Refrigerant
R410A

Slim Duct / Compact Cassette Compact Wall Mounted / Wall Mounted type

INVERTER (MULTI)

2 . TROUBLE SHOOTING

2-1 ERROR DISPLAY

2-1-1 INDOOR UNIT AND WIRED REMOTE CONTROLLER DISPLAY

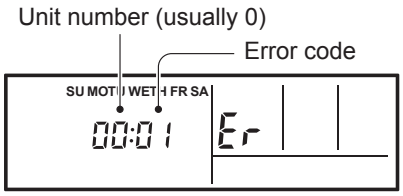
Please refer the flashing pattern as follows.
The Operation, Timer, Economy lamps operate as follows according to the error contents.

Error Contents	Indoor Unit Display			Wired Remote Controller Display	Trouble shooting
	Operation (Green)	Timer (Orange)	Economy (Green)		
Serial communication error	1 times	1 times	Continuous	11	1,2
Wired remote controller communication error	1 times	2 times	Continuous	12	3
Indoor unit capacity error	2 times	2 times	Continuous	22	4
Indoor unit model information error EEPROM access abnormal	3 times	2 times	Continuous	32	5
Manual auto switch error	3 times	5 times	Continuous	35	6
Indoor room thermistor error	4 times	1 times	Continuous	41	7
Indoor heat ex. thermistor error	4 times	2 times	Continuous	42	8
Indoor unit fan motor error	5 times	1 times	Continuous	51	9
Drain pump error	5 times	3 times	Continuous	53	10
Intake grille error	5 times	8 times	Continuous	58	11
Outdoor unit model information error	6 times	2 times	Continuous	62	12
Active filter error	6 times	4 times	Continuous	64	13
IPM error	6 times	5 times	Continuous	65	14
Discharge thermistor error	7 times	1 times	Continuous	71	15
Compressor thermistor error	7 times	2 times	Continuous	72	16
Heat ex. thermistor error	7 times	3 times	Continuous	73	17
Outdoor thermistor error	7 times	4 times	Continuous	74	18
2-way valve thermistor error	7 times	6 times	Continuous	76	19
3-way valve thermistor error	7 times	6 times	Continuous	76	20
Heat sink thermistor error	7 times	7 times	Continuous	77	21
High pressure switch error	8 times	6 times	Continuous	86	22
Over current error	9 times	4 times	Continuous	94	23
Compressor control error	9 times	5 times	Continuous	95	24
Outdoor unit fan motor error	9 times	7 times	Continuous	97	25
4-way valve error	9 times	9 times	Continuous	99	26
Discharge temp. error	10 times	1 times	Continuous	A1	27
Compressure temp. error	10 times	3 times	Continuous	A3	28

2-1-2 WIRED REMOTE CONTROLLER DISPLAY

1. SELF - DIAGNOSIS

When " Er " in Temperature Display is displayed, inspection of the air conditioning system is necessary. Please consult authorized service personnel.



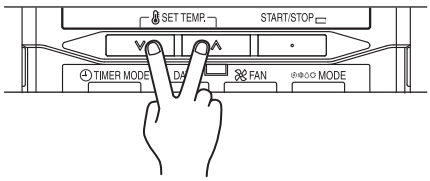
ex. Self-diagnosis check

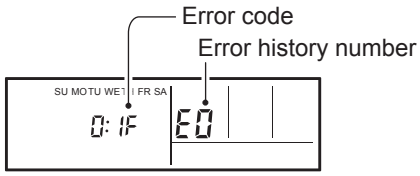
2. ERROR CODE HISTORY DISPLAY

Up to 16 memorized error codes may be displayed for the indoor unit connected to the remote controller.

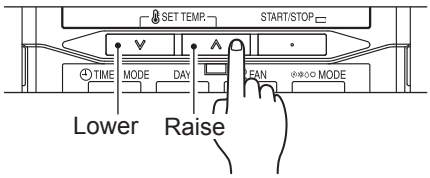
1. Stop the air conditioner operation.

2. Press the SET TEMPERATURE buttons ∨, ∧ simultaneously for 3 seconds or more to start the self-diagnosis.





3. Press the SET TEMPERATURE button to select the error history number.



0 ↔ 1 ↔ 2 ↔ 3 ↔ 4 ↔ 5 ↔ 6 ↔ 7
F ↔ E ↔ d ↔ c ↔ b ↔ A ↔ 9 ↔ 8

4. Press the SET TEMPERATURE buttons ∨, ∧ simultaneously for 3 seconds or more or there is no key input for 60 seconds to stop the display.

2-1-3 OUTDOOR UNIT DISPLAY

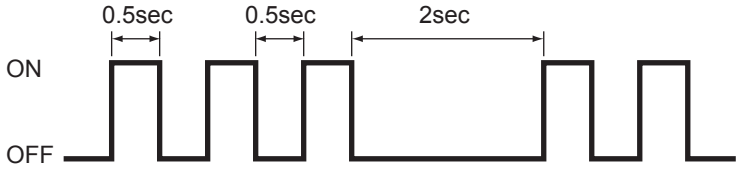
1. ERROR DISPLAY

Error Contents	LED1	LED2	LED3	Trouble shooting
Serial communication error (Outdoor unit to Indoor unit A)	● 1 time	OFF	OFF	2
Serial communication error (Outdoor unit to Indoor unit B)	OFF	● 1 time	OFF	
Serial communication error (Outdoor unit to Indoor unit C)	OFF	OFF	● 1 time	
Discharge thermistor error	● 2 times	OFF	OFF	15
Heat ex. thermistor error	● 3 times	OFF	OFF	17
Outdoor thermistor error	● 4 times	OFF	OFF	18
2-way valve thermistor error (for Indoor unit A)	● 5 times	OFF	OFF	19
2-way valve thermistor error (for Indoor unit B)	OFF	● 5 times	OFF	
2-way valve thermistor error (for Indoor unit C)	OFF	OFF	● 5 times	
3-way valve thermistor error (for Indoor unit A)	● 6 times	OFF	OFF	20
3-way valve thermistor error (for Indoor unit B)	OFF	● 6 times	OFF	
3-way valve thermistor error (for Indoor unit C)	OFF	OFF	● 6 times	
Compressor thermistor error	● 7 times	OFF	OFF	16
Heat sink thermistor error	● 8 times	OFF	OFF	21
High pressure switch 1 error	● 9 times	OFF	OFF	22
High pressure switch 2 error	●10 times	OFF	OFF	
Indoor unit capactiy error	●11 times	OFF	OFF	4
Over current error (Trip detection)	●12 times	OFF	OFF	23
Compressor control error	●13 times	OFF	OFF	24
IPM error (Trip terminal L error)	●14 times	OFF	OFF	14
Outdoor unit fan motor error	●15 times	OFF	OFF	25
Outdoor unit PCB microcomputer communication error	●17 times	OFF	OFF	12
Discharge temp. error	●18 times	OFF	OFF	27
Compressor temp. error	●19 times	OFF	OFF	28
4-way valve error	●20 times	OFF	OFF	26
Outdoor unit PCB model information error	●21 times	OFF	OFF	12
Active filter error	●22 times	OFF	OFF	13

● : Flashing

2. ERROR DISPLAY METHOD

Outdoor LED Blink (1 to 22 times) 0.5sec ON / 0.5sec OFF blinking



2-2 TROUBLE SHOOTING WITH ERROR CODE

Trouble shooting 1 **OUTDOOR UNIT Error Method:** **Serial communication error** **(Serial reverse transfer error)**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB Outdoor unit Fan motor	**Detective details:** When the indoor unit cannot receive the serial signal from Outdoor unit more than 2minutes after power ON, or the indoor unit cannot receive the serial signal more than 15seconds during normal operation.

Forecast of Cause:

1. Connection failure 2. External cause 3. Main PCB failure 4. Active filter module failure
5. Filter PCB failure 6. Outdoor unit Fan motor failure

Check Point 1-1 : Reset the power and operate

- Does error indication reappear?

NO → **Check Point 1-2 : Check external cause such as noise**

- Check if the ground connection is proper.
- 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).

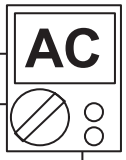
YES ↓

Check Point 2 : Check connection

- Check any loose or removed connection line of between indoor unit and outdoor unit.
  >> If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.
- Check connection condition in control unit.
  (If there is loose connector, open cable or mis-wiring)

OK ↓

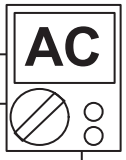
Check Point 3 : Check the voltage of power supply



- Check the voltage of power supply
  >> Check if AC198V(AC220V-10%) - 264V(AC240V+10%) appears at outdoor unit terminal L - N.

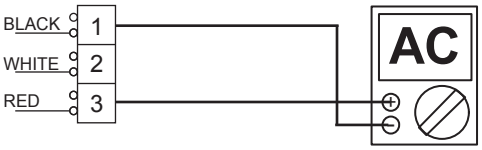
OK ↓

Check Point 4 : Check serial signal (Reverse transfer signal)



- Check serial signal (Reverse transfer signal)
  >> Check if indicated value swings between AC70V and AC130V at outdoor unit terminal 1 - 3.
  >> If it is abnormal, Check the parts as follows.
  - **Outdoor unit fan motor (PARTS INFORMATION 5)**
  - **Active filter module (PARTS INFORMATION 4)**
  - **Filter PCB (Check the wire of CN34)**

  >> If Outdoor fan motor is abnormal, replace Outdoor unit fan motor and Main PCB.
  >> If Active filter module or IPM is abnormal, replace it.
  >> If the parts are normal, replace Main PCB.



Trouble shooting 2 **INDOOR UNIT Error Method:** **Serial communication error** **(Serial forward transfer error)**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Indoor unit Controller PCB	**Detective details:** When the outdoor unit cannot properly receive the serial signal from indoor unit for 10 seconds or more.

Forecast of Cause:

1. Connection failure 2. External cause 3. Controller PCB failure

Check Point 1-1 : Reset the power and operate

- Does error indication reappear?

NO → **Check Point 1-2 : Check external cause such as noise**

- Check if the ground connection is proper.
- 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).

YES ↓

Check Point 2 : Check connection

- Check any loose or removed connection line of between indoor unit and outdoor unit.
  >> If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.
- Check connection condition in control unit.
  (If there is loose connector, open cable or mis-wiring)

OK ↓

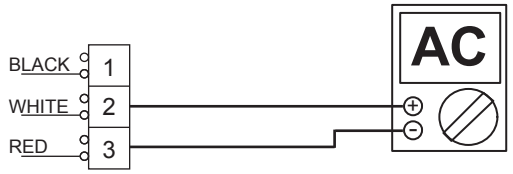
Check Point 3 : Check the voltage of power supply

- Check the voltage of power supply
  >> Check if AC198V(AC220V-10%) - 264V(AC240V+10%) appears at outdoor unit terminal L - N.

OK ↓

Check Point 4 : Check serial signal (Forward transfer signal)

- Check serial signal (Forward transfer signal)
  >> Check if indicated value swings between AC70V and AC130V at outdoor unit terminal 2 - 3.
  >> If it is abnormal, replace Controller PCB.



Trouble shooting 3 **INDOOR UNIT Error Method:** **Wired remote controller communication error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Indoor unit Controller PCB Wired remote controller (Option)	**Detective details:** When the indoor unit cannot properly receive the signal from Wired Remote Controller for 1 minute or more.

Forecast of Cause:

1. Connection failure 2. Wired remote controller failure 3. Controller PCB failure

Check Point 1 : Check the connection of terminal

Check & correct the followings.

- Check the connection of terminal between Wired Remote Controller and indoor unit, and check if there is a disconnection of the cable.

OK

Check Point 2 : Check Wired Remote Controller and Controller PCB

- Check Voltage at terminal 1-3 of Controller PCB or Communication PCB. (Power supply to Remote Control)
  Cassette, Duct Type : CN14
  Wall mount Type : CN6
  Compact Wall mount Type : CN305(UTY-XCBXZ1)

>> If it is DC12V, Remote Control is failure. (Controller PCB is normal) >> Replace Remote Control
>> If it is DC 0V, Controller PCB is failure. (Check Remote Control once again) >> Replace Controller PCB

Trouble shooting 4 **INDOOR UNIT Error Method:** **Indoor unit capacity error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
All indoor unit	The total capacity of the indoor unit if it is install beyond.

Forecast of Cause :

1. The selection of indoor units is incorrect 2. Main PCB(Outdoor unit) failure

Check Point 1 : Check the total capacity of indoor unit

- Check the total capacity of the connected indoor units.
  >> If abnormal condition is found, correct it by referring to Installation Manual or Design & Technical Manual.

OK

Check Point 2 : Replace Main PCB

▶ **If Check Point 1 do not improve the symptom, replace Main PCB of Outdoor unit.**

Trouble shooting 5 **INDOOR UNIT Error Method:** **Indoor unit model information error** **EEPROM access abnormal**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB	When power is on and there is some below case. ① When model information of EEPROM is incorrect. ② When the access to EEPROM failed.

Forecast of Cause:

1. External cause 2. Defective connection of electric components 3. Controller PCB failure

Check Point 1-1 : Reset Power Supply and operate

・Does Error indication show again?

NO → **Check Point 1-2 : Check external cause such as noise**

・Check if the ground connection is proper.
・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).

YES → **Check Point 2 : Check Indoor unit electric components**

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

→ **Check Point 3 : Replace Controller PCB**

▶ **Change Controller PCB.**

Note : EEPROM

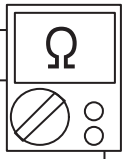
EEPROM(Electronically Erasable and Programmable Read Only Memory) is a non-volatile memory which keeps memorized information even if power is turned off. It can change the contents electronically.
To change the contents, it uses higher voltage than normal, and it can not change a partial contents. (Rewriting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

Trouble shooting 6 **INDOOR UNIT Error Method:** **Manual auto switch error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Indoor unit Controller PCB Indicator PCB Manual auto switch	**Detective details:** When the Manual auto switch becomes ON for consecutive 60 or more seconds.

Forecast of Cause :

1. Manual auto switch failure 2. Controller PCB and Indicator PCB failure

Check Point 1 : Check the Manual auto switch



- Check if Manual auto switch is kept pressed.
- Check ON/OFF switching operation by using a meter.

>> If Manual auto switch is disabled (on/off switching), replace it.

OK

Check Point 2 : Replace Controller PCB and Indicator PCB

▶ **If Check Point 1 do not improve the symptom, replace Controller PCB and Indicator PCB.**

Trouble shooting 7 **INDOOR UNIT Error Method:** **Indoor room thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB Room temperature thermistor	Room temperature thermistor is open or short is detected always.

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

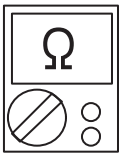
Check Point 1 : Check connection of Connector

- 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)	-10	-5	0	5	10	15	20	25
Resistance Value (kΩ)	58.2	44.0	33.6	25.2	20.2	15.8	12.5	10.0

Temperature (°C)	30	35	40	45
Resistance Value (kΩ)	8.0	6.5	5.3	4.3

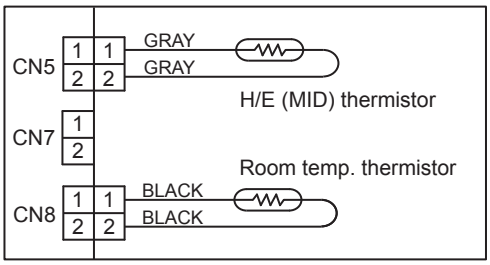
▶ **If Thermistor is either open or shorted, replace it and reset the power.**

OK

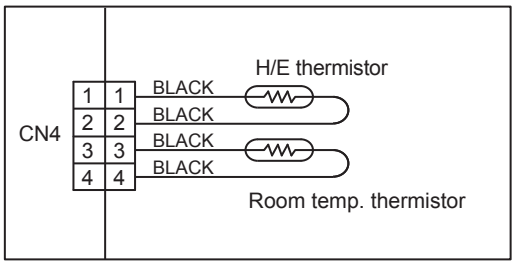
Check Point 3 : Check voltage of Controller PCB (DC5.0V)

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

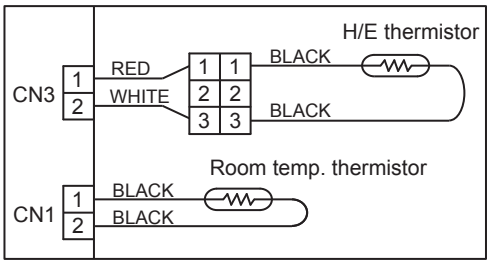
- Slim Duct / Compact cassette circuit diagram (Connector connection)



- Compact Wall mounted circuit diagram (Connector connection)



- Wall mount circuit diagram (Direct soldering to PCB)



▶ **If the voltage does not appear, replace Controller PCB.**

Trouble shooting 8 **INDOOR UNIT Error Method:** **Indoor heat ex. thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB Heat exchanger (MID) thermistor	Heat exchanger (MID) thermistor is open or short is detected always.

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

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)	-30	-20	-10	-5	0	5	10	15	20
Resistance Value (kΩ)	1131.9	579.6	312.3	233.2	176.0	134.2	103.3	80.3	62.9

Temperature (°C)	25	30	35	40	45	50	55	60	63
Resistance Value (kΩ)	49.7	39.6	31.7	25.6	20.8	17.1	14.1	11.6	10.4

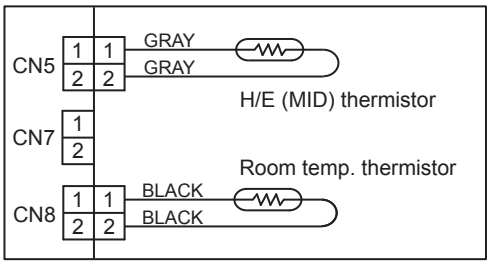
▶ **If Thermistor is either open or shorted, replace it and reset the power.**

OK

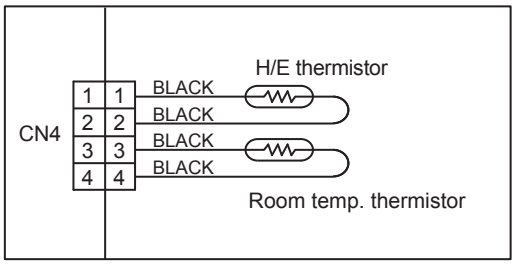
Check Point 3 : Check voltage of Controller PCB (DC5.0V)

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

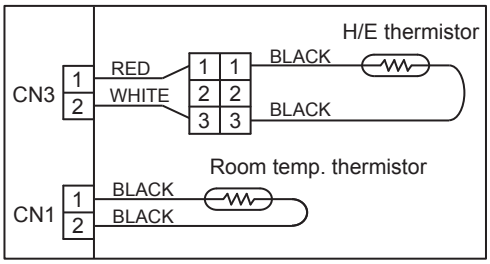
- Slim Duct / Compact cassette circuit diagram (Connector connection)



- Compact Wall mounted circuit diagram (Connector connection)



- Wall mount circuit diagram (Direct soldering to PCB)



▶ **If the voltage does not appear, replace Controller PCB.**

Trouble shooting 9 **INDOOR UNIT Error Method:** **Indoor unit fan motor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB Indoor unit fan motor	When the condition that actual frequency of Indoor Fan is below 1/3 of target frequency is continued more than 56 seconds.

Forecast of Cause:

1. Fan rotation failure 2. Fan motor winding open 3. Motor protection by surrounding temperature rise
4. Control PCB failure 5. Indoor unit fan motor 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 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 3 : Check Indoor unit fan motor

・Check Indoor unit fan motor. (PARTS INFORMATION 4)
>>If Indoor unit fan motor is abnormal, replace Indoor unit fan motor.

↓ **OK**

Check Point 4 : Replace Controller PCB

▶ **If Check Point 1- 3 do not improve the symptom, replace Controller PCB.**

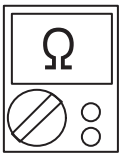
Trouble shooting 10 **INDOOR UNIT Error Method:** **Drain pump error**	**Indicate or Display:** **Refer to error code table.**

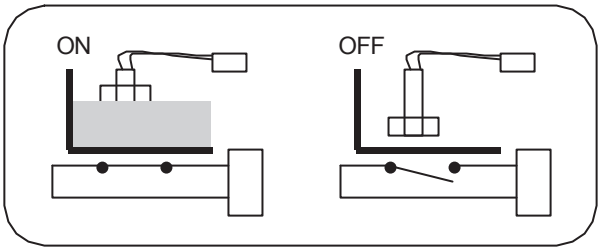
Detective Actuators:	**Detective details:**
Indoor unit Controller PCB Float switch	When Float switch is ON for more than 3 minutes.

Forecast of Cause : 1. Float switch failure 2. Shorted connector/wire 3. Controller PCB failure
4. Drain pump failure 5. Hose clogging

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 abnormal, replace it.





OK

Check Point 2 : Check Connector (CN 9) / Wire

- ☐ Check loose contact of CN9 /shorted wire (pinched wire).
  >>Replace Float switch if the wire is abnormal

OK

Check Point 3 : Check Drain Hose

- ☐ Check Drain Hose .
  >>If there is Hose clogging. Please clear the clog.

OK

Check Point 4 : Check Controller PCB

- ▶ **If Check Point 1 ~ 3 do not improve the symptom, change Controller PCB and execute the check operation again.**

Attention!!
Wall mount / 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.

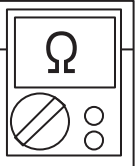
Trouble shooting 11 **INDOOR UNIT Error Method:** **Intake grille error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB Micro switch	When the Micro switch is detected open while running the compressor.

Forecast of Cause :

1. Micro switch failure 2. Shorted connector/ wire 3.Controller PCB failure

Check Point 1 : Check Limit switch



- Check operation of Micro switch. (any blocking by dust, etc.)
- Remove Micro switch and check ON/OFF switching operation by using a meter.

>>If Micro switch is detective, replace it.

OK

Check Point 2 : Check Connector (CN11) / Wire

- Check loose contact of CN11 /shorted wire (pinched wire).

>>Replace Micro switch if the wire is abnormal

OK

Check Point 3 : Replace Controller PCB

▶ **If Check Point 1 & 2 do not improve the symptom, change Controller PCB.**

Trouble shooting 12 **INDOOR UNIT Error Method:** **Outdoor unit model information error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB	When power is on and there is some below case. ① When model information of EEPROM is incorrect. ② When the access to EEPROM failed.

Forecast of Cause:

1. External cause 2. Defective connection of electric components 3. Main PCB failure

Check Point 1-1 : Reset Power Supply and operate

・Does Error indication show again?

NO → **Check Point 1-2 : Check external cause such as noise**

・Check if the ground connection is proper.
・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).

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 Main PCB

▶ **If Check Point 1,2 do not improve the symptom, replace Main PCB.**

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 13 **OUTDOOR UNIT Error Method:** **Active filter error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Active filter module	① When inverter input DC voltage is higher than 425V or lower than 80V. ② When a momentary power cut off occurred on low voltage

Forecast of Cause :

1. External cause 2. Connector connection failure 3. Main PCB failure 4. Active filter module failure

Check Point 1 : Check external 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

Check Point 2 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 3 : Check Active filter module

- Check Active filter module. **(PARTS INFORMATION 6)**

>>If Active filter module is abnormal, replace it.

OK

Check Point 4 : Replace Main PCB

▶ **If Check Point 1 - 3 do not improve the symptom, change Main PCB.**

Trouble shooting 14 **OUTDOOR UNIT Error Method:** **IPM error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB	**Detective details:** When the signal from FO terminal of IPM in Main PCB is "L"(=0V) while the compressor stops.

Forecast of Cause :

1. Main PCB failure

Check Point 1 : Replace Main PCB
▶ **Change Main PCB.**

Trouble shooting 15 **OUTDOOR UNIT Error Method:** **Outdoor discharge thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Discharge pipe temperature thermistor	When Discharge pipe temperature thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause :

1. Connector connection failure 2.Thermistor failure 3. Main PCB failure

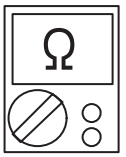
Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Remove connector and check Thermistor resistance value



Thermistor Characteristics (Approx. value)

Temperature(°C)	-30	-20	-10	0	10	20	30	40	50
Resistance Value (kΩ)	1013.1	531.6	292.9	168.6	100.9	62.5	40.0	26.3	17.8

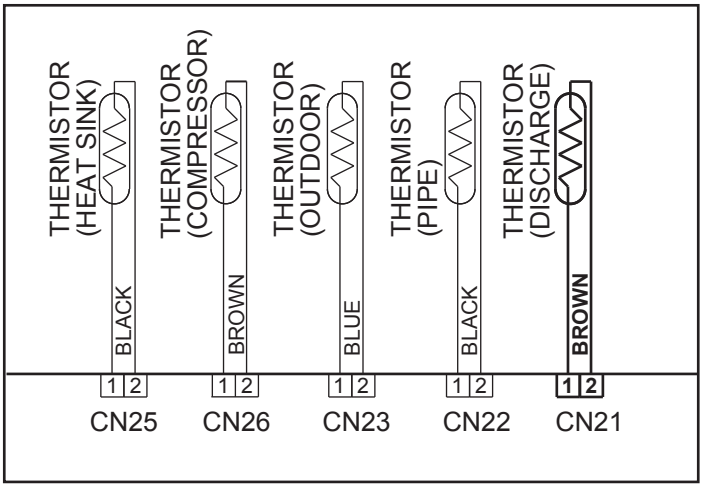
Temperature(°C)	60	70	80	90	100	110	120
Resistance Value (kΩ)	12.3	8.7	6.3	4.6	3.4	2.6	2.0

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

OK

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

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



▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 16 **OUTDOOR UNIT Error Method:** **Compressor thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Compressor temperature thermistor	When Compressor temperature thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause :

1. Connector connection failure 2. Thermistor failure 3. Main PCB failure

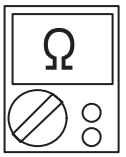
Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Remove connector and check Thermistor resistance value



Thermistor Characteristics (Rough value)

Temperature(°C)	-30	-20	-10	0	10	20	30	40	50
Resistance Value (kΩ)	1013.1	531.6	292.9	168.6	100.9	62.5	40.0	26.3	17.8

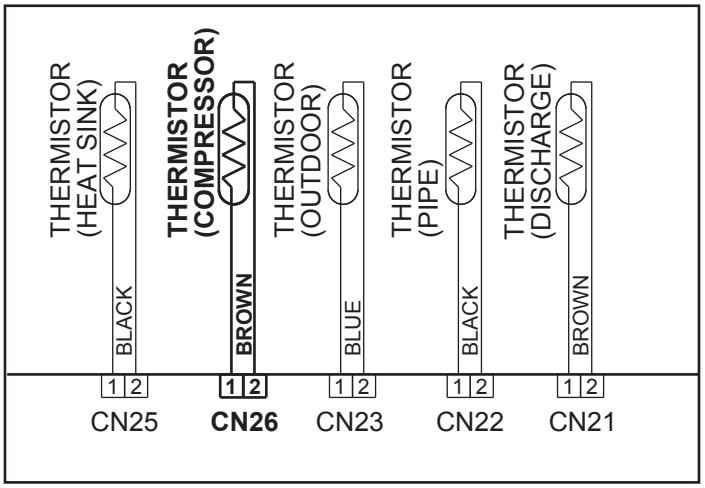
Temperature(°C)	60	70	80	90	100	110	120
Resistance Value (kΩ)	12.3	8.7	6.3	4.6	3.4	2.6	2.0

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

OK

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

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



▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 17 **OUTDOOR UNIT Error Method:** **Heat ex. thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Heat exchanger temperature thermistor	When Heat exchanger temperature thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause :

1. Connector connection failure 2.Thermistor failure 3. Main PCB failure

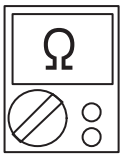
Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Remove connector and check Thermistor resistance value



Thermistor Characteristics (Approx. value)

Temperature(°C)	-30	-20	-10	0	10	20	30	40	50
Resistance Value (kΩ)	95.6	50.3	27.8	16.1	9.6	6.0	3.8	2.5	1.7

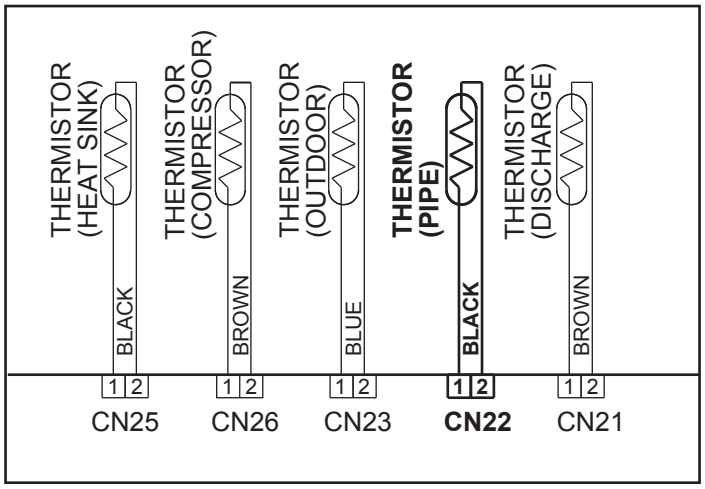
Temperature(°C)	60	70	80
Resistance Value (kΩ)	1.2	0.8	0.6

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

OK

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

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



▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 18 **OUTDOOR UNIT Error Method:** **Outdoor thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Outdoor temperature thermistor	When Outdoor temperature thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause :

1. Connector connection failure 2.Thermistor failure 3. Main PCB failure

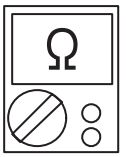
Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Remove connector and check Thermistor resistance value



Thermistor Characteristics (Approx. value)

Temperature(°C)	-30	-20	-10	0	10	20	30	40
Resistance Value (kΩ)	224.3	115.2	62.3	35.2	20.7	12.6	8.0	5.2

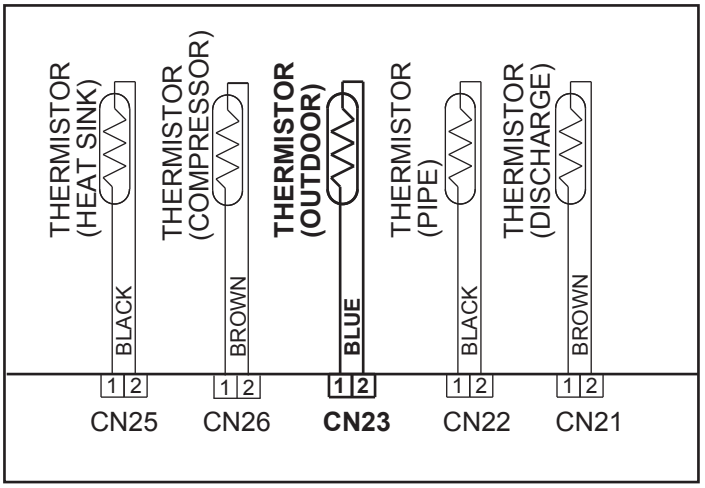
Temperature(°C)	50	60	70	80
Resistance Value (kΩ)	3.5	2.4	1.6	1.2

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

OK

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

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



▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 19 **OUTDOOR UNIT Error Method:** **2-way valve thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB 2-way valve temperature thermistor	When 2-way valve temperature thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause :

1. Connector connection failure 2.Thermistor failure 3. Main PCB failure

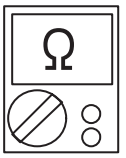
Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Remove connector and check Thermistor resistance value



Thermistor Characteristics (Approx. value)

Temperature(°C)	-30	-20	-10	0	10	20	30	40
Resistance Value (kΩ)	1131.9	579.6	312.3	176.0	103.3	62.9	39.6	25.6

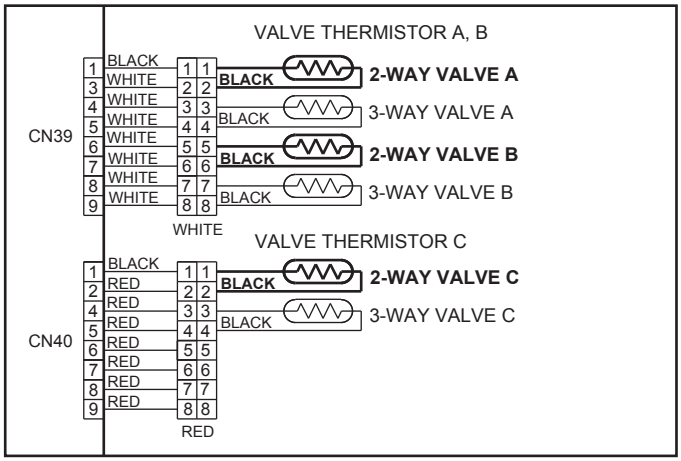
Temperature(°C)	50	60	70	80
Resistance Value (kΩ)	17.1	11.6	8.1	5.8

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

OK

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

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



▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 20 **OUTDOOR UNIT Error Method:** **3-way valve thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB 3-way valve temperature thermistor	When 3-way valve temperature thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause :

1. Connector connection failure 2.Thermistor failure 3. Main PCB failure

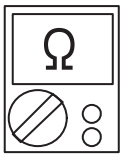
Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Remove connector and check Thermistor resistance value



Thermistor Characteristics (Approx. value)

Temperature(°C)	-30	-20	-10	0	10	20	30	40
Resistance Value (kΩ)	1131.9	579.6	312.3	176.0	103.3	62.9	39.6	25.6

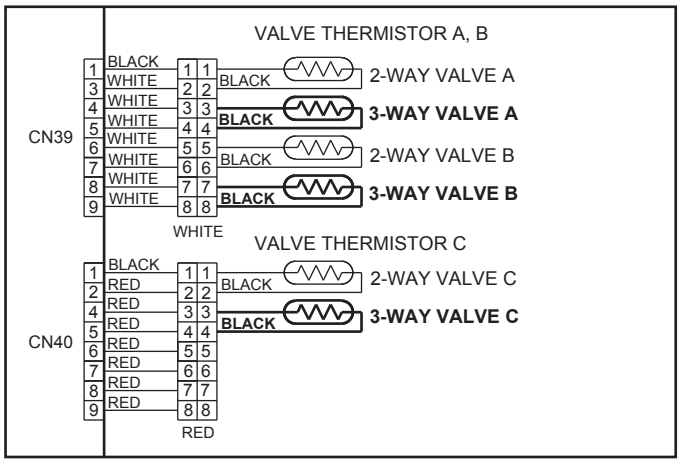
Temperature(°C)	50	60	70	80
Resistance Value (kΩ)	17.1	11.6	8.1	5.8

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

OK

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

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



▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 21 **OUTDOOR UNIT Error Method:** **Heat sink thermistor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Heat sink temperature thermistor	When Heat sink temperature thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause :

1. Connector connection failure 2.Thermistor failure 3. Main PCB failure

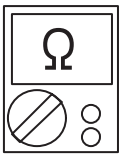
Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Remove connector and check Thermistor resistance value



Thermistor Characteristics (Approx. value)

Temperature(°C)	-30	-20	-10	0	10	20	30	40
Resistance Value (kΩ)	92.3	49.2	27.5	16.1	9.7	6.1	3.9	2.6

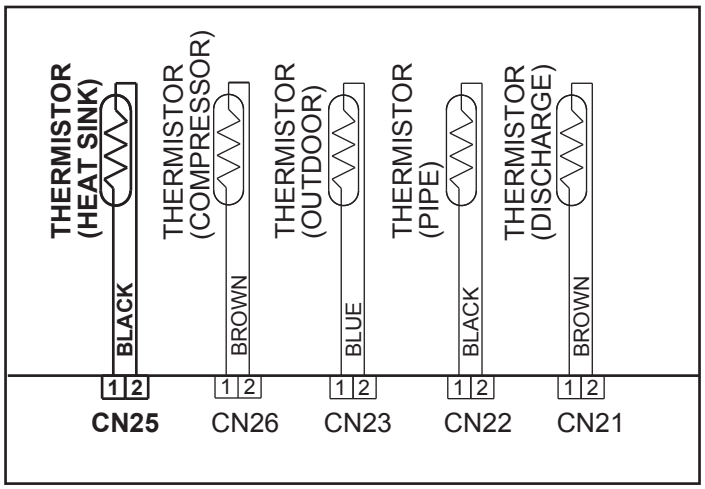
Temperature(°C)	50	60	70	80	90	100
Resistance Value (kΩ)	1.8	1.2	0.9	0.6	0.5	0.4

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

OK

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

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



▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 22 **OUTDOOR UNIT Error Method:** **High pressure switch error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Pressure switch	When pressure switch open is detected in 10 seconds after the power is turned on.

Forecast of Cause :

1. Connector connection failure 2. Pressure Switch failure 3. Main PCB failure

Check Point 1 : Reset Power Supply and operate

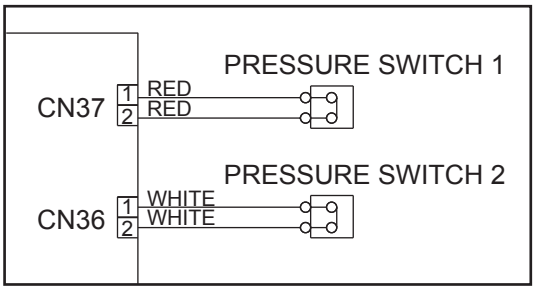
- Does abnormal LED indication show again?

NO → Check Point 3

YES ↓

Check Point 2 : Check voltage of Main PCB (DC5.0V)

- Make sure circuit diagram of outdoor unit and check terminal voltage at Pressure Switch. (DC5.0V)



▶ **If the voltage does not appear, replace Main PCB.**

OK ↓

Check Point 3 : Check Pressure Switch

- Check if connector is loose or cable is open.
  >> If no abnormal connection is found, replace Pressure Switch.

▶ **After replacing Pressure Switch, check operating condition and pressure in operation.**

- Characteristics of pressure switch

- PRESSURE SWITCH 1 (CN37)

	Pressure switch 1
Contact : Short ⇒ Open	4.2 ± 0.1MPa
Contact : Open ⇒ Short	3.2 ± 0.15MPa

- PRESSURE SWITCH 2 (CN36)

	Pressure switch 2
Contact : Short ⇒ Open	$3.7\ ^{+0}_{-0.2}$ MPa
Contact : Open ⇒ Short	2.9 ± 0.2MPa

Trouble shooting 23 **OUTDOOR UNIT Error Method:** **Over current error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Compressor	① When more than normal operating current to IPM in Main PCB flows, the compressor stops. ② After the compressor restarts, if the same operation is repeated within 40sec, the compressor stops again. ③ If ① and ② repeats 5 times, the compressor stops permanently.

Forecast of Cause :

1. Defective connection of electric components
2. Outdoor fan operation failure
3. Outdoor heat exchanger clogged
4. Compressor failure
5. Main PCB failure

Check Point 1 : Check connections of Outdoor unit electrical components

- Check if the terminal connection is loose.
- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Check Outdoor fan, Heat exchanger

- Is there anything obstructing the air distribution circuit?
- Is there any clogging of Outdoor Heat Exchanger?
- Is the Fan rotating by hand when operation is off ?

>> If the fan motor is locked, replace it.

OK

Check Point 3 : Check Outdoor fan

- Check Outdoor fan motor. (Refer to Trouble shooting 25)

>> If the fan motor is failure, replace it.

OK

Check Point 4 : Check Compressor

- Check Compressor. (PARTS INFORMATION 2)

OK

Check Point 5 : Replace Main PCB

▶ **If Check Point 1 ~ 4 do not improve the symptom, change Main PCB.**

Trouble shooting 24 **OUTDOOR UNIT Error Method:** **Compressor Control Error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Compressor	① While running the compressor, if the detected rotor location is out of phase with actual rotor location more than 90°, the compressor stops. ② After the compressor restarts, if the same operation is repeated within 40sec, the compressor stops again. ③ If ① and ② repeats 5 times, the compressor stops permanently.

Forecast of Cause :

1. Defective connection of electric components 2. Main PCB failure 3. Compressor failure

Check Point 1 : Check connection of around the Compressor components

For Compressor Terminal, Main PCB

- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.
  (Refer to PARTS INFORMATION 2)

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2: Replace Main PCB

▶ **If Check Point 1 do not improve the symptom, change Main PCB.**

OK

Check Point 3: Replace Compressor

▶ **If Check Point 2 do not improve the symptom, change Compressor.**

Trouble shooting 25 **OUTDOOR UNIT Error Method:** **Outdoor unit fan motor error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Outdoor unit fan motor	① When outdoor fan rotation speed is less than 100rpm in 20 seconds after fan motor starts, fan motor stops. ② After fan motor restarts, if the same operation within 60sec is repeated 3 times in a row, compressor and fan motor stops. ③ If ① and ② repeats 5 times in a row, compressor and fan motor stops permanently.

Forecast of Cause:

1. Fan rotation failure 2. Motor protection by surrounding temperature rise 3. Main PCB failure
4. Outdoor unit fan motor 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 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 3 : Check Outdoor unit fan motor

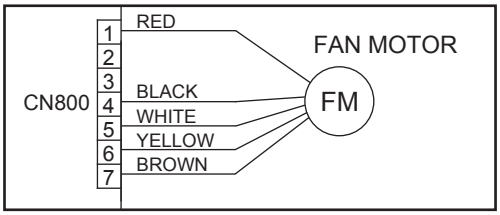
・Check Outdoor unit fan motor. **(PARTS INFORMATION 5)**
>>If Outdoor Fan Motor is abnormal, replace Outdoor fan motor and Main PCB.

OK

Check Point 4 : Check Output Voltage of Main PCB

DC

・Check outdoor unit circuit diagram and the voltage. (Measure at Main PCB side connector)



Read wire	DC voltage
Red - Black	280V (AC220V-10%) ~ 373V (AC240+10%)
White - Black	15±1.5V

▶ **If the voltage is not correct, replace Main PCB.**

Trouble shooting 26 **OUTDOOR UNIT Error Method:** **4-way valve error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Indoor unit Controller PCB Heat exchanger temperature thermistor Room temperature thermistor 4-way valve	When the indoor heat exchanger temperature is compared with the room temperature, and either following condition is detected continuously two times, the compressor stops. ・Cooling or Dry operation [Indoor heat exchanger temp.] - [Room temp.] > 10°C ・Heating operation [indoor heat exchanger temp.] - [Room temp.] < -10°C If the same operation is repeated 5 times, the compressor stops permanently.

Forecast of Cause :

1. Connector connection failure 2. Thermistor failure 3. Coil failure 4. 4-way valve failure
5. Main PCB failure 6. Controller PCB failure

Check Point 1 : Check connection of Connector

・Check if connector is removed.
・Check erroneous connection.
・Check if thermistor cable is open.
>> Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2 : Check thermistor of Indoor unit

・Isn't it fallen off the holder?
・Is there a cable pinched?
>> Check characteristics of thermistor, (Refer to Trouble shooting 7,8), If defective, replace the thermistor.

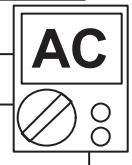
OK

Check Point 3 : Check the solenoid coil and 4-way valve

[Solenoid coil]
・Remove CN30 from Main PCB and check the resistance value of coil.
Resistance value is about 1.4kΩ
>> If it is Open or abnormal resistance value, replace Solenoid Coil.

[4-way valve]
・Check each piping temperature,
and the location of the valve by the temperature difference.
>> If the value location is not proper, replace 4-way valve.

OK



Check Point 4 : Check the voltage of 4-way valve

・Check the CN 30 voltage of Main PCB
Check if AC198V(AC220V-10%) - 264V(AC240V+10%) appears at CN 30 of Main PCB.
[Heating operation]
>> If it is not voltage, Replace Main PCB.

[Cooling operation]
>> If it is voltage, Replace Main PCB.

OK

Check Point 5 : Replace Controller PCB

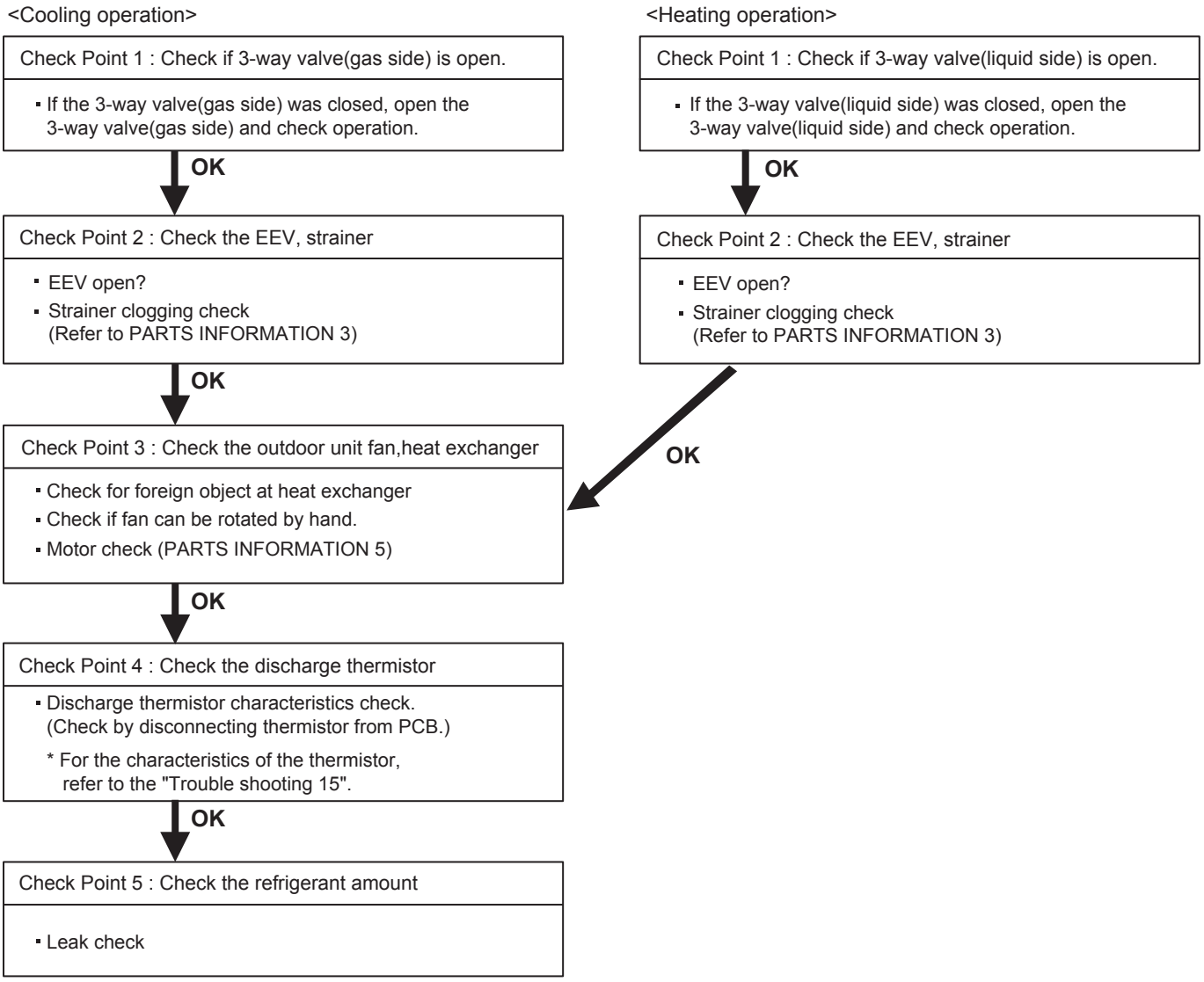
▶ **If Check Point 1- 4 do not improve the symptom, replace Controller PCB of Indoor unit .**

Trouble shooting 27 **OUTDOOR UNIT Error Method:** Discharge temp. error	**Indicate or Display:** Refer to error code table.

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Discharge temperature thermistor	"Protection stop by "discharge temperature ≧ 110°C during compressor operation"" generated 2 times within 24 hours.

Forecast of Cause :

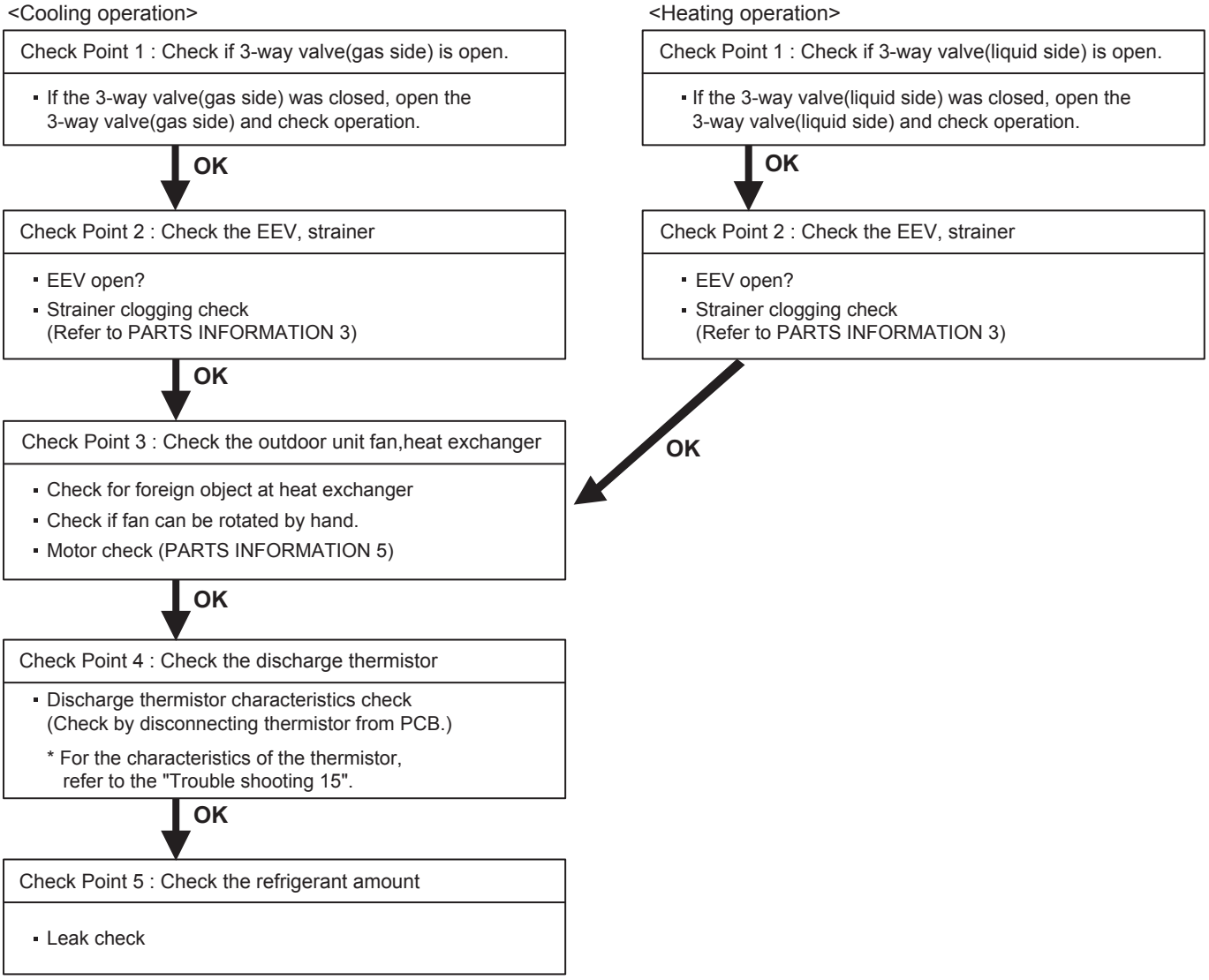
1. 3-way valve not opened
2. EEV defective, strainer clogged
3. Outdoor unit operation failure, foreign matter on heat exchanger
4. Discharge temperature thermistor failure
5. Insufficient refrigerant
6. Main PCB failure



Trouble shooting 28 **OUTDOOR UNIT Error Method:** **Compressor temp. error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Compressor temperature thermistor	"Protection stop by "compressor temperature ≧ 110°C during compressor operation"" generated 2 times within 24 hours.

Forecast of Cause :
1. 3-way valve not opened
2. EEV defective, strainer clogged
3. Outdoor unit operation failure, foreign matter on heat exchanger
4. Compressor temperature thermistor failure
5. Insufficient refrigerant
6. Main PCB failure



2-3 TROUBLE SHOOTING WITH NO ERROR CODE

Trouble shooting 29

Indoor Unit - No Power

Forecast of Cause:

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

Check Point 1 : Check Installation Condition

- Isn't 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.

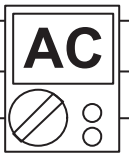
OK

Check Point 2 : Check external 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

Check Point 3 : Check Electrical Components



- Check the voltage of power supply.

>> Check if AC198 - 264V appears at Outdoor Unit Terminal L - N.

YES

- Check Fuse of between of Terminal and Filter PCB.

>> If Fuse is open, check if the wiring between Terminal and Filter PCB is loose, and replace Fuse.

- Check Varistor in Filter PCB.

>> If Varistor is defective, there is a possibility of an abnormal power supply. Check the correct power supply and replace Varistor. Upon checking the normal power supply, replace Varistor.

OK

Check Point 4 : Replace Filter PCB

▶ **If Check Point 1- 3 do not improve the symptom, replace Filter PCB.**

Trouble shooting 30

Outdoor Unit - No Power

Forecast of Cause:

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

Check Point 1 : Check Installation Condition

- Isn't 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.

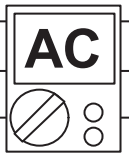
OK

Check Point 2 : Check external 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

Check Point 3 : Check Electrical Components



- Check the voltage of power supply.

>> Check if AC198 - 264V appears at Outdoor Unit Terminal L - N.

YES

- Check Fuse in Main PCB.

>> If Fuse is open, check if the wiring between Terminal and Main PCB is loose, and replace Fuse.

YES

- Check Active Filter Module. **(PARTS INFORMATION 6)**

>> If Active Filter Module is abnormal, replace it.

OK

Check Point 4 : Replace Main PCB

▶ **If Check Point 1- 3 do not improve the symptom, replace Main PCB.**

Trouble shooting 31

No Operation (Power is ON)

Forecast of Cause:

1. Setting/ Connection failure
2. External 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, check if there is an open cable connection.
- 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.

- Is there loose or removed communication line of Indoor unit and Outdoor unit?

OK

Check Point 2 : Check external 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

Check Point 3 : Check Wired Remote Controller and Controller PCB

- Check Voltage at terminal 1-3 of Controller PCB or Communication PCB.
  (Power supply to Remote Control)
  Cassette, Duct Type : CN14
  Wall mount Type : CN6
  Conpact Wall mount Type : CN305 (UTY-XCBXZ1)

>> If it is DC12V, Remote Control is failure. (Controller PCB is normal) >> Replace Remote Control
>> If it is DC 0V, Controller PCB is failure. (Check Remote Control once again)
>> Check Indoor unit fan motor. (PARTS INFORMATION 4)
If it is normal, replace Controller PCB.
If it is abnormal, replace Indoor unit fan motor and Controller PCB.

>> If the symptom does not change by above Check 1, 2, 3, replace Main PCB of Outdoor unit.

Trouble shooting 32

No Cooling / No Heating

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?
- Check if Energy save function is operated.

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 ?

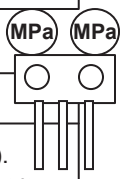
OK

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

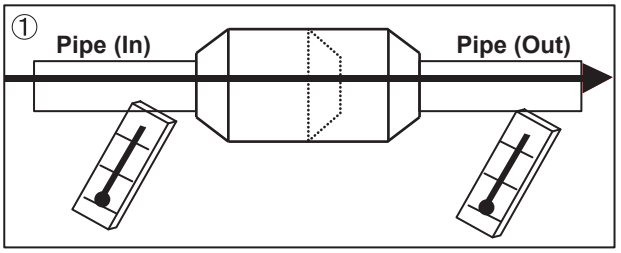
- Check if Strainer is clogged (Refer to the figure at right).
- Measure Gas Pressure and if there is a leakage, correct it.

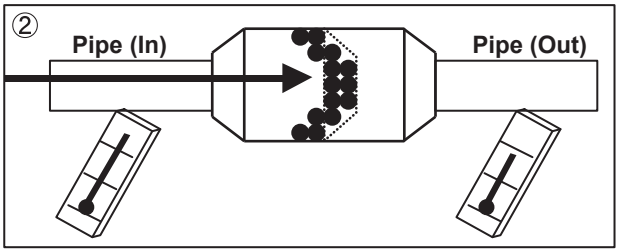
>> When recharging the refrigerant, make sure to perform vacuuming, and recharge the specified amount.

- Check EEV (PARTS INFORMATION 3)
- Check Compressor (PARTS INFORMATION 1,2)

Attention

Strainer normally does not have temperature difference between inlet and outlet as shown in① , but if there is a difference like shown in② , there is a possibility of inside clogged. In this case, replace Strainer.





Trouble shooting 33

Abnormal Noise

Forecast of Cause :

1. Abnormal installation (Indoor/ Outdoor)
2. Fan failure (Indoor/ Outdoor)
3. 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?

OK

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

- Abnormal noise is coming from Outdoor unit. (Check and correct followings)

- Is Main Unit installed in stable condition?
- Is Fan Guard 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 (PARTS INFORMATION 1,2)

Trouble shooting 34

Water Leaking

Forecast of Cause:

1. Erroneous installation 2. Drain hose 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

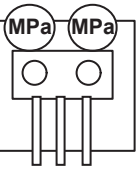
- Is Fan rotating?

Diagnosis method when water is spitting out.

- Is the filter clogged?

OK

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



2-4 SERVICE PARTS INFORMATION

SERVICE PARTS INFORMATION 1

Compressor

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

Does not start up

- Is there open or loose connection cable?

- Check Filter PCB, Main 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)

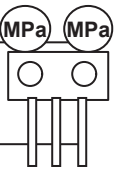
Replace Compressor

Stops soon after starting up

- Is there open or loose connection cable?

- Is Gas Pipe Valve open? (Low Pressure is too low)

- Check if Refrigerant is leaking. (Recharge Refrigerant)



- Check if Strainer is clogged. (PARTS INFORMATION 3)

- Check Filter PCB, Main 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 if vibration noise by loose bolt or contact noise of piping is happening.

▶Defective Compressor can be considered. (due to inside dirt clogging or broken component)

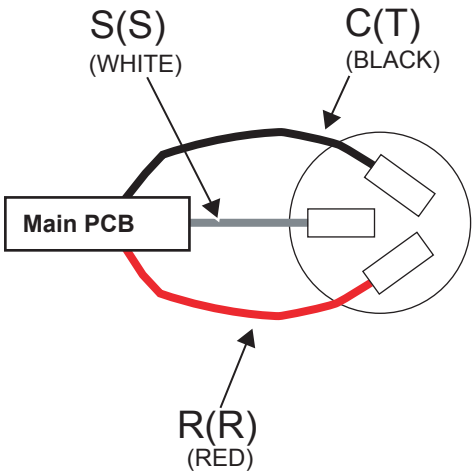
Replace Compressor

SERVICE PARTS INFORMATION 2

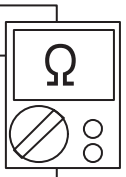
Inverter Compressor

Check Point 1 : Check Connection

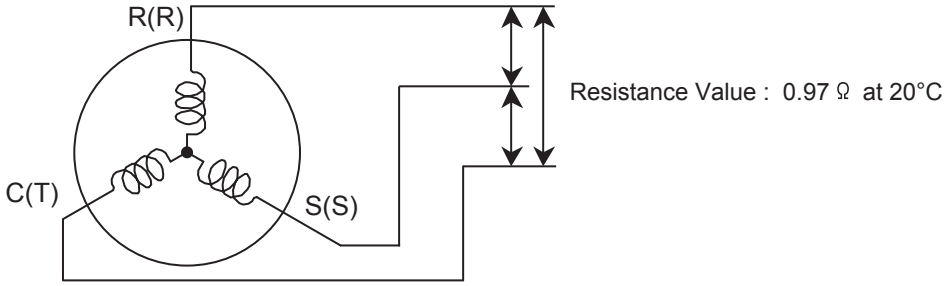
・Check terminal connection of Compressor
(loose or incorrect wiring)



Check Point 2 : Check Winding Resistance



・Check winding resistance of each terminal
▶**If the resistance value is 0Ω or infinite, replace Compressor.**



Check Point 3 : Replace Main PCB

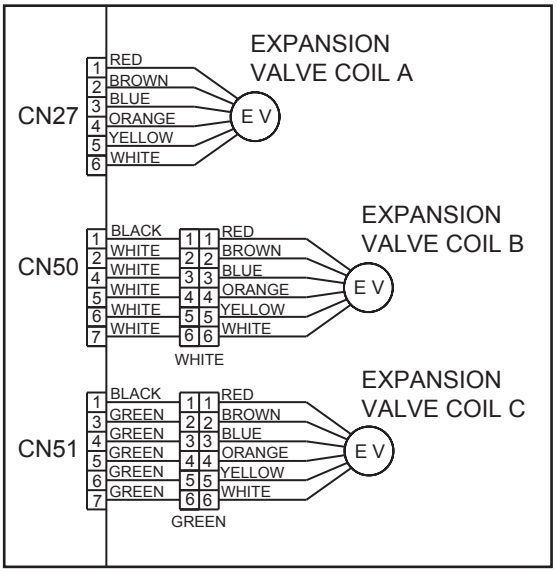
▶**If the symptom does not change with above Check 1, 2, replace Main PCB.**

SERVICE PARTS INFORMATION 3

Outdoor unit Electronic Expansion Valve
(EEV)

Check Point 1 : Check Connections

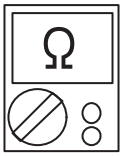
・Check connection of connector
(Loose connector or open cable)



Check Point 2 : Check Coil of EEV

・Remove connector, check each winding resistance of Coil.

Read wire	Resistance value
White - Red	**46**Ω ± **4**Ω at 20°C
Yellow - Brown	
Orange - Red	
Blue - Brown	



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

Check Point 3 : Check Voltage from Main PCB.

・Remove Connector and check Voltage (DC12V)

▶ **If it does not appear, replace Main PCB.**

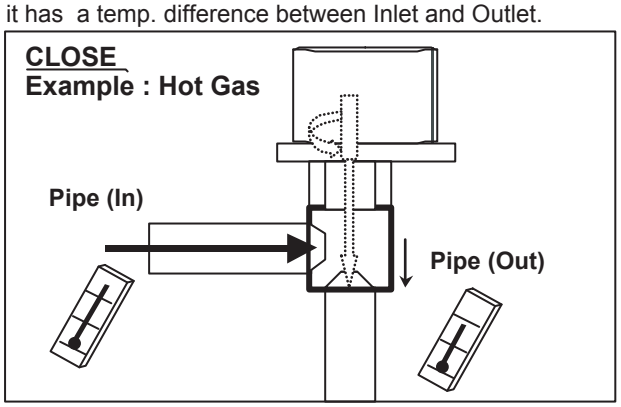
Check Point 4 : Check Noise at start up

・Turn on Power and check operation noise.

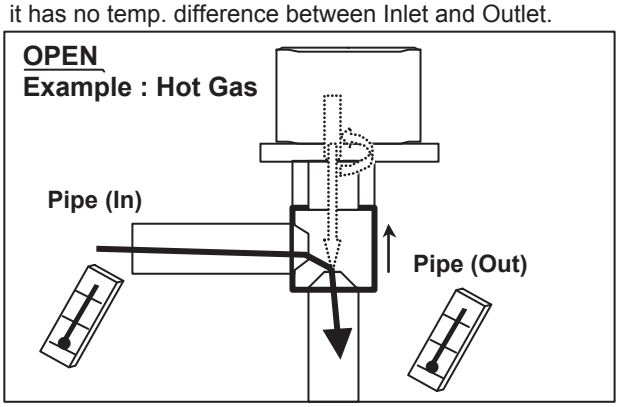
▶ **If an abnormal noise does not show, replace Main PCB.**

Check Point 5 : Check Opening and Closing Operation of Valve

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

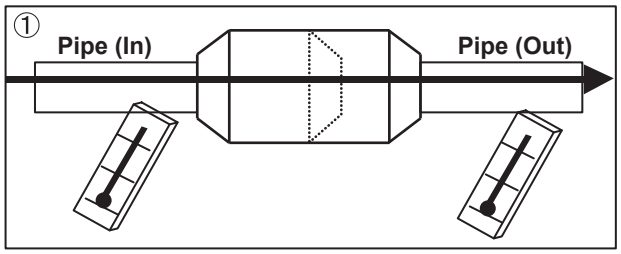


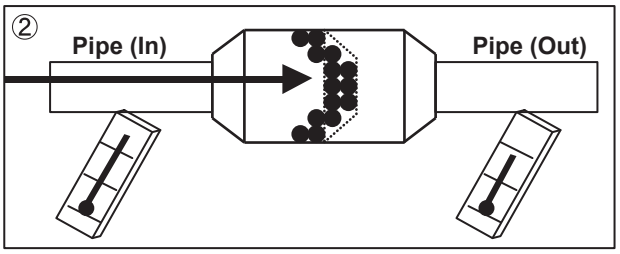
If it is open,
it has no temp. difference between Inlet and Outlet.



Check Point 6 : Check Strainer

Strainer normally does not have temperature difference between inlet and outlet as shown in① ,
but if there is a difference as shown in② , there is a possibility of inside clogged. In this case, replace Strainer.





SERVICE PARTS INFORMATION 4

Indoor unit fan motor

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: Ground terminal)
>>If they are short-circuited (below 300 kΩ), replace Indoor fan motor and Controller PCB.

For Wall Mount, Compact Wall Mount Type

Pin number (wire color)	Terminal function (symbol)
1 (Blue)	Feed back (FG)
2 (Yellow)	Speed command (Vsp)
3 (White)	Control voltage (Vcc)
4 (Black)	Ground terminal (GND)
5	No function
6 (Red)	DC voltage (Vm)

For Cassette, Duct Type

Pin number (wire color)	Terminal function (symbol)
1 (Brown)	Feed back (FG)
2 (Yellow)	Speed command (Vsp)
3 (White)	Control voltage (Vcc)
4 (Black)	Ground terminal (GND)
5	No function
6 (Red)	DC voltage (Vm)

SERVICE PARTS INFORMATION 5

Outdoor unit fan motor

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

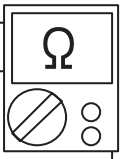
・Refer to below. Circuit-test "Vm" and "GND" terminal.
(Vm: DC voltage, GND: Ground terminal)
>>If they are short-circuited (below 300 kΩ), replace Outdoor fan motor and Main PCB.

Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3	No function
4 (Black)	Ground terminal (GND)
5 (White)	Control voltage (Vcc)
6 (Yellow)	Speed command (Vsp)
7 (Brown)	Feed back (FG)

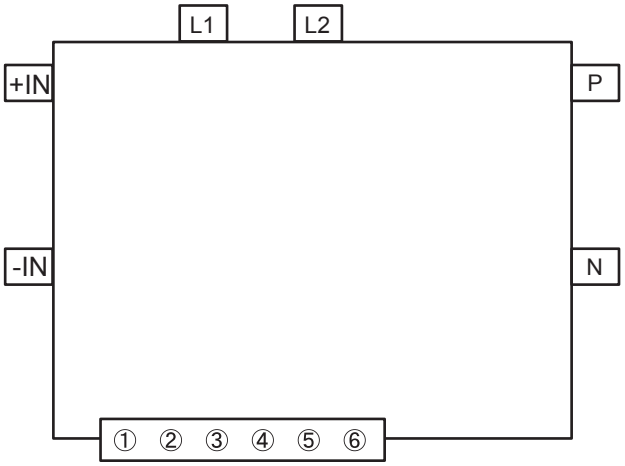
SERVICE PARTS INFORMATION 6

Active filter module

Check Point 1 : Check Open or Short-circuit and Diode (D1)



・Remove connector, check the open or short-circuit and the diode in the module



Check the open or short-circuit

	Terminal		Resistance value
	Tester(+)	Tester(-)	
	(+IN)	(–IN)	**360kΩ ±20%**
	(–IN)	N	**0 Ω**
	P	(+IN)	**720kΩ ±20%**
※	L1	L2	**1.40MΩ / 2.28MΩ** (Ref. value 1) (Ref. value 2)
	P	N	**360kΩ ±20%**
	L1,L2	Control Box	**∞ Ω**
※	L2	N	**1.69MΩ / 1.88MΩ** (Ref. value 1) (Ref. value 2)

Check the diode

	Terminal		Resistance value
	Tester(+)	Tester(-)	
※	L2	P	**1.32MΩ / 1.50MΩ** (Ref. value 1) (Ref. value 2)
※	P	L2	**1.40MΩ / 1.51MΩ** (Ref. value 1) (Ref. value 2)

※ By kind of tester, the value may change significantly.

Ref. value 1
Specifications for Multimeter
Manufacturer : HIOKI
Model name : 3804
Power source : DC9V.

Ref. value 2
Specifications for Multimeter
Manufacturer : YOKOGAWA
Model name : 7534
Power source : DC3V.

▶ **If it is abnormal,replace Active Filter Module.**

Check Point 2 : Check the Output DC voltage (between P and N)

・Check the Output DC voltage (between P and N) of compressor stopping and operating.

>> If the output voltage of compressor operating is less than the output voltage of compressor stopping, Active Filter Module is detective. >> **Replace Active Filter Module.**