean by visual inspection.	No
	If the difference between room air temperature and the indoor heat exchanger temperature is more than 20°C and indoor fan frequency is more than 1000 rpm, the filter/heat exchanger is possibly clogged.	Yes See details on the left.

#### 3.6.12 Swing flap does not operate

Check	Detail	Possible to be checked by DCS Residential
Check swing flap motor	Some functions can force the swing flap into a fixed position, although swing mode is selected on the remote controller. This is not a unit error, but a control function to prevent draft to the customer.	Yes
Check indoor unit PCB	Connector connection	No

## 4 Third party components

### 4.1 Electrical circuit

#### 4.1.1 Checking procedures

##### To check the power supply of the unit

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Check that the power supply cables and earth connection are firmly fixed to the power supply terminal X1M.
- 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 of the unit.
- 4 Measure the voltage between L and N on the power supply terminal X1M.

**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 <a href="#">"4.1.2 Repair procedures"</a> [▶ 52].

##### To check the power supply to the indoor unit

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

- 1 Remove the required plate work, see Plate work.
- 2 Check that the power supply cables and earth connection are firmly fixed to the indoor unit power supply terminal X1M.
- 3 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.
- 4 Turn ON the power using the respective circuit breaker.
- 5 Measure the voltage between L and N on the indoor unit power supply terminal X1M.

**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	Continue with the next step.

**6** Check the power supply to the unit, see ["4.1.1 Checking procedures"](#) [▶ 51].

Does the unit receive power?	Action
Yes	Correct the wiring from the main power supply terminal to the indoor unit power supply terminal, see <a href="#">"4.1.2 Repair procedures"</a> [▶ 52].
No	Adjust the power supply to the unit, see <a href="#">"4.1.2 Repair procedures"</a> [▶ 52].

#### 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 <a href="#">"4.1.2 Repair procedures"</a> [▶ 52].

#### 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 ["6.2 Wiring diagram"](#) [▶ 70].



#### 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.

### 4.1.2 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 correct the wiring from the main power supply terminal to the indoor unit power supply terminal

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Make sure that all wires are firmly and correctly connected, see "6.2 Wiring diagram" [► 70].
- 2 Check the continuity of all wires.
- 3 Replace any damaged or broken wires.



#### INFORMATION

If applicable, also check the electrical components between the main power supply terminal and the indoor unit power supply terminal (e.g. intermediate terminal, noise filter, fuse, ...).

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 Refrigerant circuit

### 4.2.1 Checking procedures



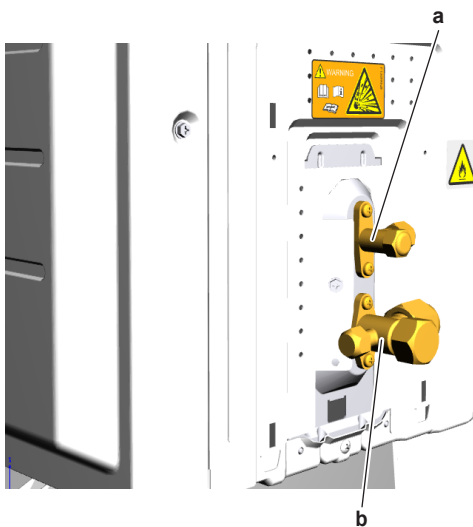
#### INFORMATION

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

### To check if the stop valves are open

**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Remove the caps.



- a** Liquid stop valve  
**b** Gas stop valve

- 2 Check if the stop valves are completely open.

The refrigerant circuit stop valves are open?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Open the stop valves of the refrigerant circuit, see <a href="#">"4.2.2 Repair procedures"</a> [▶ 58].

### To check if the refrigerant circuit is clogged

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

- 1 Wait for the refrigerant to reach the outdoor temperature.
- 2 Check that all field piping is done according to the refrigeration practice and installation manual:
  - Correct piping diameters
  - Piping distance limits are followed
  - NO pipes are squeezed
  - NO short radius bends
- 3 Connect a manometer to the service port.
- 4 Turn ON the power of the unit.
- 5 Activate **Heating** operation via the user interface.
- 6 Read the pressure on the pressure gauge. If, at the start of the unit operation, the pressure is high or very low, the refrigerant circuit might be clogged.
- 7 On the refrigerant liquid piping (between the indoor unit heat exchanger and the outdoor unit heat exchanger (coil)), using a contact thermometer, measure the temperature before and after every restricting device. If a big temperature difference is measured ( $>2.5\sim 4K$ ), an internal pipe obstruction may be present at this location.



#### INFORMATION

Focus on positions with a potential risk for clogging such as:

- Filters
- Valves
- Brazing points
- ...



#### INFORMATION

A bigger temperature drop before and after the expansion valve can be normal, however excessive ice is indicating a malfunction of the expansion valve or internal obstruction of the valve (dirt or ice build up in case of humidity in the system).

Temperature drop found?	Action
Yes	Replace the clogged part, see <a href="#">"4.2.2 Repair procedures"</a> [▶ 58].

Temperature drop found?	Action
No	Return to the troubleshooting of the specific error and continue with the next procedure.

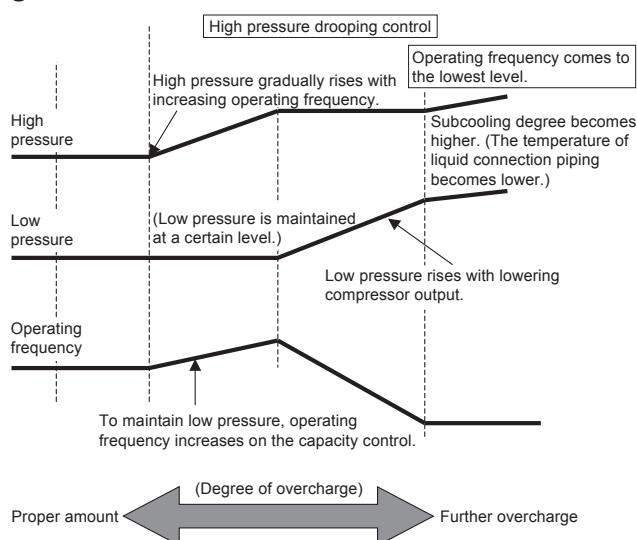
### To check if the refrigerant circuit is correctly charged

Due to the relationship to pressure control and electronic expansion valve control, the amount of refrigerant needs to be examined according to operating conditions. Refer to the procedures shown below for correct examination.

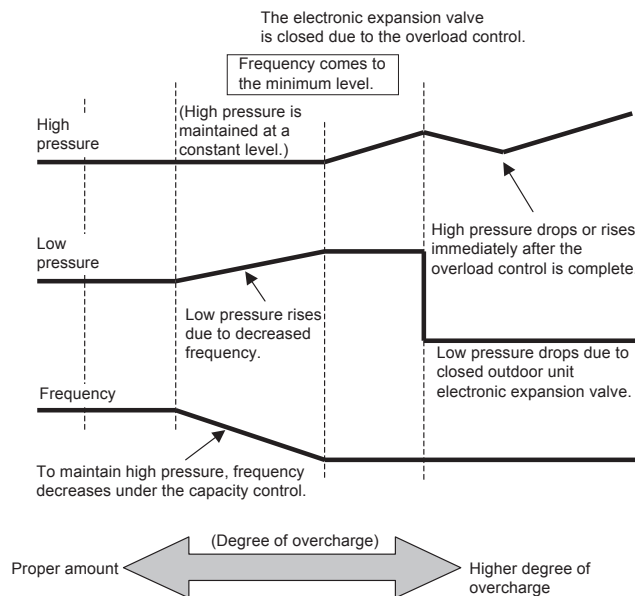
### Refrigerant overcharge diagnosis

- 1 High pressure rises. Consequently, overload control is conducted to cause insufficient cooling capacity.
- 2 The superheated degree of suction gas lowers (or the wet operation is performed). Consequently, the compressor consumes more power and is noisy (before over-current relay trips).
- 3 The subcooling degree of refrigerant in liquid form rises (values  $>4\sim 5\text{K}$  are NOT normal).

### Cooling



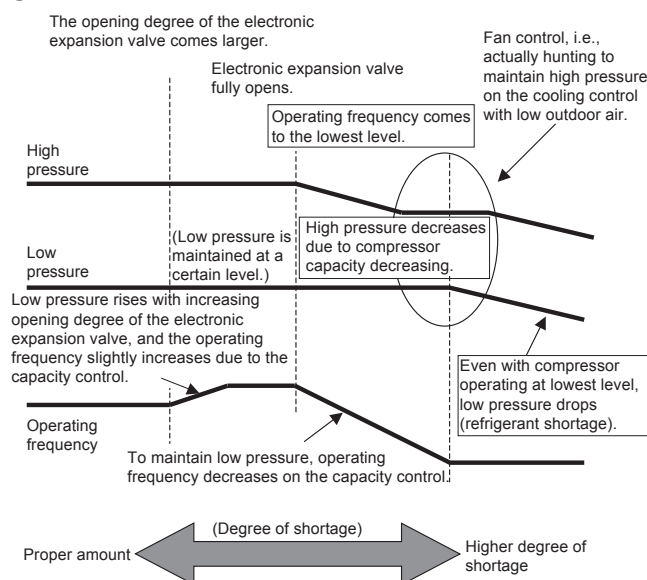
## Heating



## Refrigerant shortage diagnosis

- 1 The superheated degree of suction gas rises. Consequently, the compressor discharge gas temperature becomes higher than normal.
- 2 The superheated degree of suction gas rises. Consequently, the electronic expansion valve turns open more than normal or completely open for average output.
- 3 Low pressure drops to cause the unit not to reach cooling capacity (or heating capacity).

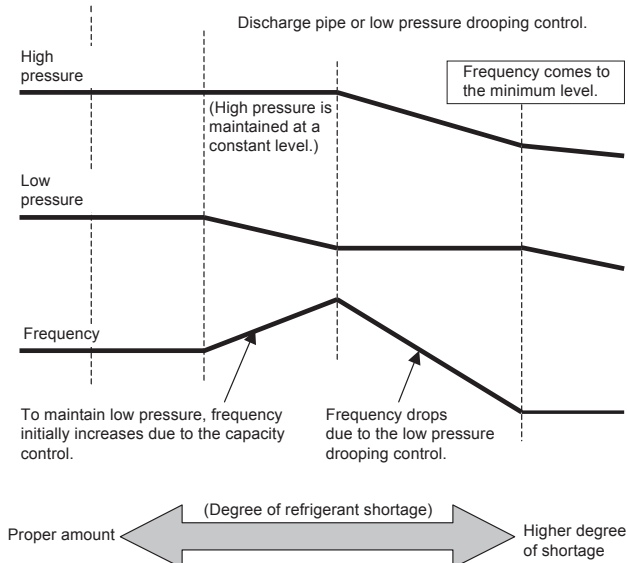
## Cooling



## Heating

The opening degree of the electronic expansion valve becomes larger.

The electronic expansion valve fully opens and frequency increases.



Is the refrigerant circuit charged correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Add or recuperate refrigerant until correctly charged, see <a href="#">"4.2.2 Repair procedures"</a> [▶ 58].

## To check for non-condensables in the refrigerant circuit

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

- 1 Wait for the refrigerant to reach the outdoor temperature.
- 2 Connect a manometer to the service port.
- 3 Measure the pressure of the refrigerant. The measured pressure converted into saturated temperature MUST be in line with the expected pressure / saturated temperature at current ambient temperature.
- 4 If the measured pressure is significantly higher (>5K), non-condensables gasses are most likely present in the refrigerant.

Any non-condensables found in the refrigerant circuit?	Action
Yes	To replace the refrigerant, see <a href="#">"4.2.2 Repair procedures"</a> [▶ 58].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

## To perform a pressure test of the refrigerant circuit

- 1 Perform a pressure test in line with local legislation.

Is the pressure in the refrigerant circuit correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the leaking part of the refrigerant circuit, see <a href="#">"4.2.2 Repair procedures"</a> [▶ 58].

#### To check if the refrigerant field piping is compliant with the regulations

- 1 Check if the refrigerant field piping is compliant with the regulations. Adjust as needed. See installation manual for field piping specifications.

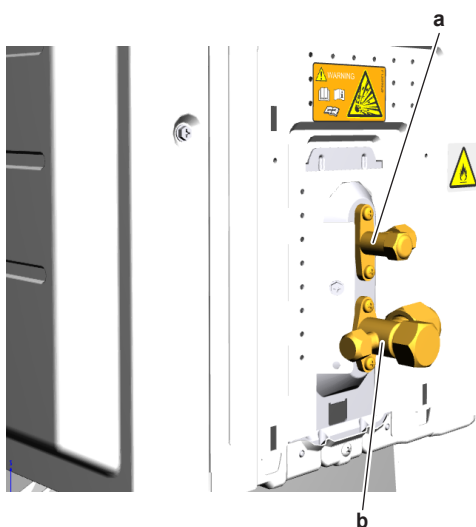
Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

### 4.2.2 Repair procedures

#### To open the stop valves of the refrigerant circuit

**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Remove the caps.



- a** Liquid stop valve  
**b** Gas stop valve

- 2 Completely open the stop valves by screwing the stop valve screw counterclockwise.

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 replace the clogged/leaking part of the refrigerant circuit**

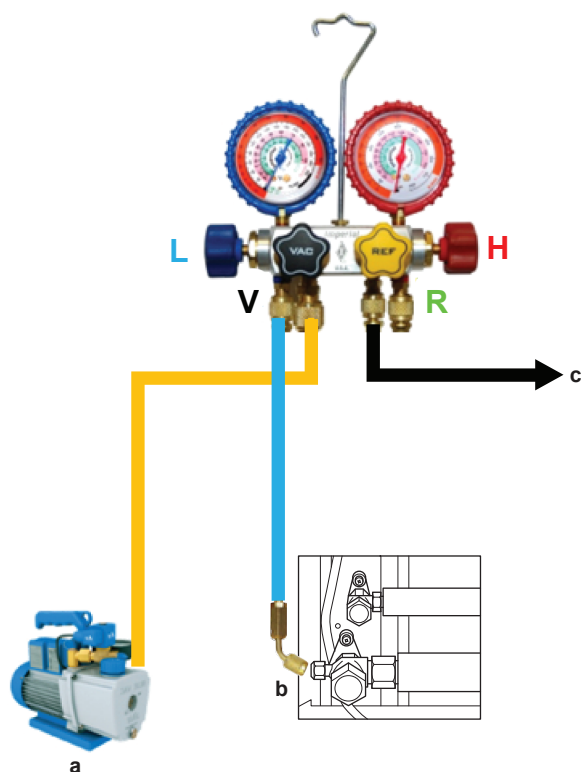
- 1 See the correct procedure for the component that needs to be repaired. See also ["Repair information"](#) [▶ 60] for more details.

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 recuperate the refrigerant**

**Prerequisite:** Stop the unit operation via the user interface.

- 1 Manually open all expansion valves.
- 2 Connect the vacuum pump, manifold, recovery unit, and refrigerant bottle to the service port of the refrigerant circuit as shown below.



- a** Vacuum pump
- b** Connect flexible hose to service port
- c** To recovery pump
- L** Low pressure
- H** High pressure
- V** Vacuum
- R** Refrigerant

- 3 To add refrigerant, see ["4.2.2 Repair procedures"](#) [▶ 58].

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 add refrigerant**

- 1 See the installer reference guide for the correct procedure.

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

**Repair information****Refrigerant piping handling**

- Make sure that the applied pressure is never higher than the unit design pressure indicated on the nameplate (PS).
- Work according to the F-gas regulation and/or local regulations.
- Make sure the correct amount of refrigerant is charged after repair according to the F-gas regulation label on the unit (factory + additional where required).
- Make sure to use the appropriate equipment and tools according to the refrigerant and unit type.
- R32 can be charged in gas phase.
- Make sure to use a digital scale (no charging cylinder).
- Execute correct vacuum drying procedure after repair:
  - When using an electronic vacuum gauge with an absolute pressure readout, a pressure of minimal 2000 micron / 2 Torr / 266 Pa MUST be reached. This pressure should stay stable for 30 minutes when vacuum pump is NOT running. If vacuum pressure CANNOT be held, most likely there is still moisture in the system. Again run the vacuum pump for 1~2 hours to a pressure (absolute pressure readout) lower than 2000 micron / 2 torr / 266 Pa. If target pressure CANNOT be reached, again check for leaks.
  - Connect the unit according to the available service ports.
  - Use related field setting where necessary to open expansion valve / solenoid valve.

**To perform refrigerant pump down operation**

The unit is equipped with an automatic pump down operation which will collect all refrigerant from the field piping and indoor unit in the outdoor unit. To protect the environment, make sure to perform the following pump down operation when relocating the unit.

**DANGER: RISK OF EXPLOSION**

**Pump down – Refrigerant leakage.** If you want to pump down the system, and there is a leak in the refrigerant circuit:

- Do NOT use the unit's automatic pump down function, with which you can collect all refrigerant from the system into the outdoor unit. **Possible consequence:** Self-combustion and explosion of the compressor because of air going into the operating compressor.
- Use a separate recovery system so that the unit's compressor does NOT have to operate.



**CAUTION**

Some outdoor units are equipped with a low pressure switch to protect the compressor by switching it off. NEVER short-circuit the low pressure switch during pump down operation.

- 1 Remove the refrigerant connection cover, see Plate work.
- 2 Remove the cap from the stop valves.
- 3 Perform pump down operation, see installer reference guide for the correct procedure.
- 4 After 5~10 minutes (after only 1~2 minutes in case temperature  $<-10^{\circ}\text{C}$ ), close the liquid stop valve using a hexagonal wrench.
- 5 Check the manifold if vacuum is reached. Close the gas stop valve and stop forced cooling operation.

**Refrigerant piping repair**

- Make sure to cover open pipe ends during repair so no dust or moisture can enter.
- Make sure to re-apply insulation removed during repair.
- Pipe expansion / flare making:
  - Remove any burrs on the cut surface using the correct tool such as reamer or scraper (note that excessive deburring can thin the pipe walls and cause cracking of the pipe).
  - Make sure the flare has the correct size (use a flare gauge).
  - Make sure no particles remain in the piping.
  - Apply just a drop of refrigerant oil on the inner surface of the flare.
  - Make sure the flare connection is tightened with the correct torque (torque values refer to installation manual).
- Brazing:
  - Use the correct brazing tool.
  - Use a phosphor copper filler metal (silver composition of 0 to 2%). Do not use flux material.
  - Flush the piping before brazing with nitrogen to avoid oxidation of the inside of the copper tubes (nitrogen purity  $\geq 99.99\%$ ).

**Refrigerant circuit vacuuming - general advice**

The effectiveness of the vacuum drying depends on many factors. Besides following the correct procedures and using equipment that is well maintained, the ambient conditions at which the vacuum is done MUST be considered. If there is moisture in the refrigerant and the ambient temperature is lower, the vacuum pressure that MUST be reached to allow the evaporation of the moisture will need to be lower. In some cases the vacuum pump may NOT be able to achieve these pressures. If possible, heat the locations where moisture is expected.

As a general target, the values below CAN be used as reference to achieve a proper vacuum on the unit:

- Absolute pressure below 270 Pa MUST be reached. The time needed for the pressure to lower is also depending on the moisture amount. If it takes very long or it is hard to reach the pressure, this MIGHT be an indication of moisture presence, so the vacuum pump will need to run longer.

- After stopping the vacuum pump, the absolute pressure **MUST** be kept below 270 Pa for at least 30 minutes, without a significant increase of pressure. If pressure increases significantly, this is an indication of the presence of moisture in the system.
- If multiple vacuum cycles need to be performed, break the vacuum between the cycles using dry nitrogen.

Depending on the site conditions, as mentioned above, lower pressure values **MIGHT** be needed to allow the boiling of the moisture in the system. The table below shows the boiling point of water for different absolute pressures.

Pressure (absolute)		Boiling point
Micron / Torr	Mbar / Pa	°C
760000 / 760	1013 / 101325	100
50000 / 50	66 / 6666	38
10000 / 10	13 / 1333	11
2000 / 2	2.6 / 266	-10
1000 / 1	1.33 / 133	-18
500 / 0.5	0.66 / 66	-24

## 4.3 External factors

### 4.3.1 Checking procedures

#### To check the outdoor temperature

- 1 The temperature ranges for the different operation modes of the unit can be found in the databook on Business Portal.



#### INFORMATION

If the outdoor temperature is outside the range of operation, the unit may NOT operate or may NOT deliver the required capacity.

Is the outdoor temperature within the operating range?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Wait for the outdoor temperature to return within the operating range.

#### 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 the required space around the outdoor unit heat exchanger**

- 1 Check if the space around the outdoor unit heat exchanger is sufficient. See the installation manual for the required space specifications. Adjust 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 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.

### 5.1 To clean the outdoor unit heat exchanger

- 1 Straighten the hair fins.
- 2 Clear the outdoor unit heat exchanger from dust, leaves,... using a fin-comb or compressed air/N<sub>2</sub>.



### CAUTION

Avoid bending or damaging the hair fins of the outdoor unit heat exchanger during the cleaning process.

Do NOT use a high-pressure washer.

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 To clean the indoor unit heat exchanger

- 1 Straighten the hair fins.
- 2 Clear the indoor unit heat exchanger from dust, ... using a fin-comb or compressed air/N<sub>2</sub>.



### CAUTION

Avoid bending or damaging the hair fins of the indoor unit heat exchanger during the cleaning process.

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.

### 5.3 To clean the indoor unit heat exchanger in extreme condition

When cleaning the indoor unit heat exchanger (contaminated by cooking oil, ...), 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, ...).

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 To clean the indoor unit and wireless remote control



#### WARNING

Improper detergents or cleaning procedure may cause damage on plastic components or water leakage. Splashed detergent on electric components, such as motors, may cause failure, smoke or ignition.



#### DANGER: RISK OF ELECTROCUTION

Before cleaning, be sure to stop the operation, turn the breaker OFF or pull out the supply cord. Otherwise, an electrical shock and injury may result.

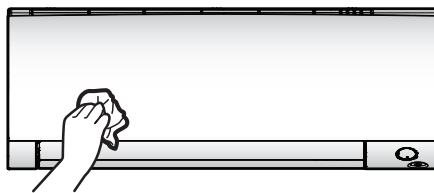


#### NOTICE

- Do NOT use gasoline, benzene, thinner, polishing powder or liquid insecticide. **Possible consequence:** Discoloration and deformation.
- Do NOT use water or air of 40°C or higher. **Possible consequence:** Discoloration and deformation.
- Do NOT use polishing compounds.
- Do NOT use a scrubbing brush. **Possible consequence:** The surface finishing peels off.
- As an end user, you may NEVER clean inside parts of the unit by yourself; this work must be performed by a qualified service person. Contact your dealer.

- 1 Clean with a soft cloth. If it is difficult to remove stains, use water or a neutral detergent.

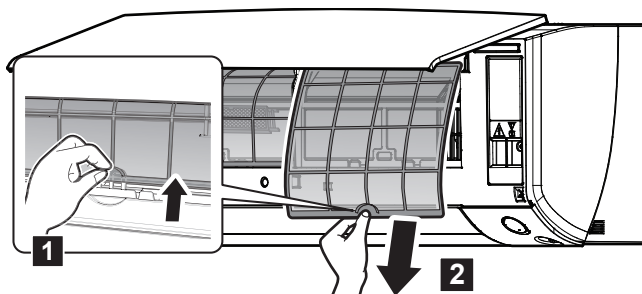
## 5.5 To clean the front panel



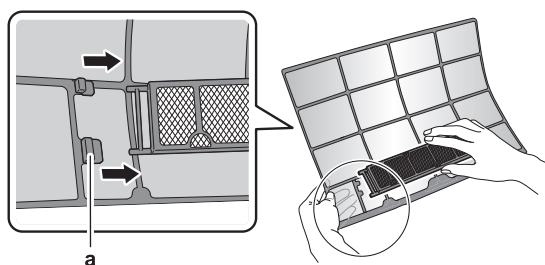
- 1 Clean the front panel with a soft cloth. If it is difficult to remove stains, use water or a neutral detergent.

## 5.6 To clean the air filters

- 1 Push the tab at the centre of each air filter, then pull it down.
- 2 Pull out the air filters.

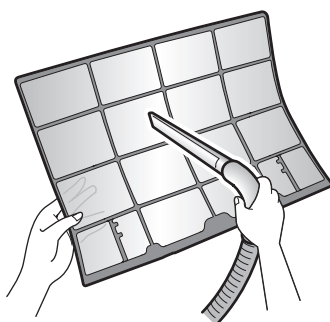


- 3 Remove the titanium apatite deodorising filter and the silver particle filter from all 4 claws.

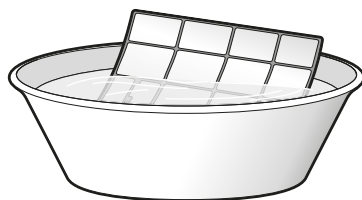


a Claw

- 4 Wash the air filters with water or clean them with a vacuum cleaner.



- 5 Soak in lukewarm water for about 10 to 15 minutes.

**INFORMATION**

- If the dust does NOT come off easily, wash them with a neutral detergent diluted in lukewarm water. Dry the air filters in the shade.
- It is recommended to clean the air filters every 2 weeks.

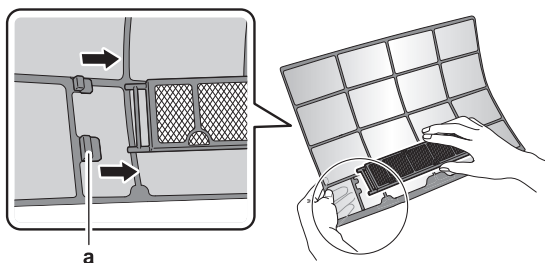
Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

## 5.7 To clean the titanium apatite deodorising filter and the silver particle filter (Ag-ion filter)

**INFORMATION**

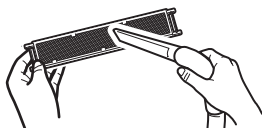
Clean the filter with water every 6 months.

- 1 Remove the titanium apatite deodorising filter and the silver allergen removal air purifying filter from all 4 claws.



**a** Tab

- 2 Remove the dust from the filter with a vacuum cleaner.



- 3 Soak the filter for 10 to 15 minutes in warm water.

**Note:** Do NOT remove the filter from the frame.



- 4 After washing, shake off remaining water and dry the filter in the shade. Do NOT wring out the filter when removing water.

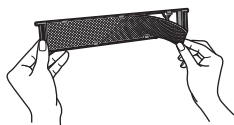
## 5.8 To replace the titanium apatite deodorising filter and the silver particle filter (Ag-ion filter)



### INFORMATION

Replace the filter every 3 years.

- 1 Remove the filter from the tabs of the filter frame and replace the filter with a new one.



### INFORMATION

- Do NOT throw away the filter frame, but use it again.
- Dispose of the old filter as non-flammable waste.

To order titanium apatite deodorising filter or silver particle filters, contact your dealer.

Item	Part number
Titanium deodorising filter	KAF970A46
Silver particle filter	KAF057A41



## 6 Technical data

### 6.1 Detailed information setting mode

#### 6.1.1 Detailed information setting mode: Indoor unit

See the installer reference guide on business portal for more information.

#### 6.1.2 Detailed information setting mode: Outdoor unit

See the installer reference guide on business portal for more information.

#### 6.1.3 Detailed information setting mode: Remote controller







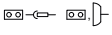












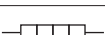
See the installer reference guide on business portal for more information.

## 6.2 Wiring diagram

### 6.2.1 Wiring diagram: Indoor unit

#### Unified wiring diagram 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		Heater

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
SKY BLU	Sky blue	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

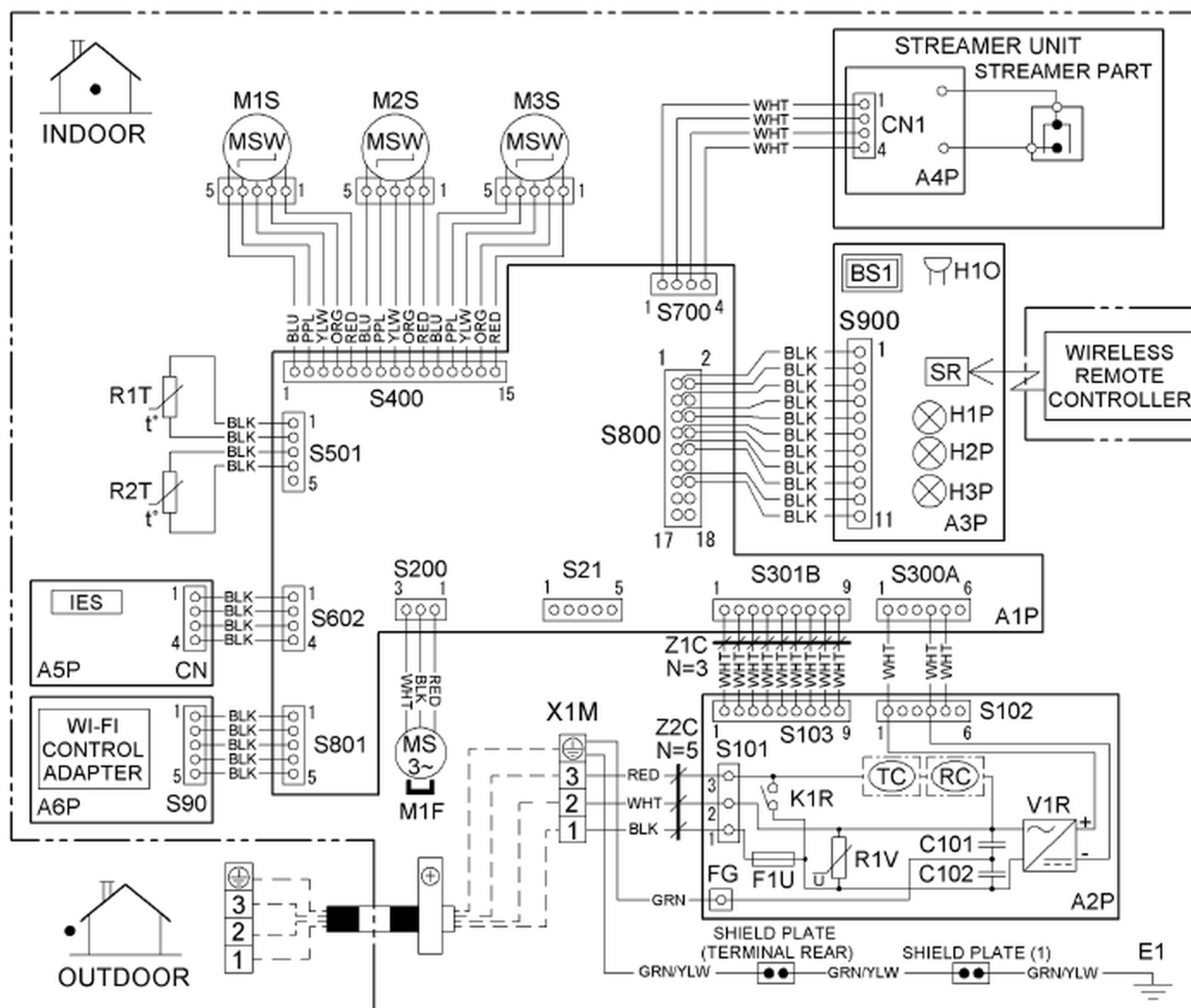
Symbol	Meaning
S*L	Float switch
S*NG	Refrigerant leak detector
S*NPH	Pressure sensor (high)
S*NPL	Pressure sensor (low)
S*PH, HPS*	Pressure switch (high)
S*PL	Pressure switch (low)
S*T	Thermostat
S*RH	Humidity sensor
S*W, SW*	Operation switch
SA*, F1S	Surge arrester
SR*, WLU	Signal receiver
SS*	Selector 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

## 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.



## 6.2.2 Wiring diagram: Outdoor unit

## Unified wiring diagram 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		Heater

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
SKY BLU	Sky blue	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
E*H	Heater

Symbol	Meaning
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
S*L	Float switch

Symbol	Meaning
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

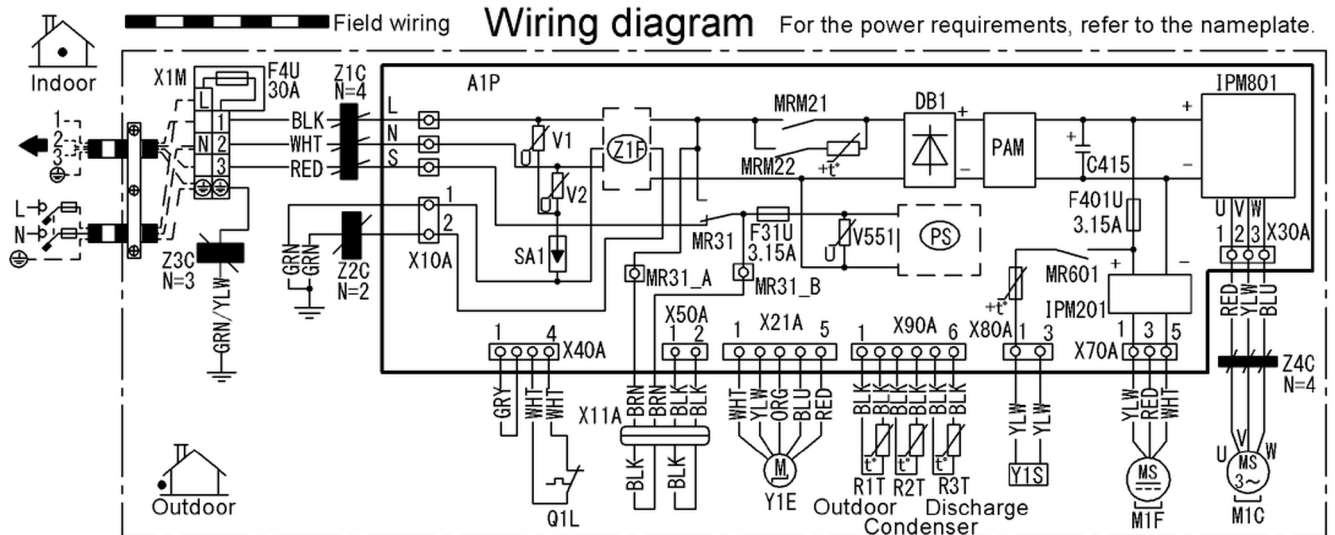


## ARXM25+35A + RXM20~35A



## 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.



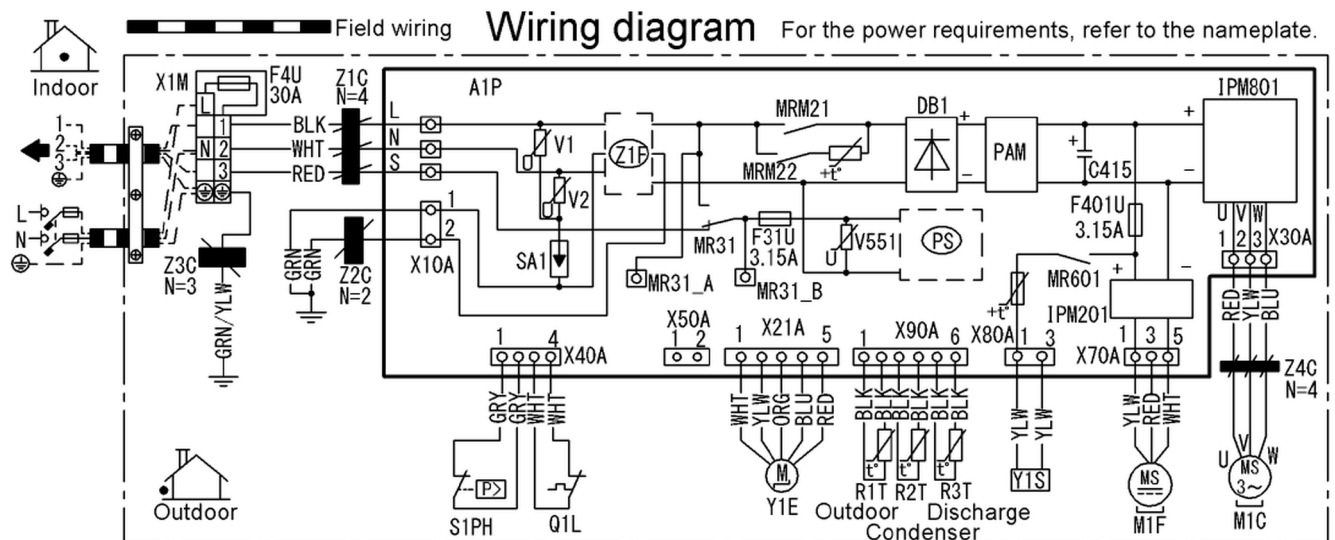
4D147369-1

## RXM42A



## 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.



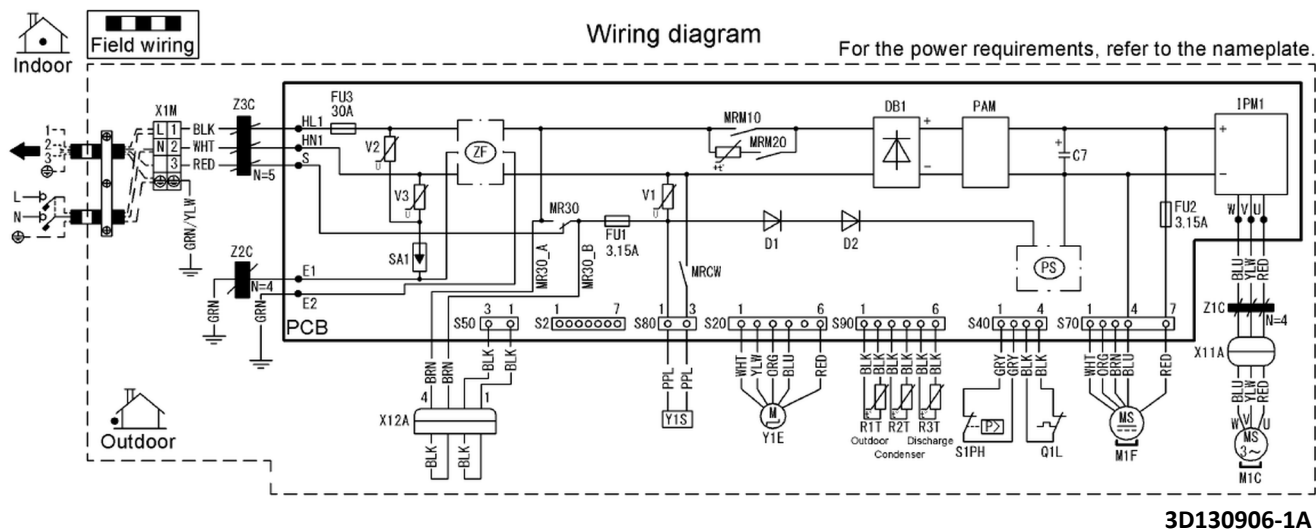
4D147370-1B

## ARXM50A + RXM50A



## 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.



## 6.3 Piping diagram

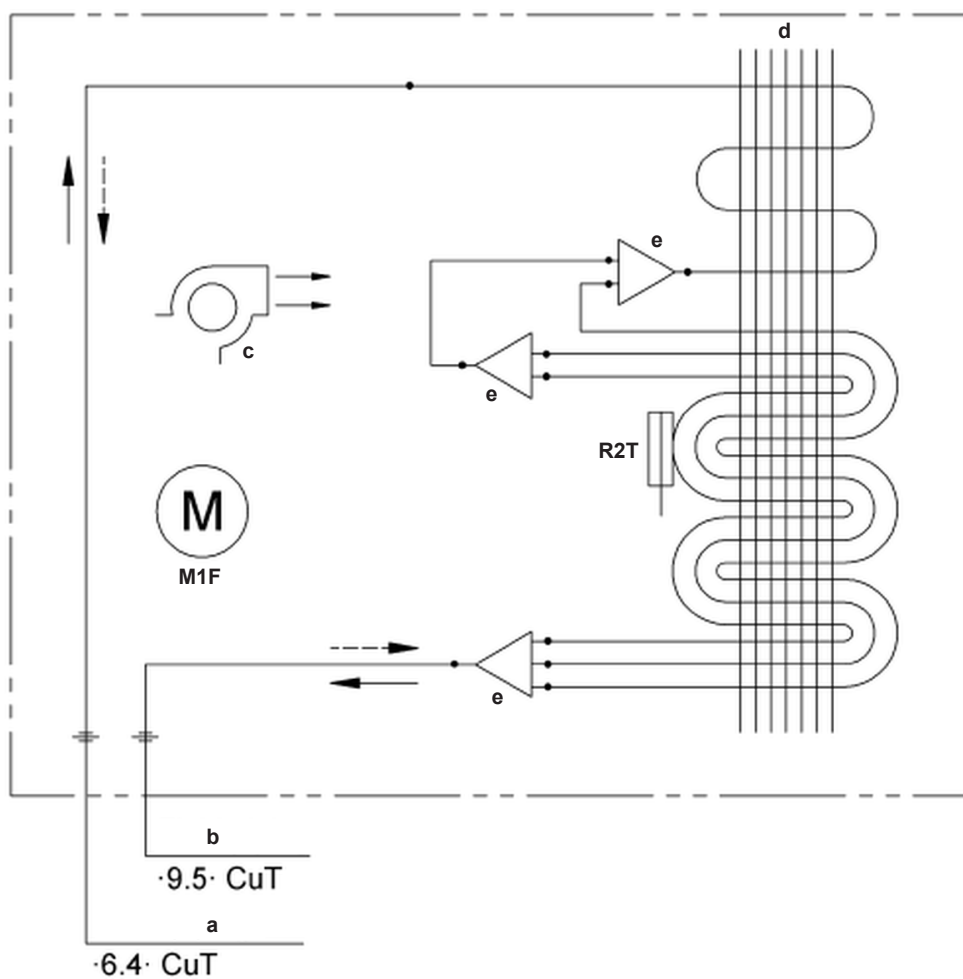
### 6.3.1 Piping diagram: Indoor unit

#### CTXM15A + ATXM20+25A + FTXM20+25A



#### 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.



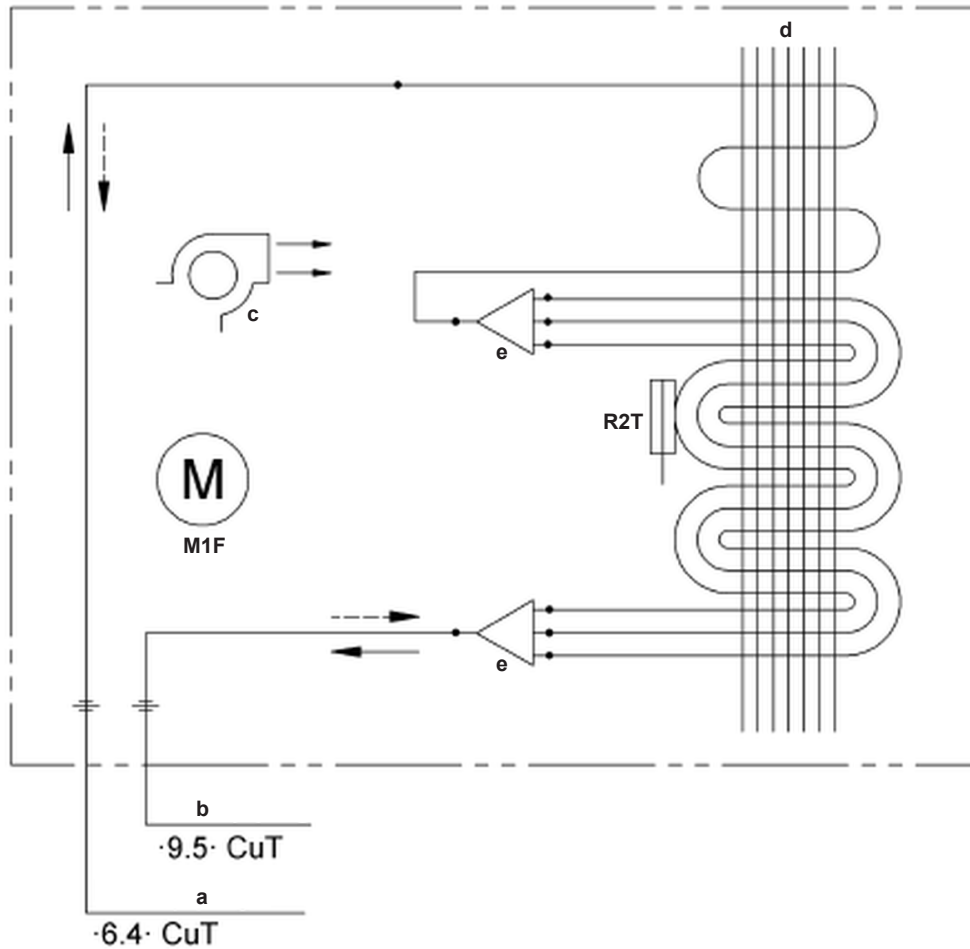
- a** Field piping (liquid: Ø6.4 mm flare connection)
- b** Field piping (gas: Ø9.5 mm flare connection)
- c** Crossflow fan
- d** Heat exchanger
- e** Distributor
- M1F** Fan motor
- R2T** Thermistor (heat exchanger)
- > Heating
- > Cooling

## ATXM35A + FTXM35A



## 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.



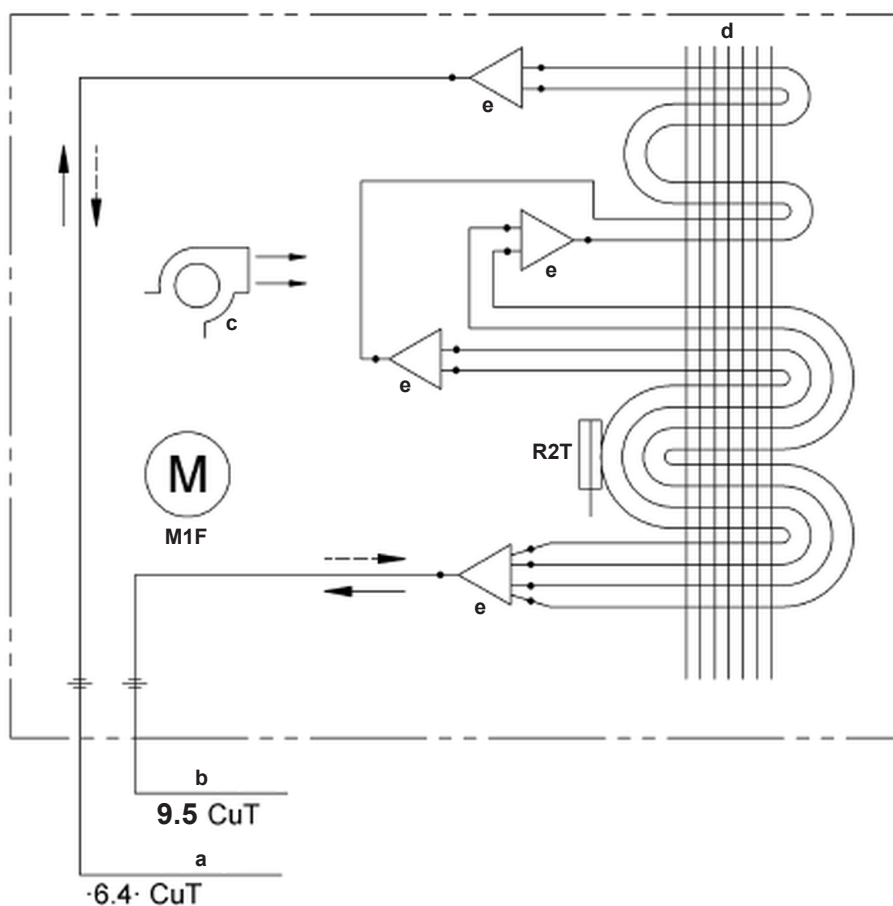
- a** Field piping (liquid: Ø6.4 mm flare connection)
- b** Field piping (gas: Ø9.5 mm flare connection)
- c** Crossflow fan
- d** Heat exchanger
- e** Distributor
- M1F** Fan motor
- R2T** Thermistor (heat exchanger)
- > Heating
- > Cooling

## FTXM42A



## 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.



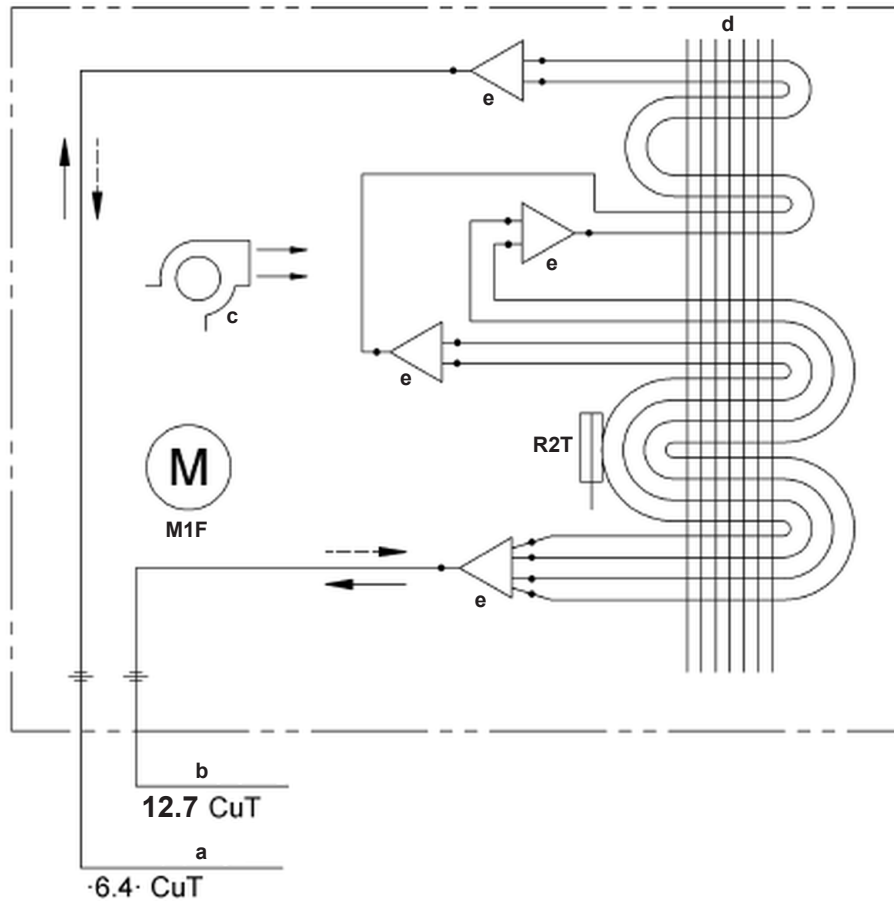
- a** Field piping (liquid: Ø6.4 mm flare connection)
- b** Field piping (gas: Ø9.5 mm flare connection)
- c** Crossflow fan
- d** Heat exchanger
- e** Distributor
- M1F** Fan motor
- R2T** Thermistor (heat exchanger)
- > Heating
- > Cooling

## ATXM50A + FTXM50A



## 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 Field piping (liquid: Ø6.4 mm flare connection)
- b Field piping (gas: Ø12.7 mm flare connection)
- c Crossflow fan
- d Heat exchanger
- e Distributor
- M1F Fan motor
- R2T Thermistor (heat exchanger)
- Heating
- Cooling

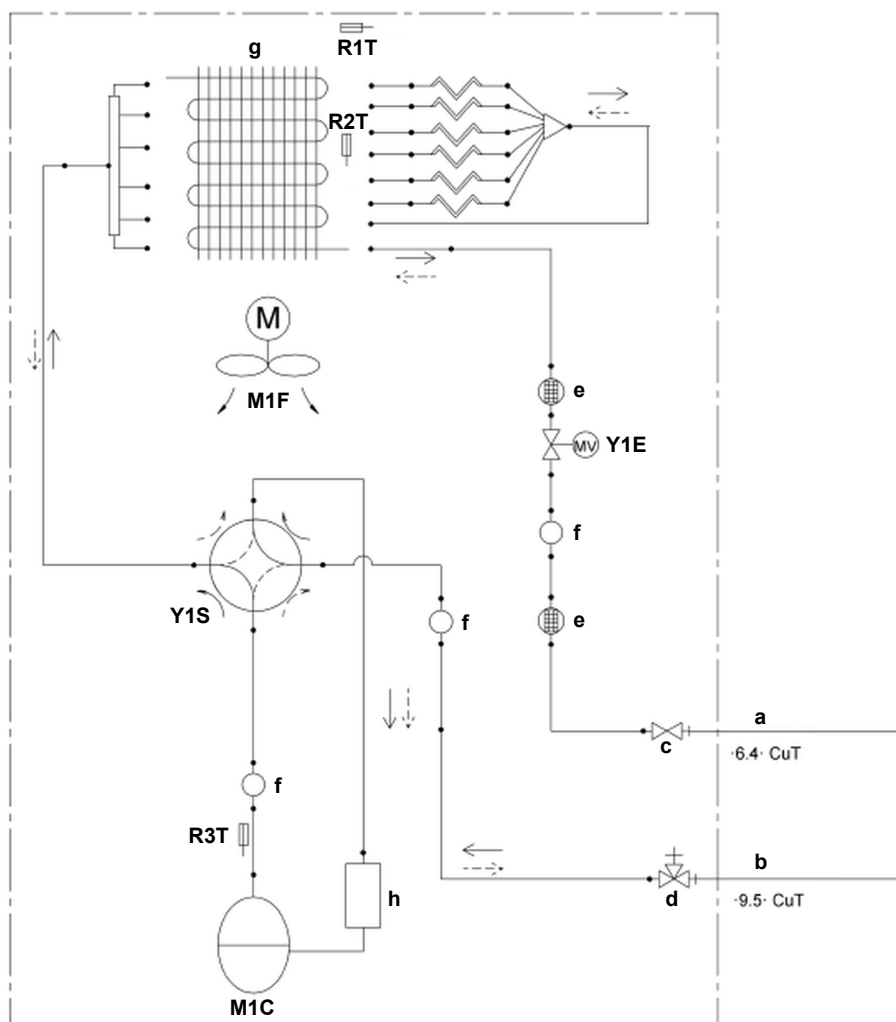
## 6.3.2 Piping diagram: Outdoor unit

## ARXM25+35A + RXM20~35A



## 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** Field piping (liquid: Ø6.4 mm flare connection)
- b** Field piping (gas: Ø9.5 mm flare connection)
- c** Liquid stop valve
- d** Gas stop valve
- e** Muffler with filter
- f** Muffler
- g** Heat exchanger
- h** Accumulator

**M1C** Compressor

**M1F** Fan

**R1T** Thermistor (outdoor air)

**R2T** Thermistor (heat exchanger)

**R3T** Thermistor (discharge pipe)

**Y1E** Electronic expansion valve

**Y1S** 4-way valve (ON: heating)

→ Refrigerant flow: cooling

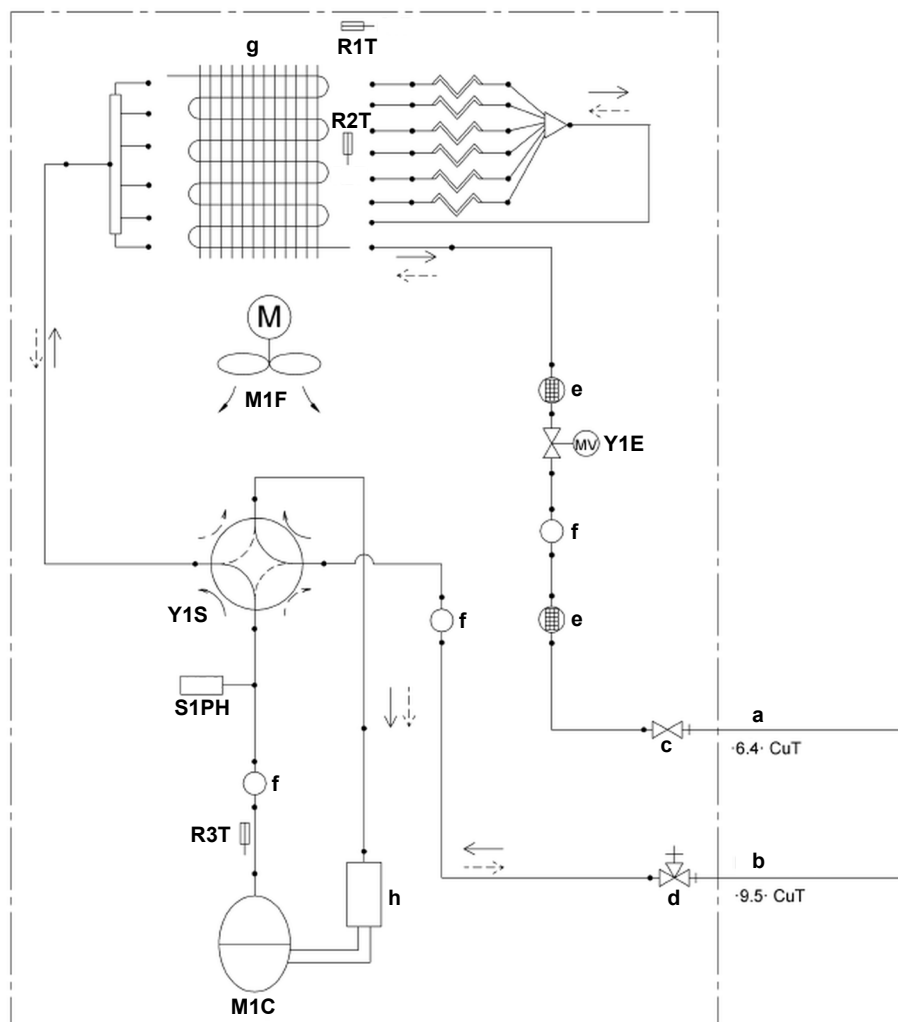
---→ Refrigerant flow: heating

## RXM42A



## 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 Field piping (liquid: Ø6.4 mm flare connection)
- b Field piping (gas: Ø9.5 mm flare connection)
- c Liquid stop valve
- d Gas stop valve
- e Muffler with filter
- f Muffler
- g Heat exchanger
- h Accumulator

**M1C** Compressor

**M1F** Fan

- R1T** Thermistor (outdoor air)
- R2T** Thermistor (heat exchanger)
- R3T** Thermistor (discharge pipe)
- S1PH** High pressure switch
- Y1E** Electronic expansion valve
- Y1S** 4-way valve (ON: heating)
- Refrigerant flow: cooling
- Refrigerant flow: heating

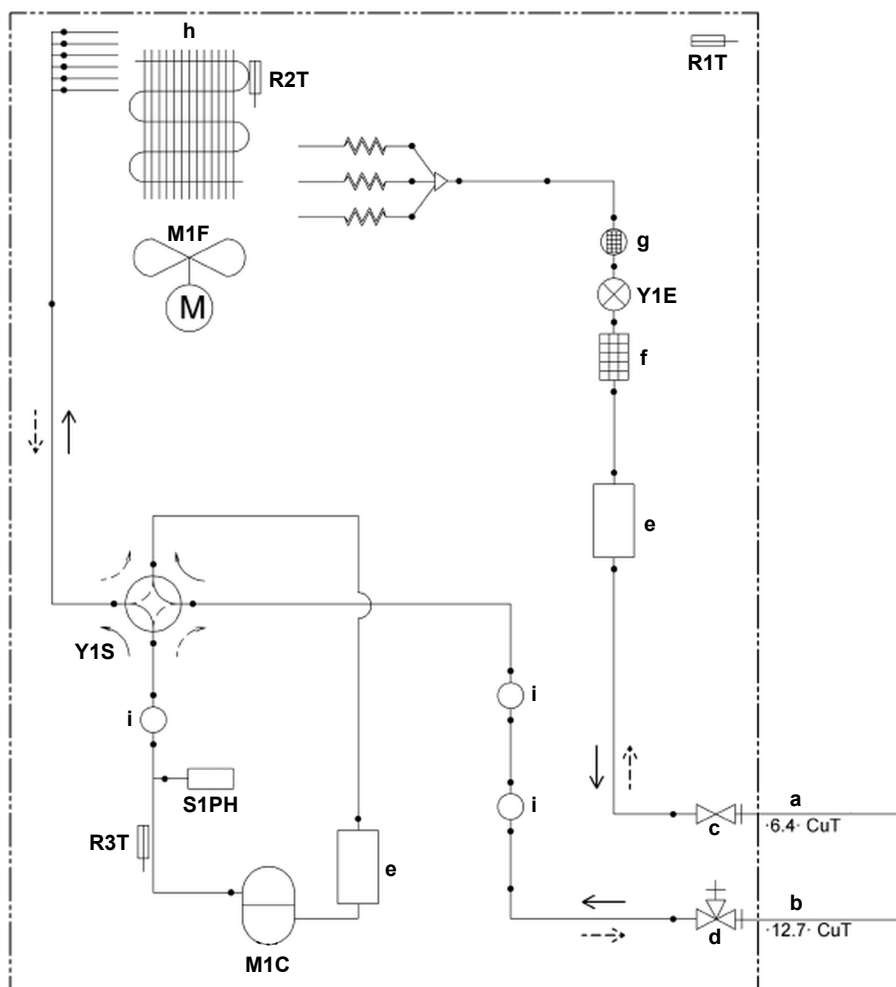


## ARXM50A + RXM50A



## 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** Field piping (liquid: Ø6.4 mm flare connection)
- b** Field piping (gas: Ø12.7 mm flare connection)
- c** Liquid stop valve
- d** Gas stop valve
- e** Accumulator
- f** Filter
- g** Muffler with filter
- h** Heat exchanger
- i** Muffler

- M1C** Compressor
- M1F** Fan
- R1T** Thermistor (outdoor air)
- R2T** Thermistor (heat exchanger)
- R3T** Thermistor (discharge pipe)
- S1PH** High pressure switch
- Y1E** Electronic expansion valve
- Y1S** 4-way valve (ON: heating)
- Refrigerant flow: cooling
- Refrigerant flow: heating

## 6.4 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.

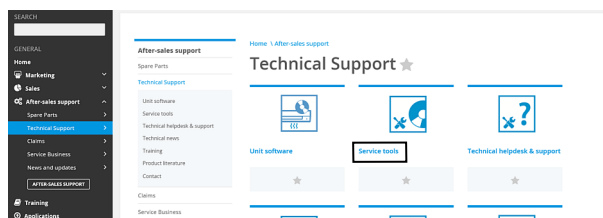
FIELD INFORMATION REPORT	
<b>Key person information</b>	
Name:	Company name:
Your contact details	
Phone number:	E-mail address:
Site address:	
Your reference:	Date of visit:
<b>Claim information</b>	
Title:	
Problem description:	
Error code:	Trouble date:
Problem frequency:	
Investigation steps done:	
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:
Heat emitters (radiators / under floor heating / fan coils /...):
Hydraulic layout (simple schematic):

Unit / Installation information	
Model name:	Serial number:
Installation / commissioning date:	Software version hydro PCB A1P
	Software version hydro PCB A5P
Software version user interface:	Software version outdoor PCB:
Minimum water volume:	Maximum water volume:
Brine composition and mixture:	
Brine freeze up temperature:	
Space heating control (leaving water temperature, room thermostat, external room thermostat):	
Space heating setpoint:	
Domestic hot water control (reheat only, schedule only, reheat + schedule):	
Domestic hot water setpoint:	
Provide pictures of the field settings overview (viewable on the user interface).	

## 6.5 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.










## 6.6 Field settings

### 6.6.1 Field settings: Indoor unit

#### To retrieve and set the field settings

##### Via the wireless remote controller

**Prerequisite:** Stop operation of the unit.

- 1 Press , , and  simultaneously.
- 2 Press .
- 3 Select SU.
- 4 Press  to confirm.
- 5 Press  to select the desired mode.
- 6 Press  to confirm.
- 7 Press  to select the desired setting.
- 8 Press  to confirm the setting.

### Overview of field settings for indoor units

The overview lists all possible settings for the indoor units. **Bold content is default setting.**

Mode	Description function	Setting	Description selection	DCS residential
3	Suspend (Reduce the standby power consumption)	0	OFF	Read/Write Setting in DCS: <b>0: ON</b> 1: OFF
		<b>1</b>	<b>ON</b>	
4	Keep dry (Fan speed OFF during cooling thermo OFF)	0	OFF	Read/Write, ALSO on ONECTA app
		<b>1</b>	<b>ON</b>	
5	Preheating (pre-heating of compressor by motor)	0	OFF	Read/Write
		<b>1</b>	<b>ON<sup>(a)</sup></b>	
6	Cooling room temperature correction	0	Low 2 = -2°C	Read/Write
		1	Low 1 = -1°C	
		<b>2</b>	<b>Standard = 0°C</b>	
		3	High 1 = +1°C	
		4	High 2 = +2°C	
7	Heating room temperature correction	0	Low 2 = -2°C	Read/Write
		1	Low 1 = -1°C	
		<b>2</b>	<b>Standard = 0°C</b>	
		3	High 1 = +1°C	
		4	High 2 = +2°C	
10	Auto restart after power resume (after shutdown)	0	OFF	Read/Write
		<b>1</b>	<b>ON</b>	
1E	Room temperature sensor selection	<b>0</b>	<b>Unit</b>	Read/Write
		1	N/A	
		2	N/A	
21	Cooling or Heating mode lock	<b>0</b>	<b>OFF (heating &amp; cooling)</b>	Read
		1	Cooling only	
		2	Heating only	

<sup>(a)</sup> Default visible value on remote controller field setting menu for Preheating (pre-heating of compressor by motor) function is 0 (OFF). However unit has Preheating (pre-heating of compressor by motor) function = 1 (ON) by default.

## 6.6.2 Field settings: Outdoor unit

**To set the facility settings****Class 20~42 units****INFORMATION**

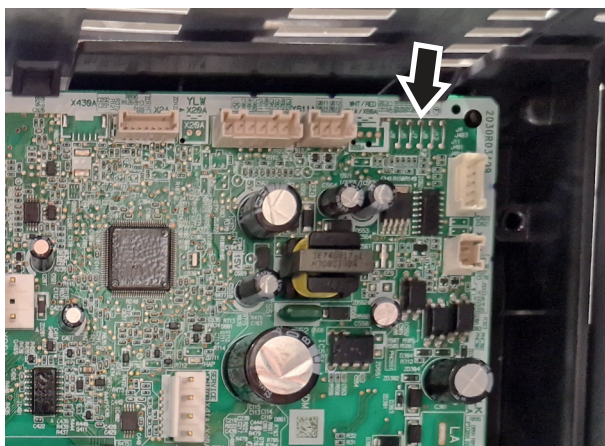
These settings are only to be used for facilities such as equipment or computer rooms and never in a residence or office with people.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Cut the jumper J7 on the main PCB using nippers or a similar tool to expand the operation range of the outdoor unit down to  $-10^{\circ}\text{C}$ .

**INFORMATION**

The outdoor unit will stop operating when the temperature drops below  $-15^{\circ}\text{C}$  and start back up once the temperature rises again.

- 2 Below is an overview of the other jumpers settings:
  - J5: Low sound setting
  - J8: Cold region setting
  - J9: Not used on this unit
  - J12: Not used on this unit

**Class 50 units****INFORMATION**

These settings are only to be used for facilities such as equipment or computer rooms and never in a residence or office with people.

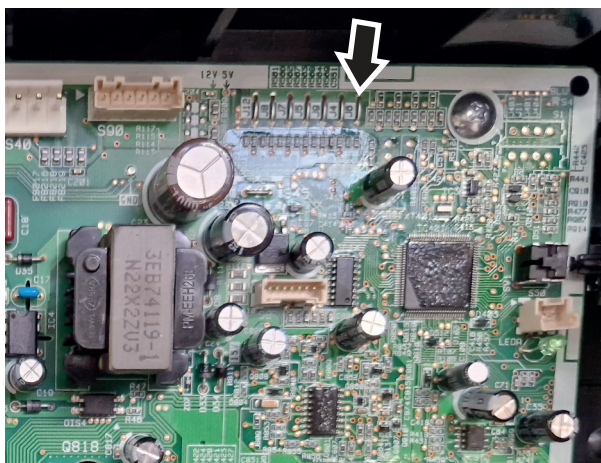
**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Cut the jumper J6 on the main PCB using nippers or a similar tool to expand the operation range of the outdoor unit down to  $-10^{\circ}\text{C}$ .





#### INFORMATION

The outdoor unit will stop operating when the temperature drops below  $-15^{\circ}\text{C}$  and start back up once the temperature rises again.

#### 2 Below is an overview of the other jumpers settings:

- J4: Not used on this unit
- J5: Low sound setting
- J7: Not used on this unit
- J8: Cold region setting
- J9: Not used on this unit
- J12: Snowfall prevention setting

#### To reduce maximum sound levels

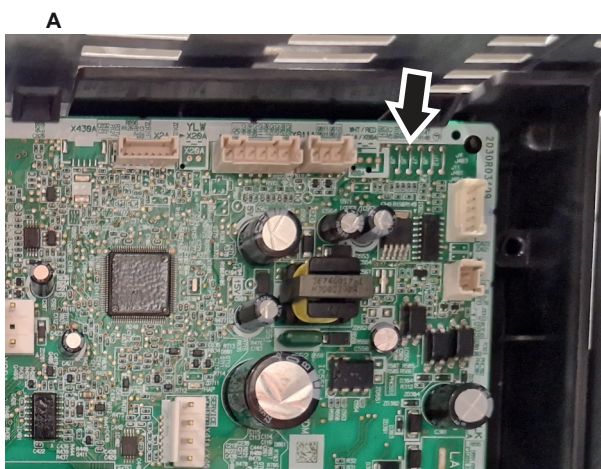
If the sound level CANNOT meet the local regulation (e.g. Netherlands), the maximum sound level can be reduced by cutting J5 jumper on the main PCB of the outdoor unit.

**Prerequisite:** Stop the unit operation via the user interface.

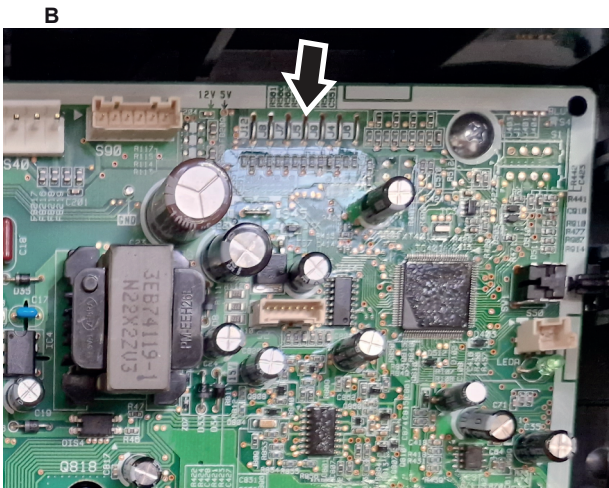
**Prerequisite:** Turn OFF the respective circuit breaker.

**Prerequisite:** Remove the required plate work, see Plate work.

#### 1 Cut the J5 jumper on the main PCB of the outdoor unit.



A Class 20~42 units



B Class 50 units

Field setting	Sound level reduction			To be used at
	RXM20+25A + ARXM25A	RXM35+42A + ARXM35A	RXM50A + ARXM50A	
Cut J5 jumper	2	2	3	Day
J5 jumper + ECONO mode activated via remote controller	6	7	8	Night



INFORMATION

New setting may affect the performance of the unit.

To set the cold region settings

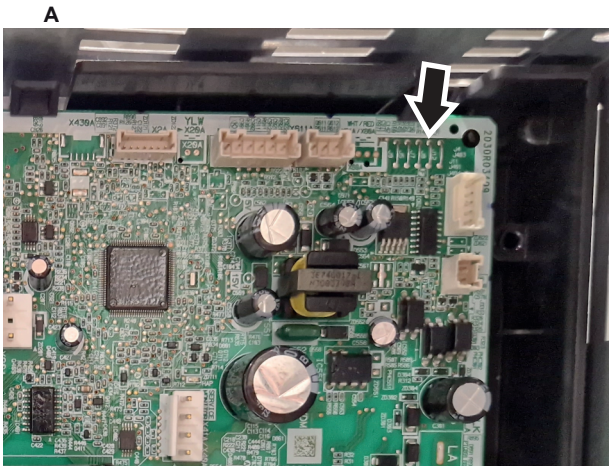
Cold region setting can be used in the event frost remains when the unit is used for heating operation under extremely low temperatures and severe environmental conditions, such as in Scandinavia.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

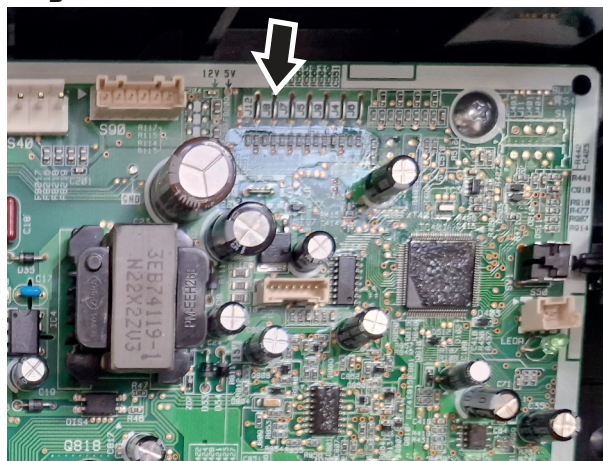
**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Cut the jumper J8 on the main PCB using nippers or a similar tool to improve the defrosting performance.



A Class 20~42 units

B



A Class 50 units

### To set the snowfall prevention settings



#### INFORMATION

ONLY applicable for Class 50 units.

In heavy snow areas, snow may cover the outdoor unit, a snowdrift pile may be formed near the outdoor unit, or icicles may reach the outdoor unit during the night. If such conditions are left uncorrected, operating the air conditioner in the next morning can cause damage to the outdoor unit fan or result in fan lock error, disallowing proper heating operation in some cases.

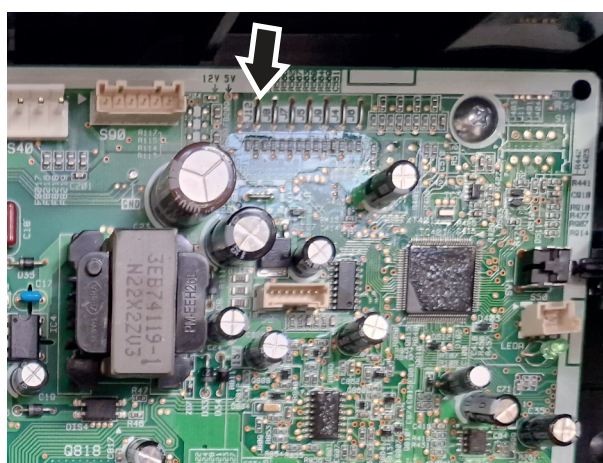
In this case the snowfall prevention setting can be used.

**Prerequisite:** Stop the unit operation via the user interface.

**Prerequisite:** Turn OFF the respective circuit breaker.

**Prerequisite:** Remove the required plate work, see Plate work.

- 1 Cut the jumper J12 on the main PCB using nippers or a similar tool to start the outdoor unit fan intermittently at low ambient.



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