Refrigerant
R410A

WALL MOUNTED type
INVERTER

2 . TROUBLE SHOOTING

2. TROUBLE SHOOTING

2-1 ERROR DISPLAY

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

1. ERROR DISPLAY
   Please refer the blinking pattern as follows.
   Indoor Unit : AS*A09LEC, AS*A12LEC

The OPERATION, TIMER lamps operate as follows according to the error contents.

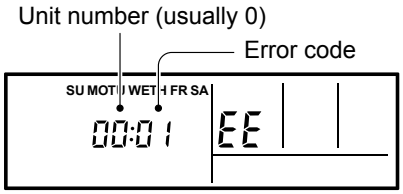
Error contents	Indoor Unit display			Wired Remote Controller Display (option)	Trouble shooting
	Operation (Green)	Timer (Orange)	Coil Dry (Yellow)		
Serial error (Serial reverse transfer error)	—	2 times 3 times ○	—	01	1
Serial error (Serial forward transfer error)	—	4 times 5 times ○	—	13	2
Wired remote controller error	—	8 times ○	—	00	3
Room temperature thermistor error	2 times ○	2 times ○	—	02	4
Indoor heat exchanger temperature thermistor (Middle) error		3 times ○	—	04	5
Outdoor discharge pipe temperature thermistor error	3 times ○	2 times ○	—	0C	6
Outdoor heat exchanger temperature thermistor error		3 times ○	—	06	7
Outdoor temperature thermistor error		4 times ○	—	0A	8
Manual auto switch error	4 times ○	2 times ○	—	20	9
Main relay welded error		3 times ○	—	No Display	10
Power supply frequency detection error		4 times ○	—	No Display	11
Over current protection	5 times ○	2 times ○	—	17	12
CT error		3 times ○	—	18	13
Compressor location ditection error		5 times ○	—	1A	14
Outdoor unit fan error		6 times ○	—	1b	15
Indoor fan motor lock error	6 times ○	2 times ○	—	12	16
Indoor fan motor rev. error		3 times ○	—	12	
Discharge temperature error	7 times ○	2 times ○	—	0F	17
Exessive high pressure protection on cooling		3 times ○	—	24	18
4-way valve error		4 times ○	—	2C	19
PFC circuit error	8 times ○	4 times ○	—	25	20
Model distinction error (Indoor)	●	●	—	11	21

○ 0.5s ON / 0.5s OFF (Flash) ● 0.1s ON / 0.1s OFF (Flash) — : OFF

2-1-2 WIRED REMOTE CONTROLLER DISPLAY (OPTION)

1. SELF - DIAGNOSIS

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



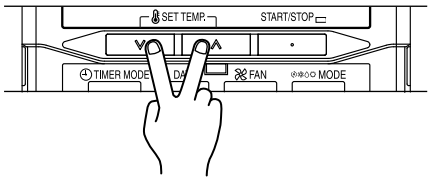
ex. Self-diagnosis check

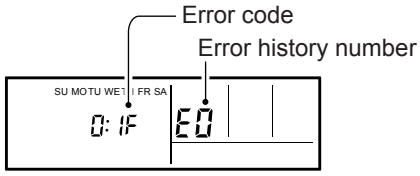
2. ERROR CODE HISTORY DISPLAY

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

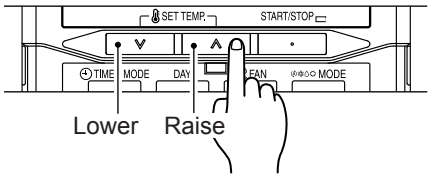
1. Stop the air conditioner operation.

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.

2-2 TROUBLE SHOOTING WITH ERROR CODE

Trouble shooting 1 **OUTDOOR UNIT Error Method:** **Serial 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 properly receive the serial signal from outdoor unit for 10 seconds or more.

Forecast of Cause:

1. Connection failure 2. External cause 3. Main PCB failure 4. 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).

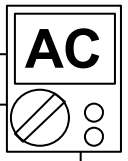
YES ↓

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 ↓

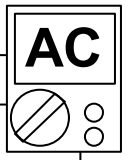
Check Point 3 : Check the voltage of power supply



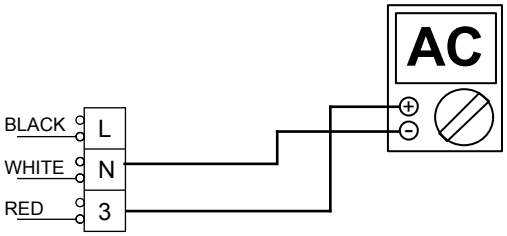
・Check the voltage of power supply
>> Check if AC198(AC220V-10%) - 264V(AC240V+10%) appears at outdoor unit terminal L - N.

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 N - 3.
>> If it is abnormal, check Outdoor unit fan motor. (PARTS INFORMATION 5)
>> If Outdoor unit fan motor is abnormal, replace Outdoor unit fan motor and Main PCB.
>> If Outdoor unit fan motor is normal, replace Main PCB.



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

Forecast of Cause:

1. Connection failure 2. External cause 3. Controller PCB failure 4. Outdoor unit Main PCB

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).

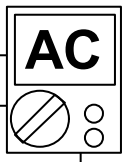
YES ↓

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 ↓

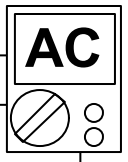
Check Point 3 : Check the voltage of power supply



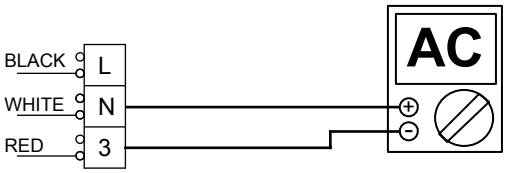
・Check the voltage of power supply
>> Check if AC198(AC220V-10%) - 264V(AC240V+10%) appears at outdoor unit terminal L - N.

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 N - 3.
>> If it is abnormal, replace Controller PCB.
>> If it is abnormal, replace Outdoor unit Main PCB.



Trouble shooting 3 **INDOOR UNIT Error Method:** **Wired Remote Controller 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 CN305 (terminal 1-3) of UTY-XCBXE (Communication kit). (Power supply to Remote Control)

>> If it is DC13V, 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:** **Room Temperature Thermistor Error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Indoor unit Controller PCB Room temperature thermistor	**Detective details:** When Room Temperature Thermistor open or short-circuit is detected at power ON.

Forecast of Cause :

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

Check Point 1 : Check connection of connector

- Check if connector is removed.
- Check if connector is 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)	-10	-5	0	5	10	15	20	25
Resistance value (kΩ)	58.2	44.0	33.6	25.9	20.2	15.8	12.5	10.0

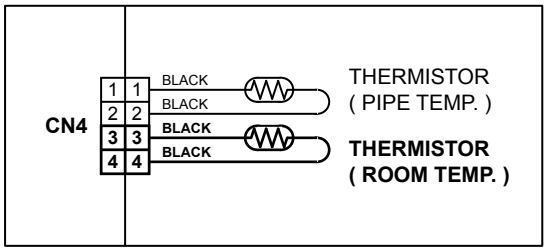
Temperature (°C)	30	35	40	45
Resistance value (kΩ)	8.0	6.5	5.3	4.3

▶ **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 indoor unit and check terminal voltage at thermistor (DC5.0V)



▶ **If the voltage does not appear, replace Controller PCB and execute the check operation again.**

Trouble shooting 5 **INDOOR UNIT Error Method:** **Indoor Heat Exchanger Temperature Thermistor (Middle) Error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Indoor unit Controller PCB Heat exchanger (MID) thermistor	**Detective details:** When Heat exchanger (MID) thermistor open or short-circuit is detected at power ON.

Forecast of Cause :

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

Check Point 1 : Check connection of connector

- Check if connector is removed.
- Check if connector is 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)	-5	0	5	10	15	20	25	30
Resistance value (kΩ)	233.2	176.0	134.2	103.3	80.3	62.9	49.7	39.6

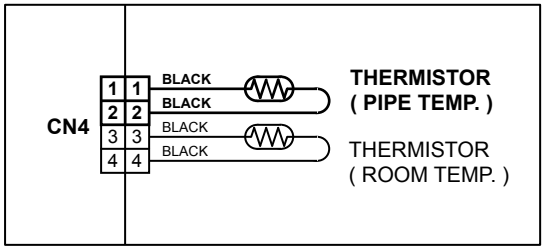
Temperature (°C)	35	40	45	50	55	60	65
Resistance value (kΩ)	31.7	25.6	20.8	17.1	14.1	11.6	9.7

▶ **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 indoor unit and check terminal voltage at thermistor (DC5.0V)



▶ **If the voltage does not appear, replace Controller PCB and execute the check operation again.**

Trouble shooting 6 **OUTDOOR UNIT Error Method:** **Outdoor Discharge Pipe Temperature 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 if connector is 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	-5	0	5	10	15	20
Resistance value (kΩ)	1013.1	531.6	292.9	221.1	168.6	129.8	100.9	79.1	62.5

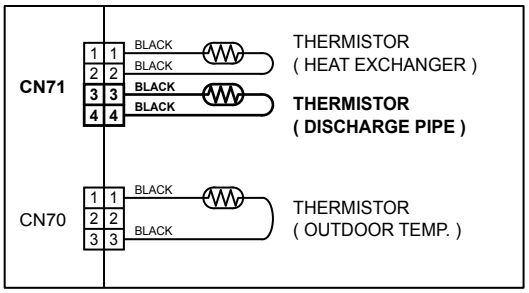
Temperature (°C)	30	40	50	60	70	80	90	100	120
Resistance value (kΩ)	40.0	26.3	17.8	12.3	8.7	6.3	4.6	3.4	2.0

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

OK

Check Point 3 : Check voltage of Inverter 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 7 **OUTDOOR UNIT Error Method:** **Outdoor Heat Exchanger Temperature Thermistor Error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB Heat exchanger temperature thermistor	**Detective details:** 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. Inverter PCB failure

Check Point 1 : Check connection of connector

- Check if connector is removed.
- Check if connector is 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	-5	0	5	10	15	20	25
Resistance value (kΩ)	95.6	50.3	27.8	21.0	16.1	12.4	9.6	7.6	6.0	4.8

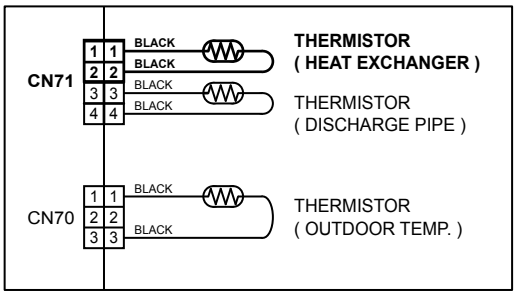
Temperature (°C)	30	35	40	45	50	60	70	80
Resistance value (kΩ)	3.8	3.1	2.5	2.1	1.7	1.2	0.8	0.6

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

OK

Check Point 3 : Check voltage of Inverter 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 8 **OUTDOOR UNIT Error Method:** **Outdoor Temperature Thermistor Error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB Outdoor temperature thermistor	**Detective details:** 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. Inverter PCB failure

Check Point 1 : Check connection of connector

- Check if connector is removed.
- Check if connector is 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	-5	0	5	10	15
Resistance value (kΩ)	224.3	115.2	62.3	46.6	35.2	26.9	20.7	16.1

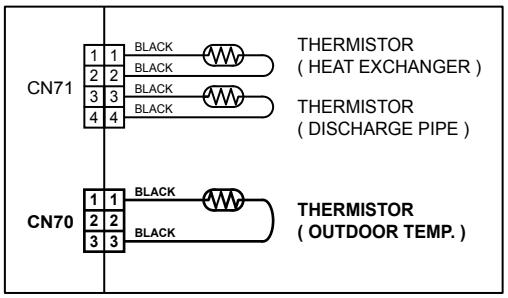
Temperature (°C)	20	30	40	50	60	70	80
Resistance value (kΩ)	12.6	8.0	5.2	3.5	2.4	1.6	1.2

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

OK

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

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

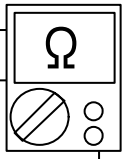


▶ **If the voltage does not appear, replace Main PCB.**

Trouble shooting 9 **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 10 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 Inverter PCB

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

Trouble shooting 10 **OUTDOOR UNIT Error Method:** **Main relay welded error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB Indoor unit Controller PCB Power code assy*1	When the signal from the outdoor unit is input after 2min.20sec. from the time of operation stop under the Main relay is OFF condition.

Forecast of Cause :

1. Power code assy*1 2. Main PCB failure 3. Controller PCB failure

Check Point 1 : Replace Main PCB

▶ **Change Main PCB.**

OK

Check Point 2 : Replace Controller PCB

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

OK

Check Point 3 : Replace Power code assy*1

▶ **If Check Point 2 do not improve the symptom, replace Power code assy.**

*1: Power code assy consists of Terminal, Relay, Thermal fuse, and Power code.

Trouble shooting 11 **INDOOR UNIT Error Method:** **Power Supply Frequency Detection Error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Indoor unit Controller PCB	**Detective details:** When power frequency is not detected by 4 seconds after power-on.

Forecast of Cause:

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

Check Point 1-1 : Reset the power supply 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).

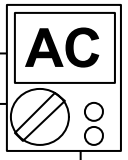
YES ↓

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 AC198(AC220V-10%) - 264V(AC240V+10%) appears at outdoor unit terminal L - N.

OK ↓

Check Point 4 : Replace Controller PCB

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

Trouble shooting 12 **OUTDOOR UNIT Error Method:** **Over Current Protection**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB Compressor	**Detective details:** ① When over current flows in Inverter PCB, the compressor stops. ② After the compressor restarts, if the same error is repeated within 40sec, the compressor stops reappear. ③ If ① and ② repeats 5 times, the compressor stops permanently.

Forecast of Cause :

1. Connection failure
2. Outdoor fan operation failure
3. Outdoor heat exchanger clogged
4. Compressor failure
5. Main PCB failure

Check Point 1 : Check connections condition in control unit

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

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

OK

Check Point 2 : Check Outdoor heat exchanger

- Is there any obstructing the air flow route?
- Is there any clogging of outdoor unit heat exchanger?

>> If clogged, clear the clog.

OK

Check Point 3 : Check Outdoor fan

- Check Outdoor fan motor. (Refer to Trouble shooting 15)

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

OK

Check Point 4 : Replace Main PCB

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

OK

Check Point 5 : Replace Compressor

▶ **If Check Point 4 do not improve the symptom, replace Compressor.**

Trouble shooting 13 **OUTDOOR UNIT Error Method:** **CT Error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB	**Detective details:** When Input Current Sensor has detected 0A, while Inverter Compressor is operating at higher than 56rps, after 1minute upon starting the Compressor. (Except during the defrost operation)

Forecast of Cause :

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

Check Point 1-1 : Reset power supply 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 connections condition in control unit

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

OK ↓

Check Point 3 : Replace Main PCB

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

Trouble shooting 14 **OUTDOOR UNIT Error Method:** **Compressor Location Detection 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 Noise from Compressor

・Turn on Power and check operation noise.

▶ **If an abnormal noise show, replace Compressor.**

OK

Check Point 2 : 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 3: Replace Main PCB

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

OK

Check Point 4: Replace Compressor

▶ **If Check Point 3 do not improve the symptom, replace Compressor.**

Trouble shooting 15 **OUTDOOR UNIT Error Method:** **Outdoor Unit Fan 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 ②repeats 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

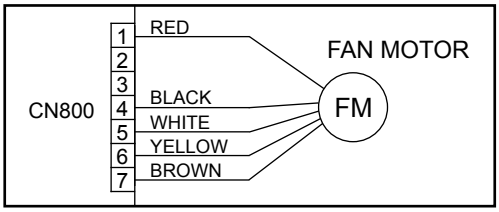
Check Point 3 : Check Outdoor unit fan motor

・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

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



Read wire	DC voltage
Red - Black	280V ±10%
White - Black	15 ±1.5V

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

Trouble shooting 16 **INDOOR UNIT Error Method:** **Indoor Fan Motor Lock Error** **Indoor Fan Motor Rev. 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 or 0rps 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 17 **OUTDOOR UNIT Error Method:** **Discharge Temperature Error**	**Indicate or Display:** **Refer to error code table.**

Detective Actuators:	**Detective details:**
Discharge temperature thermistor Outdoor unit Main PCB	"Protection stop by "discharge temperature ≧ 110degC 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

<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 open?
- Strainer clogging check (Refer to PARTS INFORMATION 3)

↓ **OK**

<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 (Refer to PARTS INFORMATION 3)

↓ **OK**

Check Point 3 : Check the outdoor unit fan,heat exchanger
- Check for foreign object at heat exchanger
- Check if fan can be rotated by hand.
- Motor check (PARTS INFORMATION 5)

↓ **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 "Trouble shooting 6".

↓ **OK**

Check Point 5 : Check the refrigerant amount
- Leak check

↓ **OK**

Check Point 6 : Replace Main PCB

▶ **If Check Point 1- 5 do not improve the symptom, replace Main PCB.**

Trouble shooting 18 **OUTDOOR UNIT Error Method:** **Excessive High Pressure Protection On Cooling**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB Outdoor unit fan motor Heat exchanger temp. thermistor Outdoor unit EEV	**Detective details:** In cooling operation, after 1 minute or more compressor starts, when outdoor heat exchanger temperature is 67 °C and above.

Forecast of Cause :

1. Connection failure
2. Outdoor fan operation failure
3. Outdoor heat exchanger clogged
4. Thermistor failure
5. EEV failure
6. Main PCB failure

Check Point 1 : Check connections condition in control unit

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

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

OK

Check Point 2 : Check Outdoor Heat Exchanger

- Is there any obstructing the air flow route?
- Is there any clogging of outdoor unit heat exchanger?

>> If clogged, clear the cloge it.

OK

Check Point 3 : Check Outdoor Fan

- Check Outdoor fan motor. (Refer to Trouble shooting 15)

>> If the Fan Motor is failure, replace it.

OK

Check Point 4 : Check Thermistor

- Check Thermistor. (Refer to Trouble shooting 7)

>> If the Thermistor is failure, replace it.

OK

Check Point 5 : Check EEV

- Check EEV. (PARTS INFORMATION 3)

>> If the EEV is failure, replace it.

OK

Check Point 6 : Replace Main PCB

▶ **If Check Point 1 ~ 5 do not improve the symptom, replace Main PCB.**

Trouble shooting 19 **OUTDOOR UNIT Error Method:** **4-way valve error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB Heat exchanger temperature thermistor Room temperature thermistor 4-way valve	**Detective details:** 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.] > 10degC ・Heating operation [indoor heat exchanger temp.] - [room temp.] < -10degC 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

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 each thermistor

・Isn't it fallen off the holder?
・Is there a cable pinched?

>> Check characteristics of thermistor (Refer to Trouble shooting 4, 5), If defective, replace the thermistor.

OK

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

[Solenoid coil]
・Remove CN30 from 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 : Replace Main PCB

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

Trouble shooting 20 **OUTDOOR UNIT Error Method:** **PFC circuit error**	**Indicate or Display:** **Refer to error code table.**
Detective Actuators: Outdoor unit Main PCB	**Detective details:** When inverter output DC voltage is higher than 415V for over 3 seconds, the compressor stops. If the same operation is repeated 5 times, the compressor stops permanently.

Forecast of Cause :

1. External cause 2. Connector connection failure 3. Main PCB 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 : Replace Main PCB

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

Trouble shooting 21 **INDOOR UNIT Error Method:** **Model Distinction Error (Indoor)**	**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 for connection of electric components 3. Controller PCB failure

Check Point 1-1 : Reset power supply and operate

・Does error indication show 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 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

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

2-3 TROUBLE SHOOTING WITH NO ERROR CODE

Trouble shooting 22

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.

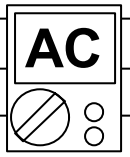
OK

Check Point 2 : Check external cause at indoor unit and outdoor unit(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(AC220V-10%) - 264V(AC240V+10%) appears at indoor unit Terminal L - N (Power supply).

NO

OK

- Check Fuse on Controller PCB (F1).

>> If Fuse is open, check loose terminal, and replace Fuse.

- Check Varistor on Controller PCB (VA1).

>> If Varistor is defective, there is a possibility of an abnormal power supply. Check the correct power voltage.

Trouble shooting 23

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.

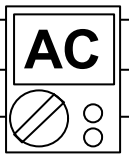
OK

Check Point 2 : Check external cause at indoor unit and outdoor unit(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(AC220V-10%) - 264V(AC240V+10%) appears at outdoor unit terminal L - N.

NO

OK

- Check Fuse(F201) on terminal board.

>> If Fuse is open, check loose terminal, and replace Fuse.

- Check Varistor on Main PCB (VA1 - 2).

>> If Varistor is defective, there is a possibility of an abnormal power supply. Check the correct power voltage.

OK

▶ If Check Point 1 ~ 3 do not improve the symptom, replace Main PCB,

Trouble shooting 24

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?

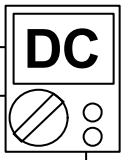
OK

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 CN305 (terminal 1-3) of UTY-XCBXE (Communication kit).
  (Power supply to Remote Control)

>> If it is DC13V, 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

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

Trouble shooting 25

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
6. Heater Unit 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

- Is outdoor unit is operating?
  (If not, refer to Trouble shooting 23)
- Is there any obstructing the air flow route?
- Is there any clogging on outdoor unit Hert Exchanger?
- Is the valve open?

OK

Check Point 3 : Check site condition

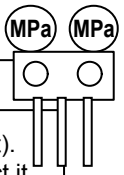
- Is capacity of indoor unit fitted to room size?
- Any windows open? Or direct sunlight?

OK

Check Point 4 : Check indoor unit / outdoor unit installation condition

- Check connection pipe.
  (Specified pipe length and pipe diameter?)
- Check any loose or removed communication line.
  >> <u>If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.</u>

OK

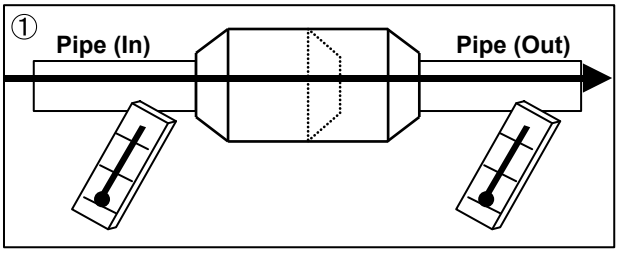


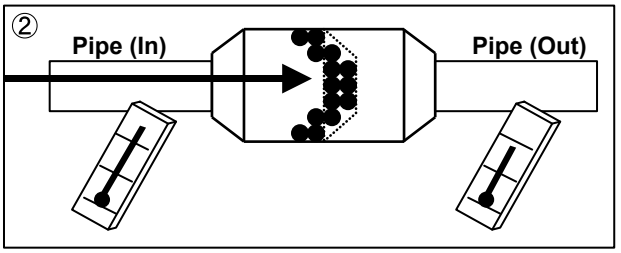
Check Point 5 : Check refrigeration cycle

- Check if Strainer is clogged (Refer to the figure at right).
- Measure gas pressure and if there is a leakage, correct it.
  >> <u>When recharging the refrigerant, make sure to perform vacuuming, and recharge the specified amount.</u>
- Check EEV (PARTS INFORMATION 3)
- Check Compressor (PARTS INFORMATION 1,2)
- Check Heater Unit (PARTS INFORMATION 6)

<u>Attention</u>

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 26

Abnormal Noise

Forecast of Cause :

1. Abnormal installation(Indoor unit / outdoor unit)
2. Fan failure(Indoor unit / outdoor unit)
3. Compressor failure (Outdoor unit)

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

Trouble shooting 27

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

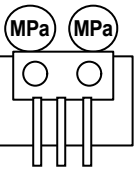
- Is Fan rotating?
  >> Check Fan Motor

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

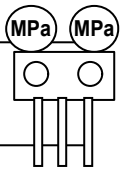
- Is there open or loose connection cable?
- Check connection of Compressor,and winding resistance. (Refer to the next page).

>> 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 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 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)

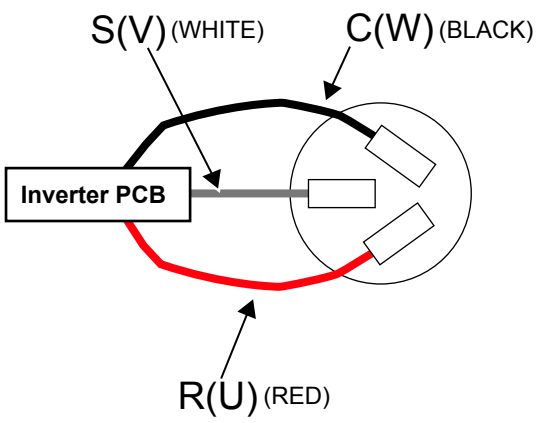
Replace Compressor

SERVICE PARTS INFORMATION 2

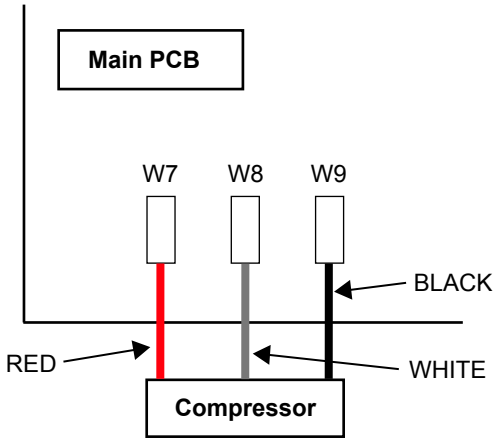
Inverter Compressor

Check Point 1 : Check connection

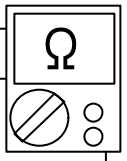
・Check terminal connection of Compressor
(Loose or incorrect wiring)



Check connection of Main PCB
(Loose or incorrect wiring)

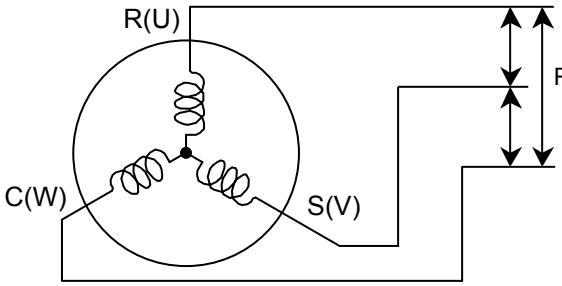


Check Point 2 : Check winding resistance



・Check winding resistance of each terminal

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



Resistance value : 0.71 Ω
(at 20°C)

Check Point 3 : Replace Inverter PCB

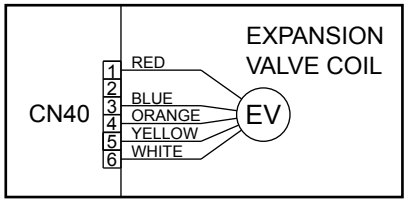
▶**If Check Point 1, 2 do not improve the symptom, replace Inverter PCB.**

SERVICE PARTS INFORMATION 3

Outdoor unit Electronic Expansion Valve
(EEV)

Check Point 1 : Check Connections

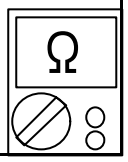
・Check connection of connector
(Loose connector or open cable)



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 - Red	
Orange - Red	
Blue - Red	



▶ **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.**

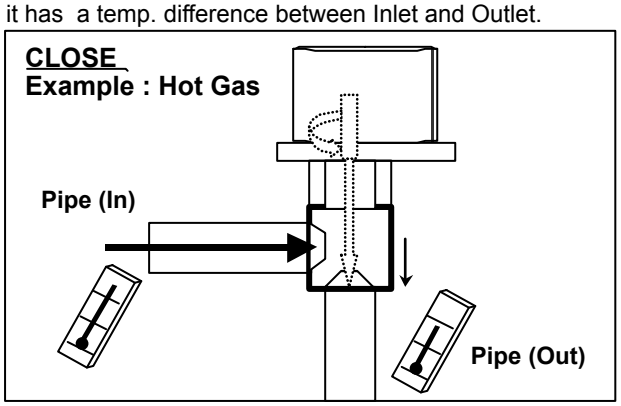
Check Point 4 : Check Noise at start up

・Turn on Power and check operation noise.

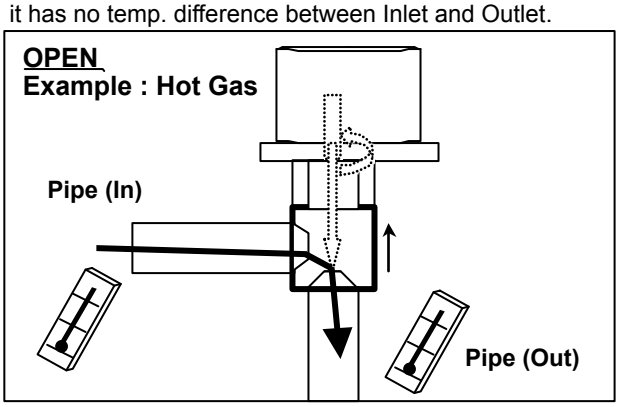
▶ **If an abnormal noise does not show, replace Main PCB.**

Check Point 5 : Check Opening and Closing Operation of Valve

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

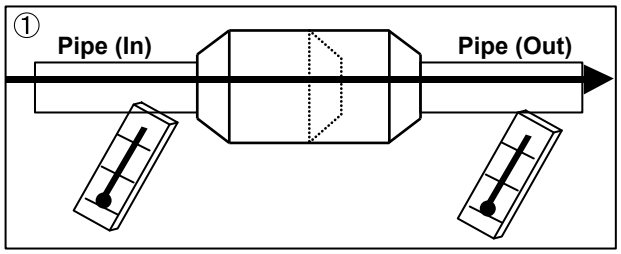


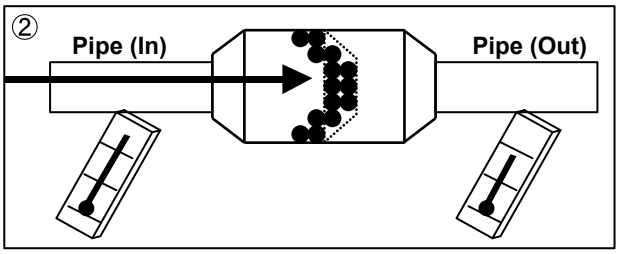
If it is open,
it has no temp. difference between Inlet and Outlet.



Check Point 6 : Check Strainer

Strainer normally does not have temperature difference between inlet and outlet as shown 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 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: 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 (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 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: Earth terminal)
>>If they are short-circuited (below 300 kΩ), replace Outdoor fan motor and Main PCB.

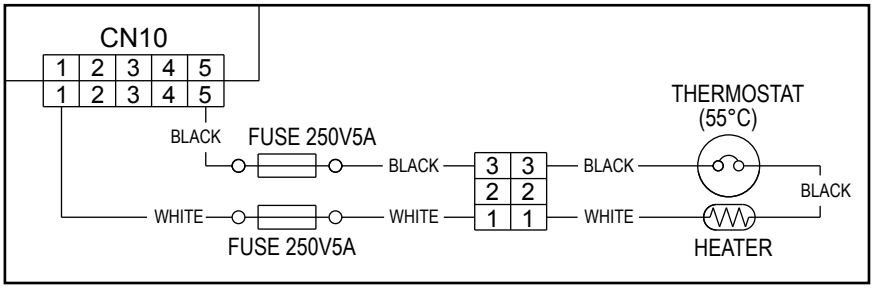
Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3	No function
4 (Black)	Earth terminal (GND)
5 (White)	Control voltage (Vcc)
6 (Yellow)	Speed command (Vsp)
7 (Brown)	Feed back (FG)

SERVICE PARTS INFORMATION 6

Heater Unit

Check Point 1 : Check Connections

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



Check Point 2 : Check electrical components

・Check Check Fuses.
>> If Fuse is open, check connection, and replace Fuse.

Check Point 3 : Check Heater wire.

・Remove connector, check resistance of Heater wire.

Read wire	Resistance value
Black - White	321 ~ 366 Ω

▶ **If Resistance value is abnormal, replace Heater Unit.**