Refrigerant R410A
INVERTER

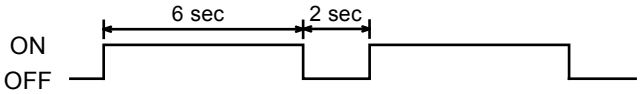
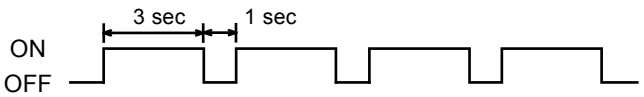
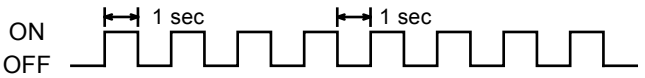
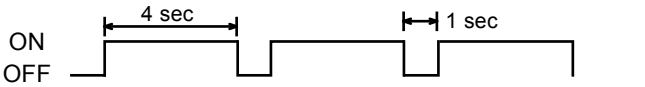
AIRSTAGE™ V-III
Variable Refrigerant Flow System

4. TROUBLE SHOOTING

4. TROUBLESHOOTING

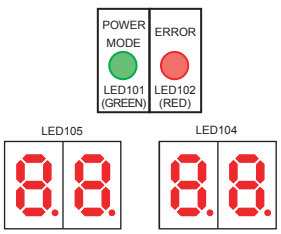
4-1 NORMAL OPERATION

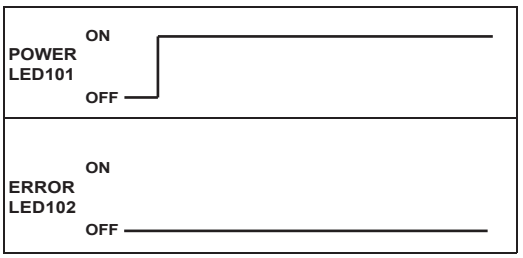
4-1-1 Indoor Unit Display

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

4-1-2 OUTDOOR UNIT DISPLAY

Indication type	7 Segment LED Pattern	Description
Idling(stop)	Blank	
Cooling Mode	"C" OO "L"	
Heating Mode	"H" EA "T"	
Oil Recovery Operation	"O" IL "R" ECOVERY	Refer to Chapter 02. (Outdoor unit operation control)
Defrost Operation	"D" E "F" ROST	Refer to Chapter 02. (Outdoor unit operation control)
Discharge Temp. Protection is stopped	"P" ROTECT "1"	<Starting condition> Discharge temp ≧ fixed value 239°F(115°C) <Release condition> 3 minutes have elapsed and discharge temperature ≦ 176°F(80°C)
High Pressure Protection is stopped	"P" ROTECT "2"	<Starting condition> High pressure ≧ 580psi(4.00MPa) or Pressure SW in operation <Release condition> 5 minutes have elapsed and high pressure ≦ 509psi (3.50MPa) and Pressure SW release
Low Pressure Protection is stopped	"P" ROTECT "3"	<Starting condition> Low pressure ≦ 7psi (0.05MPa) or low pressure ≦ 15psi (0.10MPa) continues for 10 mins <Release condition> 3 minutes have elapsed and low pressure ≧ 25psi (0.17MPa)
Compressor Temperature Protection is stopped	"P" ROTECT "4"	<Starting condition> Compressor temp ≧ fixed value 239°F(115°C) <Release condition> 3 minutes have elapsed and discharge temperature ≦ 176°F(80°C)
Peak Cut Mode	"P" eak "C" ut	
Low Noise Mode	"L" OW "N" OISE	Refer to Chapter 02. (Outdoor unit operation control)
Snow Falling Protection Fan mode	"SN" OW	Refer to Chapter 02. (Outdoor unit operation control)
Inverter Compressor Operation Indication	Blinking	ON / OFF — 1 sec / 1 sec





4-2 ABNORMAL OPERATION

4-2-1 Error code Display

An Error code is represented by 3 digit characters.
The first 2 digit means the subsection Error code, and the last 1 digit means the specifics Error code.

Ex.) Indoor unit Network communication Error

1 4 . 3

Subsection Error Code — 14 : Network communication Error

Specifics Error Code — 3 : Indoor unit Network Communication Error

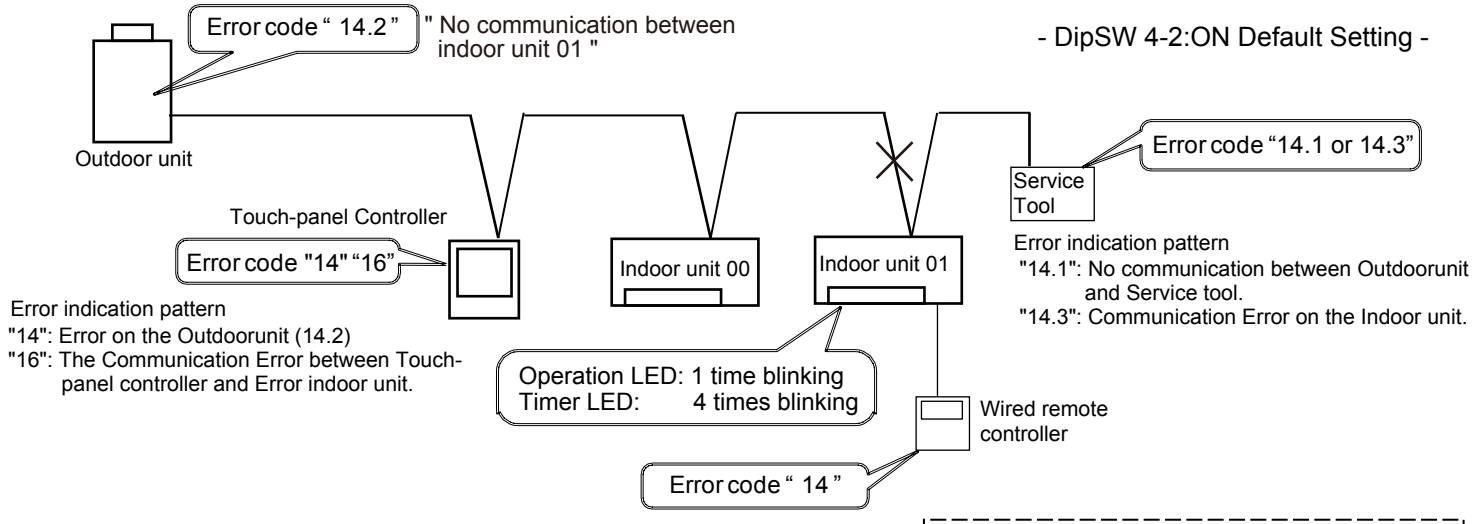
Each Error code section is shown by the following target

Subsection Error Code target	Subsection and Specifics Error code target
- Indoor unit (Operation / Timer / Filter) LED - 2 / 3 Wires Remote controller - Simple Remote controller - Group Remote controller - Central Remote controller - Touch - Panel Controller	- Outdoor unit 7 segment Display - Service Tool

When an Error occurs, each devices indicate own abnormal detecting condtion.
In order to confirm the actual error condition, the following procedure are required.

1) Confirm the Specific Error code on the Outdoor unit 7 segment display or the Service tool.
   Ex.1.) When the wired remote controller shows " 9 U (Outdoor unit Error)".
   Ex.2*.) When the wired remote controller shows " 4 2 (Indoor unit Heat-Ex Sensor Error)"
   *The Specific Error code can be indicated by service tool.

2) Confirm each Error code on each devices in case of Network communication Error.
   Ex.) When the Network cable of indoor unit 00 disconnected during operating.



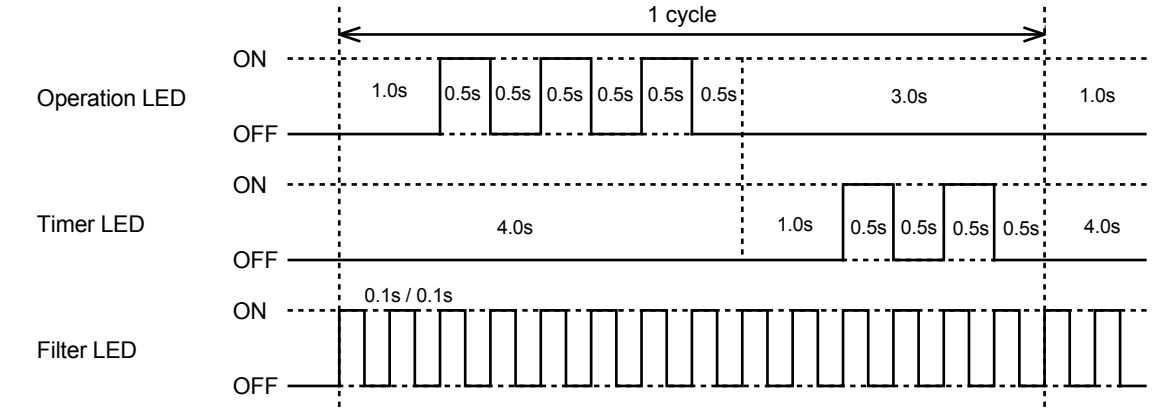
"Network communication Error"
*Indoor unit detects the condition of Error code 14.3, but it can only display the Subsection Error code.

Note: About Service tool
- To change the connecting location of service tool can be helpful for the trouble shooting.
- To check the system configuration, the Address checker function can be helpful for trouble shooting.

4-2-2 Indoor Unit Display

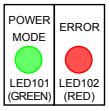
Error Indication Flashing Pattern

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

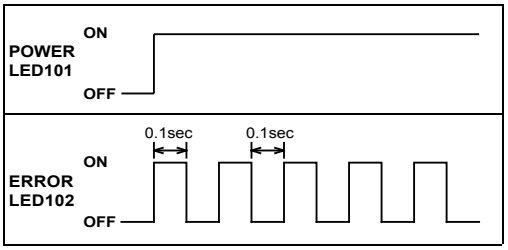


4-2-3 Outdoor Unit Display

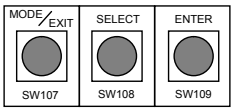
LED display



POWER MODE LED : on
ERROR LED : blink

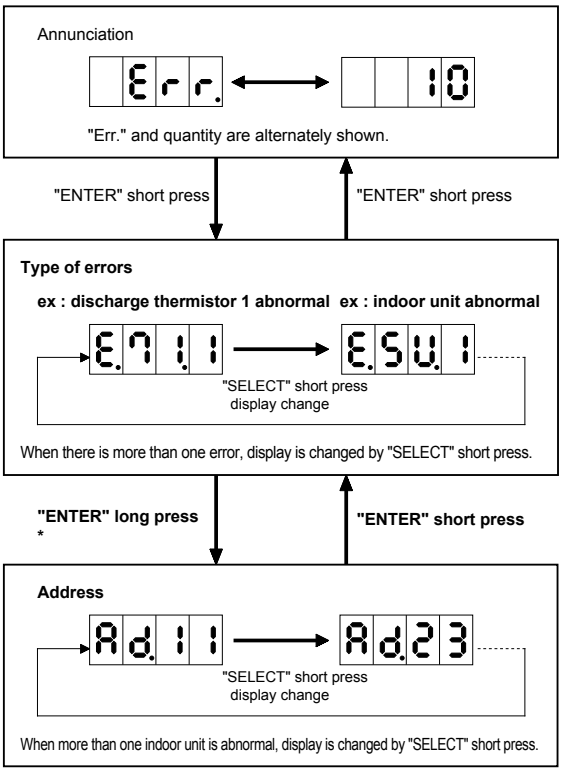


Operation button



ERROR transition

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



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

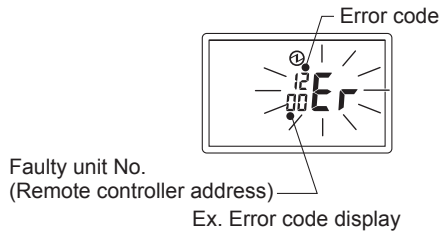
* Only in the case of "indoor unit abnormal (E.5U.1)", indoor unit address is shown by ENTER long press.

4-2-4 Remote Controller Display

<< SIMPLE REMOTE CONTROLLER >> UTY-RSKYT

ERROR CODE DISPLAY

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

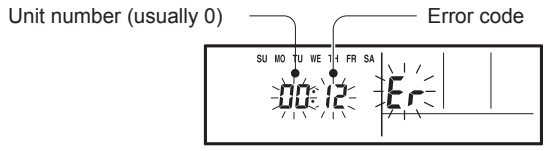


Ex. Error code display

<< WIRED REMOTE CONTROLLER 3 wire type >> UTY-RNKYT

ERROR CODE DISPLAY

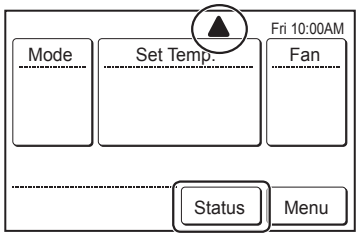
If an error occurs, the following display will be shown.
("Er" will appear in the set room temperature display.)
If "Er" is displayed, immediately contact authorized service personnel.



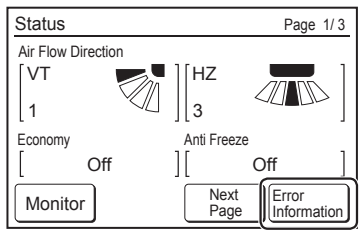
Ex. Error code display

<< WIRED REMOTE CONTROLLER 2 wire type >> UTY-RNRY

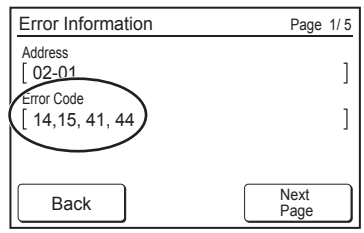
If an error occurred, an error icon appears on the Monitor mode screen.



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



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

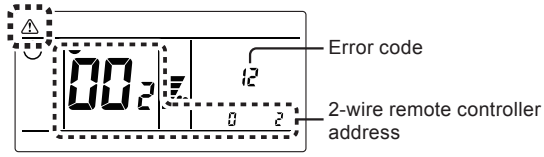


2-digit numbers are corresponding to the error code

<< WIRED REMOTE CONTROLLER 2 wire type >> UTY-RLRY

This appears automatically on the display if an error occurs.

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



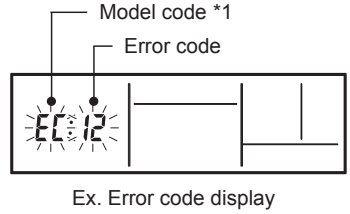
Ex. Error code display

<< GROUP REMOTE CONTROLLER >> UTY-CGGY

ERROR CODE DISPLAY

The air conditioning system must be inspected if "E : " (error code) appears on the timer and Clock Display, or the operation lamp is flashing.

*1 ; Model code
- 0 : Outdoor unit
- 1 : Indoor unit
- C : Group remote controller
- A : Convertor



Ex. Error code display

4-2-5 Trouble shooting index - Error code List 1/2 -

Display Target A	Display Target B	Display Target C	Display Target D
Simple Wired remote controller 2 / 3 wires Wired remote controller Indoor unit LED brinking times, " 1st figure: Operation LED, 2nd figure: Timer LED"	Group Remote controller Central Remote controller Touch- Panel controller	7 seg. Display on Outdoor unit Controller PCB	Service Tool

*****: No Display **A**: LED 10 times Blinks **J**: LED 13 times Blinks **U**: LED 15 times Blinks

Display Target A	Display Target B	Error Contents < Subsection >	Display Target C	Display Target D	Error Contents < Supecifics >	Trouble shooting No.
1 2		Remote controller Communicaction Error	5 U.1	1 2 . 1	Wired Remote Controller communication Error	1
				1 2 . 2	Wired Remote Controller signal error (3 wires RC)	2
				1 2 . 3	Number Excess of device in Wired RC. System (2 Wires RC)	3
9 U	1 3	Communication Error between Outdoor unit	1 3 . 1		Communication Error Between Outdoor unit	4
1 4 *	1 4 1 6	Network Communication Error	1 4. 1	1 4. 1 1 4. 3	Outdoor unit Network communication 1 Error	5
1 4 9 U	1 4 1 6		1 4. 2	1 4. 2 1 4. 1 1 4. 3	Outdoor unit Network communication 2 Error	6
1 4 9 U *	1 4 1 6		1 4. 1 1 4. 2	1 4. 3 1 4. 1 1 4. 2	Indoor unit Network communication Error	7
9 U *	1 4 1 6		1 4. 5	1 4. 5 1 4. 3	The number of indoor unit shortage Error	8
1 6		Peripheral device communication Error	1 4. 1	1 4. 3	Transmission PCB connection Error	9
*			1 4. 2		Communication Error between Controller and Indoor unit	10
2 6		Address settingError	5 U.1	2 6 . 4	Address duplication in Wired remote controller system	11
				2 6 . 5	Address setting Error in Wired remote controller system	12
*		Other setting Error	2 8 . 1	*	Auto address setting Error	13
			2 8 . 4	*	Signal amplifier auto address Error	14
2 9		Connection unit number error in wired remote controller system	5 U. 1	2 9 . 1	Connection unit number Error (Indoor unit in WRC control system)	15
2 9	*		*	*	Connection unit number Error (Remote controller)	16
3 1		Indoor unit Power supply Abnormal	5 U. 1	3 1 . 3	Indoor unit power frequency Abnormal	17
3 2		Indoor unit Main PCB Error		3 2 . 1	Indoor unit PCB Model informaiton Error	18
				3 2 . 3	Indoor unit EEPROM access Error	19
				3 2 . 7	Indoor unit microcomputer self-check error	19-1
3 A		Indoor unit communication circuit (WRC) error	5 U.1	3 A . 1	Indoor unit communication circuit (WRC) microcomputers communication error	20
4 1		Indoor unit Room temp. Sensor Error		4 1 . 1	Indoor unit Inlet air temp. Sensor Error	21
4 2		Indoor unit Heat-Ex. Sensor Error		4 2 . 1	Indoor unit Heat-Ex. Inlet temp. Sensor Error	22
				4 2 . 3	Indoor unit Heat-Ex. Outlet temp. Sensor Error	23
5 1		Indoor unit FAN Motor 1 Error		5 1 . 2	Indoor unit FAN Motor 1 rotation speed Error	24
5 2		Indoor unit Coil (EEV) Error		5 2 . 1	Indoor unit Coil 1 (EEV) Error	25
5 3		Indoor unit water drain Abnormal		5 3 . 1	Indoor unit Drain pump Error	26
*		Indoor unit Error		*	Indoor unit Error	Refer to I.U Error
9 U	6 1	Outdoor unit Power supply Abnormal	6 1 . 2		Outdoor unit under voltage Error	27
			6 1 . 5		Outdoor unit reverse phase, missing phase wire Error	27-1
	6 2	Outdoor unit PCB Error	6 2 . 3		Outdoor unit EEPROM access Error	28
			6 2 . 6		Inverters communication Error	29
			6 2 . 8		EEPROM data corrupted Error	30
			6 2. 9		Outdoor unit microcomputer self-check error	30-1
	6 3	Outdoor unit Inverter PCB Error	6 3 . 1		Inverter Error	31
*	*	OU. short interruption detection protected operation	6 7 . 2		Inverter PCB short interruption Error	32
9 U	6 8	Outodoor unit Magnetic relay Error	6 8 . 2		Rush Current limiting resistor temp. rise protection	33
9 U	6 9	Outdoor unit Transmission PCB Error	6 9. 1		Outdoor unit transmission PCB Parallel communication Error	34
1 4	1 4		6 9. 1	1 4. 1 1 4. 3		
9 U	7 1	Outdoor unit Discharge temp. Sensor Error	7 1 . 1		Discharge temp.Sensor 1 Error	35
	7 2	Outdoor unit Compressor temp. Sensor Error	7 2 . 1		Compressor temp. Sensor 1 Error	36
	7 3	Outdoor unit Heat-Ex. temp. Sensor Error	7 3 . 4		Heat-Ex 1 gas temp. Sensor Error	37
			7 3 . 5		Heat-Ex 1 liquid temp. Sensor Error	38
			7 3 . 6		Heat-Ex 2 gas temp. Sensor Error	39
			7 3 . 7		Heat-Ex 2 liquid temp. Sensor Error	40
	7 4	Outdoor temp. Sensor Error	7 4 . 1		Outdoor temp. Sensor Error	41
	7 5	Suction gas temp. Sensor Error	7 5 . 1		Suction gas temp. Sensor Error	42
	7 7	Heat sink temp. Sensor Errorl	7 7 . 1		Heat sink temp. Sensor Error	43
	8 2	Sub cool HEX temp. Sensor Error	8 2 . 2		Sub cool HEX gas outlet temp. Sensor Error	44
	8 3	Liquid pipe temp. Sensor Error	8 3 . 1		Liquid pipe temp. Sensor 1 Error	45
			8 3 . 2		Liquid pipe temp. Sensor 2 Error	46
	8 4	Current Sensor Error	8 4 . 1		Current sensor 1 Error	47

4-2-5 Trouble shooting index - Error code List 2/2 -

Display Target A	Display Target B	Display Target C	Display Target D
Simple Wired remote controller 2 / 3 wires Wired remote controller Indoor unit LED brinking times, " 1st figure: Operation LED, 2nd figure: Timer LED"	Group Remote controller Central Remote controller Touch- Panel controller	7 seg. Display on Outdoor unit Controller PCB	Service Tool

***** : No Display **A**: LED 10 times Blinks **J**: LED 13 times Blinks **U**: LED 15 times Blinks

Display Target A	Display Target B	Error Contents < Subsection >	Display Target C	Display Target D	Error Contents < Supecifics >	Trouble shooting No.
9 U	8 6	Pressure Sensor Error	8 6 . 1		Discharge pressure sensor Error	48
			8 6 . 3		Suction pressure sensor Error	49
			8 6 . 4		High pressure SW 1 Error	50
	9 3	Compressor start up Error	9 3 . 1		Inverter compressor Start up Error	51
	9 4	Trip Detection	9 4 . 1		Trip detection	52
	9 5	Compressor motor control Error	9 5 . 5		Compressor motor loss of synchronization	53
	9 7	Outdoor unitFAN Motor 1 Error	9 7 . 1		Outdoor unit FAN Motor Lock Error	54
			9 7 . 5		Outdoor unit FAN Motor temp. Abnormal	55
			9 7 . 9		Outdoor unit FAN Motor Driver Abnormal	56
	9 A	Outdoor unit coil (EEV) Error	9 A . 1		Coil 1 (EEV) Error	57
			9 A . 2		Coil 2 (EEV) Error	58
			9 A . 3		Coil 3 (EEV) Error	59
	*1	Outdoor unit Abnormal	*1		Slave outdoor unit Eror	60
	A 1	Discharge temp. Abnormal	A 1 . 1		Discharge temp. 1 Abnormal	61
	A 3	Compressor temp. Abnormal	A 3 . 1		Compressor 1 Temperature Abnormal	62
	A 4	Pressure abnormal 1	A 4 . 1		High pressure Abnormal	63
			A 4. 2		High pressure protection 1	64
	A 5	Pressure abnormal 2	A 5 . 1		Low pressure Abnormal	65
	A 6	Heat-Ex temp. Abnormal	A 6 . 3		Outdoor unit Heat-Ex 1 Gas temp. Abnormal	66
			A 6 . 4		Outdoor unit Heat-Ex 2 Gas temp. Abnormal	67
	A C	Ambient temp Abnormal	A C . 4		Outdoor unit Heat Sink temp. Abnormal	68
*		Initial Setting Error	- - - -	*	Initial Setting Error	71

*1: Master Outdoor unit : 9 U. 2 / Slave Outdoor unit and Service Tool indicate applicable Error code

Other Error code for Outdoor Air unit / DX-Kit

3 9	Indoor unit power supply circuit error	5 U.1	39.1	Indoor unit power supply error for fan motor 1	81
			39.2	Indoor unit power supply error for fan motor 2	
4 A	Indoor unit air temp. thermistor error		4A.1	Indoor unit suciton air temp. thermistor error	82
			4A.2	Indoor unit discharge air temp. thermistor error	83
5 9	Indoor unit fan motor 2 error		59.2	Indoor unit fan motor 2 rotation speed error	84

Other Error code for DX-Kit

5 2	Indoor unit Coil (EEV) Error	5 U.1	52.2	Indoor unit Coil 2 (EEV) Error	85
J 6	Peripheral device Error		J6.1	Peripheral device Error	86

Wired remote controller "Internal Error"

* These error codes will be shown only on the remote controller.

CC.1 C2.1 15.4	*	Sensor Error Transmission PCB Error Data acquisition Error	*	*	Replace the remote controller, If the error appears on the remote controller.

4-2-6 Trouble shooting index - No Error code -

	Error condition	Error Contents	Trouble shooting
No Error Code System Abnormal	Indoor Unit - No Power (Except Wall Mounted)	Indoor Unit - No Power (Except Wall Mounted)	72
	Indoor unit - No Power (Wall Mounted)	Indoor Unit - No Power (Wall Mounted)	73
	Outdoor unit - No Power	Outdoor unit - No Power	74
	No operation (Power is ON)	No operation (Power is ON)	76
	No Cooling	No Cooling / No Heating	77
	Abnormal Noise	Abnormal Noise	78
	Water leaking	Water leaking	79
	Indoor Unit - No Power(Outdoor air unit)	Indoor Unit - No Power (Outdoor air unit)	80
	Peripheral device - No Power	Peripheral device - No Power	87
	Peripheral device - FAN not operates	Peripheral device - FAN not operates	88
	Peripheral device No Cooling / No Heating	Peripheral device No Cooling / No Heating	89
	DX-Kit - No Power	DX-Kit - No Power	90

4-2-7 TROUBLE LEVEL OF SYSTEM

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

System Condition	Outdoor unit Condition	Trouble Level	
		1	2
		Not indicated on Indoor Unit and Peripheral unit. Indicated on Service Tool.	Indicated on Indoor Unit (*1) and Peripheral unit. Indicated on Service Tool.
① System is not stopped compulsorily Operation continues	Abnormal LED indication Outdoor unit does not stop	- 14.1 Outdoor unit network communication 1 error	- 62.3 Outdoorunit EEPROM acccess error - 62.8 EEPROM data corrupted error - 73.5 Heat Ex.1 liquid temp. sensor error - 73.7 Heat Ex.2 liquid temp. sensor error - 75.1 Suction gas temp sensor error - 82.2 Sub-cool Heat Ex. gas outlet temp. sensor error - 83.1 Liquid pipe temp. sensor 1 error - 83.2 Liquid pipe temp. sensor 2 error
② System is compulsorily stopped (*4)	Abnormal LED indication Outdoor unit stop	- 67.2 Inverter PCB short interruptation detection	- 62.6 Inverter communication error - 63.1 Inverter error - 68.2 Rush current limiting resister temp. rise protection (*3) - 71.1 Discharge Temp sensor 1 error - 72.1 Compressor Temp sensor 1 error - 73.4 Heat Ex. 1 gas temp sensor error - 73.6 Heat Ex. 2 gas temp sensor error - 74.1 Outdoor Temp sensor error - 77.1 Heat sink Temp sensor error - 84.1 Current sensor 1 error (*3) - 86.1 Discharge pressure sensor error - 86.3 Suction pressure sensor error - 86.4 High pressure switch 1 error - 93.1 Inverter compressor start up error (*3) - 94.1 Trip detection (*3) - 95.5 Comp. motor loss of synchronization (*3) - 97.1 Outdoor unit fan motor lock error (*3) - 97.5 Fan motor temperature abnormal (*3) - 97.9 Fan motor driver abnormal (*3) - A1.1 Discharge temperature 1 abnormal (*3) - A3.1 Compressor1 temperature abnormal (*3) - A4.1 High pressure abnormal - A4.2 High pressure protection1 - A6.3 Outdoor Heat Ex. 1 gas temp. abnormal (*3) - A6.4 Outdoor Heat Ex. 2 gas temp. abnormal (*3) - AC.4 Heat sink temperature abnormal
③ System is compulsorily stopped	Abnormal LED indication Outdoor unit stop		- 13.1 Communication error between outdoor unit - 14.2 Outdoor unit network communication 2 error - 14.5 The number of indoor unit shortage (*2) - 61.5 Outdoor unit reverse phase, missing phase wire error - 69.1 Outdoor unit transmission PCB parallel communication error - 9A.1 Coil1 (Expansion valve1) error - 9A.2 Coil2 (Expansion valve2) error - 9A.3 Coil3 (Expansion valve3) error - A5.1 Low pressure abnormal (*3)

(*1) This will not be displayed on indoor unit which Error Report Target (function setting 47 of indoor unit) is set "for administrator".
(*2) The System condition can change to ① (Trouble Level 1) by changing DIP SW (SET 4-1:OFF)
(*3) Even if power is reset, this Error cannot release. In Error release, you need to solving the problem and operate the push switch and a and apply "Error reset" (F3-40) after power restart.
(*4) When one of outdoor unit on the multi connection detects these Error, the backup operation can activate by using of remaining outdoorunit(s) Please check each trouble shooting, and read the caution before using the backup operation.

<< Error code which manual error release will be required >>

A5.1 Low pressure abnormal
84.1 Current sensor 1 error
93.1 Inverter compressor start up error
94.1 Trip detection
A1.1 Discharge temperature 1 abnormal
A3.1 Compressor 1 temperature abnormal
97.1 Outdoor unit fan motor lock error
97.5 Fan motor temperature abnormal
97.9 Fan motor driver abnormal
68.2 Rush current limiting resister temp rise protection
95.5 Compressor motor loss of synchronization
A6.3 Outdoor heat exchanger 1 gas temperature abnormal
A6.4 Outdoor heat exchanger 2 gas temperature abnormal

4-2-7 TROUBLE LEVEL OF SYSTEM

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

System Condition	Outdoor unit Condition	Trouble Level	
		1	2
		Not indicated on Indoor Unit and Peripheral unit. Indicated on Service Tool.	Indicated on Indoor Unit (*1) and Peripheral unit. Indicated on Service Tool.
① System is not stopped compulsorily Operation continues	Abnormal LED indication Outdoor unit does not stop	- 14.1 Outdoor unit network communication 1 error	- 62.3 Outdoorunit EEPROM acccess error - 62.8 EEPROM data corrupted error - 73.5 Heat Ex.1 liquid temp. sensor error - 73.7 Heat Ex.2 liquid temp. sensor error - 75.1 Suction gas temp sensor error - 82.2 Sub-cool Heat Ex. gas outlet temp. sensor error - 83.1 Liquid pipe temp. sensor 1 error - 83.2 Liquid pipe temp. sensor 2 error
② System is compulsorily stopped (*4)	Abnormal LED indication Outdoor unit stop	- 67.2 Inverter PCB short interruptation detection	- 62.6 Inverter communication error - 63.1 Inverter error - 68.2 Rush current limiting resister temp. rise protection (*3) - 71.1 Discharge Temp sensor 1 error - 72.1 Compressor Temp sensor 1 error - 73.4 Heat Ex. 1 gas temp sensor error - 73.6 Heat Ex. 2 gas temp sensor error - 74.1 Outdoor Temp sensor error - 77.1 Heat sink Temp sensor error - 84.1 Current sensor 1 error (*3) - 86.1 Discharge pressure sensor error - 86.3 Suction pressure sensor error - 86.4 High pressure switch 1 error - 93.1 Inverter compressor start up error (*3) - 94.1 Trip detection (*3) - 95.5 Comp. motor loss of synchronization (*3) - 97.1 Outdoor unit fan motor lock error (*3) - 97.5 Fan motor temperature abnormal (*3) - 97.9 Fan motor driver abnormal (*3) - A1.1 Discharge temperature 1 abnormal (*3) - A3.1 Compressor1 temperature abnormal (*3) - A4.1 High pressure abnormal - A4.2 High pressure protection1 - A6.3 Outdoor Heat Ex. 1 gas temp. abnormal (*3) - A6.4 Outdoor Heat Ex. 2 gas temp. abnormal (*3) - AC.4 Heat sink temperature abnormal
③ System is compulsorily stopped	Abnormal LED indication Outdoor unit stop		- 13.1 Communication error between outdoor unit - 14.2 Outdoor unit network communication 2 error - 14.5 The number of indoor unit shortage (*2) - 61.5 Outdoor unit reverse phase, missing phase wire error - 69.1 Outdoor unit transmission PCB parallel communication error - 9A.1 Coil1 (Expansion valve1) error - 9A.2 Coil2 (Expansion valve2) error - 9A.3 Coil3 (Expansion valve3) error - A5.1 Low pressure abnormal (*3)

(*1) This will not be displayed on indoor unit which Error Report Target (function setting 47 of indoor unit) is set "for administrator".
(*2) The System condition can change to ① (Trouble Level 1) by changing DIP SW (SET 4-1:OFF)
(*3) Even if power is reset, this Error cannot release. In Error release, you need to solving the problem and operate the push switch and a and apply "Error reset" (F3-40) after power restart.
(*4) When one of outdoor unit on the multi connection detects these Error, the backup operation can activate by using of remaining outdoorunit(s) Please check each trouble shooting, and read the caution before using the backup operation.

<< Error code which manual error release will be required >>

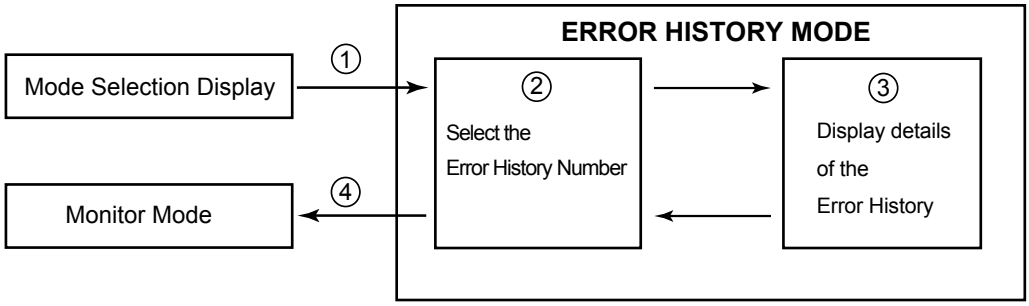
A5.1 Low pressure abnormal
84.1 Current sensor 1 error
93.1 Inverter compressor start up error
94.1 Trip detection
A1.1 Discharge temperature 1 abnormal
A3.1 Compressor 1 temperature abnormal
97.1 Outdoor unit fan motor lock error
97.5 Fan motor temperature abnormal
97.9 Fan motor driver abnormal
68.2 Rush current limiting resister temp rise protection
95.5 Compressor motor loss of synchronization
A6.3 Outdoor heat exchanger 1 gas temperature abnormal
A6.4 Outdoor heat exchanger 2 gas temperature abnormal
A4.1 High pressure Abnormal
86.4 High pressure SW 1 Error

4-2-8 ERROR HISTORY MODE

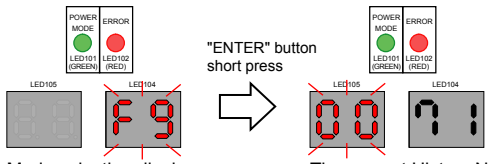
When the abnormality occurred, the Outdoor unit memorizes the history of error codes up to 10 and it can be displayed on 7 segments LED.
It is an effective means to examine abnormality that occurred in the past.

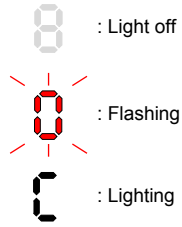
*The error history can be cleared by setting to F3-30.

Refer to the following for the procedure.

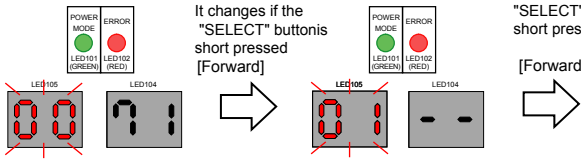


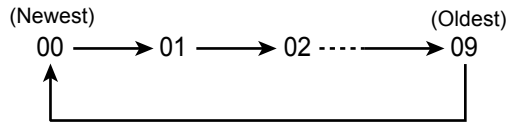
① Change to the Error History Mode from the Mode Selection Display





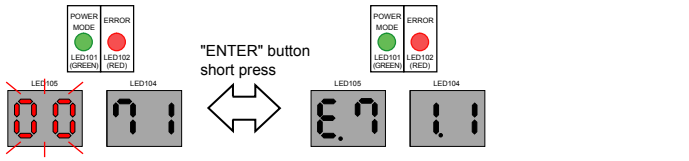
② Select the Error History Number

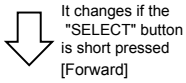


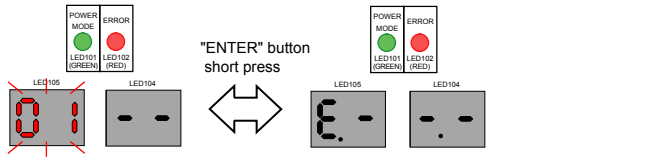


The History Number changes sequentially
from "00" to "09" by the "SELECT" button

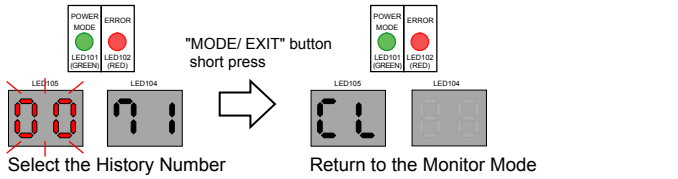
③ Check the detail of the Error History







④ End of the Error History mode



4-2-9 TROUBLE SHOOTING WITH ERROR CODE

Trouble shooting 1 **E12.1** **INDOOR UNIT Error Method:** **Wired Remote Controller Communication Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 1 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash. < 1 2 >** **Error Code : 1 2**

Detective Actuators:	**Detective details:**
Indoor unit controller PCB circuit Wired Remote Control (3 wire / 2 Wire type)	Upon receiving the signal more than 1 time from Wired Remote or other Indoor unit, but the same signal has not been received more than 1 minute (3 Wire type). 2.5 minute (2 Wire type)

Forecast of Cause :

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

Check Point 1 : Check the connection of terminal

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

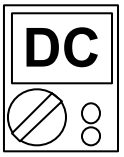
- Indoor Unit - Check the connection of terminal between remote control and Indoor unit, or between Indoor units, and check if there is a disconnection or short of the cable.

OK

Check Point 2 : Check Remote and Controller PCB

- Check terminal voltage of controller PCB Connector CNC01. (Power supply for Remote)

  If DC12V, Remote Control failure (Controller PCB is OK) >>> Replace Remote controller
  If DC0V, Controller PCB failure (Remote is OK) >>> Replace Controller PCB



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

Trouble shooting 2 **E12.2** **INDOOR UNIT Error Method:** **Wired Remote Controller signal Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1,** **Indoor Unit : Operation LED 1 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Remote Controller : 1 2**

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

Forecast of Cause :

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

Check Point 1 : Check the connection of terminal

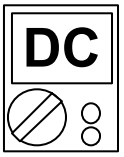
After turning off the power, check & correct the followings.

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

OK

Check Point 2 : Check Remote and Controller PCB

☐ Check terminal voltage of Controller PCB Connector CNC01. (Power supply for Remote)
If DC12V, Remote Control failure (Controller PCB is OK) >>> Replace Remote
IIf DC0V, Controller PCB failure (Remote is OK) >>> Replace Conroller PCB



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

Trouble shooting 3 E12.3 **INDOOR UNIT Error Method:** **Number excess of device in Wired remote contorller system (2 Wires RC)**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 1 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 1 2**

Detective Actuators:	**Detective details:**
Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	When the number of connecting Indoor unit and Remote controller in one RCgroup exceeds more than 32 units.

Forecast of Cause :

1. Wrong wiring of RCgroup 2. Indoor unit controller PCB failure

Check Point 1 : Wire installation Wrong RCgroup setting

- ☐ Wrong wire connection in RCgroup (Please refer to the installation manual)
- ☐ The number of connecting indoor unit and Remote controller in one RCgroup were less than 32 units.

OK

Check Point 2 : Check Indoor unit controller PCB

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

Trouble shooting 4 E1 3. 1 **OUTDOOR UNIT Error Method:** **Communication Error Between Outdoor unit**	**Indicate or Display:** **Outdoor Unit : E. 1 3. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 1 3**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB	Master unit: State in which "number of connected slave units" by Dip-SW and the number of slave units which can be recognized by communication did not match continued for 10 seconds or more after the start of control. Slave unit: State in which communication from the master unit was not received continued for 10 seconds or more after the start of control.

Forecast of Cause : 1. Noise, momentary open, voltage drop 2. Power supply defective
3. The number setting mistake of outdoor unit
4. Connection of communication lines between outdoor units defective 5. Main PCB defective

Check Point 1 : Noise, momentary open, voltage drop

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

OK

Check Point 2 : Check the power supply

- ☐ Main power ON/OFF state check
- ☐ Power cable connection, open check

OK

Check Point 3 : Check the number setting of outdoor units

☐ Check the number setting of outdoor units.

Number of outdoor unit	DIP-SW SET 5-1	DIP-SW SET 5-2
1 unit	OFF	OFF
2 units	OFF	ON
3 units	ON	OFF

OK

Check Point 4 : Check the connection of communication lines between outdoor units

Turn off the power and check.

☐ Connection and open check of communication lines between outdoor units.

OK

Check Point 5 : Replace Main PCB

☐ Change Main PCB and set up the original address.

Trouble shooting 5 E14.1 **OUTDOOR UNIT Error Method:** **Outdoor Unit Network Communication 1 Error**	**Indicate or Display:** **Outdoor Unit : E. 1 4. 1** **Indoor Unit : No display / Operation LED 1 times Flash, Timer LED 4 Times Flash, Filter LED Continuous Flash.** **Error Code : 1 4 / 1 6 / 1 4. 1 / 1 4. 3 *** *** Indoor unit indicates No display or 1 4** **Peripheral device indicates 1 4 or 16.**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB	▪DIP-SW SET4-1 is OFF. ▪No communication for 180 seconds or more from an indoor unit which received communication once and no Outdoor unit network communication 2 error.

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

Check Point 1 : Noise, momentary open, voltage drop

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

OK

Check Point 2 : Check the indoor unit power supply

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

OK

Check Point 3 : Check the communication line connection

- ☐ Communication line connection, open check

  Refer to SERVICE INFORMATION Network communication Abnormal

OK

Check Point 4 : Check the Terminal resistor setting

- ☐ Terminal resistor setting check

OK

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

- ☐ Communication PCB connection check
- ☐ Communication PCB check

OK

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

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

Trouble shooting 6 E14. 2 **OUTDOOR UNIT Error Method :** **Outdoor Unit Network Communication 2 Error**	**Indicate or Display:** **Outdoor Unit : E. 1 4. 2** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. / Operation LED 1 times Flash, Timer LED 4 Times Flash, Filter LED Continuous Flash. *** **Error Code : 9 U / 1 4 / 1 6 / 1 4. 1 / 1 4. 2 / 1 4. 3 ***

*** Indoor unit indicates 9 U or 1 4**
Peripheral device indicates 1 4 or 1 6

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB	[DIP-SW SET4-1 : ON] (Factory setting) ▪ No communication for 180 seconds or more from an indoor unit which received communication once. [DIP-SW SET4-1 : OFF] ▪ No communication for 180 seconds or more from all indoor units that once received communication.

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

Check Point 1 : Noise, momentary open, voltage drop

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

OK

Check Point 2 : Check the indoor unit power supply

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

OK

Check Point 3 : Check the communication line connection

- ☐ Communication line connection, open check
  Refer to SERVICE INFORMATION Network communication Abnormal

OK

Check Point 4 : Check the Terminal resistor setting

- ☐ Terminal resistor setting check

OK

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

- ☐ Communication PCB connection check
- ☐ Communication PCB check

OK

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

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

Trouble shooting 7 E14. 3 **INDOOR UNIT Error Method:** **Indoor unit Network communication Error**	**Indicate or Display:** **Outdoor Unit : E.1 4. 1 / 1 4. 2 *** **Indoor Unit : Operation LED 1 times Flash, Timer LED 4 Times Flash, Filter LED Continuous Flash.** **Error Code : 1 4 / 1 6 / 9 U / 14.1 / 14.2 / 14.3 ***

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

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

Forecast of Cause :

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

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

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

↓

Check Point 2 : Check the connection

After turning off the power, check and correct followings.

- ☐ Is Indoor Communication PCB loose?
- ☐ Check loose or removed connection of communication line Indoor unit => Outdoor unit.
  Refer to SERVICE INFORMATION Network communication Abnormal
- ☐ When the signal amplifier is connected , Check the error indication of signal amplifier. (Refer to the installation manual)

↓ **OK**

Check Point 3 : Check Communication PCB

- ☐ Replace Communication PCB of the Indoor units that have the error.

↓ **OK**

Check Point 4 : Check Controller PCB

- ☐ Replace controller PCB of the Indoor units that have the error.

Trouble shooting 8 E14. 5 **OUTDOOR UNIT Error Method:** **The number of Indoor unit shortage Error**	**Indicate or Display:** **Outdoor Unit : E.1 4. 5** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. / No display (When DIP-SW4-1 is OFF.)** **Error Code : 9 U / 1 4 / 1 6 / 1 4. 5 / 1 4. 3 ***

***Peripheral device indicates 14,16**

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

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

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

- ☐ Check system drawing and service tool.

OK

Check Point 2 : Check the indoor unit power supply

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

OK

Check Point 2 : Noise, momentary open, voltage drop

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

OK

Check Point 3 : Check the communication line connection

- ☐ Communication line connection, open check

  Refer to SERVICE INFORMATION Network communication Abnormal

OK

Check Point 4 : Check the Terminal resistor setting

- ☐ Terminal resistor setting check

OK

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

- ☐ Communication PCB connection check
- ☐ Communication PCB check

OK

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

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

Attention!!

In case of DIP-SW SET4-1 is ON(factory setting), If this error occurs, system stops.In case of DIP-SW SET4-1 is OFF, If this error occurs, system does not stop.

If the failure indoor unit is pinpointed and it needs to erase the error indication, it can be reset by function setting (F3-41: Maximum memorized indoor unit number reset).

Caution!!

Even if normal, this error occurs temporarily by the timing of the power ON of outdoor unit, indoor unit, and signal amplifier.

In this case, please wait for 5 minutes after turning on all the equipments.

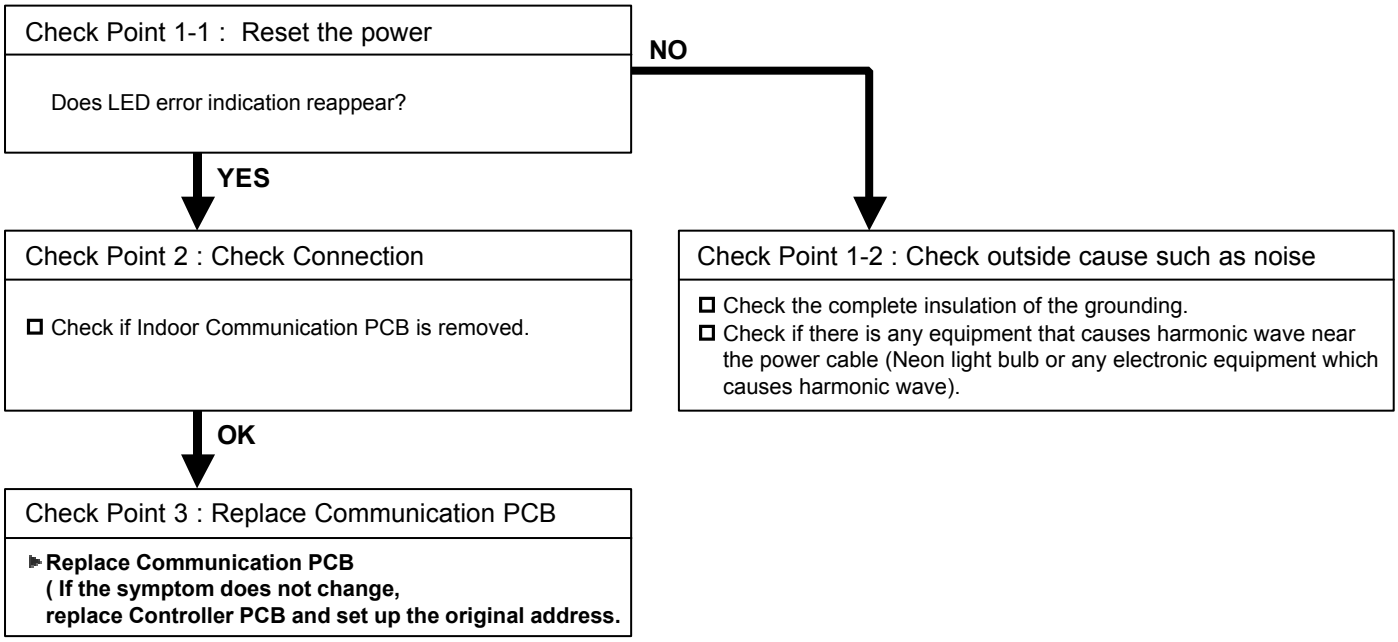
Trouble shooting 9 E16. 1 **INDOOR UNIT Error Method:** **Transmission PCB Connection Error**	**Indicate or Display:** **Outdoor Unit : E.1 4.1, 1 4.2 *** **Indoor Unit : Operation LED 1 times Flash, Timer LED 6 Times Flash, Filter LED Continuous Flash.** **Error Code : 1 6 ***

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

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

Forecast of Cause :

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



Trouble shooting 10 E16. 4 **INDOOR UNIT Error Method:** **Communication Error Between Controller and Indoor unit**	**Indicate or Display:** **Outdoor Unit : No Display** **Indoor Unit : No Display** **Error Code : 1 6 (Peripheral Unit)**

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

Forecast of Cause :

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

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

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

↓

Check Point 2 : Check the connection

After turning off the power, check and correct followings.

- ☐ Is Indoor Communication PCB loose?
- ☐ Check loose or removed connection of communication line Indoor unit => Outdoor unit.
  Refer to the Service Information -Network Abnormal -
- ☐ When the signal amplifier is connected , Check the error indication of signal amplifier - Refer to the Installation manual-

↓ **OK**

Check Point 3 : Check Communication PCB

- ☐ Replace Communication PCB of the Indoor units that have the error.

↓ **OK**

Check Point 4 : Check Controller PCB

- ☐ Replace controller PCB of the Indoor units that have the error.

Trouble shooting 11 E26. 4 **INDOOR UNIT Error Method:** **Address Duplication in Wired remote contorller system**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 2 times Flash, Timer LED 6 Times Flash, Filter LED Continuous Flash.** **Error Code : 2 6**

Detective Actuators:	**Detective details:**
Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	When the duplicated address number exists in one RCgroup

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

Check Point 1 : Wire installation

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

↓

Check Point 2 : Wrong RCgroup setting

- ☐ The duplicated address number is not existing in one RCgroup

↓

Check Point 3 : Check Indoor unit controller PCB

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

Trouble shooting 12 E26. 5 **<u>INDOOR UNIT Error Method:</u>** **Address setting Error in Wired remote contorller system**	**<u>Indicate or Display:</u>** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 2 times Flash, Timer LED 6 Times Flash, Filter LED Continuous Flash.** **Error Code : 2 6**

Detective Actuators:	**Detective details:**
Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	When the address number set by auto setting and manual setting are mixed in one RC group

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

Check Point 1 : Wire installation

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

Check Point 2 : Wrong RCgroup setting

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

Check Point 3 : Check Indoor unit controller PCB

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

Trouble shooting 13 E28. 1 **OUTDOOR UNIT Error Method:** **Auto Address Setting Error**	**Indicate or Display:** **Outdoor Unit : E. 28. 1** **Indoor Unit : No Display** **Error Code : No Display** *** Service tool does not indicate the Error code**

<< After Indoor unit Auto Adress setting >>

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

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

Check Point 1 : Check the indoor unit power supply

☐ Check the indoor unit power supply

OK

Check Point 2 : Check the indoor unit number connection

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

OK

Check Point 3 : Check the communication line connection

Check if communication line is correctly connected

☐ Is it uncoupled or cut halfway ?
☐ Connecting terminal position is correct as the installation manual shows ?

OK

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

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

Trouble shooting 14 E28. 4 **OUTDOOR UNIT Error Method:** **Signal Amplifier Auto Address Error**	**Indicate or Display:** **Outdoor Unit : E. 2 8. 4** **Indoor Unit : No Display** **Error Code : No Display** ***Service tool does not indicate the Error**

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

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

Check Point 1 : Check signal amplifier unit power supply

☐ Check signal amplifier unit power supply

OK

Check Point 2 : Check the signal amplifier number connection

☐ Check if more than 8 signal amplifiers (filter mode = off) are connected in a network.
☐ Check if more than 32 signal amplifiers (filter mode = on) are connected in a network.

OK

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

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

OK

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

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

Trouble shooting 15 E29. 1 **INDOOR UNIT Error Method:** **Connection unit number error (Indoor unit in Wired remote controller system)**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 2 times Flash, Timer LED 9 Times Flash, Filter LED Continuous Flash.** **Error Code : 2 9**

Detective Actuators:	**Detective details:**
Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	When the number of connecting indoor units are out of specified rule.

Forecast of Cause :

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

Check Point 1 : Wire installation

- ☐ Wrong number of connceting indoor unit

Check Point 2 : Check Indoor unit controller PCB

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

Trouble shooting 16 **E29. 2** **INDOOR UNIT Error Method:** **Connection unit number error (Remote controller)**	**Indicate or Display:** **Outdoor Unit : No Display** **Indoor Unit : No Display** **Error Code : 2 9**

Detective Actuators:	**Detective details:**
Wired remote controller (2-Wire)	When the number of connecting remote controller are out of specified rule.

Forecast of Cause :

1. Wrong wiring / Wrong number of connecting RC in RCgroup
2. Remote controller PCB defective

Check Point 1 : Wire installation

- ☐ Wrong number of connceting remote controller

↓

Check Point 2 : Check Indoor unit controller PCB

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

Trouble shooting 17 **E31. 3** **INDOOR UNIT Error Method:** **Indoor unit Power Frequency Abnormal**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 1 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 1**

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

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

Check Point 1-1 : Reset Power Supply

Does abnormal LED indication show again?

NO

YES

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

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

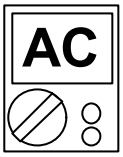
Check Point 2 : Check Installation condition

- ☐ Check Cable/Breaker
- ☐ Check loose or removed connection
  >> If Installation defect is found, correct it by referring to Installation Manual.

OK

Check Point 3 : Check connection of electric components

- ☐ Check power supply voltage (AC198 - 264V between Indoor unit terminal 1 and 2)
- ☐ Check connection of Connector (any lose connector or incorrect wiring)
- ☐ Check any shortage or corrosion on PCB.



OK

Check Point 4 : Replace Controller PCB

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

Trouble shooting 18 E32. 1 **INDOOR UNIT Error Method:** **Indoor unit PCB Model Information Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 2**

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

Forecast of Cause :

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

Check Point 1-1 : Reset Power Supply

Does abnormal LED indication show again?

NO

YES

Check Point 2 :
Check Indoor Unit electric components

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

OK

Check Point 3 : Replace Controller PCB

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

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

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

Note : EEPROM

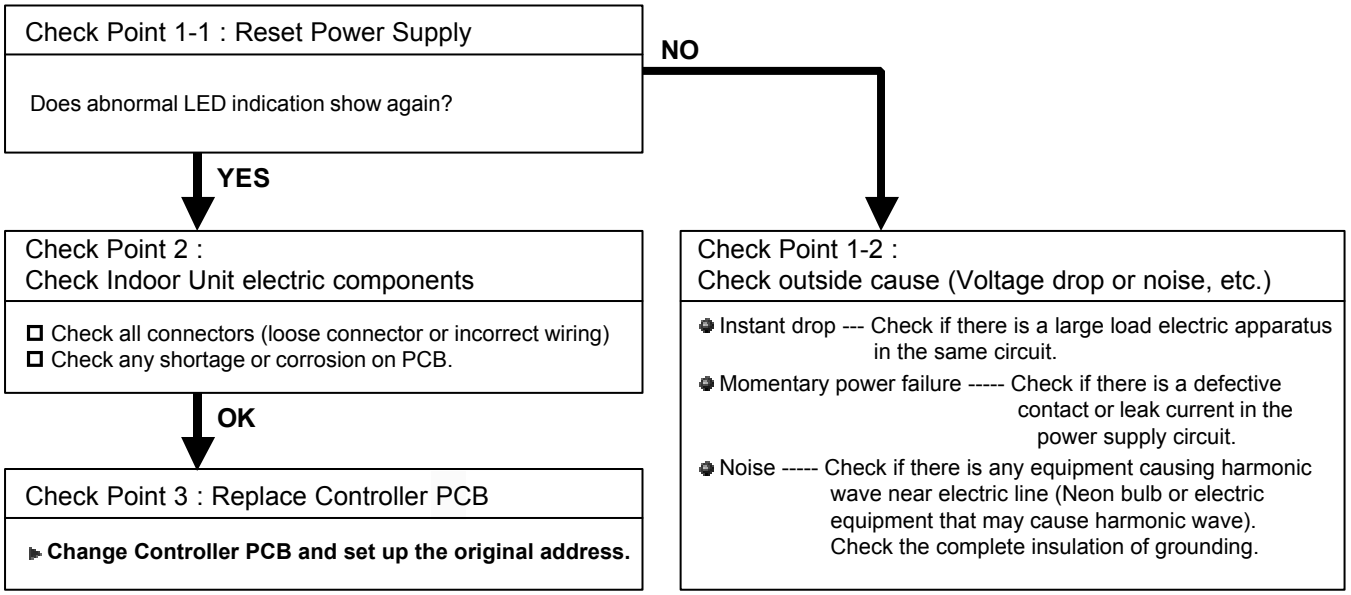
EEPROM(Electronically Erasable and Programmable Read Only Memory) is a non-volatile memory which keeps memorized information even if power is turned off. It can change the contents electronically.
To change the contents, it uses higher voltage than normal, and it can not change a partial contents. (Rewriting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

Trouble shooting 19 E32. 3 **INDOOR UNIT Error Method:** **Indoor unit EEPROM Access Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 2**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit	When 3 continuous failure occurred on lead test of EEPROM.

Forecast of Cause :

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



Trouble shooting 19-1 **E32. 7** **INDOOR UNIT Error Method:** **Indoor unit microcomputer self-check error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 2**
Detective Actuators: Indoor Unit Controller PCB Circuit	**Detective details:** When the error is detected by the self-diagnosis of a microcomputer

Forecast of Cause :

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

Check Point 1-1 : Reset Power Supply

Does abnormal LED indication show again?

NO

YES

Check Point 2 :
Check Indoor Unit electric components

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

OK

Check Point 3 : Replace Controller PCB

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

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

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

Trouble shooting 20 E3A. 1 **INDOOR UNIT Error Method:** **Indoor unit communication circuit (WRC) microcomputers communication Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 3 times Flash, Timer LED 10 Times Flash, Filter LED Continuous Flash.** **Error Code : 3 A**

Detective Actuators: Wired remote controller (2-Wire) Indoor unit Controller PCB circuit	**Detective details:** When the indoor unit(s) detects the configuration of RCG abnormal or the indoor unit detects lack of primaly -remote controller.

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

Check Point 1 : Check the connection of terminal

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

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

Check Point 2 , 3: Check Indoor unit controller PCB

- Check terminal voltage of controller PCB connector CNC01 (Power supply for remote)

If DC12V, Remote control failure (Controller PCB is OK) >>> Replace Remote controller
If DC0V, Controller PCB failure (Remote is OK) >>> Replace Controller PCB

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

Trouble shooting 21 **E41. 1** **INDOOR UNIT Error Method:** **Inlet air temp. Sensor Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 4 times Flash, Timer LED 1 Times Flash, Filter LED Continuous Flash.** **Error Code : 4 1**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit Inlet air temp Sensor	When Inlet air temp. sensor open or shortage is detected

Forecast of Cause :

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

Check Point 1 : Check connection of Connector

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

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

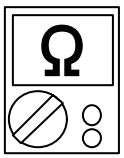
OK

Check Point 2 : Remove connector and check Sensor resistance value

Sensor characteristics (Rough value)

Temperature (°F)	32	41	50	59	68	77	86	95
Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	33.6	25.9	20.2	15.8	12.5	10.0	8.0	6.5
Voltage Value (V)	1.15	1.39	1.66	1.94	2.22	2.50	2.77	3.03

Temperature (°F)	104	113	122
Temperature (°C)	40	45	50
Resistance Value (kΩ)	5.3	4.3	3.6
Voltage Value (V)	3.27	3.48	3.68



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

OK

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

Corresponding connector

Model Type	Room temp. Sensor (Black Wires)
Duct type Cassette type Compact Wall mounted type Wall mounted type Floor / Ceiling type	CN8

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

Trouble shooting 22 **E42. 1** **INDOOR UNIT Error Method:** **Indoor unit Heat Ex. inlet temp. sensor Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 4 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 4 2**

Detective Actuators:	**Detective details:**
Indoor Unit Controller PCB Circuit Heat Exchanger Inlet temp. Sensor	When open or shorted Heat Exchanger Inlet temp. sensor is detected

Forecast of Cause :

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

Check Point 1 : Check connection of Connector

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

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

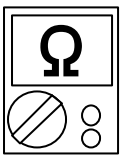
OK

Check Point 2 : Remove connector and check sensor resistance value

Sensor Characteristics (Rough value)

Temperature (°F)	32	41	50	59	68	77	86	95
Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	168.6	129.8	100.9	79.1	62.5	49.8	40.0	32.4
Voltage Value (V)	1.14	1.39	1.65	1.93	2.22	2.50	2.77	3.03

Temperature (°F)	104	113	122
Temperature (°C)	40	45	50
Resistance Value (kΩ)	26.3	21.6	17.8
Voltage Value (V)	3.27	3.49	3.69



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

OK

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

Corresponding connector

Model Type	Heat Ex Inlet temp. Sensor (Black Wires)
Duct type Cassette type Wall mounted type Floor / Ceiling type	CN9
Compact Wall mounted type	CN20

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

Trouble shooting 23 E42. 3 **INDOOR UNIT Error Method:** **Indoor unit Heat Ex. outlet temp. Sensor Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 4 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash.** **Error Code : 4 2**

Detective Actuators: Indoor Unit Controller PCB Circuit Heat Exchanger Outlet Temp. Sensor	**Detective details:** When open or shorted Heat Exchanger outlet temp. sensor is detected

Forecast of Cause :

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

Check Point 1 : Check connection of Connector

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

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

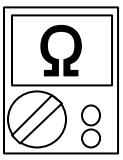
OK

Check Point 2 : Remove connector and check sensor resistance value

Sensor Characteristics (Rough value)

Temperature (°F)	32	41	50	59	68	77	86	95
Temperature (°C)	0	5	10	15	20	25	30	35
Resistance Value (kΩ)	168.6	129.8	100.9	79.1	62.5	49.8	40.0	32.4
Voltage Value (V)	1.14	1.39	1.65	1.93	2.22	2.50	2.77	3.03

Temperature (°F)	104	113	122
Temperature (°C)	40	45	50
Resistance Value (kΩ)	26.3	21.6	17.8
Voltage Value (V)	3.27	3.49	3.69



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

OK

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

Corresponding connector

Model Type	Heat Ex Outlet temp. Sensor (Gray Wires)
Duct type Cassette type Wall mounted type Floor / Ceiling type	CN9
Compact Wall mounted type	CN21

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

Trouble shooting 24 E51. 2 **INDOOR UNIT Error Method:** **Indoor Unit Fan Motor 1 rotation speed Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 5 times Flash, Timer LED 1 Times Flash, Filter LED Continuous Flash.** **Error Code : 5 1**

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

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

Check Point 1 : Check rotation of Fan

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

OK

Check Point 2 : Check Motor winding / Internal PCB circuit

- Check Indoor Fan motor **(Refer to the PARTS INFORMATION 20,21)**
  >>If Fan motor is abnormal, replace it.

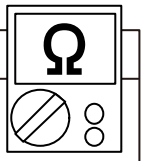
OK

Check Point 3 : Check ambient temp. around motor

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

OK

Check Point 4 : Check Motor Capacitor (*)



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

OK

Check Point 5 : Replace Controller PCB

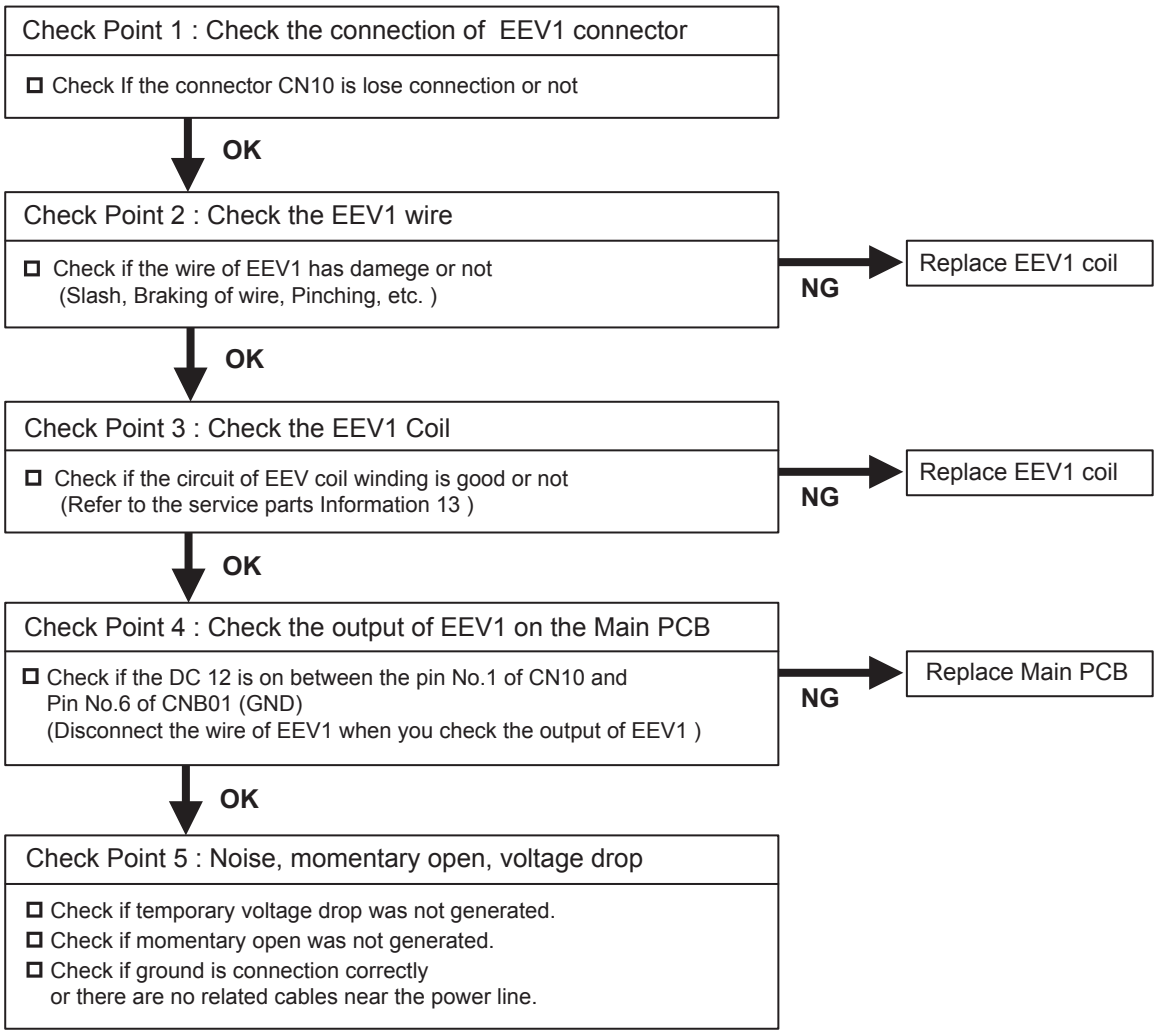
- Change Controller PCB and set up the original address.

* Applicable indoor unit:
  - ARXA, ARXB, ARXC type

Trouble shooting 25 E52. 1 **INDOOR UNIT Error Method:** Coil 1 (Expansion valve) Error	**Indicate or Display:** Outdoor Unit : E.5U.1 Indoor Unit : Operation LED 5 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash. Error Code : 5 2

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

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



Trouble shooting 26 **E53. 1** **INDOOR UNIT Error Method:** **Indoor unit Drain pump Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Indoor Unit : Operation LED 5 times Flash, Timer LED 3 Times Flash, Filter LED Continuous Flash.** **Error Code : 5 3**

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

Forecast of Cause : 1. Drain Installation 2. Drain pipe line blockage 3. Float switch defective
4. Shorted connector/wire 5. Controller PCB defective / Drain pump defective

Check Point 1 : Check Drain pipe installation

☐ Check Drain pipe installation (Refer to the installaion manual)
The Height limit for Drain pump, The angle of drain pipe, The angle of indoor unit

OK

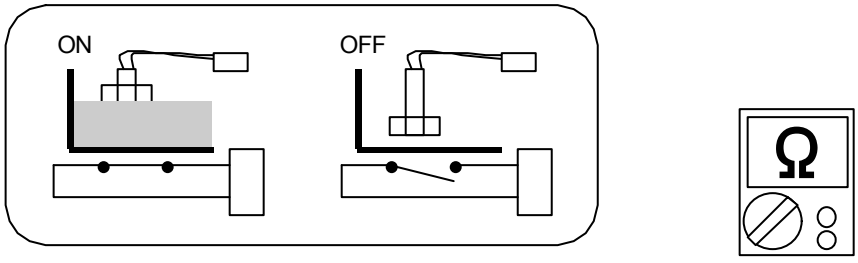
Check Point 2 : Check Drain pipe blockage

☐ Check Drain pipe line blockage
The drain pump inlet and outlet, The connecting pipe, The drain pipe outlet

OK

Check Point 3, 4 : Check Float Switch operation, connecting wire shorted.

☐ Check operation of float switch.
Remove Float switch and check ON/OFF switching operationby using a meter.
>>If Float switch is defective, replace it.



OK

Check Point 5 : Check controller PCB defective / Drain pump defective

☐ Measure power supply (AC198 - 264V) for the drain pump on the Power supply PCB (CN106) at the Float SW ON states.

>>If No voltage on the connector, replace the power supply PCB
>>If AC198- 264V on the connector, replace the Drain pump

Trouble shooting 27 E61. 2 **OUTDOOR UNIT Error Method:** **Outdoor Unit under voltage Error**	**Indicate or Display:** **Outdoor Unit : E. 6 1. 2** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 1**

Detective Actuators:	**Detective details:**
Outdoor unit Filter PCB (MAIN) Outdoor unit Main PCB	▪ When Main PCB input voltage has detected lower than AC 174.1V.

Forecast of Cause : 1. Noise, momentary open, voltage drop 2. Power supply defective
3. Filter PCB (Main) defective 4. Main PCB defective

Check Point 1 : Noise, momentary open, voltage drop

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

OK

Check Point 2 : Check the power supply

- ☐ Power cable connection, open check

OK

Check Point 3 : Check Filter PCB (Main) or Main PCB

- ☐ Check the output voltage of Filter PCB (Main).
  >> Check if AC198 - 264V appears at W606 - W605.
- ☐ Check the input voltage of Main PCB.
  >> Check if AC198 - 264V appears at CN100 (AC-IN).

NG → Replace Filter PCB (Main)

OK

Replace Main PCB

Trouble shooting 27-1 E61. 5 **OUTDOOR UNIT Error Method:** **Outdoor Unit Reverse Phase, Missing Phase Wire Error**	**Indicate or Display:** **Outdoor Unit : E. 6 1. 5** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 1**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB	▪ Reverse phase prevention circuit detected reversed phase input or input was not normal at the time of power ON. ▪ Reverse phase prevention circuit detected open-phase after power ON.

Forecast of Cause :
1. Noise, momentary open, voltage drop
2. Power supply defective
3. Filter PCB (Main) defective
4. Main PCB defective

Check Point 1 : Noise, momentary open, voltage drop

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

OK

Check Point 2 : Check the power supply

- ☐ Power cable connection, open check

OK

Check Point 3 : Check Filter PCB (Main) and Main PCB

- ☐ Check Filter PCB (Main) and Main PCB.
  (Refer to "Service Parts Information 3 ".)

Trouble shooting 28 E62. 3 **OUTDOOR UNIT Error Method:** **Outdoor Unit EEPROM Access Error**	**Indicate or Display:** **Outdoor Unit : E. 6 2. 3** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 2**

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

Forecast of Cause :

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

Check Point 1-1 :
Turn the power on again

Error displayed again?

NO →

Check Point 1-2 : Noise, momentary open, voltage drop

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

YES ↓

Check Point 2 :
Replace Main PCB

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

Trouble shooting 29 E62. 6 **OUTDOOR UNIT Error Method:** **Inverters Communication Error**	**Indicate or Display:** **Outdoor Unit : E. 6 2. 6** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 2**

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

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

Check Point 1-1 :
Turn the power on again

Error displayed again?

NO

Check Point 1-2 : Noise

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

YES

Check Point 2 : Check the main PCB to Inverter PCB wiring

☐ Connector connection state check
☐ Cable open check

OK

Check Point 3 : Check Main PCB

☐ Chack Main PCB. (Refer to "Service Parts Information 3, 4")

OK

Check Point 4 : Replace Inverter PCB

☐ Replace Inverter PCB.

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection.
(Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 30 E62. 8 **OUTDOOR UNIT Error Method:** **EEPROM data corrupted error**	**Indicate or Display:** **Outdoor Unit : E. 6 2. 8** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 2**

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

Forecast of Cause :

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

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

Error generated again after Field setting all clear (push button SW F3 (function mode) -35 execution) and the power was turned back on?

YES

NO

Check Point 1-2 : Noise, momentary open, voltage drop

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

Reconfigure the setting of F2 (setting mode) by push button SW.
* To clear the setting of F2 by Field setting all clear.

Check Point 2 : Replace Main PCB

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

Trouble shooting 30-1 E62. 9 **OUTDOOR UNIT Error Method:** **Outdoor unit microcomputer self-check error**	**Indicate or Display:** **Outdoor Unit : E. 6 2. 9** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 2**

Detective Actuators:	**Detective details:**
Outdoor unit Main PCB	When the error is detected by the self-diagnosis of a microcomputer

Forecast of Cause :

1. Noise, momentary open, voltage drop 2. Defective connection of electric component 3. Main PCB defective

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

Error generated again and the power was turned back on?

YES

NO

Check Point 1-2 : Noise, momentary open, voltage drop

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

Check Point 2 : Check Outdoor 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

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

Trouble shooting 31 E63. 1 **OUTDOOR UNIT Error Method:** Inverter Error	**Indicate or Display:** Outdoor Unit : E. 6 3. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 9 U / 6 3

Detective Actuators:	**Detective details:**
Inverter PCB	▪ Error information received from Inverter PCB. ▪ When "Inverter PCB short interruption detection" or "Rush current limiting resistor temp. rise protection" occurs, Inverter error also occurs.

Forecast of Cause :

1. Noise, momentary open, voltage drop.
2. Power supply to Filter PCB (INV) to Inverter PCB wiring disconnection, open
3. Main PCB to Inverter PCB wiring disconnection, open
4. Magnetic Relay (for inverter) coil side wiring disconnection, open
5. Magnetic Relay activation circuit defective
6. Main PCB or Filter PCB (INV) or Inverter PCB defective
7. Cement Resistor Open circuit

Check Point 1-1 : Turn the power on again

Error displayed again?

NO →

Check Point 1-2 : Noise, momentary open, voltage drop

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

YES ↓

Check Point 2 : Check error display

"Inverter PCB short interruption detection" or "Rush current limiting resistor temp. rise protection" also occur?

YES →

In case of "Inverter PCB short interruption detection", Refer to the Trouble shooting 33.
In case of "Rush current limiting resistor temp. rise protection", Refer to the Trouble shooting 34.

NO ↓

Check Point 3 : Check the wiring (Power supply to Filter PCB (INV) to Inverter PCB)

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

OK ↓

Check Point 4 : Check the wiring (Main PCB to Inverter PCB)

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

OK ↓

Check Point 5 : Check Cement resistor

- ☐ Check resistance of cement resistor
  If the circuit of both terminal was open circuit, exchange the Resistor
  Correct resistance value: 5.3 - 6.0 Ohm

OK ↓

Check Point 6 : Check Filter PCB (INV) and Inverter PCB

- ☐ Check Filter PCB (INV) and Inverter PCB.
  (Refer to "Service Parts Information 3, 4".)

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 32 E67. 2 **OUTDOOR UNIT Error Method:** **Inverter PCB short interruption Error**	**Indicate or Display:** **Outdoor Unit : E. 6 7. 2** **Indoor Unit : No Display** **Error Code : No display**

Detective Actuators:	**Detective details:**
Inverter PCB	・ "Short interruption" received from Inverter PCB

Forecast of Cause :

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

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

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

OK

Check Point 2 : Check the magnetic contactor (for Inverter) coil side wiring

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

OK

Check Point 3 : Check the wiring (Power supply to Filter PCB (INV) to Inverter PCB)

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

OK

Check Point 4 : Check Main PCB

- ☐ Chack Main PCB. (Refer to "Service Parts Information 3, 4")

OK

Check Point 5 : Replace Inverter PCB

- ☐ Replace Inverter PCB.

Trouble shooting 33 E68. 2 **OUTDOOR UNIT Error Method:** **Rush Current Limiting Resistor Temp Rise Protection**	**Indicate or Display:** **Outdoor Unit : E. 6 8. 2** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 8**

Detective Actuators:	**Detective details:**
Inverter PCB	▪ "Protection stop by "Rush current limiting resistor temperature rise detection" of inverter PCB" was generated 2 times.

Forecast of Cause :
1. Magnetic relay (for INV) coil side wiring disconnection, open
2. Power supply to Filter PCB (INV) to Inverter PCB wiring disconnection, open
3. Magnetic relay activation circuit defective
4. Main PCB to Inverter PCB wiring disconnection, open
5. Main PCB output AC198 - 242V on CN130 defective
   Main PCB defective (output AC198 - 242V on CN130 for Magnetic relay (INV) defective)

Check Point 1 : Check the magnetic relay (for invertert) coil side wiring
- ☐ Connector and wiring connection state check
- ☐ Cable open check

OK

Check Point 2 : Check Power supply to Filter PCB (INV) to inverter PCB wiring
- ☐ Connector and wiring connection state check
- ☐ Cable open check

OK

Check Point 3-1 : Magnetic relay activation circuit
- ☐ Chack the DC Voltage (12V) of CN330 on INVERTER PCB

NG → Replace Inverter PCB

OK

Check Point 4 : Check the wiring (Main PCB to Inverter PCB)
- ☐ Check the wiring connection.
  (CN138 on Main PCB to CN330 on Inverter PCB)

OK

Check Point 5 : Main PCB output AC198 - 242V for Magnetic relay
- ☐ Check the AC198 - 242V of CN130 on Main PCB

OK

Check Point 6 : Replace Main PCB
- ☐ Change Main PCB and set up the original address.

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection.
(Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

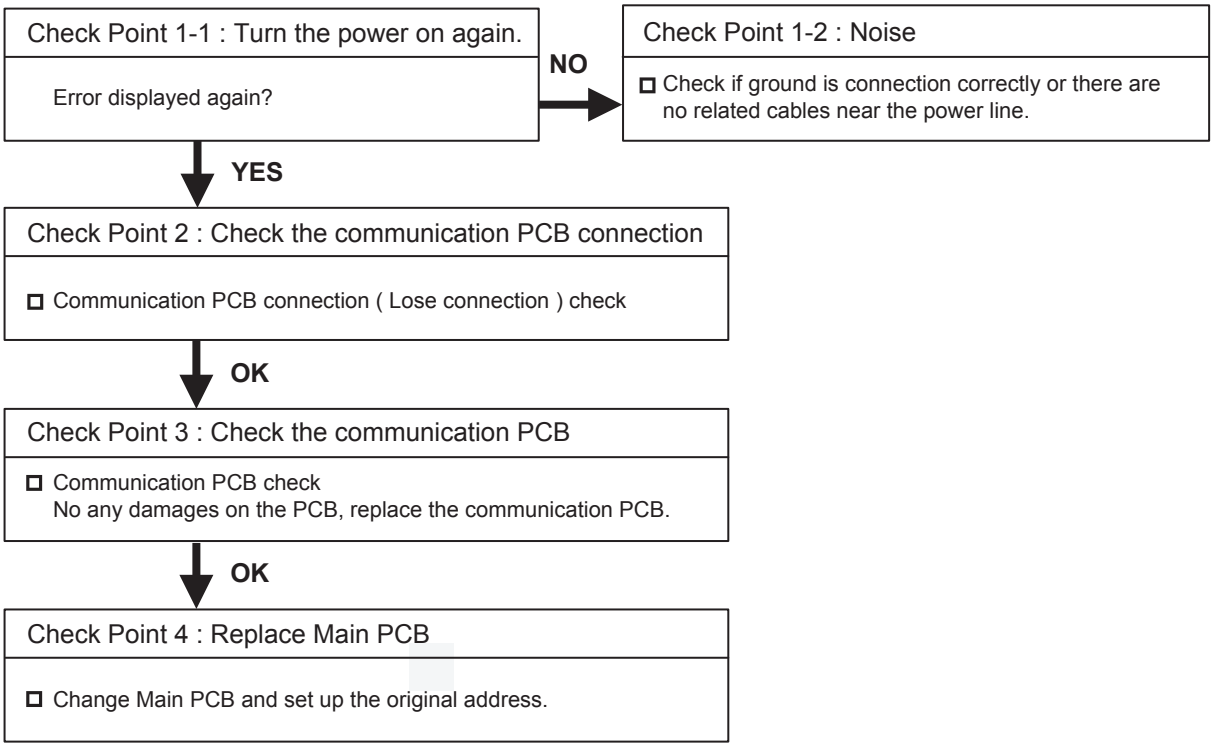
*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 34 E69. 1 **OUTDOOR UNIT Error Method:** **Outdoor Unit Transmission PCB Parallel Communication Error**	**Indicate or Display:** **Outdoor Unit : E. 6 9. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. / Operation LED 1 time Flash, Timer LED 4 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 6 9 / 1 4 / 14.1 / 14.3***

*When this error occurs on the Slave outdoor unit, Error code 69.1 is transfered to each device on the network.
When this error occures on the Master outdoor unit, the indoor unit on the network indicates 14 (14.3 No communication from Outdoor unit), and Service tool indicates 14.1 (Outdoor unit Netwrok communication Error).

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

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



Trouble shooting 35 E71. 1 **OUTDOOR UNIT Error Method:** **Discharge Temp. Sensor 1 Error**	**Indicate or Display:** **Outdoor Unit : E. 7 1. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 1**

Detective Actuators:	**Detective details:**
Discharge temp. sensor 1	・ Discharge temp. sensor 1 short detected ・ Discharge temp. sensor 1 open detected after compressor 1 operated continuously for 5 minutes or more

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

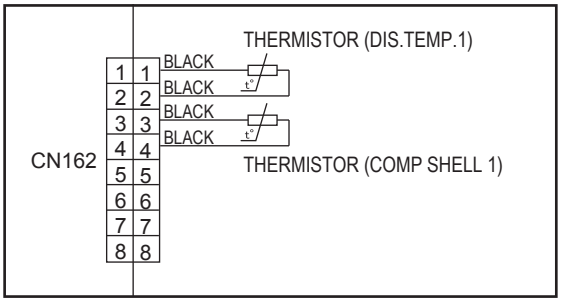
Check Point 2 : Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN162: 1-2) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Discharge temp. sensor 1 (CN162: 1-2)

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 36 E72. 1 **OUTDOOR UNIT Error Method:** **Compressor Temp Sensor 1 Error**	**Indicate or Display:** **Outdoor Unit : E. 7 2. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 2**

Detective Actuators:	**Detective details:**
Compressor temp. sensor 1	▪ Compressor temp. sensor 1 short detected ▪ Compressor temp. sensor 1 open detected after compressor 1 operated continuously for 5 minutes or more

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

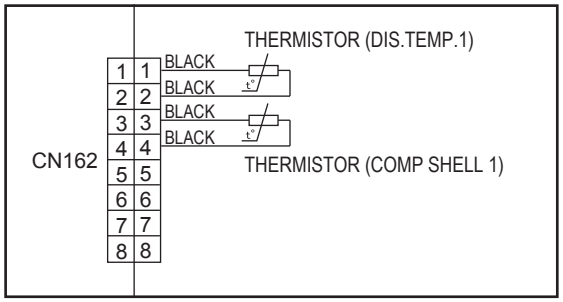
Check Point 2 : Check the sensor

- ☐ Thermistor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN162: 3-4) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Compressor temp. sensor 1 (CN162: 3-4)

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 37 E73.4 **OUTDOOR UNIT Error Method:** **Heat Ex.1 Gas Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 7 3. 4** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 3**

Detective Actuators:	**Detective details:**
Heat ex.1 gas temp. sensor	・ Heat ex.1 gas temp. sensor short or open detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

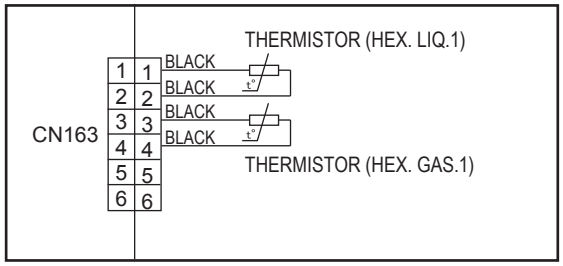
Check Point 2: Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN163: 3-4) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Heat ex.1 gas temp. sensor (CN163: 3-4)

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 38 E 73. 5 **OUTDOOR UNIT Error Method:** **Heat Ex.1 Liquid Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 7 3. 5** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 3**

Detective Actuators:	**Detective details:**
Heat ex.1 liquid temp. sensor	・ Heat ex.1 liquid temp. sensor short or open detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

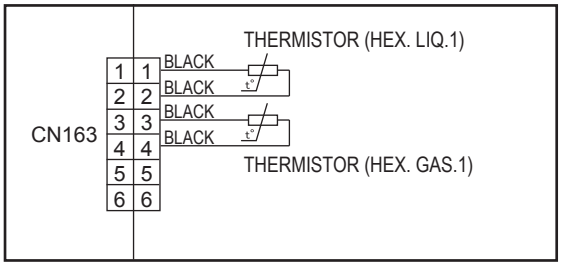
Check Point 2: Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN163: 1-2) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Heat ex.1 liquid temp. sensor (CN163: 1-2)

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

Trouble shooting 39 E73. 6 **OUTDOOR UNIT Error Method:** **Heat Ex.2 Gas Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 7 3. 6** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 3**

Detective Actuators:	**Detective details:**
Heat ex.2 gas temp. sensor	・ Heat ex.2 gas temp. sensor short or open detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

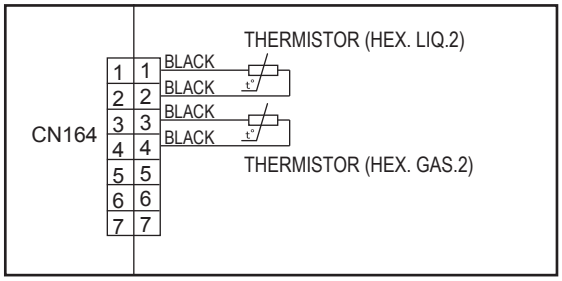
Check Point 2: Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN164: 3-4) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Heat ex.2 gas temp. sensor (CN164: 3-4)

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 40 E73. 7 **OUTDOOR UNIT Error Method:** **Heat Ex.2 Liquid Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 7 3. 7** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 3**

Detective Actuators:	**Detective details:**
Heat ex.2 liquid temp. sensor	▪ Heat ex.2 liquid temp. sensor short or open detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

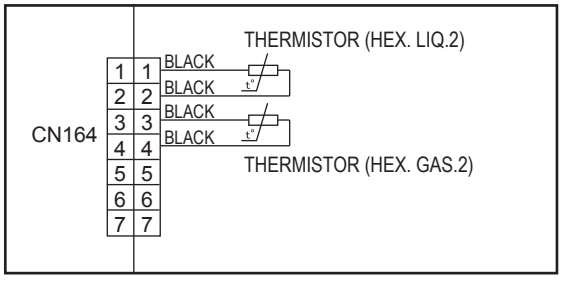
Check Point 2: Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN164: 1-2) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Heat ex.2 liquid temp. sensor (CN164: 1-2)

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

Trouble shooting 41 E74. 1 **OUTDOOR UNIT Error Method:** **Outdoor Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 7 4. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 4**

Detective Actuators:	**Detective details:**
Outdoor temp. sensor	・ Outdoor temp. sensor short or open detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

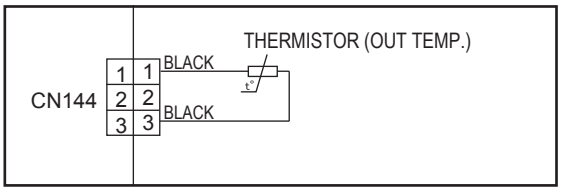
Check Point 2: Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

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



Outdoor temp. sensor (CN144:1-3)

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 42 E75. 1 **OUTDOOR UNIT Error Method:** **Suction Gas Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 7 5. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 5**

Detective Actuators:	**Detective details:**
Suction gas temp. sensor	▪ Suction gas temp. sensor short or open detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

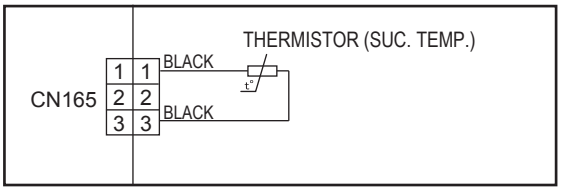
Check Point 2 : Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN165:1-3) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Suction gas temp. sensor (CN165:1-3)

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

Trouble shooting 43 E77. 1 **OUTDOOR UNIT Error Method:** **Heat Sink Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 7 7. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 7 7**

Detective Actuators:	**Detective details:**
Heat sink temp. sensor	・ Heat sink temp. sensor open/short detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Inverter PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

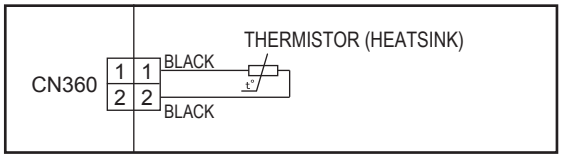
Check Point 2 : Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Inverter PCB (CN360: 1-2) voltage value = 5V
  Remove the sensor from Inverter PCB, check the voltage.



Heat sink temp. sensor (CN360: 1-2)

►**If the voltage does not appear, replace Inverter PCB.**

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 44 E82. 2 **OUTDOOR UNIT Error Method:** **Sub-cool Heat EX. Gas outlet Temp Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 8 2. 2** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 8 2**

Detective Actuators:	**Detective details:**
Sub-cooling heat ex. gas outlet temp. sensor	・ Sub-cooling heat ex. gas outlet temp. sensor short or open detected.

Forecast of Cause :

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

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

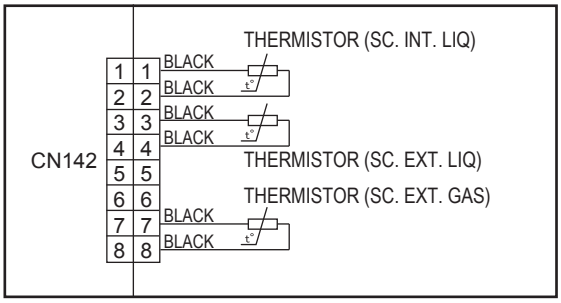
Check Point 2 : Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN142: 7-8) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Sub-cooling heat ex. gas outlet temp. sensor (CN142: 7-8)

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

Trouble shooting 45 E83. 1 **OUTDOOR UNIT Error Method:** **Liquid Pipe Temp. Sensor 1 Error**	**Indicate or Display:** **Outdoor Unit : E. 8 3. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 8 3**

Detective Actuators:	**Detective details:**
Liquid pipe temp. sensor 1	・ Liquid pipe temp. sensor 1 short or open detected

Forecast of Cause :

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

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

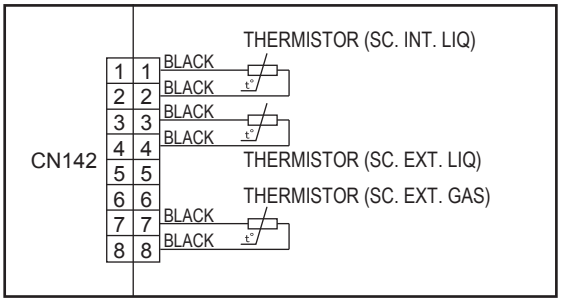
Check Point 2 : Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN142: 1-2) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Liquid pipe temp. sensor 1 (CN142: 1-2)

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

Trouble shooting 46 E83. 2 **OUTDOOR UNIT Error Method:** **Liquid Pipe Temp. Sensor 2 Error**	**Indicate or Display:** **Outdoor Unit : E. 8 3. 2** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 8 3**

Detective Actuators:	**Detective details:**
Liquid pipe temp. sensor 2	・ Liquid pipe temp. sensor 2 short or open detected

Forecast of Cause :
1. Connector connection defective, open
2. Sensor defective
3. Main PCB defective

Check Point 1 : Check the connector connection and cable open

- ☐ Connector connection state check
- ☐ Cable open check

OK

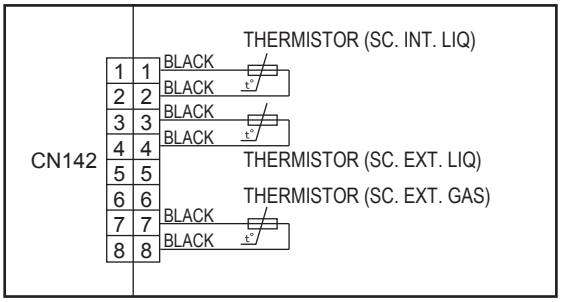
Check Point 2 : Check the sensor

- ☐ Sensor characteristics check (Disconnect the sensor from the PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

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

- ☐ Main PCB (CN142: 3-4) voltage value = 5V
  Remove the sensor from Main PCB, check the voltage.



Liquid pipe temp. sensor 2 (CN142: 3-4)

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

Trouble shooting 47 E84. 1 **OUTDOOR UNIT Error Method:** **Current Sensor 1 abnormal**	**Indicate or Display:** **Outdoor Unit : E. 8 4. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 8 4**

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

Forecast of Cause :

1. Power supply defective
2. Power cable disconnection , open
3. Filter PCB (INV) to Inverter PCB CT system wiring connector disconnection, open
4. Power supply to Filter PCB (INV) to Inverter PCB wiring disconnection, open
5. Filter PCB(INV) defective (Power supply section, current sensor section)
6. Inverter PCB defective

Check Point 1 : Check the power supply

- ☐ Main power ON/OFF state check
- ☐ Power cable connection, open check

OK

Check Point 2 : Filter PCB(INV) to Inverter PCB CT system wiring connection state

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

OK

Check Point 3 : Check the wiring (Power supply to Filter PCB (INV) to Inverter PCB)

- ☐ Connector connection state check
- ☐ Cable open check

OK

Check Point 4 : Check Filter PCB (INV) and Inverter PCB

- ☐ Chack Filter PCB (INV) and Inverter PCB.
  (Refer to "Service Parts Information 4")

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection.
(Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 48 E86. 1 OUTDOOR UNIT Error Method: Discharge Pressure Sensor Error	**Indicate or Display:** **Outdoor Unit : E. 8 6. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 8 6**

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

Forecast of Cause :
1. Discharge pressure sensor connector disconnection, open
2. Discharge pressure sensor defective
3. Main PCB defective

Check Point 1 : Check the discharge pressure sensor connection state

- ☐ Connector connection state check
- ☐ Cable open check

OK

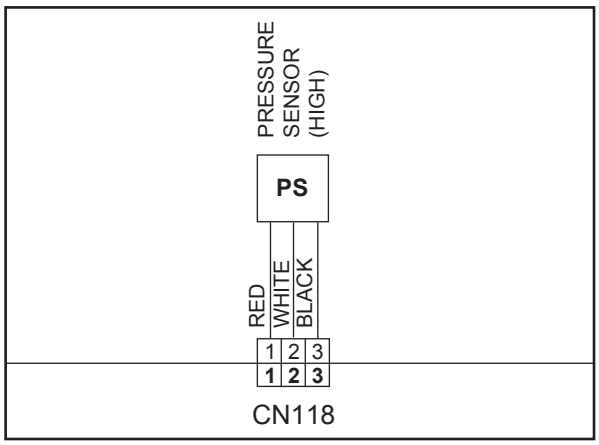
Check Point 2 : Check the discharge pressure sensor

- ☐ Sensor characteristics check
  * For the characteristics of the discharge pressure sensor, refer to the "Service Parts Information 22".

OK

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

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



Discharge pressure sensor (CN118:1-3)

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 49 E86. 3 **OUTDOOR UNIT Error Method:** **Suction Pressure Sensor Error**	**Indicate or Display:** **Outdoor Unit : E. 8 6. 3** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 8 6**

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

Forecast of Cause :
1. Suction pressure sensor connector disconnection, open
2. Suction pressure sensor defective
3. Main PCB defective

Check Point 1 : Check the suction pressure sensor connection state

- ☐ Connector connection state check
- ☐ Cable open check

OK

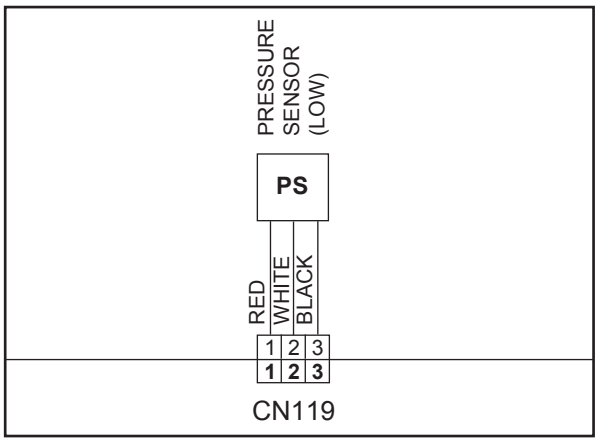
Check Point 2 : Check the suction pressure sensor

- ☐ Sensor characteristics check
  * For the characteristics of the suction pressure sensor, refer to the "Service Parts Information 22".

OK

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

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



Suction pressure sensor (CN119:1-3)

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 50 E86. 4 **OUTDOOR UNIT Error Method:** **High Pressure Switch 1 Error**	**Indicate or Display:** **Outdoor Unit : E. 8 6. 4** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 8 6**

Detective Actuators:	**Detective details:**
High pressure switch 1	・ When the power was turned on, "high pressure switch 1: open" was detected.

Forecast of Cause :
1. High pressure switch 1 connector disconnection, open
2. High pressure switch 1 characteristics defective
3. Main PCB defective

Check Point 1 : Check the high pressure switch 1 connection state

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

OK

Check Point 2 : Check the high pressure switch 1 characteristics

- ☐ Switch characteristics check
  * For the characteristics of high pressure switch 1, refer to the "Service Parts Information 23".

OK

Check Point 3 : Replace Main PCB

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

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 51 E93. 1 **OUTDOOR UNIT Error Method:** **Inverter Compressor Start UP Error**	**Indicate or Display:** **Outdoor Unit : E. 9 3. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 9 3**

Detective Actuators:	**Detective details:**
Inverter PCB	▪ "Protection stop by "overcurrent generation at inverter compressor starting" ⇒ restart" generated consecutively 60 times x 2 sets (total 120 times) * The shortest time up to error generation is about 130 minutes * Restart is not performed if an indoor unit in the same refrigerant system is not turned ON by thermostat. * After the end of the 1st set, the 2nd set is not started if all the compressors in the same refrigerant system are not temporarily stopped.

Forecast of Cause :

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

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

- ☐ Wiring connection state check
- ☐ Cable open check

OK

Check Point 2 : Check the Inverter PCB

- ☐ Inverter PCB check (Refer to Service Parts Information 4)

OK

Check Point 3 : Replace the Inverter compressor

- ☐ Inverter compressor replacement

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 52 E94. 1 **OUTDOOR UNIT Error Method:** **Trip Detection**	**Indicate or Display:** **Outdoor Unit : E. 9 4. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 9 4**

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

Forecast of Cause :

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

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

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

↓ **OK**

Check Point 2 : Check the Inverter PCB

- ☐ Inverter PCB check (Refer to Service Parts Information 4)

↓ **OK**

Check Point 3 : Replace the Inverter compressor

- ☐ Inverter compressor replacement

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 53 E95. 5 **OUTDOOR UNIT Error Method:** **Compressor Motor Loss of Synchronization**	**Indicate or Display:** **Outdoor Unit : E. 9 5. 5** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 9 5**

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

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

Check Point 1 : Check the Inverter PCB

☐ Inverter PCB check (Refer to Service Parts Information 4)

OK

Check Point 2 : Replace the Inverter compressor

☐ Inverter compressor replacement

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 54 E97. 1 **OUTDOOR UNIT Error Method:** **Outdoor Unit Fan Motor Lock Error**	**Indicate or Display:** **Outdoor Unit : E. 9 7. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 9 7**

Detective Actuators:	**Detective details:**
Outdoor unit fan motor	1. When outdoor fan rotation speed is less than 100rpm in 20 seconds after fan motor starts, fan motor and compressor stops. 2. After fan motor restarts, if the same operation is repeated consecutively 4 times, fan motor and compressor stops permanently.

Forecast of Cause :

1. Rotation obstruction by foreign matter
2. Main PCB to Driver PCB to Fan motor wiring, disconnection, open
3. Fan motor defective (winding open, lock)
4. Driver PCB defective
5. Main PCB defective

Check Point 1 : Fan rotation state check

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

OK

Check Point 2 : Main PCB to Driver PCB to Fan motor wiring connection state

- ☐ Connector and wiring connection state check.
- ☐ Check blown fuse of DC FAN motor (5A FUSE)
- ☐ Cable open check. (Refer to the service parts information 5)

OK

Check Point 3 : Fan motor defective

- ☐ Check if fan can be rotated by hand.
- ☐ Motor winding resistance check
- ☐ Motor operation check. (Refer to the service parts information 21)

OK

Check Point 4 : Replace Driver PCB

- ☐ Check the appearance of Driver PCB.
- ☐ Change Driver PCB and release the error.
  Check if the error reoccurs on a test run.

OK

Check Point 5 : Replace Main PCB

- ☐ Change Main PCB and release the error.
  Check if the error reoccurs on a test run.

  >> If it is abnormal, replace Main PCB.
  (When Main PCB is replaced, set up the original setting by Rotary, Dip, and Push SW)

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection.
(Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 55 E97. 5 **OUTDOOR UNIT Error Method:** **Outdoor Unit Fan Motor Temp. Abnormal**	**Indicate or Display:** **Outdoor Unit : E. 9 7. 5** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 9 7**

Detective Actuators:	**Detective details:**
Driver PCB	1. When outdoor fan motor cannot operate more than 470rpm, fan motor and compressor stops. 2. After fan motor restarts, if fan motor cannot operate at 470rpm or more, or the same operation is repeated consecutively 3 times within 60 minutes, fan motor and compressor stops permanently.

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

Check Point 1 : Check fan rotation state

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

OK

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

- ☐ Check for foreign matter on heat exchanger

OK

Check Point 3 : Check the ambient temperature

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

OK

Check Point 4 : Check the static pressure

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

OK

Check Point 5 : Replace Driver PCB

- ☐ Check the appearance and condition of mounting of Driver PCB.
- ☐ Change Driver PCB and release the error. Refer to the service parts info 5
  Check if the error reoccurs on a test run.

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 56 E97. 9 **OUTDOOR UNIT Error Method:** **Outdoor Unit Fan Motor Driver Abnormal**	**Indicate or Display:** **Outdoor Unit : E. 9 7. 9** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / 9 7**

Detective Actuators:	**Detective details:**
Driver PCB Fan motor Main PCB	When Driver PCB detects the following abnormalities, the error signal is output. ▪ Driver PCB defective ▪ Fan motor defective (Layer short) ▪ Main PCB defective (DC output abnormal) ▪ Lose connection or disconnecting wire

Forecast of Cause : 1. Driver PCB defective 2. Fan motor defective 3. Main PCB defective
4. Lose connection or disconnecting wire

Check Point 1 : Check the wiring connection

- ☐ Check Fan motor to Driver PCB wiring connector disconnection, open
- ☐ Check blown fuse of DC FAN motor (5A FUSE)
- ☐ Check Driver PCB to Capacitor wiring connector disconnection, open
- ☐ Check Main PCB to Driver PCB wiring connector disconnection, open

OK

Check Point 2 : Check DC input power of Driver PCB

- ☐ Check the DC voltage of CN759 is within 15V± 10%. Refer to the service parts info 5
  >> If it is abnormal, replace Main PCB.
  (When Main PCB is replaced, set up the original setting by Rotary, Dip, and Push SW)

OK

Check Point 3 : Replace Driver PCB

- ☐ Check the appearance and condition of mounting of Driver PCB.
- ☐ Change Driver PCB and release the error.
  Check if the error reoccurs on a test run.

OK

Check Point 4 : Replace Fan motor

- ☐ Check the winding resistance of Fan motor.
- ☐ Change Fan motor and check if the error reoccurs on a test run.

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

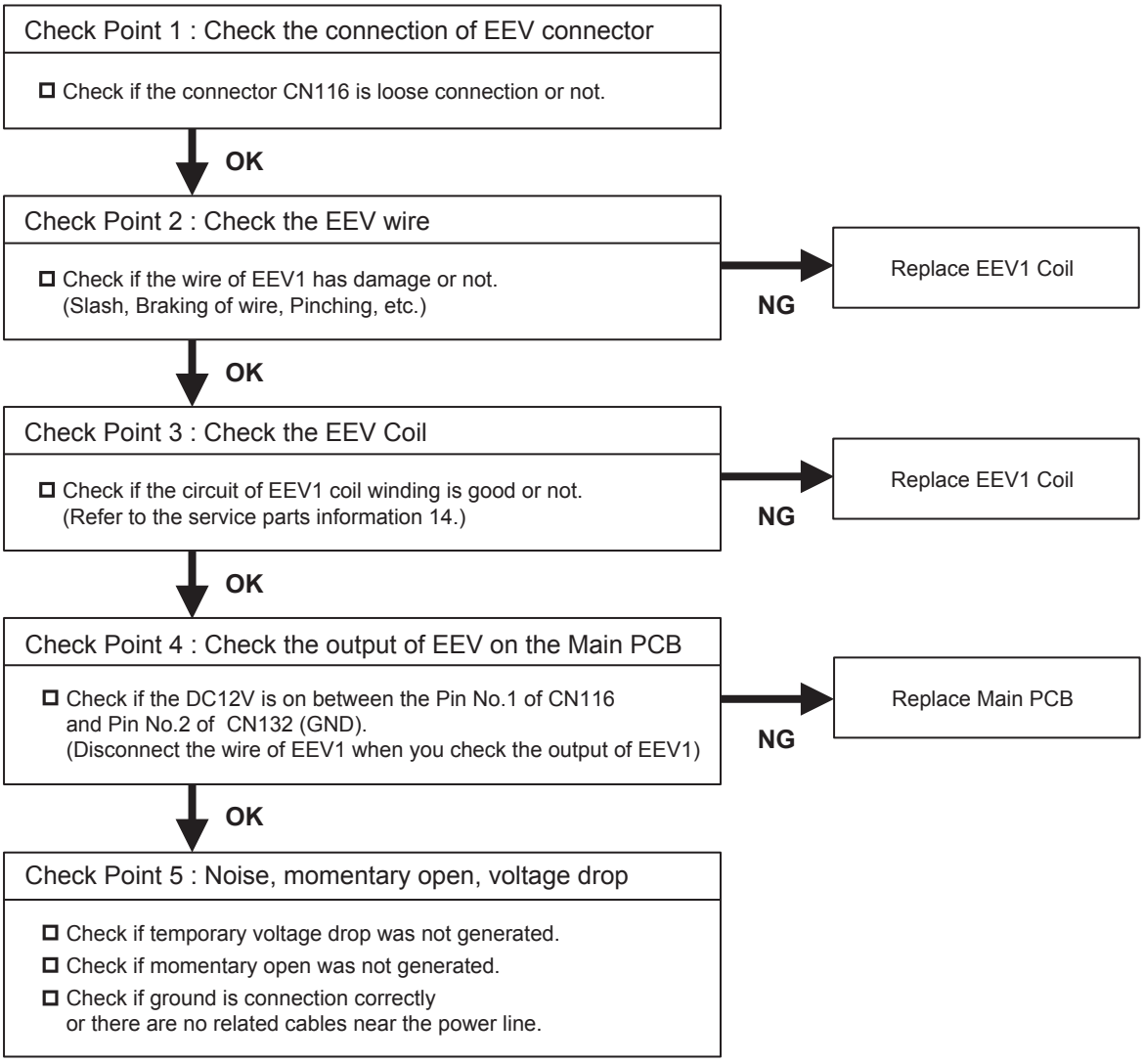
Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection.
(Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 57 E9A.1 **OUTDOOR UNIT Error Method:** Coil 1 (EEV) Error	**Indicate or Display:** Outdoor Unit : E. 9 A. 1 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 9 U / 9 A

Detective Actuators:	Detective details:
Main PCB	Coil 1(Expansion valve 1) driver circuit open detected.

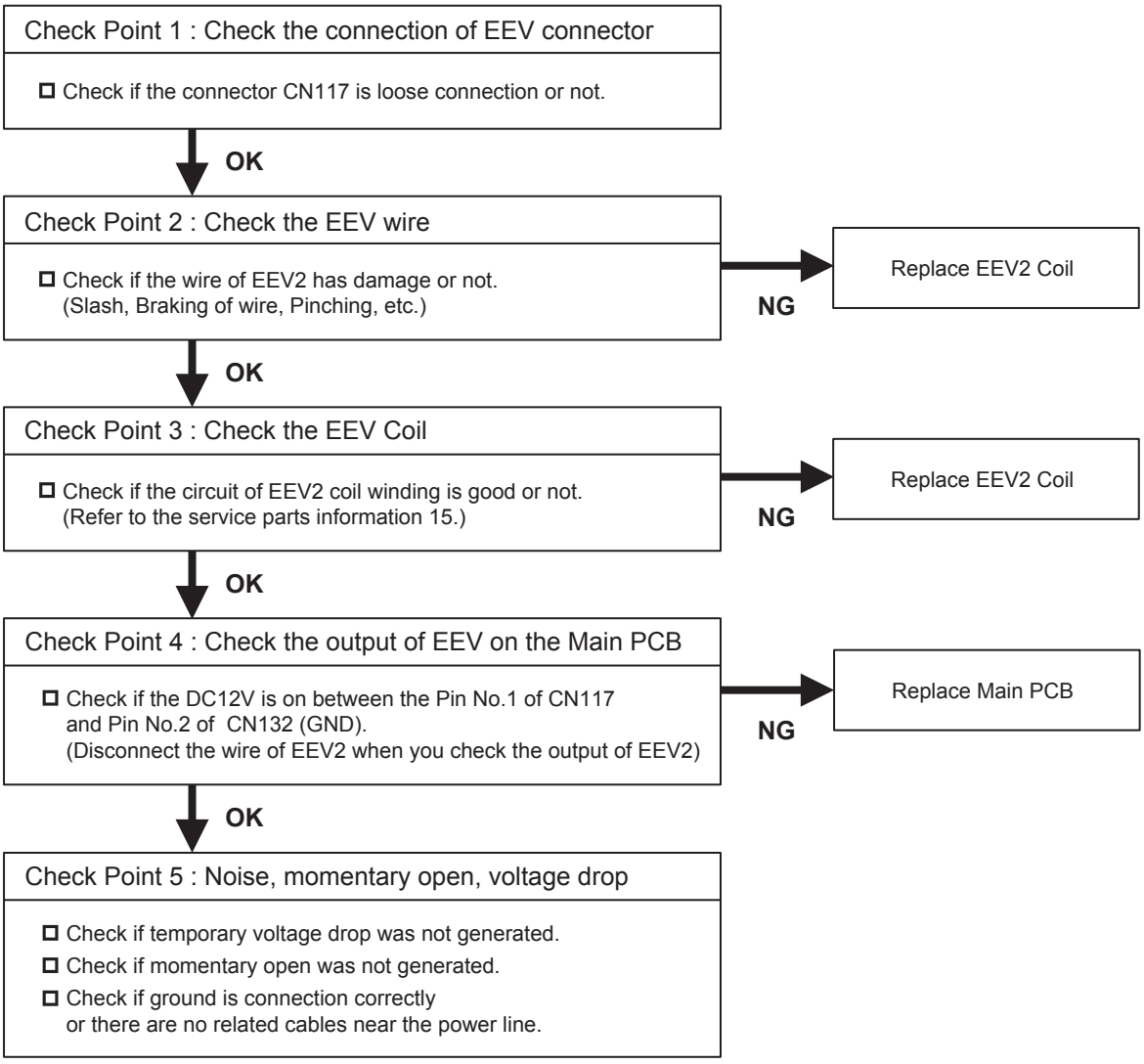
Forecast of Cause : 1. EEV1 coil loose connection 2. EEV1 wires cut or pinched.
3. Defective EEV1 coil 4. Main PCB (DC12V) output abnormal



Trouble shooting 58 E9A.2 **OUTDOOR UNIT Error Method:** Coil 2 (EEV) Error	**Indicate or Display:** Outdoor Unit : E. 9 A. 2 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 9 U / 9A

Detective Actuators:	Detective details:
Main PCB	Coil 2(Expansion valve 2) driver circuit open detected.

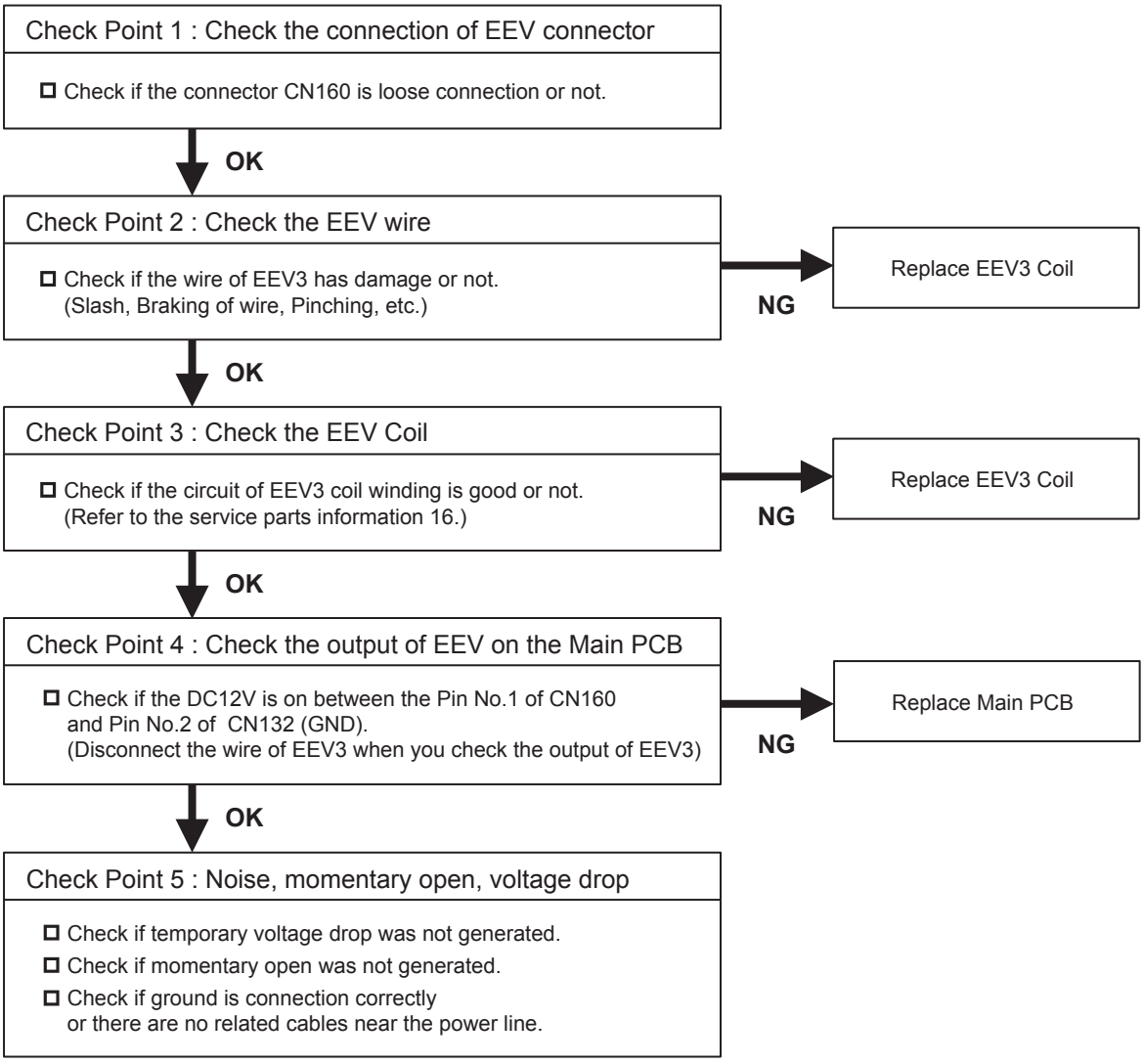
Forecast of Cause :
1. EEV2 coil loose connection
2. EEV2 wires cut or pinched.
3. Defective EEV2 coil
4. Main PCB (DC12V) output abnormal



Trouble shooting 59 E9A.3 **OUTDOOR UNIT Error Method:** Coil 3 (EEV) Error	**Indicate or Display:** Outdoor Unit : E. 9 A. 3 Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash. Error Code : 9 U / 9 A

Detective Actuators:	Detective details:
Main PCB	Coil 3(Expansion valve 3) driver circuit open detected.

Forecast of Cause : 1. EEV3 coil loose connection 2. EEV3 wires cut or pinched.
3. Defective EEV3 coil 4. Main PCB (DC12V) output abnormal



Trouble shooting 60 E9U.2 **OUTDOOR UNIT Error Method:** **Slave Outdoor Unit Error**	**Indicate or Display:** **Outdoor Unit : E. 9 U. 2 (Only for master outdoor unit)** **Indoor Unit : No display / Operation LED 9 times Flash, Timer LED 15 timse Flash Filter LED Continuous Flash** **Error Code : ***

* Master Outdoor unit : 9 U. 2 /
Slave Outdoor unit and Service Tool indicate applicable Error code

Detective Actuators:	**Detective details:**
Slave Unit	▪ Error signal received from slave unit of same refrigerant system

Check Point 1 : Check the slave unit
□ Slave unit 7 seg display check ⇒ Check by troubleshooting based on displayed error code.

Trouble shooting 61 EA1. 1 **OUTDOOR UNIT Error Method:** **Discharge Tempreture 1 Abnormal**	**Indicate or Display:** **Outdoor Unit : E. A 1. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / A 1**

Detective Actuators:	**Detective details:**
Discharge temp. sensor 1	▪ "Protection stop by "discharge temp. 1 ≧115°C (239°F) during compressor 1 operation"" generated 2 times within 40 minutes.

Forecast of Cause :

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

<Cooling operation>

Check Point 1 : Check if 3-way valve is open.

- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 2 : Check the EEV, strainer

- ☐ EEV (EEV1, EEV2, EEV3, indoor unit EEV) open?
- ☐ Strainer clogging check (before and after EEV, ACM oil return)
  Refer to "Service Parts Information 14, 15, 16".

OK

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

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

OK

Check Point 4 : Check the discharge temp. sensor 1

- ☐ Discharger temp. sensor 1 characteristics check
  (Check by disconnecting sensor from PCB.)
  * For the characteristics of the sensor, refer to the "Service Parts Information 24".

OK

Check Point 5 : Check the refrigerant amount

- ☐ Leak check

<Heating operation>

Check Point 1 : Check if 3-way valve is open.

- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 2 : Check the EEV, strainer

- ☐ EEV (EEV1, EEV2, EEV3) open?
- ☐ Strainer clogging check (before and after EEV, ACM oil return)
  Refer to "Service Parts Information 14, 15, 16".

OK

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 62 EA3. 1 **OUTDOOR UNIT Error Method:** **Compressor 1 Temperature Abnormal**	**Indicate or Display:** **Outdoor Unit : E. A 3. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / A 3**

Detective Actuators:	**Detective details:**
Compressor temp. sensor 1	▪ "Protection stop by "compressor 1 temp. ≧115°C (239°F)during compressor 1 operation"" generated 2 times within 40 minutes.

Forecast of Cause :
1. 3-way valve not opened
2. EEV defective, strainer clogged
3. Outdoor unit operation defective, foreign matter on heat exchanger
4. Compressor 1 temp. sensor defective
5. Insufficient refrigerant

<Cooling operation>

Check Point 1 : Check if 3-way valve is open.
- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 2 : Check the EEV, strainer
- ☐ EEV (EEV1, EEV2, EEV3, indoor unit EEV) open?
- ☐ Strainer clogging check (before and after EEV, ACM oil return)
  Refer to "Service Parts Information 14, 15, 16".

OK

Check Point 3 : Check the outdoor unit fan,heat exchanger
- ☐ Check for foreign matter at heat exchanger
- ☐ Check if fan can be rotated by hand.
- ☐ Motor check

OK

Check Point 4 : Check the compressor 1 temp. sensor
- ☐ Compressor 1 temp. sensor characteristics check (Check by disconnecting sensor from PCB.)

  * For the characteristics of the sensor, refer to the "Service Parts Information 24".

OK

Check Point 5 : Check the refrigerant amount
- ☐ Leak check

<Heating operation>

Check Point 1 : Check if 3-way valve is open.
- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 2 : Check the EEV, strainer
- ☐ EEV (EEV1, EEV2, EEV3) open?
- ☐ Strainer clogging check (before and after EEV, ACM oil return)
  Refer to "Service Parts Information 14, 15, 16".

OK

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 63 EA4. 1 **OUTDOOR UNIT Error Method:** **High Pressure Abnormal**	**Indicate or Display:** **Outdoor Unit : E. A 4. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / A 4**

Detective Actuators:	**Detective details:**
Judgment from value sensed by discharge pressure sensor	▪ "Protection stop by "discharge pressure ≧ 580psi(4.00MPa)during operation of any compressor"" generated 3 times within 60 minutes. If the same operation (High pressure protection stop) generated 3 times within 30 minutes, compressor stops permanently.

Forecast of Cause :

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

<Cooling operation>

Check Point 1 : Check if 3-way valve is open.

- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

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

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

OK

Check Point 3 : Check the EEV, strainer

- ☐ EEV (EEV1, EEV2) open?
- ☐ Strainer clogging check (before and after EEV, ACM, oil return) Refer to "Service Parts Information 14, 15".

OK

Check Point 4 : Check the 4-way valve (4WV1, 4WV2, 4WV3)

- ☐ 4-way valve operation check. Refer to "Service Parts Information 18".

OK

Check Point 5 : Check the solenoid valve (SV1, SV2)

- ☐ Solenoid valve operation check. Refer to "Service Parts Information 17".

OK

Check Point 6 :Check the discharge pressure sensor

- ☐ Discharge pressure sensor characteristics check
  * For the characteristics of the discharge pressure sensor, refer to "Service Parts Information 22".

OK

Check Point 7 : Check the refrigerant amount

- ☐ Refrigerant charged amount check

<Heating operation>

Check Point 1 : Check if 3-way valve is open.

- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 3 : Check the EEV, strainer (indoor unit)

- ☐ EEV operation check
- ☐ Check of strainers before and after EEV Refer to "Service Parts Information 13".

OK

Caution

By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)

The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)

- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 64 EA4. 2 **OUTDOOR UNIT Error Method:** **High Pressure Protection 1**	**Indicate or Display:** **Outdoor Unit : E. A 4. 2** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9U / A 4**

Detective Actuators:	**Detective details:**
High pressure switch 1	▪ "Protection stop by "high pressure switch 1 operated during compressor 1 operation"" generated 3 times within 60 minutes

Forecast of Cause :
1. 3-way valve not opened
2. Outdoor unit fan operation defective, foreign matter at heat exchanger, excessive ambient temperature rise
3. Check valve clogge
4. EEV defective, strainer clogged
5. Solenoid valve defective
6. 4-way valve (including a coil) defective
7. High pressure switch 1 defective
8. Refrigerant overcharged

<Cooling operation>

Check Point 1 : Check if 3-way valve is open.
- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 2 : Check the outdoor unit fan operation, heat exchanger, ambient temperature
- ☐ No foreign matter in air passage?
- ☐ Heat exchange fins clogged
- ☐ Outdoor unit fan motor check
- ☐ Ambient temperature not raised by effect of other heat sources?
- ☐ Discharged air not sucked in?

OK

Check Point 3 : Check the EEV, strainer
- ☐ EEV (EEV1, EEV2) open?
- ☐ Strainer clogging check (before and after EEV, ACM, oil return) Refer to "Service Parts Information 14, 15".

OK

Check Point 4 : Check the 4-way valve (4WV1, 4WV2, 4WV3)
- ☐ 4-way valve operation check. Refer to "Service Parts Information 18".

OK

Check Point 5 : Check the check valve
- ☐ Check if check valve (oilseparetor (out) of compressor 1) is not clogged.

OK

Check Point 6 : Check the solenoid valve (SV1, SV2)
- ☐ Solenoid valve operation check. Refer to "Service Parts Information 17".

OK

Check Point 7 : Check high pressure switch 1
- ☐ High pressure switch 1 characteristics check.
  * For the characteristics of the high pressure switch 1, refer to "Service Parts Information 23".

OK

Check Point 8 : Check the refrigerant amount
- ☐ Refrigerant charged amount check

<Heating operation>

Check Point 1 : Check if 3-way valve is open.
- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 3 : Check the EEV, strainer (indoor unit)
- ☐ EEV operation check
- ☐ Check of strainers before and after EEV Refer to "Service Parts Information 13".

OK

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection.
(Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 65 EA5. 1 **OUTDOOR UNIT Error Method:** **Low Pressure Abnormal**	**Indicate or Display:** **Outdoor Unit : E. A 5. 1** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / A 6**

Detective Actuators:	**Detective details:**
Suction pressure sensor	▪ "Protection stop by "suction pressure ≦ 15psi (0.10MPa)continued for 10 minutes" or "suction pressure ≦ 7.25psi (0.05MPa)" during operation of any compressor"" was generated 5 times within 3 hours

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

<Cooling operation>

Check Point 1 : Check if 3-way valve is open.
- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 4 : Check the indoor unit EEV, strainer clogging
- ☐ Indoor unit EEV operation check
- ☐ Strainer not clogged?

OK

Check Point 6 : Check the solenoid valve (SV1)
- ☐ Solenoid valve operation check
  Refer to "Service Parts Information 17".

OK

Check Point 7 : Check the suction pressure sensor
- ☐ Suction pressure sensor characteristics check
  * For the characteristics of the suction pressure sensor, refer to "Service Parts Information 22".

OK

Check Point 8 : Check the refrigerant amount
- ☐ Leak check

<Heating operation>

Check Point 1 : Check if 3-way valve is open.
- ☐ If the 3-way valve was closed, open the 3-way valve and check operation.

OK

Check Point 2 : Check the outdoor unit ambient temperature
- ☐ Outdoor ambient temperature lower than operating range?

OK

Check Point 3 : Check the outdoor unit fan operation, heat exchanger
- ☐ No foreign matter in air passage?
- ☐ Heat exchange fins clogged
- ☐ Fan rotates?
- ☐ Outdoor unit fan motor check

OK

Check Point 4 : Check the outdoor unit EEV, strainer clogging
- ☐ Outdoor unit EEV1, EEV2 operation check
- ☐ Strainer not clogged?
  Refer to "Service Parts Information 14,15 ".

OK

Check Point 5 : Check the 4-way valve (4WV1, 4WV2, 4WV3)
- ☐ 4-way valve operation check.
  Refer to "Service Parts Information 18".

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Trouble shooting 66 EA6. 3 **OUTDOOR UNIT Error Method:** **Heat Ex.1 gas temp. Error**	**Indicate or Display:** **Outdoor Unit : E. A 6. 3** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / A 6**

Detective Actuators:	**Detective details:**
Heat Ex.1 gas temp. sensor (TH7)	▪ Heat Ex.1 gas temp. sensor (TH7) for use as condenser (4way valve1:Off, EEV1:Open) is detected abnormally-low to High pressure saturated temp. for 4 minutes or more.

Forecast of Cause :

1. Heat Ex.1 gas temp. sensor (TH7) not installed correct position.
2. Heat Ex.1 gas temp. sensor (TH7) defective
3. 4-way valve1 (including a coil) defective
4. EEV1 (including a coil) defective
5. Main PCB defective

Check Point 1 : Check the condition of Heat Ex.1 gas temp. sensor (TH7)

- ☐ Check the condition of mounting of Heat Ex.1 gas temp. sensor (TH7).

OK

Check Point 2 : Check the Heat Ex.1 gas temp. sensor (TH7)

- ☐ Check characteristics check. (Disconnect the Heat Ex.1 gas temp. sensor from PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

Check Point 3 : Check the condition of 4-way valve1 coil

- ☐ Check the condition of mounting of 4-way valve1 coil and 4-way valve2 coil.

OK

Check Point 4 : Check the EEV

- ☐ Check the condition of mounting of EEV1 coil.
- ☐ Check the connector connection state of EEV1, EEV2, EEV3 coil.

OK

Check Point 5 : Replace Main PCB

- ☐ Check the appearance and condition of mounting of Main PCB.
  >> If it is abnormal, replace Main PCB.
  (When Main PCB is replaced, set up the original setting by Rotary, Dip, and Push SW.)

OK

Check Point 6 : Replace 4-way valve1

- ☐ 1. Fully close the 3-way valve, and the refrigerant is recovered.2. 4-way valve1 is replaced.
  3. Perform vacuuming of repaired outdoor unit thoroughly , and add the refrigerant with the recovered amount.
  4. Check if the error reoccurs on a test run.

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 67 EA6. 4 **OUTDOOR UNIT Error Method:** **Heat Ex.2 gas temp. Error**	**Indicate or Display:** **Outdoor Unit : E. A 6. 4** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / A 6**

Detective Actuators:	**Detective details:**
Heat Ex.2 gas temp. sensor (TH8)	▪ Heat Ex.2 gas temp. sensor (TH8) for use as condenser (4way valve2:Off, EEV2:Open) is detected abnormally-low to High pressure saturated temp. for 4 minutes or more.

Forecast of Cause :

1. Heat Ex.2 gas temp. sensor (TH8) not installed correct position
2. Heat Ex.2 gas temp. sensor (TH8) defective
3. 4-way valve2 (including a coil) defective
4. EEV2 (including a coil) defective
5. Main PCB defective

Check Point 1 : Check the condition of Heat Ex.2 gas temp. sensor (TH8)

- ☐ Check the condition of mounting of Heat Ex.2 gas temp. sensor (TH8).

OK

Check Point 2 : Check the Heat Ex.2 gas temp. sensor (TH8)

- ☐ Check characteristics check. (Disconnect the Heat Ex.2 gas temp. sensor from PCB and check.)
  * For the sensor characteristics, refer to the "Service Parts Information 24".

OK

Check Point 3 : Check the condition of 4-way valve2 coil

- ☐ Check the condition of mounting of 4-way valve1 coil and 4-way valve2 coil.

OK

Check Point 4 : Check the EEV2

- ☐ Check the condition of mounting of EEV2 coil.
- ☐ Check the connector connection state of EEV1, EEV2, EEV3 coil.

OK

Check Point 5 : Replace Main PCB

- ☐ Check the appearance and condition of mounting of Main PCB.
  >> If it is abnormal, replace Main PCB.
  (When Main PCB is replaced, set up the original setting by Rotary, Dip, and Push SW.)

OK

Check Point 6 : Replace 4-way valve2

- ☐ 1. Fully close the 3-way valve, and the refrigerant is recovered.2. 4-way valve2 is replaced.
  3. Perform vacuuming of repaired outdoor unit thoroughly , and add the refrigerant with the recovered amount.
  4. Check if the error reoccurs on a test run.

After fixing the problem and for canceling the Error, Error Reset (F3-40) will be required after power reset

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection. (Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 68 EAC. 4 **OUTDOOR UNIT Error Method:** **Outdoor unit Heat Sink Tempreture Abnormal**	**Indicate or Display:** **Outdoor Unit : E. A C. 4** **Indoor Unit : Operation LED 9 times Flash, Timer LED 15 Times Flash, Filter LED Continuous Flash.** **Error Code : 9 U / A C**

Detective Actuators:	**Detective details:**
Heat sink temp. sensor	▪ "Protection stop by "heat sink temp. ≧ 91°C (195.8°F) " occurred 3 times within 60 minutes.

Forecast of Cause :

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

Check Point 1 : Check the heat sink state

- ☐ Heat sink foreign matter, soiling check

OK

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

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

OK

Check Point 3 : Check the heat sink temp. sensor

- ☐ Heat sink temp. sensor characteristics check
  (Check by disconnecting sensor from PCB.)
  * For the characteristics of the thermistor, refer to "Service Parts Information 24".

Caution
By changing of DIP SW 4-2 to ON, the Back-up operation can start when the active outdoor unit exists on the multi outdoor unit connection.
(Stand alone outdoor unit is impossible)
The following conditions will be concerned in use of back-up operation. (Please do not use the system with back-up operation for long time.)
- The operating compressor life time becomes shorter.
- The operating performance may drop due to the limited active compressor(s).
- The compressor may stop frequently by protection controlling.

*In order to keep the operating capacity, the release of the Low noise mode setting might be necessary.

Trouble shooting 71 **OUTDOOR UNIT Error Method:** **Initial Setting Error**	**Indicate or Display:** **Outdoor Unit : - - - -** **Indoor Unit : No Display** **Error Code : No Display** *** Service tool does not indicate the Error code**

Detective Actuators:	**Detective details:**
Outdoor unit main PCB	▪ When no communication data can be received from the Inverter PCB at the time of power ON. (In this case, "Inverters communication error" also occurs.) ▪ When no communication data can be received from the Transmission PCB at the time of power ON. (In this case, "Outdoor unit transmission PCB parallel communication error" also occurs.) **Master unit**: When the power is turned on, the number of connected slave units set at the master unit and the number of slave units received by communication do not match. **Slave unit**: When the power is turned on, not even one master unit communication data can be received.

Forecast of Cause :
1. Power supply defective
2. Outdoor unit address/number of connected slave units setting mistake
3. The number setting mistake of outdoor unit
4. Connection of communication line between outdoor units defective
5. Noise 6.Main PCB defective 7. Inverter PCB defective 8. Transmission PCB defective

Check Point 1-1 : Turn the power on again

Error displayed again?

NO →

Check Point 1-2 : Noise

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

YES ↓

Check Point 2 : Check error display

"Inverters communication error" or "Outdoor unit transmission PCB parallel communication error" also occur?

YES →

In case of "Inverters communication error", Refer to the Trouble shooting No. 29.
In case of "Outdoor unit transmission PCB parallel communication error", Refer to the Trouble shooting No.34.

NO ↓

Check Point 3 : Chech the outdoor unit address/ number of connected slave units setting.

☐ Setting check of outdoor unit address of each outdoor unit
☐ Check the number setting of slave unit

OK ↓

Check Point 4 : Check the number setting of outdoor units

☐ Check the number setting of outdoor units

OK ↓

Check Point 5 : Check the connection of communication line between outdoor units

Drop the power and perform the check.
☐ Connection and open check of communication lines between outdoor units

OK ↓

Check Point 6 : Replace Main PCB

☐ Change Main PCB and set up the original address.

4-2-10 TROUBLE SHOOTING NO ERROR CODE

Trouble shooting 72

Indoor Unit - No Power
(Except wall mounted type)

Forecast of Cause :

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

Check Point 1 : Power supply

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

OK

Check Point 2 : Fuse of Indoor unit

☐ Is not open circuit ?
If the fuse was open state, check the cause of short circuit on the AC circuit before replacing the spare parts.

OK

NG (Short circuit on AC circuit)

Check Point 3 : Short circuit check on AC circuit

Check on short circuit state step by step
1. Disconnect AC input wire on the terminal board.
2. Disconnect Drain pump AC input connector
3. Disconnect FAN motor AC input connector

NG (Short circuit on AC circuit)

Replace power supply PCB

Check Point 4 : Resistor R101

☐ Check Resistor R101, Open / Short circuit check

NG
(Open circuit on R101)

Replace power supply PCB

OK (Not Open)
3.3 Ohm ± 5%

Check Point 5 : Short circuit check on DC supply circuit

Disconnect CN102 and check short circuit step by step.
1. Check short circuit between the pin No. 1 and the pin No.6
2. Check short circuit between the pin No. 2 and the pin No.6

NG (Short circuit)

Replace power supply PCB

OK (Open circuit)

Check Point 6 : Short circuit check on DC13.5V circuit

Disconnect CN 4 (DC power supply) , and check short circuit between the pin No. 1 and the pin No.6 step by step
1. Disconnect EEV connector
2. Disconnect SP motor
3. Disconnect Wired Remote Controller
4. Disconnect Transmission PCB

NG (Short circuit)

Replace Main PCB

OK (Open circuit)

Check Point 7 : Short circuit check on DC5.0V circuit

Disconnect CN 4 (DC power supply) , and check short circuit between the pin No. 2 and the pin No.6 step by step
1. Disconnect Indicatopr PCB
2. Disconnect SW PCB
3. Disconnect Transmission PCB

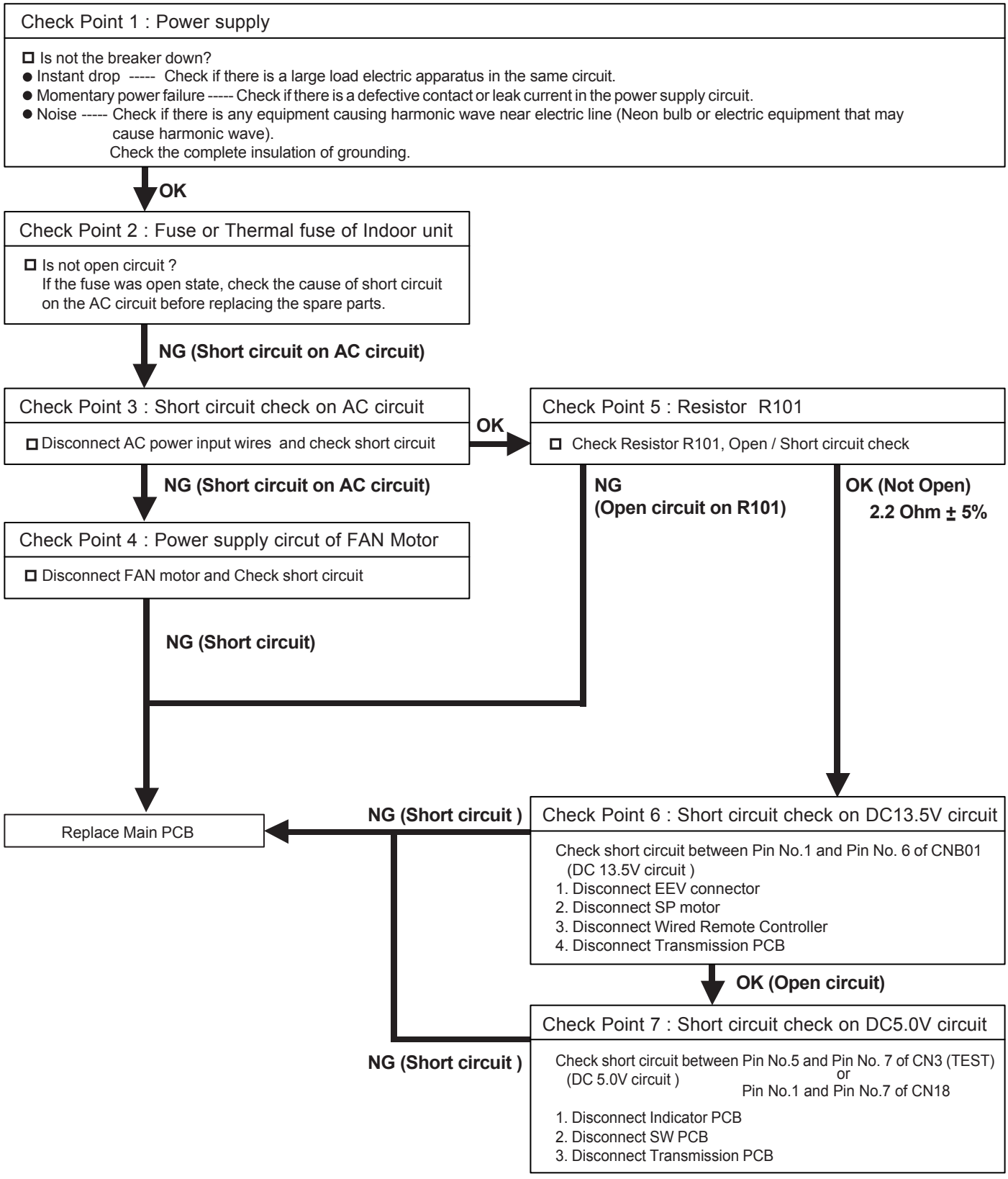
NG (Short circuit)

Trouble shooting 73

Indoor Unit - No Power
(Wall mounted type)

Forecast of Cause :

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



Trouble shooting 74

Outdoor Unit - No Power

Forecast of Cause :

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

Check Point 1 : Check Installation Condition

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

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

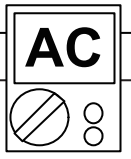
OK

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

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

OK

Check Point 3 : Check Electrical Components



☐ Check the voltage of power supply.
>> Check if AC342 - 456V appears at Outdoor Unit Terminal L1-L2, L2-L3, L3-L1.

NO

OK

☐ Check the fuse on the Filter PCB(Main).

OK

NG

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

OK

NG

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

OK

NG

☐ Replace the Filter PCB

☐ Disconnect the connector for the AC power input devices and check short circuit on power input cable one by one.
- Solenoid valve, 4 way valve, Heater, Mg-Relay -

NG

☐ Replace the defective device

OK

☐ Check short circuit on EEV's internal circuit
Disconnect EEV from Main PCB, and check the short circuit of EEV internal circuit.
Check Short circuit (0 Ohm) between pin No.1 and other pin No..

NG

☐ Replace the defective device

OK

☐ Check DC (5.0V) circuit on CN118
Check DC voltage 5.0 V between pin No.1 and pin No.3

NG (No DC5.0V)

OK

☐ Replace Main PCB

☐ Check Pressure Sensor open / short after remove Transmission PCB from the Main PCB

☐ Replace the Pressure sensor

OK (No Short Circuit 0 Ohm)

NG (Open Circuit)

Trouble shooting 76

No Operation (Power is ON)

Forecast of Cause :

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

Check Point 1 : Check indoor and outdoor installation condition

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

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

OK

Turn off Power and check/correct followings.

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

OK

Check Point 2 : Check outside 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 at Indoor unit, Outdoor unit

- ☐ Indoor Unit - Check the voltage between pins 1-3 of the connector (on the control PCB) for connection with the remote controller.
  In case of 2 wires WRC, Check the voltage between pins 1-2.

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

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

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

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

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

Trouble shooting 77

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?

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 pipe length setting (Push Switch "MODE/EXIT", "SELECT", "ENTER") suitable?
- ☐ 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

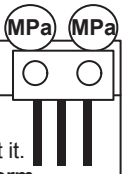
Check Point 4 : Check Indoor/Outdoor Installation Condition

- ☐ 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 Design & Technical Manual.

OK

Check Point 5 : Check Refrigeration Cycle



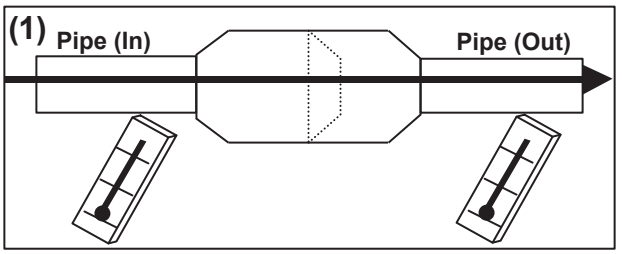
- ☐ Check if Strainer is clogged (Refer to the figure at right).
- ☐ Measure Gas Pressure and if there is a leakage, correct it.

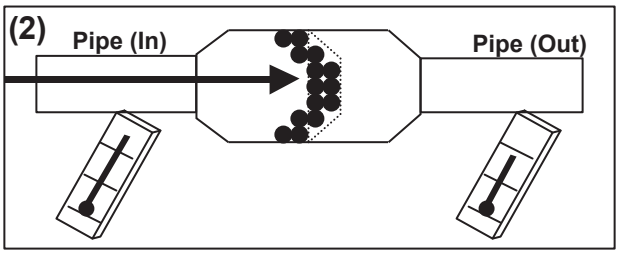
>> When recharging the refrigerant, make sure to perform vacuuming, and recharge the specified amount.

- ►Check EEV (Refer to the Service Parts Information)
- ►Check Solenoid Valve (Refer to the See Service Parts Information)
- ►Check Compressor (Refer to the See Service Parts Information)
- ►Check 4 way valve (Refer to the See Service Parts Information)

Attention!!

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





Trouble shooting 78

Abnormal Noise

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

Diagnosis method when Abnormal Noise is occurred

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

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

OK

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

Attention!!
If Refrigerant Noise is occurring, Check if the Indoor and Outdoor Thermistor is wrongly installed. Check and correct the thermistor.

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

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

OK

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

OK

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

OK

- ☐ Is Compressor locked?

>> Check Compressor (Service Parts Information 2,3)

Trouble shooting 79

Water Leaking

Forecast of Cause :

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

Diagnosis method when water leak occurs

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

OK

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

OK

- ☐ Is Fan rotating?

>> Check Fan Motor (Service Parts Information 19, 20)

OK

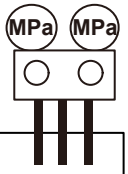
- ☐ Is Float Switch defective?

>> Check Float Switch (Refer to Trouble Shooting 26)

Diagnosis method when water is spitting out

- ☐ Is the filter clogged?

OK



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

Attention!!

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

=> Check EEV (Service Parts Information)

Trouble shooting 80

Outdoor air unit- No Power

Forecast of Cause :

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

Check Point 1 : Power supply

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

OK

Check Point 2 : Check Protector (20A)

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

OK (No short circuit)

Check Point 3 : Check AC line

- ☐ Check AC line (L-N) open / short

NG (Short circuit)

Check Point 4 : Check short circuit Filter PCB

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

OK (No short circuit)

Check Point 5 : Check short circuit Diode bridge

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

OK (No short circuit)

Check Point 6 : Check short circuit Capacitor

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

OK (No short circuit)

Check Point 7 : Check short circuit Power supply PCB

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

OK (No short circuit)

Check Point 8 : Check Fan Motor

- ☐ Check open / short of FAN motor
  Refer to the Service Parts Information 20.
  If there is short circuit, replace FAN motor.

OK (No short circuit)

Check Point 9 : Short circuit check on DC circuit

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

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

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

OK (No short circuit)

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

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

OK (No short circuit)

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

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

Trouble shooting 81 E39. 1 INDOOR UNITError Method: (E39. 2) Indoor Unit power supply error for FAN motor 1 (2)	Indicate or Display: Outdoor Unit :E.5 U.1 Error Code :39, 39.1(2)

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

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

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

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

OK

Check Point 2 : Check wire connection

- ☐ Wire lose connection / damage between the CN21 on the Controller PCB and CN250 on the Power supply PCB.
  In case of Model 72, between W530 (W531) on the Power supply PCB and Capacitor.
  >>If there is abnormal on the wire, replace it

OK

Check Point 3 : Check rotation of Fan / wire resistance

- ☐ Rotate the applicable fan by hand when operation is off.
- ☐ Disconnect the connector from the Power supply PCB and Check resistance value of Motor connector.
  (Refer to the service parts information 20)

OK

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

- ☐ Check resistance value, short circuit, visible damage
  >>If there is abnormal , replace it

OK

Check Point 5 : Replace Power supply PCB

- ☐ Change Power supply PCB

NG

Check Point 6 : Replace Controller PCB

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

Trouble shooting 82 E 4A.1 **INDOOR UNIT Error Method:** **Indoor unit suction air temp. thermistor error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Error Code : 4 A, 4 A. 1**

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

Forecast of Cause :

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

Check Point 1 : Check connection of Connector

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

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

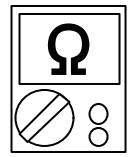
OK

Check Point 2 : Remove connector and check sensor resistance value

SensorCharacteristics (Rough value)

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

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



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

OK

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

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

Trouble shooting 83 E 4A.2 **INDOOR UNIT Error Method:** **Indoor unit discharge air temp. thermistor error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Error Code : 4 A, 4 A. 2**

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

Forecast of Cause :

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

Check Point 1 : Check connection of Connector

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

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

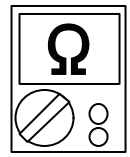
OK

Check Point 2 : Remove connector and check sensor resistance value

SensorCharacteristics (Rough value)

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

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



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

OK

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

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

Trouble shooting 84 E59. 2 **INDOOR UNIT Error Method:** **Indoor Unit Fan Motor 2 rotation speed Error**	**Indicate or Display:** **Outdoor Unit : E.5 U.1** **Error Code : 5 9, 5 9. 2**

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

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

Check Point 1 : Check rotation of Fan

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

OK

Check Point 2 : Check Motor winding / Internal PCB circuit

- Check Indoor Fan motor **(Refer to the PARTS INFORMATION 19, 20)**
  >>If Fan motor is abnormal, replace it.

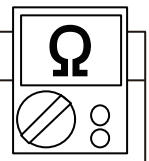
OK

Check Point 3 : Check ambient temp. around motor

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

OK

Check Point 4 : Check Motor Capacitor



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

OK

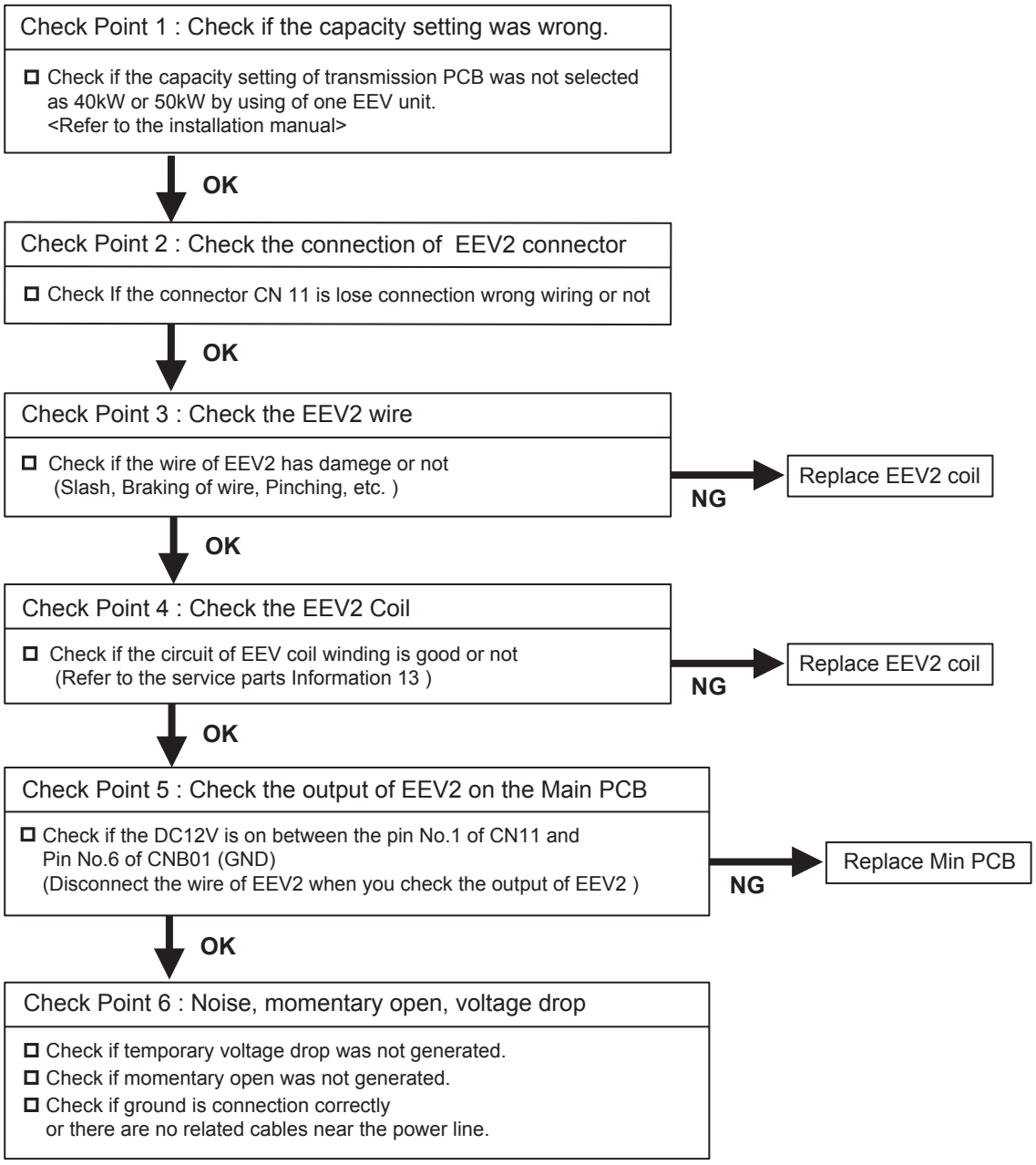
Check Point 5 : Replace Controller PCB

- Change Controller PCB and set up the original address.

Trouble shooting 85 E52. 2 **INDOOR UNIT Error Method:** Coil 2 (Expansion valve) Error	**Indicate or Display:** Outdoor Unit : E.5U.1 Indoor Unit : Operation LED 5 times Flash, Timer LED 2 Times Flash, Filter LED Continuous Flash. Error Code : 5 2

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

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



Trouble shooting 86 EJ6. 1 **OUTDOOR UNIT Error Method:** **Compressor Motor Loss of Synchronization**	**Indicate or Display:** **Outdoor Unit : E. 5U. 1** **Indoor Unit : Operation LED 13 times Flash, Timer LED 6 times Flash, Filter LED Continuous Flash.** **Error Code : J 6**

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

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

Check Point 1 : Check the wire connection of External input (Error input)

- ☐ Check wire btween the terminal “Error input signal” of DX-KIT and the peripheral device, if it is not short circuit. If the connecting wire has the shorcircuit, replace the wire.

Check Point 2 : Check the Error status of peripheral device

- ☐ Refer to the Maintenance manual for the peripheral device.

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

Trouble shooting 87

Peripheral device doesn't operate

Forecast of Cause :

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

General check procedure

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

Check Point 1 : Power supply

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

OK

Check Point 2 : LED indication on the controller PCB

LED Blinking → Check Error code indication on the remote controller or Service tool

LED ON

Check Point 3 : Operation signal output

☐ Check circuit on the terminal ON /OFF SIGNAL(OUTPUT)

Short circuit → Refer to the service manual for the peripheral device and check the trouble shooting tips.

Open circuit

Check Point 4 : Relay PCB power input DC12V

☐ Check power input CN800 Pin1 - Pin2

OK (DC12V) → Make sure that the operation command (ON signal) is transfering from the controller to the DX-Kit controller. If the ON singal was OK, Replace the Relay PCB.

NG

Make sure that the operation command (ON signal) is transfering from the Controller to the DX-Kit controller. If the ON singal was OK, Replace the Main PCB.

Other tips

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

Trouble shooting 88

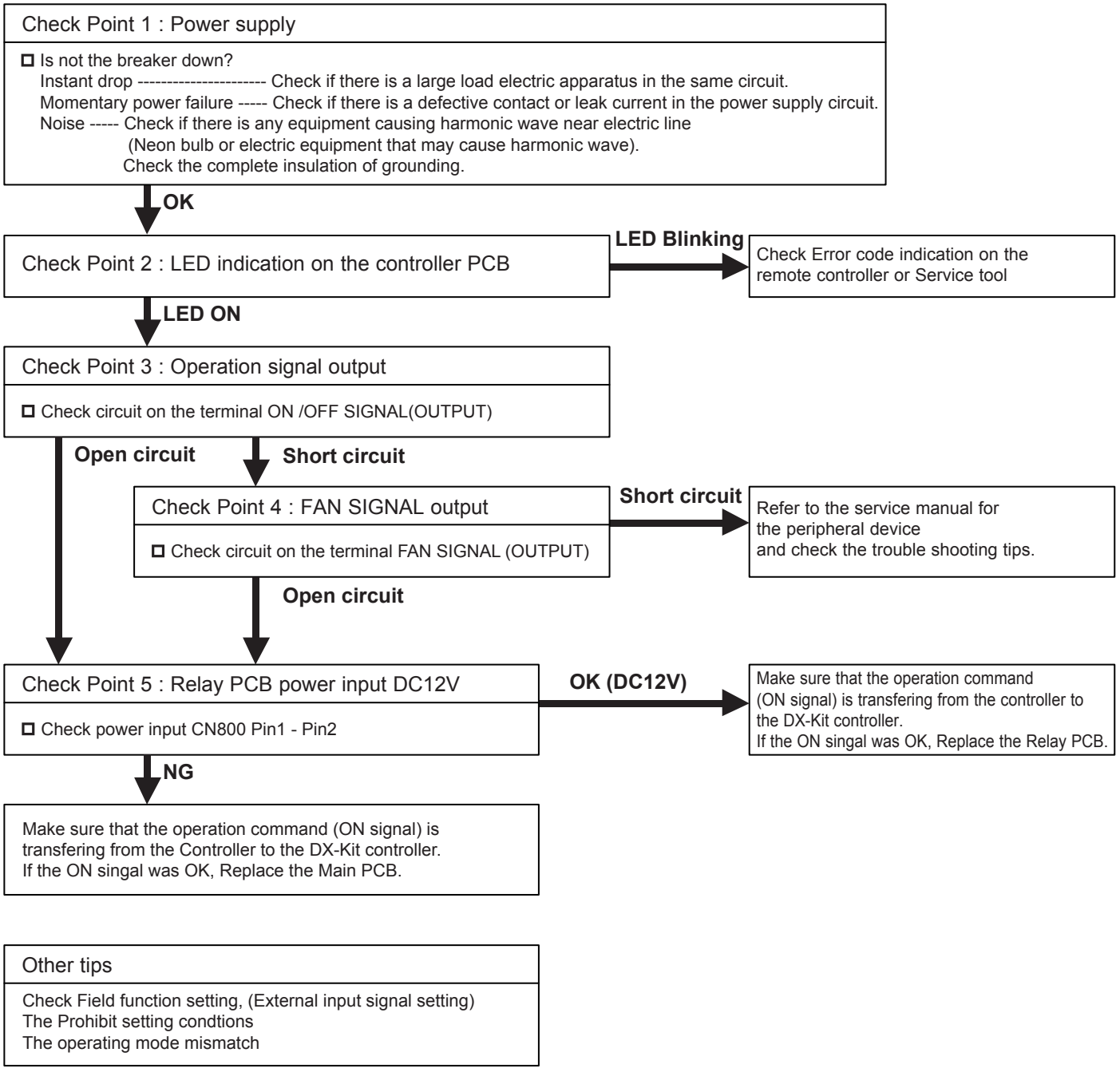
Peripheral device FAN not operate

Forecast of Cause :

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

General check procedure

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



Other tips

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

Trouble shooting 89

Peripheral device No Cooling/ Heating

Forecast of Cause :

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

General check procedure

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

Check Point 1: Temperature sensors

Sensor position / Wire connection / Temperature detection

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

Gas / Liquid Sensor Chracterristcs (Rough value)

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

Inlet / Outlet Air Sensor Chracterristcs (Rough value)

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

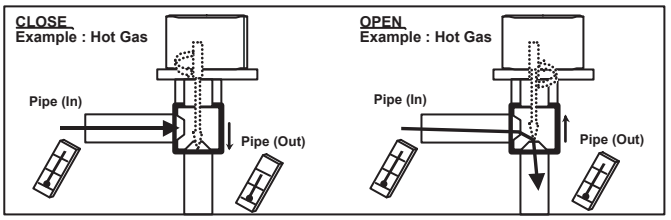
If the sensor position was incorrect, install the sensor to the correct position
If the temperature detection was wrong, replace the sensor.

Check Point 2: EEV

Wire connection / EEV movment

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

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



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

Check Point 3: External factor

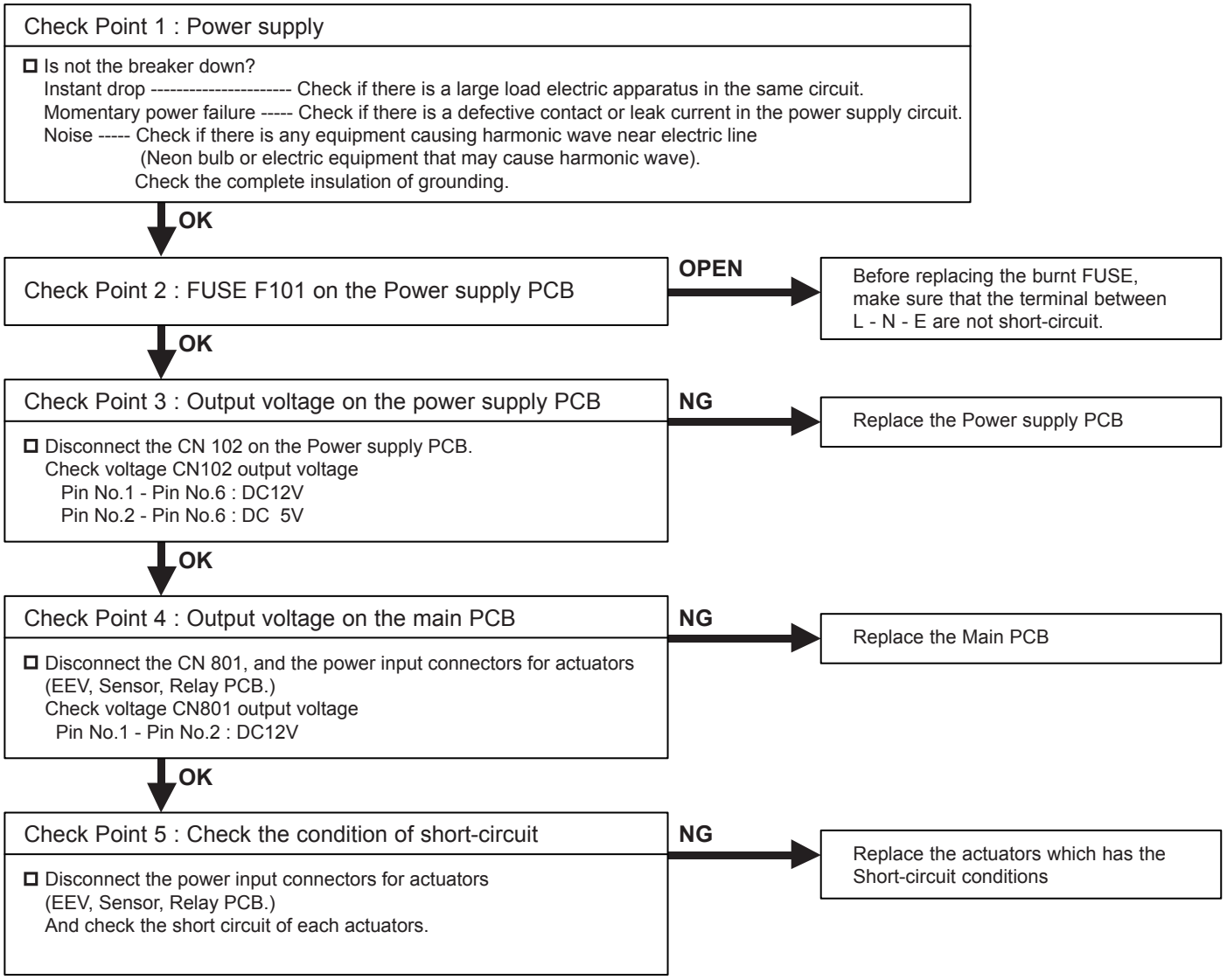
Air circulation obstruction
Design mismatch (Capacity, FAN speed mismatch, Field setting (Analog signal input) etc,)
Peripheral device abnormal (See the Serivce manual for the peripheral device)

Trouble shooting 90

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

Forecast of Cause :

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



4-3 SERVICE INFORMATION

SERVICE INFORMATION

Network communication Abnormal

- Basic trouble shooting procedure -

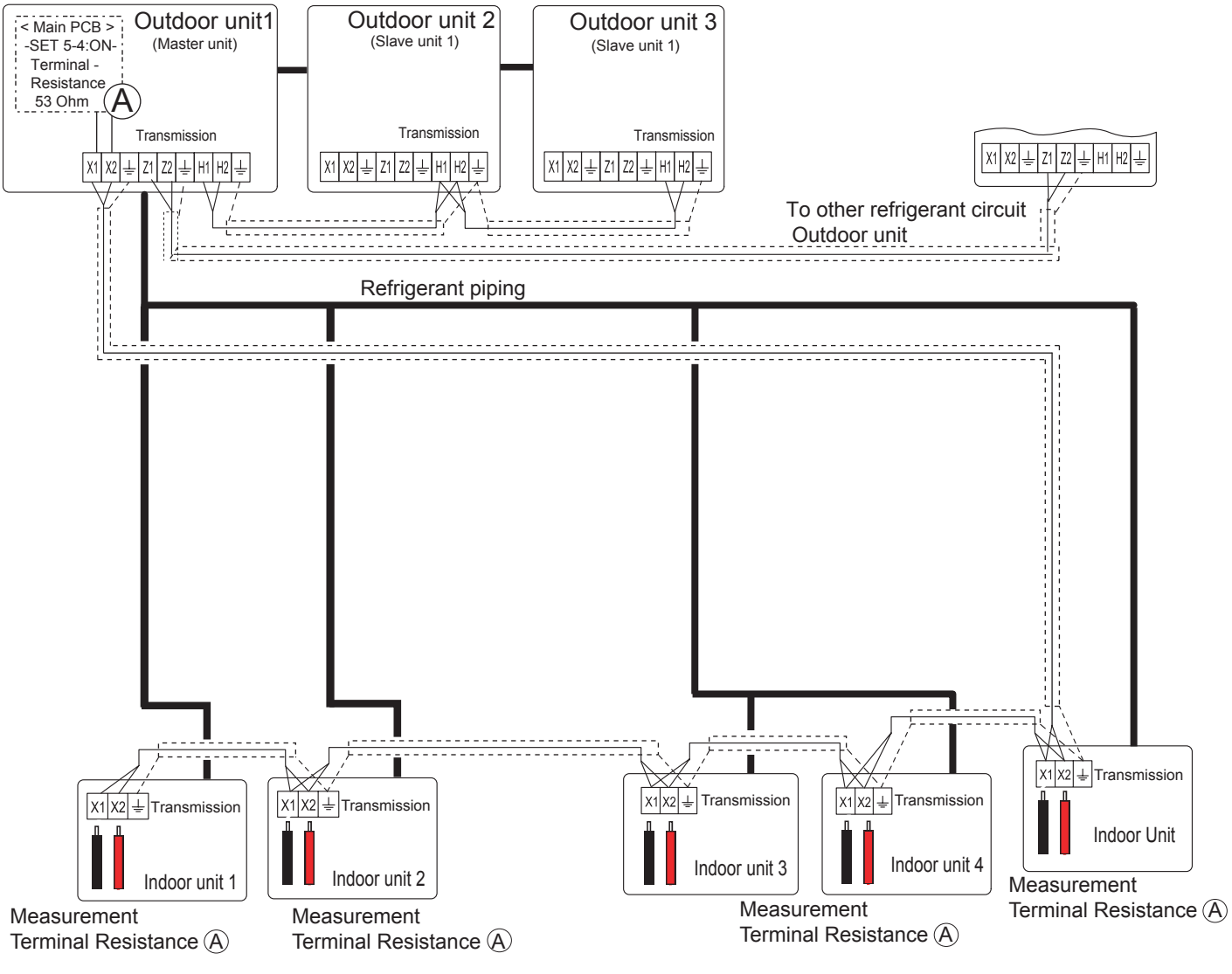
1. Check Error code in one network segment separately, and check the Error code of (OU, IU, RC, ST)
   < If the system has more than 2 Net work segments, disconnect the other Network segment.>

2. Connect Service tool to the Outdoor unit, and try out **"Address checker"** Function by the Service tool.
   < Check missing indoor unit or outdoor unit by using Address checker function of Service tool>

3. Check terminal resistance value 53 Ohm ± 5% + Line Resistance on the terminal board one by one.
   < Terminal Resistance is located on the Outdoor unit PCB(activated SET 5-4 ON) >
   *Refer to the wiring diagram of Networlk cable

Example

Terminal Resistance Ⓐ is located on the controller PCB of Outdoor unit as the Network for Indoor unit.



4-4 SERVICE INFORMATION

SERVICE INFORMATION

Backup Operation

Details :

- Backup operation is the operating method of replacing compressor while the system is running. Compressor can be replaced without stopping the system.
- In backup operation, cooling and heating capacity is decreased by the capacity of the separated outdoor unit.
- The work procedure is as follows.

4-4-1 Backup operation

1. Method of backup operation

1-1. Backup operation when compressor of the master unit is defective.

[Procedure]
(Example: Three outdoor units are connected.)

1. Stop the operation, and turn off the all outdoor units. (Make sure the pressure equalization has been finished.)

2. Fully shut off the 3-way valve (Liquid, Gas) of the broken master unit.

3. Set the **Slave unit #1** as a new master unit, and make up the system of two outdoor units.
   - Change the setting of the DIP SW 3-1 / 3-2 (Outdoor unit address setting) of the slave unit #1, from [OFF / ON](slave unit #1) to [OFF / OFF](**Master unit**).
   - Change the setting of the DIP SW 3-3 / 3-4 (Number of slave units connected setting) of the slave unit #1, from [OFF / OFF](zero unit) to [OFF / ON](one unit).

4. Set up the **Slave unit #2** as the slave unit #1.
   - Change the DIP SW 3-1/ 3-2 (Outdoor unit address setting) of the slave unit #2, from [ON/ OFF](slave unit #2) to [OFF/ ON](**Slave unit #1**).

5. Uncouple the transmission connector between the broken master unit and indoor units, and connect it into the slave unit #1 (substitutional master unit).

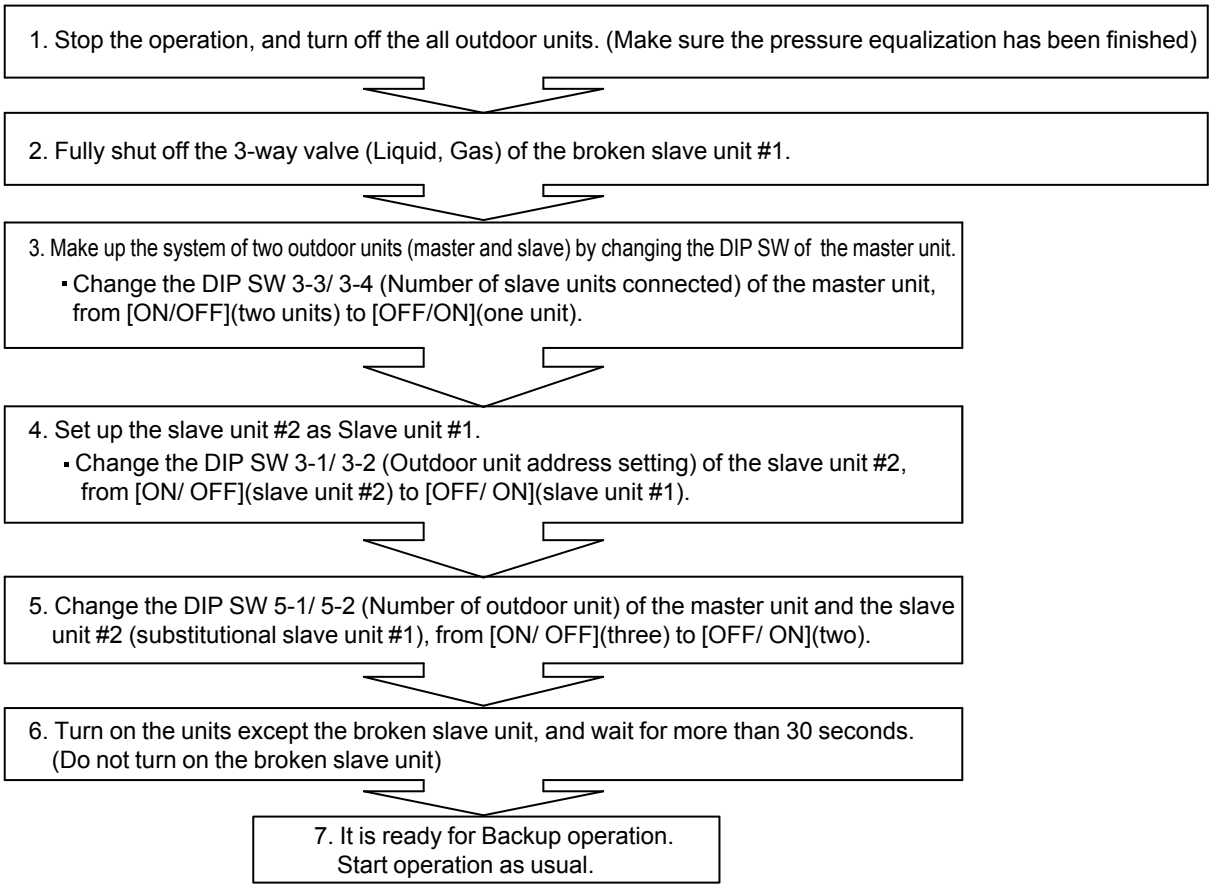
6. Change the setting of the DIP SW 5-1/ 5-2 (Number of outdoor unit) of the slave unit #1 (substitutional master unit) and #2 (substitutional slave unit #1), from [ON/ OFF](3) to [OFF/ ON](2).

7. Turn on the units except the broken master unit, and wait for more than 30 seconds. (Do not turn on the broken master unit)

8. It is ready for Backup operation. Start operation as usual.

1-2. Backup operation when compressor of the slave unit #1 is broken.

[Procedure]
(Example: Three outdoor units are connected. the slave unit #1 is broken.)



4-4-2 Work procedure after the backup operation

1. Refrigerant shortage at the backup operation

When excessive refrigerant accumulates in the defective outdoor unit during the backup operation, it becomes capacity shortage by refrigerant shortage.

The meaning of the sign
- LPS : Low pressure sensor detection value
- EEV1 : Expansion valve #1
- EEV2 : Expansion valve #2
- TH2 : Outdoor temperature sensor detection value
- TH3 : Suction temperature sensor detection value
- TH7 : Heat -Ex.1 gas temparture sensor detection value
- TH8 : Heat -Ex.2 gas temparture sensor detection value
- TH9 : Heat -Ex.1 liquid temparture sensor detection value
- TH10 : Heat -Ex.2 liquid temparture sensor detection value

<How to judge, when refrigerant is deficient>

Refrigerant shortage is judged by the information from "Service tool" during backup operation.
The outdoor unit shall enter the Cooling Main mode or Heating Main mode.

1. On Cooling operation

① It often creates "Low pressure protection stop".
>>> When LPS < 14.5psi(0.1MPa) for 10 minutes or When LPS < 7.25psi(0.05Mpa)
If one of this condition happens 5 times within 180 minutes, the system stops permanently.

② Running indoor unit's EEV is fully open condition.
>>> It displays corresponding indoor unit's EEV on the chart at the bottom of the monitor.
If there is no sign of closing the EEV from fully opened condition.

2. On Heating operation

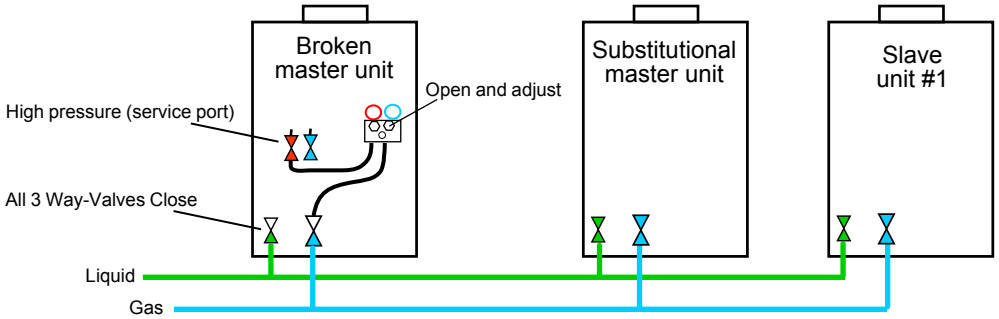
① It often creates "Low pressure protection stop".
>>> When LPS < 14.5psi(0.1MPa) for 10 minutes or When LPS < 7.25psi(0.05Mpa)
If one of this condition happens 5 times within 180 minutes, the system stops permanently.

② EEV1 opens at 480 pulse. (fully open)
EEV2 opens at 480 pulse. (fully open)

③ Suction superheat is too high, when the condition is following
TH9 < Th7, TH10 < TH8, TH2≒TH3
Note: The suctin SH can be larger temprary at the start up, oil recovery, defrosting.
Even if the lowpressure protection does not occur, keep watching the operating condition for a while.

<How to respond, when refrigerant is deficient>

① Reuse the refrigerant of the broken master unit.



Connect the high pressure service port of the broken master unit and the low pressure pipe of the broken master unit by pressure gauge.

>>> Refrigerant release from the heat exchanger of the broken master unit.
(Refrigerant is removed until refrigerant shortage is resolved)

When new refrigerant is added to the operating system, check the weight of additional refrigerant,and adjust the total refrigerant amout after repairing.

② Recover the remaining refrigerant in the broken master unit from the service port(s).

2. Refrigerant charging after the compressor replacement.

① If the amount of recovered refrigerant is available that was pulled out of outdoor unit which compressor was replaced.
(When the refrigerant is recovered by refrigerant recovery machine, and its weight is measured.)

>>> Perform vacuuming of repaired outdoor unit thoroughly, and add the refrigerant with the recovered amount.

② If the amount of recovered refrigerant from outdoor unit that compressor was replaced is not sure.
(When the refrigerant leakage was the case.)

>>> Once recover all units' refrigerant, and recharge the calculated amount of refrigerant (Original amount and additional amount) again after vacuuming.

Note: To use the recovered refrigerant is not recommended in case of refrigerant leakage.
Always charge fresh refrigerant with correct amount for the system after repairing.

4-5 SERVICE PARTS INFORMATION

SERVICE PARTS INFORMATION 1

Compressor

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

Does not start up

- Is any Indoor unit in operation?

* If it is operated right after stopping operation, Start-up protection (3min - max.6min) by differential pressure is kicked on.

- Check power supply voltage,open fuse.
- Is there open or loose connection cable?

- In case of inverter compressor, check Filter PCB, Inverter PCB, connection of Compressor, and winding resistance (Refer to the next page).

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

Replace Compressor

Stops soon after starting up

- Check power supply voltage,open fuse.
- Is there open or loose connection cable?

- Are all of the 3-way valves open? (Low pressure is too low or High pressure is too high.)

- Check if refrigerant is leaking or amount of additional refrigerant is insufficient. (Repair the leak and Recharge refrigerant)

- Check if Strainers are clogged. (Strainers before and after EEV1, 2)

In case of inverter compressor, check Filter PCB, Inverter PCB, connection of Compressor, and winding resistance. (Refer to the next page).

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

Replace Compressor

Abnormal noise

- Check power supply voltage, open fuse. Is there open or loose connection cable?

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

Replace Compressor

Note

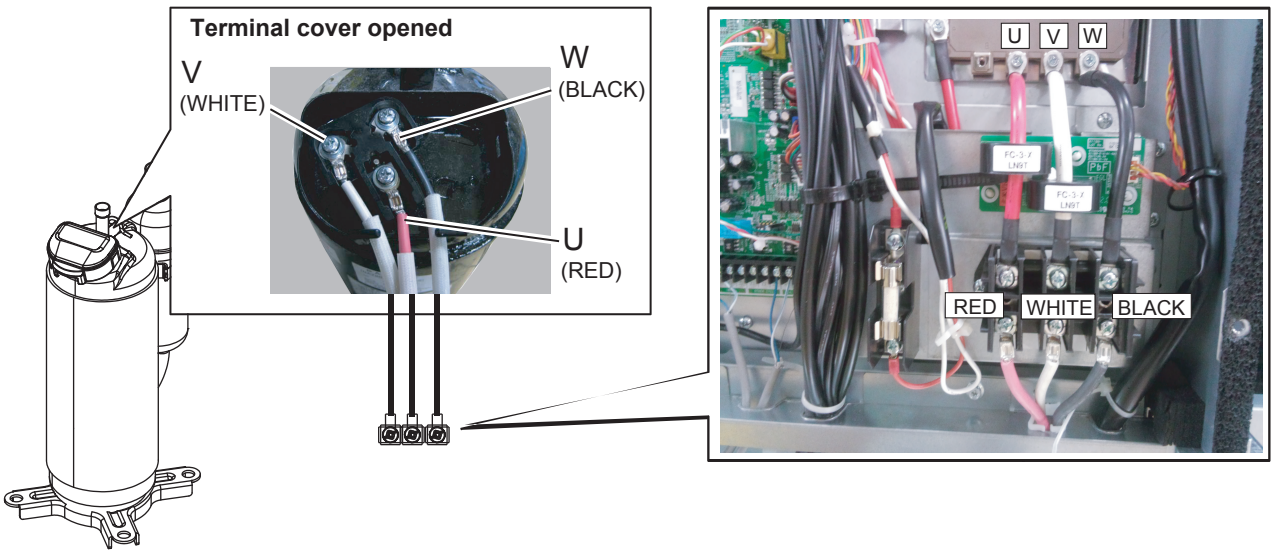
If it is suspected of lack of oil,
we recommend also replacing
OIL RETURN VALVE A ASSY(P/N 9378745056)
together with Compressor.

SERVICE PARTS INFORMATION 2

Inverter Compressor

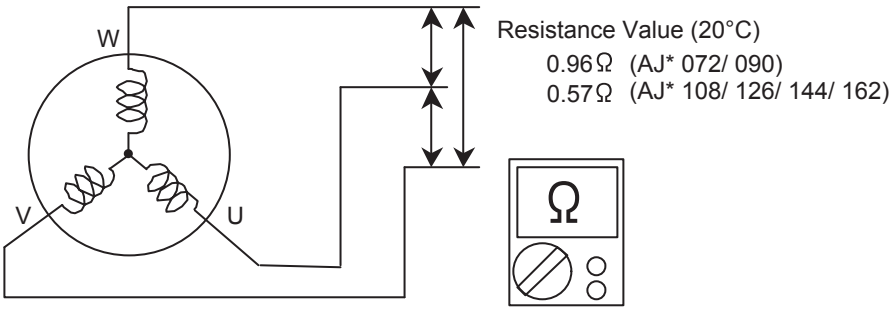
Check Point 1 : Check Connection

- ☐ Check terminal connection of Compressor (loose or incorrect wiring)
- ☐ Check connection of magnet relay (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.**



Resistance Value (20°C)
0.96Ω (AJ* 072/ 090)
0.57Ω (AJ* 108/ 126/ 144/ 162)

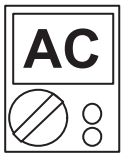
Attention!!

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

(1) Check AC voltage among each terminals from filter PCB(INV) to Diode Bridge.
(AC208 - 230V , voltage among L1, L2 and L3).
▶ **If it does not appear, check the power supply terminal.**

(2) Check Voltage from Main PCB to Inverter PCB.
(DC16.0 - 20.0V between terminals of CN126 (1-2) connector of Main PCB).
▶ **If it does not appear, replace Main PCB.**

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



SERVICE PARTS INFORMATION 3

Main PCB
Filter PCB (Main)

Check Filter PCB (Main) -1

- Is Fuse (5A/ 250V) open?

NO

YES

Check Filter PCB (Main) -2

- PCB pattern and parts on PCB defective?

YES → Replace Filter PCB (Main)

NO

Check Filter PCB (Main) -3

(1) Replace blown fuse.
(2) Disconnect all the connection wires between the Filter PCB (Main) - Main PCB.
(3) Is there a short between L1-N, L3-N, and L1-L3?

YES → Replace Filter PCB (Main)

NO

Check Main PCB -1

(4) Connect all the connection wires between the Filter PCB (Main) - Main PCB disconnected at step (2).
(5) The same as step (3), is there a short between L1-N, L3-N, and L1-L3?

YES → Replace Main PCB

NO

Electric parts check

(6) Are the following parts defective?
*For the check method, refer to 6-5.
- EEV
- SV
- 4-way valve
- Pressure sensor (High pressure/ Low pressure)

YES → Replace defective electric parts

NO

Check Main PCB -2

(7) Disconnect the wires of the pressure sensors(High pressure/ Low pressure) connected to the connector of the Main PCB.
(8) Is there a short between pins 1-3 of the Main PCB side connector?

YES → Replace Main PCB

NO

Check Main PCB -3

(9) Is there a short between pins 1-6 of CN161?

YES → Replace Main PCB

NO

Check Main PCB -4

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

YES → Replace Main PCB

NO

Check Main PCB -5

(12) Disconnect the Main PCB side connector of the connection wires (6-pin connector) between the Main PCB - Fan driver PCB.
(13) Is there a short between pins 1-2 of the Main PCB side connector (6 pins)?

YES → Replace Main PCB

NO

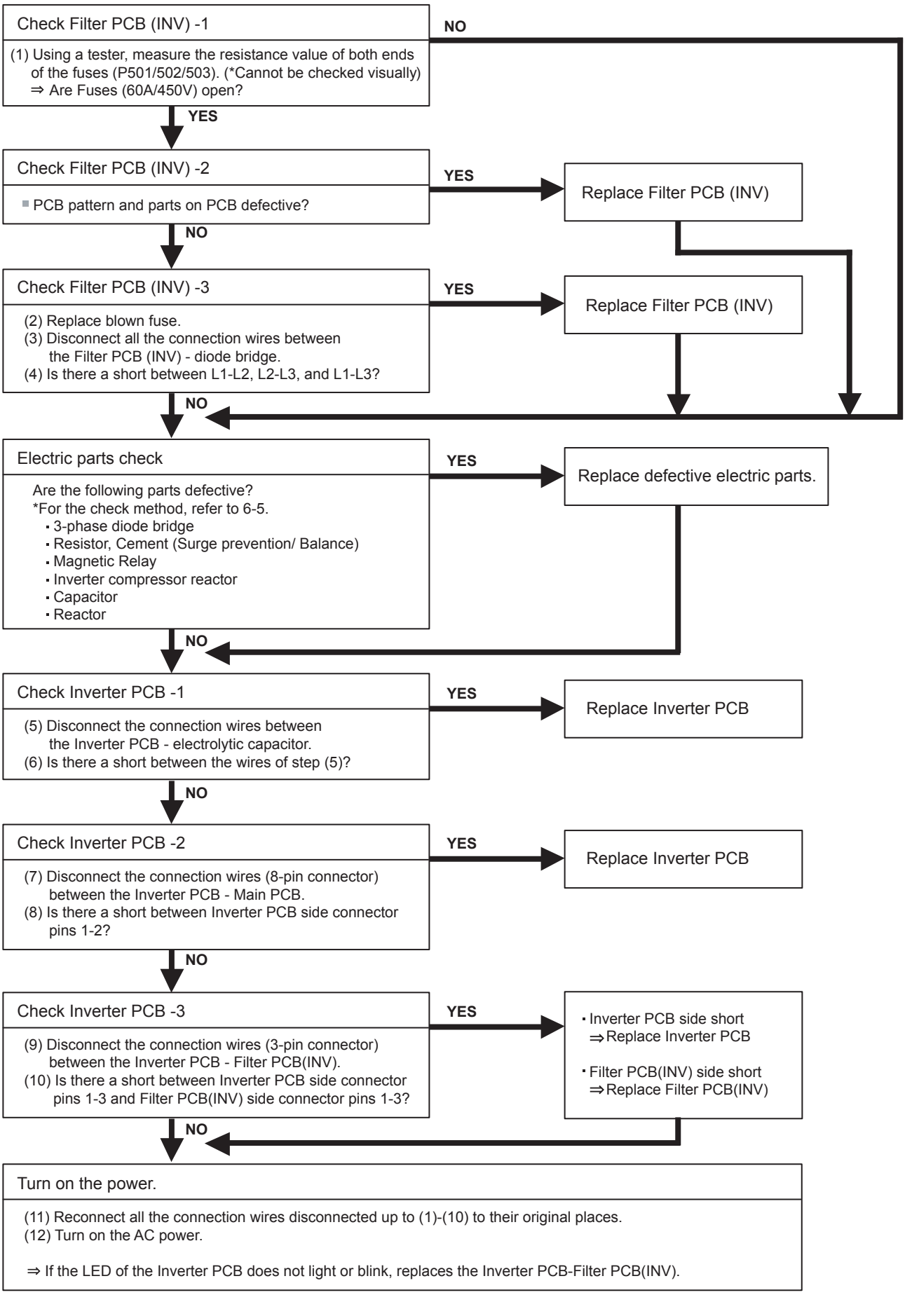
Turn on the power.

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

⇒ If the LED of the Main PCB does not light or blink, replaces the Main PCB, Filter PCB (Main).

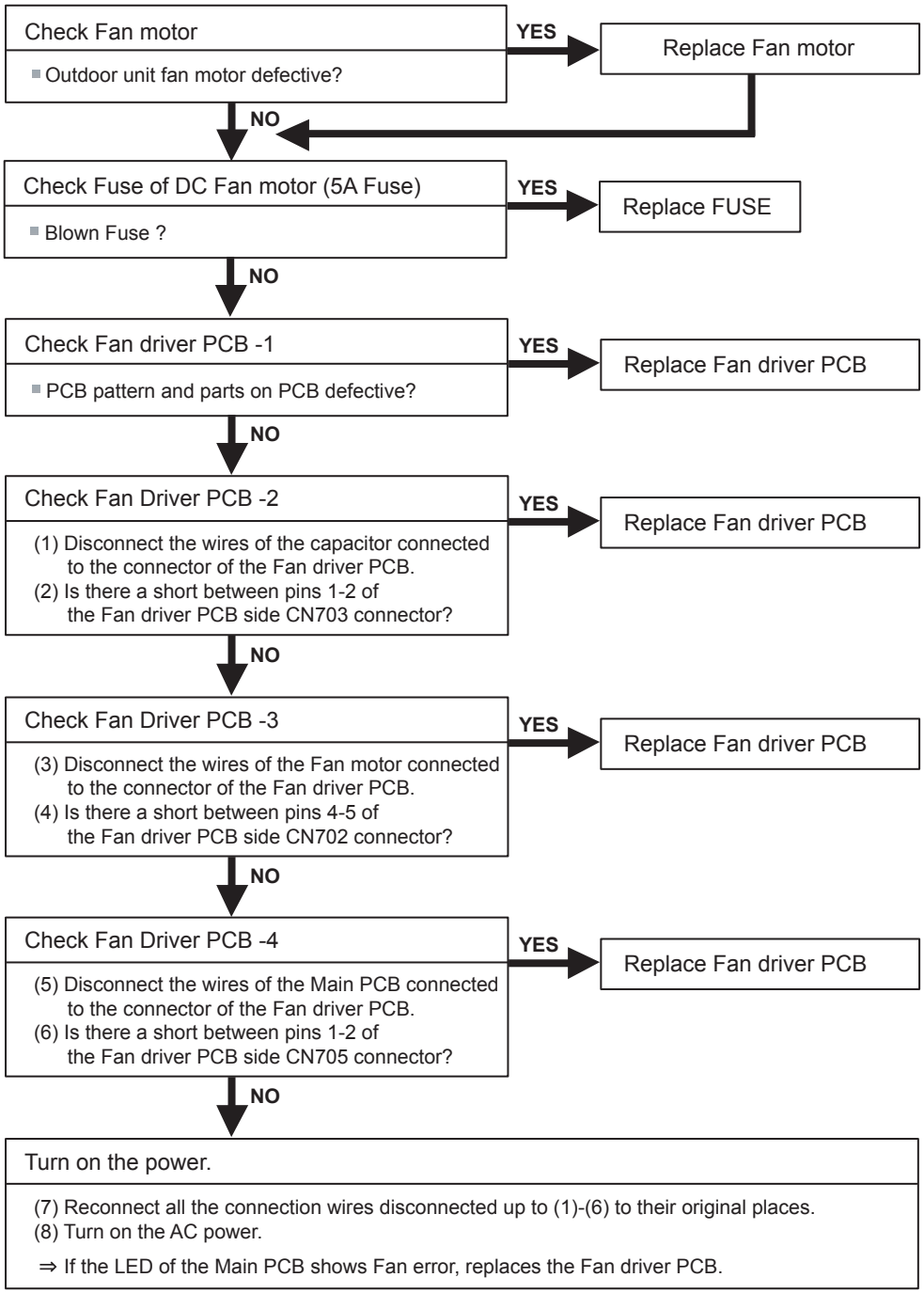
SERVICE PARTS INFORMATION 4

Inverter PCB
Filter PCB (INV)



SERVICE PARTS INFORMATION 5

Fan Driver PCB



SERVICE PARTS INFORMATION 6

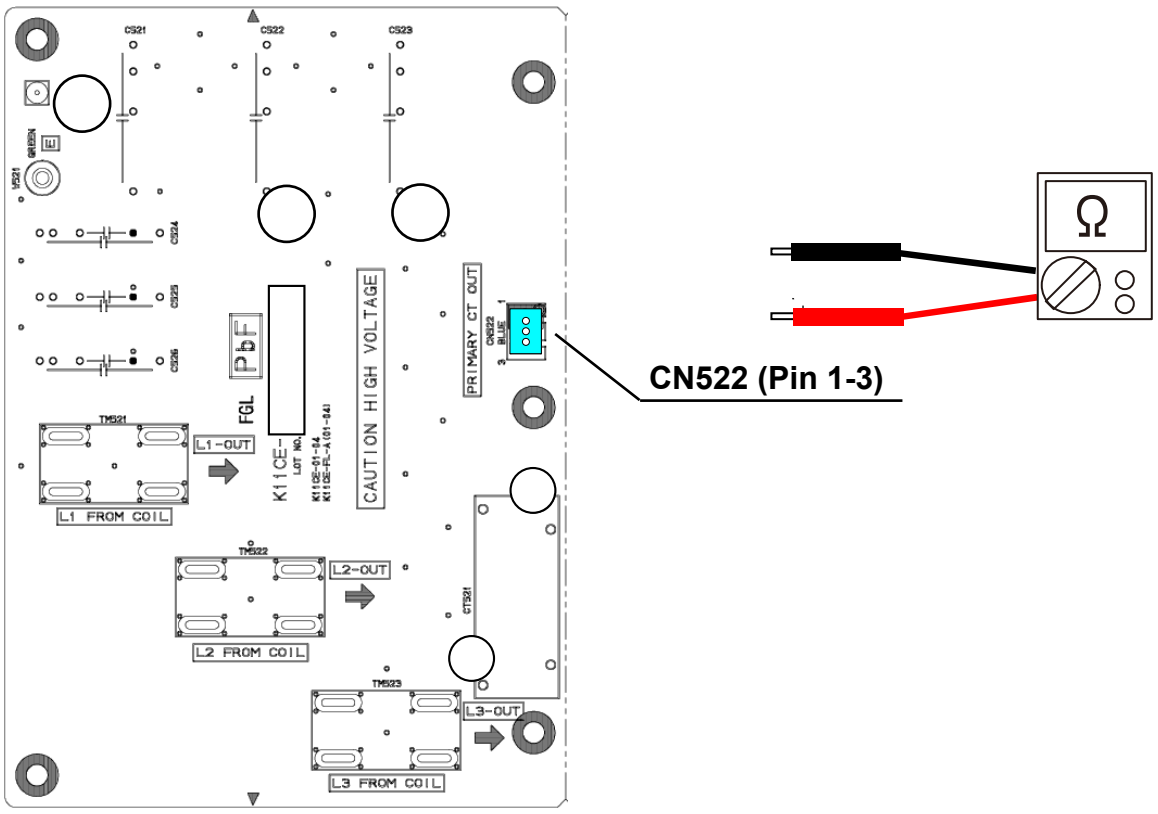
Filter PCB(INV)

Check Point 1

- Measure the resistance of Filter PCB(INV) by following procedure.
  1. Turn OFF the Outdoor unit(s) power supply
  2. Disconnect the connection wires between the Filter PCB(INV) - Inverter PCB.
  3. Measure the resistance value

Good : 300 Ohm ± 20% (240 ~ 360 Ohm)

Filter PCB(INV) [K11CE-1100HUE-FL0]



SERVICE PARTS INFORMATION 7

IPM
(Mounted on Inverter PCB)

Check Point 1

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

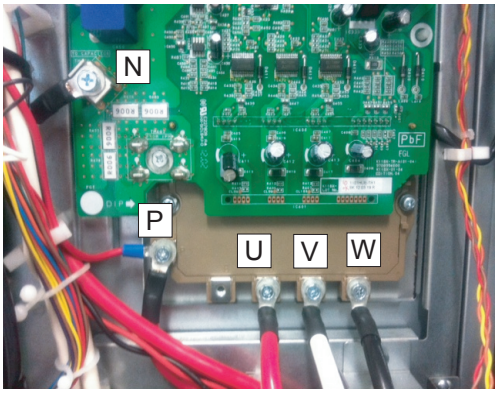
② Set the tester to the "Resistance" mode, and measure the resistance between the following terminals.

Red wire (P) - screw terminals U / V / W
White wire (N) - screw terminals U / V / W

③ Judge the result of ② as follows:

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

Inverter PCB



Check Point 2

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

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

⑤ Judge the result of ④ as follows:

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

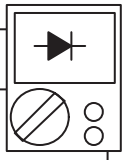
SERVICE PARTS INFORMATION 8

3-Phase Diode Bridge

Check Point 1 : Appearance check

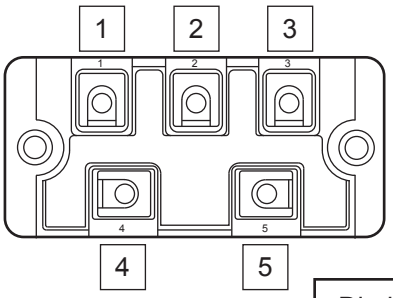
□ No fissures, breaks, damage, etc. at body and terminal section?
□ Is the rear of the body coated with silicone grease?
□ Are there no abnormalities at threaded parts (stripped threads, deformation, damage, etc.) ?

Check Point 2 : Electric check



① In the 3-phase diode bridge single part state, set the tester to the "Diode" mode, and measure the voltage value between the following terminals.

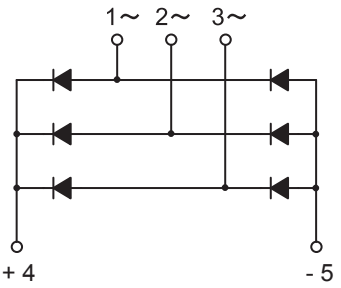
Tester + side (red)	Tester - side (black)
Pin 1	Pin 4
Pin 2	
Pin 3	
Pin 5	Pin 1
	Pin 2
	Pin 3



Diode bridge

② Judge the result of ① as follows:

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



③ Set the tester to the "Diode" mode, and measure the voltage value between the following terminals.

Tester + side (red)	Tester - side (black)
Pin 4	Pin 1
	Pin 2
	Pin 3
Pin 1	Pin 5
Pin 2	
Pin 3	

④ Judge the result of ③ as follows:

All 6 points over load	Normal
1 or more points except over load	Defective

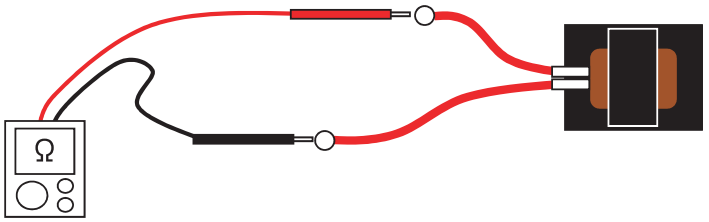
SERVICE PARTS INFORMATION 9

Reactor

Check Point 1 : Appearance check

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

Check Point 2 : Electric check



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

② Judge the result of ①as follows:

Short	: Normal
Open	: Abnormal (open)

SERVICE PARTS INFORMATION 10

Resistor, Cement

Check Point 1 : Appearance check

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

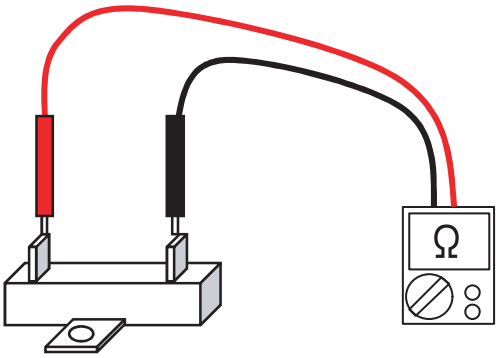
Check Point 2 : Electric check

1. Surge prevention resistor (connected to magnetic contactor)

① Set the tester to the "Resistance" mode, and measure the resistance value between the terminals. (No polarity)

② Judge the result of ① as follows:

5.6 Ω ± 5%	Normal
Other than the above	Deteriorated, defective



2. Discharge resistor (connected to electrolytic capacitor)

① Set the tester to the "Resistance" mode, and measure the resistance value between the terminals. (No polarity)

② Judge the result of ① as follows:

33 kΩ ± 5%	Normal
Other than the above	Deteriorated, defective

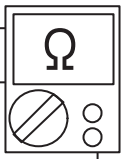
SERVICE PARTS INFORMATION 11

Terminal

Check Point 1 : Appearance check

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

Check Point 2 : Electric check



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

SERVICE PARTS INFORMATION 12

Magnetic Relay

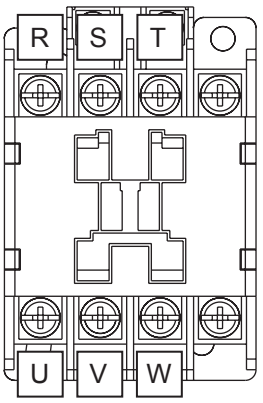
Check Point 1 : Appearance check

- □ No fissures, breaks, damage, etc. at the body and terminals section?
- □ Are there no abnormalities at threaded parts (Stripped threads, deformation, damage, etc.) ?

Check Point 2 : Electric check

① Set the tester to the "Resistance" mode, and check for open/short between the following terminals. (No polarity)

- Between R to U
- Between S to V
- Between T to W



② Judge the result of ① as follows:

Open	: Normal
Short	: Abnormal (contacts fused)

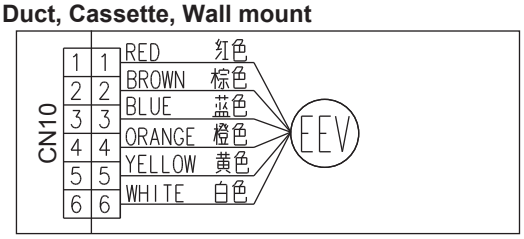
SERVICE PARTS INFORMATION 13

Indoor Unit Electronic Expansion Valve (EEV)

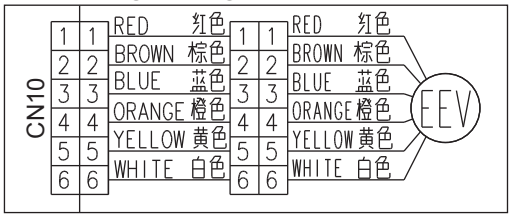
Check Point 1 : Check Connections

☐ Check Connectors (Loose connector or open cable.)

Duct, Cassette, Wall mount



Floor/ Ceiling, Ceiling, Small Wall mount



Check Point 2 : Check Coil of EEV

☐ Remove connector, check each winding resistance of Coil.

Read wire	Resistance value 68˚F(20˚C)
White - Red	**200 ± 10%** Ω
Yellow - Brown	
Orange - Red	
Blue - Brown	

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

Check Point 3 : Check Noise at start up

Turn on Power and check operation noise.

>> If an abnormal noise does not show, replace Controller PCB.

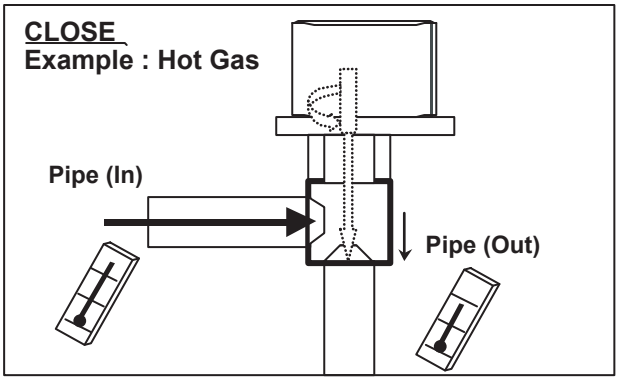
Check Point 4 : Check Voltage from Controller PCB

☐ Remove Connector and check Voltage (DC12V).

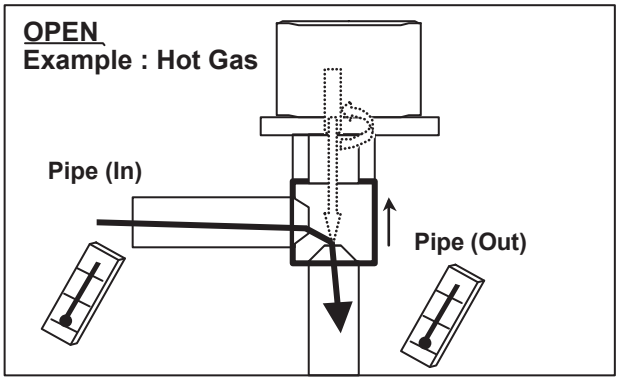
>> If it does not appear, replace Controller PCB.

Check Point 5 : Check Opening and Closing Operation of Valve

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

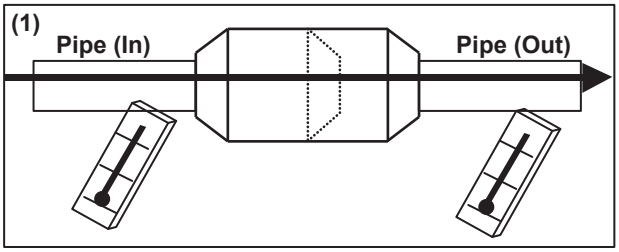


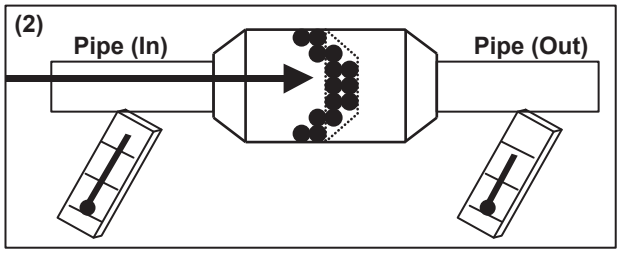
If it is open,
it has no temp. difference between Inlet and Outlet.



Check Point 6 : Check Strainer

Strainer normally does not have temperature difference between 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.



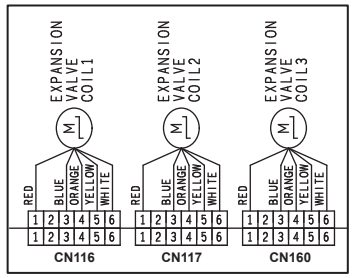


SERVICE PARTS INFORMATION 14

Outdoor Unit Electronic Expansion Valve (EEV1)

Check Point 1 : Check Connections

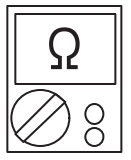
☐ Check connection of connector (CN116)
(Loose connector or open cable)



Check Point 2 : Check Coil of EEV1

☐ Remove connector, check each winding resistance of Coil.

Read wire	Resistance value 68°F(20°C)
White - Red	**46 ± 4 %** Ω
Yellow - Red	
Orange - Red	
Blue - Red	



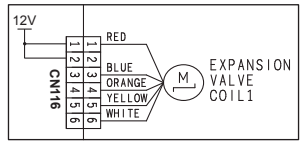
▶ **If Resistance value is abnormal, replace EEV1.**

Check Point 3 : Check Noise at start up

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

Check Point 4 : Check Voltage from Controller PCB

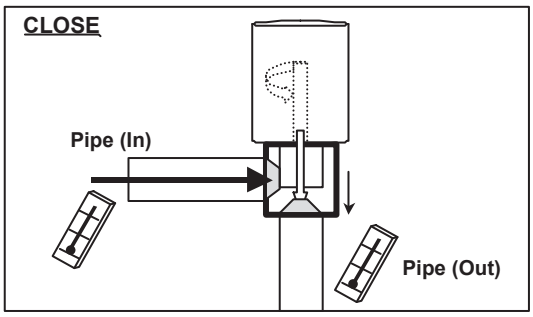
☐ Remove Connector and check Voltage (DC12V).
>> If it does not appear, replace Controller PCB.



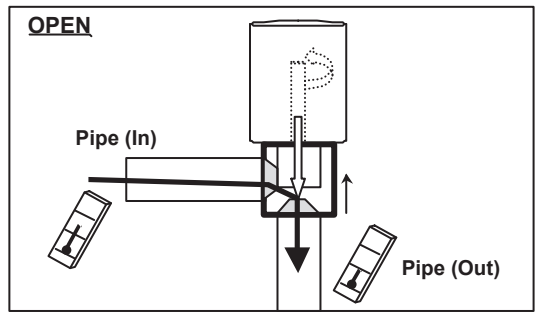
Check Point 5 : Check Opening and Closing Operation of Valve

Note : Check the EEV1 in the state of 4-way1 valve is ON.

When EEV1 is closed,
it has no temp. difference between Inlet and Outlet.



If it is open, it has a temp. difference between Inlet and Outlet.
Outlet temp. is near Low-pressure saturated temp.

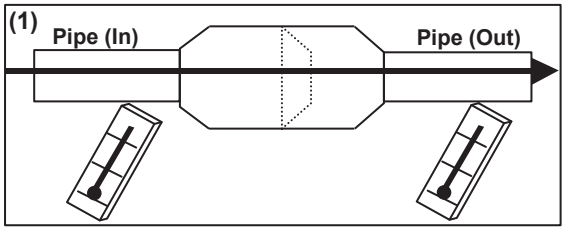


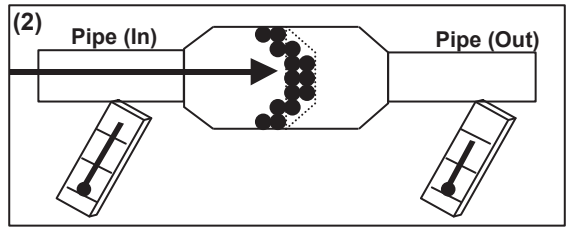
In the following cases, even if EEV1 is closed, there may be a difference in temp.
- On comp. start-up
- Just after swiching the 4-way valve1
- Just after swiching the EEV1 (Open --> Close)

Note
If valve opening is 12~51pls,
the check of temp. cannot be performed.
Check temp. at the other valve opening.

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.



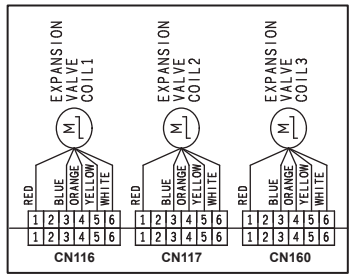


SERVICE PARTS INFORMATION 15

Outdoor Unit Electronic Expansion Valve (EEV2)

Check Point 1 : Check Connections

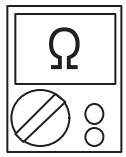
☐ Check connection of connector (CN117)
(Loose connector or open cable)



Check Point 2 : Check Coil of EEV2

☐ Remove connector, check each winding resistance of Coil.

Read wire	Resistance value 68°F(20°C)
White - Red	**46 ± 4 %** Ω
Yellow - Red	
Orange - Red	
Blue - Red	



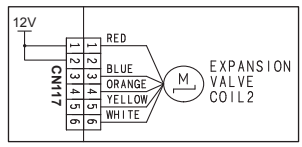
▶ **If Resistance value is abnormal, replace EEV2.**

Check Point 3 : Check Noise at start up

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

Check Point 4 : Check Voltage from Controller PCB

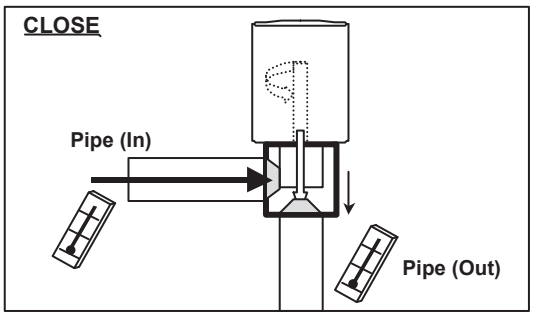
☐ Remove Connector and check Voltage (DC12V).
>> If it does not appear, replace Controller PCB.



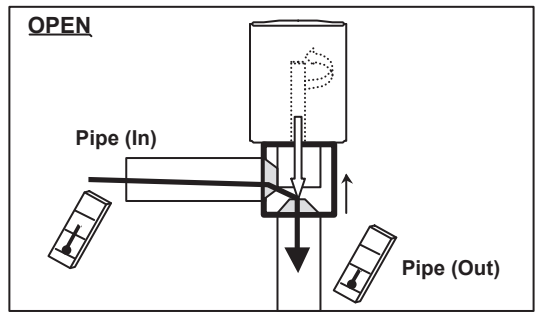
Check Point 5 : Check Opening and Closing Operation of Valve

Note : Check the EEV2 in the state of 4-way valve2 is ON.

When EEV2 is closed,
it has no temp. difference between Inlet and Outlet.



If it is open, it has a temp. difference between Inlet and Outlet.
Outlet temp. is near Low-pressure saturated temp.

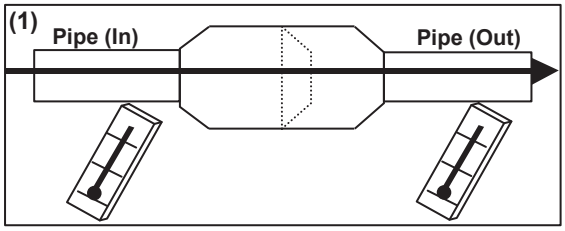


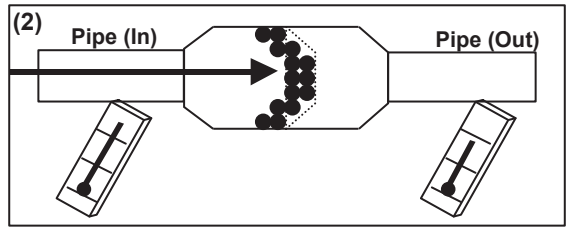
In the following cases, even if EEV2 is closed, there may be a difference in temp.
- On comp. start-up
- Just after swiching the 4-way valve2
- Just after swiching the EEV2 (Open --> Close)

Note
If valve opening is 12~51pls,
the check of temp. cannot be performed.
Check temp. at the other valve opening.

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.



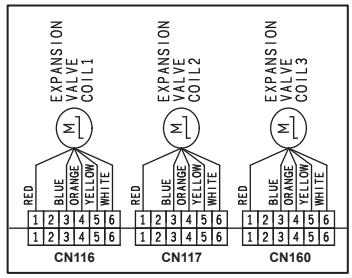


SERVICE PARTS INFORMATION 16

Outdoor Unit Electronic Expansion Valve (EEV3)

Check Point 1 : Check Connections

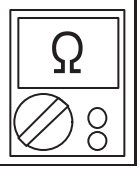
☐ Check connection of connector (CN160)
(Loose connector or open cable)



Check Point 2 : Check Coil of EEV3

☐ Remove connector, check each winding resistance of Coil.

Read wire	Resistance value 68°F(20°C)
White - Red	**46 ± 4 %** Ω
Yellow - Red	
Orange - Red	
Blue - Red	



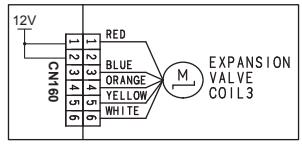
▶ **If Resistance value is abnormal, replace EEV3.**

Check Point 3 : Check Noise at start up

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

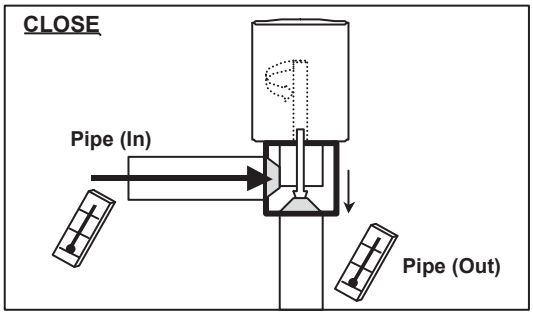
Check Point 4 : Check Voltage from Controller PCB

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

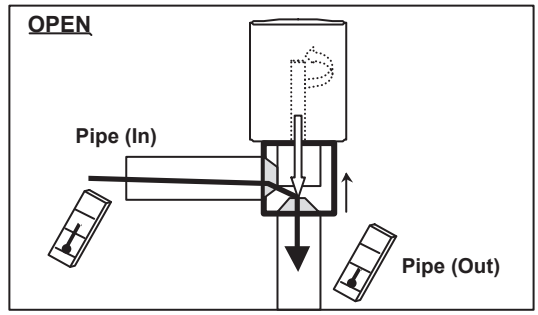


Check Point 5 : Check Opening and Closing Operation of Valve

When EEV3 is closed,
it has no temp. difference between Inlet and Outlet.



If it is open, it has a temp. difference between Inlet and Outlet.
Outlet temp. is near Low-pressure saturated temp.

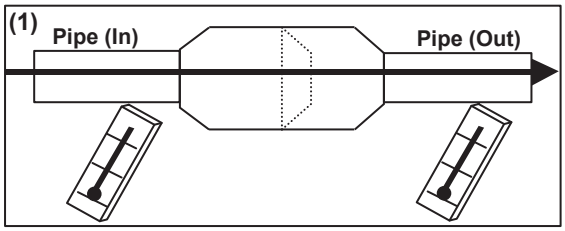


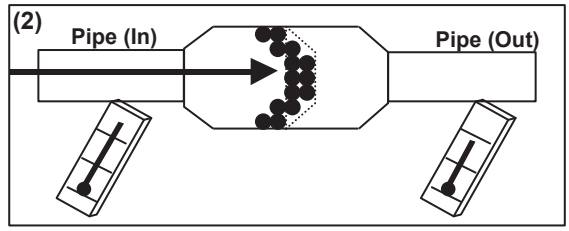
In the following cases, even if EEV3 is closed, there may be a difference in temp.
- On comp. start-up
- Just after swiching the EEV3 (Open --> Close)

Note
If valve opening is 12~51pls,
the check of temp. cannot be performed.
Check temp. at the other valve opening.

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.



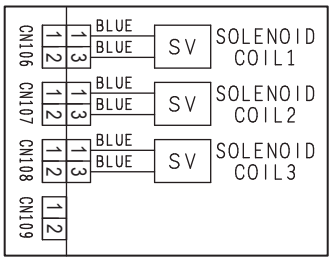


SERVICE PARTS INFORMATION 17

Outdoor Unit Solenoid Valve
(SV1, SV2, SV3)

Check Point 1 : Check connections

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



Check Point 2 : Check Solenoid Coil

☐ Remove connector and check if coil is open.

Solenoid Coil	Resistance value
SV1	1324Ω ±7%
SV2, SV3	1495Ω ±7%

Resistance value 68°F(20°C)

>> If Resistance value is abnormal, replace Solenoid Coil.

Check Point 3 : Check Voltage from Main PCB

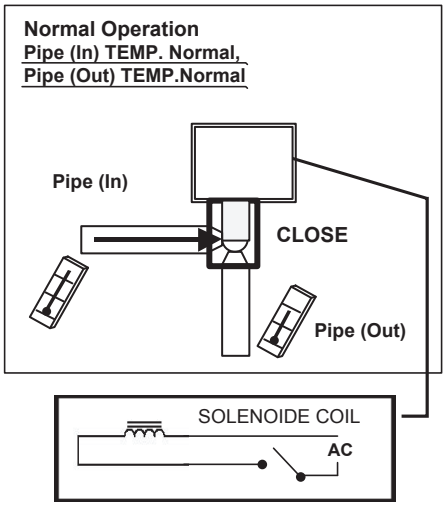
☐ Remove connector and check the voltage (AC208- 230V).

>> If the voltage does not appear, replace Main PCB.

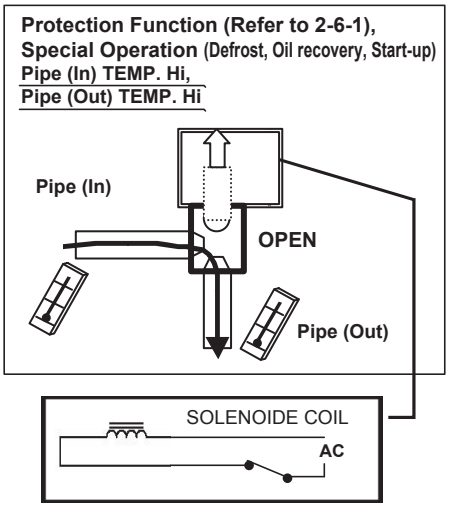
Check Point 4-1 : Check opening & closing operation of SV1, SV2

☐ Depending on either during operation or protection control, check if Valve is operating normally.
(When Valve opens, Inlet and Outlet temperature is raised.)

Normal Operation
Pipe (In) TEMP. Normal,
Pipe (Out) TEMP.Normal

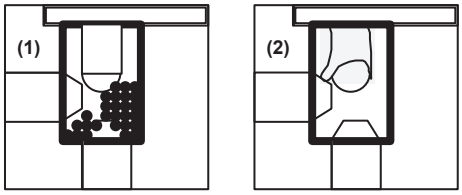


Protection Function (Refer to 2-6-1),
Special Operation (Defrost, Oil recovery, Start-up)
Pipe (In) TEMP. Hi,
Pipe (Out) TEMP. Hi



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

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

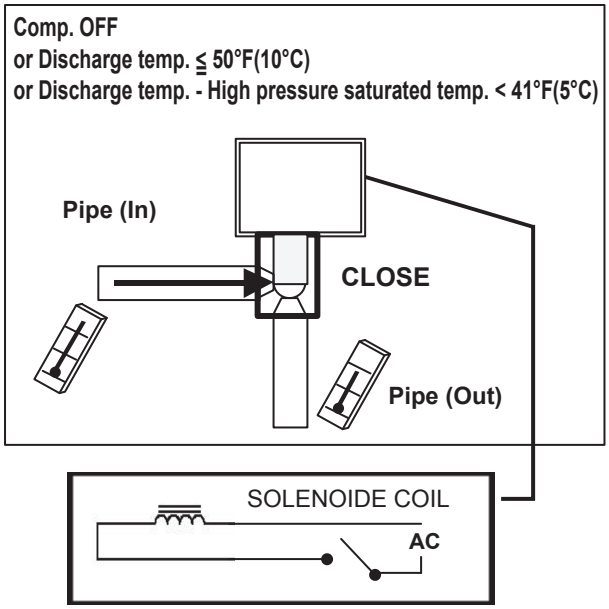


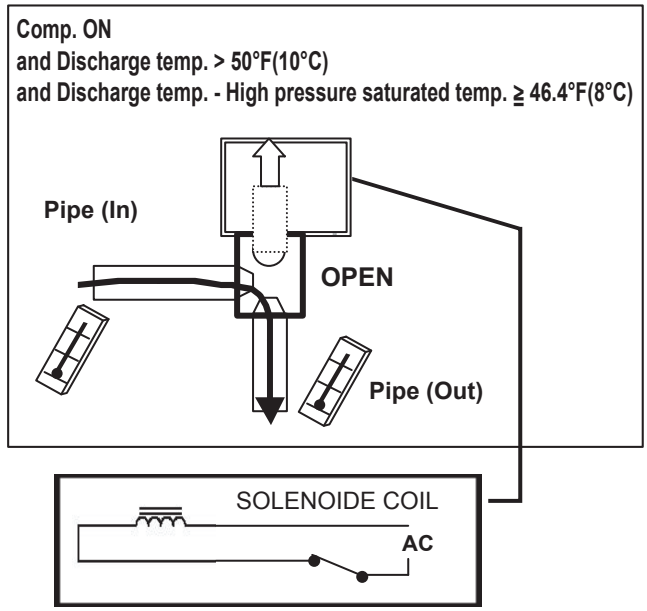
Check Point 4-2 : Check operation of SV3

☐ Check the operation noise when the connector of SV3 is removed.

- When SV3 is open
  The sound of operation noise is heard ---> Normal
  The sound of operation noise is not heard. ---> Replace SV3

- When SV3 is closed
  The sound of operation noise is heard ---> Replace Main PCB
  The sound of operation noise is not heard. ---> Normal



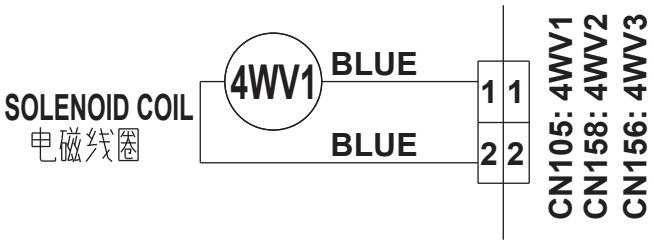


SERVICE PARTS INFORMATION 18

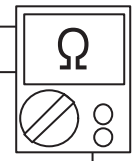
4-WAY VALVE 1 (2) (3)

Check Point 1 : Check Circuit connection

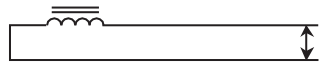
- Check the connection of connector CN105 (CN156,158)



Check Point 2 : Check Solenoid Coil



- Remove CN105 (CN156,158) from PCB and check the resistance value of coil



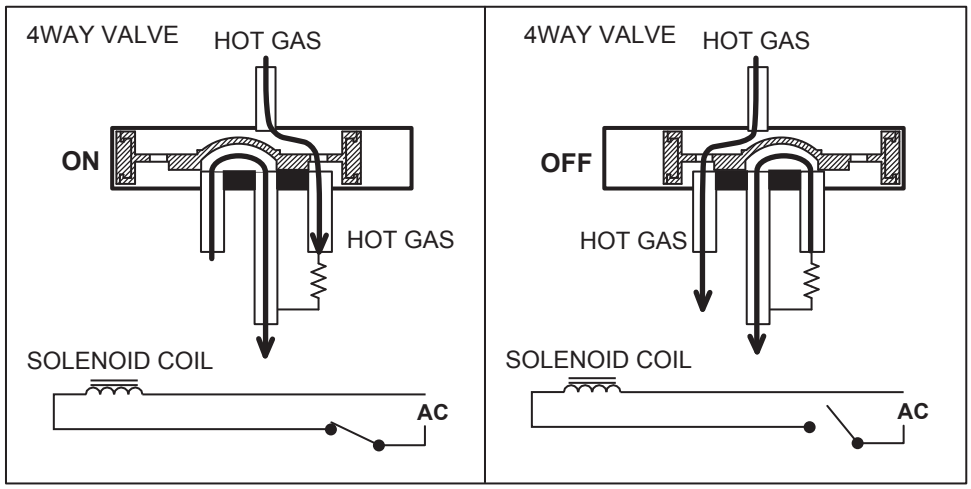
Resistance Value
2.085kΩ±10%
(4WV1, 4WV2)

1.725kΩ±10%
(4WV3)

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

Check Point 3: Check Operation of 4 Way Valve

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



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

Check Point 4: Check Voltage of Solenoid Coil

- If CN105 (CN156,158) of Control PCB dose not Show (AC208- 230V) during Heating operation (Compressor is in operation), replace Main PCB.

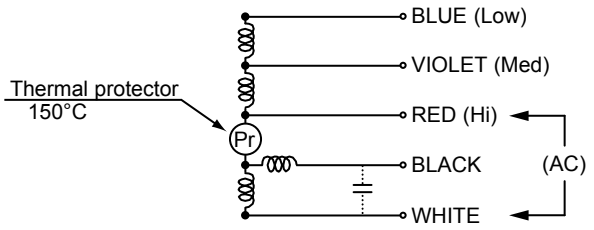
SERVICE PARTS INFORMATION 19

Indoor Unit AC Fan Motor

Check Point : ARXC36GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

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



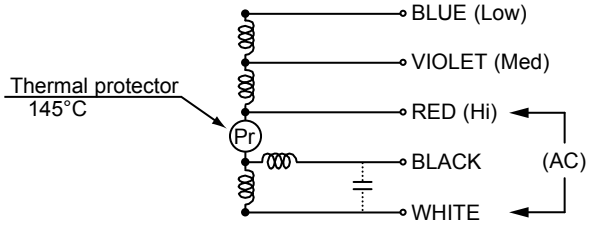
Lead wire	Resistance value
White – Red	**13.4** Ω ±**8%**
Red – Black	**16.9** Ω ±**8%**
Red – Violet	**11.5** Ω ±**8%**
Violet – Blue	**13.3** Ω ±**8%**

at 20°C

Check Point : ARXC45/ 60GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

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



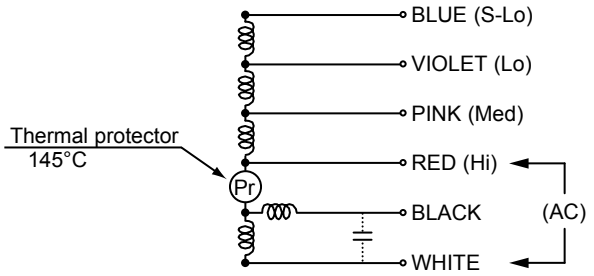
Lead wire	Resistance value
White – Red	**6.84** Ω ±**7%**
Red – Black	**9.78** Ω ±**7%**
Red – Violet	**6.1** Ω ±**7%**
Violet – Blue	**6.1** Ω ±**7%**

at 20°C

Check Point : ARXC72GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

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



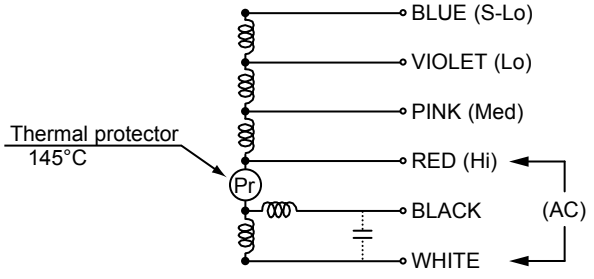
Lead wire	Resistance value
White – Red	**5.25** Ω ±**7%**
Red – Black	**5.02** Ω ±**7%**
Red – Pink	**1.86** Ω ±**7%**
Pink – Violet	**0.94** Ω ±**7%**
Violet – Blue	**0.94** Ω ±**7%**

at 20°C

Check Point : ARXC90GATH (High Static Pressure Duct Type)

☐ Check each winding resistance of the motor

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



Lead wire	Resistance value
White – Red	**4.24** Ω ±**7%**
Red – Black	**4.16** Ω ±**7%**
Red – Pink	**0.46** Ω ±**7%**
Pink – Violet	**0.91** Ω ±**7%**
Violet – Blue	**0.46** Ω ±**7%**

at 20°C

SERVICE PARTS INFORMATION 20

Indoor unit fan motor < DC motor >

⚠ When you approach this part, please cut off the power supply and wait for a while until DC voltage has been discharged.

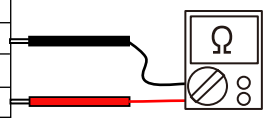
Check Point 1 : Check rotation of Fan

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

Check Point 2 : Check resistance of 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

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



SERVICE PARTS INFORMATION 21

Outdoor unit fan motor

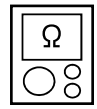
⚠ When you approach this part, please cut off the power supply and wait for a while until DC voltage has been discharged.

Check Point 1 : Check rotation of Fan

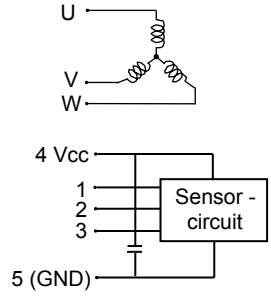
・Rotate the fan by hand when operation is off.
(Check if fan is caught, dropped off or locked motor)
>>If Fan or Bearing is abnormal, replace it.

Check Point 2 : Check resistance of Outdoor Fan Motor

・Refer to below. Circuit-test " Winding coil resistance U, V, W."
and the Location sensor Circuit test
>>If they are other resistance value, replace Outdoor fan motor.



Pin number (wire color)	Terminal function (symbol)
U (Red) - W (Black)	2.8Ω
V (white) - U (Red)	
W (Black) - V (White)	
1 (Yellow) - 4 (Pink)	9.3 KΩ
2 (Blue) - 4 (Pink)	
3 (Orange) - 4 (Pink)	
4 (Pink) - 5 (Gray)	More than 1.2 KΩ
1 or 2 or 3 - 5 (Gray)	More than 10 KΩ



SERVICE PARTS INFORMATION 22

Discharge Pressure Sensor
Suction Pressure Sensor

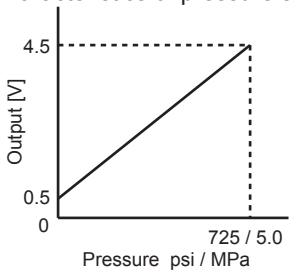
1. Discharge Pressure Sensor

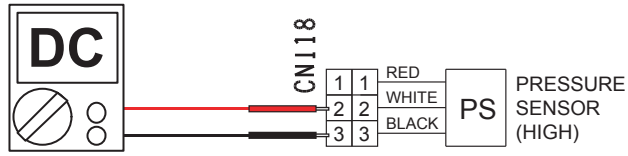
Check Point : Check Voltage from Main PCB

DC

☐ With the connector connected to the PCB, measure the voltage between CN118:2-3 of the Main PCB.

▪ Characteristics of pressure sensor





psi	0.0	14.5	29.0	43.5	58.0	72.5	101.5	116.0	130.5	145.0	174.0	203.0	232.0	261.0	290.0
MPa	0.00	0.10	0.20	0.30	0.40	0.50	0.70	0.80	0.90	1.00	1.20	1.40	1.60	1.80	2.00
Output (V)	0.50	0.58	0.66	0.74	0.82	0.90	1.06	1.14	1.22	1.30	1.46	1.62	1.78	1.94	2.10

psi	319.0	348.0	377.0	406.0	435.0	464.0	493.0	522.0	551.0	580.0	609.0	638.0	667.0	696.0	725.0
MPa	2.20	2.40	2.60	2.80	3.00	3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00
Output (V)	2.26	2.42	2.58	2.74	2.90	3.06	3.22	3.38	3.54	3.70	3.86	4.02	4.18	4.34	4.50

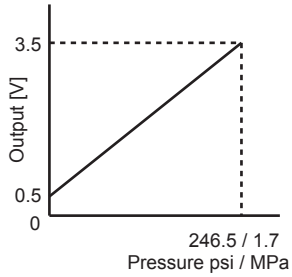
2. Suction Pressure Sensor

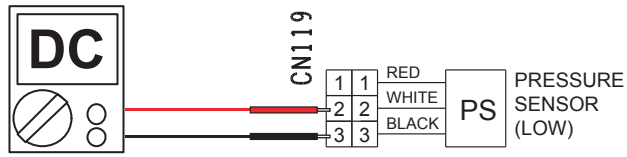
Check Point : Check Voltage from Main PCB

DC

☐ With the connector connected to the PCB, measure the voltage between CN119:2-3 of the Main PCB.

▪ Characteristics of pressure sensor





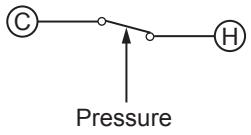
psi	0.0	14.5	29.0	43.5	58.0	72.5	101.5	116.0	130.5	145.0	159.5	174.0	188.5	203.0	217.5
MPa	0.00	0.10	0.20	0.30	0.40	0.50	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
Output (V)	0.50	0.68	0.85	1.03	1.21	1.38	1.74	1.91	2.09	2.27	2.44	2.62	2.79	2.97	3.15

psi	232.0	246.5
Mpa	1.60	1.70
Output (V)	3.32	3.50

SERVICE PARTS INFORMATION 23

Pressure Switch

▪ Type of contact



▪ Characteristics of pressure switch

Contact : Short ⇒ Open	4.2±0.1MPa (609±14.5 psi)
Contact : Open ⇒ Short	3.2±0.15MPa (464±21.8 psi)

SERVICE PARTS INFORMATION 24

Thermistor

Check Point : Check Thermistor resistance value

☐ Remove connector and check Thermistor resistance value.

Temperature [°F]	Temperature [°C]	Resistance Value [kΩ] / Voltage Value [V]			
		Thermistor A	Thermistor B	Thermistor C	Thermistor D
- 4	- 20	--- / ---	--- / ---	105.4 / 1.33	--- / ---
14	- 10	--- / ---	27.8 / 1.67	58.2 / 1.98	27.4 / 0.26
23	- 5	--- / ---	21.0 / 2.00	44.0 / 2.33	20.7 / 0.34
32	0	168.6 / 0.19	16.1 / 2.33	33.6 / 2.66	15.8 / 0.43
41	5	129.8 / 0.24	12.4 / 2.65	25.9 / 2.98	12.2 / 0.55
50	10	100.9 / 0.31	9.6 / 2.96	20.2 / 3.27	9.5 / 0.68
59	15	79.1 / 0.39	7.6 / 3.25	15.8 / 3.54	7.5 / 0.84
68	20	62.5 / 0.48	6.0 / 3.50	12.5 / 3.77	5.9 / 1.01
77	25	49.8 / 0.59	4.8 / 3.73	10.0 / 3.96	4.7 / 1.21
86	30	40.0 / 0.71	3.8 / 3.92	8.0 / 4.13	3.8 / 1.42
104	40	26.3 / 1.01	2.5 / 4.23	5.3 / 4.39	2.5 / 1.88
122	50	17.8 / 1.36	1.7 / 4.45	3.6 / 4.57	1.7 / 2.35
140	60	12.3 / 1.75	1.2 / 4.61	--- / ---	1.2 / 2.81
158	70	8.7 / 2.17	--- / ---	--- / ---	0.8 / 3.22
176	80	6.3 / 2.57	--- / ---	--- / ---	0.6 / 3.57
194	90	4.6 / 2.96	--- / ---	--- / ---	0.4 / 3.87
212	100	3.4 / 3.30	--- / ---	--- / ---	0.3 / 4.10
230	110	2.6 / 3.60	--- / ---	--- / ---	--- / ---
248	120	2.0 / 3.85	--- / ---	--- / ---	--- / ---
Applicable Thermistors		Discharge temp. TH1 Comp.1 temp. TH	Suction temp. TH Liquid temp. TH 1 Liquid temp. TH 2 Sub-cool heat- ex (outlet) TH Heat- ex 1 gas TH Heat- ex 2 gas TH Heat- ex 1 liquid TH Heat- ex 2 liquid TH	Outdoor temp. TH	Heat sink temp. TH