ESIE20-05

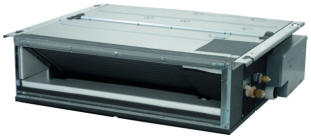
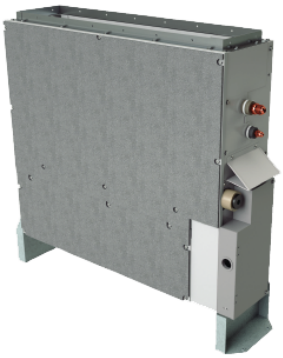
Service Manual

Multi Split Sensira R32

Indoor unit
FTXF-A FTXF-B ATXF-A

Outdoor unit
AMXF-A(9) MXF-A(9)







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Part 1. Introduction

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How to use 13

1.1. Version log

Version code	Description	Date
ESIE20-05	Document release	02/09/2020

1.2. 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.

1.2.1. Meaning of symbols

	**WARNING** Indicates a situation that could result in death or serious injury.
	**WARNING: RISK OF ELECTROCUTION** Indicates a situation that could result in electrocution.
	**WARNING: RISK OF BURNING** Indicates a situation that could result in burning because of extreme hot or cold temperatures.
	**WARNING: RISK OF EXPLOSION** Indicates a situation that could result in explosion.
	**WARNING: RISK OF POISONING** Indicates a situation that could result in poisoning.
	**WARNING: RISK OF FIRE** Indicates a situation that could result in fire.
	**CAUTION** Indicates a situation that could result in equipment or property damage.
	**INFORMATION** Indicates useful tips or additional information.

1.2.2. Warnings

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



WARNING

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

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



WARNING

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



WARNING

Do NOT touch the air inlet or aluminium fins of the unit.



WARNING

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



WARNING

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



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: RISK OF FIRE

- When reconnecting a connector to the PCB, do not apply force or damage the connector or the connector pins on the PCB.



WARNING: RISK OF BURNING

- 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.



WARNING

Always recover the refrigerants. Do NOT release them directly into the environment. Use a recovery pump to evacuate the installation.

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 may be produced if refrigerant gas comes into contact with fire.

Where applicable, pump down the system and close the service valve, before leaving the site if leak was not repaired, to avoid further leaking of the refrigerant.



WARNING: 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 1 minute, 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, refer to "Wiring diagram" on page 101.
- 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.



WARNING

- Only use copper wires.
- All field wiring must be performed in accordance with the wiring diagram and installation manual supplied with the product.
- If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires may cause an electrical shock, excessive heat generation or fire.
- Secure all terminal connections and provide proper routing for cables, both inside and outside the switchbox.
- 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 check the earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Improper earth wiring may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to check the required fuses and/or circuit breakers before starting works.



WARNING

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



WARNING

- The area shall 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.



WARNING

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

1.2.3. Cautions



CAUTION

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.



CAUTION

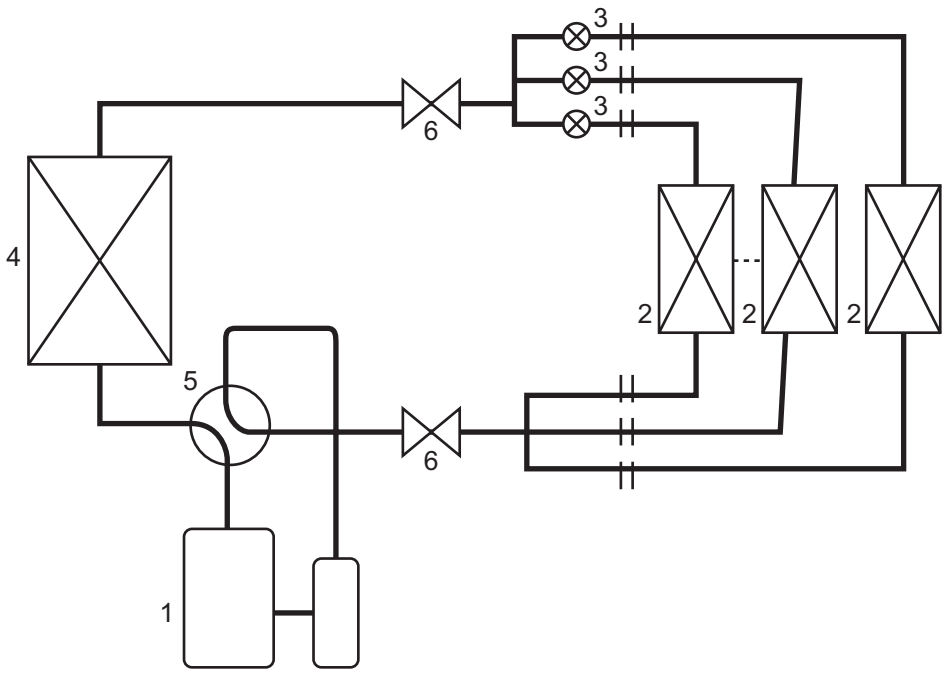
- Make sure water quality complies with EU directive 98/83 EC.
- Check the system for leaks after each repair/modification of the water side.
- Check drainage system(s) after repairs.
- Be careful when tilting units as water may leak.

1.2.4. Information

	**INFORMATION** Make sure refrigerant piping installation complies with applicable legislation. In Europe, EN378 is the applicable standard.
	**INFORMATION** Make sure the field piping and connections are not subjected to stress.

1.3. General operation

- The Multi Split 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.



1. Compressor	4. Outdoor heat exchanger
2. Indoor heat exchanger (From 2 to 5)	5. 4-way valve
3. Expansion valve (From 2 to 5)	6. Stop valves

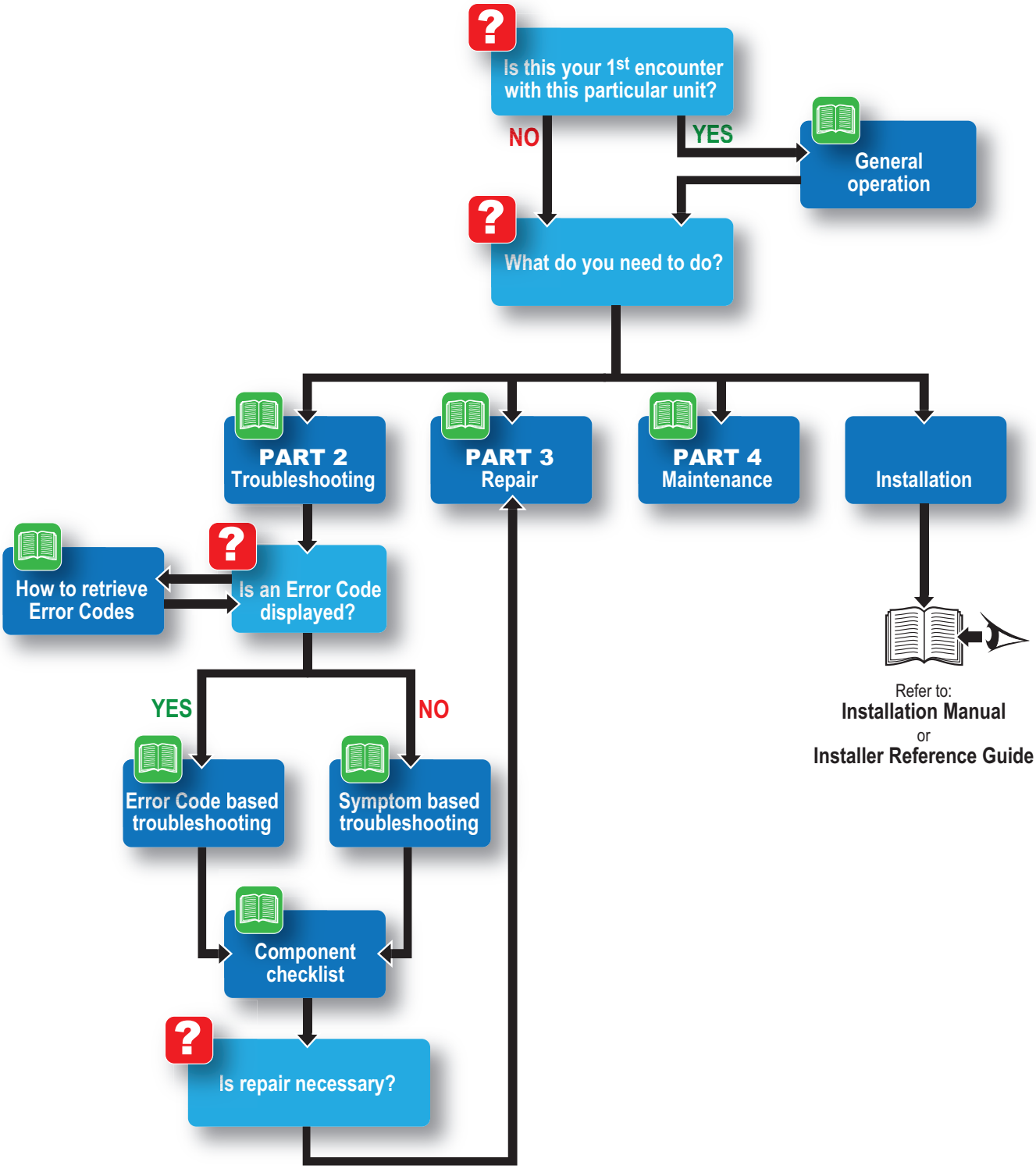
- In case of cooling, the compressor builds up pressure and hence the temperature of the refrigerant is increased. The hot refrigerant is carried to the outdoor heat exchanger which will cool down the hot refrigerant by fan. The temperature of refrigerant is further decreased by expansion through expansion valve(s). The cold refrigerant flows into the indoor unit(s) and are capable of taking up heat again. This is enabled by a fan that sucks indoor air over heat exchanger(s). This refrigerant is then transported to the compressor where temperature is further built up again and the cycle starts again. For heating, it's just the other way round.
- Each indoor unit has its own dedicated expansion valve to control the amount of the refrigerant flow going into their heat exchangers. This is defined by their own parameters (Setpoint, air temperature…etc).

1.4. How to use

1.4.1. Interactive information flow

This Daikin product Service Manual is intended for professional use only. The actions described hereafter, are only to be performed by qualified and certified persons, taking into account the safety precautions mentioned in this manual and the local regulations as well.

By following the diagram below, the reader can find the relevant information related to his/her task. The digital (pdf) version of this book allows direct page access through all active links. When Adobe Acrobat Reader is used, the <Alt> + <Back Arrow> keys or the arrow in the top right-hand corner of this page can be used to return to the previously viewed page.



1.4.2. Parts of the book

This Daikin product Service Manual is intended for professional use only. The actions described hereafter, are only to be performed by qualified and certified persons, taking into account the safety precautions mentioned in this manual and the local regulations as well.

As can be observed from the Table of Contents, this manual is split up into several chapters:

1.4.2.1. The introduction chapter

The chapter "Introduction" on page 7 includes the safety precautions, this topic and the general operation description of the product(s) this manual refers to.

1.4.2.2. The troubleshooting chapter

The chapter "Troubleshooting" on page 15 not only deals with the methods to recognize and resolve occurring error codes; it also describes the methods how to solve a problem that does not immediately trigger an error code. Such problems are referred to as 'symptom based'. Both the error code based and symptom based troubleshooting tables, indicate possible causes, the necessary checks and in case required, how to repair. The possible causes have been sorted to probability of occurrence and speed of execution.

1.4.2.3. The repair chapter

The chapter "Repair" on page 59 handles the removal and replacement of the major components in the product and discusses cleaning methods as well if applicable, such as for filters. Where applicable, refrigerant handling precautions are mentioned for certain actions; please consider these carefully for your own safety.

1.4.2.4. The maintenance chapter

The chapter "Maintenance" on page 91 of this manual describes the maintenance intervals and procedures to be performed on the product. Remember that a well maintained product, is a more reliable and efficient product.

1.4.2.5. Appendices

Finally, the service manual provides in chapter "Appendix" on page 95 valuable reference data such as piping/wiring diagrams, field settings overview and a checklist to be filled in when you need to escalate an issue to your dealer.

1.4.3. Contact information

This manual has been made with much care and effort. Use it in your daily jobs, as it has been made for you.

Despite our efforts, there is always a chance some cleric or other mistake has been made during the creation of this manual. We kindly ask you to send the found mistakes, or remarks for improvement, to the no-reply email address servicemanual@daikineurope.com.

Part 2. Troubleshooting

This part contains the following chapters:

Error codes check 15
Error based troubleshooting 17
Symptom based troubleshooting 39
Component checklist 44

2.1. Error codes check

2.1.1. Error codes via remote controller

2.1.1.1. General

If operation stops due to malfunction, the remote controller's operation LED blinks, and malfunction code is displayed. (Even if stop operation is carried out, malfunction contents are displayed when inspection mode is entered.) The malfunction code enables you to tell what kind of malfunction caused operation to stop.

2.1.2. Error codes via outdoor unit PCB2 (Service PCB) (3AMXF-A(9), 3MXF-A(9))

2.1.2.1. How to retrieve error codes

Troubleshooting via the service display.

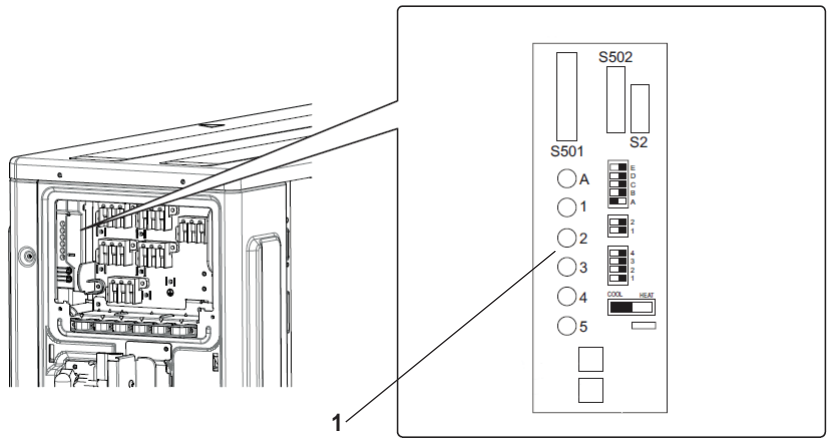
GREEN	RED					
MICRO-COMPUTER NORMAL LED-A	MALFUNCTION DETECTION					
	LED 1	LED 2	LED 3	LED 4	LED 5	DIAGNOSIS
☼	●	●	●	●	●	normal -> check indoor unit
☼	☼	●	☼	☼	●	high pressure protector activated or freeze-up in operating unit, or stand-by unit
☼	☼	●	☼	●	●	overload relay activated or high discharge pipe temperature
☼	●	☼	☼	●	●	faulty compressor start
☼	●	☼	●	☼	●	input overcurrent
☼	☼	☼	●	●	●	thermistor or ct abnormality
☼	☼	☼	●	☼	●	high temperature switchbox
☼	●	●	●	☼	●	high temperature at inverter circuit heatsink
☼	●	●	☼	●	●	output overcurrent
☼	●	●	☼	☼	●	refrigerant shortage
☼	☼	●	●	☼	●	low voltage to main circuit or over voltage to main circuit
☼	☼	●	●	●	●	reversing solenoid valve switching failure. * or high pressure switching failure
☼	☼	☼	☼	●	●	faulty outdoor unit pcb
☼	☼	☼	☼	☼	●	fan motor fault
☼	●	☼	●	●	●	wiring error check unfinished
☼	—	—	—	—	—	(Note 1)
☼	—	—	—	—	—	power supply fault

GREEN	FLASHING: NORMAL	☼	ON	☼	FLASHING
RED	OFF: NORMAL	●	OFF	—	ANY STATUS

* MAY NOT BE APPLICABLE DEPENDING ON THE MODEL

Note 1: Turn the power off and on again

Figure 2-1: Service display location



1. Service monitor LEDs

2.2. Error based troubleshooting

Overview of error codes:

Indoor unit 18
“A1-00” – PCB abnormality 18
“A5-00” – Freeze-up protection / Heating peak cut control 18
“A6-00” – Fan motor abnormality 19
“C4-00” – Liquid pipe thermistor for heat exchanger abnormality 19
“C9-00” – Suction air thermistor abnormality 20
“UH-00” – Anti-icing function in other room(s) 20
Outdoor unit 21
“E1-00” – Outdoor unit PCB abnormality 21
“E3-00” – Discharge pressure abnormality 21
“E5-00” – Compressor motor lock or overheated 22
“E6-00” – Compressor motor lock 22
“E7-00” – Fan motor abnormality 23
“E8-00” – Compressor overcurrent detection 24
“EA-00” – 4-way valve abnormality 24
“F3-00” – Discharge pipe temperature abnormality 25
“F6-00” – High pressure abnormality or refrigerant overcharge 25
“F8-00” – System shutdown due to compressor internal temperature abnormality 25
“H0-00” – Compressor sensor system abnormality 26
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2.2.1. Indoor unit

2.2.1.1. "A1-00" – PCB abnormality

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

Possible cause	Check	Corrective action
Wrong models interconnected	Check if unit combination is official. Refer to 'Combination database'.	Install compatible models.
Faulty wiring.	Check the connection of all terminals by disconnecting and reconnecting all terminals.	Replace wire harness/terminal when connection is not OK.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.
Faulty indoor PCB.	Check if error still occurs after turning off power and turning it back on again. Check if the indoor PCB receives power. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check the wiring to indoor PCB.	Adjust power to the indoor PCB. Replace indoor PCB when HAP LED is not blinking in regular intervals. Install correct spare part or update indoor PCB. Adjust wiring to indoor PCB when required.

2.2.1.2. "A5-00" – Freeze-up protection / Heating peak cut control

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

Possible cause	Check	Corrective action
Air short-circuit.	Check if the airflow around the unit is OK and there are no obstructions.	Remove obstruction.
Clogged air filter.	Check if the air filter is clogged.	Clean the air filter.
Dust accumulation on indoor heat exchanger.	Check if indoor heat exchanger is dirty/dusty.	Clean the indoor heat exchanger.
Faulty indoor heat exchanger thermistor.	Check indoor heat exchanger thermistor.	Replace indoor heat exchanger thermistor when required.
Faulty indoor PCB.	Check if error still occurs after turning off power and turning it back on again. Check if the indoor PCB receives power. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check the wiring to indoor PCB.	Adjust power to the indoor PCB. Replace indoor PCB when HAP LED is not blinking in regular intervals. Install correct spare part or update indoor PCB. Adjust wiring to indoor PCB when required.

2.2.1.3. "A6-00" – 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 outdoor unit.

Possible cause	Check	Corrective action
Faulty indoor PCB.	Check if error still occurs after turning off power and turning it back on again. Check if the indoor PCB receives power. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check the wiring to indoor PCB.	Adjust power to the indoor PCB. Replace indoor PCB when HAP LED is not blinking in regular intervals. Install correct spare part or update indoor PCB. Adjust wiring to indoor PCB when required.
Faulty indoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Indoor fan motor locked.	Switch of the power. Turn fan manually.	Replace fan motor when the fan does not turn smoothly.

More info:

Check procedures	Replacing procedures
"Fan motor" on page 45	

2.2.1.4. "C4-00" – Liquid pipe thermistor for heat exchanger abnormality

Trigger	Effect	Reset
Thermistor input is > 4.96 V or < 0.04 V during compressor operation.	Unit will stop operating.	Power reset via outdoor unit.

Possible cause	Check	Corrective action
Faulty liquid pipe thermistor.	Check liquid pipe thermistor.	Replace liquid pipe thermistor when required.
Faulty indoor unit main PCB.	Check if error still occurs after turning off power and turning it back on again. Check if the indoor PCB receives power. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check the wiring to indoor PCB.	Adjust the power to the indoor main PCB. Replace indoor main PCB when HAP LED is not blinking in regular intervals.

More info:

Check procedures	Replacing procedures
"Refrigerant thermistors" on page 55	

2.2.1.5. "C9-00" – Suction air thermistor abnormality

Trigger	Effect	Reset
Resistance value is out of range. T measured < -43.6°C or > 90°C.	Unit will stop operating.	Automatic reset when resistance is within range.

Possible cause	Check	Corrective action
Faulty suction air thermistor.	Check suction air thermistor.	Replace suction air thermistor when required.
Faulty indoor PCB.	Check if error still occurs after turning off power and turning it back on again. Check if the indoor PCB receives power. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check the wiring to indoor PCB.	Adjust power to the indoor PCB. Replace indoor PCB when HAP LED is not blinking in regular intervals. Install correct spare part or update indoor PCB. Adjust wiring to indoor PCB when required.

More info:

Check procedures	Replacing procedures
"Refrigerant thermistors" on page 55	

2.2.1.6. "UH-00" – Anti-icing function in other room(s)

Trigger	Effect	Reset
A wrong connection is detected by checking the combination of the indoor and outdoor unit on the CPU	Operation halt due to freeze up prevention in other room/unspecified internal or externa voltages/mismatch indoor and outdoor units	Auto reset after freeze up prevention is finished. Unit cannot restart before mismatch is removed.

Possible cause	Check	Corrective action
Freeze up prevention in other room.	Indoor fan is not operating while the error is displayed.	See error A5.
Mismatch of outdoor-indoor units.	Verify connection on combination database.	Replace indoor units when required.
Unspecified voltages.	Check supply voltage.	Adjust when required.

2.2.2. Outdoor unit

2.2.2.1. "E1-00" – Outdoor unit PCB abnormality

Trigger	Effect	Reset
Outdoor main PCB detects that EEPROM is abnormal.	Unit will stop operating.	Manual reset via user interface. Power reset via outdoor unit.

Possible cause	Check	Corrective action
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty capacity adapter on outdoor main PCB installed.	Check if the correct capacity adapter is used.	Replace capacity adapter when required.
External factor (e.g. electrical noise) (cause when error is reset after power reset, and error happens again after a while).	Check for source which could cause electrical interference.	Avoid electrical interference.
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.

2.2.2.2. "E3-00" – Discharge pressure abnormality

Trigger	Effect	Reset
Discharge pressure above 4.15 MPa.	Unit will stop operating.	Automatic reset when high pressure drops below 3.2 MPa.

Possible cause	Check	Corrective action
Stop valve is closed.	Check stop valve.	Open stop valve when required.
Blocked heat exchangers.	Are the heat exchangers clean?	Clean heat exchangers.
Insufficient airflow.	Are the fans operating?	Repair fan.
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Disconnected HPS wire harness terminal on the PCB.	Verify connection wire harness terminal on PCB.	Reconnect the terminal.
Disconnected HPS wire harness terminal on the HPS.	Verify connection wire harness terminal on HPS.	Reconnect the terminal(s).
Defective outdoor PCB.	Verify resistance of the wire harness terminal on the outdoor PCB.	If nearly 0 Ohm, replace outdoor PCB.
Broken high pressure sensor wire harness.	Verify resistance of the wire harness.	If resistance = infinity, replace wire harness.
Defective high pressure switch.	Check the resistance of the high pressure switch.	If resistance = infinity, replace high pressure switch.

2.2.2.3. "E5-00" – Compressor motor lock or overheated

Trigger	Effect	Reset
Compressor overload is detected.	Unit will stop operating.	Automatic reset if the unit runs for 60 seconds without error.

Possible cause	Check	Corrective action
Faulty discharge pipe thermistor.	Check discharge pipe thermistor.	Replace discharge pipe thermistor when required.
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Faulty overload protection.	Check the overload protection. Check the overload protection connections and wiring.	Replace the overload protection when required. Adjust wiring when required.
Faulty expansion valve.	Check the expansion valve.	Replace the expansion valve body or motor when required.
Faulty 4-way valve.	Check the 4-way valve.	Replace the 4-way valve coil or body when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty power module = faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Refrigerant shortage.	Check for refrigerant shortage. Refer to the nameplate for the correct charge.	Charge the correct refrigerant amount when required.
Humidity in refrigerant (ice formation in expansion valve).	Check for humidity in the refrigerant.	In case of suspicion of humidity, recover, vacuum and recharge with virgin refrigerant.
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Stop valve is closed.	Check stop valve.	Open stop valve when required.

2.2.2.4. "E6-00" – Compressor motor lock

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 about 10 min.
	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty discharge thermistor.	Check the discharge thermistor.	Replace discharge thermistor when required.
Refrigerant shortage.	Check for refrigerant shortage. Refer to the nameplate for the correct charge.	Charge the correct refrigerant amount when required.
Humidity in refrigerant (ice formation in expansion valve).	Check for humidity in the refrigerant.	In case of suspicion of humidity, recover, vacuum and recharge with virgin refrigerant.

Possible cause	Check	Corrective action
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Stop valve is closed.	Check stop valve.	Open stop valve when required.
Refrigerant circuit is clogged (HP - LP > 0,26 MPa).	Check for possible blockage (blockages can be checked by measuring the refrigerant/pipe temperature. Sudden drop in temperature could indicate a blockage (remark: this is not valid for the expansion valve)).	Replace the blocked part.
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Compressor turned off too fast.		Wait for guard timer.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Faulty 4-way valve.	Check the 4-way valve.	Replace the 4-way valve coil or body when required.
Faulty expansion valve.	Check the expansion valve.	Replace the expansion valve body or motor when required.

2.2.2.5. “E7-00” – Fan motor abnormality

Trigger	Effect	Reset
Fan does not start in about 15~30 seconds = fan motor lock. It can occur that E7-00 error is triggered even when the fan motor is running caused by a faulty hall signal.	Unit will not stop operating.	Automatic reset after a continuous run.
	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Blown fuse.	Check the fuse on the outdoor unit PCB's.	Replace fuse when required.

2.2.2.6. "E8-00" – Compressor overcurrent detection

Trigger	Effect	Reset
When the compressor is running the current exceeds 9.25 A ~ 20 A (depending on the unit) for 2.5 seconds.	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Outdoor temperature is out of operation range.	Check the outdoor temperature.	Wait until the temperature is within operation range.
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Faulty power module. = Faulty inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.

2.2.2.7. "EA-00" – 4-way valve abnormality

Trigger	Effect	Reset
The room thermistor / indoor heat exchanger are not functioning within operation range.	Unit will not stop operating.	Automatic reset when unit runs without error for 60 minutes.
	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty 4-way valve coil.	Check 4-way valve coil.	Replace 4-way valve coil when required.
Faulty 4-way valve body, blocked.	Check 4-way valve body.	Replace 4-way valve body when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty room thermistor.	Check room thermistor.	Replace room thermistor when required.
Faulty indoor heat exchanger thermistor.	Check indoor heat exchanger thermistor.	Replace indoor heat exchanger thermistor when required.
Refrigerant shortage.	Check for refrigerant shortage. Refer to the nameplate for the correct charge.	Charge the correct refrigerant amount when required.
Humidity in refrigerant (ice formation in expansion valve).	Check for humidity in the refrigerant.	In case of suspicion of humidity, recover, vacuum and recharge with virgin refrigerant.
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Stop valve is closed.	Check stop valve.	Open stop valve when required.
Faulty stop valve.	Check the stop valve.	Replace the stop valve when required.

Possible cause	Check	Corrective action
Wrong combination hybrid and outdoor unit.	Check if correct hybrid is installed.	Make official combination hybrid and outdoor unit.

2.2.2.8. "F3-00" – Discharge pipe temperature abnormality

Trigger	Effect	Reset
Discharge temperature is too high: • If the discharge temperature detected is above A°C, 10 times within 200 min. • If within 200 min the discharge temperature detected is 10 times above B°C for 15 min.	Unit will not stop operating.	Automatic reset when temperature drops below C°C.
	Unit will stop operating.	Manual reset via remote controller.

Possible cause	Check	Corrective action
Refrigerant shortage.	Check for refrigerant shortage. Refer to the nameplate for the correct charge.	Charge the correct refrigerant amount when required.
Humidity in refrigerant (ice formation in expansion valve).	Check for humidity in the refrigerant.	In case of suspicion of humidity, recover, vacuum and recharge with virgin refrigerant.
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Stop valve is closed.	Check if stop valve is open.	Open stop valve when required.
Faulty 4-way valve.	Check the 4-way valve.	Replace the 4-way valve coil or body when required.
Faulty expansion valve.	Check the expansion valve.	Replace the expansion valve body or motor when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty discharge thermistor.	Check discharge thermistor.	Replace discharge thermistor when required.
Faulty heat exchanger thermistor.	Check heat exchanger thermistor.	Replace heat exchanger thermistor when required.
Faulty outdoor temperature thermistor.	Check outdoor temperature thermistor.	Replace outdoor temperature thermistor when required.

2.2.2.9. "F6-00" – High pressure abnormality or refrigerant overcharge

Trigger	Effect	Reset
Outdoor heat exchanger thermistor measures temperature > 60°C~65°C (depending on model).	Unit will not stop operating.	Automatic reset when temperature drops below 50°C.

Possible cause	Check	Corrective action
Installation space is too small.	Check if the installation space is in line with regulations.	Adjust installation space.
Dirty outdoor heat exchanger.		Clean the outdoor heat exchanger.
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.

Possible cause	Check	Corrective action
Faulty stop valve.	Check the stop valve.	Replace the stop valve when required.
Faulty heat exchanger thermistor.	Check heat exchanger thermistor.	Replace heat exchanger thermistor when required.
Faulty expansion valve.	Check the expansion valve.	Replace the expansion valve body or motor when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

2.2.2.10. "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.

Possible cause	Check	Corrective action
Stop valve is closed.	Check stop valve.	Open stop valve fully when required.
Refrigerant circuit is clogged	Check for possible blockage (blockages can be checked by measuring the refrigerant/pipe temperature. Sudden drop in temperature could indicate a blockage (remark: this is not valid for the expansion valve)).	Replace the blocked part.
Humidity in refrigerant.	Check for humidity in the refrigerant.	In case of suspicion of humidity, recover, vacuum and recharge with virgin refrigerant.
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Leaking refrigerant.	Check if there is a leakage on the refrigerant circuit	Charge the correct refrigerant amount when required.

2.2.2.11. "H0-00" – Compressor sensor system abnormality

Trigger	Effect	Reset
DC voltage before compressor start-up is out of range (0.5~4.5 V).	Unit will stop operating.	Manual reset via user interface.
DC voltage before compressor start-up is below 50 V.	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.

Possible cause	Check	Corrective action
Faulty connection or wiring of the PCB's.	Check the connections and the wiring of the PCB's.	Adjust connection or wiring when required.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.

2.2.2.12. "H6-00" – Position detection sensor abnormality

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 run of 10 minutes.
	Unit will stop operating if the warning occurs 8 times.	Manual reset via remote controller.

Possible cause	Check	Corrective action
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Stop valve is closed.	Check stop valve.	Open stop valve when required.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.

2.2.2.13. "H8-00" – Compressor input (CT) system abnormality

Trigger	Effect	Reset
DC voltage or DC 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.
	Unit will stop operating if the warning occurs several times.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

Possible cause	Check	Corrective action
Faulty power module. Input current or compressor current too low. Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Faulty reactor.	Check reactor.	Replace reactor when required.

2.2.2.14. "H9-00" – Outdoor air temperature thermistor abnormality

Trigger	Effect	Reset
Thermistor input voltage is > 4.96 V or < 0.04 V when power is on.	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty outdoor air temperature thermistor.	Check outdoor temperature thermistor.	Replace outdoor temperature thermistor when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

2.2.2.15. "J3-00" – Discharge pipe thermistor abnormality

Trigger	Effect	Reset
Thermistor input voltage is > 4.96 V or < 0.04 V when power is on.	Unit will stop operating.	Manual reset via user interface.
Discharge pipe temperature is lower than the heat exchanger temperature.		

Possible cause	Check	Corrective action
Faulty discharge pipe thermistor.	Check discharge pipe thermistor.	Replace discharge pipe thermistor when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

2.2.2.16. "J6-00" – Outdoor heat exchanger thermistor abnormality

Trigger	Effect	Reset
Thermistor input voltage is > 4.96 V or < 0.04 V when power is on.	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty heat exchanger thermistor.	Check heat exchanger thermistor.	Replace heat exchanger thermistor when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

More info:

Check procedures	Replacing procedures
"Refrigerant thermistors" on page 55	"Replacing thermistors" on page 88
"Main PCB" on page 54	"Replacing main PCB" on page 86

2.2.2.17. “J8-00” – Liquid pipe thermistor abnormality

Trigger	Effect	Reset
Liquid pipe thermistor detects an abnormal value (open or short circuit).	Unit will stop operating.	Automatic reset.

Possible cause	Check	Corrective action
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Adjust the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty liquid pipe thermistor.	Check liquid pipe thermistor.	Replace liquid pipe thermistor when required.
Faulty capacity adapter on outdoor PCB.	Check if the correct adapter is installed. Check if the correct spare part is installed.	Adjust capacity adapter when required.

More info:

Check procedures	Replacing procedures
"Main PCB" on page 54	"Replacing main PCB" on page 86
"Refrigerant thermistors" on page 55	"Replacing thermistors" on page 88

2.2.2.18. “J9-00” – Gas pipe thermistor abnormality

Trigger	Effect	Reset
Thermistor input voltage is > 4.96 V or < 0.04 V when power is on.	Unit will stop operating.	Manual reset via user interface.
Discharge pipe temperature is lower than the heat exchanger temperature.		

Possible cause	Check	Corrective action
Faulty discharge pipe thermistor.	Check discharge pipe thermistor.	Replace discharge pipe thermistor when required.

Possible cause	Check	Corrective action
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

More info:

Check procedures	Replacing procedures
"Refrigerant thermistors" on page 55	"Replacing thermistors" on page 88
"Main PCB" on page 54	"Replacing main PCB" on page 86

2.2.2.19. “L1-00” – Outdoor main PCB abnormality

Trigger	Effect	Reset
Outdoor main PCB detects current/voltage errors.	Unit will stop operating.	Manual reset via user interface. Power reset via outdoor unit.

Possible cause	Check	Corrective action
Blown fuse.	Check fuse on outdoor main PCB.	Replace fuse if blown.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Adjust the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the alive led is blinking in regular intervals. Check if the correct spare part is installed.	Adjust the power to the outdoor inverter PCB. Replace outdoor inverter PCB.
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Faulty capacity adapter on outdoor PCB.	Check if the correct adapter is installed. Check if the correct spare part is installed.	Adjust capacity adapter when required.
External factory (e.g. electrical noise). (cause when error is reset after power reset, and error happens again after a while).	Check for source which could cause electrical interference.	Avoid electrical interference.

More info:

Check procedures	Replacing procedures
"Main PCB" on page 54	"Replacing main PCB" on page 86
"Compressor" on page 50	"Replacing compressor" on page 76
"Electronic expansion valve" on page 52	"Replacing expansion valve body" on page 80

Check procedures	Replacing procedures
"Fan motor" on page 54	"Replacing DC fan motor assembly" on page 79

2.2.2.20. "L3-00" – Switch box temperature abnormality

Trigger	Effect	Reset
Switch box temperature is too high when the compressor is off.	Unit will not stop operating.	Automatic reset when temperature drops.
	Unit will stop operating.	Manual reset via remote controller.

Possible cause	Check	Corrective action
Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Faulty radiation fin thermistor.		
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.
Outdoor heat exchanger is dirty.	Check outdoor heat exchanger.	Clean outdoor heat exchanger when required.

More info:

INFORMATION

The Inverter PCB and Main PCB are 1 PCB in this unit.

Check procedures	Replacing procedures
"Main PCB" on page 54	"Replacing main PCB" on page 86
"Fan motor" on page 54	"Replacing DC fan motor assembly" on page 79
""L3-00" – Switch box temperature abnormality" on page 110	

2.2.2.21. "L4-00" – Inverter radiating fin temperature abnormality

Trigger	Effect	Reset
Radiation fin temperature rise is detected.	Unit will stop operating.	Automatic reset.
		Power reset via outdoor unit.

Possible cause	Check	Corrective action
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.
Faulty radiating fin thermistor.	Check radiating fin thermistor.	Replace radiating fin thermistor when required.
Faulty outdoor unit PCB in which radiating fin thermistor is connected.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

Possible cause	Check	Corrective action
Silicon grease is not applied properly on the radiation fin.	Check the silicon grease on the outdoor unit PCB.	Adjust silicon grease when required.

More info:

Check procedures	Replacing procedures
"Fan motor" on page 54	"Replacing DC fan motor assembly" on page 79
"Refrigerant thermistors" on page 55	"Replacing thermistors" on page 88
"Main PCB" on page 54	"Replacing main PCB" on page 86
""L4-00" – Inverter radiating fin temperature abnormality" on page 110	

2.2.2.22. "L5-00" – Inverter instantaneous overcurrent (AC output)

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.

Possible cause	Check	Corrective action
Installation of the unit is not in line with specifications.	Check the installation specifications. Refer to the installation manual.	Adjust the installation when required.
Refrigerant shortage.	Check for refrigerant shortage. Refer to the nameplate for the correct charge.	Charge the correct refrigerant amount when required.
Humidity in refrigerant (ice formation in expansion valve).	Check for humidity in the refrigerant.	In case of suspicion of humidity, recover, vacuum and recharge with virgin refrigerant.
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Stop valve is closed.	Check stop valve.	Open stop valve when required.
Faulty power module = faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed.	Restore the power to the outdoor inverter PCB. Replace the outdoor inverter PCB when required.
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.

More info:

INFORMATION

The Inverter PCB and Main PCB are 1 PCB in this unit.

Check procedures	Replacing procedures
"Main PCB" on page 54	"Replacing main PCB" on page 86
"Compressor" on page 50	"Replacing compressor" on page 76
"Electronic expansion valve" on page 52	"Replacing expansion valve body" on page 80

2.2.2.23. “P4-00” – Radiating fin temperature sensor abnormality

Trigger	Effect	Reset
Radiating fin thermistor input voltage is < 0.04 V or > 4.96 V when power is on.	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty radiating fin thermistor.	Check radiating fin thermistor.	Replace radiating fin thermistor when required.
Faulty outdoor unit PCB in which radiating fin thermistor is connected.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

More info:

Check procedures	Replacing procedures
"Refrigerant thermistors" on page 55	"Replacing thermistors" on page 88
"Main PCB" on page 54	"Replacing main PCB" on page 86

2.2.3. System

2.2.3.1. "U0-00" – Refrigerant shortage

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

Possible cause	Check	Corrective action
Faulty air thermistor.	Check air thermistor.	Replace air thermistor when required.
Faulty discharge thermistor.	Check discharge thermistor.	Replace discharge thermistor when required.
Faulty outdoor heat exchanger thermistor.	Check outdoor heat exchanger thermistor.	Replace outdoor heat exchanger thermistor when required.
Stop valve is closed.	Check stop valve.	Open stop valve when required.
Refrigerant shortage.	Check for refrigerant shortage. Refer to the nameplate for the correct charge.	Charge the correct refrigerant amount when required.
Humidity in refrigerant (ice formation in expansion valve).	Check for humidity in the refrigerant.	In case of suspicion of humidity, recover, vacuum and recharge with virgin refrigerant.
Non condensables in refrigerant.	Check for non condensables in refrigerant.	In case of suspicion of non condensables, recover, vacuum and recharge with virgin refrigerant.
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for the correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Faulty expansion valve.	Check the expansion valve.	Replace the expansion valve body or motor when required.

More info:

Check procedures	Replacing procedures
"Refrigerant thermistors" on page 55	
"Compressor" on page 50	"Replacing compressor" on page 76
"Electronic expansion valve" on page 52	"Replacing expansion valve body" on page 80 "Replacing expansion valve motor" on page 84
"Error codes" on page 110	

2.2.3.2. "U2-00" – Power supply abnormality or instantaneous power failure

Trigger	Effect	Reset
There is no zero-cross detected in approximately 10 seconds (indoor unit PCB).	Unit will stop operating.	Power reset via outdoor unit.
Abnormal voltage drop (< 150-180 V) is detected by the DC voltage detection circuit.	Unit will stop operating.	Automatic restart after compressor stand-by of 3 minutes.
Abnormal voltage rise is detected by the over-voltage detection circuit.	Unit will stop operating.	Automatic restart after compressor stand-by of 3 minutes.

Possible cause	Check	Corrective action
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.
Defective DC voltage detection circuit.	Check PCB with DC voltage detection circuit.	Replace PCB when required.
Defective over-voltage detection circuit.	Check PCB with over-voltage detection circuit.	Replace PCB when required.
Defective PAM control part.	Check PAM control part.	Replace PAM control part when required.
Faulty compressor.	Check compressor. Check connections and wiring of the compressor. Check expansion valve (liquid back issue). Check the refrigerant charge. Refer to the nameplate for correct charge.	Replace compressor when required. Investigate reason of breakdown. Replace expansion valve when required. Fix possible leak.
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Momentary drop of voltage.	-	Wait until compressor restarts.
Momentary power failure.	-	Wait until compressor restarts.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty indoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the indoor main PCB receives power.	Restore the power to the indoor main PCB. Replace indoor main PCB when HAP LED is not blinking in regular intervals.

More info:

Check procedures	Replacing procedures
"Compressor" on page 50	"Replacing compressor" on page 76
"Electronic expansion valve" on page 52	"Replacing expansion valve body" on page 80
"Fan motor" on page 54	"Replacing DC fan motor assembly" on page 79
"Main PCB" on page 54	"Replacing main PCB" on page 86

2.2.3.3. “U3-00” – Check operation not executed or transmission error

Trigger	Effect	Reset
Failed wiring error check operation. Wiring issue between indoor and outdoor.	Unit will not start to run.	To reset the error code: push SW3 (wiring error check switch) for 10 seconds. For more information, see installation manual “wiring error check”.

Possible cause	Check	Corrective action
Stopped operation before finishing wiring check operation.	Measure the voltage at the primary side of the safety breaker. Check that all liquid and gas valves are fully open. Check piping & wiring match.	Reset error code and restart wiring error check procedure.

Possible cause	Check	Corrective action
No self-correction possible.	Outdoor temperature below 5°C.	Check wiring and piping in the usual manner.
More than 3 wrong connections.	Check piping & wiring match.	Check wiring and piping in the usual manner.
No correct wiring.	Check piping & wiring match.	Correct wiring.

2.2.3.4. "U4-00" – Transmission abnormality between indoor unit and outdoor unit

Trigger	Effect	Reset
Data sent from outdoor unit cannot be received normally, content of the send data is abnormal.	Unit will stop operating.	Power reset via outdoor unit.

Possible cause	Check	Corrective action
Faulty or disturbance of the power supply (imbalance > 10%). Power drop. Short circuit.	Check if the power supply is conform with regulations. No fluctuations in frequency.	Adjust power supply when required. Power reset via outdoor unit.
Wiring abnormality between indoor unit and outdoor unit.	Check wiring between indoor unit and outdoor unit.	Adjust wiring between indoor unit and outdoor unit when required. Replace wiring between indoor unit and outdoor unit when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty outdoor fan motor.	Check the fan motor. Check fan motor connections and wiring.	Replace fan motor when required. Adjust wiring when required.
Faulty indoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the indoor main PCB receives power.	Restore the power to the indoor main PCB. Replace indoor main PCB when HAP LED is not blinking in regular intervals.
Standby electricity saving mode is ON but there is a sky-air indoor installed on the unit.	If the indoor unit is NOT a sky-air indoor. This mode is only compatible with split indoor units.	Put "standby electricity saving function" OFF (see installation manual).

More info:

Check procedures	Replacing procedures
"Main PCB" on page 54	"Replacing main PCB" on page 86
"Fan motor" on page 54	"Replacing DC fan motor assembly" on page 79

2.2.3.5. "U5-00" – Malfunction of transmission between indoor unit and remote controller

Trigger	Effect	Reset
Data from indoor unit cannot be send to wired controller and vice-versa.	Unit cannot be controlled by the wired controller.	If the connection is correct the unit will start itself.

Possible cause	Check	Corrective action
Faulty wiring.	Double check if the wiring is correct. It can be that the connector is the same but not the cables. Use the cable who comes with the controller.	Correct wiring.

2.2.3.6. "U7-00" – Transmission outdoor unit-outdoor unit abnormality

Trigger	Effect	Reset
Communication abnormality between outdoor unit PCB's.	Unit will stop operating.	Manual reset via user interface.

Possible cause	Check	Corrective action
Faulty wiring between outdoor unit PCBs.	Check wiring between outdoor unit PCBs.	Adjust wiring between outdoor unit PCBs when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Adjust the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.
Faulty outdoor inverter PCB.	Check outdoor inverter PCB. Check if the alive led is blinking in regular intervals. Check if the correct spare part is installed.	Adjust the power to the outdoor inverter PCB. Replace outdoor inverter PCB.

More info:

Check procedures	Replacing procedures
	"Replacing main PCB" on page 86

2.2.3.7. "UA-00" – Improper combination of indoor unit and outdoor unit

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

Possible cause	Check	Corrective action
Improper combination of indoor unit and outdoor unit.	Check combination.	Adjust installation when required.
Wiring abnormality between indoor unit and outdoor unit.	Check wiring between indoor unit and outdoor unit.	Adjust wiring between indoor unit and outdoor unit when required. Replace wiring between indoor unit and outdoor unit when required.
Faulty outdoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the outdoor main PCB receives power.	Restore the power to the outdoor main PCB. Replace outdoor main PCB when HAP LED is not blinking in regular intervals.

Possible cause	Check	Corrective action
Faulty indoor unit main PCB.	Check if the HAP LED is blinking in regular intervals. Check if the correct spare part is installed. Check if the indoor main PCB receives power.	Restore the power to the indoor main PCB. Replace indoor main PCB when HAP LED is not blinking in regular intervals.
Standby electricity saving mode is ON but there is a sky-air indoor installed on the unit.	If the indoor unit is NOT a sky-air indoor. This mode is only compatible with split indoor units.	Put “standby electricity saving function” OFF (see installation manual).

More info:

Check procedures	Replacing procedures
"Main PCB" on page 54	"Replacing main PCB" on page 86

2.2.3.8. “UF-00” – Wiring and piping mismatch

Trigger	Effect	Reset
When the interunit wiring between indoor and outdoor unit is incorrect. Piping abnormality.	Unit will stop operating.	Automatic reset.

Possible cause	Check	Corrective action
Faulty wiring between indoor and outdoor unit.	Check wiring between indoor and outdoor unit.	Correct wiring.
Refrigerant shortage (incorrect charge/leakage).	Check for refrigerant shortage. Perform a leak test.	If required, repair the leak and charge the correct amount of refrigerant.
Refrigerant circuit is clogged.	Check for possible blockage (Blockages can be checked by measuring the refrigerant/pipe temperature. Sudden drop in temperature could indicate a blockage. (Remark: This is not valid for the expansion valve.)).	

More info:

Check procedures	Replacing procedures
"Wiring diagram" on page 101	

2.3. Symptom based troubleshooting

2.3.1. Operation does not start

Check	Detail
When the operation lamp is off, there is a power failure. Check the power supply.	Is the power supply breaker ON? Do other electrical appliances work? Is the rated voltage (± 10%) supplied? Check the insulation of the electric system.
Check the type of the indoor units.	Is the indoor unit type compatible with the outdoor unit?
Check the transmission between indoors and outdoor.	Connection wires.
Check the outdoor temperature.	Heating operation cannot be used when the outdoor temperature is 18°C WB or higher. Cooling operation cannot be used when the outdoor temperature is below 10°C DB.
When the operation lamp blinks, there may be an error code, activating the protection device. Diagnose with remote controller indication.	See "Error based troubleshooting" on page 17.
Check the remote controller addresses.	Are the address settings for the remote controller and indoor unit correct?
Check the operation circuit.	Is the thermal fuse blown. Are wire size and wire connections OK?
Check fan motor.	Is the magnetic switch defective? Is the overcurrent relay defective?
Check compressor.	Is the contact defective? Is the protection thermostat defective? Is the compressor itself defective?
Check remote controller.	Are the batteries LOW? Are there incorrect settings?
Check the LEDs on outdoor unit PCB2 (3MXF-A, 3AMXF-A).	See "Error codes via outdoor unit PCB2 (Service PCB) (3AMXF-A(9), 3MXF-A(9))" on page 16.

2.3.2. Operation sometimes stops

Check	Detail
When the operation lamp is off, there is a power failure. Check the power supply.	A power failure of 2 to 10 cycles stops air conditioner operation.
Check the outdoor temperature.	Heating operation cannot be used when the outdoor temperature is 18°C WB or higher. Cooling operation cannot be used when the outdoor temperature is below 10°C DB.
When the operation lamp blinks, there may be an error code, activating the protection device. Diagnose with remote controller indication.	See "Error based troubleshooting" on page 17.
Check the LEDs on outdoor unit PCB2 (3MXF-A, 3AMXF-A).	See "Error codes via outdoor unit PCB2 (Service PCB) (3AMXF-A(9), 3MXF-A(9))" on page 16.

2.3.3. Some indoor units do not operate

Check	Detail
Check the type of the indoor units.	Is the indoor unit type compatible with the outdoor unit?
Check if the operation modes of the indoor units have conflict.	Heating mode CANNOT be together with FAN* or Dry or Cooling mode. And vice versa. Other combinations of modes can be together. (Ex. Cooling and FAN, Cooling and Dry)

2.3.4. Operation starts but the unit does not cool/heat

Check	Detail
Check the electrical power supply.	Is the rated voltage (± 10%) supplied?
Check for piping and wiring errors in the connection between the indoor units and outdoor unit.	Refrigerant piping is too long; is the length within specified range? Field piping is defective; is there a refrigerant leakage? Is there capacity loss over the condensor, saturation pressure or sound because of air mixed in to the circuit? Incorrect size of connection wiring. Is there a cross wiring? (Ex: Indoor unit A piping is with indoor unit C wiring.)
When the operation lamp blinks, there may be a thermistor detection error code, activating the protection device.	Check the resistance of all thermistors. Check the connection of all thermistors. Is there a malfunction in the room temperature thermistor or outdoor temperature thermistor?
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.
Diagnose by service port pressure and operating current.	Check for refrigerant shortage.
Check if the set temperature is appropriate.	thermostat “off” can be activated, set the appropriate temperature.
Check the type of the indoor and outdoor units.	Is the indoor unit type compatible with the outdoor unit?
Check the air filter.	Is the air filter clean?

2.3.5. Operating noise and vibrations

Check	Detail
Check the installation conditions (specified in the installation manual).	Use general vibration prevention where needed. If the mounting wall is too thin, you must use cushion material or rubber, or change the installation place. Refrigerant piping is too short; is the length within specified range? Due to bad installation or general conditions there may be deformation of the unit. Are all the screws installed and tightened properly? Is all piping secured, fixed and supported by inserting a cushion material where needed? Install piping weights or correct by hand if any piping is in contact with other parts. Is the fan in contact with other parts? If so separate the fan from the other parts.
Check refrigerant charge.	Is the unit filled with the specified refrigerant volume? Is there a flushing noise, due to refrigerant shortage? Is there air in the system?

Check	Detail
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.

2.3.6. Abnormal high pressure

In cooling mode

Check item	Detail
Does the outdoor unit fan run normally?	Visual inspection
Is the outdoor unit heat exchanger clogged?	Visual inspection
Is there clogging before or after the expansion valve (capillary)?	Check if there is a temperature difference before and after expansion valve (capillary). Check if the main valve unit of expansion valve operates (by noise, vibration).
Is the High Pressure Switch normal?	Check continuity by using a tester.
Is the outdoor unit installed under such conditions that short circuit easily occurs?	Visual inspection
Is the piping length ≤5 m?	Visual inspection
Does air enter the refrigerant system?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.
Is the refrigerant overcharged?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

In heating mode

Check item	Detail
Does the indoor unit fan run normally?	Visual inspection
Is the indoor unit heat exchanger clogged?	Visual inspection
Is the indoor unit installed under such conditions that short circuit easily occurs?	Visual inspection
Is there clogging before or after the expansion valve (capillary)?	Check if there is a temperature difference before and after expansion valve (capillary). Check if the main valve unit of expansion valve operates (by noise, vibration).
Is the High Presure Switch normal?	Check continuity by using a tester.
Is the minimum piping length respected?	Visual inspection
Does air enter the refrigerant system?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.
Is the refrigerant overcharged?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

2.3.7. 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
Does the indoor unit fan run normally?	Visual inspection
Is the indoor unit heat exchanger clogged?	Visual inspection
Is the indoor unit installed under such conditions that short circuit easily occurs?	Visual inspection

Check item	Detail
Is there clogging before or after the expansion valve (capillary)?	Check if there is a temperature difference before and after expansion valve (capillary). Check if the main valve unit of expansion valve operates (by noise, vibration).
Is the check valve (if applicable) clogged?	after check valve. If YES, the check valve is caught.
Is there a shortage of refrigerant?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

In heating mode

Check item	Detail
Does the outdoor unit fan run normally?	Visual inspection
Is the outdoor unit heat exchanger clogged?	Visual inspection
Is there clogging before or after the expansion valve (capillary)?	Check if there is a temperature difference before and after expansion valve (capillary). Check if the main valve unit of expansion valve operates (by noise, vibration).
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 caught.
Is the outdoor unit installed under such conditions that short circuit easily occurs?	Visual inspection
Is there a shortage of refrigerant?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

2.3.8. Indoor fan starts operating but the compressor does not operate

Check	Detail
Check the power supply.	Is the rated voltage (± 10%) supplied? Check the insulation of the electric system.
Check the thermistor.	Connection witch PCB. Output.
Check PCB's HAP LED's (if applicable).	If green led on the control PCB is not blinking, then the microprocessor is not working. If the green led on the main PCB is not blinking, then the microprocessor is not working. If first green LED on the service monitor PCB is not blinking, then the microprocessor is not working.
Check the magnetic switch.	
Check the power transistor.	
Check the compressor.	Defective contact. Defective compressor. Defective protection thermostat.
Check the outdoor temperature.	Heating operation cannot be used when the outdoor temperature is 18°C WB or higher. Cooling operation cannot be used when the outdoor temperature is below 10°C DB.

2.3.9. Operation starts and the unit stops immediately

Check	Detail
Check the power supply.	Is the capacity of the safety breaker as specified? 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. Is the circuit exclusive? Is the rated voltage (± 10%) supplied? Is there an incorrect size of connection wiring?
Check the refrigerant charge.	Overcharge. Air in the system. Water in the system.
Check the fan motor.	Check the magnetic switch. Check the overcurrent relay.
Check the four way valve coil.	Is there a short circuit? Is the four way valve coil broken?
Check the outdoor PCB.	Is there a short circuit? Is the outdoor PCB broken?
Check the heat exchanger.	Soiled heat exchanger, obstruction.
Check the airflow.	Soiled air filter, obstruction, installation space.

2.3.10. Operation stops, unit cannot start for a while

Check	Detail
Check if standby function is activated.	Compressor delay timer is counting. Wait for minimum 3 minutes.
Check the power supply.	Low voltage? Is the size of the power cable sufficient?
Check the refrigerant charge.	Incorrect charge. Air in the system. Water in the system. Obstruction in the system.
Check compressor.	Overcurrent relay. Protection thermostat.

2.3.11. Indoor unit

Not available yet.

2.3.12. Outdoor unit

Not available yet.

2.3.13. System

Not applicable.

2.3.14. Others

Not applicable.

2.4. Component checklist

Overview of component checklists:

Indoor unit 45
Fan motor 45
Outdoor unit 48
4-way valve 48
Compressor 50
Electronic expansion valve 52
Fan motor 54
Main PCB 54
Refrigerant thermistors 55

2.4.1. Indoor unit

2.4.1.1. Fan motor

Technical specification		Description	
The motor has a single connector for DC power and the rotation counter feed back from the integrated pulse generator (4 pulses/revolution).		The fan motor runs on a fixed speed to supply the required air flow rate.	
Location			
Piping diagram	**Wiring diagram**	**Switch box**	**Component overview of unit**
See "Indoor unit" on page 104.	See "Indoor unit" on page 101.	Not applicable.	Not applicable.
Check procedure			

Mechanical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove casing when required.

PROCEDURE

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

Electrical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove casing when required.

PROCEDURE

1. First perform a mechanical check of the DC fan motor assembly.
2. Measure the resistance between the pins 1-2, 1-3, and 2-3 of the DC fan motor connector. All measurements MUST be 15~20 Ω.

2.4.1.2. Indoor unit PCB

INFORMATION

To perform a power check of the indoor unit PCB

Power check

PRELIMINARY ACTIONS

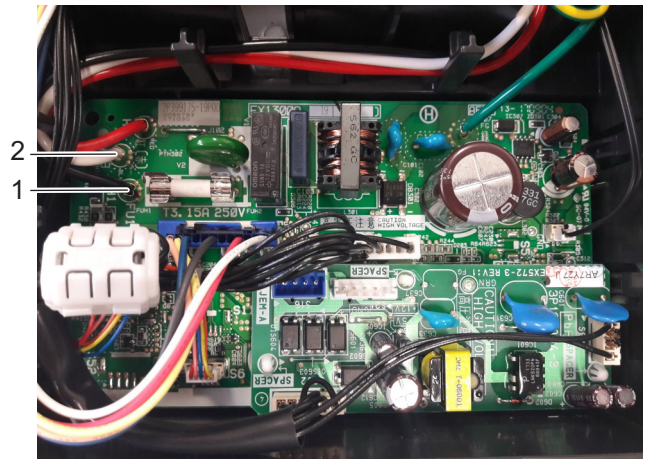
1. Stop the unit operation via the user interface.
2. Turn OFF the respective circuit breaker.

3. Remove plate work when required.

PROCEDURE

1. Turn ON the power of the unit.
2. Measure the voltage between the black and white wires on the PCB. The measured voltage MUST be 16 V DC.

Figure 2-2: Measuring the voltage



1. Black wire 2. White wire

3. Check the power supply from the outdoor unit to the indoor unit.

Electrical check

Procedure not available yet.

Check if the correct spare part is installed

PRELIMINARY ACTIONS

1. First perform all earlier checks of the indoor unit PCB.

PROCEDURE

1. Visit your local spare parts webbank.
2. Enter the model name of your unit and check if the installed spare part number corresponds with the spare part number indicated in the webbank.

Check the wiring of the indoor unit PCB

PRELIMINARY ACTIONS

1. First perform all earlier checks of the indoor unit PCB.
2. Stop the unit operation via the user interface.
3. Turn OFF the respective circuit breaker.

PROCEDURE

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 "Wiring diagram" on page 101.

INFORMATION

Correct the wiring as needed.

Check the fuse of the indoor unit PCB

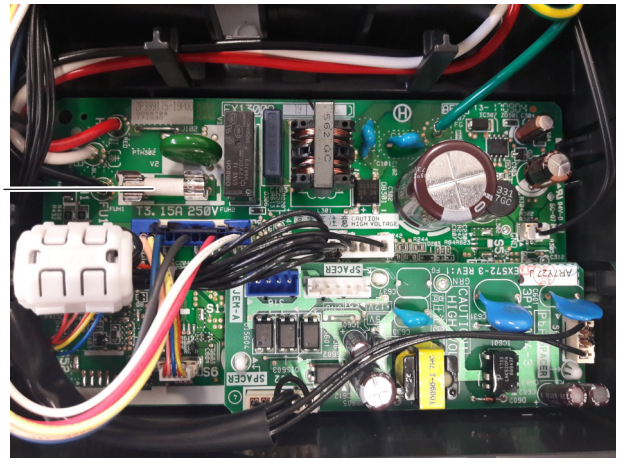
PRELIMINARY ACTIONS

1. First perform all earlier checks of the indoor unit PCB.

PROCEDURE

1. Measure the continuity of the fuse. If no continuity is measured, the fuse has blown.

Figure 2-3: Measuring the continuity of the fuse



1. Fuse

2.4.1.3. Swing flap motor

Electrical check

PRELIMINARY ACTIONS

1. Stop the unit operation via the user interface.
2. Turn OFF the respective circuit breaker.
3. Remove the required plate work.

PROCEDURE

1. Disconnect the motor connector from the indoor unit PCB.
2. Measure the resistance between the following pins of the motor connector. The measurements MUST be as shown in the table below.

2.4.2. Outdoor unit

2.4.2.1. 4-way valve

Technical specification		Description	
-		The 4-way valve directs the super heated refrigerant discharged from the compressor to the indoor heat exchanger in case of heating operation or to the outdoor heat exchanger in case of defrosting and cooling operation.	
Location			
Piping diagram	**Wiring diagram**	**Switch box**	**Component overview of unit**
See "Outdoor unit" on page 106.	See "Outdoor unit" on page 102.	See "Outdoor unit" on page 110.	See "Outdoor unit" on page 109.
Check procedure			
Mechanical check			

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

1. Loosen the screw and remove the coil from the 4-way valve (refer to "Replacing 4-way valve coil" on page 75).

> **WARNING: RISK OF FIRE**
>
> When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

2. Unplug 4-way valve connector from applicable PCB, see table "Component checklist" on page 110.
3. Switch the circuit breaker on.
4. Switch on the Daikin unit via the user interface, start cooling/defrost operation.

   If the temperature after the heat exchanger drops, proceed with next step.

   If the temperature after the heat exchanger rises, the 4-way valve is stuck in heating position, replace the 4-way valve body (refer to "Replacing 4-way valve body" on page 74).

   If the temperature after the heat exchanger does not rise, check the refrigerant pressure by connecting a manifold to one of the service ports.

   - If no pressure is measured, perform a pressure test and fix any leaks.
   - If pressure is measured, the 4-way valve is stuck in the middle, confirm by determining the position of the 4-way valve as described below and replace the 4-way valve (refer to "Replacing 4-way valve body" on page 74).

> **CAUTION - RISK OF LIQUID ENTERING THE COMPRESSOR**
>
> To prevent damage to the compressor the step below must only be done once.

5. While listening to the 4-way valve, place a round permanent magnet on the core of the solenoid valve. If you do not hear the 4-way valve switching, it must be replaced (refer to "Replacing 4-way valve body" on page 74).

Electrical check

PRELIMINARY ACTIONS

1. Switch off Daikin unit via the user interface.
2. Switch off Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

1. Switch on the Daikin unit, start heating operation.

> **WARNING: RISK OF FIRE**
>
> When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

2. Measure the voltage on 4-way valve connector: pin 1-3, see table "Component checklist" on page 110. If the measured voltage does not range 220-240 VAC during switching / 15 VAC after switching, unplug 4-way valve connector from PCB and measure the voltage directly on the PCB: pin 1-3 of 4-way valve connection.
   - If the voltage, measured directly on the PCB does not range 220-240 VAC during switching / 15 VAC after switching, replace main PCB.
   - If the voltage, measured directly on the PCB does range 220-240 VAC during switching / 15 VAC after switching, replace the 4-way valve coil (refer to "Replacing 4-way valve coil" on page 75).

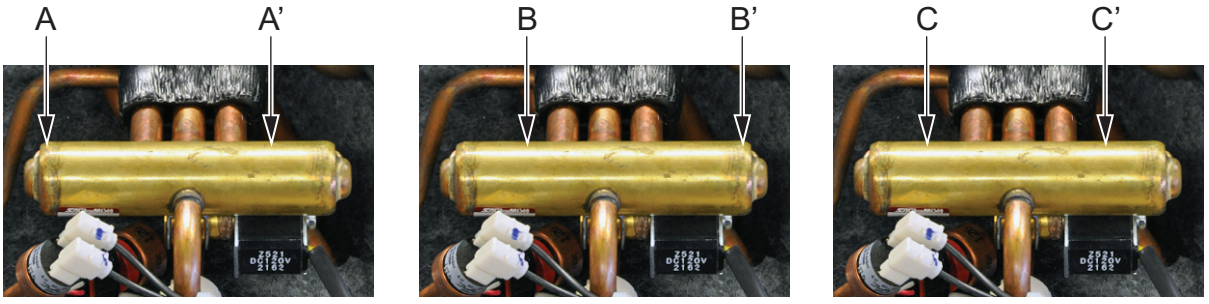
> **WARNING: RISK OF FIRE**
>
> When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

3. Unplug 4-way valve connector from PCB and measure the resistance of the 4-way valve coil. If the measured resistance does not range 1000 - 2000 Ω, replace the 4-way valve coil (refer to "Replacing 4-way valve coil" on page 75).
4. Switch on the Daikin unit, start cooling/defrost operation.

   If the temperature after the plate type heat exchanger rises, the control of the 4-way valve is wrong. Replace main PCB.

Determine the position of the 4-way valve

1. Switch off Daikin unit via the user interface.
2. Switch off Daikin unit with the field supplied circuit breaker.
3. Slide a magnet over the front and the rear of the 4-way valve body and sense the attraction of the magnet to determine the valve position.
4. If the magnet is attracted in positions A,A' or B,B', the 4-way valve is OK; if the magnet is attracted in positions C,C' the 4-way valve must be replaced (refer to "Replacing 4-way valve body" on page 74).



2.4.2.2. Compressor

Technical specification		Description	
Type: inverter driven, swing double swing.		The compressor compresses the refrigerant in the refrigerant circuit.	
Location			
Piping diagram	**Wiring diagram**	**Switch box**	**Component overview of unit**
See "Outdoor unit" on page 106.	See "Outdoor unit" on page 102.	See "Outdoor unit" on page 110.	See "Outdoor unit" on page 109.

Check procedure

Preliminary check

1. Check if the Daikin unit is connected to earth.
2. Check if the stop valve is open.

Mechanical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

1. Open the compressor insulation.
2. Check if the condition of the compressor dampers and piping is correct.

Electrical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required.

PROCEDURE

1. Open the compressor insulation.
2. Switch on the Daikin unit and measure the U, V, W inverter voltages. All voltages must be identical, if not, replace the inverter PCB.
3. Switch off the Daikin unit via the user interface.
4. Switch off the Daikin unit with the field supplied circuit breaker.

INFORMATION

Note the position of the cables on the compressor wire terminals to allow identical wiring during reinstallation.

5. Disconnect the Faston connectors U, V and W from the compressor, take picture.
6. Measure the compressor motor windings U-V, V-W and U-W.

7. Megger the compressor using 500 or 1000 VDC, the insulation must be higher than 3 MΩ.

8. Replace the compressor if the windings and/or insulation measurements fail (refer to "Replacing compressor" on page 76).

9. Run the compressor and measure the current in each phase; the current for each phase should be identical (refer to "Product specific information" on page 110). In that case it can be decided to preventively replace the compressor (refer to "Replacing compressor" on page 76).

2.4.2.3. Electronic expansion valve

Technical specification	Description
The electronic expansion valve has a hermetically sealed body with a slide-on stepping motor drive coil (480 pulses from fully closed to fully open position).	The electronic expansion valve is used: • To control the flow of refrigerant. Depending on location, the trigger point is sub-cool and/or superheat. • To stop the flow of refrigerant completely when closing (= 0 pulses).

Location			
Piping diagram	**Wiring diagram**	**Switch box**	**Component overview of unit**
See "Outdoor unit" on page 106.	See "Outdoor unit" on page 102.	See "Outdoor unit" on page 110.	See "Outdoor unit" on page 109.

Check procedure

Mechanical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Switch on the Daikin unit and listen to the expansion valve assembly, if the expansion valve body does not create a latching sound, continue with the electrical check.
4. Switch off the Daikin unit via the user interface.
5. Switch off the Daikin unit with the field supplied circuit breaker.
6. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

1. Remove the expansion valve coil from the expansion valve body.
2. Slide the magnet (tool part N° 9950038) over the expansion valve body and gently rotate the magnet to manually operate the expansion valve body clockwise (closing) and counterclockwise (opening).
3. If it is not possible to open the expansion valve body with the magnet, the expansion valve body is blocked and the expansion valve body must be replaced (refer to "Replacing expansion valve body" on page 80).

Electrical check

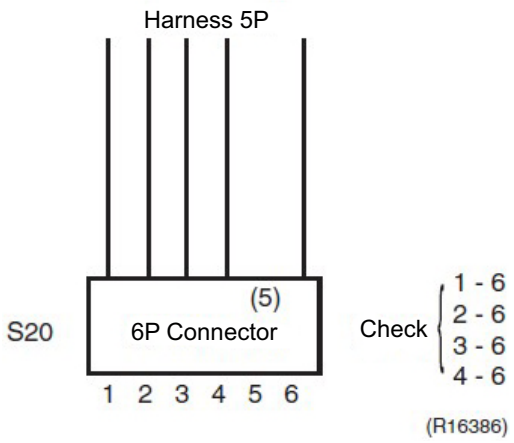
PRELIMINARY ACTIONS

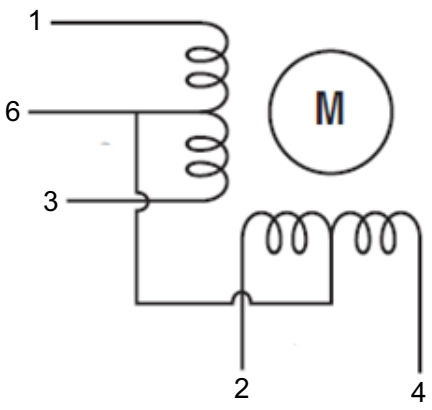
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

1. Check if the electrical connector of the expansion valve coil was correctly connected to the PCB, if not, connect the electrical connector.
2. Disconnect the electrical connector of the expansion valve coil and check the continuity between below pins using a multi meter. It should be ± the same value.
   - Connector pin 1-6: connected
   - Connector pin 2-6: connected

- Connector pin 3-6: connected
- Connector pin 4-6: connected





3. If one or more of the windings have no continuity, replace the expansion valve coil.

2.4.2.4. Fan motor

Technical specification		Description	
The motor has a single connector for DC power and the rotation counter feed back from the integrated pulse generator (4 pulses/revolution).		The fan motor runs on a fixed speed to supply the required air flow rate.	
Location			
Piping diagram	**Wiring diagram**	**Switch box**	**Component overview of unit**
See "Outdoor unit" on page 106.	See "Outdoor unit" on page 102.	See "Outdoor unit" on page 110.	See "Outdoor unit" on page 109.
Check procedure			

Mechanical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

1. Check the state of the propeller, replace the propeller if damaged, deformed, cracked or broken (refer to "Replacing propeller fan blade assembly" on page 87).
2. Check the motor shaft bearing friction, only perform electrical check if motor runs with low shaft bearing friction. Replace fan motor if friction is abnormal (refer to "Replacing DC fan motor assembly" on page 79).

Electrical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

1. Check fuse on PCB, replace if blown, see table "Component checklist" on page 110.



WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

2. Check if fan motor connector is plugged into PCB.
3. Power the Daikin unit.
4. Check power supply, the measured voltage must be 198 - 240 VAC, if not replace main PCB (refer to "Replacing main PCB" on page 86).

2.4.2.5. Main PCB

Not available yet.

2.4.2.6. Refrigerant thermistors

Technical specification		Description	
A single type of thermistor is used; the resistance vs. temperature characteristics is shown in below table "Thermistor resistance / temperature characteristics (type 1)".		The thermistors are used to measure the temperature at multiple locations inside the Daikin unit. The measured temperatures are processed by the main board.	
Location			
Piping diagram	**Wiring diagram**	**Switch box**	**Component overview of unit**
See "Outdoor unit" on page 106.	See "Outdoor unit" on page 102.	See "Outdoor unit" on page 110.	See "Outdoor unit" on page 109.
Check procedure			

Mechanical check

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Locate the thermistor and check if thermal contact with the piping or ambient is ensured.

Electrical check

INFORMATION

If a thermistor check fails, replace the thermistor.

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required.

PROCEDURE

1. From the table in the appendix ("Component checklist" on page 110), select the thermistor that must be checked.
2. Measure the temperature of the thermistor using a contact thermometer.

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

3. Unplug the connector from the appropriate PCB and measure the resistance between the pins listed in the table in the appendix ("Component checklist" on page 110).
   - Compare the measured resistance with the range determined by the lower and higher temperature.
4. If the measured resistance does not match the listed value, the thermistor must be replaced.

INFORMATION

All thermistors have a tolerance of 5%.

E.g. R3T air thermistor - main PCB - connector S90: pin 1-2 type 1:

- Measured temperature with contact thermometer: 23.1°C.
- Unplug the sensor and measure the resistance between S90: 1-2: 21.86 kΩ.

- The resistance values are defined by below table "Thermistor resistance / temperature characteristics (type 1)":
  - Resistance at 23°C: 21.85 kΩ.
  - Resistance at 24°C: 20.90 kΩ.
- The measured value 21.86 kΩ is inside the range, thermistor R3T passes the check.

INFORMATION

The user interface allows to monitor most thermistors.

If the measured resistance of the thermistor matches the temperature measured with the contact thermometer but the temperature for the corresponding thermistor is not correct on the user interface display, replace applicable PCB.

Table 2-1: Thermistor resistance / temperature characteristics (type 1)

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
-20	197.81	0	65.84	20	25.01	40	10.63	60	4.87
-19	186.53	1	62.54	21	23.91	41	10.21	61	4.70
-18	175.97	2	59.43	22	22.85	42	9.81	62	4.54
-17	166.07	3	56.49	23	21.85	43	9.42	63	4.38
-16	156.80	4	53.71	24	20.90	44	9.06	64	4.23
-15	148.10	5	51.09	25	20.00	45	8.71	65	4.08
-14	139.94	6	48.61	26	19.14	46	8.37	66	3.94
-13	132.28	7	46.26	27	18.32	47	8.05	67	3.81
-12	125.09	8	44.05	28	17.54	48	7.75	68	3.68
-11	118.34	9	41.95	29	16.80	49	7.46	69	3.56
-10	111.99	10	39.96	30	16.10	50	7.18	70	3.44
-9	106.03	11	38.08	31	15.43	51	6.91	71	3.32
-8	100.41	12	36.30	32	14.79	52	6.65	72	3.21
-7	95.14	13	34.62	33	14.18	53	6.41	73	3.11
-6	90.17	14	33.02	34	13.59	54	6.65	74	3.01
-5	85.49	15	31.50	35	13.04	55	6.41	75	2.91
-4	81.08	16	30.06	36	12.51	56	6.18	76	2.82
-3	76.93	17	28.70	37	12.01	57	5.95	77	2.72
-2	73.01	18	27.41	38	11.52	58	5.74	78	2.64
-1	69.32	19	26.18	39	11.06	59	5.14	79	2.55
								80	2.47

Table 2-2: Thermistor resistance / temperature characteristics (air thermistor FTXM-M, FTXM-N and FTXP-M9)

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
-32,5	237,01	-6,0	46,5	20,5	12,3	47,0	4,0	73,5	1,6
-32,0	229,08	-5,5	45,3	21,0	12,0	47,5	3,9	74,0	1,5
-31,5	221,45	-5,0	44,0	21,5	11,7	48,0	3,9	74,5	1,5
-31,0	214,10	-4,5	42,8	22,0	11,4	48,5	3,8	75,0	1,5
-30,5	207,02	-4,0	41,7	22,5	11,2	49,0	3,7	75,5	1,5
-30,0	200,20	-3,5	40,6	23,0	10,9	49,5	3,7	76,0	1,4
-29,5	193,64	-3,0	39,5	23,5	10,7	50,0	3,6	76,5	1,4
-29,0	187,32	-2,5	38,4	24,0	10,5	50,5	3,5	77,0	1,4
-28,5	181,22	-2,0	37,4	24,5	10,2	51,0	3,5	77,5	1,4
-28,0	175,35	-1,5	36,4	25,0	10,0	51,5	3,4	78,0	1,4
-27,5	169,70	-1,0	35,5	25,5	9,8	52,0	3,3	78,5	1,3
-27,0	164,24	-0,5	34,5	26,0	9,6	52,5	3,3	79,0	1,3
-26,5	158,99	0,0	33,6	26,5	9,4	53,0	3,2	79,5	1,3
-26,0	153,92	0,5	32,7	27,0	9,2	53,5	3,1	80,0	1,3
-25,5	149,03	1,0	31,9	27,5	9,0	54,0	3,1	80,5	1,3

T °C	kΩ
-25,0	144,32
-24,5	139,77
-24,0	135,39
-23,5	131,15
-23,0	127,07
-22,5	123,13
-22,0	119,33
-21,5	115,66
-21,0	112,11
-20,5	108,69
-20,0	105,38
-19,5	102,19
-19,0	99,11
-18,5	96,13
-18,0	93,25
-17,5	90,47
-17,0	87,78
-16,5	85,19
-16,0	82,67
-15,5	80,25
-15,0	77,90
-14,5	75,63
-14,0	73,43
-13,5	71,31
-13,0	69,25
-12,5	67,27
-12,0	65,34
-11,5	63,48
-11,0	61,68
-10,5	59,93
-10,0	58,25
-9,5	56,61
-9,0	55,03
-8,5	53,50
-8,0	52,01
-7,5	50,57
-7,0	49,18
-6,5	47,83

T °C	kΩ
1,5	31,1
2,0	30,3
2,5	29,5
3,0	28,7
3,5	28,0
4,0	27,3
4,5	26,6
5,0	25,9
5,5	25,3
6,0	24,6
6,5	24,0
7,0	23,4
7,5	22,8
8,0	22,3
8,5	21,7
9,0	21,2
9,5	20,7
10,0	20,2
10,5	19,7
11,0	19,2
11,5	18,7
12,0	18,3
12,5	17,9
13,0	17,4
13,5	17,0
14,0	16,6
14,5	16,2
15,0	15,8
15,5	15,5
16,0	15,1
16,5	14,8
17,0	14,4
17,5	14,1
18,0	13,8
18,5	13,4
19,0	13,1
19,5	12,8
20,0	12,5

T °C	kΩ
28,0	8,8
28,5	8,6
29,0	8,4
29,5	8,2
30,0	8,0
30,5	7,9
31,0	7,7
31,5	7,5
32,0	7,4
32,5	7,2
33,0	7,1
33,5	6,9
34,0	6,8
34,5	6,6
35,0	6,5
35,5	6,4
36,0	6,2
36,5	6,1
37,0	6,0
37,5	5,9
38,0	5,7
38,5	5,6
39,0	5,5
39,5	5,4
40,0	5,3
40,5	5,2
41,0	5,1
41,5	5,0
42,0	4,9
42,5	4,8
43,0	4,7
43,5	4,6
44,0	4,5
44,5	4,4
45,0	4,3
45,5	4,3
46,0	4,2
46,5	4,1

T °C	kΩ
54,5	3,0
55,0	3,0
55,5	2,9
56,0	2,9
56,5	2,8
57,0	2,8
57,5	2,7
58,0	2,7
58,5	2,6
59,0	2,6
59,5	2,5
60,0	2,5
60,5	2,4
61,0	2,4
61,5	2,4
62,0	2,3
62,5	2,3
63,0	2,2
63,5	2,2
64,0	2,2
64,5	2,1
65,0	2,1
65,5	2,1
66,0	2,0
66,5	2,0
67,0	1,9
67,5	1,9
68,0	1,9
68,5	1,9
69,0	1,8
69,5	1,8
70,0	1,8
70,5	1,7
71,0	1,7
71,5	1,7
72,0	1,6
72,5	1,6
73,0	1,6

T °C	kΩ
81,0	1,2
81,5	1,2
82,0	1,2
82,5	1,2
83,0	1,2
83,5	1,1
84,0	1,1
84,5	1,1
85,0	1,1
85,5	1,1
86,0	1,1
86,5	1,0
87,0	1,0
87,5	1,0
88,0	1,0
88,5	1,0
89,0	1,0
89,5	0,9
90,0	0,9
90,5	0,9
91,0	0,9
91,5	0,9
92,0	0,9
92,5	0,9
93,0	0,9
93,5	0,8
94,0	0,8
94,5	0,8
95,0	0,8
95,5	0,8
96,0	0,8
96,5	0,8
97,0	0,8
97,5	0,7
98,0	0,7
98,5	0,7
99,0	0,7
99,5	0,7

Part 3. Repair

This part contains the following chapters:

Refrigerant repair procedures 59
Service tools 63
Unit specific repair procedures 64

3.1. Refrigerant repair procedures

Overview:

Refrigerant piping handling 59
Recovery procedure 59
Refrigerant pump down 61
Piping repair procedures 62

3.1.1. Refrigerant piping handling

- Make sure the applied pressure is never higher than the unit design pressure as indicated on the nameplate (PS).
- Work according the F-gas regulation and/or local regulations.
- Make sure the correct amount according the F-gas regulation label on the unit (factory + additional where required) of refrigerant is charged after repair.
- 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 work:
  - -0,1 MPa / -760 mmHg / -750 Torr / -1 bar for at least 1 hour.
  - Connect the unit according the available service ports, refer to "Recovery procedure" on page 59.
  - Use related field setting where necessary to open expansion valve/solenoid valve.

3.1.2. Recovery procedure

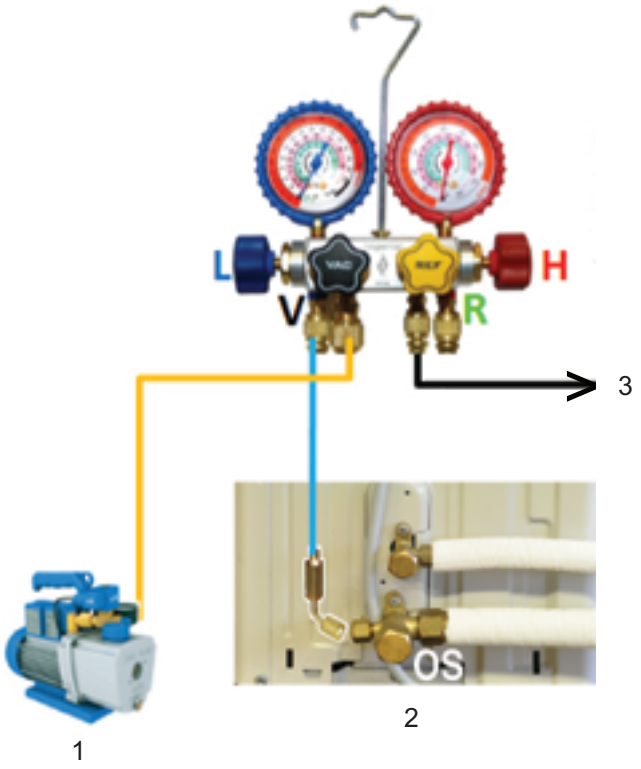
3.1.2.1. Outdoor unit casing

1. Switch off the Daikin unit via the user interface.
2. Manually open the expansion valve (located on the outdoor unit).
3. Connect the vacuum pump, manifold, recovery unit and refrigerant bottle to the service port as shown below.

   For the location of the service ports, refer to "Outdoor unit" on page 106.

In case of 1 service port at the stop valves

Figure 3-1: 1 service port at the stop valves



1. Vacuum pump
2. Connect flexible hose to service port 3 stop valve
3. To recovery pump

INFORMATION

See instruction of the recovery pump supplier how to recover the refrigerant.

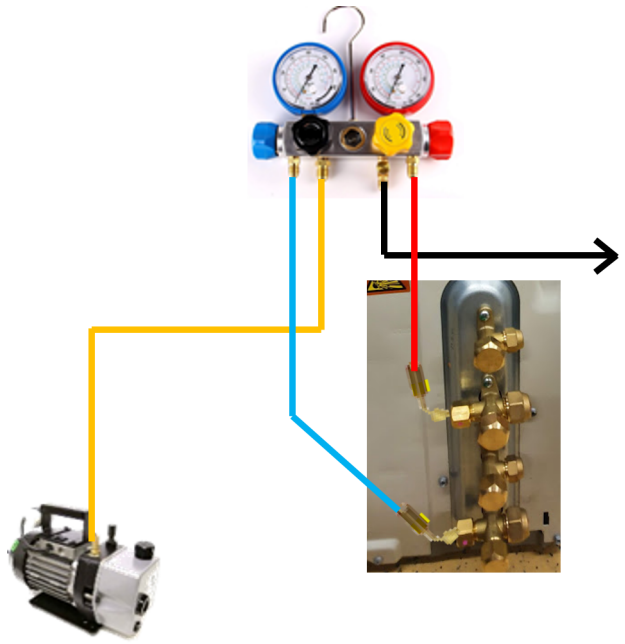
In case of 2 service ports at the stop valves

Connect both stop valve service ports to the manifold.

In case of 3 service ports at the stop valves

Connect 1 hose to the suction stop valve service port and 1 hose to the service port between the expansion valve and outdoor H/E.

Figure 3-2: 2 service ports at stop valves



1. Vacuum pump	2. To recovery pump

INFORMATION

See instruction of the recovery pump supplier how to recover the refrigerant.

3.1.3. Refrigerant pump down

To protect the environment, make sure to perform the following pump down operation when relocating the unit.

WARNING: RISK OF EXPLOSION

- When the refrigeration circuit has a leak, do not execute pump down with the compressor.
- Use recovery system into separate cylinder.
- Warning, explosive hazard exists when executing pump down.
- Pump down with compressor can lead to self-combustion due to air entering during pump down.

INFORMATION

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 valve lid from liquid stop valve and gas stop valve.
2. Carry out pump down operation.

CAUTION

Refer to Installer Reference Guide for 'Pump down operation' procedure.

3. After 5-10 min (after only 1-2 min in case of very low Ta < -10°C), close the liquid stop valve with a hexagonal wrench.
4. Check on manifold if vacuum is reached, close gas stop valve and forced cooling operation.

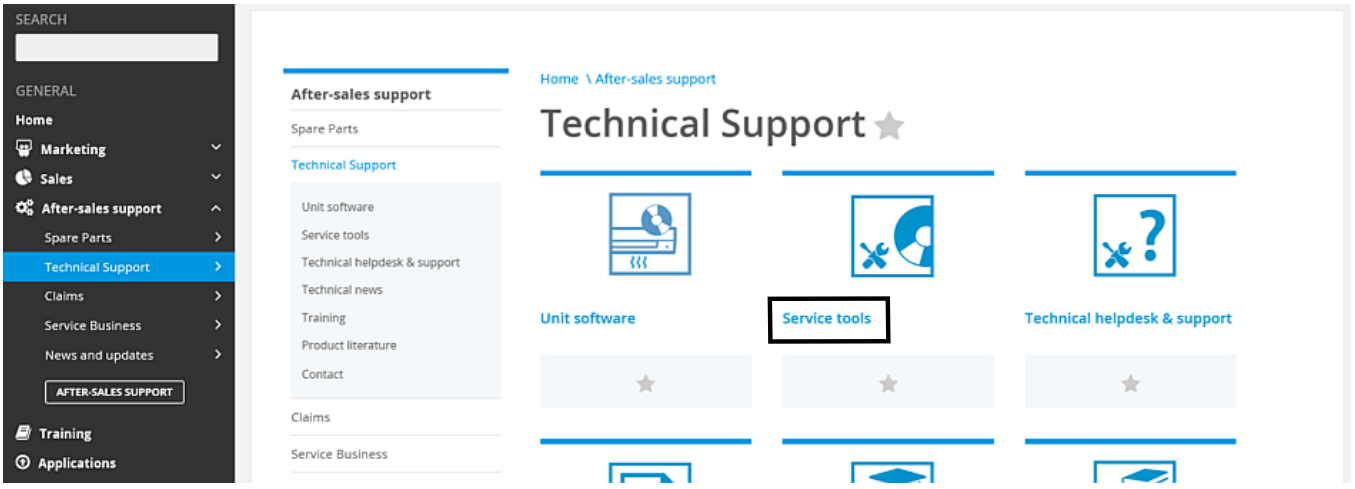
3.1.4. Piping repair procedures

- Make sure to cover open pipe ends during repair work 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 and use 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 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 ≥ 99,99%).

3.2. Service tools

For an overview of the applicable service tools, please check the Daikin Business Portal: http://www.mydaikin.eu

Go to the tab “After-sales support” on the left side and then select “Technical support”.



You will then find a button “Service tools” which gives you an overview on which service tool to use for which product. Also additional information on the service tool (instruction, latest software) can be found there.

3.3. Unit specific repair procedures

Overview:

Indoor unit 65
Replacing fan motor 65
Outdoor unit 69
Basic removal 69
Replacing switch box 71
Replacing 4-way valve body 74
Replacing 4-way valve coil 75
Replacing compressor 76
Replacing DC fan motor assembly 79
Replacing expansion valve body 80
Replacing expansion valve motor 84
Replacing main PCB 86
Replacing propeller fan blade assembly 87
Replacing thermistors 88
Setting test mode for inverter checker 89

3.3.1. Indoor unit

3.3.1.1. Replacing fan motor

PRELIMINARY ACTIONS

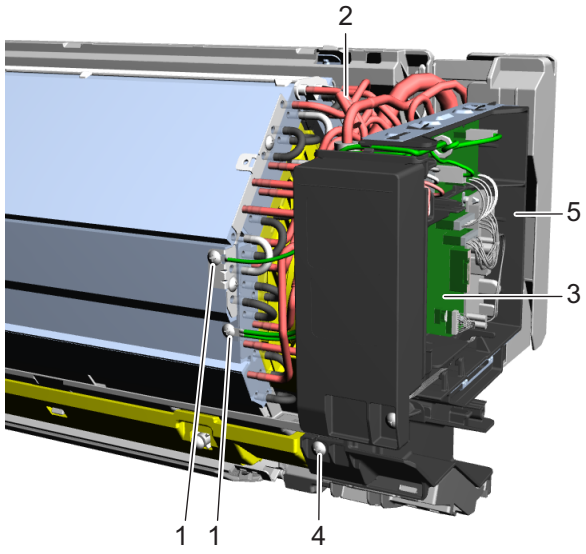
1. Stop the unit operation via the user interface.
2. Turn OFF the respective circuit breaker.
3. Remove the required plate work.

PROCEDURE

Removal

1. Pull the clip and remove the heat exchanger thermistor from its holder.
2. Remove the screws to disconnect the grounding wires from the heat exchanger.

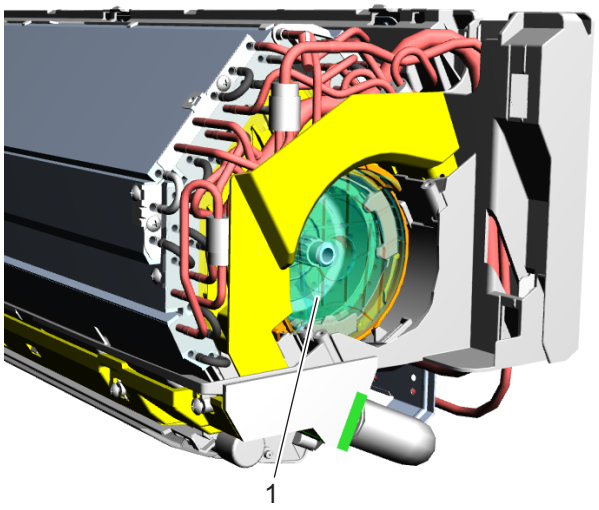
Figure 3-3: Removing the screws



1. Grounding wire screw
2. Heat exchanger thermistor
3. Indoor unit PCB
4. Switch box screw
5. Switch box

3. Disconnect the connectors of the indoor unit fan motor, the swing flap motor and the swing raster motor (if equipped) from the indoor unit PCB.
4. Remove the screw and remove the switch box from the indoor unit.
5. Click the indoor unit fan motor cover out of the indoor unit.

Figure 3-4: Clicking the indoor unit fan motor cover



1. Indoor unit fan motor cover

6. Remove the rubber from the indoor unit.
7. Remove the indoor unit fan motor from the indoor unit.

Installation

1. Install the indoor unit fan motor in its correct location on the fan.
2. Install the rubber in front of the fan motor.
3. Click the indoor unit fan motor cover on the indoor unit.
4. Put the switch box in place.

3.3.1.2. Replacing indoor unit PCB

PRELIMINARY ACTIONS

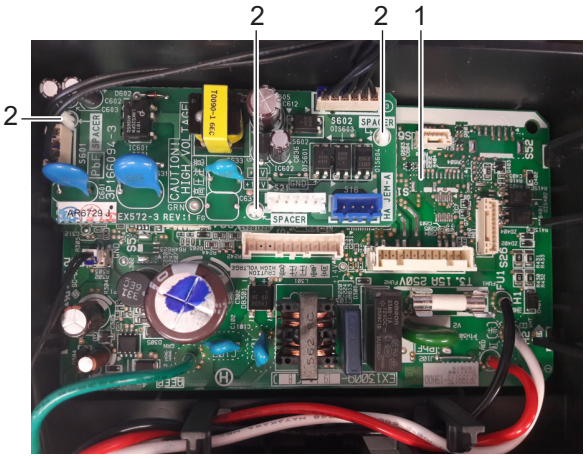
1. Stop the unit operation via the user interface.
2. Turn OFF the respective circuit breaker.
3. Remove the required plate work.

PROCEDURE

Removal

1. Disconnect all connectors from the indoor unit PCB.
2. Carefully pull the indoor unit PCB from the PCB supports.

Figure 3-5: Indoor unit PCB



1. Indoor unit PCB	2. PCB support

3. Remove the indoor unit PCB from the indoor unit.

Installation

1. Proceed in reverse order.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "Wiring diagram" on page 101.

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

3.3.1.3. Replacing swing flap motor

PRELIMINARY ACTIONS

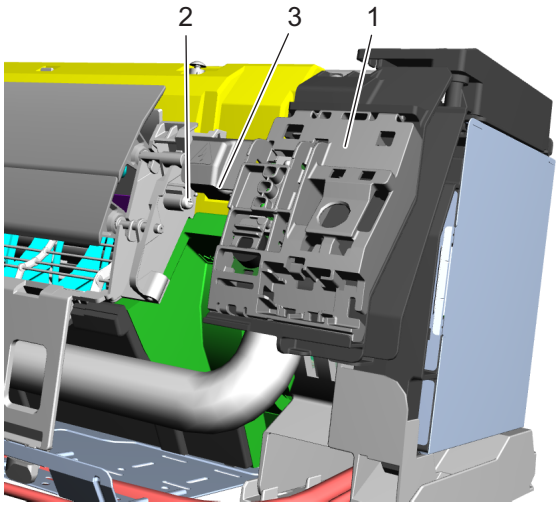
1. Stop the unit operation via the user interface.
2. Turn OFF the respective circuit breaker.
3. Remove the required plate work.

PROCEDURE

Removal

1. Remove the cover.

Figure 3-6: Removing the cover



1. Cover
2. Screw
3. Swing flap motor

2. Disconnect the connector from the swing flap motor.
3. Remove the screw from the swing flap motor.
4. Remove the swing flap motor from the swing flap.

Installation

1. Proceed in reverse order.

3.3.2. Outdoor unit

3.3.2.1. Basic removal

3.3.2.1.1 Single fan outdoor unit

3.3.2.1.2 Removing refrigerant connection cover

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.

PROCEDURE

Removal

1. Loosen and remove the 2 screws (1) that fix the refrigerant connection cover.

Figure 3-7: Removing refrigerant connection cover



1. Screw

3.3.2.1.3 Removing the top plate

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.

PROCEDURE

Removal

1. Loosen and remove the 2 screws (1) that fix the top plate.

Figure 3-8: Removing the top plate



1. Screw

3.3.2.1.4 Removing the front plate

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.

PROCEDURE

Removal

1. Remove the top plate.
2. Loosen and remove the 8 screws (1) that fix the front plate.

Figure 3-9: Removing the front plate



1. Screw

3.3.2.1.5 Removing the compressor sound insulation

PRELIMINARY ACTIONS

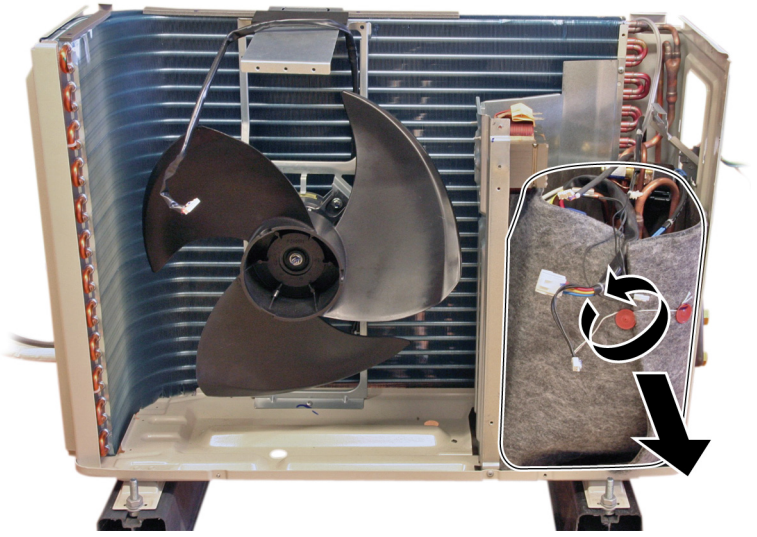
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.

PROCEDURE

Removal

1. Remove the top plate.
2. Remove the front plate.
3. Remove the compressor sound insulation (untwist the cord and remove the insulation).

Figure 3-10: Removing the compressor sound insulation



3.3.2.2. Replacing switch box

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 69.

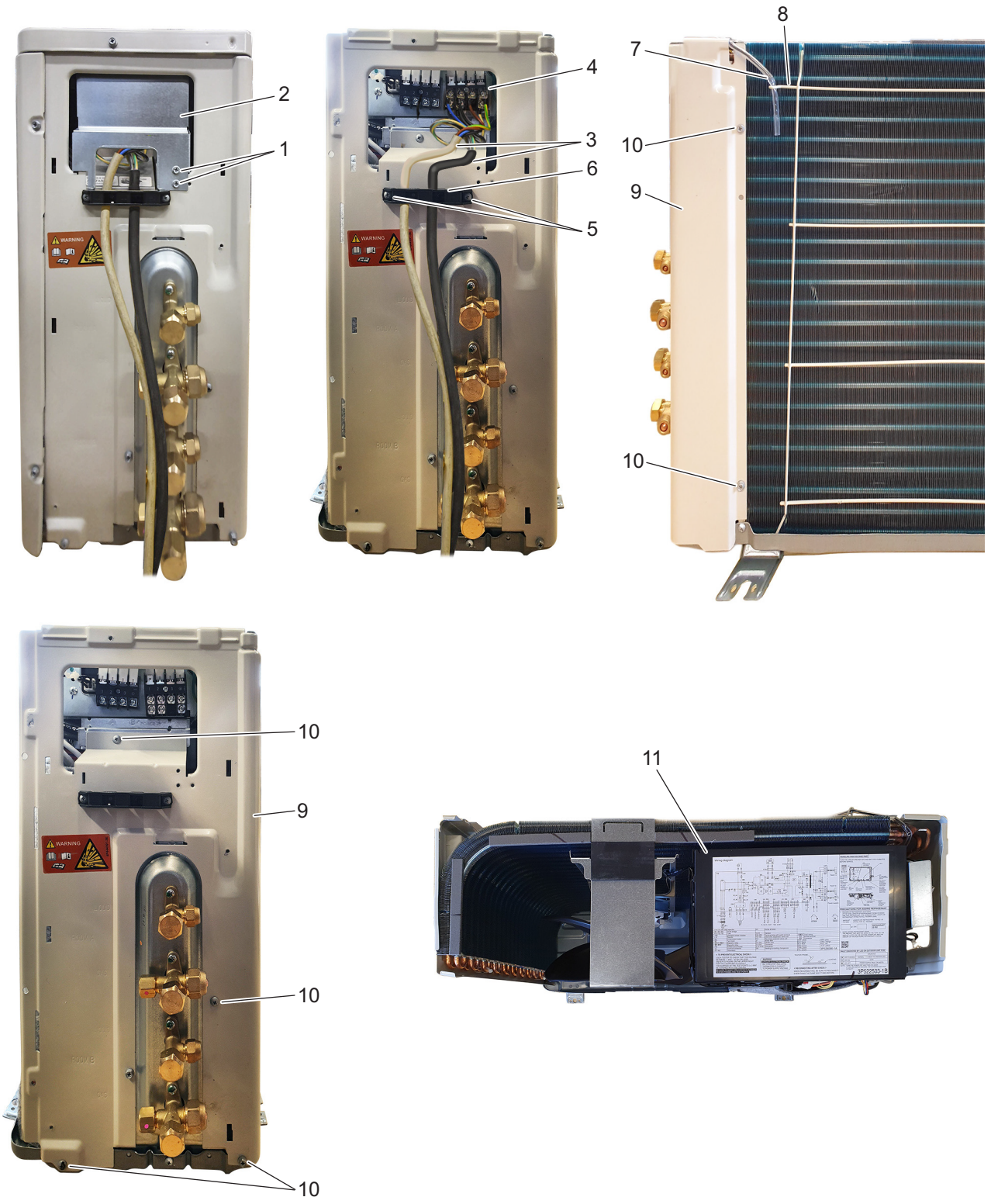
PROCEDURE

Removal

	**WARNING: RISK OF FIRE** When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

1. Remove the screws (1) that fix the terminal protector plate (2), remove the plate (2)
2. Remove all electrical power wiring (3) from the wire terminals (4).
3. Remove the screws (5) that fix the wire clamp (6), remove the wire clamp (6).
4. Remove the thermistor (7) out of the guard net (8) and the side plate (9)
5. Remove the screws (10) that fix the side plate assembly (9), remove the side plate assembly.

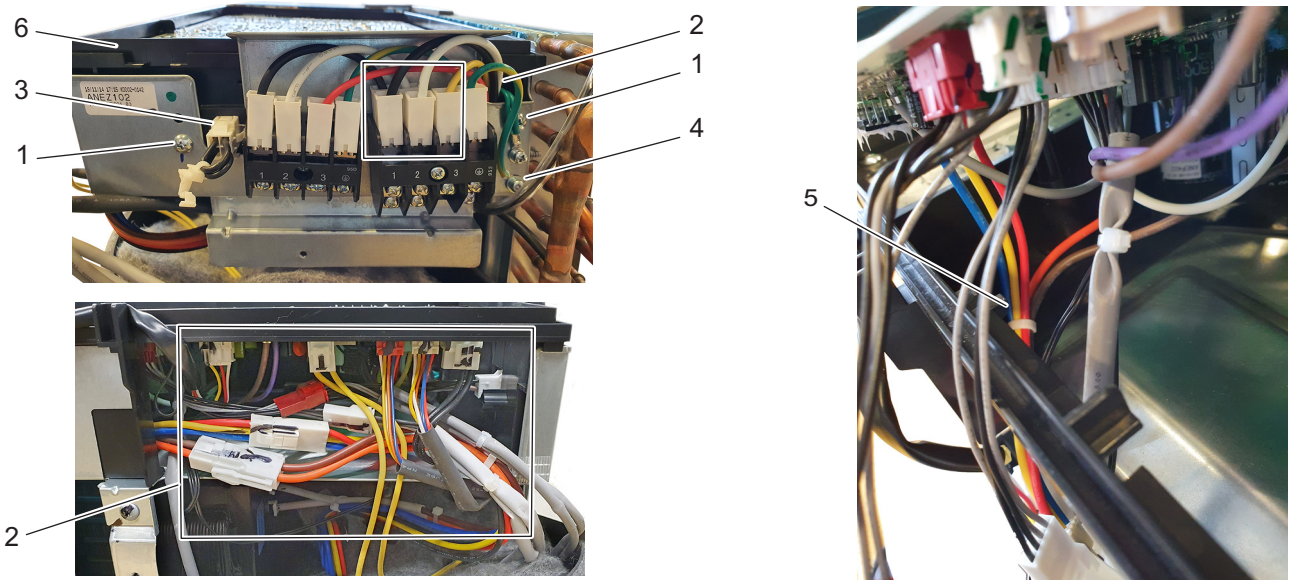
Figure 3-11: Removing the switch box



1. Screw
2. Terminal protector plate
3. Electrical power wiring
4. Wire terminals
5. Screw
6. Wire clamp
7. Thermistor
8. Guard net
9. Side plate
10. Screw
11. Switch box

6. Remove the screws (1) that fix the switch box (6).
7. Unplug all connectors (2) from the main PCB, see "Component checklist" on page 110.
8. Unplug the connector (3) and keep it for re-use.
9. Disconnect the earth wiring (4).
10. Cut the cable tie (5).
11. Lift the switch box (6) from the Daikin unit.

Figure 3-12: Removing the switch box



1. Screw
2. Connector
3. Connector
4. Earth wiring
5. Cable tie
6. Switch box

Installation

1. Proceed in reverse order.

3.3.2.3. Replacing 4-way valve body

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Recover the refrigerant, refer to "Recovery procedure" on page 59.
4. Remove plate work when required (refer to "Basic removal" on page 69).

PROCEDURE

Removal

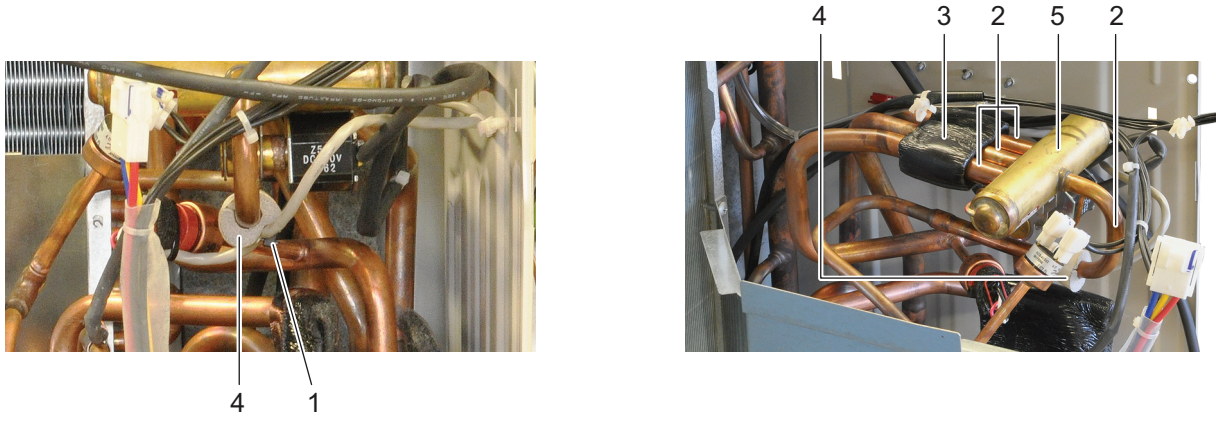
1. Remove any parts that block the way to the 4-way valve.

	INFORMATION Follow local regulations and Daikin refrigerant repair procedures during the repair of your unit, refer to "Refrigerant repair procedures" on page 59.

	CAUTION The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

2. Cut the 4-way valve pipes (2).
3. Remove the 4-way valve (5).
4. Recuperate the putty (3).
5. Recuperate the insulation (4).

Figure 3-13: Removing the 4-way valve



1. Tie wrap
2. 4-way valve pipe
3. Putty
4. Insulation
5. 4-way valve

Installation

	WARNING Overheating the 4-way valve will damage or destroy it.

1. Wrap a wet rag around the 4-way valve (5).

INFORMATION

Install the putty on the 4-way valve.

Install the compressor sound insulation in the same location.

2. Proceed in reverse order.

3.3.2.4. Replacing 4-way valve coil

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required.
4. Remove any part that block the way to the 4-way valve coil.

PROCEDURE

Removal

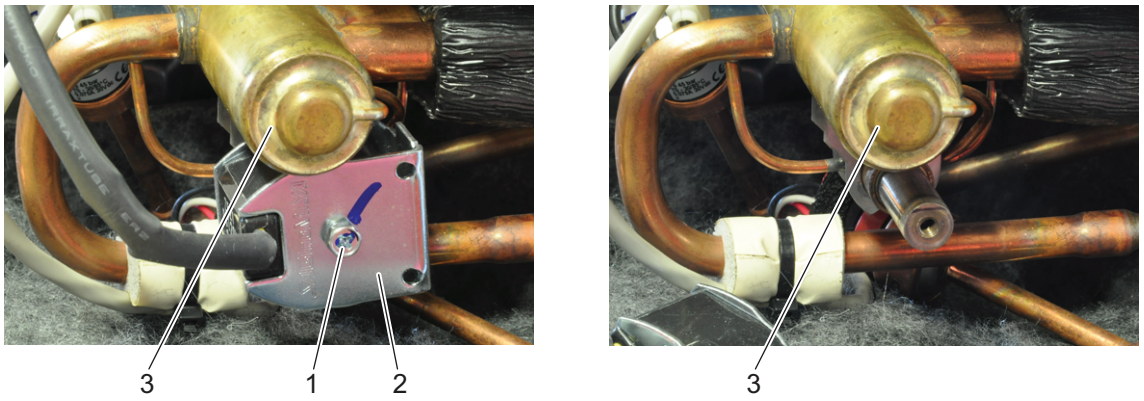
1. Loosen and remove the screw (1) that fixes the 4-way valve coil (2).
2. Cut the tie wraps that fix the 4-way valve coil wiring.

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

3. Unplug 4-way valve connector from PCB.

Figure 3-14: Removing the 4-way valve coil



1. Screw
2. 4-way valve coil
3. 4-way valve body

Installation

1. Proceed in reverse order.

3.3.2.5. Replacing compressor

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Recover the refrigerant, refer to "Recovery procedure" on page 59.
4. Remove plate work when required.
5. Remove any part that blocks the way to the compressor.

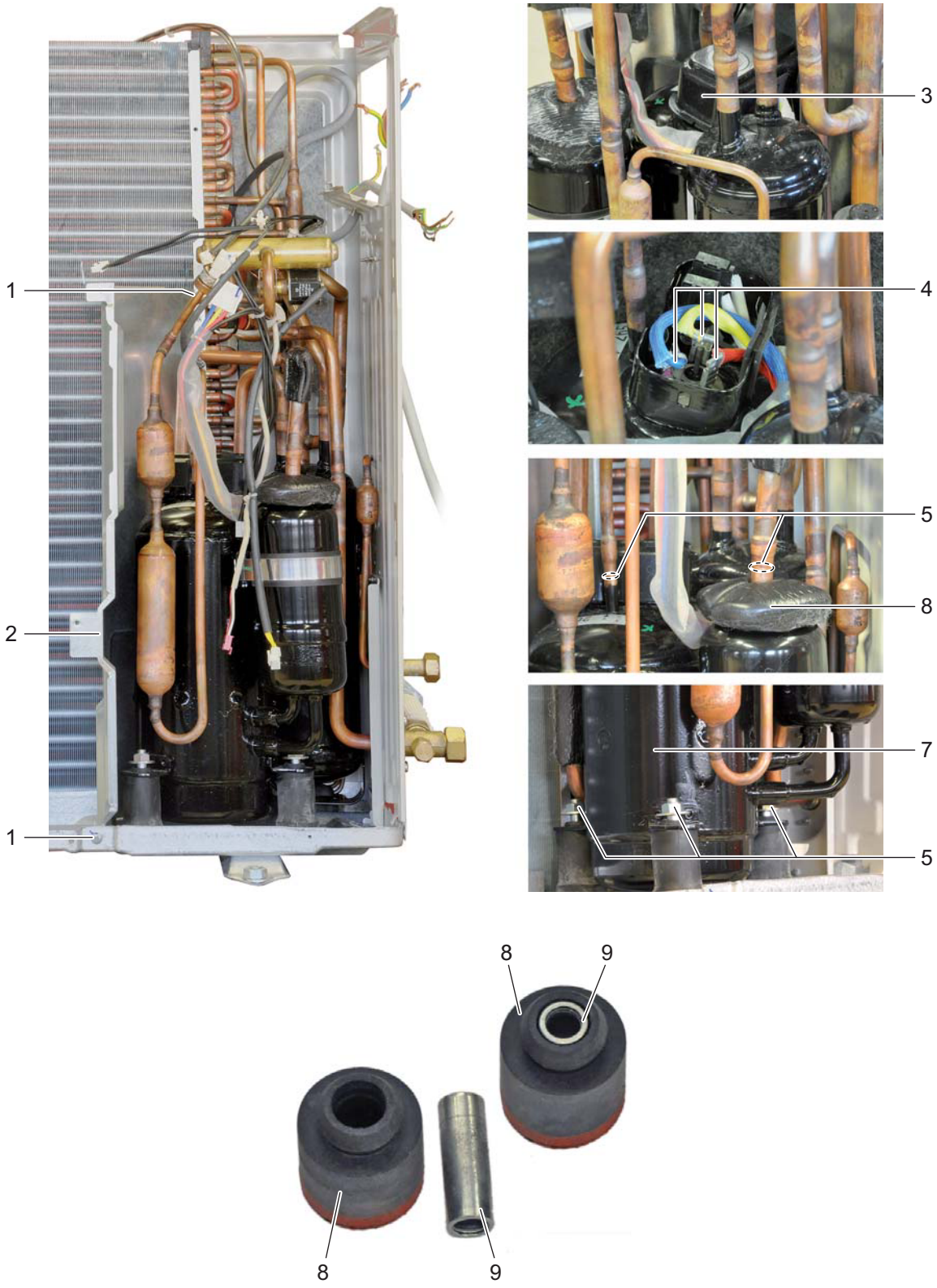
PROCEDURE

	**INFORMATION** Follow local regulations and Daikin refrigerant repair procedures during the repair of your unit, refer to "Refrigerant repair procedures" on page 59.
	**CAUTION** The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

Removal

1. Remove the terminal cover (3) and unplug the compressor wiring (4) and take picture.
2. Using a pipe cutter, cut the compressor pipes (5) below the soldered joint.
3. Loosen and remove the 3 nuts (6) that fix the compressor (7).
4. Remove the compressor (7).
5. Remove the dampers (9) with bushings (10) from the compressor (7).
6. Recuperate the putty (8).

Figure 3-15: Removing the compressor



1. Screw	6. Nut
2. Partition plate assembly	7. Compressor
3. Terminal cover	8. Putty
4. Compressor wiring	9. Dampers
5. Compressor pipe	10. Bushing

Installation

	**CAUTION** The oil in the compressor is hygroscopic. Remove the caps from the compressor piping as late as possible.
	**INFORMATION** Before installing a new compressor, determine the cause of the compressor failure and take all required corrective actions.
	**INFORMATION** If the dampers are worn, replace the dampers. The bushings inside the dampers are recuperated for use with the new dampers.
	**INFORMATION** Install the putty on the compressor. Install the compressor sound insulation in the same location.

1. Check damper status, replace when worn.
2. First install the 3 (new) dampers (without the bushings) on the new compressor.
3. Install the 3 bushings in the dampers.
4. When installing the new compressor, remove the caps from the compression pipe and the suction pipe as late as possible.
5. When soldering the compressor pipes, cover the compressor pipes with a wet cloth to prevent overheating the compressor (and the oil in the compression pipe).
6. Proceed in reverse order.

3.3.2.6. Replacing DC fan motor assembly

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the propeller fan blade assembly, refer to "Replacing propeller fan blade assembly" on page 87.

PROCEDURE

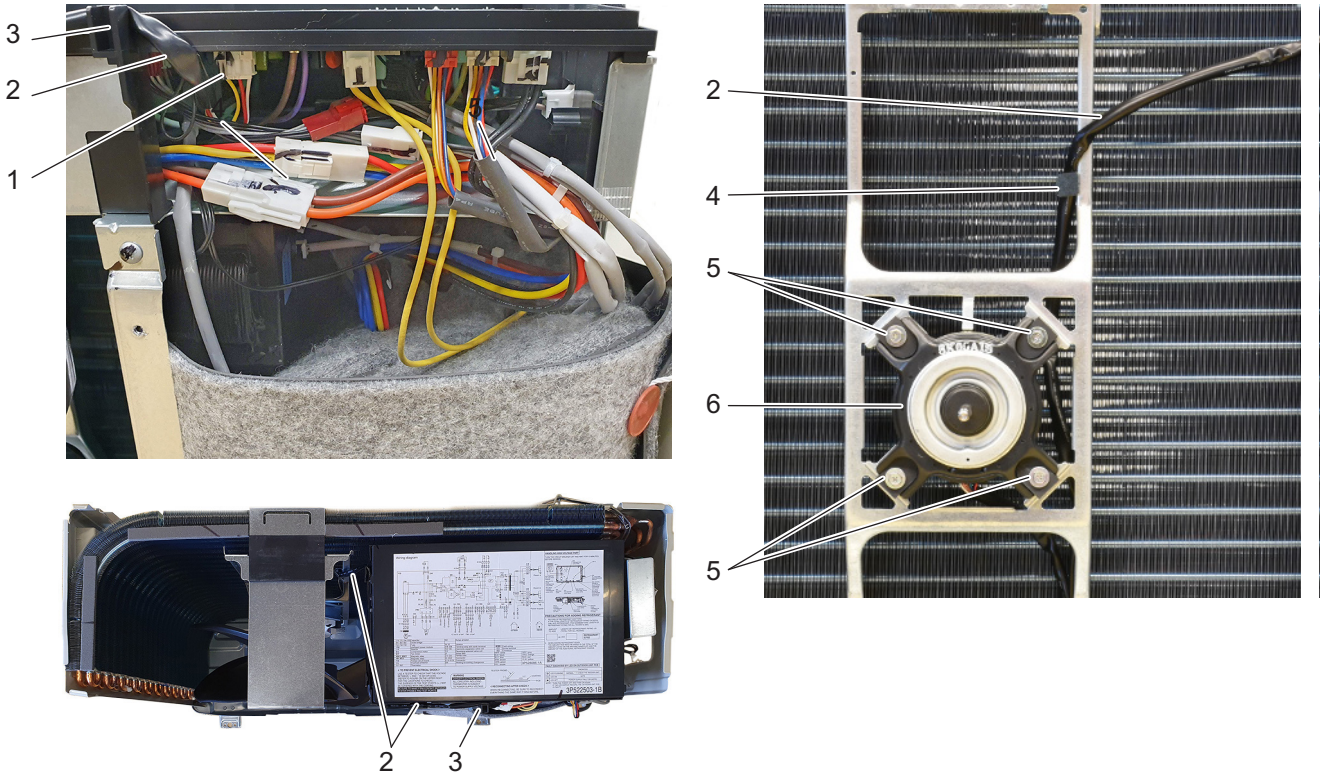
Removal

1. Unplug the fan motor connector (1) from the main PCB.

> **WARNING: RISK OF FIRE**
>
> When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

2. Release the fan motor assembly harness (2) from the slot (3).
3. Slightly bend the harness retainers (4) to release the fan motor assembly harness (2).
4. Loosen and remove the screws (5) that fix the DC fan motor assembly (6).
5. Remove the DC fan motor assembly (6).

Figure 3-16: Removing the DC fan motor assembly



1. Fan motor connector
2. Fan motor assembly harness
3. Slot
4. Harness retainer
5. Screw
6. Fan motor assembly

Installation

1. Proceed in reverse order.

3.3.2.7. Replacing expansion valve body

To remove the expansion valve motor

PRELIMINARY ACTIONS

1. Stop the unit operation via the user interface.
2. Turn OFF the respective circuit breaker.
3. Remove the required plate work, refer to "Basic removal" on page 69.

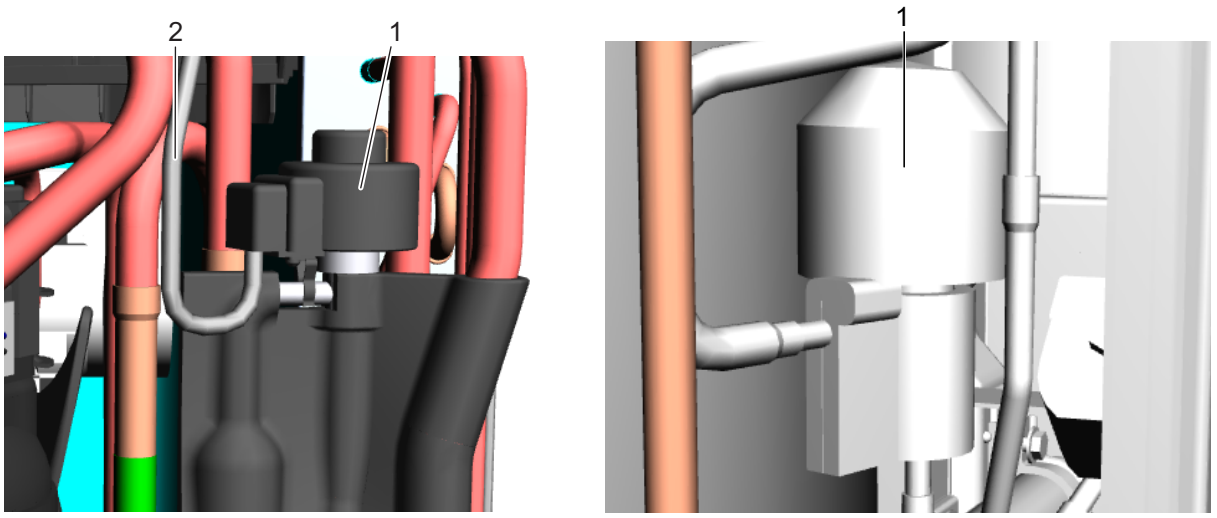
PROCEDURE

1. If needed, remove any parts or insulation to create more space for the removal.
2. Pull up the expansion valve motor to remove it from the expansion valve body.

INFORMATION

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

Figure 3-17: Removing the expansion valve motor



1. Expansion valve motor
2. Expansion valve motor harness

INFORMATION

The expansion valve and motor can have a different configuration / layout.

3. Cut all tie straps that fix the expansion valve motor harness.
4. Disconnect the expansion valve motor connector from the main PCB.

To remove the expansion valve body

PRELIMINARY ACTIONS

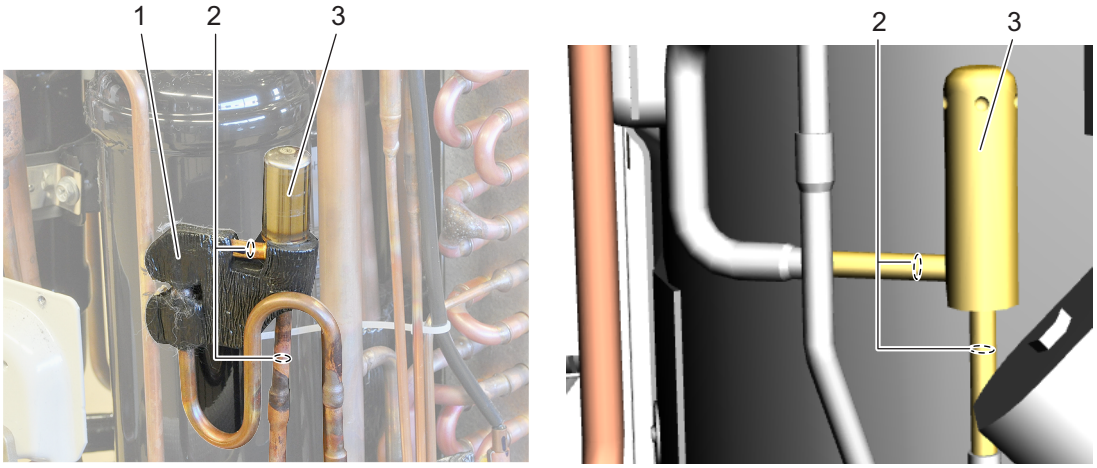
1. Recuperate the refrigerant from the refrigerant circuit, see "Refrigerant repair procedures" on page 59.
2. If needed, remove any parts or insulation to create more space for the removal.

PROCEDURE

1. Remove the expansion valve motor.

2. Remove the putty. Keep for re-use.

Figure 3-18: Removing the putty



1. Putty
2. Expansion valve pipe
3. Expansion valve body

INFORMATION

The expansion valve and motor can have a different configuration / layout.

3. Cut the expansion valve pipes using a pipe cutter.
4. Remove the expansion valve body.
5. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
6. Heat the ends of the expansion valve pipes using an oxygen acetylene torch and remove the expansion valve pipe ends.
7. Stop the nitrogen supply when the piping has cooled down.

To install the expansion valve body

1. Install the expansion valve body in the correct location and correctly oriented.
2. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
3. Wrap a wet rag around the expansion valve body and solder the refrigerant pipes to the expansion valve body.

CAUTION

Overheating the valve will damage or destroy it.

4. After soldering is done, stop the nitrogen supply after the component has cooled down.
5. Proceed in reverse order.

About the installation of the expansion valve motor

INFORMATION

Select the correct type

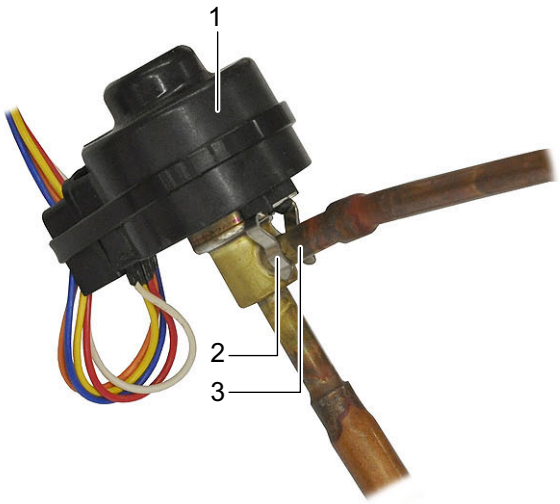
To install the expansion valve motor with clip

1. Install the expansion valve motor on the expansion valve body.

INFORMATION

The expansion valve motor is equipped with a pipe retention clip. Install the pipe retention clip over the pipe to lock the expansion valve motor.

Figure 3-19: Installing the expansion valve motor with clip



1. Expansion valve motor
2. Pipe retention clip
3. Pipe

2. Route the expansion valve motor harness towards the appropriate PCB.
3. Connect the expansion valve motor connector to the appropriate PCB.

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

4. Fix the expansion valve motor harness using new tie straps.
5. Install the insulation cap on the expansion valve motor (if applicable).

To install the expansion valve motor with bracket

1. Install the expansion valve motor on the expansion valve body.

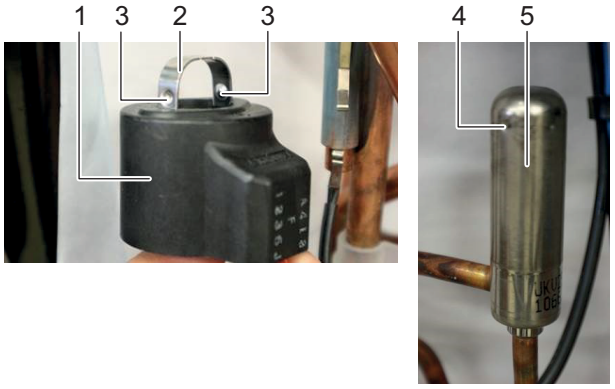
INFORMATION

The expansion valve motor is equipped with a metal bracket. Fit the nipples of the metal bracket into the notches of the expansion valve body.

CAUTION

Make sure to install the expansion valve motor in the correct position (orientation).

Figure 3-20: Installing the expansion valve motor with bracket



1. Expansion valve motor
2. Metal bracket
3. Nipple
4. Notch
5. Expansion valve body

2. Route the expansion valve motor harness towards the appropriate PCB.

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

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

4. Fix the expansion valve motor harness using new tie straps.

5. Install the insulation cap on the expansion valve motor (if applicable).

3.3.2.8. Replacing expansion valve motor

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required.
4. Remove any part that block the way to the expansion valve motor.

PROCEDURE

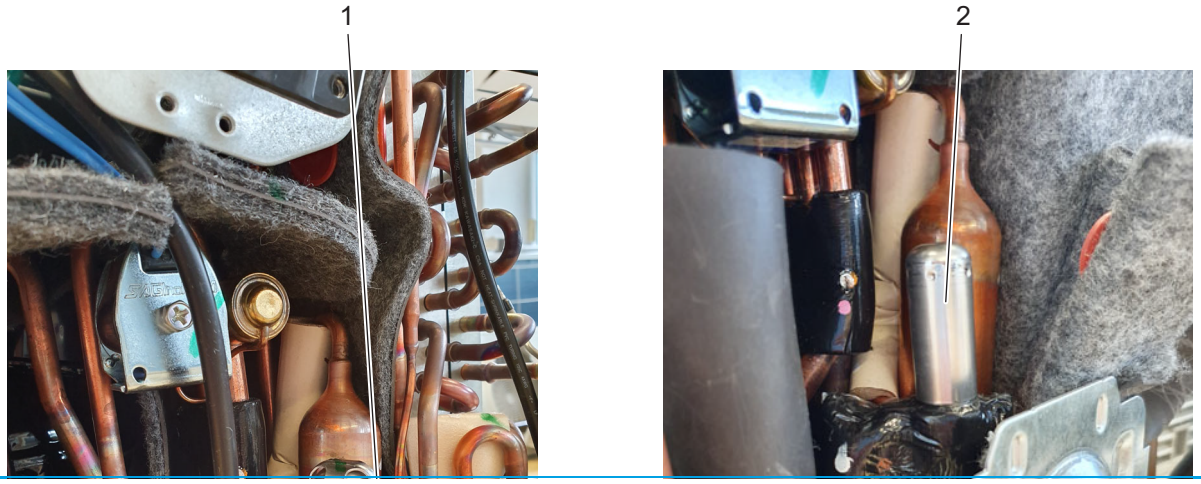
Removal

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

1. Remove the expansion valve motor (1) from the expansion valve body (2).
2. Unplug expansion valve motor connector from PCB.
3. Cut all tie wraps that fix the expansion valve motor (1) wiring.

Figure 3-21: Removing the expansion valve motor



1. Expansion valve motor
2. Expansion valve

Installation

INFORMATION

Replace all tie wraps that were cut during removal.

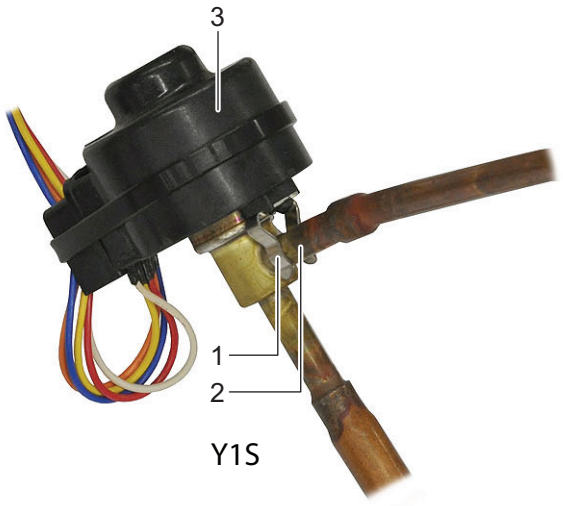
1. Proceed in reverse order.

INFORMATION

The expansion valve motor (3) is equipped with a pipe retention clip (1). The pipe retention clip (1) must be placed over the pipe (2) to lock the expansion valve motor (3).

2. When installing the expansion valve motor (3), lock it on the expansion valve.

Figure 3-22: Locking the expansion valve motor



1. Pipe retention clip
2. Pipe
3. Expansion valve motor

3.3.2.9. Replacing main PCB

PRELIMINARY ACTIONS

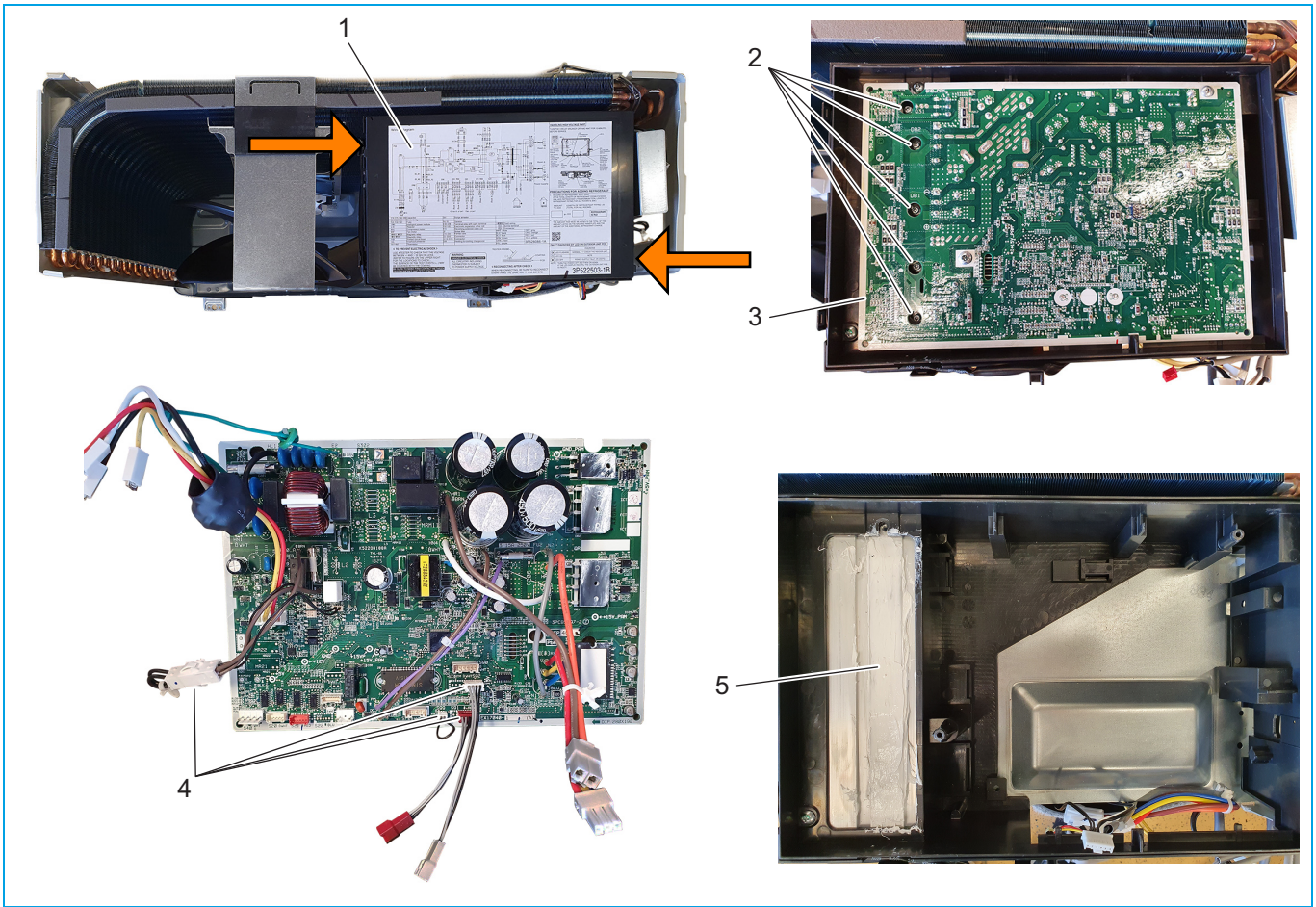
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the switch box, refer to "Replacing switch box" on page 71.

PROCEDURE

Removal

1. Press (arrows) the side of the switch box cover (1) to remove the cover.
2. Remove the screws (2) that fix the main PCB (3).
3. Remove the connectors (4) and keep them for re-use.
4. Remove the old thermal interface grease with a cloth, and clean the heat sink surfaces (5).

Figure 3-23: Removing the main PCB



1. Switch box cover
2. Screw
3. Main PCB
4. Connector
5. Heat sink surface

Installation

1. Apply new thermal interface grease on the heat sink surfaces (5).
2. Proceed in reverse order.

3.3.2.10. Replacing propeller fan blade assembly

PRELIMINARY ACTIONS

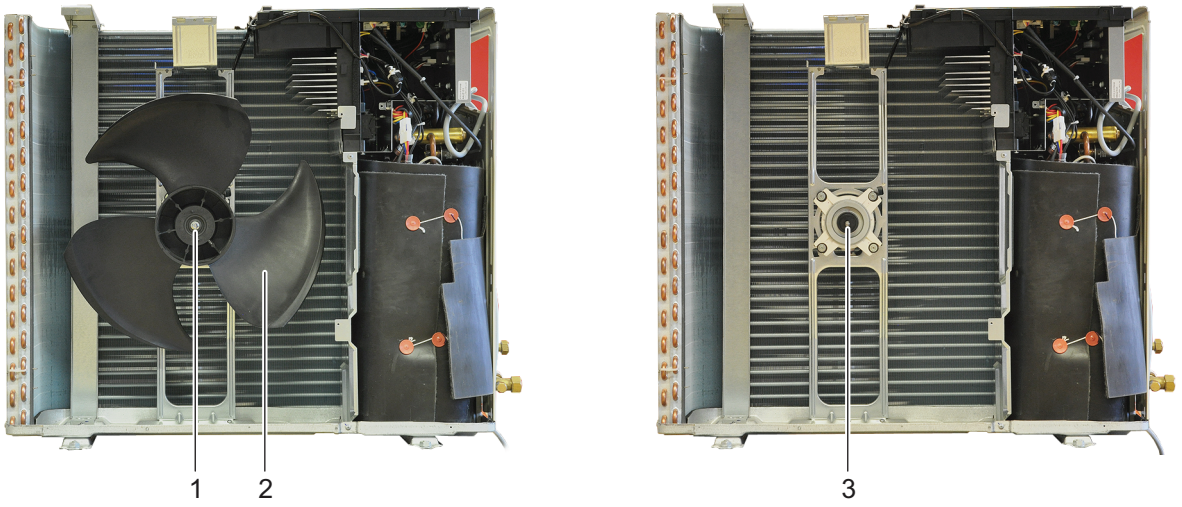
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required.

PROCEDURE

Removal

1. Remove the nut (1) that fixes the propeller fan blade assembly (2).
2. Pull the propeller fan blade assembly (2) from the fan motor assembly (3).

Figure 3-24: Removing the propeller fan blade assembly



1. Nut
2. Propeller fan blade assembly
3. Fan motor assembly

Installation

CAUTION

Do not install a damaged propeller.

1. Proceed in reverse order.

3.3.2.11. Replacing thermistors

PRELIMINARY ACTIONS

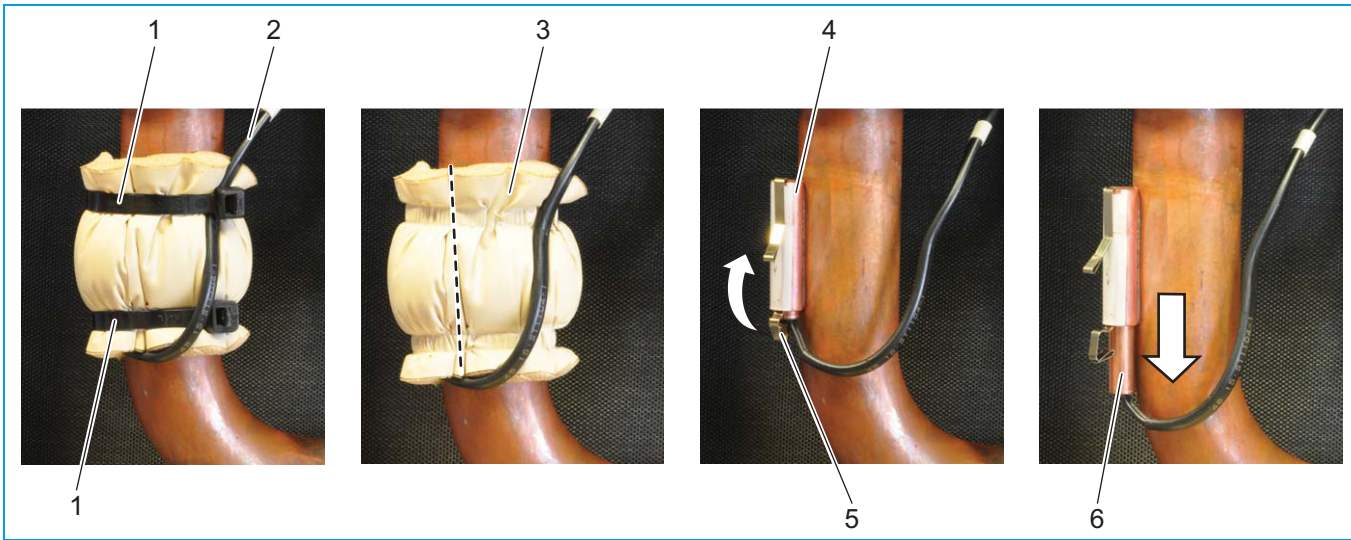
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, see "Basic removal" on page 69.

PROCEDURE

Removal

1. Locate thermistor that needs to be replaced, see "Component checklist" on page 110.
2. Cut the tie wraps (1) that fix the insulation (3) and the thermistor wire (2).
3. Cut the insulation (3) and remove it.
4. Pull the clip (5) that fixes the thermistor (6).
5. Remove the thermistor (6) from the thermistor holder (4).

Figure 3-25: Replacing a thermistor



1. Tie wrap
2. Thermistor wire
3. Insulation
4. Thermistor holder
5. Clip
6. Thermistor

Installation

1. Proceed in reverse order.

3.3.2.12. Setting test mode for inverter checker

3.3.2.12.1 For 2MXF-A/2AMXF-A outdoor units

Activate power transistor test operation from the indoor unit with the remote controller.

- Press the centre of TEMP and MODE simultaneously.
- Press MODE to select T (test run mode).
- Press MODE to select FAN mode.
- Press ON/OFF to start power transistor check operation.

3.3.2.12.2 For 3MXF-A/3AMXF-A outdoor units

Activate the power transistor test operation from the outdoor unit.

1. Press the forced cooling operation ON/OFF (push button SW1 on Service PCB) for 5 seconds, refer to "Outdoor unit" on page 98.

Part 4. Maintenance

This part contains the following chapters:

Indoor unit 91
Outdoor unit.....93

4.1. Indoor unit

WARNING

Before performing any maintenance, power off the unit.

INFORMATION

After all checks are made, make sure the water and brine circuits are filled properly again and fluid pressures are in line with regulations (± 2 bar).

4.1.1. General maintenance

1. Optimal operation conditions

	Cooling	Heating
Differential between suction temperature and discharge temperature	8~18°C	14~30°C
DB	27°C	20°C
WB	19°C	Not applicable

2. Correlation of air-conditioner's operation status, pressure and running current

COOLING	Low pressure	High pressure	Running current
Dirty air filter	Lower	Lower	Lower
Short circuit of air inlet/outlet	Lower	Lower	Lower
Air mixed in refrigerant	Higher	Higher	Higher
Water mixed in refrigerant	Lower*	Lower	Lower
Dirt mixed in refrigerant	Lower**	Lower	Lower
Refrigerant shortage (gas)	Lower	Lower	Lower
Unsatisfactory compression	Higher***	Lower	Lower

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

** Dirt in the refrigerant clogs filters inside the piping and is basically the same phenomenon as pump down.

*** Pressure differential between high and low pressure becomes low.

3. Clean the indoor heat exchanger (if necessary. Example: contaminated by cooking oil, …).
   - 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 do not use household cleaning agents.
   - Please rinse the heat exchanger and drain pan with water after the cleaning process. (*)

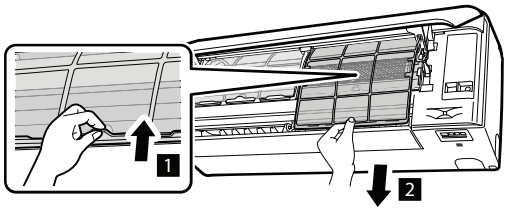
CAUTION

* Rinse out the cleaning agent until there is no cleaning agent left. Otherwise, the corrosion of heat exchanger and drain pan may occur.

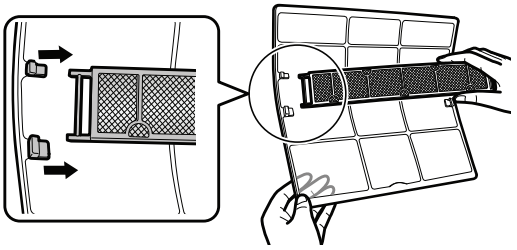
Pay attention to the cleaning agent that may also corrode other materials of indoor unit (Aluminium, copper, plastic, ABS, …).

4.1.2. To clean the air filters

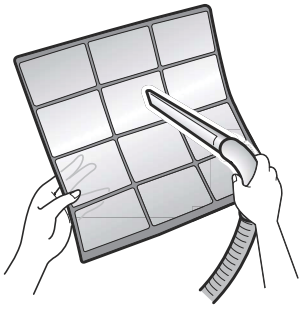
1. Push the tab at the center of each air filter, then pull it down.
2. Pull out the air filters.



3. Remove the titanium apatite deodorizing filter and silver particle filter from the tabs.



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.



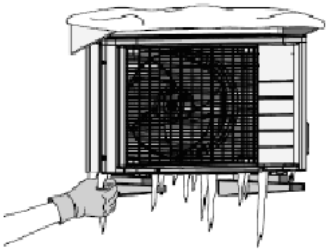
INFORMATION

- 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.

4.2. Outdoor unit

4.2.1. General maintenance outdoor unit

1. Outdoor unit coil
   - Straighten hair fins.
   - Clear coil from dust, leaves, etc. with a fin-comb, or compressed air/N2. Avoid bending or damaging of the Alu fins during the cleaning process.
   - Remove the icicles during winter season. Use gloves to avoid injury and unit damage.



CAUTION

Make sure not to bend the hair fins.

2. Correlation of air-conditioner's operation status, pressure and running current.

COOLING	Low pressure	High pressure	Running current
Dirty air filter	Higher	Higher	Higher
Short circuit of air inlet/outlet	Higher	Higher	Higher
Air mixed in refrigerant	Higher	Higher	Higher
Water mixed in refrigerant	Lower*	Lower	Lower
Dirt mixed in refrigerant	Lower**	Lower	Lower
Refrigerant shortage (gas)	Lower***	Lower	Lower

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

** Dirt in the refrigerant clogs filters inside the piping and is basically the same phenomenon as pump down.

*** Pressure differential between high and low pressure becomes low.

1.

Part 5. Appendix

This part contains the following chapters:

Field setting 97
Wiring diagram 101
Piping diagram 104
Component overview of unit 109
Product specific information 110
Switch box 110

5.1. Field setting

5.1.1. Indoor unit

Not applicable

5.1.2. Outdoor unit

5.1.2.1. Multi split outdoor

5.1.2.1.1 Wiring error check

This product is capable of automatic correction of wiring error.

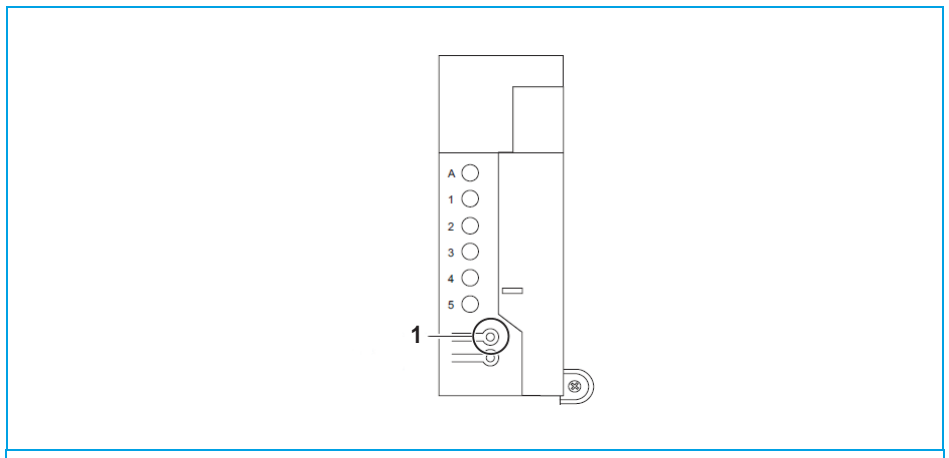
Shortly press the “wiring error check switch” on the outdoor unit service PC board. However, the wiring error check switch will not function for 3 minutes after the safety breaker is turned on; or depending on the outside air conditions (see note 2). About 15 - 20 minutes after the switch is pressed, the errors in the connection wiring will be corrected.

Shortly press the “wiring error check switch” again for cancellation. Wiring error check is not possible after cancellation. The safety breaker has to turn off and turn on again to restart wiring error check.

If self-correction is not possible, check the indoor unit wiring and piping in the usual manner.

LED	1	2	3	4	5	Message
Status	All flashing (simultaneously)					Autonomic correction impossible
	Flashing (on after another)					Autonomic correction completed
	☼ (one or more LEDs 1 to 4 are ON)					Abnormal stop (note 4)

Figure 5-1: Service PC board wiring error check switch location



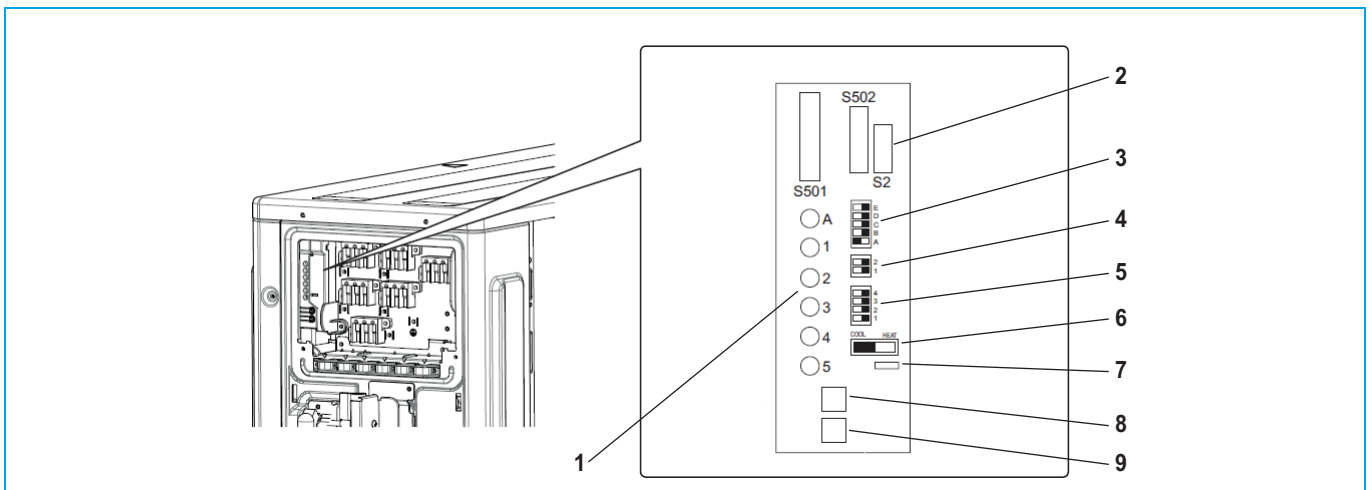
1. Wiring error check switch (SW3)

Note

1. For two rooms, LED3, 4 and 5 are not present, and for three rooms, LED4 and 5 are not present, and for four rooms LED 5 is not present.
2. If the outside air temperature is 5°C or less, the wiring error check function will not operate.
3. After wiring error check operation is completed, LED indication will continue until ordinary operation starts.
   This is normal.
4. Follow the product diagnosis procedures (details of product error diagnosis are listed on the back of the fight side plate).

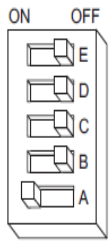
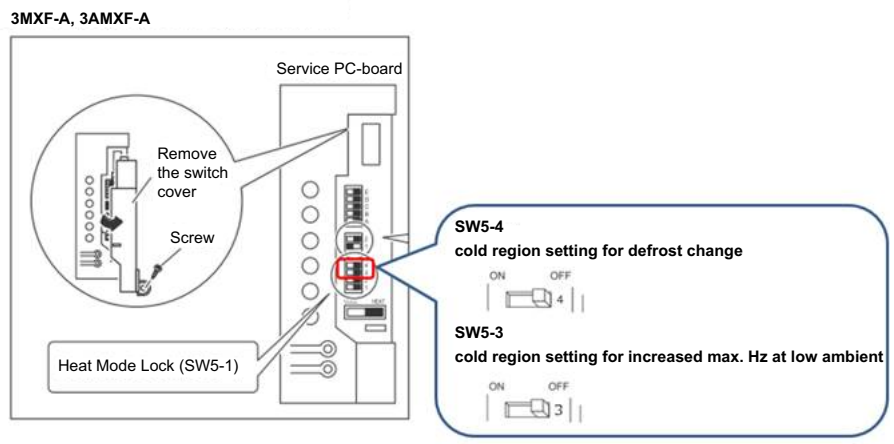
5.1.2.1.2 Dip switch settings

Figure 5-2: Dip switch location



1. Service monitor LEDs
2. Connector for D checker
3. SW4
4. SW6
5. SW5
6. Cool/heat selector
7. J_DP jumper
8. SW3
9. SW1

SW1	Forced operation • In combination with the cool/heat selector switch the unit can be started in cooling or heating. • Is also used to activate the inverter checker mode.
SW3	Cross wiring check (figure 5-2 on page 98).
J_DP jumper	Not used.
Cool/heat selector	• Used in combination with the SW1. • Must be set in cooling for pump down operation.

SW4	Priority room setting. The indoor unit for which priority room setting is applied takes priority in the following cases. **1-1 Operation mode priority** The operation mode of the indoor unit which is set for priority room setting takes priority. If the set indoor unit is operating, all other indoor units do not operate and enter standby mode, according to the operation mode of the set indoor unit. **1-2 Priority during high-power operation** If the indoor unit which is set for priority room settings is operating at high power, the capabilities of other indoor units will be somewhat reduced. Power supply gives priority to the indoor unit which is set for priority room setting. **1-3 Quiet operation priority** Setting the indoor unit to quiet operation will make the indoor unit run quietly. **Setting procedure** Slide the switch to the ON side for the switch that corresponds to the piping connected to the indoor unit to be set (in the figure below, it is room A). **BE SURE TO SET ONLY ONE ROOM.** 
SW5	SW5-1 Heat mode lock • This setting will force the unit to only operate in heating. SW5-2: not used SW5-3: cold region setting for increased max. Hz at low ambient SW5-4: cold region setting for defrost change 
SW6	SW6-1 Night quiet mode **About Night Quiet Mode** The Night Quiet Mode function reduces operating noise of the outdoor unit at night time. This function is useful if the customer is worried about the effects of the operating noises on the neighbours. SW6-2 • Not used.

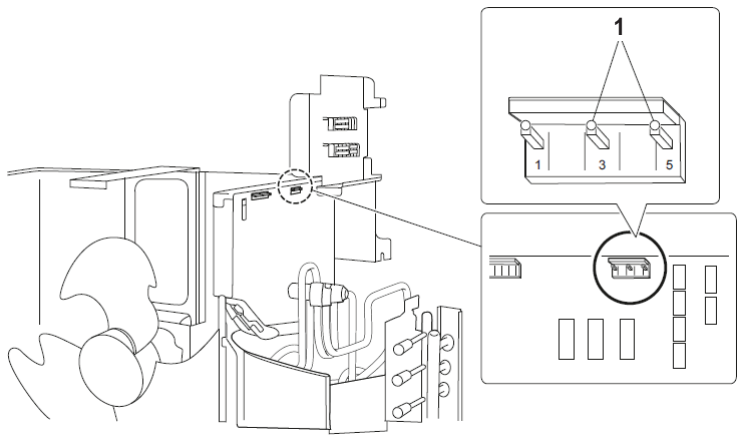
5.1.2.1.3 Cool mode lock

1. Use the S15 connector to set the unit to cool only.
   Short-circuit pins 3 and 5 of the connector S15 to set to only cool (C).

The following specifications apply to the connector housing and pins.

- ST products Housing: VHR-5N
- Pin: SVH-21T-1,1

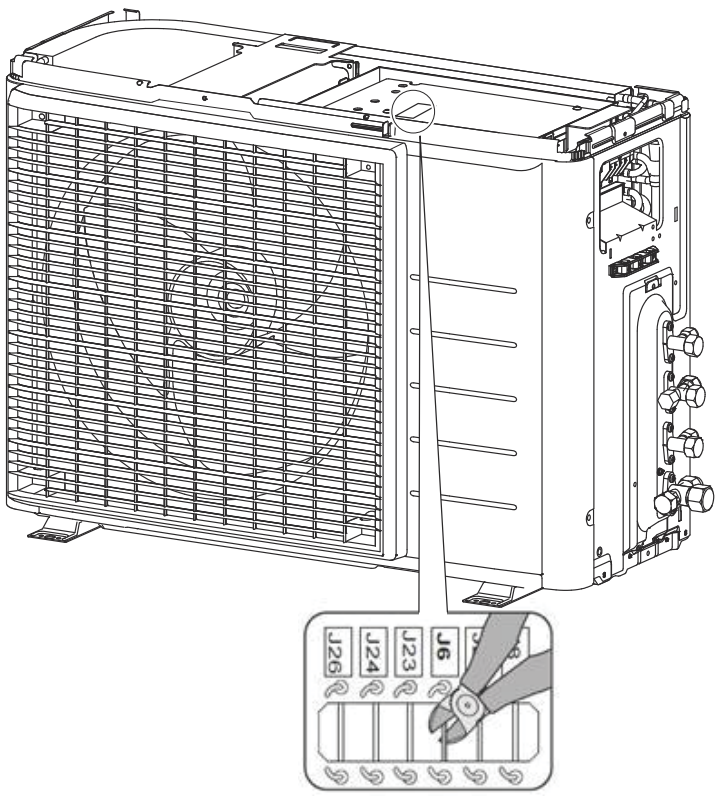
Figure 5-3: S15 connector location



1. S15 connector pins 3-5

5.1.2.1.4 Multi Split outdoor jumper settings (2MXF-A, 2AMXF-A)

Figure 5-4: Jumper location



J8	Not used
J12	Cold region setting for defrost change
J6	Night quiet mode setting
J23	Econo mode prohibition setting
J24	Not used
J26	Cold region setting for increased max. Hz at low ambient

5.1.3. Remote controller

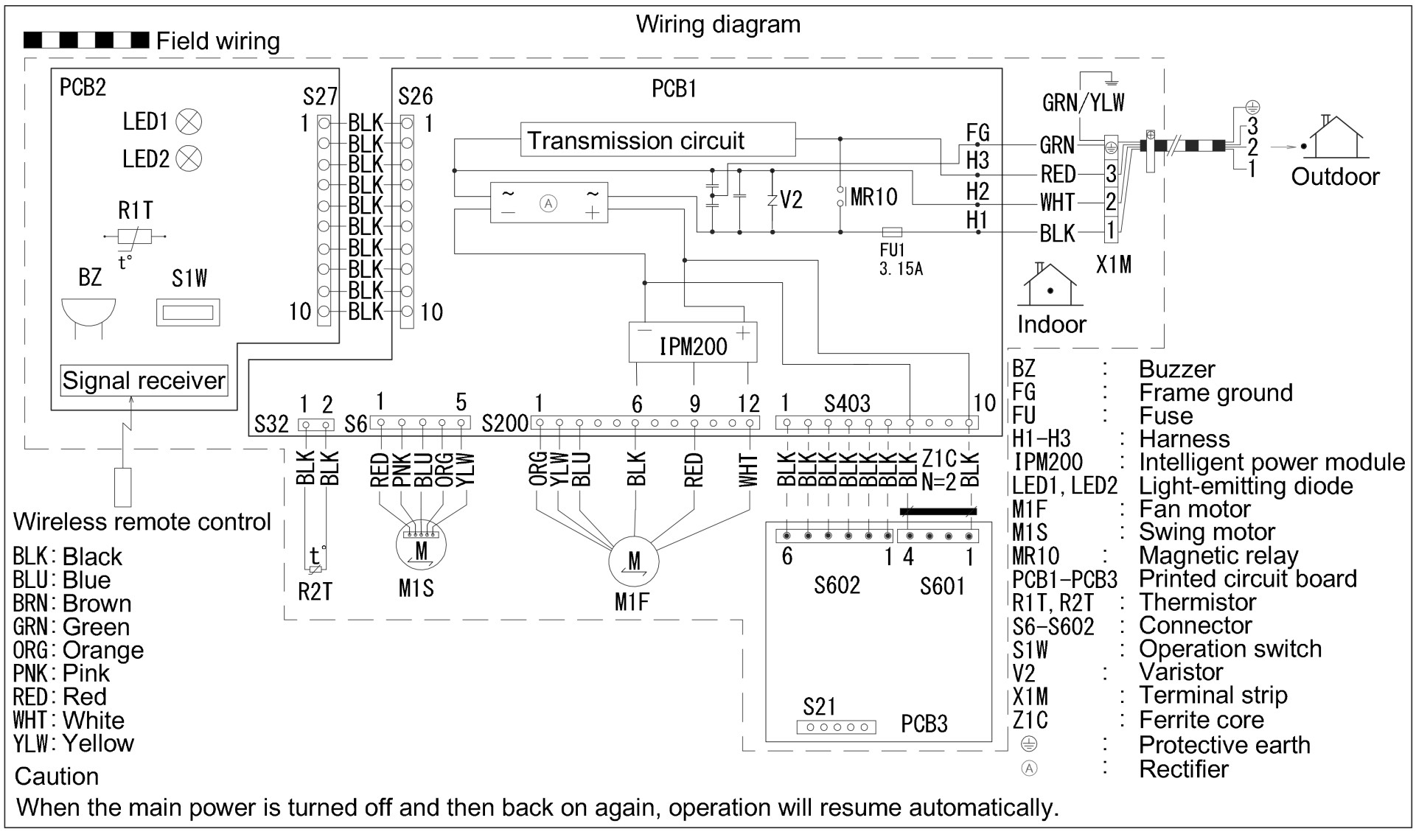
Not applicable.

5.2. Wiring diagram

5.2.1. Indoor unit

5.2.1.1. FTXF20A, FTXF20B, FTXF25A, FTXF25B, FTXF35A, ATXF25A, ATXF35A

Figure 5-5: Wiring diagram - indoor unit FTXF20A, FTXF20B, FTXF25A, FTXF25B, FTXF35A, ATXF25A, ATXF35A



Notes

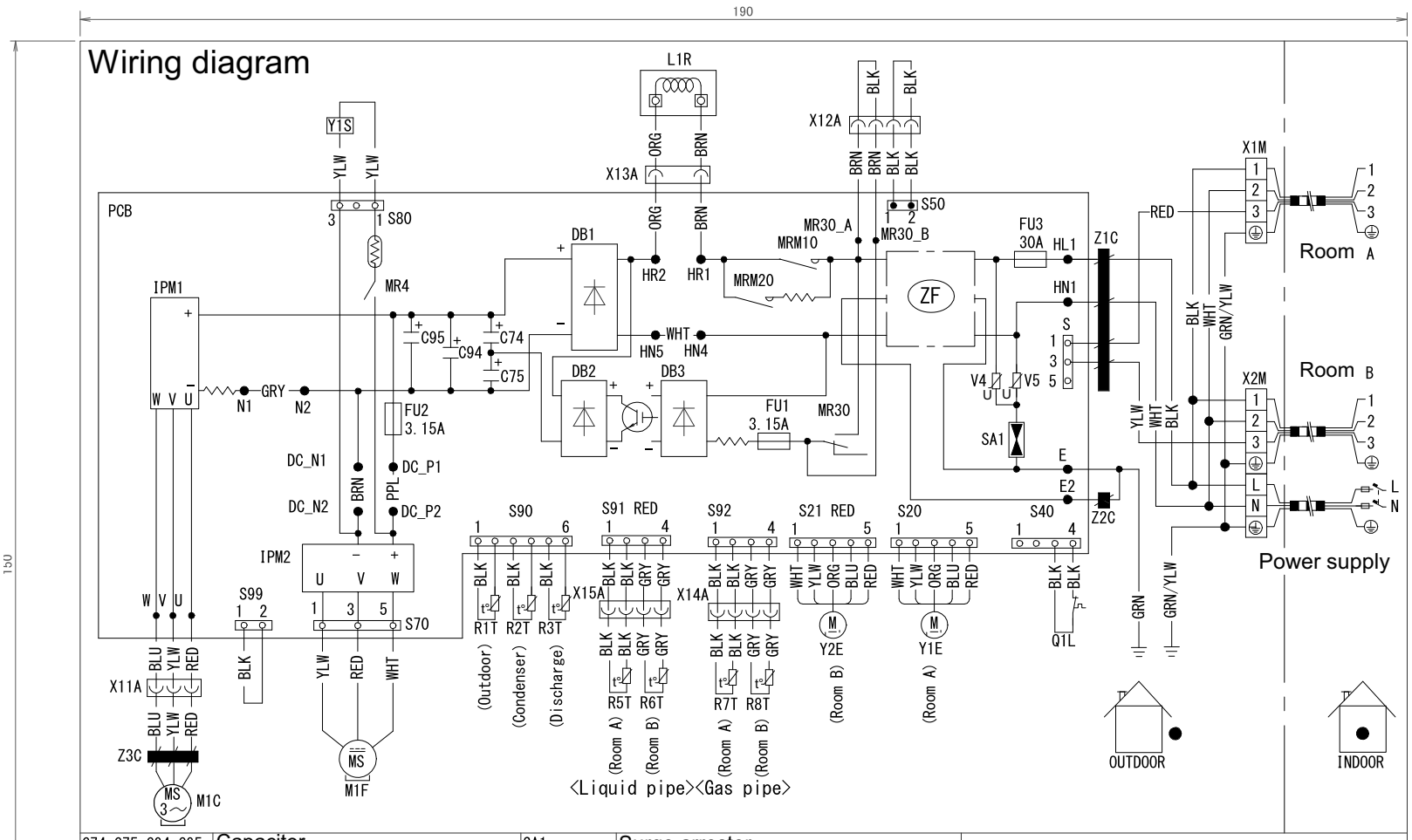
1. Size: length ·70· X width ·120·.
2. Refer to purchasing specification ·AS303002·, unless otherwise specified.

3D095416A

5.2.2. Outdoor unit

5.2.2.1. 2MXF40A, 2AMXF40A

Figure 5-6: Wiring diagram - outdoor unit 2MXF40A, 2AMXF40A

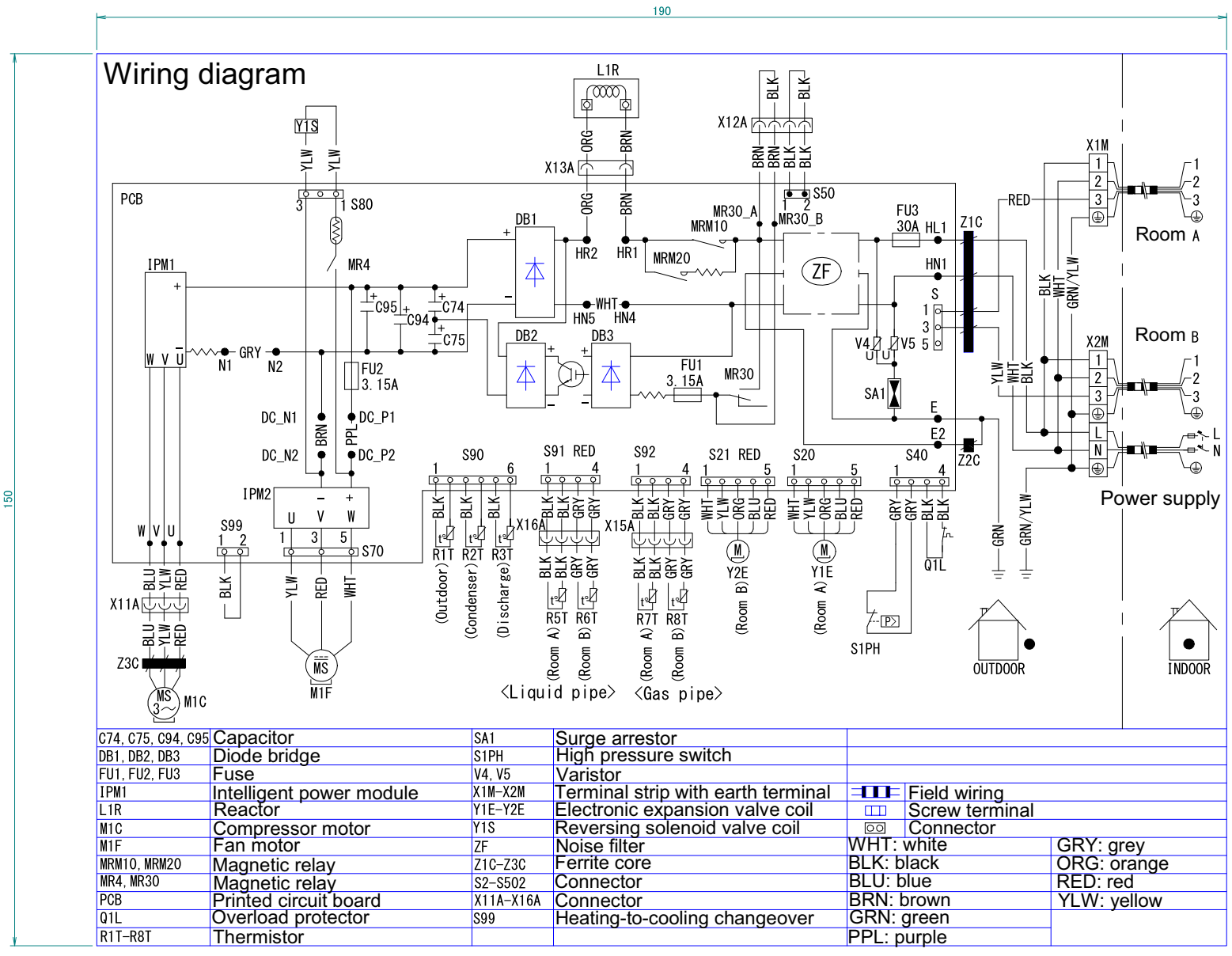


C74, C75, C94, C95	Capacitor	SA1	Surge arrestor		
DB1, DB2, DB3	Diode bridge				
FU1, FU2, FU3	Fuse	V4, V5	Varistor		
IPM1	Intelligent power module	X1M-X2M	Terminal strip with earth terminal	Field wiring	
L1R	Reactor	Y1E-Y2E	Electronic expansion valve coil	Screw terminal	
M1C	Compressor motor	Y1S	Reversing solenoid valve coil	Connector	
M1F	Fan motor	ZF	Noise filter	WHT: white	GRY: grey
MRM10, MRM20	Magnetic relay	Z1C-Z3C	Ferrite core	BLK: black	ORG: orange
MR4, MR30	Magnetic relay	S2-S502	Connector	BLU: blue	RED: red
PCB	Printed circuit board	X11A-X15A	Connector	BRN: brown	YLW: yellow
Q1L	Overload protector	S99	Heating-to-cooling changeover	GRN: green	
R1T-R8T	Thermistor			PPL: purple	

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5.2.2.2. 2MXF50A, 2AMXF50A

Figure 5-7: Wiring diagram - outdoor unit 2MXF50A, 2AMXF50A

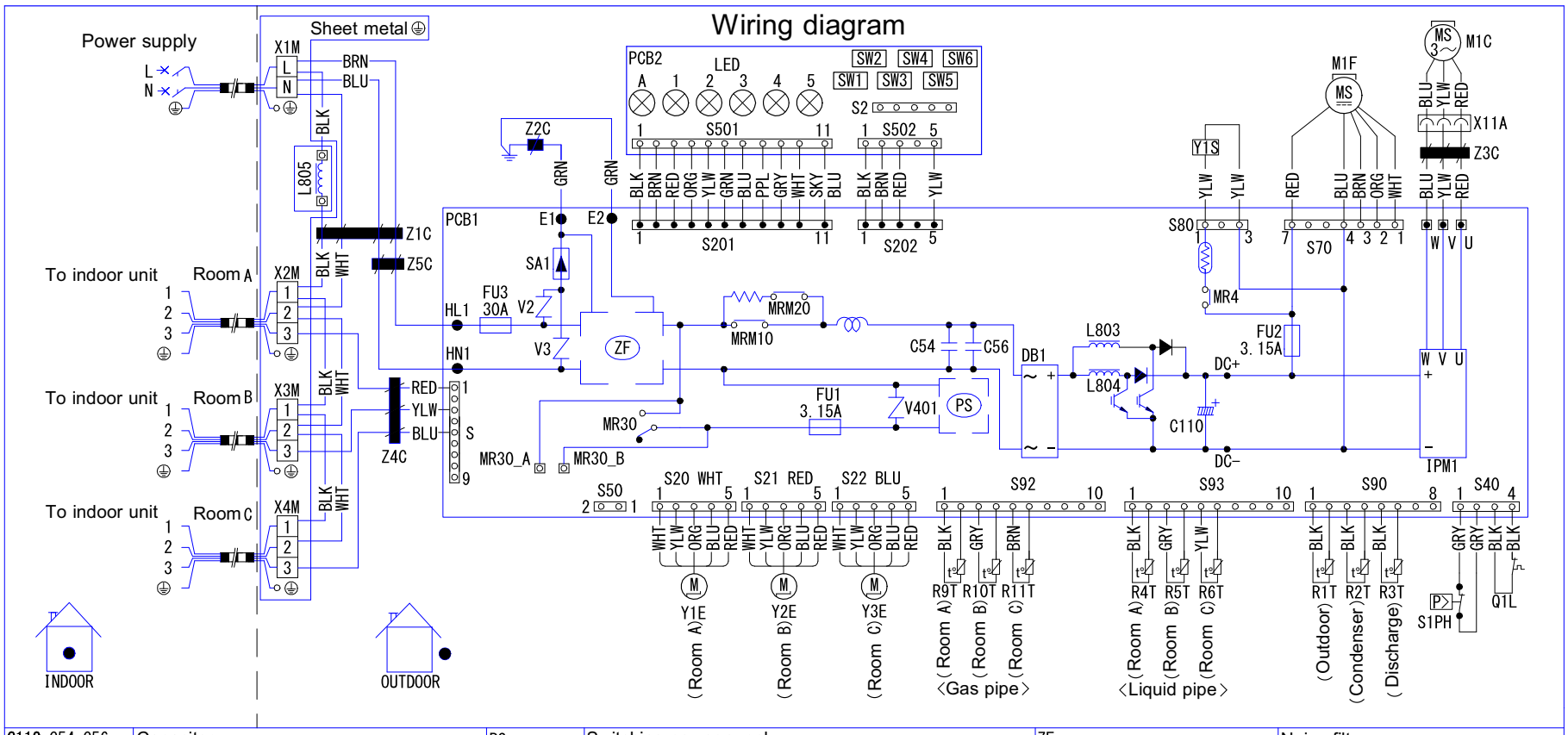


C74, C75, C94, C95	Capacitor	SA1	Surge arrestor		
DB1, DB2, DB3	Diode bridge	S1PH	High pressure switch		
FU1, FU2, FU3	Fuse	V4, V5	Varistor		
IPM1	Intelligent power module	X1M-X2M	Terminal strip with earth terminal	Field wiring	
L1R	Reactor	Y1E-Y2E	Electronic expansion valve coil	Screw terminal	
M1C	Compressor motor	Y1S	Reversing solenoid valve coil	Connector	
M1F	Fan motor	ZF	Noise filter	WHT: white	GRY: grey
MRM10, MRM20	Magnetic relay	Z1C-Z3C	Ferrite core	BLK: black	ORG: orange
MR4, MR30	Magnetic relay	S2-S502	Connector	BLU: blue	RED: red
PCB	Printed circuit board	X11A-X16A	Connector	BRN: brown	YLW: yellow
Q1L	Overload protector	S99	Heating-to-cooling changeover	GRN: green	
R1T-R8T	Thermistor			PPL: purple	

3D114690B

5.2.2.3. 3MXF52A(9), 3AMXF52A(9)

Figure 5-8: Wiring diagram - outdoor unit 3MXF52A(9), 3AMXF52A(9)

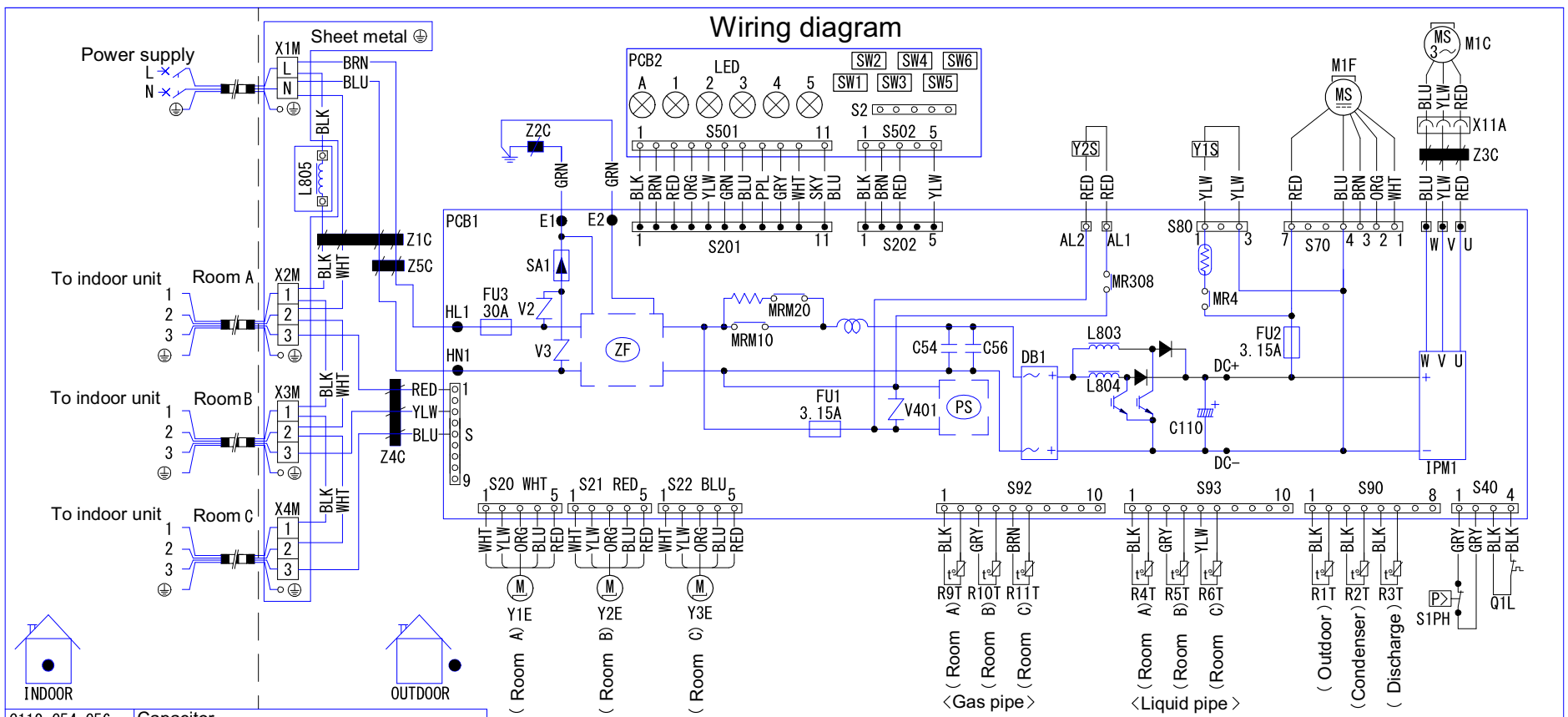


C110, C54, C56	Capacitor	PS	Switching power supply	ZF	Noise filter	
DB1	Diode bridge	Q1L	Overload protector	S, S2-S502	Connector	
FU1, FU2, FU3	Fuse	R1T-R11T	Thermistor	U, V, W	Connector	
IPM1	Intelligent power module	SA1	Surge arrester	X11A, MR30_A, MR30_B	Connector	
L803, L804, L805	Reactor	S1PH	High pressure switch	Field wiring		
LED1-5, LEDA	Light-emitting diode	SW1-SW6	Switch	Screw terminal		
M1C	Compressor motor	V2, V3, V401	Varistor	Connector		
M1F	Fan motor	X1M-X4M	Terminal strip with earth terminal	BLK: black	GRY: grey	SKY BLU: sky blue
MRM10, MRM20	Magnetic relay	Y1E-Y3E	Electronic expansion valve coil	BLU: blue	ORG: orange	WHT: white
MR4, MR30	Magnetic relay	Y1S	Reversing solenoid valve coil	BRN: brown	PPL: purple	YLW: yellow
PCB1, PCB2	Printed circuit board	Z1C-Z5C	Ferrite core	GRN: green	RED: red	3D123866-1A

3D123866A

5.2.2.4. 3MXF68A(9)

Figure 5-9: Wiring diagram - outdoor unit 3MXF68A(9)



C110, C54, C56	Capacitor					
DB1	Diode bridge	Q1L	Overload protector	ZF	Noise filter	
FU1, FU2, FU3	Fuse	R1T-R11T	Thermistor	S, S2-S502	Connector	
IPM1	Intelligent power module	SA1	Surge arrester	U, V, W	Connector	
L803, L804, L805	Reactor	S1PH	High pressure switch	X11A, AL1, AL2	Connector	
LED1-5, LEDA	Light-emitting diode	SW1-SW6	Switch	Field wiring		
M1C	Compressor motor	V2, V3, V401	Varistor	Screw terminal		
M1F	Fan motor	X1M-X4M	Terminal strip with earth terminal	Connector		
MRM10, MRM20	Magnetic relay	Y1E-Y3E	Electronic expansion valve coil	BLK: black	GRY: grey	SKY BLU: sky blue
MR4, MR308	Magnetic relay	Y1S	Reversing solenoid valve coil	BLU: blue	ORG: orange	WHT: white
PCB1, PCB2	Printed circuit board	Y2S	Solenoid valve	BRN: brown	PPL: purple	YLW: yellow
PS	Switching power supply	Z1C-Z5C	Ferrite core	GRN: green	RED: red	3D123861-1B

3D123861B

5.2.3. Field wiring

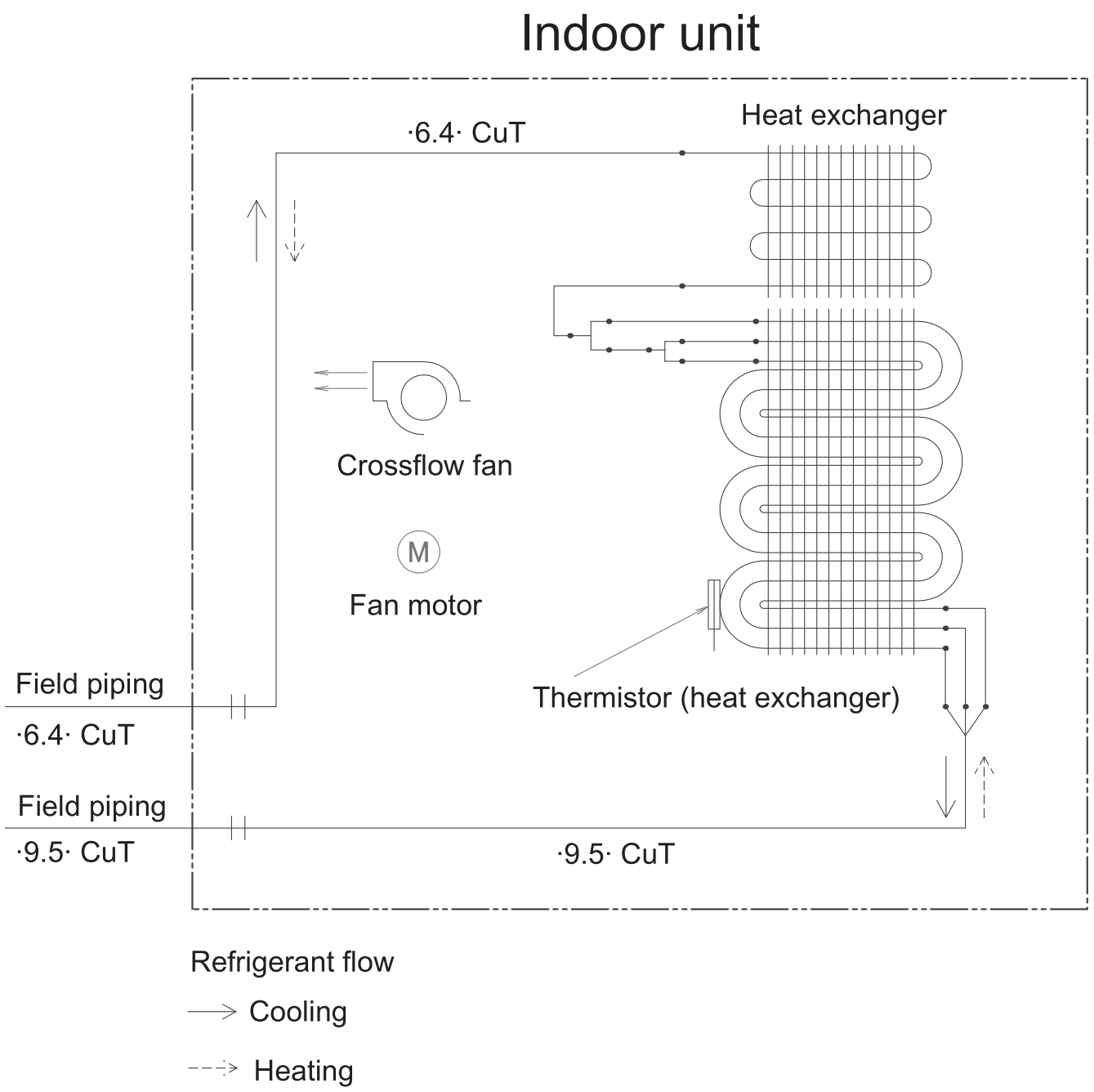
Not applicable.

5.3. Piping diagram

5.3.1. Indoor unit

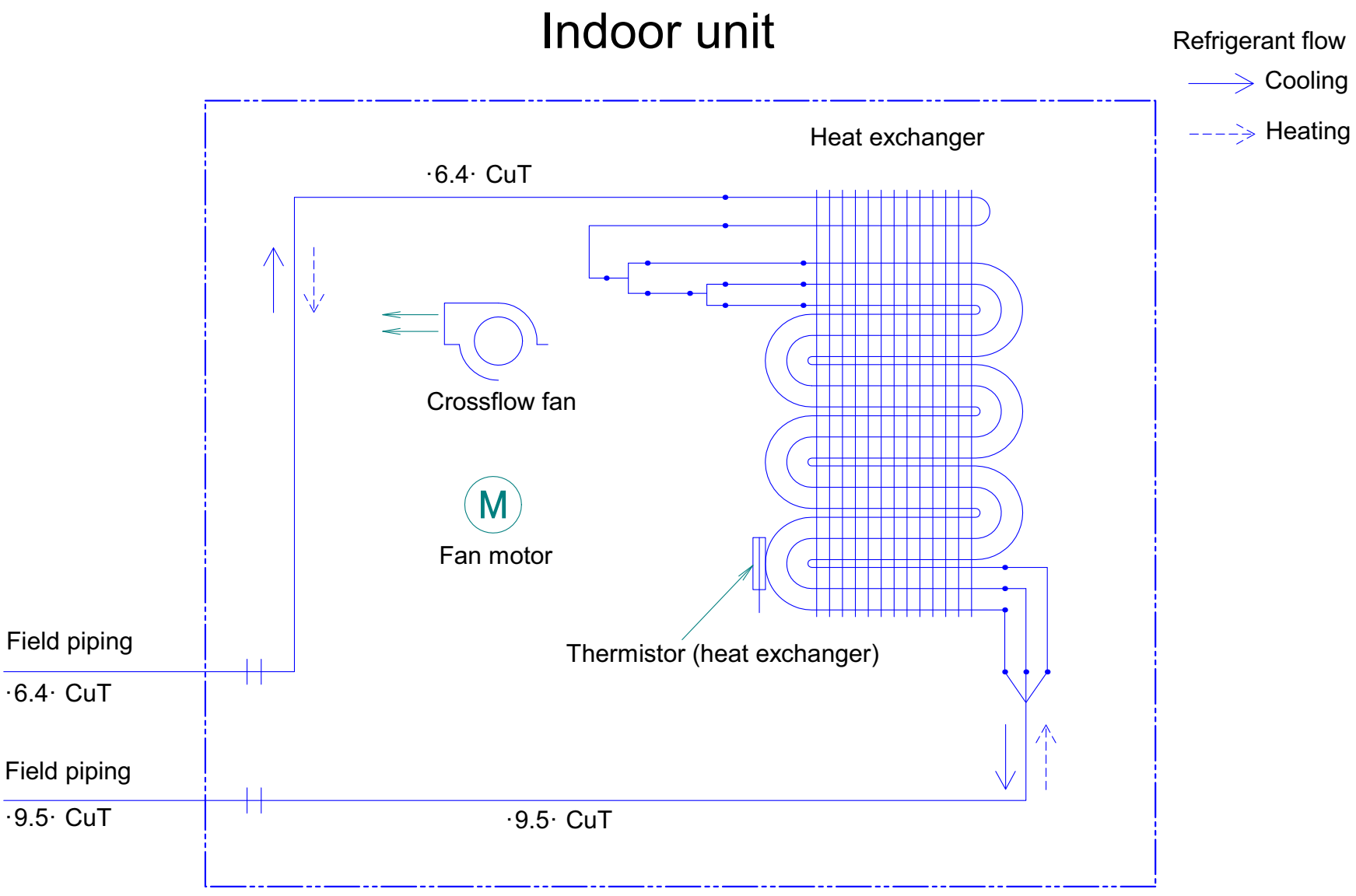
5.3.1.1. FTXF20A, FTXF25A, FTXF35A, ATXF35A, ATXF25A2V1B

Figure 5-10: Piping diagram - indoor unit FTXF20A, FTXF25A, FTXF35A, ATXF35A, ATXF25A2V1B



5.3.1.2. FTXF20B, FTXF25B, ATXF25A5V1B

Figure 5-11: Piping diagram - indoor unit FTXF20B, FTXF25B, ATXF25A5V1B

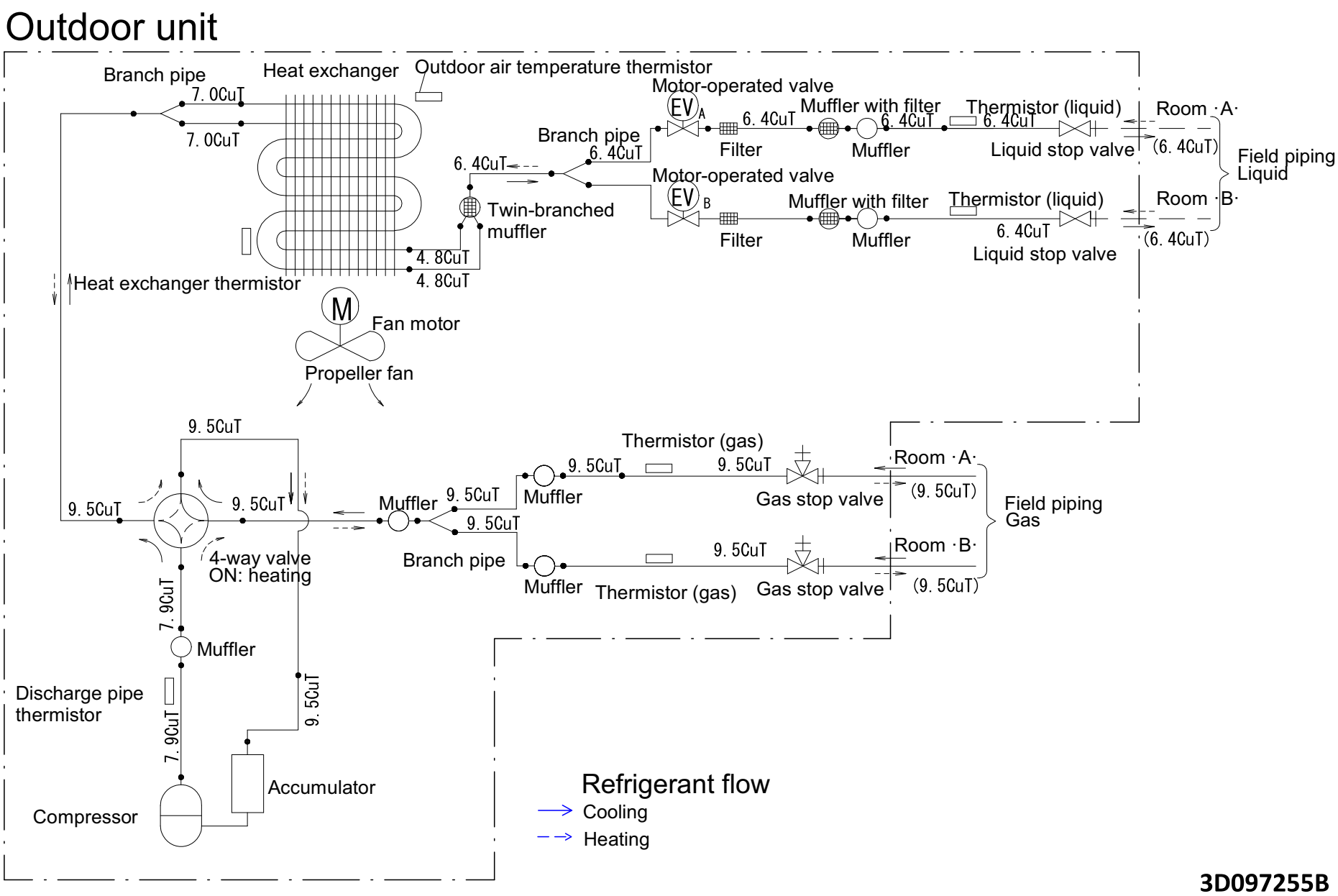


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5.3.2. Outdoor unit

5.3.2.1. 2MXF40A, 2AMXF40A

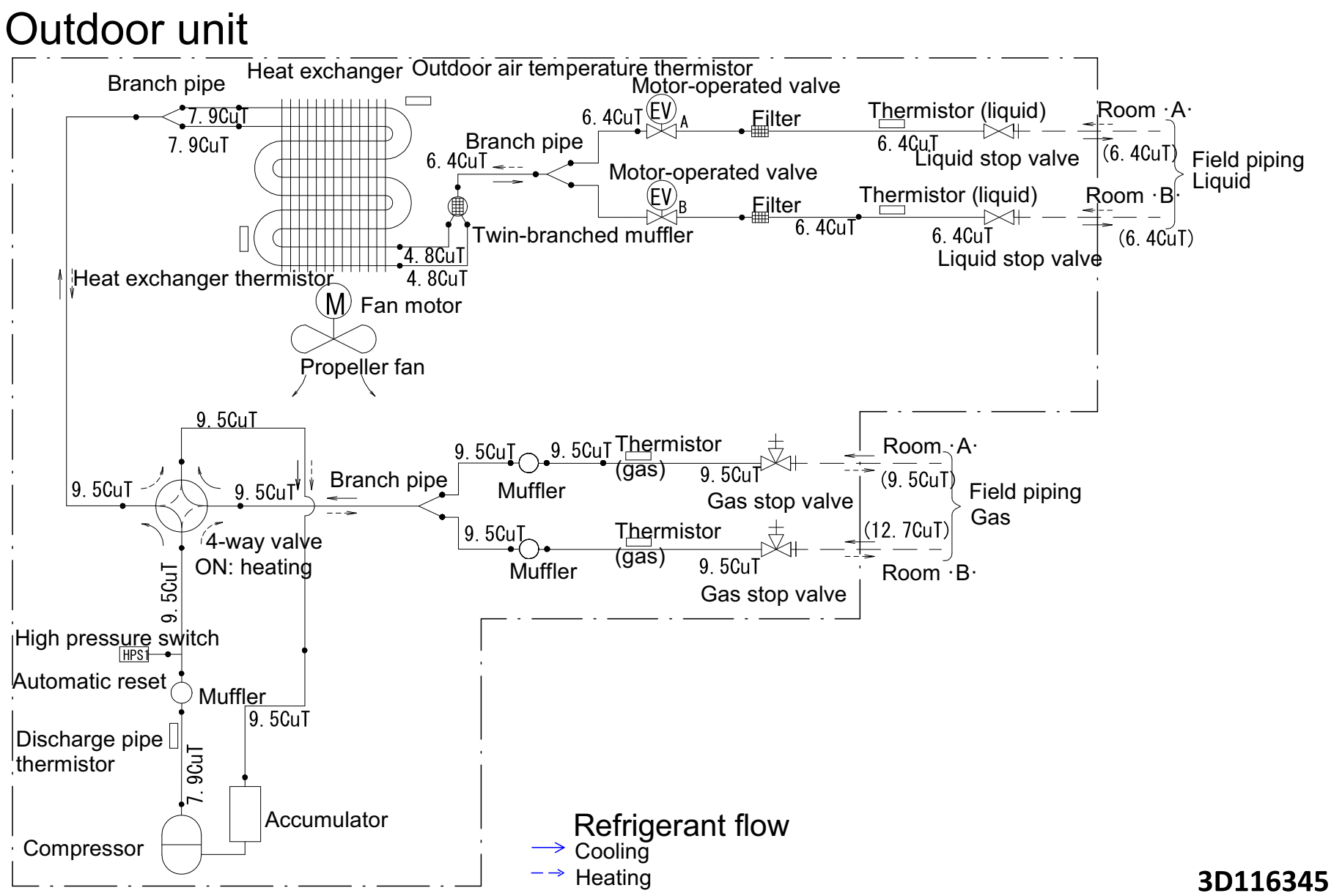
Figure 5-12: Piping diagram - outdoor unit 2MXF40A, 2AMXF40A



3D097255B

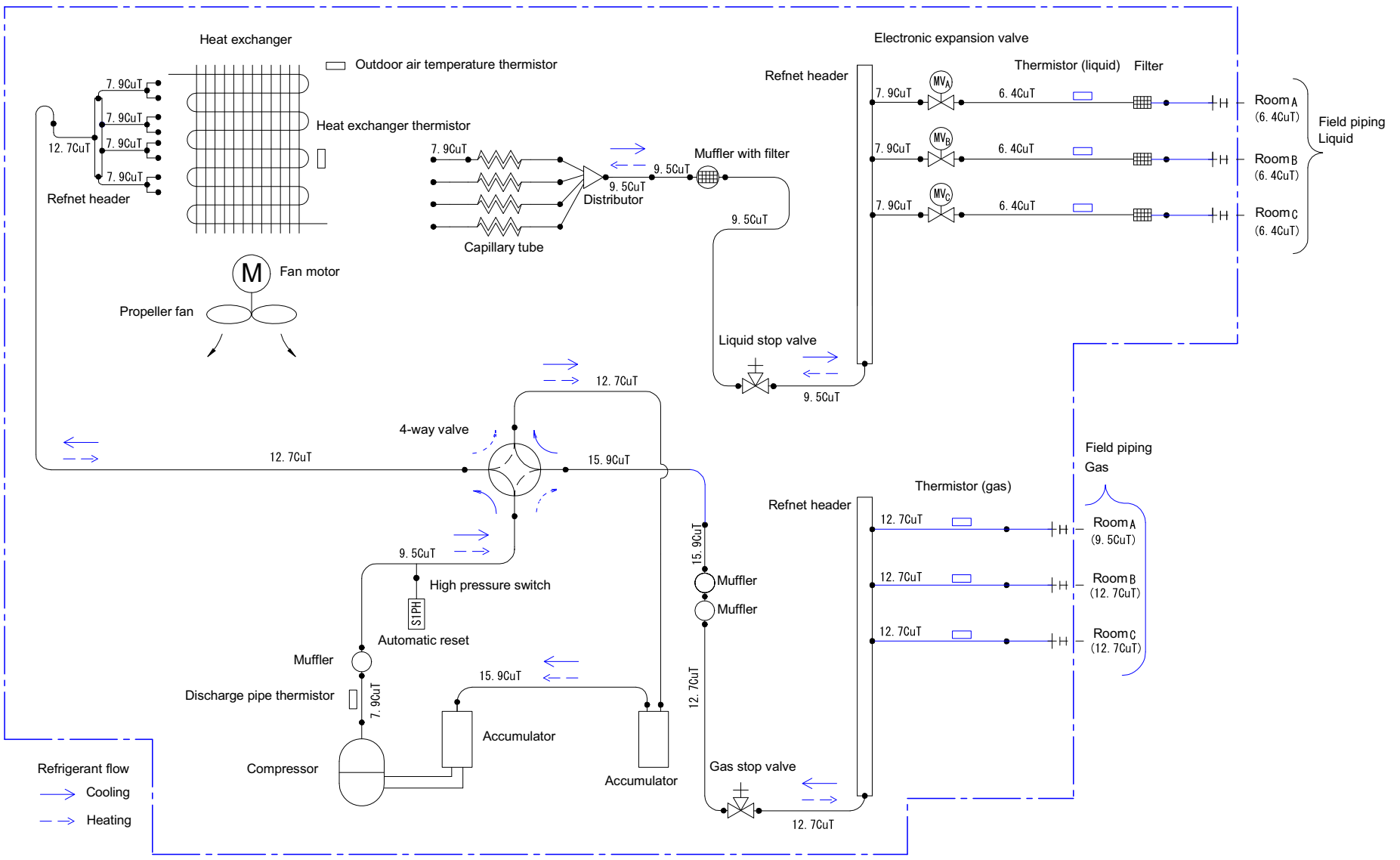
5.3.2.2. 2MXF50A, 2AMXF50A

Figure 5-13: Piping diagram - outdoor unit 2MXF50A, 2AMXF50A



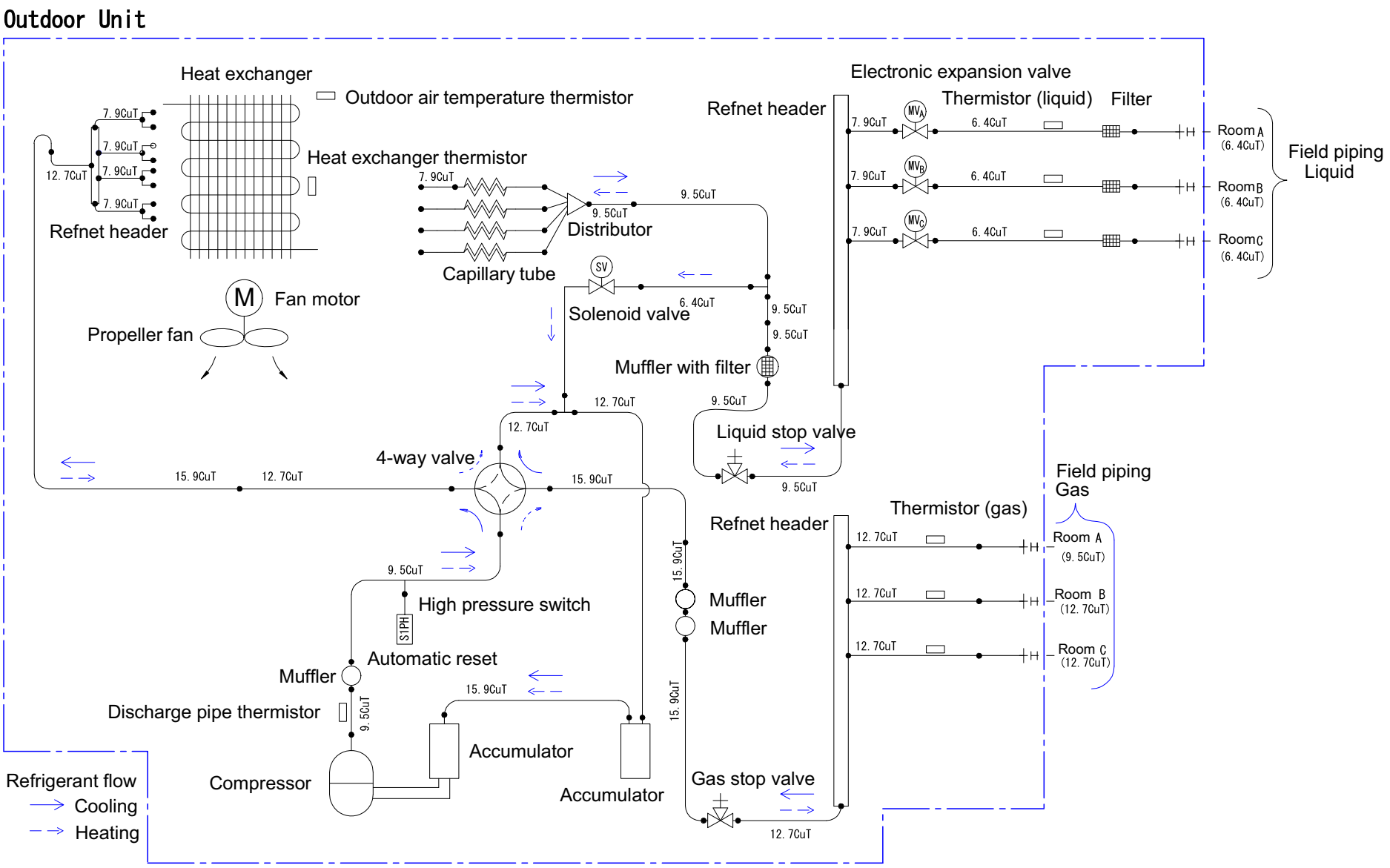
5.3.2.3. 3MXF52A(9), 3AMXF52A(9)

Figure 5-14: Piping diagram - outdoor unit 3MXF52A(9), 3AMXF52A(9)



5.3.2.4. 3MXF68A(9)

Figure 5-15: Piping diagram - outdoor unit 3MXF68A(9)



3D100777C

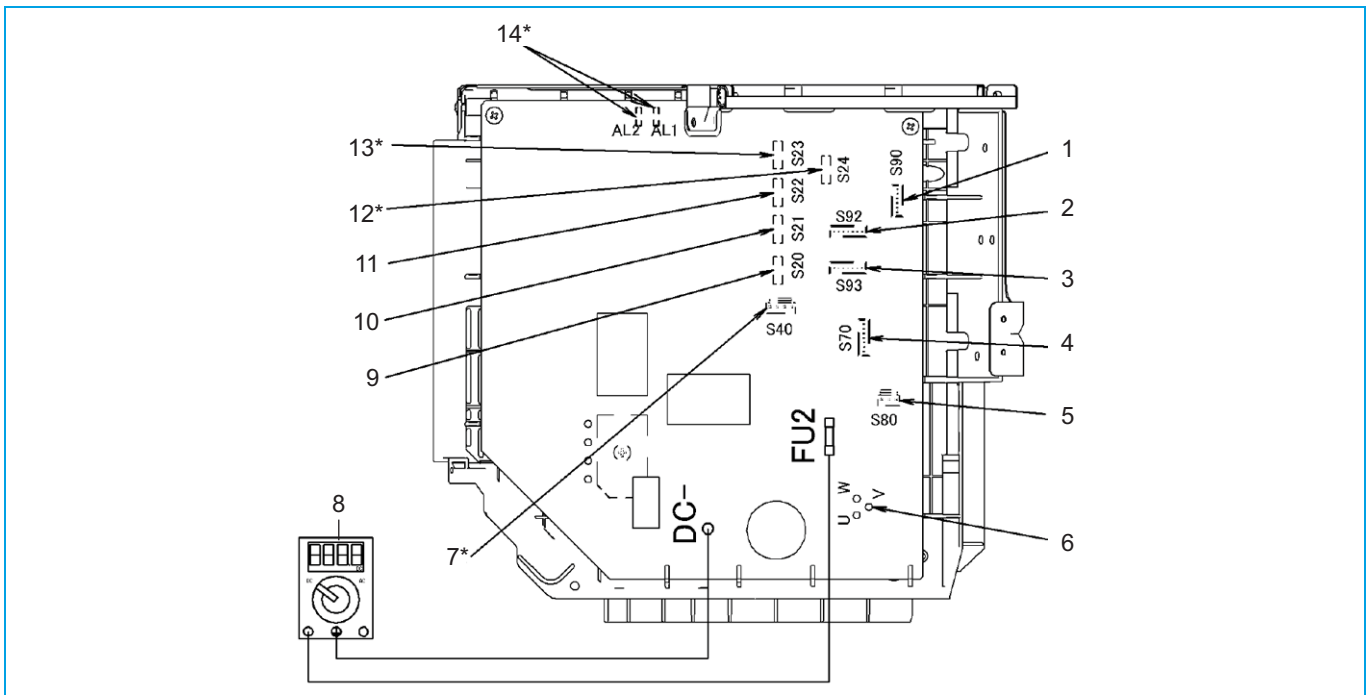
5.4. Component overview of unit

5.4.1. Indoor unit

Not available yet.

5.4.2. Outdoor unit

Figure 5-16: Component overview - outdoor unit



1. Thermistor lead wire connector	8. Multimeter (DC voltage range)
2. Thermistor lead wire connector (gas pipe)	9. Electronic expansion valve coil lead wire connection (room - A)
3. Thermistor lead wire connector (liquid pipe)	10. Electronic expansion valve coil lead wire connection (room - B)
4. Fan motor lead wire connector	11. Electronic expansion valve coil lead wire connection (room - C)
5. Four way valve lead wire connector	12. Electronic expansion valve coil lead wire connection (room - E) *
6. Compressor lead wire connector	13. Electronic expansion valve coil lead wire connection (room - D) *
7. OL lead wire connector * high pressure switch	14. Solenoid valve lead wire connector *

* may not be present depending on the model

5.5. Product specific information

5.5.1. Error codes

5.5.1.1. “E7-00” – Fan motor abnormality

Unit will automatically reset the error after a continuous run for 60 minutes without any other error code.

5.5.1.2. “EA-00” – Malfunction of 4-way valve

Set conditions

Room thermistor/indoor heat exchanger is not functioning within operation range.

Reset conditions

Continuous run for about 60 minutes without any other error.

5.5.1.3. “F3-00” – Discharge pipe temperature abnormality

Set conditions

- If the discharge temperature detected is above A°C, 10 times within 200 min.
- If within 200 min the discharge temperature detected is 10 times above B°C for 15 min.

Automatic reset conditions

- Unit will automatically reset the error when the discharge temperature drops below B for 60 minutes without any other error.
- Unit will Automatically reset when temperature drops below C°C.

Discharge pipe control (3MXF52A(9), 3MXF68A(9), 3AMXF52A(9))	A (°C)	B (°C)	C (°C)
> 50 Hz and rising > 45 Hz and dropping	120	111	107
40~50 Hz and rising 35~45 Hz and dropping	118	109	105
< 40 Hz and rising < 35 Hz and dropping	115	106	102

5.5.1.4. “L3-00” – Switch box temperature abnormality

Set conditions

When the compressor is off, the radiation fin temperature is above 98 °C.

Automatic reset conditions

Unit will automatically reset the error when the radiation fin temperature drops below 75 °C for 60 minutes without any other error.

To cool the electrical components, the outdoor fan starts when the radiation fin temperature rises above 83 °C and stops when it drops below 75 °C.

5.5.1.5. “L4-00” – Inverter radiating fin temperature abnormality

Set conditions

When the compressor is ON, the radiation fin temperature is above 98 °C.

If the error repeats, the system is shut down.

Automatic reset conditions

Unit will automatically reset the error when the radiation fin temperature drops below 78 °C for 60 minutes without any other error.

5.5.2. Component checklist

Not available yet.

5.6. Switch box

5.6.1. Indoor unit

Not applicable.

5.6.2. Outdoor unit

Not available.

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.

DAIKIN

FIELD INFORMATION REPORT

Key person info	
Name:	Company name:
Your contact details Phone number:	E-mail address:
Site address:	
Your reference:	Date of visit:

Claim info	
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 info
Application (house, apartment, office, …):
New project or refurbishment:
Heat emitters (radiators / under floor heating / fan coils / …):
Hydraulic layout (simple schematic):

Unit / Installation info	
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, ext. 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).