Refrigerant R410A
INVERTER

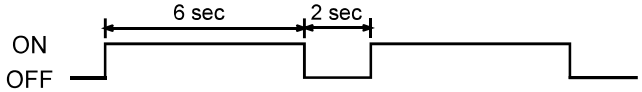
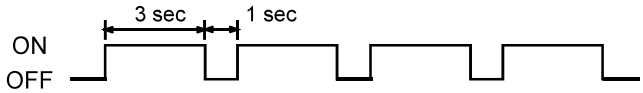
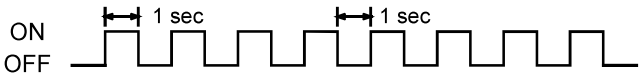
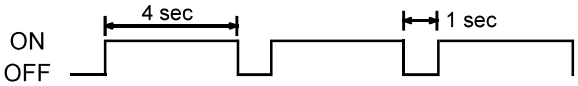
AIRSTAGE™ J-IIS
Variable Refrigerant Flow System

4.TROUBLE SHOOTING

4.TROUBLESHOOTING

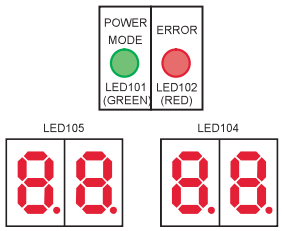
4-1 NORMAL OPERATION

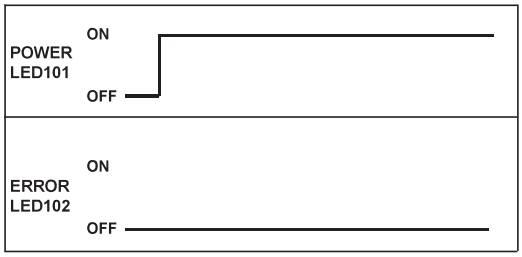
4-1-1 Indoor Unit Display

Indication type	Indication Lamp	Flashing Pattern
Operation	Operation LED	Continuous lighting
Anti Freeze		Continuous lighting(lowered light)
Timer	Timer LED	Continuous lighting(lowered light)
Filter	Filter LED	Continuous lighting
Power Failure	Operation LED	
	Timer LED	
Test Operation	Operation LED Timer LED	
Defrosting Oil Recovery	Operation LED	
Opposite Operation Mode	Timer LED	
Maintenance Mode	Operation LED Timer LED Filter LED	
Location Notification	Operation LED Timer LED Filter LED	 This function is only available on the 2 wires remote controller. Please refer to the installation manual of UTY-RNR*

4-1-2 OUTDOOR UNIT DISPLAY

Indication type	7 Segment LED Pattern	Description
Idling(stop)	Blank	
Cooling Mode	"C" OO "L"	
Heating Mode	"H" EA "T"	
Oil Recovery Operation	"O" IL "R" ECOVERY	Refer to 02-10 page for operation.
Defrost Operation	"D" E "F" ROST	Refer to 02-11 page for operation.
System stooped with Discharge Temp. Protection	"P" ROTECT "1"	<Starting condition> Discharge temp ≧ fixed value: 115°C <Release condition> 3 minutes have elapsed and discharge temperature ≦ 80°C
System stopped with High Pressure Protection	"P" ROTECT "2"	<Starting condition> High pressure ≧ 4.00MPa <Release condition> 5 minutes have elapsed and high pressure ≦ 3.50MPa
System stopped with Low Pressure Protection	"P" ROTECT "3"	<Starting condition> Low pressure ≦ 0.05MPa or low pressure ≦ 0.10MPa continues for 10 minutes <Release condition> 3 minutes have elapsed and low pressure ≧ 0.17MPa
System stopped with compressor Temperature Protection	"P" ROTECT "4"	<Starting condition> Compressor temp ≧ fixed value :110°C <Release condition> 3 minutes have elapsed and discharge temperature ≦ 80°C
Peak Cut Mode	"P" eak "C" ut	
Low Noise Mode	"L" OW "N" OISE	Refer to 02-08 page for operation.
Inverter Compressor Operation Indication	Blinking	ON / OFF — 1 sec / 1 sec





4-2 ABNORMAL OPERATION

4-2-1 Indoor Unit Display

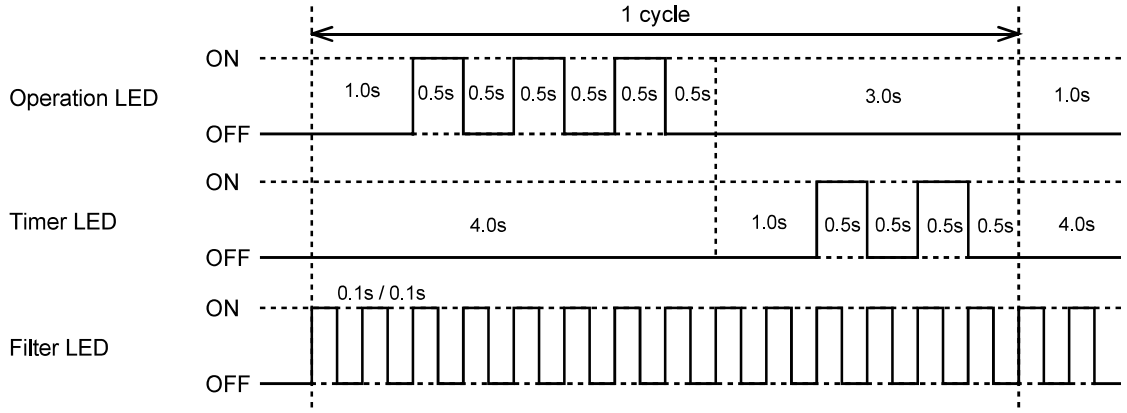
Please refer the flashing pattern as follows.

Error Contents	Operation LED	Timer LED	Filter LED	Trouble shooting
Remote Controller Communication Error	1 times flash	2 times flash	Continuous flash	9
Network Communication Error	1 times flash	4 times flash	Continuous flash	11
Indoor Unit Parallel Communication Error	1 times flash	6 times flash	Continuous flash	10
Indoor Unit Power Frequency Abnormal	3 times flash	1 times flash	Continuous flash	2
Indoor Unit Main PCB Error	3 times flash	2 times flash	Continuous flash	1,3
Room Temperature Sensor Error	4 times flash	1 times flash	Continuous flash	4
Indoor Unit Heat Ex. Sensor Error	4 times flash	2 times flash	Continuous flash	5,6
Indoor Unit Fan Motor Error	5 times flash	1 times flash	Continuous flash	8
Water Drain Abnormal	5 times flash	3 times flash	Continuous flash	7
Outdoor Unit Error	9 times flash	15 times flash	Continuous flash	12 ~ 48

Depending on contents of Outdoor unit, it may not indicate. (Refer to "TROUBLE LEVEL OF SYSTEM")

Error Indication Flashing Pattern

Example : Indoor Unit Main PCB Error (Operation LED : 3 times, Timer LED : 2 times)



Outdoor Air Unit

Error Contents	Error code		Operation LED	Timer LED	Filter LED	Trouble shooting
	Large division	Small division				
Indoor unit power supply error for fan motor 1	3 9	1	3 times flash	9 times flash	Continuous flash	100
Indoor unit power supply error for fan motor 2	3 9	2	3 times flash	9 times flash	Continuous flash	
Indoor unit suction air temp. thermistor error	4 A	1	4 times flash	10 times flash	Continuous flash	101
Indoor unit discharge air temp. thermistor error	4 A	2	4 times flash	10 times flash	Continuous flash	102
Indoor unit fan motor 2 rotation error	5 9	2	5 times flash	9 times flash	Continuous flash	103
No power	-		-	-	-	104

* LED Display when Option receiver unit installed.

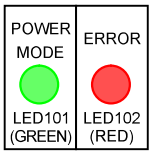
DX-Kit

Error Contents	Error code	Trouble shooting
Remote controller communication error	1 2	9
Network communication error	1 4	11
Peripheral unit communication error	1 6	10
Indoor unit address setting error	2 6	12
Connection unit number error in WRC system	2 9	13
Indoor unit power supply abnormal	3 1	2
Indoor unit main PCB error	3 2	1, 3
Indoor unit (Communication circuit) WRC error	3 A	14
Indoor unit heat ex. temp. thermistor error	4 2	5, 6
Indoor unit air temp. thermistor error	4 A	101, 102
Indoor unit coil 1 (Expansionvalve) error	5 2	105
Indoor unit coil 2 (Expansionvalve) error	5 2	106
Indoor unit water drain abnormal	5 3	7
Outdoor unit miscellaneous error	9 U	12~ 48
DX-Kit Error	J 6	107

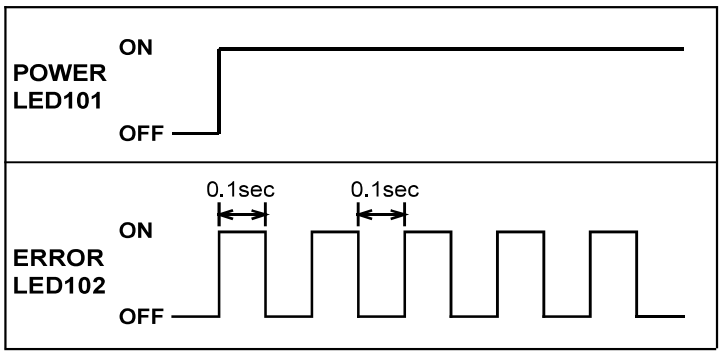
No Error Code	Trouble shooting
Peripheral device - No Power	108
Peripheral device - FAN does not operate	109
Peripheral device - No cooling/ No Heating	110
DX Kit No Power	111

4-2-2 Outdoor Unit Display

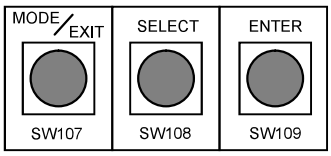
LED display



POWER MODE LED : on
ERROR LED : blink

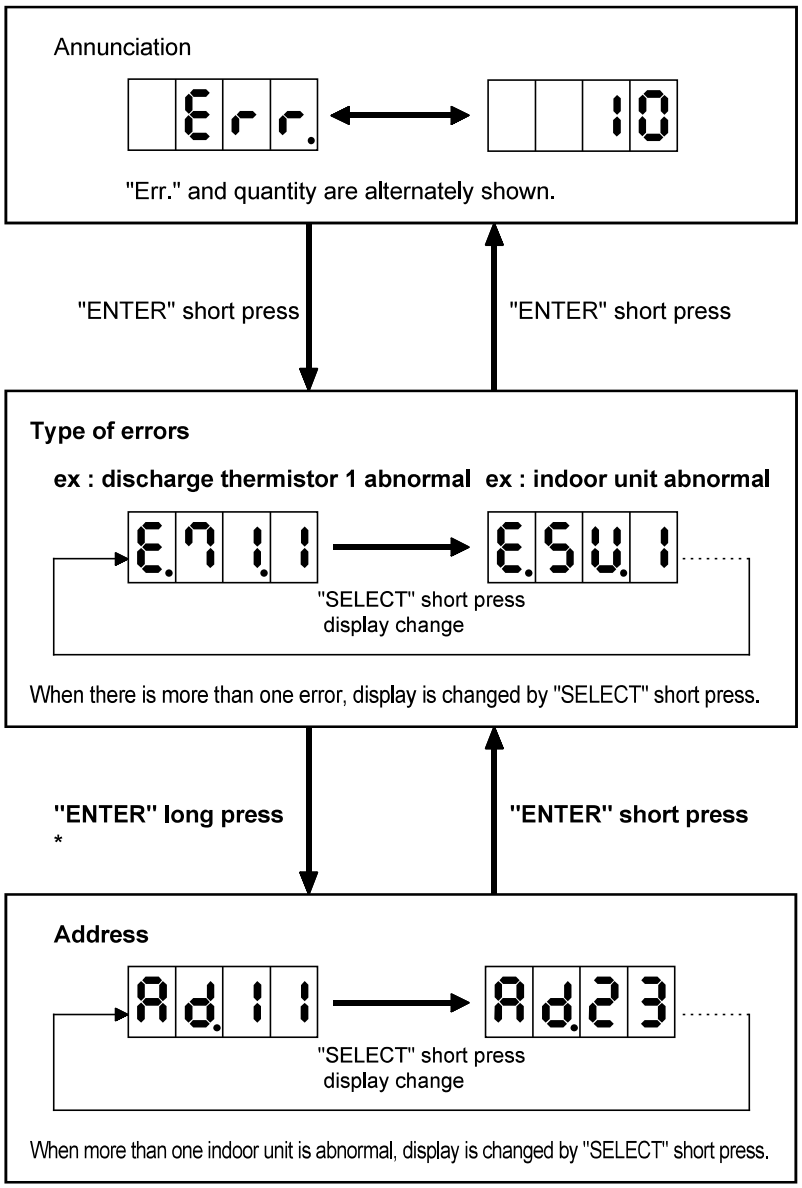


Operation button



ERROR transition

Short press : less than 3 seconds
Long press : more than 3 seconds



If some error is newly occured or resolved during transition, it is reflected after going back to "Annunciation".

*Only in the case of "indoor unit abnormal (E.5U.1)", indoor unit address is shown by ENTER long press.

4-2-3 Error Code List for Outdoor Unit

Error Code	Error Contents	Trouble shooting
1 4.2	Outdoor Unit Network Communication 2 Error	16
1 4.5	The number of Indoor unit shortage	46
2 8.1	Auto Address Setting Error	44
2 8.4	Signal Amplifier Auto Address Setting Error	45
5 U.1	Indoor Unit Error	1 - 15
6 2.3	Outdoor Unit EEPROM Access Error	17
6 2.6	Inverter Communication Error	18
6 2.8	EEPROM Data corrupted Error	19
6 3.1	Inverter Error	20
6 7.2	Inverter PCB short intereuption detection	21
6 9.1	Outdoor Unit transmission PCB Parallel Communication Error	22
7 1.1	Discharge Temp. Sensor Error < TH1 >	23
7 2.1	Compressor Temp. Sensor Error < TH10 >	24
7 3.3	Heat Ex. Liquid pipe Temp. Sensor Error < TH5 >	25
7 4.1	Outdoor Temp. Sensor Error < TH3 >	26
7 5.1	Suction Gas Temp. Sensor Error < TH4 >	27
7 7.1	Heat Sink Temp. Sensor Error < IPM built in >	28
8 4.1	Current Sensor Error	29
8 6.1	Discharge Pressure Sensor Error	30
8 6.3	Suction Pressure Sensor Error	31

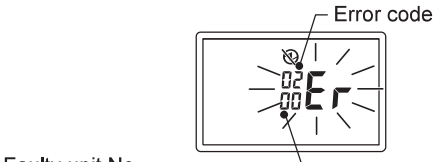
Error Code	Error Contents	Trouble shooting
9 3.1	Inverter Compressor Start Up Error	32
9 4.1	Trip Detection	33
9 5.5	Compressor Motor Loss of Synchronization	34
9 7.1	Outdoor Unit Fan Motor Lock Error (Start up Error)	35
9 7.4	Outdoor unit FAN motor under voltage (Lack of DC Voltage)	36
9 7.5	Outdoor Unit Fan Motor Temperature Abnormal	37
9 A.1	Coil (Expansion Valve) Error	38
A 1.1	Discharge Temperature Abnormal	39
A 3.1	Compressor Temperature Abnormal	40
A 4.1	High Pressure Abnormal	41
A 5.1	Low Pressure Abnormal	42
A C.4	Outdoor unit Heat Sink temp. Abnormal	43

4-2-4 Remote Controller Display

<< *SIMPLE REMOTE CONTROLLER* >> UTY-RSK *

ERROR CODE DISPLAY

If an error occurs, the following display will be shown.
("Er" will appear in the set room temperature display.)
If "Er" is displayed, immediately contact authorized service personnel.

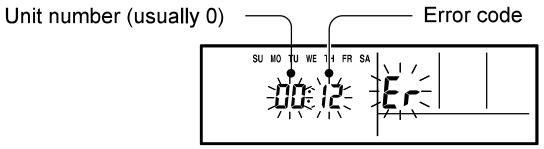


Ex. Error code display

<< *WIRED REMOTE CONTROLLER* 3 wire type>> UTY-RNK *

ERROR CODE DISPLAY

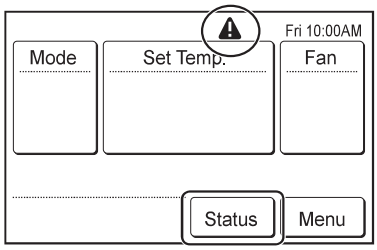
If an error occurs, the following display will be shown.
("Er" will appear in the set room temperature display.)
If "Er" is displayed, immediately contact authorized service personnel.



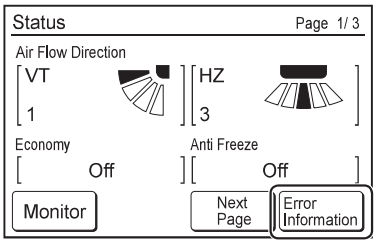
Ex. Error code display

<< *WIRED REMOTE CONTROLLER* 2 wire type>> UTY-RNR *

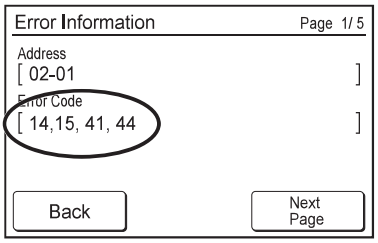
If an error occurred, an error icon appears on the Monitor mode screen.



1. Touch the [Status] on the Monitor mode screen.



2. Touch the [Error Information] on the Status screen.

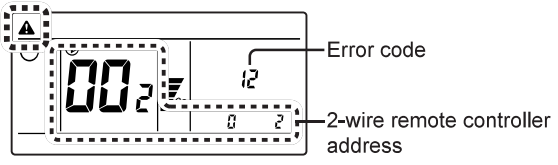


2-digit numbers are corresponding to the error code

<< *WIRED REMOTE CONTROLLER* 2 wire type>> UTY-RLR *

This appears automatically on the display if an error occurs.

If an error occurs, the following display will be shown. ("⚠" will appear in the "Monitor Mode Screen")



Ex. Error code display

4-2-5 Error Code List for Simple and Wired Remote Controller

Error Code	Error Contents	Trouble shooting
1 2	Remote Controller Communication Error	9, 83
1 4	Network Communication Error	11
1 5	Scan Error	84
1 6	Indoor Unit Parallel Communication Error	10
2 6	Address setting Error	12
2 9	Connection unit number error in wired remote controller system	13
3 1	Indoor Unit Power Frequency Abnormal	2
3 2	Indoor Unit Main PCB Error	1, 3
3 A	Indoor unit communication circuit (WRC) error	14

Error Code	Error Contents	Trouble shooting
4 1	Room Temperature Sensor Error	4
4 2	Indoor Unit Heat Ex. Sensor Error	5, 6
5 1	Inddor Unit Fan Motor Error	8
5 2	Inddor Unit Fan Motor Error	8
5 3	Indoor unit Coil (EEV) Error	15
9 U	Outdoor Unit Error	16 ~ 52

4-2-6 TROUBLE LEVEL OF SYSTEM

<< System Condition when Outdoor Unit Error is occurred >>

System Condition	Outdoor unit Condition	Trouble Level	
		1	2
		(1) Not indicated on Indoor Unit. Not indicated on Peripheral Unit. Indicated on Service Tool.	(2) ● Indicated on Indoor Unit. Indicated on Peripheral. Indicated on Service Tool.
System is not stopped compulsorily	>Abnormal >LED indication >Outdoor unit does not stop	(Not available)	> Suction gas Temp sensor error > Outdoor Temp sensor error > Sub-cool heat Ex. gas inlet Temp sensor error > Sub-cool heat Ex. gas outlet Temp sensor error
	>Abnormal >LED indication >Outdoor unit does not stop	>Temporary blackout detection protection (Inverter compressor stop)	> Discharge temperature abnormal (Inverter compressor stops) > Compressor temperature abnormal (Inverter compressor stops) > High pressure switch error (Inverter compressor stops) > High pressure switch error (Constant speed compressor stops) > Discharge Temp sensor error (Inverter compressor stops) > Compressor Temp sensor error (Inverter compressor stop) > Heat sink Temp sensor error (Inverter compressor stop) > Current sensor error (Inverter compressor stop) > High pressure switch error (Inverter compressor stop) > Inverter error (Inverter compressor stop) > Heat sink temperature abnormal (Inverter compressor stop) > Inverter compressor start up error (Inverter compressor stop) > Trip detection (Inverter compressor stops) > Rush current limiting resister Temp rise protection (Inverter compressor stop) > Comp. motor loss of synchronization (Inverter compressor stop) > Inverter communication error (Inverter compressor stop) > Outdoor unit EEPROM access error > Outdoor unit EEPROM data corrupted > Indoor unit number shortage

● **This will not be displayed on indoor unit which Error Report Target(function setting 47 of indoor unit) is set "for administrator".**

System Condition	Outdoor unit Condition	Trouble Level	
		1	2
		(1) Not indicated on Indoor Unit. Not indicated on Peripheral Unit. Indicated on Service Tool.	(2) Indicated on Indoor Unit. Indicated on Peripheral. Indicated on Service Tool.
System is compulsorily stopped.	>Abnormal >LED indication >Outdoor unit stops >Need to repair >secondary accident is possible.	(Not available)	>High pressure abnormal >Low pressure abnormal >Fan motor 1 lock error >Fan motor 2 lock error >Fan motor 1 temp. abnormal >Fan motor 2 temp. abnormal >Heat Ex. liquid Temp sensor error >Discharge pressure sensor error >Suction pressure sensor error >Outdoor unit communication PCB parallel communication error >Outdoor unit network communication 2 error >Lack of DC Voltage >Indoor unit number shortage >SC HE. Liquid Outlet Temp Sensor Error

<Important>

Even if power is reset, the following Error cannot release.
- Discharge temperature abnormal
- Compressor temperature abnormal
- Current sensor error
- Inverter compressor start up error
- Trip detection
- Rush current limiting resister Temp rise protection
- Comp. motor loss of synchronization
- Low pressure abnormal
- Fan motor 1 lock error
- Fan motor 2 lock error

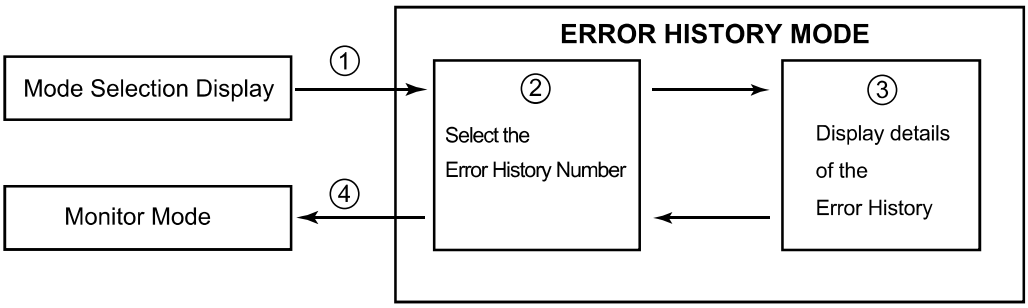
These errors can not be judged without operating the system, and the serviceman would not be able to check it if the system power is turned off before visiting the site for repair.
In Error release, you need to operate push switch and apply "Error reset" (F3-40) after power restart.

4-2-7 ERROR HISTORY MODE

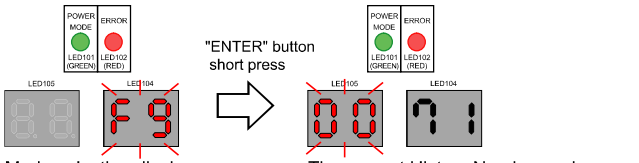
When the abnormality occurred, the J2 system memorizes the history of error codes up to 10 and it can be displayed on 7 segments LED.
It is an effective means to examine abnormality that occurred in the past.

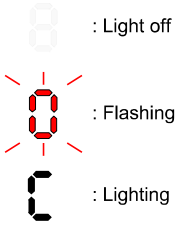
*The error history can be cleared by setting to F3-30.

Refer to the following for the procedure.

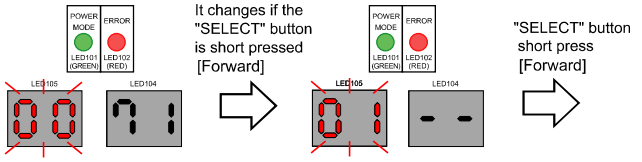


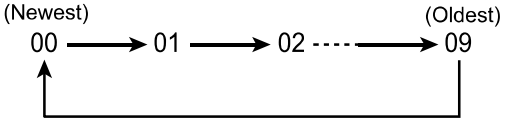
① Change to the Error History Mode from the Mode Selection Display





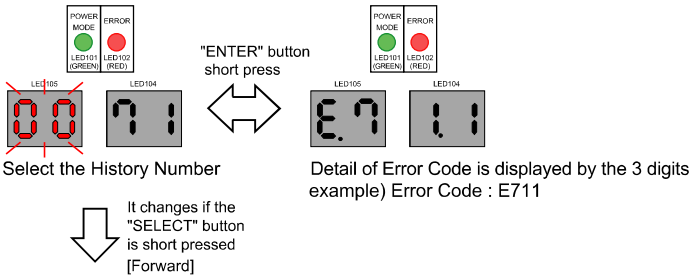
② Select the Error History Number



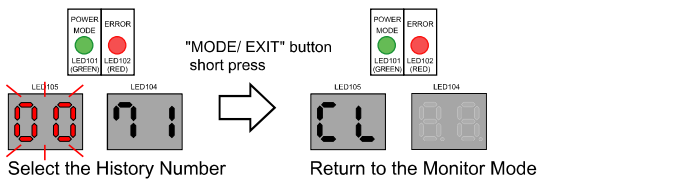


The History Number changes sequentially
from "00" to "09" by the "SELECT" button

③ Check the detail of the Error History



④ End of the Error History mode



4-3 TROUBLE SHOOTING

4-3-1 Trouble shooting with error code (INDOOR UNIT)

Trouble shooting 1 **INDOOR UNIT Error Method:** **Model Information Error** **(Indoor Unit Main PCB Error)**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 2**

Detective Actuators: Indoor Unit Controller PCB Circuit	**Detective details:** 3 continuous failure of read test of EEPROM at Power ON, or Apparent Model information error from EEPROM. Also, Error on Model information upon model information test of EEPROM, or Model information of EEPROM not possible to recover.

Forecast of Cause :

1. Outside cause 2. Connection failure of electric components 3. Controller PCB defective

Check Point 1-1 : Reset Power Supply

Does abnormal LED indication show again?

NO → Check Point 1-2 :
Check outside cause (Voltage drop or noise, etc.)

- Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave). Check the complete insulation of grounding.

YES → Check Point 2 :
Check Indoor Unit electric components

- ☐ Check all connectors (loose connector or incorrect wiring)
- ☐ Check any shortage or corrosion on PCB.

OK → Check Point 3 : Replace Controller PCB

▶ **Change Controller PCB and set up the original address.**

Note : EEPROM

EEPROM(Electronically Erasable and Programmable Read Only Memory) is a non-volatile memory which keeps memorized information even if power is turned off. It can change the contents electronically.
To change the contents, it uses higher voltage than normal, and it can not change a partial contents. (Rewriting shall be done upon erasing the all contents.)
There is a limit in a number of rewriting.

Trouble shooting 2 **INDOOR UNIT Error Method:** **Power Frequency Abnormal**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 1 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 1**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit	When 5 continuous failures occurred at Power frequency test.

Forecast of Cause : 1. Outside cause 2. Installation failure 3. Defective connection of electric components 4.Controller PCB defective

Check Point 1-1 : Reset Power Supply

Does abnormal LED indication show again?

NO

YES

Check Point 1-2 :
Check outside cause (Voltage drop or noise, etc.)

- Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave). Check the complete insulation of grounding.
- Wrong power supply installation ----- Check if the power supply frequency is stable or not.

Check Point 2 : Check Installation condition

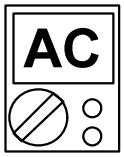
- ☐ Check Cable/Breaker
- ☐ Check loose or removed connection

>> If Installation defect is found, correct it by referring to Installation Manual.

OK

Check Point 3 : Check connection of electric components

- ☐ Check power supply voltage (AC230V between Indoor unit terminal 1 and 2)
- ☐ Check connection of Connector (any lose connector or incorrect wiring)
- ☐ Check any shortage or corrosion on PCB.



OK

Check Point 4 : Replace Controller PCB

► **Change Controller PCB and set up the original address.**

Trouble shooting 3 **INDOOR UNIT Error Method:** **EEPROM Access Abnormal** **(Indoor Unit Main PCB Error)**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 2**
Detective Actuators: Indoor Unit Controller PCB Circuit	**Detective details:** When 3 continuous failure occurred on read test of EEPROM.

Forecast of Cause : 1. Outside cause 2. Defective connection of electric component 3. Controller PCB defective

Check Point 1-1 : Reset Power Supply

Does abnormal LED indication show again?

NO

YES

Check Point 2 :
Check Indoor Unit electric components

- ☐ Check all connectors (loose connector or incorrect wiring)
- ☐ Check any shortage or corrosion on PCB.

OK

Check Point 3 : Replace Controller PCB

▶ **Change Controller PCB and set up the original address.**

Check Point 1-2 :
Check outside cause (Voltage drop or noise, etc.)

- Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave). Check the complete insulation of grounding.

Trouble shooting 4 **INDOOR UNIT Error Method:** **Room Temperature Sensor Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 4 times Flash, Timer LED 1 Times Flash, Filter LED Continuous Flash.** **Error Code : 4 1**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit Indoor Temperature Thermistor	When Indoor thermistor open or shortage is detected at power ON.

Forecast of Cause :

1. Connector defective connection 2. Thermistor defective 3. Controller PCB defective

Check Point 1 : Check connection of Connector

- ☐ Check if connector is loose or removed
- ☐ Check erroneous connection
- ☐ Check if thermistor cable is open

>>Reset Power when reinstalling due to removed connector or incorrect wiring.

OK

Check Point 2 : Remove connector and check Thermistor resistance value

Thermistor Characteristics (Rough value)

Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	33.6	25.9	20.2	15.8	12.5	10.0	8.0	6.5

Temperature (°C)	40	45
Resistance Value (kΩ)	5.3	4.3

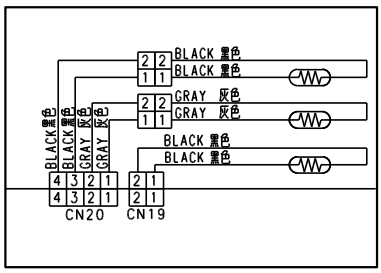
If Thermistor is either open or shorted, replace it and reset the power.

OK

Check Point 3 : Check voltage of Controller PCB (DC5.0V)

Make sure circuit diagram of each indoor unit and check terminal voltage at Thermistor (DC5.0V)

・Duct Schematic Diagram (Connector connection)

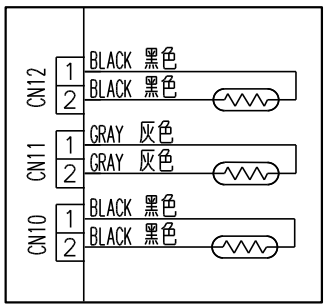


H/E Inlet Thermistor
(CN20 Wire:Black)

H/E Outlet Thermistor
(CN20 Wire:Gray)

Room Temp. Thermistor
(CN19 Wire:Black)

・Small size Wall mount Schematic Diagram(Direct soldering to PCB)



H/E Intlet Thermistor
(CN12 Wire:Black)

H/E Outlet Thermistor
(CN11 Wire:Gray)

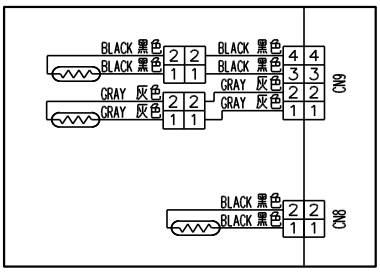
Room Temp. Thermistor
(CN10 Wire:Black)

・Cassette Schematic Diagram (Connector connection)

H/E Inlet Thermistor
(CN9 Wire:Black)

H/E Outlet Thermistor
(CN9 Wire:Gray)

Room Temp. Thermistor
(CN8 Wire:Black)

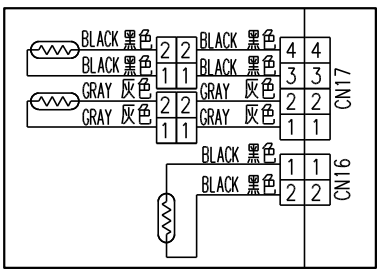


・Wall mount Schematic Diagram (Connector connection)

H/E Inlet Thermistor
(CN17 Wire:Black)

H/E Outlet Thermistor
(CN17Wire:Gray)

Room Temp. Thermistor
(CN16 Wire:Black)



If the voltage does not appear, replace Controller PCB and set up the original address.

Trouble shooting 5 **INDOOR UNIT Error Method:** **Heat Exchanger Inlet Sensor Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 4 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 4 2**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit Heat Exchanger Inlet Thermistor	When open or shorted Heat Exchanger Inlet Thermistor is detected at Power ON.

Forecast of Cause :

1. Connector defective connection 2. Thermistor defective 3. Controller PCB defective

Check Point 1 : Check connection of Connector

- ☐ Check if connector is loose or removed
- ☐ Check erroneous connection
- ☐ Check if thermistor cable is open

>>Reset Power when reinstalling due to removed connector or incorrect wiring.

OK

Check Point 2 : Remove connector and check Thermistor resistance value

Thermistor Characteristics (Rough value)

Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	168.6	129.8	100.9	79.1	62.5	49.8	40.0	32.4

Temperature (°C)	40	45	50	55	60
Resistance Value (kΩ)	26.3	21.6	17.8	14.8	12.3

If Thermistor is either open or shorted, replace it and reset the power.

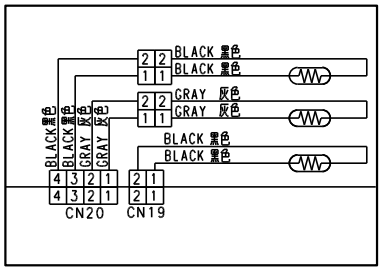
OK

DC

Check Point 3 : Check voltage of Controller PCB (DC5.0V)

Make sure circuit diagram of each indoor unit and check terminal voltage at Thermistor (DC5.0V)

・Duct Schematic Diagram (Connector connection)

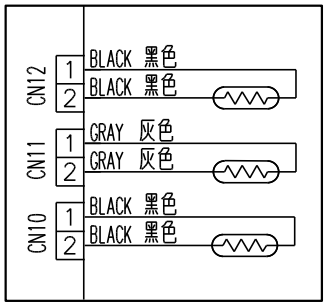


H/E Inlet Thermistor (CN20 Wire:Black)

H/E Outlet Thermistor (CN20 Wire:Gray)

Room Temp. Thermistor (CN19 Wire:Black)

・Small size Wall mount Schematic Diagram(Direct soldering to PCB)



H/E Intlet Thermistor (CN12 Wire:Black)

H/E Outlet Thermistor (CN11 Wire:Gray)

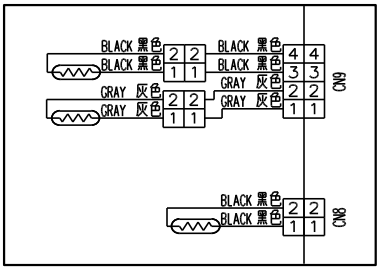
Room Temp. Thermistor (CN10 Wire:Black)

・Cassette Schematic Diagram (Connector connection)

H/E Inlet Thermistor (CN9 Wire:Black)

H/E Outlet Thermistor (CN9 Wire:Gray)

Room Temp. Thermistor (CN8 Wire:Black)

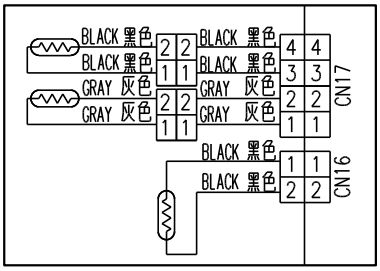


・Wall mount Schematic Diagram (Connector connection)

H/E Inlet Thermistor (CN17 Wire:Black)

H/E Outlet Thermistor (CN17Wire:Gray)

Room Temp. Thermistor (CN16 Wire:Black)



If the voltage does not appear, replace Controller PCB and set up the original address.

Trouble shooting 6 **INDOOR UNIT Error Method:** **Heat Exchanger Outlet Sensor Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 4 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 4 2**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit Heat Exchanger Outlet Thermistor	When open or shorted Heat Exchanger outlet Thermistor is detected at Power ON.

Forecast of Cause :

1. Connector defective connection 2.Thermistor defective 3.Controller PCB defective

Check Point 1 : Check connection of Connector

- ■ Check if connector is loose or removed
- ■ Check erroneous connection
- ■ Check if thermistor cable is open

>>Reset Power when reinstalling due to removed connector or incorrect wiring.

OK

Check Point 2 : Remove connector and check Thermistor resistance value

Thermistor Characteristics (Rough value)

Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	168.6	129.8	100.9	79.1	62.5	49.8	40.0	32.4

Temperature (°C)	40	45	50	55	60
Resistance Value (kΩ)	26.3	21.6	17.8	14.8	12.3

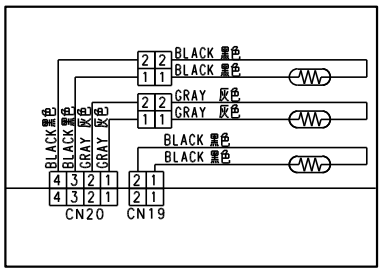
If Thermistor is either open or shorted, replace it and reset the power.

OK

Check Point 3 : Check voltage of Controller PCB (DC5.0V)

Make sure circuit diagram of each indoor unit and check terminal voltage at Thermistor (DC5.0V)

・Duct Schematic Diagram (Connector connection)

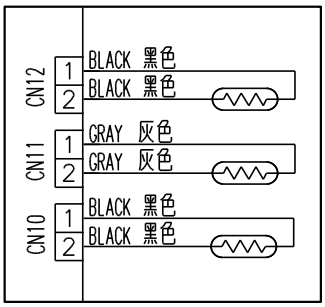


H/E Inlet Thermistor (CN20 Wire:Black)

H/E Outlet Thermistor (CN20 Wire:Gray)

Room Temp. Thermistor (CN19 Wire:Black)

・Small size Wall mount Schematic Diagram(Direct soldering to PCB)



H/E Intlet Thermistor (CN12 Wire:Black)

H/E Outlet Thermistor (CN11 Wire:Gray)

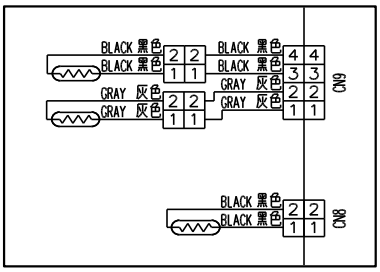
Room Temp. Thermistor (CN10 Wire:Black)

・Cassette Schematic Diagram (Connector connection)

H/E Inlet Thermistor (CN9 Wire:Black)

H/E Outlet Thermistor (CN9 Wire:Gray)

Room Temp. Thermistor (CN8 Wire:Black)

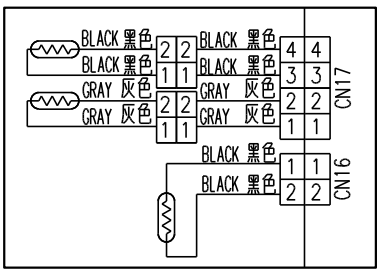


・Wall mount Schematic Diagram (Connector connection)

H/E Inlet Thermistor (CN17 Wire:Black)

H/E Outlet Thermistor (CN17Wire:Gray)

Room Temp. Thermistor (CN16 Wire:Black)



If the voltage does not appear, replace Controller PCB and set up the original address

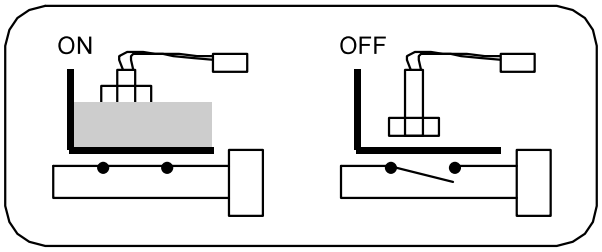
Trouble shooting 7 **INDOOR UNIT Error Method:** **Water Drain Abnormal**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 5 times Flash, Timer LED 3 Times Flash, Filter LED Continuous Flash.** **Error Code : 5 3**
Detective Actuators: Indoor Unit Controller PCB Circuit Float Switch	**Detective details:** When Float switch is ON for more than 3 minutes.

Forecast of Cause :

1. Float switch defective 2. Shorted connector/wire 3. Controller PCB defective 4. Drain pump defective

Check Point 1 : Check Float Switch

- ☐ Check operation of float switch. (any blocking by dust, etc.)
- ☐ Remove Float switch and check ON/OFF switching operation by using a meter.
  >>If Float switch is defective, replace it.



OK

Check Point 2 : Check Connector (CNA05) / Wire

- ☐ Check loose contact of CNA05 /shorted wire (pinched wire).
  >>Replace Float switch if the wire is abnormal

OK

Check Point 3 : Check Controller PCB

- ▶ **If Check Point 1 & 2 do not improve the symptom, change Controller PCB and set up the original address.**

Attention!!
Small size wall mount type does not have a float switch. In this case, replace Controller PCB and set up the original address. Please refer to.

Trouble shooting 8 **INDOOR UNIT Error Method:** **Indoor Unit Fan Motor Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 5 times Flash, Timer LED 1 Times Flash, Filter LED Continuous Flash.** **Error Code : 5 1**
Detective Actuators: Indoor Unit Controller PCB Circuit Indoor Fan Motor	**Detective details:** When Indoor fan control is either phase control or DC control and rotation feed back control is ON, the feed back rotation value becomes 0 and lasts for more than 1 minute at motor operation condition. Or, the feed back rotation value continues at 1/3 of target value for more than 1 minute.

Forecast of Cause : 1. Fan rotation failure 2. Fan motor winding open 3. Motor protection by surrounding temp. increase 4.Capacitor failure 5. Control PCB failure

Check Point 1 : Check rotation of Fan

- ☐ Rotate the fan by hand when operation is off.
  (Check if fan is caught, dropped off or locked motor)
  >>If Fan or Bearing is abnormal, replace it.

OK

Check Point 2 : Check Motor winding

- ☐ Check Indoor Fan motor
  Refer to the Service parts information.

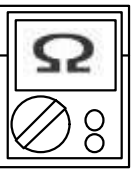
OK

Check Point 3 : Check ambient temp. around motor

- ☐ Check excessively high temperature around the motor.
  (If there is any surrounding equipment that causes heat)
  >>Upon the temperature coming down, restart operation.

OK

Check Point 4 : Check Motor Capacitor



- ☐ Check continuity of motor capacitor
  >>If it is shorted, replace the capacitor.

OK

Check Point 5 : Replace Controller PCB

- ☐ Change Controller PCB and set up the original address.

Attention!!
In case of Duct type, replace Controller PCB and set up the original address, since it is a tapping control.

Trouble shooting 9 **INDOOR UNIT Error Method:** **Wired Remote Controller Communication Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 1 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 1 2**

Detective Actuators:	**Detective details:**
Indoor unit controller PCB circuit Wired Remote Control (3 wire / 2 wire type)	Upon receiving the signal more than 1 time from Wired Remote or other Indoor unit, but the same signal has not been received more than 1 minute.

Forecast of Cause :

1. Terminal connection abnormal 2. Wired Remote Control failure 3. Controller PCB failure

Check Point 1 : Check the connection of terminal

After turning off the power, check & correct the followings.

- Indoor Unit - Check the connection of terminal between remote control and Indoor unit, or between Indoor units, and check if there is a disconnection or short of the cable.

OK

Check Point 2 : Check Remote and Controller PCB

- Check terminal voltage of controller PCB Connector CNC01. (Power supply for Remote)
  If DC12V, Remote Control failure (Controller PCB is OK) >>> Replace Remote
  If DC0V, Controller PCB failure (Remote is OK) >>> Replac e C o ntroller PCB
- **In case of re-installation is done due to removed connector or incorrect wiring,turn on the power again.**

Trouble shooting 9 **INDOOR UNIT Error Method:** **Wired Remote Controller Token Error**	**Indicate or Display:** **Indoor Unit : Operation LED 1 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Outdoor Unit : E.5 U.1, Error LED Continuous Flash.** **Remote Controller : 1 2**

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB circuit Wired Remote Control (3 wire type)	More than 1 time of Token (Communication between wired remote controllers) is received, but it was not received more than 1 minute.

Forecast of Cause :

1. Terminal connection abnormal 2. Mis-setting 3. Wired Remote Control failure 4. Controller PCB failure

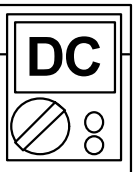
Check Point 1 : Check the connection of terminal

After turning off the power, check & correct the followings.

- Indoor Unit - Check the connection of terminal between remote control and Indoor unit, or between Indoor units, and check if there is a disconnection or short of the cable.

OK

Check Point 2 : Check Remote and Controller PCB



- Check terminal voltage of controller PCB Connector CNC01. (Power supply for Remote)
  If DC12V, Remote Control failure (Controller PCB is OK) >>> Replace Remote
  If DC0V, Controller PCB failure (Remote is OK) >>> Replac e C o ntroller PCB
- **In case of re-installation is done due to removed connector or incorrect wiring,turn on the power again.**

Trouble shooting 10 **INDOOR UNIT Error Method:** Indoor Unit Parallel Communication Error	**Indicate or Display:** Outdoor Unit : E.1 4.1, 1 4.2 * Indoor Unit : Operation LED 1 times Flash, Timer LED 6 Times Flash, Filter LED Continuous Flash. Error Code : 1 6 *

*** Outdoor unit indicates 1 4.1 or 14.2 (No communication from Indoor unit)**
Peripheral device indicates 1 6 (1 6.4 Error)
Service Tool indicates 14.3 (Missing Error Indoor unit)

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB circuit Indoor unit Communication PCB	When Parallel communication error (Communication reset occurs continuously more than specified times) is detected.

Forecast of Cause :

1. Connection failure 2. Outside cause 3. Communication PCB failure 4. Controller PCB failure

Check Point 1-1 : Reset the power

Does LED error indication reappear?

NO

YES

Check Point 2 : Check Connection

☐ Check if Indoor Communication PCB is removed.

OK

Check Point 3 : Replace Communication PCB

▶ **Replace Communication PCB**
(If the symptom does not change, replace Controller PCB and set up the original address.)

Check Point 1-2 : Check outside cause such as noise

☐ Check the complete insulation of the grounding.
☐ Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).

Trouble shooting 11 INDOOR UNIT Error Method: Network Communication Error	Indicate or Display: Outdoor Unit : E.1 4. 1 / 1 4. 2 * Indoor Unit : Operation LED 1 times Flash, Timer LED 4 Times Flash, Filter LED Continuous Flash. Error Code : 1 4 / 1 6 / 9 U / 14.1 / 14.2 / 14.3 *

*** Outdoor unit indicates 1 4.1 or 1 4.2 (No communication from 14.3 Error Indoor unit)**
Peripheral device indicates 1 4 or 1 6

Detective Actuators:	Detective details:
Indoor unit Controller PCB circuit Indoor unit Communication PCB	When the cut-off of network communication is detected (more than 90 seconds passed since the last receipt of Outdoor unit signal).

Forecast of Cause :

1. Connection failure 2. Outside cause 3. Communication PCB failure 4. Controller PCB failure

Check Point 1 : Check the connection

After turning off the power, check and correct followings.

- ☐ Is Indoor Communication PCB loose?
- ☐ Check loose or removed connection of communication line between Indoor and Outdoor unit.
- ☐ When the signal amplifier is connected , is it failure of signal amplifier?

OK

Check Point 2 : Check if any outside cause such as voltage drop or noise

- Instant voltage drop ----- Check if there is any electric equipment with a large load within the same circuit.
- Momentary power failure ----- Check contact failure or leak current in power supply circuit
  >>Check Outdoor Unit as well.
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave). And check the complete insulation of grounding.
  >>If the same symptom does not reappear after resetting the power, possibility of noise is high.

OK

Check Point 3 : Check Communication PCB and Controller PCB

- ☐ If some of Indoor units have errors, replace Communication PCB of the Indoor units that have the error.
  >>If the symptom does not change, replace Indoor unit Controller PCB.
- ☐ If all the Indoor units have error, check if the Outdoor Unit Communication PCB has a loose connection.
  >>If the symptom does not change, replace Outdoor unit Communication PCB (Replace Controller PCB if it does not change).

Trouble shooting 12 **INDOOR UNIT Error Method:** **Address setting Error in Wired remote contorller system**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 2 times Flash, Timer LED 6 Times Flash, Filter LED Continuous Flash.** **Error Code : 2 6**
Detective Actuators: Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	**Detective details:** When the address number set by auto setting and manual setting are mixed in one RC group. When the duplicated address number exists in one RC group.

Forecast of Cause : 1. Wrong wiring of RCgroup 2. Wrong remote address setting 3. Indoor unit controller PCB failure 4. Remote controller failure

Check Point 1 : Wire installation

- ☐ Wrong wire connection in RCgroup (Please refer to the installation manual)

Check Point 2 : Wrong RCgroup setting

- ☐ The given address number by auto setting (00) and the manual set number (Except 00) were not existing in one RCG.
- ☐ The remote controller address setting by U.I. were not existing same address.
- ☐ The duplicated address number is not existing in one RCgroup

Check Point 3 : Check Indoor unit controller PCB

- ☐ Check if controller PCB damage
- ☐ Change controller PCB and check the Error after setting remote controller address

Trouble shooting 13 **INDOOR UNIT Error Method:** **Connection unit number error in Wired remote controller system**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 2 times Flash, Timer LED 9 Times Flash, Filter LED Continuous Flash.** **Error Code : 2 9**
Detective Actuators: Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	**Detective details:** When the number of connecting indoor units are out of specified rule.

Forecast of Cause :

1. Wrong wiring/ Number of I.U, RC in RCgroup 2. Indoor unit controller PCB defective

Check Point 1 : Wire installation

- ☐ Wrong number of connceting indoor unit

Check Point 2 : Check Indoor unit controller PCB

- ☐ Check if controller PCB damage
- ☐ Change controller PCB and check the Error after setting remote controller address

Trouble shooting 14 **INDOOR UNIT Error Method:** **Indoor unit communication circuit (WRC) error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 10 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 A**
Detective Actuators: Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	**Detective details:** When the indoor unit(s) detects the configuration of RCG abnormal or the indoor unit detects lack of primaly -remote controller.

Forecast of Cause : 1. Terminal connection abnormal 2. Wired remote controller failure
3. Indoor unit controller PCB defective

Check Point 1 : Check the connection of terminal

After turning off the power supply, check & correct the followings

- Indoor unit - Check the connection of terminal between remote control and indoor unit, or between Indoor units and check if there is a disconnection or short of the cable

Check Point 2 , 3: Check Indoor unit controller PCB

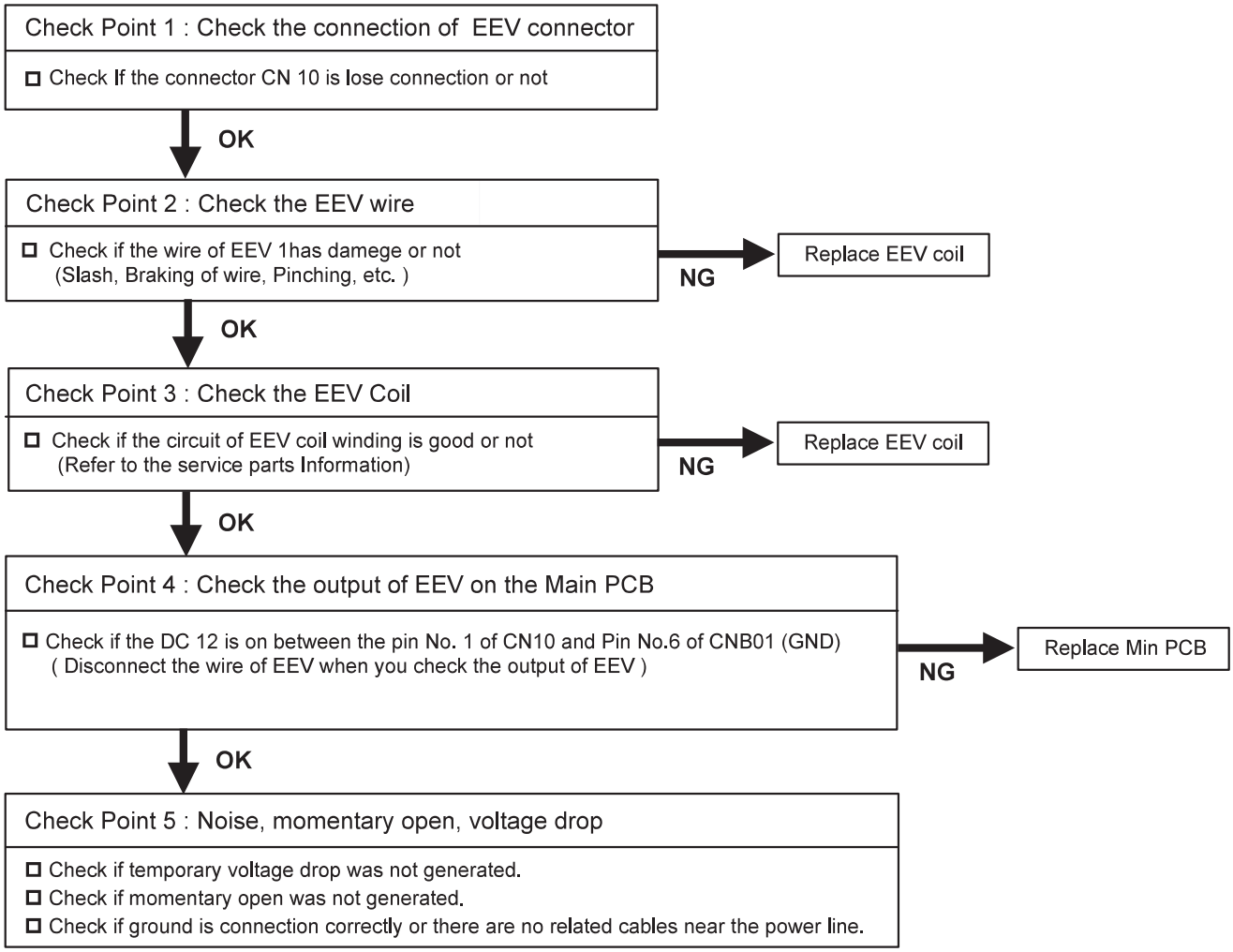
- Check terminal voltage of controller PCB connector CNC01 (Power supply for remote)
  If DC12V, Remote control failure (Controller PCB is OK) >>> Replace Remote controller
  If DC0V, Controller PCB failure (Remote is OK) >>> Replace Controller PCB

In case of re-installation is done due to remobed connector or incorrect wiring, turn on the power again.

Trouble shooting 15 **INDOOR UNIT Error Method:** **Indoor unit Coil (EEV) Error**	**Indicate or Display:** **Outdoor Unit : E.5U.1** **Indoor Unit : Operation LED 5 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 5 2**

Detective Actuators: Indoor unit controller PCB	**Detective details:** When the EEV1 drive circuit is open circuit

Forecast of Cause : 1. EEV coil lose connection 2. EEV wire(s) cut or pinched 3. Defective EEV coil
4. Controller PCB (DC 12V) output abnormal
5. Noise momentary open, voltage drop



4-3-2 Trouble Shooring With Error Code (OUTDOOR UNIT)

Trouble shooting 16 **OUTDOOR UNIT Error Method :** Outdoor Unit Network Communication 2 Error	**Indicate or Display:** Outdoor Unit : E. 14. 2 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 14

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Outdoor unit communication PCB	▪ No communication for 180 seconds or more from all indoor units that once received communication.

Forecast of Cause : 1. Noise, momentary open, voltage drop 2. Indoor unit power off
3. Communication line connection defective 4. Terminal resistor setting mistake
5. Communication PCB mounting defective, Communication PCB defective
6. Main PCB defective

Check Point 1 : Noise, momentary open, voltage drop

- ☐ Check if temporary voltage drop was not generated.
- ☐ Check if momentary open was not generated.
- ☐ Check if ground is connection correctly or there are no related cables near the power line.

↓ OK

Check Point 2 : Check the indoor unit power supply

- ☐ Main power ON check
- ☐ Power cable connection and open check

↓ OK

Check Point 3 : Check the communication line connection

- ☐ Communication line connection, open check

↓ OK

Check Point 4 : Check the Terminal resistor setting

- ☐ Terminal resistor setting check

↓ OK

Check Point 5 : Check the communication PCB (outdoor unit/indoor unit)

- ☐ Communication PCB connection check
- ☐ Communication PCB check

↓ OK

Check Point 6 : Replace Main PCB (outdoor unit / in door unit)

- ☐ Change Main PCB and set up the original address.

Trouble shooting 17 **OUTDOOR UNIT Error Method:** **Outdoor Unit EEPROM Access Error**	**Indicate or Display:** **Outdoor Unit : E. 62. 3** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 62**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB	▪Access to EEPROM failed due to some cause after outdoor unit started.

Forecast of Cause : 1.Noise, momentary open, voltage drop 2. Main PCB defective

Check Point 1-1 : Turn the power on again	Check Point 1-2 : Noise, momentary open, voltage drop
Error displayed again?	☐ Check if temporary voltage drop was not generated. ☐ Check if momentary open was not generated. ☐ Check if ground is connection correctly or there are no related cables near the power line.

YES

Check Point 2 : Replace Main PCB
☐ Change Main PCB and set up the original address.

Trouble shooting 18 **OUTDOOR UNIT Error Method:** **Inverter Communication Error**	**Indicate or Display:** **Outdoor Unit : E. 62. 6** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 62**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Outdoor unit Inverter PCB	▪ Communication not received from Inverter PCB for 10 seconds or more

Forecast of Cause : 1. Noise 2. Main to Inverter PCBs wiring connection defective
3. Main PCB defective 4. Inverter PCB defective

Check Point 1-1 :
Turn the power on again.

Error displayed again?

NO →

Check Point 1-2 : Noise

☐ Check if ground is connection correctly or there are no related cables near the power line.

YES ↓

Check Point 2 : Check the main to Inv erter P CB wiring

☐ Connector connection state check
☐ Cable open check

OK ↓

Check Point 3 : Check Main PCB

☐ Chack Main PCB. (Refer to "Service Parts Information)

OK ↓

Check Point 4 : Replace Inverter PCB

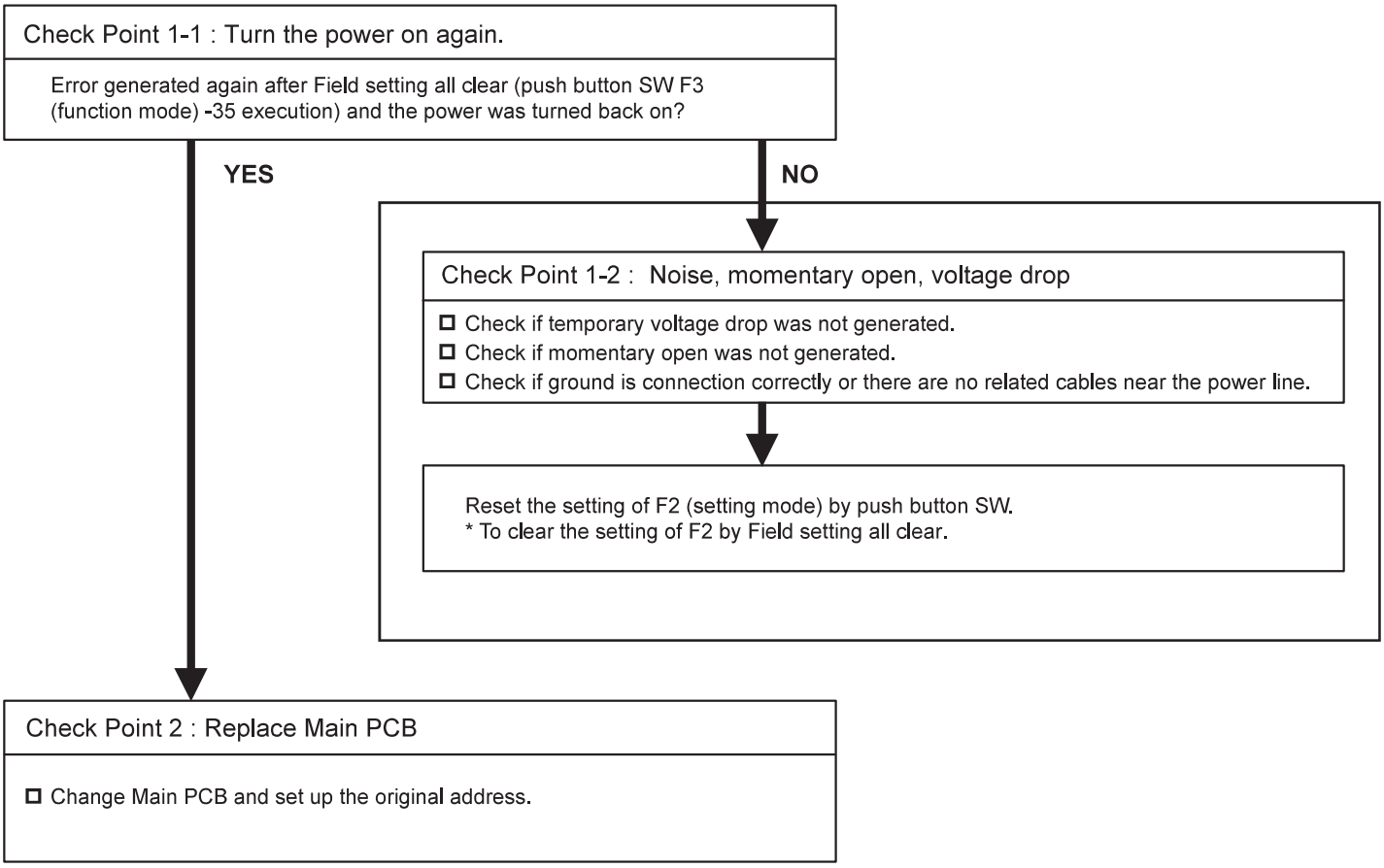
☐ Replace Inverter PCB.

Trouble shooting 19 **OUTDOOR UNIT Error Method:** EEPROM Data corrupted Error	**Indicate or Display:** Outdoor Unit : E. 62. 8 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 62

Detective Actuators: Outdoor unit Main PCB	**Detective details:** ▪ Set contents sum value memorized in EEPROM and sum value calculated based on the set contents read from EEPROM do not match * Regarding the sum value, only the contents set in the push button SW setting mode (F2) shall be the objective.

Forecast of Cause :

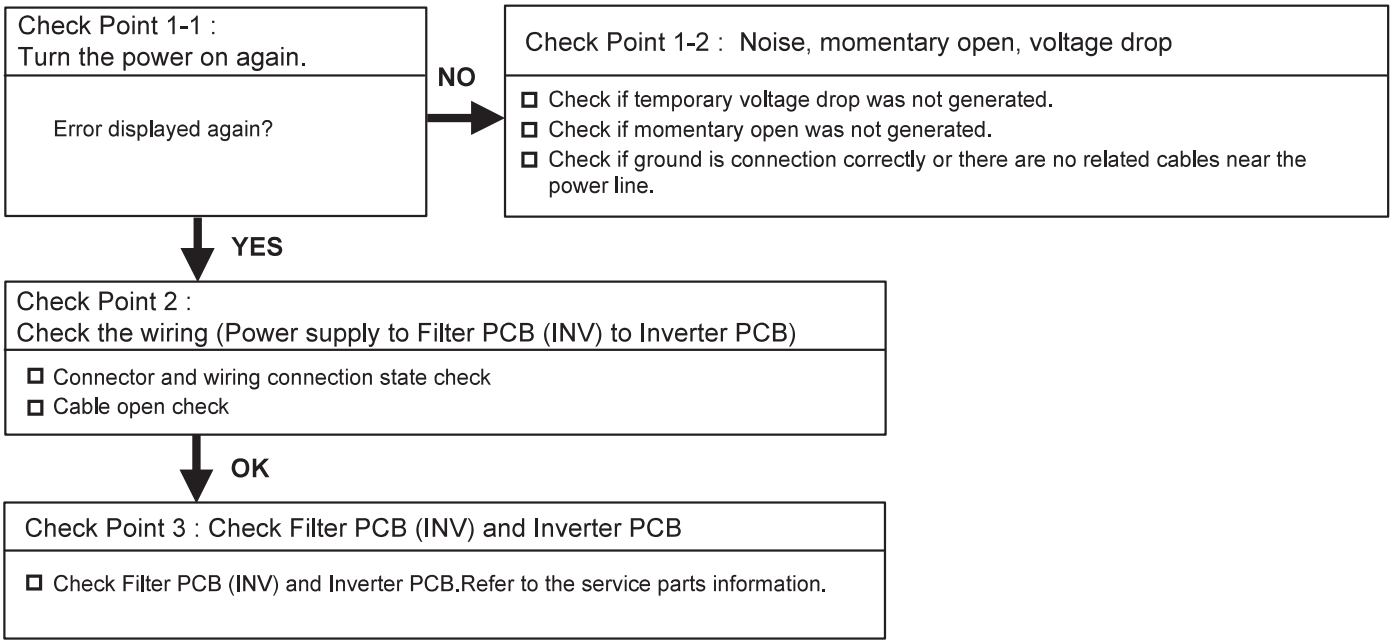
1. Noise, momentary open, voltage drop 2. Main PCB defective



Trouble shooting 20 **OUTDOOR UNIT Error Method:** **Inverter Error**	**Indicate or Display:** **Outdoor Unit : E. 63. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 63**

Detective Actuators:	**Detective details:**
Inverter PCB Filter PCB	▪ Error information received from Inverter PCB

Forecast of Cause :
1.Noise, momentary open, voltage drop.
2. Power supply to Filter PCB (INV) to Inverter PCB wiring disconnection, open
3. Filter PCB (INV) defective
4. Inverter PCB defective



Trouble shooting 21 **OUTDOOR UNIT Error Method:** **Inverter PCB short interruption detection**	**Indicate or Display:** **Outdoor Unit : E. 67. 2** **Indoor Unit : No Display** **Error Code : 67**

Detective Actuators:	**Detective details:**
Inverter PCB	・"Momentary power failure" received from Inverter PCB

Forecast of Cause :

1. Noise, momentary power failure, voltage drop
2. Power supply to Filter PCB (INV) to Inverter PCB wiring disconnection, open
3. Main PCB defective
4. Inverter PCB defective

Check Point 1 : Noise, momentary power failure, voltage drop

- ☐ Check if temporary voltage drop was not generated.
- ☐ Check if momentary power failure was not generated.
- ☐ Check if ground is connection correctly or there are no related cables near the power line.

OK

Check Point 2 : Check the wiring (Power supply to Filter PCB (INV) to Inverter PCB)

- ☐ Connector and wiring connection state check
- ☐ Cable open check

OK

Check Point 3 : Check Main PCB

- ☐ Check Main PCB Power supply

OK

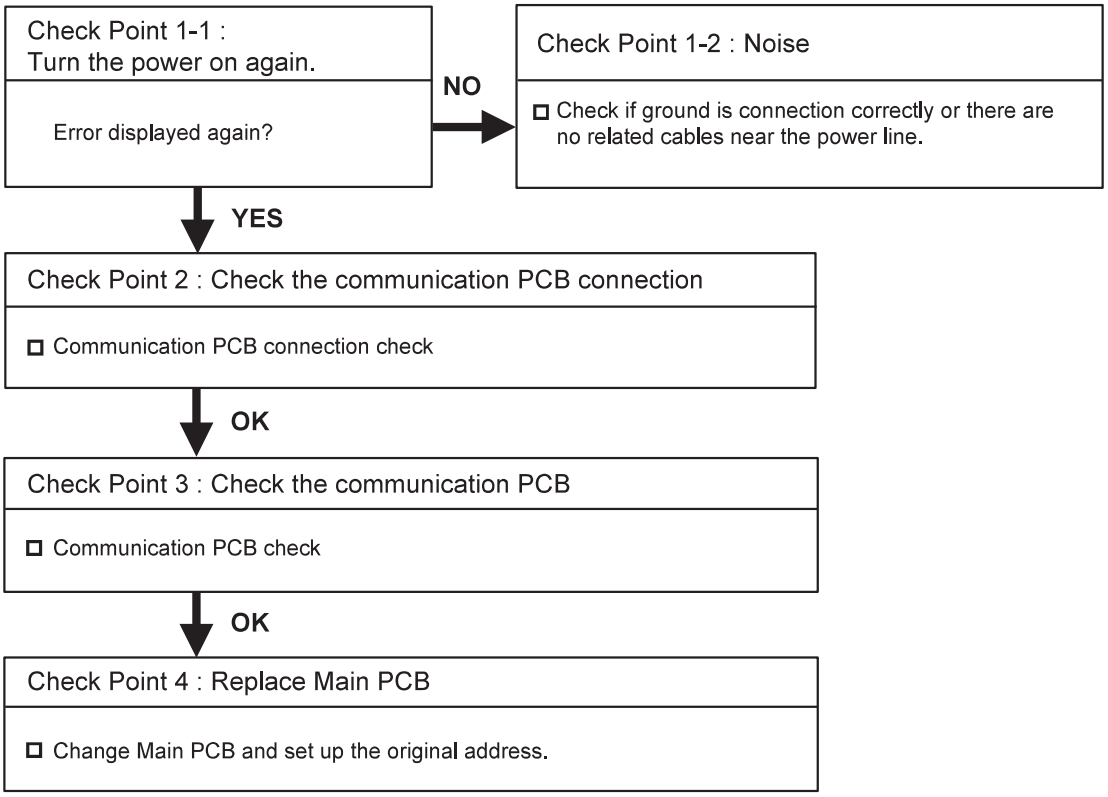
Check Point 4 : Replace Inverter PCB

- ☐ Replace Inverter PCB.

Trouble shooting 22 **OUTDOOR UNIT Error Method:** **Outdoor Unit transmission PCB Parallel Communication Error**	**Indicate or Display:** **Outdoor Unit : E. 69. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 69**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Communication PCB	▪ Parallel communication (communication between main CPU and communication PCB) failed 5 times.

Forecast of Cause : 1. Noise 2. Communication PCB connection defective
3. Communication PCB defective 4. Main PCB defective



Trouble shooting 23 OUTDOOR UNIT Error Method: Discharge Temp Sensor Error	Indicate or Display: Outdoor Unit : E. 71. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 71

Detective Actuators: Discharge temperature thermistor 1	Detective details: ▪ Discharge temperature thermistor 1 short detected ▪ Discharge thermistor 1 open detected after compressor 1 operated continuously for 5 minutes or more

Forecast of Cause :

1. Connector connection defective, open
2. Thermistor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

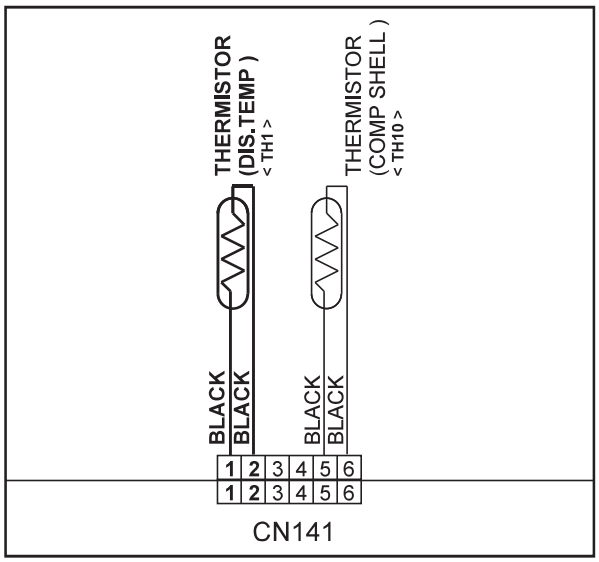
Check Point 2 : Check the thermistor

- ☐ Thermistor characteristics check (Disconnect the thermistor from the PCB and check.)
  * For the thermistor characteristics, refer to the "Service Parts Information 22".

OK

Check Point 3 : Check voltage of Main PCB (DC5.0V)

- ☐ Main PCB (CN141:1-2) voltage value = 5V
  Remove the thermistor from Main PCB, check the voltage.



Discharge temperature sensor 1 (CN141:1-2)

►**If the voltage does not appear, replace Main PCB and set up orignal address.**

Trouble shooting 24 **OUTDOOR UNIT Error Method:** **Compressor Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 72. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 72**

Detective Actuators:	**Detective details:**
Compressor temperature thermistor	▪ Compressor temperature thermistor short detected ▪ Compressor thermistor open detected after compressor operated continuously for 5 minutes or more

Forecast of Cause :

1. Connector connection defective, open
2. Thermistor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

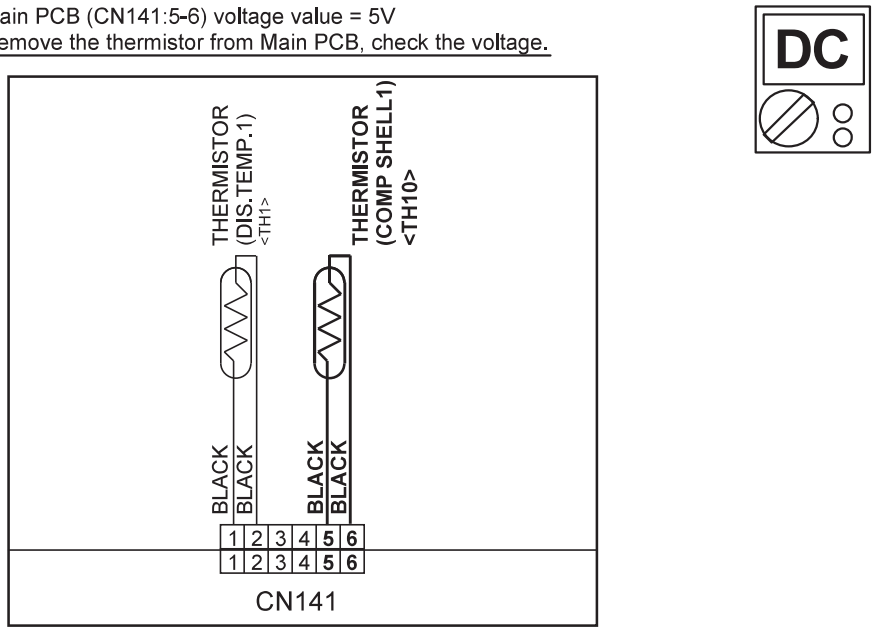
Check Point 2 : Check the thermistor

- ☐ Thermistor characteristics check (Disconnect the thermistor from the PCB and check.)
  * For the thermistor characteristics, refer to the "Service Parts Information".

OK

Check Point 3 : Check voltage of Main PCB (DC5.0V)

- ☐ Main PCB (CN141:5-6) voltage value = 5V
  Remove the thermistor from Main PCB, check the voltage.



Compressor temperature sensor (CN141:5-6)

►**If the voltage does not appear, replace Main PCB and set up orignal address.**

Trouble shooting 25 OUTDOOR UNIT Error Method: Outdoor Unit Heat Ex. Liquid Temp. Sensor Error	Indicate or Display: Outdoor Unit : E. 73. 3 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 73

Detective Actuators:	Detective details:
Heat exchanger liquid temperature thermistor	▪ Heat exchanger liquid temperature thermistor short or open detected

Forecast of Cause :

1. Connector connection defective, open
2. Thermistor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

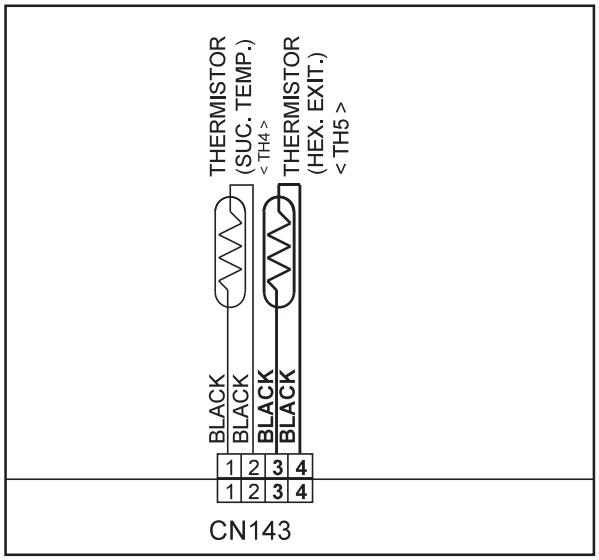
Check Point 2 : Check the thermistor

- ☐ Thermistor characteristics check (Disconnect the thermistor from the PCB and check.)
  * For the thermistor characteristics, refer to the "Service Parts Information 22".

OK

Check Point 3 : Check voltage of Main PCB (DC5.0V)

- ☐ Main PCB (CN143:3-4) voltage value = 5V
  Remove the thermistor from Main PCB, check the voltage.



Heat exchanger liquid temperature sensor (CN143:3-4)

►**If the voltage does not appear, replace Main PCB and set up orignal address.**

Trouble shooting 26 OUTDOOR UNIT Error Method: Outdoor Temp Sensor Error	Indicate or Display: Outdoor Unit : E. 74. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 74

Detective Actuators: Outdoor temperature thermistor	Detective details: · Outdoor temperature thermistor short or open detected

Forecast of Cause :

1. Connector connection defective, open
2. Thermistor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

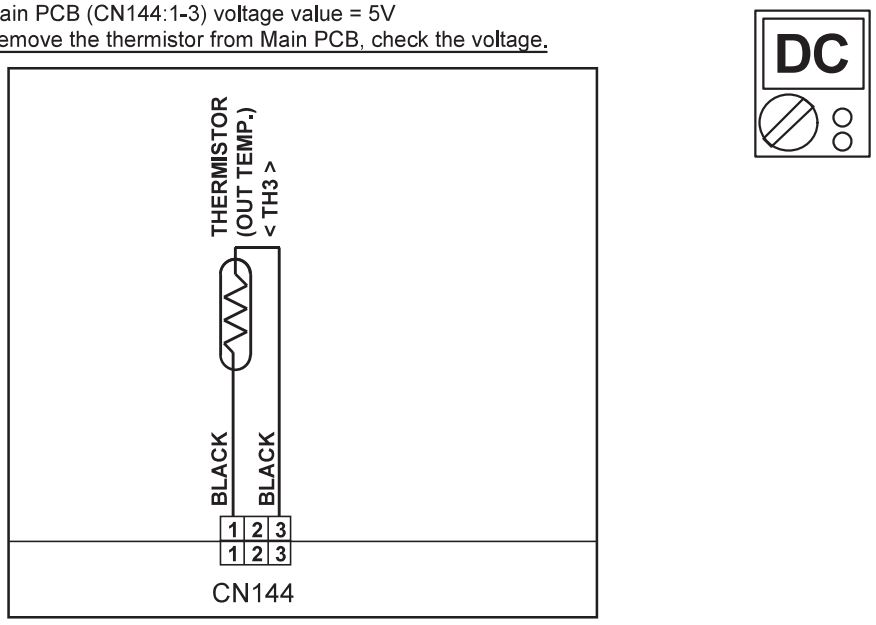
Check Point 2: Check the thermistor

- ☐ Thermistor characteristics check (Disconnect the thermistor from the PCB and check.)
  * For the thermistor characteristics, refer to the "Service Parts Information ".

OK

Check Point 3 : Check voltage of Main PCB (DC5.0V)

- ☐ Main PCB (CN144:1-3) voltage value = 5V
  Remove the thermistor from Main PCB, check the voltage.



Outdoor temperature sensor (CN144:1-3)

►**If the voltage does not appear, replace Main PCB and set up orignal address.**

Trouble shooting 27 **OUTDOOR UNIT Error Method:** **Suction Gas Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 75. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 75**

Detective Actuators:	**Detective details:**
Suction gas temperature thermistor	▪ Suction gas temperature thermistor short or open detected

Forecast of Cause :

1. Connector connection defective, open
2. Thermistor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

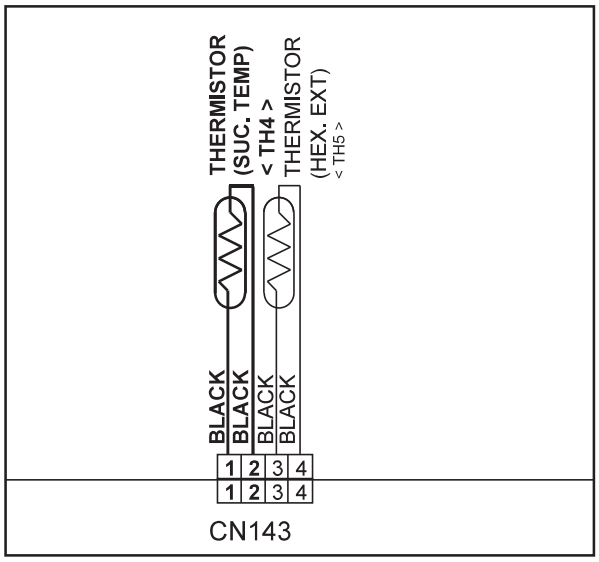
Check Point 2 : Check the thermistor

- ☐ Thermistor characteristics check (Disconnect the thermistor from the PCB and check.)
  * For the thermistor characteristics, refer to the "Service Parts Information".

OK

Check Point 3 : Check voltage of Main PCB (DC5.0V)

- ☐ Main PCB (CN143:1-2) voltage value = 5V
  Remove the thermistor from Main PCB, check the voltage.



Suction gas temperature sensor (CN143:1-2)

►**If the voltage does not appear, replace Main PCB and set up orignal address.**

Trouble shooting 28 **OUTDOOR UNIT Error Method:** **Heat Sink Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 77. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 77**

Detective Actuators:	**Detective details:**
Inverter PCB	・ Heat sink temperature thermistor (Inside IPM) open/short circuit detected

Forecast of Cause : 1.Inverter PCB failure

►**If this error is displayed, replace Inverter PCB**

Trouble shooting 29 OUTDOOR UNIT Error Method: Current Sensor Error	Indicate or Display: Outdoor Unit : E. 84. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 84

Detective Actuators:	Detective details:
Judgment from value sensed by current sensor 1 (current sensor for inverter) * Current sensor 1 is mounted on Filter PCB (INV)	・ "Protection stop by "inverter speed ≧ 20rps and sensor value 0A continued for 1 min"" was generated 2 times ・ Sensor value while inverter stopped = maximum was detected

Forecast of Cause :

1. Filter PCB to Inverter PCB current sensor wiring connector disconnection, open
2. Power supply to Filter PCB to Inverter PC wiring disconnection, open
3. Filter PCB defective (Power supply section, current sensor section)
4. Inverter PCB defective

Check Point 1 : Filter PCB to Inverter PCB current sensor wiring connection state

- ☐ Connector and wiring connection state check
- ☐ Cable open check

↓ OK

Check Point 2 : Check the wiring (Power supply to Filter PCB to Inverter PCB)

- ☐ Connector connection state check
- ☐ Cable open check

↓ OK

- ☐ Check Filter PCB and INV PCB
  Refer to the service parts information

Trouble shooting 30 OUTDOOR UNIT Error Method: Discharge Pressure Sensor Error	Indicate or Display: Outdoor Unit : E. 86. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 86

Detective Actuators:	Detective details:
Discharge pressure sensor	・When any of the following conditions is satisfied, a discharge pressure sensor error is generated. 1. 30 seconds or more have elapsed since the outdoor unit power was turned on and pressure sensor detected value ＜ 0.3V continued for 30 seconds or more 2. 30 seconds or more have elapsed since the outdoor unit power was turned on and pressure sensor detected value ≧ 5.0V was detected.

Forecast of Cause :

1. Discharge pressure sensor connector disconnection, open
2. Discharge pressure sensor defective
3. Main PCB defective

Check Point 1 : Check the discharge pressure sensor connection state

- ☐ Connector connection state check
- ☐ Cable open check

OK

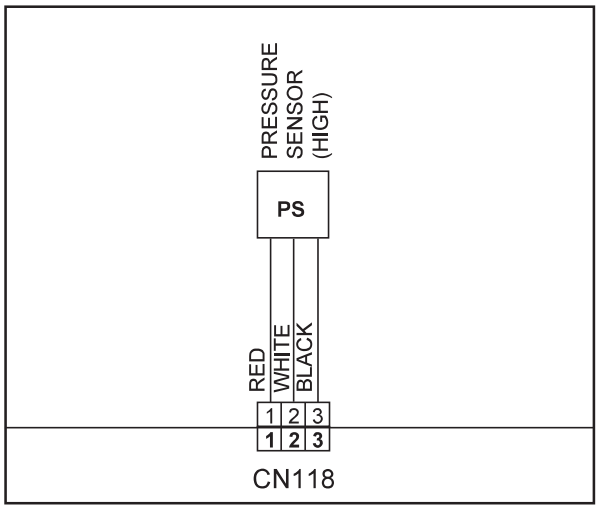
Check Point 2 : Check the discharge pressure sensor

- ☐ Sensor characteristics check
  * For the characteristics of the discharge pressure sensor, refer to the "Service Parts Information".

OK

Check Point 3 : Check voltage of Main PCB (DC5.0V)

- ☐ Main PCB (CN118:1-3) voltage value = 5V
  Remove the thermistor from Main PCB, check the voltage.



Discharge pressure sensor (CN118:1-3)

▶ **If the voltage does not appear, replace Main PCB and set up orignal address.**

Trouble shooting 31 **OUTDOOR UNIT Error Method:** **Suction Pressure Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 86. 3** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 86**

Detective Actuators:	**Detective details:**
Suction pressure sensor	・When any of the following conditions is satisfied, a suction pressure sensor error is generated. 1. 30 seconds or more have elapsed since the outdoor unit power was turned on and pressure sensor detected value < 0.06V continued for 30 seconds or more. 2. 30 seconds or more have elapsed since the outdoor unit power was turned on and pressure sensor detected value ≧ 5.0V was detected.

Forecast of Cause :

1. Suction pressure sensor connector disconnection, open
2. Suction pressure sensor defective
3. Main PCB defective

Check Point 1 : Check the suction pressure sensor connection state

- ☐ Connector connection state check
- ☐ Cable open check

OK

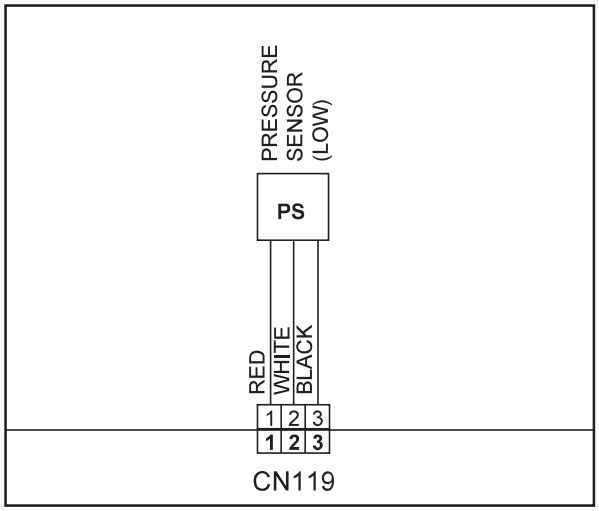
Check Point 2 : Check the suction pressure sensor

- ☐ Sensor characteristics check
  * For the characteristics of the suction pressure sensor, refer to the "Service Parts Information ".

OK

Check Point 3 : Check voltage of Main PCB (DC5.0V)

- ☐ Main PCB (CN119:1-3) voltage value = 5V
  Remove the thermistor from Main PCB, check the voltage.



Suction pressure sensor (CN119:1-3)

►**If the voltage does not appear, replace Main PCB and set up orignal address.**

Trouble shooting 32 **OUTDOOR UNIT Error Method:** **Inverter Compressor Start UP Error**	**Indicate or Display:** **Outdoor Unit : E. 93. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 93**

Detective Actuators:	**Detective details:**
Inverter PCB Inverter Compressor	▪ "Protection stop by "overcurrent generation at inverter compressor starting" ⇒ restart" generated consecutively 60 times x 2 sets (total 120 times) * The shortest time up to error generation is about 100 minutes *Restart is not performed if an indoor unit in the same refrigerant system is not turned ON by thermostat. * After the end of the 1st set, the 2nd set is not started if all the compressors in the same refrigerant system are not temporarily stopped.

Forecast of Cause :
1. Inverter PCB to inverter compressor wiring disconnection, open
2. Inverter PCB defective
3. Inverter compressor defective (lock, winding short)

Check Point 1 : Check the Inverter PCB to inverter compressor connection state

- ☐ Wiring connection state check
- ☐ Cable open check

OK

Check Point 2 : Check the Inverter PCB

- ☐ Inverter PCB check (Refer to Service Parts Information)

OK

Check Point 3 : Check the Inverter compressor

- ☐ Inverter compressor check (Refer to Service Parts Information)

Trouble shooting 33 **OUTDOOR UNIT Error Method:** Trip Detection	**Indicate or Display:** Outdoor Unit : E. 94. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 94

Detective Actuators:	**Detective details:**
Inverter PCB Inverter Compressor SV coil	▪ "Protection stop by "overcurrent generation after inverter compressor start processing completed"" generated consecutively 5 times. * The number of generations is reset if protection stop is not generated again within 40 seconds after restarting.

Forecast of Cause :

1. Outdoor unit fan operation defective, foreign matter on hear exchanger, excessive rise of ambient temperature
2. Inverter PCB defective
3. Inverter compressor defective (lock, winding short)
4. SV Coil Abnormal

Check Point 1 : Check the outdoor unit fan operation, heat exchanger, ambient temperature

- ☐ No obstructions in air passages?
- ☐ Heat exchange fins clogged
- ☐ Outdoor unit fan motor check
- ☐ Ambient temperature not raised by the effect of other heat sources?
- ☐ Discharged air not sucked in?

↓ OK

Check Point 2 : Check the Inverter PCB

- ☐ Inverter PCB check (Refer to Service Parts Information)

↓ OK

Check Point 3 : Check the Inverter compressor

- ☐ Check Inverter compressor (Refer to Service Parts Information)

↓ OK

Check Point 4: Check the SV, Coil

- ☐ Check the connector of SV connected on the Main PCB surely.
- ☐ Check the Coil installed on the Valve surely (Fixed condition, direction, depth)
- ☐ Check the resistance of wires (Not open circuit)
- ☐ Check the valve are operating surely

Trouble shooting 34 **OUTDOOR UNIT Error Method:** **Compressor Motor Loss of Synchronization**	**Indicate or Display:** **Outdoor Unit : E. 95. 5** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 95**

Detective Actuators:	**Detective details:**
Inverter PCB Inverter Compressor	▪ "Protection stop by "loss of synchronization detection"" generated consecutively 5 times *The number of generations is reset if protection stop is not generated again within 40 seconds after restarting.

Forecast of Cause :
1.Inverter PCB defective
2.Inverter compressor defective (lock)

Check Point 1 : Check the Inverter PCB
☐ Inverter PCB check (Refer to Service Parts Information)

OK

Check Point 2 : Check the Inverter compressor
☐ Inverter compressor check (Refer to Service Parts Information)

Trouble shooting 35 **OUTDOOR UNIT Error Method:** **Outdoor Unit Fan Motor Lock Error** **- Start up Error -**	**Indicate or Display:** **Outdoor Unit : E. 97. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 97**

Detective Actuators:	**Detective details:**
Outdoor unit fan	・"Protection stop by "fan speed ≦ 100rpm" 20 seconds after fan operation command issued" was generated consecutively 15 times * The compressor is protection stopped every time fan protection stop has been generated 3 times.

Forecast of Cause :

1. Rotation obstruction by foreign matter
2. Motor wiring, connector disconnection, open
3. Fan motor defective (winding open, lock)
4. Main PCB defective (drive circuit, speed detection circuit)

Check Point 1 : Fan rotation state check

- ☐ Check for the absence of foreign matter around the fan

OK

Check Point 2 : Check the motor wiring, connector disconnection, open

- ☐ Check for motor wiring connector disconnection, open.

OK

Check Point 3 : Fan motor defective

- ☐ Check if fan can be rotated by hand.
- ☐ Motor winding resistance check
- ☐ Motor operation check

OK

Check Point 4 : Check Main PCB

- ☐ Drive circuit output check (Between Pin No.3 and Pin No.2 on CN 116 : DC 13.6 - 16.5 V)
- ☐ Check if speed can be detected.

>>If replace Main PCB and and set up orignal address.

Trouble shooting 36 **OUTDOOR UNIT Error Method:** Outdoor unit Fan motor undervoltage - Lack of DC Voltage -	**Indicate or Display:** **Outdoor Unit : E. 97. 4** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 97**

Detective Actuators: Outdoor unit main PCB	**Detective details:** ▪ Low DC power supply (DC voltage 180V or less) detected

Forecast of Cause :
1. Power OFF, voltage drop, momentary open
2. Power supply wiring connection defective, open
3. Main PCB defective (electrolytic capacitor, DC voltage detection circuit)

Check Point 1 : Check the Power supply

- ☐ Power ON?
- ☐ Temporary voltage drop not generated?
- ☐ Momentary open circuit not generated?

↓ OK

Check Point 2 : Check the power line

- ☐ Power supply wiring connection check
- ☐ Power supply wiring open check

↓ OK

Check Point 3 : Replace Main PCB

- ☐ Electrolytic capacitor check
- ☐ DC voltage detection circuit check

>>If replace Main PCB and and set up orignal address,

Trouble shooting 37 OUTDOOR UNIT Error Method: **Outdoor Unit Fan Motor 1 Temp. Abnormal**	Indicate or Display: Outdoor Unit : E. 97. 5 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 97

Detective Actuators:	Detective details:
Outdoor unit fan	▪ Protection stop by speed ≦ 220rpm after 60 seconds have elapsed after fan operation command issued generated 3 times within 3 hours.

Forecast of Cause :
1. Rotation obstructed by foreign matter
2. Ventilation obstructed by heat exchange foreign matter
3. Excessive ambient temperature rise
4. Static pressure setting incorrect, specifled static pressure value exceeded
5. Fan motor defective (internal PCB defective)

Check Point 1 : Check fan rotation state

- ☐ Check for the absence of foreign matter around the fan

OK

Check Point 2 : Check for obstruction of ventilation by heat exchange foreign matter

- ☐ Check for foreign matter on heat exchanger

OK

Check Point 3 : Check the ambient temperature

- ☐ Ambient temperature not raised by the effect of other heat sources?
- ☐ Discharged air not sucked in?

OK

Check Point 4 : Check the static pressure

- ☐ Check if static pressure is set correctly.
- ☐ Check if static pressure is not higher than the specified value.

OK

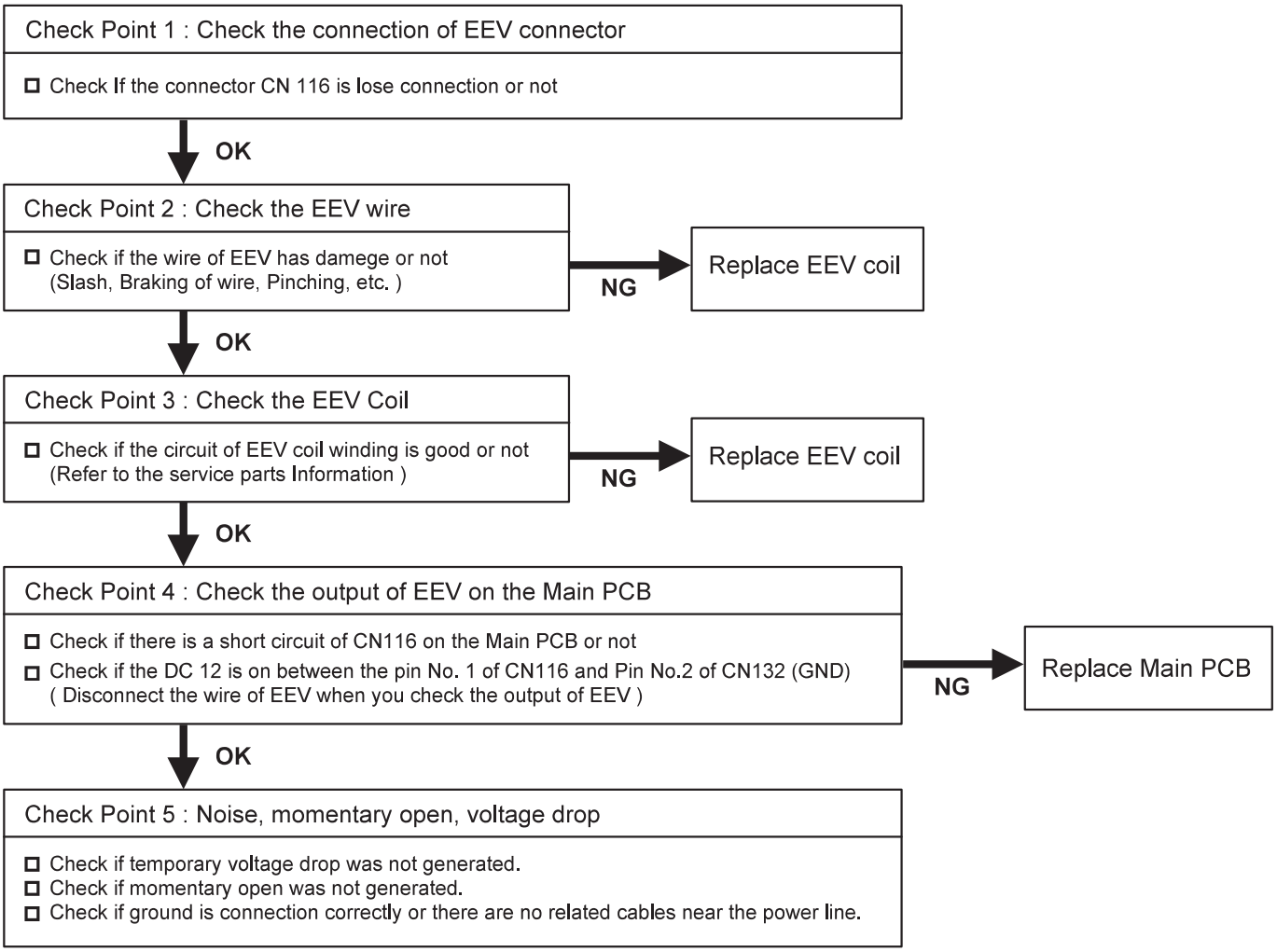
Check Point 5 : Replace the fan motor

- ☐ Check if fan can be rotated by hand.
- ☐ Motor winding resistance check
- ☐ Motor operation check

Trouble shooting 38 **OUTDOOR UNIT Error Method:** Coil EEV Error	**Indicate or Display:** **Outdoor Unit : E. 9A. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9A**

Detective Actuators: Outdoor unit main PCB	**Detective details:** ▪ When the EEV input on the Main PCB (CN116, CN117) was open circuit or short circuit.

Forecast of Cause :
1. EEV coil lose connection
2. EEV wire(s) cut or pinched
3. Defective EEV coil
4. Main PCB (DC 12V) output abnormal



Trouble shooting 39 OUTDOOR UNIT Error Method: Discharge Tempreture Abnormal	Indicate or Display: Outdoor Unit : E. A1. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : A1

Detective Actuators:	Detective details:
Discharge temperature thermistor	▪ "Protection stop by "discharge temperature1 ≧115°C during compressor operation"" generated 2 times within 40 minutes

Forecast of Cause :

1. 3-way valve not opened
2. EEV defective, strainer clogged
3. Outdoor unit operation defective, foreign matter on heat exchanger
4. Discharge temperature thermistor defective
5. Insufficient refrigerant

<Cooling operation>

Check Point 1 : Check if 3-way valve(gas side) is open.

- ☐ If the 3-way valve(gas side) was closed, open the 3-way valve(gas side) and check operation.

OK

Check Point 2 : Check the EEV, strainer

- ☐ EEV (EEV, indoor unit EEV) open?
- ☐ Strainer clogging check (before EEV, 3Way Valve, oil return)
  Refer to "Service Parts Information".

OK

Check Point 3 : Check the outdoor unit fan,heat exchanger

- ☐ Check for foreign matter at heat exchanger
- ☐ Check if fan can be rotated by hand.
- ☐ Motor check

OK

Check Point 4 : Check the discharge thermistor

- ☐ Discharger thermistor characteristics check (Check by disconnecting thermistor from PCB.)
  * For the characteristics of the thermistor, refer to the "Service Parts Information".

OK

Check Point 5 : Check the refrigerant amount

- ☐ Leak check

<Heating operation>

Check Point 1 : Check if 3-way valve(liquid side) is open.

- ☐ If the 3-way valve(liquid side) was closed, open the 3-way valve(liquid side) and check operation.

OK

Check Point 2 : Check the EEV, strainer

- ☐ EEV open?
- ☐ Strainer clogging check (before EEV, 3Way Valve, oil return)
  Refer to "Service Parts Information".

OK

Trouble shooting 40 OUTDOOR UNIT Error Method: Compressor Tempreture Abnormal	Indicate or Display: Outdoor Unit : E. A3. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : A3

Detective Actuators:	Detective details:
Compressor temperature thermistor	▪"Protection stop by "compressor tempreture"≧ 110℃ during compressor operation""generated 2 times within 40 minutes

Forecast of Cause :

1. 3-way valve not opened
2. EEV defective, strainer clogged
3. Outdoor unit operation defective, foreign matter on heat exchanger
4. Compressor 1 temperature thermistor defective
5. Insufficient refrigerant

<Cooling operation>

Check Point 1 : Check if 3-way valve(gas side) is open.

- ☐ If the 3-way valve(gas side) was closed, open the 3-way valve(gas side) and check operation.

OK

Check Point 2 : Check the EEV, strainer

- ☐ EEV (EEV, indoor unit EEV) open?
- ☐ Strainer clogging check (before and after EEV, 3Way Valve oil return)
  Refer to "Service Parts Information".

OK

Check Point 3 : Outdoor unit fan, heat exchanger check

- ☐ Check for foreign matter at heat exchanger
- ☐ Check if fan can be rotated by hand.
- ☐ Motor check

OK

Check Point 4 : Check the compressor temperature thermistor

- ☐ Compressor temperature thermistor characteristics check (Check by disconnecting thermistor from PCB)

  * For the characteristics of the thermistor, refer to the "Service Parts Information.

OK

Check Point 5 : Check the refrigerant amount

- ☐ Leak check

<Heating operation>

Check Point 1 : Check if 3-way valve(liquid side) is open.

- ☐ If the 3-way valve(liquid side) was closed, open the 3-way valve(liquid side) and check operation.

OK

Check Point 2 : Check the EEV, strainer

- ☐ EEV open?
- ☐ Strainer clogging check (before and after EEV, 3 Way Valve oil return)
  Refer to "Service Parts Information".

OK

Trouble shooting 41 OUTDOOR UNIT Error Method: High Pressure Abnormal	Indicate or Display: Outdoor Unit : E. A4. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : A4

Detective Actuators:	Detective details:
Judgment from value sensed by discharge pressure sensor	▪ "Protection stop by "discharge pressure ≧ 4.00MPa during operation of any compressor"" generated 3 times within 60 minutes

Forecast of Cause :

1. 3-way valve not opened
2. Outdoor unit fan operation defective, foreign matter at heat exchanger, excessive ambient temperature rise
3. Check valve clogged
4. EEV defective, strainer clogged
5. Solenoid valve defective
6. Discharge pressure sensor defective
7. Refrigerant overcharged

<Cooling operation>

Check Point 1 : Check if 3-way valve(liquid side) is open.

- ☐ If the 3-way valve(liquid side) was closed, open the 3-way valve(liquid side) and check operation.

OK

Check Point 2 : Check the outdoor unit fan operation, heat exchanger, ambient temperature

- ☐ No foreign matter in air passage?
- ☐ Heat exchange fins clogged
- ☐ Outdoor unit fan motor check
- ☐ Ambient temp. not raised by effect of other heat sources?
- ☐ Discharged air not sucked in?

OK

Check Point 3 : Check the EEV, strainer

- ☐ EEV open?
- ☐ Strainer clogging check. (before EEV) Refer to "Service Parts Information".

OK

<Heating operation>

Check Point 1 : Check if 3-way valve(gas side) is open.

- ☐ If the 3-way valve(gas side) was closed, open the 3-way valve(gas side) and check operation.

OK

Check Point 4 : Check the EEV, strainer (indoor unit)

- ☐ EEV operation check
- ☐ Check of strainers before and after EEV Refer to "Service Parts Information".

OK

Check Point 5 : Check the solenoid valve

- ☐ Solenoid valve operation check Refer to "Service Parts Information".

OK

Check Point 6 :Check the discharge pressure sensor

- ☐ Discharge pressure sensor characteristics check *For the characteristics of the discharge pressure sensor, refer to "Service Parts Information".

OK

Check Point 7 : Check the refrigerant amount

- ☐ Refrigerant charged amount check

Trouble shooting 42 OUTDOOR UNIT Error Method: Low Pressure Abnormal	Indicate or Display: Outdoor Unit : E. A5. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : A5

Detective Actuators:	Detective details:
Suction pressure sensor	▪ "Protection stop by "suction pressure ≦ 0.10MPa continued for 10 minutes" or "suction pressure ≦ 0.05MPa" during operation of any compressor"" was generated 5 times within 3 hours

Forecast of Cause :

1. 3-way valve not opened
2. Outdoor unit ambient temperature too low
3. Outdoor unit fan operation defective, foreign matter at heat exchanger
4. EEV defective, strainer clogged
5. Solenoid valve defective
6. Low pressure sensor characteristics defective
7. Insufficient refrigerant

<Cooling operation>

Check Point 1 : Check if 3-way valve(gas side) is open.

- If the 3-way valve(gas side) was closed, open the 3-way valve(gas side) and check operation.

OK

Check Point 4 : Check the indoor unit EEV, strainer clogging

- Indoor unit EEV operation check
- Strainer not clogged?

OK

Check Point 5 : Check the solenoid valve

- Solenoid valve operation check.
  Refer to "Service Parts Information".

OK

Check Point 6 : Check the suction pressure sensor

- Suction pressure sensor characteristics check
  *For the characteristics of the suction pressure sensor, refer to "Service Parts Information".

OK

Check Point 7 : Check the refrigerant amount

- Leak check

<Heating operation>

Check Point 1 : Check if 3-way valve(liquid side) is open.

- If the 3-way valve(liquid side) was closed, open the 3-way valve(liquid side) and check operation.

OK

Check Point 2 : Check the outdoor unit ambient temperature

- Outdoor ambient temperature lower than operating range?

OK

Check Point 3 : Check the outdoor unit fan operation, heat exchanger

- No foreign matter in air passage?
- Heat exchange fins clogged
- Fan rotates?
- Outdoor unit fan motor check

OK

Check Point 4 : Check the outdoor unit EEV, strainer clogging

- Outdoor unit EEV1 operation check
- Strainer not clogged?
  Refer to "Service Parts Information".

Trouble shooting 43 OUTDOOR UNIT Error Method: Outdoor unit Heat Sink Tempreture Abnormal	Indicate or Display: Outdoor Unit : E. A C. 4 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 9 U / A C

Detective Actuators:	Detective details:
Heat sink temp. sensor	▪ "Protection stop by "heat sink temp. ≧ 100°C generated 3 times within 60 minutes.

Forecast of Cause :

1. Foreign matter on heat sink, heat sink dirty
2. Foreign matter on heat exchanger, excessive ambient temperature rise
3. Heat sink temp. sensor defective

Check Point 1 : Check the heat sink state

- ☐ Heat sink foreign matter, soiling check

↓ OK

Check Point 2 :
Check the foreign matter and ambient temperature of heat exchanger

- ☐ Heat exchange foreign matter check
- ☐ Ambient temperature not raised by effect of other heat sources?
- ☐ Discharged air not sucked in?

↓ OK

Check Point 3 : Check the heat sink temp. sensor

- ☐ Heat sink temp. sensor characteristics check
  (Check by disconnecting sensor from PCB.)
  * For the characteristics of the thermistor, refer to "Service Parts Information".

Trouble shooting 44 OUTDOOR UNIT Error Method: Auto Address Setting Error	Indicate or Display: Outdoor Unit : E. 28. 1 Indoor Unit : No Display Error Code : 28

Detective Actuators:	Detective details:
Outdoor unit Main PCB	▪ When none of the connected indoor units answers during auto address And when abnormal answer signal is input.

Forecast of Cause : 1. Indoor unit power supply defective 2 Indoor unit overconnected
3.Communication line incorrect connection 4. Noise, momentary open

Check Point 1 : Check the indoor unit power supply

☐ Check the indoor unit power supply

↓ OK

Check Point 2 : Check the indoor unit number connection

☐ Check if more than 64 indoor units are connected in a refrigerant circuit

↓ OK

Check Point 3 : Check the communication line connection

Check if communication line is correctly connected
☐ Is it uncoupled or cut halfway ?
☐ Connecting terminal position is correct as the installation manual shows ?

↓ OK

Check Point 4 : Check noise, momentary open, voltage drop

☐ Check if power supply temporarily stops by outages or if strong noise is generated from surrounding environment during auto address

---

Trouble shooting 45 OUTDOOR UNIT Error Method: Signal Amplifier Auto Address Error	Indicate or Display: Outdoor Unit : E. 28. 4 Indoor Unit : No Display Error Code : 28

Detective Actuators:	Detective details:
Outdoor unit Main PCB	▪ When abnormal answer signal is input during signal amplifier auto address

Forecast of Cause : 1. Signal amplifier power supply defective 2. Signal amplifier overconnected
3. Signal amplifier auto address wrong setting 4. Noise, momentary open.

Check Point 1 : Check signal amplifier unit power supply

☐ Check signal amplifier unit power supply

↓ OK

Check Point 2 : Check the signal amplifier number connection

☐ Check if more than 8 signal amplifiers are connected in a network

↓ OK

Check Point 3 : Check the operation of signal amplifier auto address setting

☐ Check if signal amplifier auto address is set at the same time from multiple outdoor units (master unit)

↓ OK

Check Point 4 : Check noise, momentary open, voltage drop

☐ Check if power supply temporarily stops by outages or if strong noise is generated from surrounding environment during signal amplifier auto address

Trouble shooting 46 **OUTDOOR UNIT Error Method:** The number of Indoor unit shortage	**Indicate or Display:** Outdoor Unit : E.1 4.5 Indoor Unit : No display Error Code : No display

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB circuit Indoor unit Communication PCB	When the indoor unit number decreases for 180 seconds from the memorized maximum indoor units number after power(Breaker) ON.

Forecast of Cause :
1.Indoor unit power off
2. Noise, momentary open, voltage drop
3.Communication line connection defective
4. Terminal resistor setting mistake
5.Communication PCB mounting defective, Communication PCB defective
6. Controller PCB defective

Check Point 1 : Find the indoor unit that the communication is lost.

- ☐ Check system drawing and service tool.

OK

Check Point 2 : Check the indoor unit power supply

- ☐ Main power ON check
- ☐ Power cable connection and open check

OK

Check Point 2 : Noise, momentary open, voltage drop

- ☐ Check if temporary voltage drop was not generated.
- ☐ Check if momentary open was not generated.
- ☐ Check if ground is connection correctly or there are no related cables near the power line.

OK

Check Point 3 : Check the communication line connection

- ☐ Communication line connection, open check

OK

Check Point 4 : Check the Terminal resistor setting

- ☐ Terminal resistor setting check

OK

Check Point 5 : Check the communication PCB (indoor unit / outdoor unit)

- ☐ Communication PCB connection check
- ☐ Communication PCB check

OK

Check Point 6 : Replace Main PCB and Communication PCB (indoor unit / outdoor unit)

- ☐ Change Main PCB and Communication PCB, and set up the original address.

Attention!!

Even if this error occurs, system does not stop. If the failure indoor unit is pinpointed and it needs to erase the error indication, it can be reset by function setting (F3-41: Maximum memorized indoor unit number reset).

4-3-3 TROUBLE SHOOTING WITH NO ERROR CODE

Trouble shooting 47

Indoor Unit - No Power

Forecast of Cause :

1.Power Supply failure 2. Outside cause 3. Electrical Component defective

Check Point 1 : Check Installation Condition

- ☐ Is not the breaker down?
- ☐ Check loose or removed connection cable.

>>If abnormal condition is found, correct it by referring to Installation Manual or Data & Technical Manual.

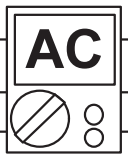
OK

Check Point 2 : Check Outside Cause such as Voltage drop or Noise

- ● Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- ● Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- ● Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).
  Check the complete insulation of grounding.

OK

Check Point 3 : Check Electrical Components



☐ Check Voltage of power supply.
>> Check AC230V appears at Indoor Unit Terminal 1 - 2 (Power Supply).

NG

OK

☐ Check the fuse and thermal fuse.

OK

NG

☐ Replace the fuse or thermal fuse.
☐ Check if the power supply terminals section is shorted.

OK

NG

☐ For AS model, advance to OK without checking.
☐ For models other than the AS model, disconnect the cable connecting the Power Supply PCB and controller PCB and recheck if the power supply terminals section is not shorted.
(Note) Always check in the power off state.

OK

NG

☐ Replace the controller PCB.

☐ Replace the Power Supply PCB.

OK

NG

☐ Replace the Display PCB.

NG

► **If the symptom does not change by above Check 3, replace Controller PCB or Power Supply PCB.**

Trouble shooting 48

Outdoor Unit - No Power

Forecast of Cause :

1.Power Supply failure 2. Outside cause 3. Electrical Components defective

Check Point 1 : Check Installation Condition

- ☐ Isnt the breaker down?
- ☐ Check loose or removed connection cable.

>>If abnormal condition is found, correct it by referring to Installation Manual or Data & Technical Manual.

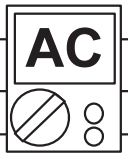
OK

Check Point 2 : Check Outside Cause such as Voltage drop or Noise

- Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).
  Check the complete insulation of grounding.

OK

Check Point 3 : Check Electrical Components



☐ Check the voltage of power supply.
>> Check if the reted voltage appears at Outdoor Unit Terminal L - N

NO

OK

☐ Check the fuse on the Filter PCB.

NG

☐ Replace the fuse.
☐ Recheck if the power supply terminals section is shorted.
(Note) Always check in the power off state.

NG

☐ Disconnect connecting cable of the Filter PCB and Main PCB and recheck.
if the power supply terminals section is not shorted.
(Note) Always check in the power off state.

OK

☐ Check If the FAN motor PCB has a damage or not. (Check short circuit)

OK

☐ Check if the circuit between pin No. 1 and pin No.2 of CN102 on the Main PCB has short circuit or not (Short circuit : NG)
*Disconnect FAN motor when check the circuit

NG

☐ Replace the Inverter PCB

NG

NG

☐ Replace the FAN Motor

NG

☐ Replace the Filter PCB.

NG

☐ **If the symptom does not change by above Check 3, replace Main PCB or Filter PCB**

Trouble shooting 49

No Operation (Power is ON)

Forecast of Cause :

1.Setting/Connection failure 2. Outside cause
3.Electrical Component defective

Check Point 1 : Check indoor and outdoor installation condition

- ☐ Indoor Unit - Check incorrect wiring between Indoor Unit– Remote Control, or terminals between Indoor Units. Or, check if there is an open cable connection.
- ☐ Check address setting (Are all the address of Indoor and Outdoor correct?)
- ☐ Are these Indoor Unit, Outdoor Unit, and Remote Control suitable model numbers to connect?

>> If there is some abnormal condition, correct it by referring to Installation manual and Data & Technical Manual.

OK

Turn off Power and check/correct followings,

- ☐ Isn't Communication PCB of Indoor Unit removed?
- ☐ Is there loose or removed communication line of Indoor Unit and Outdoor Unit?
- ☐ Check Terminator (DIP-SW SET 5) is installed on Outdoor Main PCB.
- ☐ Check loose or removed communication line between each Outdoor Unit.
- ☐ Check loose Communication PCB of each Outdoor Unit.

OK

Check Point 2 : Check outside cause at Indoor and Outdoor (Voltage drop or Noise

- Instant drop -----Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).
  Check the complete insulation of grounding.

OK

DC

Check Point 3 : Check Electrical Components at Indoor and Outdoor

☐ Indoor Unit - Check the voltage between pins 1-3 of the connector (on the control PCB) for connection with the remote controller.

>> If it is DC12V, Remote Control is defective (Controller PCB is normal) >> Replace Remote Control

>> If it is DC 0V, Controller PCB is defective (Check Remote Control once agein) >> Replace Controller PCB

☐ If some of Indoor unit does not operate, replace the Communication PCB of the non-operative Indoor Unit.

>> If the symptom does not change, replace Controller PCB of Indoor Unit.

☐ If all of Indoor Units do not operate, check the connection between Main PCB and Communication PCB of Outdoor Unit (Main Unit).

>> If the symptom does not change, replace Communication PCB of Outdoor Unit (Main Unit).
(If it did not work, replace Main PCB.)

Trouble shooting 50

No Cooling

Forecast of Cause :

1.Indoor Unit error 2. Outdoor Unit error 3. Effect by Surrounding environment
4.Connection Pipe / Connection Wire failure
5. Refrigeration cycle failure

Check Point 1 : Check Indoor Unit

- ☐ Does Indoor Unit FAN run on HIGH FAN?
- ☐ Is Air Filter dirty?
- ☐ Is Heat Exchanger clogged?

↓ OK

Check Point 2 : Check Outdoor Unit Operation

- ☐ Check if Outdoor Unit is operating
- ☐ Check any objects that obstruct the air flow route.
- ☐ Check clogged Heat Exchanger.
- ☐ Is the Valve open?

↓ OK

Check Point 3 : Check Site Condition

- ☐ Is capacity of Indoor Unit fitted to Room size?
- ☐ Any windows open? Or direct sunlight ?

↓ OK

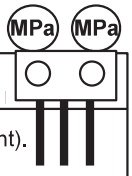
Check Point 4 : Check Indoor/Outdoor Installation Condition

- ☐ Check connection pipe (specified pipe length & Pipe diameter?)
- ☐ Check any loose or removed communication line.

>> **If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.**

↓ OK

Check Point 5 : Check Refrigeration Cycle



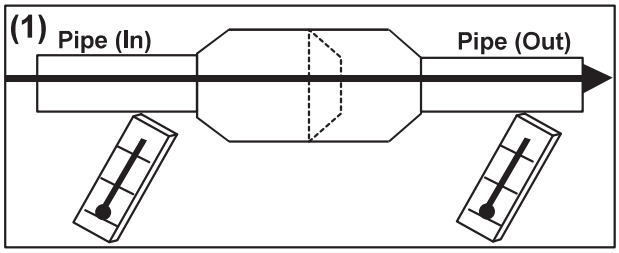
- ☐ Check if Strainer is clogged (Refer to the figure at right).
- ☐ Measure Gas Pressure and if there is a leakage, correct it.

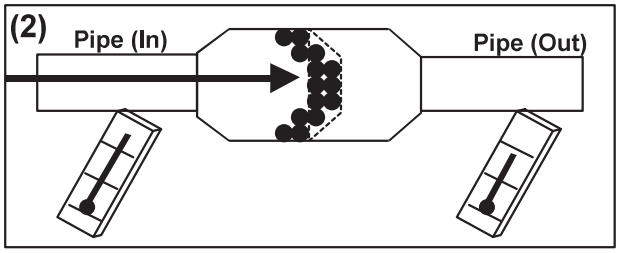
>> **When recharging the refrigerant, make sure to perform vacuuming, and recharge the specified amount.**

- ►Check EEV
- ►Check Solenoid Valve (Refer to Service Parts Information)
- ►Check Compressor (Refer to Service Parts Information)

Attention!!

Strainer normally does not have temperature difference between inlet and outlet as shown in (1), but if there is a difference like shown in (2), there is a possibility of inside clogged. In this case, replace Strainer.





Trouble shooting 51

Abnormal Noise

Forecast of Cause :

1.Abnormal installation (Indoor/Outdoor) 2. Fan failure(Indoor / Outdoor)
3.EEV failure (Indoor) 4. Compressor failure (Outdoor)

Diagnosis method when Abnormal Noise is occurred

Abnormal noise is coming from Indoor Unit
(Check and correct followings)

- ☐ Is Main Unit installed in stable condition?
- ☐ Is the installation of Air suction grille and front panel normal?
- ☐ In case of Duct type : Is Static Pressure range normal?
  (Refer to Data & Technical Manual)

OK

- ☐ Is Fan broken or deformed?
- ☐ Is the screw of Fan loose?
- ☐ Is there any object which obstruct the Fan rotation?

Attention!!

- If Refrigerant Noise is occurring, Check if the Indoor and Outdoor Thermistor is wrongly installed. Check and correct the thermistor.
- Check the refrigerant additional charging amount. When the refrigerant is not enough, add the refrigerant. However, the total refrigerant amount is prevented from more than 6.83kg.

Abnormal noise is coming from Outdoor Unit
(Check and correct followings)

- ☐ Is Main Unit installed in stable condition?
- ☐ Is Bell Mouth installed normally?

OK

- ☐ Is Fan broken or deformed?
- ☐ Is the screw of Fan loose?
- ☐ Is there any object which obstruct the Fan rotation?

OK

- ☐ Check if vibration noise by loose bolt or contact noise of piping is happening.

OK

- ☐ Is Compressor locked?
  >> Check Compressor (Refer to Service Parts Information)

Trouble shooting 52

Water Leaking

Forecast of Cause :

1.Erroneous installation 2. Drain hose failure 3. Float Switch failure

Diagnosis method when water leak occurs

- ☐ Is Main Unit installed in stable condition?
- ☐ Is Main Unit broken or deformed at the time of transportation or maintenance?

OK

- ☐ Is Drain Hose connection loose?
- ☐ Is there a trap in Drain Hose?
- ☐ Is Drain Hose clogged?

OK

- ☐ Is Fan rotating?
  >> Check Fan Motor (Refer to Service Parts Information)

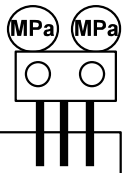
OK

- ☐ Is Float Switch defective?
  >> Check Float Switch (Refer to Trouble Shooting)

Diagnosis method when water is spitting out

- ☐ Is the filter clogged?

OK



- ☐ Check Gas Pressure and correct it if there was a gas leak.

Attention!!

If water is leaking from the Indoor Unit that is not in operation, there is a possibility of Indoor EEV is not closed.

=> Check EEV (Refer to Service Parts Information)

4-3-4 Trouble Shooting for Optional Parts

1. External Switch Controller (UTY-TEKX)

Trouble shooting 53

Error Contents :	**Symptom :**
Power Supply Error	**No operation & LED does not light up.**

Condition :

1. No power supply.
   Voltage error between red and black terminals of External Switch Controller. (Normal voltage: 12V plus minus 10%)
2. Electric circuit error.
   Voltage is normal between red and black terminals of External Switch Controller (Normal voltage: 12V plus minus 10%)

Cause 1 : Indoor unit defective
- ☐ Refer to Indoor unit trouble shooting.

↓ OK

Cause 2 : Connection cable is defective or open.
- ☐ Check installation of connection cable.
- ☐ Check if connection cable is open.

OK →

Cause 3 : Defective insertion or open connection of the cable between External Switch Controller terminal and PCB.
- ☐ Check connector insertion.
- ☐ Check if connection cable is open.

↓ OK

Cause 4 : Ext. Switch Controller is defective.
- ►**Replace External Switch Controller.**

Trouble shooting 54

Error Contents :	**Symptom :**
The abnormality in connection of remote controller cable	**LED repeats flashing 0.5sec ON & 0.5sec OFF.**

Condition :

Communication with Indoor unit has been cut off for longer than 1 minute.

Cause 1 :
Communication cable is defective or open.
- ☐ Check installation of connection cable.
- ☐ Check if connection cable is open.

↓ OK

Cause 2 : Defective insertion or open connection of the cable between External Switch Controller terminal and PCB.
- ☐ Check connector insertion.
- ☐ Check if connection cable is open.

↓ OK

Cause 3 : DIP switch setting defective
- ☐ Check setting of DIP-SW1-4, 1-5, 1-6.

OK →

Cause 4 : External noise
- ☐ Remove or shut out external noise source.

↓ OK

Cause 5 : Ext. Switch Controller is defective.
- ►**Replace External Switch Controller.**

Trouble shooting 55

Error Contents :	**Symptom :**
Transmission Error	**LED repeats flashing 0.5sec ON & 1.0sec OFF.**

Condition :
Normal communication with Indoor unit has been suspended for longer than 1 minute.

Cause 1 : DIP switch setting defective
☐ Check setting of DIP-SW1-4, 1-5, 1-6.

OK

Cause 2 : External noise
☐ Remove or shut out external noise source.

OK

Cause 3 : Ext. Switch Controller is defective.
►**Replace External Switch Controller.**

Trouble shooting 56

Error Contents :	**Symptom :**
Switch Operation Error	**LED is lighting but Switch (SW1 or SW2) does not operate.**

Condition :
Switch input can not be detected.

Cause 1 : Connection cable is defective or open.
☐ Check installation of connection cable.
☐ Check if connection cable is open.

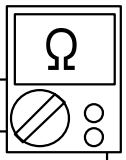
OK

Cause 2 : Defective insertion or open connection of the cable between External Switch Controller terminal and PCB.
☐ Check connector insertion.
☐ Check if connection cable is open.

OK

Cause 3 : DIP switch setting defective
☐ Check DIP Switch setting.

OK



Cause 4 : External Switch is defective
☐ Check any short or switch operation failure.
☐ Check resistance value between the terminals, at the time of input.
►**OPEN** : More than 50 kΩ
►**SHORT :** Less than 1 kΩ

OK

Cause 5 : Ext. Switch Controller is defective.
►**Replace External Switch Controller.**

2. Signal Amplifier (UTY-VSGXZ1)

Trouble shooting 57

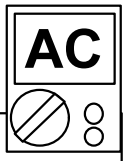
Error Contents :	**Symptom :**
Power Supply Error	**No display**

Details :
Condition of occurrence : Normal power is not supplied. 7 segment indicator is defective.
Release condition : Normal power is supplied. 7 segment indicator is normal.

Cause 1 :
Power supply cable installation is defective or open.

☐ Check following installation and reset the power supply.
(1) Installation of power cable on power supply terminal.
(2) Connection between Power PCB and Terminal.
(3) Connector condition between power PCB and Main PCB.

OK



Cause 2 : Signal Amplifier is defective.

If normal voltage (Rated Voltage) is applied to power supply terminal of Signal Amplifier, there is a possibility of defective PCB. Proceed as follows.
►**Replace Signal Amplifier.**

Trouble shooting 58

Error Contents :	**Symptom :**
Communication Error	**Error code does not appear [_]** **Communication error occurs at connected equipment side.**

Details :
Condition of occurrence : Network cable defective. External noise is applied.
Overlapping of Signal Amplifier address setting. System design mistake.
Release condition : Network cable is connected. External noise is removed.
Overlapping of Signal Amplifier has been corrected. System design is normal.

Cause 1 :
Network cable installation is defective or open.

☐ Check Network cable installation.

OK

Cause 2 : External noise

☐ Remove external noise around Signal Amplifier or Network cable. (Keep enough distance)

OK

Cause 3 :
Overlapped address of Signal Amplifier.

☐ Set up address again which does not overlap on system. After set up again, reset the power supply.

OK

Cause 4 : System Design mistake

☐ Check following items.(Refer to Installation Manual)
(1) Installation location of Terminal Resistor.
(Only 1 location on NS*)
(2) Cable length. (Within 500m maximum on NS*)
(3) Number of units connected
(Up to 64 units maximum on NS*)
(4) Communication cable specification.
(Use specified type.)
(5) Number of Signal Amplifier installed.
(Up to 8 units max. on system)
(6) Network cable shall not be connected in loop.

*NS : Network Segment

Trouble shooting 59

Error Contents :	**Symptom :**
Address Setting Error	**Error display [2 6]** **No operation.**

Details :

Condition of occurrence : Address is not set at Signal Amplifier.
Release condition : Address setting mode is started up, and desired address has been set up.

Cause 1 : External noise

- ☐ Upon pressing RESET button (SW7) or turning on power, proceed as follows.

(1) If error did not appear, it is not a defect of PCB. Remove the surrounding noise source.
(2) If error occurs again, check followings other than removing surrounding noise source.

OK

Cause 2 : Address is not set at Signal Amplifier.

- ☐ Set up address again. After set up again, reset the power supply.

OK

Cause 3 : Signal Amplifier is defective.

►**Replace Signal Amplifier.**

Trouble shooting 60

Error Contents :	**Symptom :**
Parallel Communication Error	**Error display [C 1]** **No operation.**

Details :

Condition of occurrence : Communication error between CPU and Network Driver IC
Release condition : Communication is normal between CPU and Network Driver IC

Cause 1 : External noise

- ☐ Upon pressing RESET button (SW7) or turning on power, proceed as follows.

(1) If error did not appear, it is not a defect of PCB. Remove the surrounding noise source.
(2) If error occurs again, check followings other than removing surrounding noise source.

OK

Cause 2 : Signal Amplifier is defective.

►**Replace Signal Amplifier.**

Trouble shooting 61

Error Contents :	**Symptom :**
Communication Error B	**Error display [D9 (Flashing or Lighting)]** **No operation.**

Details :

Condition of occurrence : Communication error between CPU and Network Driver IC (CH_B side).
Network Driver IC is defective.

Release condition : Communication is normal between CPU and Network Driver IC (CH_B side).
Network Driver IC operation is normal.

Cause 1 : External noise

- ☐ Upon pressing RESET button (SW7) or turning on power, proceed as follows.

(1) If error did not appear, it is not a defect of PCB. Remove the surrounding noise source.

(2) If error occurs again, check followings other than removing surrounding noise source.

OK

Cause 2 :Signal Amplifier is defective.

►**Replace Signal Amplifier.**

Trouble shooting 62

Error Contents :	**Symptom :**
Communication Error A	**Error display [D14 (Flashing or Lighting)]** **No operation.**

Details :

Condition of occurrence : Communication error between CPU and Network Driver IC (CH_A side).
Network Driver IC is defective.

Release condition : Communication is normal between CPU and Network Driver IC (CH_A side).
Network Driver IC operation is normal.

Cause 1 : External noise

- ☐ Upon pressing RESET button (SW7) or turning on power, proceed as follows.

(1) If error did not appear, it is not a defect of PCB. Remove the surrounding noise source.

(2) If error occurs again, check followings other than removing surrounding noise source.

OK

Cause 2 : Signal Amplifier is defective.

►**Replace Signal Amplifier.**

3. Network Convertor (UTY-VGGXZ1)

1. When connecting a group remote controller to a network convertor

Trouble shooting 63

Error Contents :	**Symptom :**
Power Supply Error	**No display**

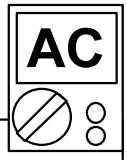
Details :

Condition of occurrence : Normal power is not supplied. 7 segment indicator is defective.
Release condition : Normal power is supplied. 7 segment indicator is normal.

Cause 1 :
Power supply cable installation is defective or open.

☐ Check following installation and reset the power supply.
(1) Installation of power cable on power supply terminal.
(2) Connection between Power PCB and Terminal.
(3) Connector condition between power PCB and Main PCB.

OK



Cause 2 : Network Convertor is defective.

If normal voltage (Rated Voltage) is applied to power supply terminal of Network Convertor, there is a possibility of defective PCB. Proceed as follows.
►**Replace Nerwork Convertor.**

Trouble shooting 64

Error Contents :	**Symptom :**
PCB Error 1	**Error Code display [C 1]** **All the control items do not operate.**

Details :

Condition of occurrence : Synchronization of Network Device was not normally done.
Release condition : When the synchronization of the device is normally done.

Cause 1 : External noise

☐ After pressing SW104 of Network Convertor PCB for 5 seconds or turning on power.
Does error code display reappear?

YES

● Remove the surrounding noise source.

OK

NO

● It is not a defect of PCB. Remove the surrounding noise source.

Cause 2 : Network Convertor is defective.

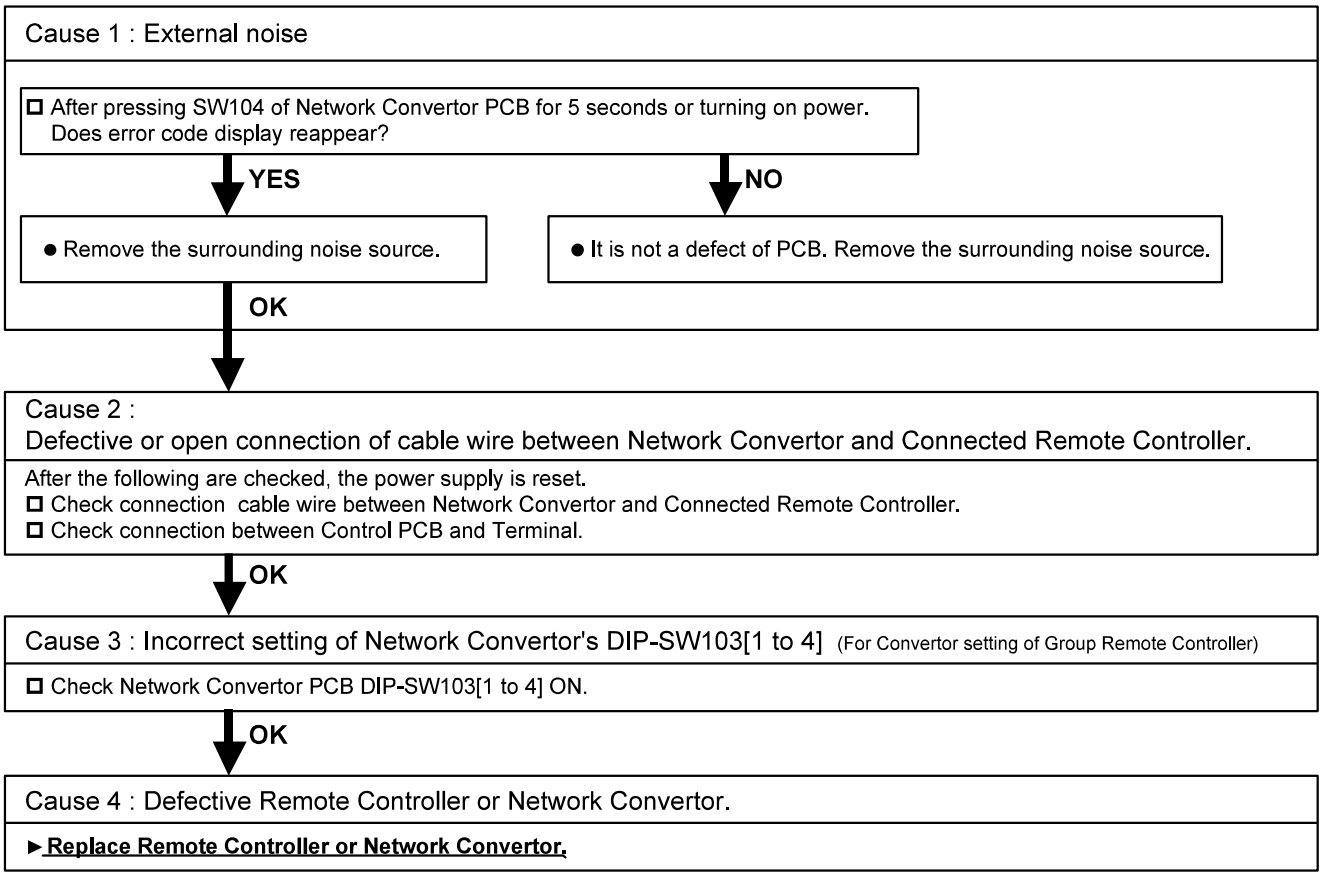
►**Replace Network Convertor.**

Trouble shooting 65

Error Contents :	**Symptom :**
Communication Error with Group Remote Controller	**Error Code display [1 2] Control/Display from Group Remote is not available.**

Details :

Condition of occurrence : The communication between Group Remote and Network Convertor was not normally performed.
Release condition : When the communication between Group Remote and Network Convertor resumes normal operation.



Trouble shooting 66

Error Contents :	Symptom :
Software Error	**Error Code display [C A]** **All the control items do not operate.** **Other Controls are left they are.**

Details :

Condition of occurrence : Micon program performed an abnormal control.
Error of inside information of EEPROM.
initial setting of Network Converor PCB was not normally performed.

Release condition : Micon has been reset, and the control of Network Convertor became normal.
When error disappeared and Network Convetor becomes available to control.

Cause 1 : External noise

☐ Check continuation of error.
(1) If error is released automatically, it is not a defect of PCB. Remove the surrounding noise source around Network Convertor.
(2) If error is not released automatically, check followings.

↓ **OK**

☐ After pressing SW104 of Network Convertor PCB for 5 seconds or turning on power.
Does error code display reappear?

↓ **YES**

● Remove the surrounding noise source.

↓ **OK**

↓ **NO**

● It is not a defect of PCB. Remove the surrounding noise source.

Cause 2 : Network Convertor is defective.

►**Replace Network Convertor.**

Trouble shooting 67

Error Contents :	Symptom :
Refrigerant circuit address setting error	**Error Code display [2 6]**

Details :

Condition of occurrence : Indoor unit registration is 3 refrigerant circuits or more.

Release condition : Indoor unit registration is 2 refrigerant circuits or less.

Cause 1 : Check of number of indoor unit registration refrigerant circuits

☐ Check indoor unit registration.
(1) Number of refrigerant circuits of indoor unit registered at Replace Group Remote Controller is 3 refrigerant circuits or more even though connected to one converter.

↓ **YES**

☐ Make 2 refrigerant circuits or less and wait 2 minutes

↓ **NO**

☐ Replace Network Convertor
Replace Group Remote Controller

3. Network Convertor (UTY-VGGXZ1)

2. When connecting a single split type indoor unit to a network convertor

Trouble shooting 68

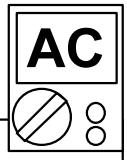
Error Contents :	**Symptom :**
Power Supply Error	**No display**

Details :
Condition of occurrence : Normal power is not supplied. 7 segment indicator is defective.
Release condition : Normal power is supplied. 7 segment indicator is normal.

Cause 1 :
Power supply cable installation is defective or open.

☐ Check following installation and reset the power supply.
(1) Installation of power cable on power supply terminal.
(2) Connection between Power PCB and Terminal.
(3) Connector condition between power PCB and Main PCB.

OK



Cause 2 : Network Convertor is defective.

If normal voltage (220V) is applied to power supply terminal of Network Convertor, there is a possibility of defective PCB. Proceed as follows.
►**Replace Network Convertor.**

Trouble shooting 69

Error Contents :	**Symptom :**
PCB Error 1	**Error Code display [C 1]** **All the control items do not operate.**

Details :
Condition of occurrence : Synchronization of Network Device was not normally done.
Release condition : When the synchronization of the device is normally done.

Cause 1 : External noise

☐ After pressing SW104 of Network Convertor PCB for 5 seconds or turning on power.
Does error code display reappear?

YES

● Remove the surrounding noise source.

OK

NO

● It is not a defect of PCB. Remove the surrounding noise source.

Cause 2 : Network Convertor is defective.

►**Replace Network Convertor.**

Trouble shooting 70

Error Contents :	**Symptom :**
Communication Error with Standard Remote Controller	**Error Code display [1 2] Control/Display from Standard Remote is not available. Other controls are left as they are.**

Details :

Condition of occurrence : The communication between Standard Remote Controller and Network Convertor was not normally performed.

Release condition : When the communication between Standard Remote Controller and Network Convertor resumes normal operation.

Cause 1 : External noise

☐ After pressing SW104 of Network Convertor PCB for 5 seconds or turning on power. Does error code display reappear?

YES

● Remove the surrounding noise source.

OK

NO

● It is not a defect of PCB. Remove the surrounding noise source.

Cause 2 :
Defective or open connection of cable wire between Network Convertor and Connected Remote Controller.

After the following are checked, the power supply is reset.
☐ Check connection cable wire between Network Convertor and Connected Remote Controller.
☐ Check connection between Control PCB and Terminal.

OK

Cause 3 : Incorrect setting of Network Convertor's DIP-SW107[2] (Wired RC Validity setting)

☐ Check Network Convertor PCB DIP-SW107[2].

OK

Cause 4 : Incorrect selection of Remote Controller

☐ Check connection Remote Controller. (Is it specified with the Installation Manual of Network Convertor?)

OK

Cause 5 :
Incorrect setting of Remote Controller's DIP-SW (Number of connected remote controllers)

☐ Check DIP-SW of Remote Controller.

OK

Cause 6 : Defective Remote Controller or Network Convertor.

►**Replace Remote Controller or Network Convertor.**

Trouble shooting 71

Error Contents :	**Symptom :**
Communication Error with Indoor Unit	**Error Code display [1 6]** **All the control items do not operate.**

Details :

Condition of occurrence : The communication between Indoor unit and Network Convertor was not performed normally.
Release condition : When the communication with Indoor unit is resumed normally.

Cause 1 : External noise

☐ After pressing SW104 of Network Convertor PCB for 5 seconds or turning on power.
Does error code display reappear?

YES

● Remove the surrounding noise source.

NO

● It is not a defect of PCB. Remove the surrounding noise source.

OK

Cause 2 :
Defective or open connection of Remote Control cable between Network Convertor and Indoor Unit.

After the following are checked, the power supply is reset.
☐ Check connection cable wire between Network Convertor and Indoor unit.
☐ Check connection between Control PCB and Terminal.

OK

Cause 3 : Power to Indoor unit is shut down.

☐ Check the power to Indoor unit.

OK

Cause 4 : Incorrect setting of main unit address of Indoor unit.

☐ Check main unit address setting of Indoor unit.

OK

Cause 5 : Incorrect setting of DIP-SW of Network Convertor. Mis-read of Indoor unit type and RC type.

☐ Check DIP-SW103[1 to 8] of Network Convertor (Indoor unit type, RC type, number of Indoor units connected.)
☐ Check Indoor unit type and RC type of all Indoor units connected to Network Convertor.

OK

Cause 6 : Defective PCB of Indoor unit or Network Convertor.

►**Replace PCB of Controller PCB or Network Convertor.**

Trouble shooting 72

Error Contents :	**Symptom :**
Communication Error with Indoor Unit	**Error Code display [2 6]** **All the control items do not operate.**

Details :

Condition of occurrence : The communication between Indoor unit and Network Convertor was not performed normally.
Release condition : When the communication with Indoor unit is resumed normally.

Cause 1 : External noise

☐ After pressing SW104 of Network Convertor PCB for 5 seconds or turning on power. Does error code display reappear?

YES

● Remove the surrounding noise source.

OK

NO

● It is not a defect of PCB. Remove the surrounding noise source.

Cause 2 : Defective or open connection of Remote Control cable between Network Convertor and Indoor Unit.

After the following are checked, the power supply is reset.
☐ Check connection cable wire between Network Convertor and Indoor unit.
☐ Check connection between Control PCB and Terminal.

OK

Cause 3 : Power to Indoor unit is shut down.

☐ Check the power to Indoor unit.

OK

Cause 4 : Incorrect setting of main unit address of Indoor unit.

☐ Check main unit address setting of Indoor unit.

OK

Cause 5 : Incorrect setting of DIP-SW of Network Convertor. Mis-read of Indoor unit type and RC type.

☐ Check DIP-SW103[1 to 8] of Network Convertor (Indoor unit type, RC type, number of Indoor units connected.)
☐ Check Indoor unit type and RC type of all Indoor units connected to Network Convertor.

OK

Cause 6 : Defective PCB of Indoor unit or Network Convertor.

►**Replace PCB of Controller PCB or Network Convertor.**

Trouble shooting 73

Error Contents :
Software Error

Symptom :
Error Code display [C A]
All the control items do not operate.
Other Controls are left they are.

Details :
Condition of occurrence : Micon program performed an abnormal control.
Error of inside information of EEPROM.
initial setting of Network Converor PCB was not normally performed.
Release condition : Micon has been reset, and the control of Network Convertor became normal.
When error disappeared and Network Convetor becomes available to control.

Cause 1 : External noise

☐ Check continuation of error.
(1) If error is released automatically, it is not a defect of PCB. Remove the surrounding noise source around Network Convertor.
(2) If error is not released automatically, check followings.

↓ OK

☐ After pressing SW104 of Network Convertor PCB for 5 seconds or turning on power.
Does error code display reappear?

↓ YES

● Remove the surrounding noise source.

↓ OK

NO

● It is not a defect of PCB. Remove the surrounding noise source.

Cause 2 : Network Convertor is defective.

►**Replace Network Convertor.**

Trouble shooting 74

Error Contents :
Indoor / Outdoor Unit Error

Symptom :
Error Code display [5 U]
Other controls are left as they are.

Details :
Condition of occurrence : When error occurred on Indoor/Outdoor unit that is connected to Network Convertor.
Release condition : When the error of Indoor/Outdoor unit that is connected to Network Convertor is released.

Cause 1 : Error occurred in Indoor unit

►**Refer to Indoor Unit trouble shooting.**
(Removal of error of indoor unit connected to network converter)

↓ OK

Cause 2 : Error occurred in Outdoor unit

►**Refer to Outdoor Unit trouble shooting.**
(Removal of error of outdoor unit connected to network converter)

4. Group Remote Controller (UTY-CGGY / CGGG)

Trouble shooting 75

Error Contents :	**Symptom :**
PCB Error	**Error Code display [C 4]** **OPERATION LED is flashing.**

Details :

Condition of occurrence : When EEPROM can not be written, or the control port does not operate.
Release condition : Power is reset.

Cause 1 : Remote Controller is defective.

►**Replace Group Remote Controller.**

Trouble shooting 76

Error Contents :	**Symptom :**
Connection Error	**Error Code display [1 2]** **OPERATION LED is flashing.**

Details :

Condition of occurrence : The valid signal has not been received from the convertor more than 90 seconds after the communication line became valid.

Release condition : Valid signal is received from Convertor.

Cause 1 : Connection failure

- ☐ Check power to the convertor.
- ☐ Check connection of remote control line between controller and convertor.

OK

Cause 2 : Check outside cause (Voltage drop or noise, etc.)

- ● Instant drop ---------- Check if there is a large load electric apparatus in the same circuit.
- ● Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- ● Noise ---------- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).

OK

Cause 3 : Remote Controller is defective.

►**Replace Group Remote Controller.**

Trouble shooting 77

Error Contents :	**Symptom :**
Address Setting Error	**Error Code display [2 6]** **OPERATION LED is flashing.**

Details :

Condition of occurrence :

1. No Indoor unit is registered.

Release condition :

1. The key to enter the function selection process is pressed.
   TIME< key and TIME> key are simultaneously kept pressed.
2. It automatically initializes by itself. After that, it is released by pressing the key to enter the function selection process.

Cause 1 : Setting failure

- ☐ Register Indoor units again by entering to the function selection mode.
  (Keep pressing TIME< key and TIME> key.
  (Refer to the installation manual for the remote controller.)

Trouble shooting 78

Error Contents :	**Symptom :**
System Error	**Error Code display [1 5]** **OPERATION LED is flashing.**

Details :

Condition of occurrence :

1. Registration started within 4 minutes after power ON
2. Indoor unit refrigerant system registered at controller connected to converter reached 3 or more ([26] error generated at converter)
3. Only the slave unit is registered. (Main unit is not registered.)
4. Indoor unit which is not existing was registered.
5. Outdoor unit is not set in the same refrigerant circuit as the indoor unit.

Release condition :

Registered contents have been changed by SELECT key, DAY key, Timer Mode key (DELETE key).

Cause 1 : Conditions check

- ☐ Check if 4 minutes or more after starting
- ☐ Clear when [26] error generated at converter.
- ☐ Check if refrigerant systems do not become 3 or more by this indoor unit registration.

↓ **OK**

Cause 2 : Setting failure

- ☐ Recheck the registered contents.(Register the main unit.)
- ☐ Check Indoor unit DIP-SW, R-SW
- ☐ Check outdoor unit R-SW.

↓ **OK**

Cause 3 : Connection failure

- ☐ Check transmission cable
- ☐ Check if Indoor or Outdoor unit power line is disconnected.
- ☐ Check if the convertor power line is disconnected.
- ☐ Check connection between controller and the convertor.

↓ **OK**

Cause 4 : Check outside cause (Voltage drop or noise, etc.)

- ● Instant drop ---------- Check if there is a large load electric apparatus in the same circuit.
- ● Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- ● Noise ---------- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).

↓ **OK**

Cause 5 : Remote Controller is defective.

►**Replace Group Remote Controller.**

Trouble shooting 79

Error Contents :	**Symptom :**
Transmission Error	**Error Code display [1 4]** **OPERATION LED is flashing.**

Details :

Condition of occurrence : When the signal is cut off for more than 10 minutes from the registered Indoor unit (not including Slave unit).

Release condition : 1. The signal has been received from the Indoor units that was creating the error.
2. MPU has been booted up. (Release from the reset operation, the power failure stand-by operation.

Cause 1 : Connection failure

- ☐ Check transmission cable
- ☐ Check disconnected power line for Indoor unit.
- ☐ Check if convertor power line is disconnected.

↓ OK

Cause 2 : Check outside cause (Voltage drop or noise, etc.)

- ● Instant drop ---------- Check if there is a large load electric apparatus in the same circuit.
- ● Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- ● Noise ---------- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).

↓ OK

Cause 3 : Remote Controller is defective.

► **Replace Group Remote Controller.**

5. Wired Remote Controller (UTY-RNK∗)

Trouble shooting 80

Error Contents :	**Symptom :**
Thermo Sensor Error	**Thermostat Sensor display is flashing.**

Details :

Condition of occurrence : Thermistor in remote controller is open or shorted.
Release condition : Thermistor in remote controller is not open or shorted.

Cause 1 : Remote controller internal thermistor trouble

- ☐ Replace remote controller.

6. Wired (UTY-RNK∗) and Simple Remote Controller (UTY-RSK∗,RHK∗)

Trouble shooting 81

Error Contents :	**Symptom :**
Indoor Unit ⇔ Remote Controller Communication Error	**Error Code display [1 2]**

Details :

Condition of occurrence : When signal from indoor unit does not enter
Release condition : When signal from indoor unit entered

Cause 1 : Check connection

- ☐ Check cable
- ☐ Check indoor unit power supply

↓ OK

Cause 2 : Check indoor unit remote controller address.

- ☐ Check if the indoor unit remote controller addresses are sequentially set from 0.

↓ OK

Cause 3 : Noise

- ☐ Remove the surrounding noise.

↓ OK

Cause 4 : Remote controller trouble

- ☐ Replace remote controller.

↓ OK

Cause 5 : Indoor unit PCB trouble

- ☐ Change Controller PCB and set up the original address.

Trouble shooting 82

Error Contents :	**Symptom :**
Incompatible Indoor Unit is Connected	**Error Code display [1 5]**

Details :

Condition of occurrence : When information was not obtained from indoor unit
Release condition : When information was obtained from indoor unit

Cause 1 : Check remote controller master/slave setting.

- ☐ For the check and modification methods, refer to the remote controller (including external SW) installation manual.
- ☐ When there is 1 remote controller, check whether or not it is set as the master remote controller.
- ☐ When there are 2 remote controllers, check if one side is the master remote controller and the other side is the slave remote controller.
- ☐ When there are 1 remote controller and 1 external switch controller, check if the remote controller is master controller and the external switch controller is slave controller.

↓ OK

Cause 2 : Check connection

- ☐ Check cable
- ☐ Check indoor unit power supply

↓ OK

Cause 3 : Noise

- ☐ Source around cable

↓ OK

Cause 4 : Remote controller trouble

- ☐ Replace remote controller.

↓ OK

Cause 5 : Indoor unit PCB trouble

- ☐ Change Controller PCB and set up the original address.

7. System Controller (UTY-APGX) / Service Tool (UTY-ASGX) / Web Monitoring Tool (UTY-AMGX)
(Referred to as "Service Tool" hereafter)

Trouble shooting 83

Error Contents :	**Symptom :**
Unit Not Detected	**1 or more units (but not all) are not detected after Scan.** **1 or more units (but not all) are not listed in the system list after Scan.**

Details :

Condition of occurrence:
- Unit address is not set correctly.
- Network cable is not connected correctly.
- System design is mistaken.
- Unit transmission board is defective.

Recovery condition:
- Unit address is set correctly.
- Network cable is connected as designed.
- System design and work is corrected.
- Unit transmission board is normal.

Cause 1 : Unit address is not set correctly.

☐ Check the unit address setting of the undetected unit and correct it if mistaken.

OK

Cause 2 : Network cable is not connected as designed.

☐ Check that the network cables are connected according to the site design drawing.
Check specifically the network segment where the undetected unit exists.

☐ Check and fix the loose cable connection to the terminal of the undetected unit.

☐ Using Service Tool, perform scan changing the network segment where the Service Tool is connected and localize the mistaken network segment. Start from the network segment where the undetected unit exists.
Specify priority scan when possible.

OK

Cause 3 : System design work is mistaken.

☐ Check the following items and fix appropriately if mistaken.

(1) 1 (and only 1) Terminal Resistor is connected for each network segment.
(2) Cable length is within 500m for each network segment.
(3) Number of units connected within a network segment does not exceed 64.
(1 connected port of Signal Amplifier is counted as 1).
(4) Network cable specification is as specified in the Design & Technical Document.
(5) Total number of Signal Amplifiers does not exceed 8 per system.
(6) Network cable is not connected in loop.
(7) Both ends of the network cable are grounded.
(8) Network cables are not bundled together with power cables to prevent noise induction.

OK

Cause 4 : Unit transmission board is defective.

☐ Replace transmission board of the undetected unit if none of the above cause applies.

Note :
A Network Segment is a portion of the network connected directly by network cables and is separated by Signal Amplifiers. If no Signal Amplifier exits, there is only 1 network segment.

Trouble shooting 100 **INDOOR UNIT Error Method:** **Indoor Unit power supply error for FAN motor 1 (2)**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Error Code : 3 9 , 3 9 . 1 (2)**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit Indoor Unit filter PCB Circuit	When the DC power input for Fan motor < W500 - W501 (W530 - W531) on the Filter PCB> becomes lower voltage than the specified voltage.

Forecast of Cause : 1. Noise momentary open, voltage drop 2. Wire connection 3. Fan motor
4. Peripheral electric devices 5. Filter PCB 6. Controller PCB

Check Point 1 : Check if any outside cause such as voltage drop or noise

- Instant voltage drop ----- Check if there is any electric equipment with a large load within the same circuit.
- Momentary power failure ----- Check contact failure or leak current in power supply circuit
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave). And check the complete insulation of grounding.

>>If the same symptom does not reappear after resetting the power, possibility of noise is high.

OK

Check Point 2 : Check wire connection

- Wire lose connection / damage between the CN21on the Controller PCB and CN250 on the Filter PCB In case of Model 72, between W530 (W531) on the filter PCB and capacitor.

>>If there is abnormal on the wire, replace it

OK

Check Point 3 : Check rotation of Fan / wire resistance

- Rotate the applicable fan by hand when operation is off.
- Disconnect the connector from the controller PCB and Check resistance value of Motor connector (Refer to the service parts information 13-2)

OK

Check Point 4 : Check peripheral devices, Posistor, Capacitor, Diode bridge

- Check resistance value, short circuit, visible damage

>>If there is abnormal , replace it

OK

Check Point 5 : Replace Filter PCB

- Change filter PCB

NG

Check Point 6 : Replace Controller PCB

- Change Controller PCB and set up the original address.

Trouble shooting 101 **INDOOR UNIT Error Method:** **Indoor unit suction air temp. thermistor error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Error Code : 4 A, 4 A. 1**

Detective Actuators: Indoor Unit Controller PCB Circuit Suction air temp. Sensor	**Detective details:** When Indoor unit suction air temp. thermistor open or shortage is detected

Forecast of Cause : 1. Connector defective connection 2. Thermistor defective 3. Controller PCB defective

Check Point 1 : Check connection of Connector

- ☐ Check if connector is loose or removed
- ☐ Check erroneous connection
- ☐ Check if thermistor cable is open

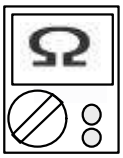
>>Reset Power when reinstalling due to removed connector or incorrect wiring.

OK

Check Point 2 : Remove connector and check sensor resistance value

Sensor Characteristics (Rough value)

Temperature (°F)	32	41	50	59	68	77	86	95
Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	33.6	25.2	20.1	15.8	12.5	10.0	8.0	6.5



Temperature (°F)	104	113	122
Temperature (°C)	40	45	50
Resistance Value (kΩ)	5.3	4.3	3.5

▶ **If Thermistor is either open or shorted, replace it and reset the power.**

OK

Check Point 3 : Check voltage CN9 of Controller PCB (DC5.0V)

▶ **If the voltage does not appear, replace Controller PCB and set up the original address.**

Trouble shooting 102 **INDOOR UNIT Error Method:** **Indoor unit discharge air temp. thermistor error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Error Code : 4 A, 4 A. 2**

Detective Actuators: Indoor Unit Controller PCB Circuit Discharge air temp. Sensor	**Detective details:** When Indoor unit discharge air temp. thermistor open or shortage is detected

Forecast of Cause : 1. Connector defective connection 2. thermistor defective 3. Controller PCB defective

Check Point 1 : Check connection of Connector

- ☐ Check if connector is loose or removed
- ☐ Check erroneous connection
- ☐ Check if thermistor cable is open

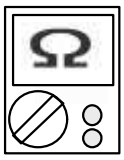
>>Reset Power when reinstalling due to removed connector or incorrect wiring.

OK

Check Point 2 : Remove connector and check sensor resistance value

Sensor Characteristics (Rough value)

Temperature (°F)	32	41	50	59	68	77	86	95
Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	33.6	25.2	20.1	15.8	12.5	10.0	8.0	6.5



Temperature (°F)	104	113	122
Temperature (°C)	40	45	50
Resistance Value (kΩ)	5.3	4.3	3.5

If Thermistor is either open or shorted, replace it and reset the power.

OK

Check Point 3 : Check voltage CN9 of Controller PCB (DC5.0V)

If the voltage does not appear, replace Controller PCB and set up the original address.

Trouble shooting 103 **INDOOR UNIT Error Method:** **Indoor Unit Fan Motor 2 rotation speed Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Error Code : 5 9, 5 9. 2**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit Indoor Fan Motor 2	When the FAN motor feed back rotation value which is detecting on the controller PCB becomes 0 and lasts for more than 1 minute at motor operation condition. Or, when the feed back rotation value contimues at 1/ 3 of target value for more than 1 minute.

Forecast of Cause : 1. Fan rotation failure 2. Fan motor winding open 3. Motor protection by ambient temp. increase
4. Capacitor failure 5. Controller PCB failure

Check Point 1 : Check rotation of Fan

- Rotate the fan by hand when operation is off.
  (Check if fan is caught, dropped off or locked motor)
  >>If Fan or Bearing is abnormal, replace it.

OK

Check Point 2 : Check Motor winding / Internal PCB circuit

- Check Indoor Fan motor **(Refer to the PARTS INFORMATION 13-2)**
  >>If Fan motor is abnormal, replace it.

OK

Check Point 3 : Check ambient temp. around motor

- Check excessively high temperature around the motor.
  (If there is any surrounding equipment that causes heat)
  >>Upon the temperature coming down, restart operation..

OK

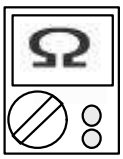
Check Point 4 : Check Motor Capacitor

- Check continuity of motor capacitor
  >>If it is shorted, replace the capacitor.

OK

Check Point 5 : Replace Controller PCB

- Change Controller PCB and set up the original address.



Trouble shooting 104

Outdoor air unit - No Power

Forecast of Cause :

1. Power Supply failure 2. Outside cause 3. Electrical Component defective

Check Point 1 : Power supply

- ☐ Is not the breaker down?
- ● Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- ● Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- ● Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).
  Check the complete insulation of grounding.

OK

Check Point 2 : Check Protector (20A)

- ☐ Check protector open / short
  If the protector is open circuit, replace it.

OK (No short circuit)

Check Point 3 : Check AC line

- ☐ Check AC line (L-N) open / short

NG (Short circuit)

Check Point 4 : Check short circuit Filter PCB

- ☐ Disconnect the wire between Filter PCB and reactor, check short circuit of AC line.
  If there is short circuit, replace the Filter PCB.

OK (No short circuit)

Check Point 5 : Check short circuit Diode bridge

- ☐ Connect the disconnected wire(s) on the check point 4, disconnect the wire between Diode bridge and Capacitor, check short circuit of AC line.
  If there is short circuit, replace the Diode bridge.

OK (No short circuit)

Check Point 6 : Check short circuit Capacitor

- ☐ Connect the disconnected wire(s) on the check point 5, disconnect the wire between Capacitor and Filter PCB, check short circuit of AC line.
  If there is short circuit, replace the Capacitor.

OK (No short circuit)

Check Point 7 : Check short circuit Power supply PCB

- ☐ Connect the disconnected wire(s) on the check point 6, disconnect the wire of Fan motor, check short circuit of AC line.
  If there is short circuit, replace the Power supply PCB.

OK (No short circuit)

Check Point 8 : Check Fan Motor

- ☐ Check open / short of FAN motor
  Refer to the Service Parts Information 13-2
  If there is short circuit, replace FAN motor.

OK (No short circuit)

Check Point 9 : Short circuit check on DC circuit

Disconnect the connector (CN200) on the Power supply PCB and check the short circuit

1. DC12V line (CN200 Pin 1- 5)
2. DC 5V Line (CN200 Pin 1 - 3)
3. DC 15V-1 Line (CN500 Pin 3 - 4)
4. DC 15V-2 Line (CN530 Pin 3 - 4)

If one of them is short circuit, replace the Power supply PCB

OK (No short circuit)

Check Point 10 : Check short circuit of actuators (for DC12V)

- ☐ Disconnect the CN10 (EEV1) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 5.
  If the short circuit disappears, replace the EEV coil.
- ☐ Disconnect the CNC01 (WRC) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 5.
  If the short circuit disappears, check the WRC wire, WRC.
- ☐ Disconnect the CNB01 (Ext.Out) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 5.
  If the short circuit disappears, check the Ext. device or wiring.
- ☐ Disconnect the CN2 (TransmissionPCB) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 5.
  If the short circuit disappears, replace the Transmission PCB.
- ☐ Disconnect the CN22 (Interconnecting wire) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 5.
  If the short circuit disappears, replace the Filter PCB.
- ☐ If the short circuit appears after disconnecing actuators, replace the Main PCB.

OK (No short circuit)

Check Point 11 : Check short circuit of actuators (for DC5V)

- ☐ Disconnect the CN14 (SW PCB) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 3.
  If the short circuit disappears, replace the SW PCB.
- ☐ Disconnect the CN18 (Receiver unit *Option) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 3.
  If the short circuit disappears, check the wire, Receiver unit.
- ☐ Disconnect the CN2 (Transmission PCB) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 3.
  If the short circuit disappears, replace the Transmission PCB.
- ☐ Disconnect the CN21 (Interconnecting wire) on the Main PCB, and check short circuit on Main PCB CN 4 Pin 1 - 3.
  If the short circuit disappears, replace the Power supply PCB.
- ☐ If the short circuit appears after disconnecing actuators, replace the Main PCB.

Trouble shooting 105 **INDOOR UNIT Error Method:** Coil 1 (Expansion valve) Error	**Indicate or Display:** Outdoor Unit : E.5U.1 Indoor Unit : Operation LED 5 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash. Error Code : 5 2

Detective Actuators:	**Detective details:**
Indoor unit controller PCB	When the EEV1 drive circuit is open circuit

Forecast of Cause : 1. Wrong capacity setting 2. EEV1 coil lose connection 3. EEV1 wire(s) cut or pinched
4. Defective EEV1 coil 5. Controller PCB (DC 12V) output abnormal
6. Noise momentary open, voltage drop

Check Point 1 : Check if the capacity setting was wrong.

- ☐ Check if the capacity setting of transmission PCB was not selected as 40kW or 50kW by using of one EEV unit. <Refer to the installation manual>

OK

Check Point 2 : Check the connection of EEV2 connector

- ☐ Check If the connector CN 10 is lose connection wrong wiring or not

OK

Check Point 3 : Check the EEV2 wire

- ☐ Check if the wire of EEV 1 has damege or not (Slash, Braking of wire, Pinching, etc.)

NG → Replace EEV1 unit

OK

Check Point 4 : Check the EEV1 Coil

- ☐ Check if the circuit of EEV coil winding is good or not (Refer to the service parts Information 8)

NG → Replace EEV1 unit

OK

Check Point 5 : Check the output of EEV1 on the Main PCB

- ☐ Check if the DC 12 is on between the pin No. 1 of CN10 and Pin No.6 of CNB01 (GND) (Disconnect the wire of EEV1 when you check the output of EEV2)

NG → Replace Main PCB

OK

Check Point 6 : Noise, momentary open, voltage drop

- ☐ Check if temporary voltage drop was not generated.
- ☐ Check if momentary open was not generated.
- ☐ Check if ground is connection correctly or there are no related cables near the power line.

Trouble shooting 106 **INDOOR UNIT Error Method:** Coil 2 (Expansion valve) Error	**Indicate or Display:** Outdoor Unit : E.5U.1 Indoor Unit : Operation LED 5 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash. Error Code : 5 2

Detective Actuators:	**Detective details:**
Indoor unit controller PCB	When the EEV2 drive circuit is open circuit

Forecast of Cause : 1. Wrong capacity setting 2. EEV2 coil lose connection 3. EEV2 wire(s) cut or pinched
4. Defective EEV2 coil 5. Controller PCB (DC 12V) output abnormal
6. Noise momentary open, voltage drop

Check Point 1 : Check if the capacity setting was wrong.

- ☐ Check if the capacity setting of transmission PCB was not selected as 40kW or 50kW by using of one EEV unit. <Refer to the installation manual>

OK

Check Point 2 : Check the connection of EEV2 connector

- ☐ Check If the connector CN 11 is lose connection wrong wiring or not

OK

Check Point 3 : Check the EEV2 wire

- ☐ Check if the wire of EEV 2 has damege or not (Slash, Braking of wire, Pinching, etc.)

NG → Replace EEV2 unit

OK

Check Point 4 : Check the EEV2 Coil

- ☐ Check if the circuit of EEV coil winding is good or not (Refer to the service parts Information 8)

NG → Replace EEV2 unit

OK

Check Point 5 : Check the output of EEV2 on the Main PCB

- ☐ Check if the DC 12 is on between the pin No. 1 of CN11 and Pin No.6 of CNB01 (GND) (Disconnect the wire of EEV2 when you check the output of EEV2)

NG → Replace Main PCB

OK

Check Point 6 : Noise, momentary open, voltage drop

- ☐ Check if temporary voltage drop was not generated.
- ☐ Check if momentary open was not generated.
- ☐ Check if ground is connection correctly or there are no related cables near the power line.

Trouble shooting 107 **INDOOR UNIT Error Method:** Peripheral device Error (DX-KIT Error)	**Indicate or Display:** Outdoor Unit : E.5U.1 Indoor Unit : Operation LED 13 times Flash, Timer LED 6 Times Flash, Filter LED Continuous Flash. Error Code : J 6

Detective Actuators:	**Detective details:**
Peripheral device Error	When the DX-KIT control unit recived the Error input from Peripheral device Error

Forecast of Cause :

1. Error input connecting wire (When the External input Error input in use.) damage
2. Peripheral device Error

Check point 1: Check the wire connection of External input (Error input)
☐ Check wire btween the terminal "Error input signal" of DX-KIT and the peripheral device, if it is not short circuit. If the connecting wire has the shorcircuit, replace the wire.

Check point 2: Check the Error status of peripheral device
☐ Refer to the Maintenance manual for the peripheral device.

* The type of error cannot be checked at the DX-KIT control unit.

Trouble shooting 108

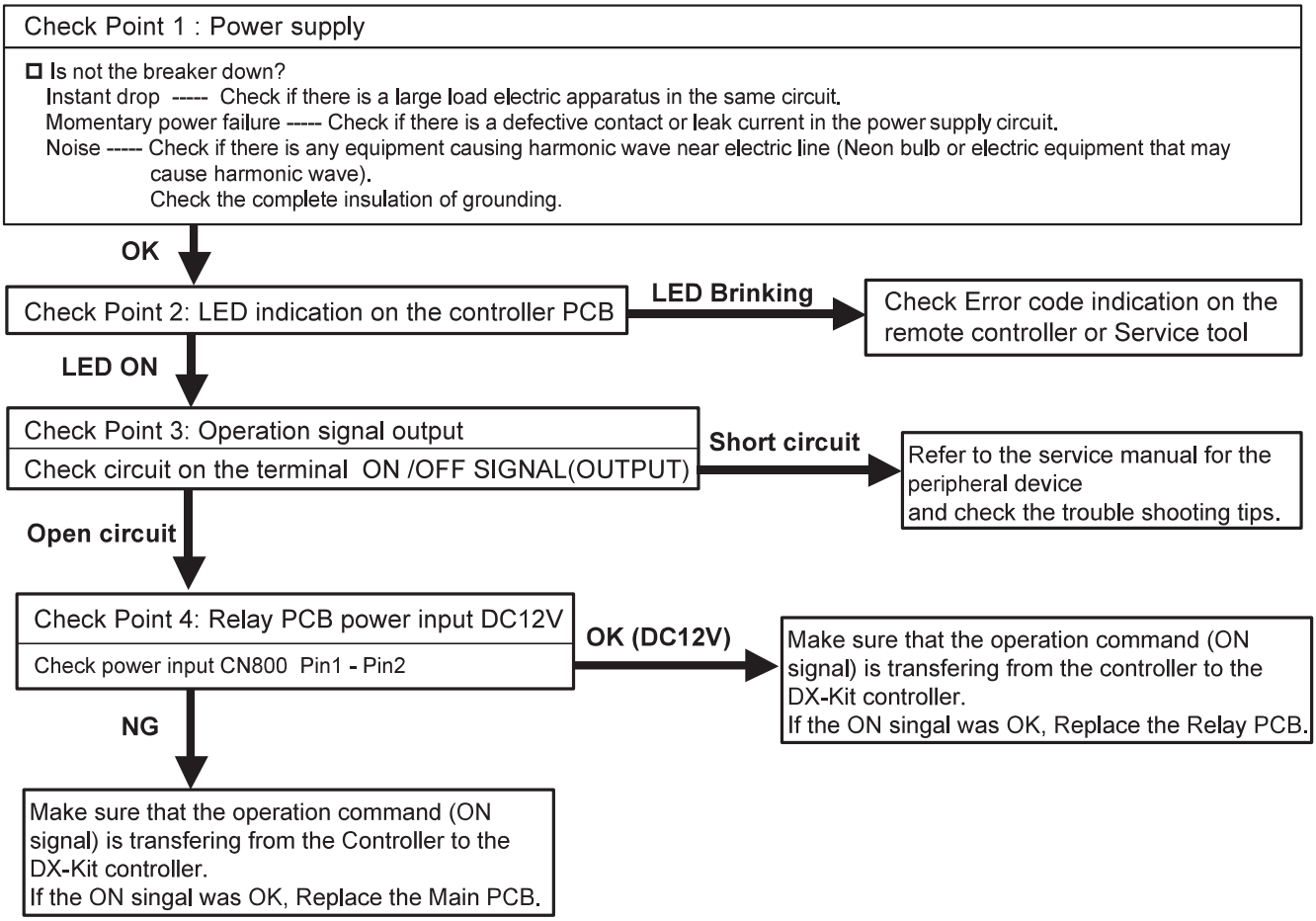
Peripheral device doesn't operate (No-power)

Forecast of Cause :

1. Power supply failuer 2. Trouble on peripheral device
3. DX-Kit Electrical compornent defective 4. Field setting mismatch

General check procedure

1. Check Error code on the VRF system. (Remote controller, Service tool, etc)
2. Check LED brinks on the controler PCB of DX-KIT
3. Check Error code on the peripheral device.
4. Check non of wrong filed settings or wrong installation.



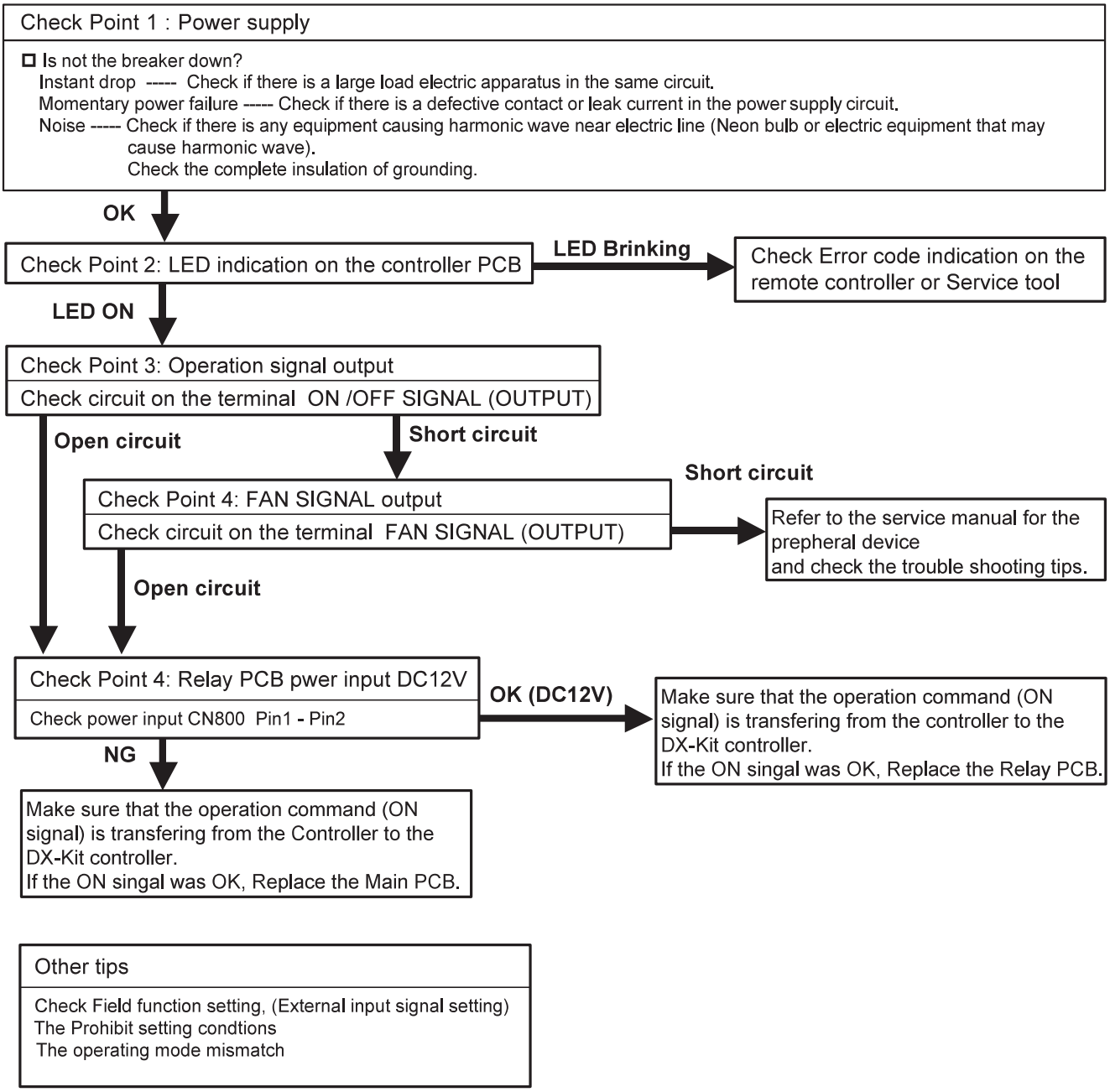
Other tips

Check Field function setting, (External input signal setting)
The Prohibit setting condtions
The operating mode mismatch

Trouble shooting 109	Forecast of Cause :
Peripheral device FAN does not operate	1. Power supply failuer 2. Trouble on peripheral device 3. DX-Kit Electrical compornent defective 4. Field setting mismatch

General check procedure

1. Check Error code on the VRF system. (Remote controller, Service tool, etc)
2. Check LED brinks on the controller PCB of DX-KIT
3. Check Error code on the peripheral device.
4. Check non of wrong filed settings or wrong installation.
5. Check if FAN operation stopped by the freeze prevention or the defrosting operation.



Other tips
Check Field function setting, (External input signal setting) The Prohibit setting condtions The operating mode mismatch

Trouble shooting 110

Peripheral device No Cooling / No Heating

Forecast of Cause :

1. Temperature controlling 2. EEV controlling 3. External Factor

General check procedure

1. Check Error code on the VRF system. (Remote controller, Service tool, etc)
2. Check LED brinks on the controler PCB of DX-KIT
3. Check Error code on the peripheral device.
4. Check none of protection function is operating on the system.
   Protection functions (For the description of protective conditions, see the service manual.)
   - Abnormal Temperature: Compressor temperature, Discharge temperature, Heat-sink temperature, IDU HEX temp.
   - Abnormal pressure: High pressure, Low pressure,
   - Abnormal on devices: EEV coil, FAN motor, Compressor Frq,

Check Point 1: Temperature sensors

Sensor position / Wire connection / Temperature detection

- Measure the resistance of sensor at the terminal board, and compare the temperature (transformed with resistance value) with the actual detecting temperature by using the Service tool.

Gas / Liquid Sensor Chracterristcs (Rough value)

Temperature (°F)	32	41	50	59	68	77	86	95	104	113	122
Temperature (°C)	0	5	10	15	20	25	30	35	40	45	50
Resistance Value (kOhm)	33.6	25.2	20.1	15.8	12.5	10.0	8.0	6.5	5.3	4.3	3.5

Inlet / Outlet Air Sensor Chracterristcs (Rough value)

Temperature (°F)	32	41	50	59	68	77	86	95	104	113	122
Temperature (°C)	0	5	10	15	20	25	30	35	40	45	50
Resistance Value (kOhm)	168.6	129.8	100.9	79.1	62.5	49.8	40.0	32.4	26.3	21.2	17.8

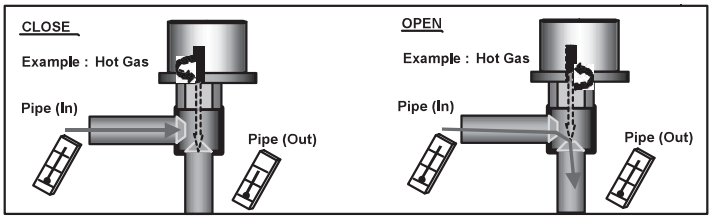
If the sensor position was incorrect, install the sensor to the correct position
If the temperature detection was wrong, replace the sensor.

Check Point 2: EEV

Wire connection / EEV movment

- Measure the resistance of EEV coil and measure the DC12V power input at the terminal board.
  EEV1: CN10_Pin No.1-Pin No.6, Pin No.1-Pin No.4, Pin No.2-Pin No.3, Pin No.2-Pin No.5)
  EEV2: CN11_Pin No.1-Pin No.6, Pin No.1-Pin No.4, Pin No.2-Pin No.3, Pin No.2-Pin No.5)
- Check EEV initialisation movment by the power reset of DX-Kit.
- Check refrigerant flowing by measuring the temperature of pipe inlet and pipe outlet.

Read wire	Resistance value (20°C)
White - Red	**200 ± 10%** Ω
Yellow - Brown	
Orange - Red	
Blue - Brown	



If the resistance of EEV coil was not correct, replace the EEV unit.
If the DC12V did not appear on the terminal, check DCV power supply on CN102.
No Voltage: Replace the power supply PCB, DC12V appeares: Replace the controller PCB.
If the EEV did not react after power reset, or no refrigerant flowing, replace the EEV unit.

Check Point 3: External factor

Air circulation obstruction
Design mismatch (Capacity, FAN speed mismatch, Field setting (Analog signal input) etc,)
Peripheral device abnormal (See the Serivce manual for the peripheral device)

Trouble shooting 111

DX-KIT Controller No Power
(LED on the Main PCB is OFF)

Forecast of Cause :

1. Power supply failuer
2. DX-Kit Electrical compornent defective

Check Point 1 : Power supply

☐ Is not the breaker down?
Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
Noise ----- Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave).
Check the complete insulation of grounding.

OK

Check Point 2: FUSE F101 on the Power supply PCB → **OPEN** → Before replacing the burnt FUSE, make sure that the terminal between L-N -E are not short-circuit.

OK

Check Point 2: Output voltage on the power supply PCB
Disconnect the CN 102 on the Power supply PCB.
Check voltage CN102 output voltage
Pin No.1 - Pin No.6: DC12V
Pin No.2 - Pin No.6: DC5V

→ **NG** → Replace the Power supply PCB

OK

the condition of short-circuit, and

Check Point 2: Output voltage on the main PCB
Disconnect the CN 801, and the power input connectors for actuators (EEV, Sensor, Relay PCB.)
Check voltage CN801 output voltage
Pin No.1 - Pin No.2: DC12V

→ **NG** → Replace the Main PCB

OK

Check Point 2: Output voltage on the main PCB
Disconnect the power input connectors for actuators (EEV, Sensor, Relay PCB.)
And check the short circuit of each actuators.

→ **NG** → Replace the actuators which has the Short-circuit conditions

4-4 SERVICE PARTS INFORMATION

SERVICE PARTS INFORMATION 1

Compressor

Diagnosis method of Compressor (If Outdoor Unit 7 segment LED displays Error, refer to Trouble shooting)

Does not start up

- Is any Indoor Unit in operation?
  * If it is operated right after stopping operation, 3 minutes start-up protection by differential pressure is kicked on.
- Check power supply voltage,open fuse.
- Is there open or loose connection cable?
- In case of inverter compressor, check Filter PCB, Inverter PCB, connection of Compressor, and winding resistance (Refer to the next page).

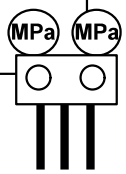
>> If there is no failure, the defect of Compressor is considered (Locked compressor due to clogged dirt or less oil)

Replace Compressor

Stops soon after starting up

- Check power supply voltage,open fuse.
- Is there open or loose connection cable?
- Is Gas Pipe Valve open? (Low Pressure is too low)
- Isn't it Liquid Compression?

>> Check Low pressure value and if it too high, check Indoor Unit. (Indoor Unit EEV too much open, or Indoor unit EEV that is not in operation open.



- Check if Refrigerant is leaking. (Recharge Refrigerant)
- Check if Strainer is clogged.
- In case of inverter compressor, check Filter PCB, Inverter PCB, connection of Compressor, and winding resistance. (Refer to the next page).

>> If there is no failure, the defect of Compressor can be considered. (Compression part broken or valve defective.)

Replace Compressor

Abnormal noise

- Check power supply voltage,open fuse. Is there open or loose connection cable?
- **Defective Compressor can be considered. (due to inside dirt clogging or broken component)**

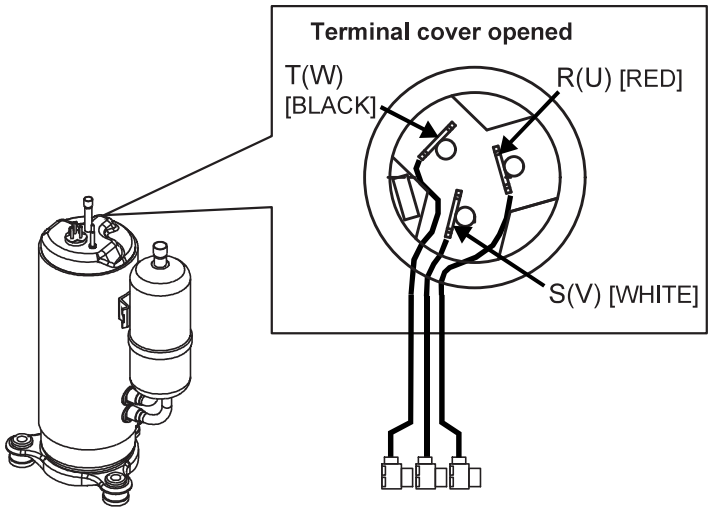
Replace Compressor

SERVICE PARTS INFORMATION 2

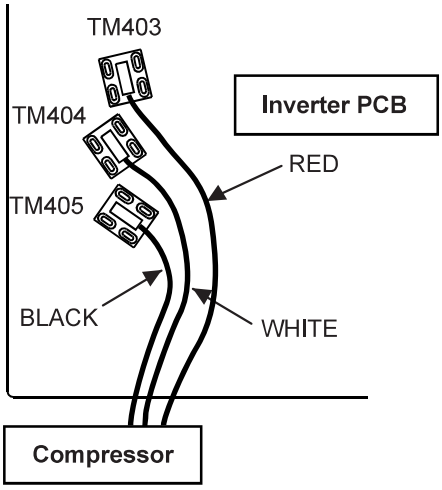
Inverter Compressor

Check Point 1 : Check Connection

☐ Check terminal connection of Compressor
(loose or incorrect wiring)



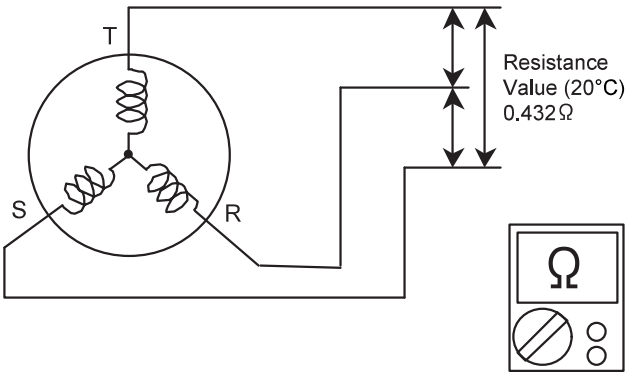
☐ Check connection of Inverter PCB
(Loose or incorrect wiring)



Check Point 2 : Check Winding Resistance

☐ Check winding resistance of each terminal

► **If the resistance value is 0Ω or infinite, replace Compressor.**



Attention!!

If Check 1, 2 are normal, make sure the following points.

(1) Check AC voltage among each terminals from filter PCB(INV) to Diode Bridge.
(Rated voltage among L and N).
► **If it does not appear, check the power supply terminal.**

(2) Check Voltage from Main PCB to Inverter PCB.
(DC13.5 - 16.5V between terminals of CN126 (1-2) connector
and DC (-12.0) - (-8.0)V between terminals of CN126 (3-2) connector of Main PCB).
► **If it does not appear, replace Main PCB.**

◆ **If both of above voltages appear, it is considered to be Inverter PCB circuit failure. Replace Inverter PCB and check operation.**

SERVICE PARTS INFORMATION 3

Main PCB
Filter PCB

Check Filter PCB -1
- Is Fuse (5A/250V) open?

NO → Check Filter PCB -3

YES

Check Filter PCB -2
- PCB pattern and parts on PCB defective?

YES → Replace Filter PCB

NO

Check Filter PCB -3
(1) Replace blown fuse.
(2) Disconnect all the connection wires between the Filter PCB - Main PCB.
(3) Is there a short between L-N?

YES → Replace Filter PCB

NO

Check Main PCB -1
(4) Connect all the connection wires between the Filter PCB - Main PCB disconnected at step (2).
(5) The same as step (3), is there a short between L-N?

YES → Replace Main PCB

NO

Check Main PCB -2
(6) Is there a open or short between the two ends of the resistance R005?

YES → Replace Main PCB

NO

Check Main PCB -3
(7) Is there a short between each terminals of Diode D006.

YES → Replace Main PCB

NO

Electric parts check
- Is the following part defective?
  - Reactor Assy

YES → Replace defective electric parts

NO

Check Main PCB -4
(8) Disconnect the wires of the pressure sensors (high pressure/low pressure) connected to the connector of the Main PCB.
(9) Is there a short between pins 1-3 of the Main PCB side connector?

YES → Replace Main PCB

NO

Check pressure sensors (high pressure/ low pressure)
- Refer to Pressure sensor check.

Check Main PCB -5
(10) Disconnect the Main PCB side connector of the connection wires (8-pin connector) between the Main PCB - Inverter PCB.
(11) Is there a short between pins 1-2 of the Main PCB side connector (8 pins)?

YES → Replace Main PCB

NO

Turn on the power.
(12) Reconnect all the connection wires disconnected up to (1)-(11) to their original places.
(13) Turn on the AC power.
⇒ If the LED of the Main PCB does not light or blink, replaces the Main PCB, Filter PCB.

SERVICE PARTS INFORMATION 4

Inverter PCB
Filter PCB

Check Filter PCB -1

(1) Using a tester, measure the resistance value of both ends of the fuses (P501). (*Cannot be checked visually.)
Is Fuse (45A/500V) open?

NO

YES

Check Filter PCB -2

- PCB pattern and parts on PCB defective?

YES → Replace Filter PCB

NO

Check Filter PCB -3

(2) Replace blown fuse.
(3) Disconnect all the connection wires between the Filter PCB - Inverter PCB.
(4) Is there a short between L- N?

YES → Replace Filter PCB

NO

Check Inverter PCB -1

(5) Is there a open between the two ends of the resistance R385 or R386?
(6) Is there a short between wire :W380 and terminal
TM394 (AJ*040/045) or TM390 (AJ*054).

YES → Replace Inverter PCB

NO

Check Inverter PCB -2

(7) Is there a open between each terminals of Diode D380 or D381.

YES → Replace Inverter PCB

NO

Electric parts check

Are the following parts defective?
- ACTPM
- Choke Coil

YES → Replace defective electric parts.

NO

Check Inverter PCB -3

(8) Disconnect the connection wires (2) between the Inverter PCB and ACTPM
(9) Is there a short between the wires of step (8)?

YES → Replace Inverter PCB

NO

Check Inverter PCB -4

(10) Disconnect the connection wires (8-pin connector)
between the Inverter PCB - Main PCB.
(11) Is there a short between Inverter PCB side connector pins 1-2 and 2-3?

YES → Replace Inverter PCB

NO

Check Inverter PCB -5

(12) Disconnect the connection wires (3-pin connector)
between the Inverter PCB - Filter PCB.
(13) Is there a short between Inverter PCB side connector
pins 1-3 and Filter PCB side connector pins 1-3?

YES →
- Inverter PCB side short circuit
⇒Replace Inverter PCB
- Filter PCB side short circuit
⇒Replace Filter PCB

NO

Turn on the power.

(14) Reconnect all the connection wires disconnected up to (1)-(13) to their original places.
(15) Turn on the AC power.

⇒ If there is the error indication about the Inverter PCB on the Main PCB, replaces the Inverter PCB-Filter PCB.

SERVICE PARTS INFORMATION 5

IPM
(Mounted on Inverter PCB)

Check Point 1

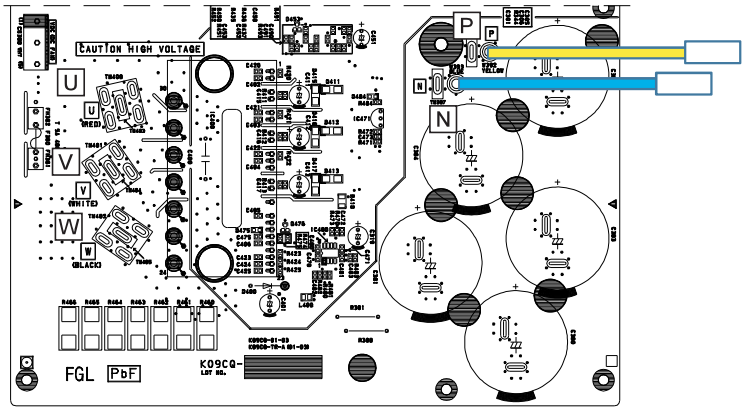
① Disconnect the connection wires between the Inverter PCB - ACTPM and Inverter PCB - Inverter Compressor.

② Set the tester to the "Resistance" mode, and measure the resistance between the following terminals.

Yellow wire (P) - Fasten terminals U/V/W
Blue wire (N) - Fasten terminals U/V/W

③ Judge the result of ② as follows:

All 6 points several MΩ or greater	: Normal
1 or more points several kΩ to short	: Defective



Inverter PCB

Check Point 2

④ Set the tester to the "Diode" mode, and measure the voltage value between the following terminals.

Tester +side (red)	Tester - side (black)	Tester display [V]
Terminal U	Yellow wire (P)	
Terminal V		
Terminal W		
Blue wire (N)	Terminal U	
	Terminal V	
	Terminal W	

⑤ Judge the result of ④ as follows:

All 6 points several 0.3V to 0.7V	: Normal
1 or more points under 0.1V or over load	: Defective

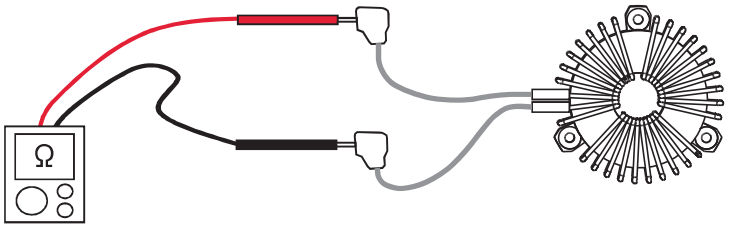
SERVICE PARTS INFORMATION 6

Choke Coil (INV)
Reactor assy (DC Fan)

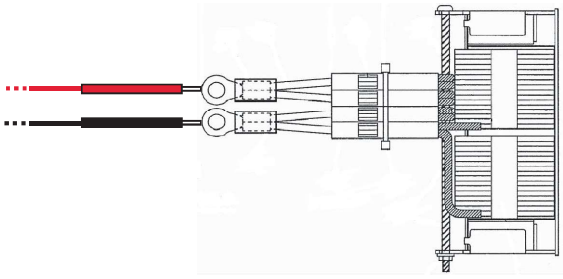
Check Point 1 : Appearance check

□ No fissures, breaks, damage, etc. at the body and winding section, terminals section?

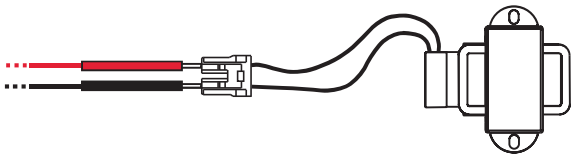
Check Point 2 : Electric check



Choke Coil (INV)
for AJ*040/ 045



Choke Coil (INV)
for AJ*054



Reactor assy (DC Fan)

① Set the tester to the "Resistance" mode, and check for open/short between both ends of the reactor wire (or connector).

② Judge the result of ①as follows:

Short	Normal
Open	Abnormal (open)

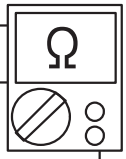
SERVICE PARTS INFORMATION 7

Terminal

Check Point 1 : Appearance check

- □ No fissures, breaks, damage, etc. at the body and terminals section?
- □ Not clogged with foreign matter?
- □ Are there no abnormalities at threaded parts (Stripped threads, deformation, damage, etc.) ?

Check Point 2 : Electric check



- □ No short between adjacent terminals?
- □ Conducts before and after same terminal?

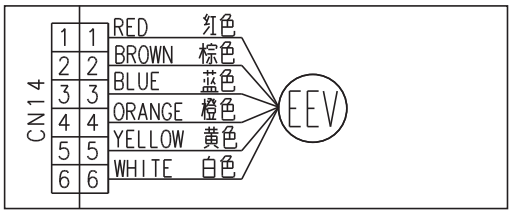
SERVICE PARTS INFORMATION 8

Indoor Unit Electronic Expansion Valve (EEV)

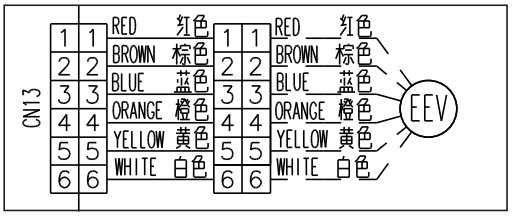
Check Point 1 : Check Connections

☐ Check Connectors (Loose connector or open cable.)

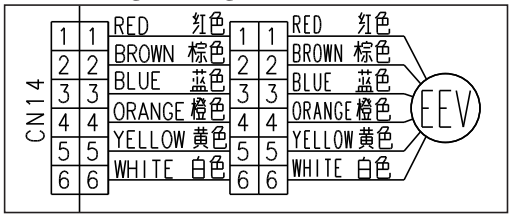
Duct



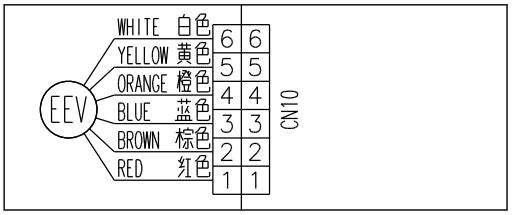
Small Wall mount



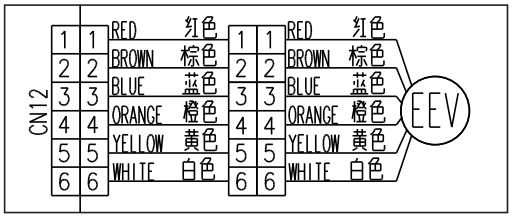
Floor/ Ceiling, Ceiling



Cassette



Wall mount



Check Point 2 : Check Coil of EEV

☐ Remove connector, check each winding resistance of Coil.

Read wire	Resistance value (20 °C)
White - Red	**200 ± 10%** Ω
Yellow - Brown	
Orange - Red	
Blue - Brown	

▶ **If Resistance value is abnormal, replace EEV.**

Check Point 3 : Check Voltage from Controller PCB

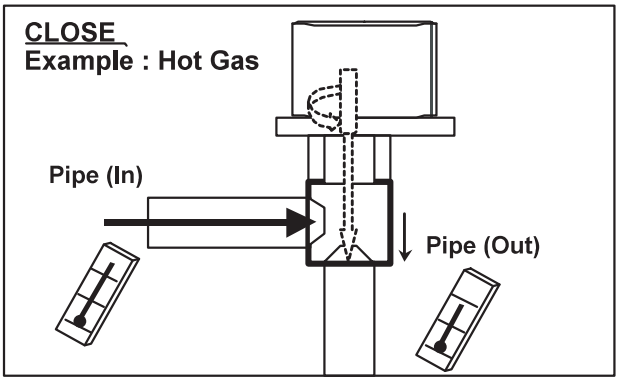
☐ Remove Connector and check Voltage (DC12V).
>> **If it does not appear, replace Controller PCB.**

Check Point 4 : Check Noise at start up

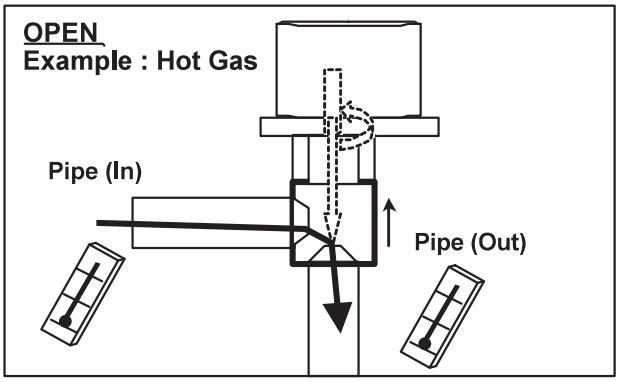
Turn on Power and check operation noise.
>> **If an abnormal noise does not show, replace Controller PCB.**

Check Point 5 : Check Opening and Closing Operation of Valve

When Valve is closed,
it has a temp. difference between Inlet and Outlet.

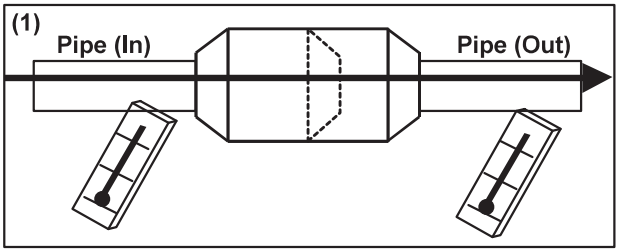


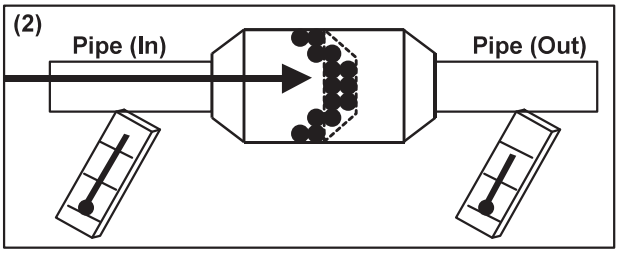
If it is open, it has no temp. difference between Inlet and Outlet



Check Point 6 : Check Strainer

Strainer normally does not have temperature difference between inlet and outlet as shown in (1), but if there is a difference as shown in (2), there is a possibility of inside clogged. In this case, replace Strainer.



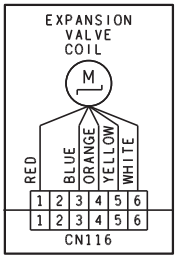


SERVICE PARTS INFORMATION 9

Outdoor Unit Electronic Expansion Valve (EEV)

Check Point 1 : Check Connections

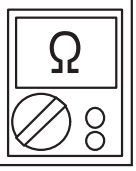
☐ Check connection of connector (CN116)
(Loose connector or open cable)



Check Point 2 : Check Coil of EEV1

☐ Remove connector, check each winding resistance of Coil.

Read wire	Resistance value (20 °C)
White - Red	46 ± 3.7 Ω
Yellow - Red	
Orange - Red	
Blue - Red	



► **If Resistance value is abnormal, replace EEV.**

Check Point 3 : Check Noise at start up

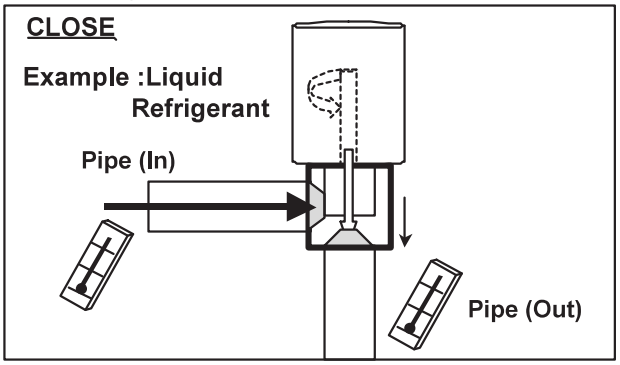
☐ Turn on Power and check operation noise.
>> If an abnormal noise does not show, replace Controller PCB.

Check Point 4 : Check Voltage from Controller PCB

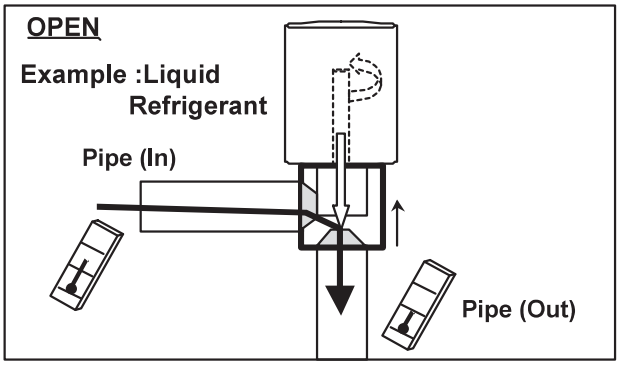
☐ Remove Connector and check Voltage (DC12V).
>> If it does not appear, replace Controller PCB.

Check Point 5 : Check Opening and Closing Operation of Valve

When Valve is closed,
it has a temp. difference between Inlet and Outlet.

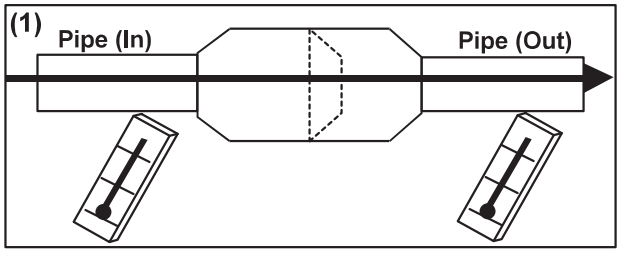


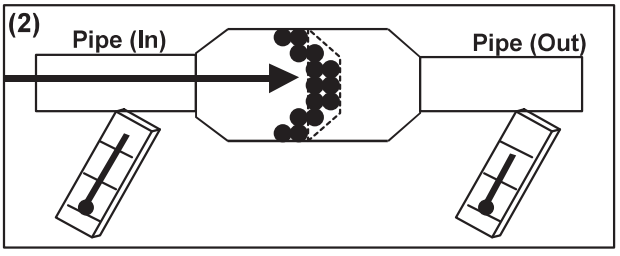
If it is open, it has no temp. difference between Inlet and Outlet.



Check Point 6 : Check Strainer

Strainer normally does not have temperature difference between i nlet and outlet as shown in (1), but if there is a difference as shown in (2), there is a possibility of inside clogged. In this case, replace Strainer.



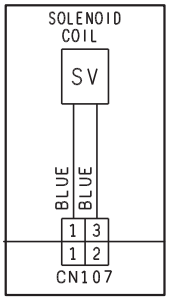


SERVICE PARTS INFORMATION 10

Outdoor Unit Solenoid Valve (SV)

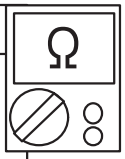
Check Point 1 : Check connections

☐ Check connection of connector.
(Loose connector or open cable)



Check Point 2 : Check Solenoid Coil

☐ Remove connector and check if coil is open.
(Normal resistance value of each coil: 2085 ± 10% Ω)
>> If Resistance value is abnormal, replace Solenoid Coil.

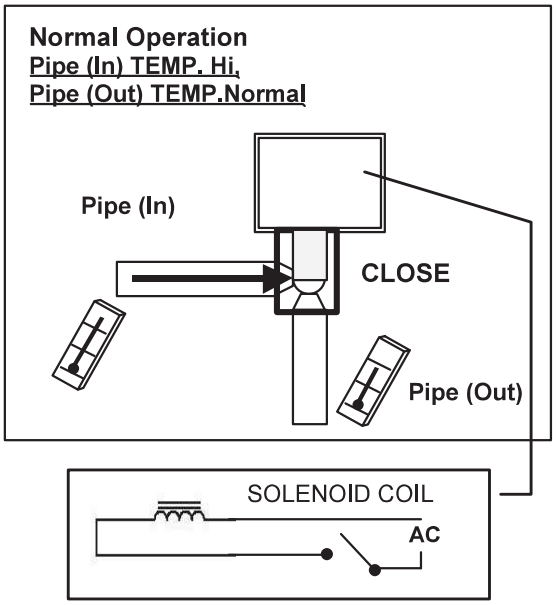


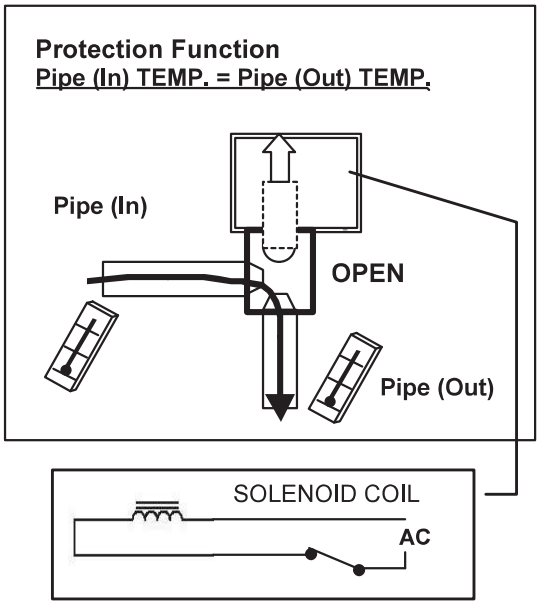
Check Point 3 : Check Voltage from Controller PCB

☐ Remove connector and check the voltage (Rated AC voltage).
>> If the voltage does not appear, replace Controller PCB.

Check Point 4 : Check opening & closing operation of Valve

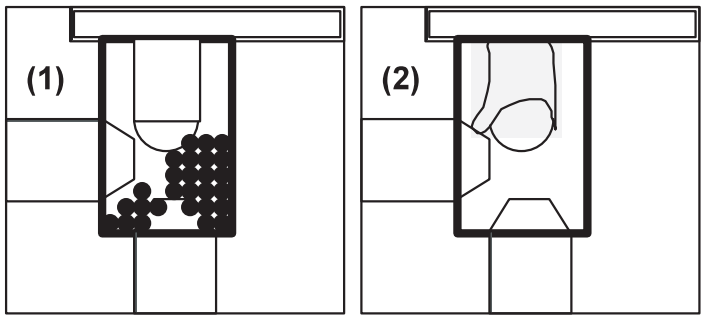
☐ Depending on either during operation or protection control, check if Valve is operating normally.
(When Valve opens, there is no temperature difference between Inlet and Outlet.)





☐ If the valve closes by removing the connector of the valve which does not close, it is considered to be Controller PCB failure. Replace Controller PCB.

☐ If it does not close by removing connector, there is a possibility of (1) clogging by dirt, or (2) deformation by the heat at the time of Solenoid Valve installation.
In this case, replace Solenoid Valve.

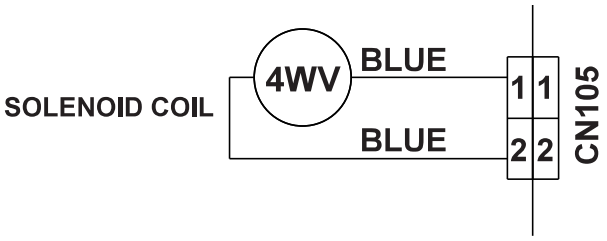


SERVICE PARTS INFORMATION 11

4-WAY VALVE

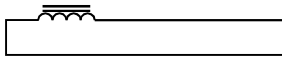
Check Point 1 : Check Circuit connection

- Check the connection of connector CN 105

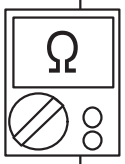


Check Point 2 : Check Solenoid Coil

- Remove CN6 from PCB and check the resistance value of coil



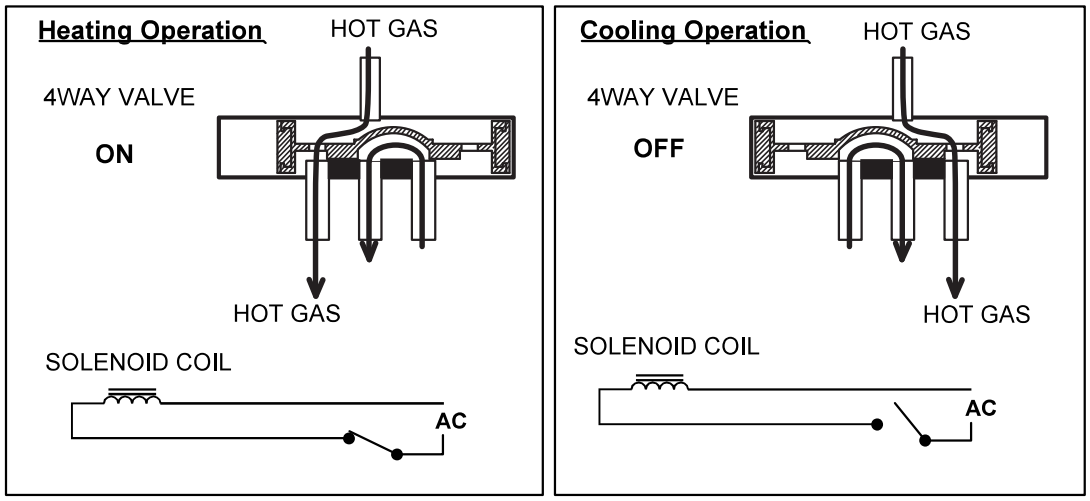
Resistance Value
≒ **2085 ±10%Ω**



☆If it is Open or abnormal resistance value, replace Solenoid Coil

Check Point 3: Check Operation of 4-Way Valve

- Check each piping temperature, and confirm the location of the valve by the temperature difference.



☆If the valve location is not proper, replace 4 way valve.

Check Point 4: Check Voltage from Controller PCB

- Remove connector and check the voltage (Rated AC voltage).
  >> If the voltage does not appear, replace Controller PCB.

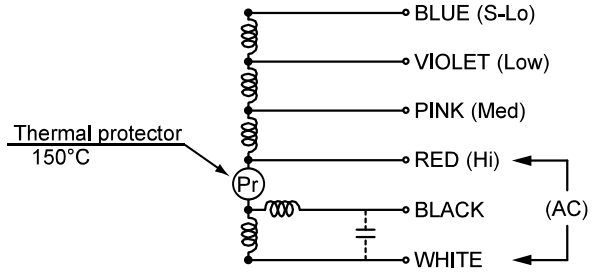
SERVICE PARTS INFORMATION 12-1

Indoor Unit Fan Motor <AC motor>

Check Point : ARXB24GALH (Low Static pressure Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



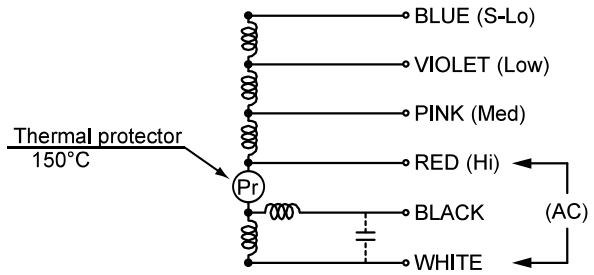
Lead wire	Resistance value
White – Red	**44.8** Ω ±**8%**
Red – Black	**37.3** Ω ±**8%**
Red – Pink	**21.3** Ω ±**8%**
Pink – Violet	**12.9** Ω ±**8%**
Violet – Blue	**12.9** Ω ±**8%**

at 20°C

Check Point : ARXB30/ 36GALH (Low Static pressure Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



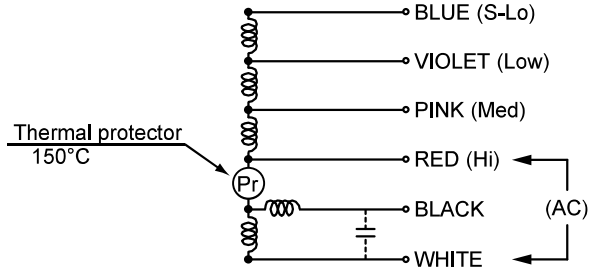
Lead wire	Resistance value
White – Red	**47.1** Ω ±**8%**
Red – Black	**27.4** Ω ±**8%**
Red – Pink	**8.00** Ω ±**8%**
Pink – Violet	**8.00** Ω ±**8%**
Violet – Blue	**8.00** Ω ±**8%**

at 20°C

Check Point : ARXB45GALH (Low Static pressure Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



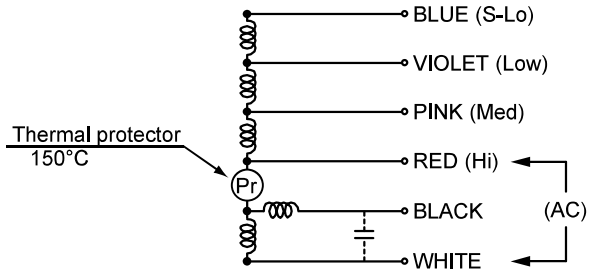
Lead wire	Resistance value
White – Red	**19.7** Ω ±**8%**
Red – Black	**13.8** Ω ±**8%**
Red – Pink	**5.86** Ω ±**8%**
Pink – Violet	**5.86** Ω ±**8%**
Violet – Blue	**5.86** Ω ±**8%**

at 20°C

Check Point : ARXA24/ 30GALH (Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



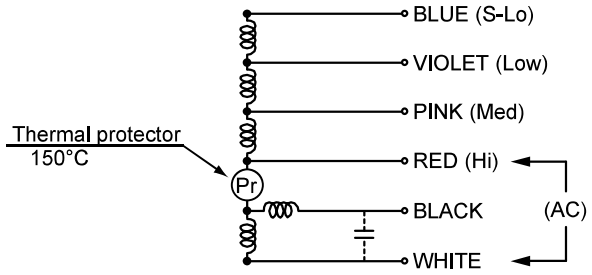
Lead wire	Resistance value
White – Red	**47.1** Ω ±**8%**
Red – Black	**27.4** Ω ±**8%**
Red – Pink	**8.00** Ω ±**8%**
Pink – Violet	**8.00** Ω ±**8%**
Violet – Blue	**8.00** Ω ±**8%**

at 20°C

Check Point : ARXA36/ 45GALH (Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**

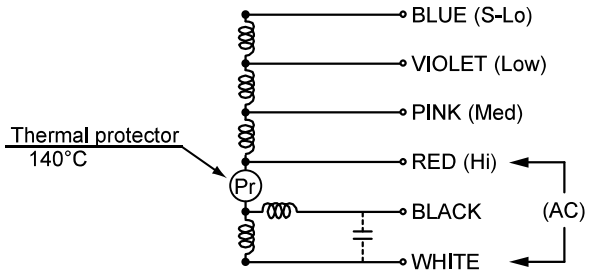


Lead wire	Resistance value
White – Red	**19.7** Ω ±**8%**
Red – Black	**13.0** Ω ±**8%**
Red – Pink	**5.86** Ω ±**8%**
Pink – Violet	**5.86** Ω ±**8%**
Violet – Blue	**5.86** Ω ±**8%**

at 20°C

Check Point : ARXB07GALH (Compact Duct Type)

☐ Check each winding resistance of the motor
►**If Resistance value is abnormal, replace motor.**

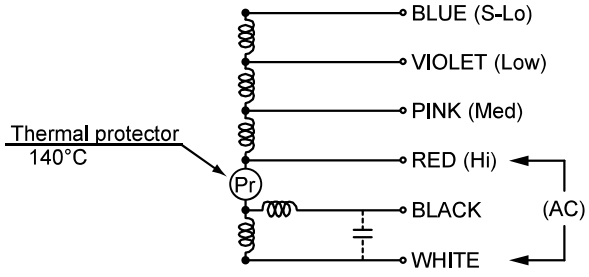


Lead wire	Resistance value
White – Red	**579** Ω ±**8%**
Red – Black	**255** Ω ±**8%**
Red – Pink	**162** Ω ±**8%**
Pink – Violet	**66** Ω ±**8%**
Violet – Blue	**93** Ω ±**8%**

at 20°C

Check Point : ARXB09GALH (Compact Duct Type)

☐ Check each winding resistance of the motor
►**If Resistance value is abnormal, replace motor.**

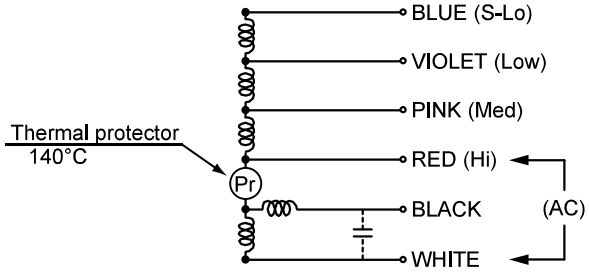


Lead wire	Resistance value
White – Red	**322.8** Ω ±**8%**
Red – Black	**255** Ω ±**8%**
Red – Pink	**103** Ω ±**8%**
Pink – Violet	**53** Ω ±**8%**
Violet – Blue	**100.7** Ω ±**8%**

at 20°C

Check Point : ARXB12GALH (Compact Duct Type)

☐ Check each winding resistance of the motor
►**If Resistance value is abnormal, replace motor.**



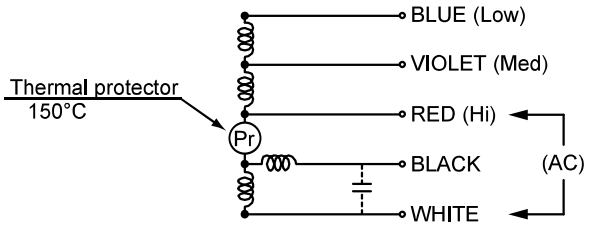
Lead wire	Resistance value
White – Red	**336** Ω ±**8%**
Red – Black	**261** Ω ±**8%**
Red – Pink	**107** Ω ±**8%**
Pink – Violet	**55** Ω ±**8%**
Violet – Blue	**103** Ω ±**8%**

at 20°C

Check Point : ARXC36GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



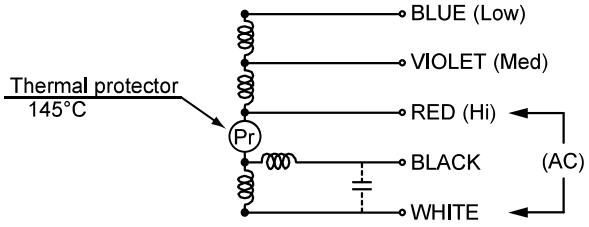
Lead wire	Resistance value
White – Red	**13.4** Ω ±**8%**
Red – Black	**16.9** Ω ±**8%**
Red – Violet	**11.5** Ω ±**8%**
Violet – Blue	**13.3** Ω ±**8%**

at 20°C

Check Point : ARXC45/ 60GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



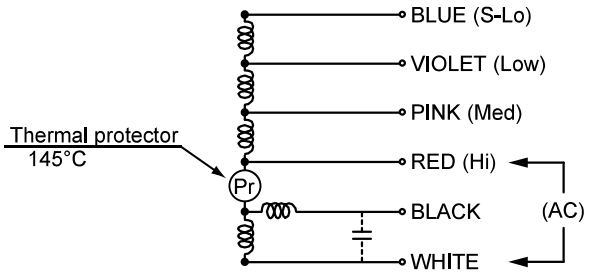
Lead wire	Resistance value
White – Red	**6.84** Ω ±**7%**
Red – Black	**9.78** Ω ±**7%**
Red – Violet	**6.1** Ω ±**7%**
Violet – Blue	**6.1** Ω ±**7%**

at 20°C

Check Point : ARXC72GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



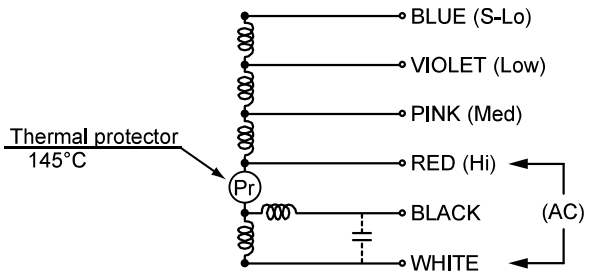
Lead wire	Resistance value
White – Red	**5.25** Ω ±**7%**
Red – Black	**5.02** Ω ±**7%**
Red – Pink	**1.86** Ω ±**7%**
Pink – Violet	**0.94** Ω ±**7%**
Violet – Blue	**0.94** Ω ±**7%**

at 20°C

Check Point : ARXC90GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



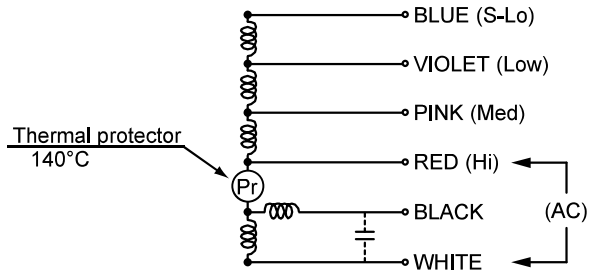
Lead wire	Resistance value
White – Red	**4.24** Ω ±**7%**
Red – Black	**4.16** Ω ±**7%**
Red – Pink	**0.46** Ω ±**7%**
Pink – Violet	**0.91** Ω ±**7%**
Violet – Blue	**0.46** Ω ±**7%**

at 20°C

Check Point : ARXB14GALH (Compact Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



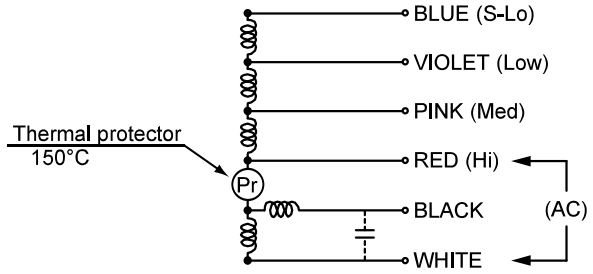
Lead wire	Resistance value
White – Red	**136.5** Ω ±**8%**
Red – Black	**125.6** Ω ±**8%**
Red – Pink	**23.7** Ω ±**8%**
Pink – Violet	**23.7** Ω ±**8%**
Violet – Blue	**49.4** Ω ±**8%**

at 20°C

Check Point : ARXB18GALH (Compact Duct Type)

☐ Check each winding resistance of the motor

►**If Resistance value is abnormal, replace motor.**



Lead wire	Resistance value
White – Red	**89.7** Ω ±**8%**
Red – Black	**150** Ω ±**8%**
Red – Pink	**37.4** Ω ±**8%**
Pink – Violet	**37.4** Ω ±**8%**
Violet – Blue	**197** Ω ±**8%**

at 20°C

SERVICE PARTS INFORMATION 12-2

Indoor Unit Fan Motor <DC motor>

- AUXB 04, 07,09,12,14,18,24 - AUXD 18,24 - AUXA 30,36,45, 54 - ARXA24,30,36,45GBLH
- ARXD 07,09,12,14,18,24 - AB*A 12,14,18,24,30,36,45,54
- AS*A 04, 07,09,12,14,18,24,30 - AS*E 04, 07,09,12,14

⚠ When you approach this part, please cut off the power supply and wait for a while until DC voltage has been discharged.

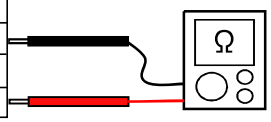
Check Point 1 : Check rotation of Fan

・Rotate the fan by hand when operation is off.
(Check if fan is caught, dropped off or locked motor)
>>If Fan or Bearing is abnormal, replace it.

Check Point 2 : Check resistance of Indoor Fan Motor

・Refer to below. Circuit-test "Vm" and "GND" terminal.
(Vm: DC voltage, GND: Earth terminal)
>>If they are short-circuited (below 300 kΩ), replace Indoor fan motor and Controller PCB.

Pin number (wire color)	Terminal function (symbol)
1 (Brown or Blue)	Feed back (FG)
2 (Yellow)	Speed command (Vsp)
3 (White)	Control voltage (Vcc)
4 (Black)	Earth terminal (GND)
5	No function
6 (Red)	DC voltage (Vm)



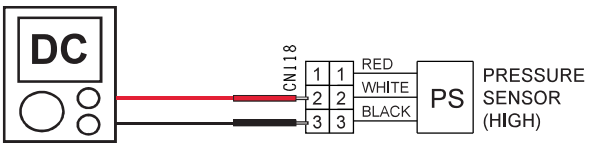
SERVICE PARTS INFORMATION 13

Discharge Pressure Sensor
Suction Pressure Sensor

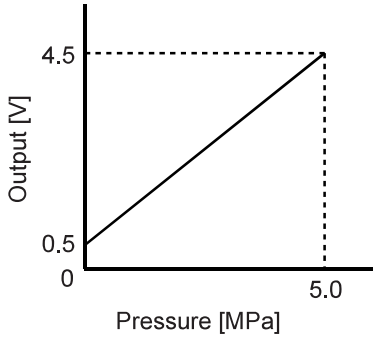
1. Discharge Pressure Sensor

Check Point : Check Voltage from Main PCB

☐ With the connector connected to the PCB,
measure the voltage between CN118:2-3 of the Main PCB.



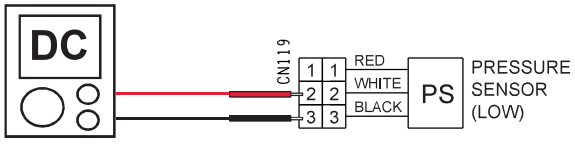
▪ Characteristics of pressure sensor



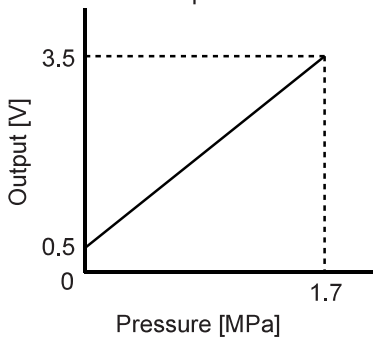
2. Suction Pressure Sensor

Check Point : Check Voltage from Main PCB

☐ With the connector connected to the PCB,
measure the voltage between CN119:2-3 of the Main PCB.



▪ Characteristics of pressure sensor



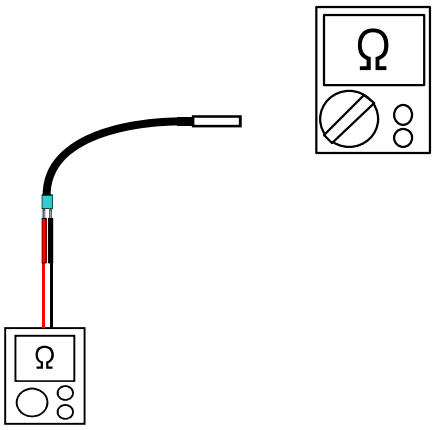
SERVICE PARTS INFORMATION 14

Thermistor

Check Point : Check Thermistor resistance value

☐ Remove connector and check Thermistor resistance value.

Temperature [°C]	Resistance Value [kΩ]		
	Thermistor A	Thermistor B	Thermistor C
- 20	---	---	105.4
- 10	---	27.8	58.2
- 5	---	21.0	44.0
0	168.6	16.1	33.6
5	129.8	12.4	25.9
10	100.9	9.6	20.2
15	79.1	7.6	15.8
20	62.6	6.0	12.5
25	49.8	4.8	10.0
30	40.0	3.8	8.0
40	26.3	2.5	5.3
50	17.8	1.7	3.6
60	12.3	1.2	---
70	8.7	---	---
80	6.3	---	---
90	4.6	---	---
100	3.4	---	---
110	2.6	---	---
120	2.0	---	---
Applicable Thermistors	Discharge temp. TH : [TH1] Comp temp. TH : [TH10]	Heat exchanger. TH : [TH5] Suction temp. TH : [TH4]	Outdoor temp. TH : [TH3]



SERVICE PARTS INFORMATION 15

ACTPM
(Active Filter Module)

Check Point 1 : Appearance check

□ No fissures, breaks, damage, etc. at the body and terminals section?

Check Point 2 : Electric check

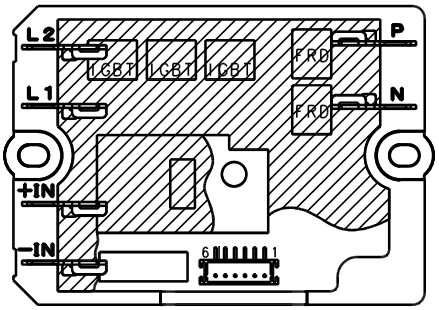
① Disconnect the connection wires.

② Set the tester to the "Resistance" mode, and measure the resistance between the following terminals.

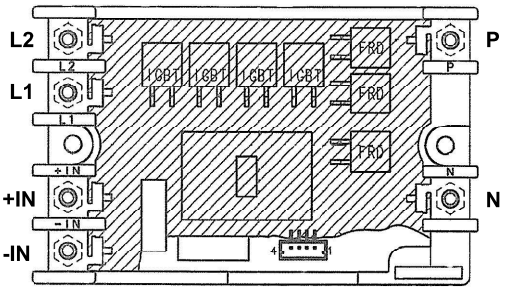
L2 - P
L2 - N

③ Judge the result of ② as follows:

All 3 points several 100kΩ or greater	: Normal
1 or more points 100kΩ to short	: Defective



ACTPM for AJ*040/ 045



ACTPM for AJ*054

Check Point 3

④ Set the tester to the "Diode" mode, and measure the voltage value between the following terminals.

Tester +side (red)	Tester - side (black)	Tester display [V]
L2	P	

⑤ Judge the result of ④ as follows:

Several 0.3V to 0.7V	: Normal
Under 0.1V or over load	: Defective

SERVICE PARTS INFORMATION 16

Outdoor Unit Fan Motor

⚠ When you approach this part, please cut off the power supply and wait for a while until DC voltage has been discharged.

Check Point 1 : Check rotation of Fan

- Rotate the fan by hand when operation is off.
  (Check if fan is caught, dropped off or locked motor)
  >>If Fan or Bearing is abnormal, replace it.

Check Point 2 : Check resistance of Outdoor Fan Motor

- Refer to below. Circuit-test "Vm" and "GND" terminal.
  (Vm: DC voltage, GND: Earth terminal)
  >>If they are short-circuited (below 300 kΩ), replace Outdoor fan motor.

Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3	No function
4 (Black)	Earth terminal (GND)
5 (White)	Control voltage (Vcc)
6 (Yellow)	Speed command (Vsp)
7 (Brown)	Feed back (FG)