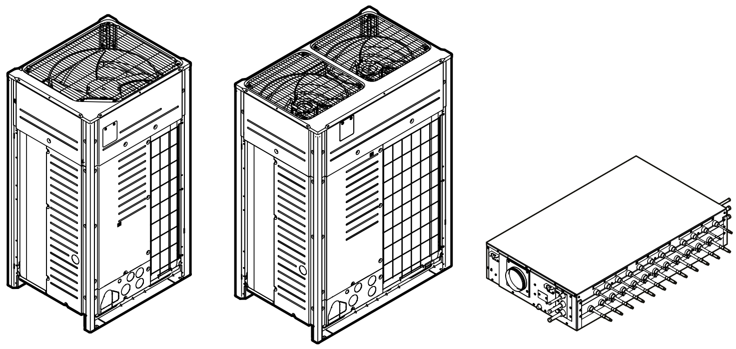
Service manual

VRV5 Heat Recovery Outdoor Unit
VRV5 Branch Selector Box



REYA8A7Y1B
REYA10A7Y1B
REYA12A7Y1B
REYA14A7Y1B
REYA16A7Y1B
REYA18A7Y1B
REYA20A7Y1B

REMA5A7Y1B

BS4A14AJV1B
BS6A14AJV1B
BS8A14AJV1B
BS10A14AJV1B
BS12A14AJV1B

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Disclaimer

Version log

Version code	Description	Date
ESIE21-13	Document release	November 2022

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1 Safety precautions

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

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

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

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

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

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

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

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

1.1 Meaning of warnings and symbols

DANGER

Indicates a situation that results in death or serious injury.

DANGER: RISK OF ELECTROCUTION

Indicates a situation that could result in electrocution.

DANGER: RISK OF BURNING/SCALDING

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

DANGER: RISK OF EXPLOSION

Indicates a situation that could result in explosion.

WARNING

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

WARNING: FLAMMABLE MATERIAL

CAUTION

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

NOTICE

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

INFORMATION

Indicates useful tips or additional information.

1.2 Dangers

DANGER: RISK OF BURNING/SCALDING

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

DANGER: RISK OF ELECTROCUTION

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

1.3 Warnings

WARNING

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

WARNING

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

WARNING

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

Initial safety checks MUST include that:

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

WARNING

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

WARNING

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

WARNING

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

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

WARNING

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

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

WARNING

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

WARNING

Tear apart and throw away plastic packaging bags so that nobody, especially NOT children, can play with them. **Possible consequence:** suffocation.

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

Removal of refrigerant MUST be according to the following:

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

WARNING

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

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

WARNING

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

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

WARNING

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

WARNING

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

WARNING

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

Please refer to the service manual for more information.

WARNING

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

WARNING

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

WARNING

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

1.4 Cautions

CAUTION

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

CAUTION

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

CAUTION

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

1.5 Notices

NOTICE

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

NOTICE

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

NOTICE

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

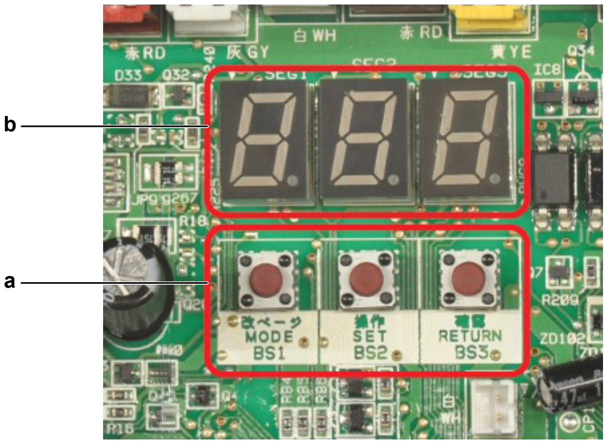
2 Troubleshooting

2.1 To access push buttons and 7-segment display

1 For outdoor unit: Remove the service plate, see "3.13 Plate work" [▶ 309].

2 For branch selector box: Remove the switch box cover, see "3.13 Plate work" [▶ 309].

Result: The push buttons and 7-segment display are located on A1P.



a Push buttons
b 7-segment display

3 Active error code is highlighted on the 7-segment display.

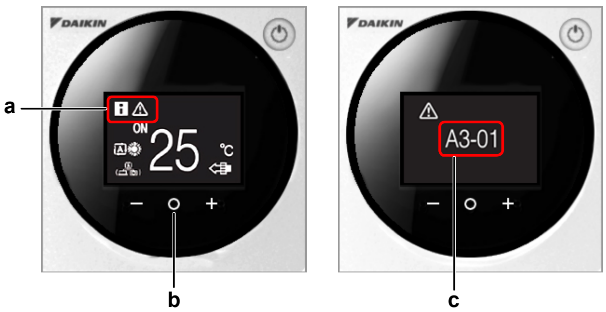
2.2 To retrieve error codes and check error history

2.2.1 Via the indoor unit remote controller BRC1H

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

To retrieve the error code

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



a Messages zone
b Middle button ○
c Error screen

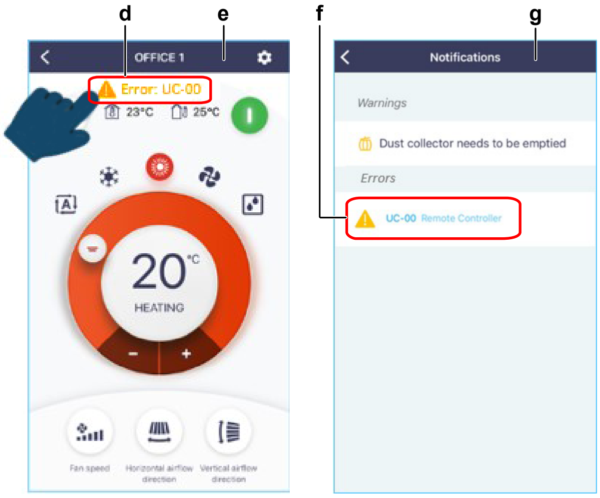
1 Press the middle button to enter the main menu from the home screen.

Result: An error screen is displayed.

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

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

The active error is shown on the home screen.



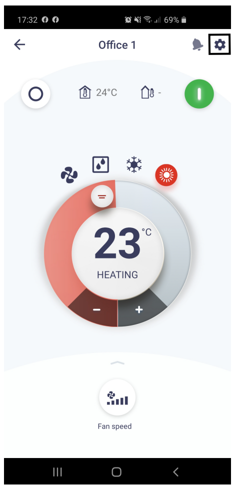
d Active error
e Home screen
f Error(s) details
g Notifications screen

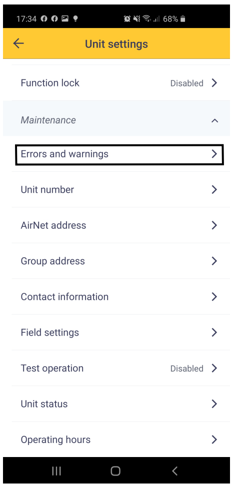
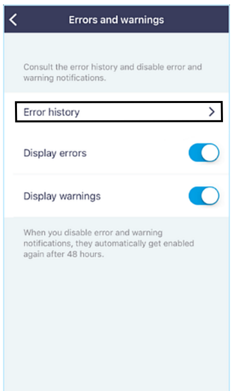
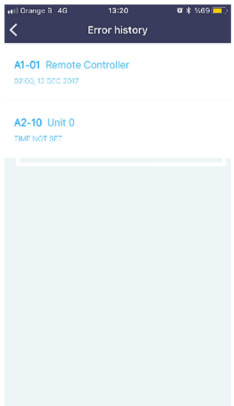
3 Tap the active error.

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

To check the error history

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

#	Action	Image for reference	Result
1	Tap the settings icon.		The Unit settings screen is displayed.

#	Action	Image for reference	Result
2	Tap Errors and warnings.		The Errors and warnings screen is displayed.
3	Tap Error history.		 The Error history screen is displayed.

2.3 Error based troubleshooting

2.3.1 Overview of error codes

Main code	Sub code Main	Sub code Sub	Description
A0	00		External Protection Device Activated
	11		R32 Leakage Detection
	13		False R32 Leakage Detection
	20		R32 Leakage Detection At Branch Selector Box
A3	01		Open Float Switch On Optional Drain-up Kit Of Branch Selector Box
CH	01		R32 Leak Detection Sensor Failure Or Disconnected
	02		R32 Leak Detection Sensor Life Time Is Exceeded
	05		R32 Leak Detection Sensor Life Time <6 Months
	10		R32 Leak Detection Sensor Replacement To Confirm
	20		R32 Leak Detection Sensor Replacement At Branch Selector Box To Confirm
	21		R32 Leak Detection Sensor At Branch Selector Box Failure Or Disconnected
	22		R32 Leak Detection Sensor At Branch Selector Box Life Time <6 Months
	23		R32 Leak Detection Sensor At Branch Selector Box Life Time Is Exceeded
E1	01		Outdoor Unit Main PCB A1P Error
	02		Outdoor Unit Main PCB A1P Error
	15		Branch Selector Box Main PCB Error
E2	01	02	Current Leak Detection
	06	07	Open Circuit on Earth Leakage Detection Core
E3	01	03	Actuation of High Pressure Switch
	02	04	High Pressure Error
	07		High Pressure Switch Reset Error
	13	14	Liquid Stop Valve Check Error
	18		Actuation of High Pressure Switch During Test Run
	20	21	Jumper Open On Main PCB
E4	01	02	Low Pressure Error
E5	01	02	Compressor Overload/Motor Lock Error
E6	17	19	Inverter Overcurrent Error
E7	01	13	Outdoor Unit Fan Motor M1F Error
	02	14	Outdoor Unit Fan Motor M2F Error
	05	17	Outdoor Unit Fan Motor M1F Overcurrent Error
	06	18	Outdoor Unit Fan Motor M2F Overcurrent Error
	09	21	Fan Inverter PCB A4P (Integrated Power Module) Overheated
	10	22	Fan Inverter PCB A5P (Integrated Power Module) Overheated

Main code	Sub code Main	Sub code Sub	Description
E9	01	05	Electronic Expansion Valve Y1E Malfunction
	03	06	Electronic Expansion Valve Y2E Malfunction
	04	07	Electronic Expansion Valve Y3E Malfunction
	20	21	Electronic Expansion Valve (Y1E) Failure
	23	24	Electronic Expansion Valve (Y2E) Failure
	26	27	Electronic Expansion Valve (Y4E) Malfunction
	29	34	Electronic Expansion Valve (Y5E) Malfunction
	30	35	Electronic Expansion valve (Y7E) Malfunction
	44	45	Electronic Expansion Valve (Y3E) Failure
	48	49	Electronic Expansion Valve Overcurrent Error
	51	52	Electronic Expansion Valve Thermal Cutting Error
	54	55	Electronic Expansion Valve Defective Circuit
EA	27		Branch Selector Box Damper Failure
F3	01	03	Compressor Discharge Temperature Too High
	02	04	High Discharge Temperature Cross Pipe At Branch Selector Box
	20	21	Compressor Body Temperature Too High
F4	01		Wet Operation Caution
	02	04	Wet Alarm for Compressor M1C
	08	10	Wet Operation Error for Compressor M1C
	14		Indoor Unit Wet Operation Alarm
F6	01		Refrigerant Overcharge Detection by High Pressure Sensor S1NPH
	02		Refrigerant Overcharge Detection During Test-Run
	03		Refrigerant Overcharge Detection from High Subcool Value
F9	01		Branch Selector Box Electronic Expansion Valve Abnormality (High Pressure/Low Pressure Gas Pipe)
	02		Branch Selector Box Electronic Expansion Valve Abnormality (Suction Gas Pipe)
	05		Branch Selector Box Electronic Expansion Valve Abnormality (Subcooling)
	06		Branch Selector Box Electronic Expansion Valve Abnormality (Safety Gas)
	07		Branch Selector Box Electronic Expansion Valve Abnormality (Safety Liquid)
	08		Branch Selector Box Electronic Expansion Valve Overcurrent Error (Safety Gas/Liquid)
	09		Branch Selector Box Power Back-up PCB Error
H3	02	04	Transmission Error Between Main PCB And Inverter PCB
H7	01	05	Defective Fan Inverter PCB A4P
	02	06	Defective Fan Inverter PCB A5P
	21	23	Defective Fan Inverter PCB A4P
	22	24	Defective Fan Inverter PCB A5P
H9	01	02	Ambient Temperature Thermistor R1T Abnormality

Main code	Sub code		Description
	Main	Sub	
HA	00		Defrost Fail Alarm
J3	16	22	Discharge Thermistor R21T Open Circuit
	17	23	Discharge Thermistor R21T Short Circuit
	47	49	Compressor Body Thermistor R15T Open Circuit
	48	50	Compressor Body Thermistor R15T Short Circuit
	56	57	High Discharge Temperature
J5	01	03	Compressor Suction Thermistor R12T Malfunction
	18	19	Suction Temperature Thermistor R10T Abnormality
J6	01	02	De-icer Thermistor R11T Abnormality
	08	09	Upper Heat Exchanger Gas Pipe Thermistor R8T Malfunction
	11	12	Lower Heat Exchanger Gas Pipe Thermistor R9T Malfunction
J7	01	02	Main Liquid Pipe Thermistor R3T Malfunction
	06	07	Liquid Thermistor R7T Abnormality
	18	19	Gas Inlet Subcool PHE Thermistor R16T Abnormality
J8	01	02	Upper Heat Exchanger Liquid Temperature Thermistor R4T Abnormality
	08	09	Lower Heat Exchanger Liquid Pipe Thermistor R5T Abnormality
J9	01	02	Gas Thermistor R6T Abnormality
	08	09	Gas Thermistor R6T Abnormality
	11	12	Receiver Gas Thermistor R13T Abnormality
JA	06	08	High Pressure Sensor S1NPH Abnormality
	07	09	High Pressure Sensor S1NPH Malfunction
JC	06	08	Low Pressure Sensor S1NPL Abnormality
	07	09	Low Pressure Sensor S1NPL Malfunction
L1	01	07	Inverter PCB A3P Malfunction
	02	08	Inverter PCB A3P Current Detection Primary Circuit
	03	09	Inverter PCB A3P Current Detection Secondary Circuit
	04	10	Power Transistor Error On Inverter PCB A3P
	05	15	Inverter PCB A3P Hardware Fault
	28	32	Fan Inverter PCB A4P EEPROM Error
	29	33	Fan Inverter PCB A5P EEPROM Error
	36	38	Inverter PCB A3P EEPROM Error
	47	49	Inverter PCB A3P16 V DC Abnormal
L2	01	02	Power Supply Abnormality During Test Run
	04	05	Power Supply Abnormality During Normal Operation

Main code	Sub code Main	Sub	Description
L4	01	02	Inverter PCB A3P High Fin Temperature
	06	18	Fan Inverter PCB A4P High Fin Temperature
	07	19	Fan Inverter PCB A5P High Fin Temperature
L5	03	05	Output Overcurrent Detection On Inverter PCB A3P
L8	03	06	Overcurrent on Inverter PCB A3P Except Start-up
L9	01	05	Stall Prevention by Inverter PCB A3P
	13	14	Inverter PCB A3P Output Phase Abnormality
LC	01		Transmission Abnormality
	14	15	Transmission Abnormality Main PCB/Inverter PCB A3P
	19	20	Transmission Abnormality Main PCB/Fan Inverter PCB A4P
	24	25	Transmission Abnormality Main PCB/Fan Inverter PCB A5P
	33	34	Transmission Abnormality Main PCB/Sub PCB
P1	01	02	Open Phase or Unbalanced Power Supply Detection by Inverter PCB A3P
P2	00		Refrigerant Auto-charge Interrupted
P4	01	04	Fin Thermistor Abnormality On Inverter PCB A3P
	02	15	Fin Thermistor Abnormality On Fan Inverter PCB A4P
	03	16	Fin Thermistor Abnormality On Fan Inverter PCB A5P
P8	00		Freeze-Up During Refrigerant Auto-Charge
P9	00		Refrigerant Auto-Charge Finished Normally
PA	00		No Refrigerant in Refrigerant Cylinder During Auto-Charge
PE	00		Refrigerant Auto-Charge on Last Stage
PF	00		Long Test Run Failed
PJ	04	05	Capacity Setting Mismatch for Inverter PCB A3P
	09	15	Capacity Setting Mismatch for Fan Inverter PCB A4P
	10	17	Capacity Setting Mismatch for Fan Inverter PCB A5P
U0	-		Refrigerant Shortage Detection (Warning)
	05		Refrigerant Shortage Detection
	06		Refrigerant Shortage Detection
	08	09	Refrigerant Shortage Detection by High Pressure Sensor
U1	01	05	Open Phase Detection On Power Supply
	04	06	Reverse Phase Detection
	19	20	Hz Error Detection On Power Supply
U2	01	08	Inverter Circuit Power Supply Abnormality - Inverter PCB A3P Abnormal Voltage
	02	09	Inverter Circuit Power Supply Abnormality - Inverter PCB A3P Phase Loss
	03	10	Inverter Circuit Power Supply Abnormality - Inverter PCB A3P DC Circuit Not Charging

Main code	Sub code		Description
	Main	Sub	
U3	02		Test Run Interrupted
	03		Test Run Not Performed Yet
	04		Test Run Ended Abnormally
	05		Test Run Aborted on Initial Transmission
	06		Test Run Aborted on Normal Transmission
	07		Transmission Abnormality on Test Run
	08		Transmission Abnormality on Test Run
	12		Commissioning Of Branch Selector Box Safety System NOT Completed
U4	01		Communication Between Indoor Units And Branch Selector Box Missing
	03		Outdoor Unit Not Able to Start Because Of Indoor Unit Malfunction
	11		Communication Between Outdoor Unit And Branch Selector Box Missing
	12		Communication Between Outdoor Unit And All Branch Selector Boxes Electric Noise
	13		Communication Between Indoor Units And Branch Selector Box Missing
	14		Communication Between Indoor Units And Branch Selector Box Electric Noise
U5	04		Communication Abnormality Between Indoor Unit Main PCB And Remote Controller
	06		Supervisor Remote Controller Not Connected/Not Set
U7	01		Transmission Abnormality Between Systems - DTA104A61, 62 Error
	02		Transmission Abnormality Between Systems - DTA104A61, 62 Error
	03		Transmission Error Between Main Outdoor Unit and Sub 1 Outdoor Unit
	05		Multi System Abnormality
	06		Multi System Address Abnormality
	07		More Than 2 Outdoor Units on Q1-Q2 Transmission
	11		Excess Indoor Units Detected on Test Run
	24		Duplication of Address Setting on Multiple DTA104A61,62 Installation
U9	01		Other Indoor Unit Has Error
	03		Abnormality Of R32 Safety System On Other Indoor Unit On Same Port Of Branch Selector Box
	04		Abnormality Of R32 Safety System On Other Branch Selector Box

Main code	Sub code Main	Sub code Sub	Description
UA	00		Combination Abnormality
	03		Combination Abnormality - Mix of R22, R407C, R410A And R32 Type Units Detected
	16		Combination Abnormality - More Than 64 Indoor Units Detected On Same System
	17		Combination Abnormality - Local Setting Abnormality
	18		Combination Abnormality - Outdoor Unit Not Compatible With Indoor Units (Refrigerant Type)
	19		Combination Abnormality - Local Set Alarm
	20		Combination Abnormality - Non Compatible Outdoor Unit in Multi Combination
	21		Combination Abnormality - BPMK Unit(s) Detected
	22		Branch Selector Box Abnormality – Single installation
	23		Branch Selector Box Abnormality –Connected Indoor Unit Index too High
	25		Branch Selector Box Abnormality –Transmission Wiring Abnormality Between Branch Selector Box and Outdoor Unit
	26		Branch Selector Box Abnormality - Transmission Wiring Abnormality On Branch Selector Box
	27		Branch Selector Box Abnormality – No Branch Selector Box Detected
	28		Branch Selector Box Abnormality –Non-compatible Branch Selector Box Detected
	29		Branch Selector Box Abnormality – Connected Indoor Unit Index Too Low
	30		Combination Abnormality – Heat Pump and Heat Recovery Outdoor Units Detected in Same Combination
	31		Combination Abnormality - REMA-A Unit Detected Without a Multi Combination
	35		Combination Abnormality - REMA-A Unit Detected in Wrong Combination
	38		Combination Abnormality - Altherma Hydro Unit Detected
	39		Combination Abnormality - Incorrect Combination
	43		Combination Abnormality - Incorrect Combination
	49		Combination Abnormality - Wrong unit Combination
	50		Combination Abnormality - High Temperature Hydrobox Detected Connected to a BS Unit
	51		Combination Abnormality - Only Hydrobox Units Detected
	52		Branch Selector Box Refrigerant Type Abnormality
	53		Branch Selector Box Abnormality – Branch Selector Box Dip Switch Abnormality
	55		R32 Pump Down Locked State (Outdoor Unit Setting Required)
	57		Mechanical Ventilation Abnormality (External Input Is Closed)
	58		Supervisor Remote Controller Not Connected/Not Set
	60		Branch Selector Box Power Back-up PCB, Capacitor PCB Malfunction/Not Connected
	61		Branch Selector Box Power Back-up PCB No Power
	62		Branch Selector Box Power Failure Detection

Main code	Sub code		Description
	Main	Sub	
UF	01		Wiring and Piping Mismatch - Excess Connection Ratio
	05		Wiring and Piping Mismatch - Stop Valves Closed or Incorrect
	18		Failure Test Run Cross Wiring/Cross Piping (After Outdoor Set Mode 2-20-2)
UH	01		Auto Address Failure
	02		Auto Address Failure
UJ	34		Capacity Mismatch Between VAM And EKVDX Module
	35		Abnormality At VAM Unit
	36		Transmission Error Between VAM And EKVDX
	37		VAM Unit Has A6-28 Error
	40		Maintenance Wiring (Ventilation Fan Branch Selector Box)
E-1	-		Refrigerant Leak Check is Not Possible
E-2	-		Refrigerant Leak Check Cannot Be Performed - Indoor Air Temperature is Out Of Range.
E-3	-		Refrigerant Leak Check Cannot Be Performed - Outdoor Air Temperature is Out Of Range.
E-4	-		Refrigerant Leak Check is Interrupted - Too Low Pressure is Detected
E-5	-		Refrigerant Leak Check Cannot Be Performed - A Unit Which is Not Compatible With Leak Detection Function is Installed
NG	-		Refrigerant Leak Check Function Detects Refrigerant Leak
OK	-		Refrigerant Leak Check Function Detects No Refrigerant Leak

2.3.2 A0-00 – External protection device activated

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

To solve the error code

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

1 Check if the field setting 22-1 is correctly set according to the following wiring situations on T1-T2 of X1M terminal of the indoor unit. See "6.7 Field settings" [▶ 401]. Correct as needed.

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

2 If wiring connected to T1-T2 of the indoor unit terminal, check correct connection and continuity of the wiring. See Wiring diagram in the service manual of the specific indoor unit.

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

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

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

4 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

5 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

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

2.3.3 A0-11 – R32 leakage detection

Trigger	Effect	Reset
The R32 sensor indoor unit detected a refrigerant leak while fan of indoor unit is switched ON.	▪ In branch selector box, gas and liquid shut-off expansion valves for the faulty indoor unit completely close. ▪ Outdoor unit continues operating for other indoor circuits of this branch selector box.	▪ Power reset of the indoor unit. ▪ Outdoor unit shows error "CH-10". Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit. ▪ Outdoor unit shows error "UA-55". Set field setting 2-24-1 to 0 on the outdoor unit.

To solve the error code

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

1 Stop the outdoor unit operation for at least 30 minutes.

2 Check the field piping for refrigerant leak. Check saturation pressure of the field piping via the liquid and gas service port and determine the corresponding saturation temperature.

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

- Recover the refrigerant, see "4.2 Refrigerant circuit" [▸ 359].
- Repair the field piping.
- Perform a pressure test of the field piping.
- Replace the R32 leak detection sensor of the indoor unit with error code A0-11. After replacement, at power ON of indoor unit, outdoor unit will display error code CH-10. Related gas and liquid shut-off expansion valves of the branch selector box will close again. Other expansion valves keep their position.
- Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit. Outdoor unit shows error code UA-55.
- Set outdoor unit field setting 2-21 to 1 + press BS3 1 time on the outdoor unit main PCB. All expansion valves (outdoor unit, branch selector box and indoor units) will open.
- Vacuum and recharge the refrigerant at the outdoor unit. Consult amount sticker. See installation manual of the outdoor unit for correct refrigerant charge procedure.
- Set outdoor unit field setting 2-24-1 to 0. Error UA-55 is cleared.
- Fill in the logbook.

  Possible cause: Refrigerant leak at indoor unit side.

4 If saturation temperature (gas and/or liquid) = outdoor ambient temperature, NO refrigerant leak is present between the outdoor unit and the branch selector box. As the related gas and liquid shut-off expansion valves of the branch selector box are closed, perform as described below to check for refrigerant leak at the indoor unit side.

5 Using a leak tester, check the faulty indoor unit for refrigerant leak. If refrigerant leak is found, repair the leak as described above.

6 If NO refrigerant leak (oil traces) is found, shortly open the related gas and liquid shut-off expansion valves (set field setting 2-23-0 to 1 + press BS3 2 times) of the branch selector box to equalize the pressure between the system and the faulty indoor unit.

7 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See service manual of the specific indoor unit.

Possible cause: Faulty R32 leak detection sensor.

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

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

9 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

INFORMATION

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

2.3.4 A0-13 – False R32 leakage detection

Trigger	Effect	Reset
The R32 sensor indoor unit detected a refrigerant leak while fan of indoor unit is switched OFF.	Indoor unit will start forced fan operation to check R32 leak detection.	Automatic reset if NO R32 leak detected during forced fan operation.
		A0-11 error will be displayed when R32 leak detected during forced fan operation.

To solve the error code

INFORMATION

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

1 Stop the outdoor unit operation for at least 30 minutes.

2 Check the field piping for refrigerant leak. Check saturation pressure of the field piping via the liquid and gas service port and determine the corresponding saturation temperature.

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

- Recover the refrigerant, see "4.2 Refrigerant circuit" [▶ 359].
- Repair the field piping.
- Perform a pressure test of the field piping.
- Replace the R32 leak detection sensor of the indoor unit with error code A0-11. After replacement, at power ON, indoor unit will display error code CH-10.
- Recharge the refrigerant at the outdoor unit. Consult amount sticker. See installation manual of the outdoor unit for correct refrigerant charge procedure.
- Fill in the logbook.

  Possible cause: Refrigerant leak at indoor unit side.

4 If saturation temperature (gas and/or liquid) = outdoor ambient temperature, perform as described below.

5 Using a leak tester, check the faulty indoor unit for refrigerant leak. If refrigerant leak is found, repair the leak as described above.

6 If NO refrigerant leak was found, perform as described below.

7 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See service manual of the specific indoor unit.

Possible cause: Faulty R32 leak detection sensor.

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

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

9 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

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

2.3.5 A0-20 – R32 leakage detection at branch selector box

Trigger	Effect	Reset
The R32 sensor of the branch selector box detected a refrigerant leak.	Outdoor unit will stop operating and all valves in all branch selector boxes fully close.	▪ Power reset of the branch selector box. ▪ Outdoor unit shows error “CH-20”. Set field setting 2-5-0 to 1 on the main PCB of the faulty branch selector box. ▪ Outdoor unit shows error “UA-55”. Set field setting 2-24-1 to 0 on the outdoor unit.

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

1. Stop the outdoor unit operation for at least 30 minutes.
2. Check the field piping for refrigerant leak. Check saturation pressure of the field piping via the liquid and gas service port and determine the corresponding saturation temperature.
3. If saturation temperature (gas and/or liquid) <outdoor ambient temperature, refrigerant leak is present. Perform as follows to repair the refrigerant leak:
   - Recover the refrigerant, see "4.2 Refrigerant circuit" [▸ 359].
   - Repair the field piping.
   - Perform a pressure test of the field piping.
   - Replace the R32 leak detection sensor of the branch selector box with error code A0-20. After replacement, at power ON of branch selector box, outdoor unit will display error code CH-20. Safety gas and safety liquid expansion valves of the branch selector box will close again. Other expansion valves keep their position.
   - Set field setting 2-5-0 to 1 on the main PCB of the faulty branch selector box. Safety gas and safety liquid expansion valves of the branch selector box will open. Outdoor unit shows error code UA-55.
   - Set outdoor unit field setting 2-21 to 1 + press BS3 1 time on the outdoor unit main PCB. All expansion valves (outdoor unit, branch selector box and indoor units) will open.
   - Vacuum and recharge the refrigerant at the outdoor unit. Consult amount sticker. See installation manual of the outdoor unit for correct refrigerant charge procedure.
   - Set outdoor unit field setting 2-24-1 to 0. Error UA-55 is cleared.
   - Fill in the logbook.

     Possible cause: Refrigerant leak at branch selector box side.
4. If saturation temperature (gas and/or liquid) = outdoor ambient temperature, perform as described below.
5. Using a leak tester, check the faulty branch selector box for refrigerant leak. If refrigerant leak is found, repair the leak as described above.
6. If NO refrigerant leak was found, perform as described below.
7. Perform a check of the R32 leak detection sensor of the faulty branch selector box. See "3.2.8 R32 leak detection sensor" [▸ 226].

   Possible cause: Faulty R32 leak detection sensor.
8. Check if any external (foreign) vapor substance influenced the functioning of the R32 leak detection sensor. Repair as needed.

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

9 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▸ 221].

Possible cause: Faulty branch selector box main PCB.

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

2.3.6 A3-01 – Open float switch on optional drain-up kit of branch selector box

Trigger	Effect	Reset
Float switch S2L of optional drain-up kit is open.	Outdoor unit stops operating while output to drain pump (230 VAC) continues.	Auto reset when float switch S2L is closed.

To solve the error code

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

1 Perform a check of the drain-up kit PCB. See Drain-up kit PCB.

Possible cause: Faulty PCB.

2 Perform a check of the float switches of the drain-up kit. See Float switch.

Possible cause: Faulty float switch(es).

3 Perform a check of the drain pump of the drain-up kit. See Drain pump.

Possible cause: Faulty drain pump.

4 Fill the drain pan of the branch selector box until float switch S1L opens. Check if the drain outlet of the branch selector box and the optional drain-up kit is blocked. Check the optional drain-up kit for excessive lift (>1000 mm). Correct as needed

Possible cause: Drain outlet blocked or excessive lift at the drain-up kit.

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

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

Trigger	Effect	Reset
The R32 sensor NOT connected to indoor unit main PCB.	Indoor unit will stop operating while other indoor units show error U9-02. Outdoor unit forced stop (without automatic refrigerant recovery operation).	Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit.
R32 sensor PCB failure		

To solve the error code

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

1. Check wiring (insertion and continuity) on connector X41A on the indoor unit main PCB and connector CN1 on the PCB of the R32 leak detection sensor. See Wiring diagram in the service manual of the specific indoor unit.

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

2. Check the error history for error code A0-11, see "2 Troubleshooting" [▸ 18]. If A0-11 is found, R32 leak detection sensor was replaced after this error and power reconnected. Check if field setting 25-14=02. Correct if needed, see "6.7 Field settings" [▸ 401].

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

3. Perform a check of the R32 leak detection sensor of the faulty indoor unit. See service manual of the specific indoor unit.

   Possible cause: Faulty R32 leak detection sensor.

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

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

5. Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

   Possible cause: Faulty indoor unit main PCB.

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

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

Trigger	Effect	Reset
The R32 sensor detected operation of 10 years or more.	Indoor unit will stop operating. Other indoor units and outdoor unit will continue operating.	▪ Power reset of the indoor unit. ▪ Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit. ▪ Outdoor unit shows error “UA-55”. Set field setting 2-24-1 to 0 on the outdoor unit.

To solve the error code

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

1 Check the error history to see if R32 leak detection sensor was replaced, see "2 Troubleshooting" [▶ 18]. If replaced, check if timer was reset during sensor replacement. Reset as needed.

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

2 Check the operation time of the R32 leak detection sensor of the faulty indoor unit. If operation time is 10 years, replace the R32 leak detection sensor. See service manual of the specific indoor unit.

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

3 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See service manual of the specific indoor unit.

Possible cause: Faulty R32 leak detection sensor.

4 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

INFORMATION

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

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

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

To solve the error code

INFORMATION

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

1 Check the error history to see if R32 leak detection sensor was replaced, see "2 Troubleshooting" [▶ 18]. If replaced, check if timer was reset during sensor replacement. Reset as needed.

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

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

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

3 Perform a check of the R32 leak detection sensor of the faulty indoor unit. See service manual of the specific indoor unit.

Possible cause: Faulty R32 leak detection sensor.

4 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

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

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

Trigger	Effect	Reset
Power reset after the R32 sensor detected disconnection or malfunction between indoor unit main PCB and R32 sensor (error CH-01).	Outdoor unit stops operating.	▪ Set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit. ▪ Outdoor unit shows error "UA-55". Set field setting 2-24-1 to 0 on the outdoor unit.
Power reset after R32 sensor detected a leak (error A0-11).		
Power reset after warning lifetime <6 months (caution CH-02).	Outdoor unit continues operating.	▪ When R32 sensor was replaced, after power reset, set field setting 25-14-01 to 02 on the remote controller of the faulty indoor unit. ▪ Outdoor unit shows error "UA-55". Set field setting 2-24-1 to 0 on the outdoor unit.

To solve the error code

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

1. Check wiring (insertion and continuity) on connector X41A on the indoor unit main PCB and connector CN1 on the PCB of the R32 leak detection sensor. See Wiring diagram in the service manual of the specific indoor unit.

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

2. Check the error history for error code A0-11, see "2 Troubleshooting" [▸ 18]. If A0-11 is found, R32 leak detection sensor was replaced after this error and power reconnected. Check if field setting 25-14=02. Correct if needed, see "6.7 Field settings" [▸ 401].

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

3. Perform a check of the R32 leak detection sensor of the faulty indoor unit. See service manual of the specific indoor unit.

   Possible cause: Faulty R32 leak detection sensor.

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

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

5 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

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

2.3.11 CH-20 – R32 leak detection sensor replacement at branch selector box to confirm

Trigger	Effect	Reset
The R32 sensor detected disconnection between branch selector box PCB and R32 sensor.	Outdoor unit stops operating.	▪ Set field setting 2-5-0 to 1 on the main PCB of the faulty branch selector box. ▪ Outdoor units shows error UA-55. Set field setting 2-24-1 to 0 on the outdoor unit.
R32 sensor replaced in branch selector box and power reset after error A0-20 or CH23.		
Power reset after R32 sensor end lifetime (error CH-23).		▪ When R32 sensor is replaced, after power reset, set field setting 2-5-1 to 2 on the main PCB of the faulty branch selector box. ▪ Outdoor units shows error UA-55. Set field setting 2-24-1 to 0 on the outdoor unit.
Incorrect setting on sub PCB of branch selector box.		Reset when setting 2-6-1 (default) on sub PCB of branch selector box is corrected.
Power reset after warning lifetime <6 months (caution CH-22).	Outdoor unit continues operating.	▪ When R32 sensor is replaced, after power reset, set field setting 2-5-1 to 2 on the main PCB of the faulty branch selector box. ▪ Outdoor units shows error UA-55. Set field setting 2-24-1 to 0 on the outdoor unit.

To solve the error code

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

1 Check wiring (insertion and continuity) on connector X19A on the branch selector box PCB and connector CN1 on the PCB of the R32 leak detection sensor. See "6.2 Wiring diagram" [▸ 376].

Possible cause: Faulty or damaged wiring between branch selector box PCB and R32 leak detection sensor.

2 Check the error history for error code A0-20, see "2 Troubleshooting" [▸ 18]. If A0-20 is found, R32 leak detection sensor was replaced after this error and power reconnected. Check if field setting 2-5=02 on the branch selector box. Correct if needed, see "6.7 Field settings" [▸ 401].

Possible cause: R32 leak detection sensor was replaced without adjusting field setting 2-5 on the branch selector box.

3 Perform a check of the R32 leak detection sensor of the faulty branch selector box. See "3.2.8 R32 leak detection sensor" [▸ 226].

Possible cause: Faulty R32 leak detection sensor.

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

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

5 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▸ 221].

Possible cause: Faulty branch selector box main PCB.

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

2.3.12 CH-21 – R32 leak detection sensor at branch selector box failure or disconnected

Trigger	Effect	Reset
The R32 sensor not connected to branch selector box PCB.	Outdoor unit continues operating for indoor circuits of other branch selector boxes.	▪ Set field setting 2-5-0 to 1 on the main PCB of the faulty branch selector box. ▪ Outdoor units shows error UA-55. Set field setting 2-24-1 to 0 on the outdoor unit.
R32 sensor PCB failure.		

To solve the error code

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

1 Check wiring (insertion and continuity) on connector X19A on the branch selector box PCB and connector CN1 on the PCB of the R32 leak detection sensor. See "6.2 Wiring diagram" [▸ 376].

Possible cause: Faulty or damaged wiring between branch selector box PCB and R32 leak detection sensor.

2 Check the error history for error code A0-20, see "2 Troubleshooting" [▶ 18]. If A0-20 is found, R32 leak detection sensor was replaced after this error and power reconnected. Check if field setting 2-5=02 on the branch selector box. Correct if needed, see "6.7 Field settings" [▶ 401].

Possible cause: R32 leak detection sensor was replaced without adjusting field setting 2-5 on the branch selector box.

3 Perform a check of the R32 leak detection sensor of the faulty branch selector box. See "3.2.8 R32 leak detection sensor" [▶ 226].

Possible cause: Faulty R32 leak detection sensor.

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

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

5 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

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

2.3.13 CH-22 – R32 leak detection sensor at branch selector box life time <6 months

Trigger	Effect	Reset
The R32 sensor detected operation of 9.5 years or more.	Branch selector box will continue operating. Outdoor unit can operate for ALL indoor units.	▪ Set field setting 2-5-0 to 1 on the main PCB of the faulty branch selector box. ▪ Outdoor units shows error UA-55. Set field setting 2-24-1 to 0 on the outdoor unit.

To solve the error code

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

1 Check the error history to see if R32 leak detection sensor was replaced, see "2 Troubleshooting" [▶ 18]. If replaced, check if timer was reset during sensor replacement. Reset as needed.

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

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

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

3 Perform a check of the R32 leak detection sensor of the faulty branch selector box. See "3.2.8 R32 leak detection sensor" [▶ 226].

Possible cause: Faulty R32 leak detection sensor.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

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

2.3.14 CH-23 – R32 leak detection sensor at branch selector box life time is exceeded

Trigger	Effect	Reset
The R32 sensor detected operation of 10 years or more.	Outdoor unit stops operating.	▪ After R32 sensor replacement, power reset of the branch selector box. ▪ Set field setting 2-5-0 to 1 on the main PCB of the branch selector box. ▪ Outdoor unit shows error "UA-55". Set field setting 2-24-1 to 0 on the outdoor unit.

To solve the error code

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

1 Check the error history to see if R32 leak detection sensor was replaced, see "2 Troubleshooting" [▶ 18]. If replaced, check if timer was reset during sensor replacement. Reset as needed.

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

2 Check the operation time of the R32 leak detection sensor of the faulty branch selector box. If operation time is 10 years, replace the R32 leak detection sensor. See "3.2.8 R32 leak detection sensor" [▶ 226].

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

3 Perform a check of the R32 leak detection sensor of the faulty branch selector box. See "3.2.8 R32 leak detection sensor" [▶ 226].

Possible cause: Faulty R32 leak detection sensor.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

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

2.3.15 E1-01 – Outdoor unit main PCB A1P error

Trigger	Effect	Reset
Main PCB fails reading/ writing memory (EEPROM error).	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

2 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

3 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

4 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.16 E1-02 – Outdoor unit main PCB A1P error

Trigger	Effect	Reset
Defected main PCB.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.17 E1-15 – Branch selector box main PCB error

Trigger	Effect	Reset
Faulty main PCB of branch selector box.	Unit will stop operating.	Manual reset via user interface.
Main PCB of branch selector box fails reading/ writing memory (EEPROM error).		

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

1 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▸ 221].

Possible cause: Faulty branch selector box main PCB.

2 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

3 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▸ 368].

Possible cause: External source may cause interference.

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

2.3.18 E2-01-02 – Current leak detection

Main error code	Sub error code	Unit
E2	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects earth leakage through current sensor >safety value, see Safety devices.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Perform a check of the current sensor. See "3.5 Current sensor" [▸ 247].

Possible cause: Faulty current sensor.

2 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:

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

3 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

4 Using a megger device, check the solenoid valve coils, 4-way valve coil, fan motors and compressors if any earth leakage is found. Replace the component(s) that generate earth leakage.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Refrigerant overcharge.

6 Check for the presence of humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Humidity in the refrigerant circuit.

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

2.3.19 E2-06-07 – Open circuit on earth leakage detection core

Main error code	Sub error code	Unit
E2	06	Main
	07	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects open circuit on connector X101A.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

INFORMATION

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

1. Check that connector X101A is correctly connected to the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Open circuit on connector X101A.

2. Perform a check of the current sensor. See "3.5 Current sensor" [▶ 247].

   Possible cause: Faulty current sensor.

3. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

INFORMATION

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

2.3.20 E3-01-03 – Actuation of high pressure switch

Main error code	Sub error code	Unit
E3	01	Main
	03	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
High pressure switch opens due to high pressure >safety value, Safety devices.	Unit will stop operating.	If field setting 2-15=1 (default): When pressure drops below the reset value, via the indoor unit remote controller, cycle OFF & ON.
		If field setting 2-15=0: When pressure drops below the reset value, press BS3 on main PCB on outdoor unit, and then via indoor unit remote controller, cycle OFF & ON.

To solve the error code

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

1. Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Closed stop valve in the refrigerant circuit.

2. Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▶ 368].

   Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

3. Clean the outdoor heat exchanger. See "5 Maintenance" [▶ 370].

   Possible cause: Dirty outdoor heat exchanger.

4. Perform a check of the high pressure switch. See High pressure switch.

   Possible cause: Faulty high pressure switch.

5. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Refrigerant overcharge.

6. Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

7. Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Clogged refrigerant circuit.

8. Perform a check of the condenser side expansion valve. See "3.6 Expansion valve" [▶ 250].

   Possible cause: Faulty condenser side expansion valve.

9. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

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

2.3.21 E3-02-04 – High pressure error

Main error code	Sub error code	Unit
E3	02	Main
	04	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
High pressure control (by sensor) active due to pressure >safety value certain times within certain minutes, see Safety devices.	Unit will stop operating.	If field setting 2-15=1 (default): Via the indoor unit remote controller, cycle OFF & ON.
		If field setting 2-15=0: Press BS3 on main PCB on outdoor unit, and then via indoor unit remote controller, cycle OFF & ON.

To solve the error code

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

1. Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Closed stop valve in the refrigerant circuit.

2. Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▸ 368].

   Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

3. Clean the outdoor heat exchanger. See "5 Maintenance" [▸ 370].

   Possible cause: Dirty outdoor heat exchanger.

4. Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▸ 326].

   Possible cause: Faulty refrigerant high pressure sensor.

5. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Refrigerant overcharge.

6 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

7 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Clogged refrigerant circuit.

8 Perform a check of the condenser side expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty condenser side expansion valve.

9 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

INFORMATION

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

2.3.22 E3-07 – High pressure switch reset error

Trigger	Effect	Reset
High pressure switch did not reset and it stays activated.	Unit will stop operating.	If field setting 2-15=1 (default): Via the indoor unit remote controller, cycle OFF & ON.
		If field setting 2-15=0: Press BS3 on main PCB on outdoor unit, and then via indoor unit remote controller, cycle OFF & ON.

To solve the error code

INFORMATION

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Perform a check of the high pressure switch. See High pressure switch.

Possible cause: Faulty high pressure switch.

3 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

INFORMATION

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

2.3.23 E3-13-14 – Liquid stop valve check error

Main error code	Sub error code	Unit
E3	13	Main
	14	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Pressure builds up quickly on test run operation.	Unit will stop test run.	Eliminate the cause, repeat test operation procedure.

To solve the error code

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

1. Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Closed stop valve in the refrigerant circuit.

2. Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

   Possible cause: Faulty refrigerant high pressure sensor.

3. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Refrigerant overcharge.

4. Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

5. Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Clogged refrigerant circuit.

6. Perform a check of the condenser side expansion valve. See "3.6 Expansion valve" [▶ 250].

   Possible cause: Faulty condenser side expansion valve.

7. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

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

2.3.24 E3-18 – Actuation of high pressure switch during test run

Trigger	Effect	Reset
High pressure switch is activated during test run.	Unit will stop test run.	If field setting 2-15=1 (default): Via the indoor unit remote controller, cycle OFF & ON.
		If field setting 2-15=0: Press BS3 on main PCB on outdoor unit, and then via indoor unit remote controller, cycle OFF & ON.

To solve the error code

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

1. Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Closed stop valve in the refrigerant circuit.

2. Perform a check of the high pressure switch. See High pressure switch.

   Possible cause: Faulty high pressure switch.

3. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Refrigerant overcharge.

4. Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▸ 359].

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

5. Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Clogged refrigerant circuit.

6. Perform a check of the condenser side expansion valve. See "3.6 Expansion valve" [▸ 250].

   Possible cause: Faulty condenser side expansion valve.

7. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB.

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

2.3.25 E3-20-21 – Jumper open on main PCB

Main error code	Sub error code	Unit
E3	20	Main
	21	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
X4A jumper on main PCB open.	Unit will stop operating.	Ensure X4A jumper is inserted.

To solve the error code

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

1 Check that the bridge connector X4A of the main PCB is correctly connected. See "3.9 Main PCB" [▶ 280].

Possible cause: Open jumper X4A on main PCB.

2 Perform a check of the high pressure switch. See High pressure switch.

Possible cause: Faulty high pressure switch.

3 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.26 E4-01-02 – Low pressure error

Main error code	Sub error code	Unit
E4	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Low pressure control (by sensor) active due to <safety value certain times within certain minutes, see Safety devices.	Unit will stop operating.	Manual reset via user interface.
		Automatic Reset when Low Pressure >reset value, see Safety devices.

To solve the error code

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Perform a cross-wiring check of the F1-F2 transmission wiring between the indoor units and outdoor unit. Set field setting 2-5 of the outdoor unit to 1 to start the indoor units connected to that outdoor unit on forced fan operation, see "6.7 Field settings" [▶ 401]. If any other indoor unit (that should be connected to a different outdoor unit) is operating, this indoor unit is connected to the wrong outdoor unit (cross-wired). Correct the wiring between the indoor unit(s) and outdoor unit.

Possible cause: F1-F2 transmission wiring is cross-wired with another outdoor unit system.

3 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant shortage.

4 Check for the presence of humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Humidity in the refrigerant circuit.

5 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Clogged refrigerant circuit.

6 Perform a check of the evaporator side expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty evaporator side expansion valve.

7 Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▶ 368].

Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

8 Clean the outdoor heat exchanger. See "5 Maintenance" [▶ 370].

Possible cause: Dirty outdoor heat exchanger.

9 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

10 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

11 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

INFORMATION

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

2.3.27 E5-01-02 – Compressor overload/Motor Lock Error

Main error code	Sub error code	Unit
E5	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Compressor overload is detected for M1C.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Clogged refrigerant circuit.

3 Perform a check of the oil return valve Y11S. See "3.11 Oil return valve" [▶ 294].

Possible cause: Faulty oil return valve Y11S .

4 Check if there are oil traps in the field piping. See installation manual for piping rules.

Possible cause: Compressor running without oil will draw higher current and get locked.

5 Perform a check of the compressor. See "3.3 Compressor" [▶ 230].

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

6 Check liquid back issue. Check expansion valve operation. See "3.6 Expansion valve" [▶ 250].

Possible cause: Expansion valve CANNOT keep minimum superheat of 3 K while running as evaporator.

7 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant shortage.

8 Perform a check of the 4-way valve. See "3.1 4-way valve" [▶ 205].

Possible cause: Faulty 4-way valve.

9 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

10 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

Possible cause: Faulty inverter PCB.

11 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.28 E6-17-19 – Inverter overcurrent error

Main error code	Sub error code	Unit
E6	17	Main
	19	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Overcurrent on Inverter PCB A3P for Compressor M1C.	Unit will stop operating.	Manual reset via user interface.
Actual current value of the compressor is abnormally high compared to nominal current of the compressor for at least 30 minutes.		

To solve the error code

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

1 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

2 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

3 Connect a pressure gauge to both high and low pressure service ports and read the high and low refrigerant pressure. Connect the service monitoring tool to the unit and compare the pressure values to the pressure read on the pressure gauges. In case the service monitoring tool read-out does NOT correspond with the pressures read through the pressure gauges, the main PCB needs to be replaced, see "3.9 Main PCB" [▶ 280].

4 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

5 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

6 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

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

2.3.29 E7-01-13 – Outdoor unit fan motor M1F error

Main error code	Sub error code	Unit
E7	01	Main
	13	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Malfunction of rotation detection for M1F. Careful, there is no rpm detection. Fan judgement is based on logic by current drawn.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▸ 257].

Possible cause: Faulty fan inverter PCB A4P.

2 Check if power supply cable to fan motor is NOT loose. Check connector X1A on fan inverter PCB A4P. See "To check the wiring of the fan inverter PCB" "3.7 Fan inverter PCB" [▸ 257]. Check wire to fan motor M1F.

Possible cause: Faulty power supply cable to fan motor M1F.

3 Perform a check of the outdoor unit fan motor M1F. See "3.12 Outdoor unit fan motor" [▸ 299].

Possible cause: Faulty outdoor unit fan motor M1F.

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

2.3.30 E7-02-14 – Outdoor unit fan motor M2F error

Main error code	Sub error code	Unit
E7	02	Main
	14	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Malfunction of rotation detection for M2F. Careful, there is no rpm detection. Fan judgement is based on logic by current drawn.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A5P.

2 Check if power supply cable to fan motor is NOT loose. Check connector X3A on fan inverter PCB A5P. See "To check the wiring of the fan inverter PCB" "3.7 Fan inverter PCB" [▶ 257]. Check wire to fan motor M2F.

Possible cause: Faulty power supply cable to fan motor M2F.

3 Perform a check of the outdoor unit fan motor M2F. See "3.12 Outdoor unit fan motor" [▶ 299].

Possible cause: Faulty outdoor unit fan motor M2F.

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

2.3.31 E7-05-17 – Outdoor unit fan motor M1F overcurrent error

Main error code	Sub error code	Unit
E7	05	Main
	17	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Overcurrent detected on outdoor unit fan motor M1F.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

INFORMATION

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

1. Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▶ 257].

   Possible cause: Faulty fan inverter PCB A4P.

2. Perform a check of the outdoor unit fan motor M1F. See "3.12 Outdoor unit fan motor" [▶ 299].

   Possible cause: Faulty outdoor unit fan motor M1F.

INFORMATION

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

2.3.32 E7-06-18 – Outdoor unit fan motor M2F overcurrent error

Main error code	Sub error code	Unit
E7	06	Main
	18	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Overcurrent detected on outdoor unit fan motor M2F.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

INFORMATION

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

1. Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▶ 257].

   Possible cause: Faulty fan inverter PCB A5P.

2 Perform a check of the outdoor unit fan motor M2F. See "3.12 Outdoor unit fan motor" [▶ 299].

Possible cause: Faulty outdoor unit fan motor M2F.

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

2.3.33 E7-09-21 – Fan inverter PCB A4P (integrated power module) overheated

Main error code	Sub error code	Unit
E7	09	Main
	21	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Fan inverter PCB A4P is overheated.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A4P.

2 Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▶ 368].

Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

3 Clean the outdoor heat exchanger. See "5 Maintenance" [▶ 370].

Possible cause: Dirty outdoor heat exchanger.

4 Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty liquid cooling expansion valve.

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

2.3.34 E7-10-22 – Fan inverter PCB A5P (integrated power module) overheated

Main error code	Sub error code	Unit
E7	10	Main
	22	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Fan inverter PCB A5P is overheated.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

INFORMATION

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

1. Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▸ 257].

   Possible cause: Faulty fan inverter PCB A5P.

2. Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▸ 368].

   Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

3. Clean the outdoor heat exchanger. See "5 Maintenance" [▸ 370].

   Possible cause: Dirty outdoor heat exchanger.

4. Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▸ 250].

   Possible cause: Faulty liquid cooling expansion valve.

INFORMATION

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

2.3.35 E9-01-05 – Electronic expansion valve Y1E malfunction

Main error code	Sub error code	Unit
E9	01	Main
	05	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Upper heat exchanger expansion valve Y1E malfunction.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

2 Perform a check of the upper heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty upper heat exchanger expansion valve.

3 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

4 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

6 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

7 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.36 E9-03-06 – Electronic expansion valve Y2E malfunction

Main error code	Sub error code	Unit
E9	03	Main
	06	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Subcool expansion valve Y2E malfunction.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

INFORMATION

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

INFORMATION

When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB.

2. Perform a check of the subcool expansion valve. See "3.6 Expansion valve" [▸ 250].

   Possible cause: Faulty subcool expansion valve.

3. Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty refrigerant side thermistor(s).

4. Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▸ 330]

   Possible cause: Faulty refrigerant low pressure sensor.

5. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Refrigerant overcharge.

6. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

   Possible cause:
   - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
   - Power drop,
   - Short circuit.

7. Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▸ 368].

Possible cause: External source may cause interference.

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

2.3.37 E9-04-07 – Electronic expansion valve Y3E abnormality

Main error code	Sub error code	Unit
E9	04	Main
	07	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

2 Perform a check of the lower heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty lower heat exchanger expansion valve.

3 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

4 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

6 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

7 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.38 E9-20-21 – Electronic Expansion Valve (Y1E) failure

Main error code	Sub error code	Unit
E9	20	Main
	21	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Upper heat exchanger expansion valve Y1E malfunction.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

2 Perform a check of the upper heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty upper heat exchanger expansion valve.

3 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

4 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

6 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:

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

7 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▸ 368].

Possible cause: External source may cause interference.

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

2.3.39 E9-23-24 – Electronic expansion valve (Y2E) failure

Main error code	Sub error code	Unit
E9	23	Main
	24	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Subcool expansion valve Y2E malfunction.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

2 Perform a check of the subcool expansion valve. See "3.6 Expansion valve" [▸ 250].

Possible cause: Faulty subcool expansion valve.

3 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▸ 343].

Possible cause: Faulty refrigerant side thermistor(s).

4 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

6 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

7 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

INFORMATION

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

2.3.40 E9-26-27 – Electronic expansion valve (Y4E) malfunction

Main error code	Sub error code	Unit
E9	26	Main
	27	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

To solve the error code

INFORMATION

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

INFORMATION

When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

2 Perform a check of the receiver gas expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty receiver gas expansion valve.

3 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

4 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

6 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

7 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.41 E9-29-34 – Electronic expansion valve (Y5E) malfunction

Main error code	Sub error code	Unit
E9	29	Main
	34	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Liquid cooling expansion valve Y5E malfunction.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

2 Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty liquid cooling expansion valve.

3 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

4 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

6 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

7 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

INFORMATION

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

2.3.42 E9-30-35 – Electronic expansion valve (Y7E) malfunction

Main error code	Sub error code	Unit
E9	30	Main
	35	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Liquid injection expansion valve Y7E malfunction.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the Sub PCB. See "3.17 Sub PCB" [▶ 338].

Possible cause: Faulty Sub PCB.

2 Perform a check of the liquid injection expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty expansion valve.

3 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

4 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

5 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

6 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

7 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.43 E9-44-45 – Electronic expansion valve (Y3E) failure

Main error code	Sub error code	Unit
E9	44	Main
	45	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Lower heat exchanger expansion valve Y3E malfunction.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

2. Perform a check of the lower heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

   Possible cause: Faulty lower heat exchanger expansion valve.

3. Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

   Possible cause: Faulty refrigerant side thermistor(s).

4. Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

   Possible cause: Faulty refrigerant low pressure sensor.

5. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Refrigerant overcharge.

6. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

   Possible cause:
   - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
   - Power drop,
   - Short circuit.

7. Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

   Possible cause: External source may cause interference.

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

2.3.44 E9-48-49 – Electronic expansion valve overcurrent error

Main error code	Sub error code	Unit
E9	48	Main
	49	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Expansion valve overcurrent.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

2. Perform a check of the Sub PCB. See "3.17 Sub PCB" [▶ 338].

   Possible cause: Faulty Sub PCB.

3. Perform a check of all expansion valves. See "3.6 Expansion valve" [▶ 250].

   Possible cause: Faulty expansion valve.

4. Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

   Possible cause: Faulty refrigerant side thermistor(s).

5. Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

   Possible cause: Faulty refrigerant low pressure sensor.

6. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Refrigerant overcharge.

7. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

   Possible cause:
   - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
   - Power drop,
   - Short circuit.

8 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.45 E9-51-52 – Electronic expansion valve thermal cutting error

Main error code	Sub error code	Unit
E9	51	Main
	52	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Expansion valve thermal cutting error.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

2 Perform a check of the Sub PCB. See "3.17 Sub PCB" [▶ 338].

Possible cause: Faulty Sub PCB.

3 Perform a check of all expansion valves. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty expansion valve.

4 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

5 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

6 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

7. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

   Possible cause:
   - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
   - Power drop,
   - Short circuit.

8. Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

   Possible cause: External source may cause interference.

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

2.3.46 E9-54-55 – Electronic expansion valve defective circuit

Main error code	Sub error code	Unit
E9	54	Main
	55	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Expansion valve defective circuit.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the outdoor unit main PCB checks all expansion valve coil windings by current check.

1. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

2. Perform a check of the Sub PCB. See "3.17 Sub PCB" [▶ 338].

   Possible cause: Faulty Sub PCB.

3. Perform a check of all expansion valves. See "3.6 Expansion valve" [▶ 250].

   Possible cause: Faulty expansion valve.

4 Perform a check of all refrigerant side thermistors. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty refrigerant side thermistor(s).

5 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

6 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

7 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

8 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.47 EA-27 – Branch selector box damper failure

Trigger	Effect	Reset
Limit switch of the branch selector box damper motor did NOT detect damper movement after motor was energized.	Unit will stop operating.	Power reset at branch selector box.

To solve the error code

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

1 At the faulty branch selector box, set field setting mode 2 – code 3 – 0 to 1 to activate the damper motor.

2 If the damper motor keeps rotating, perform a check of the branch selector box limit switch(es), see "3.2.4 Branch selector box limit switch" [▶ 221].

Possible cause: Faulty limit switch(es).

3 If the damper motor does NOT start rotating, perform as described below.

4 Perform a check of the branch selector box damper motor. See "3.2.2 Branch selector box damper motor" [▶ 215].

Possible cause: Faulty damper motor.

5 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

6 Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

Possible cause: External source may cause interference.

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

2.3.48 F3-01-03 – Compressor discharge temperature too high

Main error code	Sub error code	Unit
F3	01	Main
	03	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Discharge temperature >safety value certain times within certain minutes, see Safety devices.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when discharge temperature <reset value, see Safety devices.

To solve the error code

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

3 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

4 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant shortage.

5 Perform a check of the compressor. See "3.3 Compressor" [▶ 230].

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

6 Perform a check of the lower heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty lower heat exchanger expansion valve.

7 Perform a check of the upper heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty upper heat exchanger expansion valve.

8 Perform a check of the expansion valve(s) of the indoor unit(s). See service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit expansion valve.

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

2.3.49 F3-02-04 – High discharge temperature cross pipe at branch selector box

Main error code	Sub error code	Unit
F3	02	Main
	04	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Compressor discharge temperature abnormality during test run.	Unit will stop operating.	After field piping between outdoor unit and branch selector box is corrected, perform new test run.

To solve the error code

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Check that the refrigerant field piping is connected to the appropriate pipes. At outdoor unit, high pressure / low pressure connection is the right side pipe. At branch selector box, high pressure / low pressure connection is the middle pipe.

Possible cause: Refrigerant field piping incorrectly connected.

3 Check that the suction and high pressure / low pressure pipes are connected to the correct refnet.

Possible cause: Incorrect refnet.

4 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▸ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

5 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

6 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Refrigerant shortage.

7 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

8 Perform a check of the following expansion valves. See "3.6 Expansion valve" [▸ 250]:

- Upper heat exchanger expansion valve
- Lower heat exchanger expansion valve
- Subcool expansion valve
- Receiver gas expansion valve
- Liquid injection expansion valve (ONLY for REYA14~20 units)
- ALL branch selector box expansion valves

Possible cause: Faulty expansion valve.

9 ONLY for REMA5 + REYA8~12 units: Perform a check of the gas injection solenoid valve. See "3.16 Solenoid valve" [▸ 334].

Possible cause: Faulty solenoid valve.

10 ONLY for REYA14~20 units: Perform a check of the Sub PCB. See "3.17 Sub PCB" [▸ 338].

Possible cause: Faulty Sub PCB.

11 Perform a check of the expansion valve(s) of the indoor unit(s). See service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit expansion valve.

INFORMATION

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

2.3.50 F3-20-21 – Compressor body temperature too high

Main error code	Sub error code	Unit
F3	20	Main
	21	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Body temperature >safety value certain times within certain minutes, see Safety devices.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when body temperature <reset value, see Safety devices.

To solve the error code

INFORMATION

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

1. Perform a check of the compressor body thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty compressor body thermistor or connector fault.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB.

3. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Refrigerant shortage.

4. Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

5. Perform a check of the lower heat exchanger expansion valve. See "3.6 Expansion valve" [▸ 250].

   Possible cause: Faulty lower heat exchanger expansion valve.

6. Perform a check of the upper heat exchanger expansion valve. See "3.6 Expansion valve" [▸ 250].

   Possible cause: Faulty upper heat exchanger expansion valve.

7. Perform a check of the expansion valve(s) of the indoor unit(s). See service manual of the respective indoor unit(s) for more information.

   Possible cause: Faulty indoor unit expansion valve.

INFORMATION

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

2.3.51 F4-01 – Wet operation caution

Trigger	Effect	Reset
Discharge superheat <10°C ($SH_{Discharge}=T_{Discharge} - T_{condensation}$).	Unit keeps running.	Automatic reset when discharge superheat >10°C.

To solve the error code

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

1. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Refrigerant overcharge.

2. Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

3. Perform a check of the evaporator side expansion valve. See "3.6 Expansion valve" [▶ 250].

   Possible cause: Faulty evaporator side expansion valve.

4. Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▶ 368].

   Possible cause: Airflow of the indoor unit is blocked.

5. Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

   Possible cause: Faulty or clogged air filter.

6. Adjust external static pressure setting for ducted type indoor units, if necessary.

7. Perform a check of the indoor unit fan motor. See service manual of the respective indoor unit(s).

   Possible cause: Faulty indoor unit fan motor.

8. Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

   Possible cause: Faulty discharge pipe thermistor or connector fault.

9. Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

   Possible cause: Faulty refrigerant high pressure sensor.

10. Perform a check of the indoor air thermistor. See indoor unit manuals to check thermistors on indoor units.

    Possible cause: Faulty indoor air thermistor.

11. Check all indoor units operation in heating mode. Check for room temperatures below 20°C. Check if caution disappears once rooms heat-up. If NOT, continue checking the cause of the wet operation.

    Possible cause: Indoor room temperature too low when in heating mode. Too cold rooms might create more subcool resulting in wet operation.

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

2.3.52 F4-02-04 – Wet alarm for compressor M1C

Main error code	Sub error code	Unit
F4	02	Main
	04	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Discharge superheat <10°C for 90 minutes ($SH_{Discharge}=T_{Discharge} - T_{condensation}$).	Unit will stop.	Manual reset via user interface.

To solve the error code

INFORMATION

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

1 Perform a check of the suction pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty suction pipe thermistor or connector fault.

2 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

3 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

4 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

5 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

6 Perform a check of the evaporator side expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty evaporator side expansion valve.

7 Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▶ 368].

Possible cause: Airflow of the indoor unit is blocked.

8 Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

Possible cause: Faulty or clogged air filter.

9 Adjust external static pressure setting for ducted type indoor units, if necessary.

10 Perform a check of the indoor unit fan motor. See service manual of the respective indoor unit(s).

Possible cause: Faulty indoor unit fan motor.

11 Perform a check of the indoor air thermistor. See indoor unit manuals to check thermistors on indoor units.

Possible cause: Faulty indoor air thermistor.

12 Check all indoor units operation in heating mode. Check for room temperatures below 20°C. Check if caution disappears once rooms heat-up. If NOT, continue checking the cause of the wet operation.

Possible cause: Indoor room temperature too low when in heating mode. Too cold rooms might create more subcool resulting in wet operation.

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

2.3.53 F4-08-10 – Wet operation error for compressor M1C

Main error code	Sub error code	Unit
F4	08	Main
	10	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Discharge superheat <10˚C for 90 minutes ($SH_{Discharge}=T_{Discharge} - T_{condensation}$).	Unit will stop.	Manual reset via user interface.

To solve the error code

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

1 Perform a check of the suction pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty suction pipe thermistor or connector fault.

2 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

3 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

4 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Refrigerant overcharge.

5 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▸ 359].

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

6 Perform a check of the evaporator side expansion valve. See "3.6 Expansion valve" [▸ 250].

Possible cause: Faulty evaporator side expansion valve.

7 Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▸ 368].

Possible cause: Airflow of the indoor unit is blocked.

8 Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

Possible cause: Faulty or clogged air filter.

9 Adjust external static pressure setting for ducted type indoor units, if necessary.

10 Perform a check of the indoor unit fan motor. See service manual of the respective indoor unit(s).

Possible cause: Faulty indoor unit fan motor.

11 Perform a check of the indoor air thermistor. See indoor unit manuals to check thermistors on indoor units.

Possible cause: Faulty indoor air thermistor.

12 Check all indoor units operation in heating mode. Check for room temperatures below 20°C. Check if caution disappears once rooms heat-up. If NOT, continue checking the cause of the wet operation.

Possible cause: Indoor room temperature too low when in heating mode. Too cold rooms might create more subcool resulting in wet operation.

INFORMATION

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

2.3.54 F4-14 – Indoor unit wet operation alarm

Trigger	Effect	Reset
In cooling mode on indoor Unit: (($T_{Gas\ Pipe}$ – ($T_{Liquid\ Pipe}$) < 2,5 °C while Indoor Expansion Valve opening < 300 pulse AND Outdoor Unit Discharge Superheat = ($T_{Discharge}$ - $T_{condensation}$) < 10 °C for more than 45 minutes	Unit stops Operating.	Manual reset via user interface.

To solve the error code

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

1. Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

   Possible cause: Faulty or clogged air filter.

2. Use Service Checker to find the indoor units where difference between gas pipe thermistor and liquid pipe thermistor meets the trigger condition and indoor unit expansion valve opening is lower than 300 pulses.

3. Stop these indoor units while some other indoor units are still in operation and system is in Cooling Operation. Check if the liquid pipe temperature read-out is close to evaporation temperature. Or use an expansion valve stethoscope to determine the refrigerant flow on expansion valve while expansion valve is closed.

   Possible cause: If liquid pipe temperature is close to evaporation temperature or flow is detected by expansion valve stethoscope then indoor unit expansion valve is bleeding while closed. Faulty indoor unit expansion valve.

4. Perform a check of the indoor unit fan motor. See service manual of the respective indoor unit(s).

   Possible cause: Faulty indoor unit fan motor.

5. Perform a check of the indoor unit air and pipe thermistors. See service manual of the respective indoor unit(s) for more information.

   Possible cause: Faulty thermistor.

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

2.3.55 F6-01 – Refrigerant overcharge detection by high pressure sensor S1NPH

Trigger	Effect	Reset
Discharge superheat <10°C ($SH_{Discharge}=T_{Discharge} - T_{condensation}$) during test run.	Unit will stop running.	Manual reset via user interface.
Excessive subcool is detected from comparison of ambient thermistor, liquid thermistor, de-icer thermistor to saturated temperature derived from high pressure sensor S1NPH.		

To solve the error code

INFORMATION

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

1. Perform a check of the outdoor air thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty ambient air thermistor.

2. Perform a check of the main refrigerant liquid thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty main refrigerant liquid thermistor or connector fault.

3. Perform a check of the de–icer thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty de–icer thermistor or connector fault.

4. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Refrigerant overcharge.

5. Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▸ 359].

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

6. Perform a check of the evaporator side expansion valve. See "3.6 Expansion valve" [▸ 250].

   Possible cause: Faulty evaporator side expansion valve.

7. Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▸ 368].

   Possible cause: Airflow of the indoor unit is blocked.

8. Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

   Possible cause: Faulty or clogged air filter.

9. Adjust external static pressure setting for ducted type indoor units, if necessary.

10. Perform a check of the indoor unit fan motor. See service manual of the respective indoor unit(s).

    Possible cause: Faulty indoor unit fan motor.

11. Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▸ 343].

    Possible cause: Faulty discharge pipe thermistor or connector fault.

12. Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▸ 326].

    Possible cause: Faulty refrigerant high pressure sensor.

13. Perform a check of the indoor unit air thermistors. See service manual of the respective indoor unit(s) for more information.

    Possible cause: Faulty indoor unit air thermistor(s).

14. Check all indoor units operation in heating mode. Check for room temperatures below 20°C. Check if caution disappears once rooms heat-up. If NOT, continue checking the cause of the wet operation.

Possible cause: Indoor room temperature too low when in heating mode. Too cold rooms might create more subcool resulting in wet operation.

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

2.3.56 F6-02 – Refrigerant overcharge detection during test-run

Trigger	Effect	Reset
Discharge superheat <10°C ($SH_{Discharge}=T_{Discharge} - T_{condensation}$) during test run.	Unit will stop test run.	Push BS3 (return) button once.
Excessive subcool is detected from comparison of ambient thermistor, liquid thermistor, de-icer thermistor to saturated temperature derived from high pressure sensor S1NPH.		

To solve the error code

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

1. Perform a check of the outdoor air thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty ambient air thermistor.

2. Perform a check of the main refrigerant liquid thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty main refrigerant liquid thermistor or connector fault.

3. Perform a check of the de–icer thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty de–icer thermistor or connector fault.

4. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Refrigerant overcharge.

5. Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▸ 359].

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

6. Perform a check of the evaporator side expansion valve. See "3.6 Expansion valve" [▸ 250].

   Possible cause: Faulty evaporator side expansion valve.

7. Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▸ 368].

   Possible cause: Airflow of the indoor unit is blocked.

8 Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

Possible cause: Faulty or clogged air filter.

9 Adjust external static pressure setting for ducted type indoor units, if necessary.

10 Perform a check of the indoor unit fan motor. See service manual of the respective indoor unit(s).

Possible cause: Faulty indoor unit fan motor.

11 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

12 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

13 Perform a check of the indoor unit air thermistors. See service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit air thermistor(s).

14 Check all indoor units operation in heating mode. Check for room temperatures below 20°C. Check if caution disappears once rooms heat-up. If NOT, continue checking the cause of the wet operation.

Possible cause: Indoor room temperature too low when in heating mode. Too cold rooms might create more subcool resulting in wet operation.

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

2.3.57 F6-03 – Refrigerant overcharge detection by high subcool value

Trigger	Effect	Reset
Discharge superheat <10˚C ($SH_{Discharge}=T_{Discharge} - T_{condensation}$) during test run.	Unit will stop running.	Manual reset via user interface.
Excessive subcool is detected from comparison of ambient thermistor, liquid thermistor, de-icer thermistor to saturated temperature derived from high pressure sensor S1NPH.		

To solve the error code

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

1 Perform a check of the outdoor air thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty ambient air thermistor.

2 Perform a check of the main refrigerant liquid thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty main refrigerant liquid thermistor or connector fault.

3 Perform a check of the de–icer thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty de–icer thermistor or connector fault.

4 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant overcharge.

5 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

6 Perform a check of the evaporator side expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty evaporator side expansion valve.

7 Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▶ 368].

Possible cause: Airflow of the indoor unit is blocked.

8 Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

Possible cause: Faulty or clogged air filter.

9 Adjust external static pressure setting for ducted type indoor units, if necessary.

10 Perform a check of the indoor unit fan motor. See service manual of the respective indoor unit(s).

Possible cause: Faulty indoor unit fan motor.

11 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

12 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

13 Perform a check of the indoor unit air thermistors. See service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit air thermistor(s).

14 Check all indoor units operation in heating mode. Check for room temperatures below 20°C. Check if caution disappears once rooms heat-up. If NOT, continue checking the cause of the wet operation.

Possible cause: Indoor room temperature too low when in heating mode. Too cold rooms might create more subcool resulting in wet operation.

INFORMATION

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

2.3.58 F9-01 – Branch selector box electronic expansion valve abnormality (high pressure/low pressure gas pipe)

Trigger	Effect	Reset
After power is supplied, continuity has not been detected on the coil for expansion valve	Unit will stop running.	Power reset at branch selector box.

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the branch selector box main PCB checks all expansion valve coil windings by current check.

1 Locate the branch selector box by checking indoor unit remote controllers showing F9 error. Branch selector box that is connected to the indoor unit(s) that show F9 error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2 At the located branch selector box, turn power supply OFF and then ON. Check if error disappears.

Possible cause: External noise. Check further on how to eliminate external factors.

3 Perform a check of the high pressure/low pressure gas pipe expansion valves in the branch selector box. See "3.2.3 Branch selector box expansion valve" [▶ 215].

Possible cause: Faulty expansion valve, loose connector, faulty expansion valve coil.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

5 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.

Possible cause: Faulty branch selector box sub PCB.

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

2.3.59 F9-02 – Branch selector box electronic expansion valve abnormality (suction gas pipe)

Trigger	Effect	Reset
After power is supplied, continuity has not been detected on the coil for expansion valve	Unit will stop running.	Power reset at branch selector box.

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the branch selector box main PCB checks all expansion valve coil windings by current check.

1 Locate the branch selector box by checking indoor unit remote controllers showing F9 error. Branch selector box that is connected to the indoor unit(s) that show F9 error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2 At the located branch selector box, turn power supply OFF and then ON. Check if error disappears.

Possible cause: External noise. Check further on how to eliminate external factors.

3 Perform a check of the suction gas pipe expansion valves in the branch selector box. See "3.2.3 Branch selector box expansion valve" [▶ 215].

Possible cause: Faulty expansion valve, loose connector, faulty expansion valve coil.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

5 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.

Possible cause: Faulty branch selector box sub PCB.

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

2.3.60 F9-05 – Branch selector box electronic expansion valve abnormality (subcooling)

Trigger	Effect	Reset
After power is supplied, continuity has not been detected on the coil for expansion valve	Unit will stop running.	Power reset at branch selector box.

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the branch selector box main PCB checks all expansion valve coil windings by current check.

1. Locate the branch selector box by checking indoor unit remote controllers showing F9 error. Branch selector box that is connected to the indoor unit(s) that show F9 error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2. At the located branch selector box, turn power supply OFF and then ON. Check if error disappears.

   Possible cause: External noise. Check further on how to eliminate external factors.

3. Perform a check of the subcooling expansion valves in the branch selector box. See "3.2.3 Branch selector box expansion valve" [▶ 215].

   Possible cause: Faulty expansion valve, loose connector, faulty expansion valve coil.

4. Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

5 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.
  Possible cause: Faulty branch selector box sub PCB.

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

2.3.61 F9-06 – Branch selector box electronic expansion valve abnormality (safety gas)

Trigger	Effect	Reset
After power is supplied, continuity has not been detected on the coil for expansion valve	Unit will stop running.	Power reset at branch selector box.

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the branch selector box main PCB checks all expansion valve coil windings by current check.

1 Locate the branch selector box by checking indoor unit remote controllers showing F9 error. Branch selector box that is connected to the indoor unit(s) that show F9 error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2 At the located branch selector box, turn power supply OFF and then ON. Check if error disappears.

Possible cause: External noise. Check further on how to eliminate external factors.

3 Perform a check of the safety gas expansion valves in the branch selector box. See "3.2.3 Branch selector box expansion valve" [▶ 215].

Possible cause: Faulty expansion valve, loose connector, faulty expansion valve coil.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

5 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.
  Possible cause: Faulty branch selector box sub PCB.

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

2.3.62 F9-07 – Branch selector box electronic expansion valve abnormality (safety liquid)

Trigger	Effect	Reset
After power is supplied, continuity has not been detected on the coil for expansion valve	Unit will stop running.	Power reset at branch selector box.

> **INFORMATION**
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

> **INFORMATION**
> When the power is switched ON, the branch selector box main PCB checks all expansion valve coil windings by current check.

1 Locate the branch selector box by checking indoor unit remote controllers showing F9 error. Branch selector box that is connected to the indoor unit(s) that show F9 error is subject to further investigation.

> **NOTICE**
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2 At the located branch selector box, turn power supply OFF and then ON. Check if error disappears.

Possible cause: External noise. Check further on how to eliminate external factors.

3 Perform a check of the safety liquid expansion valves in the branch selector box. See "3.2.3 Branch selector box expansion valve" [▶ 215].

Possible cause: Faulty expansion valve, loose connector, faulty expansion valve coil.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

5 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.
  Possible cause: Faulty branch selector box sub PCB.

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

2.3.63 F9-08 – Branch selector box electronic expansion valve overcurrent error (safety gas/liquid)

Trigger	Effect	Reset
Expansion valve overcurrent.	Unit will stop running.	Power reset at branch selector box.

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

> **INFORMATION**
>
> When the power is switched ON, the branch selector box main PCB checks all expansion valve coil windings by current check.

1 Locate the branch selector box by checking indoor unit remote controllers showing F9 error. Branch selector box that is connected to the indoor unit(s) that show F9 error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2 At the located branch selector box, turn power supply OFF and then ON. Check if error disappears.

Possible cause: External noise. Check further on how to eliminate external factors.

3 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

4 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.
  Possible cause: Faulty branch selector box sub PCB.

5 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.
  Possible cause: Faulty branch selector box sub PCB.

6 Perform a check of the safety gas expansion valves in the branch selector box. See "3.2.3 Branch selector box expansion valve" [▶ 215].

Possible cause: Faulty expansion valve, loose connector, faulty expansion valve coil.

7 Perform a check of the safety liquid expansion valves in the branch selector box. See "3.2.3 Branch selector box expansion valve" [▶ 215].

Possible cause: Faulty expansion valve, loose connector, faulty expansion valve coil.

8 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

INFORMATION

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

2.3.64 F9-09 – Branch selector box power back-up PCB error

Trigger	Effect	Reset
Faulty power back-up PCB or capacitor PCB at branch selector box.	Unit will stop operating.	Manual reset via user interface.

> **INFORMATION**
>
> In case the system contains multiple branch selector boxes and field setting 2-9 "Error handling address" is NOT set uniquely at the different branch selector boxes, ALL indoor units in the system will show this error.
>
> If field setting 2-9 is set uniquely at the different branch selector boxes, ONLY the indoor units connected to the faulty branch selector box will show this error.

To solve the error code

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

1. Perform a check of the branch selector box power back-up PCB. See "3.2.6 Branch selector box power back-up PCB" [▶ 225].

   Possible cause: Faulty branch selector box power back-up PCB.

2. Perform a check of the branch selector box capacitor PCB. See "3.2.1 Branch selector box capacitor PCB" [▶ 213].

   Possible cause: Faulty branch selector box capacitor PCB.

3. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

   Possible cause:
   - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
   - Power drop,
   - Short circuit.

4. Perform a power reset. If the error disappears and is raised again after a while, check for the presence of an external source causing electrical noise. See "4.4 External factors" [▶ 368].

   Possible cause: External source may cause interference.

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

2.3.65 H3-02-04 – Transmission error between main PCB and inverter PCB

Main error code	Sub error code	Unit
H3	02	Main
	04	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Transmission abnormality between outdoor unit main PCB and inverter PCB A3P.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

1. Check wiring between main PCB and inverter PCB.
2. Check if connector X40A is correctly inserted. See "6.2 Wiring diagram" [▶ 376].

   Possible cause: Incorrect wiring.
3. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.
4. Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

   Possible cause: Faulty inverter PCB.

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

2.3.66 H7-01-05 – Defective fan inverter PCB A4P

Main error code	Sub error code	Unit
H7	01	Main
	05	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Abnormal current form detected by fan inverter PCB during start-up of fan motor.	Unit will stop operating.	Power reset at outdoor unit.

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

1. Perform a check of the outdoor unit fan motor M1F. See "3.12 Outdoor unit fan motor" [▶ 299].

   Possible cause: Faulty outdoor unit fan motor M1F.

2 Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A4P.

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

2.3.67 H7-02-06 – Defective fan inverter PCB A5P

Main error code	Sub error code	Unit
H7	02	Main
	06	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Abnormal current form detected by fan inverter PCB during start-up of fan motor.	Unit will stop operating.	Power reset at outdoor unit.

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

1 Perform a check of the outdoor unit fan motor M2F. See "3.12 Outdoor unit fan motor" [▶ 299].

Possible cause: Faulty outdoor unit fan motor M2F.

2 Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A5P.

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

2.3.68 H7-21-23 – Defective fan inverter PCB A4P

Main error code	Sub error code	Unit
H7	21	Main
	23	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Abnormal current form detected by fan inverter PCB during start-up of fan motor.	Unit will stop operating.	Power reset at outdoor unit.

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

1. Perform a check of the outdoor unit fan motor M1F. See "3.12 Outdoor unit fan motor" [▸ 299].

   Possible cause: Faulty outdoor unit fan motor M1F.

2. Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▸ 257].

   Possible cause: Faulty fan inverter PCB A4P.

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

2.3.69 H7-22-24 – Defective fan inverter PCB A5P

Main error code	Sub error code	Unit
H7	22	Main
	24	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Abnormal current form detected by fan inverter PCB during start-up of fan motor.	Unit will stop operating.	Power reset at outdoor unit.

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

1. Perform a check of the outdoor unit fan motor M2F. See "3.12 Outdoor unit fan motor" [▸ 299].

   Possible cause: Faulty outdoor unit fan motor M2F.

2 Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A5P.

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

2.3.70 H9-01-02 – Ambient temperature thermistor R1T abnormality

Main error code	Sub error code	Unit
H9	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Ambient temperature thermistor R1T read-out is out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the outdoor air thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty ambient air thermistor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.71 HA-00 – Defrost fail alarm

Trigger	Effect	Reset
When outdoor unit judges defrost is not completed.	Unit keeps running.	Auto reset.

To solve the error code

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

1. Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▸ 368].

   Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

2. Clean the outdoor heat exchanger. See "5 Maintenance" [▸ 370].

   Possible cause: Dirty outdoor heat exchanger.

3. Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Refrigerant shortage.

4. Perform a check of the de–icer thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty de–icer thermistor or connector fault.

5. Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▸ 326].

   Possible cause: Faulty refrigerant high pressure sensor.

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

2.3.72 J3-16-22 – Discharge thermistor R21T open circuit

Main error code	Sub error code	Unit
J3	16	Main
	22	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Compressor (M1C) discharge thermistor R21T open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.73 J3-17-23 – Discharge thermistor R21T short circuit

Main error code	Sub error code	Unit
J3	17	Main
	23	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Compressor (M1C) discharge thermistor R21T short circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.74 J3-47-49 – Compressor body thermistor R15T open circuit

Main error code	Sub error code	Unit
J3	47	Main
	49	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Compressor (M1C) body temperature thermistorR15T open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1. Perform a check of the compressor body thermistor. See "3.18 Thermistors" [▶ 343].

   Possible cause: Faulty compressor body thermistor or connector fault.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

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

2.3.75 J3-48-50 – Compressor body thermistor R15T short circuit

Main error code	Sub error code	Unit
J3	48	Main
	50	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Compressor (M1C) body temperature thermistor R15T short circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the compressor body thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty compressor body thermistor or connector fault.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.76 J3-56-57 – High discharge temperature

Main error code	Sub error code	Unit
J3	56	Main
	57	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Compressor discharge temperature too high.	Unit keeps running.	Auto reset.

To solve the error code

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

1 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

2 Perform a check of the lower heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty lower heat exchanger expansion valve.

3 Perform a check of the upper heat exchanger expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty upper heat exchanger expansion valve.

4 Perform a check of the subcool expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty subcool expansion valve.

5 Perform a check of the expansion valve(s) of the indoor unit(s). See service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit expansion valve.

6 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

7 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant shortage.

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

2.3.77 J5-01-03 – Compressor suction thermistor R12T malfunction

Main error code	Sub error code	Unit
J5	01	Main
	03	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Thermistor read-out is out of range	Unit will stop operating.	Auto-reset when thermistor read-out is within range

To solve the error code

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

1 Perform a check of the suction pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty suction pipe thermistor or connector fault.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.78 J5-18-19 – Suction temperature thermistor R10T abnormality

Main error code	Sub error code	Unit
J5	18	Main
	19	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Thermistor read-out is out of range	Unit will stop operating.	Auto-reset when thermistor read-out is within range

To solve the error code

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

1 Perform a check of the suction pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty suction pipe thermistor or connector fault.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.79 J6-01-02 – De–icer thermistor R11T abnormality

Main error code	Sub error code	Unit
J6	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
De-icer temperature thermistor R11T short/ open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the de–icer thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty de–icer thermistor or connector fault.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

INFORMATION

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

2.3.80 J6-08-09 – Upper heat exchanger gas pipe thermistor R8T malfunction

Main error code	Sub error code	Unit
J6	08	Main
	09	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Upper heat exchanger gas pipe thermistor R8T short/open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

INFORMATION

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

1. Perform a check of the upper heat exchanger gas pipe thermistor. See "3.18 Thermistors" [▶ 343].

   Possible cause: Faulty upper heat exchanger gas pipe thermistor.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

INFORMATION

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

2.3.81 J6-11-12 – Lower heat exchanger gas pipe thermistor R9T malfunction

Main error code	Sub error code	Unit
J6	11	Main
	12	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Lower heat exchanger gas pipe thermistor R9T short/open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the lower heat exchanger gas pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty lower heat exchanger gas pipe thermistor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.82 J7-01-02 – Main liquid pipe thermistor R3T malfunction

Main error code	Sub error code	Unit
J7	01	Main
	02	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main liquid pipe thermistor R3T short/open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the main liquid pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty main liquid pipe thermistor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.83 J7-06-07 – Liquid thermistor R7T abnormality

Main error code	Sub error code	Unit
J7	06	Main
	07	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Refrigerant liquid thermistor R7T after subcool heat exchanger short/open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1. Perform a check of the refrigerant liquid thermistor of the subcool heat exchanger. See "3.18 Thermistors" [▶ 343].

   Possible cause: Faulty refrigerant liquid thermistor of the subcool heat exchanger or connector fault.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

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

2.3.84 J7-18-19 – Gas inlet subcool PHE thermistor R16T abnormality

Main error code	Sub error code	Unit
J7	18	Main
	19	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Gas thermistor R16T at inlet of subcool heat exchanger short/open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1. Perform a check of the gas pipe inlet thermistor of the subcool heat exchanger. See "3.18 Thermistors" [▶ 343].

   Possible cause: Faulty gas pipe inlet thermistor of the subcool heat exchanger.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

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

2.3.85 J8-01-02 – Upper heat exchanger liquid temperature thermistor R4T abnormality

Main error code	Sub error code	Unit
J8	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Upper heat exchanger liquid temperature thermistor R4T short/ open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the upper heat exchanger liquid temperature thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty upper heat exchanger liquid temperature thermistor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.86 J8-08-09 – Lower heat exchanger liquid temperature thermistor R5T abnormality

Main error code	Sub error code	Unit
J8	08	Main
	09	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Lower heat exchanger liquid temperature thermistor R5T short/ open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the lower heat exchanger liquid temperature thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty lower heat exchanger liquid temperature thermistor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.87 J9-01-02 – Gas thermistor R6T abnormality

Main error code	Sub error code	Unit
J9	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Gas thermistor R6T after subcool heat exchanger short/open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1 Perform a check of the gas pipe thermistor of the subcool heat exchanger. See "3.18 Thermistors" [▸ 343].

Possible cause: Faulty gas pipe thermistor of the subcool heat exchanger.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

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

2.3.88 J9-08-09 – Gas thermistor R6T abnormality

Main error code	Sub error code	Unit
J9	08	Main
	09	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Gas thermistor R6T after subcool heat exchanger is out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1. Perform a check of the gas pipe thermistor of the subcool heat exchanger. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty gas pipe thermistor of the subcool heat exchanger.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB.

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

2.3.89 J9-11-12 – Receiver gas thermistor R13T abnormality

Main error code	Sub error code	Unit
J9	11	Main
	12	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Receiver gas thermistor R13T short/open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when thermistor read-out is within range.

To solve the error code

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

1. Perform a check of the receiver gas thermistor. See "3.18 Thermistors" [▸ 343].

   Possible cause: Faulty receiver gas thermistor or connector fault.

1. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB.

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

2.3.90 JA-06-08 – High pressure sensor S1NPH abnormality

Main error code	Sub error code	Unit
JA	06	Main
	08	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
High pressure sensor S1NPH read-out open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when sensor read-out is within range.

To solve the error code

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

1 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▸ 326].

Possible cause: Faulty refrigerant high pressure sensor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

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

2.3.91 JA-07-09 – High pressure sensor S1NPH malfunction

Main error code	Sub error code	Unit
JA	07	Main
	09	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
High pressure sensor S1NPH read-out short circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when sensor read-out is within range.

To solve the error code

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

1 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.92 JC-06-08 – Low pressure sensor S1NPL abnormality

Main error code	Sub error code	Unit
JC	06	Main
	08	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Low pressure sensor S1NPL read-out open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when sensor read-out is within range.

To solve the error code

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

1 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

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

2.3.93 JC-07-09 – Low pressure sensor S1NPL malfunction

Main error code	Sub error code	Unit
JC	07	Main
	09	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Low pressure sensor S1NPL read-out open circuit or out of range.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when sensor read-out is within range.

To solve the error code

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

1 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▸ 330]

Possible cause: Faulty refrigerant low pressure sensor.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

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

2.3.94 L1-01-07 – Inverter PCB A3P abnormality

Main error code	Sub error code	Unit
L1	01	Main
	07	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects voltage/ current errors on output waveform or current read-out.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

2 Perform a check of the inverter PCB A3P. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB A3P or non-compatible inverter PCB.

3 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

4 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

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

2.3.95 L1-02-08 – Inverter PCB A3P current detection primary circuit

Main error code	Sub error code	Unit
L1	02	Main
	08	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects voltage/ current errors on output waveform or current read-out.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

2 Perform a check of the inverter PCB A3P. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB A3P or non-compatible inverter PCB.

3 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

4 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

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

2.3.96 L1-03-09 – Inverter PCB A3P current detection secondary circuit

Main error code	Sub error code	Unit
L1	03	Main
	09	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects voltage/ current errors on output waveform or current read-out.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

2 Perform a check of the inverter PCB A3P. See "3.8 Inverter PCB" [▶ 269].

Possible cause: Faulty inverter PCB A3P or non-compatible inverter PCB.

3 Perform a check of the compressor. See "3.3 Compressor" [▶ 230].

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

4 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

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

2.3.97 L1-04-10 – Power transistor error on inverter PCB A3P

Main error code	Sub error code	Unit
L1	04	Main
	10	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects voltage/ current errors on output waveform or current read-out.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB or wrong capacity setting.

2. Perform a check of the inverter PCB A3P. See "3.8 Inverter PCB" [▸ 269].

   Possible cause: Faulty inverter PCB A3P or non-compatible inverter PCB.

3. Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

4. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

   Possible cause:

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

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

2.3.98 L1-05-15 – Inverter PCB A3P hardware fault

Main error code	Sub error code	Unit
L1	05	Main
	15	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects voltage/ current errors on output waveform or current read-out.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB or wrong capacity setting.

2. Perform a check of the inverter PCB A3P. See "3.8 Inverter PCB" [▸ 269].

   Possible cause: Faulty inverter PCB A3P or non-compatible inverter PCB.

3. Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

4. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

   Possible cause:
   - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
   - Power drop,
   - Short circuit.

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

2.3.99 L1-28-32 – Fan inverter PCB A4P Eeprom error

Main error code	Sub error code	Unit
L1	28	Main
	32	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Fan inverter PCB A4P fails reading/writing memory (EEPROM error).	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A4P.

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

2.3.100 L1-29-33 – Fan inverter PCB A5P Eeprom error

Main error code	Sub error code	Unit
L1	29	Main
	33	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Fan inverter PCB A5P fails reading/writing memory (EEPROM error).	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A5P.

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

2.3.101 L1-36-38 – Inverter PCB A3P Eeprom error

Main error code	Sub error code	Unit
L1	36	Main
	38	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P fails reading/writing memory (EEPROM error).	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Perform a check of the inverter PCB A3P. See "3.8 Inverter PCB" [▶ 269].

Possible cause: Faulty inverter PCB A3P or non-compatible inverter PCB.

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

2.3.102 L1-47-49 – Inverter PCB A3P 16 V DC abnormal

Main error code	Sub error code	Unit
L1	47	Main
	49	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects voltage/ current errors on output waveform or current read-out.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB or wrong capacity setting.

2. Perform a check of the inverter PCB A3P. See "3.8 Inverter PCB" [▶ 269].

   Possible cause: Faulty inverter PCB A3P or non-compatible inverter PCB.

3. Perform a check of the compressor. See "3.3 Compressor" [▶ 230].

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

4. Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

   Possible cause:
   - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
   - Power drop,
   - Short circuit.

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

2.3.103 L2-01-02 – Power supply abnormality during test run

Main error code	Sub error code	Unit
L2	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects 50 Hz zero-crossing error.	Unit stops and retries after guard timer (3 minutes) - infinite cycle.	Automatic reset when within zero-crossing interval range.
		Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> Main PCB checks L1-N on connector X1A for sinus waveform each time crossing the zero-line. Interval between each zero-crossing is 10 miliseconds when the power supply is 50 Hz.

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

Possible cause: Faulty inverter PCB.

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

2.3.104 L2-04-05 – Power supply abnormality during normal operation

Main error code	Sub error code	Unit
L2	04	Main
	05	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects 50 Hz zero-crossing error.	Unit stops and retries after guard timer (3 minutes) - infinite cycle.	Automatic reset when within zero-crossing interval range.
		Power reset at outdoor unit.

To solve the error code

INFORMATION

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

INFORMATION

Main PCB checks L1-N on connector X1A for sinus waveform each time crossing the zero-line. Interval between each zero-crossing is 10 miliseconds when the power supply is 50 Hz.

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:

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

2 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

INFORMATION

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

2.3.105 L4-01-02 – Inverter PCB A3P high fin temperature

Main error code	Sub error code	Unit
L4	01	Main
	02	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Thermistor located inside the power module of the inverter PCB for compressor detects a temperature higher than a certain value.	Unit will stop operating.	Manual reset via remote controller. Outdoor unit power reset.

To solve the error code

INFORMATION

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

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Wait until the rectifier voltage is below 10 V DC.

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

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

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

3 Check if heat sink plate is correctly fixed with screws.

Possible cause: Heat sink plate not correctly installed.

4 Check (by touching) if refrigerant is flowing through the radiant cooling refrigerant circuit. The radiant cooling refrigerant circuit should be warm if refrigerant is flowing. If no refrigerant flow, perform a check of the liquid cooling expansion valve, see "3.6 Expansion valve" [▸ 250].

Possible cause: No refrigerant flow through the radiant cooling refrigerant circuit.

5 Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▸ 250].

Possible cause: Faulty liquid cooling expansion valve.

6 Check ambient temperature. Check if outdoor unit location temperature differs drastically.

7 Check if there is discharge air by-pass on installation location.

Possible cause: External noise. Check further on how to eliminate external factors.

8 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

INFORMATION

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

2.3.106 L4-06-18 – Fan inverter PCB A4P high fin temperature

Main error code	Sub error code	Unit
L4	06	Main
	18	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Thermistor located inside the power module of the fan inverter PCB detects a temperature higher than a certain value.	Unit will stop operating.	Manual reset via remote controller. Outdoor unit power reset.

To solve the error code

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

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1. Wait until the rectifier voltage is below 10 V DC.

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

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

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

3. Check if heat sink plate is correctly fixed with screws.

   Possible cause: Heat sink plate not correctly installed.

4. Check (by touching) if refrigerant is flowing through the radiant cooling refrigerant circuit. The radiant cooling refrigerant circuit should be warm if refrigerant is flowing. If no refrigerant flow, perform a check of the liquid cooling expansion valve, see "3.6 Expansion valve" [▶ 250].

   Possible cause: No refrigerant flow through the radiant cooling refrigerant circuit.

5. Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▶ 250].

   Possible cause: Faulty liquid cooling expansion valve.

6. Check ambient temperature. Check if outdoor unit location temperature differs drastically.
7. Check if there is discharge air by-pass on installation location.

Possible cause: External noise. Check further on how to eliminate external factors.

8 Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A4P.

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

2.3.107 L4-07-19 – Fan inverter PCB A5P high fin temperature

Main error code	Sub error code	Unit
L4	07	Main
	19	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Thermistor located inside the power module of the fan inverter PCB detects a temperature higher than a certain value.	Unit will stop operating.	Manual reset via remote controller. Outdoor unit power reset.

To solve the error code

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

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Wait until the rectifier voltage is below 10 V DC.

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

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

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

3 Check if heat sink plate is correctly fixed with screws.

Possible cause: Heat sink plate not correctly installed.

4 Check (by touching) if refrigerant is flowing through the radiant cooling refrigerant circuit. The radiant cooling refrigerant circuit should be warm if refrigerant is flowing. If no refrigerant flow, perform a check of the liquid cooling expansion valve, see "3.6 Expansion valve" [▸ 250].

Possible cause: No refrigerant flow through the radiant cooling refrigerant circuit.

5 Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▸ 250].

Possible cause: Faulty liquid cooling expansion valve.

6 Check ambient temperature. Check if outdoor unit location temperature differs drastically.

7 Check if there is discharge air by-pass on installation location.

Possible cause: External noise. Check further on how to eliminate external factors.

8 Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▸ 257].

Possible cause: Faulty fan inverter PCB A5P.

INFORMATION

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

2.3.108 L5-03-05 – Output overcurrent detection on inverter PCB A3P

Main error code	Sub error code	Unit
L5	03	Main
	05	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects overcurrent to power transistor.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

INFORMATION

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

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

2 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Clogged refrigerant circuit.

3 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

4 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▸ 359].

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

5 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

6 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

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

2.3.109 L8-03-06 – Overcurrent on inverter PCB A3P except start-up

Main error code	Sub error code	Unit
L8	03	Main
	06	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects overcurrent to compressor except on start-up.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:

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

2 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Clogged refrigerant circuit.

3 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

4 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▸ 359].

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

5 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

6 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

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

2.3.110 L9-01-05 – Stall prevention by inverter PCB A3P

Main error code	Sub error code	Unit
L9	01	Main
	05	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects overcurrent or no rotation at start-up.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

2 Check if the refrigerant circuit is clogged. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Clogged refrigerant circuit.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

4 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

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

2.3.111 L9-13-14 – Inverter PCB A3P output phase abnormality

Main error code	Sub error code	Unit
L9	13	Main
	14	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
When inverter PCB A3P detects phase loss to compressor on U, V, W.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

2 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

3 Perform a check of the compressor. See "3.3 Compressor" [▸ 230].

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

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

2.3.112 LC-01 – Transmission abnormality

Trigger	Effect	Reset
No transmission between PCB boards.	Unit will stop operating.	Automatic reset.

To solve the error code

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

1. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB or wrong capacity setting.

2. Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▶ 289].

   Possible cause: Faulty noise filter PCB.

3. Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

   Possible cause: Faulty inverter PCB.

4. Perform a check of the fan inverter PCB. See "3.7 Fan inverter PCB" [▶ 257].

   Possible cause: Faulty fan inverter PCB.

5. Check that the bridge connector X4A of the fan inverter PCB is correctly connected. See "3.7 Fan inverter PCB" [▶ 257].

   Possible cause: Open jumper X4A on fan inverter PCB.

6. Check the wiring between the PCB's. See "6.2 Wiring diagram" [▶ 376].

   Possible cause: Faulty wiring between PCB's.

7. Check if the correct spare part is installed for all PCB's. See checking procedures of the specific PCB's.

   Possible cause: Wrong spare part PCB installed.

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

2.3.113 LC-14-15 – Transmission abnormality main PCB/inverter PCB A3P

Main error code	Sub error code	Unit
LC	14	Main
	15	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
No transmission between main PCB and inverter PCB A3P.	Unit will stop operating.	Automatic reset.

To solve the error code

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

1. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB or wrong capacity setting.

2. Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▶ 289].

   Possible cause: Faulty noise filter PCB.

3. Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

   Possible cause: Faulty inverter PCB.

4. Check the wiring between the PCB's. See "6.2 Wiring diagram" [▶ 376].

   Possible cause: Faulty wiring between PCB's.

5. Check if the correct spare part is installed for all PCB's. See checking procedures of the specific PCB's.

   Possible cause: Wrong spare part PCB installed.

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

2.3.114 LC-19-20 – Transmission abnormality main PCB/fan inverter PCB A4P

Main error code	Sub error code	Unit
LC	19	Main
	20	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
No transmission between main PCB and fan inverter PCB A4P.	Unit will stop operating.	Automatic reset.

To solve the error code

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

1. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB or wrong capacity setting.

2. Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▸ 289].

   Possible cause: Faulty noise filter PCB.

3. Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

   Possible cause: Faulty inverter PCB.

4. Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▸ 257].

   Possible cause: Faulty fan inverter PCB A4P.

5. Check that the bridge connector X4A of the fan inverter PCB is correctly connected. See "3.7 Fan inverter PCB" [▸ 257].

   Possible cause: Open jumper X4A on fan inverter PCB.

6. Check the wiring between the PCB's. See "6.2 Wiring diagram" [▸ 376].

   Possible cause: Faulty wiring between PCB's.

7. Check if the correct spare part is installed for all PCB's. See checking procedures of the specific PCB's.

   Possible cause: Wrong spare part PCB installed.

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

2.3.115 LC-24-25 – Transmission abnormality main PCB/fan inverter PCB A5P

Main error code	Sub error code	Unit
LC	24	Main
	25	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
No transmission between main PCB and fan inverter PCB A5P.	Unit will stop operating.	Automatic reset.

To solve the error code

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

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

2 Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▶ 289].

Possible cause: Faulty noise filter PCB.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

Possible cause: Faulty inverter PCB.

4 Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A5P.

5 Check that the bridge connector X4A of the fan inverter PCB is correctly connected. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Open jumper X4A on fan inverter PCB.

6 Check the wiring between the PCB's. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty wiring between PCB's.

7 Check if the correct spare part is installed for all PCB's. See checking procedures of the specific PCB's.

Possible cause: Wrong spare part PCB installed.

INFORMATION

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

2.3.116 LC-33-34 – Transmission abnormality main PCB/sub PCB

Main error code	Sub error code	Unit
LC	33	Main
	34	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
No transmission between main PCB and sub PCB.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

INFORMATION

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

1 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

2 Perform a check of the Sub PCB. See "3.17 Sub PCB" [▶ 338].

Possible cause: Faulty Sub PCB.

3 Check the wiring between the PCB's. See "6.2 Wiring diagram" [▸ 376].

Possible cause: Faulty wiring between PCB's.

4 Check if the correct spare part is installed for all PCB's. See checking procedures of the specific PCB's.

Possible cause: Wrong spare part PCB installed.

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

2.3.117 P1-01-02 – Open phase or unbalanced power supply detection by inverter PCB A3P

Main error code	Sub error code	Unit
P1	01	Main
	02	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects power unbalance >4%.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset.

To solve the error code

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

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:

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

2 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

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

2.3.118 P2-00 – Refrigerant auto-charge interrupted

Trigger	Effect	Reset
Auto-charge function is terminated before finished.	Auto-charge operation will terminate.	Push BS3 (return) button once.

To solve the error code

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

1. Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▶ 368].

   Possible cause: Airflow of the indoor unit is blocked.

2. Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

   Possible cause: Faulty or clogged air filter.

3. Adjust external static pressure setting for ducted type indoor units, if necessary.
4. Restart refrigerant auto-charge function. See installer reference guide for more information.

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

2.3.119 P4-01-04 – Fin thermistor abnormality on inverter PCB A3P

Main error code	Sub error code	Unit
P4	01	Main
	04	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects open or short circuit or out of range on fin thermistor.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when fin temperature is within range.

To solve the error code

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

1 Perform a check of the fin thermistor of the PCB. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty fin thermistor of the PCB.

1 Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▶ 368].

Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

2 Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty liquid cooling expansion valve.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

Possible cause: Faulty inverter PCB.

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

2.3.120 P4-02-15 – Fin thermistor abnormality on fan inverter PCB A4P

Main error code	Sub error code	Unit
P4	02	Main
	15	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Fan inverter PCB A4P detects open or short circuit or out of range on fin thermistor.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when fin temperature is within range.

To solve the error code

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

1 Perform a check of the fin thermistor of the PCB. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty fin thermistor of the PCB.

1 Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▶ 368].

Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

2 Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty liquid cooling expansion valve.

3 Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A4P.

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

2.3.121 P4-03-16 – Fin thermistor abnormality on fan inverter PCB A5P

Main error code	Sub error code	Unit
P4	03	Main
	16	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Fan inverter PCB A5P detects open or short circuit or out of range on fin thermistor.	Unit will stop operating.	Manual reset via user interface.
		Automatic reset when fin temperature is within range.

To solve the error code

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

1 Perform a check of the fin thermistor of the PCB. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty fin thermistor of the PCB.

1 Check the required space around the outdoor unit heat exchanger. See "4.4 External factors" [▶ 368].

Possible cause: Insufficient air flow or air by-pass due to required space specifications not met.

2 Perform a check of the liquid cooling expansion valve. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty liquid cooling expansion valve.

3 Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▶ 257].

Possible cause: Faulty fan inverter PCB A5P.

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

2.3.122 P8-00 – Freeze-up during refrigerant auto-charge

Trigger	Effect	Reset
Very low temperatures detected on indoor unit coil during refrigerant auto-charge.	Auto-charge operation will terminate.	Push BS3 (return) button once.

To solve the error code

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

1 Check for objects near the indoor unit that may block the airflow. See "4.4 External factors" [▶ 368].

Possible cause: Airflow of the indoor unit is blocked.

2 Clean the air filters of the indoor unit(s). See service manual of the respective indoor unit(s).

Possible cause: Faulty or clogged air filter.

3 Adjust external static pressure setting for ducted type indoor units, if necessary.

4 Restart refrigerant auto-charge function. See installer reference guide for more information.

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

2.3.123 P9-00 – Refrigerant auto-charge finished normally

Trigger	Effect	Reset
This is not an error. It indicates that refrigerant auto-charge function ended normally and user may proceed with test run.	-	Push BS1 (mode) button once.

To solve the error code

1 Proceed with test run.

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

2.3.124 PA-00 – No refrigerant in refrigerant cylinder during auto-charge

Trigger	Effect	Reset
-	-	-

To solve the error code

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

1 Connect a new refrigerant cylinder to continue refrigerant auto-charge. See installer reference guide for more information.

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

2.3.125 PE-00 – Refrigerant auto-charge in last stage

Trigger	Effect	Reset
This is not an error. It indicates that refrigerant auto-charge function proceeded to final stage.	-	-

To solve the error code

1 Continue refrigerant charging.

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

2.3.126 PF-00 – Long test run failed

Trigger	Effect	Reset
Long test run failed (2-88=0) while additional charge input (2-14=0).	Unit will stop test run.	Push BS1 (mode) button once.

To solve the error code

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

1 Change field setting 2–14. See "6.7 Field settings" [▸ 401].

Possible cause: No input at field setting 2–14 (2–14 = 0) when field setting 2–88 = 0.

2 Set field setting 2–88 to 1, see "6.7 Field settings" [▸ 401]. Press the set button BS2 more than 5 seconds to start the short test run.

> **INFORMATION**
>
> Leak check function will NOT be available if short test run is conducted while commissioning.

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

2.3.127 PJ-04-05 – Capacity setting mismatch for inverter PCB A3P

Main error code	Sub error code	Unit
PJ	04	Main
	05	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects other type PCB than set in EEPROM or wrong dip switch setting on spare part main PCB.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Check if the correct spare part is installed for the main PCB. See "3.9 Main PCB" [▸ 280]. Check dip switch setting for spare part main PCB.

Possible cause: Incorrect spare part main PCB or incorrect dip switch setting.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

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

2.3.128 PJ-09-15 – Capacity setting mismatch for fan inverter PCB A4P

Main error code	Sub error code	Unit
PJ	09	Main
	15	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects other type PCB than set in EEPROM or wrong dip switch setting on spare part main PCB.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1 Check if the correct spare part is installed for the main PCB. See "3.9 Main PCB" [▸ 280]. Check dip switch setting for spare part main PCB.

Possible cause: Incorrect spare part main PCB or incorrect dip switch setting.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

3 Perform a check of the fan inverter PCB A4P. See "3.7 Fan inverter PCB" [▸ 257].

Possible cause: Faulty fan inverter PCB A4P.

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

2.3.129 PJ-10-17 – Capacity setting mismatch for fan inverter PCB A5P

Main error code	Sub error code	Unit
PJ	10	Main
	17	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects other type PCB than set in EEPROM or wrong dip switch setting on spare part main PCB.	Unit will stop operating.	Manual reset via user interface.
		Power reset at outdoor unit.

To solve the error code

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

1. Check if the correct spare part is installed for the main PCB. See "3.9 Main PCB" [▸ 280]. Check dip switch setting for spare part main PCB.

   Possible cause: Incorrect spare part main PCB or incorrect dip switch setting.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB.

3. Perform a check of the fan inverter PCB A5P. See "3.7 Fan inverter PCB" [▸ 257].

   Possible cause: Faulty fan inverter PCB A5P.

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

2.3.130 U0 – Refrigerant shortage detection (Warning)

Trigger	Effect	Reset
This is not an error but a warning.	Unit keeps running.	Auto reset when trigger is not met.

To solve the error code

1. Refer to U0-05 or U0-06 to proceed.

2.3.131 U0-05 – Refrigerant shortage detection

Trigger	Effect	Reset
Refrigerant shortage detection during cooling.	Unit keeps running.	Auto reset.

To solve the error code

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

1. Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▸ 359].

   Possible cause: Closed stop valve in the refrigerant circuit.

2. Perform a check of all expansion valves. See "3.6 Expansion valve" [▸ 250].

Possible cause: Faulty expansion valve.

3 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

4 Perform a check of the suction pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty suction pipe thermistor or connector fault.

5 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

6 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

7 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant shortage.

8 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

9 Perform a check of the compressor. See "3.3 Compressor" [▶ 230].

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

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

2.3.132 U0-06 – Refrigerant shortage detection

Trigger	Effect	Reset
Refrigerant shortage detection during heating.	Unit keeps running.	Auto reset.

To solve the error code

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Perform a check of all expansion valves. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty expansion valve.

3 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

4 Perform a check of the suction pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty suction pipe thermistor or connector fault.

5 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

6 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

7 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant shortage.

8 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

9 Perform a check of the compressor. See "3.3 Compressor" [▶ 230].

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

INFORMATION

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

2.3.133 U0-08-09 – Refrigerant shortage detection by high pressure sensor

Main error code	Sub error code	Unit
U0	08	Main
	09	Sub

INFORMATION

Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Refrigerant shortage detection.	Unit keeps running.	Auto reset.

To solve the error code

INFORMATION

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Perform a check of all expansion valves. See "3.6 Expansion valve" [▶ 250].

Possible cause: Faulty expansion valve.

3 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

4 Perform a check of the suction pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty suction pipe thermistor or connector fault.

5 Perform a check of the discharge pipe thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty discharge pipe thermistor or connector fault.

6 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 359].

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

7 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Refrigerant shortage.

8 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

9 Perform a check of the compressor. See "3.3 Compressor" [▶ 230].

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

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

2.3.134 U1-01-05 – Open phase detection on Power supply

Main error code	Sub error code	Unit
U1	01	Main
	05	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Open phase detected by phase detection circuit.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

2 Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▸ 289].

Possible cause: Faulty noise filter PCB.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

Possible cause: Faulty inverter PCB.

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

2.3.135 U1-04-06 – Reverse phase detection

Main error code	Sub error code	Unit
U1	04	Main
	06	Sub

> **INFORMATION**
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB detects reverse phase between L1 - L3 phases.	Forced stop.	Power reset at outdoor unit.

To solve the error code

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

1 Check the phase sequence on the mains power supply terminal, see "To check the power supply of the unit" in "4.1 Electrical circuit" [▸ 350]. Correct if needed.

Possible cause: Incorrect phase sequence on mains power supply terminal.

2 Check if any of the phases is missing on the mains power supply terminal, see "To check the power supply of the unit" in "4.1 Electrical circuit" [▸ 350]. Correct if needed.

Possible cause: Missing phase(s) on mains power supply terminal.

3 Check if the phase L3 is present on the power supply connector X1A on the main PCB, see "To perform a power check" in "3.9 Main PCB" [▸ 280]. Correct if needed.

Possible cause: Missing phase L3 on main PCB power supply connector.

4 Perform a check of the fuses of the main PCB, see "3.9 Main PCB" [▶ 280].

Possible cause: Blown fuse(s) on main PCB.

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

2.3.136 U1-19-20 – Hz error detection on Power Supply

Main error code	Sub error code	Unit
U1	19	Main
	20	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Main PCB does not detect zero-crossing for a certain duration.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

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

> **INFORMATION**
>
> Main PCB checks L1-N on connector X1A for sinus waveform each time crossing the zero-line. Interval between each zero-crossing is 10 miliseconds when the power supply is 50 Hz.

1 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB.

3 Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

Possible cause: Faulty inverter PCB.

4 Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▶ 289].

Possible cause: Faulty noise filter PCB.

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

2.3.137 U2-01-08 – Inverter circuit power supply abnormality - inverter PCB A3P abnormal voltage

Main error code	Sub error code	Unit
U2	01	Main
	08	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects DC voltage cannot reach or maintain minimum 500 V DC.	Unit will stop operating.	Power reset at outdoor unit.
No zero cross is detected by main PCB through at least 10 seconds.		
Abnormal voltage drop is detected by DC voltage detection circuit.		
Abnormal voltage rise is detected by over voltage detection circuit.		

To solve the error code

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

1. Check if the power supply wiring is correct. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Incorrect power supply wiring.

2. Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▶ 289].

   Possible cause: Faulty noise filter PCB.

3. Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

   Possible cause: Faulty inverter PCB.

4. Check the wiring between the PCB's. See "6.2 Wiring diagram" [▶ 376].

   Possible cause: Faulty wiring between PCB's.

5. Perform a check of the reactor. See Reactor.

   Possible cause: Faulty reactor.

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

2.3.138 U2-02-09 – Inverter circuit power supply abnormality - inverter PCB A3P phase loss

Main error code	Sub error code	Unit
U2	02	Main
	09	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects DC voltage cannot reach or maintain minimum 500 V DC.	Unit will stop operating.	Power reset at outdoor unit.
No zero cross is detected by main PCB through at least 10 seconds.		
Abnormal voltage drop is detected by DC voltage detection circuit.		
Abnormal voltage rise is detected by over voltage detection circuit.		

To solve the error code

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

1. Check if the power supply wiring is correct. See "4.1 Electrical circuit" [▸ 350].

   Possible cause: Incorrect power supply wiring.

2. Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▸ 289].

   Possible cause: Faulty noise filter PCB.

3. Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▸ 269].

   Possible cause: Faulty inverter PCB.

4. Check the wiring between the PCB's. See "6.2 Wiring diagram" [▸ 376].

   Possible cause: Faulty wiring between PCB's.

5. Perform a check of the reactor. See Reactor.

   Possible cause: Faulty reactor.

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

2.3.139 U2-03-10 – Inverter circuit power supply abnormality - inverter PCB A3P DC circuit not charging

Main error code	Sub error code	Unit
U2	03	Main
	10	Sub

> **INFORMATION**
>
> Main and Sub indications are relevant in multiple outdoor unit configurations. Main outdoor unit is the unit to which F1-F2 IN transmission line is connected. Main and Sub outdoor units can be identified by field setting 1-00.

Trigger	Effect	Reset
Inverter PCB A3P detects DC voltage cannot reach or maintain minimum 500 V DC.	Unit will stop operating.	Power reset at outdoor unit.
No zero cross is detected by main PCB through at least 10 seconds.		
Abnormal voltage drop is detected by DC voltage detection circuit.		
Abnormal voltage rise is detected by over voltage detection circuit.		

To solve the error code

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

1. Check if the power supply wiring is correct. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Incorrect power supply wiring.

2. Perform a check of the noise filter PCB. See "3.10 Noise filter PCB" [▶ 289].

   Possible cause: Faulty noise filter PCB.

3. Perform a check of the inverter PCB. See "3.8 Inverter PCB" [▶ 269].

   Possible cause: Faulty inverter PCB.

4. Check the wiring between the PCB's. See "6.2 Wiring diagram" [▶ 376].

   Possible cause: Faulty wiring between PCB's.

5. Perform a check of the reactor. See Reactor.

   Possible cause: Faulty reactor.

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

2.3.140 U3-02 – Test run interrupted manually

Trigger	Effect	Reset
Test run interrupted manually by user on main PCB.	Warning.	Perform test run.
Leak detection or refrigerant amount check has NOT been performed.		

To solve the error code

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

1. Check if communication between outdoor unit and indoor units is initialised. Check field setting 1-10 for count of indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units shown than expected, communication between 1 or more indoor unit(s) and outdoor unit is NOT correct. Check the F1-F2 transmission line between the indoor unit and outdoor unit, see "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

2. Perform a test run from the outdoor unit. See installer reference guide for more information.
3. Check the error history, see "2 Troubleshooting" [▶ 18]. Solve the error code(s) using the error based troubleshooting, see "2.3 Error based troubleshooting" [▶ 21].
4. System operation is possible but leak detection function will NEVER run.

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

2.3.141 U3-03 – Test run not performed yet

Trigger	Effect	Reset
Test run NOT performed.	Unit will NOT operate.	Perform test run.

To solve the error code

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

1. Check if communication between outdoor unit and indoor units is initialised. Check field setting 1-10 for count of indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units shown than expected, communication between 1 or more indoor unit(s) and outdoor unit is NOT correct. Check the F1-F2 transmission line between the indoor unit and outdoor unit, see "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

2. Perform a test run from the outdoor unit. See installer reference guide for more information.
3. Check the error history, see "2 Troubleshooting" [▶ 18]. Solve the error code(s) using the error based troubleshooting, see "2.3 Error based troubleshooting" [▶ 21].

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

2.3.142 U3-04 – Test run ended abnormally

Trigger	Effect	Reset
Test run ended abnormally.	Unit will NOT operate.	Restart test run.

To solve the error code

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

1. Check for an indoor unit related error code. See Indoor unit related error codes for an overview of the indoor unit related error codes. To solve the error, see the service manual of the respective indoor unit(s) for more information.
2. Check the error history, see "2 Troubleshooting" [▶ 18]. Solve the error code(s) using the error based troubleshooting, see "2.3 Error based troubleshooting" [▶ 21].
3. Check if communication between outdoor unit and indoor units is initialised. Check field setting 1-10 for count of indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units shown than expected, communication between 1 or more indoor unit(s) and outdoor unit is NOT correct. Check the F1-F2 transmission line between the indoor unit and outdoor unit, see "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

4. Perform a test run from the outdoor unit. See installer reference guide for more information.

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

2.3.143 U3-05 – Test run aborted on initial transmission

Trigger	Effect	Reset
Test run could NOT start or abort due to transmission issues.	Unit will NOT operate.	Restart test run.

To solve the error code

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

1. Check if communication between outdoor unit and indoor units is initialised. Check field setting 1-10 for count of indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units shown than expected, communication between 1 or more indoor unit(s) and outdoor unit is NOT correct. Check the F1-F2 transmission line between the indoor unit and outdoor unit, see "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

2. Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

3. Perform a test run from the outdoor unit. See installer reference guide for more information.

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

2.3.144 U3-06 – Test run aborted on normal transmission

Trigger	Effect	Reset
Test run could NOT start or abort due to transmission issues.	Unit will NOT operate.	Restart test run.

To solve the error code

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

1. Check if communication between outdoor unit and indoor units is initialised. Check field setting 1-10 for count of indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units shown than expected, communication between 1 or more indoor unit(s) and outdoor unit is NOT correct. Check the F1-F2 transmission line between the indoor unit and outdoor unit, see "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

2 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

3 Perform a test run from the outdoor unit. See installer reference guide for more information.

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

2.3.145 U3-07 – Transmission abnormality on test run

Trigger	Effect	Reset
Test run could NOT start or abort due to transmission issues.	Unit will NOT operate.	Restart test run.

To solve the error code

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

1 Check if communication between outdoor unit and indoor units is initialised. Check field setting 1-10 for count of indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units shown than expected, communication between 1 or more indoor unit(s) and outdoor unit is NOT correct. Check the F1-F2 transmission line between the indoor unit and outdoor unit, see "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

2 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

3 Perform a test run from the outdoor unit. See installer reference guide for more information.

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

2.3.146 U3-08 – Transmission abnormality on test run

Trigger	Effect	Reset
Test run could NOT start or abort due to transmission issues.	Unit will NOT operate.	Restart test run.

To solve the error code

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

1. Check if communication between outdoor unit and indoor units is initialised. Check field setting 1-10 for count of indoor units, see "6.7 Field settings" [▸ 401]. If less indoor units shown than expected, communication between 1 or more indoor unit(s) and outdoor unit is NOT correct. Check the F1-F2 transmission line between the indoor unit and outdoor unit, see "4.1 Electrical circuit" [▸ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

2. Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▸ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

3. Perform a test run from the outdoor unit. See installer reference guide for more information.

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

2.3.147 U3-12 – Commissioning of branch selector box safety system NOT completed

Trigger	Effect	Reset
Safety systems NOT yet confirmed at branch selector box(es).	Unit will stop operating.	Automatic reset when safety systems are confirmed.

To solve the error code

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

1. Simulate R32 refrigerant leak (set field setting 2-3-0 to 1 at the branch selector box main PCB) and check that ALL extra required safety systems function correctly. Extra required safety systems depend on the total refrigerant charge of the system and room surface. See installation manual of the branch selector box.

   Possible cause: Extra required safety systems NOT checked.

2. Check that correct operation of the extra required safety systems is confirmed at ALL branch selector boxes connected to the same system (set field setting 2-6-0 to 1 at main PCB of ALL branch selector boxes).

   Possible cause: Correct operation of extra required safety systems NOT confirmed at at least 1 branch selector box in the system.

3. Check that field setting 2-6-1 is ONLY set on main PCB of the branch selector boxes.

Possible cause: Field setting 2-6-1 set on sub PCB A2P and/or A3P of the branch selector box.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

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

2.3.148 U4-01 – Communication between indoor units and branch selector box missing

Trigger	Effect	Reset
Communication between branch selector box and indoor unit(s) disconnected for more than 10 minutes.	Unit will stop operating. Error indication U4-13 on outdoor unit.	Auto reset after communication is restored for more than 1 minute.

To solve the error code

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

1 Check if the power supply to the branch selector box is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

2 Check if the power supply to the indoor unit is compliant with the regulations. See indoor unit service manual.

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

3 Check the F1-F2 transmission line between the indoor unit and branch selector box. See "4.1 Electrical circuit" [▶ 350]. Check that the wiring is correctly connected to the following terminals:
- At indoor unit: F1-F2 terminal (from branch selector box).
- At branch selector box: F1-F2 terminal (to indoor unit).

Possible cause: Faulty or interruption in transmission line between indoor unit and branch selector box.

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

2.3.149 U4-03 – Outdoor unit not able to start because of indoor unit malfunction

Trigger	Effect	Reset
Minimum 1 indoor unit detects a malfunction when outdoor unit is set for: ▪ Cross piping check (2-20-02), ▪ Refrigerant containment check.	Unit will stop operating.	Restart test function at outdoor unit.

To solve the error code

1 Check indoor units for error codes starting with A, C or U. See troubleshooting in the service manual of the respective indoor unit(s) to solve the error code(s).

Possible cause: Indoor unit detects a malfunction.

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

2.3.150 U4-11 – Communication between outdoor unit and branch selector box missing

Trigger	Effect	Reset
Communication between outdoor unit and branch selector box disconnected for more than 2 minutes.	Unit will stop operating.	Auto reset after communication is restored for more than 1 minute.

To solve the error code

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

1 Check the F1-F2 transmission line between the outdoor unit and branch selector box. See "4.1 Electrical circuit" [▸ 350]. Check that the wiring is correctly connected to the following terminals:

- At outdoor unit: F1-F2 terminal (to indoor unit).
- At branch selector box: F1-F2 terminal (from outdoor unit).

Possible cause: Faulty or interruption in transmission line between outdoor unit and branch selector box.

2 Check the F1-F2 communication voltage on the branch selector box. See "4.1 Electrical circuit" [▸ 350].

Possible cause: Faulty communication voltage on branch selector box.

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

2.3.151 U4-12 – Communication between outdoor unit and all branch selector boxes electric noise

Trigger	Effect	Reset
Communication between outdoor unit and all branch selector boxes is disturbed by electric noise.	Unit will stop operating.	Auto reset after communication is restored for more than 1 minute.

To solve the error code

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

1 Check the F1-F2 transmission line between the outdoor unit and branch selector box. See "4.1 Electrical circuit" [▶ 350]. Check that the wiring is correctly connected to the following terminals:

- At outdoor unit: F1-F2 terminal (to indoor unit).
- At branch selector box: F1-F2 terminal (from outdoor unit).

Possible cause: Faulty or interruption in transmission line between outdoor unit and branch selector box.

2 Check the F1-F2 transmission line between the branch selector boxes. See "4.1 Electrical circuit" [▶ 350]. Check that the wiring is correctly connected to the following terminals of ALL branch selector boxes:

- F1-F2 terminal (from other branch selector box).
- F1-F2 terminal (to other branch selector box).

Possible cause: Faulty or interruption in transmission line between branch selector boxes.

3 Check the F1-F2 communication voltage on ALL branch selector boxes. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty communication voltage on branch selector box.

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

2.3.152 U4-13 – Communication between indoor units and branch selector box missing

Trigger	Effect	Reset
Communication between branch selector box and indoor unit(s) disconnected for more than 10 minutes.	Unit will stop operating.	Auto reset after communication is restored for more than 1 minute.

To solve the error code

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

1 Check if the power supply to the branch selector box is compliant with the regulations. See "4.1 Electrical circuit" [▸ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

2 Check if the power supply to the indoor unit is compliant with the regulations. See indoor unit service manual.

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

3 Check the F1-F2 transmission line between the indoor unit and branch selector box. See "4.1 Electrical circuit" [▸ 350]. Check that the wiring is correctly connected to the following terminals:

- At indoor unit: F1-F2 terminal (from branch selector box).
- At branch selector box: F1-F2 terminal (to indoor unit).

Possible cause: Faulty or interruption in transmission line between indoor unit and branch selector box.

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

2.3.153 U4-14 – Communication between indoor units and branch selector box electric noise

Trigger	Effect	Reset
Communication between branch selector box and indoor unit(s) is disturbed by electric noise.	Unit will stop operating.	Auto reset after communication is restored for more than 1 minute.

To solve the error code

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

1 Check the F1-F2 transmission line between the indoor unit and branch selector box. See "4.1 Electrical circuit" [▸ 350]. Check that the wiring is correctly connected to the following terminals:

- At indoor unit: F1-F2 terminal (from branch selector box).
- At branch selector box: F1-F2 terminal (to indoor unit).

Possible cause: Faulty or interruption in transmission line between indoor unit and branch selector box.

2 Check the F1-F2 communication voltage on the indoor unit. See "4.1 Electrical circuit" [▸ 350].

Possible cause: Faulty communication voltage on indoor unit.

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

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

Trigger	Effect	Reset
Transmission abnormality between indoor unit main PCB and remote controller.	The indoor unit that has the error will stop operating (fan OFF, expansion valve OFF) while all the other indoor units and outdoor unit will continue operating for indoor units without error.	Auto reset.

To solve the error code

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

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

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

2. Perform a check of the remote controller. See service manual of the specific indoor unit.

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

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

   - If error transfers to the other indoor unit, replace the remote controller. See service manual of the specific indoor unit.
     Possible cause: Faulty remote controller.
   - If error is still present on the indoor unit, Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.
     Possible cause: Faulty indoor unit main PCB.

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

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

Trigger	Effect	Reset
Supervisor remote controller NOT connected or NOT set correctly.	Indoor unit continues FAN ONLY operation while other indoor units show error U9-01. Outdoor unit stops operating.	Operation NOT allowed while abnormality continues.

To solve the error code

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

1 Check that the field setting is correctly set on the outdoor unit: [2-60=0] when NO supervisor remote controller connected, [2-60=1] when supervisor remote controller connected. See "6.7 Field settings" [▸ 401].

Possible cause: Faulty field setting for supervisor remote controller.

2 Check that the setting [R2-05=02] is correct and that the supervisor remote controller functions correctly. See Remote controller user interface in the service manual of the respective indoor unit for more information.

Possible cause: Faulty setting or supervisor remote controller.

3 Check the communication wiring between the supervisor remote controller and the indoor unit main PCB. See Remote controller user interface in the service manual of the respective indoor unit for more information.

Possible cause: Faulty communication wiring between remote controller and indoor unit.

4 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

5 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▸ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

6 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

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

2.3.156 U7-01 – Transmission abnormality between systems - DTA104A61,62 error

Trigger	Effect	Reset
Communication problem between systems.	Unit will stop operating.	Auto reset when communication is normal.
Conflict in settings and configuration for DTA104A61,62.	Unit keeps running.	Auto reset when correct settings apply on DTA104A61,62.

To solve the error code

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

1. Check the Q1-Q2 communication between the outdoor units. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in communication between outdoor units.

2. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

3. Check wiring and configuration of option DTA104A61, 62. See option handbook on Business Portal for more information.
4. Check the F1-F2 OUT transmission line between the outdoor unit main PCB and option PCB DTA104A61, 62. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between outdoor unit and option DTA104A61, 62.

5. Check that ONLY the master outdoor unit has F1-F2 IN connection. If another outdoor unit has F1-F2 IN connection, correct the installation.
6. Check if low noise operation or demand control is active without an optional DTA104A61,62 PCB. Field setting 2-12 CANNOT be set to 1 if DTA104A61,62 is not present, see "6.7 Field settings" [▶ 401].

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

2.3.157 U7-02 – Transmission abnormality between systems - DTA104A61,62 error

Trigger	Effect	Reset
Transmission error on DTA104A61,62 initialization.	Forced stop.	Auto reset.

To solve the error code

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

1. Check if multiple units are wired to the same cool/heat zone without cool/heat master set. One main PCB needs to be set cool/heat master (field setting 2-0 = 1) while all other units need to be set sub (field setting 2-0 = 2). See "6.7 Field settings" [▶ 401].

   Possible cause: No cool/heat master set when multiple units are wired to the same cool/heat zone.

2. If unified cool/heat selection is NOT present, set the DTA104A61,62 cool/heat setting to IND.
3. Check wiring and configuration of option DTA104A61, 62. See option handbook on Business Portal for more information.

4 Check if low noise operation or demand control is active without an optional DTA104A61,62 PCB. Field setting 2-12 CANNOT be set to 1 if DTA104A61,62 is not present, see "6.7 Field settings" [▶ 401].

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

2.3.158 U7-03 – Transmission abnormality between main outdoor unit and sub 1 outdoor unit

Trigger	Effect	Reset
Main PCB on main outdoor unit detects transmission abnormality on a multi installation.	Forced stop.	Auto reset.

To solve the error code

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

1 Check the Q1-Q2 communication between the outdoor units. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in communication between outdoor units.

2 Perform a check of the main PCB of the main outdoor unit. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB of the main outdoor unit.

3 Perform a check of the main PCB of the sub 1 outdoor unit. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB of the sub 1 outdoor unit.

4 Check that ONLY the master outdoor unit has F1-F2 IN connection. If another outdoor unit has F1-F2 IN connection, correct the installation.

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

2.3.159 U7-05 – Multi system abnormality

Trigger	Effect	Reset
Main PCB on main outdoor unit detects transmission abnormality on a multi installation.	Forced stop.	Auto reset.

To solve the error code

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

1 Check the Q1-Q2 communication between the outdoor units. See "4.1 Electrical circuit" [▸ 350].

Possible cause: Faulty or interruption in communication between outdoor units.

2 Perform a check of the main PCB of the main outdoor unit. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB of the main outdoor unit.

3 Perform a check of the main PCB of the sub 1 outdoor unit. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB of the sub 1 outdoor unit.

4 Check that ONLY the master outdoor unit has F1-F2 IN connection. If another outdoor unit has F1-F2 IN connection, correct the installation.

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

2.3.160 U7-06 – Multi system address abnormality

Trigger	Effect	Reset
Main PCB on main outdoor unit detects transmission abnormality on a multi installation.	Forced stop.	Auto reset.

To solve the error code

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

1 Check the Q1-Q2 communication between the outdoor units. See "4.1 Electrical circuit" [▸ 350].

Possible cause: Faulty or interruption in communication between outdoor units.

2 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

3 Check that ONLY the master outdoor unit has F1-F2 IN connection. If another outdoor unit has F1-F2 IN connection, correct the installation.

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

2.3.161 U7-07 – More than 2 outdoor units on Q1-Q2 transmission

Trigger	Effect	Reset
More than 2 outdoor units are detected on Q1-Q2 transmission line.	Forced stop.	Power reset at outdoor unit.

To solve the error code

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

1. Maximum 2 outdoor units are allowed in the installation. Change the installation if needed.
2. Check the Q1-Q2 communication between the outdoor units. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in communication between outdoor units.
3. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

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

2.3.162 U7-11 – Excess indoor units detected on test run

Trigger	Effect	Reset
Test run detects more than allowed amount of indoor units or indoor unit total index.	Forced stop.	Auto reset.

To solve the error code

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

1. Check total index and total count for indoor units. See Data book on Business Portal for more information.

   Possible cause: Indoor Unit capacity connected is too high.
2. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.
3. Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

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

2.3.163 U7-24 – Duplication of address setting on multiple DTA104A61,62 installation

Trigger	Effect	Reset
Bad configuration of option DTA104A61,62 PCB.	Forced stop.	DTA104A61,62 power reset.

To solve the error code

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

1. Check wiring and configuration of option DTA104A61, 62. See option handbook on Business Portal for more information.
2. Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB.

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

2.3.164 U9-01 – Other indoor unit has error

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

To solve the error code

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

1. Check the indoor units for error codes other than U9-01. See troubleshooting in the service manual of the respective indoor unit(s) to solve the error code(s).
2. Check for improper combination of units. See the combination table in the Databook for more information. Change the installation with ONLY compatible type units.
3. Check field setting 1-10 to count the indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units detected than it should be, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

4 Set field setting 2-5 of the outdoor unit to 1 to start the indoor units connected to that outdoor unit on forced fan operation, see "6.7 Field settings" [▸ 401]. If any of these indoor units is NOT operating, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

5 Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB.

6 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▸ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

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

2.3.165 U9-03 – Abnormality of R32 safety system on other indoor unit on same port of branch selector box

Trigger	Effect	Reset
R32 leak detected on other indoor unit connected to the same branch selector box indoor port without group control (no P1/P2 loop).	Outdoor unit can operate for indoor units connected to other ports of the branch selector box.	Auto reset.

To solve the error code

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

1 Check other indoor units connected to the same port of the branch selector box for error code A0-11 or CH-10. See "2.3 Error based troubleshooting" [▸ 21] to solve the error code(s).

2 Check that the F1-F2 transmission line between the indoor unit and branch selector box is connected to the correct terminal at the branch selector box.

Possible cause: Indoor unit that has error U9-03 is NOT connected to the same port of the branch selector box as the indoor unit that has error A0-11 or CH-10, but is NOT wired correctly.

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

2.3.166 U9-04 – Abnormality of R32 safety system on other branch selector box

Trigger	Effect	Reset
R32 leak detected on other branch selector box.	Outdoor unit stops operating.	Auto reset.

To solve the error code

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

1. Check indoor units connected to other branch selector box(es) for error code A0-20 or CH-20. See "2.3 Error based troubleshooting" [▶ 21] to solve the error code(s).
2. Check that the F1-F2 transmission line between the indoor unit and branch selector box is connected to the correct branch selector box.

   Possible cause: Indoor unit that has error U9-04 is connected to the same branch selector box as the indoor unit that has error A0-20 or CH-20, but is wired to another branch selector box.

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

2.3.167 UA-00 – Combination abnormality

Trigger	Effect	Reset
Combination abnormality.	Forced stop.	Power reset and only allowed combination.

To solve the error code

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

1. Change the installation with ONLY R32 type indoor units.

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

2.3.168 UA-03 – Combination abnormality - Mix of R22, R407C, R410A and R32 type units detected

Trigger	Effect	Reset
Mix of R22, R407C, R410A, R32 type units detected.	Forced stop.	Power reset and only allowed combination.

To solve the error code

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

1. Change the installation with ONLY R32 type indoor units.

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

2.3.169 UA-16 – Combination abnormality - More than 64 indoor units detected on same system

Trigger	Effect	Reset
Main PCB on main outdoor unit detects more than 64 indoor units on same system.	Forced stop.	Automatic reset after re-initialization detects less than 64 compatible indoor units.

To solve the error code

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

1. Change the installation to include a maximum of 64 indoor units.

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

2.3.170 UA-17 – Combination abnormality - Local setting abnormality

Trigger	Effect	Reset
Main PCB on main outdoor unit detects compatibility issues.	Forced stop.	Automatic reset after re-initialization detects compatible units and normal field settings.
Main PCB detects field setting abnormality.		

To solve the error code

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

1. Check for improper combination of units. See the combination table in the Databook for more information. Change the installation with ONLY compatible type units.
2. Check and verify the outdoor unit field settings with the default settings. See "6.7 Field settings" [▶ 401].

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

2.3.171 UA-18 – Combination abnormality - Outdoor unit not compatible with indoor units (refrigerant type)

Trigger	Effect	Reset
Main PCB on main outdoor unit detects compatibility issues.	Forced stop.	Automatic reset after re-initialization detects compatible units.
Outdoor unit NOT compatible with indoor units (refrigerant type).		

To solve the error code

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

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

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

2.3.172 UA-19 – Combination abnormality - Local set alarm

Trigger	Effect	Reset
Main PCB on main outdoor unit detects compatibility issues.	Forced stop.	Automatic reset after re-initialization detects compatible units and normal field settings.
Main PCB detects field setting abnormality, local set alarm.		

To solve the error code

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

1. Check for improper combination of units. See the combination table in the Databook for more information. Change the installation with ONLY compatible type units.
2. Check and verify the outdoor unit field settings with the default settings. See "6.7 Field settings" [▶ 401].

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

2.3.173 UA-20 – Combination abnormality - Non-compatible outdoor unit in multi-combination

Trigger	Effect	Reset
Main PCB on main outdoor unit detects compatibility issues.	Forced stop.	Automatic reset after re-initialization detects compatible units.
Outdoor unit NOT compatible with multi combination.		

To solve the error code

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

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

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

2.3.174 UA-21 – Combination abnormality - BPMK units detected

Trigger	Effect	Reset
Main PCB detects BPMK unit(s) on F1/F2 wiring.	Forced stop.	Automatic reset after re-initialization detects compatible units.

To solve the error code

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

1. Check for improper combination of units. See the combination table in the Databook for more information. Change the installation with ONLY compatible type units.
2. Change the installation without BPMK units.

2.3.175 UA-22 – Combination abnormality - Single Installation

Trigger	Effect	Reset
Abnormal combination on outdoor unit installation.	Unit will not operate.	Power reset at outdoor unit.

To solve the error code

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

1. Check if a multi combination ONLY compatible type outdoor unit is detected on a single installation. Check databook for proper combination.

   Possible cause: REMA5 unit detected without multi combination. Install REMA5 unit in a multi installation.

2. Check the Q1-Q2 communication between the outdoor units. See "4.1 Electrical circuit" [▸ 350].

   Possible cause: Faulty or interruption in communication between outdoor units.

3. Perform a check of the main PCB of the main outdoor unit. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB of the main outdoor unit.

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

2.3.176 UA-23 – Branch selector box Abnormality - Connected Indoor Unit Index too High

Trigger	Effect	Reset
Total indoor unit index connected to branch selector box is too high.	Alarm status ON.	Power reset at branch selector box.

To solve the error code

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

1. Check total index and total count for indoor units. See Data book on Business Portal for more information.

   Possible cause: Indoor Unit capacity connected is too high.

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

2.3.177 UA-25 – Branch selector box Abnormality - Transmission Wiring Abnormality between BS Unit and Outdoor Unit

Trigger	Effect	Reset
Transmission abnormality detected between outdoor unit and branch selector box.	Alarm status ON.	Auto recovery when transmission is normal.

To solve the error code

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

1 Locate the branch selector box by checking indoor unit remote controllers showing this error. Branch selector box that is connected to the indoor unit(s) that show this error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2 Check the transmission wiring between branch selector box and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty transmission wiring.

3 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

4 Perform a check of the main PCB of the main outdoor unit. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB of the main outdoor unit.

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

2.3.178 UA-26 – Branch selector box Abnormality - Transmission Wiring Abnormality on branch selector box

Trigger	Effect	Reset
Transmission abnormality detected between branch selector boxes.	Alarm status ON.	Auto recovery when transmission is normal

To solve the error code

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

1 Locate the branch selector box by checking indoor unit remote controllers showing this error. Branch selector box that is connected to the indoor unit(s) that show this error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

2 Check the transmission wiring between branch selector boxes. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty transmission wiring.

3 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

4 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.

Possible cause: Faulty branch selector box sub PCB.

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

2.3.179 UA-27 – Branch selector box Abnormality - no branch selector box detected

Trigger	Effect	Reset
No branch selector box(es) detected by outdoor unit.	Alarm status ON.	Auto recovery when transmission is normal.
Total indoor units detected are below minimum allowed combination.		

To solve the error code

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

1 Check system layout. Heat Recovery Units needs to have branch selector box(es) installed.

Possible cause: No branch selector boxes installed.

2 Check indoor units connected through BS Units. A system needs to have above a minimum combination ratio of indoor units that are connected through branch selector boxes. See Databook for more information.

Possible cause: Indoor Units connected through branch selector boxes are below allowed minimum ratio.

3 Check the transmission wiring between branch selector box and connected indoor unit(s). See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty transmission wiring.

4 Check indoor unit PCB(s). See Service Manual of the respective indoor unit.

Possible cause: Faulty indoor unit PCB(s).

5 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

6 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▶ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.

  Possible cause: Faulty branch selector box sub PCB.

7 Perform a check of the main PCB of the main outdoor unit. See "3.9 Main PCB" [▸ 280].

Possible cause: Faulty main PCB of the main outdoor unit.

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

2.3.180 UA-28 – Branch selector box Abnormality - non-compatible branch selector box detected

Trigger	Effect	Reset
Non-compatible branch selector box(es) detected on F1-F2 wiring.	Alarm status ON.	Auto recovery when transmission is normal.

To solve the error code

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

1 Check system layout. Heat Recovery Units needs to have branch selector box(es) installed.

Possible cause: No branch selector boxes installed.

2 Locate the branch selector box by checking indoor unit remote controllers showing this error. Branch selector box that is connected to the indoor unit(s) that show this error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

3 Check system layout. Only BS-A-A type branch selector boxes are compatible with VRV5 Heat Recovery System.

Possible cause: Older type branch selector box installed.

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

2.3.181 UA-29 – Branch selector box Abnormality - Connected Indoor Unit Index too Low

Trigger	Effect	Reset
Total indoor unit index connected to branch selector box is too low.	Alarm status ON.	Power reset at branch selector box.

To solve the error code

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

1 Check system layout. Heat Recovery Units needs to have branch selector box(es) installed.

Possible cause: No branch selector boxes installed.

2 Locate the branch selector box by checking indoor unit remote controllers showing this error. Branch selector box that is connected to the indoor unit(s) that show this error is subject to further investigation.

> **NOTICE**
>
> Other indoor units in the circuit will show U9 Error. This means "There is an error in the circuit but it is not the unit that shows U9".

3 Check total index and total count for indoor units. See Data book on Business Portal for more information.

Possible cause: Indoor Unit capacity connected is too high.

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

2.3.182 UA-30 – Combination Abnormality - Heat Pump and Heat Recovery Outdoor Units Detected in Same Combination

Trigger	Effect	Reset
Heat Pump and Heat Recovery Type outdoor units are detected together on Q1-Q2 wiring.	Unit will stop operating.	Power reset at outdoor unit.

To solve the error code

1 Check outdoor units on the same Q1-Q2 wiring. Heat Pump and Heat Recovery type outdoor units cannot be present on the same circuit.

Possible cause: Heat Pump and Heat Recovery type units on same circuit.

2.3.183 UA-31 – Combination abnormality - REMA-A unit detected without a multi combination

Trigger	Effect	Reset
More than 2 outdoor units are detected on Q1-Q2 transmission line.	Forced stop.	Power reset at outdoor unit.
REMA5 unit detected without a multi combination.		

To solve the error code

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

1. Maximum 2 outdoor units are allowed in the installation. Change the installation if needed.
2. Check the Q1-Q2 communication between the outdoor units. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty or interruption in communication between outdoor units.
3. REMA Units are only allowed in multi combination as REMA5A + REMA5A or REYA8A + REMA5A.

   Possible cause: REMA-A unit installed as standalone unit.
4. Perform a check of the main PCB of the main outdoor unit. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB of the main outdoor unit.

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

2.3.184 UA-35 – Combination abnormality - REMA-A Unit Detected in Wrong Combination

Trigger	Effect	Reset
REMA Unit detected in a Not-Allowed combination	Unit will stop operating	Power reset at outdoor unit.

To solve the error code

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

1. REMA Units are only allowed in multi combination as REMA5A + REMA5A or REYA8A + REMA5A.

   Possible cause: REMA-A unit installed in a not-allowed multi combination.
2. Check the Q1-Q2 communication between the outdoor units in multi combination. See "4.1 Electrical circuit" [▶ 350].

   Possible cause: Faulty wiring.
3. Perform a check of the main PCB of the main outdoor unit. See "3.9 Main PCB" [▶ 280].

   Possible cause: Faulty main PCB of the main outdoor unit.

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

2.3.185 UA-38 – Combination abnormality - Altherma hydro unit detected

Trigger	Effect	Reset
Main PCB on main outdoor unit detects Altherma hydrobox on F1-F2 IN wiring.	Forced stop.	Automatic reset after re-initialization detects compatible units.

To solve the error code

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

1 NO Hydrobox unit is allowed in the installation. See the Databook for more information.

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

2.3.186 UA-39 – Combination abnormality - Incorrect combination

Trigger	Effect	Reset
Main PCB on main outdoor unit detects compatibility issues.	Forced stop.	Automatic reset after re-initialization detects compatible units.

To solve the error code

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

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

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

2.3.187 UA-43 – Combination abnormality - Incorrect combination

Trigger	Effect	Reset
Main PCB on main outdoor unit detects compatibility issues.	Forced stop.	Automatic reset after re-initialization detects compatible units.

To solve the error code

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

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

INFORMATION

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

2.3.188 UA-49 – Combination abnormality - Wrong unit combination

Trigger	Effect	Reset
Main PCB on main outdoor unit detects compatibility issues.	Forced stop.	Automatic reset after re-initialization detects compatible units.

To solve the error code

INFORMATION

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

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

INFORMATION

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

2.3.189 UA-50 – Combination abnormality - High Temperature Hydrobox Detected Connected to a BS Unit

Trigger	Effect	Reset
HXHD-A unit detected on branch selector box to indoor F1-F2 wiring.	Forced stop.	Power reset at outdoor unit.

To solve the error code

1 NO Hydrobox unit is allowed in the installation. See the Databook for more information.

INFORMATION

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

2.3.190 UA-51 – Combination abnormality - only hydrobox units detected

Trigger	Effect	Reset
Outdoor unit detects only hydro units connected.	Forced stop.	Power reset at outdoor unit.

To solve the error code

1 NO Hydrobox unit is allowed in the installation. See the Databook for more information.

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

2.3.191 UA-52 – Branch selector box refrigerant type abnormality

Trigger	Effect	Reset
Detected PCB of branch seleector box is NOT the correct type. Detected branch selector box for R22, R407C, R410A.	Unit will stop operating.	Power reset and correct type branch selector box.

To solve the error code

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

1 Check that the correct type branch selector box (BS4A~12A14A) is installed. Change as needed.

Possible cause: Wrong type branch selector box installed.

2 Check if the correct spare part (EB20062-1) is installed for the main PCB A1P of the branch selector box See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Incorrect spare part main PCB A1P.

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

2.3.192 UA-53 – Combination abnormality - Branch Selector box Dip Switch Abnormality

Trigger	Effect	Reset
Branch selector box dip switch abnormality is detected.	Forced stop.	Power reset at outdoor unit.

To solve the error code

1 Check dip switch settings for multi branch selector boxes.

Possible cause: Wrong dipswitch setting.

2 Apply correct dip switch setting while branch selector box power is OFF. After correcting the dip switch, turn on the power and perform a communication reset on the outdoor unit PCB. See "How to perform a communication reset" [▶ 358].

3 Check all indoor unit connection to the branch selector box. Correct any wiring or piping fault.

Possible cause: Piping and/or wiring fault of indoor units to branch selector box.

4 Check power supply to all indoor units. Turn on any indoor unit where power is OFF. After Indoor unit(s) power ON, perform a communication reset on outdoor unit PCB. See "How to perform a communication reset" [▶ 358].

Possible cause: Indoor unit(s) with power OFF.

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

2.3.193 UA-55 – R32 pump down locked state (outdoor unit setting required)

Trigger	Effect	Reset
After reset of error code CH-10 (by setting field setting 25-14-0 to 1 on indoor unit remote controller).	Outdoor unit forced stop.	Automatic reset when outdoor lock function was reset at outdoor main PCB (set field setting 2-24-1 to 0).
After reset of error code CH-20 (by setting field setting 2-5-0 to 1 on branch selector box main PCB).		

To solve the error code

1 Check the indoor units for error code A0-11 or CH-01. See "2.3 Error based troubleshooting" [▶ 21] to solve the error code(s).

2 Check the indoor units and outdoor unit for error code A0-20. See "2.3 Error based troubleshooting" [▶ 21] to solve the error code.

3 Reset the outdoor lock function. Set the field setting 2-24-1 to 0 on the outdoor unit. See "6.7 Field settings" [▶ 401].

Possible cause: Outdoor lock function active.

4 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

5 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

6 Perform a check of the indoor unit main PCB. See service manual of the specific indoor unit.

Possible cause: Faulty indoor unit main PCB.

7 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

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

2.3.194 UA-57 – Mechanical ventilation abnormality (external input is closed)

Trigger	Effect	Reset
Mechanical ventilation abnormality (external input on outdoor unit terminal is closed).	Forced stop.	Operation NOT allowed while abnormality continues.

To solve the error code

1. Check if the mechanical ventilation functions correctly and repair as needed. See "4.3 Manufacturer components" [▸ 368].

   Possible cause: Faulty mechanical ventilation.

2. Check the mechanical ventilation error input signal. See "4.1 Electrical circuit" [▸ 350].

   Possible cause: Faulty mechanical ventilation error input signal.

3. Perform a check of the main PCB. See "3.9 Main PCB" [▸ 280].

   Possible cause: Faulty main PCB or wrong capacity setting.

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

2.3.195 UA-58 – Supervisor remote controller not connected/not set

Trigger	Effect	Reset
Supervisor remote controller NOT connected.	Indoor unit conitnues FAN ONLY operation while other indoor units show error U9-01. Outdoor unit stops operating.	Operation NOT allowed while abnormality continues.

To solve the error code

1. Check that the field setting is correctly set on the outdoor unit: [2-60=0] when NO supervisor remote controller connected, [2-60=1] when supervisor remote controller connected. See "6.7 Field settings" [▸ 401].

   Possible cause: Faulty field setting for supervisor remote controller.

2. Check that the setting [R2-05=02] is correct and that the supervisor remote controller functions correctly. See Remote controller user interface in the service manual of the respective indoor unit for more information.

   Possible cause: Faulty setting or supervisor remote controller.

3. Check the communication wiring between the supervisor remote controller and the indoor unit main PCB. See Remote controller user interface in the service manual of the respective indoor unit for more information.

Possible cause: Faulty communication wiring between remote controller and indoor unit.

4 Perform a check of the indoor unit main PCB. See service manual of the airconditioning indoor unit.

Possible cause: Faulty indoor unit main PCB.

5 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

6 Perform a check of the main PCB. See "3.9 Main PCB" [▶ 280].

Possible cause: Faulty main PCB or wrong capacity setting.

INFORMATION

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

2.3.196 UA-60 – Branch selector box power back-up PCB, capacitor PCB malfunction/not connected

Trigger	Effect	Reset
Branch selector box main PCB A1P detects malfunction or disconnection of power back-up PCB and/or capacitor PCB.	Unit will stop operating.	Auto reset.

To solve the error code

1 Check communication wiring (insertion and continuity) on connector X51A on the branch selector box main PCB and connector X101A on the branch selector box power back-up PCB. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box main PCB and power back-up PCB.

2 Check communication wiring (insertion and continuity) on connector X51A on the branch selector box sub PCB A2P and connector X201A on the branch selector box power back-up PCB. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box sub PCB A2P and power back-up PCB.

3 Check communication wiring (insertion and continuity) on connector X51A on the branch selector box sub PCB A3P and connector X301A on the branch selector box power back-up PCB. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box sub PCB A3P and power back-up PCB.

4 For BS6~12A units: Check communication wiring (insertion and continuity) on connector X3A on the branch selector box power back-up PCB and connector X11A on the branch selector box capacitor PCB A5P. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box power back-up PCB and capacitor PCB.

5 For BS10~12A units: Check communication wiring (insertion and continuity) on connector X4A on the branch selector box power back-up PCB and connector X11A on the branch selector box capacitor PCB A6P. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box power back-up PCB and capacitor PCB.

6 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

7 Perform a check of the branch selector box power back-up PCB. See "3.2.6 Branch selector box power back-up PCB" [▶ 225].

Possible cause: Faulty branch selector box power back-up PCB.

8 Perform a check of the branch selector box capacitor PCB. See "3.2.1 Branch selector box capacitor PCB" [▶ 213].

Possible cause: Faulty branch selector box capacitor PCB.

INFORMATION

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

2.3.197 UA-61 – Branch selector box power back-up PCB no power

Trigger	Effect	Reset
Branch selector box main PCB A1P detects no power of power back-up PCB.	Unit will stop operating.	Auto reset.

To solve the error code

1 Check communication wiring (insertion and continuity) on connector X51A on the branch selector box main PCB and connector X101A on the branch selector box power back-up PCB. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box main PCB and power back-up PCB.

2 For BS6~12A units: Check communication wiring (insertion and continuity) on connector X3A on the branch selector box power back-up PCB and connector X11A on the branch selector box capacitor PCB A5P. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box power back-up PCB and capacitor PCB.

3 For BS10~12A units: Check communication wiring (insertion and continuity) on connector X4A on the branch selector box power back-up PCB and connector X11A on the branch selector box capacitor PCB A6P. See "6.2 Wiring diagram" [▶ 376].

Possible cause: Faulty or damaged communication wiring between branch selector box power back-up PCB and capacitor PCB.

4 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▶ 221].

Possible cause: Faulty branch selector box main PCB.

5 Perform a check of the branch selector box power back-up PCB. See "3.2.6 Branch selector box power back-up PCB" [▸ 225].

Possible cause: Faulty branch selector box power back-up PCB.

6 Perform a check of the branch selector box capacitor PCB. See "3.2.1 Branch selector box capacitor PCB" [▸ 213].

Possible cause: Faulty branch selector box capacitor PCB.

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

2.3.198 UA-62 – Branch selector box power failure detection

Trigger	Effect	Reset
Outdoor unit main PCB lost communication with branch selector box..	Unit will stop operating.	Auto reset.

To solve the error code

1 Perform a check of the branch selector box main PCB. See "3.2.5 Branch selector box main PCB" [▸ 221].

Possible cause: Faulty branch selector box main PCB.

2 Perform a check of the branch selector box sub PCB(s). See "3.2.7 Branch selector box sub PCB" [▸ 226].

- For BS6~8A units: A2P.
- For BS10~12A units: A2P and A3P.

Possible cause: Faulty branch selector box sub PCB.

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

2.3.199 UF-01 – Wiring and piping mismatch - Excess connection ratio

Trigger	Effect	Reset
Minimum 1 indoor unit fails to perform cross pipe check during test run.	Forced stop.	Perform test run.

To solve the error code

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▸ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Check that the refrigerant circuit piping and wiring connections of the system are correctly installed.

Possible cause: Refrigerant piping and/or wiring mismatch.

3 Set field setting 2-5 of the outdoor unit to 1 to start the indoor units connected to that outdoor unit on forced fan operation, see "6.7 Field settings" [▶ 401]. If any of these indoor units is NOT operating, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

4 Check field setting 1-10 to count the indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units detected than it should be, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

5 Perform a check of the indoor unit pipe thermistors, see service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit pipe thermistor.

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

2.3.200 UF-05 – Wiring and piping mismatch - Stop valves closed or incorrect

Trigger	Effect	Reset
Minimum 1 indoor unit fails to perform cross pipe check during test run.	Forced stop.	Perform test run.

To solve the error code

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

1 Check that all stop valves of the refrigerant circuit are open. See "4.2 Refrigerant circuit" [▶ 359].

Possible cause: Closed stop valve in the refrigerant circuit.

2 Check that the refrigerant circuit piping and wiring connections of the system are correctly installed.

Possible cause: Refrigerant piping and/or wiring mismatch.

3 Set field setting 2-5 of the outdoor unit to 1 to start the indoor units connected to that outdoor unit on forced fan operation, see "6.7 Field settings" [▶ 401]. If any of these indoor units is NOT operating, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

4 Check field setting 1-10 to count the indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units detected than it should be, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

5 Perform a check of the indoor unit pipe thermistors, see service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit pipe thermistor.

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

2.3.201 UF-18 – Failure test run cross wiring/cross piping (after outdoor set Mode 2-20-2)

Trigger	Effect	Reset
During test run by Mode 2-20-2, if failure of: ▪ Or indoor unit coil sensor NOT dropping while expansion valve open. ▪ Or outdoor low discharge superheat detected.	Unit will stop operating.	Power rest of outdoor unit.

To solve the error code

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

1 Operate the faulty indoor unit in forced cooling operation (by outdoor test run).

2 Check via service monitoring tool if the indoor unit coil temperature lowers while indoor unit expansion valve is open. Compatible service monitoring tools are:

- Checker type 3: F1-F2 outdoor <-> branch selector box
- Checker type 4: F1-F2 outdoor <-> branch selector box
- D-checker: at connector X27A of outdoor unit main PCB.
- Mobile monitoring tool: at connector X27A of outdoor unit main PCB.

3 If indoor unit coil temperature lowers while expansion valve is open, check refrigerant charge of the system. In case of refrigerant shortage or overcharge, discharge temperature at the compressor might be too high (refrigerant shortage) or too low (refrigerant overcharge).

Possible cause: Incorrect refrigerant charge.

4 If indoor unit coil temperature does NOT lower while expansion is open, perform as described below:

5 Check that the indoor unit refrigerant piping is connected to the correct port of the branch selector box.

Possible cause: Indoor unit refrigerant piping connected to wrong port in accordance with F1-F2 terminals at branch selector box.

6 Perform a check of the expansion valve(s) of the indoor unit(s). See service manual of the respective indoor unit(s) for more information.

Possible cause: Faulty indoor unit expansion valve.

7 With the faulty indoor unit operating in forced cooling operation (by outdoor test run), check via service monitoring tool the status of the branch selector box expansion valves of the circuit of the faulty indoor unit. Compatible service monitoring tools are:

- D-checker: at connector X101A of branch selector box main PCB or sub PCB (A2P or A3P), depending on the circuit of the faulty indoor unit.
- Mobile monitoring tool: at connector X101A of branch selector box main PCB or sub PCB (A2P or A3P), depending on the circuit of the faulty indoor unit.

8 If expansion valve(s) do NOT function correctly:

- Perform a check of the faulty expansion valve of the branch selector box, see "3.6 Expansion valve" [▸ 250].
  Possible cause: Faulty branch selector box expansion valve.
- Perform a check of the branch selector box main PCB or sub PCB to which the faulty expansion valve is connected, see "3.2.5 Branch selector box main PCB" [▸ 221] or "3.2.7 Branch selector box sub PCB" [▸ 226].
  Possible cause: Faulty branch selector box main PCB or sub PCB.

INFORMATION

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

2.3.202 UH-01 – Auto-address failure

Trigger	Effect	Reset
Main PCB detects improper combination at indoor unit side.	Forced stop.	Reset communication from main PCB.
Missing auto address of indoor unit(s) after initialization.		

To solve the error code

INFORMATION

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

1 Set field setting 2-5 of the outdoor unit to 1 to start the indoor units connected to that outdoor unit on forced fan operation, see "6.7 Field settings" [▸ 401]. If any of these indoor units is NOT operating, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

2 Perform a communication reset of the F1-F2 transmission, see "4.1 Electrical circuit" [▸ 350].

3 Check field setting 1-10 to count the indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units detected than it should be, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

4 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:

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

5 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

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

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

2.3.203 UH-02 – Auto-address failure

Trigger	Effect	Reset
Main PCB detects improper combination at indoor unit side.	Forced stop.	Reset communication from main PCB.
Missing auto address of indoor unit(s) after initialization.		

To solve the error code

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

1 Set field setting 2-5 of the outdoor unit to 1 to start the indoor units connected to that outdoor unit on forced fan operation, see "6.7 Field settings" [▶ 401]. If any of these indoor units is NOT operating, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

2 Perform a communication reset of the F1-F2 transmission, see "4.1 Electrical circuit" [▶ 350].

3 Check field setting 1-10 to count the indoor units, see "6.7 Field settings" [▶ 401]. If less indoor units detected than it should be, check the indoor unit(s) that have power black-out or malfunctioning PCB. See service manual of the respective indoor unit for more information.

Possible cause: Power black-out or malfunctioning PCB on indoor unit(s).

4 Check if the power supply is compliant with the regulations. See "4.1 Electrical circuit" [▶ 350].

Possible cause:
- Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
- Power drop,
- Short circuit.

5 Check the F1-F2 transmission line between the indoor units and outdoor unit. See "4.1 Electrical circuit" [▶ 350].

Possible cause: Faulty or interruption in transmission line between indoor units and outdoor unit.

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

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

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

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

To solve the error code

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

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

2 Check if the correct spare part is installed for the indoor unit main PCB. See service manual of the specific indoor unit. Check that the correct capacity setting adapter is connected to X23A of the PCB.

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

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

2.3.205 UJ-35 – Abnormality at VAM unit

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

To solve the error code

1. Check the error code at the VAM-J8 indoor unit. See "Error based troubleshooting" in the service manual of the specific indoor unit to solve the error code.
2. Check the software and EEPROM version on the user interface and PCB. See "User interface" in the service manual of the specific indoor unit.

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

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

2.3.206 UJ-36 – Transmission error between VAM and EKVDX

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

To solve the error code

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

1. Check the transmission wiring between the VAM unit and the DX unit. See "Wiring diagram" in the service manual of the specific indoor unit. Field wiring F1-F2 is ONLY required at DX unit. If F1-F2 wiring is present between VAM unit and DX unit, remove this loop.

   Possible cause: Faulty transmission wiring.
2. Check the field settings for VAM unit and DX unit pair application. Make sure to perform the correct settings. See "Field settings" in the service manual of the specific indoor unit.

   Possible cause: Incorrect field setting.

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

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

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

To solve the error code

1. Check the VAM-J8 indoor unit for error code A6-28. See "Error based troubleshooting" in the service manual of the specific indoor unit to solve the error code.

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

2.3.208 UJ-40 – Maintenance warning (ventilation fan branch selector box)

Trigger	Effect	Reset
When period of power to outdoor unit exceeds the maintenance cycle since last reset (setting 2-58-0 at outdoor unit main PCB).	Unit will stop operating.	Auto reset.

To solve the error code

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

1. Check that the ventilation functions correctly (maintenance at branch selector box). Perform as follows:
   - At the branch selector box main PCB, set field setting 2-3-0 to 1 to activate the safety system.
   - Check that the ventilation functions correctly. See "4.3 Manufacturer components" [▶ 368]. Correct as needed.
   - Once ventilation functions correctly, set field setting 2-3-1 to 0 to deactivate the safety system.
2. Reset the maintenance cycle timer. Perform as follows:
   - At the outdoor unit main PCB, check the current setting of field setting 2-58 (default setting -5 = 5 years).
   - Set field setting 2-58 to 0 (timer reset).
   - Set field setting 2-58 back to the same value that was originally found.

   Possible cause: Period of power to outdoor unit exceeds the maintenance cycle since last reset.
3. Check if ventilation is required at the branch selector box, see installation manual of the branch selector box. If NO ventilation is required at branch selector box, check that field setting 2-4 is set to 0 (default setting = 1) at the branch selector box main PCB.

   Possible cause: No ventilation required at branch selector box while field setting 2-4 is set to 1.

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

2.3.209 E-1 – Refrigerant leak check is not possible

Trigger	Effect	Reset
Total refrigerant judgement is unknown.	Unit will stop operating.	Manual reset via user interface.

To solve the error code

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

1. Change field setting 2–14. See "6.7 Field settings" [▸ 401].

   Possible cause: No input at field setting 2–14 (2–14 = 0) when field setting 2–88 = 0.

2. Set field setting 2–88 to 0, see "6.7 Field settings" [▸ 401] to enable the outdoor unit to perform long test run to be able to judge refrigerant amount.
3. Check if test run was interrupted.
4. Check the error history, see "2 Troubleshooting" [▸ 18]. Solve the error code(s) using the error based troubleshooting, see "2.3 Error based troubleshooting" [▸ 21].

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

2.3.210 E-2 – Refrigerant leak check cannot be performed - indoor air temperature is out of range

Trigger	Effect	Reset
Average indoor unit air temperature <15°C.	Unit will NOT start refrigerant leak check mode.	Perform refrigerant leak check when average indoor temperature >15°C.

To solve the error code

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

1. Perform a check of the indoor unit air thermistors. See service manual of the respective indoor unit(s) for more information.

   Possible cause: Faulty indoor unit air thermistor(s).

2. Perform refrigerant leak check when the average indoor temperature is above 15°C.

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

2.3.211 E-3 – Refrigerant leak check cannot be performed - outdoor air temperature is out of range

Trigger	Effect	Reset
Outdoor air temperature <20°C.	Unit will NOT start refrigerant leak check mode.	Perform refrigerant leak check when average outdoor temperature >20°C.

To solve the error code

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

1 Perform a check of the outdoor air thermistor. See "3.18 Thermistors" [▶ 343].

Possible cause: Faulty ambient air thermistor.

2 Perform refrigerant leak check when the outdoor temperature is above 20°C.

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

2.3.212 E-4 – Refrigerant leak check is interrupted - too low pressure is detected

Trigger	Effect	Reset
Too low pressure is detected during refrigerant leak check mode.	Refrigerant leak check function CANNOT be performed.	Restart leak detection operation.

To solve the error code

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

1 Perform a check of the refrigerant high pressure sensor. See "3.14 Refrigerant high pressure sensor" [▶ 326].

Possible cause: Faulty refrigerant high pressure sensor.

2 Perform a check of the refrigerant low pressure sensor. See "3.15 Refrigerant low pressure sensor" [▶ 330]

Possible cause: Faulty refrigerant low pressure sensor.

3 Restart leak detection operation.

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

2.3.213 E-5 – Refrigerant leak check cannot be performed - a unit which is not compatible with leak detection function is installed

Trigger	Effect	Reset
Leak detection is NOT supported for some of the installed indoor units (e.g. Hydrobox, …).	Refrigerant leak check function CANNOT be performed.	No reset required.

To solve the error code

1. No corrective action needed, unless there is an indoor unit in the system which is refrigerant leak function incompatible.

2.3.214 NG – Refrigerant leak check function detects refrigerant leak

Trigger	Effect	Reset
Result of refrigerant leak check function deviates more than 15% compared to result of test run.	Result of last 3 refrigerant leak check function is stored on Mode 1 items 29-30-31, see "6.7 Field settings" [▶ 401].	No reset required.

To solve the error code

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

1. Check for leaks in the refrigerant circuit. Look for oil traces on the unit(s). Check the brazing points on the field piping. Perform a leak test, see "4.2 Refrigerant circuit" [▶ 359].

   Possible cause: Leak in the refrigerant circuit.

2. Indoor and/or outdoor temperature(s) of test run and latest leak check function should NOT differ too much. Consult the logbook and compare temperatures to auto-charge time. Perform a new leak test when the indoor and outdoor temperatures do NOT deviate too much compared to the time of test run.

   Possible cause: Indoor and/or outdoor temperature(s) of test run and latest leak check function is drastically different from each other.

3. Check if indoor unit layout has changed since latest test run. If this is the case, a new test run needs to be performed.

   Possible cause: Indoor unit layout has changed since latest test run.

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

2.3.215 OK – Refrigerant leak check function detects no refrigerant leak

Trigger	Effect	Reset
Result of refrigerant leak check function is within 15% range, compared to result of test run.	Unit will operate normally.	No reset required.

To solve the error code

1 No corrective action needed.

2.4 Symptom based troubleshooting

2.4.1 Normal operating conditions

Below items are a guideline on how to check normal operating conditions of the unit. Still, values are for reference ONLY and working conditions outside of this range do NOT necessarily address abnormalities and errors. Operating conditions are a result of several items to check together.

Item	Description	Normal value
Discharge superheat	Discharge pipe temperature – condensation temperature	25 K to 45 K

Discharge superheat = discharge pipe temperature – condensation temperature

- Discharge pipe temperature: Read out from discharge pipe thermistor R21T.
- Condensation temperature: Calculated by main PCB from the pressure read-out of the high pressure sensor.

Higher discharge superheat may result from refrigerant shortage or compressor internal by-pass.

Lower discharge superheat may result from low suction superheat which is caused by wet operation.

Item	Description	Normal value
Suction superheat	Suction temperature – evaporation temperature	5 K

Suction superheat = suction temperature – evaporation temperature

- Suction temperature: Read out from suction thermistor R10T.
- Evaporation temperature: Calculated by main PCB from the pressure read-out of the low pressure sensor.

Suction superheat may be high if difference between [indoor set temperature – indoor air temperature] is too high and will result in high discharge superheat.

Suction superheat may be low if:

- Difference between [indoor set temperature – indoor air temperature] is too low
- Discharge superheat is too low (<20 K)
- Outdoor unit judges wet operation

2.4.2 Symptom: The system does not operate

- The air conditioner does not start immediately after the ON/OFF button on the user interface is pressed. If the operation lamp lights, the system is in normal condition. To prevent overloading of the compressor motor, the air conditioner starts 5 minutes after it is turned ON again in case it was turned OFF just before. The same starting delay occurs after the operation mode selector button was used.
- If "Under Centralized Control" is displayed on the user interface, pressing the operation button causes the display to blink for a few seconds. The blinking display indicates that the user interface cannot be used.
- The system does not start immediately after the power supply is turned on. Wait one minute until the micro computer is prepared for operation.

2.4.3 Symptom: Cool/Heat cannot be changed over

- When the display shows (change-over under centralized control), it shows that this is a slave user interface.
- When the cool/heat changeover remote control switch is installed and the display shows (change-over under centralized control), this is because cool/ heat changeover is controlled by the cool/ heat changeover remote control switch. Ask your dealer where the remote control switch is installed.

2.4.4 Symptom: Fan operation is possible, but cooling and heating do not work

Immediately after the power is turned on. The micro computer is getting ready to operate and is performing a communication check with all indoor units. Please wait 12 minutes maximally until this process is finished.

2.4.5 Symptom: The fan speed does not correspond to the setting

The fan speed does not change even if the fan speed adjustment button is pressed. During heating operation, when the room temperature reaches the set temperature, the outdoor unit goes off and the indoor unit changes to whisper fan speed. This is to prevent cold air blowing directly on occupants of the room. The fan speed will not change even when another indoor unit is in heating operation, if the button is pressed.

2.4.6 Symptom: The fan direction does not correspond to the setting

The fan direction does not correspond with the user interface display. The fan direction does not swing. This is because the unit is being controlled by the micro computer.

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

- When humidity is high during cooling operation. If the interior of an indoor unit is extremely contaminated, the temperature distribution inside a room becomes uneven. It is necessary to clean the interior of the indoor unit. Ask your dealer for details on cleaning the unit. This operation requires a qualified service person.
- Immediately after the cooling operation stops and if the room temperature and humidity are low. This is because warm refrigerant gas flows back into the indoor unit and generates steam.

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

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

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

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

2.4.10 Symptom: Noise of air conditioners (Indoor unit)

- A "zeen" sound is heard immediately after the power supply is turned on. The electronic expansion valve inside an indoor unit starts working and makes the noise. Its volume will reduce in about one minute.
- A continuous low "shah" sound is heard when the system is in cooling operation or at a stop. When the drain pump (optional accessories) is in operation, this noise is heard.
- A "pishi-pishi" squeaking sound is heard when the system stops after heating operation. Expansion and contraction of plastic parts caused by temperature change make this noise.
- A low "sah", "choro-choro" sound is heard while the indoor unit is stopped. When another indoor unit is in operation, this noise is heard. In order to prevent oil and refrigerant from remaining in the system, a small amount of refrigerant is kept flowing.

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

- A continuous low hissing sound is heard when the system is in cooling or defrost operation. This is the sound of refrigerant gas flowing through both indoor and outdoor units.
- A hissing sound which is heard at the start or immediately after stopping operation or defrost operation. This is the noise of refrigerant caused by flow stop or flow change.

2.4.12 Symptom: Noise of air conditioners (Outdoor unit)

When the tone of operating noise changes. This noise is caused by the change of frequency.

2.4.13 Symptom: Dust comes out of the unit

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

2.4.14 Symptom: The units can give off odours

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

2.4.15 Symptom: The outdoor unit fan does not spin

During operation. The speed of the fan is controlled in order to optimise product operation.

2.4.16 Symptom: The display shows "88"

This is the case immediately after the main power supply switch is turned on and means that the user interface is in normal condition. This continues for 1 minute.

2.4.17 Symptom: The compressor in the outdoor unit does not stop after a short heating operation

This is to prevent refrigerant from remaining in the compressor. The unit will stop after 5 to 10 minutes.

2.4.18 Symptom: The inside of an outdoor unit is warm even when the unit has stopped

This is because the crankcase heater is warming the compressor so that the compressor can start smoothly.

2.4.19 Symptom: Hot air can be felt when the indoor unit is stopped

Several different indoor units are being run on the same system. When another unit is running, some refrigerant will still flow through the unit.

2.4.20 Symptom: Unit operation problems

Symptom	Possible failure	Root cause	Repair
Unit(s) do not operate	Unit(s) do not operate	Missing or abnormal power supply (reverse phase, missing phase, abnormal voltage...) to the outdoor unit	Check Power Supply. See "4.1 Electrical circuit" [▶ 350]
		Indoor unit(s) do not receive power supply	Check power supply to the indoor unit(s), check if HAP Led blinks, check fuse(s) on indoor unit board. Also check BPMKs in case indoor unit is of RA type.
		Mismatch of combination of outdoor unit and indoor unit	Check error codes. Check compatibility
		Out of operation range	Check operation range on databook
	All indoor units show icon blinking continuously	No Cool/Heat master is set	Select Cool/Heat Master by pressing Operating Mode button on the desired unit. The symbol will fade-away for Cool/Heat Master and will be fixed (not blinking) for the remaining indoor units
	Indoor unit(s) show icon blinking temporarily when ON button is pressed	The unit(s) are either under Centralized Control and prohibited to operate or under Forced OFF operation by T1/T2 input	Release prohibitions from central controller or check T1/T2 contact status or check indoor unit field setting for forced off
	Indoor units show fan-only mode	Transmission initialization not completed	See "To check F1-F2 transmission" [▶ 353]. Perform transmission re-initialization
			Check transmission wiring
			Check indoor unit PCBs
			Check outdoor unit main PCB, see "3.9 Main PCB" [▶ 280]
Operation sometimes stops	Power failure	A power failure consecutively more than 2 cycles may stop the air conditioner operation	Restore power supply. See "4.1 Electrical circuit" [▶ 350]

Symptom	Possible failure	Root cause	Repair
Operation stops and then restarts after 3 minutes.	Outdoor unit performing 'retry' operation	Retry mode triggered by an error	Check field setting 1-23, 1-24, 1-25 for latest retry content. See "6.7 Field settings" [▶ 401]. Refer to error code found for further troubleshooting.
Unit operates but does not cool or does not heat	Piping or wiring mismatch	Tranmission or piping problem	Correct piping, wiring
	Abnormal refrigerant amount	Outdoor unit may be overcharged or lacking refrigerant	Check refrigerant amount. See "4.2 Refrigerant circuit" [▶ 359]
	Incorrect thermistor values	Thermistors not in their location, miswiring or faulty thermistor	Check thermistors, see "3.18 Thermistors" [▶ 343]
	Incorrect expansion valve operation	Expansion valve not operating correctly	Check expansion valves. See "3.6 Expansion valve" [▶ 250]
	Cross piping/wiring among different outdoor unit systems	Indoor unit transmission line and piping is not connected to the same outdoor unit system	Correct piping, wiring

Symptom	Possible failure	Root cause	Repair
Disturbing operation noise and vibration	Faulty Inverter PCB output	Instable output voltage from inverter PCB to compressor(s)	Check Power Supply, see "4.1 Electrical circuit" [▶ 350]. Restore the power supply in conform with the requirements. Check inverter PCB(s) and perform a power transistor check, see "3.8 Inverter PCB" [▶ 269]. Check compressor(s), see "3.3 Compressor" [▶ 230]
	Installation faults	Unit not installed according to installation manual	Check installation manual. Correct necessary items. Leave required space to outdoor unit for operation
	Wet operation	Liquid compression	Check thermistors. See "3.18 Thermistors" [▶ 343]. Check for refrigerant overcharge, see "4.2 Refrigerant circuit" [▶ 359]. Check expansion valves for heat exchanger that run as evaporator. Check superheat. Recover refrigerant and weigh. Charge refrigerant to the correct amount
	Flash gas on liquid piping	Expansion valve fault of refrigerant shortage	Check expansion valves for heat exchangers that run as evaporator. Check superheat. Recover refrigerant and weigh. Charge refrigerant to the correct amount

2.4.21 Other symptoms

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

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

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

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

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

3 Components

CAUTION

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

3.1 4-way valve

3.1.1 Checking procedures

INFORMATION

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

To perform a mechanical check of the 4-way valve

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▶ 309].

DANGER: RISK OF BURNING/SCALDING

The coil gets hot while energized. Wait for it to cool down.

2 Verify that the screw is firmly fixing the coil to the valve body.

3 Check if any damage or burst is present.

Is the 4-way valve coil firmly fixed and not visually damaged?	Action
Yes	Perform an electrical check of the 4-way valve, see "3.1.1 Checking procedures" [▶ 205].
No	Fix or replace the 4-way valve coil, see "3.1.2 Repair procedures" [▶ 210].

To perform an electrical check of the 4-way valve

1 First perform a mechanical check of the 4-way valve, see "3.1.1 Checking procedures" [▶ 205].

2 Unplug the 4-way valve connector from the appropriate PCB.

3 Measure the resistance of the 4-way valve coil between the pins of the 4-way valve connector.

Result: The measured value must be as indicated in the table below ± 10%.

<table>
<tr><th rowspan="2">Name</th><th rowspan="2">Symbol</th><th rowspan="2">Location (PCB)</th><th rowspan="2">Connector</th><th colspan="4">Winding resistance (Ω)</th></tr>
<tr><th>5+8</th><th>10+12</th><th>14+16</th><th>18+20</th></tr>
<tr><td>High pressure/ low pressure 4-way valve</td><td>Y3S</td><td>A1P</td><td>X8A</td><td colspan="2">1510</td><td colspan="2">1350</td></tr>
</table>

Name	Symbol	Location (PCB)	Connector	Winding resistance (Ω)			
				5+8	10+12	14+16	18+20
Lower heat exchanger 4-way valve	Y4S	A1P	X13A	1510			1430
Upper heat exchanger 4-way valve	Y5S	A1P	X9A	2210			

Is the measured value correct?	Action
Yes	Continue with the next step.
No	Replace the 4-way valve coil, see "3.1.2 Repair procedures" [▶ 210].

When outdoor temperature is mild and unit can switch between heating and cooling

> **INFORMATION**
>
> This procedure is ONLY possible when the outdoor temperature is within the temperature range for both `Heating` and `Cooling` operation mode. See the databook on Business Portal for the temperature range of the operation modes.

1. Connect the 4-way valve connector to the appropriate PCB.
2. Turn ON the power using the respective circuit breaker.
3. Activate `Heating` operation via the Cool/Heat master user interface.

> **CAUTION**
>
> Activate all units to make sure the system is operating with full Heating load so the upper heat exchanger 4-way valve Y5S is switched ON. Check with the service monitoring tool that Operation Mode is `Heating`.

4. With the 4-way valve connector connected to the PCB, measure the voltage on the 4-way valve connection of the PCB. The measured voltage MUST be:
   - 0 V AC for high pressure / low pressure 4-way valve Y3S
   - 230 V AC for lower heat exchanger 4-way valve Y4S
   - 230 V AC for upper heat exchanger 4-way valve Y5S. When operating with low load, Y5S can switch OFF (=0 V AC).
5. De-activate `Heating` and activate `Cooling` operation via the Cool/Heat master user interface.

> **CAUTION**
>
> Activate all units to make sure the system is operating with full Cooling load so the lower heat exchanger 4-way valve Y4S is switched ON. Check with the service monitoring tool that Operation Mode is `Cooling`.

6. With the 4-way valve connector connected to the PCB, measure the voltage on the 4-way valve connection of the PCB. The measured voltage MUST be:
   - 230 V AC for high pressure / low pressure 4-way valve Y3S
   - 0 V AC for lower heat exchanger 4-way valve Y4S. When operating with low load, Y4S can switch ON (=230 V AC).
   - 0 V AC for upper heat exchanger 4-way valve Y5S.

Are the measured voltages correct?	Action
Yes	Perform a position check of the 4-way valve, see "3.1.1 Checking procedures" [▶ 205].
No	Perform a check the main PCB, see "3.9 Main PCB" [▶ 280].

When outdoor temperature does not allow the unit to run in cooling or heating mode

> **INFORMATION**
>
> Follow this procedure when the outdoor temperature is outside the temperature range for one of the operation modes (`Heating` or `Cooling`). The unit CANNOT operate in the mode for which the outdoor temperature is outside its temperature range. See the databook on Business Portal for the temperature range of the operation modes.

1. Connect the 4-way valve connector to the appropriate PCB.
2. Turn ON the power using the respective circuit breaker.
3. With the unit operating, connect the service monitoring tool to the unit and check whether the unit is in one of the following operation modes in which the 4-way valves are energized:

   Y3S valve:
   - Cooling mode
   - Oil Return Operation in Cooling
   - Defrost/Oil Return Operation in Heating

   Y4S valve:
   - Heating mode
   - Low load Cooling mode
   - Simultaneous Cooling/Heating operation
   - Defrost operation

   Y5S valve:
   - Heating mode*
   - Oil Return Operation in simultaneous Cooling/Heating mode

* Y5S may also be OFF if low load condition

Is this the case?	Action
No	Skip the next step of this procedure.
Yes	Perform the next step of this procedure.

4. With the 4-way valve connector connected to the PCB, measure the voltage on the 4-way valve connection of the PCB.

   Result: The measured voltage MUST be 230 V AC.

Is the measured voltage correct?	Action
Yes	Perform a position check of the 4-way valve, see "3.1.1 Checking procedures" [▶ 205].
No	Perform a check the main PCB, see "3.9 Main PCB" [▶ 280].

5. If, according to the service monitoring tool, the unit is in one of the following operation modes in which the 4-way valves are NOT energized:

Y3S valve:
- Heating mode
- Simultaneous Cooling/Heating operation
- Oil Return Operation in Simultaneous Cooling/Heating mode

Y4S valve:
- Cooling mode*
- Oil Return operation in Cooling
- Defrost/Oil return operation in Heating
- Oil Return operation in Simultaneous Cooling/Heating

* Y4S may also be ON if low load condition

Y5S valve:
- Cooling mode
- Low load Heating mode
- Simultaneous Cooling/Heating operation
- Defrost/Oil return operation in Heating
- Oil Return operation in Simultaneous Cooling/Heating

6 With the 4-way valve connector connected to the PCB, measure the voltage on the 4-way valve connection of the PCB.

Result: The measured voltage MUST be 0 V AC.

Is the measured voltage correct?	Action
Yes	Perform a position check of the 4-way valve, see "3.1.1 Checking procedures" [▶ 205].
No	Perform a check the main PCB, see "3.9 Main PCB" [▶ 280].

To perform a position check of the 4-way valve

1 First perform an electrical check of the 4-way valve, see "3.1.1 Checking procedures" [▶ 205].

When outdoor temperature is mild and unit can switch between heating and cooling

INFORMATION

This procedure is ONLY possible when the outdoor temperature is within the temperature range for both `Heating` and `Cooling` operation mode. See the databook on Business Portal for the temperature range of the operation modes.

1 Activate `Heating` operation via the Cool/Heat master user interface.

CAUTION

It is NOT possible to activate operation modes with another user interface than the Cool/Heat master user interface.

INFORMATION

It is recommended to connect the service monitoring tool to the unit and verify the operation mode of the 4-way valve.

2 Check with a contact thermometer (or by touching) if the flow through the 4-way valve corresponds with the flow shown in the flow diagram. (See "6.3 Piping diagram" [▶ 390]).

Is the flow correct?	Action
Yes	Skip the next step of this procedure.
No	Perform the next step of this procedure.

3 Connect a manifold to one of the service ports of the refrigerant circuit and check the pressure (suction, discharge). Compare with normal operation conditions of the unit.

Refrigerant pressure correct?	Action
Yes	Replace the body of the 4-way valve, see "3.1.2 Repair procedures" [▸ 210].
No	Leaks may be found in the refrigerant circuit. Perform a pressure test of the refrigerant circuit, see "4.2.1 Checking procedures" [▸ 359].

4 De-activate `Heating` and activate `Cooling` operation via the Cool/Heat master user interface.

5 Check with a contact thermometer (or by touching) if the flow through the 4-way valve corresponds with the flow shown in the flow diagram. (See "6.3 Piping diagram" [▸ 390]).

Is the flow correct?	Action
Yes	4-way valve is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the body of the 4-way valve, see "3.1.2 Repair procedures" [▸ 210].

When outdoor temperature does not allow the unit to run in cooling or heating mode

INFORMATION

Follow this procedure when the outdoor temperature is outside the temperature range for one of the operation modes (`Heating` or `Cooling`). The unit CANNOT operate in the mode for which the outdoor temperature is outside its temperature range. See the databook on Business Portal for the temperature range of the operation modes.

1 With the unit operating, connect the service monitoring tool to the unit and check in which of the following operation modes the unit is operating:

- Cooling mode
- Heating mode
- Simultaneous Cooling/Heating Operation
- Oil return operation in Cooling mode
- Defrost / Oil return Operation in Heating mode
- Oil return Operation in Simultaneous Cooling/Heating mode

2 Check with a contact thermometer (or by touching) if the flow through the 4-way valve corresponds with the flow shown in the flow diagram of the specific operation mode. (See "6.3 Piping diagram" [▸ 390]).

Is the flow correct?	Action
Yes	4-way valve is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Perform the next step of this procedure.

3 Connect a manifold to one of the service ports of the refrigerant circuit and check the pressure (suction, discharge). Compare with normal operation conditions of the unit.

Refrigerant pressure correct?	Action
Yes	Replace the body of the 4-way valve, see "3.1.2 Repair procedures" [▸ 210].
No	Leaks may be found in the refrigerant circuit. Perform a pressure test of the refrigerant circuit, see "4.2.1 Checking procedures" [▸ 359].

3.1.2 Repair procedures

To remove the 4-way valve coil

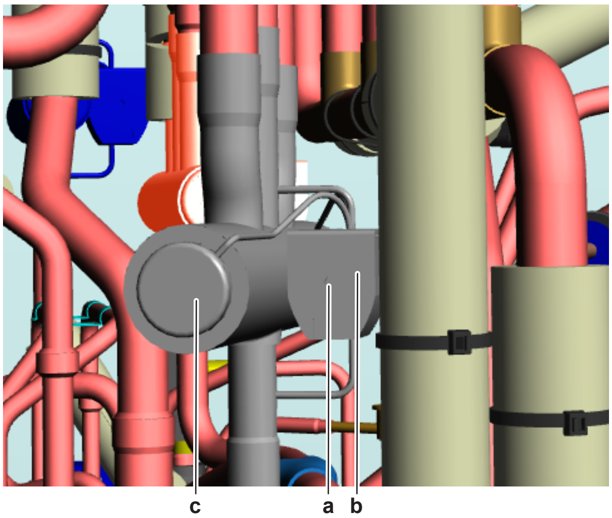
Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

Prerequisite: If needed, remove any parts to create more space for the removal of the 4-way valve coil.

1 Remove the screw and remove the 4-way valve coil from the 4-way valve body.



a Screw
b 4-way valve coil
c 4-way valve body

2 Cut all tie straps that fix the 4-way valve coil harness.

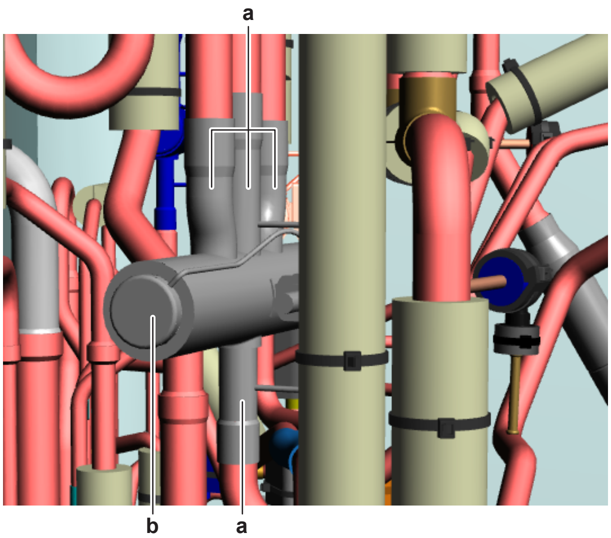
3 Unplug the 4-way valve connector from the appropriate PCB.

4 To install the 4-way valve coil, see "3.1.2 Repair procedures" [▸ 210].

To remove the 4-way valve body

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

1. Remove the 4-way valve coil from the 4-way valve body, see "3.1.2 Repair procedures" [▶ 210].
2. Remove and keep the putty (if installed) and the insulation (if installed) for re-use.
3. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
4. Wrap a wet rag around the components near the 4-way valve pipes. Heat the brazing points of the 4-way valve pipes using an oxygen acetylene torch and remove the 4-way valve pipes from the refrigerant pipes using pliers.



a 4-way valve pipe
b 4-way valve

5. Stop the nitrogen supply when the piping has cooled down.
6. Remove the 4-way valve.

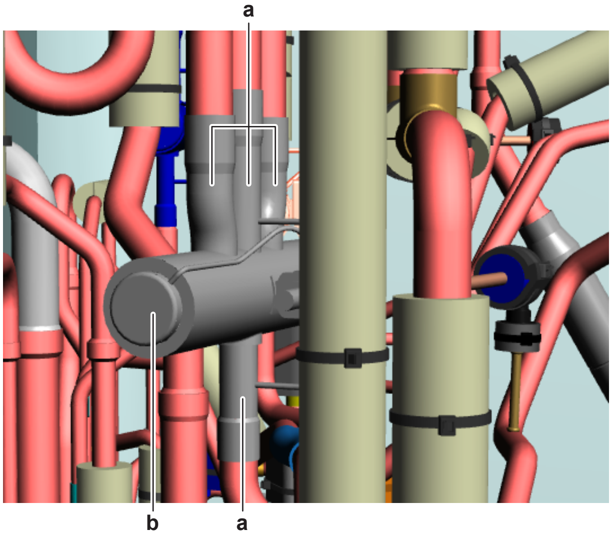
> **INFORMATION**
>
> It is ALSO possible to cut the component pipe(s) using a pipe cutter. Make sure to remove the remaining component pipe end(s) from the refrigerant pipes by heating the brazing point(s) of the component pipe(s) using an oxygen acetylene torch.

7. Install plugs or caps on the open pipe ends of the refrigerant piping to avoid dirt or impurities from entering the piping.
8. To install the 4-way valve body, see "3.1.2 Repair procedures" [▶ 210].

To install the 4-way valve body

1. Remove the plugs or caps from the refrigerant piping and make sure they are clean.
2. Remove the 4-way valve coil from the spare part 4-way valve body.
3. Install the 4-way valve body in the correct location and correctly oriented. Insert the pipe ends in the pipe expansions.
4. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.

5 Wrap a wet rag around the 4-way valve body and any other components near the 4-way valve and solder the 4-way valve pipes to the refrigerant pipes.



a 4-way valve pipe
b 4-way valve

> **CAUTION**
>
> Overheating the valve will damage or destroy it.

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

7 Install the putty (if available) and the insulation (if available) in their original location.

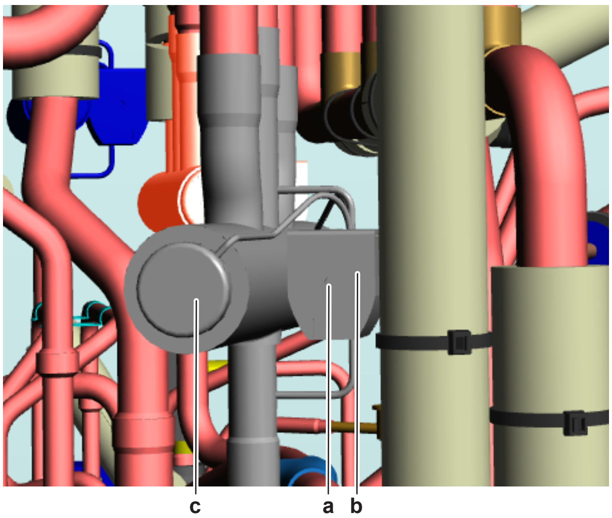
8 Install the 4-way valve coil on the 4-way valve body, see "3.1.2 Repair procedures" [▸ 210].

9 Perform a pressure test, see "4.2.1 Checking procedures" [▸ 359].

10 Add refrigerant to the refrigerant circuit, see "4.2.2 Repair procedures" [▸ 364].

To install the 4-way valve coil

1 Install the 4-way valve coil on the 4-way valve body.



a Screw
b 4-way valve coil

c 4-way valve body

2 Install and tighten the screw to fix the 4-way valve coil.

3 Route the 4-way valve coil harness towards the appropriate PCB.

4 Connect the 4-way valve connector to the appropriate PCB.

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

5 Fix the 4-way valve coil harness using new tie straps.

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

3.2 Branch selector box

3.2.1 Branch selector box capacitor PCB

Checking procedures

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

Repair procedures

To remove the branch selector box capacitor PCB

Prerequisite: Stop the unit operation via the central controller.

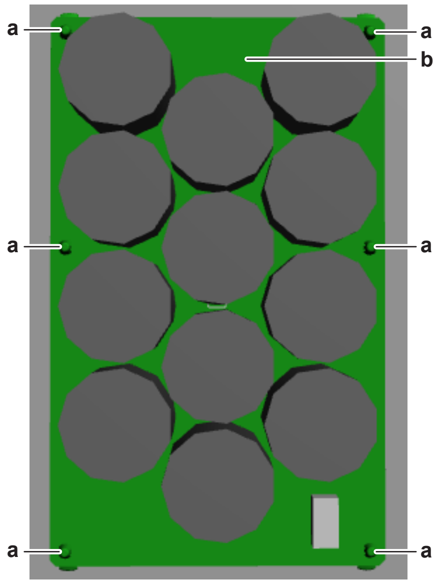
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

Prerequisite: Access the back side of the PCB mounting plate, see "3.13 Plate work" [▸ 309].

1 Disconnect the connector from the branch selector box capacitor PCB.

2 Carefully pull the branch selector box capacitor PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.

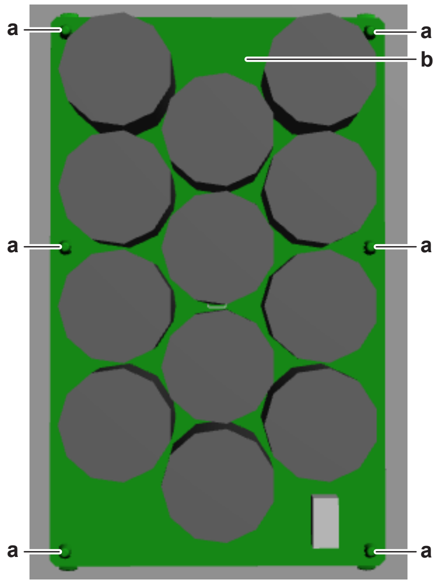


a PCB support
b Branch selector box capacitor PCB

3. Remove the branch selector box capacitor PCB from the branch selector box.
4. To install the branch selector box capacitor PCB, see "Repair procedures" [▸ 213].

To install the branch selector box capacitor PCB

1. Install the branch selector box capacitor PCB on the correct location on the PCB mounting plate.
2. Correctly install the branch selector box capacitor PCB on the PCB supports.



a PCB support
b Branch selector box capacitor PCB

3. Connect the connector to the branch selector box capacitor PCB.

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

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 213] of the branch selector box capacitor PCB and continue with the next procedure.

3.2.2 Branch selector box damper motor

3.2.3 Branch selector box expansion valve

Checking procedures

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

To perform a mechanical check of the expansion valve

Prerequisite: Power OFF the unit for 3 minutes. Then turn ON the unit and listen to the expansion valve assembly. If the expansion valve does NOT make a latching sound, continue with the electrical check of the expansion valve, see "Checking procedures" [▶ 215].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Remove the expansion valve coil from the expansion valve body, see "Repair procedures" [▶ 219].
2. Slide the expansion valve magnet over the expansion valve body and gently rotate the magnet clockwise/counterclockwise to manually close/open the expansion valve.

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

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

Does the expansion valve open?	Action
Yes	Perform an electrical check of the expansion valve, see "Checking procedures" [▶ 215].
No	Replace the Branch selector box, see Installation manual of the Branch selector box.

To perform an electrical check of the expansion valve

Prerequisite: First perform a mechanical check of the expansion valve, see "Checking procedures" [▶ 215].

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

A1P

Expansion valve name	Symbol	Connector	Winding resistance	BS4A	BS6A	BS8A	BS10A	BS12A
Suction gas pipe	Y1E	X21A		✓	✓	✓	✓	✓
HP/LP gas pipe	Y2E	X22A						
Subcool	Y3E	X23A						
Safety gas	Y4E	X33A						
Safety liquid	Y5E	X34A						
Suction gas pipe	Y6E	X24A		✓	✓	✓	✓	✓
HP/LP gas pipe	Y7E	X25A						
Subcool	Y8E	X26A						
Safety gas	Y9E	X35A						
Safety liquid	Y10E	X36A						
Suction gas pipe	Y11E	X27A		✓	✓	✓	✓	✓
HP/LP gas pipe	Y12E	X28A						
Subcool	Y13E	X29A						
Safety gas	Y14E	X37A						
Safety liquid	Y15E	X38A						
Suction gas pipe	Y16E	X30A		✓	✓	✓	✓	✓
HP/LP gas pipe	Y17E	X31A						
Subcool	Y18E	X32A						
Safety gas	Y19E	X39A						
Safety liquid	Y20E	X40A						

A2P

Expansion valve name	Symbol	Connector	Winding resistance	BS4A	BS6A	BS8A	BS10A	BS12A
Suction gas pipe	Y21E	X21A			✓	✓	✓	✓
HP/LP gas pipe	Y22E	X22A						
Subcool	Y23E	X23A						
Safety gas	Y24E	X33A						
Safety liquid	Y25E	X34A						
Suction gas pipe	Y26E	X24A			✓	✓	✓	✓
HP/LP gas pipe	Y27E	X25A						
Subcool	Y28E	X26A						
Safety gas	Y29E	X35A						
Safety liquid	Y30E	X36A						
Suction gas pipe	Y31E	X27A				✓	✓	✓
HP/LP gas pipe	Y32E	X28A						
Subcool	Y33E	X29A						
Safety gas	Y34E	X37A						
Safety liquid	Y35E	X38A						
Suction gas pipe	Y36E	X30A				✓	✓	✓
HP/LP gas pipe	Y37E	X31A						
Subcool	Y38E	X32A						
Safety gas	Y39E	X39A						
Safety liquid	Y40E	X40A						

A3P

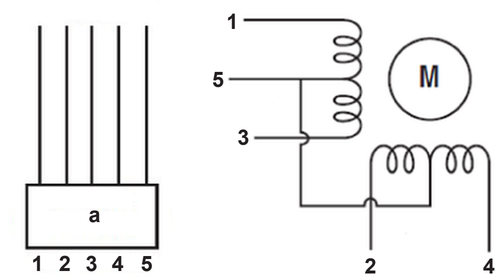
Expansion valve name	Symbol	Connector	Winding resistance	BS4A	BS6A	BS8A	BS10A	BS12A
Suction gas pipe	Y41E	X21A					✓	✓
HP/LP gas pipe	Y42E	X22A						
Subcool	Y43E	X23A						
Safety gas	Y44E	X33A						
Safety liquid	Y45E	X34A						

Expansion valve name	Symbol	Connector	Winding resistance	BS4A	BS6A	BS8A	BS10A	BS12A
Suction gas pipe	Y46E	X24A					✓	✓
HP/LP gas pipe	Y47E	X25A						
Subcool	Y48E	X26A						
Safety gas	Y49E	X35A						
Safety liquid	Y50E	X36A						
Suction gas pipe	Y51E	X27A						✓
HP/LP gas pipe	Y52E	X28A						
Subcool	Y53E	X29A						
Safety gas	Y54E	X37A						
Safety liquid	Y55E	X38A						
Suction gas pipe	Y56E	X30A						✓
HP/LP gas pipe	Y57E	X31A						
Subcool	Y58E	X32A						
Safety gas	Y59E	X39A						
Safety liquid	Y60E	X40A						

INFORMATION

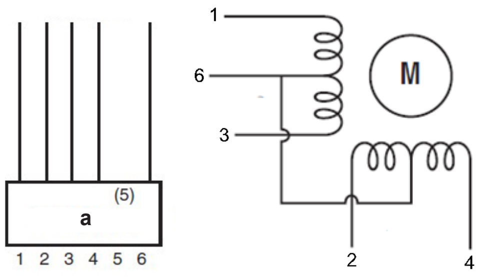
Below are shown examples of the resistance measurements in which the common wire is connected to pin 5 or to pin 6 of the expansion valve coil connector. Connections may differ according to the type of expansion valve.

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



a Connector

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



a Connector

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

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

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

Is the measured resistance correct?	Action
Yes	Perform an operation check of the expansion valve, see "3.6.1 Checking procedures" [▸ 250].
No	Replace the expansion valve coil, "3.6.2 Repair procedures" [▸ 252].

Problem solved?

After all checking procedures listed above have been performed:

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

Repair procedures

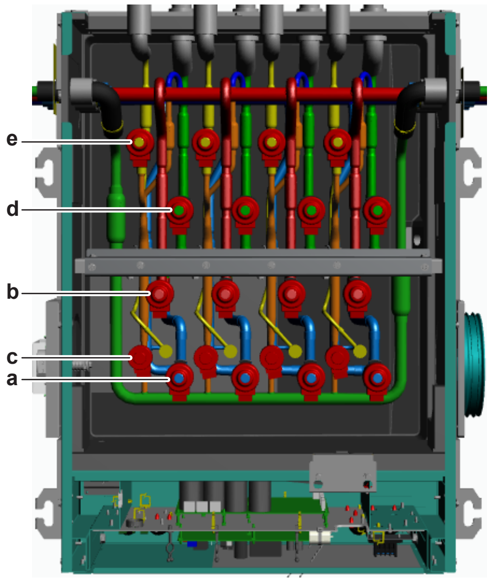
To remove the expansion valve coil

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

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



a Suction gas pipe expansion valve coil
b High pressure/low pressure gas pipe expansion valve coil
c Subcool expansion valve coil
d Safety gas expansion valve coil
e Safety liquid expansion valve coil

2 Pull the expansion valve coil to remove it from the expansion valve body.

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

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

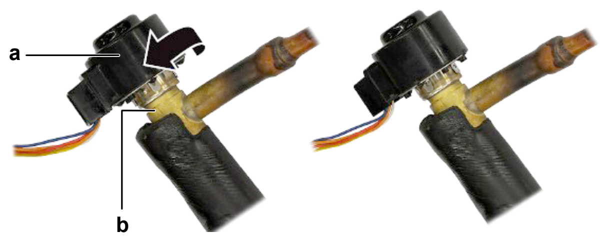
4 Disconnect the expansion valve coil connector from the appropriate PCB. See "To perform an electrical check of the expansion valve" [▶ 215] for an overview of the expansion valve connectors and their locations.

5 To install the expansion valve coil, see "Repair procedures" [▶ 219].

To install the expansion valve coil

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

> **INFORMATION**
>
> Turn the expansion valve coil 1/8 turn clockwise to lock it on the expansion valve body.



a Expansion valve coil
b Pipe

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

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

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

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

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

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 215] of the expansion valve and continue with the next procedure.

3.2.4 Branch selector box limit switch

3.2.5 Branch selector box main PCB

Checking procedures

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

To perform a power check of the branch selector box main PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Turn ON the power of the branch selector box.

2 Measure the voltage on connector X1A of the branch selector box main PCB.

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

Does the Branch selector box main PCB receive power?	Action
Yes	Return to "Checking procedures" [▶ 221] of the branch selector box main PCB and continue with the next procedure.
No	Continue with the next step.

3 Check the power supply to the branch selector box, see "4.1.1 Checking procedures" [▶ 350].

Does the branch selector box receive power?	Action
Yes	Correct the wiring from the main power supply terminal to the branch selector box main PCB, see "4.1.2 Repair procedures" [▶ 357].

Does the branch selector box receive power?	Action
No	Adjust the power supply to the branch selector box, see "4.1.2 Repair procedures" [▸ 357].

To check the HAP LED of the branch selector box main PCB

Prerequisite: First perform a power check of the branch selector box main PCB, see "Checking procedures" [▸ 221].

1 Locate the HAP LED on the branch selector box main PCB.

Does the HAP LED blink in regular intervals (approximately 1 Hz)?	Action
Yes	Return to "Checking procedures" [▸ 221] of the branch selector box main PCB and continue with the next procedure.
No	Replace the branch selector box main PCB, see "Repair procedures" [▸ 223].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the branch selector box main PCB, see "Checking procedures" [▸ 221].

1 Visit your local spare parts webbank.

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

Is the correct spare part for the branch selector box main PCB installed?	Action
Yes	Return to "Checking procedures" [▸ 221] of the branch selector box main PCB and continue with the next procedure.
No	Replace the branch selector box main PCB, see "Repair procedures" [▸ 223].

To check the wiring of the branch selector box main PCB

Prerequisite: First perform all earlier checks of the branch selector box main PCB, see "Checking procedures" [▸ 221].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Check that all wires are properly connected and that all connectors are fully plugged-in.

2 Check that no connectors or wires are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▸ 376].

> **INFORMATION**
>
> Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 221] of the branch selector box main PCB and continue with the next procedure.

To check the fuse of the branch selector box main PCB

Prerequisite: First perform all earlier checks of the branch selector box main PCB, see "Checking procedures" [▶ 221].

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

Blown fuse on the branch selector box main PCB?	Action
Yes	Replace the blown fuse, see "3.17.2 Repair procedures" [▶ 341].
No	Return to "3.17.1 Checking procedures" [▶ 338] of the branch selector box main PCB and continue with the next procedure.

To check the DIP switches of the branch selector box main PCB

1 To check the correct position of the DIP switches, refer to the Installation manual. Correct as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 221] of the branch selector box main PCB and continue with the next procedure.

Problem solved?

After all checking procedures listed above have been performed:

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

Repair procedures

To remove the branch selector box main PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Disconnect all connectors from the branch selector box main PCB.

2 Remove the bridged connector X15A. Keep for reuse.

3 Remove the screw and disconnect the ground wire from the branch selector box.

4. Carefully pull the branch selector box main PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.
5. Remove the branch selector box main PCB from the branch selector box.
6. To install the branch selector box main PCB, see "Repair procedures" [▸ 223].

To install the branch selector box main PCB

> **INFORMATION**
>
> When replacing the branch selector box main PCB, R32 leak detection sensor PCB ALSO MUST be replaced. See "Repair procedures" [▸ 228] and replace R32 leak detection sensor.

1. Install the branch selector box main PCB on the correct location in the branch selector box.
2. Correctly install the branch selector box main PCB on the PCB supports.
3. Connect the ground wire to the branch selector box. Install and tighten the screw to fix the ground wire.
4. Install the bridged connector X15A.
5. Connect all connectors to the branch selector box main PCB.

> **INFORMATION**
>
> Use the wiring diagram and connection diagram for correct installation of the connectors, see "6.2 Wiring diagram" [▸ 376].

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

6. Check DIP switches and adjust as required, see "Checking procedures" [▸ 221].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▸ 221] of the branch selector box main PCB and continue with the next procedure.

To remove a fuse of the branch selector box main PCB

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

1. Remove the fuse from the PCB.
2. To install a fuse on the branch selector box main PCB, see "Repair procedures" [▸ 223].

To install a fuse on the branch selector box main PCB

> **WARNING**
>
> For continued protection against risk of fire, replace ONLY with same type and rating of fuse.

1. Install the fuse on the correct location on the PCB.

> **CAUTION**
>
> Make sure the fuse is plugged-in correctly (contact with the fuse holder).

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 221] of the branch selector box main PCB and continue with the next procedure.

3.2.6 Branch selector box power back-up PCB

Checking procedures

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

Repair procedures

To remove the branch selector box power back-up PCB

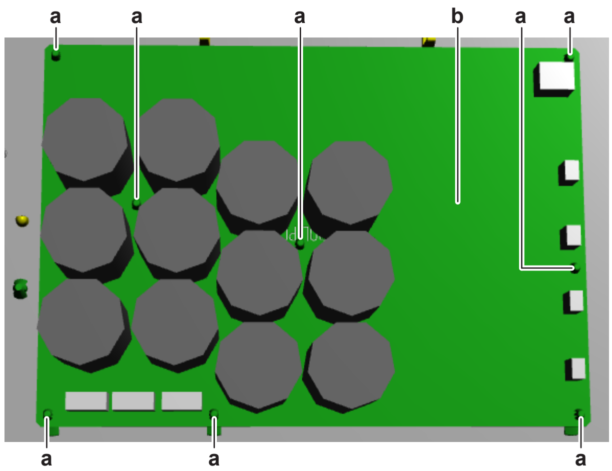
Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

Prerequisite: Access the back side of the PCB mounting plate, see "3.13 Plate work" [▶ 309].

1. Disconnect ALL connectors from the branch selector box power back-up PCB.
2. Carefully pull the branch selector box power back-up PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.

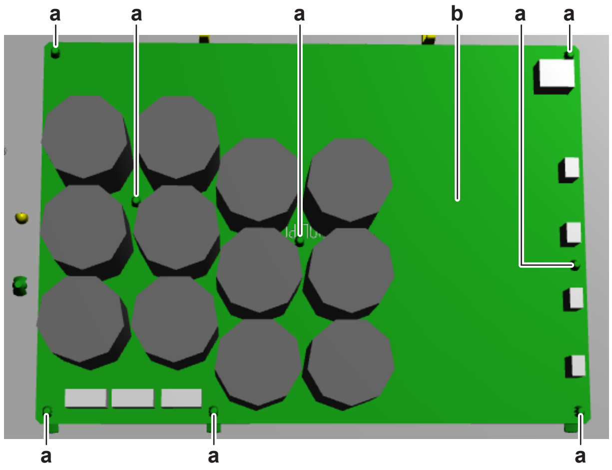


a PCB support
b Branch selector box power back-up PCB

3. Remove the branch selector box power back-up PCB from the branch selector box.
4. To install the branch selector box power back-up PCB, see "Repair procedures" [▶ 225].

To install the branch selector box power back-up PCB

1. Install the branch selector box power back-up PCB on the correct location on the PCB mounting plate.
2. Correctly install the branch selector box power back-up PCB on the PCB supports.



a PCB support
b Branch selector box power back-up PCB

3. Connect ALL connectors to the branch selector box power back-up PCB.

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

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 225] of the branch selector box power back-up PCB and continue with the next procedure.

3.2.7 Branch selector box sub PCB

The branch selector boxes have the following sub PCB's:

- BS6~8A units: A2P.
- BS10~12A units: A2P and A3P.

These sub PCB's are identical to the branch selector box main PCB.

Perform as described in the check and repair procedures of the branch selector box main PCB (see "3.2.5 Branch selector box main PCB" [▶ 221]) and apply to the appropriate sub PCB.

3.2.8 R32 leak detection sensor

Checking procedures

To perform an electrical check of the R32 leak detection sensor

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

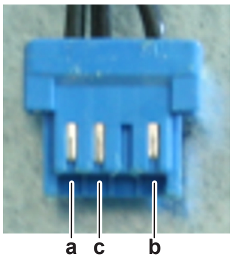
1 Remove the required plate work, see "3.13 Plate work" [▶ 309].

> **DANGER: RISK OF ELECTROCUTION**
>
> Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

2 Disconnect the R32 leak detection sensor connector X19A from the branch selector box main PCB.

> **INFORMATION**
>
> Make sure that the wiring between the sensor connector and the connector on the PCB is properly connected and NOT damaged (check continuity), see "6.2 Wiring diagram" [▶ 376].

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



- **a** Measuring point
- **b** Measuring point
- **c** Measuring point

VDC	COM	REF	VDC	COM	REF
a	b	1.269~1.551 V	b	a	0.414~0.506 V
a	c	OL	c	a	OL
b	c	1.053~1.287 V	c	b	OL

Measured values are correct?	Action
Yes	Continue with the next step.
No	Replace the R32 leak detection sensor, see "Repair procedures" [▶ 228].

4 Connect the R32 leak detection sensor connector to the branch selector box main PCB.

5 Turn ON the power using the respective circuit breaker.

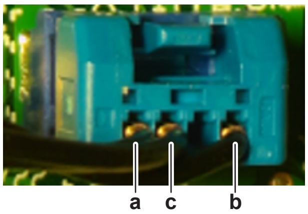
6 Start the unit operation via the central controller.

7 Activate Cooling operation via the user interface.

8 Wait until the unit is operating properly and make sure NO R32 leak is present.

9 Measure the voltage between N wire and power supply wire on connector X19A on the branch selector box main PCB.

Result: The measured voltage MUST be 5 V DC.



a Power supply
b N
c R32 leak detection

Is the measured voltage correct?	Action
Yes	Continue with the next step.
No	Perform a check of the branch selector box PCB, see "Checking procedures" [▶ 221].

10 Measure the voltage between N wire and R32 leak detection wire on connector X19A on the branch selector box main PCB.

Result: The measured voltage MUST be 0.5~4.5 V DC.

Does the leak detection sensor function correctly?	Action
Yes	Return to troubleshooting of the specific error code and continue with the next procedure.
No	Replace the leak detection sensor, see "Repair procedures" [▶ 228].

Repair procedures

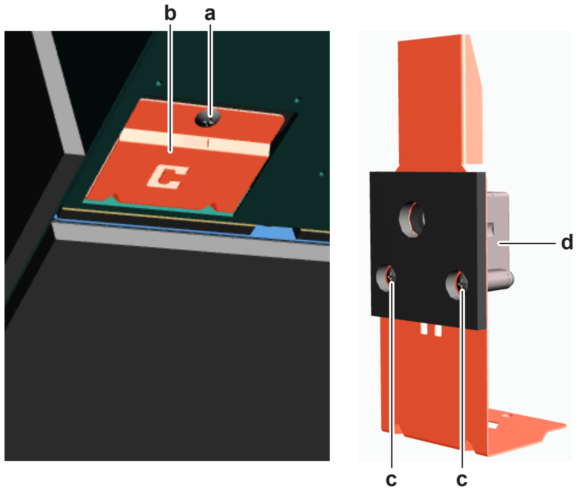
To remove the R32 leak detection sensor

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Disconnect the R32 leak detection sensor connector.
2. Cut all tie straps that fix the R32 leak detection sensor wiring harness.
3. Route the R32 leak detection sensor wiring harness out of the switch box and out of the harness retainers.
4. At the bottom of the branch selector box, remove the screw and pull the R32 leak detection sensor assembly out of the branch selector box.

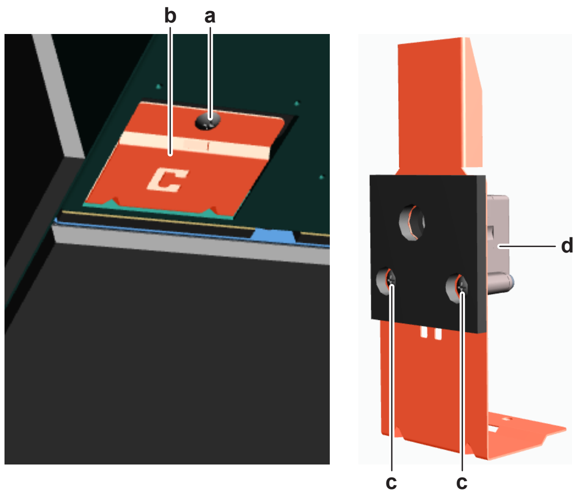


- **a** Screw
- **b** R32 leak detection sensor assy
- **c** Screw (R32 leak detection sensor)
- **d** R32 leak detection sensor

5. Remove the 2 screws from the R32 leak detection sensor.
6. Remove the R32 leak detection sensor from its mounting bracket.
7. To install the R32 leak detection sensor, see "Repair procedures" [▶ 228].

To install the R32 leak detection sensor

1. Install the R32 leak detection sensor in the correct location on mounting bracket.
2. Install and tighten the 2 screws to fix the R32 leak detection sensor.



- **a** Screw
- **b** R32 leak detection sensor assy
- **c** Screw (R32 leak detection sensor)
- **d** R32 leak detection sensor

3. While guiding the R32 leak detection sensor wiring harness, install the R32 leak detection sensor assembly in the correct location on the branch selector box.
4. Install and tighten the screw to fix the R32 leak detection sensor assembly.
5. Route the R32 leak detection sensor wiring harness through the appropriate harness retainers, inside the switch box.
6. Connect the R32 leak detection sensor connector.
7. Install new tie straps to fix the wiring harness.

> **INFORMATION**
>
> Replace all cable ties that were cut during removal.

> **INFORMATION**
>
> Upon power supply to the branch selector box, set the field setting 2-5 = 1 to reset the timer of the R32 leak detection sensor.

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

3.3 Compressor

3.3.1 Checking procedures

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

To perform an auditive check of the compressor

Prerequisite: First perform a power transistor check of the inverter PCB, see "3.8 Inverter PCB" [▶ 269]. If power transistor is OK, proceed as follows:

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Open the compressor insulation.
2. Turn ON the power using the respective circuit breaker.
3. Start the unit operation via the central controller.
4. Wait for - or create condition to operate the compressor.
5. Listen to the compressor when it tries to operate. Judge if a mechanical lock is present.

> **INFORMATION**
>
> If you have a multimeter with data logging functionality, record the current in 1 of the U-V-W wires at compressor start-up. If mechanical lock is present, logged current will drastically increase to a peak value and the unit will trigger an error.

> **INFORMATION**
>
> If a mechanical lock is present, also check and eliminate the root cause. Mechanical lock is most likely caused by lack of lubrication (which might be related to overheat or wet operation), failing crankcase heater (if available), impurities in the refrigerant, ...

A mechanical lock is present on the compressor?	Action
Yes	Replace the compressor, see "3.3.2 Repair procedures" [▸ 236].
No	Perform an mechanical check of the compressor, see "3.3.1 Checking procedures" [▸ 230].

To perform a mechanical check of the compressor

INFORMATION

For outdoor units 5~12 HP, the transportation stay for the compressor should be removed. Otherwise vibration is not absorbed, which can lead to pipe crack. See "3.3.2 Repair procedures" [▸ 236].

Prerequisite: First perform an auditive check of the compressor, see "3.3.1 Checking procedures" [▸ 230].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Before proceeding:

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

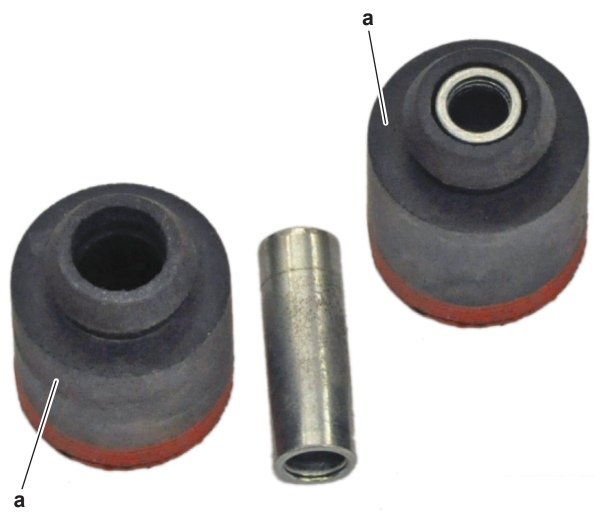
2 Visually check:

- For oil drops around the compressor. Locate and fix as needed.
- Pipes for signs of damage. Replace pipes as needed.

3 Check that the compressor bolts are correctly fixed. Fix as needed.

4 Check that the compressor wire terminals cover is correctly installed and fixed. Correct as needed.

5 Check the compressor dampers for any damage.



a Damper

> **INFORMATION**
>
> The compressor dampers may look different.

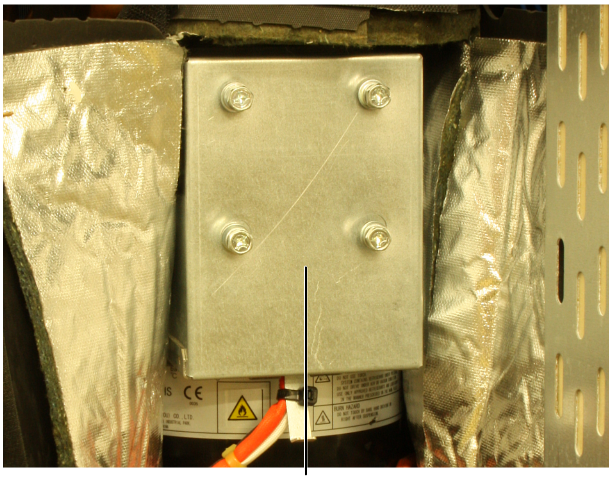
Compressor dampers are in a good condition?	Action
Yes	Perform an electrical check of the compressor, see "3.3.1 Checking procedures" [▶ 230].
No	Replace the compressor and/or damaged dampers, see "3.3.2 Repair procedures" [▶ 236].

To perform an electrical check of the compressor

1 First perform a mechanical check of the compressor, see "3.3.1 Checking procedures" [▶ 230].

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2 Remove the cover of the compressor wire terminals.



a

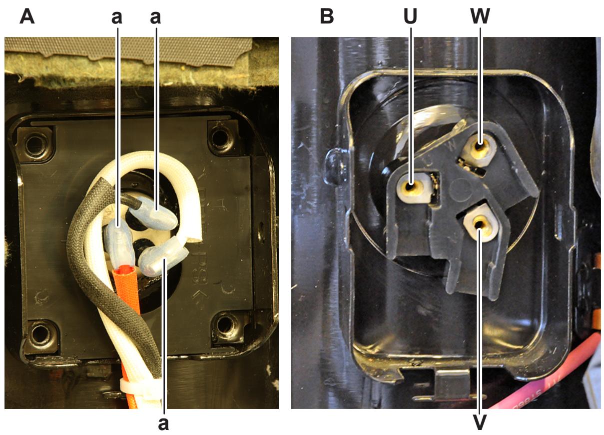
a Compressor wire terminals cover

3 For REMA5 and REYA8~12 units: Disconnect the Faston connectors from the compressor wire terminals U, V and W.

4 For REYA14~20 units:

- Loosen and remove the 3 bolts that fix the compressor wiring.
- Remove the wiring from the compressor wire terminals U, V and W.
- Carefully straighten the terminal lugs.
- Remove the black wire guide.

> **INFORMATION**
>
> Note the position of the wiring on the compressor wire terminals to allow correct connection during installation.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Faston connection
U U
V V
W W

> **CAUTION**
>
> Before measuring the compressor motor windings resistance, measure the resistance of the multimeter probes by holding the probes against each other. If the measured resistance is NOT 0 Ω, this value MUST be subtracted from the measured winding resistance.

5 Measure the resistance between the compressor motor windings U-V, V-W and U-W.

Result: All measurements MUST be approximately the same.

Unit	Winding resistance value (at temperature of 20°C)
REMA5 + REYA8~12	0.299 Ω±5%
REYA14~20	0.168 Ω±5%

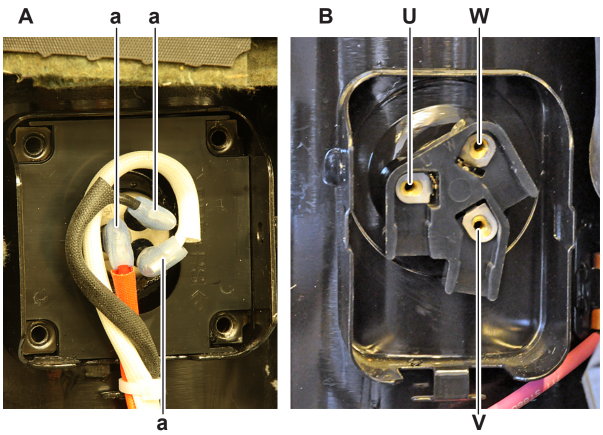
Compressor motor winding measurements are correct?	Action
Yes	Continue with the next step.
No	Replace the compressor, see "3.3.2 Repair procedures" [▶ 236].

6 Measure the continuity of the U, V and W wires between the compressor and the PCB. If no continuity, correct as needed, see "6.2 Wiring diagram" [▶ 376].

7 For REMA5 and REYA8~12 units: Connect the Faston connectors to the compressor wire terminals U, V and W

8 For REYA14~20 units:

- Install the black wire guide over the terminal lugs.
- Bend the terminal lugs against the black wire guide.
- Align the wiring with the compressor wire terminals U, V and W.
- Insert and fix the 3 bolts that fix the compressor wiring.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Faston connection
U U
V V
W W

9 Install the compressor wire terminals cover.

10 Install the compressor insulation.

11 Turn ON the power using the respective circuit breaker.

12 Start the unit operation via the central controller.

> **CAUTION**
>
> NEVER operate the compressor with the compressor wire terminals cover removed.

13 Wait for – or create condition to operate the compressor.

14 Once the compressor operates, measure the U-V-W inverter voltages. ALWAYS measure at the PCB side.

Result: All measurements MUST be the same.

Inverter voltage measurements are correct?	Action
Yes	Continue with the next step.
No	Perform a check of the appropriate PCB, see "3 Components" [▶ 205].

15 While compressor is operating, measure the current in each phase U, V and W. ALWAYS measure at the PCB side.

Result: All measurements MUST be the same.

Compressor motor winding current measurements are correct?	Action
Yes	Perform an insulation check of the compressor, see "3.3.1 Checking procedures" [▶ 230].
No	Preventively replace the compressor, see "3.3.2 Repair procedures" [▶ 236].

To perform an insulation check of the compressor

Prerequisite: First perform an electrical check of the compressor, see "3.3.1 Checking procedures" [▶ 230].

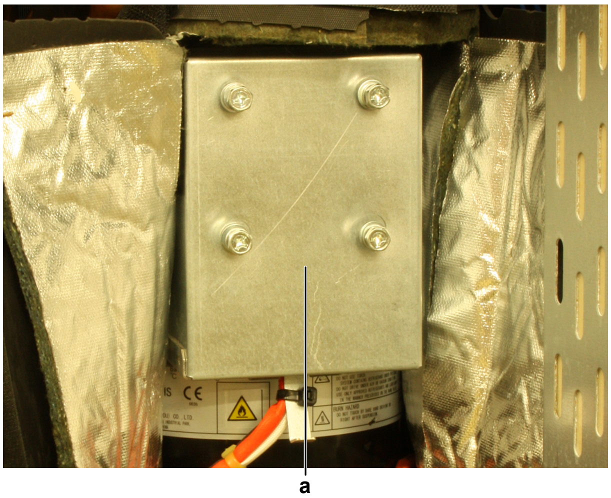
Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Before proceeding:

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

2 Remove the cover of the compressor wire terminals.



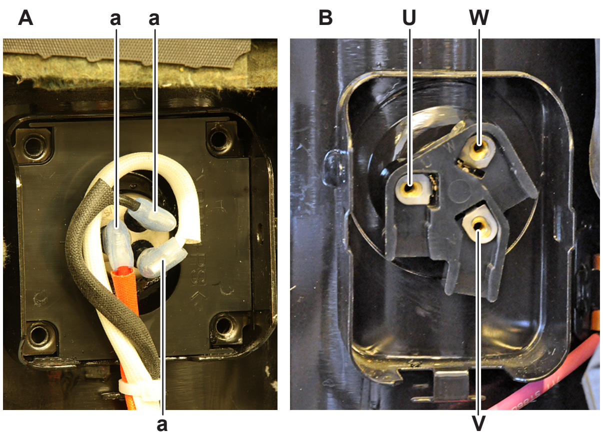
a Compressor wire terminals cover

3 For REMA5 and REYA8~12 units: Disconnect the Faston connectors from the compressor wire terminals U, V and W.

4 For REYA14~20 units:

- Loosen and remove the 3 bolts that fix the compressor wiring.
- Remove the wiring from the compressor wire terminals U, V and W.
- Carefully straighten the terminal lugs.
- Remove the black wire guide.

> **INFORMATION**
>
> Note the position of the wiring on the compressor wire terminals to allow correct connection during installation.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Faston connection
U U

V	V
W	W

5. Set the Megger voltage to 500 V DC or 1000 V DC.
6. Measure the insulation resistance between the following terminals. The measured insulation resistance MUST be >3 MΩ.
   - U–ground,
   - V–ground,
   - W–ground.

Compressor insulation measurements are correct?	Action
Yes	Compressor is OK. Return to troubleshooting of the specific error and continue with the next procedure.
No	Replace the compressor, see "3.3.2 Repair procedures" [▶ 236].

3.3.2 Repair procedures

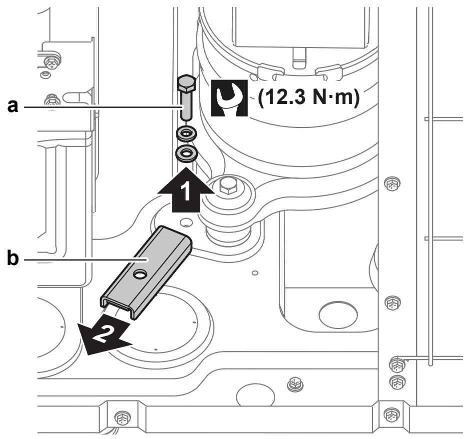
To remove the transportation stay (only for 5~12 HP)

NOTICE

If the unit is operated with the transportation stay attached, abnormal vibration or noise may be generated.

The transportation stay for protecting the unit during transport must be removed. Proceed as shown in the figure and procedure below.

1. Remove the bolt (a) and washers.
2. Remove the transportation stay (b) as shown in the figure below.



a Bolt
b Transportation stay

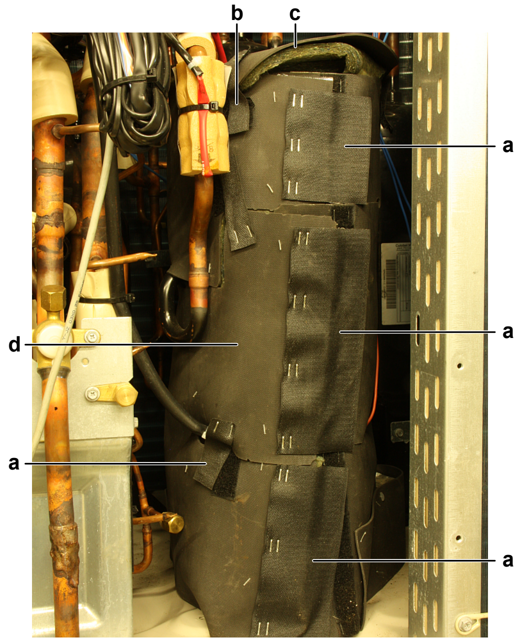
To remove the compressor insulation

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Detach all the strips.



a Strip
b Top jacket strip
c Top jacket
d Body jacket

2. Detach the strip of the top jacket.
3. Remove the top jacket.
4. Remove the body jacket from the compressor.
5. To install the compressor insulation, see "3.3.2 Repair procedures" [▶ 236].

To remove the compressor

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

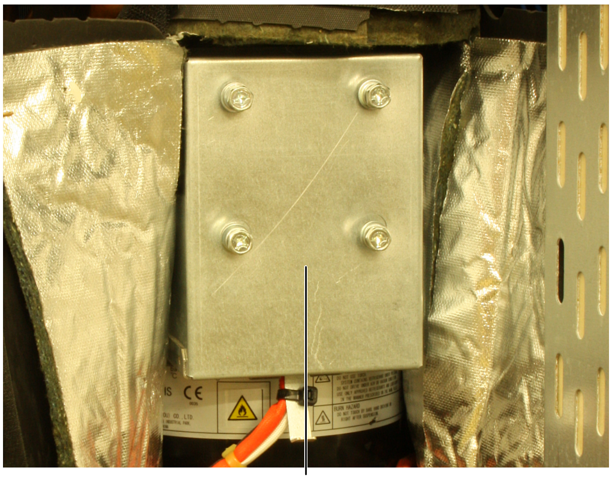
Prerequisite: Remove the compressor insulation.

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

1. If needed, remove any parts to create more space for the removal of the compressor.

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2. Remove the cover of the compressor wire terminals.



a Compressor wire terminals cover

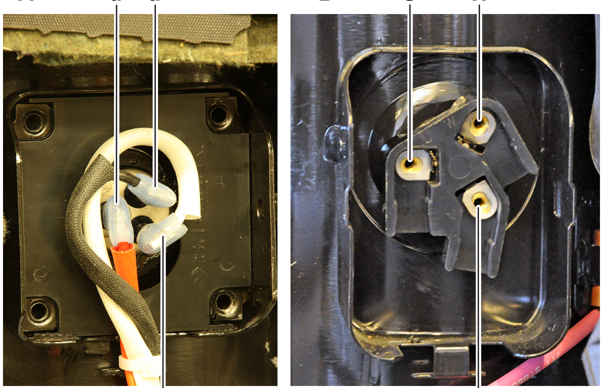
3 For REMA5 and REYA8~12 units: Disconnect the Faston connectors from the compressor wire terminals U, V and W.

4 For REYA14~20 units:

- Loosen and remove the 3 bolts that fix the compressor wiring.
- Remove the wiring from the compressor wire terminals U, V and W.
- Carefully straighten the terminal lugs.
- Remove the black wire guide.

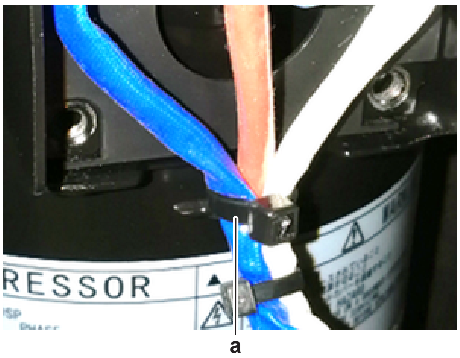
INFORMATION

Note the position of the wiring on the compressor wire terminals to allow correct connection during installation.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Faston connection
U U
V V
W W

5 Cut the tie strap and remove the compressor wiring from the compressor body.



a Tie strap

6 If applicable, remove the screw and disconnect the ground wire from the compressor.

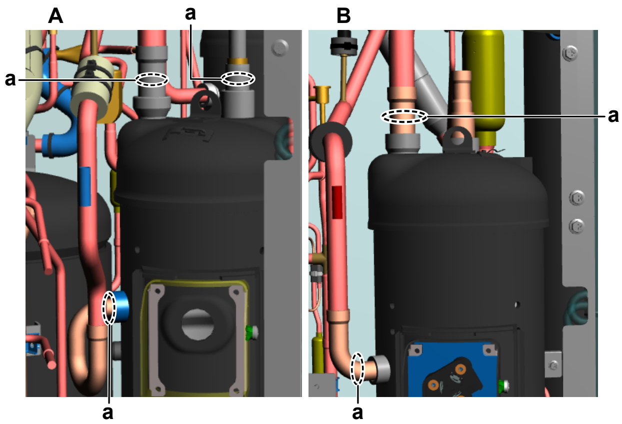
7 Remove the crankcase heater, see "To remove the crankcase heater" [▸ 246].

8 Remove the following thermistors from their holder:

- Suction thermistor
- Discharge pipe thermistor
- Compressor body thermistor (if applicable)

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

10 Wrap a wet rag around the components near the compressor pipes. Heat the brazing points of the compressor pipes using an oxygen acetylene torch and remove the refrigerant pipes from the compressor pipes using pliers.

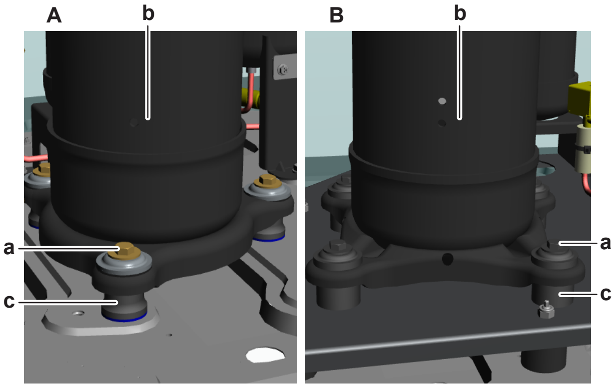


A REMA5 + REYA8~12 units
B REYA14~20 units
a Compressor pipe

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

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

12 Remove the nuts and bolts and remove the compressor from the unit.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Nut
b Compressor
c Damper

13 For REMA5 and REYA8~12 units: Remove the 3 dampers from the compressor.

14 For REYA14~20 units: Remove the 4 dampers from the compressor.

> **INFORMATION**
>
> The compressor dampers may look different.

15 Remove the bushings and keep them for re-use.

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

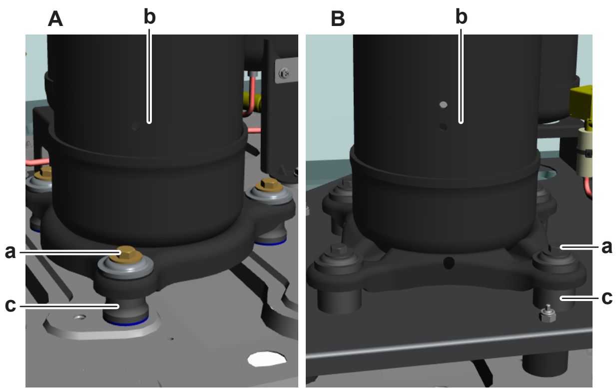
17 To install the compressor, see "3.3.2 Repair procedures" [▶ 236].

To install the compressor

1. Check the state of the dampers. Replace if worn.
2. For REMA5 and REYA8~12 units: Install the 3 dampers in the correct location on the unit.
3. For REYA14~20 units: Install the 4 dampers in the correct location on the unit.
4. Remove the plugs or caps from the refrigerant piping and make sure they are clean.
5. Remove the caps from the compressor pipes (of the new compressor).

> **CAUTION**
>
> The oil in the compressor is hygroscopic. Therefore remove the caps from the compressor pipes as late as possible.

6. Install the compressor on the correct location on the dampers. Properly insert the refrigerant pipes in the pipe expansions of the compressor pipes.
7. Install and tighten the bolts and nuts to fix the compressor to the dampers.

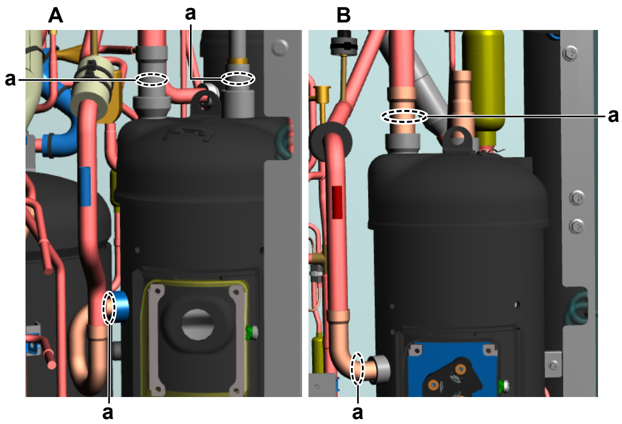


A REMA5 + REYA8~12 units
B REYA14~20 units
a Nut
b Compressor
c Damper

> **INFORMATION**
>
> The compressor dampers may look different.

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

9 Wrap a wet rag around the compressor pipes and any other components near the compressor and solder the compressor pipes to the refrigerant pipes.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Compressor pipe

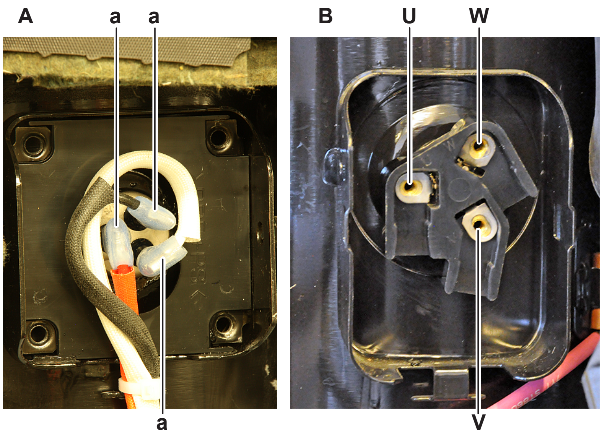
> **CAUTION**
>
> Overheating the compressor pipes (and the oil inside the compressor pipes) will damage or destroy the compressor.

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

11 For REMA5 and REYA8~12 units: Connect the Faston connectors to the compressor wire terminals U, V and W

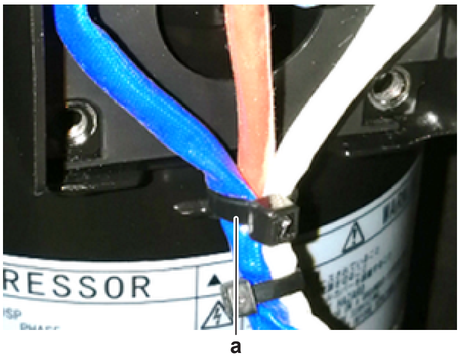
12 For REYA14~20 units:

- Install the black wire guide over the terminal lugs.
- Bend the terminal lugs against the black wire guide.
- Align the wiring with the compressor wire terminals U, V and W.
- Insert and fix the 3 bolts that fix the compressor wiring.



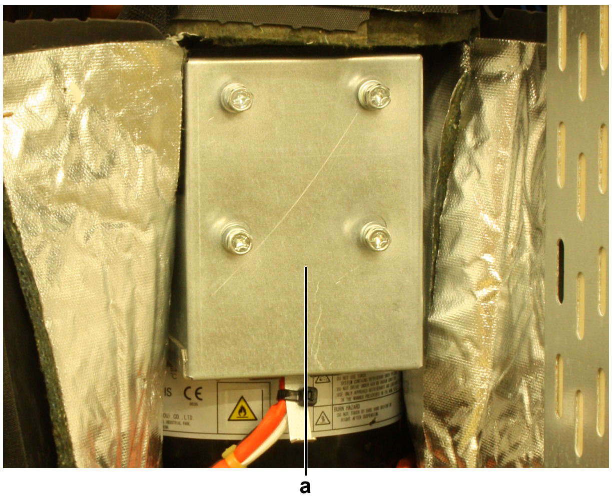
A REMA5 + REYA8~12 units
B REYA14~20 units
a Faston connection
U U
V V
W W

13 Fix the compressor wiring to the protrusion on the compressor body using a new tie strap.



a Tie strap

14 Install the cover of the compressor wire terminals.



a Compressor wire terminals cover

15 If applicable, connect the ground wire to the compressor. Install and tighten the screw to fix the ground wire.

16 Install the crankcase heater, see "To install the crankcase heater" [▶ 246]

17 Install the following thermistors in their holder:

- Suction thermistor
- Discharge pipe thermistor
- Compressor body thermistor (if applicable)

18 Install the compressor insulation, see "3.3.2 Repair procedures" [▶ 236].

19 Perform a pressure test, see "4.2.1 Checking procedures" [▶ 359].

20 Add refrigerant to the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

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

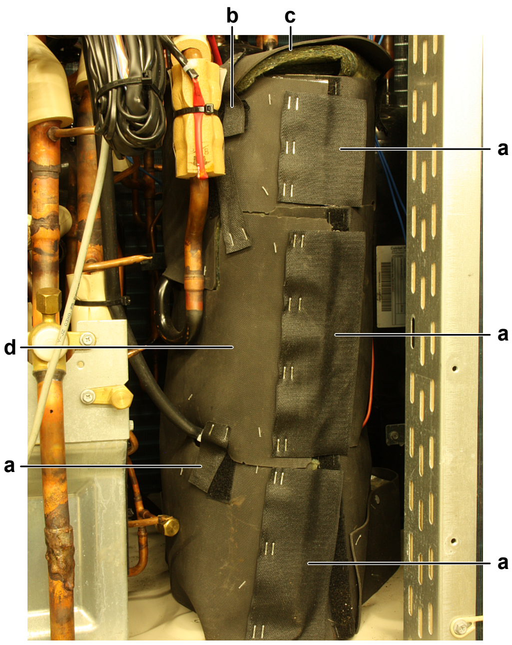
To install the compressor insulation

1 Install the body jacket on the compressor.

2 Route the compressor wiring, crankcase heater wiring and compressor body thermistor wiring through the appropriate openings in the compressor body jacket.

3 Install the top jacket.

4 Attach the strip to the top jacket.



a Strip
b Top jacket strip
c Top jacket
d Body jacket

5 Attach all the strips.

3.4 Crankcase heater

3.4.1 Checking procedures

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

To perform an electrical check of the crankcase heater

Prerequisite: Stop the unit operation via the central controller.

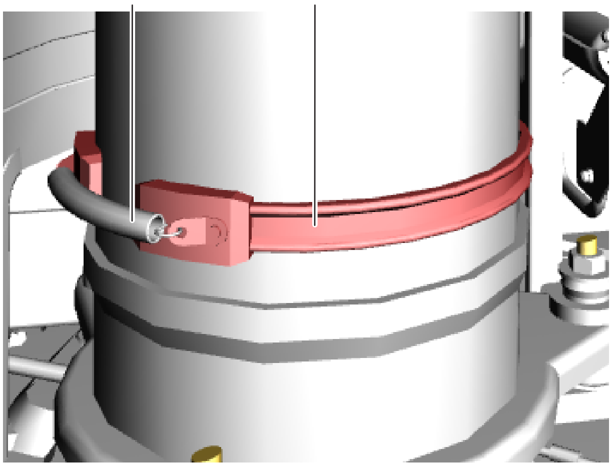
Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▸ 309].

> **DANGER: RISK OF ELECTROCUTION**
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

2 Open the compressor insulation.

3 Detach the spring that fixes the crankcase heater on the compressor.



a Spring
b Crankcase heater

4 Remove the crankcase heater from the compressor and wait for 5 minutes (until the heater element reaches ambient temperature).

5 Disconnect the crankcase heater connector from the appropriate PCB.

6 Measure the resistance on the crankcase heater connector.

Result: The resistance MUST be 1.8 kΩ±10%.

Is the measured resistance correct?	Action
Yes	Continue with the next step.
No	Replace the crankcase heater, see "3.4.2 Repair procedures" [▸ 246].

> **CAUTION**
> If the crankcase heater is found short-circuit, do NOT connect its connector to the PCB. When the crankcase heater gets energized, it will damage the PCB.

7 Connect the crankcase heater connector to the appropriate PCB and install the crankcase heater on the compressor.

8 Turn ON the power using the respective circuit breaker.

9 Start the unit operation via the central controller.

INFORMATION

Verify that the read-out of the outdoor air thermistor, discharge thermistor and compressor body thermistor (if available) is correct.

- Measure the outdoor temperature. Use a contact thermometer to measure the other thermistor temperatures.
- Compare with the read-out via the service monitoring tool or field settings.

10 With the crankcase heater energised (compressor OFF and discharge temperature <70°C), measure the voltage on the crankcase heater connector on the PCB.

Result: The measured voltage MUST be 230 V AC.

INFORMATION

The compressor body temperature MUST raise at least 5°C before the crankcase heater is deactivated.

Is the measured voltage correct?	Action
Yes	Perform an insulation check of the crankcase heater, see "3.4.1 Checking procedures" [▸ 244].
No	Perform a check of the main PCB, see "3.9 Main PCB" [▸ 280].

To perform an insulation check of the crankcase heater

Prerequisite: First perform an electrical check of the crankcase heater, see "3.4.1 Checking procedures" [▸ 244].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Before proceeding:

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

2 Disconnect the crankcase heater connector from the appropriate PCB.

3 Set the Megger voltage to at least 500 V DC.

4 Connect the Megger ground test lead directly to the crankcase heater ground wire.

CAUTION

Do NOT connect the Megger ground test lead to any other ground wire.

5 Measure the insulation resistance between the phase and ground wire. The measured insulation resistance MUST be >1 MΩ.

Is the measured insulation resistance correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the crankcase heater, see "3.4.2 Repair procedures" [▸ 246].

3.4.2 Repair procedures

To remove the crankcase heater

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

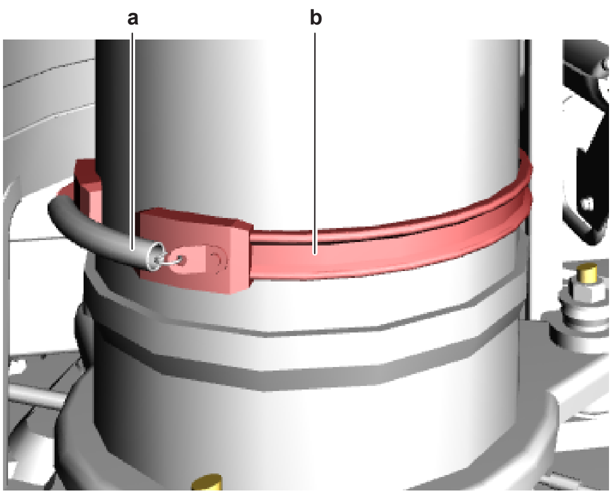
1 Remove the required plate work, see "3.13 Plate work" [▸ 309].

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

2 Open the compressor insulation.

3 Detach the spring that fixes the crankcase heater on the compressor.



a Spring
b Crankcase heater

4 Cut all tie straps that fix the crankcase heater harness.

5 Disconnect the crankcase heater connector from the appropriate PCB.

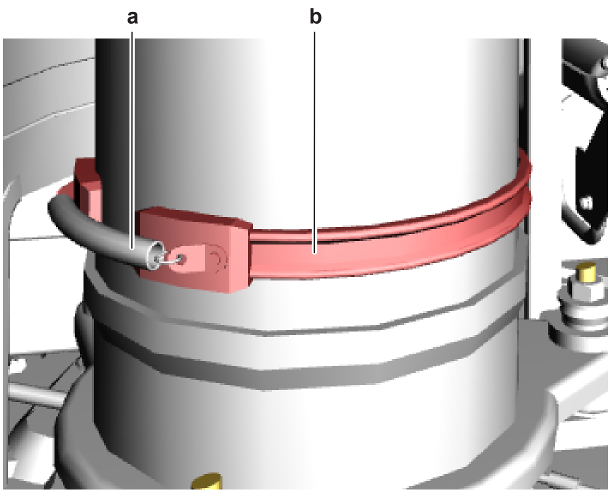
6 Remove the crankcase heater from the unit.

7 To install the crankcase heater, see "3.4.2 Repair procedures" [▸ 246].

To install the crankcase heater

1 Install the crankcase heater on the compressor.

2 Attach the spring to fix the crankcase heater.



a Spring
b Crankcase heater

3 Route the crankcase heater harness towards the switch box.

4 Connect the crankcase heater connector to the appropriate PCB and install the crankcase heater on the compressor.

WARNING

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

5 Fix the crankcase heater harness using new tie straps.

INFORMATION

Replace all cable ties that were cut during removal.

6 Install the compressor insulation.

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

3.5 Current sensor

3.5.1 Checking procedures

To perform an electrical check of the current sensor

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▶ 309].

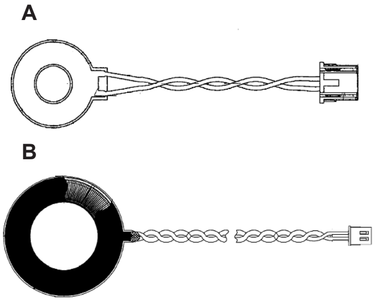
DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2 Visually check the current sensor for any damage or burnt-out components. If any damage is found, replace the current sensor, see "3.5.2 Repair procedures" [▶ 248].

3 Locate the current sensor connector on the main PCB, see "6.2 Wiring diagram" [▶ 376].

Unit	Location (PCB)	Connector	Type
REMA5 + REYA8~12	A1P	X101A	1
REYA14~20	A1P	X101A	2



A Type 1
B Type 2

4 Check the wiring from connector X101A to the current sensor.

5 Disconnect the current sensor connector from the connector X101A on the main PCB and measure the resistance between the pins of the current sensor connector.

Result: The measured resistance MUST be:

Type	Resistance
1	40.5~49.5 Ω
2	57.6~70.4 Ω

6 Set the Megger voltage to at least 500 V DC.

7 Measure the insulation resistance between the phase and ground.

Result: The measured insulation resistance MUST be >1000 MΩ.

Are the measurements correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the current sensor, see "3.5.2 Repair procedures" [▶ 248].

3.5.2 Repair procedures

To remove the current sensor

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▶ 309].

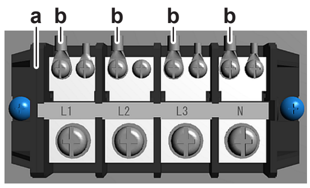
DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2 Disconnect the current sensor connector from the appropriate PCB.

3 Remove the current sensor wiring harness from the tie wraps.

4 Loosen the screw connections to disconnect ALL power wiring (going through the current sensor) from the power supply wiring terminal.



a Power supply wiring terminal
b Power wiring going through current sensor

5 Slide the current sensor on the power wiring and remove the current sensor.

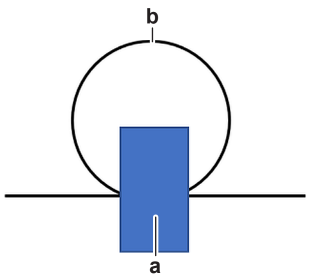
6 To install the current sensor, see "3.5.2 Repair procedures" [▶ 248].

To install the current sensor

1 Slide the current sensor on the power wiring and install the current sensor in place.

2 Loop count for current sensor N=1. Make the loop with the appropriate wiring:

Unit	Power wire
REMA5 + REYA8~12	X1M (L1, L2, L3) to A2P (L1A, L2A, L3A) + X1M (L1, N) to A1P
REYA14~20	X1M (L1, L2, L3, N) to A2P (L1A, L2A, L3A, N) + X1M (L1, N) to A1P



a Current sensor
b Power wiring (loop once through current sensor)

3 Install the power wiring in the connections and tighten the screws. Pay attention to phase order and neutral connection.

4 Route the current sensor wiring inside the tie wraps.

5 Connect the current sensor wiring harness to the connector on the appropriate PCB.

Is the problem solved?	Action
Yes	No further actions required.

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

3.6 Expansion valve

3.6.1 Checking procedures

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

To perform a mechanical check of the expansion valve

Prerequisite: Power OFF the unit for 3 minutes. Then turn ON the unit and listen to the expansion valve assembly. If the expansion valve does NOT make a latching sound, continue with the electrical check of the expansion valve, see "3.6.1 Checking procedures" [▸ 250].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

1. Remove the expansion valve insulation (if applicable) and visually check:
   - For oil drops around the expansion valve. Locate and fix as necessary.
   - Pipes for signs of damage. Replace pipes as needed.
   - Coil wires for signs of damage. Replace expansion valve coil as needed. See "3.6.2 Repair procedures" [▸ 252].
2. Remove the expansion valve coil from the expansion valve body, see "3.6.2 Repair procedures" [▸ 252].
3. Slide the expansion valve magnet over the expansion valve body and gently rotate the magnet clockwise/counterclockwise to manually close/open the expansion valve. Listen to check if the valve is closing/opening and manually close the valve when check is done.

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

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

Does the expansion valve open?	Action
Yes	Perform an electrical check of the expansion valve, see "3.6.1 Checking procedures" [▸ 250].
No	Replace the expansion valve body, see "3.6.2 Repair procedures" [▸ 252].

To perform an electrical check of the expansion valve

1 First perform a mechanical check of the expansion valve, see "3.6.1 Checking procedures" [▶ 250].

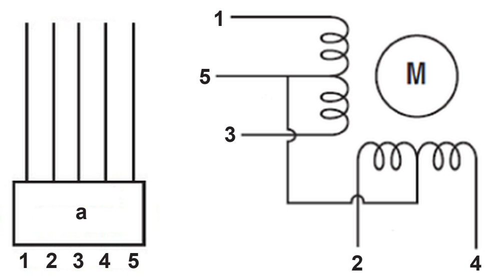
2 Disconnect the electrical connector of the expansion valve coil from the appropriate PCB and measure the resistance of all windings (between the pins of each phase (wire) and the common wire) using a multi meter. All measurements MUST be approximately the same.

Name	Symbol	Location (PCB)	Connector	Winding resistance
Upper heat exchanger expansion valve	Y1E	Main	X21A	150±15 Ω
Sub-cool expansion valve	Y2E	Main	X26A	46±3 Ω
Lower heat exchanger expansion valve	Y3E	Main	X22A	150±15 Ω
Receiver gas expansion valve	Y4E	Main	X25A	150±15 Ω
Liquid cooling expansion valve	Y5E	Main	X23A	46±3 Ω
Liquid injection expansion valve	Y7E	Sub	X9A	46±3 Ω

INFORMATION

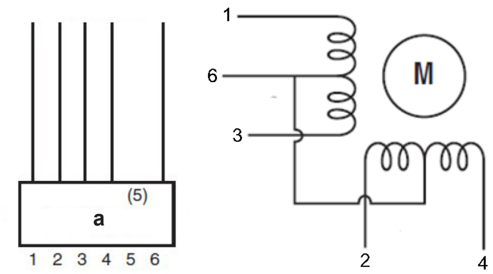
Below are shown examples of the resistance measurements in which the common wire is connected to pin 5 or to pin 6 of the expansion valve coil connector. Connections may differ according to the type of expansion valve.

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



a Connector

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



a Connector

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

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

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

Is the measured resistance correct?	Action
Yes	Perform an operation check of the expansion valve, see "3.6.1 Checking procedures" [▶ 250].
No	Replace the expansion valve coil, "3.6.2 Repair procedures" [▶ 252].

Problem solved?

After all checking procedures listed above have been performed:

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

3.6.2 Repair procedures

To remove the expansion valve coil

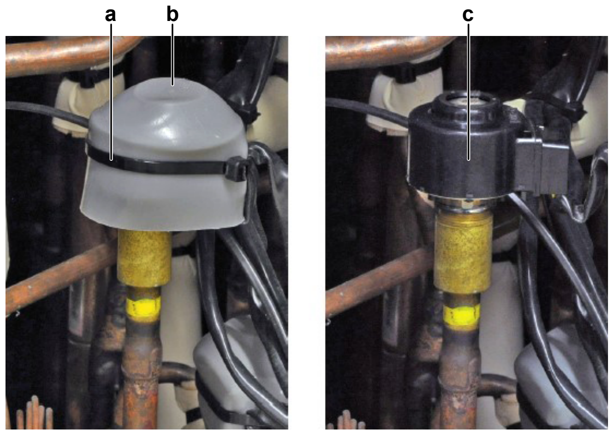
Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

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

2 Cut the tie strap and remove the insulation cap.



a Tie strap
b Expansion valve cover
c Expansion valve coil

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

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

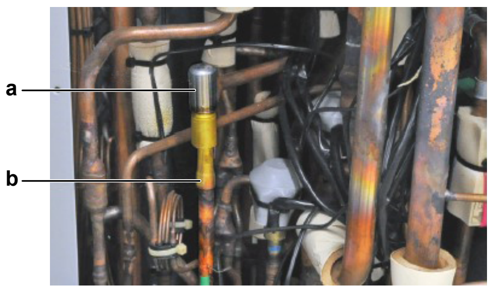
4. Cut all tie straps that fix the expansion valve coil harness.
5. Disconnect the expansion valve coil connector from the appropriate PCB. See "To perform an electrical check of the expansion valve" [▶ 251] for an overview oft he expansion valve connectors and their locations.
6. To install the expansion valve coil, see "3.6.2 Repair procedures" [▶ 252].

To remove the expansion valve body

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

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

1. Remove the expansion valve coil, see "3.6.2 Repair procedures" [▶ 252].
2. Using a valve magnet, open the expansion valve.
3. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
4. Wrap a wet rag around the components near the expansion valve pipes. Heat the brazing points of the expansion valve pipes using an oxygen acetylene torch and remove the expansion valve pipes from the refrigerant pipes using pliers.



a Expansion valve body
b Expansion valve pipe

> **INFORMATION**
>
> The expansion valve and coil can have a different configuration / layout.

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

6 Remove the expansion valve body.

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

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

8 To install the expansion valve body, see "3.6.2 Repair procedures" [▶ 252].

To install the expansion valve body

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

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

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

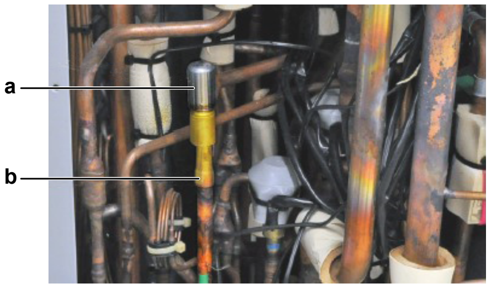
4 Open the expansion valve using a valve magnet.

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

6 Wrap a wet rag around the expansion valve body and any other components near the expansion valve and solder the expansion valve pipes to the refrigerant pipes.

> **CAUTION**
>
> Overheating the valve will damage or destroy it.

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



a Expansion valve body
b Expansion valve pipe

8 To install the expansion valve coil, see "3.6.2 Repair procedures" [▶ 252].

9 Perform a pressure test, see "4.2.1 Checking procedures" [▶ 359].

10 Add refrigerant to the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

To install the expansion valve coil

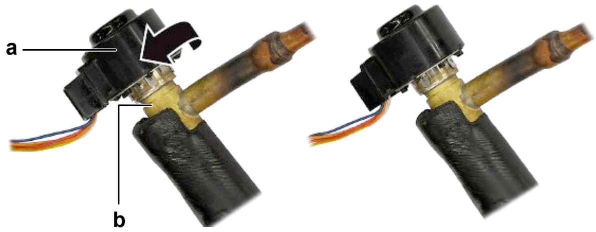
1 Install the expansion valve coil on the expansion valve body.

INFORMATION

Turn the expansion valve coil 1/8 turn clockwise to lock it on the expansion valve body.

INFORMATION

The correct alignment of the expansion valve coil is ensured by dimples.



a Expansion valve coil
b Pipe

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

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

WARNING

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

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

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

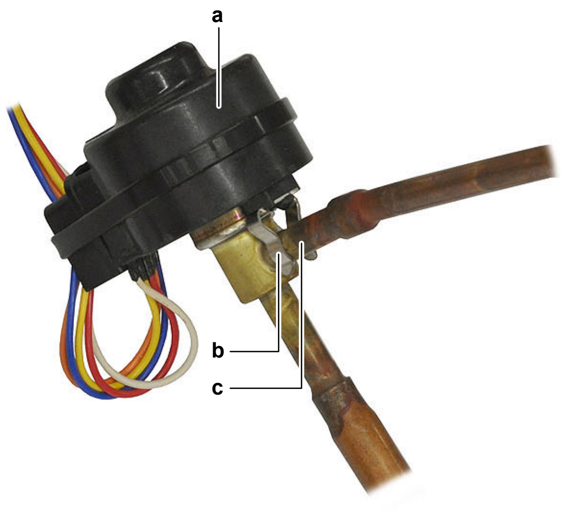
Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.6.1 Checking procedures" [▶ 250] of the expansion valve and continue with the next procedure.

To install the expansion valve coil with clip

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

INFORMATION

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



a Expansion valve coil
b Pipe retention clip
c Pipe

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

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

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

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

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

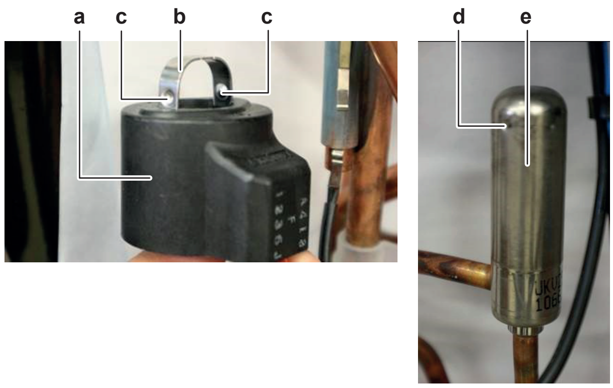
Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.6.1 Checking procedures" [▶ 250] of the expansion valve and continue with the next procedure.

To install the expansion valve coil with bracket

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

> **INFORMATION**
>
> The expansion valve coil 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 coil in the correct position (orientation).



a Expansion valve coil
b Metal bracket
c Nipple
d Notch
e Expansion valve body

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

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

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

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

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

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.6.1 Checking procedures" [▶ 250] of the expansion valve and continue with the next procedure.

3.7 Fan inverter PCB

3.7.1 Single fan outdoor unit

Checking procedures

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

To perform a power check of the fan inverter PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

Prerequisite: Access the switch box, see "3.13 Plate work" [▶ 309].

1 Turn ON the power of the unit.

2 Measure the voltage between pins 1 and 3 of connector X5A The measured voltage MUST be 18 V DC.

Is the measured voltage on the PCB correct?	Action
Yes	Return to "Checking procedures" [▶ 257] of the PCB and continue with the next procedure.
No	Continue with the next step.

3 Measure the output voltage voltage on connector X601A on the inverter PCB.

Result: The measured voltage MUST be 18 V DC.

Is the measured output voltage on the inverter PCB correct?	Action
Yes	Correct the wiring between the fan inverter PCB and the inverter PCB, see "4.1.2 Repair procedures" [▶ 357].
No	Perform a check of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

To check the HAP LED of the fan inverter PCB

1 First perform a power check of the fan inverter PCB, see "Checking procedures" [▶ 257].

2 Locate the HAP LED on the fan inverter PCB.

Does the HAP LED blink in regular intervals (approximately 1 Hz)?	Action
Yes	Return to "Checking procedures" [▶ 257] of the fan inverter PCB and continue with the next procedure.
No	Replace the fan inverter PCB, see "Repair procedures" [▶ 261].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 257].

1 Visit your local spare parts webbank.

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

Is the correct spare part for the fan inverter PCB installed?	Action
Yes	Return to "Checking procedures" [▶ 257] of the fan inverter PCB and continue with the next procedure.
No	Replace the fan inverter PCB, see "Repair procedures" [▶ 261].

To check the wiring of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 257].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1. Check that all wires are properly connected and that all connectors are fully plugged-in.
2. Check that no connectors or wires are damaged.
3. Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▶ 376].

> **INFORMATION**
>
> Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 257] of the fan inverter PCB and continue with the next procedure.

To check the fuse of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 257].

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

Blown fuse on the fan inverter PCB?	Action
Yes	Replace the fan inverter PCB, see "Repair procedures" [▶ 261].
No	Return to "Checking procedures" [▶ 257] of the fan inverter PCB and continue with the next procedure.

To check the rectifier voltage of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 257].

1. Turn ON the power of the unit.

> **DANGER: RISK OF ELECTROCUTION**
>
> Do NOT touch any live parts or PCB's.

2. Measure the DC voltage on P1 and N1 on the fan inverter PCB.

   Result: The measured voltage MUST be approximately 560 V DC.

a Wire terminal P1
b Wire terminal N1

Is the measured voltage correct?	Action
Yes	Perform a power transistor check of the fan inverter PCB, see "Checking procedures" [▶ 257].
No	Continue with the next step.

3 Measure the DC output voltage on P12 and N33 on the inverter PCB.

Result: The measured voltage MUST be approximately 560 V DC.

Is the measured output voltage on the inverter PCB correct?	Action
Yes	Correct the wiring between the fan inverter PCB and the inverter PCB, see "4.1.2 Repair procedures" [▶ 357].
No	Perform a check of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

To perform a power transistor check of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 257].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Set the multimeter to diode measurement.

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2 Disconnect the connector X1A and Faston connectors P1 and N1 from the fan inverter PCB.

3 Check the fan inverter PCB in reference with the image and table below.

a Connector P1
b Connector N1
c Connector X1A, pin U
d Connector X1A, pin V
e Connector X1A, pin W

VDC	Com	Ref	VDC	Com	Ref
P1	X1A, pin U	OL	N1	X1A, pin V	0.45
P1	X1A, pin V	OL	N1	X1A, pin W	0.45
P1	X1A, pin W	OL	X1A, pin U	N1	OL
X1A, pin U	P1	0.45	X1A, pin V	N1	OL
X1A, pin V	P1	0.45	X1A, pin W	N1	OL
X1A, pin W	P1	0.45	P1	N1	OL
N1	X1A, pin U	0.45	N1	P1	0.81

Are the test results OK?	Action
Yes	Power transistors are OK. Return to "Checking procedures" [▶ 257].

Are the test results OK?	Action
No	Replace the fan inverter PCB, see "Repair procedures" [▶ 261].

Problem solved?

After all checking procedures listed above have been performed:

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

Repair procedures

To remove the fan inverter PCB

Prerequisite: Stop the unit operation via the central controller.

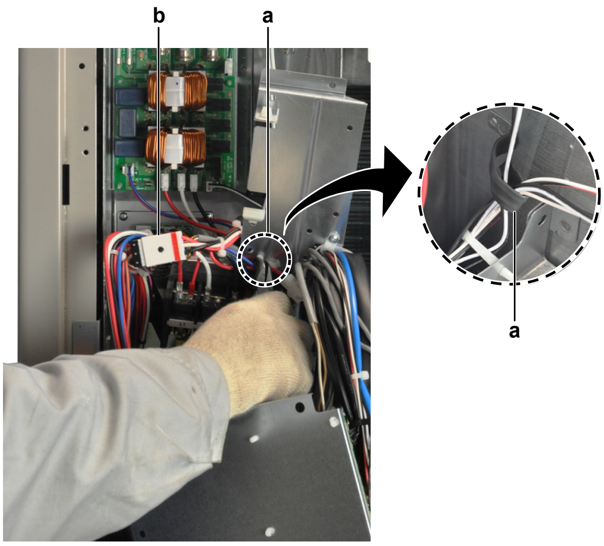
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

Prerequisite: Access the switch box, see "3.13 Plate work" [▶ 309].

1 Locate the fan inverter PCB.

2 Using pliers, detach the cable clamp from the power terminal assembly.



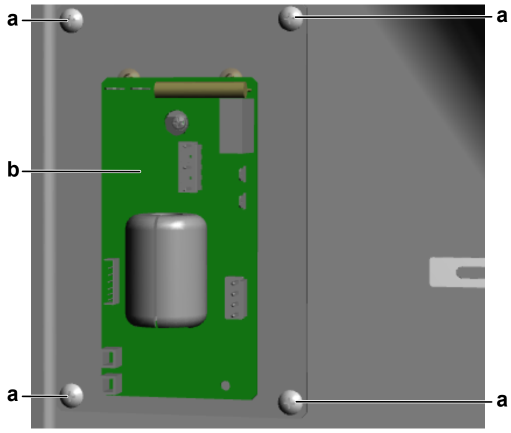
a Cable clamp
b Fan connector X1A

3 Disconnect the fan motor connector X1A.

4 Disconnect ALL connectors from the fan inverter PCB.

> **INFORMATION**
>
> Bridge connector X4A is not supplied with the spare part PCB. Transfer the bridge connector X4A.

5 Remove the 4 screws that fix the fan inverter PCB mounting plate.



a Screw
b Fan inverter PCB

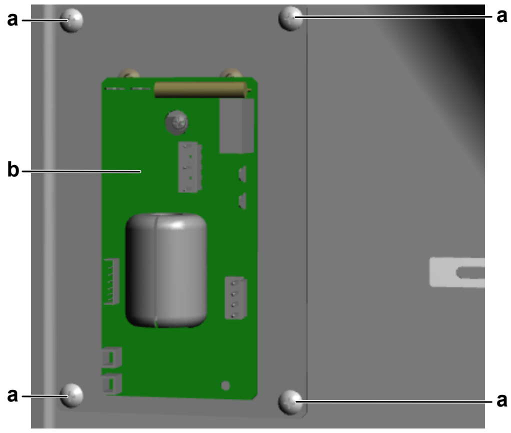
6 Remove the fan inverter PCB mounting plate (with fan inverter PCB and heat sink mounted).

7 To install the new fan inverter PCB, see "Repair procedures" [▶ 261].

To install the fan inverter PCB

1 Install the fan inverter PCB mounting plate (with fan inverter PCB and heat sink mounted) in the correct location on the unit.

2 Install and tighten the 4 screws to fix the fan inverter PCB mounting plate.



a Screw
b Fan inverter PCB

3 Connect all connectors to the fan inverter PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "6.2 Wiring diagram" [▶ 376].

WARNING

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

4 Install connector X4A which you recuperated from the removed PCB.

5 Assemble the switch box, see "3.13 Plate work" [▶ 309].

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to "Checking procedures" [▶ 257] of the fan inverter PCB and continue with the next procedure.

3.7.2 Double fan outdoor unit

Checking procedures

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

To perform a power check of the fan inverter PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

Prerequisite: Access the switch box, see "3.13 Plate work" [▶ 309].

1. Turn ON the power of the unit.
2. For fan inverter PCB A4P: Measure the voltage between pins 1 and 3 of connector X5A.
3. For fan inverter PCB A5P: Measure the voltage between pins 2 and 4 of connector X5A.

   Result: The measured voltage MUST be 18 V DC.

Is the measured voltage on the PCB correct?	Action
Yes	Return to "Checking procedures" [▶ 263] procedures of the PCB and continue with the next procedure.
No	Continue with the next step.

4. Measure the output voltage on connector X601A on the inverter PCB.

   Result: The measured voltage MUST be 18 V DC.

Is the measured output voltage on the inverter PCB correct?	Action
Yes	Correct the wiring between the fan inverter PCB and the inverter PCB, see "4.1.2 Repair procedures" [▶ 357].
No	Perform a check of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

To check the HAP LED of the fan inverter PCB

1. First perform a power check of the fan inverter PCB, see "Checking procedures" [▶ 263].

> **INFORMATION**
>
> Make sure that the PCB is NOT in stand-by mode. The HAP LED will NOT blink when in stand-by mode.

2 Locate the HAP LED on the fan inverter PCB.

Does the HAP LED blink in regular intervals (approximately 1 Hz)?	Action
Yes	Return to "Checking procedures" [▶ 263] of the fan inverter PCB and continue with the next procedure.
No	Replace the fan inverter PCB, see "Repair procedures" [▶ 267].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 263].

1 Visit your local spare parts webbank.

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

Is the correct spare part for the fan inverter PCB installed?	Action
Yes	Return to "Checking procedures" [▶ 263] of the fan inverter PCB and continue with the next procedure.
No	Replace the fan inverter PCB, see "Repair procedures" [▶ 267].

To check the wiring of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 263].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Check that all wires are properly connected and that all connectors are fully plugged-in.

2 Check that no connectors or wires are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▶ 376].

> **INFORMATION**
>
> Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 263] of the fan inverter PCB and continue with the next procedure.

To check the fuse of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 263].

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

Blown fuse on the fan inverter PCB?	Action
Yes	Replace the fan inverter PCB, see "Repair procedures" [▶ 267].
No	Return to "Checking procedures" [▶ 263] of the fan inverter PCB and continue with the next procedure.

To check the rectifier voltage of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▶ 263].

1 Turn ON the power of the unit.

DANGER: RISK OF ELECTROCUTION

Do NOT touch any live parts or PCB's.

2 Measure the DC voltage on P1 and N1 on the fan inverter PCB.

Result: The measured voltage MUST be approximately 560 V DC.

a Wire terminal P1
b Wire terminal N1

Is the measured voltage correct?	Action
Yes	Perform a power transistor check of the fan inverter PCB, see "Checking procedures" [▶ 263].
No	Continue with the next step.

Inverter PCB A4P

1 Measure the DC output voltage between the terminals P12 and N33 on the inverter PCB.

Result: The measured voltage MUST be approximately 560 V DC.

Is the measured output voltage on the inverter PCB correct?	Action
Yes	Correct the wiring between the fan inverter PCB and the inverter PCB, see "4.1.2 Repair procedures" [▶ 357].
No	Perform a check of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

Inverter PCB A5P

1 Measure the DC output voltage between the terminals P11 and N11 on the fan inverter PCB A4P.

Result: The measured voltage MUST be approximately 560 V DC.

Is the measured output voltage on the fan inverter PCB correct?	Action
Yes	Correct the wiring between the fan inverter PCB's, see "4.1.2 Repair procedures" [▸ 357].
No	Perform a check of the fan inverter PCB, see "Repair procedures" [▸ 267].

To perform a power transistor check of the fan inverter PCB

Prerequisite: First perform all earlier checks of the fan inverter PCB, see "Checking procedures" [▸ 263].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

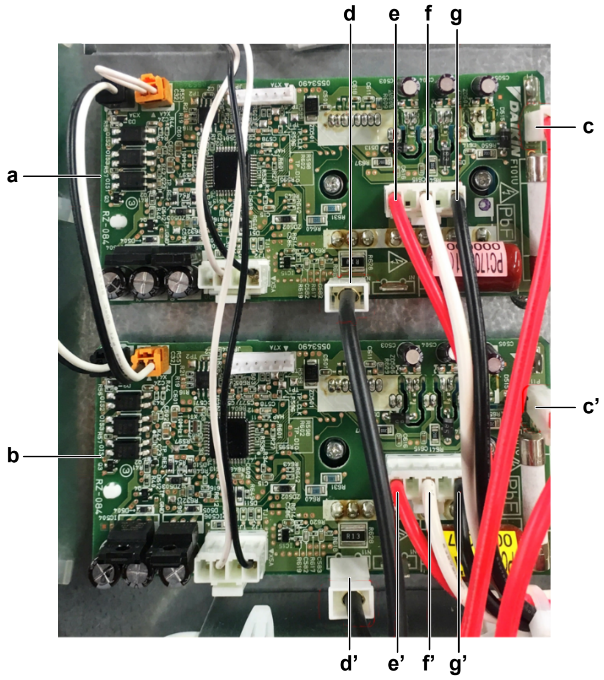
1 Set the multimeter to diode measurement.

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

2 Disconnect the connector X1A and Faston connectors P1 and N1 from the fan inverter PCB.

3 Check the fan inverter PCB in reference with the tables below.



a Fan inverter PCB A4P
b Fan inverter PCB A7P
c / c' Connector P11
d / d' Connector N11
e / e' Connector X1A, pin U
f / f' Connector X1A, pin V
g / g' Connector X1A, pin W

VDC	Com	Ref	VDC	Com	Ref
P1	X1A, pin U	OL	N1	X1A, pin V	0.45
P1	X1A, pin V	OL	N1	X1A, pin W	0.45

VDC	Com	Ref	VDC	Com	Ref
P1	X1A, pin W	OL	X1A, pin U	N1	OL
X1A, pin U	P1	0.45	X1A, pin V	N1	OL
X1A, pin V	P1	0.45	X1A, pin W	N1	OL
X1A, pin W	P1	0.45	P1	N1	OL
N1	X1A, pin U	0.45	N1	P1	0.81

Are the test results OK?	Action
Yes	Power transistors are OK. Return to "Checking procedures" [▶ 263].
No	Replace the fan inverter PCB, see "Repair procedures" [▶ 267].

Problem solved?

After all checking procedures listed above have been performed:

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

Repair procedures

To remove the fan inverter PCB

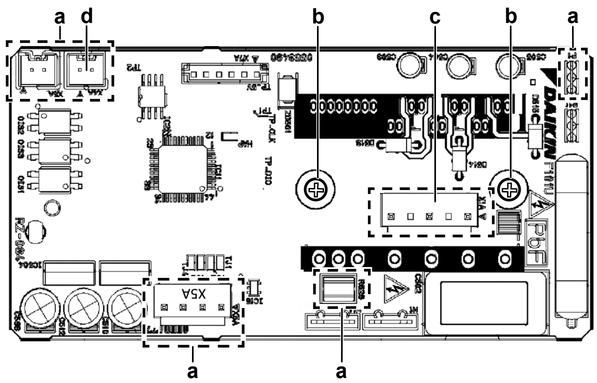
Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Access the switch box, see "3.13 Plate work" [▶ 309].
2. Disconnect ALL connectors from the fan inverter PCB.

> **INFORMATION**
>
> For fan inverter PCB A5P: Bridge connector X4A is not supplied with the spare part PCB. Transfer the bridge connector X4A.



- **a** Connector
- **b** Screw
- **c** Connector X1A
- **d** Connector X4A

3 Loosen and remove the 2 screws that fix the fan inverter PCB to the heat sink plate.

4 Carefully pull the PCB at the side and unlatch the PCB support using a small pair of pliers.

5 Remove the fan inverter PCB.

6 To install the new fan inverter PCB, see "Repair procedures" [▶ 267].

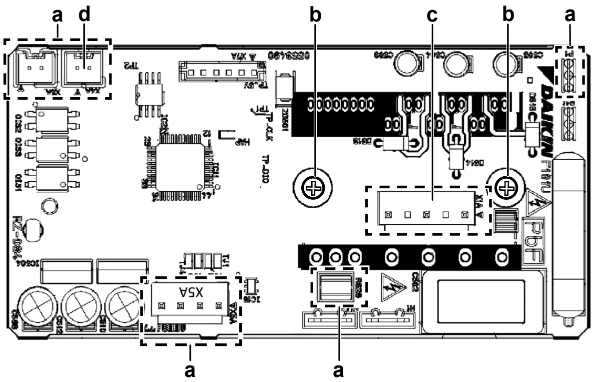
To install the fan inverter PCB

1 Check the status of the heat transfer sheet. If damaged, replace the heat transfer sheet.

2 Install the fan inverter PCB in the correct location on the heat sink.

3 Install the fan inverter PCB on the PCB support.

4 Install and tighten the 2 screws to fix the fan inverter PCB to the heat sink plate.



a Connector
b Screw
c Connector X1A
d Connector X4A

5 Connect ALL connectors to the fan inverter PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "6.2 Wiring diagram" [▶ 376].

WARNING

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

6 For inverter PCB A5P: Install connector X4A which you recuperated from the removed PCB.

7 Assemble the switch box, see "3.13 Plate work" [▶ 309].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 263] of the fan inverter PCB and continue with the next procedure.

3.8 Inverter PCB

3.8.1 Checking procedures

INFORMATION

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

To perform a power check of the inverter PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

Prerequisite: Access the switch box, see "3.13 Plate work" [▸ 309].

1 Turn ON the power of the unit.

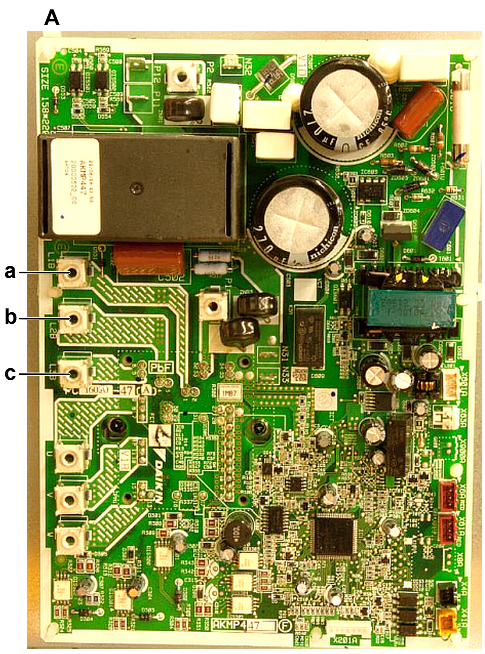
DANGER: RISK OF ELECTROCUTION

Do NOT touch any live parts or PCB's.

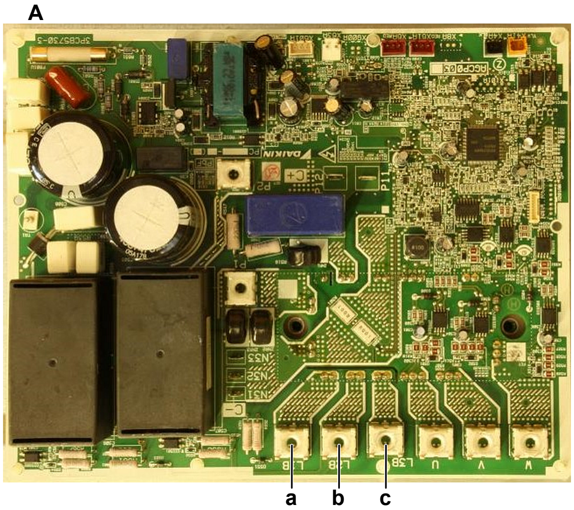
2 Measure the voltage between the following wires on the inverter PCB.

Result: All measurements MUST be 400 V AC.

- L1B –L2B
- L1B –L3B
- L2B –L3B



A REMA5 + REYA8~12 units
a Wire L1B
b Wire L2B
c Wire L3B



A REYA14~20 units
a Wire L1B
b Wire L2B
c Wire L3B

Does the inverter PCB receive power?	Action
Yes	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.
No	Continue with the next step.

3 Perform an electrical check of the noise filter PCB, see "3.10.1 Checking procedures" [▶ 289].

Electrical check of noise filter PCB correct?	Action
Yes	Correct the wiring between the inverter PCB and the noise filter PCB, see "4.1.2 Repair procedures" [▶ 357].
No	Perform a check of the noise filter PCB, see "3.10.1 Checking procedures" [▶ 289].

To check the HAP LED of the inverter PCB

1 First perform a power check of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

> **INFORMATION**
>
> Make sure that the PCB is NOT in stand-by mode. The HAP LED will NOT blink when in stand-by mode.

2 If needed wake up the PCB by performing one of the following actions:

- Turn OFF and then ON the power to the unit,
- Turn OFF the power supply to the main PCB by unplugging and then plugging the connector X1A;
- Create a forced thermo-ON condition by setting field setting 2–6 = 1 (forced thermo-ON indoor) or field setting 2–20 = 1 (manual refrigerant charge). See "6.7 Field settings" [▶ 401]. Once HAP LED blinks, immediately change related field setting (2–6 or 2–20) back to 0 to deactivate related function.

3 Locate the HAP LED on the inverter PCB.

Does the HAP LED blink in regular intervals (approximately 1 Hz)?	Action
Yes	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.
No	Replace the inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

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

Is the correct spare part for the inverter PCB installed?	Action
Yes	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.
No	Replace the inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

To check the wiring of the inverter PCB

Prerequisite: First perform all earlier checks of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1. Wait until the rectifier voltage is below 10 V DC.

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2. Check that all wires are properly connected and that all connectors are fully plugged-in.
3. Check that no connectors or wires are damaged.
4. Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▶ 376].

INFORMATION

Correct the wiring as needed.

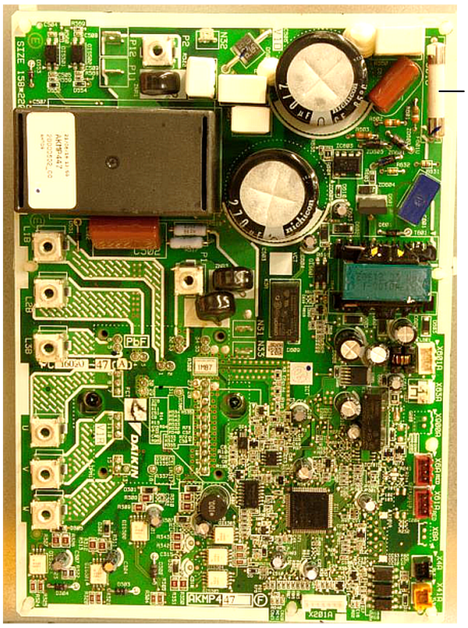
Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.

To check the fuses of the inverter PCB

Prerequisite: First perform all earlier checks of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

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

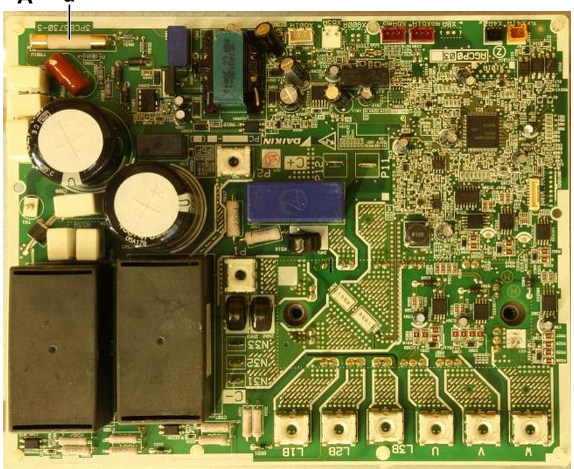
A



a

A REMA5 + REYA8~12 units
a Fuse

A a



A REYA14~20 units
a Fuse

Any blown fuses on the inverter PCB?	Action
Yes	Replace the inverter PCB, see "3.8.2 Repair procedures" [▶ 278].
No	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.

To check the rectifier voltage of the inverter PCB

Prerequisite: First perform all earlier checks of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

1 Turn ON the power of the unit.

2 Measure the voltage on the rectifier voltage check connector X3A.

Result: The measured voltage MUST be approximately 560 V DC.

A REMA5 + REYA8~12 units
B REYA14~20 units
a Connector X3A

Is the measured voltage correct?	Action
Yes	Diode module is OK. Perform a check of the power module of the inverter PCB, see "3.8.1 Checking procedures" [▸ 269].
No	Continue with the next step.

3 Perform a check of the reactor, see Checking procedures.

Is the reactor OK?	Action
Yes	Replace the inverter PCB, see "3.8.2 Repair procedures" [▸ 278].
No	Replace the reactor, see Repair procedures.

To perform a diode module check

REMA5 + REYA8~12 units

1 First check the rectifier voltage of the inverter PCB, see "3.8.1 Checking procedures" [▸ 269].

> **INFORMATION**
>
> If the rectifier voltage is OK, the diode module is OK. If rectifier voltage is NOT OK, proceed as described in the rectifier voltage check procedure.
>
> Below procedure describes how to check the diode module itself.

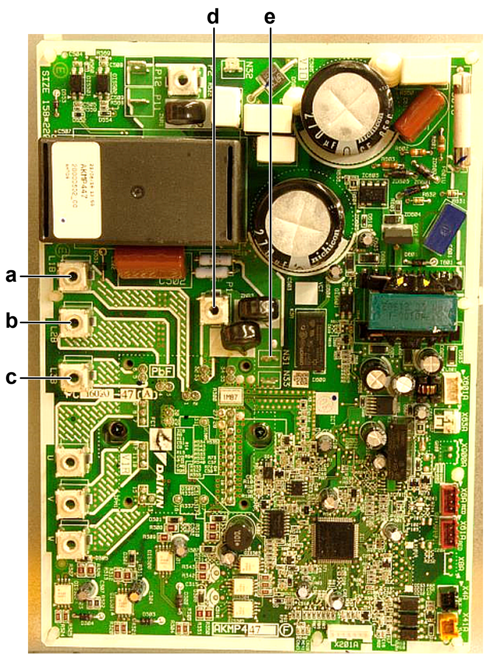
2 Stop the unit operation via the central controller.

3 Turn OFF the respective circuit breaker.

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

4 Disconnect the wire terminals and Faston connectors L1B, L2B, L3B, P1 and N31 from the inverter PCB.

5 Check the diode module in reference with the table below.



a Wire terminal L1B
b Wire terminal L2B
c Wire terminal L3B
d Wire terminal P1
e Faston connector terminal N31

VDC	Com	Ref	VDC	Com	Ref
P1	L1B	OL	N31	L1B	0.49
P1	L2B	OL	N31	L2B	0.49
P1	L3B	OL	N31	L3B	0.49
L1B	P1	0.49	L1B	N31	OL
L2B	P1	0.49	L2B	N31	OL
L3B	P1	0.49	L3B	N31	OL
			N31	P1	0.87
			P1	N31	OL

6 If the diode module is NOT ok, replace the inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

REYA14~20 units

1 First check the rectifier voltage of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

> **INFORMATION**
>
> If the rectifier voltage is OK, the diode module is OK. If rectifier voltage is NOT OK, proceed as described in the rectifier voltage check procedure.
>
> Below procedure describes how to check the diode module itself.

2 Stop the unit operation via the central controller.

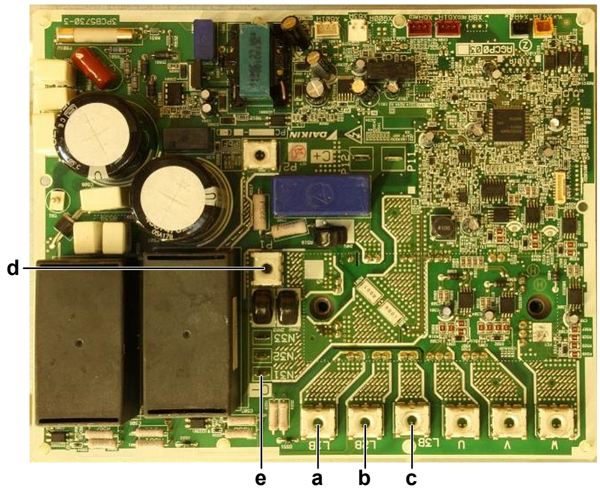
3 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

4 Disconnect the wire terminals and Faston connectors L1B, L2B, L3B, P1 and N31 from the inverter PCB.

5 Check the diode module in reference with the table below.



- **a** Wire terminal L1B
- **b** Wire terminal L2B
- **c** Wire terminal L3B
- **d** Wire terminal P1
- **e** Faston connector terminal N31

VDC	Com	Ref	VDC	Com	Ref
P1	L1B	OL	N31	L1B	0.48
P1	L2B	OL	N31	L2B	0.48
P1	L3B	OL	N31	L3B	0.48
L1B	P1	0.48	L1B	N31	OL
L2B	P1	0.48	L2B	N31	OL
L3B	P1	0.48	L3B	N31	OL
			N31	P1	0.85
			P1	N31	OL

6 If the diode module is NOT ok, replace the inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

To perform a power module check

REYA14~20 units

Prerequisite: First check the rectifier voltage of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

Prerequisite: Stop the unit operation via the central controller.

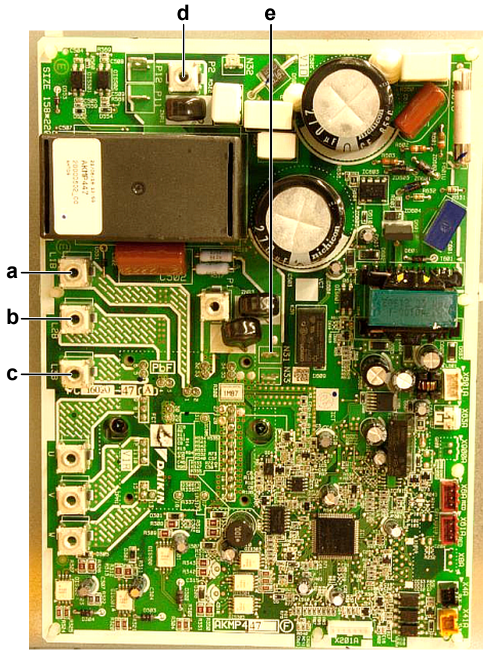
Prerequisite: Turn OFF the respective circuit breaker.

1 Loosen the screws and disconnect the compressor wires from the wire terminals U, V and W on the inverter PCB.

2 Loosen the screw and disconnect the wire from the wire terminal P2 on the inverter PCB.

3 Disconnect the Faston connector from terminal N31 on the inverter PCB.

4 Check the power module in reference with the image and the table below.



a Wire terminal U
b Wire terminal V
c Wire terminal W
d Wire terminal P2
e Faston connector terminal N31

VDC	Com	Ref	VDC	Com	Ref
P2	U	OL	N31	U	0.43
P2	V	OL	N31	V	0.43
P2	W	OL	N31	W	0.43
U	P2	0.43	U	N31	OL
V	P2	0.43	V	N31	OL
W	P2	0.43	W	N31	OL
			N31	P2	0.78
			P2	N31	OL

Are the test results OK?	Action
Yes	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.
No	Replace the inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

REMA5 + REYA8~12 units

Prerequisite: First check the rectifier voltage of the inverter PCB, see "3.8.1 Checking procedures" [▶ 269].

Prerequisite: Stop the unit operation via the central controller.

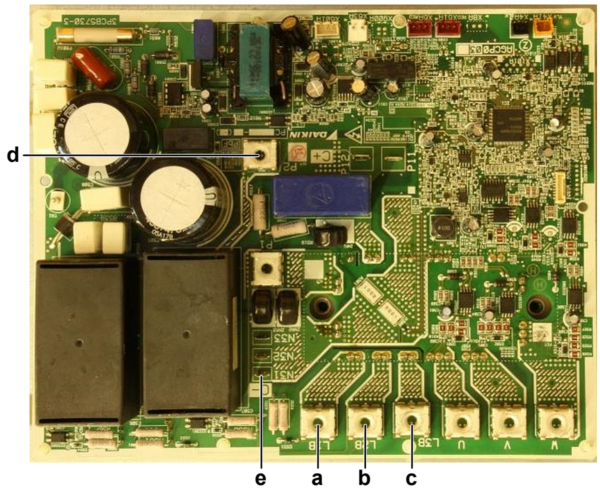
Prerequisite: Turn OFF the respective circuit breaker.

1 Loosen the screws and disconnect the compressor wires from the wire terminals U, V and W on the inverter PCB.

2 Loosen the screw and disconnect the wire from the wire terminal P2 on the inverter PCB.

3 Disconnect the Faston connector from terminal N31 on the inverter PCB.

4 Check the power module in reference with the image and the table below.



a Wire terminal U
b Wire terminal V
c Wire terminal W
d Wire terminal P2
e Faston connector terminal N31

VDC	Com	Ref	VDC	Com	Ref
P2	U	OL	N31	U	0.42
P2	V	OL	N31	V	0.42
P2	W	OL	N31	W	0.42
U	P2	0.42	U	N31	OL
V	P2	0.42	V	N31	OL
W	P2	0.42	W	N31	OL
			N31	P2	0.75
			P2	N31	OL

Are the test results OK?	Action
Yes	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.
No	Replace the inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

Problem solved?

After all checking procedures listed above have been performed:

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

3.8.2 Repair procedures

To remove the inverter PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Access the switch box, see "3.13 Plate work" [▶ 309].

DANGER: RISK OF ELECTROCUTION

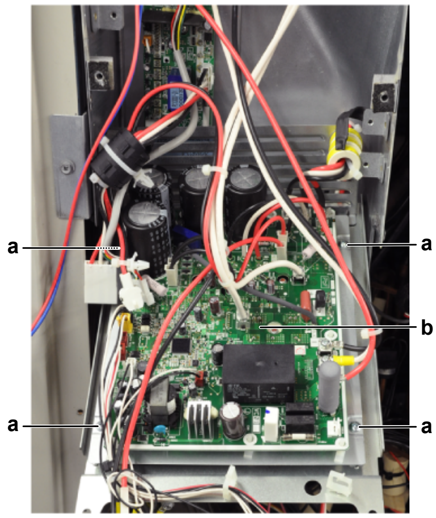
Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

For single fan units

1 Disconnect ALL connectors from the inverter PCB.

2 Loosen the screws and disconnect ALL wiring from the inverter PCB.

3 Remove the 4 screws that fix the inverter PCB mounting plate.



a Screw
b Inverter PCB

4 Remove the inverter PCB mounting plate (with inverter PCB mounted).

5 To install the new inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

For double fan units

1 Disconnect all connectors from the inverter PCB.

2 Loosen the screws and disconnect ALL wiring from the inverter PCB.

3 Remove the 4 screws that fix the heat sink plate support.

4 Remove the heat sink plate support.

a Screw
b Heat sink plate support

5 Remove the 4 screws that fix the inverter PCB mounting plate.

a Screw
b Inverter PCB

6 Remove all wiring from the inverter PCB mounting plate (harness retainers, tie straps).

7 Remove the inverter PCB mounting plate (with inverter PCB mounted).

8 To install the new inverter PCB, see "3.8.2 Repair procedures" [▶ 278].

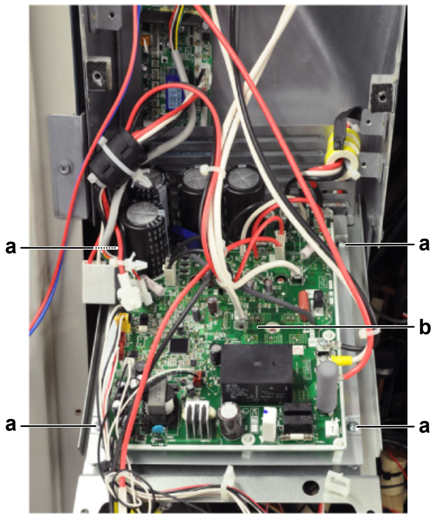
To install the inverter PCB

For single fan units

1 Clean the heat sink surface of the inverter PCB mounting plate (with inverter PCB installed) and install a new heat transfer sheet on the heat sink.

2 Install the inverter PCB mounting plate on the correct location.

3 Install and tighten the 4 screws to fix the inverter PCB mounting plate.



a Screw
b Inverter PCB

4 Connect the wires to the screw connections on the inverter PCB.

5 Connect all connectors to the inverter PCB.

> **INFORMATION**
>
> Use the wiring diagram and connection diagram for correct installation of the connectors, see "6.2 Wiring diagram" [▶ 376].

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

6 Assemble the switch box, see "3.13 Plate work" [▶ 309].

For double fan units

1 Clean the heat sink surface of the inverter PCB mounting plate (with inverter PCB installed) and install a new heat transfer sheet on the heat sink.

2 Install the inverter PCB mounting plate on the correct location.

3 Install and tighten the 4 screws that fix the inverter PCB mounting plate.

a Screw
b Inverter PCB

4 Connect the wires to the screw connections on the inverter PCB.

5 Connect all connectors to the inverter PCB.

> **INFORMATION**
>
> Use the wiring diagram and connection diagram for correct installation of the connectors, see "6.2 Wiring diagram" [▶ 376].

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

6 Install ALL wiring on the inverter PCB mounting plate (harness retainers, tie straps).

7 Install the heat sink plate support in the correct location.

8 Install and tighten the 4 screws to fix the heat sink plate support.

a Screw
b Heat sink plate support

9 Assemble the switch box, see "3.13 Plate work" [▶ 309].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.8.1 Checking procedures" [▶ 269] of the inverter PCB and continue with the next procedure.

3.9 Main PCB

3.9.1 Checking procedures

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

To perform a power check of the main PCB

Prerequisite: Stop the unit operation via the central controller.

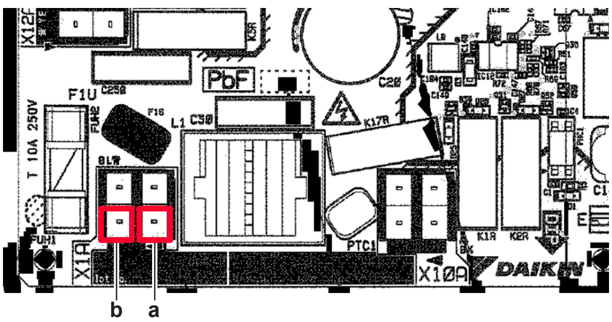
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Turn ON the power of the unit.

2 Measure the voltage between the pins 1-2 on connector X1A of the main PCB.

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



a Connector X1A , pin 1
b Connector X1A , pin 2

Does the main PCB receive power?	Action
Yes	Return to "3.9.1 Checking procedures" [▸ 280] of the main PCB and continue with the next procedure.
No	Continue with the next step.

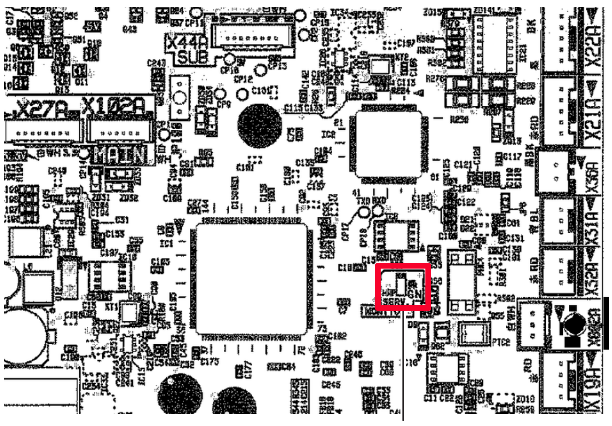
3 Check the power supply to the unit, see "4.1.1 Checking procedures" [▸ 350].

Does the unit receive power?	Action
Yes	Correct the wiring from the main power supply terminal to the main PCB, see "3.9.2 Repair procedures" [▸ 284].
No	Adjust the power supply to the unit, see "4.1.2 Repair procedures" [▸ 357].

To check the HAP LED of the main PCB

Prerequisite: First perform a power check of the main PCB, see "3.9.1 Checking procedures" [▸ 280].

1 Locate the HAP LED on the main PCB.



a

a HAP LED

> **INFORMATION**
>
> Make sure the correct software is available on the PCB. If NOT, update using the updater tool.

Does the HAP LED blink in regular intervals (approximately 1 Hz)?	Action
Yes	Return to "3.9.1 Checking procedures" [▸ 280] of the main PCB and continue with the next procedure.
No	Replace the main PCB, "3.9.2 Repair procedures" [▸ 284].

To check if the correct spare part is installed

1 First perform all earlier checks of the main PCB, see "3.9.1 Checking procedures" [▸ 280].

2 If a spare part main PCB is installed in your unit, check that it is the correct one by performing the procedure described below.

3 Make sure the DIP switches of the main PCB are set correctly, see "3.9.2 Repair procedures" [▶ 284].

4 Visit your local spare parts webbank.

5 Enter the model name of your unit and check if the installed spare part number corresponds with the spare part number indicated in the webbank.

Is the correct spare part for the main PCB installed?	Action
Yes	Return to "3.9.1 Checking procedures" [▶ 280] of the main PCB and continue with the next procedure.
No	Replace the main PCB, "3.9.2 Repair procedures" [▶ 284].

To check the wiring of the main PCB

Prerequisite: First perform all earlier checks of the main PCB, see "3.9.1 Checking procedures" [▶ 280].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Check that all wires are properly connected and that all connectors are fully plugged-in.

2 Check that no connectors or wires are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▶ 376].

4 Check that the bridge connectors X3A and X4A is plugged in, see "6.2 Wiring diagram" [▶ 376].

INFORMATION

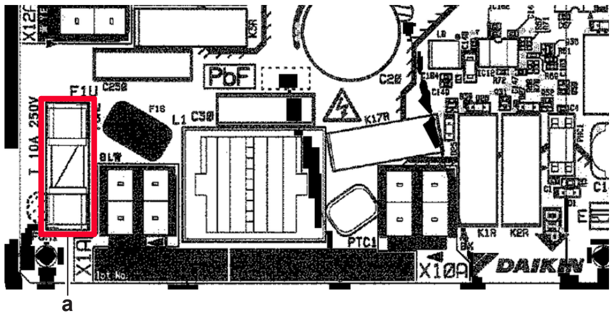
Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.9.1 Checking procedures" [▶ 280] of the main PCB and continue with the next procedure.

To check the fuses of the main PCB

Prerequisite: First perform all earlier checks of the main PCB, see "3.9.1 Checking procedures" [▶ 280].

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



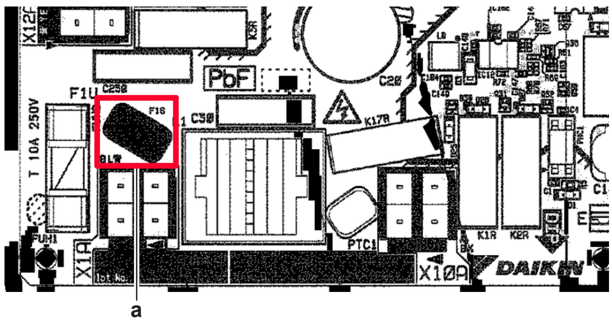
a Fuse F1U

Any blown fuses on the main PCB?	Action
Yes	Replace the blown fuse(s), see "3.9.2 Repair procedures." [▶ 284]
No	Return to "3.9.1 Checking procedures" [▶ 280] of the main PCB and continue with the next procedure.

To check the varistors of the main PCB

Prerequisite: First perform all earlier checks of the main PCB, see "3.9.1 Checking procedures" [▶ 280].

1. Measure the resistance of the varistor. If the reading is nearly infinite, the varistor is still good.



a Varistor F1S

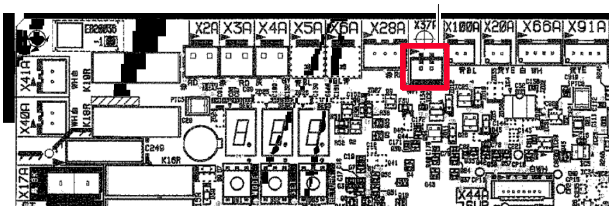
Any broken varistors on the main PCB?	Action
Yes	Replace the main PCB, see "3.9.2 Repair procedures." [▶ 284]
No	Return to "3.9.1 Checking procedures" [▶ 280] of the main PCB and continue with the next procedure.

To check the power supply to the optional PCB

Prerequisite: First perform all earlier checks of the main PCB, see "3.9.1 Checking procedures" [▶ 280].

1. Turn ON the power of the unit.
2. Measure the voltage on connector X37A of the main PCB. The measurement MUST be 16 V DC.

a



a Connector X37A

Is the measurement correct?	Action
Yes	Return to "3.9.1 Checking procedures" [▸ 280] of the main PCB and continue with the next procedure.
No	Replace the main PCB, see "3.9.2 Repair procedures" [▸ 284].

Problem solved?

After all checking procedures listed above have been performed:

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

3.9.2 Repair procedures

To correct the wiring from the main power supply terminal to the main PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1. Remove the required plate work, see "3.13 Plate work" [▸ 309].
2. Make sure that all wires are firmly and correctly connected, see "6.2 Wiring diagram" [▸ 376].
3. Check the continuity of all wires.
4. Replace any damaged or broken wires.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.9.1 Checking procedures" [▸ 280] of the main PCB and continue with the next procedure.

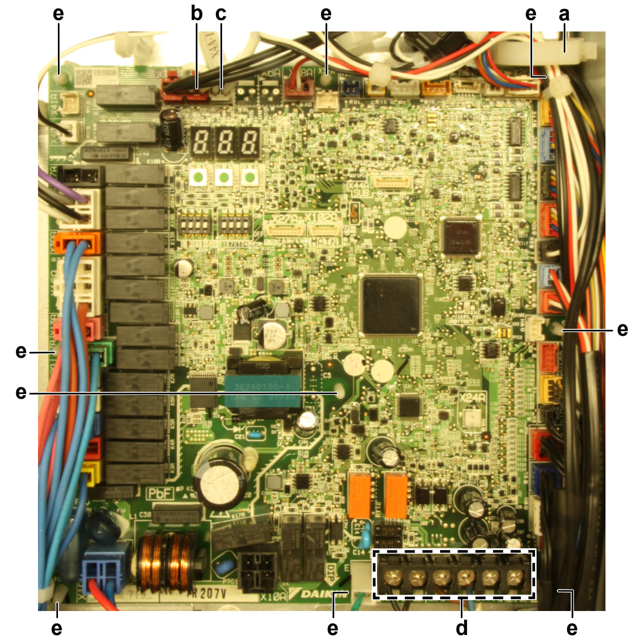
To remove the main PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

1. Unlatch the cable clamp at the top right corner of the main PCB to facilitate the removal of the PCB.

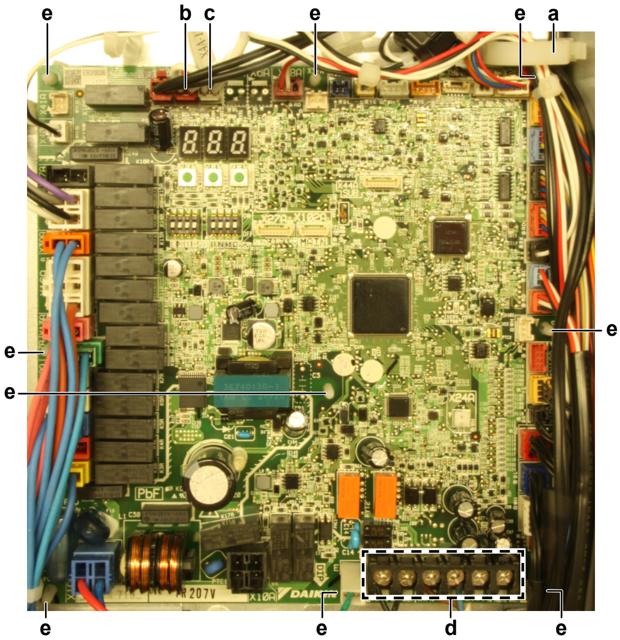


a Cable clamp
b Bridge connector X3A
c Bridge connector X4A
d Wire terminal X1M
e PCB support

2. Disconnect the bridge connectors X3A and X4A from the main PCB. Keep for reuse.
3. Disconnect ALL other connectors from the main PCB assembly.
4. Note the transmission field wiring on wire terminal X1M.
5. Loosen the screws and disconnect the wiring from the wire terminal X1M.
6. Carefully pull the PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.
7. Remove the main PCB from the switch box.
8. To install the new outdoor unit main PCB, see "3.9.2 Repair procedures" [▶ 284].

To install the main PCB

1. Install the main PCB on its correct location in the switch box.
2. Install the main PCB on the PCB supports.



a Cable clamp
b Bridge connector X3A
c Bridge connector X4A
d Wire terminal X1M
e PCB support

3. Connect ALL field wiring to the wire terminal X1M. Tighten the screws to fix the field wiring.
4. Install the bridge connectors X3A and X4A in the correct location on the main PCB.
5. Connect ALL connectors to the main PCB assembly.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "6.2 Wiring diagram" [▶ 376].

WARNING

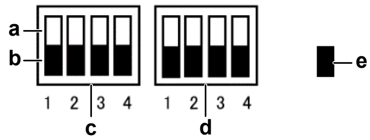
When reconnecting a connector to the PCB, make sure to connect it on the correct location and do NOT apply force, as this may damage the connector or connector pins of the PCB.

6. Route the wiring through the cable clamp at the upper right side of the main PCB.
7. Install new tie straps as needed to fix the wiring.
8. When installing a new main PCB, it needs to be defined for capacity. Otherwise, PJ error is generated.
9. When installing a new main PCB, set the dipswitch settings accordingly to the model. See "3.9.2 Repair procedures" [▶ 284].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.9.1 Checking procedures" [▶ 280] of the main PCB and continue with the next procedure.

To set the DIP switches of the spare part main PCB

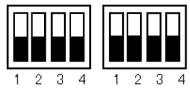
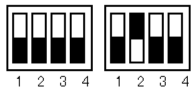
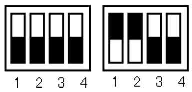
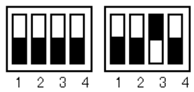
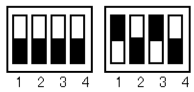
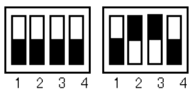
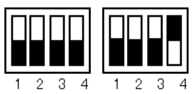
If a spare part main PCB is installed in your unit, the DIP switches need to be set. By default (factory settings) all switches are in off position.



a ON position
b OFF position
c DS1
e DS2
e Shows the position of a switch

1 Shut the power off.

2 Position the DIP switches for your particular model as shown in the table below.

Applicable models	Position of DIP switches	
REMA5		All switches are OFF.
REYA8		DS2-2 is ON.
REYA10		DS2-1 and DS2-2 are ON.
REYA12		DS2-3 is ON.
REYA14		DS2-1 and DS2-3 are ON.
REYA16		DS2-2 and DS2-3 are ON.
REYA18		DS2-1 and DS2-2 and DS2-3 are ON.
REYA20		DS2-4 is ON.

3 After replacing main PCBA1P , a test run is required. Refer to Installation Manual for Test Run. If test run is not carried out successfully, U3 Error will be triggered.

4 If PJ or UA or U7 Errors are triggered after spare part main PCB A1P replacement, check the position of the switches accordingly. If the error is not solved then consult the related error code for troubleshooting.

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to "3.9.1 Checking procedures" [▶ 280] of the main PCB and continue with the next procedure.

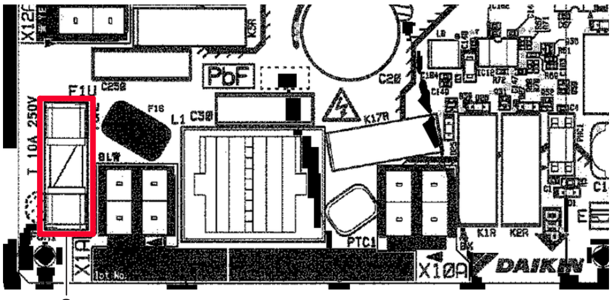
To remove a fuse of the main PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Remove the fuse from the PCB.



a Fuse F1U

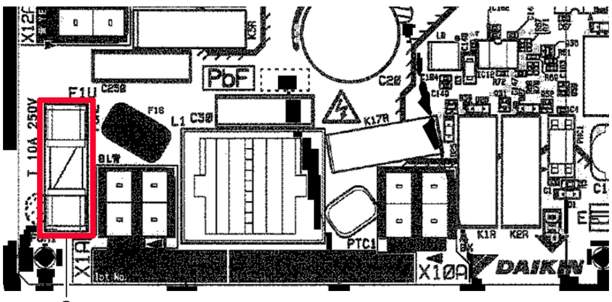
2 To install the fuse on the main PCB, see "3.9.2 Repair procedures" [▶ 284].

To install a fuse on the main PCB

> **WARNING**
> For continued protection against risk of fire, replace ONLY with same type and rating of fuse.

1 Install the fuse on the correct location on the PCB.

> **CAUTION**
> Make sure the fuse is plugged-in correctly (contact with the fuse holder).



a Fuse F1U

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.9.1 Checking procedures" [▶ 280] of the main PCB and continue with the next procedure.

3.10 Noise filter PCB

3.10.1 Checking procedures

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

To perform a power check of the noise filter PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

Prerequisite: Access the switch box but leave ALL wiring connected, see "3.13 Plate work" [▶ 309].

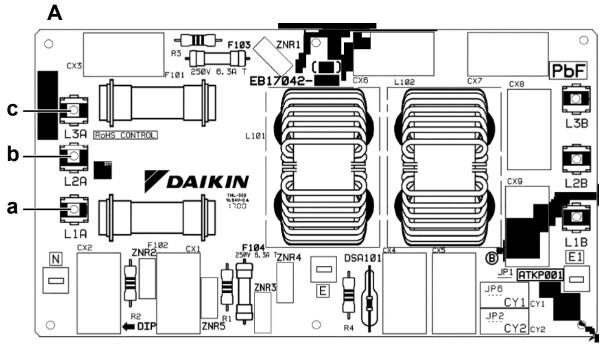
1 Turn ON the power of the unit.

2 Measure the voltage between the following wires of the noise filter PCB on the location shown below.

Result: All measurements MUST be 400 V AC.

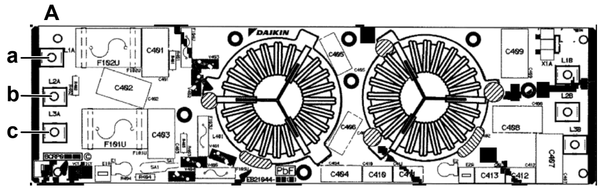
- L1A–L2A
- L1A–L3A
- L2A–L3A

A



A REMA5 + REYA8~12 units
a L1A
b L2A
c L3A

A



A REYA14~20 units
a L1A
b L2A
c L3A

Is the measured voltage on the PCB correct?	Action
Yes	Return to "3.10.1 Checking procedures" [▶ 289] procedures of the PCB and continue with the next procedure.
No	Continue with the next step.

3 Check the power supply to the unit, see "4.1.1 Checking procedures" [▶ 350].

Does the unit receive power?	Action
Yes	Correct the wiring from the main power supply terminal to the noise filter PCB, see "3.10.2 Repair procedures" [▶ 292].
No	Adjust the power supply to the unit, see "4.1.2 Repair procedures" [▶ 357].

To perform an electrical check of the noise filter PCB

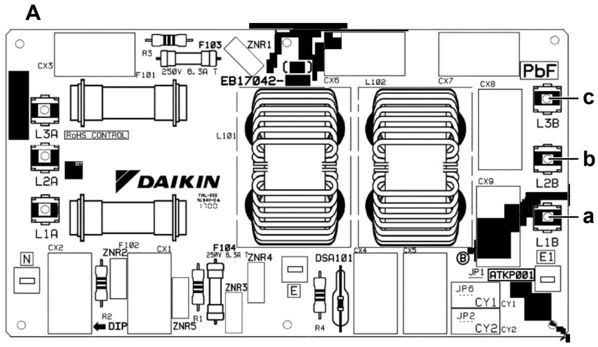
Prerequisite: First check the power supply to the noise filter PCB, see "3.10.1 Checking procedures" [▶ 289].

1 Measure the voltage between the following output wires of the noise filter PCB on the location shown below.

Result: All measurements MUST be 400 V AC.

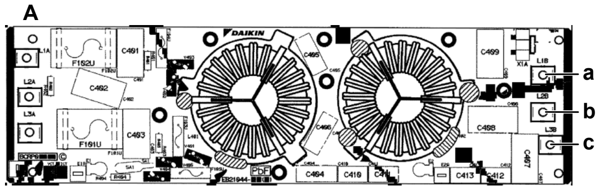
- L1B–L2B
- L1B–L3B
- L2B–L3B

A



A REMA5 + REYA8~12 units
a L1B
b L2B
c L3B

A



A REYA14~20 units
a L1B
b L2B
c L3B

Is the output voltage on the noise filter PCB correct?	Action
Yes	Return to "3.10.1 Checking procedures" [▶ 289] of the noise filter PCB and continue with the next procedure.
No	Replace the noise filter PCB, see "3.10.2 Repair procedures" [▶ 292].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the noise filter PCB, see "3.10.1 Checking procedures" [▸ 289].

1 Visit your local spare parts webbank.

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

Is the correct spare part for the noise filter PCB installed?	Action
Yes	Return to "3.10.1 Checking procedures" [▸ 289] of the noise filter PCB and continue with the next procedure.
No	Replace the noise filter PCB, see "3.10.2 Repair procedures" [▸ 292].

To check the wiring of the noise filter PCB

Prerequisite: First perform all earlier checks of the noise filter PCB, see "3.10.1 Checking procedures" [▸ 289].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Check that all wires are properly connected and that all connectors are fully plugged-in.

2 Check that no connectors or wires are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▸ 376].

INFORMATION

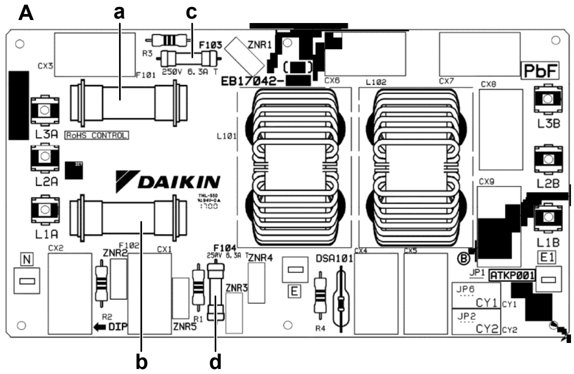
Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.10.1 Checking procedures" [▸ 289] of the noise filter PCB and continue with the next procedure.

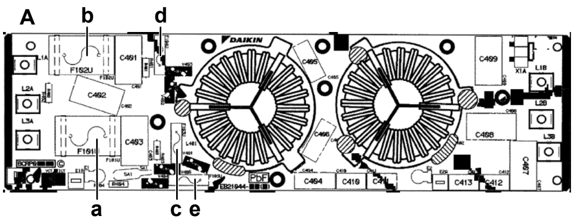
To check the fuses of the noise filter PCB

Prerequisite: First perform all earlier checks of the noise filter PCB, see "3.10.1 Checking procedures" [▸ 289].

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



A	REMA5 + REYA8~12 units
a	Fuse F101
b	Fuse F102
c	Fuse F103
d	Fuse F104



A	REYA14~20 units
a	Fuse F101U
b	Fuse F102U
c	Fuse F103U
d	Fuse F104U
e	Fuse F105U

Blown fuse on the noise filter PCB?	Action
Yes	Replace the noise filter PCB, see "3.10.2 Repair procedures" [▶ 292].
No	Return to "3.10.1 Checking procedures" [▶ 289] of the noise filter PCB and continue with the next procedure.

Problem solved?

After all checking procedures listed above have been performed:

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

3.10.2 Repair procedures

To correct the wiring from the main power supply terminal to the noise filter PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Access the switch box, see "3.13 Plate work" [▶ 309].

2 Make sure that all wires are firmly and correctly connected, see "6.2 Wiring diagram" [▶ 376].

3 Check the continuity of all wires.

4 Replace any damaged or broken wires.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.10.1 Checking procedures" [▶ 289] of the noise filter PCB and continue with the next procedure.

To remove the noise filter PCB

Prerequisite: Stop the unit operation via the central controller.

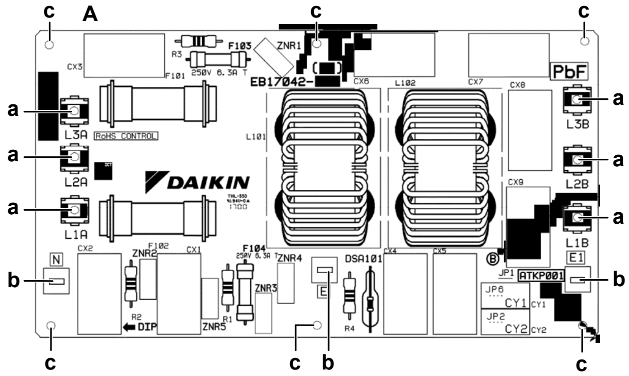
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

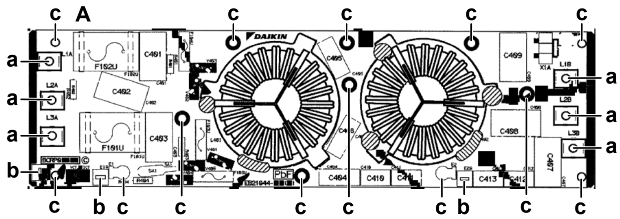
1 Access the switch box, see "3.13 Plate work" [▶ 309].

2 Loosen the screws and disconnect the wires from the wire terminals of the noise filter PCB.

3 Disconnect the Faston connectors from the noise filter PCB.



A REMA5 + REYA8~12 units
a Screw connection
b Faston connector
c PCB support



A REYA14~20 units
a Screw connection
b Faston connector
c PCB support

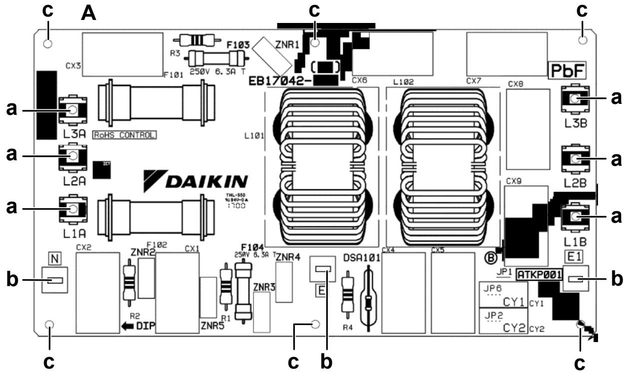
4 Carefully pull the PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.

5 To install the new noise filter PCB, see "3.10.2 Repair procedures" [▶ 292].

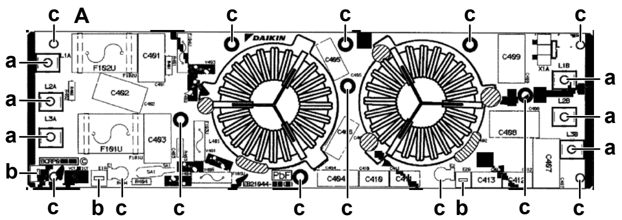
To install the noise filter PCB

1 Install the noise filter PCB on the correct location in the switch box.

2 Install the noise filter PCB on the PCB supports.



A REMA5 + REYA8~12 units
a Screw connection
b Faston connector
c PCB support



A REYA14~20 units
a Screw connection
b Faston connector
c PCB support

3 Connect the Faston connectors to the noise filter PCB.

4 Connect ALL wires to the screw connections of the noise filter PCB. Tighten the screws to fix the wires.

> **INFORMATION**
>
> Use the wiring diagram for correct installation of the wiring, see "6.2 Wiring diagram" [▶ 376].

5 Assemble the switch box, see "3.13 Plate work" [▶ 309].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.10.1 Checking procedures" [▶ 289] of the noise filter PCB and continue with the next procedure.

3.11 Oil return valve

3.11.1 Checking procedures

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

To perform a mechanical check of the oil return valve

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Verify that the screw is firmly fixing the coil to the valve body.
2. Check if any damage or burst is present.

Is the oil return valve coil firmly fixed and not visually damaged?	Action
Yes	Perform an electrical check of the oil return valve, see "3.11.1 Checking procedures" [▶ 294].
No	Fix or replace the oil return valve coil, see "3.11.2 Repair procedures" [▶ 295].

Problem solved?

After all checking procedures listed above have been performed:

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

3.11.2 Repair procedures

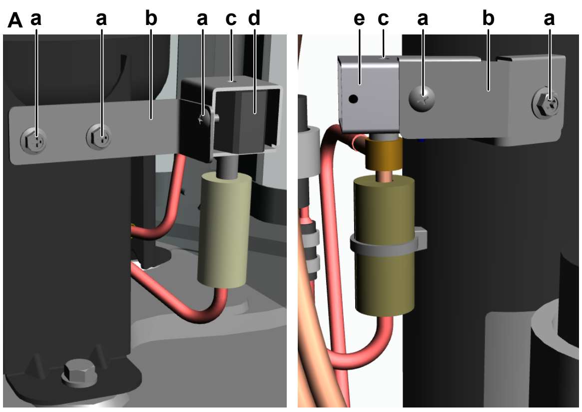
To remove the oil return valve coil

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

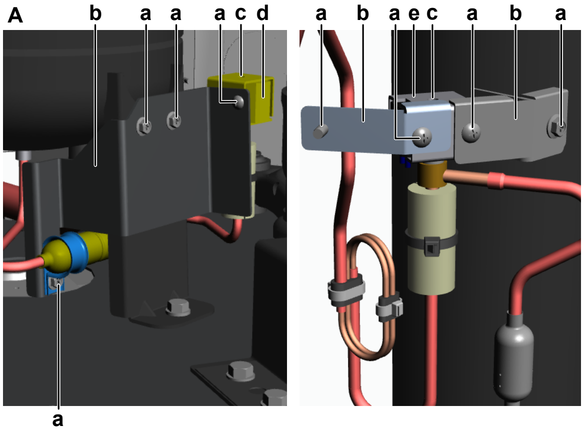
Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. If needed, remove any parts to create more space for the removal of the oil return valve coil.
2. Remove the screws and remove the bracket. Keep for reuse.
3. Remove the screw and remove the oil return valve coil from the oil return valve body.



A REMA5 + REYA8~12 units
a Screw (bracket)
b Bracket
c Screw (coil)

d Y10S valve coil
e Y11S valve coil



A REYA14~20 units
a Screw (bracket)
b Bracket
c Screw (coil)
d Y10S valve coil
e Y11S valve coil

4 Cut all tie straps that fix the oil return valve coil harness.

5 Disconnect the oil return valve coil connector from the appropriate PCB.

6 To install the oil return valve coil, see "3.11.2 Repair procedures" [▶ 295].

To remove the oil return valve body

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

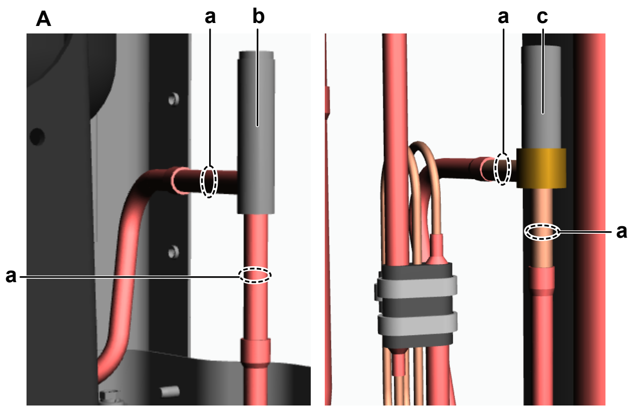
1 Remove the oil return valve coil from the oil return valve body, see "3.11.2 Repair procedures" [▶ 295].

2 Remove the insulation from the oil return valve pipes. Keep for reuse.

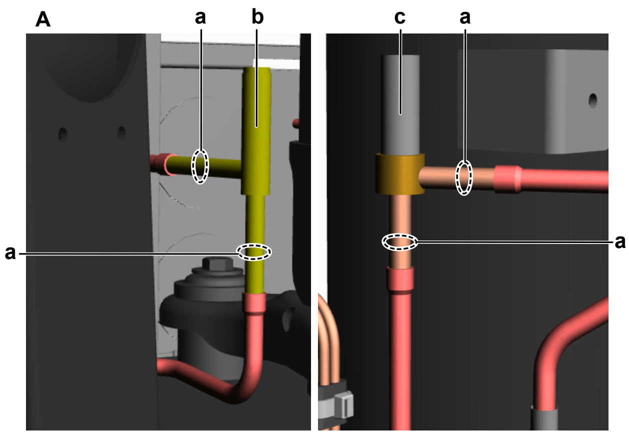
3 Using a valve magnet, open the oil return valve.

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

5 Wrap a wet rag around the components near the oil return valve pipes. Heat the brazing points of the oil return valve pipes using an oxygen acetylene torch and remove the oil return valve pipes from the refrigerant pipes using pliers.



A REMA5 + REYA8~12 units
a Oil return valve pipe
b Y10S oil return valve body
c Y11S oil return valve body



A	REYA14~20 units
a	Oil return valve pipe
b	Y10S oil return valve body
c	Y11S oil return valve body

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

7 Remove the oil return valve body.

INFORMATION

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

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

9 To install the oil return valve body, see "3.11.2 Repair procedures" [▶ 295].

To install the oil return valve body

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

2 Remove the oil return valve coil from the spare part oil return valve body.

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

4 Open the oil return valve using a valve magnet.

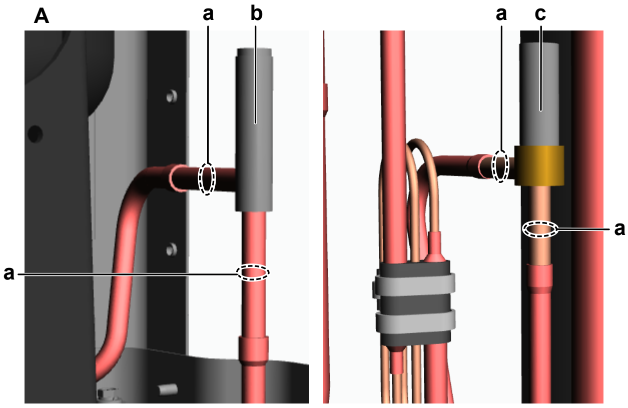
5 Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.

6 Wrap a wet rag around the oil return valve body and any other components near the oil return valve and solder the oil return valve pipes to the refrigerant pipes.

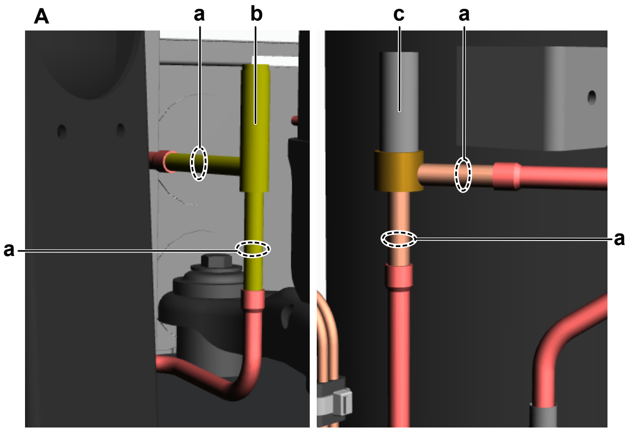
CAUTION

Overheating the valve will damage or destroy it.

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



A REMA5 + REYA8~12 units
a Oil return valve pipe
b Y10S oil return valve body
c Y11S oil return valve body



A REYA14~20 units
a Oil return valve pipe
b Y10S oil return valve body
c Y11S oil return valve body

8 Install the insulation in the original location on the oil return valve pipes.

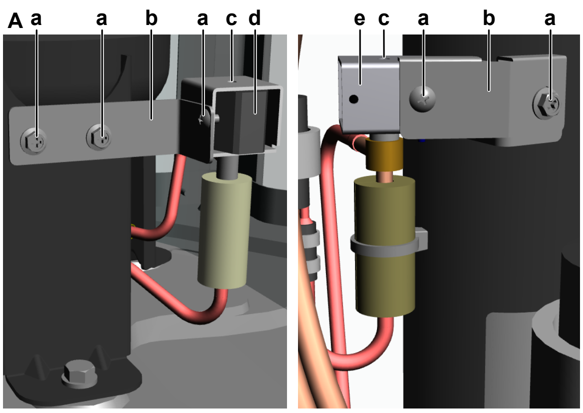
9 Install the oil return valve coil on the oil return valve body, see "3.11.2 Repair procedures" [▶ 295].

10 Perform a pressure test, see "4.2.1 Checking procedures" [▶ 359].

11 Add refrigerant to the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

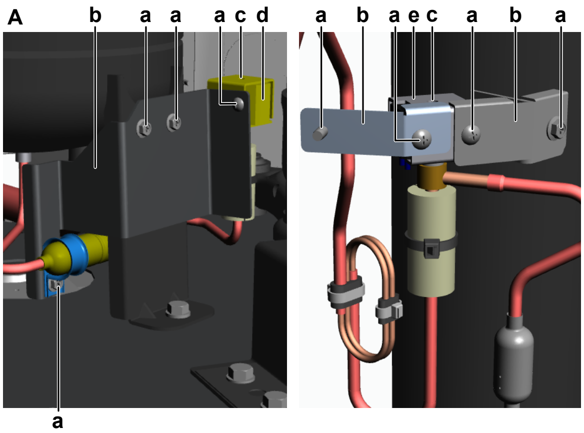
To install the oil return valve coil

1 Install the oil return valve coil on the oil return valve body.



A REMA5 + REYA8~12 units

a Screw (bracket)
b Bracket
c Screw (coil)
d Y10S valve coil
e Y11S valve coil



A REYA14~20 units
a Screw (bracket)
b Bracket
c Screw (coil)
d Y10S valve coil
e Y11S valve coil

2. Install and tighten the screw to fix the oil return valve coil.
3. Install the bracket and fix it using the screws.
4. Route the oil return valve coil harness towards the appropriate PCB.
5. Connect the oil return valve coil connector to the PCB.

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

6. Fix the oil return valve coil harness using new tie straps.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.11.1 Checking procedures" [▶ 294] of the oil return valve and continue with the next procedure.

3.12 Outdoor unit fan motor

3.12.1 Single fan outdoor unit

Checking procedures

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

To perform a mechanical check of the propeller fan blade assembly

Prerequisite: First perform a power transistor check of the fan inverter PCB, see "3.7 Fan inverter PCB" [▸ 257]. If power transistor is OK, proceed as follows:

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

1. If propeller fan blade touches the bell mouth, check if the fan motor is correctly mounted on its base, see "Repair procedures" [▸ 301].
2. Check the state of the propeller fan blade assembly for damage, deformations and cracks.

Is the propeller fan blade assembly damaged?	Action
Yes	Replace the propeller fan blade assembly, see "Repair procedures" [▸ 301].
No	Perform a mechanical check of the DC fan motor assembly, see "Checking procedures" [▸ 299].

To perform a mechanical check of the DC fan motor assembly

Prerequisite: First perform a mechanical check of the propeller fan blade assembly, see "Checking procedures" [▸ 299].

1. Visually check:
   - For any burnt-out part or wire. If found, replace the fan motor, see "Repair procedures" [▸ 301].
   - That fan motor fixation bolts are correctly installed and fixed. Correct as needed.
2. Manually rotate the fan motor shaft. Check that it rotates smoothly.
3. Check the friction of the DC fan motor shaft bearing.

Is the DC fan motor shaft friction normal?	Action
Yes	Perform an electrical check of the DC fan motor assembly, see "Checking procedures" [▸ 299].
No	Replace the DC fan motor assembly, see "Repair procedures" [▸ 301].

To perform an electrical check of the DC fan motor assembly

1. First perform a mechanical check of the DC fan motor assembly, see "Checking procedures" [▸ 299].

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

2. Turn ON the power of the unit.
3. Activate `Cooling` or `Heating` operation via the Cool/Heat master user interface.
4. Check the functioning of the outdoor unit fan.

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

5 Stop the unit operation via the central controller.

6 Turn OFF the respective circuit breaker.

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

7 Check that the DC fan motor connector X1A is properly connected to the PCB.

8 Unplug the DC fan motor connector and measure the resistance between the pins 1-2, 1-3, and 2-3 of the DC fan motor connector.

Result: All measurements MUST be 8.27 Ω±5% at 20°C.

INFORMATION

Make sure that the wiring between the DC fan motor connector and the connector on the PCB is properly connected and NOT damaged (check continuity), see "6.2 Wiring diagram" [▶ 376].

INFORMATION

Winding resistance values above are given for reference. You should NOT be reading a value in kΩ or a short-circuit. Make sure that the propeller fan blade does NOT rotate, as this could affect resistance measurements.

9 Set the Megger voltage to 500 V DC or 1000 V DC.

10 Measure the insulation resistance for the motor terminals. Measurements between each phase and fan motor body (e.g. axle) MUST be >1000 MΩ.

Are the measured resistance values correct?	Action
Yes	Perform a check of the fan inverter PCB, see "Checking procedures" [▶ 257].
No	Replace the DC fan motor, see "Repair procedures" [▶ 301].

Problem solved?

After all checking procedures listed above have been performed:

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

Repair procedures

To remove the propeller fan blade assembly

Prerequisite: Stop the unit operation via the central controller.

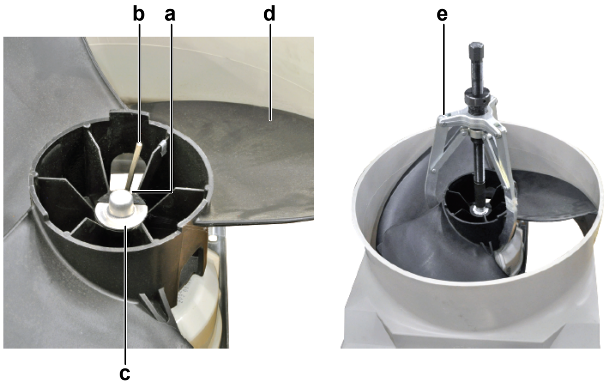
Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▶ 309].

2 Loosen and remove the screw using an Allen key.

3 Remove the axle cover.

4 Pull the propeller fan blade from the fan motor axle.



- **a** Screw
- **b** Allen key
- **c** Axle cover
- **d** Propeller fan blade assembly
- **e** Pulley remover

> **INFORMATION**
>
> Use a pulley remover if the propeller cannot be removed manually.

5 To install the propeller fan blade assembly, see "Repair procedures" [▶ 301].

To remove the DC fan motor assembly

1 Remove the propeller fan blade assembly from the DC fan motor assembly, see "Repair procedures" [▶ 301].

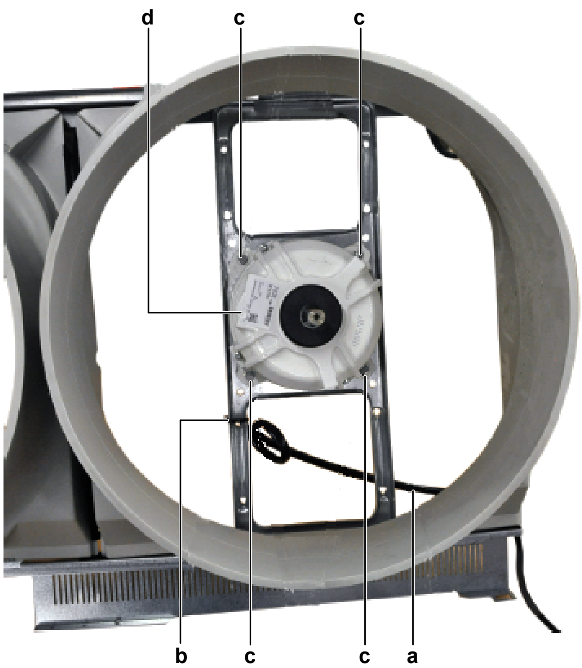
> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2 Disconnect the DC fan motor connector.

3 Unlock the ferrite bead.

4 Cut the tie strap.

5 Detach the DC fan motor cable.



a Fan motor cable
b Tie wrap
c Screw
d Fan motor

6. Remove the 4 screws that fix the DC fan motor assembly.
7. Remove the DC fan motor assembly from the unit.
8. To install the DC fan motor assembly, see "Repair procedures" [▶ 301].

To install the DC fan motor assembly

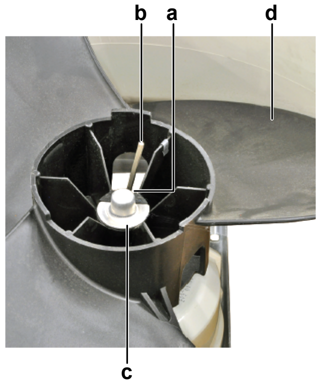
1. Install the DC fan motor assembly in the correct location.
2. Fix the DC fan motor assembly to the unit by tightening the screws.
3. Route the DC fan motor cable.
4. Attach the DC fan motor cable to the fan motor support bracket.
5. Install a new tie strap to fix the DC fan motor cable.
6. Connect the DC fan motor connector.
7. Lock the ferrite bead.
8. Install the propeller fan blade assembly, see "Repair procedures" [▶ 301].

To install the propeller fan blade assembly

1. Install the propeller fan blade assembly on the DC fan motor assembly.

> **CAUTION**
>
> Do NOT install a damaged propeller fan blade assembly.

2. Install the axle cover.
3. Install and tighten the screw using an Allen key to fix the propeller fan blade assembly.



a Screw
b Allen key
c Axle cover
d Propeller fan blade assembly

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▶ 299] of the outdoor unit fan motor and continue with the next procedure.

3.12.2 Double fan outdoor unit

> **INFORMATION**
>
> See Component overview for the correct location of DC fan motors M1F and M2F.

Checking procedures

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

To perform a mechanical check of the propeller fan blade assemblies

Prerequisite: First perform a power transistor check of the fan inverter PCB, see "3.7 Fan inverter PCB" [▶ 257]. If power transistor is OK, proceed as follows:

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. If propeller fan blade touches the bell mouth, check if the fan motor is correctly mounted on its base, see "Repair procedures" [▶ 306].
2. Check the state of the propeller fan blade assemblies for damage, deformations and cracks.

One or both propeller fan blade assemblies are damaged?	Action
Yes	Replace the damaged propeller fan blade assembly, see "Repair procedures" [▶ 306].

One or both propeller fan blade assemblies are damaged?	Action
No	Perform a mechanical check of the DC fan motor assembly, see "Checking procedures" [▸ 304].

To perform a mechanical check of the DC fan motor assembly

Prerequisite: First perform a mechanical check of the propeller fan blade assembly, see "Checking procedures" [▸ 304].

1. Visually check:
   - For any burnt-out part or wire. If found, replace the fan motor, see "Repair procedures" [▸ 306].
   - That fan motor fixation bolts are correctly installed and fixed. Correct as needed.
2. Manually rotate the fan motor shaft. Check that it rotates smoothly.
3. Check the friction of the DC fan motor shaft bearing.

Is the DC fan motor shaft friction normal?	Action
Yes	Perform an electrical check of the DC fan motor assembly, see "Checking procedures" [▸ 304].
No	Replace the DC fan motor assembly, see "Repair procedures" [▸ 306].

To perform an electrical check of the DC fan motor assembly

1. First perform a mechanical check of both DC fan motor assemblies, see "Checking procedures" [▸ 304].

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

2. Turn ON the power of the unit.
3. Activate `Cooling` or `Heating` operation via the Cool/Heat master user interface.
4. Check the functioning of the outdoor unit fan.

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

5. Stop the unit via the central controller.
6. Turn OFF the respective circuit breaker.

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

7 Check that the DC fan motor connectors (X1A on A4P for M1F and X1A on A5P for M2F) are properly connected to the PCB.

8 Unplug the DC fan motor connectors X1A of both fans and measure the resistance between the pins 1–2, 1–3, and 2–3 of the DC fan motor connectors.

Result: All measurements MUST be 4.44°Ω±5% at 20°C.

> **INFORMATION**
>
> Make sure that the wiring between the DC fan motor connector and the connector on the PCB is properly connected and NOT damaged (check continuity), see "6.2 Wiring diagram" [▸ 376].

> **INFORMATION**
>
> Winding resistance values above are given for reference. You should NOT be reading a value in kΩ or a short-circuit. Make sure that the propeller fan blade does NOT rotate, as this could affect resistance measurements.

9 Set the Megger voltage to 500 V DC or 1000 V DC.

10 Measure the insulation resistance for the motor terminals. Measurements between each phase and fan motor body (e.g. axle) MUST be >1000 MΩ.

Are the measured resistance values correct?	Action
Yes	Perform a check of the fan inverter PCB, see "Checking procedures" [▸ 263].
No	Replace the DC fan motor assembly, see "Repair procedures" [▸ 306].

Problem solved?

After all checking procedures listed above have been performed:

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

Repair procedures

To remove the propeller fan blade assembly

Prerequisite: Stop the unit operation via the central controller.

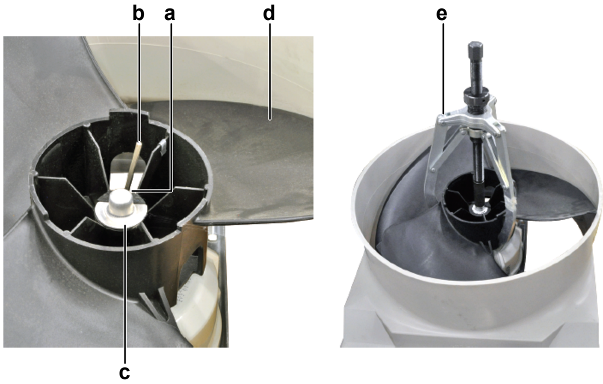
Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▸ 309].

2 Loosen and remove the screw using an Allen key.

3 Remove the axle cover.

4 Pull the propeller fan blade from the fan motor axle.



a Screw
b Allen key
c Axle cover
d Propeller fan blade assembly
e Pulley remover

> **INFORMATION**
>
> Use a pulley remover if the propeller cannot be removed manually.

5 To install the propeller fan blade assembly, see "Repair procedures" [▸ 306].

To remove the DC fan motor assembly

1 Remove the propeller fan blade assembly from the DC fan motor assembly, see "Repair procedures" [▸ 306].

2 Remove the required plate work, see "3.13 Plate work" [▸ 309].

3 Disconnect the DC fan motor connector.

4 Unlock the ferrite bead.

5 Cut the tie strap.

6 Detach the DC fan motor cable.

a Fan motor cable
b Tie wrap
c Screw
d Fan motor

7 Remove the 4 screws that fix the DC fan motor assembly.

8 Remove the DC fan motor assembly from the unit.

9 To install the DC fan motor assembly, see "Repair procedures" [▸ 306].

To install the DC fan motor assembly

1 Install the DC fan motor assembly in the correct location.

2 Install and tighten the 4 screws.

3 Route the DC fan motor cable.

4 Attach the DC fan motor cable to the fan motor support bracket.

5 Install a new tie strap to fix the DC fan motor cable.

6 Connect the DC fan motor connector.

7 Lock the ferrite bead.

8 Install the propeller fan blade assembly, see "Repair procedures" [▸ 306].

9 Install the plate work of the outdoor unit, see "3.13 Plate work" [▸ 309].

To install the propeller fan blade assembly

1 Install the propeller fan blade assembly on the DC fan motor assembly.

> **CAUTION**
>
> Do NOT install a damaged propeller fan blade assembly.

2 Install the axle cover.

3 Install and tighten the screw using an Allen key to fix the propeller fan blade assembly.

a Screw
b Allen key
c Axle cover
d Propeller fan blade assembly

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "Checking procedures" [▸ 304] of the outdoor unit fan motor and continue with the next procedure.

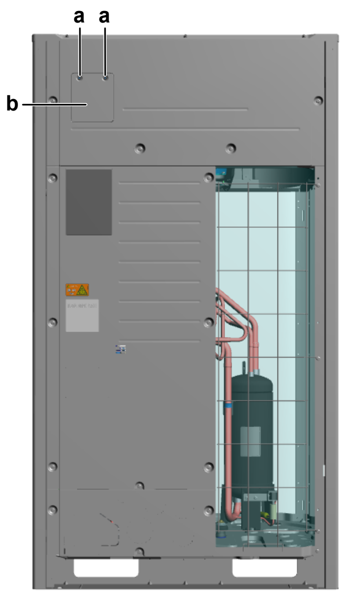
3.13 Plate work

3.13.1 To remove the plate work on single fan units

Prerequisite: Stop the unit operation via the central controller.

1 Turn OFF the respective circuit breaker.

To remove the service plate

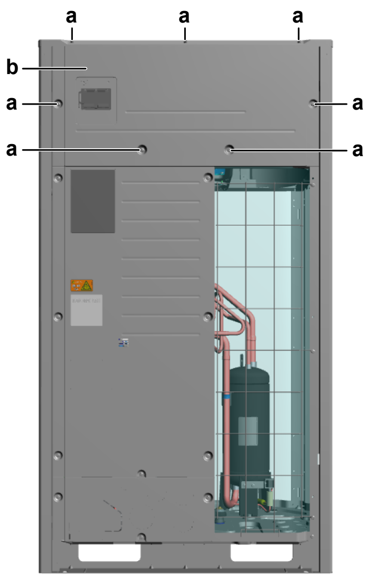


a Screw
b Service plate

2 Loosen and remove the 2 screws that fix the service plate assembly.

3 Remove the service plate assembly from the unit.

To remove the upper front plate

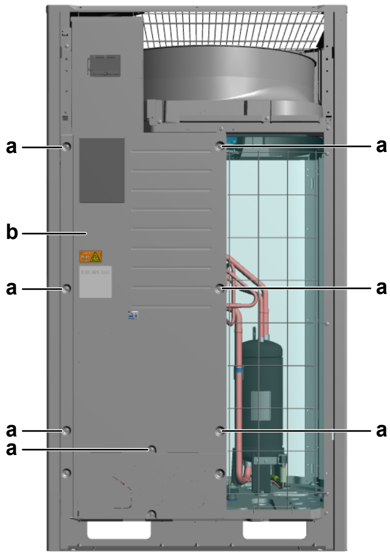


a Screw
b Upper front plate

4 Loosen and remove the 7 screws that fix the upper front plate assembly.

5 Lift the upper front plate assembly and remove it from the unit.

To remove the front plate



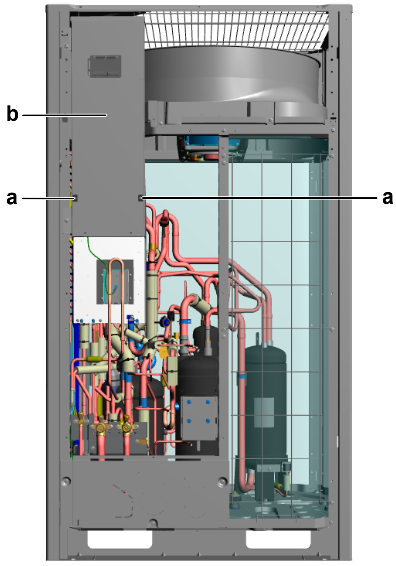
a Screw
b Front plate

6 Loosen and remove the 7 screws that fix the front plate assembly.

7 Lift the front plate assembly and remove it from the unit.

To remove the switch box cover

> **DANGER: RISK OF ELECTROCUTION**
>
> Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

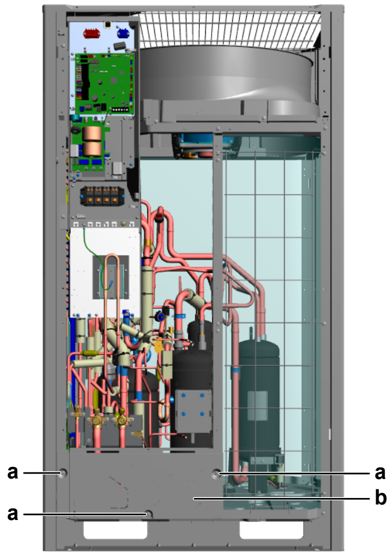


a Screw
b Switch box cover

8 Loosen and remove the 2 screws that fix the switchbox cover.

9 Remove the switchbox cover from the unit.

To remove the lower front plate

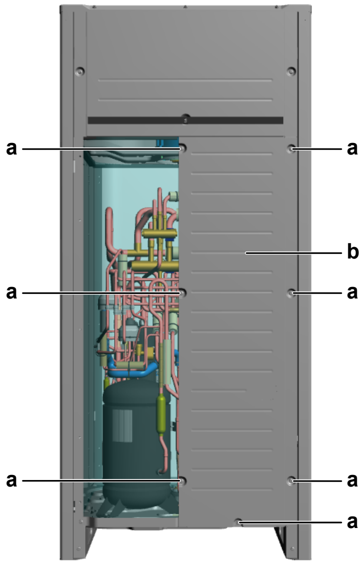


a Screw
b Lower front plate

10 Loosen and remove the 3 screws that fix the lower front plate assembly.

11 Lift the lower front plate assembly and remove it from the unit.

To remove the side plate

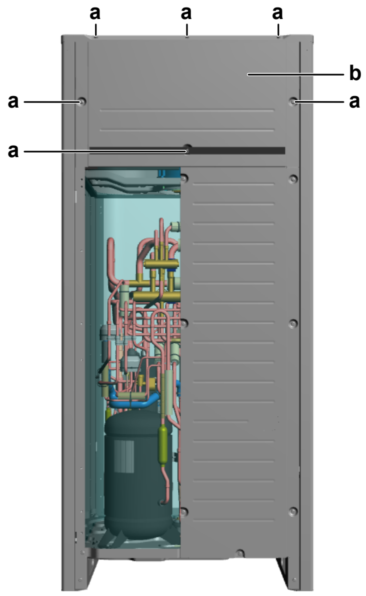


a Screw
b Side plate

12 Loosen and remove the 7 screws that fix the side plate assembly.

13 Lift the side plate assembly and remove it from the unit.

To remove the upper side plate

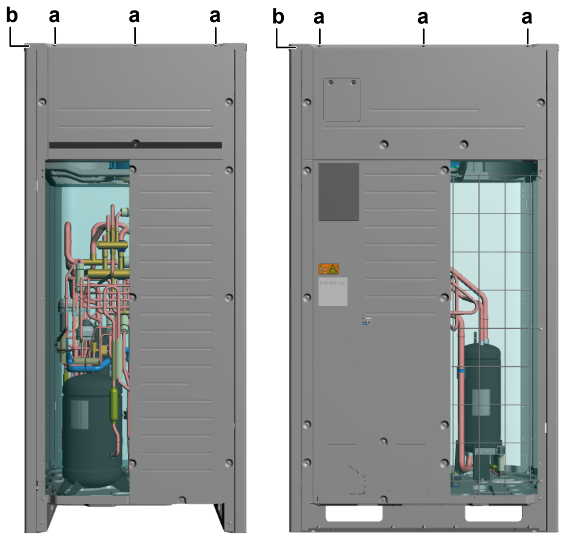


a Screw
b Upper side plate

14 Loosen and remove the 6 screws that fix the upper side plate assembly.

15 Lift the upper side plate assembly and remove it from the unit.

To remove the top plate



a Screw
b Top plate

16 Loosen and remove the 12 screws that fix the top plate assembly.

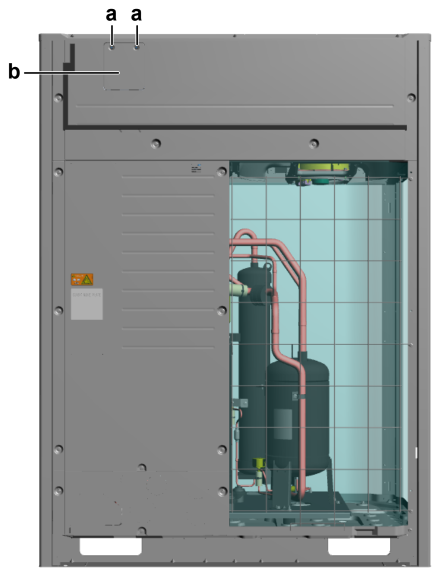
17 Remove the top plate from the unit.

3.13.2 To remove the plate work on double fan units

Prerequisite: Stop the unit operation via the central controller.

1 Turn OFF the respective circuit breaker.

To remove the service plate

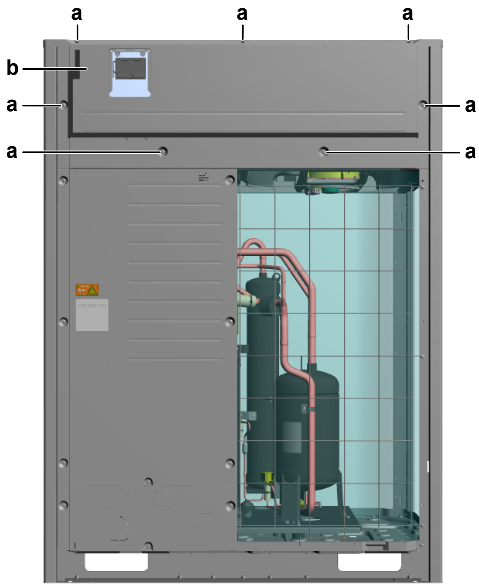


a Screw
b Service plate

2 Loosen and remove the 2 screws that fix the service plate assembly.

3 Remove the service plate assembly from the unit.

To remove the upper front plate

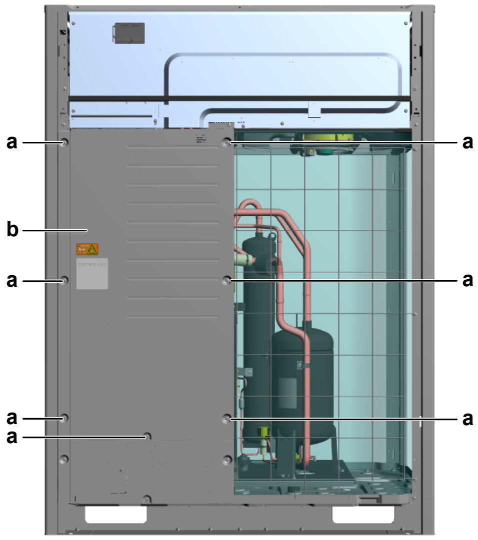


a Screw
b Upper front plate

4 Loosen and remove the 7 screws that fix the upper front plate assembly.

5 Lift the upper front plate assembly and remove it from the unit.

To remove the front plate



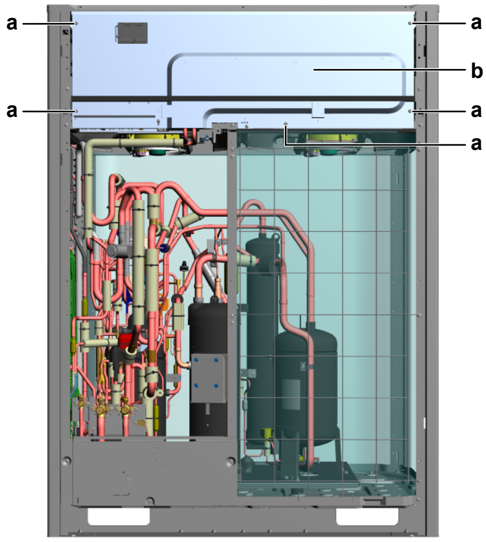
a Screw
b Front plate

6 Loosen and remove the 7 screws that fix the front plate assembly.

7 Lift the front plate assembly and remove it from the unit.

To remove the switch box cover

> **DANGER: RISK OF ELECTROCUTION**
>
> Wait for at least 10 minutes after the circuit breaker has been turned OFF, to be sure the rectifier voltage is below 10 V DC before proceeding.

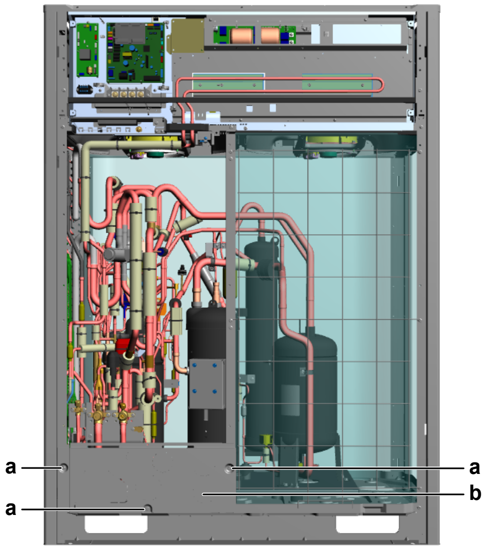


a Screw
b Switchbox cover

8 Loosen and remove the 5 screws that fix the switchbox cover.

9 Remove the switchbox cover from the unit.

To remove the lower front plate

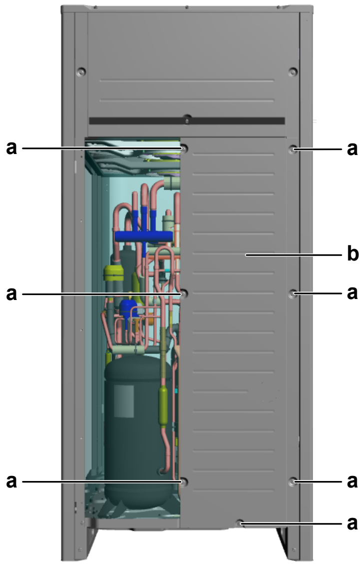


1 Screw
3 Lower front plate

10 Loosen and remove the 3 screws that fix the lower front plate assembly.

11 Lift the lower front plate assembly and remove it from the unit.

To remove the side plate

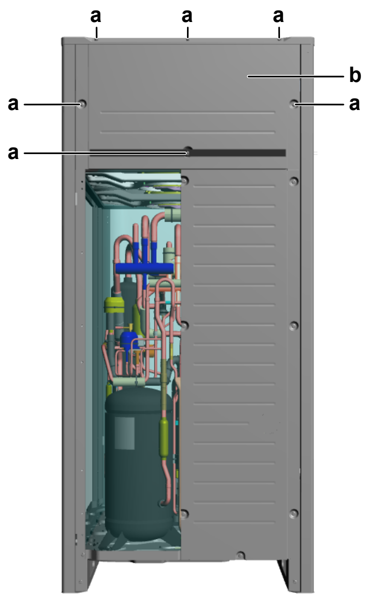


a Screw
b Side plate

12 Loosen and remove the 7 screws that fix the side plate assembly.

13 Lift the side plate assembly and remove it from the unit.

To remove the upper side plate

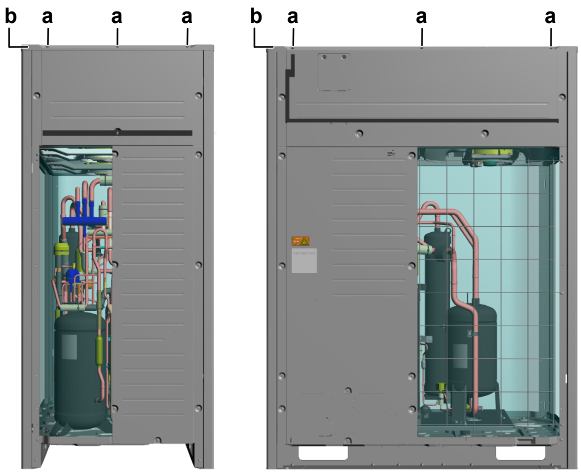


a Screw
b Upper side plate

14 Loosen and remove the 6 screws that fix the upper side plate assembly.

15 Lift the upper side plate assembly and remove it from the unit.

To remove the top plate



a Screw
b Top plate

16 Loosen and remove the 12 screws that fix the top plate assembly.

17 Remove the top plate from the unit.

3.13.3 To remove the plate work on the branch selector box

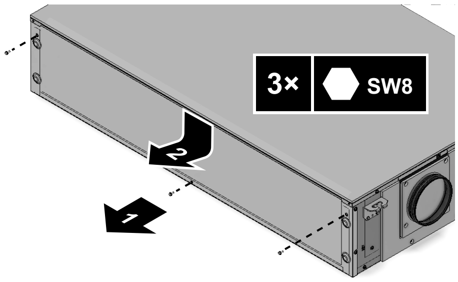
Prerequisite: Stop the unit operation via the central controller.

1 Turn OFF the respective circuit breaker.

To remove the switch box cover

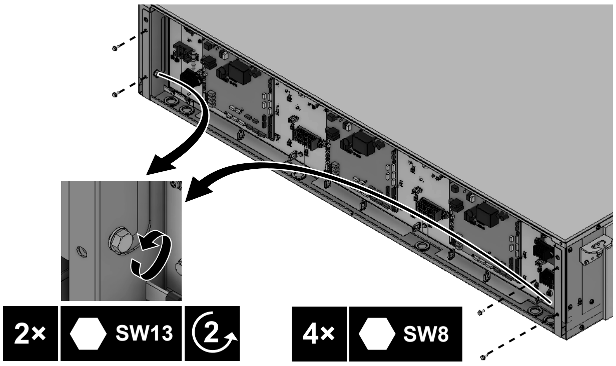
1 Loosen and remove the screws that fix the switchbox cover.

2 Remove the switchbox cover to access the PCB.

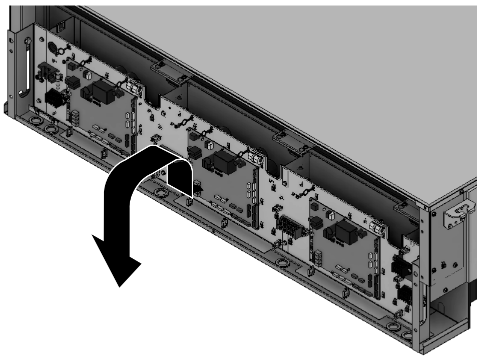


To lower the switch box

1. Remove the switch box cover.
2. Remove the 4 screws.
3. Store the screws in a safe place.
4. Loosen the M8 bolts 2 turns without removing them.

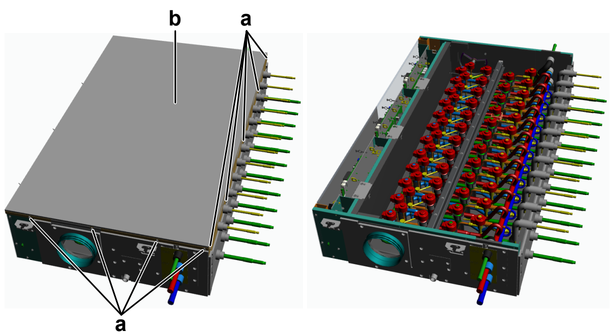


5. Lift the switch box, pull it forward and lower it.



To remove the top plate

1. Loosen and remove the top plate screws.
2. Lift the top plate and remove it from the unit.



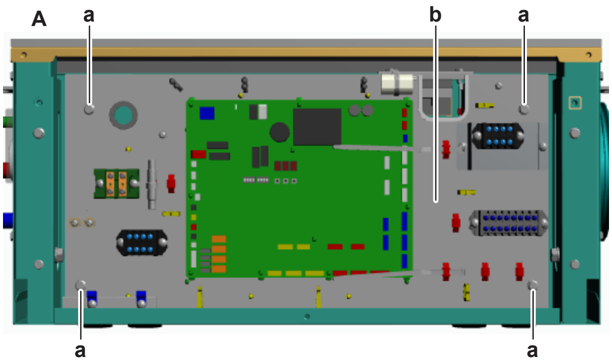
a Screw
b Top plate

To access the back side of the PCB mounting plate

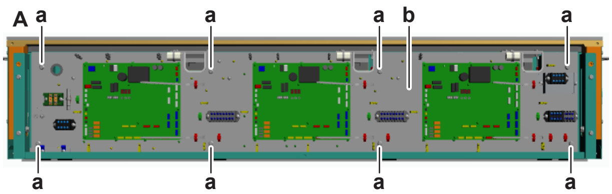
1 Remove the switch box cover.

2 Remove the bolts and carefully tilt the PCB mounting plate.

Result: Back side of the PCB mounting plate is accessible.



A BS4A branch selector box
a Bolt
b PCB mounting plate



A BS12A branch selector box
a Bolt
b PCB mounting plate

3.13.4 To access the switch box on single fan units

- TO ACCESS THE NOISE FILTER PCB, FAN INVERTER PCB AND REACTOR

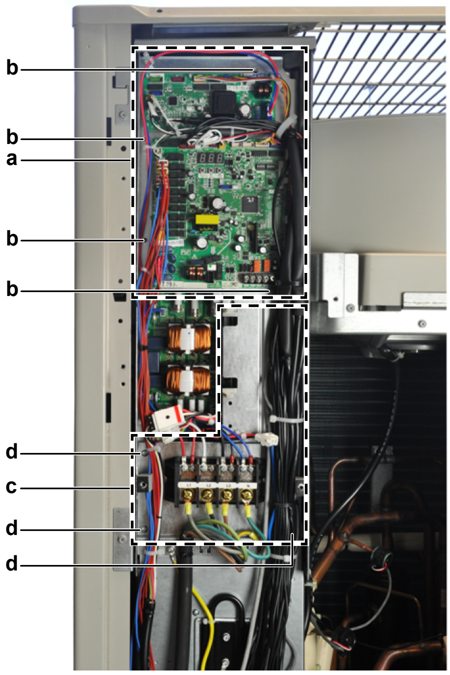
Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▸ 309].

DANGER: RISK OF ELECTROCUTION

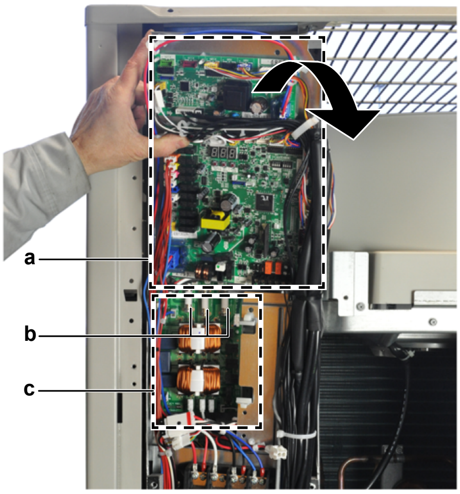
Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].



a Main PCB
b Screw (main PCB assy)
c Power supply terminal assembly
d Screw (power supply terminal assy)

2 Remove the 4 screws that fix the main PCB assembly.

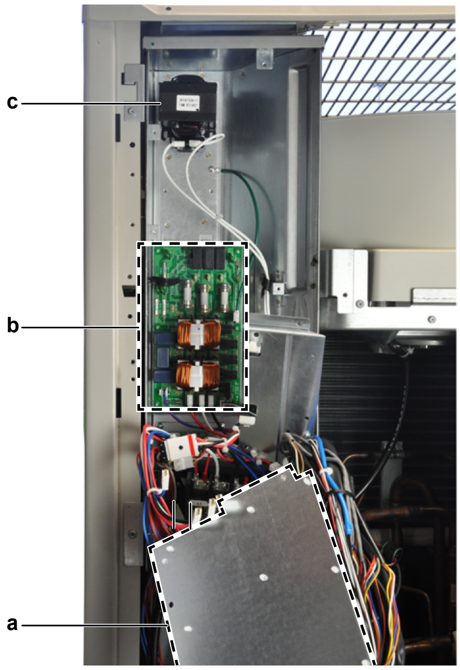
3 Remove the 3 screws that fix the power supply terminal assembly.



a Main PCB
b Power input wiring
c Noise filter PCB

4 Slightly tilt the main PCB assembly to access the noise filter PCB while ALL wiring is still connected.

5 Remove the power input wiring from the noise filter PCB.



a Main PCB
b Noise filter PCB
c Reactor

6 Completely tilt the main PCB assembly to get full access to the noise filter PCB and the reactor.

- TO ACCESS THE INVERTER PCB

Prerequisite: Stop the unit operation via the central controller.

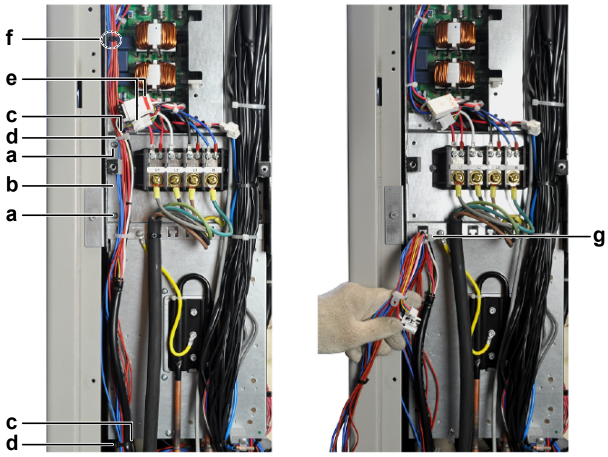
Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▶ 309].

DANGER: RISK OF ELECTROCUTION

Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2 Loosen and remove the screws that fix the power terminal assembly.



a Screw (power terminal assy)
b Power terminal assembly
c Screw (cable clamp)
d Cable clamp
e Connectors X1A and X2A
f Wiring
g Tie wrap

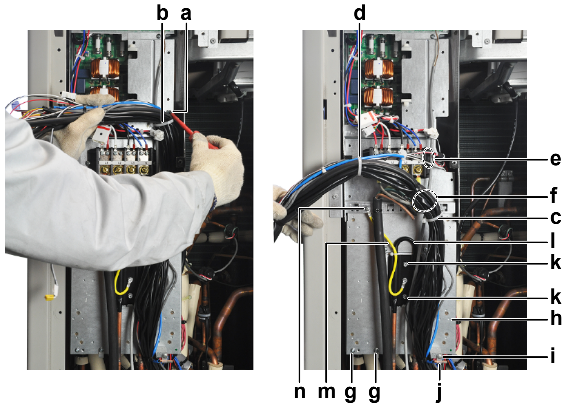
3 Loosen and remove the 2 screws that fix the cable clamps.

4 Unplug the fan connectors X1A and X2A.

5 Unplug the wiring from the main PCB.

6 Detach the tie wrap.

7 Loosen and remove the screw that fixes the cable clamp.



a Screw (cable clamp)
b Cable clamp
c Tie wrap
d Tie wrap
e Cables
f Cables
g Screw (inverter PCB assy)
h Inverter PCB assembly
i Screw (thermistor clamp)
j Thermistor clamp
k Screw (refrigerant liquid pipe)
l Refrigerant liquid pipe
m Ground wire
n Screw (ground wire)

8 Detach the tie wrap.

9 Cut the tie wraps on the cable harness.

10 Separate the cables.

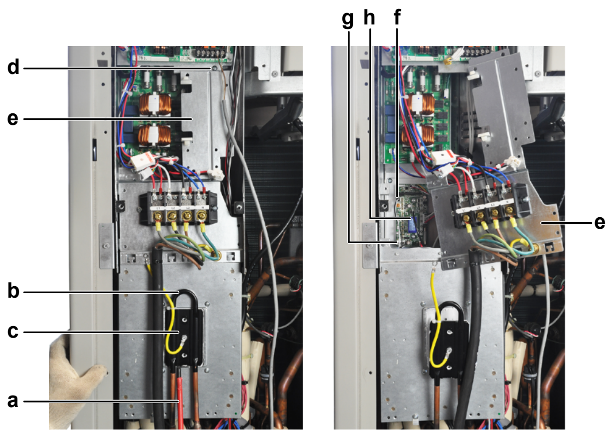
11 Loosen and remove the 2 screws that fix the inverter PCB assembly.

12 Loosen and remove the screw that fixes the thermistor clamp.

13 Loosen and remove the 2 screws that fix the refrigerant liquid pipe.

14 Loosen and remove the screw that fixes the ground wire.

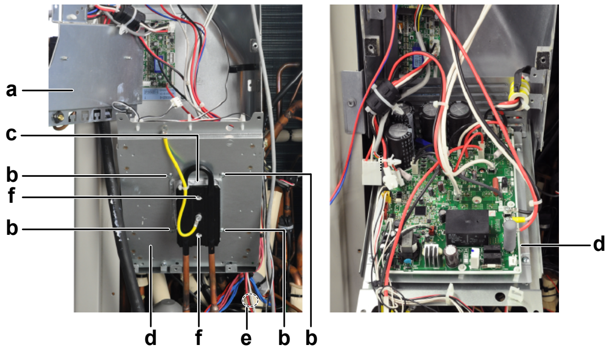
15 Using a flat screwdriver, separate the refrigerant liquid pipe from the heat sink.



a Flat screwdriver
b Refrigerant liquid pipe
c Heat sink
d Screw
e Power terminal assembly
f Connector X3A
g Connector X5A
h Fan inverter PCB

16 Loosen and remove the screw that fixes the power terminal assembly.

17 Move the power terminal assembly to the right.



a Power terminal assembly
b Screw (heat sink)
c Heat sink
d Inverter PCB
e Compressor cable
f Screw (heat sink element)

18 Disconnect connectors X3A and X5A from the fan inverter PCB.

19 Turn the power terminal assembly to the left.

20 Remove the 4 screws that fix the heat sink.

21 Lift and slightly tilt the inverter PCB assembly, guide the compressor cable into the switch box.

22 Put the inverter PCB assembly in horizontal position to access the inverter PCB.

3.13.5 To access the switch box on double fan units

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Remove the required plate work, see "3.13 Plate work" [▸ 309].

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

2 Do NOT loosen the screws that fix the inverter PCB heat sinks at this step. These screws ONLY need to be removed when replacing an inverter PCB.

3 Loosen and remove the 4 screws that fix the liquid cooling pipe heat sinks.

4 Loosen and remove the short screw that fixes the grounding wire to the liquid cooling pipe heat sink.

5 Loosen and remove the screw that fixes the thermistor R1T mounting bracket.

6 Using a screwdriver, carefully separate both liquid cooling pipe heat sinks from the inverter PCB heat sinks.

7 Loosen and remove the screws that fix the inverter mounting plate.

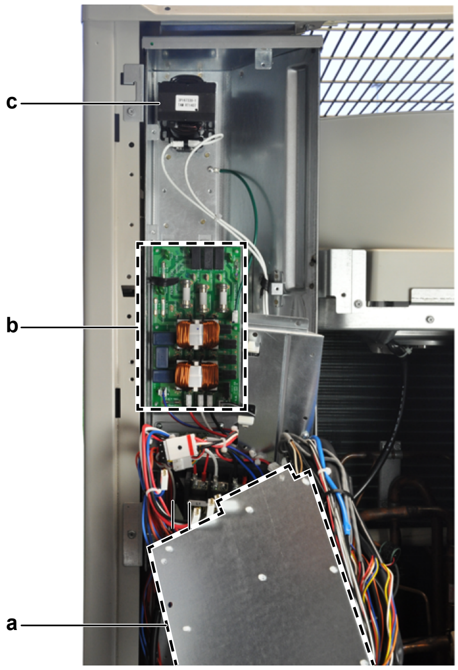
8 Carefully pull the inverter mounting plate to the front and tilt it. Pay attention to the liquid cooling piping.

9 Disconnect the necessary wiring to have access to noise filter PCB, the reactor and - on the rear side of the inverter mounting plate - the inverter PCB and fan inverter PCB.

3.13.6 To assemble the switch box on single fan units

- TO ASSEMBLE THE SWITCH BOX - NOISE FILTER PCB, FAN INVERTER PCB AND REACTOR

1 Carefully bring the main PCB assembly to the correct position and connect the power input wiring to the noise filter PCB.

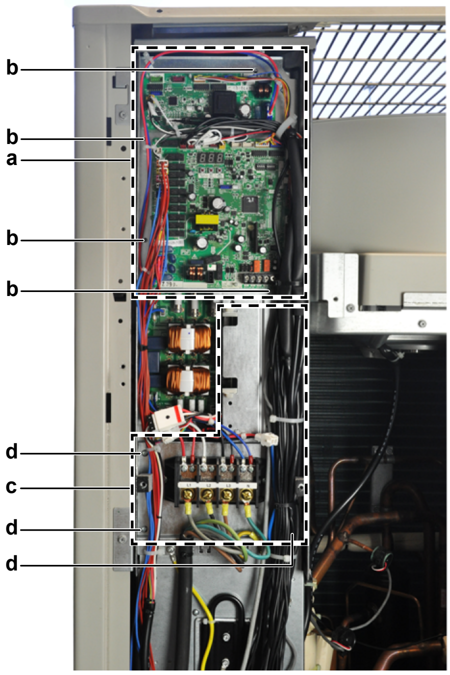


a Main PCB
b Noise filter PCB
c Reactor

2 Install the main PCB assembly and power supply terminal assembly in the correct location.

3 Install and tighten the 3 screws to fix the power supply terminal assembly.

4 Install and tighten the 4 screws to fix the main PCB assembly.



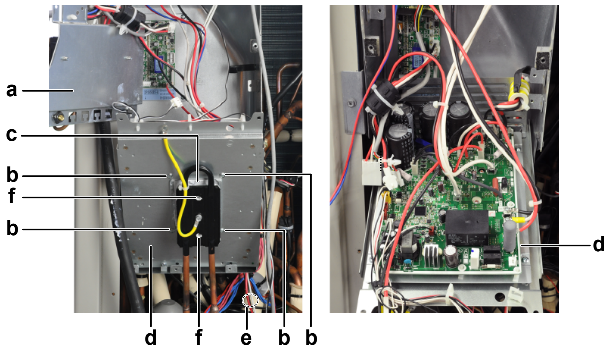
a Main PCB
b Screw (main PCB assy)

c Power supply terminal assembly
d Screw (power supply terminal assy)

5 Install the required plate work, see "3.13 Plate work" [▶ 309].

- TO ASSEMBLE THE SWITCH BOX - INVERTER PCB

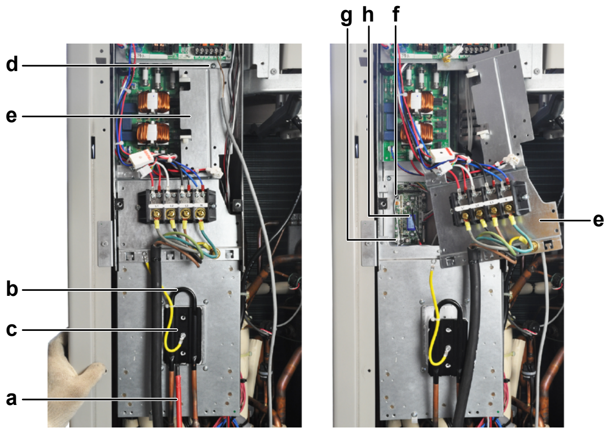
1 Put the inverter PCB assembly in vertical position.



a Power terminal assembly
b Screw (heat sink)
c Heat sink
d Inverter PCB
e Compressor cable
f Screw (heat sink element)

2 Install the 4 screws that fix the heat sink.

3 Turn the power terminal assembly to the right.



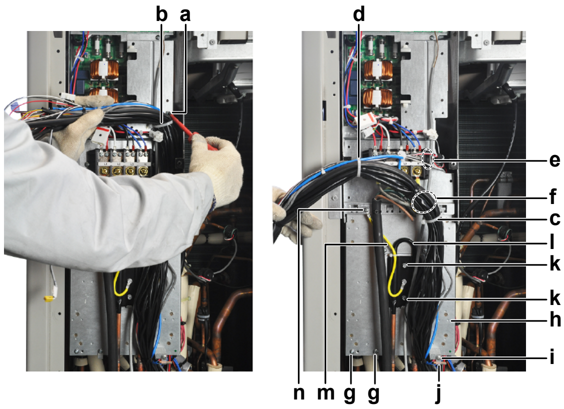
a Flat screwdriver
b Refrigerant liquid pipe
c Heat sink
d Screw
e Power terminal assembly
f Connector X3A
g Connector X5A
h Fan inverter PCB

4 Connect connectors X3A and X5A to the fan inverter PCB.

5 Move the power terminal assembly to the left.

6 Install the screw to fix the power terminal assembly.

7 Install the refrigerant liquid pipe on the heat sink.



a	Screw (cable clamp)	**h**	Inverter PCB assembly
b	Cable clamp	**i**	Screw (thermistor clamp)
c	Tie wrap	**j**	Thermistor clamp
d	Tie wrap	**k**	Screw (refrigerant liquid pipe)
e	Cables	**l**	Refrigerant liquid pipe
f	Cables	**m**	Ground wire
g	Screw (inverter PCB assy)	**n**	Screw (ground wire)

8 Install the screw to fix the ground wire.

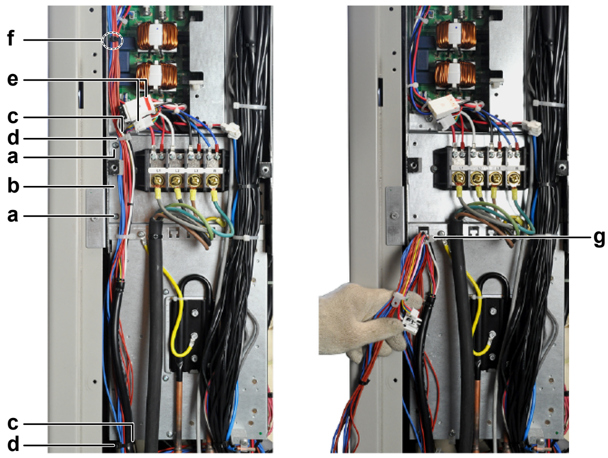
9 Install the 2 screws to fix the refrigerant liquid pipe.

10 Install the screw to fix the thermistor clamp.

11 Install the 2 screws to fix the inverter PCB assembly.

12 Tie the cables together with tie wraps.

13 Install the screw to fix the cable clamp.



- **a** Screw (power terminal assy)
- **b** Power terminal assembly
- **c** Screw (cable clamp)
- **d** Cable clamp
- **e** Connectors X1A and X2A
- **f** Wiring
- **g** Tie wrap

14 Install the tie wrap.

15 Connect the wiring to the main PCB.

16 Connect the fan connectors X1A and X2A.

17 Install the 2 screws to fix the cable clamps.

18 Install the screws to fix the power terminal assembly.

19 Install the required plate work, see "3.13 Plate work" [▶ 309].

3.13.7 To assemble the switch box on double fan units

1. Carefully install the inverter mounting plate in the correct location. Pay attention to the liquid cooling piping.
2. Install and tighten the screws that fix the inverter mounting plate.
3. Install the liquid cooling pipe heat sinks in the correct location on the inverter PCB heat sinks.
4. Install and tighten the 4 screws to fix the liquid cooling pipe heat sinks.
5. Install and tighten the short screw to fix the ground wire to the liquid cooling pipe heat sink.
6. Install the thermistor R1T mounting bracket in the correct location.
7. Install and tighten the screw to fix the thermistor mounting bracket.
8. Install the required plate work, see "3.13 Plate work" [▶ 309].

3.14 Refrigerant high pressure sensor

3.14.1 Checking procedures

To perform an electrical check of the refrigerant pressure sensor

Prerequisite: Stop the unit operation via the central controller.

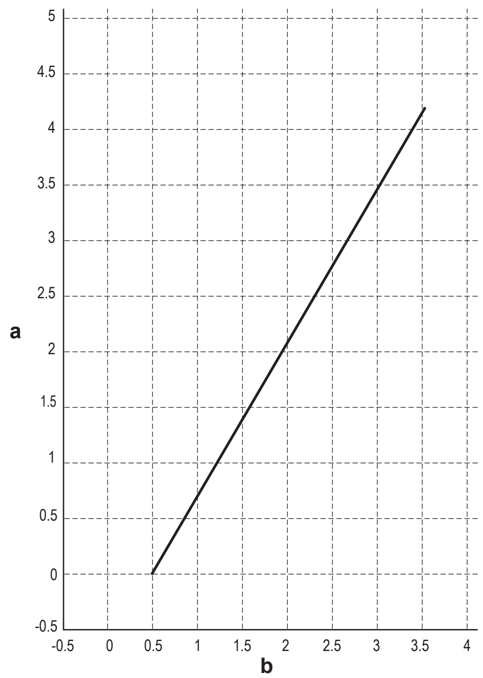
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Turn ON the power of the unit.
2. Connect a pressure gauge to the high pressure service port. Read the pressure.

> **INFORMATION**
>
> When the unit is operating in heating mode, the high pressure port is the gas service port. When the unit is operating in cooling (defrost) mode, the high pressure port is the liquid service port.

3. Using the graphic below, determine the expected sensor output voltage based on the pressure obtained in the previous step.



a Detected pressure (MPa)
b Output voltage (V)

V (DC)	Detected pressure MPa
0.5	0.01
0.6	0.15
0.7	0.29
0.8	0.42
0.9	0.56
1.0	0.70
1.1	0.84
1.2	0.98
1.3	1.11
1.4	1.25
1.5	1.39
1.6	1.53
1.7	1.67
1.8	1.80
1.9	1.94
2.0	2.08
2.1	2.22
2.2	2.36
2.3	2.49
2.4	2.63
2.5	2.77
2.6	2.91

V (DC)	Detected pressure MPa
2.7	3.05
2.8	3.18
2.9	3.32
3.0	3.46
3.1	3.60
3.2	3.74
3.3	3.87
3.4	4.01
3.5	4.15
3.6	4.29

4 Measure the voltage on X32A: pins 2–3 (= refrigerant pressure sensor output signal).

5 Check that the measured voltage is in line with the expected voltage through the read refrigerant pressure.

INFORMATION

Connect the service monitoring tool to the unit or use field settings mode 1 (see "6.7 Field settings" [▸ 401]) to monitor the high pressure.

If the measured output voltage value matches the voltage determined through the measured pressure, but the pressure via the service monitoring tool is NOT correct, replace the appropriate PCB.

The measured voltage is inside the expected range?	Action
Yes	Refrigerant pressure sensor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

6 Unplug the refrigerant pressure sensor connector X32A and measure the voltage (power supply) between pins 1–3 on main PCB.

Result: The measured voltage MUST be +5 V DC.

Is the measured voltage +5 V DC?	Then
Yes	Replace the refrigerant pressure sensor, see "3.14.2 Repair procedures" [▸ 328].
No	Perform a check of the main PCB, see "3.9 Main PCB" [▸ 280].

3.14.2 Repair procedures

To remove the refrigerant pressure sensor

Prerequisite: Stop the unit operation via the central controller.

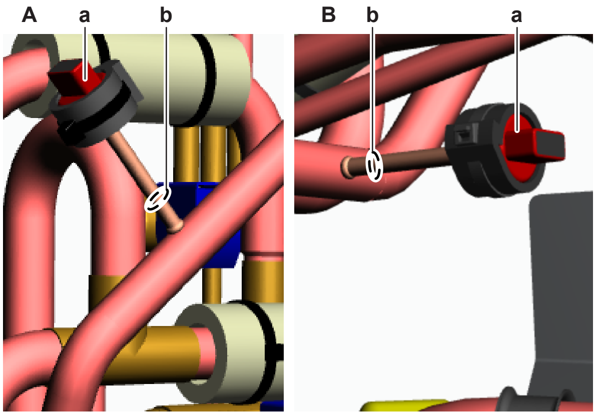
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▸ 309].

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

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

1. Cut all tie straps that fix the refrigerant pressure sensor harness.
2. Disconnect the refrigerant pressure sensor connector from the PCB.
3. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
4. Wrap a wet rag around the components near the refrigerant pressure sensor. Heat the brazing point of the refrigerant pressure sensor pipe using an oxygen acetylene torch and remove the refrigerant pressure sensor pipe from the refrigerant pipe using pliers.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Refrigerant pressure sensor
b Refrigerant pressure sensor pipe

5. Stop the nitrogen supply when the piping has cooled down.
6. Remove the refrigerant pressure sensor.

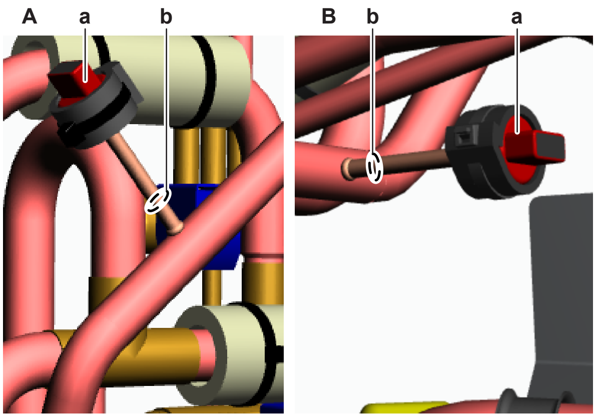
INFORMATION

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

7. Install a plug or cap on the refrigerant piping to avoid dirt or impurities from entering the piping.
8. To install the refrigerant pressure sensor, see "3.14.2 Repair procedures" [▶ 328].

To install the refrigerant pressure sensor

1. Remove the plug or cap from the refrigerant piping and make sure it is clean.
2. Install the refrigerant pressure sensor in the correct location.
3. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
4. Wrap a wet rag around the refrigerant pressure sensor and any other components near the pressure sensor and solder the refrigerant pressure sensor pipe to the refrigerant pipe.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Refrigerant pressure sensor
b Refrigerant pressure sensor pipe

CAUTION

Overheating the pressure sensor will damage or destroy it.

5 After soldering is done, stop the nitrogen supply after the component has cooled-down.
6 Route the refrigerant pressure sensor harness towards the appropriate PCB.
7 Connect the refrigerant pressure sensor connector to the appropriate PCB.
8 Fix the refrigerant pressure sensor harness using new tie straps.
9 Perform a pressure test, see "4.2.1 Checking procedures" [▶ 359].
10 Add refrigerant to the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

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

3.15 Refrigerant low pressure sensor

3.15.1 Checking procedures

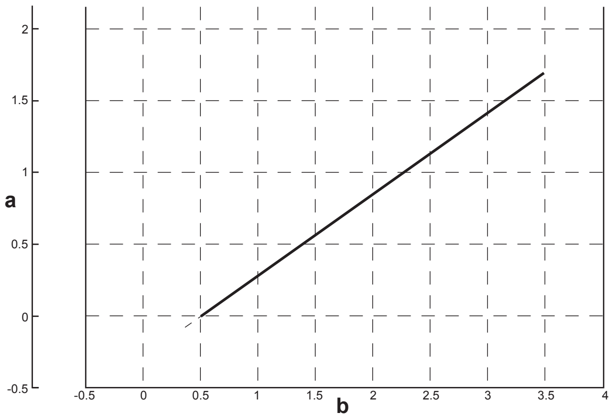
To perform an electrical check of the refrigerant pressure sensor

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Connect a pressure gauge to the refrigerant charge port.
2 Turn ON the power of the unit.
3 Read the pressure on the pressure gauge.
4 Using the graphic below, determine the expected sensor output voltage based on the pressure obtained in the previous step.



a Detected pressure (MPa)
b Output voltage (V)

V (DC)	Detected pressure (MPa)
0.3	–0.12
0.4	–0.07
0.5	–0.01
0.6	0.05
0.7	0.10
0.8	0.16
0.9	0.22
1.0	0.28
1.1	0.33
1.2	0.39
1.3	0.45
1.4	0.50
1.5	0.56
1.6	0.62
1.7	0.67
1.8	0.73
1.9	0.79
2.0	0.85
2.1	0.90
2.2	0.96
2.3	1.02
2.4	1.07
2.5	1.13
2.6	1.19
2.7	1.24
2.8	1.30
2.9	1.36

V (DC)	Detected pressure (MPa)
3.0	1.42
3.1	1.47
3.2	1.53
3.3	1.59
3.4	1.64
3.5	1.70

INFORMATION

The refrigerant pressure sensor connector MUST be plugged into the appropriate PCB.

5 Measure the voltage on X31A: pins 2–3 (= refrigerant pressure output signal) on the main PCB.

6 Check that the measured voltage is in line with the expected voltage through the read refrigerant pressure.

INFORMATION

Connect the service monitoring tool to the unit or use field settings mode 1-43 (see "6.7 Field settings" [▶ 401]) to monitor the low pressure.

If the measured output voltage value matches the voltage determined through the measured pressure, but the pressure via the service monitoring tool is NOT correct, replace the applicable PCB.

The measured voltage is inside the expected range?	Action
Yes	Refrigerant pressure sensor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

7 Unplug the refrigerant pressure sensor connector X31A and measure the voltage (power supply) between pins 1–3 on main PCB.

Result: The measured voltage MUST be +5 V DC.

Is the measured voltage +5 V DC?	Then
Yes	Replace the refrigerant pressure sensor, see "3.15.2 Repair procedures" [▶ 332].
No	Perform a check of the main PCB, see "3.9 Main PCB" [▶ 280].

3.15.2 Repair procedures

To remove the refrigerant pressure sensor

Prerequisite: Stop the unit operation via the central controller.

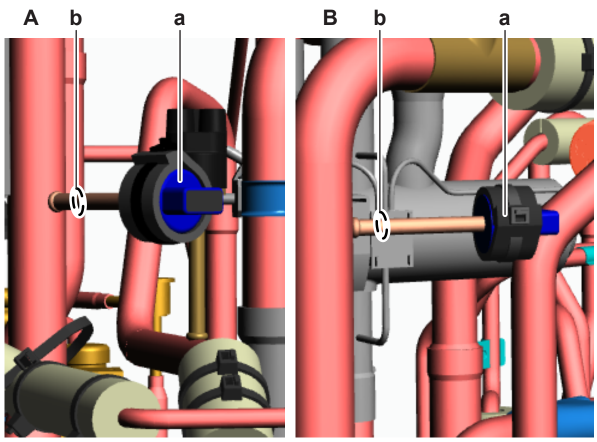
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

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

1. Cut all tie straps that fix the refrigerant pressure sensor harness.
2. Disconnect the refrigerant pressure sensor connector from the PCB.
3. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
4. Wrap a wet rag around the components near the refrigerant pressure sensor. Heat the brazing point of the refrigerant pressure sensor pipe using an oxygen acetylene torch and remove the refrigerant pressure sensor pipe from the refrigerant pipe using pliers.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Refrigerant pressure sensor
b Refrigerant pressure sensor pipe

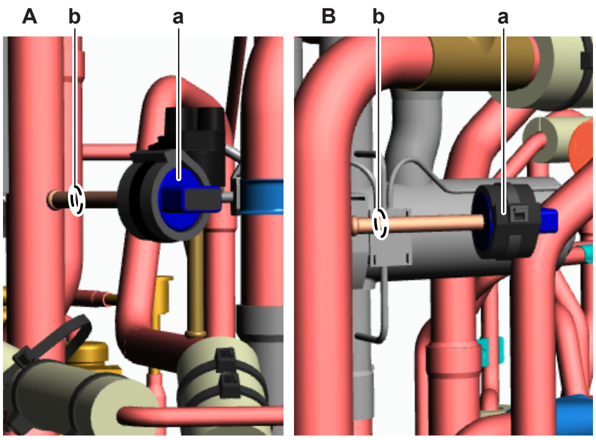
5. Stop the nitrogen supply when the piping has cooled down.
6. Remove the refrigerant pressure sensor.

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

7. Install a plug or cap on the refrigerant piping to avoid dirt or impurities from entering the piping.
8. To install the refrigerant pressure sensor, see "3.15.2 Repair procedures" [▶ 332].

To install the refrigerant pressure sensor

1. Remove the plug or cap from the refrigerant piping and make sure it is clean.
2. Install the refrigerant pressure sensor in the correct location.
3. Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
4. Wrap a wet rag around the refrigerant pressure sensor and any other components near the pressure sensor and solder the refrigerant pressure sensor pipe to the refrigerant pipe.



A REMA5 + REYA8~12 units
B REYA14~20 units
a Refrigerant pressure sensor
b Refrigerant pressure sensor pipe

> **CAUTION**
>
> Overheating the pressure sensor will damage or destroy it.

5. After soldering is done, stop the nitrogen supply after the component has cooled-down.
6. Route the refrigerant pressure sensor harness towards the appropriate PCB.
7. Connect the refrigerant pressure sensor connector to the appropriate PCB.
8. Fix the refrigerant pressure sensor harness using new tie straps.
9. Perform a pressure test, see "4.2.1 Checking procedures" [▶ 359].
10. Add refrigerant to the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

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

3.16 Solenoid valve

3.16.1 Checking procedures

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

To perform a mechanical check of the solenoid valve

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Visually check:

- For oil drops around the solenoid valve. Locate and fix as needed.
- Pipes for signs of damage. Replace pipes as needed.

2 Verify that the screw is firmly fixing the coil to the valve body.

3 Check coil and coil wires if any damage or burst is present.

Is the solenoid valve coil firmly fixed and not visually damaged?	Action
Yes	Perform an electrical check of the solenoid valve, see "3.16.1 Checking procedures" [▶ 334].
No	Fix or replace the solenoid valve coil, see "3.16.2 Repair procedures" [▶ 335].

Problem solved?

After all checking procedures listed above have been performed:

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

3.16.2 Repair procedures

To remove the solenoid valve coil

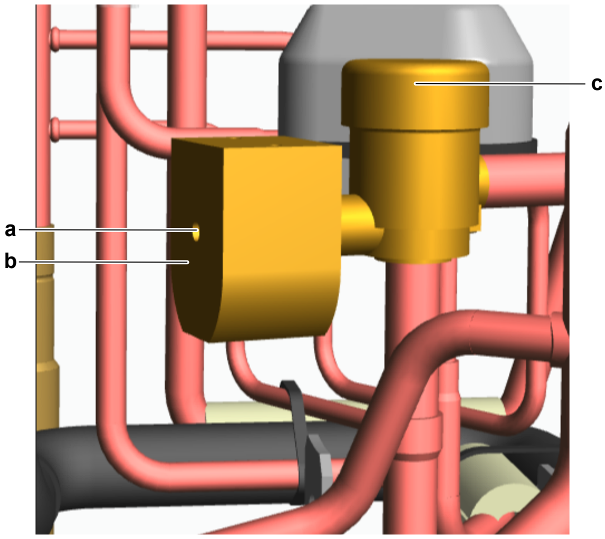
Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

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

1 Remove the screw that fixes the solenoid valve coil to the solenoid valve body.



a Screw
b Solenoid valve coil
c Solenoid valve body

2 Remove the solenoid valve coil from the solenoid valve body.

3 Disconnect the solenoid valve connector from the main PCB.

4 Cut all tie straps that fix the solenoid valve harness.

5 To install the solenoid valve coil, see "3.16.2 Repair procedures" [▸ 335].

To remove the solenoid valve body

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▸ 364].

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

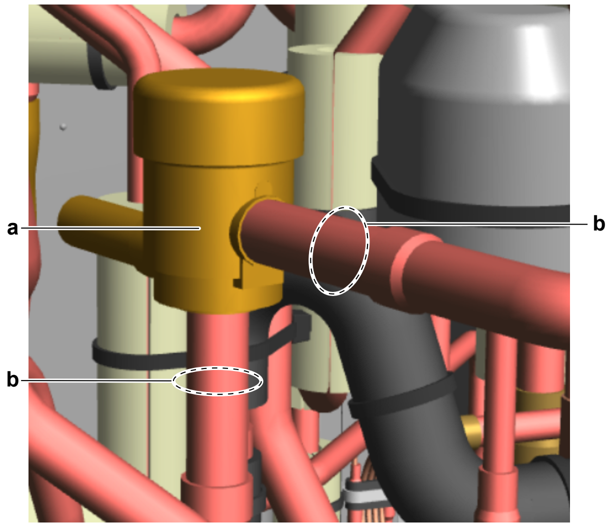
1 Remove the solenoid valve coil, see "3.16.2 Repair procedures" [▸ 335].

2 Remove the insulation from the oil return valve pipes (if applicable). Keep for reuse.

3 Using a valve magnet, open the solenoid valve.

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

5 Wrap a wet rag around the components near the solenoid valve body pipes. Heat the brazing points of the solenoid valve body pipes using an oxygen acetylene torch and remove the solenoid valve body pipes from the refrigerant pipes using pliers.



a Solenoid valve body
b Pipe

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

7 Remove the solenoid valve body.

INFORMATION

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

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

9 To install the solenoid valve body, see "3.16.2 Repair procedures" [▸ 335].

To install the solenoid valve body

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

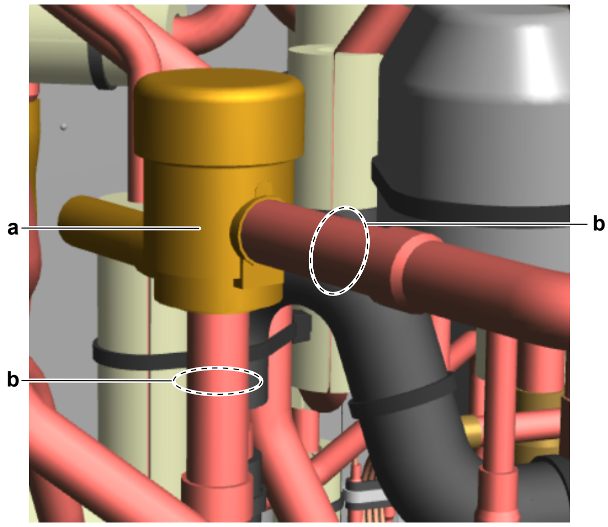
2 Remove the solenoid valve coil from the spare part solenoid valve body.

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

4 Open the solenoid valve using a valve magnet.

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

6 Wrap a wet rag around the solenoid valve body and any other components near the solenoid valve and solder the solenoid valve body pipes to the refrigerant pipes.



a Solenoid valve body
b Pipe

CAUTION

Overheating the valve will damage or destroy it.

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

8 Install the insulation in the original location on the oil return valve pipes (if applicable).

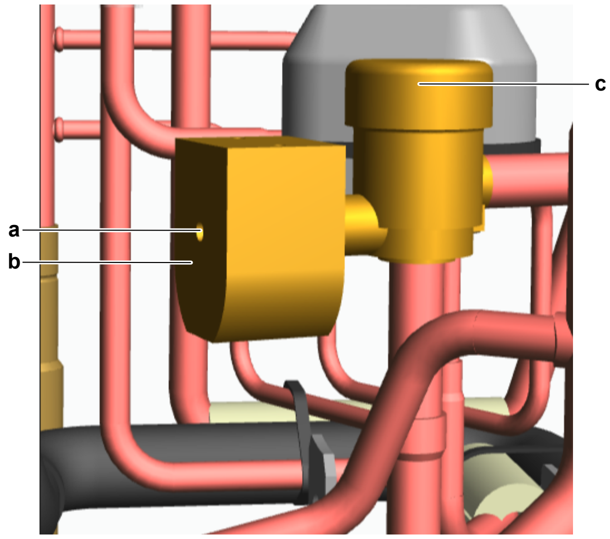
9 Install the solenoid valve coil, see "3.16.2 Repair procedures" [▶ 335].

10 Perform a pressure test, see "4.2.1 Checking procedures" [▶ 359].

11 Add refrigerant to the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

To install the solenoid valve coil

1 Install and tighten the screw to fix the solenoid valve coil to the solenoid valve body.



a Screw
b Solenoid valve coil
c Solenoid valve body

2 Route the solenoid valve harness towards the switch box.

3 Connect the solenoid valve connector to the main PCB.

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

4 Fix the solenoid valve harness using new tie straps.

> **INFORMATION**
>
> Replace all cable ties that were cut during removal.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.16.1 Checking procedures" [▶ 334] of the solenoid valve and continue with the next procedure.

3.17 Sub PCB

3.17.1 Checking procedures

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

To perform a power check of the Sub PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

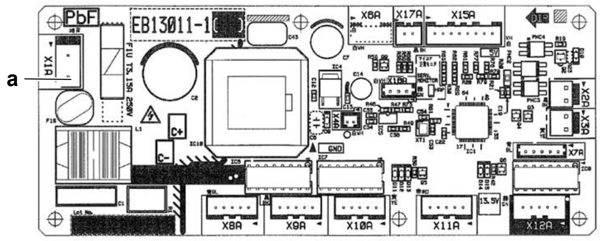
Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Visually check the PCB for damage and burnt-out components. If any damage found, replace the PCB, see "3.17.2 Repair procedures" [▶ 341].

2 Turn ON the power of the unit.

3 Measure the voltage on connector X1A of the Sub PCB.

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



a Connector X1A

Does the Sub PCB receive power?	Action
Yes	Return to "3.17.1 Checking procedures" [▶ 338] of the sub PCB and continue with the next procedure.
No	Continue with the next step.

4 Check the power supply to the unit, see "4.1.1 Checking procedures" [▶ 350].

Does the unit receive power?	Action
Yes	Correct the wiring from the main power supply terminal to the sub PCB, see "3.17.2 Repair procedures" [▶ 341].
No	Adjust the power supply to the unit, see "4.1.2 Repair procedures" [▶ 357].

To check the HAP LED of the Sub PCB

Prerequisite: First perform a power check of the Sub PCB, see "3.17.1 Checking procedures" [▶ 338].

1 Locate the HAP LED on the Sub PCB.

Does the HAP LED blink in regular intervals (approximately 1 Hz)?	Action
Yes	Return to "3.17.1 Checking procedures" [▶ 338] of the Sub PCB and continue with the next procedure.
No	Replace the Sub PCB, see "3.17.2 Repair procedures" [▶ 341].

To perform an electrical check of the sub PCB

Prerequisite: First perform all earlier checks of the Sub PCB, see "3.17.1 Checking procedures" [▶ 338].

1 Measure the voltage on connector X2A of the sub PCB.

Result: The measurement MUST be 13.8 V DC ± 10%.

Is the measured voltage correct?	Action
Yes	Return to "3.17.1 Checking procedures" [▶ 338] of the Sub PCB and continue with the next procedure.
No	Replace the Sub PCB, see "3.17.2 Repair procedures" [▶ 341].

To check if the correct spare part is installed

Prerequisite: First perform all earlier checks of the Sub PCB, see "3.17.1 Checking procedures" [▶ 338].

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

Is the correct spare part for the Sub PCB installed?	Action
Yes	Return to "3.17.1 Checking procedures" [▶ 338] of the Sub PCB and continue with the next procedure.
No	Replace the Sub PCB, see "3.17.2 Repair procedures" [▶ 341].

To check the wiring of the Sub PCB

Prerequisite: First perform all earlier checks of the Sub PCB, see "3.17.1 Checking procedures" [▶ 338].

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1. Check that all wires are properly connected and that all connectors are fully plugged-in.
2. Check that no connectors or wires are damaged.
3. Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▶ 376].

> **INFORMATION**
>
> Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.17.1 Checking procedures" [▶ 338] of the Sub PCB and continue with the next procedure.

To check the fuse of the Sub PCB

Prerequisite: First perform all earlier checks of the Sub PCB, see "3.17.1 Checking procedures" [▶ 338].

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

Blown fuse on the Sub PCB?	Action
Yes	Replace the blown fuse, see "3.17.2 Repair procedures" [▸ 341].
No	Return to "3.17.1 Checking procedures" [▸ 338] of the Sub PCB and continue with the next procedure.

To check the varistor of the Sub PCB

Prerequisite: First perform all earlier checks of the Sub PCB, see "3.17.1 Checking procedures" [▸ 338].

1. Measure the resistance of the varistor. If the reading is nearly infinite, the varistor is still good.

Varistor on Sub PCB broken?	Action
Yes	Replace the Sub PCB, see "3.17.2 Repair procedures" [▸ 341].
No	Return to "3.17.1 Checking procedures" [▸ 338] of the sub PCB and continue with the next procedure.

Problem solved?

After all checking procedures listed above have been performed:

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

3.17.2 Repair procedures

To correct the wiring from the main power supply terminal to the Sub PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1. Remove the required plate work, see "3.13 Plate work" [▸ 309].
2. Make sure that all wires are firmly and correctly connected, see "6.2 Wiring diagram" [▸ 376].
3. Check the continuity of all wires.
4. Replace any damaged or broken wires.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.17.1 Checking procedures" [▸ 338] of the Sub PCB and continue with the next procedure.

To remove the Sub PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

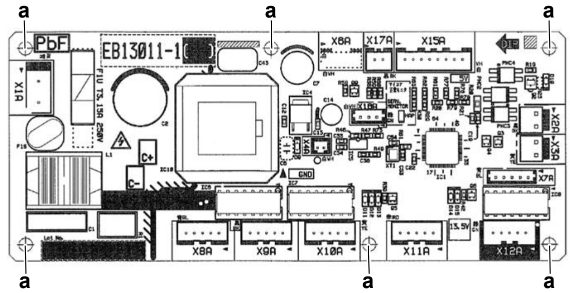
1 Remove the required plate work, see "3.13 Plate work" [▶ 309].

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▶ 351].

2 Locate the Sub PCB.

3 Disconnect all connectors from the Sub PCB.

4 Carefully pull the Sub PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.



a PCB support

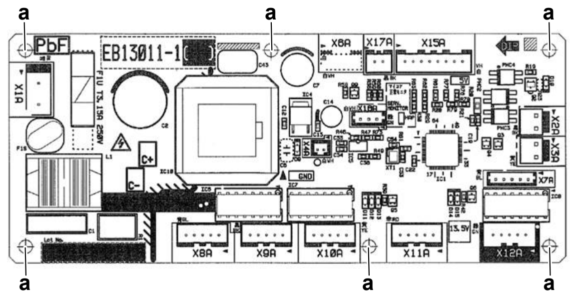
5 Remove the Sub PCB from the unit.

6 To install the Sub PCB, see "3.17.2 Repair procedures" [▶ 341].

To install the Sub PCB

1 Install the Sub PCB on its correct location.

2 Latch the PCB supports to fix the Sub PCB.



a PCB support

3 Connect all connectors to the Sub PCB.

> **INFORMATION**
>
> Use the wiring diagram and connection diagram for correct installation of the connectors, see "6.2 Wiring diagram" [▶ 376].

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

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to "3.17.1 Checking procedures" [▶ 338] of the Sub PCB and continue with the next procedure.

To remove a fuse of the Sub PCB

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Remove the fuse from the PCB.
2. To install a fuse on the Sub PCB, see "3.17.2 Repair procedures" [▶ 341].

To install a fuse on the Sub PCB

> **WARNING**
>
> For continued protection against risk of fire, replace ONLY with same type and rating of fuse.

1. Install the fuse on the correct location on the PCB.

> **CAUTION**
>
> Make sure the fuse is plugged-in correctly (contact with the fuse holder).

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.17.1 Checking procedures" [▶ 338] of the Sub PCB and continue with the next procedure.

3.18 Thermistors

3.18.1 Refrigerant side thermistors

Checking procedures

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

To perform a mechanical check of the specific thermistor

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Locate the thermistor and remove the insulation if needed. Check that the thermistor is correctly installed and that there is thermal contact between the thermistor and the piping or ambient (for air thermistor).

Is the thermistor correctly installed (thermal contact between the thermistor and the piping)?	Action
Yes	Perform an electrical check of the specific thermistor, see "Checking procedures" [▸ 343].
No	Correctly install the thermistor, see "Repair procedures" [▸ 347].

To perform an electrical check of the specific thermistor

1. First perform a mechanical check of the thermistor, see "Checking procedures" [▸ 343].
2. Locate the thermistor.

> **INFORMATION**
>
> Remove the thermistor from its holder if not reachable with a contact thermometer.

3. Measure the temperature using a contact thermometer.

Name	Symbol	Location (PCB)	Connector (pins)	Reference (table)
Air thermistor	R1T	Main	X18A:1-2	A
Main Liquid Pipe thermistor	R3T	Main	X30A:1-2	B
Upper heat exchanger liquid temperature thermistor	R4T	Main	X30A:3-4	B
Lower heat exchanger liquid temperature thermistor	R5T	Main	X30A:5-6	B
Gas pipe thermistor of the subcool heat exchanger	R6T	Main	X30A:7-8	B
Liquid pipe thermistor of the subcool heat exchanger	R7T	Main	X30A:9-10	B
Upper heat exchanger Gas temperature thermistor	R8T	Main	X29A:1-2	B

Name	Symbol	Location (PCB)	Connector (pins)	Reference (table)
Lower heat exchanger Gas temperature thermistor	R9T	Main	X29A:3-4	B
Suction temperature thermistor	R10T	Main	X29A:5-6	B
De-icer thermistor	R11T	Main	X35A:1-2	B
Compressor suction temperature thermistor	R12T	Main	X35A:3-4	B
Receiver Gas Thermistor	R13T	Main	X46A:1-2	B
Compressor Body Thermistor	R15T	Main	X33A: 3-4	C
Gas Injection Thermistor (ONLY for REMA5 + REYA8~12)	R16T	Main	X35A: 5-6	B
Compressor Discharge Thermistor	R21T	Main	X33A: 1-2	C

4 Determine the thermistor resistance that matches the measured temperature.

Thermistor – Table A

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
–30	363.4	0	65.80	30	16.09	60	4.93
–25	266.7	5	51.11	35	13.02	65	4.12
–20	197.8	10	40.01	40	10.60	70	3.46
–15	148.2	15	31.54	45	8.69		
–10	112.1	20	25.04	50	7.15		
–5	85.51	25	20.00	55	5.92		

Thermistor – Table B

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
–30	363.8	5	51.05	40	10.58	75	2.93
–25	266.8	10	39.91	45	8.67	80	2.48
–20	197.8	15	31.44	50	7.14	85	2.12
–15	148.2	20	24.95	55	5.92	90	1.81
–10	112.0	25	19.94	60	4.93		
–5	85.52	30	16.04	65	4.12		
0	65.84	35	12.99	70	3.47		

Thermistor – Table C

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
–30	3407	20	256.9	70	35.45	120	7.47
–25	2540	25	205.7	75	29.84	125	6.50
–20	1910	30	165.7	80	26.07	130	5.68
–15	1449	35	134.3	85	21.38	135	4.97
–10	1108	40	109.4	90	18.21	140	4.36
–5	853.8	45	59.58	95	15.57	145	3.84
0	662.7	50	73.73	100	13.36	150	3.84
5	517.9	55	60.98	105	11.49		
10	407.4	60	50.67	110	9.92		
15	322.5	65	42.29	115	8.59		

5 Disconnect the thermistor connector from the appropriate PCB.

6 Measure the resistance between the appropriate pins of the thermistor connector.

7 Check that the measured resistance value matches the resistance determined through the measured temperature (earlier step in the procedure).

- E.g. R3T thermistor:
- Measured temperature with contact thermometer: 23.1°C,
- Resistance value determined through temperature (using the thermistor table B):
  Resistance at 23°C: 21.85 kΩ,
  Resistance at 24°C: 20.90 kΩ,
- Disconnect connector and measure resistance between X30A pin 1-2:
  Measured resistance: 21.8 kΩ,
- Measured resistance value is inside the range. R3T thermistor passes the check.

> **INFORMATION**
>
> All thermistors have a resistance tolerance of 3%.

> **INFORMATION**
>
> Connect the service monitoring tool to the unit or use field settings mode 1 (see "6.7 Field settings" [▶ 401]) to monitor the thermistors.
>
> If the measured resistance value matches the resistance determined through the measured temperature, but the temperature for the corresponding thermistor via service monitoring tool or field settings mode 1 is NOT correct, replace the applicable PCB.

Does the measured resistance of the thermistor match with the temperature determined resistance?	Action
Yes	Thermistor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the specific thermistor, see "Repair procedures" [▶ 347].

Repair procedures

To remove the thermistor

Prerequisite: Stop the unit operation via the central controller.

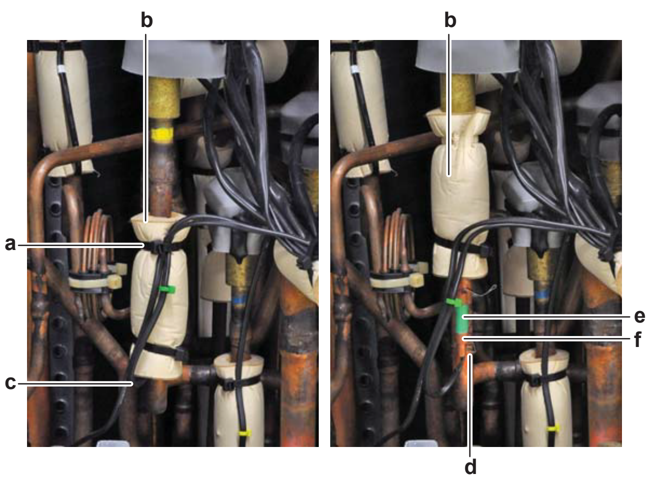
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Locate the thermistor that needs to be removed.

2 Remove the thermistor from the thermistor holder as follows:

- For air (ambient) thermistor:
  Open the thermistor holder and remove the thermistor from the holder.
- For refrigerant piping thermistors:
  - Cut the tie straps that fix the insulation and the thermistor wire.
  - Slide the insulation aside.
  - Pull the clip that fixes the thermistor.
  - Remove the thermistor from the thermistor holder.



a Tie strap
b Insulation
c Thermistor wire
d Clip
e Thermistor holder
f Thermistor

3 Cut all tie straps that fix the thermistor harness.

4 Disconnect the thermistor connector from the appropriate PCB.

INFORMATION

Some of the thermistors are wired to the same connector. See connector and pin information of the thermistors at the start of the electrical check procedure and "6.2 Wiring diagram" [▶ 376]. ALWAYS replace the complete set of thermistors wired to the same connector.

5 When removing the complete set of thermistors wired to the same connector:

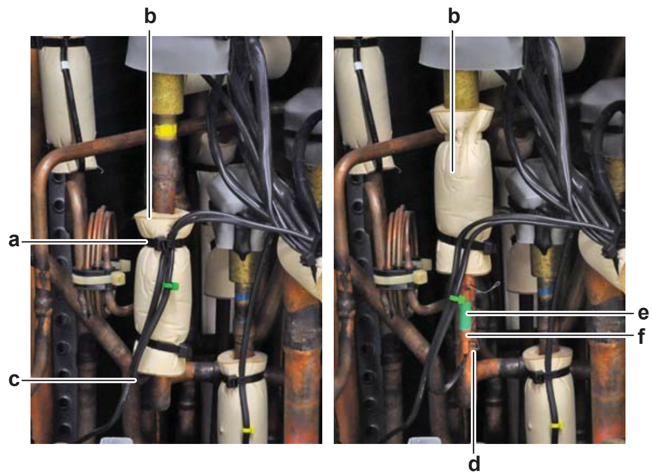
- Remove all other thermistors wired to the connector from their thermistor holder,
- Disconnect the thermistor connector,
- Remove the complete set of thermistors.

6 To install the thermistor, see "Repair procedures" [▶ 347].

To install the thermistor

1 Install the thermistor in the thermistor holder as follows:

- For air (ambient) thermistor:
  Correctly install the thermistor in the holder and close the thermistor holder.
- For refrigerant piping thermistors:
  Pull the clip and install the thermistor in the specific thermistor holder. Make sure the clip is in the correct position (blocking the thermistor).



a Tie strap
b Insulation
c Thermistor wire
d Clip
e Thermistor holder
f Thermistor

2 Route the thermistor harness towards the appropriate PCB.

3 Connect the thermistor connector to the appropriate PCB.

INFORMATION

Some of the thermistors are wired to the same connector. See connector and pin information of the thermistors at the start of the electrical check procedure and "6.2 Wiring diagram" [▶ 376]. ALWAYS replace the complete set of thermistors wired to the same connector.

4 When installing the complete set of thermistors wired to the same connector:

- Install all other thermistors wired to the connector in their thermistor holder,
- Route the thermistor harness of all thermistors towards the appropriate PCB or intermediate connector,
- Connect the thermistor connector.

WARNING

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

5 Fix the thermistor harness using new tie straps.

6 Install the insulation around the thermistor.

7 Fix the insulation and the thermistor wire using new tie straps.

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

3.18.2 Other thermistors

Checking procedures

To perform an electrical check of the fin thermistor

1 Stop operation of the outdoor unit and wait for at least 30 minutes.

2 Measure the ambient temperature close to the outdoor unit.

3 Connect the service checker tool to the outdoor unit.

4 Read the temperature of the specific PCB fin thermistor. The read temperature MUST correspond to the measured ambient temperature.

Does the temperature of the fin thermistor match with the ambient temperature?	Action
Yes	Thermistor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the specific PCB, see "3 Components" [▶ 205].

4 Third party components

4.1 Electrical circuit

4.1.1 Checking procedures

To check the power supply of the unit

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Check that the power supply cables and earth connection are firmly fixed to the power supply terminal X1M.
2. Measure the insulation resistance between each power supply terminal and the ground using a megger device of 500 V DC. All measurements MUST be >1MΩ. If insulation resistance is <1MΩ, earth leakage is present.
3. Turn ON the power of the unit.
4. Measure the voltage between the phases L1-L2-L3 on the power supply terminal X1M. The voltage MUST be 400 V AC ± 10%.
5. Measure the voltage between each phase and N on the power supply terminal X1M. The voltage MUST be 230 V AC ± 10%.
6. Unbalance between the phases MUST NOT exceed 2%.

Is the measured voltage (power supply) correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "4.1.2 Repair procedures" [▶ 357].

To check the power supply to the branch selector box

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Check that the power supply cables and earth connection are firmly fixed to the indoor unit power supply terminal X1M.
2. Measure the insulation resistance between each power supply terminal and the ground using a megger device of 500 V DC. All measurements MUST be >1MΩ. If insulation resistance is <1MΩ, earth leakage is present.
3. Turn ON the power using the respective circuit breaker.
4. Measure the voltage between L and N on the indoor unit power supply terminal X1M.

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

Is the measured voltage (power supply) correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "4.1.2 Repair procedures" [▶ 357].

To check if the power supply is compliant with the regulations

1 Check that the power source is in line with the requirements described in the databook.

Is the power supply compliant with the regulations?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "4.1.2 Repair procedures" [▶ 357].

To prevent electrical hazards

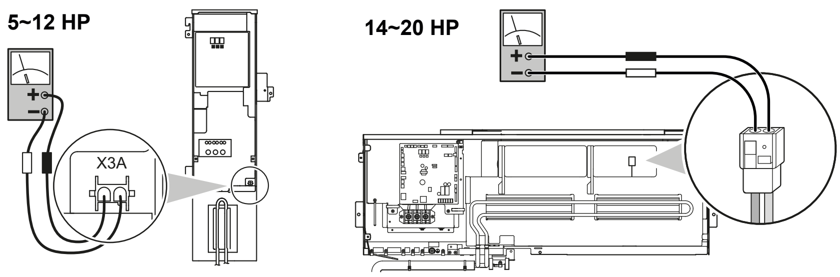
To check the rectifier voltage

1 Stop the unit operation (via the central controller).

2 Turn OFF the respective circuit breaker.

3 Measure the voltage on the rectifier voltage check connector X3A.

Result: The measured voltage should be below 10 V DC.



Additional information

4 Pull out junction connectors X1A, X2A for the fan motors in the outdoor unit before starting service operation on the inverter equipment. Be careful NOT to touch the live parts. (If a fan rotates due to strong wind, it may store electricity in the capacitor or in the main circuit and cause electrical shock.)

5 After the service is finished, plug the junction connector back in. Otherwise the malfunction code E7 will be displayed on the user interface or on the outdoor unit 7-segment display and normal operation will NOT be performed.

For details refer to the wiring diagram labelled on the back of the electrical component box cover.

Pay attention to the fan. It is dangerous to inspect the unit while the fan is running. Make sure to turn off the main switch and to remove the fuses from the control circuit located in the outdoor unit.

To check the F1-F2 communication voltage on branch selector box

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Turn ON the power using the respective circuit breaker.
2. Start the unit operation via the central controller.
3. Let the system operate for a while.
4. Check that the connector X5A is correctly connected to the branch selector box main PCB A1P and is NOT damaged.
5. Measure the communication voltage between pins 1-2 on the connector X5A.

   Result: The measured voltage MUST be 16 V DC.

Is the measured communication voltage correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

6. Measure the communication voltage between F1-F2 (to which transmission wiring from outdoor unit or from other branch selector box is connected) on the terminal X2M of the branch selector box.

   Result: The measured voltage MUST be 16 V DC.

Is the measured communication voltage correct?	Action
Yes	Correct the wiring between the terminal X2M and the branch selector box main PCB A1P, see "6.2 Wiring diagram" [▶ 376].
No	Check the F1-F2 transmission between outdoor units and branch selector box or between branch selector boxes, see "4.1.1 Checking procedures" [▶ 350].

To check the F1-F2 communication voltage on indoor unit

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Turn ON the power using the respective circuit breaker.
2. Start the unit operation via the central controller.
3. Let the system operate for a while.
4. Check that the connector X30A is correctly connected to the indoor unit main PCB and is NOT damaged.
5. Measure the communication voltage between pins 3-4 on the connector X30A.

   Result: The measured voltage MUST be 16 V DC.

Is the measured communication voltage correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

6 Measure the communication voltage between F1-F2 on the terminal (X2M or X1M depending on the indoor unit).

Result: The measured voltage MUST be 16 V DC.

Is the measured communication voltage correct?	Action
Yes	Correct the wiring between the terminal (X2M or X1M depending on the indoor unit) and the indoor unit main PCB, see Wiring diagram in the indoor unit service manual.
No	Check the F1-F2 transmission between indoor units and branch selector box, see "4.1.1 Checking procedures" [▸ 350].

To check F1-F2 transmission

To check the F1-F2 wiring

1 Check that the wiring:

- is within installation length limits,
- is of the proper wire type,
- is of the proper wire thickness,
- is properly fixed to the terminals,
- is executed according to the installation manual, with no star connections.

2 Check that no shielded cables are used or that shielded cables are grounded only on one side of the cable.

3 Check that F1-F2 wiring has continuity all over.

4 Check that the minimum distance between the power cables and communication cables outside the units is respected (see table below).

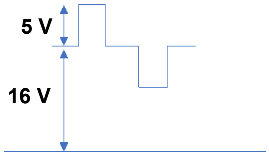
Power supply cable current (X)	Distance between power and communication cables
X ≤10 A	≥300 mm
10 A <X ≤50 A	≥500 mm
50 A <X ≤100 A	≥1000 mm
X >100 A	≥1500 mm

Is the wiring correctly executed, as indicated in the installation manual?	Action
Yes	Continue with the next step in this checking procedure.

Is the wiring correctly executed, as indicated in the installation manual?	Action
No	Modify the wiring, see the installation manual.

To measure the F1-F2 transmission

F1-F2 transmission is a D3Net rectangular waveform, 16 VDC ± 5 V with 16-5V amplitude that appears on the 16V base line:



F1-F2 terminals on indoor units, branch selector boxes, outdoor units and central controllers are all possible measurement points. Use as many points as you can and take the time necessary for measurement if analyzing with an oscilloscope.

On outdoor units, measurement should be done either at F1-F2 IN or F1-F2 OUT. If the F1-F2 OUT terminal is not used, then measure at the F1-F2 IN terminal.

You can conduct the measuring with a multimeter or an oscilloscope.

To measure the F1-F2 transmission with a multimeter:

5 Set the multimeter to DC Voltage measurement.

6 Measure on the F1 and F2 terminals.

Result: 16 V DC should be read.

To measure the F1-F2 transmission with an oscilloscope:

> **INFORMATION**
>
> Ensure that probes are securely connected to F1-F2 terminals. Otherwise, distortions will be generated resulting in misinterpretation of data. It is recommended to connect temporary cables to the probes and then connect the cables to the terminals securely.

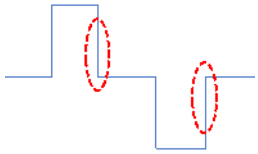
7 Measure at as many points as you can, this can help to determinate the problem.

For example: if the measurements at the indoor unit side are distorted while central controller and outdoor unit seem OK, you can suppose that the failure in transmission is related to the indoor unit side.

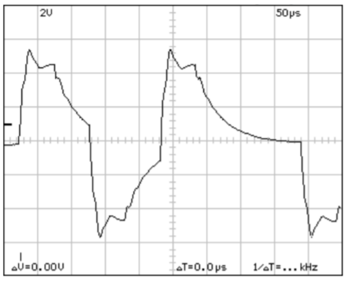
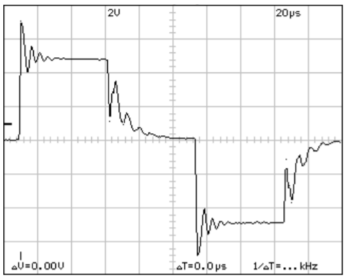
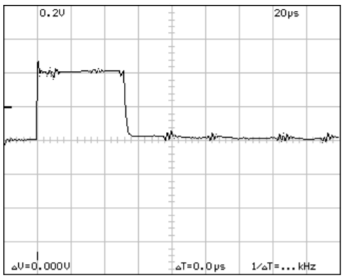
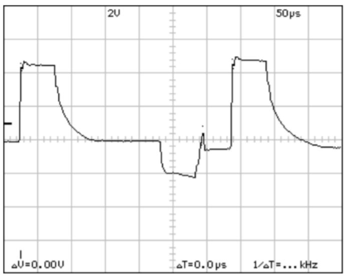
8 Set time base (horizontal) to 50 µs/div to 100 µs. Voltage axis (vertical) should be set to 2V/div to 5V. Set position properly, otherwise the data may appear outside the screen. In AC mode, which is a sampling mode in oscilloscopes, waveforms appear in the middle of the screen. So, it is recommended to use AC mode if possible.

9 Set the triggering mode of the oscilloscope to "Normal". If "Auto" mode is selected, observed waveforms may be cleared instantaneously leading to misinterpretation of data.

10 Ignore very short-time pulses of 1V amplitude or less, or overshooting at the rising edge may be ignored. Focus on the shown points of the waveform below:



Examples of waveform distortions on D3Net and possible causes:

	**Rounded waveforms at falling edges.** Possible reasons: ▪ Excessive wire length, ▪ Excessive number of connected devices, ▪ Branching (star connections).
	**Ringing.** Possible reasons: ▪ Transmission wiring very close to high voltage cables, ▪ Use of multi-conductor type wires.
	**Noise.** Possible reasons: ▪ Transmission wiring very close to high voltage cables, ▪ Transmission wiring effected from external equipment causing noise.
	**Faulty Waveform.** Possible reasons: ▪ Transmission circuit failure on a PCB.

After checking and correcting possible causes of F1-F2 transmission problems, perform a communication reset (see "4.1.2 Repair procedures" [▶ 357]).

To check the mechanical ventilation error input

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Turn ON the power using the respective circuit breaker.
2. Start the unit operation via the central controller.
3. Let the system operate for a while.

4 Check that the mechanical ventilation functions correctly. Repair as needed.

5 Disconnect the connector X36A from the main PCB and measure the resistance between pins 1-2 on wired connector. Resistance MUST be:

- OL (switch SFB=open) when mechanical ventilation functions correctly (=normal operation).
- 0 Ω (switch SFB=closed) when faulty mechanical ventilation detected.

INFORMATION

Make sure that the wiring between the switch SFB and connector X36A is correctly connected and NOT damaged (check continuity). "6.2 Wiring diagram" [▶ 376].

Is the measured resistance 0 Ω (switch SFB=closed)?	Action
Yes	Continue with the next step.
No	Mechanical ventilation error input is OK.

6 Again check that the mechanical ventilation functions correctly. Repair as needed.

7 If mechanical ventilation functions correctly, check if the option PCB drives the switch SFB to the closed position.

Does the option PCB drive the switch SFB to closed position?	Action
Yes	Check for the reason why the option PCB drives the switch SFB to closed position (faulty option PCB, ...).
No	Replace the switch SFB, see "4.3.2 Repair procedures" [▶ 368].

To check the communication between outdoor units

Q1 and Q2 are connection terminals for the transmission wiring between multi outdoor units. Perform as follows:

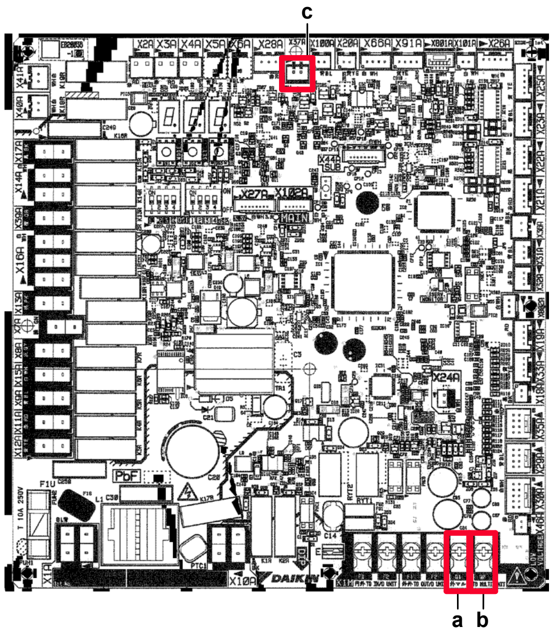
1 Make sure that all wires are firmly and correctly connected, see "6.2 Wiring diagram" [▶ 376].

2 Check the continuity of all wires.

3 Replace any damaged or broken wires.

4 Measure the voltage on the main PCB's of all connected outdoor units as shown below:

VDC	Com.	Ref.
Q1	X37A: pin 1	13 V DC
Q2	X37A: pin 1	13 V DC
Q1	X37A: pin 2	-3 V DC
Q2	X37A: pin 2	-3 V DC



a Terminal Q1
b Terminal Q2
c Connector X37A

Is the measured voltage correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Perform a check of the main PCB, see "3.9 Main PCB" [▶ 280].

To check the wiring between the outdoor unit and the indoor unit

1. Check that all wires are properly connected and that all connectors are fully plugged-in.
2. Check that no connectors or wires are damaged.
3. Check that the wiring corresponds with the wiring diagram, see "6.2 Wiring diagram" [▶ 376].

> **INFORMATION**
>
> Correct the wiring as needed.

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

4.1.2 Repair procedures

To adjust the power supply

1. Make sure that the power source is in line with the requirements described in the databook.
2. Adjust the power supply within 50 Hz ± 3%.

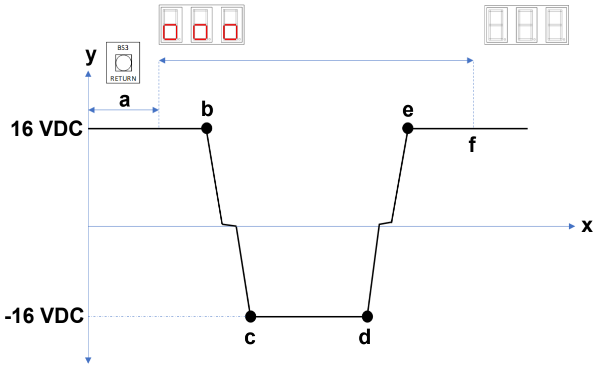
Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To perform a communication reset

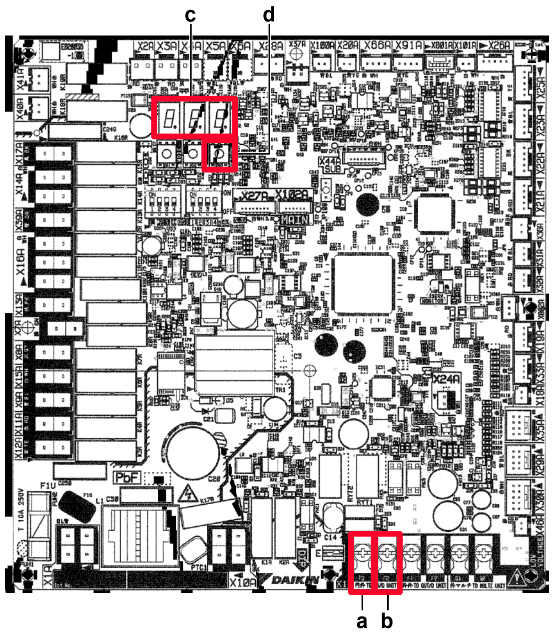
NOTICE

If an indoor unit and/or branch selector box is/are powered OFF when communication reset is performed, the outdoor unit will delete the indoor unit/ branch selector box information since this/these unit will not be identified during re-initialization. If a branch selector box is Power OFF, all the indoor units connected to the branch selector box will not be identified no matter if they have power or not. If so, these units will not be recognized by the outdoor unit upon power restore to this indoor unit.

1 Set multimeter to V DC measurement. The example below is performed while COM-F1 and V DC-F2, the polarity will be opposite than the graph below if connected otherwise (which is not a problem).



a Y: Voltage (VDC)
b X: Time



a Terminal F1
b Terminal F2
c 7-segment display

d Push button BS3

2. Push BS3 (RETURN) and hold it for 5 seconds until the 7-segment display shows "000". Then release BS3.

   Result: After a while, voltage will drop to almost 0 V DC. At this stage it means that re-initialization has started.

   Result: Depending on the system size, voltage will rise to 16 V DC and hit 0 V back again several times.

Result: When finished, 7-Segment Display will turn OFF. This indicates that re-initialization has completed.

The time this procedure takes, depends on the amount of indoor units.

To adjust the wiring between the outdoor units

1. Adjust the wiring according to the wiring diagram and connection diagram, see "6.2 Wiring diagram" [▶ 376].
2. Check that all wires are properly connected.
3. Check that no wires are damaged.

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

To correct the wiring between PCB's

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Make sure that all wires are firmly and correctly connected, see "6.2 Wiring diagram" [▶ 376].
2. Check the continuity of all wires.
3. Replace any damaged or broken wires.

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

4.2 Refrigerant circuit

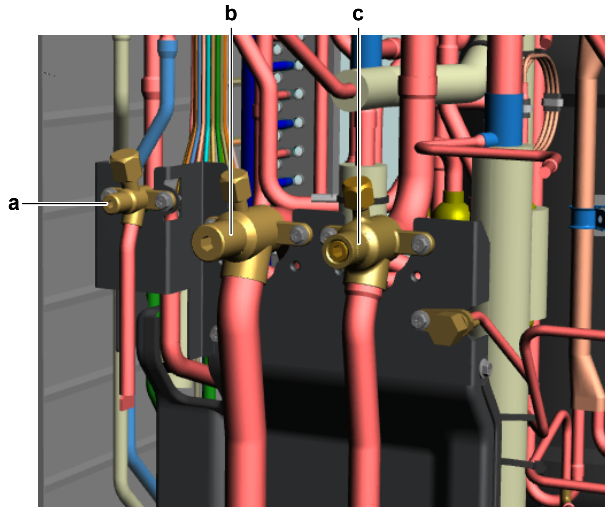
4.2.1 Checking procedures

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

To check if the stop valves are open

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1 Remove the caps.



a Liquid stop valve
b Suction gas stop valve
c High pressure/low pressure gas stop valve

2 Check if the stop valves are completely open.

The refrigerant circuit stop valves are open?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Open the stop valves of the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].

To check if the refrigerant circuit is clogged

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

1 Wait for the refrigerant to reach the outdoor temperature.

2 Check that all field piping is done according to the refrigeration practice and installation manual:

- Correct piping diameters
- Piping distance limits are followed
- NO pipes are squeezed
- NO short radius bends

3 Connect a manometer to the high pressure and low pressure service ports.

4 Turn ON the power of the unit.

5 Activate `Heating` operation via the Cool/Heat master user interface.

6 Read the pressure on the high and low pressure gauges. If the difference between high and low pressure >0.2 MPa, the refrigerant circuit might be clogged.

7 On the refrigerant liquid piping (between the indoor unit heat exchanger and the outdoor unit heat exchanger (coil)), using a contact thermometer, measure the temperature before and after every restricting device. If a big temperature difference is measured (>2.5~4K), an internal pipe obstruction may be present at this location.

> **INFORMATION**
>
> Focus on positions with a potential risk for clogging such as:
>
> - Filters
> - Valves
> - Brazing points
> - ...

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

Temperature drop found?	Action
Yes	Replace the clogged part, see "4.2.2 Repair procedures" [▸ 364].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To check if the refrigerant circuit is correctly charged

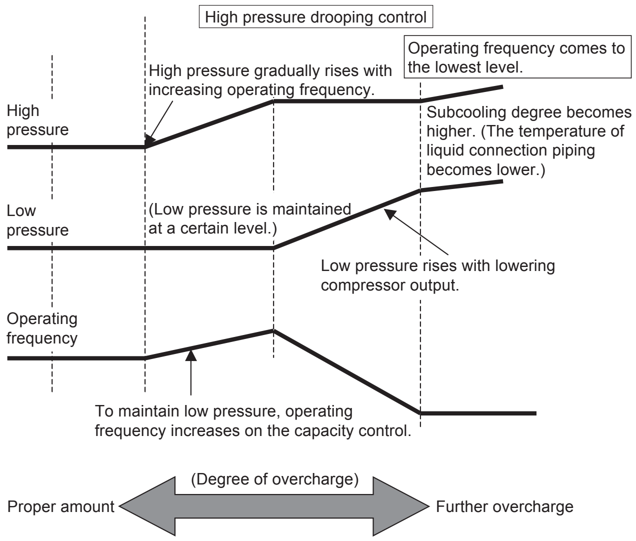
Due to the relationship to pressure control and electronic expansion valve control, the amount of refrigerant needs to be examined according to operating conditions.

Refer to the procedures shown below for correct examination.

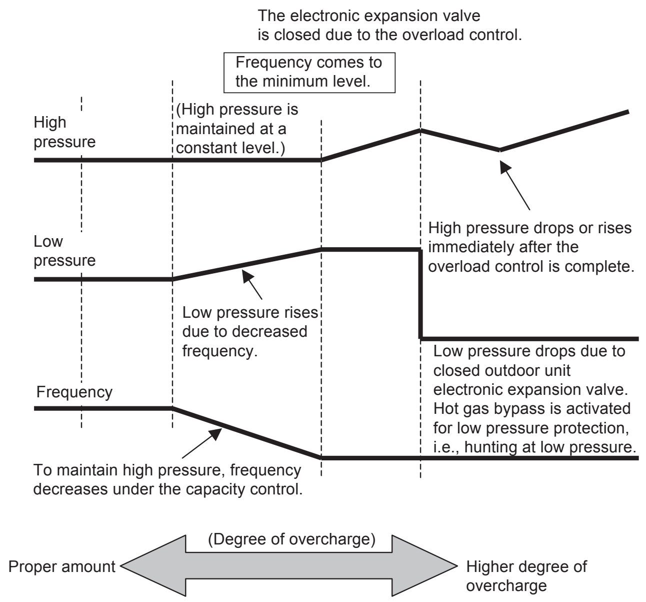
Refrigerant overcharge diagnosis

1. High pressure rises. Consequently, overload control is conducted to cause insufficient cooling capacity.
2. The superheated degree of suction gas lowers (or the wet operation is performed). Consequently, the compressor consumes more power and is noisy (before over-current relay trips).
3. The subcooling degree of refrigerant in liquid form rises (values >4~5K are NOT normal). Consequently, in heating, the temperature of discharge air through the subcooled section becomes lower.

Cooling



Heating



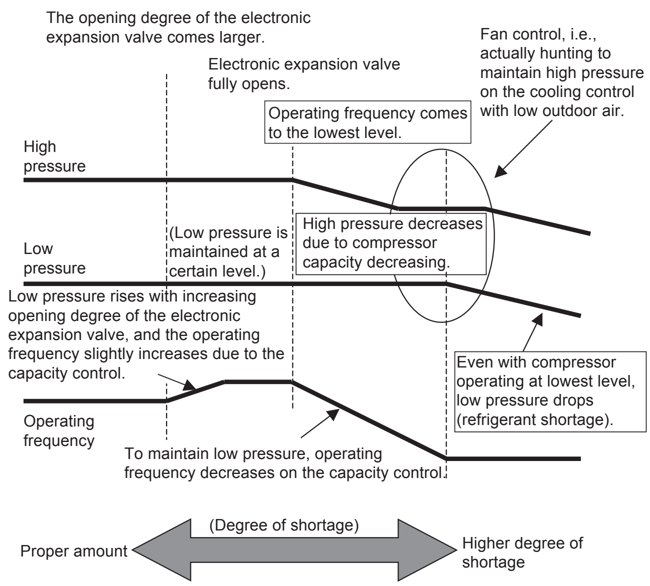
Refrigerant shortage diagnosis

1 The superheated degree of suction gas rises. Consequently, the compressor discharge gas temperature becomes higher than normal.

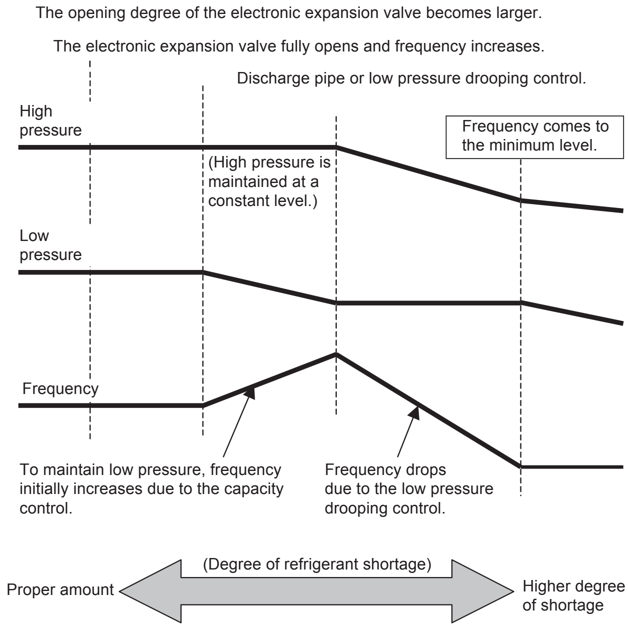
2 The superheated degree of suction gas rises. Consequently, the electronic expansion valve turns open more than normal or completely open for average output.

3 Low pressure drops to cause the unit not to reach cooling capacity (or heating capacity).

Cooling



Heating



Is the refrigerant circuit charged correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Add or recuperate refrigerant until correctly charged, see "4.2.2 Repair procedures" [▶ 364].

To check for non-condensables in the refrigerant circuit

Prerequisite: Stop the unit operation via the central controller.

Prerequisite: Turn OFF the respective circuit breaker.

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

Any non-condensables found in the refrigerant circuit?	Action
Yes	To replace the refrigerant, see "4.2.2 Repair procedures" [▶ 364].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To perform a leak test

The leak test must satisfy the specifications of EN378-2.

1. Perform the two leaks tests below.

To check for leaks: Vacuum leak test

1. Evacuate the system from the liquid and gas piping to a gauge pressure of –100.7 kPa (–1.007 bar) for more than 2 hours.
2. Once reached, turn off the vacuum pump and check that the pressure does not rise for at least 1 minute.
3. Should the pressure rise, the system may either contain moisture (see vacuum drying below) or have leaks.

To check for leaks: Pressure leak test

1. Break the vacuum by pressurising with nitrogen gas to a minimum gauge pressure of 0.2 MPa (2 bar). Never set the gauge pressure higher than the maximum operation pressure of the unit, i.e. 4.0 MPa (40 bar).
2. Test for leaks by applying a bubble test solution to all piping connections.
3. Discharge all nitrogen gas.

NOTICE

ALWAYS use a recommended bubble test solution from your wholesaler.

NEVER use soap water:

- Soap water may cause cracking of components, such as flare nuts or stop valve caps.
- Soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold.
- Soap water contains ammonia which may lead to corrosion of flared joints (between the brass flare nut and the copper flare).

Problem solved?

Any leaks found in the refrigerant circuit?	Action
Yes	Replace the leaking part of the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 364].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

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

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

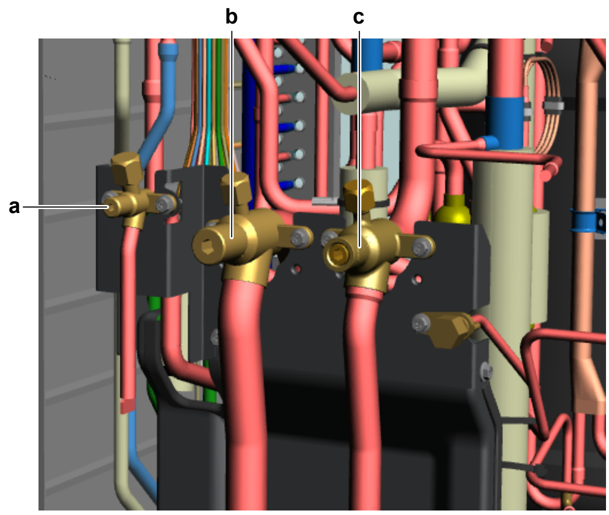
Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.2.2 Repair procedures

To open the stop valves of the refrigerant circuit

Prerequisite: Remove the required plate work, see "3.13 Plate work" [▶ 309].

1. Remove the caps.



a Liquid stop valve
b Suction gas stop valve
c High pressure/low pressure gas stop valve

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

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

To replace the clogged/leaking part of the refrigerant circuit

1 See the correct procedure for the component that needs to be repaired. See also "Repair information" [▸ 365] for more details.

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

To recuperate the refrigerant

To add refrigerant

1 See the installer reference guide for the correct procedure.

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

Repair information

Refrigerant piping handling

- Make sure that the applied pressure is never higher than the unit design pressure indicated on the nameplate (PS).
- Work according to the F-gas regulation and/or local regulations.

- Make sure the correct amount of refrigerant is charged after repair according to the F-gas regulation label on the unit (factory + additional where required).
- Make sure to use the appropriate equipment and tools according to the refrigerant and unit type.
- R32 can be charged in gas phase.
- Make sure to use a digital scale (no charging cylinder).
- Execute correct vacuum drying procedure after repair:
  - When using an electronic vacuum gauge with an absolute pressure readout, a pressure of minimal 2000 micron / 2 Torr / 266 Pa MUST be reached. This pressure should stay stable for 30 minutes when vacuum pump is NOT running. If vacuum pressure CANNOT be held, most likely there is still moisture in the system. Again run the vacuum pump for 1~2 hours to a pressure (absolute pressure readout) lower than 2000 micron / 2 torr / 266 Pa. If target pressure CANNOT be reached, again check for leaks.
  - Connect the unit according to the available service ports.
  - Use related field setting where necessary to open expansion valve / solenoid valve.

Refrigerant piping repair

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

Additional refrigerant charge amount

1. Once automatic or manual additional refrigerant charge is completed, it is necessary to give input to the outdoor unit over the total additional refrigerant charge amount.
2. Set field setting 2–14 according to the table below. See "6.7 Field settings" [▶ 401].

Mode 2-14	R32 [kg]	Mode 2-14	R32 [kg]	Mode 2-14	R32 [kg]
0	No input	5	20~25	10	45~50
1	0~5	6	25~30	11	50~55
2	5~10	7	30~35	12	55~60

Mode 2-14	R32 [kg]	Mode 2-14	R32 [kg]	Mode 2-14	R32 [kg]
3	10~15	8	35~40		
4	15~20	9	40~45		

3 Even though they can be selected, 2-14 settings 13, 14, and 15 CANNOT be set.

4 Default setting is 0. If set to 0, refrigerant leak check function will NOT be available.

5 If set to 0 and field setting 2-88=0, at the end of the test-run error code U3-02 will indicate that refrigerant leak check function will NOT be available.

Refrigerant circuit vacuuming - general advice

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

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

- Absolute pressure below 270 Pa MUST be reached. The time needed for the pressure to lower is also depending on the moisture amount. If it takes very long or it is hard to reach the pressure, this MIGHT be an indication of moisture presence, so the vacuum pump will need to run longer.
- After stopping the vacuum pump, the absolute pressure MUST be kept below 270 Pa for at least 30 minutes, without a significant increase of pressure. If pressure increases significantly, this is an indication of the presence of moisture in the system.
- If multiple vacuum cycles need to be performed, break the vacuum between the cycles using dry nitrogen.

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

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

4.3 Manufacturer components

4.3.1 Checking procedures

To check the correct operation / setting of the manufacturer component

1 See the specific dealer manual to check for the correct installation, operation or setting of your component.

Does the component function correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the specific component, see "4.3.2 Repair procedures" [▶ 368].

4.3.2 Repair procedures

To adjust the manufacturer component

1 See the specific dealer manual to adjust your component.

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

4.4 External factors

4.4.1 Checking procedures

To check the outdoor temperature

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

INFORMATION

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

INFORMATION

If difference between the ambient temperature and temperature at air inlet of the outdoor unit heat exchanger is >5 K, consider mounting an air guide at the air discharge outlet of the outdoor unit heat exchanger.

Is the outdoor temperature within the operating range?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.

Is the outdoor temperature within the operating range?	Action
No	Wait for the outdoor temperature to return within the operating range.

To check for objects that may block the airflow

1 Check for the presence of object(s) near the indoor unit that may block the airflow. Remove the object(s) as needed.

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

To check the required space around the outdoor unit heat exchanger

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

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

To check for an external power source

1 Check for the presence of an external power source. This might cause electrical interference (electrical noise disturbance).

2 If an external power source was found, remove it.

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

5 Maintenance

> **NOTICE**
>
> **General maintenance/inspection checklist.** Next to the maintenance instructions in this chapter, a general maintenance/inspection checklist is also available on the Daikin Business Portal (authentication required).
>
> The general maintenance/inspection checklist is complementary to the instructions in this chapter and can be used as a guideline and reporting template during maintenance.

5.1 Maintenance schedule

To ensure optimal availability of the unit, certain checks and inspections on the unit and the field wiring have to be carried out at regular intervals. See the checking procedures in this manual for inspection of the components mentioned below.

The intervals depend on:

- Local legislation,
- the conditions at the installation site (presence of dust, sea salt, harmful gas, oil mist, power supply fluctuation, bumps, vibration etc.),
- how the unit is operated (frequent stop and start, longer operation hours etc.),
- total running hours of the unit,
- ambient conditions (high heat and humidity load etc.)

Depending on the above mentioned factors, maintenance may be required sooner than the mentioned interval here below.

The table below also assumes a unit operation of 10 hours/day and 2500 hours/ year.
Normal use of the unit is considered when a unit is not performing the stop/start cycle (Thermo OFF and then ON) more than 6 times/hour.

Component	Inspection	Maintenance
Electric Motor	1 year	20.000 hours
PCB		25.000 hours
Heat Exchanger		5 years
Sensor, Thermistor		5 years
User Interface, Switches		25.000 hours
Drain Pan		8 years
Expansion Valve		20.000 hours
Solenoid Valve		20.000 hours
Air Filter		5 years
High Efficiency Filter		1 year
Fuse		10 years
Crankcase Heater		8 years
Components under pressure		In case of corrosion
R32 leak sensor (indoor + branch selector box)		10 years

Also, the cleaning of air filters, heat exchangers, fan propellers, drain pans etc. has to be carried out at regular intervals, see "5.2 Maintenance procedures for outdoor units" [▸ 371], Maintenance procedures for indoor units (see indoor units service manual) and "5.3 Maintenance procedures for Branch Selector Boxes" [▸ 374].

5.2 Maintenance procedures for outdoor units

5.2.1 To check the general status of the unit

Prerequisite: Switch off all the indoor units.

Prerequisite: Stop the unit operation via the central controller.

1. Turn OFF the respective circuit breaker.

> **DANGER: RISK OF ELECTROCUTION**
>
> Confirm the rectifier voltage is below 10 V DC before proceeding, see "To prevent electrical hazards" [▸ 351].

2. Clean the cover plates, see "5.2.2 To clean the cover plates" [▸ 372].
3. Check if any other equipment interferes with the operation of the outdoor unit (other device exhaust to outdoor unit heat exchanger, chimney exhaust to outdoor unit, corrosive or explosive ambient, electrical equipment such as antennas, GSM towers, etc...). Refer to the installation manual.
4. Make sure that there is sufficient air flow or no air by-pass on outdoor unit heat exchanger in cooling mode. Refer to installation manual for required space. Even after outdoor unit heat exchanger is cleaned by maintenance, if difference between ambient temperature and air inlet of outdoor unit heat exchanger is 5K or more, consider mounting an air guide at air discharge outlet of the outdoor unit.

5 Prior to cleaning, check for oil drips on the bottom plate. If found, check system for signs of refrigerant shortage, check possible leaking points and repair when necessary. Refer to Repair instructions of the component when necessary.

6 Clean the bottom plate.

7 Clean the inside of the unit.

> **NOTICE**
>
> To clean the inside of the unit:
>
> - Use water or compressed air, not warmer than 50° C.
> - Do not use any cleaning agents or chemicals.
> - Do not use pressurized water.

8 Check the general status inside the cover plates.

9 Check the visual appearance of all the components, including PCBs. Refer to component check methods if any irregularity is found.

10 Check the electrical connections. Tighten and secure the connections when necessary.

11 Check if power supply is in conform with legislation. See "To check if the power supply is compliant with the regulations" [▶ 351].

12 Check and tighten the power supply wiring on the dedicated terminal.

13 Check insulation on piping and refrigerant branches. Replace or fix insulation where necessary.

14 Make sure that the water drain works properly and is not clogged or does not cause any accumulation of water.

15 Clean outdoor unit heat exchanger see "5.2.3 To clean the outdoor unit heat exchanger" [▶ 373].

16 Clean outdoor unit fan propellers.

17 Check latest error codes and latest retries, see "2.2 To retrieve error codes and check error history" [▶ 18].

18 Log the maintenance in the log-book.

After outdoor unit maintenance, indoor unit maintenance (see service manual of the indoor unit) and branch selector box maintenance (see "5.3 Maintenance procedures for Branch Selector Boxes" [▶ 374]) is performed, check the system via the service monitoring tool for normal operation. See "2.4 Symptom based troubleshooting" [▶ 197].

5.2.2 To clean the cover plates

1 Clean the cover plates with a wet cloth.

> **NOTICE**
>
> To clean the plate work:
>
> - Use water or compressed air, not warmer than 50° C.
> - Do not use any cleaning agents or chemicals.
> - Do not use pressurized water.

5.2.3 To clean the outdoor unit heat exchanger

1. Straighten the hair fins.
2. Clear the outdoor unit heat exchanger from dust, leaves,… using a fin-comb or compressed air/N_2.

CAUTION

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

Do NOT use a high-pressure washer.

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

5.3 Maintenance procedures for Branch Selector Boxes

5.3.1 To check the general status of the Branch Selector Box

Prerequisite: Stop indoor unit operation via user interface, central controller, ...

Prerequisite: Turn OFF the power of the branch selector box.

Prerequisite: Turn OFF the respective circuit breaker.

1. Prior to cleaning, check installation space for oil drips. If found, check system for signs of refrigerant shortage, check possible leaking points and repair as needed.
2. Check if any other equipment interferes with the operation of the branch selector box.
3. Clean the cover plates with a piece of wet cloth, see "5.3.2 To clean the cover plates" [▸ 374].
4. Open the branch selector box, see "3.13 Plate work" [▸ 309].
5. Check the general status inside the cover plates.
6. Check the status of drain piping in case multi branch selectors.
7. Check the visual appearance of all components. Refer to component checks if any irregularity is found.
8. Check the electrical connections. Tighten and secure the connections as needed.
9. Check if power supply is in conform with legislation. See ""To check if the power supply is conform with the regulations" [▸ 351]".
10. Check and tighten the power supply wiring on the dedicated terminal.
11. Check the insulation on piping. Replace or fix insulation where necessary.
12. Check the DIP switch settings. See the installation manual for more information.
13. Log the maintenance in the log-book.
14. After outdoor unit maintenance (see "5.2 Maintenance procedures for outdoor units" [▸ 371]), indoor unit maintenance (see service manual of the indoor unit) and branch selector box maintenance is performed, check the system via the service monitoring tool for normal operation. See "2.4 Symptom based troubleshooting" [▸ 197].

5.3.2 To clean the cover plates

1. Clean the cover plates with a wet cloth.

> **NOTICE**
>
> To clean the plate work:
>
> - Use water or compressed air, not warmer than 50° C.
> - Do not use any cleaning agents or chemicals.
> - Do not use pressurized water.

6 Technical data

6.1 Detailed information setting mode

6.1.1 Detailed information setting mode: Outdoor unit

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

6.1.2 Detailed information setting mode: Remote controller

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

6.2 Wiring diagram

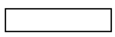
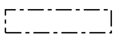
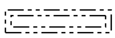
6.2.1 Wiring diagram: Outdoor unit

Refer to the wiring diagram sticker on the unit. The abbreviations used are listed below:

> **INFORMATION**
>
> The wiring diagram on the outdoor unit is only for the outdoor unit. For the indoor unit or optional electrical components, refer to the wiring diagram of the indoor unit.

1. Symbols (see below).
2. Refer to the installation or service manual on how to use BS1~BS3 push buttons and DS1~DS2 switches.
3. Do NOT operate the unit by short-circuiting protection device S1PH.
4. Refer to the installation manual for connection wiring to indoor–outdoor transmission F1-F2 and outdoor-multi transmission Q1-Q2.
5. When using the central control system, connect outdoor–outdoor transmission F1-F2.
6. The capacity of the contact is 220~240V AC – 0.5 A (rush current needs 3 A or less).
7. Use dry contact for micro current (10 mA or less, 15 V DC).
8. When using the optional adapter, refer to the installation manual of the optional adapter.

Symbols:

	Field wiring
	Terminal block
	Connector
	Terminal
	Protective earth
	Noiseless earth
	Earth wiring
	Field supply
	PCB
	Switch box
	Option

Colours:

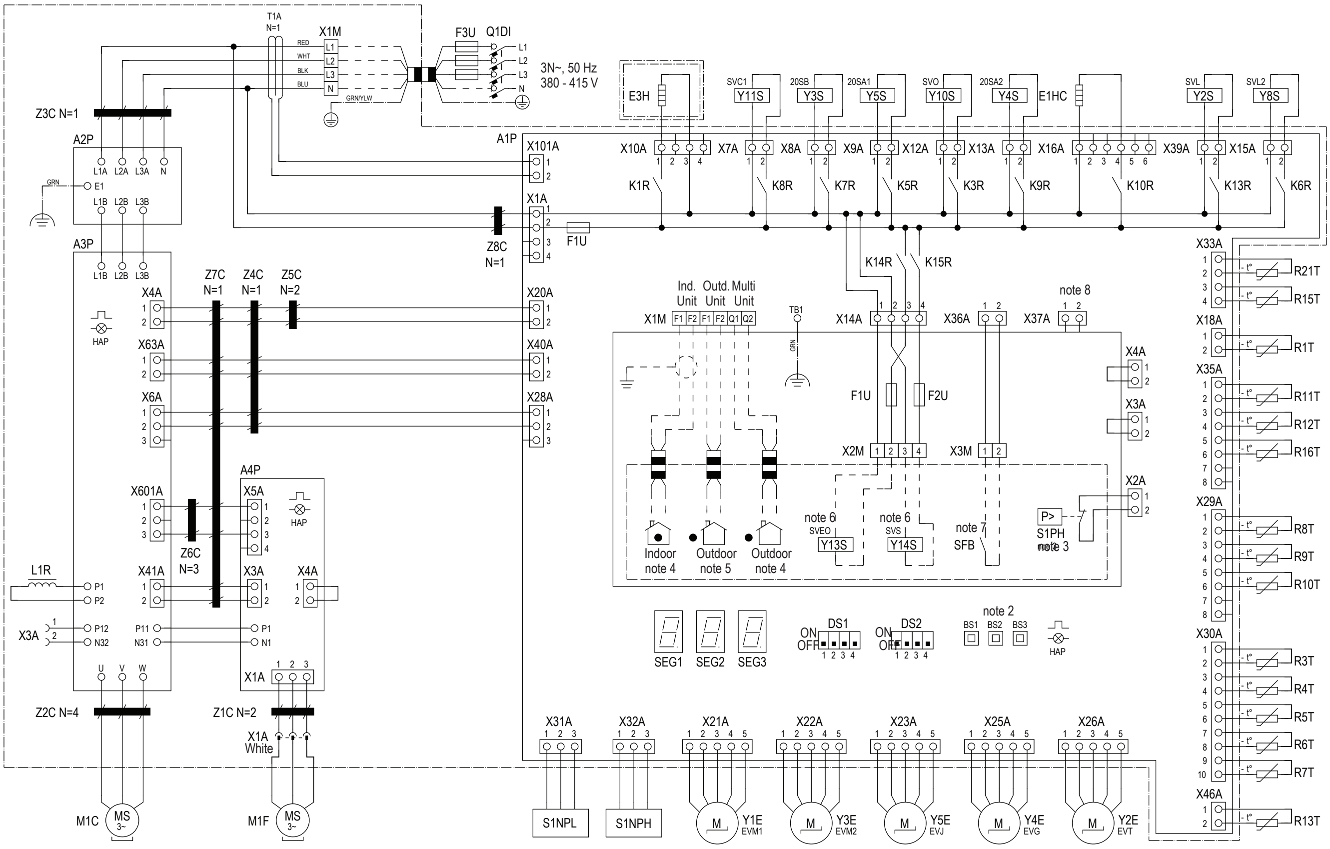
BLK	Black
RED	Red
BLU	Blue
WHT	White
GRN	Green

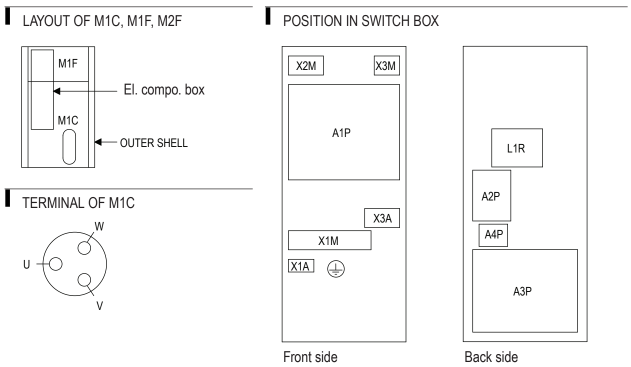
Legend for wiring diagram

A1P	Printed circuit board (main)
A2P	Printed circuit board (noise filter)
A3P	Printed circuit board (inverter)
A4P	Printed circuit board (fan)
A5P (14~20 HP only)	Printed circuit board (fan)
A6P (14~20 HP only)	Printed circuit board (sub)
BS1~BS3 (A1P)	Push button switch (MODE, SET, RETURN)
DS1, DS2 (A1P)	DIP switch
E1HC	Crankcase heater
E3H	Bottom plate heater
F1U (A1P)	Fuse (T 10 A / 250 V)
F1U (A6P)(14~20 HP only)	Fuse (T 3.15 A / 250 V)
F1U, F2U	Fuse (T 1 A / 250 V)
F3U	Field fuse
F101U (A4P)	Fuse
HAP (A*P)	Pilot lamp (service monitor is green)
K*R (A*P)	Relay on PCB
L1R	Reactor
M1C	Motor (compressor)
M1F	Motor (fan)
M2F (14~20 HP only)	Motor (fan)
Q1DI	Earth leakage circuit breaker
R1T	Thermistor (air)
R3T	Thermistor (liquid, main)
R4T	Thermistor (heat exchanger, liquid pipe upper)
R5T	Thermistor (heat exchanger, liquid pipe lower)
R6T	Thermistor (subcool heat exchanger gas)
R7T	Thermistor (subcool heat exchanger liquid)
R8T	Thermistor (heat exchanger, gas upper)
R9T	Thermistor (heat exchanger, gas lower)
R10T	Thermistor (suction)
R11T	Thermistor (heat exchanger, de-icer)
R12T	Thermistor (suction compressor)
R13T	Thermistor (receiver gas)

R15T	Thermistor (M1C body)
R16T (5~12 HP only)	Thermistor (gas injection)
R21T	Thermistor (M1C discharge)
S1NPH	High pressure sensor
S1NPL	Low pressure sensor
S1PH	High pressure switch
SEG1~SEG3 (A1P)	7-segment display
SFB	Mechanical ventilation error input
T1A	Current sensor
X*A	Connector
X*M	Terminal strip
Y1E	Electronic expansion valve (heat exchanger upper)
Y2E	Electronic expansion valve (subcool heat exchanger)
Y3E	Electronic expansion valve (heat exchanger lower)
Y4E	Electronic expansion valve (receiver gas)
Y5E	Electronic expansion valve (inverter cooling)
Y7E (14~20 HP only)	Electronic expansion valve (liquid injection)
Y2S	Solenoid valve (liquid pipe)
Y3S	Solenoid valve (high pressure/low pressure gas pipe)
Y4S	Solenoid valve (heat exchanger lower)
Y5S	Solenoid valve (heat exchanger upper)
Y8S (5~12 HP only)	Solenoid valve (gas injection)
Y10S	Solenoid valve (accu oil return)
Y11S	Solenoid valve (M1C oil return)
Y13S	Error operation output (SVEO)
Y14S	Leak sensor output (SVS)
Z*C	Noise filter (ferrite core)

REMA5 + REYA8~12





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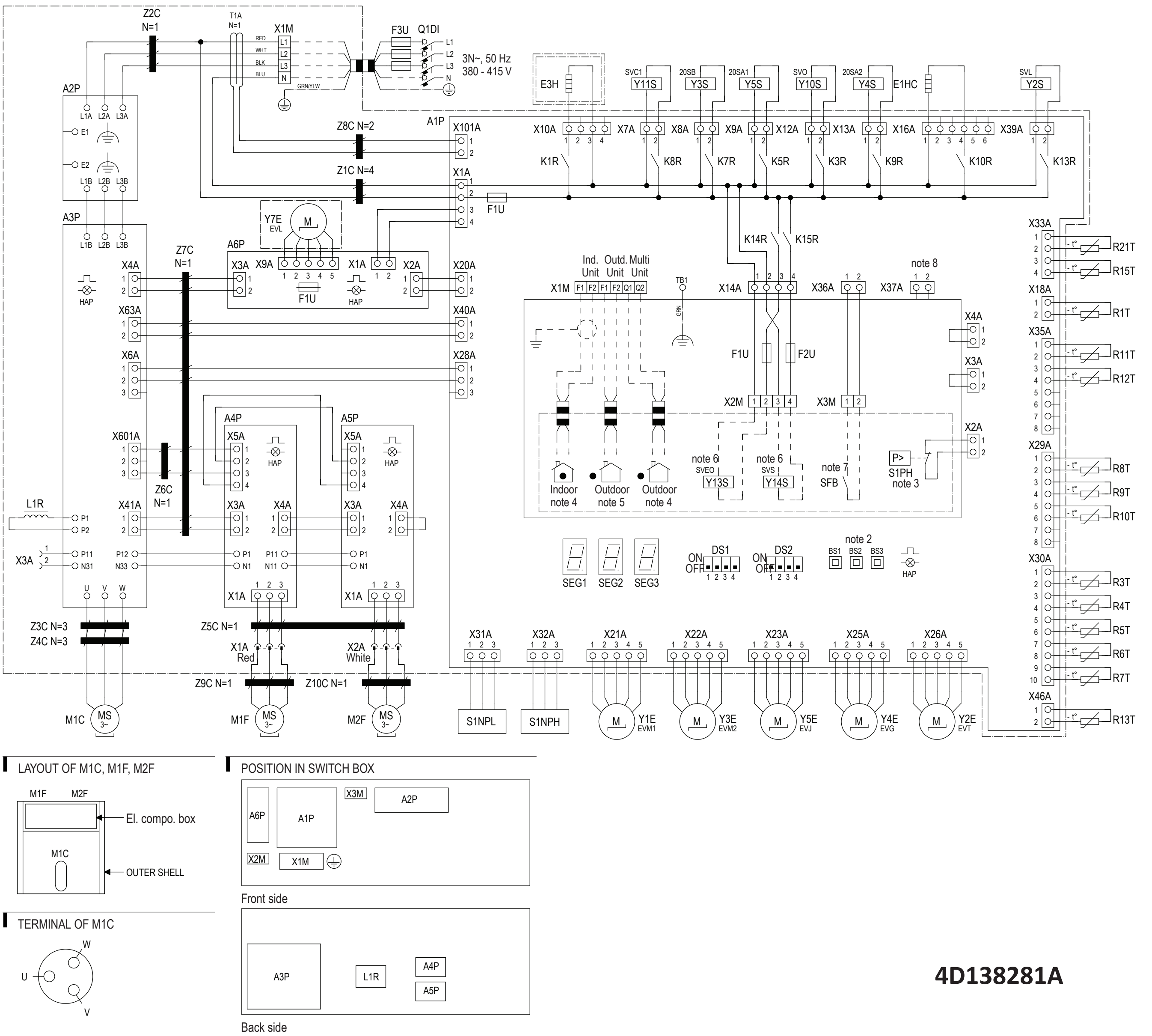
REYA14~20



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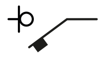
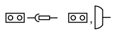
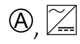
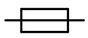
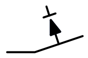
LAYOUT OF M1C, M1F, M2F
POSITION IN SWITCH BOX
Front side
Back side
TERMINAL OF M1C

6.2.2 Wiring diagram: Branch selector box

The wiring diagram is delivered with the unit, located at the inside of the service cover.

For applied parts and numbering, see the wiring diagram on the unit. Part numbering is by Arabic numbers in ascending order for each part and is represented in the overview below by "*" in the part code.

Symbol	Meaning	Symbol	Meaning
  	Circuit breaker		Protective earth
	Connection		Protective earth (screw)
	Connector		Rectifier
	Earth		Relay connector
	Field wiring		Short-circuit connector
	Fuse		Terminal
	Indoor unit		Terminal strip
	Outdoor unit		Wire clamp
	Residual current device		

Symbol	Colour	Symbol	Colour
BLK	Black	ORG	Orange
BLU	Blue	PNK	Pink
BRN	Brown	PRP, PPL	Purple
GRN	Green	RED	Red
GRY	Grey	WHT	White
		YLW	Yellow

Symbol	Meaning
A*P	Printed circuit board (PCB)
BS*	Pushbutton ON/OFF, operation switch
BZ, H*O	Buzzer
C*	Capacitor
AC*, CN*, E*, HA*, HE*, HL*, HN*, HR*, MR*_A, MR*_B, S*, U, V, W, X*A, K*R_*, NE	Connection, connector
D*, V*D	Diode
DB*	Diode bridge
DS*	DIP switch
E*H	Heater

draft – 09/12/2022 14:35

Symbol	Meaning
FU*, F*U, (for characteristics, see PCB inside your unit)	Fuse
FG*	Connector (frame ground)
H*	Harness
H*P, LED*, V*L	Pilot lamp, light emitting diode
HAP	Light emitting diode (service monitor green)
HIGH VOLTAGE	High voltage
IES	Intelligent eye sensor
IPM*	Intelligent power module
K*	Contact
K*R, KCR, KFR, KHuR, K*M	Magnetic relay
L	Live
L*	Coil
L*R	Reactor
M*	Stepper motor
M*C	Compressor motor
M*D	Damper motor
M*F	Fan motor
M*P	Drain pump motor
M*S	Swing motor
MR*, MRCW*, MRM*, MRN*	Magnetic relay
N	Neutral
n=*, N=*	Number of passes through ferrite core
NE*	Functional earth
PAM	Pulse-amplitude modulation
PCB*	Printed circuit board
PM*	Power module
PS	Switching power supply
PTC*	PTC thermistor
Q*	Insulated gate bipolar transistor (IGBT)
Q*C	Circuit breaker
Q*DI, KLM	Earth leak circuit breaker
Q*L	Overload protector
Q*M	Thermo switch
Q*R	Residual current device
R*	Resistor
R*T	Thermistor

Symbol	Meaning
RC	Receiver
S*C	Limit switch
S*L	Float switch
S*NG	Refrigerant leak detector
S*NPH	Pressure sensor (high)
S*NPL	Pressure sensor (low)
S*PH, HPS*	Pressure switch (high)
S*PL	Pressure switch (low)
S*T	Thermostat
S*RH	Humidity sensor
S*W, SW*	Operation switch
SA*, F1S	Surge arrester
SEG*	7-segment display
SR*, WLU	Signal receiver
SS*	Selector switch
SHEET METAL	Terminal strip fixed plate
T*R	Transformer
TC, TRC	Transmitter
V*, R*V	Varistor
V*R	Diode bridge, Insulated-gate bipolar transistor (IGBT) power module
WRC	Wireless remote controller
X*	Terminal
X*M	Terminal strip (block)
X*Y	Connector
Y*E	Electronic expansion valve coil
Y*R, Y*S	Reversing solenoid valve coil
Z*C	Ferrite core
ZF, Z*F	Noise filter

Specific BS unit wiring diagram legend

Symbol	Meaning
EVL	Electronic expansion valve (suction)
EVH	Electronic expansion valve (HP/LP)
EVSC	Electronic expansion valve (subcool)
EVSG	Electronic expansion valve (gas shut-off valve)
EVSL	Electronic expansion valve (liquid shut-off valve)

Symbol	Meaning
X15A	Connector (drain up kit abnormal signal)

Notes

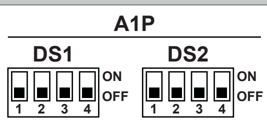
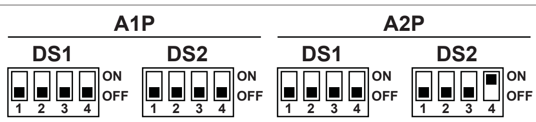
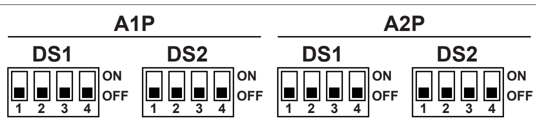
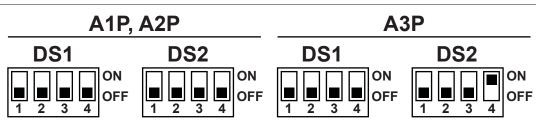
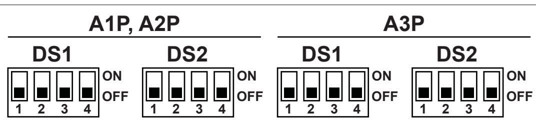
1. This wiring diagram applies to the BS unit only.
2. Symbols:

   : terminal block

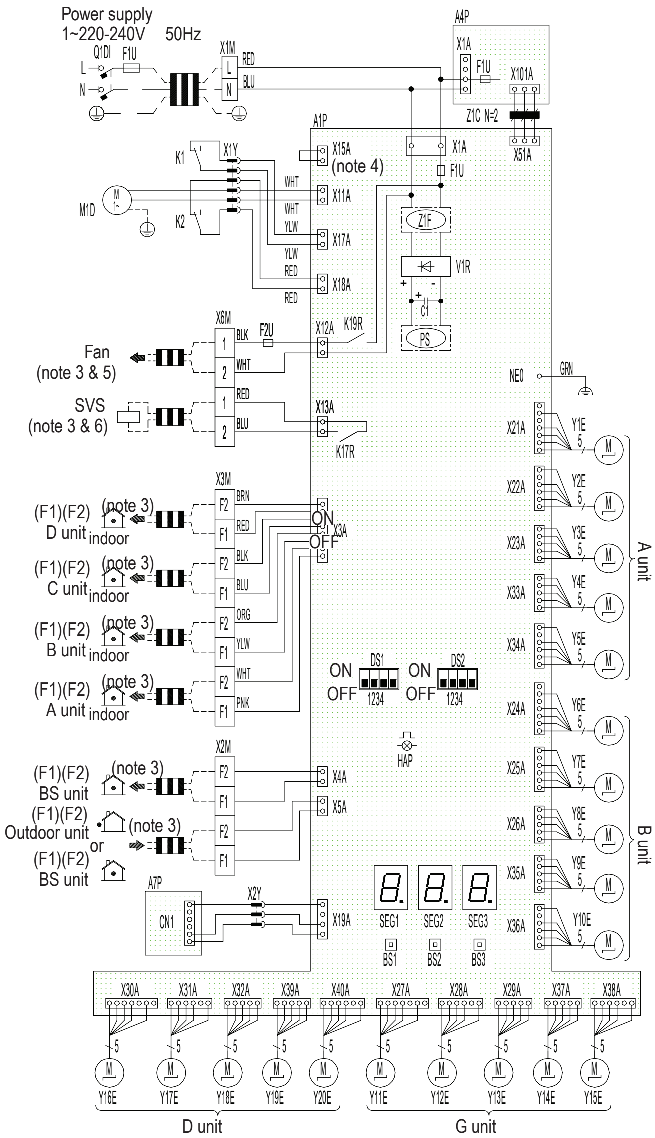
   : connector

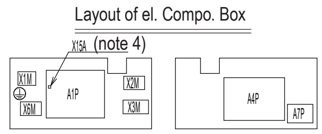
   : field wiring

   : earth terminal
3. For wiring for the terminal block on X2M ~ X6M (operation), see the installation manual attached to the product.
4. For X15A (A1P), remove the short circuit connector and connect the air conditioner stop signal (optional product) when using the drain up kit (optional product). For details, see the operation manual attached to the kit.
5. The capacity of the contact is 220~240V AC-0.5A.
6. Digital output: max 220~240V AC-0.5A. To use this output, see the installation manual.
7. The factory settings of DIP switch (DS1, DS2) are as follows:

Model	DS1, DS2 factory settings
BS4A	
BS6A	
BS8A	
BS10A	
BS12A	
To set the DIP switches (DS1~2) and push buttons (BS1~3), see the installation manual	

Branch selector box BS4A





A1P	
DS1	DS2
ON OFF	ON OFF

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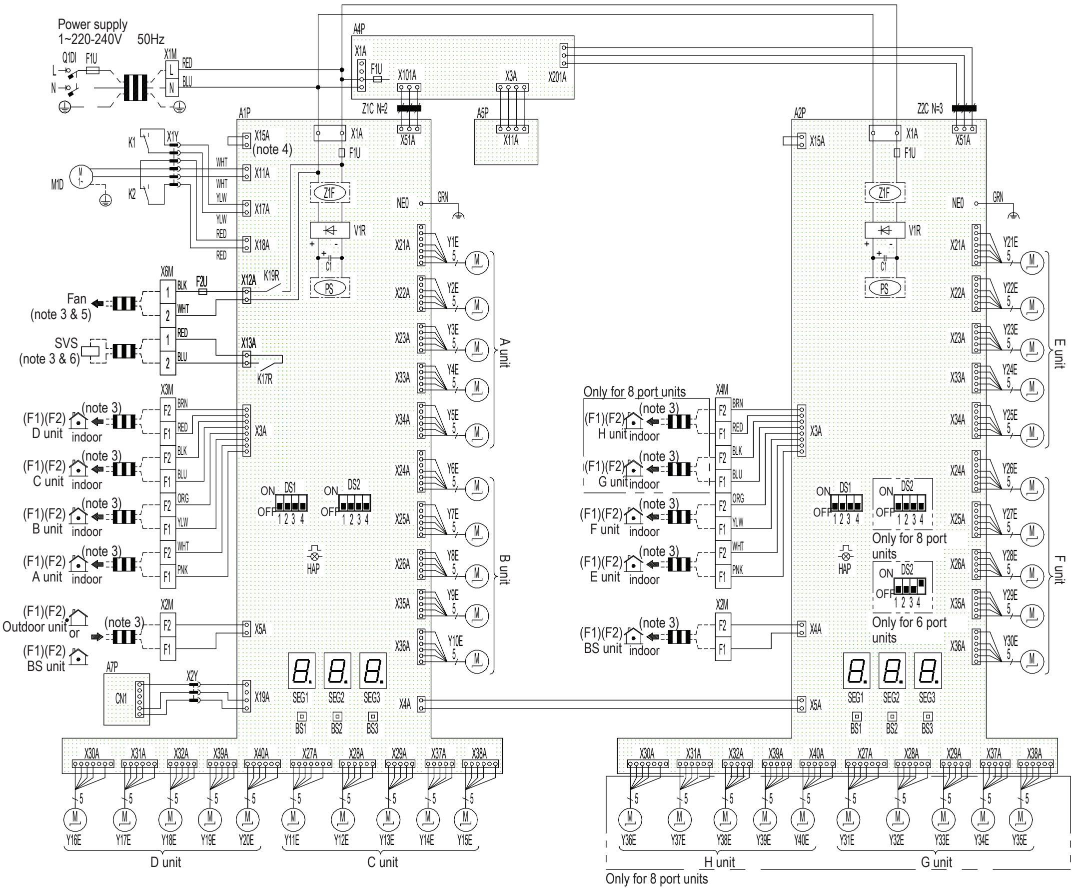
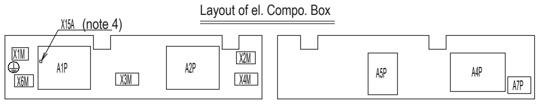
Branch selector box BS6~8A



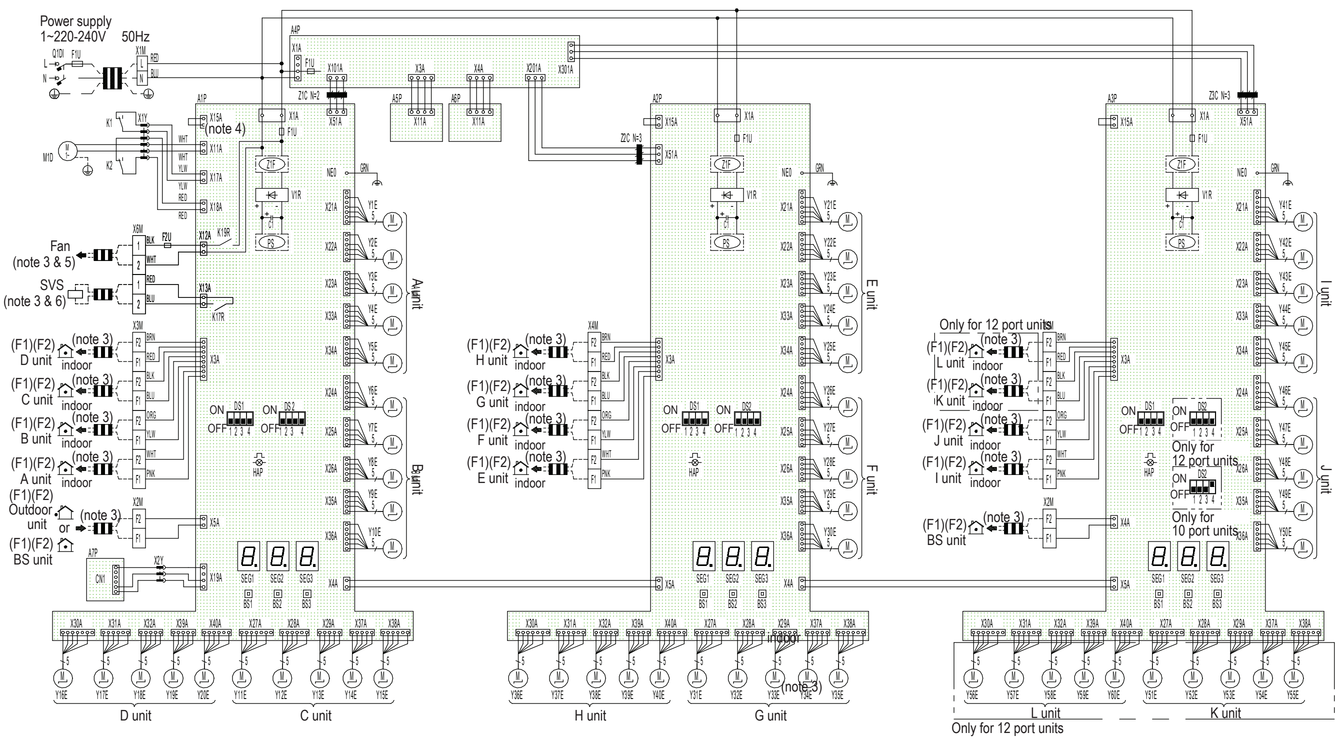
	A1P		A2P	
	DS1	DS2	DS1	DS2
BS8A14AJV1B	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2
BS6A14AJV1B	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2

Layout of el. Compo. Box



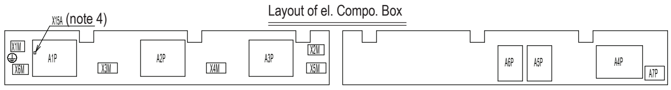
2D139832

Branch selector box BS10~12A



	A1P, A2P		A3P	
	DS1	DS2	DS1	DS2
BS12A14AJV1B	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2
BS10A14AJV1B	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2

Layout of el. Compo. Box



2D139833

6.2.3 Wiring diagram: Drain-up kit

(1) Wiring diagram

English	Translation
Wiring diagram	Wiring diagram
Drain up kit	Drain up kit
Circuit board	Circuit board
Float switch (For operation)	Float switch (For operation)
Float switch (For abnormalities)	Float switch (For abnormalities)
Air conditioner stop signal	Air conditioner stop signal
Drain up	Drain up
Relay harness	Relay harness
BS/SV unit	BS/SV unit
leftmost PCB	Leftmost PCB
Power terminal	Power terminal
Power supply wire	Power supply wire

(2) Notes

English	Translation
NOTE	NOTE
⏚	Protective earth
⊗	Screw connection

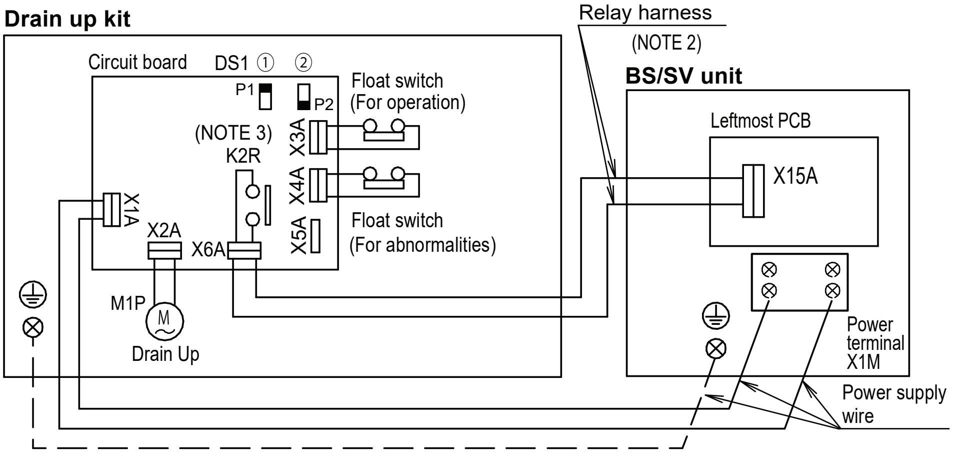
NOTES:

1. Be sure to turn on the drain up kit power supply. If the power supply is not turned on, the air conditioner will stop abnormally and operation will not be possible.
2. The relay harness cannot be extended. (It may malfunction due to noise)
3. When the power supply is turned on, the K2R contact closes and becomes a non-voltage constant B contact.

(3) Legend

DS1	DIP switch
K2R	Contact
M1P	Drain pump
P1, P2	DIP switch position
X1A~X15A	Connector
Z*C	Noise filter (ferrite core)

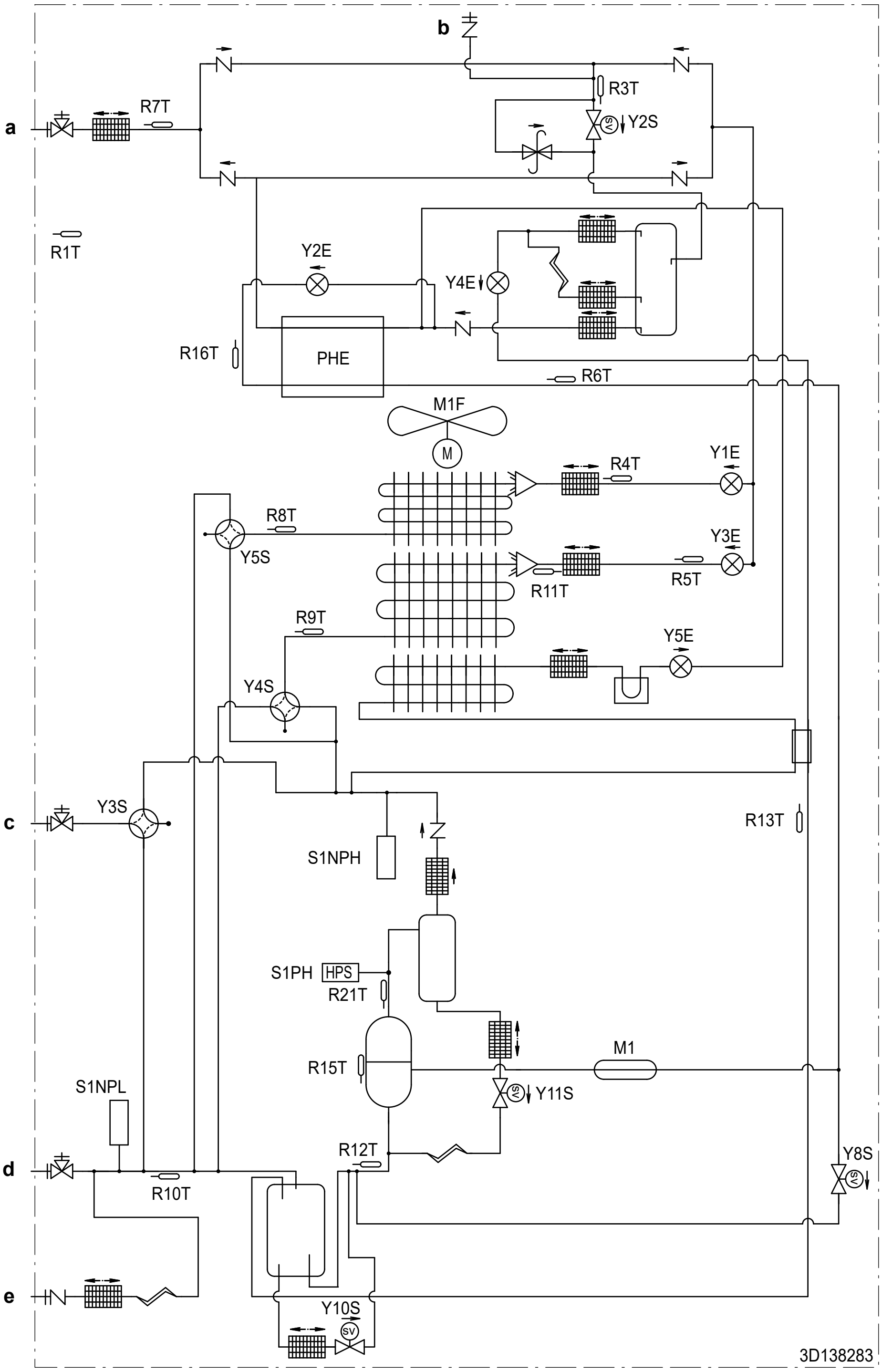
Wiring diagram



6.3 Piping diagram

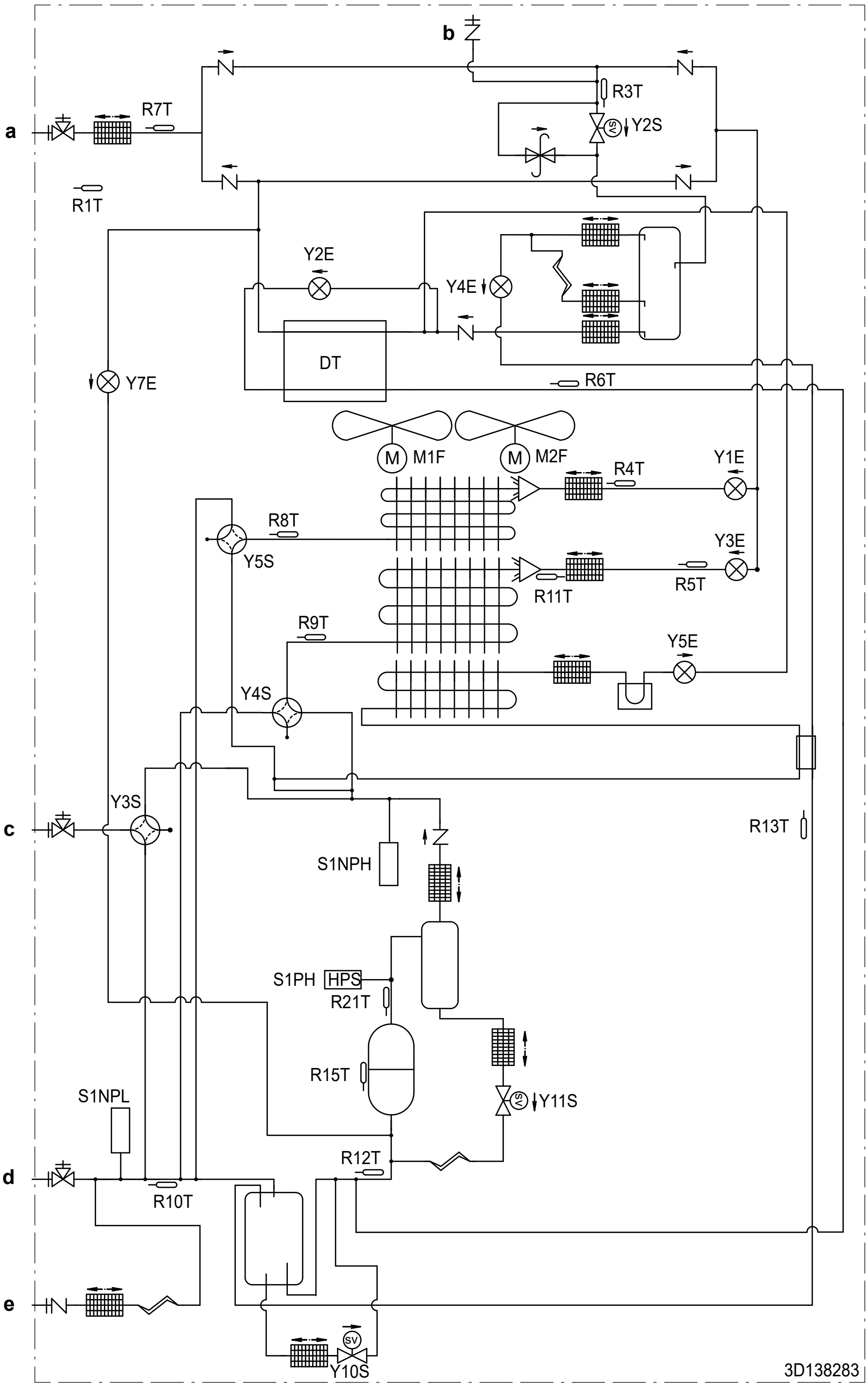
6.3.1 Piping diagram: Outdoor unit

Piping diagram: 5~12 HP

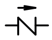
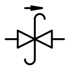
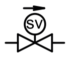
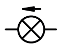
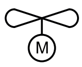
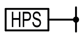
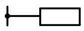
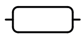
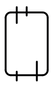
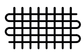
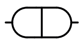
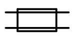
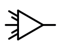
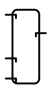
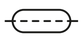


a Stop valve (liquid)
b Service port
c Stop valve (high pressure/low pressure)
d Stop valve (gas)
e Charge port

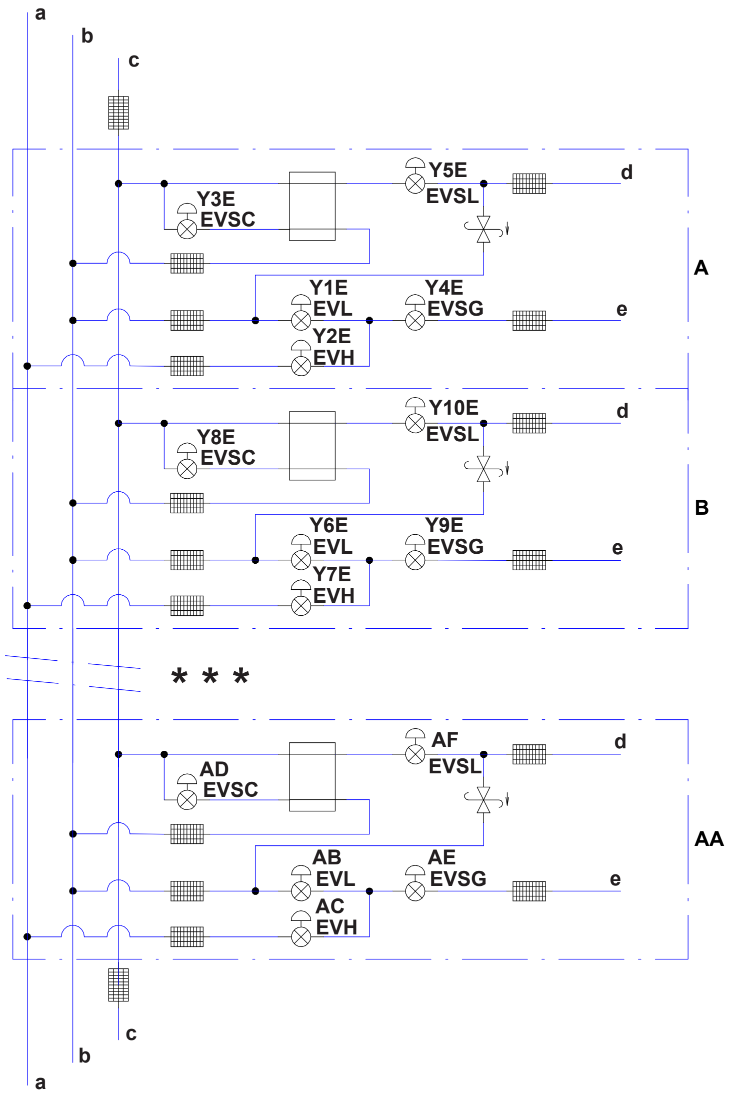
Piping diagram: 14~20 HP



a Stop valve (liquid)
b Service port
c Stop valve (high pressure/low pressure)
d Stop valve (gas)
e Charge port

	Charge port / Service port
	Stop valve
	Filter
	Check valve
	Pressure relief valve
	Thermistor
	Solenoid valve
	Heat sink (PCB)
	Capillary tube
	Expansion valve
	4-way valve
	Propeller fan
	High pressure switch
	*PL: low pressure sensor *PH: high pressure sensor
	Oil separator
	Accumulator
	Heat exchanger
	Compressor
	PHE: plate heat exchanger DT: double tube heat exchanger
	Distributor
	Liquid receiver
	Muffler

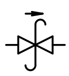
6.3.2 Piping diagram: Branch selector box



a	High pressure / low pressure gas pipe
b	Suction gas pipe
c	Liquid pipe
d	Liquid pipe to indoor unit
e	Gas pipe to indoor unit
EVL	Electronic expansion valve (suction)
EVH	Electronic expansion valve (HP/LP)
EVSC	Electronic expansion valve (subcool)
EVSG	Electronic expansion valve (gas shut-off valve)
EVSL	Electronic expansion valve (liquid shut-off valve)
Y*E	Electronic expansion valve
A	Branch pipe port (to indoor unit A)
B	Branch pipe port (to indoor unit B)
AA	See table below
AB	See table below
AC	See table below
AD	See table below
AE	See table below
AF	See table below
***	This pattern is repeated AG times (see below) in total

Branch selector box	AA	AB	AC	AD	AE	AF	AG
BS4A	D	Y16E	Y17E	Y18E	Y19E	Y20E	4
BS6A	F	Y26E	Y27E	Y28E	Y29E	Y30E	6
BS8A	H	Y36E	Y37E	Y38E	Y39E	Y40E	8
BS10A	J	Y46E	Y47E	Y48E	Y49E	Y50E	10
BS12A	K	Y56E	Y57E	Y58E	Y59E	Y60E	12

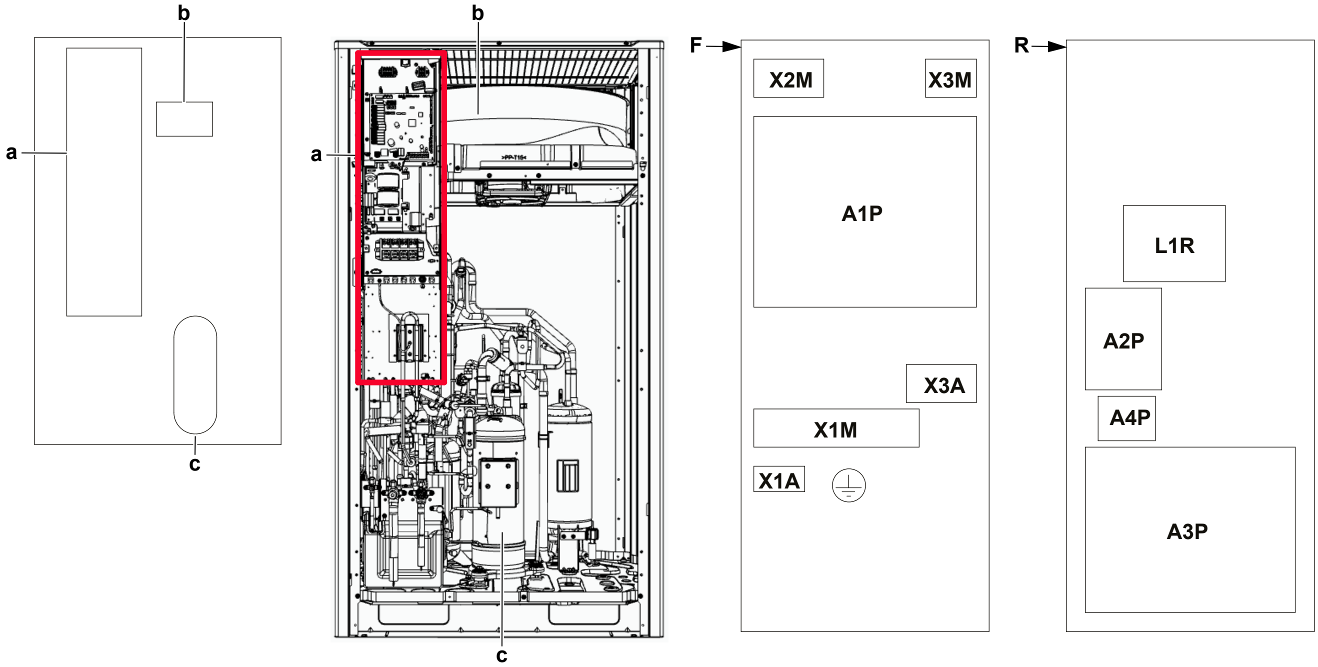

Filter


Pressure relief valve


Double tube heat exchanger

6.4 Switchbox overview

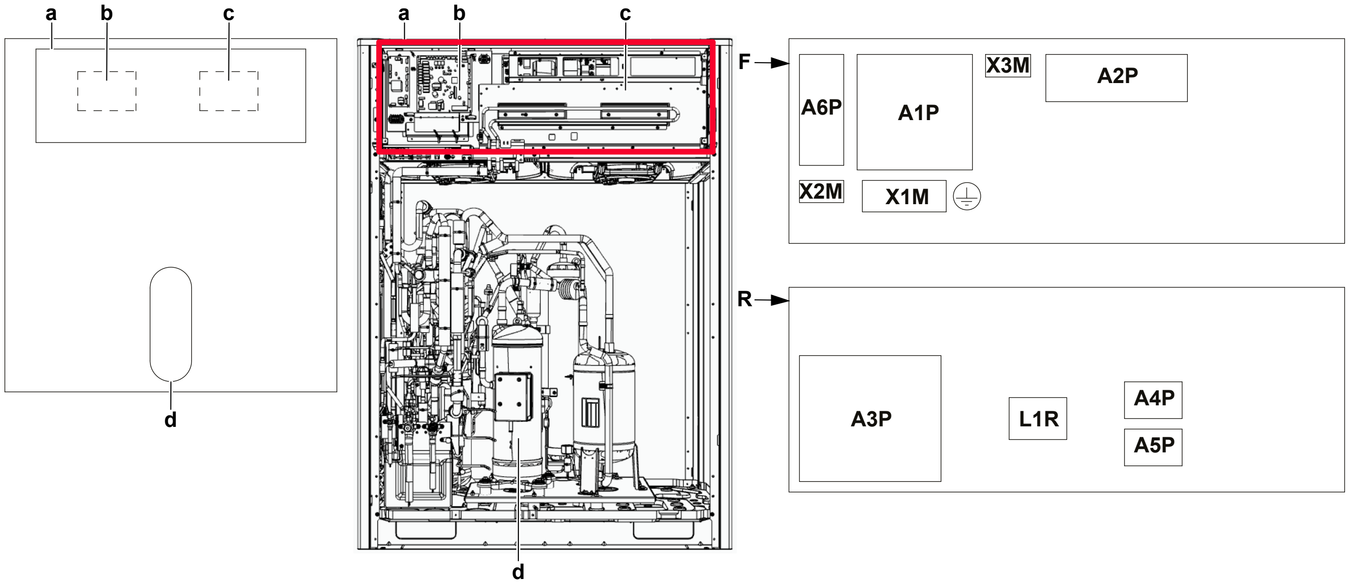
6.4.1 Single fan units



a	Switchbox
b	Fan motor (M1F)
c	Compressor (M1C)

F	Front view
R	Rear view
A1P	Main PCB
A2P	Noise filter PCB
A3P	Inverter PCB
A4P	Fan inverter PCB
L1R	Reactor
X1A	Connector for M1F
X3A	Rectifier voltage check connector
X1M	Power supply wire terminal
X2M	Wire terminal
X3M	Wire terminal (mechanical ventilation error input)

6.4.2 Double fan units

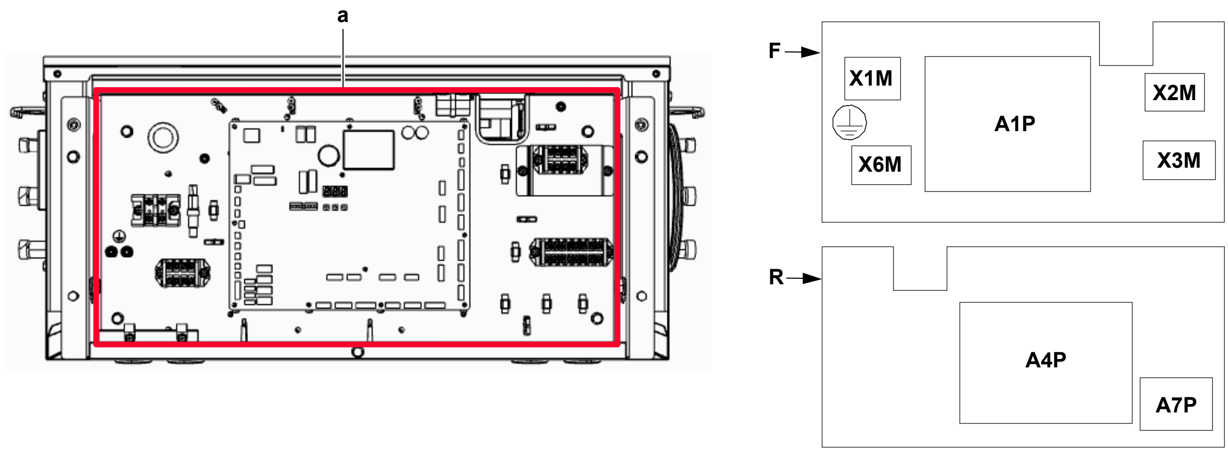


a Switchbox
b Fan motor (M1F)
c Fan motor (M2F)
d Compressor (M1C)

F Front view
R Rear view
A1P Main PCB
A2P Noise filter PCB
A3P Inverter PCB
A4P Fan inverter PCB for M1F
A5P Fan inverter PCB for M2F
A6P Sub PCB
L1R Reactor
X1M Power supply wire terminal
X2M Wire terminal
X3M Wire terminal (mechanical ventilation error input)

6.4.3 Branch selector box

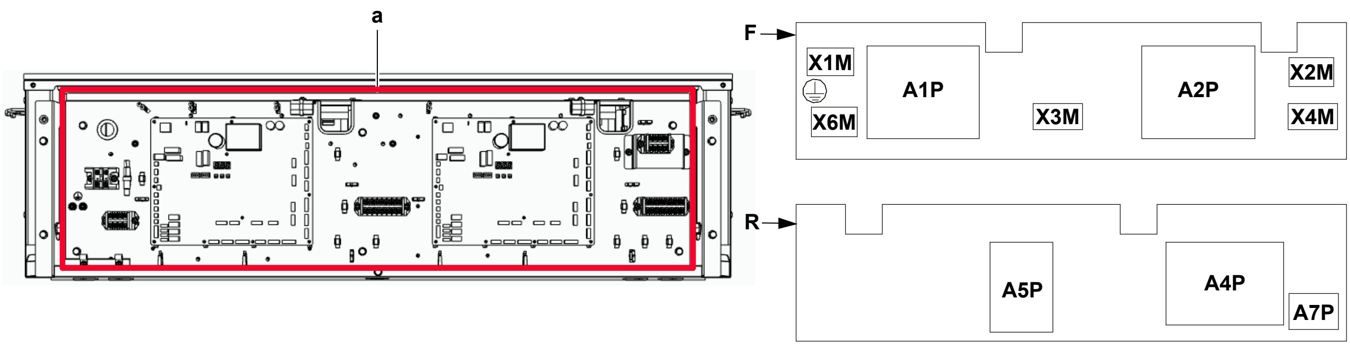
BS4A



a Switchbox

F Front view
R Rear view
A1P Main PCB
A4P Power back-up PCB
A7P R32 leak detection sensor
X1M Terminal strip (power)
X2M Terminal strip (transmission)
X3M Terminal strip (transmission)
X6M Terminal strip (external output)

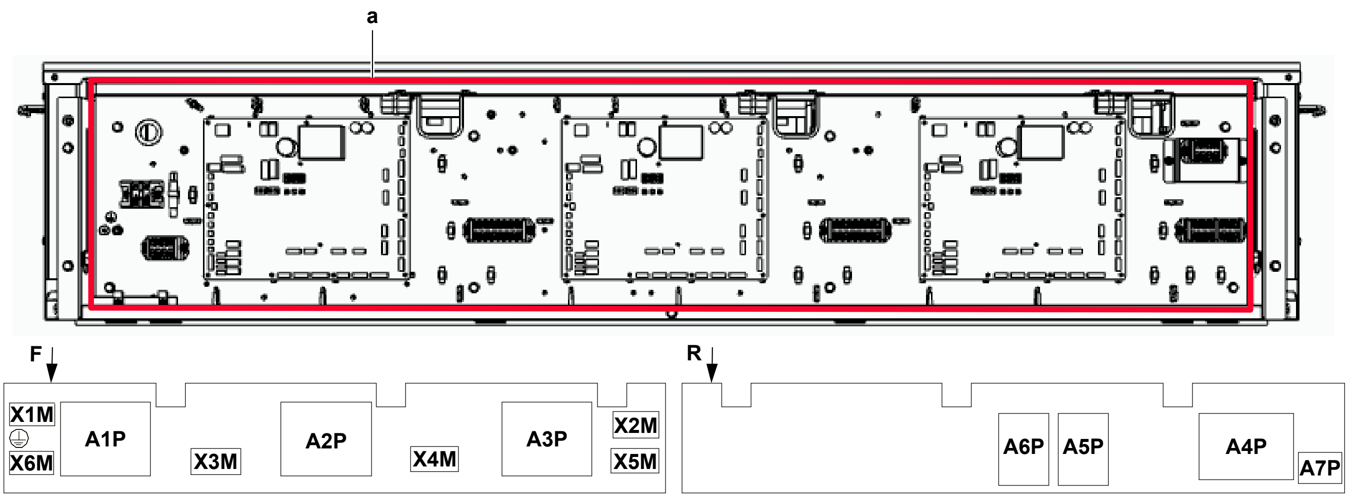
BS6~8A



a Switchbox

F Front view
R Rear view
A1P Main PCB
A2P Sub PCB
A4P Power back-up PCB
A5P Capacitor PCB
A7P R32 leak detection sensor
X1M Terminal strip (power)
X2M Terminal strip (transmission)
X3M Terminal strip (transmission)
X4M Terminal strip (transmission)
X6M Terminal strip (external output)

BS10~12A



a Switchbox
F Front view
R Rear view
A1P Main PCB
A2P Sub PCB
A3P Sub PCB
A4P Power back-up PCB
A5P Capacitor PCB
A6P Capacitor PCB
A7P R32 leak detection sensor
X1M Terminal strip (power)
X2M Terminal strip (transmission)
X3M Terminal strip (transmission)
X4M Terminal strip (transmission)
X5M Terminal strip (transmission)
X6M Terminal strip (external output)

6.5 Field information report

See next page.

In case a problem occurred on the unit which could not be resolved by using the content of this service manual or in case you have a problem which could be resolved but of which the manufacturer should be notified, we advise you to contact your distributor.
To facilitate the investigation, additional information is required. Please fill out the following form before contacting your distributor.

FIELD INFORMATION REPORT	
Key person information	
Name:	Company name:
Your contact details Phone number:	E-mail address:
Site address:	
Your reference:	Date of visit:
Claim information	
Title:	
Problem description:	
Error code:	Trouble date:
Problem frequency:	
Investigation steps done:	
Insert picture of the trouble.	
Current situation (solved, not solved,…):	
Countermeasures taken:	
Comments and proposals:	
Part available for return (if applicable):	

Application information
Application (house, apartment, office,...):
New project or reimbursement:
Piping layout / Wiring layout (simple schematic):

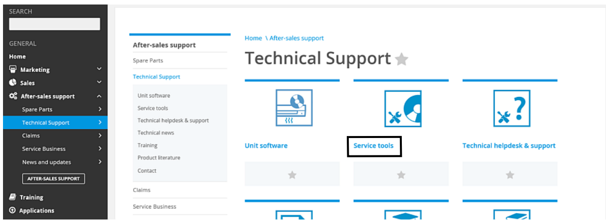
Unit / Installation information	
Model name:	Serial number:
Installation / commissioning date:	Software version user interface:
Software version outdoor PCB:	

Provide pictures of the field settings overview (viewable on the user interface).

6.6 Service tools

1 For an overview of the available service tools, check the Daikin Business Portal (authentication required).

2 Go to the tab After-sales support on the left navigation pane and select Technical support.

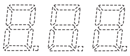


3 Click the button Service tools. An overview of the available service tools for the different products is shown. Also additional information on the service tools (instruction, latest software) can be found here.

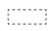
6.7 Field settings

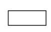
6.7.1 To access mode 1 or 2

1. Check if the unit is in normal mode. If NOT in normal mode, push BS1 to return to normal mode. 7-segment display indication state will be as shown:

   Result: 

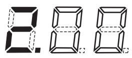
2. 7-segment display indications:

    Off

    Blinking

    On

3. BS1 is used to change the mode you want to access.

Access	Action
Mode 1	Push BS1 one time. 7-segment display indication changes to: 
Mode 2	Push BS1 for at least 5 seconds. 7-segment display indication changes to: 

INFORMATION

To access the field settings on BRC1H controller, see the installer reference guide of the specific controller and the indoor unit installer reference guide for more information.

6.7.2 To use mode 1

Outdoor units

Mode 1 is used to monitor the status of the unit.

What	How
Changing and accessing the setting in mode 1	Once mode 1 is selected (push BS1 one time), you can select the wanted setting. It is done by pushing BS2. Accessing the selected setting's value is done by pushing BS3 one time.
To quit and return to the initial status	Press BS1.

Example:

Checking the content of parameter [1-10] (to know how many indoor units are connected to the system).

[A-B]=C in this case defined as: A=1; B=10; C=the value we want to know/monitor:

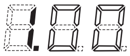
1. Make sure the 7-segment display indication is as during normal operation (default situation when shipped from factory). 7-segment display indications:

Off

Blinking

On

2. Push BS1 one time.

   Result: Mode 1 is accessed: 

3. Push BS2 10 times.

   Result: Mode 1 setting 10 is addressed: 

4. Push BS3 one time; the value which is returned (depending on the actual field situation), is the amount of indoor units which are connected to the system.

   Result: Mode 1 setting 10 is addressed and selected, return value (e.g. 15) is monitored information (15 indoor units connected to the system).

5. To leave the monitoring function, push BS1 one time.

Branch selector box

Mode 1 is used to set basic settings and to monitor the status of the unit.

What	How
Changing and accessing the setting in mode 1	1 Push BS1 one time to select mode 1. 2 Push BS2 to select the required setting. 3 Push BS3 one time to access the selected setting's value.
To quit and return to the initial status	Push BS1.

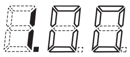
Example

Checking the content of parameter [1-2] (to know the software version).

[Mode-Setting]=Value in this case defined as: Mode=1; Setting=2; Value=the value we want to know/monitor:

1. Make sure the 7-segment display indication is in the default situation (normal operation).

2. Push BS1 one time.

   Result: Mode 1 is accessed: 

3. Push BS2 two times.

   Result: Mode 1 setting 2 is addressed: 

4. Push BS3 one time. The displays shows the software version.

   Result: Mode 1 setting 2 is addressed and selected, return value is monitored information.

5. Push BS1 one time to quit mode 1.

6.7.3 To use mode 2

Outdoor units

The master unit should be used to input field settings in mode 2.

Mode 2 is used to set field settings of the outdoor unit and system.

What	How
Changing and accessing the setting in mode 2	Once mode 2 is selected (push BS1 for more than 5 seconds), you can select the wanted setting. It is done by pushing BS2. Accessing the selected setting's value is done by pushing BS3 1 time.
To quit and return to the initial status	Press BS1.
Changing the value of the selected setting in mode 2	▪ Once mode 2 is selected (push BS1 for more than 5 seconds) you can select the wanted setting. It is done by pushing BS2. ▪ Accessing the selected setting's value is done by pushing BS3 1 time. ▪ Now BS2 is used to select the required value of the selected setting. ▪ When the required value is selected, you can define the change of value by pushing BS3 1 time. ▪ Press BS3 again to start operation according to the chosen value.

Example:

Checking the content of parameter [2-18] (to define the high static pressure setting of the outdoor unit's fan).

[A-B]=C in this case defined as: A=2; B=18; C=the value we want to know/change

1. Make sure the 7-segment display indication is as during normal operation (default situation when shipped from factory). 7-segment display indications:

   Off

   Blinking

   On

2. Push BS1 for over 5 seconds.

   Result: Mode 2 is accessed: 

3. Push BS2 18 times.

   Result: Mode 2 setting 18 is addressed: 

4. Push BS3 1 time; the value which is returned (depending on the actual field situation), is the status of the setting. In the case of [2-18], default value is "0", which means the function is not active.

   Result: Mode 2 setting 18 is addressed and selected, return value (e.g. 0) is the current setting situation.

5. To change the value of the setting, push BS2 till the required value appears on the 7-segment display indication. When achieved, define the setting value by pushing BS3 1 time. To start operation according to the chosen setting, confirm again by pushing BS3.

6. To leave the monitoring function, push BS1 1 time.

Branch selector box

Mode 2 is used to set field settings of the BS unit.

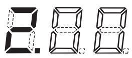
What	How
Changing and accessing the setting in mode 2	▪ Push BS1 for more than five seconds to select mode 2. ▪ Push BS2 to select the required setting. ▪ Push BS3 one time to access the selected setting's value.
To quit and return to the initial status	Push BS1.
Changing the value of the selected setting in mode 2	▪ Push BS1 for more than five seconds to select mode 2. ▪ Push BS2 to select the required setting. ▪ Push BS3 one time to access the selected setting's value. ▪ Push BS2 to select the required value of the selected setting. ▪ Push BS3 one time to validate the change. ▪ Push BS3 again to start operation with the chosen value.

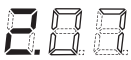
Example

Checking the content of parameter [2-7] (to enable or disable the ventilated enclosure function).

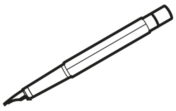
[Mode-Setting]=Value in this case is defined as: Mode=2; Setting=7; Value=the value we want to know/change.

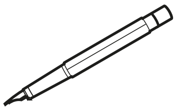
1. Make sure the 7-segment display indication is in the default situation (normal operation).
2. Push BS1 for more than five seconds.

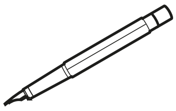
   Result: Mode 2 is accessed: 
3. Push BS2 seven times.

   Result: Mode 2 setting 7 is addressed: 
4. Push BS3 one time. The display shows the status of the setting (depending on the actual field situation). In the case of [2-7], the default value is "1", which means the ventilated enclosure function is enabled.

   Result: Mode 2 setting 7 is addressed and selected, return value is the current setting situation.
5. To change the value of the setting, push BS2 till the required value appears on the 7-segment display indication.
6. Push BS3 one time to validate the change.
7. Push BS3 to start operation according to the chosen setting.
8. Push BS1 one time to quit mode 2.







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