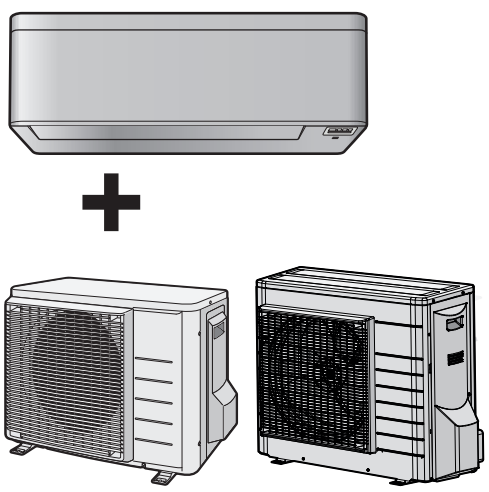
Service manual

Split Stylish R32



CTXA15A2V1B(W)(S)(T)
FTXA20A2V1B(W)(S)(T)
FTXA25A2V1B(W)(S)(T)
FTXA35A2V1B(W)(S)(T)
FTXA42A2V1B(W)(S)(T)
FTXA50A2V1B(W)(S)(T)

RXA42A2V1B
RXA50A2V1B

RXA20A2V1B
RXA25A2V1B
RXA35A2V1B

Service manual
Split Stylish R32

English

Disclaimer

Disclaimer

The present publication is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V.. Daikin Europe N.V. has compiled the content of this publication to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this publication. All content is copyrighted by Daikin Europe N.V..

Table of contents

1 Troubleshooting 4
1.1 To display the error code on the user interface 4
1.2 To reset the error code via remote controller 4
1.3 To reset the error code via outdoor unit 4
1.4 To perform a test run 4
1.4.1 To perform a test run using the user interface 4
1.5 Error based troubleshooting 4
1.5.1 A1-00 – PCB abnormality 4
1.5.2 A5-00 – Freeze-up protection / heating peak cut control 5
1.5.3 A6-00 – Indoor unit fan motor abnormality 5
1.5.4 AH-00 – Streamer unit abnormality 5
1.5.5 C4-00 – Indoor heat exchanger thermistor abnormality 5
1.5.6 C9-00 – Room thermistor abnormality 5
1.5.7 CC-00 – Humidity sensor abnormality 6
1.5.8 CE-00 – Intelligent thermal sensor abnormality 6
1.5.9 E1-00 – PCB defect 6
1.5.10 E3-00 – High pressure switch abnormality 6
1.5.11 E5-00 – Overheat of inverter compressor motor 7
1.5.12 E6-00 – Compressor startup defect 7
1.5.13 E7-00 – Fan lock abnormality 8
1.5.14 E8-00 – Input overvoltage abnormality 8
1.5.15 EA-00 – Cooling/Heating switch abnormality 8
1.5.16 F3-00 – Discharge pipe temperature stop abnormality 8
1.5.17 F6-00 – Stop due to cooling high pressure 9
1.5.18 F8-00 – System shutdown due to compressor internal temperature abnormality 9
1.5.19 H0-00 – Current sensor abnormality 9
1.5.20 H3-00 – High pressure switch defect 10
1.5.21 H6-00 – Location detection sensor abnormality 10
1.5.22 H8-00 – Compressor input abnormality 10
1.5.23 H9-00 – Outdoor air thermistor abnormality 11
1.5.24 J3-00 – Discharge pipe thermistor dislocation abnormality 11
1.5.25 J6-00 – Outdoor heat exchanger thermistor abnormality 11
1.5.26 L3-00 – Electrical component temperature abnormality 11
1.5.27 L4-00 – Fin temperature increase abnormality 11
1.5.28 L5-00 – Output over current abnormality 12
1.5.29 P4-00 – Fin thermistor abnormality 12
1.5.30 U0-00 – Shortage of refrigerant 12
1.5.31 U2-00 – Main circuit voltage abnormality 13
1.5.32 U4-00 – Indoor/outdoor transmission abnormality 13
1.5.33 U5-00 – Transmission malfunction between indoor unit and remote controller 13
1.5.34 UA-00 – Indoor/outdoor combination abnormality 13
1.6 Symptom based troubleshooting 15
1.6.1 Operation does not start 15
1.6.2 Operation sometimes stops 15
1.6.3 Operation starts but the unit does not cool/heat 15
1.6.4 Operating noise and vibrations 15
1.6.5 Abnormal high pressure 16
1.6.6 Abnormal low pressure 16
1.6.7 Indoor fan starts operating but the compressor does not operate 17
1.6.8 Operation starts and the unit stops immediately 17
1.6.9 Operation stops, unit cannot start for a while 17
1.6.10 Unit discharges white mist 17
1.6.11 Swing flap does not operate 17

2 Components 18
2.1 4-way valve 18
2.1.1 Checking procedures 18
2.1.2 Repair procedures 19
2.2 Compressor 20
2.2.1 Checking procedures 20
2.2.2 Repair procedures 22
2.3 Expansion valve 23
2.3.1 Checking procedures 23
2.3.2 Repair procedures 24
2.4 Front panel motor 26
2.4.1 Checking procedures 26
2.4.2 Repair procedures 26
2.5 High pressure switch 27
2.5.1 Checking procedures 27
2.5.2 Repair procedures 27
2.6 Humidity sensor 28
2.6.1 Checking procedures 28
2.6.2 Repair procedures 28
2.7 Indoor unit fan motor 29
2.7.1 Checking procedures 29
2.7.2 Repair procedures 29
2.8 Indoor unit PCB 30
2.8.1 Checking procedures 30
2.8.2 Repair procedures 31
2.9 Intelligent thermal sensor 33
2.9.1 Checking procedures 33
2.9.2 Repair procedures 33
2.10 Inverter PCB 34
2.10.1 Checking procedures 34
2.10.2 Repair procedures 35
2.11 Main PCB 35
2.11.1 Checking procedures 35
2.11.2 Repair procedures 36
2.12 Outdoor unit fan motor 38
2.12.1 Checking procedures 38
2.12.2 Repair procedures 39
2.13 Plate work 40
2.13.1 Outdoor unit 40
2.13.2 Indoor unit 42
2.14 Reactor 44
2.14.1 Checking procedures 44
2.14.2 Repair procedures 45
2.15 Streamer unit 45
2.15.1 Checking procedures 45
2.15.2 Repair procedures 45
2.16 Swing flap motor 46
2.16.1 Main swing flap motor 46
2.16.2 Secondary swing flap motor 47
2.17 Swing raster motor 48
2.17.1 Checking procedures 48
2.17.2 Repair procedures 49
2.18 Thermistors 49
2.18.1 Refrigerant thermistors 49
2.18.2 Other thermistors 51
2.19 Wifi control PCB 51
2.19.1 Checking procedures 51
2.19.2 Repair procedures 51

3 Third party components 52
3.1 Power supply 52
3.1.1 Checking procedures 52
3.1.2 Repair procedures 52
3.2 Refrigerant circuit 53
3.2.1 Checking procedures 53
3.2.2 Repair procedures 54
3.3 External factors 55
3.3.1 Checking procedures 55
3.3.2 Repair procedures 55

4 Maintenance 56
4.1 To clean the outdoor unit heat exchanger 56
4.2 To clean the indoor unit heat exchanger 56

4.3 To clean the air filters 56

5 Technical data 57

5.1 Detailed information setting mode 57
5.1.1 Detailed information setting mode: Indoor unit 57
5.1.2 Detailed information setting mode: Outdoor unit 57
5.1.3 Detailed information setting mode: Remote controller 57
5.2 Wiring diagram 58
5.2.1 Wiring diagram: Indoor unit 58
5.2.2 Wiring diagram: Outdoor unit 59
5.3 Piping diagram 61
5.3.1 Piping diagram: Indoor unit 61
5.3.2 Piping diagram: Outdoor unit 62
5.4 Component overview 64
5.4.1 Component overview: Indoor unit 64
5.4.2 Component overview: Outdoor unit 66
5.5 Field information report 68
5.6 Field settings 71
5.6.1 To control heating only mode 71
5.6.2 To adjust target set temperature in heating operation 71
5.6.3 To control the indoor unit fan during thermostat off 71
5.6.4 To change auto restart ON to OFF 71
5.6.5 To control cooling mode only 71
5.7 Service tools 72

1 Troubleshooting

1.1 To display the error code on the user interface

1 Hold Cancel for about 5 seconds.

Result: 00 blinks in the temperature display section.

2 Press Cancel repeatedly until a continuous beep is heard.

Result: The code is now displayed on the display.

INFORMATION

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

1.2 To reset the error code via remote controller

Prerequisite: Problem is solved.

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

1.3 To reset the error code via outdoor unit

Prerequisite: Problem is solved.

1 Perform a power reset to reset the error code.

1.4 To perform a test run

Prerequisite: Power supply MUST be in the specified range.

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

Prerequisite: Test run should be performed in accordance with the operation manual of the indoor unit to make sure that all functions and parts are working properly.

1 In cooling mode, select the lowest programmable temperature. In heating mode, select the highest programmable temperature. Test run can be disabled if necessary.

2 When the test run is finished, set the temperature to a normal level. In cooling mode: 26~28°C, in heating mode: 20~24°C.

3 The system stops operating 3 minutes after the unit is turned OFF.

INFORMATION

- Even if the unit is turned OFF, it consumes electricity.
- When the power turns back on after a power break, the previously selected mode will be resumed.

1.4.1 To perform a test run using the user interface

1 Press ⏻ to switch the system on.

2 Press Temp ▼, Temp ▲ and Mode simultaneously.

3 Press Temp ▲, select 7 and press Mode.

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

4 To stop operation sooner, press ⏻.

1.5 Error based troubleshooting

1.5.1 A1-00 – PCB abnormality

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

To solve the error code

INFORMATION

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

1 Check for improper combination of the indoor unit and the outdoor unit. See the combination table in the Databook for more information.

2 Perform a check of the power supply, connections, wiring,… between the outdoor unit and the indoor unit. See "3.1 Power supply" on page 52.

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

3 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

4 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

INFORMATION

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

1.5.2 A5-00 – Freeze-up protection / heating peak cut control

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

To solve the error code

INFORMATION

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

1 Check for objects near the indoor unit that may block the airflow. See "3.3 External factors" on page 55.

Possible cause: Airflow of the indoor unit is blocked.

2 Clean the air filter. See "4 Maintenance" on page 56.

Possible cause: Faulty or dirty air filter.

3 Clean the indoor unit heat exchanger. See "4 Maintenance" on page 56.

Possible cause: Dirty indoor unit heat exchanger.

4 Perform a check of the indoor unit heat exchanger thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty indoor unit heat exchanger thermistor.

5 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

INFORMATION

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

1.5.3 A6-00 – Indoor unit fan motor abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

2 Perform a check of the indoor unit fan motor. See "2.7 Indoor unit fan motor" on page 29.

Possible cause: Faulty indoor unit fan motor.

INFORMATION

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

1.5.4 AH-00 – Streamer unit abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the streamer unit. See "2.15 Streamer unit" on page 45.

Possible cause: Faulty streamer unit.

INFORMATION

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

1.5.5 C4-00 – Indoor heat exchanger thermistor abnormality

Trigger	Effect	Reset
Refrigerant liquid thermistor detects an open or short circuit during compressor operation.	Unit will stop operating.	Power reset via outdoor unit.

To solve the error code

INFORMATION

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

INFORMATION

In case of preferential kWh rate, the indoor unit also needs a power reset.

1 Perform a check of the refrigerant liquid thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty refrigerant liquid thermistor.

2 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

INFORMATION

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

1.5.6 C9-00 – Room thermistor abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the room thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty room thermistor.

2 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

INFORMATION

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

1.5.7 CC-00 – Humidity sensor abnormality

Trigger	Effect	Reset
▪ Disconnected sensor ▪ Broken sensor ▪ Communication 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 humidity sensor. See "2.6 Humidity sensor" on page 28.

Possible cause: Faulty humidity sensor.

INFORMATION

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

1.5.8 CE-00 – Intelligent thermal sensor abnormality

Trigger	Effect	Reset
▪ Disconnected sensor ▪ Broken sensor ▪ Communication 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 intelligent thermal sensor. See "2.9 Intelligent thermal sensor" on page 33.

Possible cause: Faulty intelligent thermal sensor.

INFORMATION

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

1.5.9 E1-00 – PCB defect

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

To solve the error code

INFORMATION

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

INFORMATION

In case of preferential kWh rate, the indoor unit also needs a power reset.

1 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

2 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

3 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

INFORMATION

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

1.5.10 E3-00 – High pressure switch abnormality

Trigger	Effect	Reset
High pressure switch opens due to measured pressure >41.7 bar.	Unit will stop operating.	Manual reset via user interface.
High pressure control (measured pressure >38 bar) occurs 16 times within 300 minutes.		

To solve the error code

INFORMATION

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

1 Perform a check of the high pressure switch. See "2.5 High pressure switch" on page 27.

Possible cause: Faulty high pressure switch.

2 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

3 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

4 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

INFORMATION

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

1.5.11 E5-00 – Overheat of inverter compressor motor

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

To solve the error code

INFORMATION

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

1 Perform a check of the discharge pipe thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty discharge pipe thermistor.

2 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

3 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

4 Perform a check of the expansion valve. See "2.3 Expansion valve" on page 23.

Possible cause: Faulty expansion valve.

5 Perform a check of the 4-way valve. See "2.1 4-way valve" on page 18.

Possible cause: Faulty 4-way valve.

6 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

7 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

8 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

INFORMATION

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

1.5.12 E6-00 – Compressor startup defect

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

To solve the error code

INFORMATION

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

1 Perform a check of the discharge pipe thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty discharge pipe thermistor.

2 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

3 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

4 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

5 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

6 Perform a check of the 4-way valve. See "2.1 4-way valve" on page 18.

Possible cause: Faulty 4-way valve.

7 Perform a check of the expansion valve. See "2.3 Expansion valve" on page 23.

Possible cause: Faulty expansion valve.

INFORMATION

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

1.5.13 E7-00 – Fan lock abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

2 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

INFORMATION

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

1.5.14 E8-00 – Input overvoltage abnormality

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

To solve the error code

INFORMATION

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

1 Check the outdoor temperature. See "3.3 External factors" on page 55.

Possible cause: Outdoor temperature is out of operation range.

2 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

3 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

4 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

INFORMATION

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

1.5.15 EA-00 – Cooling/Heating switch abnormality

Trigger	Effect	Reset
Room thermistor is NOT functioning within operation range.	Unit will NOT stop operating.	Automatic reset after a continuous operation of 10 minutes.
	If the error occurs too soon: unit will stop operating.	Manual reset via user interface.

To solve the error code

INFORMATION

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

1 Perform a check of the 4-way valve. See "2.1 4-way valve" on page 18.

Possible cause: Faulty 4-way valve.

2 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

3 Perform a check of the room thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty room thermistor.

4 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

INFORMATION

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

1.5.16 F3-00 – Discharge pipe temperature stop abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

2 Perform a check of the 4-way valve. See "2.1 4-way valve" on page 18.

Possible cause: Faulty 4-way valve.

3 Perform a check of the expansion valve. See "2.3 Expansion valve" on page 23.

Possible cause: Faulty expansion valve.

4 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

5 Perform a check of all refrigerant thermistors. See "2.18 Thermistors" on page 49.

Possible cause: Faulty refrigerant thermistor(s).

INFORMATION

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

1.5.17 F6-00 – Stop due to cooling high pressure

Trigger	Effect	Reset
Outdoor heat exchanger thermistor measures temperature >60°C~65°C	Unit will NOT stop operating.	Automatic reset when temperature drops below 50°C.

To solve the error code

INFORMATION

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

1 Clean the outdoor heat exchanger. See "4 Maintenance" on page 56.

Possible cause: Dirty outdoor heat exchanger.

2 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

3 Perform a check of the heat exchanger thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty heat exchanger thermistor.

4 Perform a check of the expansion valve. See "2.3 Expansion valve" on page 23.

Possible cause: Faulty expansion valve.

5 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

6 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

INFORMATION

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

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

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

To solve the error code

INFORMATION

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

1 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

2 Perform a check of the discharge pipe thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty discharge pipe thermistor.

INFORMATION

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

1.5.19 H0-00 – Current sensor abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

2 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

3 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

INFORMATION

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

1.5.20 H3-00 – High pressure switch defect

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

To solve the error code

INFORMATION

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

1 Perform a check of the high pressure switch. See "2.5 High pressure switch" on page 27.

Possible cause: Faulty high pressure switch.

2 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

3 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

4 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

5 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

INFORMATION

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

1.5.21 H6-00 – Location detection sensor abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

2 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

3 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

4 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

5 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

INFORMATION

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

1.5.22 H8-00 – Compressor input abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

2 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

3 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

4 Perform a check of the reactor. See "2.14 Reactor" on page 44.

Possible cause: Faulty reactor.

INFORMATION

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

1.5.23 H9-00 – Outdoor air thermistor abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the outdoor air thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty outdoor air thermistor.

2 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

INFORMATION

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

1.5.24 J3-00 – Discharge pipe thermistor dislocation abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the discharge pipe thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty discharge pipe thermistor.

2 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

INFORMATION

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

1.5.25 J6-00 – Outdoor heat exchanger thermistor abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the heat exchanger thermistor. See "2.18 Thermistors" on page 49.

Possible cause: Faulty heat exchanger thermistor.

2 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

INFORMATION

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

1.5.26 L3-00 – Electrical component temperature abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

2 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

3 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

4 Clean the outdoor heat exchanger. See "4 Maintenance" on page 56.

Possible cause: Dirty outdoor heat exchanger.

INFORMATION

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

1.5.27 L4-00 – Fin temperature increase abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

2 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

3 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

4 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

5 Check that the silicon grease is applied properly on the radiation fin of the outdoor unit PCB. Adjust if needed.

Possible cause: Silicon grease NOT applied properly on the radiation fin.

INFORMATION

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

1.5.28 L5-00 – Output over current abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

2 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

3 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

4 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

INFORMATION

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

1.5.29 P4-00 – Fin thermistor abnormality

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

To solve the error code

INFORMATION

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

1 Perform a check of the inverter PCB. See "2.10 Inverter PCB" on page 34.

Possible cause: Faulty power module = inverter PCB.

2 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

INFORMATION

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

1.5.30 U0-00 – Shortage of refrigerant

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

To solve the error code

INFORMATION

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

1 Perform a check of all refrigerant thermistors. See "2.18 Thermistors" on page 49.

Possible cause: Faulty refrigerant thermistor(s).

2 Perform a check of the refrigerant circuit. See "3.2 Refrigerant circuit" on page 53.

Possible cause:
- Stop valve is closed,
- Clogged refrigerant circuit,
- Refrigerant circuit NOT charged correctly,
- Humidity in the refrigerant circuit,
- Non-condensables in the refrigerant circuit,
- Leaking refrigerant circuit.

3 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

4 Perform a check of the expansion valve. See "2.3 Expansion valve" on page 23.

Possible cause: Faulty expansion valve.

INFORMATION

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

1.5.31 U2-00 – Main circuit voltage abnormality

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

To solve the error code

INFORMATION

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

INFORMATION

In case of preferential kWh rate, the indoor unit also needs a power reset.

1 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

2 Perform a check of the compressor. See "2.2 Compressor" on page 20.

Possible cause: Faulty compressor.

3 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

4 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

5 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

6 Wait until the compressor restarts.

Possible cause:
- Momentary drop of voltage,
- Momentary power failure.

INFORMATION

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

1.5.32 U4-00 – Indoor/outdoor transmission abnormality

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

To solve the error code

INFORMATION

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

INFORMATION

In case of preferential kWh rate, the indoor unit also needs a power reset.

1 Check if the power supply is conform with the regulations. See "3.1 Power supply" on page 52.

Possible cause:
- Faulty or disturbance of the power supply (imbalance >10%),
- Power drop,
- Short circuit.

2 Perform a check of the power supply, connections, wiring,… between the outdoor unit and the indoor unit. See "3.1 Power supply" on page 52.

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

3 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

4 Perform a check of the outdoor unit fan motor. See "2.12 Outdoor unit fan motor" on page 38.

Possible cause: Faulty outdoor unit fan motor.

5 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

INFORMATION

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

1.5.33 U5-00 – Transmission malfunction between indoor unit and remote controller

Trigger	Effect	Reset
Communication failure between indoor unit and user interface.	Unit will stop operating.	Automatic reset.

To solve the error code

INFORMATION

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

1 Check for improper combination of the indoor unit and the remote controller. See Business Portal for more information.

2 Check the wiring between the indoor unit and remote controller. See "3.1 Power supply" on page 52.

Possible cause: Faulty wiring between the indoor unit and remote controller.

INFORMATION

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

1.5.34 UA-00 – Indoor/outdoor combination abnormality

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

1 Troubleshooting

To solve the error code

INFORMATION

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

INFORMATION

In case of preferential kWh rate, the indoor unit also needs a power reset.

1 Check for improper combination of the indoor unit and the outdoor unit. See the combination table in the Databook for more information.

2 Perform a check of the power supply, connections, wiring,… between the outdoor unit and the indoor unit. See "3.1 Power supply" on page 52.

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

3 Perform a check of the main PCB. See "2.11 Main PCB" on page 35.

Possible cause: Faulty main PCB.

4 Perform a check of the indoor unit PCB. See "2.8 Indoor unit PCB" on page 30.

Possible cause: Faulty indoor unit PCB.

INFORMATION

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

1.6 Symptom based troubleshooting

1.6.1 Operation does not start

Check	Detail
When the operation lamp is off, there is a power failure. Check the power supply.	▪ Is the power supply breaker ON? ▪ Do other electrical appliances work? ▪ Is the rated voltage (± 10%) is supplied? ▪ Check the insulation of the electric system.
Check the type of the indoor unit.	Is the indoor unit type compatible with the outdoor unit?
Check the transmission between indoor and outdoor	▪
Check the outdoor temperature.	▪ Heating operation cannot be used when the outdoor temperature is 18°C WB or higher. ▪ Cooling operation cannot be used when the outdoor temperature is below –10°C DB.
When the operation lamp blinks, there may be an error code, activating the protection device. Diagnose with remote controller indication.	See "1.5 Error based troubleshooting" on page 4.
Check the remote controller addresses.	Are the address settings for the remote controller and indoor unit correct?
Check the operation circuit.	▪ Is the thermal fuse blown. ▪ Are wire size and wire connections OK?.
Check high pressure switch.	Not available
Check fan motor.	▪ Is the magnetic switch defective? ▪ Is the overcurrent relay defective?
Check compressor.	▪ Is the contact defective? ▪ Is the protection thermostat defective? ▪ Is the compressor itself defective?
Check remote controller.	▪ Are the batteries LOW? ▪ Are there incorrect settings?

1.6.2 Operation sometimes stops

Symptom	Check	Detail
Operation sometimes stops	Check the power supply.	A power failure of 2 to 10 cycles stops air conditioner operation. (Operation lamp OFF)
	Check the outdoor temperature.	Heating operation cannot be used when the outdoor temperature is 18°C WB or higher, and cooling operation cannot be used when the outdoor temperature is below –10°C DB.
	Diagnose with remote controller indication.	**{Jesse Victoor, 12/01/2018 09:43:04:** ???**}**

1.6.3 Operation starts but the unit does not cool/heat

Symptom	Check	Detail
Operation starts and the unit does not cool/heat	Check for wiring and piping errors in the connection between the indoor unit and outdoor unit.	Not applicable
	Check for thermistor detection errors.	Check if the thermistor is mounted securely.
	Check for faulty operation of the electronic expansion valve.	Set the unit to cooling operation, and check the temperature of the liquid pipe to see if the electronic expansion valve works.
	Diagnose with remote controller indication.	Not applicable
	Diagnose by service port pressure and operating current.	Check for refrigerant shortage.

1.6.4 Operating noise and vibrations

Symptom	Check	Detail
Operating noise and vibrations	Check the output voltage of the power module.	**{Jesse Victoor, 12/01/2018 09:41:35:** ???**}**
	Check the power module.	**{Jesse Victoor, 12/01/2018 09:41:35:** ???**}**
	Check the installation condition.	Check if the required spaces for installation (specified in the installation manual) are provided.

Symptom	Check	Detail
{Jesse Victoor, 12/01/2018 09:41:41: ????**}**	Check refrigerant charge.	▪ Overcharge ▪ Air in the system ▪ Flushing noise, due to refrigerant shortage

1.6.5 Abnormal high pressure

In cooling mode

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

In cooling mode

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

1.6.6 Abnormal low pressure

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

In cooling mode

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

In cooling mode

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

1.6.7 Indoor fan starts operating but the compressor does not operate

Symptom	Check	Detail
Indoor fan starts operating, compressor does not operate	Check power supply	▪ Check if the rated voltage is supplied. ▪ Check the insulation of the electric system.
	Check thermistor	Connection witch PCB, output.
	Check PCB's	HAP LED.
	Check magnetic switch	
	Check power transistor	
	Check compressor	Defective contact, defective compressor, defective protection thermostat.
	Check operation range	Is the outdoor temperature within the limit.

1.6.8 Operation starts and the unit stops immediately

Symptom	Check	Detail
Operation starts and the unit stops immediately	Check refrigerant charge	▪ Overcharge ▪ Air in the system ▪ Water in the system
	Check pressure switch	Not available
	Check fan motor	▪ Check magnetic switch ▪ Operation
	Check heat exchanger	Soiled heat exchanger, obstruction.
	Check airflow	Soiled air filter, obstruction, installation space.

1.6.9 Operation stops, unit cannot start for a while

Symptom	Check	Detail
Operation stops, the unit cannot start for a while	Check compressor	Overcurrent relay, protection thermostat
	Check power supply	Low voltage, size of power cable
	Check high pressure	
	Check refrigerant charge	▪ Air in the system ▪ Incorrect charge ▪ Water in the system ▪ Obstruction in the system
	Compressor delay timer is counting.	Wait for minimum 3 minutes.

1.6.10 Unit discharges white mist

Symptom	Check	Detail
Unit discharges white mist	Check installation conditions	Humid site, dirty site, oil mist
	Check heat exchanger	Dirty heat exchanger
	Air filter	Dirty air filter
	Fan motor	Defective fan motor

1.6.11 Swing flap does not operate

Symptom	Check	Detail
Swing flap does not operate	Check swing flap motor	Some functions can force the swing flap into a fixed position, although swing mode is selected on the remote controller. This is not a unit error, but a control function to prevent draft to the customer.
	Check indoor unit PCB	Connector connection

2 Components

2.1 4-way valve

2.1.1 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: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the 4-way valve connector from the main PCB.

2 Turn ON the power of the unit.

INFORMATION

Default position of the 4-way valve is Heating mode.

3 Activate Heating operation via the user interface.

Water temperature after plate type heat exchanger of the indoor unit:	Action
Drops	4-way valve is stuck in cooling position. Replace the 4-way valve body, see "2.1.2 Repair procedures" on page 19.
Rises	Skip the next step of this procedure.
Does NOT rise/drop	Perform the next step of this procedure.

4 Connect a manifold to one of the service ports of the refrigerant circuit and check the pressure.

Refrigerant pressure measured?	Action
Yes	Perform a position check of the 4-way valve, see "2.1.1 Checking procedures" on page 18.
No	Leaks may be found in the refrigerant circuit. Perform a pressure test of the refrigerant circuit, see "3.2.1 Checking procedures" on page 53.

CAUTION

To prevent damage due to liquid entering the compressor, the steps below MUST ONLY be executed once.

CAUTION

Make sure you have a pressure difference of at least 6 bar between the high and low pressure when performing this test.

5 Place a round permanent magnet on the core of the solenoid valve and listen to the 4-way valve.

Does the 4-way valve switch?	Action
Yes	Perform an electrical check of the 4-way valve, see "2.1.1 Checking procedures" on page 18.
No	Replace the 4-way valve body, see "2.1.2 Repair procedures" on page 19.

To perform an electrical check of the 4-way valve

1 First perform a mechanical check of the 4-way valve, see "2.1.1 Checking procedures" on page 18.

2 Activate Cooling operation via the user interface.

3 Measure the voltage on the 4-way valve connector pins 1-3. The measured voltage MUST be 220~240 V AC during switching and 12 V DC after switching of the 4-way valve.

Is the measured voltage correct?	Action
Yes	Skip the next step of this procedure.
No	Perform the next step of this procedure.

4 Disconnect the 4-way valve connector from the main PCB and measure the voltage on the connector pins 1-3 of the connector on the main PCB. The voltage MUST be 220~240 V AC during switching and 12 V DC after switching.

Is the measured voltage on the 4-way valve connector of the main PCB correct?	Action
Yes	Replace the 4-way valve coil, see "2.1.2 Repair procedures" on page 19.
No	Replace the main PCB, see "2.11 Main PCB" on page 35.

5 Disconnect the 4-way valve connector from the main PCB and measure the resistance of the 4-way valve coil. The resistance MUST be 1000~2000 Ω.

Is the measured resistance correct?	Action
Yes	Perform the next step of this procedure.
No	Replace the 4-way valve coil, see "2.1.2 Repair procedures" on page 19.

6 De-activate Cooling and activate Heating operation via the user interface.

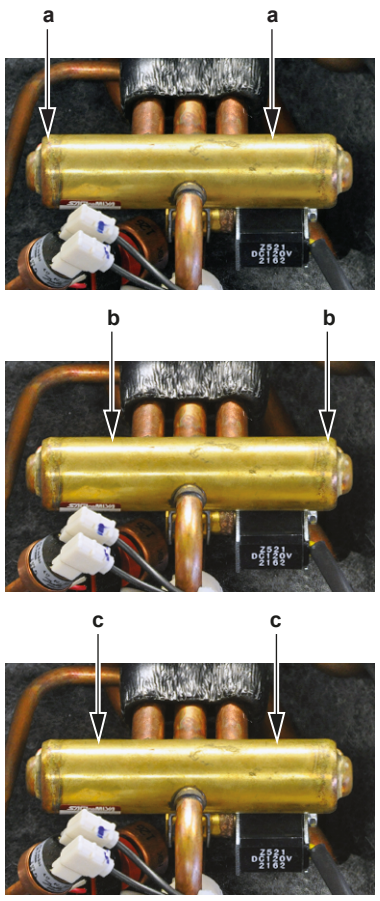
7 Measure the temperature after the plate type heat exchanger.

Does the measured temperature rise?	Action
Yes	Perform a position check of the 4-way valve, see "2.1.1 Checking procedures" on page 18.
No	Replace the main PCB, see "2.11 Main PCB" on page 35.

To perform a position check of the 4-way valve

1 First perform a mechanical check of the 4-way valve, see "2.1.1 Checking procedures" on page 18.

2 Slide a magnet over the front and rear side of the 4-way valve body. The magnet MUST be attracted in the positions a or b, but NOT in positions c.



a Magnet attracted
b Magnet attracted
c Magnet NOT attracted

Magnet is attracted in the correct positions of the 4-way valve?	Action
Yes	The 4-way valve is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the 4-way valve body, see "2.1.2 Repair procedures" on page 19.

2.1.2 Repair procedures

To remove the 4-way valve coil

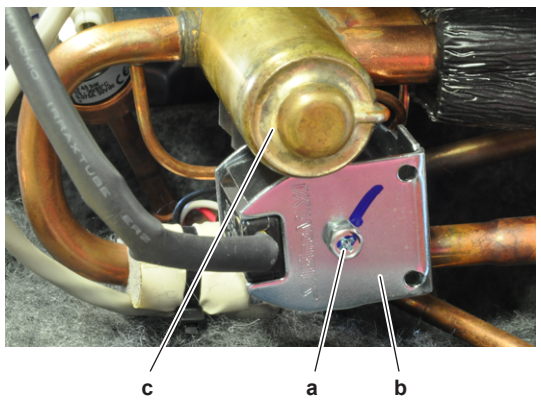
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

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 Disconnect the 4-way valve coil connector from the main PCB.

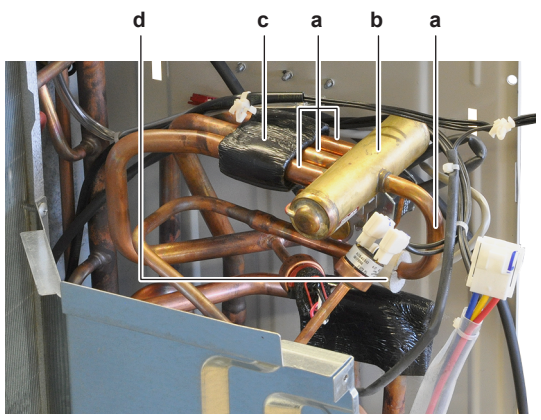
4 To install the 4-way valve coil, see "2.1.2 Repair procedures" on page 19.

To remove the 4-way valve body

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

1 Remove the 4-way valve coil from the 4-way valve body, see "2.1.2 Repair procedures" on page 19.

2 Cut the 4-way valve pipes using a pipe cutter.



a 4-way valve pipe
b 4-way valve
c Putty
d Insulation

3 Remove the 4-way valve.

4 Keep the putty and the insulation for re-use.

5 To install the 4-way valve body, see "2.1.2 Repair procedures" on page 19.

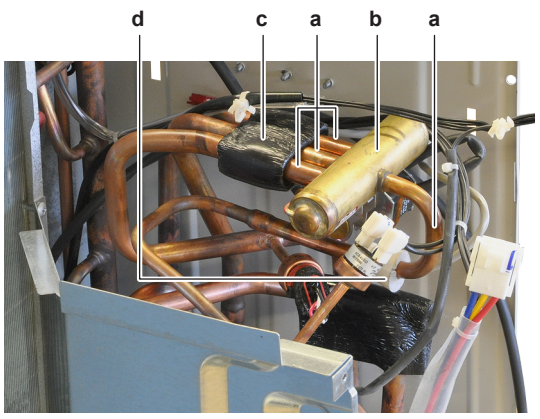
To install the 4-way valve body

1 Install the 4-way valve in the correct location.

2 Wrap a wet rag around the 4-way valve and solder the 4-way valve pipes to the 4-way valve.

CAUTION

Overheating the valve will damage or destroy it.



a 4-way valve pipe
b 4-way valve
c Putty
d Insulation

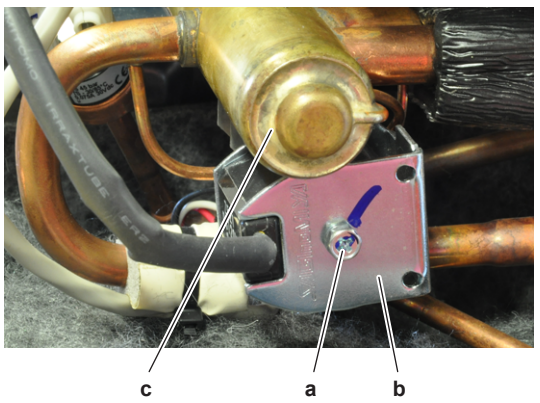
3 Install the putty and the insulation in their original location.

4 Install the 4-way valve coil on the 4-way valve body, see "2.1.2 Repair procedures" on page 19.

5 Add refrigerant to the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

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 main PCB.

4 Connect the 4-way valve coil connector to the main PCB.

WARNING

When reconnecting a connector to the PCB, 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.

2.2 Compressor

2.2.1 Checking procedures

INFORMATION

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

To perform a mechanical check of the compressor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Open the compressor insulation.

2 Check the compressor dampers and piping for any damage.



a Damper

INFORMATION

The compressor dampers may look different.

Compressor dampers and piping are in a good condition?	Action
Yes	Perform an electrical check of the compressor, see "2.2.1 Checking procedures" on page 20.
No	Replace the compressor, see "2.2.2 Repair procedures" on page 22.

To perform an electrical check of the compressor

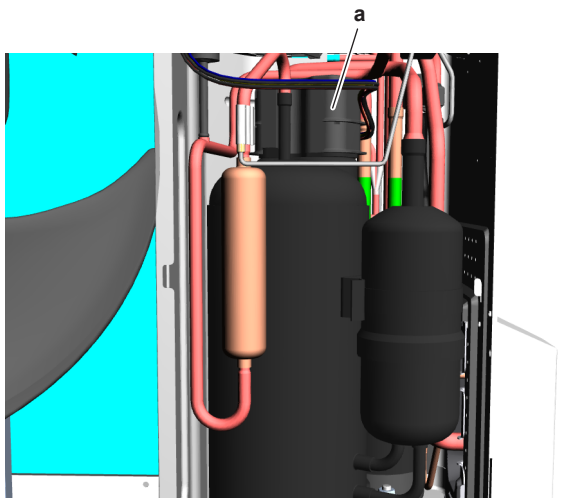
1 First perform a mechanical check of the compressor, see "2.2.1 Checking procedures" on page 20.

2 Open the compressor insulation.

WARNING

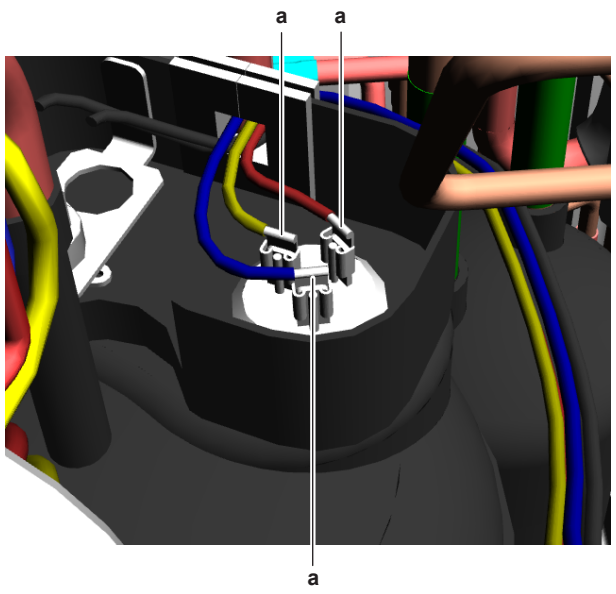
The smoothing capacitor MUST discharge below 10 V DC before disconnecting the Faston connectors from the compressor wiring terminals. Risk of electrocution.

3 Remove the cover of the compressor wire terminals.



a Compressor wire terminals cover

4 Disconnect the Faston connectors from the compressor wire terminals U, V and W.



a Faston connectors

INFORMATION

Note the position of the Faston connectors on the compressor wire terminals to allow correct connection during installation.

5 Measure the resistance between the compressor motor windings U-V, V-W and U-W. All measurements MUST be the same.

6 Re-connect the Faston connectors and run the compressor.

7 Measure the current in each phase U-V, V-W and U-W. All measurements MUST be the same.

Compressor motor winding measurements are correct?	Action
Yes	Perform an insulation check of the compressor, see "2.2.1 Checking procedures" on page 20.
No	Replace the compressor, see "2.2.2 Repair procedures" on page 22.

To perform an insulation check of the compressor

Prerequisite: First perform an electrical check of the compressor, see "2.2.1 Checking procedures" on page 20.

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

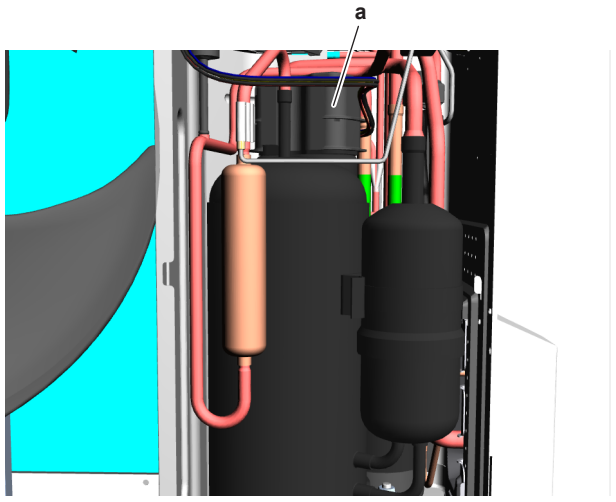
Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Open the compressor insulation.

WARNING

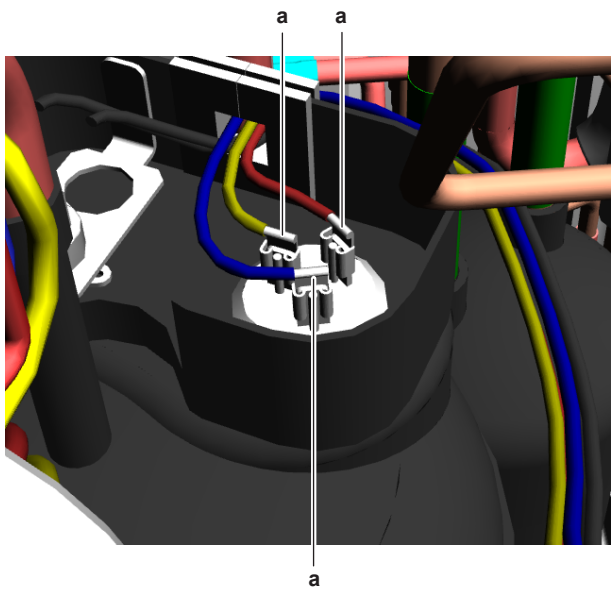
The smoothing capacitor MUST discharge below 10 V DC before disconnecting the Faston connectors from the compressor wiring terminals. Risk of electrocution.

2 Remove the cover of the compressor wire terminals.



a Compressor wire terminals cover

3 Disconnect the Faston connectors from the compressor wire terminals U, V and W.



a Faston connectors

INFORMATION

Note the position of the Faston connectors on the compressor wire terminals to allow correct connection during installation.

4 Set the Megger voltage to 500 V DC or 1000 V DC.

5 Connect the Megger ground test lead directly to the compressor ground wire.

CAUTION

Do NOT connect the Megger ground test lead to any other ground wire.

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	Perform a check of the compressor overload protection, see "2.2.1 Checking procedures" on page 20..
No	Replace the compressor, see "2.2.2 Repair procedures" on page 22.

2.2.2 Repair procedures

To remove the compressor

Prerequisite: Turn OFF the unit via the user interface.

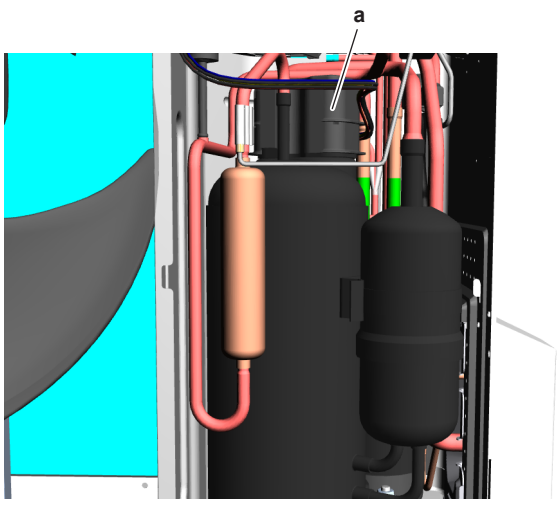
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

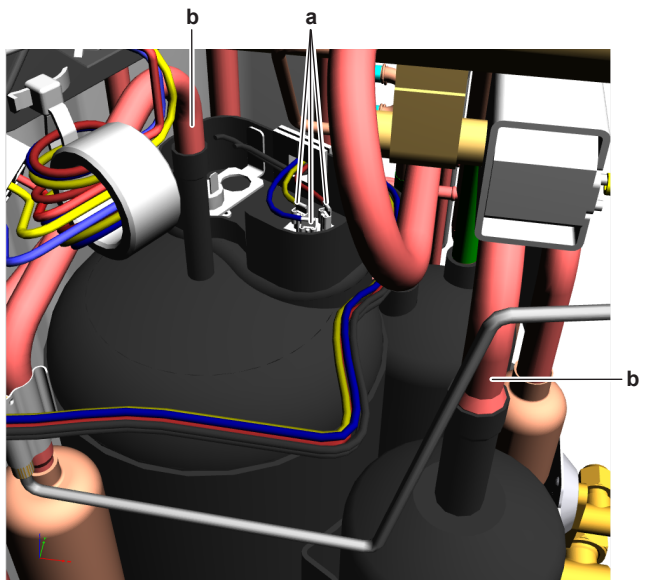
1 If needed, remove any parts to create more space for the removal of the compressor.

2 Remove the cover of the compressor wire terminals.



a Compressor wire terminals cover

3 Disconnect the Faston connectors from the compressor wire terminals U, V and W.



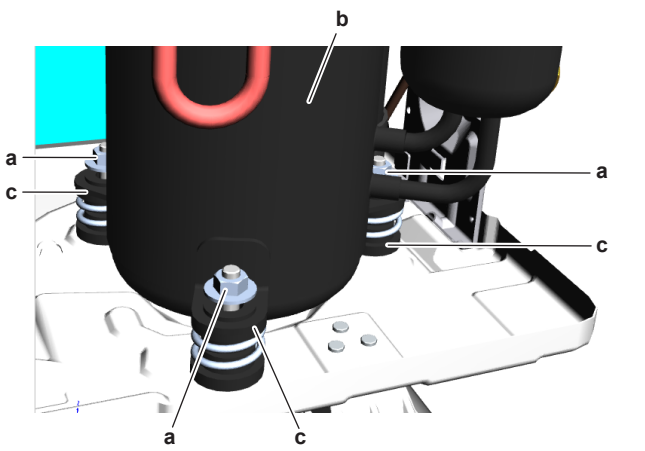
a Faston connectors
c Compressor pipe

INFORMATION

Note the position of the Faston connectors on the compressor wire terminals to allow correct connection during installation.

4 Cut the compressor pipes (below the soldered joint) using a pipe cutter.

5 Remove the 3 nuts and remove the compressor from the unit.



a Nut
b Compressor
c Damper

6 Remove the 3 dampers and springs from the compressor.

INFORMATION

The compressor dampers may look different.

7 Remove the bushings and keep them for re-use.

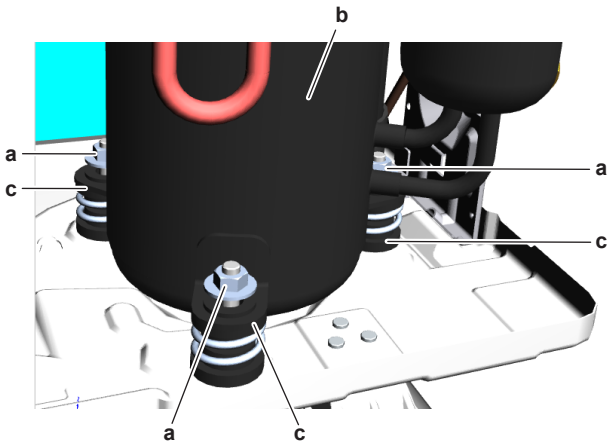
8 Keep the putty for re-use.

9 To install the compressor, see "2.2.2 Repair procedures" on page 22.

To install the compressor

1 Check the state of the dampers. Replace if worn.

2 Install the 3 dampers and springs in the correct location on the outdoor unit.



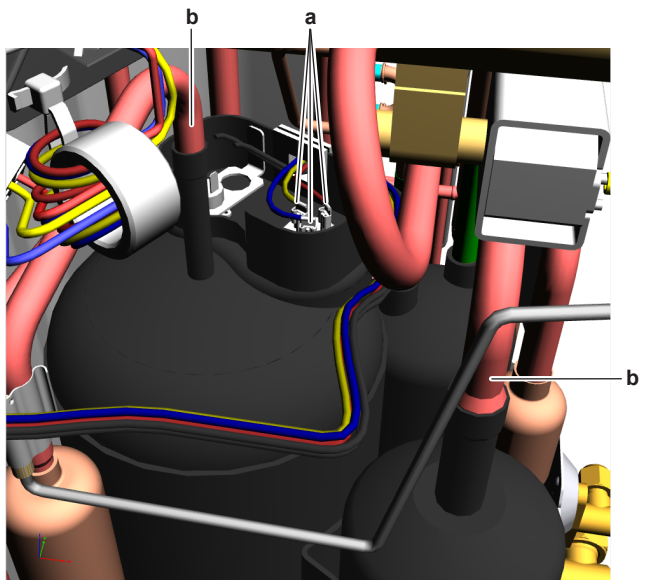
a Nut
b Compressor
c Damper

3 Remove the caps from the compression pipe and suction pipe.

CAUTION

The oil in the compressor is hygroscopic. Therefore remove the caps from the compressor pipes as late as possible.

4 Wrap a wet rag around the compressor pipes and solder the compressor pipes to the refrigerant pipes.



a Faston connectors
c Compressor pipe

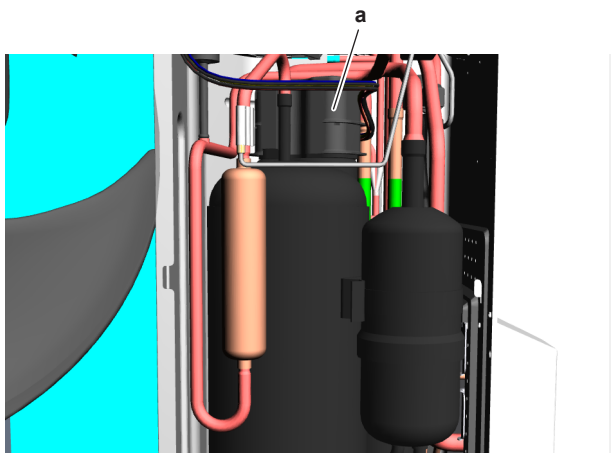
CAUTION

Overheating the compressor pipes (and the oil inside the compressor pipes) will damage or destroy the compressor.

5 Install the putty in the correct location.

6 Connect the Faston connectors to the compressor wire terminals U, V and W

7 Install the cover of the compressor wire terminals.



a Compressor wire terminals cover

8 Add refrigerant to the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

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.

2.3 Expansion valve

2.3.1 Checking procedures

INFORMATION

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

To perform a mechanical check of the expansion valve

Prerequisite: Power OFF the unit for 3 minutes. Then turn ON the unit and listen to the expansion valve assembly. If the expansion valve does NOT make a latching sound, continue with the electrical check of the expansion valve, see "2.3.1 Checking procedures" on page 23.

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Remove the expansion valve motor from the expansion valve body, see "2.3.2 Repair procedures" on page 24.

2 Slide the magnet (tool part number 9950038) over the expansion valve body and gently rotate the magnet clockwise/counterclockwise to manually close/open the expansion valve body.

Does the expansion valve body open?	Action
Yes	Perform an electrical check of the expansion valve, see "2.3.1 Checking procedures" on page 23.
No	Replace the expansion valve body, see "2.3.2 Repair procedures" on page 24.

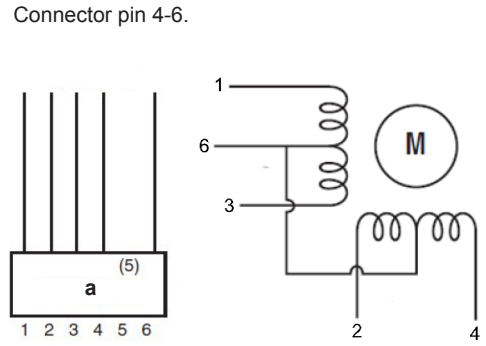
To perform an electrical check of the expansion valve

Prerequisite: First perform a mechanical check of the expansion valve, see "2.3.1 Checking procedures" on page 23.

1 Make sure that the electrical connector of the expansion valve motor is correctly connected to the main PCB.

2 Disconnect the electrical connector of the expansion valve motor from the main PCB and measure the continuity between the following pins (windings) using a multi meter. All measurements MUST be approximately the same.

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



a Connector S20

1 or more windings have no continuity?	Action
Yes	Replace the expansion valve motor, "2.3.2 Repair procedures" on page 24.
No	Component is OK. Return to the troubleshooting of the specific error and continue with the next step.

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.

2.3.2 Repair procedures

To remove the expansion valve motor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

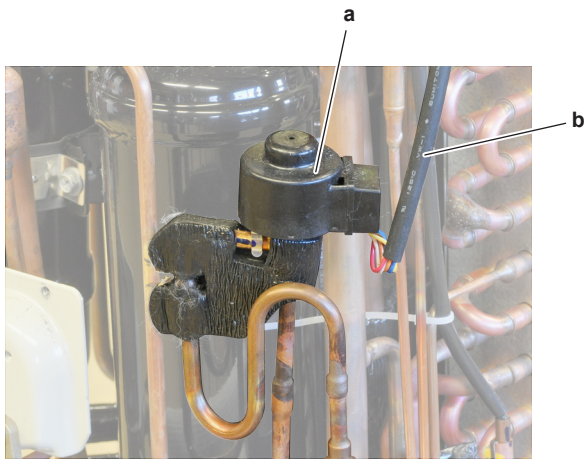
Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

Prerequisite: If needed, remove any parts to create more space for the removal.

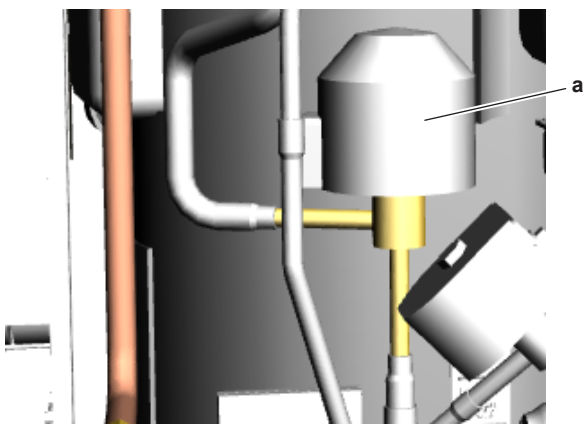
1 Pull up the expansion valve motor to remove it from the expansion valve body.

INFORMATION

It may be needed to turn the expansion valve motor 1/8 turn counter clockwise to unlock it.



a Expansion valve motor
b Expansion valve motor harness



a Expansion valve motor

INFORMATION

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

2 Cut all tie straps that fix the expansion valve motor harness.

3 Disconnect the expansion valve motor connector from the main PCB.

4 To install the expansion valve motor, see "2.3.2 Repair procedures" on page 24.

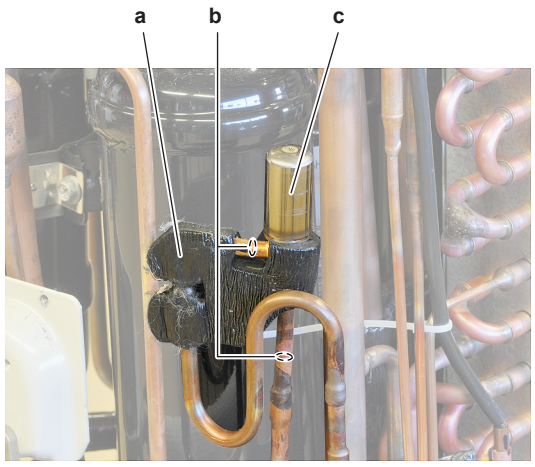
To remove the expansion valve body

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

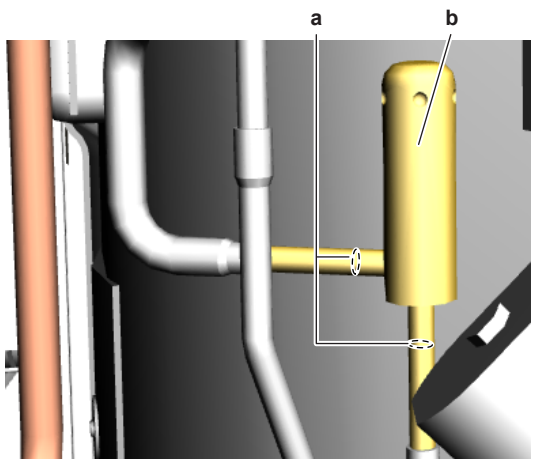
Prerequisite: If needed, remove any parts to create more space for the removal.

1 Remove the expansion valve motor, see "2.3.2 Repair procedures" on page 24.

2 Remove the putty. Keep for re-use.



a Putty
b Expansion valve pipe
c Expansion valve body



a Expansion valve pipe
b Expansion valve body

INFORMATION

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

3 Cut the expansion valve pipes using a pipe cutter.

4 Remove the expansion valve body.

5 To install the expansion valve body, see "2.3.2 Repair procedures" on page 24.

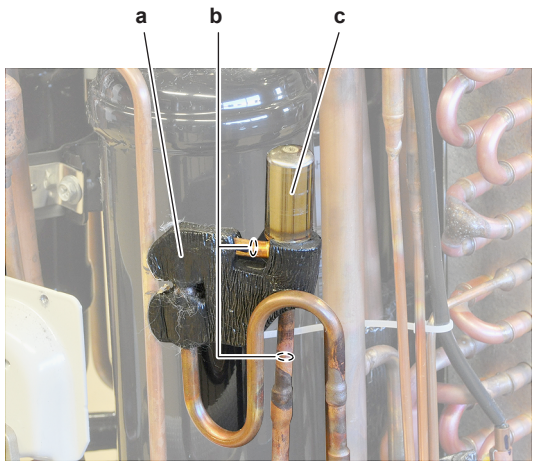
To install the expansion valve body

1 Install the expansion valve body in the correct location.

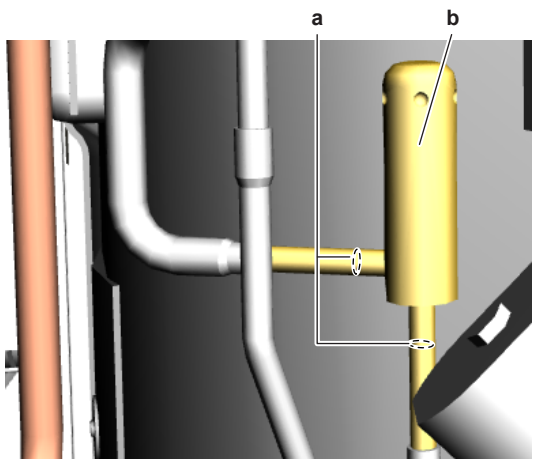
2 Wrap a wet rag around the expansion valve body and solder the refrigerant pipes to the expansion valve body.

CAUTION

Overheating the valve will damage or destroy it.



a Putty
b Expansion valve pipe
c Expansion valve body



a Expansion valve pipe
b Expansion valve body

INFORMATION

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

3 Reinstall the putty.

4 To install the expansion valve motor, see "2.3.2 Repair procedures" on page 24.

5 Add refrigerant to the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

About the installation of the expansion valve motor

NOTICE

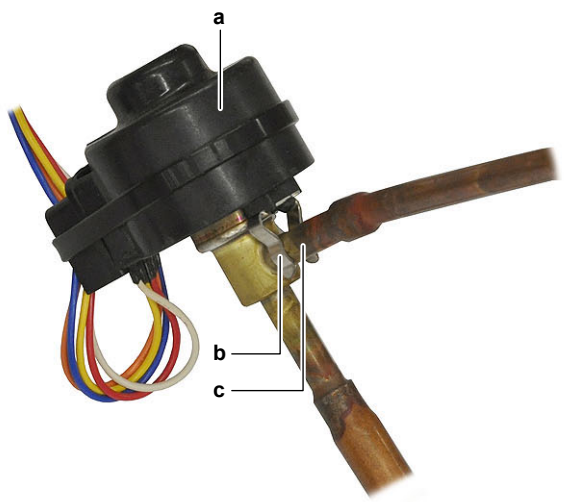
Select the correct type.

To install the expansion valve motor with clip

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

INFORMATION

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



a Expansion valve motor
b Pipe retention clip
c Pipe

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

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

WARNING

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

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

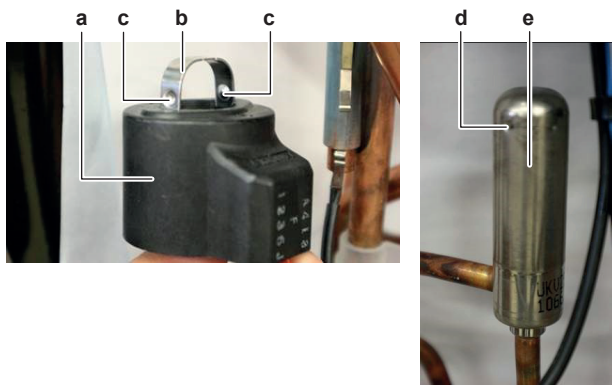
Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.3.1 Checking procedures" on page 23 of the expansion valve and continue with the next procedure.

To install the expansion valve motor with bracket

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

INFORMATION

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



a Expansion valve motor
b Metal bracket
c Nipple
d Notch
e Expanion valve body

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

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

WARNING

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

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

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.3.1 Checking procedures" on page 23 of the expansion valve and continue with the next procedure.

2.4 Front panel motor

2.4.1 Checking procedures

To perform an electrical check of the front panel motor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the motor connector from the indoor unit PCB.

2 Measure the resistance between the following pins of the motor connector. The measurements MUST be as shown in the table below.

Pins	Measured resistance (Ω)
1-2	235
1-3	
1-4	
1-5	
2-3	470
2-4	
2-5	
3-4	
3-5	
4-5	

Front panel motor resistance measurements are correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the front panel motor, see "2.4.2 Repair procedures" on page 26.

2.4.2 Repair procedures

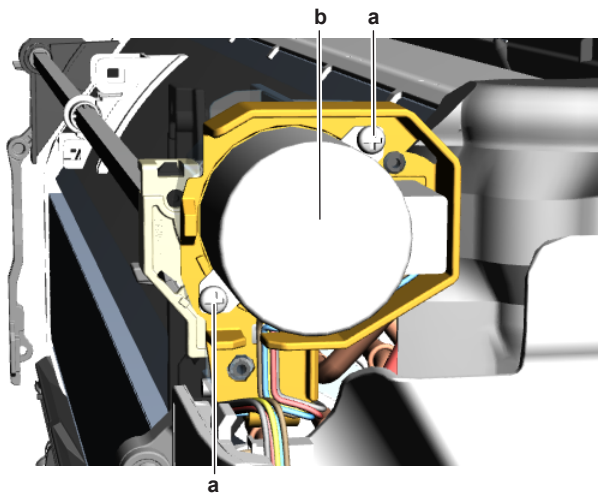
To remove the front panel motor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Remove the 2 screws and remove the front panel motor from the indoor unit.



a Screw
b Front panel motor

2 Disconnect the harness from the front panel motor.

3 To install the front panel motor, see "2.4.2 Repair procedures" on page 26.

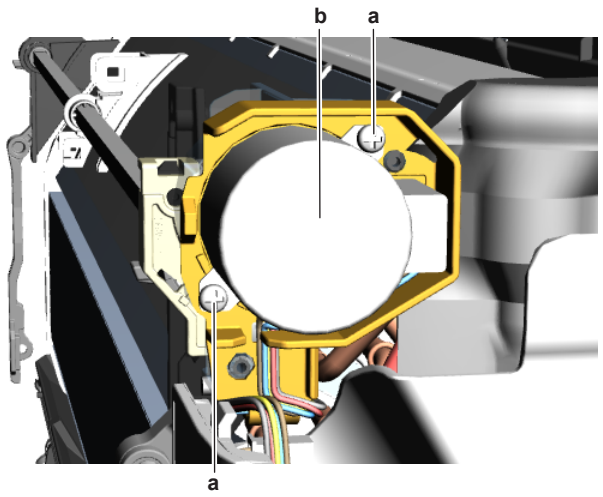
To install the front panel motor

1 Connect the harness to the front panel motor connector.

2 Install the front panel motor on the indoor unit and tighten using the 2 screws.

CAUTION

Make sure the motor axle is well aligned with the slot in the gear when installing the motor.



a Screw
b Front panel motor

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.

2.5 High pressure switch

2.5.1 Checking procedures

To perform an electrical check of the high pressure switch

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the high pressure switch connector from the PCB.

2 Recuperate the refrigerant from the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

3 Measure contacts between the pins 1-2 of the high pressure switch connector. The switch MUST be open.

4 Measure again contacts between the pins 1-2 of the high pressure switch connector. The switch MUST be closed.

Both high pressure switch connector measurements are correct?	Then
Yes	High pressure switch is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the high pressure switch, see "2.5.2 Repair procedures" on page 27.

2.5.2 Repair procedures

To remove the high pressure switch

Prerequisite: Turn OFF the unit via the user interface.

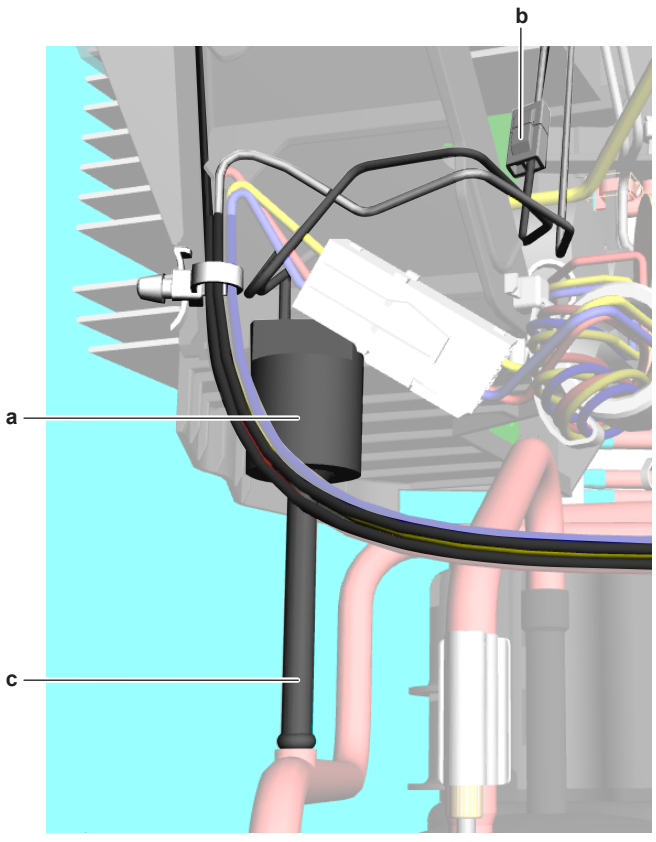
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

Prerequisite: If needed, remove any parts to create more space for the removal of the high pressure switch.

1 Disconnect the connector from the high pressure switch.



a High pressure switch
b Connector

c High pressure switch pipe

2 Cut the high pressure switch pipe using a pipe cutter.

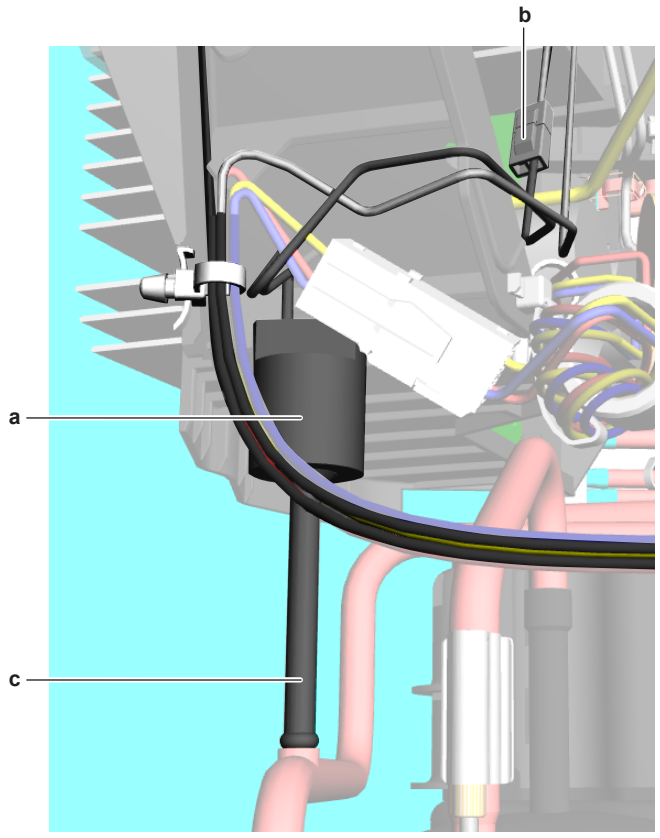
3 Remove the high pressure switch from the unit.

4 To install the high pressure switch, see "2.5.2 Repair procedures" on page 27.

To install the high pressure switch

1 Install the high pressure switch in the correct location.

2 Wrap a wet rag around the high pressure switch and solder the high pressure switch pipe to the high pressure switch.



a High pressure switch
b Connector
c High pressure switch pipe

CAUTION

Overheating the pressure switch will damage or destroy it.

3 Connect the connector to the high pressure switch.

4 Add refrigerant to the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

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.

2.6 Humidity sensor

2.6.1 Checking procedures

1 As there is no specific check procedure for this component, first perform a check of the indoor unit PCB to check if the humidity sensor needs to be replaced. See "2.8.1 Checking procedures" on page 30.

After complete check of the indoor unit PCB, is the problem solved?	Action
Yes	No further actions required.
No	Replace the humidity sensor, see "2.6.2 Repair procedures" on page 28.

2.6.2 Repair procedures

To remove the humidity sensor

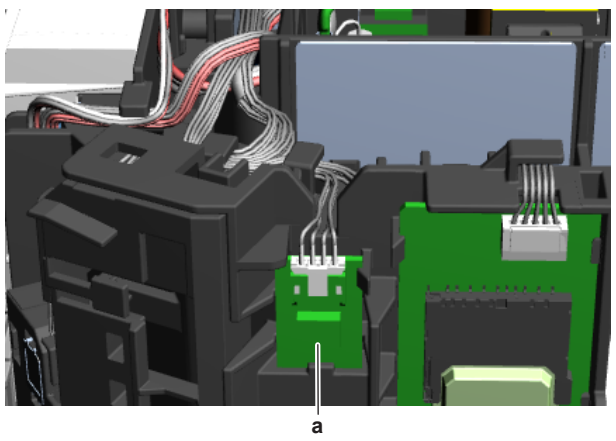
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the humidity sensor connector from the indoor unit PCB.

2 Carefully click the complete humidity sensor PCB assembly out of the indoor unit.

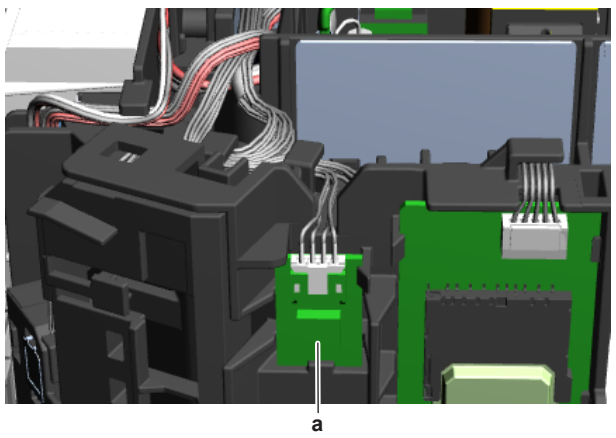


a Humidity sensor PCB assembly

3 To install the humidity sensor PCB assembly, see "2.6.2 Repair procedures" on page 28.

To install the humidity sensor

1 Click the humidity sensor PCB assembly on the indoor unit.



a Humidity sensor PCB assembly

2 Route the humidity sensor harness inside the switch box, along the harness retainers.

3 Connect the humidity sensor harness to the appropriate connector on the indoor unit PCB.

WARNING

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

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

2.7 Indoor unit fan motor

2.7.1 Checking procedures

INFORMATION

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

To perform a mechanical check of the DC fan motor assembly

1 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 "2.7.1 Checking procedures" on page 29.
No	Replace the DC fan motor assembly, see "2.7.2 Repair procedures" on page 29.

To perform an electrical check of the DC fan motor assembly

1 First perform a mechanical check of the DC fan motor assembly, see "2.7.1 Checking procedures" on page 29.

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

DC fan motor resistance measurements are correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the DC fan motor, see "2.7.2 Repair procedures" on page 29.

2.7.2 Repair procedures

To remove the DC fan motor assembly

Prerequisite: Turn OFF the unit via the user interface.

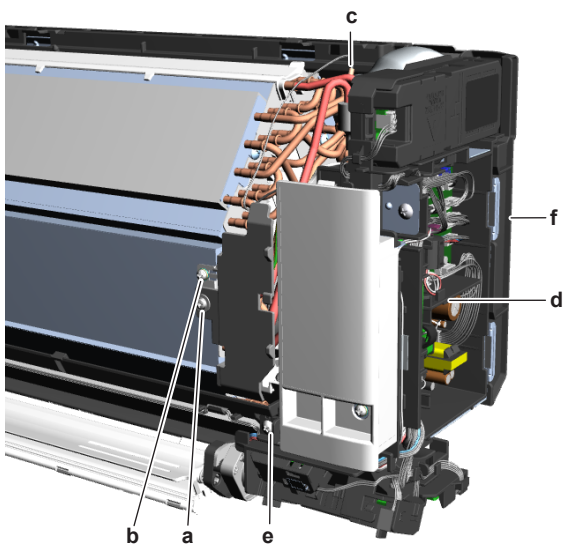
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Pull the clip and remove the heat exchanger thermistor from its holder.

2 Remove the screw and remove the cover.

3 Remove the screw to disconnect the grounding wire from the heat exchanger

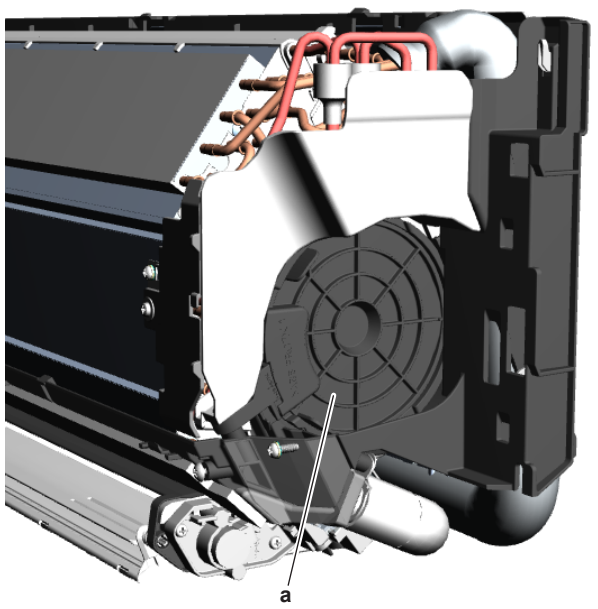


a Grouding wire cover screw
b Grounding wire screw
c Heat exchanger thermistor
d Indoor unit PCB
e Switch box screw
f Switch box

4 Disconnect the connectors of the indoor unit fan motor and the front wiring from the indoor unit PCB

5 Remove the screw and remove the switch box from the indoor unit.

6 Click the indoor unit fan motor cover out of the indoor unit.



a Indoor unit fan motor cover

7 Remove the rubber from the indoor unit.

8 Remove the indoor unit fan motor from the indoor unit.

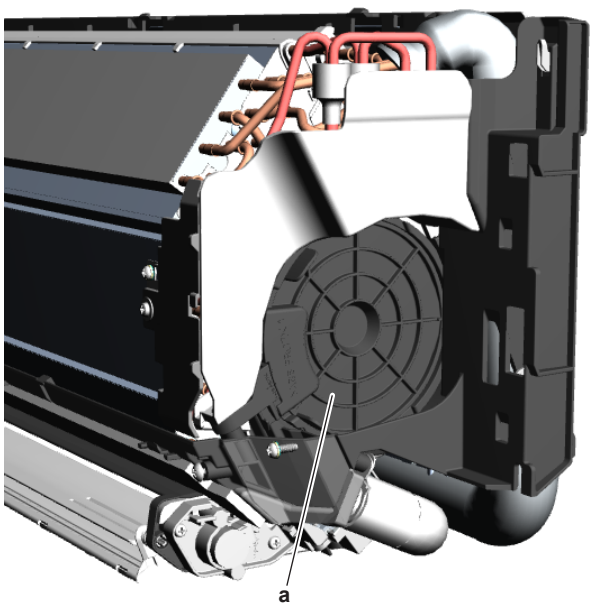
9 To install the indoor unit fan motor, see "2.7.2 Repair procedures" on page 29.

To install the DC fan motor assembly

1 Install the indoor unit fan motor in its correct location on the fan.

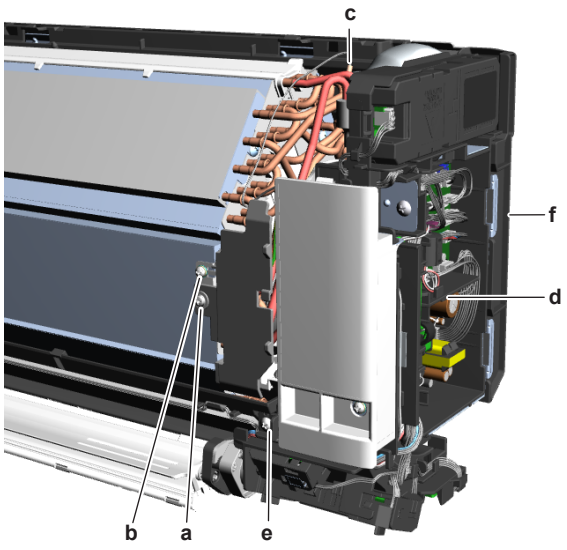
2 Install the rubber in front of the fan motor.

3 Click the indoor unit fan motor cover on the indoor unit.



a Indoor unit fan motor cover

4 Put the switch box in place.



a Grouding wire cover screw
b Grounding wire screw
c Heat exchanger thermistor
d Indoor unit PCB
e Switch box screw
f Switch box

5 Route the connectors of the indoor unit fan motor and front wiring inside the switch box and connect them to the indoor unit PCB.

6 Install and tighten the screw to secure the switch box.

7 Install the heat exchanger thermistor in its holder.

8 Connect the grounding wire to the heat exchanger using the screw.

9 Install the grounding wire cover using the screw.

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.

2.8 Indoor unit PCB

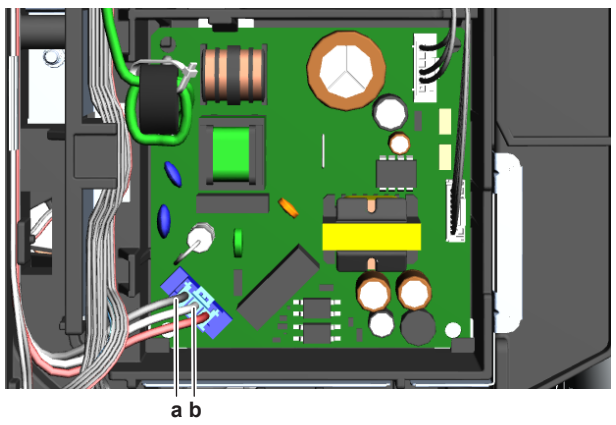
2.8.1 Checking procedures

INFORMATION

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

To perform a power check of the indoor unit PCB

1 Measure the voltage between the black and white wires on the PCB. The measured voltage MUST be 16 V DC.



a Black wire
b White wire

Is the measured voltage on the indoor unit PCB correct?	Action
Yes	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.
No	Adjust the power of the indoor unit PCB, see "2.8.2 Repair procedures" on page 31.

To perform an electrical check of the indoor unit PCB

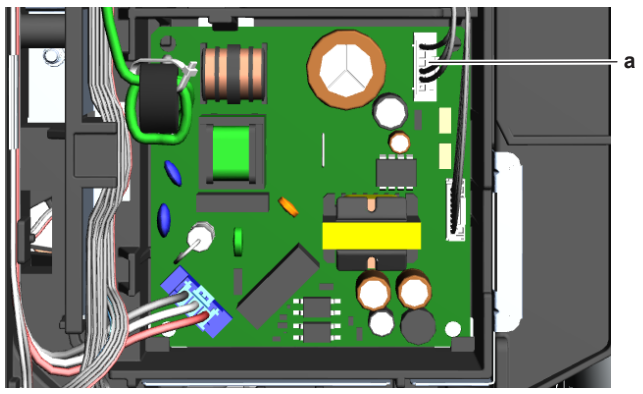
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Turn ON the power of the unit.

2 Measure the voltage between the pins 1-4 of the connector S102. The measured voltage MUST be 320 VDC.



a Connector S102

Is the measured voltage on the indoor unit PCB correct?	Action
Yes	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.
No	Replace the indoor unit PCB, see "2.8.2 Repair procedures" on page 31.

To check the HAP LED of the indoor unit PCB

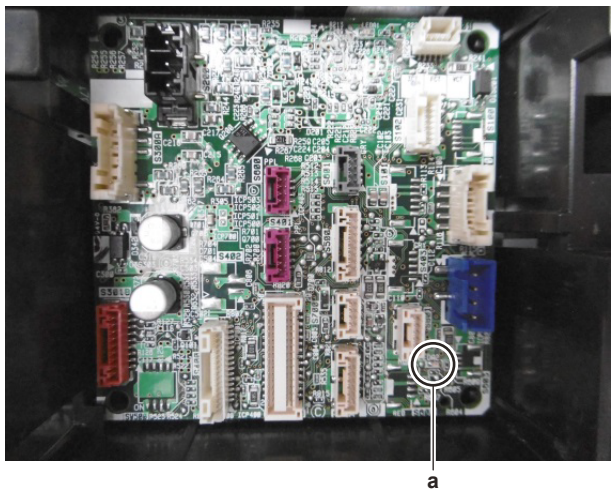
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Turn ON the power of the unit.

2 Locate the HAP LED on the indoor unit PCB.



a HAP LED

Does the HAP LED blink in regular intervals (1 second ON/1 second OFF)?	Action
Yes	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.
No	Replace the indoor unit PCB, see "2.8.2 Repair procedures" on page 31.

To check if the correct spare part is installed

1 Visit your local spare parts webbank.

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

Is the correct spare part for the indoor unit PCB installed?	Action
Yes	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.
No	Replace the indoor unit PCB, see "2.8.2 Repair procedures" on page 31.

To check the wiring of the indoor unit PCB

1 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

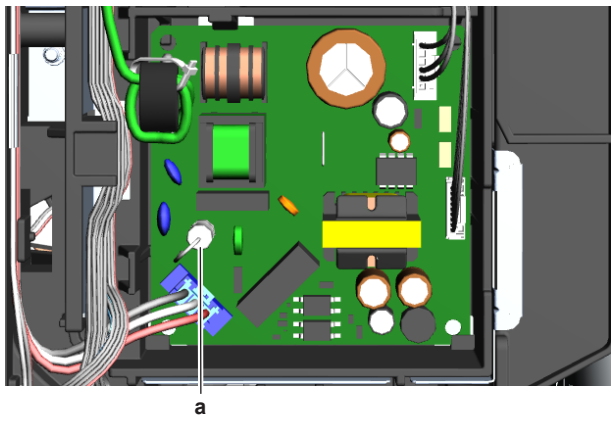
2 Check that no connectors are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "5.2 Wiring diagram" on page 58.

Is the wiring on the indoor unit PCB correct?	Action
Yes	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.
No	Adjust the wiring of the indoor unit PCB, see "2.8.2 Repair procedures" on page 31.

To check the fuse of the indoor unit PCB

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



a Fuse

Blown fuse on the indoor unit PCB?	Action
Yes	Replace the blown fuse, see "2.8.2 Repair procedures" on page 31.
No	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit 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.

2.8.2 Repair procedures

To adjust the power of the indoor unit PCB

1 Make sure that the power source is in line with the requirements described in the databook.

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.

To remove the indoor unit PCB

INFORMATION

As the indoor unit PCB exists of two parts (power PCB and control PCB) which can be replaced separately, only replace the appropriate part of the indoor unit PCB.

Prerequisite: Turn OFF the unit via the user interface.

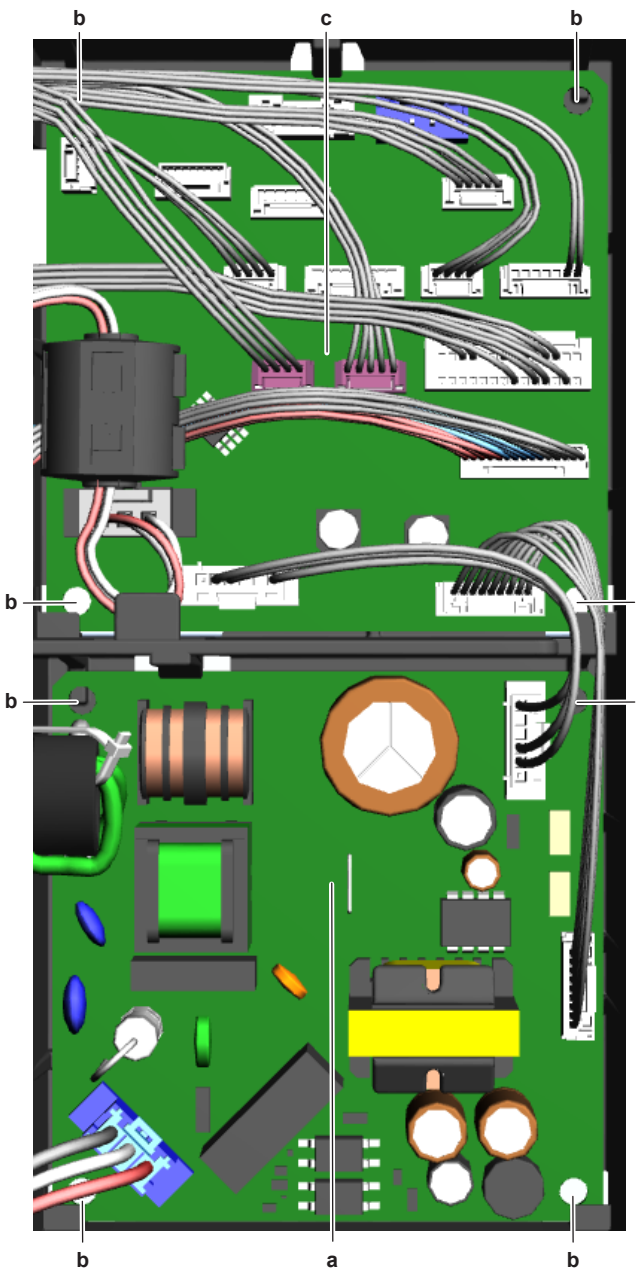
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect all connectors from the indoor unit PCB.

2 Carefully pull the indoor unit PCB from the PCB supports.

a Indoor unit PCB
b PCB support



a Indoor unit (power) PCB
b PCB support

c Indoor unit (control) PCB

3 Remove the indoor unit PCB from the indoor unit.

4 To install the indoor unit PCB, see "2.8.2 Repair procedures" on page 31.

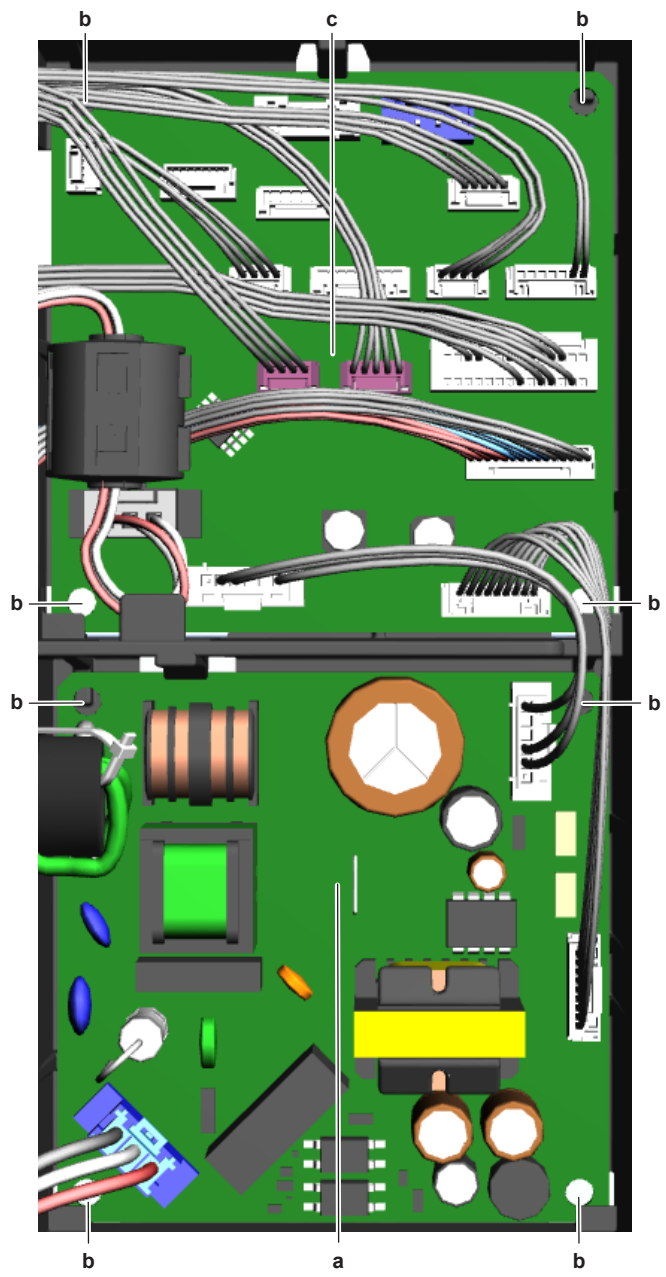
To install the indoor unit PCB

INFORMATION

As the indoor unit PCB exists of two parts (power PCB and control PCB) which can be replaced separately, only replace the appropriate part of the indoor unit PCB.

1 Install the indoor unit PCB in the correct location on the PCB supports.

a Indoor unit PCB
b PCB support



a Indoor unit (power) PCB
b PCB support
c Indoor unit (control) PCB

2 Connect all connectors to the indoor unit PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "5.2 Wiring diagram" on page 58.

WARNING

When reconnecting a connector to the PCB, 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 "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.

To adjust the wiring of the indoor unit PCB

1 Adjust the wiring according to the wiring diagram and connection diagram, see "5.2 Wiring diagram" on page 58.

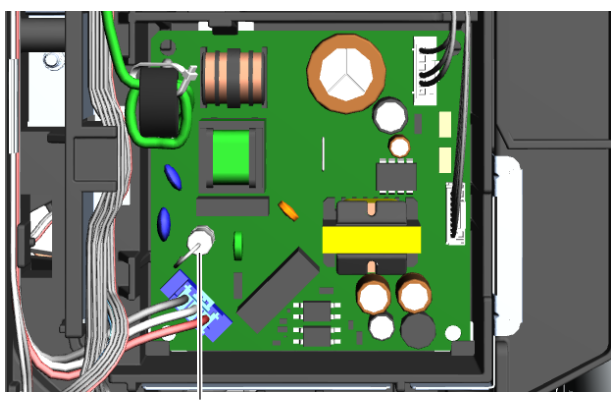
2 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

3 Check that no connectors are damaged.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.

To remove a fuse of the indoor unit PCB

1 Remove the fuse from the PCB.



a Fuse

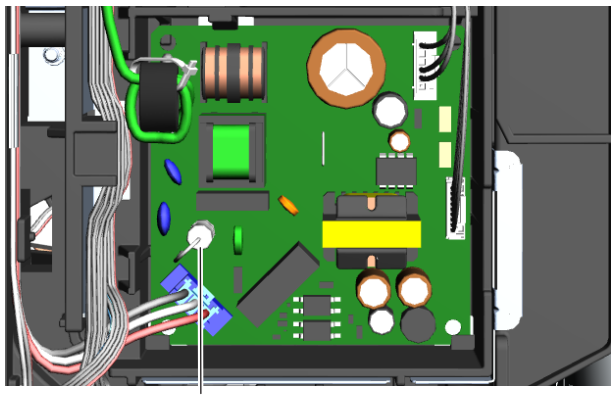
2 To install a fuse on the indoor unit PCB, see "2.8.2 Repair procedures" on page 31.

To install a fuse on the indoor unit PCB

1 Install the fuse on the correct location on the PCB.

CAUTION

Make sure the fuse is plugged-in correctly (contact with the fuse holder).



a Fuse

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.8.1 Checking procedures" on page 30 of the indoor unit PCB and continue with the next procedure.

2.9 Intelligent thermal sensor

2.9.1 Checking procedures

1 As there is no specific check procedure for this component, first perform a check of the indoor unit PCB to check if the intelligent thermal sensor needs to be replaced. See "2.8.1 Checking procedures" on page 30.

After complete check of the indoor unit PCB, is the problem solved?	Action
Yes	No further actions required.
No	Replace the intelligent thermal sensor, see "2.9.2 Repair procedures" on page 33.

2.9.2 Repair procedures

To remove the intelligent thermal sensor

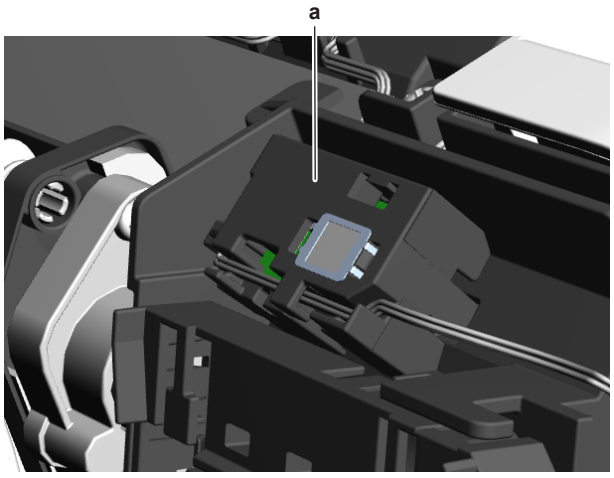
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the intelligent thermal sensor connector from the indoor unit PCB.

2 Carefully click the complete intelligent thermal sensor assembly out of the indoor unit.

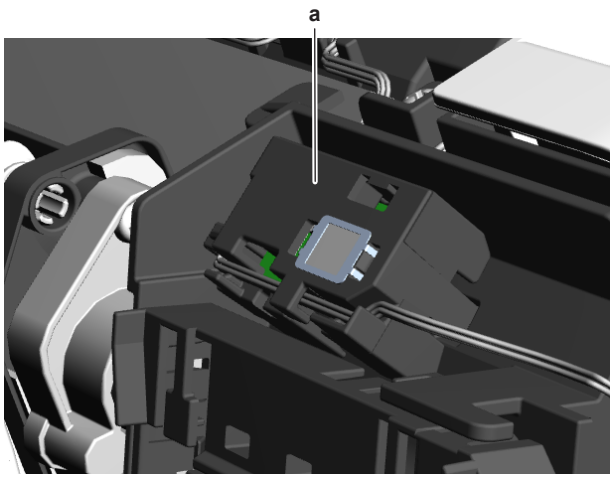


a Intelligent thermal sensor assembly

3 To install the intelligent thermal sensor assembly, see "2.9.2 Repair procedures" on page 33.

To install the intelligent thermal sensor

1 Click the intelligent thermal sensor assembly on the indoor unit.



a Intelligent thermal sensor assembly

2 Route the intelligent thermal sensor harness inside the switch box, along the harness retainers.

3 Connect the intelligent thermal sensor harness to the appropriate connector on the indoor unit PCB.

WARNING

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

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

2.10 Inverter PCB

2.10.1 Checking procedures

As the inverter PCB is integrated in the main PCB of the unit, see "2.11 Main PCB" on page 35 for the other check procedures.

To perform an electrical check of the inverter PCB

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Open the compressor insulation.

2 Remove the cover of the compressor wire terminals.

3 Measure the voltage between the pins 7-4 of the connector S70. Wait until the voltage drops below 10 V DC.

WARNING

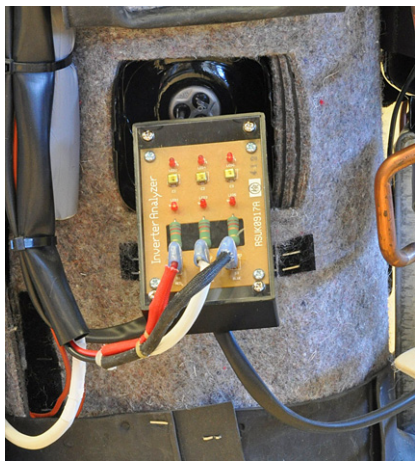
The smoothing capacitor MUST discharge below 10 V DC before disconnecting the Faston connectors from the compressor wiring terminals. Risk of electrocution.

4 Disconnect the Faston connectors from the compressor wire terminals U, V and W.

INFORMATION

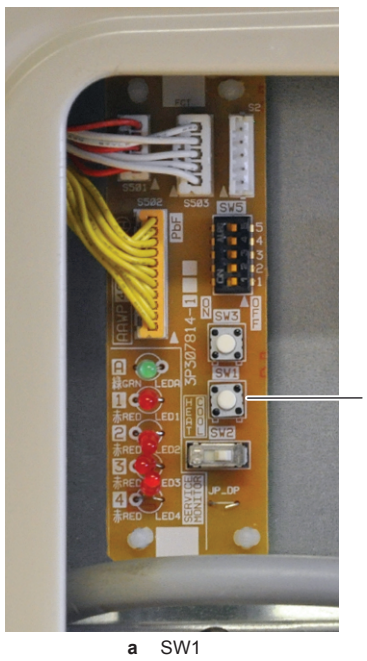
Note the position of the Faston connectors on the compressor wire terminals to allow correct connection during installation.

5 Connect the Faston connectors to the Inverter Analyzer (SPP number 1368521).



6 Turn ON the power of the unit.

7 Locate the switch SW1 on the Inverter Analyzer and press for 5 seconds to activate the inverter test.



a SW1

8 All LED's on the Inverter Analyzer must lit.

9 Turn off the respective circuit breaker.

10 Wait a few minutes and confirm that the LED's of the Inverter Analyzer are off.

11 Disconnect the Inverter Analyzer from the Faston connectors.

12 Connect the Faston connectors to the wire terminals U, V and W of the compressor.

INFORMATION

Use the notes made during disconnection to connect the Faston connectors to the correct wire terminals of the compressor.

All LED's of the inverter analyzer are lit during inverter test?	Action
Yes	Return to Checking procedures of the inverter PCB and continue with the next procedure.
No	Replace the inverter PCB, see Repair procedures.

2.10.2 Repair procedures

As the inverter PCB is integrated in the main PCB of the unit, see "2.11 Main PCB" on page 35 for the repair procedures.

2.11 Main PCB

2.11.1 Checking procedures

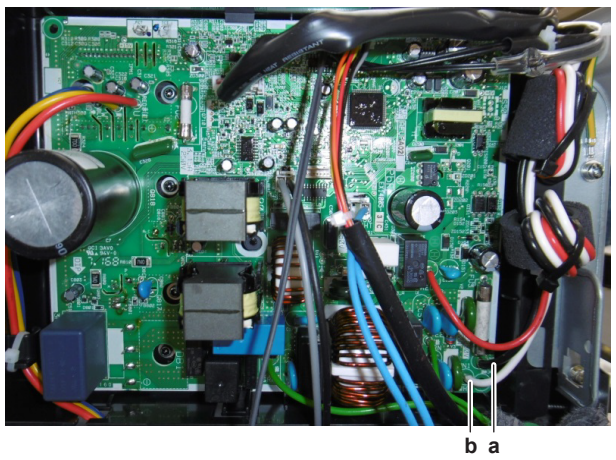
INFORMATION

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

To perform a power check of the main PCB

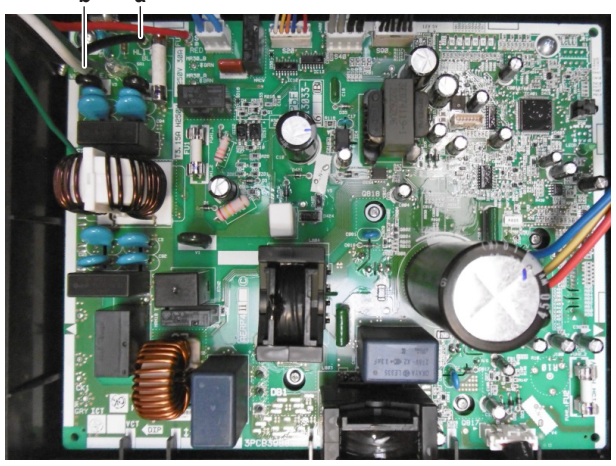
1 Measure the voltage between the black and white wires shown below.

Class 20~35



a Black wire
b White wire

Class 42~50



a Black wire
b White wire

Is the measured voltage on the PCB correct?	Action
Yes	Return to "2.11.1 Checking procedures" on page 35 of the PCB and continue with the next procedure.
No	Adjust the power of the main PCB, see "2.11.2 Repair procedures" on page 36.

To check the HAP LED of the main PCB

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Turn ON the power of the unit.

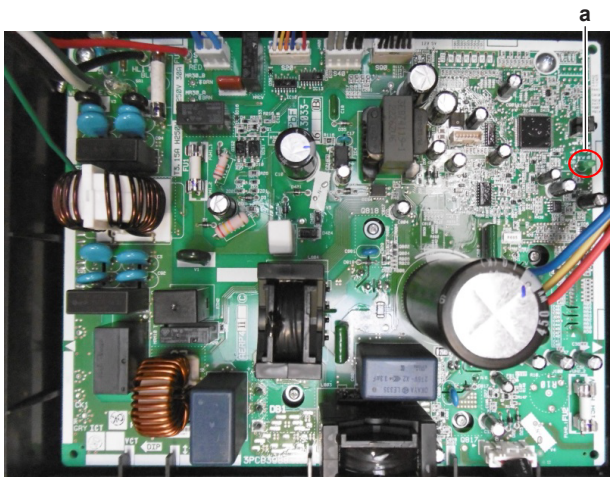
2 Locate the HAP LED on the main PCB.

Class 20~35



a HAP LED

Class 42~50



a HAP LED

Does the HAP LED blink in regular intervals (1 second ON/1 second OFF)?	Action
Yes	Return to "2.11.1 Checking procedures" on page 35 of the main PCB and continue with the next procedure.
No	Remove the main PCB, see "2.11.2 Repair procedures" on page 36.

To check if the correct spare part is installed

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.

NOTICE

Also check that the correct spare part is installed for the capacity adapter.

Is the correct spare part for the PCB installed?	Action
Yes	Return to "2.11.1 Checking procedures" on page 35 of the main PCB and continue with the next procedure.
No	Replace the main PCB, see "2.11.2 Repair procedures" on page 36.

To check the wiring of the main PCB

1 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

2 Check that no connectors are damaged.

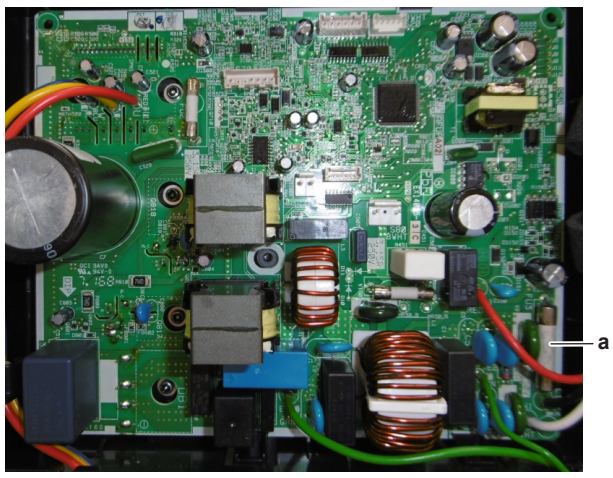
3 Check that the wiring corresponds with the wiring diagram, see "5.2 Wiring diagram" on page 58.

Is the wiring on the main PCB correct?	Action
Yes	Return to "2.11.1 Checking procedures" on page 35 of the main PCB and continue with the next procedure.
No	Adjust the wiring of the main PCB, see "2.11.2 Repair procedures" on page 36.

To check the fuse of the main PCB

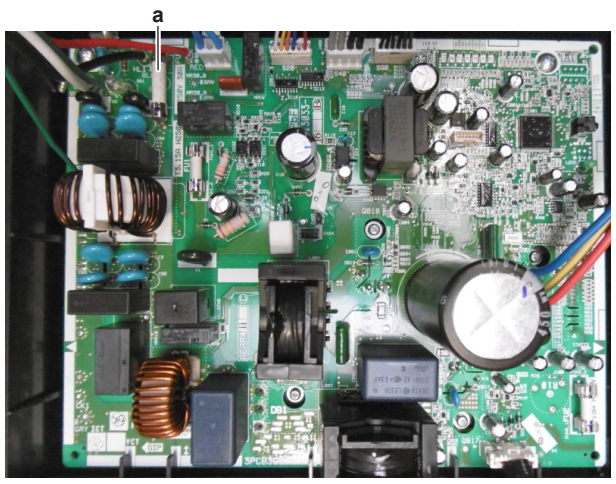
1 Measure the continuity of the fuse. If no continuity is measured, the fuse is blown.

Class 20~35



a Fuse

Class 42~50



a Fuse

Blown fuse on the main PCB?	Action
Yes	Replace the blown fuse, see "2.11.2 Repair procedures" on page 36.
No	Return to "2.11.1 Checking procedures" on page 35 of the 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.

2.11.2 Repair procedures

To adjust the power of the main PCB

1 Make sure that the power source is in line with the requirements described in the databook.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.11.1 Checking procedures" on page 35 of the PCB and continue with the next procedure.

To remove the main PCB

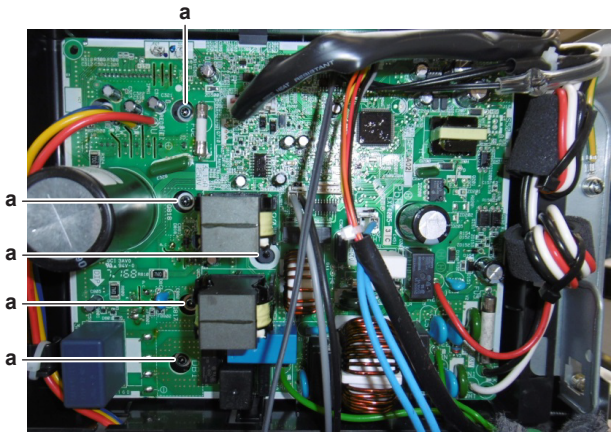
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

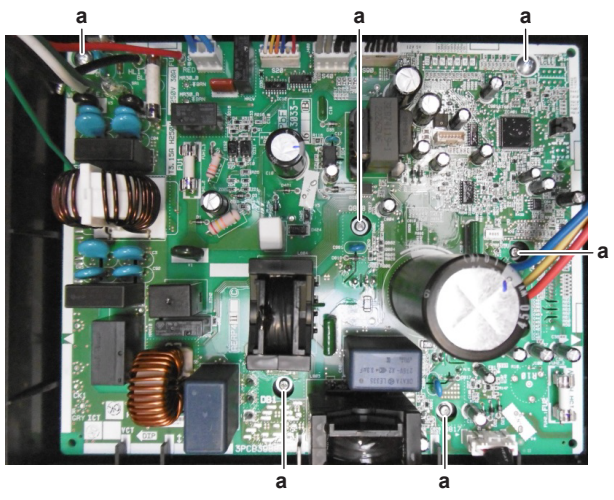
1 Disconnect all connectors from the main PCB.

Class 20~35



a Screw

Class 42~50



a Screw

For all models

2 Remove the screws from the main PCB.

3 Remove the main PCB from the unit.

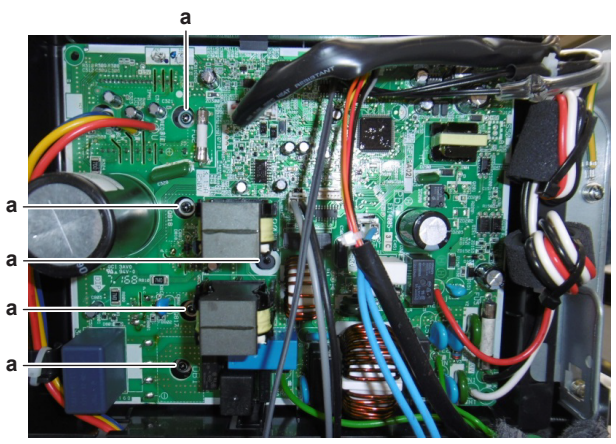
4 To install the main PCB, see "2.11.2 Repair procedures" on page 36.

To install the main PCB

1 Apply heat sink compound to the heat sink.

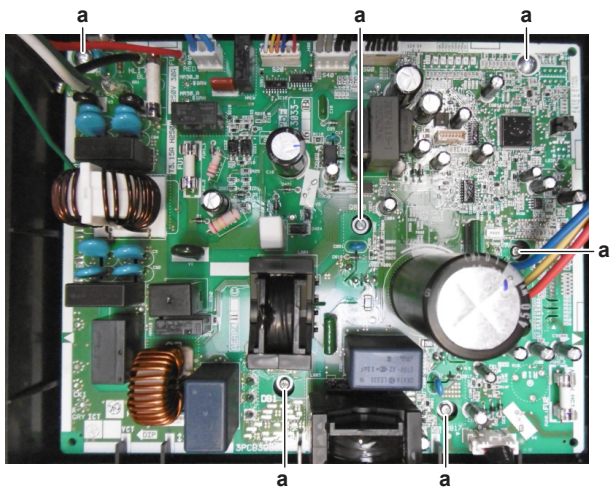
2 Install the main PCB on the correct location in the switch box.

Class 20~35



a Screw

Class 42~50



a Screw

For all models

3 Install and tighten the screws.

4 Connect all connectors to the main PCB.

INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "5.2 Wiring diagram" on page 58.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.11.1 Checking procedures" on page 35 of the PCB and continue with the next procedure.

To adjust the wiring of the main PCB

1 Adjust the wiring according to the wiring diagram and connection diagram, see "5.2 Wiring diagram" on page 58.

2 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

3 Check that no connectors are damaged.

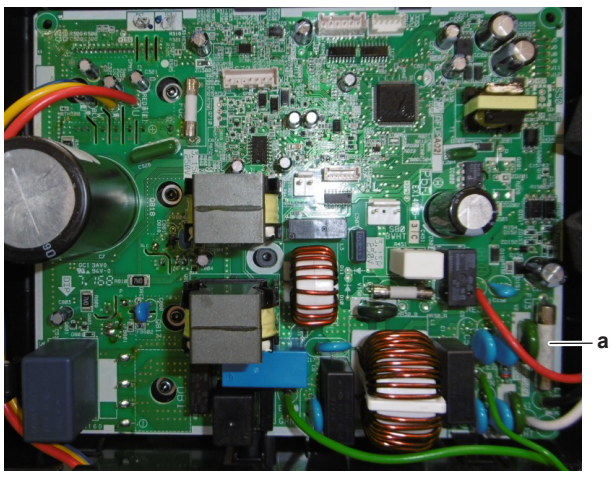
Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to "2.11.1 Checking procedures" on page 35 of the PCB and continue with the next procedure.

To remove a fuse of the main PCB

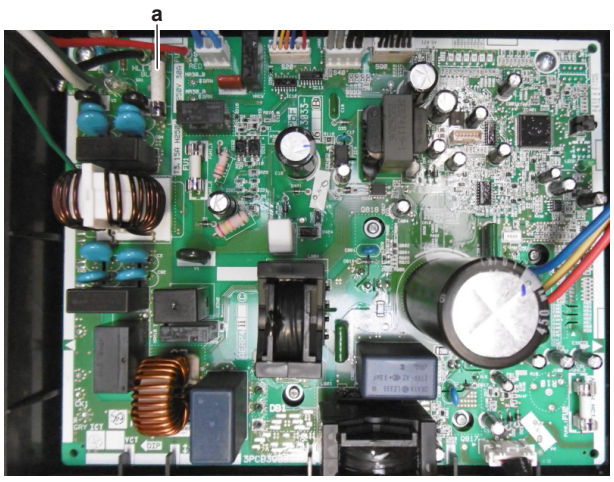
1 Remove the fuse from the PCB.

Class 20~35



a Fuse

Class 42~50



a Fuse

For all models

2 To install a fuse on the main PCB, see "2.11.2 Repair procedures" on page 36.

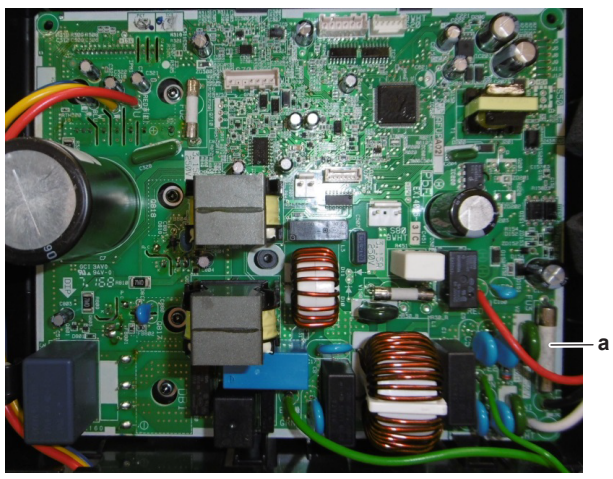
To install a fuse on the main PCB

1 Install the fuse on the correct location on the PCB.

CAUTION

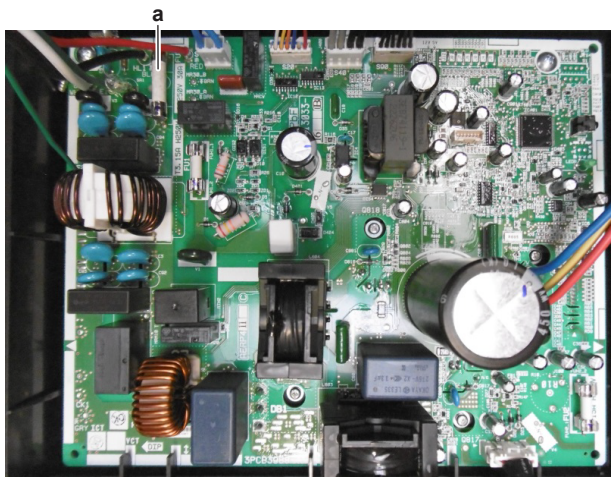
Make sure the fuse is plugged-in correctly (contact with the fuse holder).

Class 20~35



a Fuse

Class 42~50



a Fuse

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.11.1 Checking procedures" on page 35 of the PCB and continue with the next procedure.

2.12 Outdoor unit fan motor

2.12.1 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: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 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 "2.12.2 Repair procedures" on page 39.
No	Perform a mechanical check of the DC fan motor assembly, see "2.12.1 Checking procedures" on page 38.

To perform a mechanical check of the DC fan motor assembly

Prerequisite: First perform a mechanical check of the propeller fan blade assembly, see "2.12.1 Checking procedures" on page 38.

1 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 "2.12.1 Checking procedures" on page 38.
No	Replace the DC fan motor assembly, see "2.12.2 Repair procedures" on page 39.

To perform an electrical check of the DC fan motor assembly

1 First perform a mechanical check of the DC fan motor assembly, see "2.12.1 Checking procedures" on page 38.

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

DC fan motor resistance measurements are correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the DC fan motor, see "2.12.2 Repair procedures" on page 39.

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.

2.12.2 Repair procedures

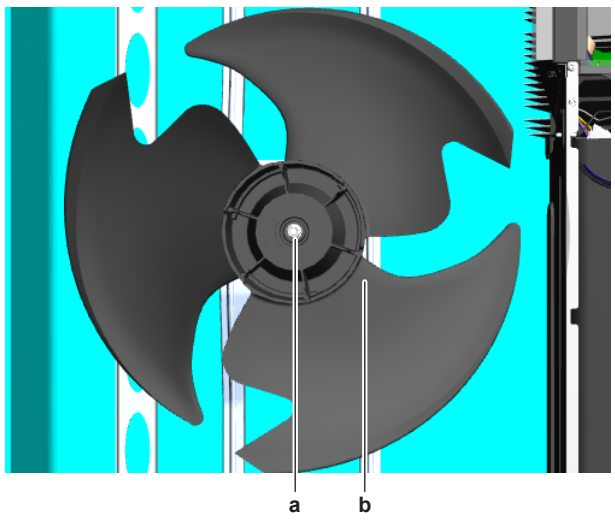
To remove the propeller fan blade assembly

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Remove the nut that fixes the propeller fan blade assembly.



a Nut
b Propeller fan blade assembly

2 Pull and remove the propeller fan blade assembly from the DC fan motor assembly.

3 To install the propeller fan blade assembly, see "2.12.2 Repair procedures" on page 39.

To remove the DC fan motor assembly

1 Remove the propeller fan blade assembly from the DC fan motor assembly, see "2.12.2 Repair procedures" on page 39.

2 Disconnect the DC fan motor connector from the main PCB.

3 Unlock the ferrite bead.

4 Cut the tie strap.

5 Detach the DC fan motor harness from the switch box.

6 Slightly bend the harness retainers to detach the DC fan motor harness.

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 "2.12.2 Repair procedures" on page 39.

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 harness through the harness retainers and bend the harness retainers to attach the DC fan motor harness.

4 Attach the DC fan motor harness to the switch box.

5 Install a new tie strap to fix the DC fan motor harness to the switch box.

6 Connect the DC fan motor connector to the connector on the main PCB.

7 Lock the ferrite bead.

8 Install the propeller fan blade assembly, see "2.12.2 Repair procedures" on page 39.

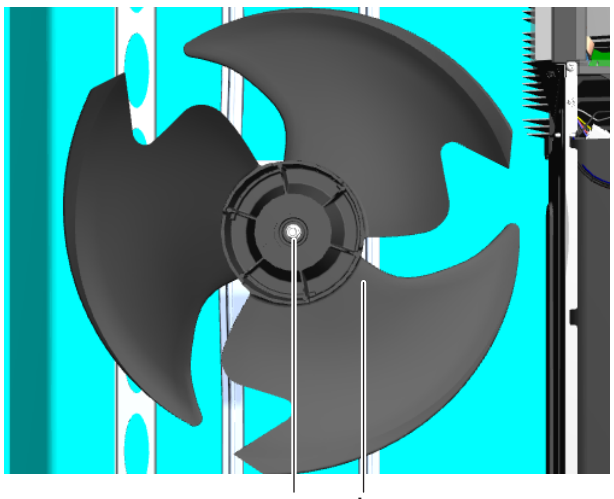
To install the propeller fan blade assembly

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 and tighten the nut to fix the propeller fan blade assembly.



a Nut
b Propeller fan blade assembly

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "2.12.1 Checking procedures" on page 38 of the outdoor unit fan motor and continue with the next procedure.

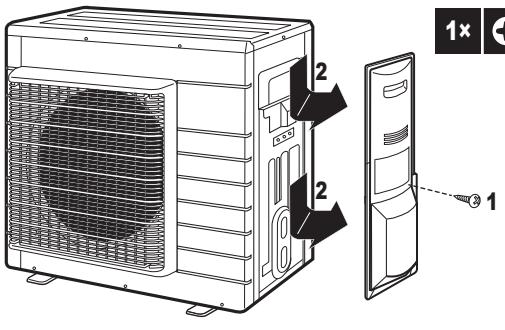
2.13 Plate work

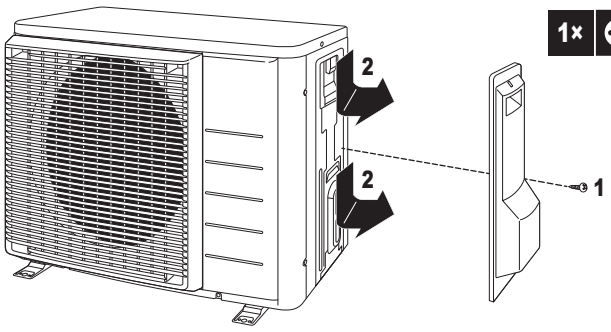
2.13.1 Outdoor unit

To remove the refrigerant connection cover

DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING





To remove the top plate

INFORMATION

This procedure is just an example and may differ on some details for your actual unit.

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Loosen and remove the screws that fix the top plate.
   a Screw
   b Top plate

2 Remove the top plate.

To remove the front plate

INFORMATION

This procedure is just an example and may differ on some details for your actual unit.

Prerequisite: Remove the top plate, see "2.13 Plate work" on page 40.

1 Loosen and remove the screws that fix the front plate.
   a Screw
   b Front plate

2 Remove the front plate.

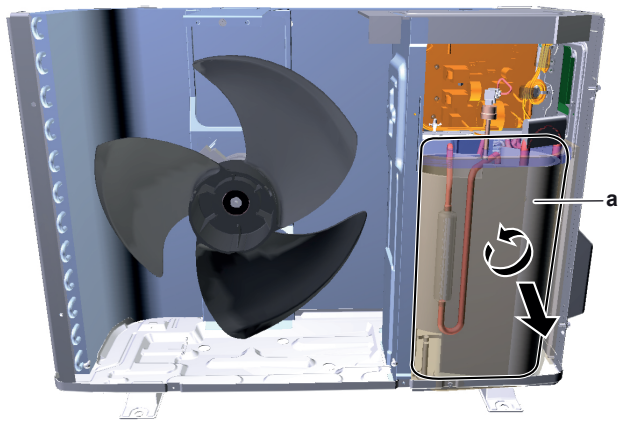
To remove the compressor sound insulation

INFORMATION

This procedure is just an example and may differ on some details for your actual unit.

Prerequisite: Remove the front plate, see "2.13 Plate work" on page 40.

1 Untwist the cord and remove the compressor sound insulation.



a Compressor sound insulation

To remove the switch box

INFORMATION

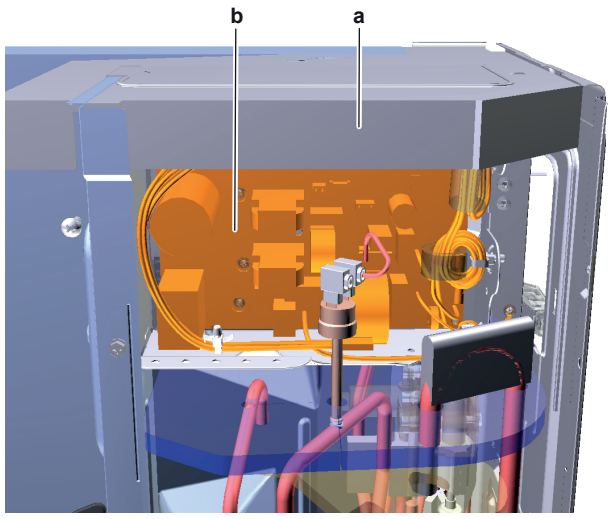
This procedure is just an example and may differ on some details for your actual unit.

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

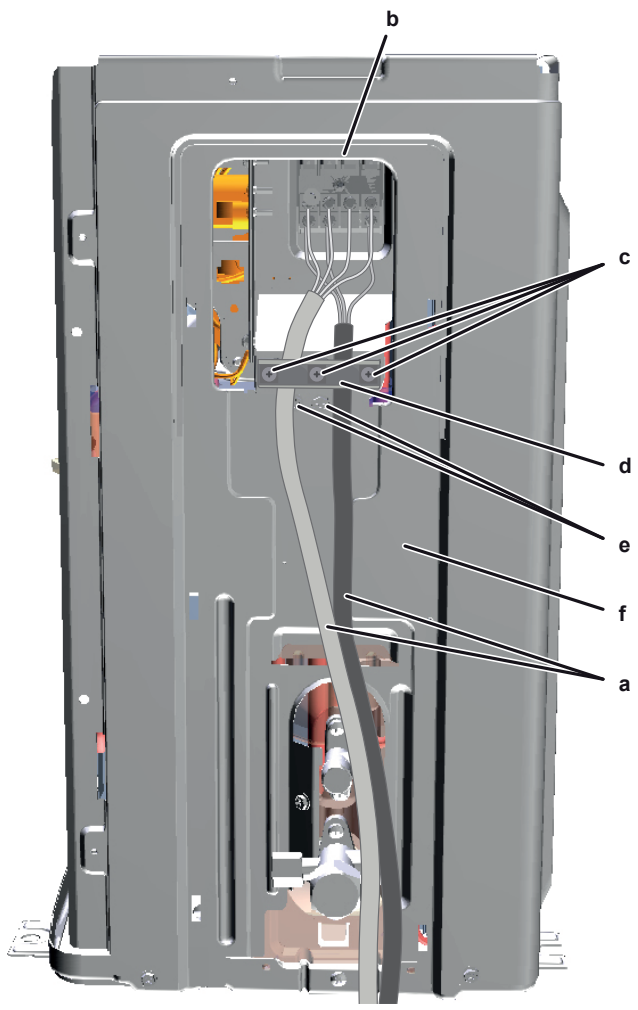
1 Remove the insulation on the upper side of the switch box.



a Insulation
b Main PCB

2 Disconnect all connectors from the main PCB.

3 Disconnect the electrical power supply wiring from the wire terminals.



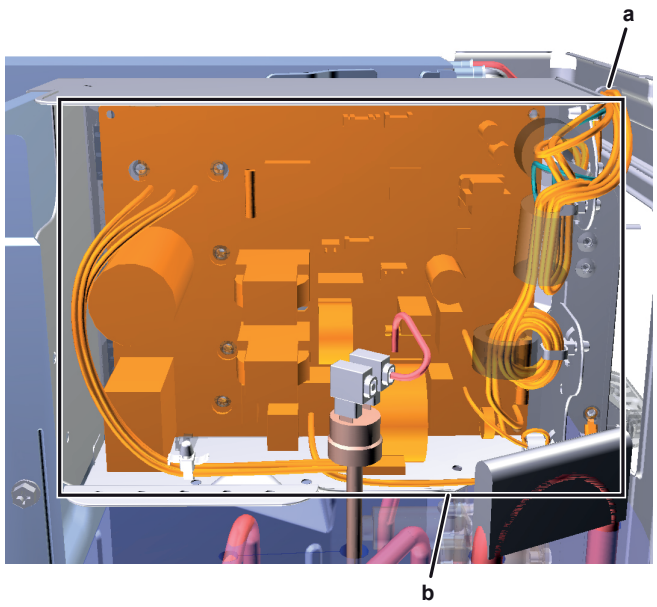
a Electrical power supply wiring
b Wire terminals
c Screws
d Wire clamp
e Screws
f Right side plate assembly

4 Remove the screws that fix the wire clamp.

5 Remove the wire clamp.

6 Remove the screws that fix the right side plate assembly.

7 Cut the cable tie.



a Cable tie
b Switch box

8 Lift and remove the switch box from the outdoor unit.

9 To install the switch box, see "2.13 Plate work" on page 40.

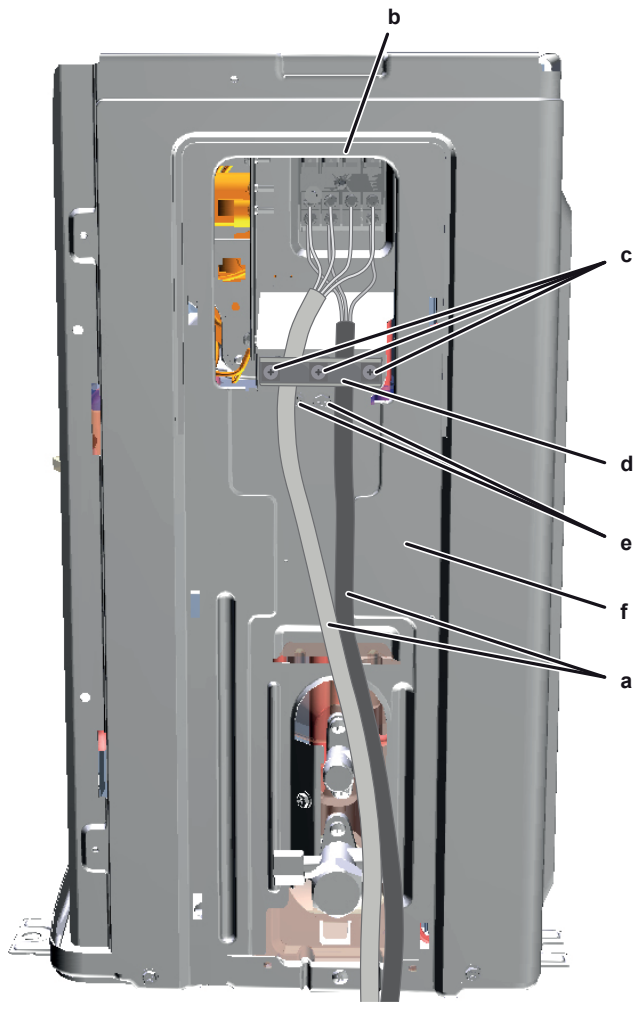
To install the switch box

INFORMATION

This procedure is just an example and may differ on some details for your actual unit.

1 Install the switch box on the correct location in the outdoor unit.

2 Install the right side plate assembly on the outdoor unit and fix it using the screws.



a Electrical power supply wiring
b Wire terminals
c Screws
d Wire clamp
e Screws
f Right side plate assembly

3 Connect the electrical power supply wiring to the wire terminals.

4 Install the wire clamp and fix it using the screws.

5 Connect all connectors to the main PCB.

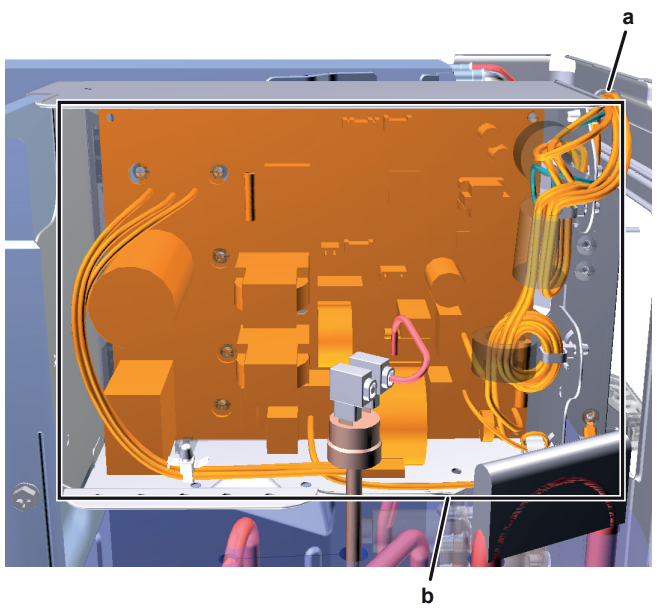
INFORMATION

Use the wiring diagram and connection diagram for correct installation of the connectors, see "5.2 Wiring diagram" on page 58.

WARNING

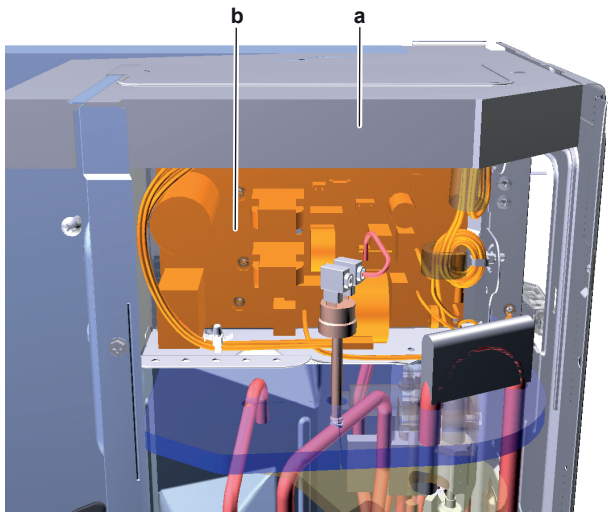
When reconnecting a connector to the PCB, do NOT apply force, as this may damage the connector or connector pins of the PCB.

6 Fix the wiring to the switch box using a new cable tie.



a Cable tie
b Switch box

7 Install the insulation on the upper side of the switch box.

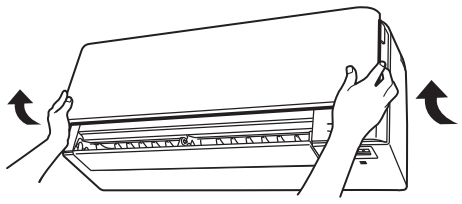


a Insulation
b Main PCB

2.13.2 Indoor unit

To open the front panel

1 Hold the front panel on both sides and open it.



Open the front panel using the user interface.

2 Stop operation.

3 Hold ⏲ on the user interface for at least 2 seconds.

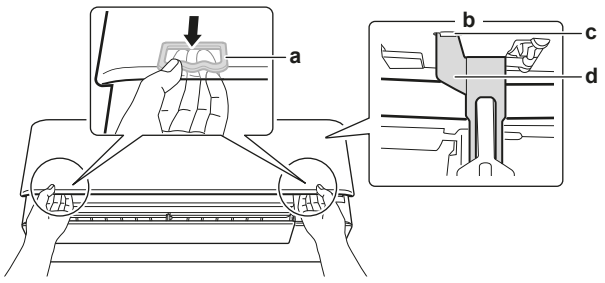
Result: The front panel will open.

Note: Press and hold ⏲ again for at least 2 seconds to close the front panel.

4 Turn the power supply off.

5 Pull down both locks on the back of the front panel.

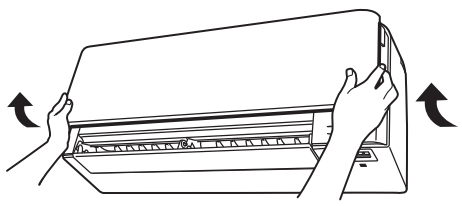
6 Open the front panel until the support fits into the fixing tab.



a Lock (1 on each side)
b Backside of the front panel
c Fixing tab
d Support

INFORMATION

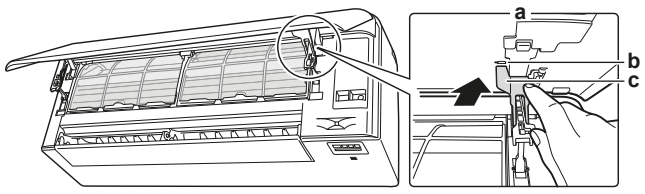
If you CANNOT find the user interface or you use another optional controller. Pull the front panel carefully up by hand as shown in the following figure.



To close the front panel

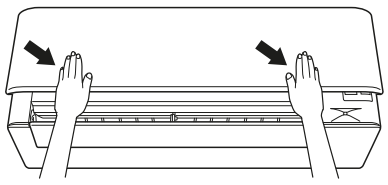
1 Set the filters as they were.

2 Lift the front panel slightly and remove the support from the fixing tab.



a Backside of the front panel
b Fixing tab
c Support

3 Close the front panel.



4 Gently press the front panel down until it clicks.

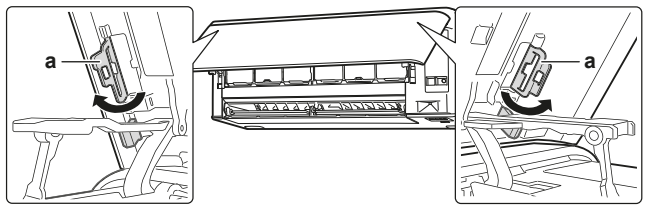
To remove the front panel

INFORMATION

Remove the front panel only in case it MUST be replaced.

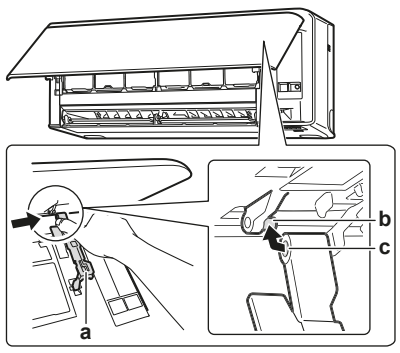
1 Open the front panel. See "To open the front panel" on page 42.

2 Open the panel locks located on the back side of the panel (1 on each side).



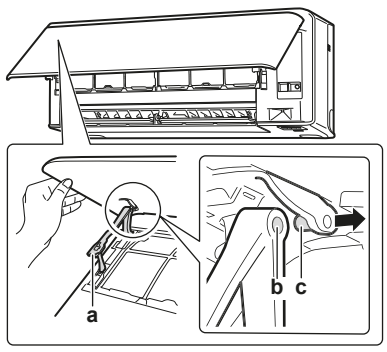
a Panel lock

3 Push the right arm lightly to the right to disconnect the shaft from the shaft slot on the right side.



a Arm
b Shaft
c Shaft slot

4 Disconnect the front panel shaft from the shaft slot on the left side.



a Arm
b Shaft slot
c Shaft

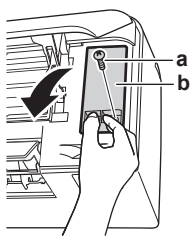
5 Remove the front panel.

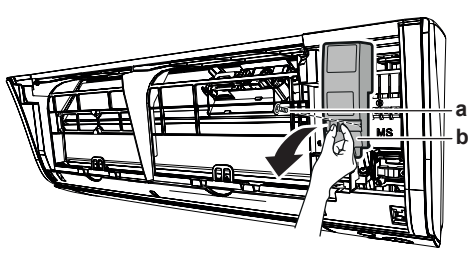
6 To re-install the front panel perform the steps in the opposite order.

To open the service cover

1 Remove 1 screw from the service cover.

2 Pull out the service cover horizontally away from the unit.





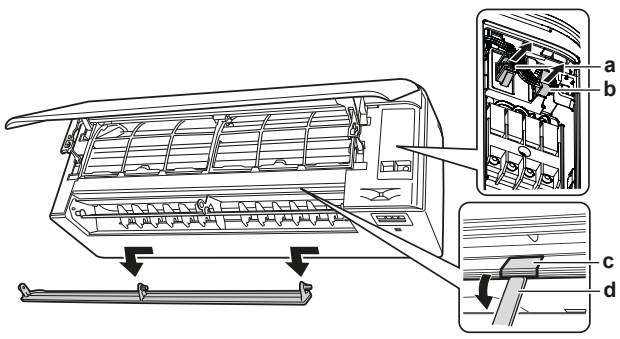
a Service cover screw
b Service cover

To remove the front grille

CAUTION

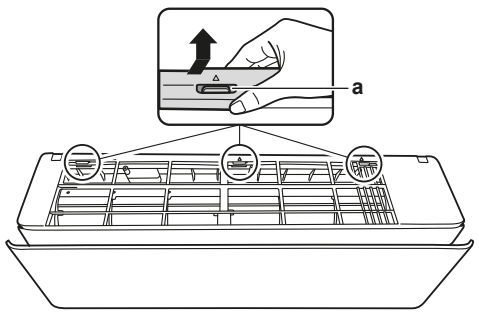
Wear protective gloves.

1 Open the front panel. Refer to "To open the front panel" on page 42.
2 Remove the service cover. Refer to "To open the service cover" on page 43.
3 Remove the wire harness from the wire clamp and the connector.
4 Remove the flap by pushing it to the left side and towards you.
5 Remove the 2 screw covers using a long flat plate such as a ruler wrapped in a cloth and remove 2 screws.



a Connector
b Wire clamp
c Screw cover
d Long flat plate wrapped in a cloth

6 Push the front grille up and then towards the mounting plate to remove the front grille from the 3 hooks.



a Hook

Prerequisite: If working space is limited.

7 Insert a flat screwdriver next to the hooks.
8 Pull the front grille up using the flat screwdriver and push towards the mounting plate.

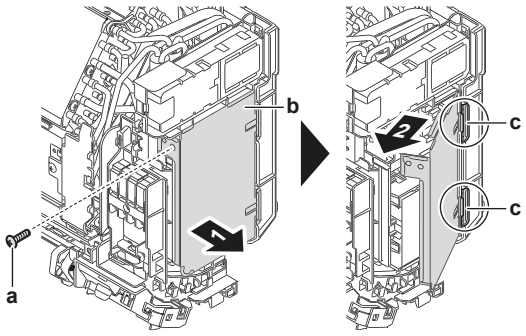
a Hook
b Flat screwdriver

To re-install the front grille

1 Install the front grille and firmly engage the 3 upper hooks.
2 Tighten the 2 screws and put the 2 screw covers back.
3 Re-install the flap.
4 Insert the wire harness back into the connector and secure it with the wire clamp.
5 Close the front panel. Refer to "To close the front panel" on page 43.

To remove the electrical wiring box cover

1 Remove the front grille.
2 Remove 1 screw from the electrical wiring box.
3 Open the electrical wiring box cover by pulling it to the front.
4 Remove the electrical wiring box cover from the 2 rear hooks.



a Screw
b Electrical wiring box
c Rear hook

5 To re-install the cover, first attach the electrical wiring box to the hooks, close the electrical wiring box, and re-install the screw.

2.14 Reactor

2.14.1 Checking procedures

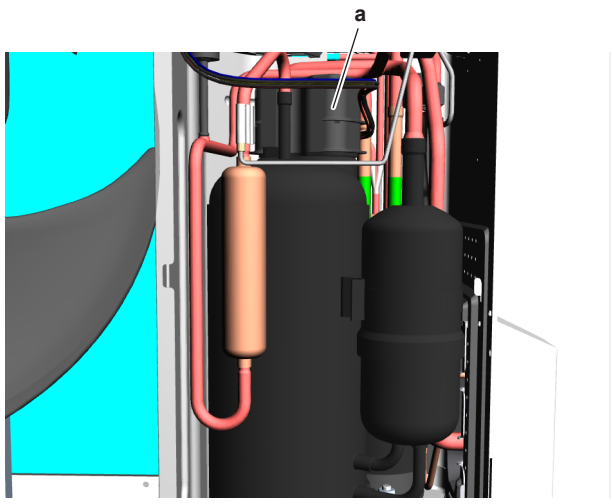
To perform an electrical check of the reactor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Open the compressor insulation.
2 Remove the cover of the compressor wire terminals.



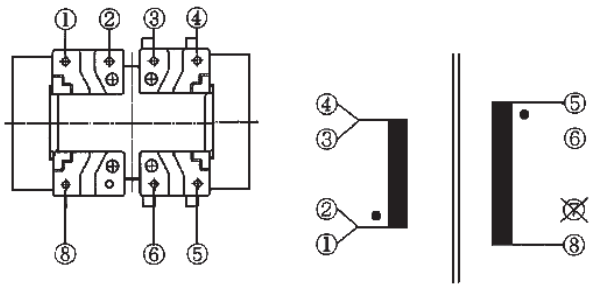
a Compressor wire terminals cover

INFORMATION

The reactor will trip at a temperature of 115°C and will reset at a temperature of 95°C.

3 Measure the resistance on the following locations of the reactor. Resistance values MUST be as follows:

Location	Resistance (Ω)
1,2-3,4	0.037 ± 20%
5-8	0.19 ± 20%



Is the measured reactor resistance correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next step.
No	Replace the reactor, see "2.14.2 Repair procedures" on page 45.

2.14.2 Repair procedures

To remove the reactor

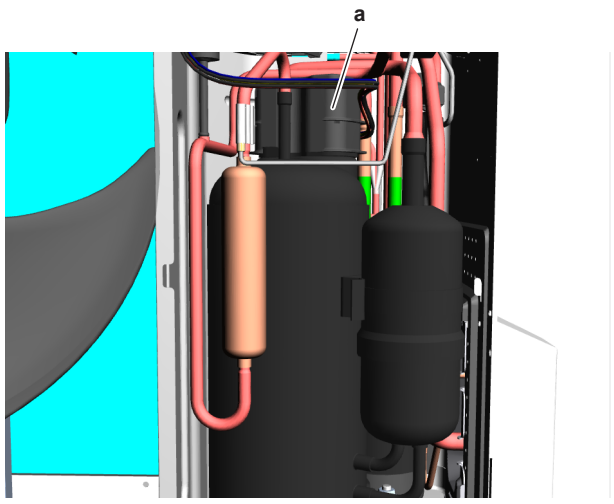
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Open the compressor insulation.

2 Remove the cover of the compressor wire terminals.



a Compressor wire terminals cover

3 Disconnect the connector.

4 Remove the clip and remove the reactor from the compressor.

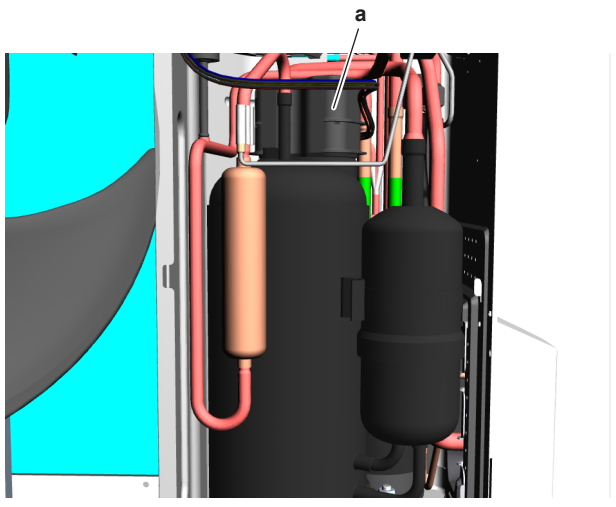
5 To install the reactor, see "2.14.2 Repair procedures" on page 45.

To install the reactor

1 Install the reactor in the correct location and install the clip.

2 Connect the reactor connector.

3 Install the cover of the compressor wire terminals.



a Compressor wire terminals cover

4 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.

2.15 Streamer unit

2.15.1 Checking procedures

1 As there is no specific check procedure for this component, first perform a check of the indoor unit PCB to check if the streamer unit needs to be replaced. See "2.8.1 Checking procedures" on page 30.

After complete check of the indoor unit PCB, is the problem solved?	Action
Yes	No further actions required.
No	Replace the streamer unit, see "2.15.2 Repair procedures" on page 45.

2.15.2 Repair procedures

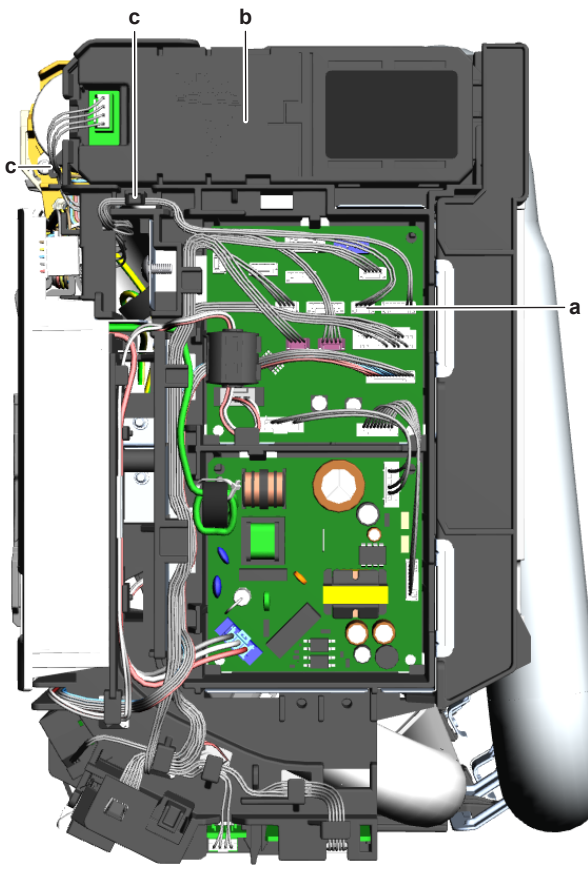
To remove the streamer unit

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the streamer unit connector from the indoor unit PCB.



a Streamer unit connector
b Streamer unit
c Retainer

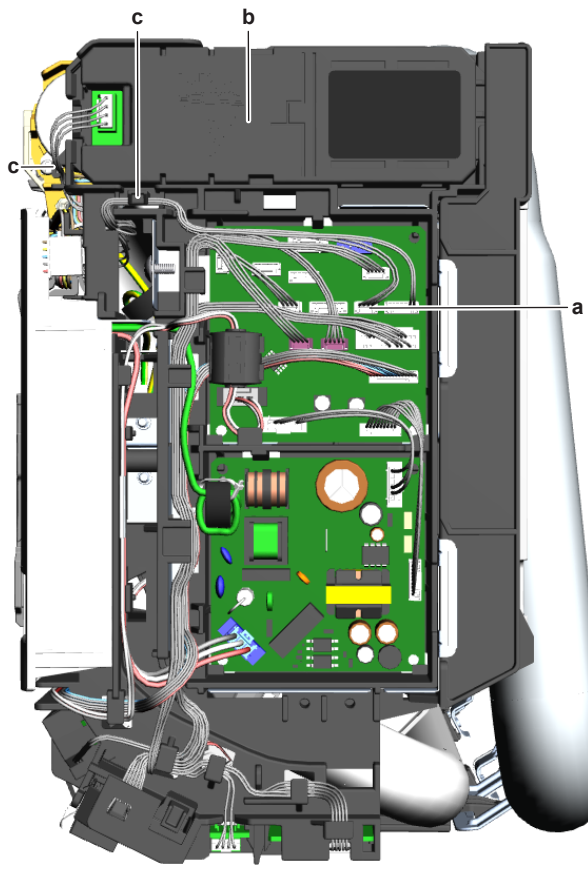
2 Route the streamer unit harness out of the retainers.

3 Click the streamer unit out of the indoor unit.

4 To install the streamer unit, see "2.15.2 Repair procedures" on page 45.

To install the streamer unit

1 Install the streamer unit in the correct location on the indoor unit.



a Streamer unit connector
b Streamer unit
c Retainer

2 Route the streamer unit harness inside the switch box and through the retainers.

3 Connect the streamer unit connector to the indoor unit PCB.

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

2.16 Swing flap motor

2.16.1 Main swing flap motor

Checking procedures

Repair procedures

INFORMATION

To replace the motor, the complete gearcase assembly MUST be replaced.

To remove the swing flap motor gearcase assembly

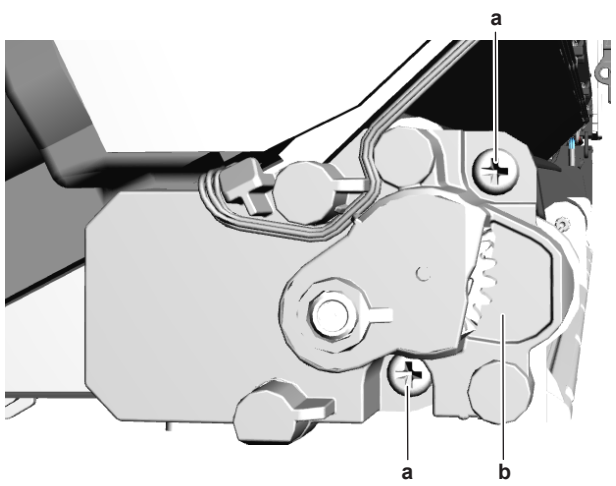
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Remove the main swing flap from the indoor unit (by clicking it out).

2 Remove the 2 screws and remove the swing flap motor gearcase assembly from the indoor unit.



a Screw
b Swing flap motor gearcase assembly

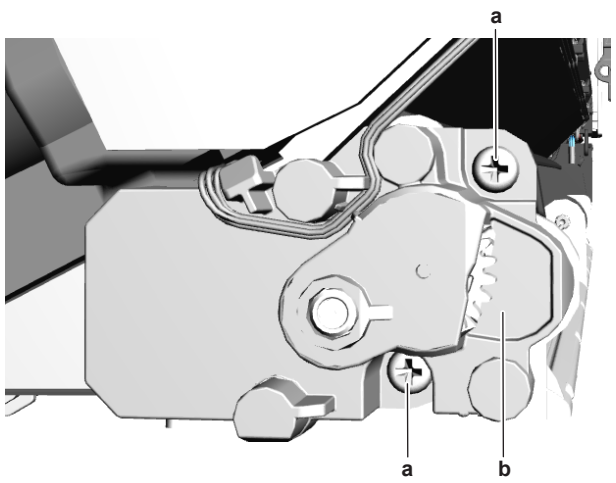
3 Disconnect the swing flap motor harness from the swing flap motor.

4 To install the swing flap motor gearcase assembly, see "Repair procedures" on page 46.

To install the swing flap motor gearcase assembly

1 Connect the swing flap motor harness to the swing flap motor connector.

2 Install the swing flap motor gearcase assembly on the indoor unit and tighten using the 2 screws.



a Screw
b Swing flap motor gearcase assembly

3 Install the main swing flap in the indoor unit (by clicking it on).

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.

2.16.2 Secondary swing flap motor

Checking procedures

To perform an electrical check of the swing flap motor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the motor connector from the indoor unit PCB.

2 Measure the resistance between the following pins of the motor connector. The measurements MUST be as shown in the table below.

Pins	Measured resistance (Ω)
1-2	235
1-3	
1-4	
1-5	
2-3	470
2-4	
2-5	
3-4	
3-5	
4-5	

Swing flap motor resistance measurements are correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the swing flap motor, see "Repair procedures" on page 47.

Repair procedures

INFORMATION

To replace the motor, the complete gearcase assembly MUST be replaced.

To remove the swing flap motor gearcase assembly

Prerequisite: Turn OFF the unit via the user interface.

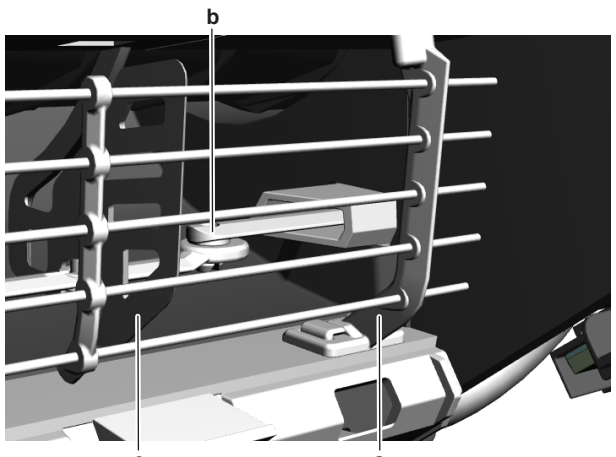
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Remove the main swing flap from the indoor unit (by clicking it out).

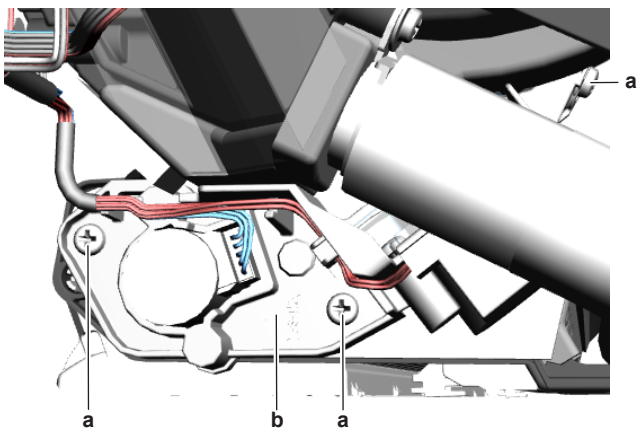
2 Remove the secondary swing flap from the indoor unit (by clicking it out).

3 Remove the right side fan guard from the indoor unit (by clicking it out).



a Fan guard
b Rocker arm
c **Swing raster**

4 Remove the 3 screws from the swing flap motor gear case assembly. Do NOT yet remove the assembly from the indoor unit.



a Screw
b Swing flap motor gearcase assembly

5 Disconnect the rocker arm from the swing raster.

6 Remove the swing flap motor gear case assembly from the indoor unit.

7 Disconnect the harness from the swing flap motor.

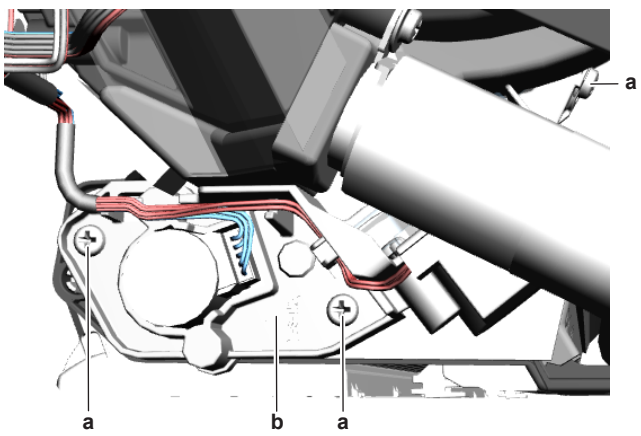
8 Disconnect the harness from the swing raster motor.

9 To install the swing flap motor gearcase assembly, see "Repair procedures" on page 47.

To install the swing flap motor gearcase assembly

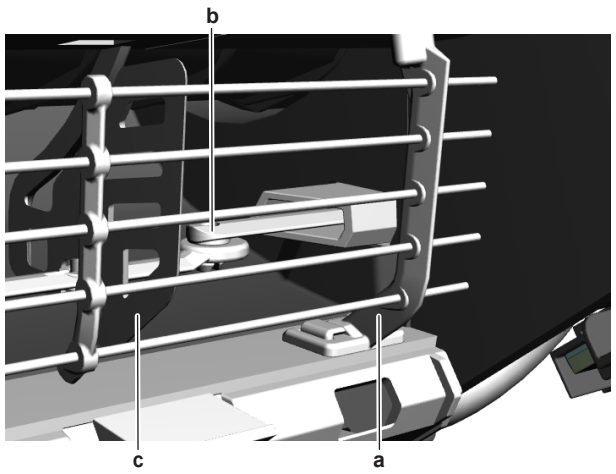
1 Connect the harness to the swing raster motor connector.

2 Install the swing flap motor gearcase assembly on the indoor unit. Install the 3 screws, but do NOT yet tighten them.



a Screw
b Swing flap motor gearcase assembly

3 Connect the rocker arm to the swing raster.



a Fan guard
b Rocker arm
c Swing raster

4 Tighten the 3 screws to fix the swing flap motor assembly.

5 Connect the harness to the swing flap motor connector.

6 Install the right side fan guard on the indoor unit (by clicking it on).

7 Install the secondary swing flap in the indoor unit (by clicking it on).

8 Install the main swing flap in the indoor unit (by clicking it on).

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.

2.17 Swing raster motor

2.17.1 Checking procedures

To perform an electrical check of the swing raster motor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the motor connector from the indoor unit PCB.

2 Measure the resistance between the following pins of the motor connector. The measurements MUST be as shown in the table below.

Pins	Measured resistance (Ω)
1-2	235
1-3	
1-4	
1-5	
2-3	470
2-4	
2-5	
3-4	
3-5	
4-5	

Front panel motor resistance measurements are correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the front panel motor, see "2.4.2 Repair procedures" on page 26.

Swing raster motor resistance measurements are correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the swing raster motor, see "2.17.2 Repair procedures" on page 49.

2.17.2 Repair procedures

INFORMATION

To replace the motor, the complete gearcase assembly MUST be replaced.

As the swing raster motor is integrated in the secondary swing flap motor gearcase assembly, see "2.16.2 Secondary swing flap motor" on page 47 for the repair procedures.

2.18 Thermistors

NOTICE

Select the correct type.

2.18.1 Refrigerant 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: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Locate the thermistor and remove the insulation if needed. Check if there is thermal contact between the thermistor and the piping or ambient.

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" on page 49.
No	Correctly install the thermistor, see "Repair procedures" on page 50.

To perform an electrical check of the specific thermistor

Prerequisite: First perform a mechanical check of the thermistor, see "Checking procedures" on page 49.

1 Locate the thermistor.

2 Measure the temperature using a contact thermometer.

Name	Symbol	Location (PCB)	Connector (pins)	Type
Air thermistor	R1T	Main	S90:1-2	1
Heat exchanger thermistor	R2T	Main	S90:3-4	1
Discharge pipe thermistor	R3T	Main	S90:5-6	1
Heat exchanger thermistor	R1T	Indoor	S501:1-2	1

INFORMATION

The thermistors may vary according to the specific unit.

3 Determine the thermistor resistance that matches the measured temperature.

Type 1 thermistor

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

4 Disconnect the thermistor connector from the appropriate PCB.

5 Measure the resistance between the appropriate pins of the thermistor connector.

6 Check that the measured resistance value matches the resistance determined through the measured temperature (earlier step in the procedure). E.g. R1T thermistor:

- Measured temperature with contact thermometer: 23.1°C,
- Resistance value determined through temperature (using the table for type 1 thermistors):
  Resistance at 23°C: 21.85 kΩ,
  Resistance at 24°C: 20.90 kΩ,
- Disconnect connector and measure resistance between S90 pin 1-2:
  Measured resistance: 21.86 kΩ,
- Measured resistance value is inside the range. R1T thermistor passes the check.

INFORMATION

All thermistors have a resistance tolerance of 5%.

INFORMATION

The user interface allows to monitor most thermistors.

If the measured resistance value matches the resistance determined through the measured temperature, but the temperature for the corresponding thermistor is NOT correct on the user interface display, 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" on page 50.

Repair procedures

To remove the thermistor

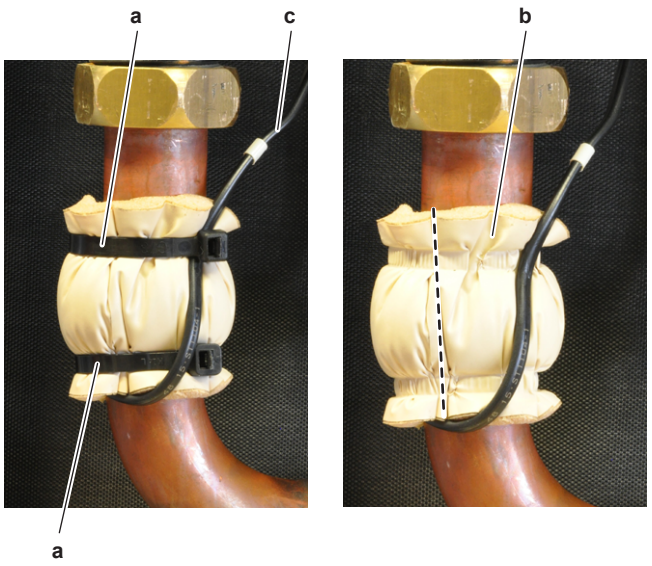
Prerequisite: Turn OFF the unit via the user interface.

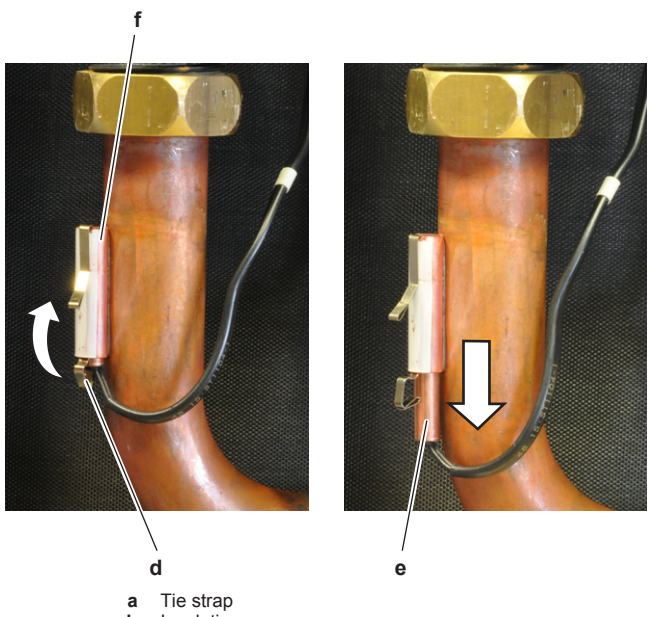
Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Locate the thermistor that needs to be removed.

2 Cut the tie straps that fix the insulation and the thermistor wire.





a Tie strap
b Insulation
c Thermistor wire
d Clip
e Thermistor
f Thermistor holder

3 Cut and remove the insulation.

4 Pull the clip that fixes the thermistor.

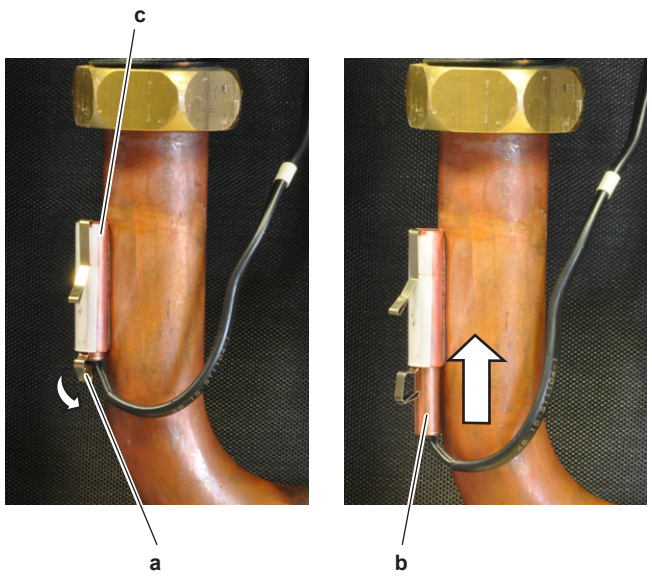
5 Remove the thermistor from the thermistor holder.

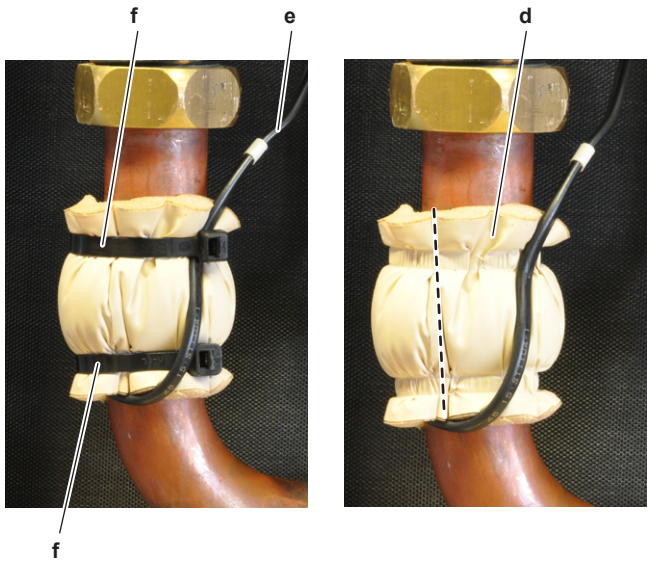
6 Disconnect the thermistor connector from the appropriate PCB and remove the thermistor.

7 To install the thermistor, see "Repair procedures" on page 50.

To install the thermistor

1 Pull the clip and install the thermistor in the specific thermistor holder. Make sure the clip is in the correct position (blocking the thermistor).





a Clip
b Thermistor
c Thermistor holder
d Insulation
e Thermistor wire
f Tie strap

2 Connect the thermistor connector to the appropriate PCB.

WARNING

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

3 Install the insulation around the thermistor.

4 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.

2.18.2 Other thermistors

Checking procedures

To perform a mechanical check of the specific thermistor

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Locate the thermistor and remove the insulation if needed. Check if there is thermal contact between the thermistor and the piping or ambient.

Is the thermistor correctly installed (thermal contact between the thermistor and the piping or ambient)?	Action
Yes	Perform an electrical check of the specific thermistor, see "Checking procedures" on page 51.
No	Correctly install the thermistor, see Repair procedures.

Repair procedures

As the room thermistor is located on the same PCB as the humidity sensor, see "2.6 Humidity sensor" on page 28 for the repair procedures.

2.19 Wifi control PCB

2.19.1 Checking procedures

1 As there is no specific check procedure for this component, first perform a check of the indoor unit PCB to check if the wifi control PCB needs to be replaced. See "2.8.1 Checking procedures" on page 30.

After complete check of the indoor unit PCB, is the problem solved?	Action
Yes	No further actions required.
No	Replace the wifi control PCB, see "2.19.2 Repair procedures" on page 51.

2.19.2 Repair procedures

To remove the wifi control PCB

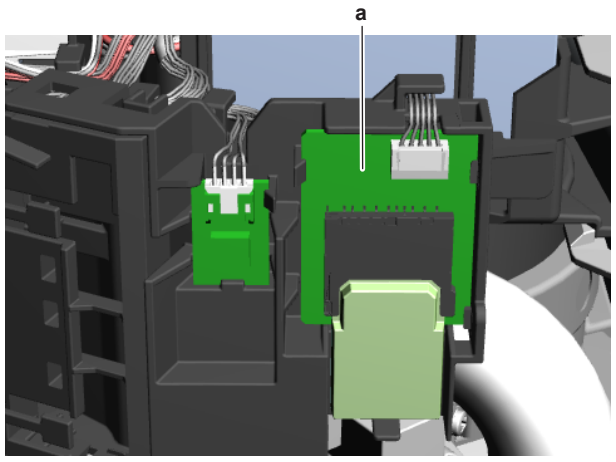
Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Disconnect the wifi control PCB connector from the indoor unit PCB.

2 Carefully click the complete wifi control PCB assembly out of the indoor unit.

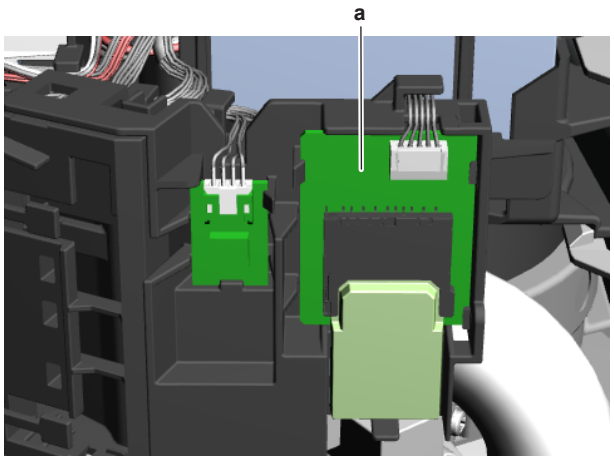


a Wifi control PCB assembly

3 To install the wifi control PCB assembly, see "2.19.2 Repair procedures" on page 51.

To install the wifi control PCB

1 Click the wifi control PCB assembly on the indoor unit.



a Wifi control PCB assembly

2 Route the wifi control PCB harness inside the switch box, along the harness retainers.

3 Connect the wifi control PCB harness to the appropriate connector on the indoor unit PCB.

WARNING

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

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

3 Third party components

3.1 Power supply

3.1.1 Checking procedures

To check if the power supply is conform with the regulations

1 Check that the power source is in line with the requirements described in the databook.

Is the power supply conform 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 "3.1.2 Repair procedures" on page 52.

To check the wiring between the outdoor unit and the indoor unit

1 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

2 Check that no connectors are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "5.2 Wiring diagram" on page 58.

Is the all wiring between the outdoor unit and the indoor unit correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the wiring where needed, see "3.1.2 Repair procedures" on page 52.

To check the wiring between the indoor unit and the remote controller

1 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

2 Check that no connectors are damaged.

3 Check that the wiring corresponds with the wiring diagram, see "5.2 Wiring diagram" on page 58.

Is all wiring between the indoor unit and remote controller correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the wiring where needed, see "3.1.2 Repair procedures" on page 52.

3.1.2 Repair procedures

To adjust the power supply

1 Make sure that the power source is in line with the requirements described in the databook.

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

To adjust the wiring between the outdoor unit and the indoor unit

1 Adjust the wiring according to the wiring diagram and connection diagram, see "5.2 Wiring diagram" on page 58.

2 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

3 Check that no connectors 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 adjust the wiring between the indoor unit and the remote controller

1 Adjust the wiring according to the wiring diagram and connection diagram, see "5.2 Wiring diagram" on page 58.

2 Check that all connectors are fully plugged-in. All colour codes MUST correspond.

3 Check that no connectors are damaged.

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.

3.2 Refrigerant circuit

3.2.1 Checking procedures

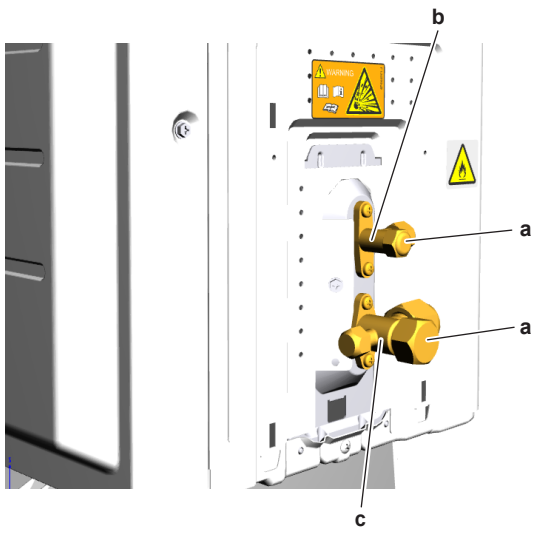
INFORMATION

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

To check if the stop valve is open

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Remove the caps.



a Cap
b Liquid stop valve
c Gas stop valve

2 Check if the stop valve is completely open.

The refrigerant circuit stop valve is open?	Action
Yes	Return to "3.2.1 Checking procedures" on page 53 of the refrigerant circuit and continue with the next procedure.
No	Open the stop valve of the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

To check if the refrigerant circuit is clogged

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Wait for the refrigerant to reach the outdoor temperature.

2 Connect a manometer to the service port.

3 Measure the low pressure as a reference.

4 Turn ON the power of the unit.

5 Activate Cooling via the user interface.

6 Again measure the low pressure.

Low pressure lower than expected?	Then
Yes	Obstruction is possible.
No	Obstruction is less likely.

7 Using a thermometer, check for a temperature drop of minimum 4°C. The obstruction is most likely located where this temperature drop occurs.

Temperature drop found?	Action
Yes	Replace the clogged part, see "3.2.2 Repair procedures" on page 54.
No	Return to "3.2.1 Checking procedures" on page 53 of the refrigerant circuit and continue with the next procedure.

To check if the refrigerant circuit is correctly charged

1 Recuperate all refrigerant from the unit, see "3.2.2 Repair procedures" on page 54.

2 Weigh the recuperated refrigerant.

3 Compare the weight of the recuperated refrigerant with the logbook of the unit. If the weight does NOT match the logbook, the refrigerant circuit is charged incorrectly.

CAUTION

Make sure that the original calculation of refrigerant is correct. (e.g. take into account that due to additional piping, additional refrigerant could be required).

Is the refrigerant circuit charged correctly?	Action
Yes	Return to "3.2.1 Checking procedures" on page 53 of the refrigerant circuit and continue with the next procedure.
No	Add or recuperate refrigerant until correctly charged, see "3.2.2 Repair procedures" on page 54.

To check for non-condensables in the refrigerant circuit

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Wait for the refrigerant to reach the outdoor temperature.

2 Connect a manometer to the service port.

3 Measure the pressure of the refrigerant. The measured pressure MUST be in line with the expected pressure at outdoor temperature.

4 If the measured pressure is higher than the expected pressure (at outdoor temperature), other non-condensables are mixed in the refrigerant.

Any non-condensables found in the refrigerant circuit?	Action
Yes	To replace the refrigerant, see "3.2.2 Repair procedures" on page 54.
No	Return to "3.2.1 Checking procedures" on page 53 of the refrigerant circuit and continue with the next procedure.

To perform a pressure test of the refrigerant circuit

1 Perform a pressure test in line with local legislation.

CAUTION

Perform a pressure test only when leaks are expected.

Is the pressure in the refrigerant circuit correct?	Action
Yes	Return to "3.2.1 Checking procedures" on page 53 of the refrigerant circuit and continue with the next procedure.
No	Replace the leaking part of the refrigerant circuit, see "3.2.2 Repair procedures" on page 54.

Problem solved?

After all checking procedures listed above have been performed:

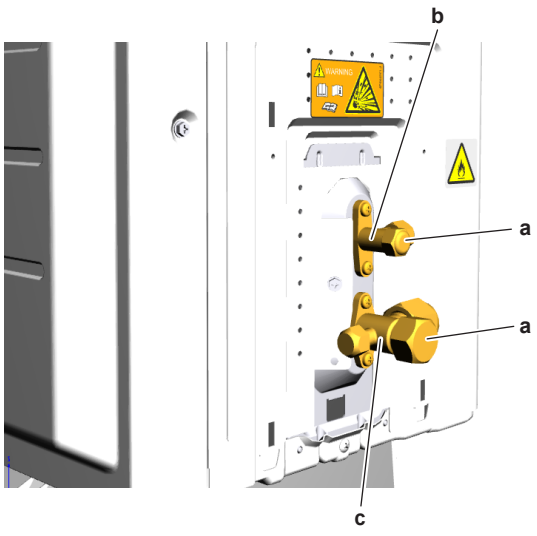
Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.2.2 Repair procedures

To open the stop valve of the refrigerant circuit

Prerequisite: Remove the required plate work, see "2.13 Plate work" on page 40.

1 Remove the caps.



a Cap
b Liquid stop valve
c Gas stop valve

2 Completely open the stop valve 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.

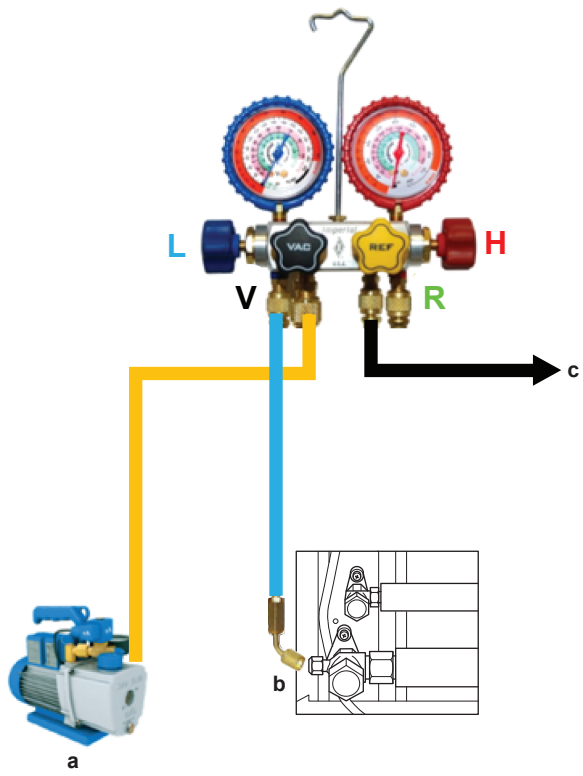
Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.2.1 Checking procedures" on page 53 of the refrigerant circuit and continue with the next procedure.

To recuperate the refrigerant

Prerequisite: Turn OFF the unit via the user interface.

1 Manually open the expansion valve.

2 Connect the vacuum pump, manifold, recovery unit, and refrigerant bottle to the service port of the refrigerant circuit as shown below.



a Vacuum pump
b Connect flexible hose to service port 3 stop valve
c To recovery pump
L Low pressure
H High pressure
V Vacuum
R Refrigerant

3 To add refrigerant, see "3.2.2 Repair procedures" on page 54.

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

To add refrigerant

1 See the installer reference guide for the correct procedure.

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Perform a pressure test of the refrigerant circuit, see "3.2.1 Checking procedures" on page 53.

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.
- Charge non-azeotropic refrigerant (e.g. R410A) always in a liquid state.
- R32 can be charged in gas phase.
- Make sure to use a digital scale (no charging cylinder).
- Execute correct vacuum drying procedure after repair:
  - –0.1 MPa / –760 mm Hg / –750 Torr / –1 bar for at least 1 hour.
  - Connect the unit according to the available service ports.
  - Use related field setting where necessary to open expansion valve / solenoid valve.

To perform refrigerant pump down operation

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

DANGER: RISK OF EXPLOSION

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

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

CAUTION

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

1. Remove the refrigerant connection cover, see "2.13 Plate work" on page 40.
2. Remove the cap from the stop valves.
3. Perform pump down operation, see installer reference guide for the correct procedure.
4. After 5~10 minutes (after only 1~2 minutes in case temperature <–10°C), close the liquid stop valve using a hexagonal wrench.
5. Check the manifold if vacuum is reached. Close the gas stop valve and stop forced cooling operation.

Refrigerant piping repair

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

3.3 External factors

3.3.1 Checking procedures

To check the outdoor temperature

1. The outdoor unit is designed to operate within a temperature range of –25°C and 35°C. If the outdoor temperature is outside this range, the outdoor unit may stop operating.

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

To check for objects that may block the airflow

1. Check for the presence of objects near the indoor unit that may block the airflow.

Is an object found that may block the airflow?	Action
Yes	Remove the object, see "3.3.2 Repair procedures" on page 55.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.3.2 Repair procedures

To remove objects that may block the airflow

1. Remove objects that may block the airflow from the near environment of the indoor unit.

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 Maintenance

4.1 To clean the outdoor unit heat exchanger

1 Straighten the hair fins.

2 Clear the outdoor unit heat exchanger from dust, leaves,… using a fin-comb or compressed air/N_2.

CAUTION

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

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

4.2 To clean the indoor unit heat exchanger

1 Straighten the hair fins.

2 Clear the indoor unit heat exchanger from dust, leaves,… using a fin-comb or compressed air/N_2.

CAUTION

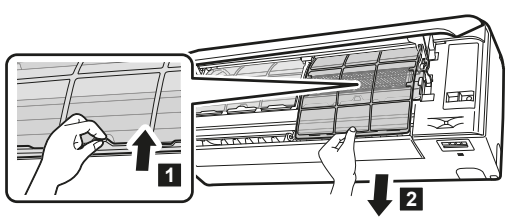
Avoid bending or damaging the hair fins of the indoor unit heat exchanger during the cleaning process.

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

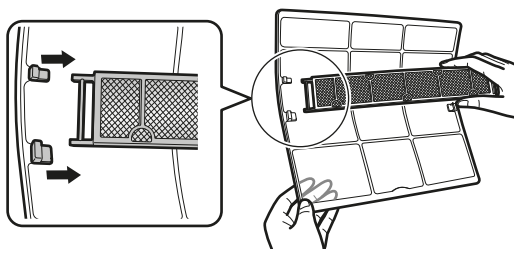
4.3 To clean the air filters

1 Push the tab at the centre of each air filter, then pull it down.

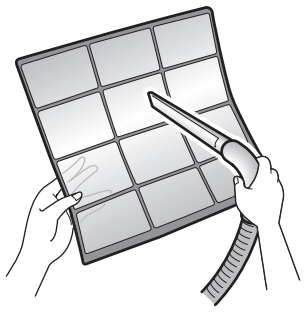
2 Pull out the air filters.



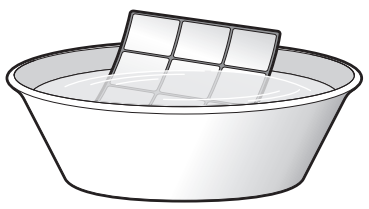
3 Remove the titanium apatite deodorizing filter and silver particle filter from the tabs.



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



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



INFORMATION

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

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 Technical data

5.1 Detailed information setting mode

5.1.1 Detailed information setting mode: Indoor unit

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

5.1.2 Detailed information setting mode: Outdoor unit

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

5.1.3 Detailed information setting mode: Remote controller

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

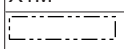
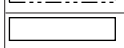
5.2 Wiring diagram

5.2.1 Wiring diagram: Indoor unit

(1) Wiring diagram

English	Translation
Wiring diagram	Wiring diagram
Indoor unit	Indoor unit
Outdoor unit	Outdoor unit
Wi-fi control circuit	Wi-fi control circuit
Streamer unit	Streamer unit
Streamer part	Streamer part
Earth plate	Earth plate
Wireless remote controller	Wireless remote controller

(2) Notes

English	Translation
	Connection
X1M	Main terminal
	Field supply
	PCB
	Protective earth
	Field wire

NOTES:

BLK : Black

YLW : Yellow

RED : Red

BLU : Blue

BRN : Brown

WHT : White

Caution

When the main power is turned off and then back on again, operation will resume automatically.

(3) Legend

A*P	Printed circuit
BS*	Button switch
C*	Capacitor
CN*, S, FG	Connector
E1	Heat exchanger
F1U	Fuse
H*P	Pilot lamp
H1O	Buzzer
IES	Motion detection sensor
K1R	Magnetic relay
M1F	Motor (indoor fan)
M1S, M2S, M3S	Motor (swing flap)
M4S	Motor (front panel)
R1T, R2T	Thermistor
R*V	Varistor
SR	Signal receiver
S1RH	Humidity sensor
TC	Transmission circuit
V1R	Rectifier
X1M	Terminal block
Z*C	Ferrite core

5.2.2 Wiring diagram: Outdoor unit

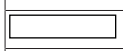
See the internal wiring diagram supplied with the unit (on the inside of the top plate). The abbreviations used are listed below.

Class 20~35

(1) Wiring diagram

English	Translation
Wiring diagram	Wiring diagram
Indoor	Indoor
Outdoor	Outdoor
Condenser	Condenser
Discharge	Discharge

(2) Notes

English	Translation
	Connection
X1M	Main terminal
	Field supply
	PCB
	Protective earth
	Earth
	Field wire

NOTES:

BLK : Black
WHT : White
BRN : Brown
RED : Red
GRN : Green
YLW : Yellow
ORG : Orange
BLU : Blue
GRY : Grey
For the power requirements, refer to the nameplate.

(3) Legend

C*	Capacitor
DB1	Diode bridge
E1, E2, HL1, HN1, S	Connector
FU1, FU2, FU3	Fuse
IPM*	Intelligent power module
L	Live
M1C	Compressor motor
M1F	Fan motor
MR*	Magnetic relay
N	Neutral
PAM	Pulse-amplitude modulation
PCB	Printed circuit board
PS	Switching power supply
Q1L	Overload protector
R1T, R2T, R3T	Thermistor
S2 -S90	Terminal connector
SA1	Surge arrestor
V2, V3, V150	Varistor
X11A	Connector
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Reversing solenoid valve coil
Z*C	Ferrite core
Z*F	Noise filter

5 Technical data

Class 42~50

(1) Wiring diagram

English	Translation
Wiring diagram	Wiring diagram
Indoor	Indoor
Outdoor	Outdoor
Condenser	Condenser
Discharge	Discharge

(2) Notes

English	Translation
⊣	Connection
X1M	Main terminal
– – – – – – –	Field supply
▭	PCB
⏚	Protective earth
⏚	Earth
▪▪▪	Field wire

NOTES:

BLK : Black
WHT : White
BRN : Brown
RED : Red
GRN : Green
YLW : Yellow
ORG : Orange
BLU : Blue
GRY : Grey
For the power requirements, refer to the nameplate.

(3) Legend

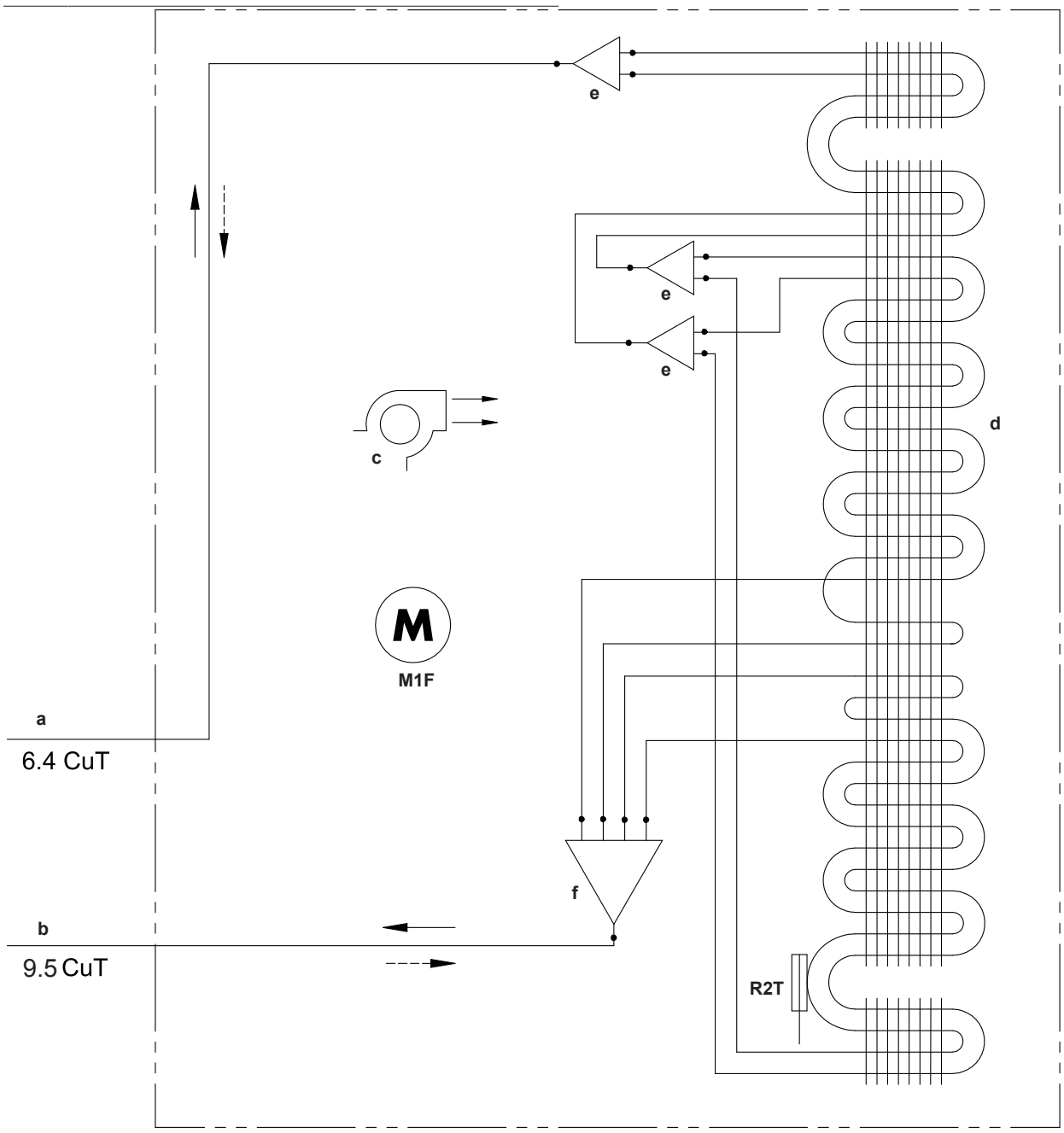
C*	Capacitor
D*	Diode
DB1	Diode bridge
E1, E2, HL1, HN1, S, U, V, W	Connector
FU1, FU2, FU3	Fuse
IPM*	Intelligent power module
L	Live
M1C	Compressor motor
M1F	Fan motor
MR*	Magnetic relay
N	Neutral
N = 4, N= 5	Number of passes
PAM	Pulse-amplitude modulation
PCB	Printed circuit board
PS	Switching power supply
Q1L	Overload protector
R1T, R2T, R3T	Thermistor
S1PH	High pressure switch
S2 -S90	Terminal connector
SA1	Surge arrestor
V1 , V2, V3	Varistor
X11A	Connector
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Reversing solenoid valve coil
Z*C	Ferrite core
Z*F	Noise filter

5.3 Piping diagram

5.3.1 Piping diagram: Indoor unit

INFORMATION

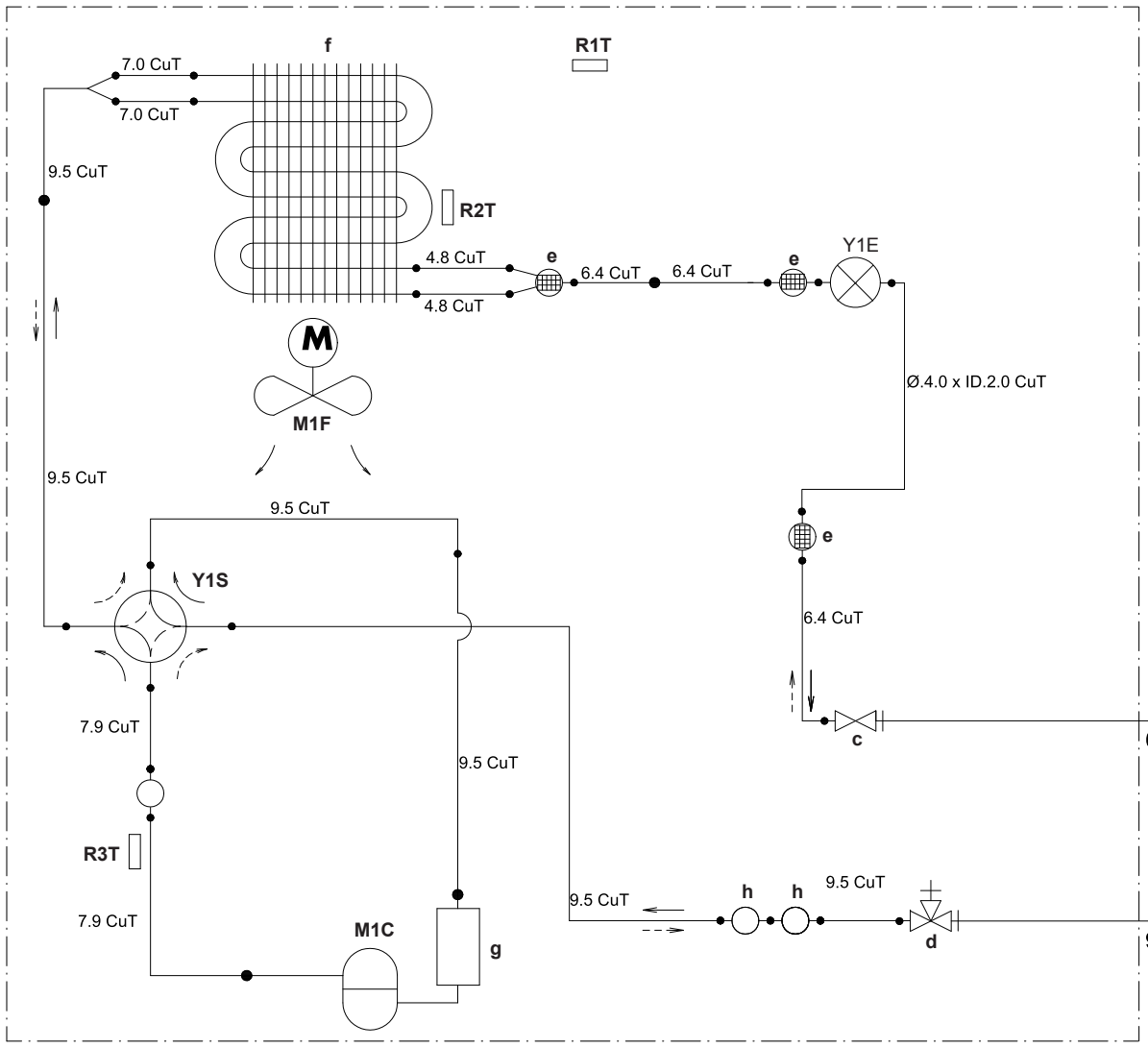
The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.



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

5.3.2 Piping diagram: Outdoor unit

Class 20~35



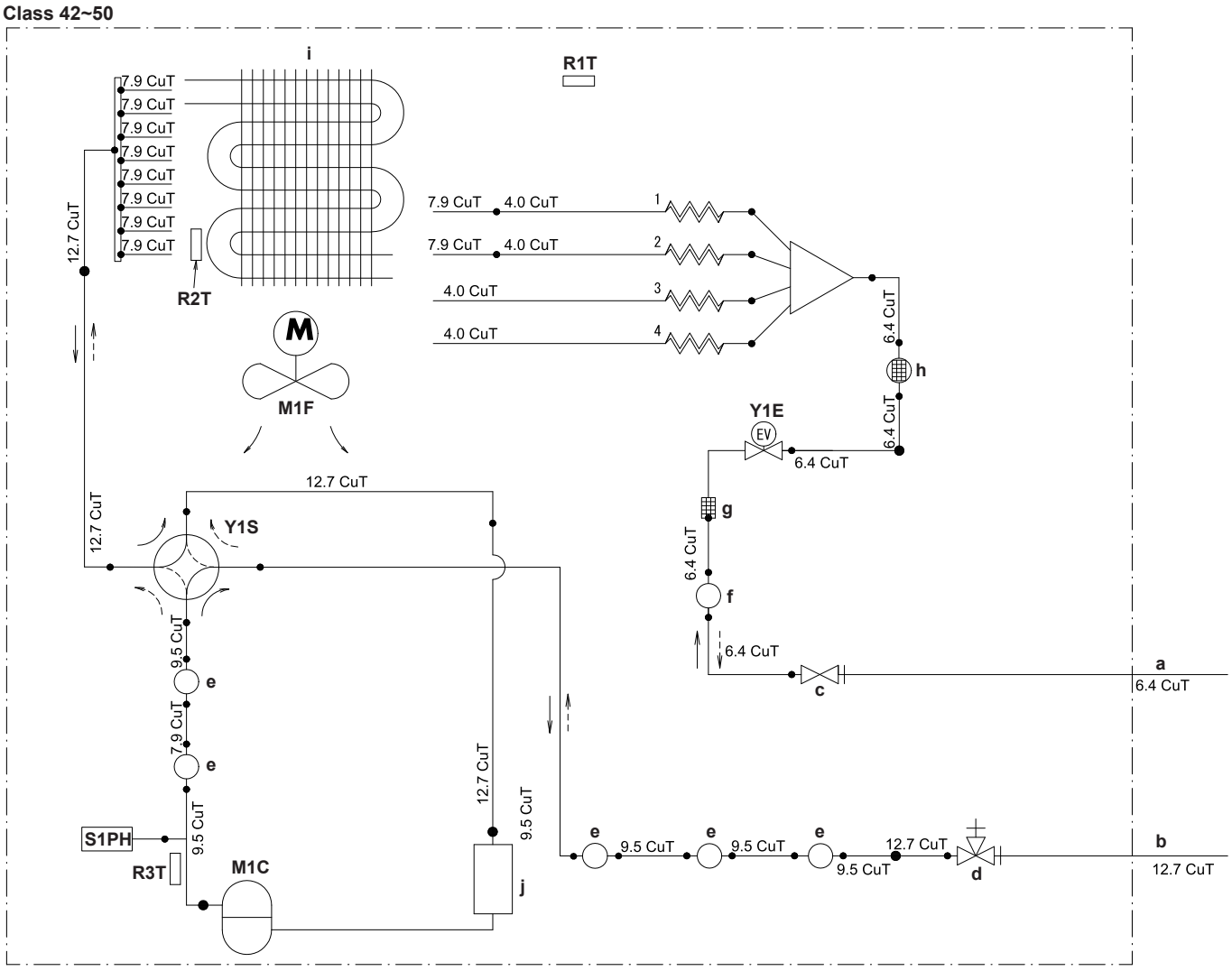
3D091995B

a	Field piping (liquid: Ø6.4 mm flare connection)
b	Field piping (gas: Ø9.5 mm flare connection)
c	Stop valve (liquid)
d	Stop valve with service port (gas)
e	Muffler with filter
f	Heat exchanger
g	Accumulator
h	Muffler
M1C	Compressor
M1F	Fan
R1T	Thermistor (outdoor air)
R2T	Thermistor (heat exchanger)
R3T	Thermistor (compressor discharge)
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4-way valve)(ON: cooling)
--►	Heating
—►	Cooling

INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.

Class 42~50



3D112730

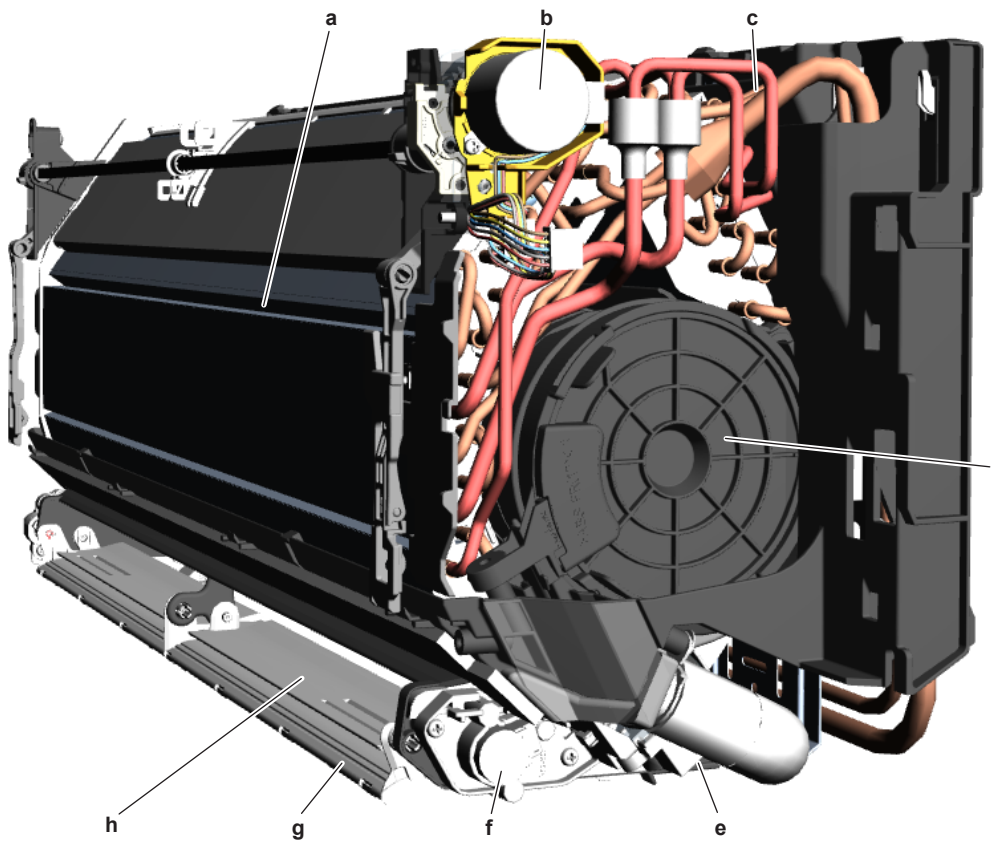
a	Field piping (liquid: Ø6.4 mm flare connection)
b	Field piping (gas: Ø12.7 mm flare connection)
c	Stop valve (liquid)
d	Stop valve (gas)
e	Muffler
f	Gas receiver
g	Filter
h	Muffler with filter
i	Heat exchanger
j	Accumulator
M1C	Compressor
M1F	Fan
R1T	Thermistor (outdoor air)
R2T	Thermistor (heat exchanger)
R3T	Thermistor (compressor discharge)
S1PH	High pressure switch
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4-way valve)(ON: heating)
--►	Heating
——►	Cooling

INFORMATION

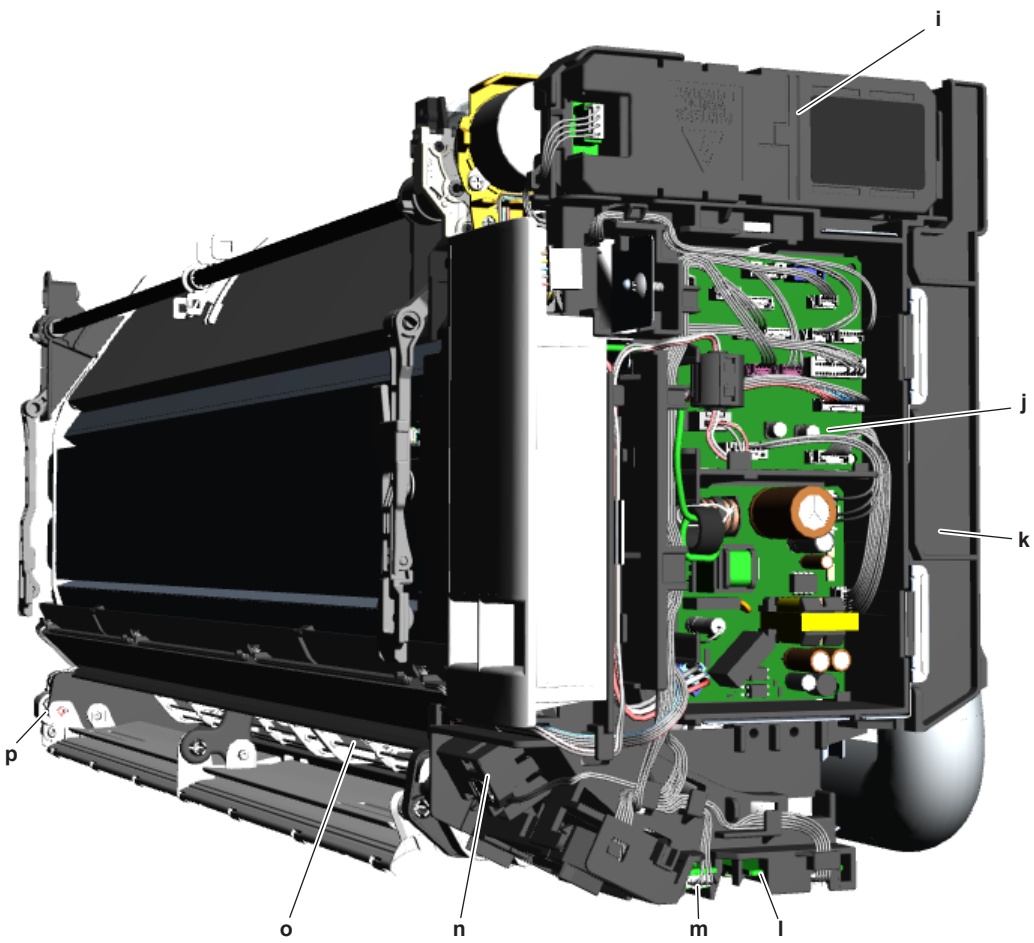
The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.

5.4 Component overview

5.4.1 Component overview: Indoor unit



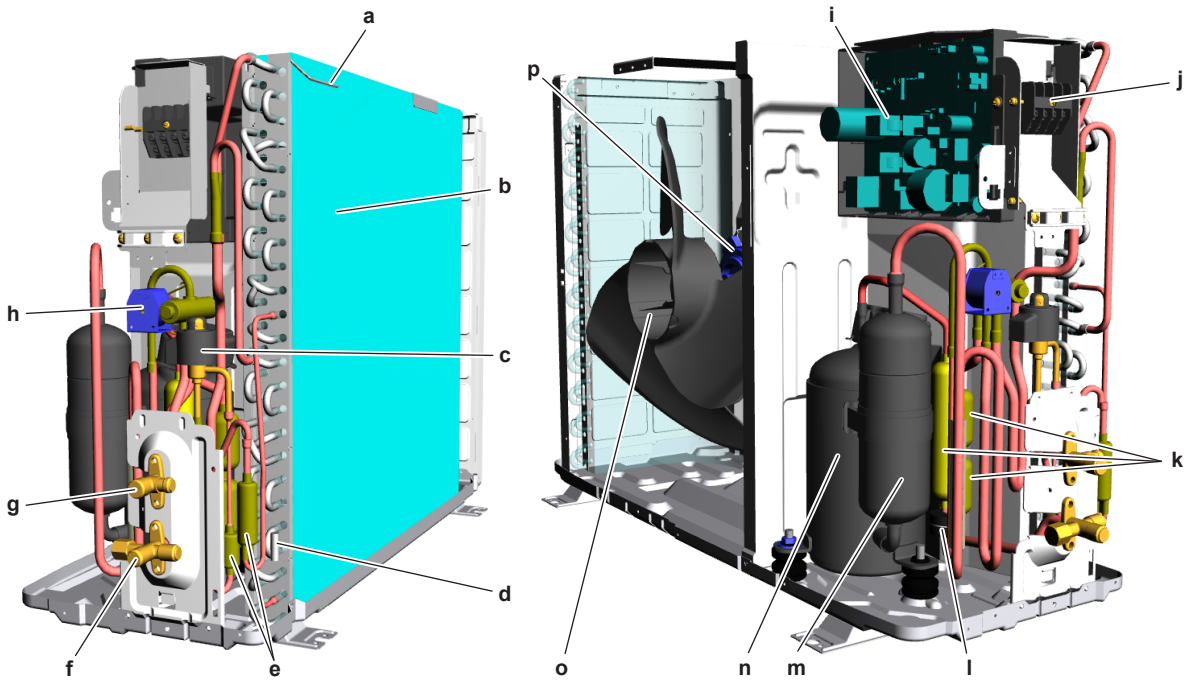
a Heat exchanger
b Front panel motor
C Heat exchanger thermistor R1T
e Swing raster motor
f Secondary swing flap motor
g Main swing flap
h Secondary swing flap



i	Streamer unit
j	Indoor unit PCB
k	Switch box
l	Wifi control PCB
m	Humidity sensor PCB (including room thermistor R2T)
n	Intelligent thermal sensor
o	Swing raster
p	Main swing flap motor

5.4.2 Component overview: Outdoor unit

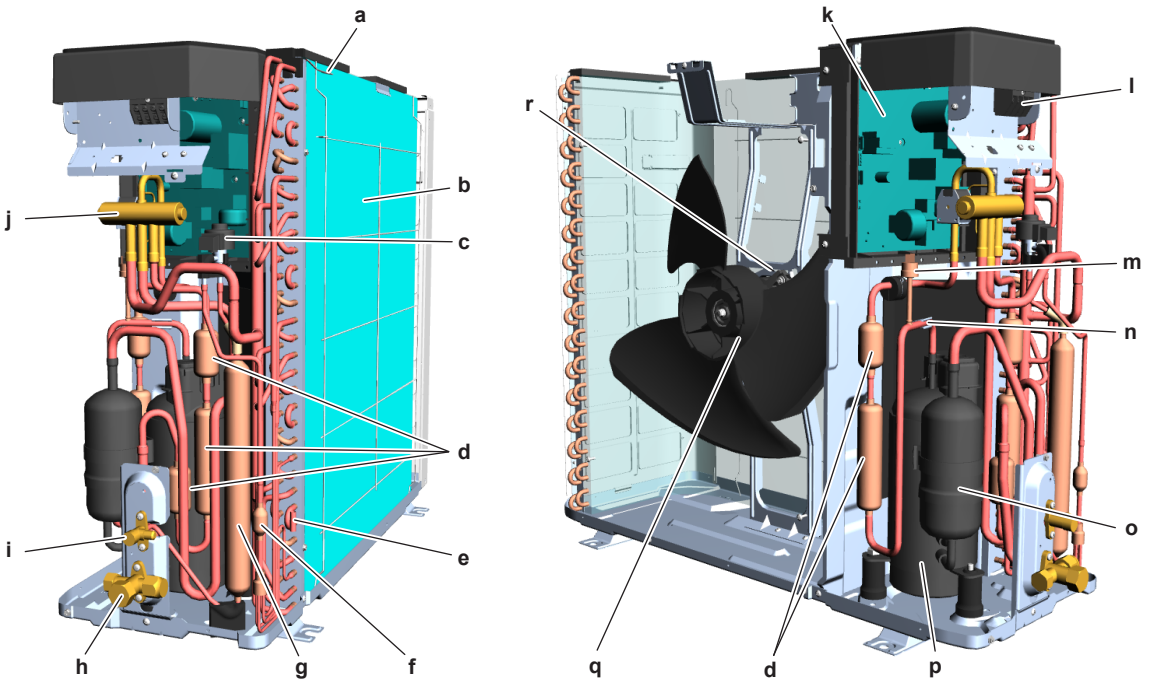
Class 20~35



a	Air thermistor R1T
b	Heat exchanger
c	Expansion valve
d	Heat exchanger thermistor R2T
e	Muffler with filter
f	Liquid service ports
g	Gas service port
h	4-way valve coil

i	Main + inverter PCB
j	Service PCB
k	Muffler
l	Discharge pipe thermistor R3T
m	Accumulator
n	Compressor
o	Fan
p	Fan motor

Class 42~50



a	Air thermistor R1T
b	Heat exchanger
c	Expansion valve
d	Muffler
e	Heat exchanger thermistor R2T
f	Muffler with filter
g	Gas receiver
h	Liquid service ports
i	Gas service port

j	4-way valve coil
k	Main + inverter PCB
l	Service PCB
m	High pressure switch
n	Discharge pipe thermistor R3T
o	Accumulator
p	Compressor
q	Fan
r	Fan motor

5.5 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:
Heat emitters (radiators / under floor heating / fan coils /…):
Hydraulic layout (simple schematic):

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

Provide pictures of the field settings overview (viewable on the user interface).

5.6 Field settings

5.6.1 To control heating only mode

Prerequisite: Stop operation of the unit.

1 Press [Temp ▲], [Temp ▼], and [Mode] simultaneously.
2 Press [Temp ▲].
3 Select SU.
4 Press [Mode] to confirm.
5 Press [Temp ▲].
6 Select 19.
7 Press [Mode] to confirm.
8 Press [Temp ▲].
9 Select 1 (0: factory setting, 1: heating only).
10 Press [Mode] to confirm.

5.6.2 To adjust target set temperature in heating operation

INFORMATION

When there is a big difference between the indoor room temperature and the set temperature in heating mode, adjust the target set temperature field setting.

- Target temperature = remote controller set temperature + 2.5°C. For example:
  Remote controller set temperature = 20°C
  Target temperature = 20°C + 2.5°C = 22.5°C
  Thermo off temperature = 24.5°C

1 Press [Temp ▲], [Temp ▼], and [Mode] simultaneously.
2 Press [Temp ▲].
3 Select SU.
4 Press [Mode] to confirm.
5 Press [Temp ▲].
6 Select 7.
7 Press [Mode] to confirm.
8 Press [Temp ▲].
9 Select the value to set the desired target temperature:
   - 0 = –2,0°C
   - 1 = –1,0°C
   - 2 = 0°C (factory setting)
   - 3 = +1,0°C
   - 4 = +2,0°C
10 Press [Mode] to confirm.

5.6.3 To control the indoor unit fan during thermostat off

1 Press [Temp ▲], [Temp ▼], and [Mode] simultaneously.
2 Press [Temp ▲].
3 Select SU.
4 Press [Mode] to confirm.
5 Press [Temp ▲].
6 Select 4.
7 Press [Mode] to confirm.
8 Press [Temp ▲].
9 Select 0 (0: fan ON, 1: fan OFF).
10 Press [Mode] to confirm.

5.6.4 To change auto restart ON to OFF

INFORMATION

After power failure, the unit will automatically restart (default setting). It is possible to switch OFF auto restart. For example: after a long power failure, generators have to start-up. As there is limited energy and the air conditioners do NOT have priority, it is recommended to switch OFF auto restart.

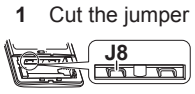
1 Press [Temp ▲], [Temp ▼], and [Mode] simultaneously.
2 Press [Temp ▲].
3 Select SU.
4 Press [Mode] to confirm.
5 Press [Temp ▲].
6 Select 10.
7 Press [Mode] to confirm.
8 Press [Temp ▲].
9 Select 0 (0: auto restart OFF, 1: auto restart ON).
10 Press [Mode] to confirm.

5.6.5 To control cooling mode only

Prerequisite: Turn OFF the unit via the user interface.

Prerequisite: Turn OFF the respective circuit breaker.

1 Cut the jumper J8 on the user interface of the indoor unit.

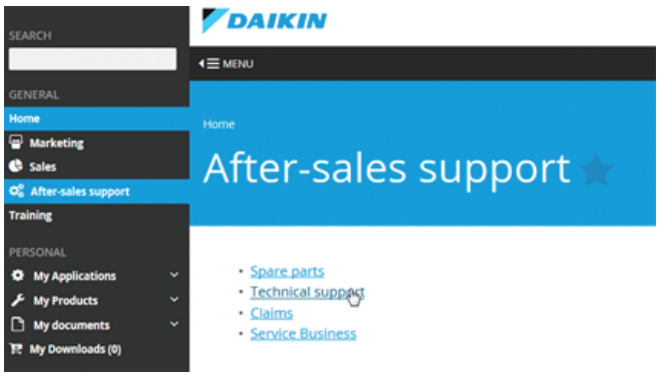


2 Turn on the unit using the respective circuit breaker.
3 Turn ON the unit via the user interface.

5.7 Service tools

1 For an overview of the available service tools, check the Business Portal: http://www.mydaikin.eu.

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.







Copyright 2018 Daikin

DAIKIN EUROPE N.V.
Zandvoordestraat 300, B-8400 Oostende, Belgium

ESIE18-03 2018.09