






















5. TROUBLE DIAGNOSIS

5-1.	Contents of Remote Controller Switch Alarm Display	5-1-1
5-2.	PAC System Alarm Codes	
1.	Indoor	5-2-1-1
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5-3.	Inspection of Parts (Outdoor Unit)	5-3-1
5-4.	How to Replace Fan Motor	5-4-1















5-1. Contents of Remote Controller Switch Alarm Display

ON: ○ Blinking: ☀ OFF: ●

Possible cause of malfunction			Wired remote control display	Wireless remote controller receiver display			
				 Operation	 Timer	 Standby	
Serial communication errors Missetting	Failure in receiving serial signal from remote controller's indoor unit	Faulty remote controller	E01				
		Disconnection/Contact failure of remote controller wiring					
		CHK(check) pins on the indoor unit control PCB are short circuited					
	Settings of system address, indoor unit address and group control are not made	In the case of non-group control: • Power supply OFF of outdoor unit • Disconnection / Contact failure of inter-unit wiring In the case of group control: Automatic address operation was not carried out.					
	Setting failure of nonvolatile memory IC	Faulty setting of EEPROM (IC010) on indoor unit	E02				
	Failure in indoor unit serial signal from remote controller	Faulty remote controller					
		Wrong wiring of remote controller					
	Error in indoor unit receiving signal from remote controller (central)		E03	E04			
	Failure in indoor unit receiving serial signal from outdoor unit	Disconnection / Contact failure of inter-unit wiring					
		• Faulty indoor unit control PCB • Faulty outdoor unit control PCB • Communication circuit fuse (F302) on indoor unit control PCB opened					
		• Fuse on outdoor unit control PCB opened Since failure of an outdoor fan motor is considered as a cause, both outdoor unit control PCB and outdoor unit fan motor are exchanged simultaneously.					
	Duplication of indoor unit address	Duplication of indoor unit address setting	E08	E09			
	Duplication of main remote controller setting	Error because of more than one remote controller setting to main					
	Improper setting	Automatic address setting start is prohibited					
		Duplication of main unit in group control					
	Communication error between main and sub indoor units	• Disconnection of wiring between main unit and additional units • Contact failure of wiring • Faulty indoor unit control PCB (Main or Addition)	E18	E15			
	Automatic address alarm	The total capacity of indoor units is too low					
		• The total capacity of indoor units is too high • The numbers of indoor units is two or more.					
	Outdoor unit Communication error		E24				
	Outdoor unit Communication error						
	Indoor & outdoor unit type miss-matched	Setting error, indoor/outdoor unit type/model miss-matched	L02	L03			
	Duplication of group control's main indoor unit	Duplication of main indoor unit address in group control					
	Group control wiring is connected to individual control indoor unit	Group control wiring is connected to individual control indoor unit	L07				
	Indoor unit address is not set		L08				
	Indoor unit capacity is not set		L09	L18			
	4-way valve locked trouble / operation failure						

Continued

ON: ○ Blinking: ☀ OFF: ●

Possible cause of malfunction			Wired remote control display	Wireless remote controller receiver display		
						
				Operation	Timer	Standby
Activation of protective device	Faulty wiring connections of (ceiling) indoor unit panel	Correct the wiring connection Correct insertion direction of connector (Hook is outside)	P09			
	Indoor unit fan motor trouble	Indoor unit fan motor locked	P01			
		Indoor unit fan motor layer short				
		Contact failure in thermostat protector circuit				
	Activation of float switch wiring	Faulty drain pump	P10			
		Drainage failure				
		Contact failure of float switch wiring				
	Faulty drain pump	Faulty drain pump	P11			
		Drain pump locked				
	WHE water freezing alarm	WHE water freezing error		●		
	Indoor unit fan motor trouble	Indoor unit fan motor locked	P12			
		Faulty wiring connections of indoor unit fan motor				
	Valve error	Valve error	P13			
		Refrigerant circuit error				
		Wrong installation for refrigerant piping and wiring				
	Discharge temperature protective alarm	Compressor discharge temperature trouble	P03			
	Activation of high pressure switch	Compressor discharge pressure trouble	P04			
	Power supply failure	Open phase detected AC power supply trouble	P05			
	Insufficient gas	Insufficient gas level detected	P15			
	Compressor overcurrent trouble		P16		●	
	Fan motor locked/reversed airflow detected	Outdoor unit fan motor trouble	P22			
		Outdoor unit fan trouble				
	WHE water pump interlock OFF alarm	WHE pump interlock error	P23			
	Inverter compressor trouble		P29			
	Group control trouble	Indoor unit in group control trouble	P31			
	Activation of current control compressor's protective device	Primary (input) overcurrent detected	H01			
	PAM trouble (overcurrent/over-voltage), Activation of compressor's protective device	PAM trouble	H02			
		Primary current control, Activation of compressor's protective device	H03	●		●
	Thermistor fault	Indoor unit thermistor open/short	Indoor heat exchanger temperature sensor (E1) trouble	F01		
Indoor heat exchanger temperature sensor (E2) trouble			F02			
Indoor air temperature sensor (TA) trouble			F10			●
Outdoor unit thermistor open/short		Compressor discharge temperature sensor (TD) trouble	F04			
		Outdoor heat exchanger temperature sensor (C1) trouble	F06			
		Outdoor air temperature sensor (TO) trouble	F08			○
Monvolatile memory failure		Indoor unit EEPROM trouble	F29	Operating and timer lamp blinking simultaneously 		●

5-2. PAC System Alarm Codes

1. Indoor

Alarms for indoor units

Alarm Code	Alarm Meaning
E01	Remote Controller Reception Error
E02	Remote Controller Transmission Error
E03	Error in Indoor Unit Receiving Signal from Remote Controller (central)
E04	Error in Indoor Unit Receiving Signal from the Outdoor Unit
E08	Duplicate Indoor Unit Address Settings Error
E09	More Than One Remote Controller Set to Main Error
E12	Automatic Address Setting Start is Prohibited while Auto-address Setting in Progress.
E14	Main Unit duplication in Simultaneous-operation Multi Control (detected outdoor unit)
E15	Automatic Address Alarm (The total capacity of indoor units is too low.)
E16	Automatic Address Alarm (The total capacity of indoor units is too high or the total number of indoor units is too many.)
E18	Faulty Communication in Group Control Wiring

P09	Faulty wiring connections of (ceiling) indoor unit panel
P31	Group Control Error

Check Prior to Auto Address Setting

* If an outdoor unit displays an alarm, conduct this process after diagnosing the problem.

1 Auto Address	1-1	Is the power of the indoor unit(s) and outdoor unit(s) on?	Yes	2-1
			No	Power on
2 Indoor/outdoor wiring	2-1	Has the wiring of the indoor/outdoor been completed? Is it all connected correctly?	Yes	3-1
			No	Connect the wiring correctly
3 Installation or setting related	3-1	Be sure that the indoor and outdoor units are connected with correct combination written in catalog.	Yes	3-2
			No	Correct the connection
	3-2	Is the remote control wiring connected with two indoor/outdoor combinations or more for group control?	Yes	3-3
			No	3-4
	3-3	Turn on the power of only one system and run auto address setting again. Upon completion of the auto address setting, turn on the power for the next system and run auto address setting while still power switched on, units whose auto address setting have completed. (In the case of multiple systems, run the auto address setting respectively in due order for each system.)		
	3-4	Run the auto address setting.		
4 Relocation and resetting of address [U3, F3]	4-1	Be sure that the indoor and outdoor units are connected with correct combination described in the catalog.	Yes	4-2
			No	Correct the connection
	4-2	Be sure that the detailed setting items are made at factory setting.	Yes	4-3
			No	Correct the setting
	4-3	Run the auto address setting.		

• For information on the remote control's detailed settings, refer to the Reference Materials.

• Factory setting

Item code	Item	Value
11	Indoor unit capacity	0
12	System address	99
13	Indoor unit address	99
14	Group control address	99

E01 Remote Controller Reception Error

(When indoor unit(s) are connected)

1. Error Detection Method

It is judged an error if no self-addressed communication is sent to the remote controller in a 3-minute period.

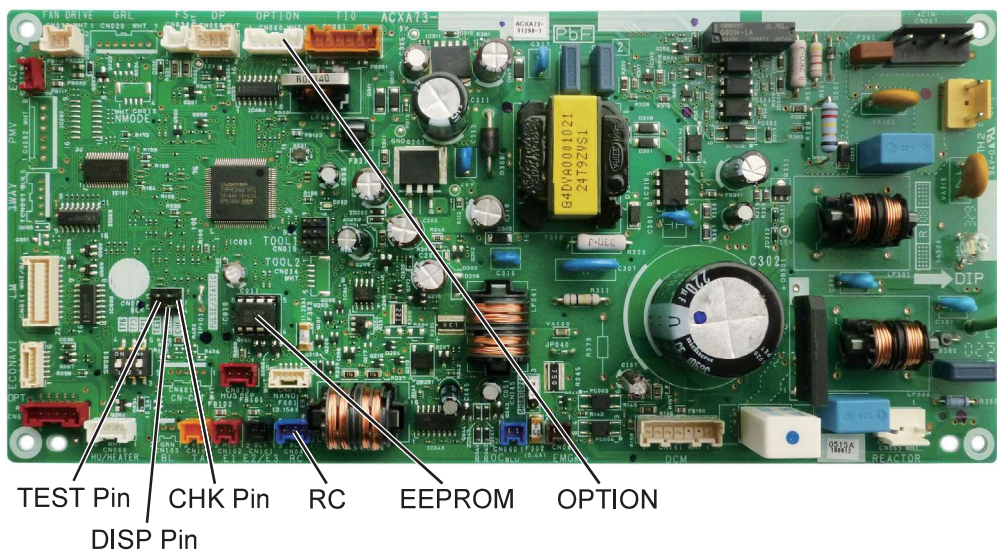
- When a remote controller is set to sub remote controller.
- When there are nine or more indoor units in a remote control group's wiring.
- When the CHK (check pin) and/or TEST (test pin) on the indoor unit control PC board are short circuited.
- The nonvolatile memory (EEPROM) is not installed or faulty when turning on the power.
- Indoor unit control PC board error
- Remote controller check mode
- Malfunctions of the remote controller itself (reception circuit error)

2. Error Diagnosis

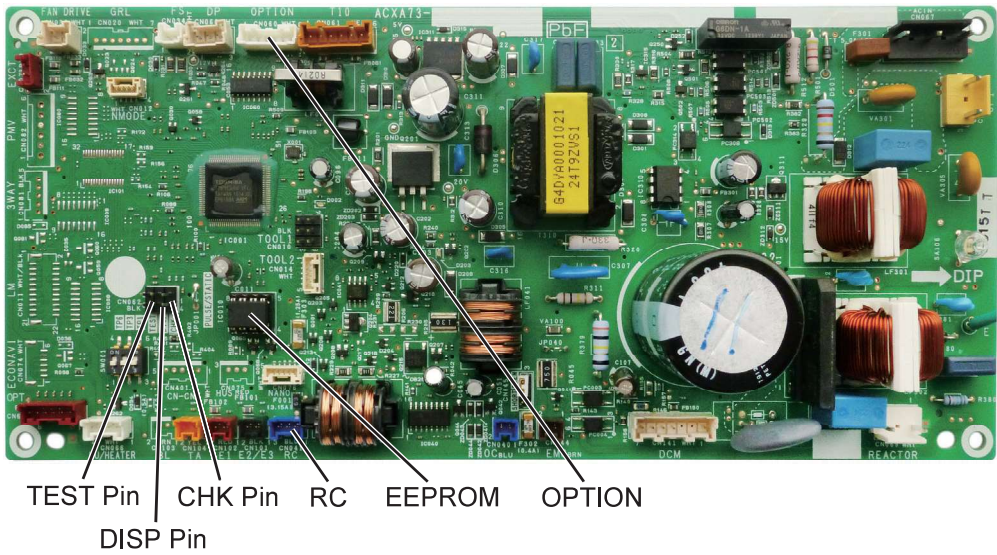
1 Auto Address	1-1	Is auto address setting complete?	Yes	1-2
			No	1-3
	1-2	Is there an auto address setting error (Is the outdoor unit showing an alarm)?	Yes	1-3
			No	2-1
	1-3	Conduct checks prior to auto address setting.		
2 Group Control Wiring	2-1	Is that indoor unit under group control?	Yes	2-2
			No	3-1
	2-2	Are there any indoor units with their power off in the remote control group's wiring?	Yes	Power on
			No	2-3
	2-3	Are nine or more indoor units connected in one remote control group's wiring?	Yes	Correct the wiring
			No	2-4
	2-4	Was the remote control group's wiring changed after auto address setting was complete? Alternatively, were group settings changed in the remote control detailed settings mode?	Yes	2-5
			No	3-1
	2-5	No main unit in the remote control group's wiring? Re-execute auto address setting.		
3 Installation or setting related	3-1	Are the CHK pin and TEST pin on the indoor unit control board short-circuited?	Yes	Remove the short
			No	3-2
	3-2	Is the wireless remote controller connected to on the indoor unit's control PC board?	Yes	3-3
			No	3-5
	3-3	Disconnect the connector mentioned above on the PC board of the indoor unit control PC board, and see whether the E01 goes off after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote controller, set the other remote controller as the main.)	Yes	3-4
			No	3-5
	3-4	Replace wireless remote control parts including wiring.		
	3-5	Is the LED blinking on the indoor unit's control PC board?	Yes	3-6
			No	3-7
	3-6	The nonvolatile memory (EEPROM) on the indoor unit's control PC board is either not installed, improperly installed or the nonvolatile memory is faulty. Correct this or after replacing the nonvolatile memory, write model data to it in the remote control detailed settings mode.		
	3-7	Is there a short, miswiring, disconnection, wrong contact or grounding in the remote control's wiring?	Yes	Correct the wiring
			No	Replace the indoor unit's control board.

- Regarding the remote controller check, refer to the Reference Materials.
- For information on the procedures for replacing the nonvolatile memory (EEPROM) of the indoor unit and/or replacing the indoor unit's control board, refer to the manual that is packaged with the indoor unit service board.

ACXA73-3129* : 4-Way Cassette Type (Type U3) Indoor Unit Control Board



ACXA73-3440* : Middle Static Pressure Duct Type (Type F3) Indoor Unit Control Board



E02 Remote Controller Transmission Error

1. Error Detection Method

When the remote controller itself cannot transmit. Or when it cannot receive the signal it transmitted itself, or when they are different and judged an error.

- Malfunction of the remote controller itself (transmit circuit error)

2. Error Diagnosis

1 Remote Control Group Wiring	1-1	Is the indoor unit under group control?	Yes	1-2
			No	2-1
	1-2	Are the wires 1 (white) & 2 (black) to the remote control group shorted or opened?	Yes	Correct the wiring
			No	2-1
2 Group Control Wiring	2-1	Is the wireless remote controller connected to on the indoor unit's control PC board?	Yes	2-2
			No	2-4
	2-2	Disconnect the connector mentioned above on the board of the indoor unit control PC board, and see whether the E02 goes off after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote controller, set the other remote controller as the main.)	Yes	2-3
			No	2-4
	2-3	Replace wireless remote control parts including wiring.		
	2-4	Is there a short, miswiring, open, wrong contact or grounding in the remote control's wiring?	Yes	Correct the wiring
			No	Replace the indoor unit's control PC board

- Regarding the remote controller check, refer to the Reference Materials.
- For information on the procedures for replacing the nonvolatile memory (EEPROM) of the indoor unit and/or replacing the indoor unit's control board, refer to the manual that is packaged with the indoor unit service board.

E03 Error in Indoor Unit Receiving Signal from Remote Controller (central)

(When indoor unit(s) are connected)

1. Error Detection Method

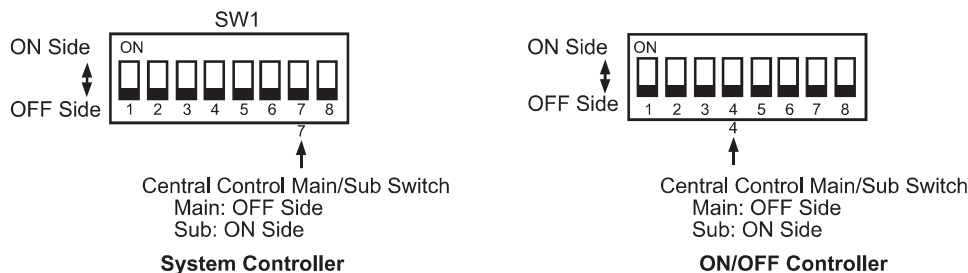
It is judged an error when there is no communication from any remote controller (collectively) in a 3-minute period or if there is no communication from the central device in a 15-minute period.

- When there was once communication, but during use the remote control wiring is opened or miswired.
- The line to the central control unit for indoor/outdoor operations is opened.
- Settings are made only for sub remote controller.
- The power to the central control unit is not on and remote controllers are not being used (or the indoor/outdoor operations line to the central control unit is opened).
- When remote controller are not being used, only the sub remote controller is set up.

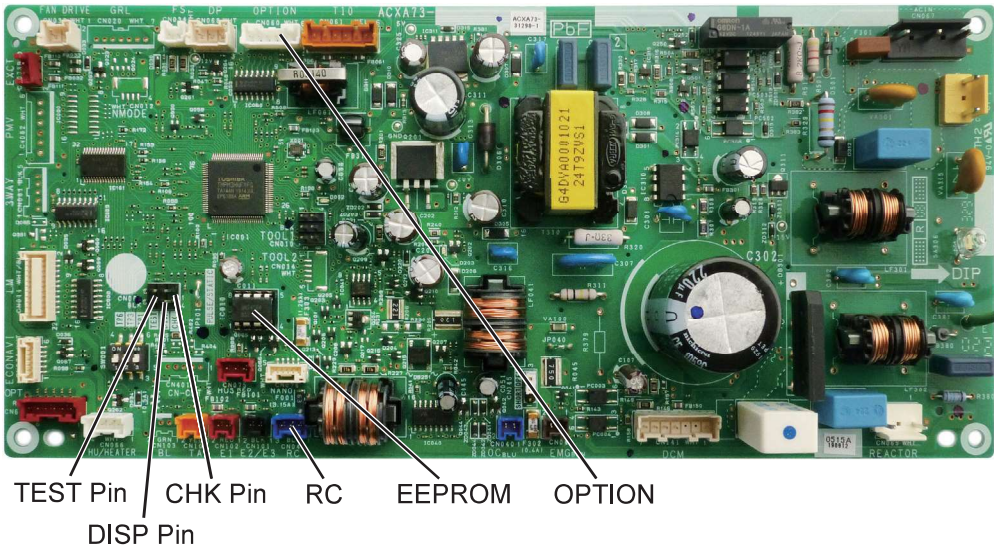
2. Error Diagnosis

1 Central control unit	1-1	Is the central control unit connected?	Yes	1-2
			No	2-1
	1-2	Is the central control unit's powered off?	Yes	Power on
			No	1-3
	1-3	Are all the Main/Sub switches on the connected central control unit set to Sub?	Yes	1-4
			No	1-5
	1-4	Of the central control units that are connected, set only the uppermost central control unit to Main and the others to Sub. The order from top to bottom is communication adaptor → system controller → ON/OFF controller.		
	1-5	Is the indoor/outdoor operations line connected to the central control unit opened?	Yes	Correct the setting
			No	2-1
2 Remote controller	2-1	Is the indoor unit under group control?	Yes	2-2
			No	3-1
	2-2	Are the wires 1 (white) & 2 (black) to the remote control group opened, have wrong contact or grounded?	Yes	Correct the setting
			No	3-1
3 Indoor unit control PC board	3-1	Is the wireless remote controller connected to on the indoor unit's control PC board?	Yes	3-2
			No	3-4
	3-2	Disconnect the connector mentioned above on the control PC board of the indoor unit control PC board, and see whether the E03 goes off after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote controller, set the other remote controller as the main.)	Yes	3-3
			No	3-4
	3-3	Replace wireless remote control parts including wiring.		
	3-4	Is there a short, miswiring, open, wrong contact or grounding in the remote control's wiring?	Yes	Correct the wiring
			No	Replace the indoor unit control board

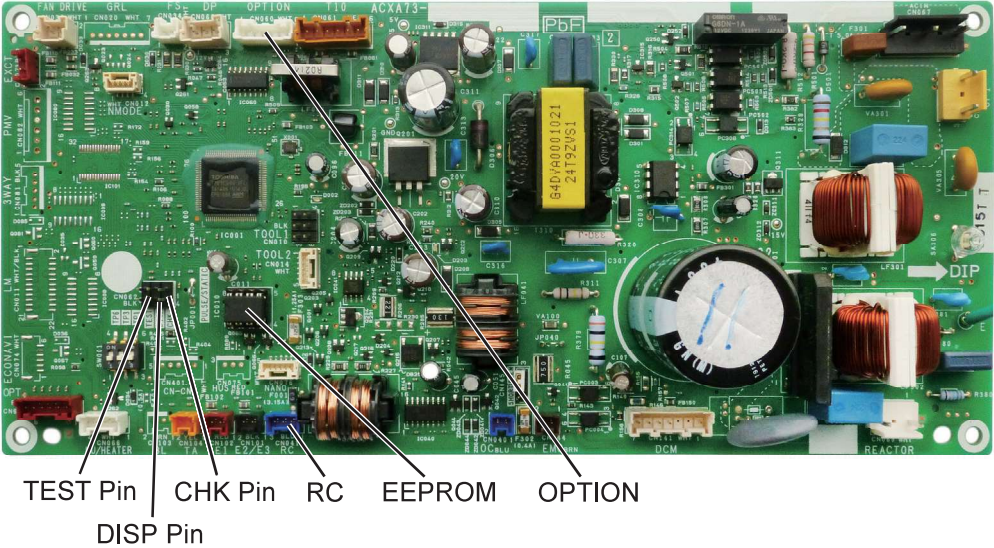
- Regarding the remote controller check, refer to the Reference Materials.
- For information on the procedures for replacing the nonvolatile memory (EEPROM) of the indoor unit and/or replacing the indoor unit's control board, refer to the manual that is packaged with the indoor unit service board.



ACXA73-3129* : 4-Way Cassette Type (Type U3) Indoor Unit Control Board



ACXA73-3440* : Middle Static Pressure Duct Type (Type F3) Indoor Unit Control Board



E04 Error in Indoor Unit Receiving Signal from the Outdoor unit

1. Error Detection Method

When there is no communication within a 3-minute period from the outdoor unit. Or, judged an error when no reply comes from the outdoor unit.

- The outdoor unit is not turned on.
- When the network of indoor/outdoor operation line was wired, the (SHORT) setting of the terminal resistor switch on the outdoor control PC board was set on multiple units (four or more).
- When the power was turned on after auto address setting was completed, the number of indoor units had been changed.
- Forgot to turn on the indoor unit.
- The CHK pin and/or TEST pin on the indoor unit's control PC board are shorted.
- Forgot to install the nonvolatile memory (EEPROM) when replacing the indoor unit control PC board.
- Mistakenly set the indoor unit address to Not Set in the remote control's detailed setting mode.
- When indoor unit addresses are duplicated.
- There is a short, open, wrong contact or grounding of the indoor/outdoor operation line.
- There is an error in the receiving circuit on the signal output PC board (optional control PC board).
- Malfunctions of the outdoor unit
- The thermistor inside the indoor unit is grounded.

2. Error Diagnosis

1 Power Source	1-1	Is/was the power to the outdoor unit cut off?	Yes	After turning the power on, wait three minutes
			No	1-2
	1-2	Is the indoor unit powered off?	Yes	Power on
			No	2-1
2 Indoor/outdoor wiring	2-1	Is the indoor/outdoor wiring connected correctly?	Yes	3-1
			No	Correct the wiring
3 No. of Indoor Units	3-1	Was the number of indoor units increased or decreased after auto address setting was complete?	Yes	3-2
			No	3-3
	3-2	Conduct checks prior to auto address setting.		
	3-3	Check the indoor unit addresses from the remote control's detailed settings mode. Is it Not Set (99), or is the indoor unit's address duplicated?	Yes	3-2
			No	4-1
4 Indoor unit control PC board	4-1	Are the CHK pin and/or TEST pin on the indoor unit control PC board short-circuited?	Yes	Remove the short
			No	4-2
	4-2	Is the wireless remote controller connected to on the indoor unit's control PC board?	Yes	4-3
			No	4-5
	4-3	Disconnect the connector mentioned above on the control PC board of the indoor unit control PC board, and see whether the E04 goes off after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote controller, set the other remote controller as the main.)	Yes	4-4
			No	4-5
	4-4	Replace wireless remote control parts including wiring.		
	4-5	Is the LED on the indoor unit control PC board blinking?	Yes	4-6
			No	4-7
	4-6	The nonvolatile memory (EEPROM) on the indoor unit's control PC board is either not installed, improperly installed or the nonvolatile memory is faulty. Correct this or after replacing the nonvolatile memory, write model data to it in the remote control detailed settings mode.		
	4-7	Are all the remote controllers of the other indoor units connected to that outdoor unit displaying E04?	Yes	Replace the outdoor unit control board
			No	Replace the indoor unit control board

E08 Duplicate Indoor Unit Address Settings Error

1. Error Detection Method

It is judged an error if the addresses of indoor units are duplicated.

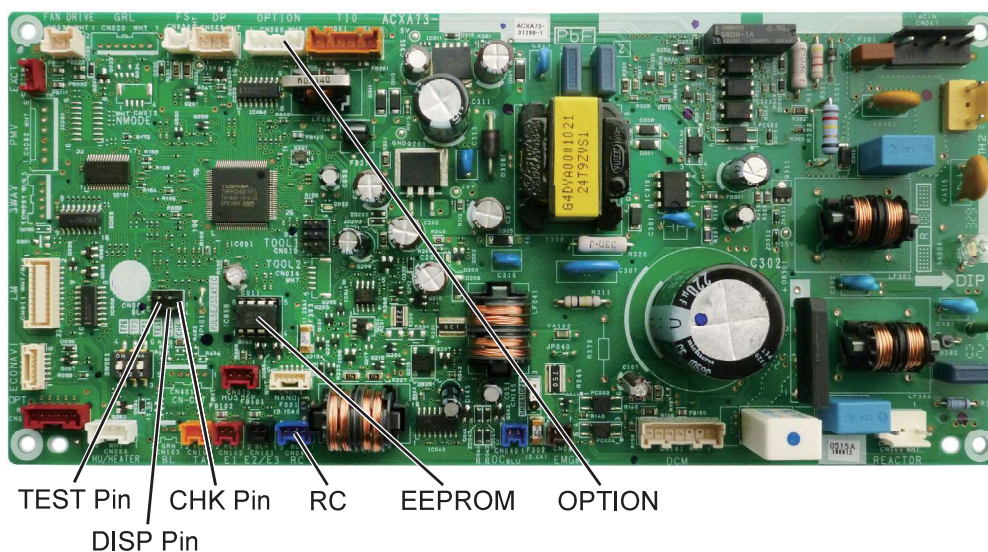
- The indoor unit address settings are duplicated in the remote control detailed settings mode.
- The multiple unit DISP pin is shorted across the indoor unit whose address is Not Set.

2. Error Diagnosis

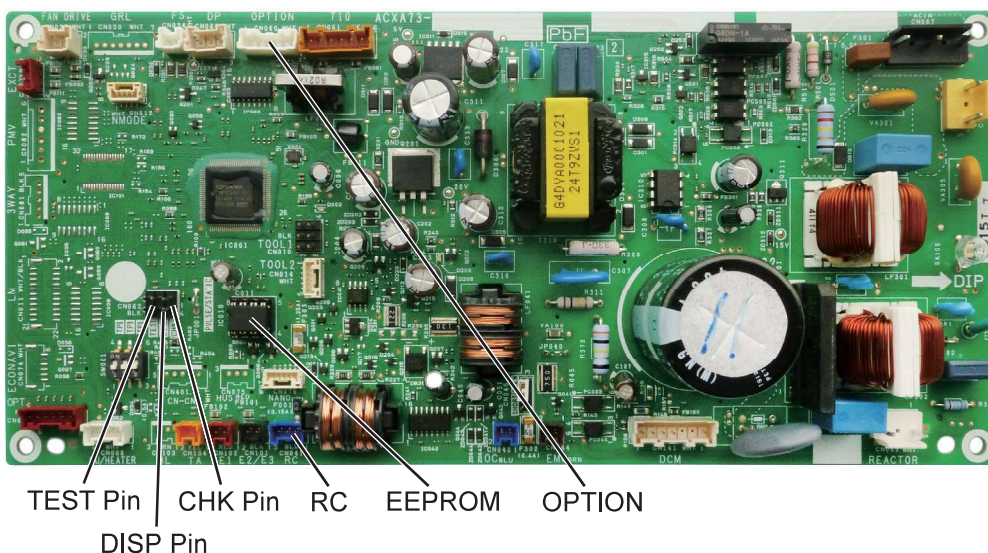
1 Indoor unit control PC board	1-1	Is the DISP pin on the indoor unit control PC board shorted?	Yes	Remove the short
			No	1-2
	1-2	Conduct checks prior to auto address setting. Does E08 fail to go off even after running auto address setting again?	Yes	1-3
			No	1-4
	1-3	The nonvolatile memory (EEPROM) on the indoor unit board has failed. ↓ Replace the EEPROM.		
	1-4	Do not make changes to indoor unit addresses with the detailed settings of the remote controller. Make them in the remote control address change mode.		

- For information on the procedures for replacing the nonvolatile memory (EEPROM) of the indoor unit, refer to the manual that is packaged with the indoor unit service board.

ACXA73-3129* : 4-Way Cassette Type (Type U3) Indoor Unit Control Board



ACXA73-3440* : Middle Static Pressure Duct Type (Type F3) Indoor Unit Control Board



E09 More Than One Remote Controller Set to Main Error

1. Error Detection Method

It is judged an error when more than one remote controller in a remote control group is set as the main remote controller.

- Forgot to set one remote controller to sub in a 2-remote control group.
- When using one wireless and one wired remote controller in a control group, forgot to set one of them to sub.

2. Error Diagnosis

1 Remote controller	1-1	Set one of the 2 remote controllers to sub.
---------------------	-----	---

- Method for setting a remote controller to sub

<CZ-RTC4>

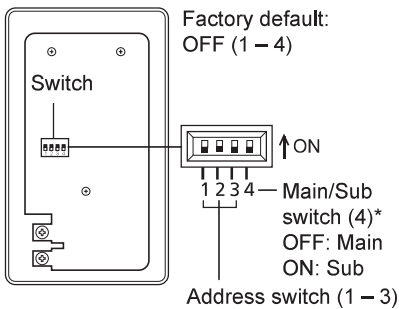
1. Press and hold + + buttons for several seconds simultaneously.
2. This will display **SETTING**, the CODE No. "01" and the SET DATA "0001" or the like on the remote controller's display.
3. Press / buttons to select the CODE No. to "01".
4. Press / buttons to select the SET DATA to "0000". (0000: Sub 0001: Main)
5. Press button (Once the display changes from flashing to steady, the setting is complete).
6. Once you press button, the remote controller returns to its normal display.

<CZ-RTC5B>

1. Press and hold + + buttons for 4 seconds or more simultaneously.
2. Press / buttons to select the "3. RC. setting mode" and press the button.
3. The Code no. "01" and the Set data "0001" or the like on the remote controller's display.
4. Press / buttons to select the Code no. to "01" and press the button.
5. Press / buttons to select the Set data to "0000" (0000: Sub 0001: Main) and press the button.
6. Press button. After selecting [YES], the unit restarts.

Wireless remote controller

CZ-RWRC3

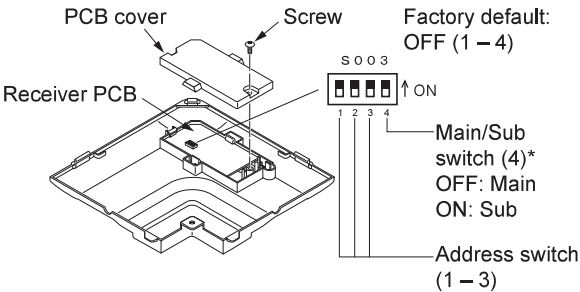


Main/Sub setting

- Use this to set Main/Sub for the remote controller and the receiver.
- Set one to [Main] and the other to [Sub].
- Factory default: [Main]
- It is recommended to set the wired remote controller to [Main].

Main/Sub	MAIN	SUB
Main/Sub switch position		

CZ-RWRU3



* When using the infrared remote controller and the wired remote controller in combination, set the wired remote controller to [Main].

E12 Automatic Address Setting Start is Prohibited While Auto-address Setting in Progress.

1. Error Detection Method

- It is judged an error if a command to start auto address setting comes from another controller during auto address setting.
- This occurs in a system that has more than one outdoor unit and operating lines among the indoor/outdoor units (networked wiring), when an instruction to start auto address setting is given from another controller during the auto address setting process.

2. Error Diagnosis

1 Auto Address	1-1	When one controller in a networked system is running auto address setting, it is not possible to start auto address setting from another controller. Wait until the auto address setting in progress finishes.
----------------	-----	---

E14 Main Unit duplication in Simultaneous-operation Multi Control (detected outdoor unit)

1. Error Detection Method

It is judged an error that the main units are duplicated in the indoor unit group.

- Main unit setting was made in the indoor unit group control setting of the remote control detailed settings mode.

2. Failure Diagnosis

1 Group Control Address	1-1	Are multiple indoor units set up as the main unit?	Yes	2-1
			No	2-2
2 Installation & Setting	2-1	Set up only one indoor unit as the main unit and other indoor units to the sub-unit.		
	2-2	Carry out the auto address setting.		

E15 Automatic Address Alarm (The total capacity of indoor units is too low.)

1. Error Detection Method

Connecting indoor unit

It is judged an error the total capacity of indoor units replied by communication is lower than that of outdoor unit.

- The total capacity of indoor units is lower than that of outdoor unit.
- Some indoor unit(s) are connected but power is not turned on.
- The CHK pin (CN062/CN071) and/or TEST pin (CN064) of the indoor unit is shorted when its power is turned on.

2. Error Diagnosis

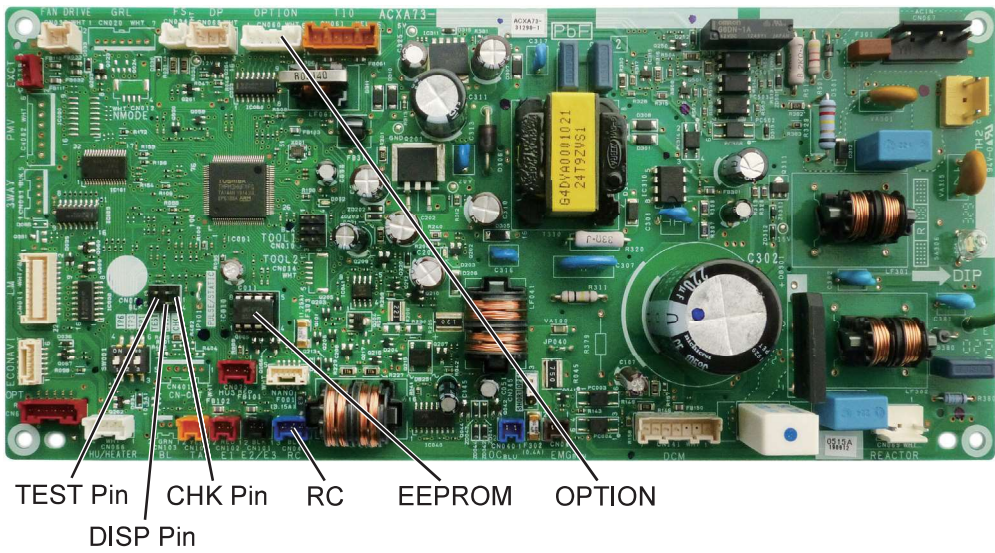
1 Power Source	1-1	Is the indoor unit powered off?	Yes	Power on
			No	2-1
2 Indoor/outdoor wiring	2-1	Is the indoor/outdoor wiring connected correctly?	Yes	3-1
			No	Correct the wiring
3 No. of Indoor Units	3-1	Was the number of indoor units changed after auto address setting finished?	Yes	3-2
			No	4-1
	3-2	Conduct checks prior to auto address setting.		
4 Indoor unit control PC board	4-1	Be sure that the detailed setting items are made at factory setting. [U3, F3]	Yes	4-2
			No	Correct the setting Run the auto address
	4-2	Are the CHK Pin and TEST Pin on the indoor unit control board short-circuited?	Yes	Remove the short
			No	4-3
	4-3	Is the wireless remote controller connected to on the indoor unit's control PC board?	Yes	4-4
			No	4-6
	4-4	Disconnect the connector mentioned above on the control PC board of the indoor unit control PC board and see whether the E15 goes off after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote controller, set the other remote controller as the main.)	Yes	4-5
			No	4-6
	4-5	Replace wireless remote control parts including wiring.		
	4-6	Is the LED blinking on the indoor unit's control PC board?	Yes	4-7
			No	5-1
	4-7	The nonvolatile memory (EEPROM) on the indoor unit's control board is either not installed, improperly installed or the nonvolatile memory is faulty. Correct this or after replacing the nonvolatile memory, write model data to it in the remote control detailed settings mode.		
5 Outdoor unit control PC board	5-1	Check all items under the section "Check Prior to Auto Address Setting".		

• Factory setting

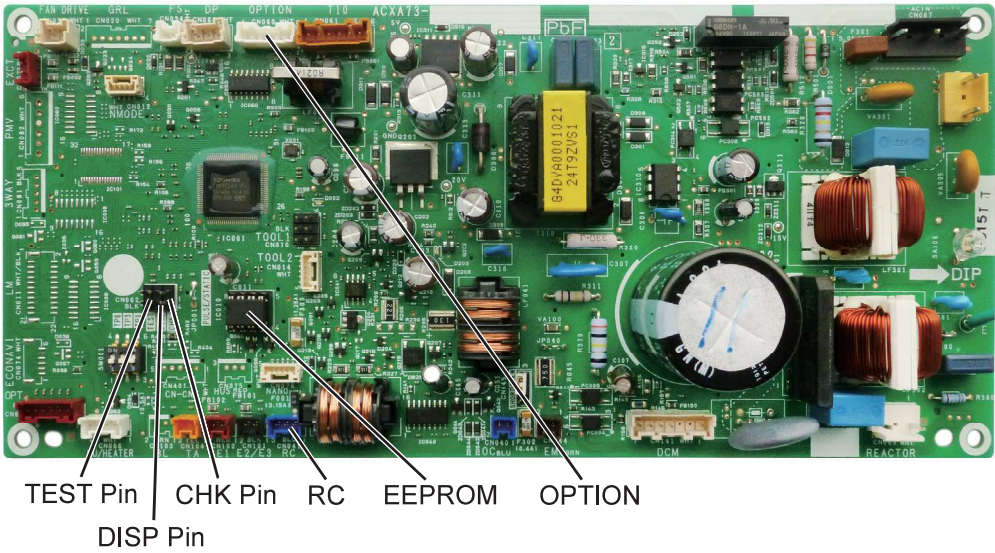
Item code	Item	Value
11	Indoor unit capacity	0
12	System address	99
13	Indoor unit address	99
14	Group control address	99

- For information on the procedures for replacing the nonvolatile memory (EEPROM) of the indoor unit, refer to the manual that is packaged with the indoor unit service board.
- For information on the remote control's detailed settings, refer to the Reference Materials.
- The alarm also occurs when the indoor unit cannot be recognized (indoor unit only blackout, disconnection of indoor/outdoor operation line, etc.) during auto address setting.

ACXA73-3129* : 4-Way Cassette Type (Type U3) Indoor Unit Control Board



ACXA73-3440* : Middle Static Pressure Duct Type (Type F3) Indoor Unit Control Board



E16 Automatic Address Alarm (The total capacity of indoor units is too high.)

1. Error Detection Method

It is judged an error the total capacity of indoor units is too high or the total number of indoor units is too many.

- The total capacity of indoor units is too high.
- The total number of indoor units is too many.

2. Error Diagnosis

1 Indoor unit control PC board [U3, F3]	1-1	Be sure that the detailed setting items are made at factory setting.	Yes	2-1
			No	Correct the setting Run the auto address
2 Auto Address	2-1	Check all items under the section "Check Prior to Auto Address Setting".		

• Factory setting

Item code	Item	Value
11	Indoor unit capacity	0
12	System address	99
13	Indoor unit address	99
14	Group control address	99

E18 Faulty Communication in Group Control Wiring

1. Error Detection Method

When the main remote controller cannot communicate with a sub remote controller in the remote control group.

It is judged an error if a sub remote controller in a remote control group fails to communicate with the main remote controller for a period of three minutes.

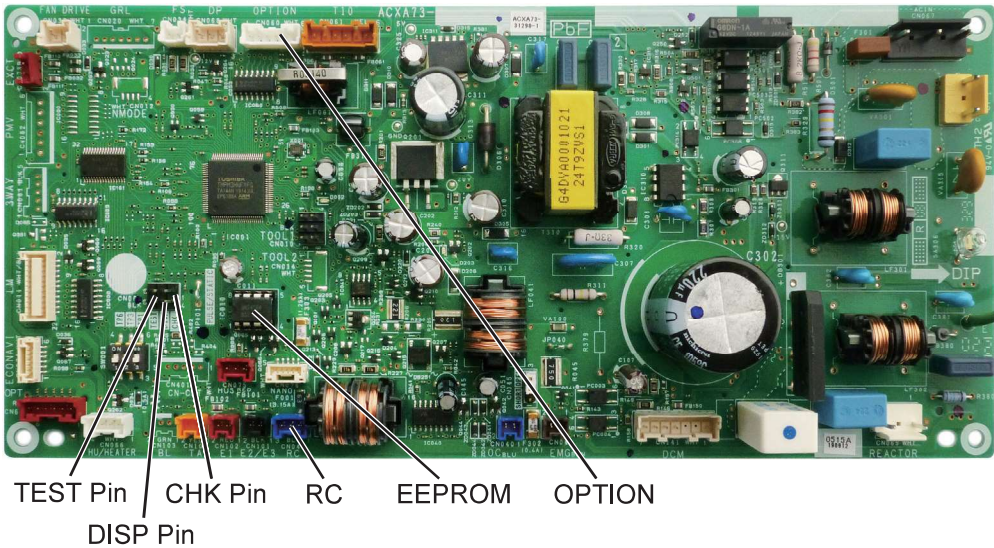
- An indoor unit within the control group does not have its power on.
- The CHK pin and TEXT pin on the indoor unit in the control group are shorted.
- The DISP pin of an indoor unit sub remote controller in the control group is shorted.
- Remote control group wiring is opened.
- More than one indoor unit in the control group is set to Main.
- An indoor unit in the control group is set to Separate.

2. Error Diagnosis

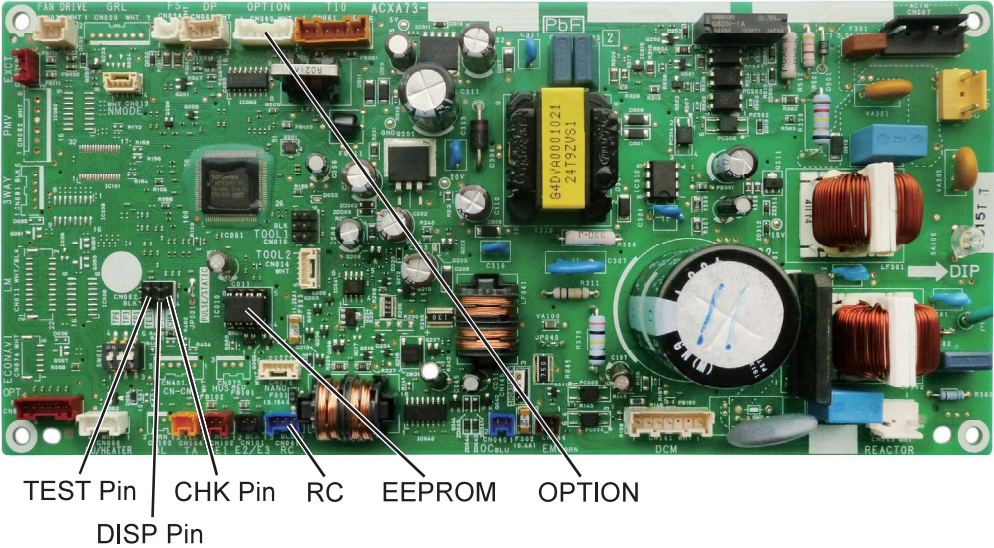
1 Indoor Unit	1-1	Is the indoor unit powered off?	Yes	Power on
			No	1-2
	1-2	Are the CHK pin, TEST pin and DISP pin on the indoor unit control PC board short-circuited?	Yes	Remove the short
			No	2-1
2 Substitute Sub Remote Controller	2-1	Is the remote control group's wiring opened?	Yes	Correct the wiring
			No	2-2
	2-2	Check the group settings (Item Code 14) from the remote control's detailed settings mode. Is the main remote controller (1) set to more than one remote controller or to separate (0)?	Yes	2-3
			No	3-1
	2-3	Is the wiring of the remote control group wired according to the wiring diagram?	Yes	2-4
			No	2-5
	2-4	Run the auto address setting again.		
	2-5	Run the auto address setting again after correcting the wiring of the remote control group.		
3 Indoor unit control PCB	3-1	Is the wireless remote controller connected to on the indoor unit's control PC board?	Yes	3-2
			No	3-4
	3-2	Disconnect the connector mentioned above on the control PC board of the indoor unit control PC board, and see whether the E18 goes off after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote controller, set the other remote controller as the main.)	Yes	3-3
			No	3-4
	3-3	Replace wireless remote control parts including wiring.		
	3-4	Replace the indoor unit control PC board.		

- For information on the remote control's detailed settings, refer to the Reference Materials.
- For information on the procedures for replacing the Indoor unit control PCB, refer to the manual that is packaged with the indoor unit service board.

ACXA73-3129* : 4-Way Cassette Type (Type U3) Indoor Unit Control Board



ACXA73-3440* : Middle Static Pressure Duct Type (Type F3) Indoor Unit Control Board

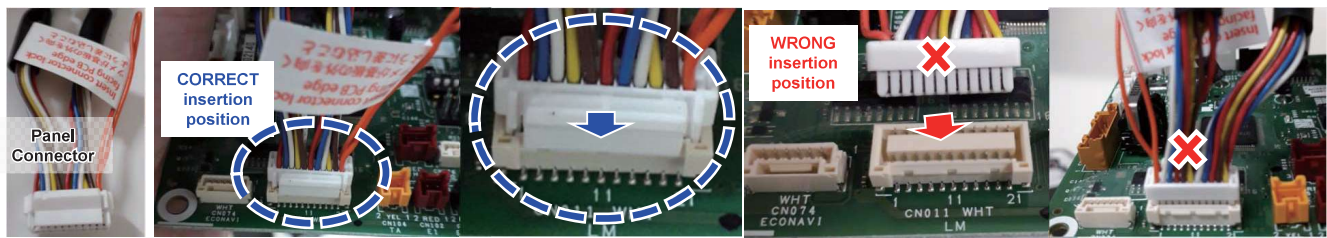


P09 Error description : Indoor unit ceiling cassette air swing motor do not operate

Error was judged as no connection between the ceiling cassette panel into Indoor PCB communication (feedback signal).

Possible Causes

1. Indoor unit ceiling cassette panel connector was not properly / wrongly connected into the PCB connector

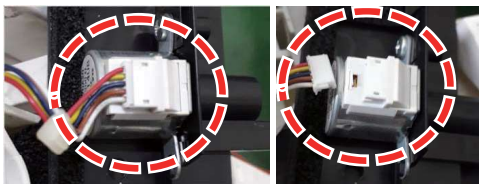


2. Air swing motor (inside the panel) was locked (jammed) or no operation

=> Check the air swing motor shaft can be rotate with hand

3. Air swing motor (inside the panel) wiring connector loosen or wire broken

=> Check the air swing motor wire connector connection



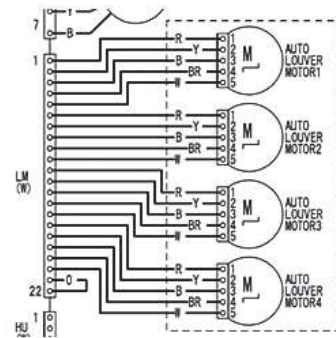
4. Indoor PCB for air swing control was malfunction

=> Check with multi meter at pin 1(red)-2, 1-3, 1-4 & 1-5 : 12Vdc

=> Check with multi meter at pin 6 (red)-7, 6-8, 6-9 & 6-10 : 12Vdc

=> Check with multi meter at pin 11 (red)-12, 11-13, 11-14 & 11-15 : 12Vdc

=> Check with multi meter at pin 16 (red)-17, 16-18, 16-19 & 16-20 : 12Vdc



P31 Group Control Error

1. Error Detection Method

- Other indoor unit alarms within the group.

1 Other indoor unit	1-1	Survey the indoor unit that alarms other than “P31” in the indoor unit group and specify the causes of failure.
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5-2. PAC System Alarm Codes

2. Outdoor

Alarms for outdoor units

Alarm Code	Alarm Meaning
E04	Error in Indoor Unit Receiving Signal from the Outdoor Unit
F04	Compressor Discharge Temperature Sensor (TD) Trouble
F06	Inlet Temperature Sensor (C1) in Heat Exchanger Trouble
F08	Outdoor Air Temperature Sensor (TO) Trouble
H01	Primary (input) Overcurrent Detected
H02	PAM Trouble
H03	Primary Current CT Sensor (current sensor) Failure
L18	4-Way Valve Operation Failure
P03	Compressor Discharge Temperature Trouble
P04	High Pressure Trouble
P05	AC Power Supply Trouble
P07	HIC (IPM) Temperature Trouble
P13	Alarm Valve Open
P15	Insufficient Gas Level Detected
P16	Compressor Overcurrent Trouble
P22	Outdoor Unit Fan Motor Trouble
P29	Lack of INV compressor wiring, INV compressor actuation failure (including locked), DCCT failure

Error Codes Table

Diagnosis display	Abnormality / Protection control	Abnormality Judgment	Protection Operation	Problem	Check location
E04	Indoor/outdoor abnormal communication	After operation for 1 minute	Indoor fan only operation can start by entering into force cooling operation	Indoor/outdoor communication not establish	<ul style="list-style-type: none"> Indoor/outdoor wire terminal Indoor/outdoor PCB Indoor/outdoor connection wire
F04	Compressor temperature sensor abnormality	Continuous for 5s	—	Compressor temperature sensor open or short circuit	<ul style="list-style-type: none"> Compressor temperature sensor lead wire and connector
F06	Outdoor heat exchanger temperature sensor 1 abnormality	Continuous for 5s	—	Outdoor heat exchanger temperature sensor 1 open or short circuit	<ul style="list-style-type: none"> Outdoor heat exchanger temperature sensor 1 lead wire and connector
F08	Outdoor air temperature sensor abnormality	Continuous for 5s	—	Outdoor air temperature sensor open or short circuit	<ul style="list-style-type: none"> Outdoor air temperature sensor lead wire and connector
H01	Indoor high pressure protection	—	—	Indoor high pressure protection (Heating)	<ul style="list-style-type: none"> Check indoor heat exchanger Air filter dirty Air circulation short circuit
H02	Power factor correction (PFC) circuit protection	4 times happen within 20 minutes	—	Power factor correction circuit abnormal	<ul style="list-style-type: none"> Outdoor PCB faulty
H03	Outdoor current transformer (CT) abnormality	—	—	Current transformer faulty or compressor faulty	<ul style="list-style-type: none"> Outdoor PCB faulty or compressor faulty
L18	4-way valve switching abnormality	4 times happen within 30 minutes	—	4-way valve switching abnormal	<ul style="list-style-type: none"> 4-way valve Lead wire and connector
P03	Compressor overheating protection	4 times happen within 20 minutes	—	Compressor overheat	<ul style="list-style-type: none"> Insufficient refrigerant
P04	Outdoor cooling high pressure protection	4 times happen within 20 minutes	—	Cooling high pressure protection	<ul style="list-style-type: none"> Check refrigeration system Outdoor air circuit
P05	Indoor / outdoor misconnection abnormality	—	—	Indoor and outdoor rated voltage different	<ul style="list-style-type: none"> Indoor and outdoor units check
P07	Power transistor module overheating protection	4 times happen within 30 minutes	—	Power transistor module overheat	<ul style="list-style-type: none"> PCB faulty Outdoor air circuit (fan motor)
P15	Refrigeration cycle abnormality	2 times happen within 20 minutes	—	Refrigeration cycle abnormal	<ul style="list-style-type: none"> Insufficient refrigerant or valve close
P16	Outdoor direct current (DC) peak detection	Continuous happen for 7 times	—	Power transistor module current protection	<ul style="list-style-type: none"> Power transistor module faulty or compressor lock
P22	Outdoor fan motor mechanism lock	2 times happen within 20 minutes	—	Outdoor fan motor lock or feedback abnormal	<ul style="list-style-type: none"> Outdoor fan motor lead wire and connector Fan motor lock or block
P29	Compressor abnormal revolution	4 times happen within 20 minutes	—	Compressor abnormal revolution	<ul style="list-style-type: none"> Power transistor module faulty or compressor lock

E04 Indoor/Outdoor Abnormal Communication

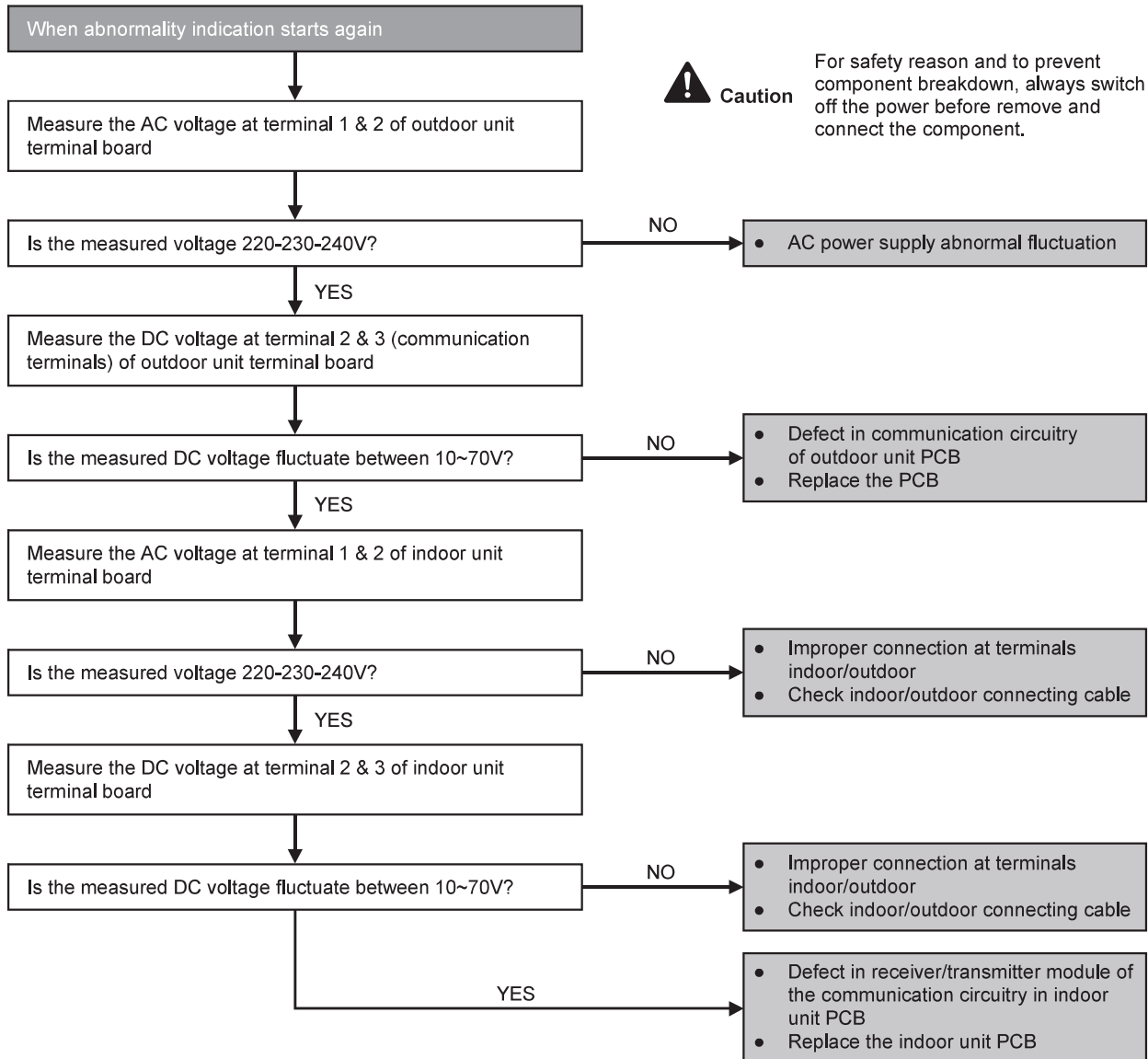
Malfunction Decision Conditions

- During startup and operation of cooling and heating, the data received from outdoor unit in indoor unit signal transmission is checked whether it is normal.

Malfunction Caused

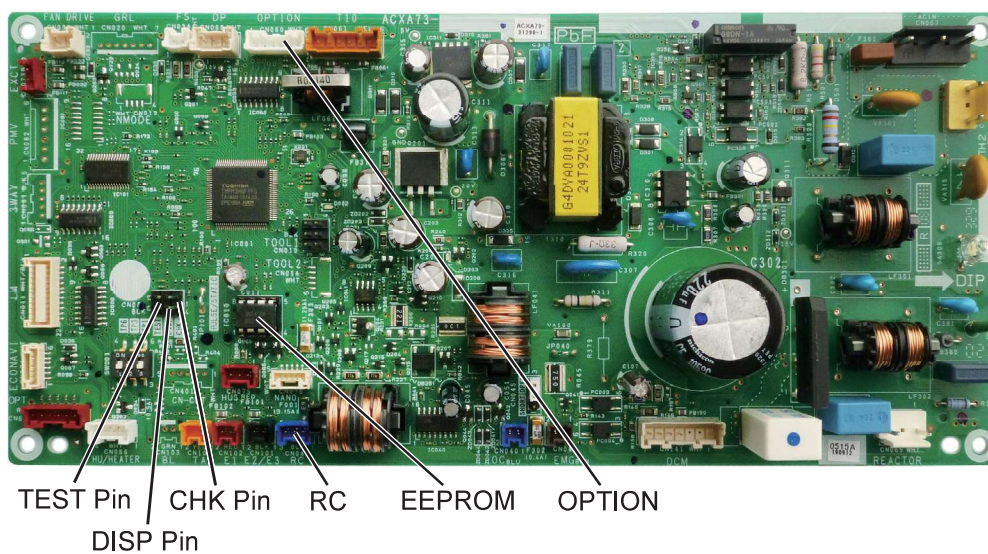
- Faulty indoor unit PCB.
- Faulty outdoor unit PCB.
- Indoor unit-outdoor unit signal transmission error due to wiring error.
- Indoor unit-outdoor unit signal transmission error due to breaking of wire in the connection wires between the indoor and outdoor units.

Troubleshooting

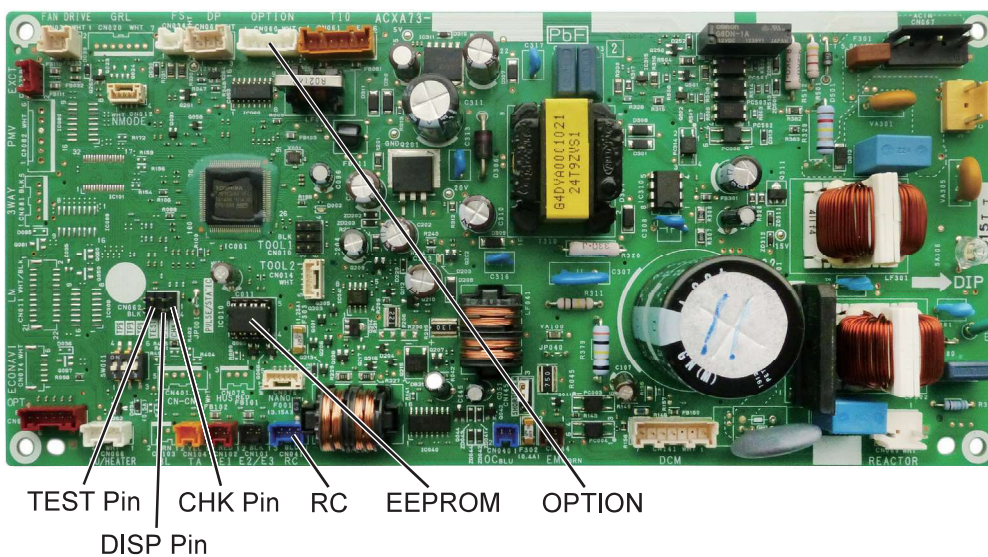


5

ACXA73-3129* : 4-Way Cassette Type (Type U3) Indoor Unit Control Board



ACXA73-3440* : Middle Static Pressure Duct Type (Type F3) Indoor Unit Control Board



F04 Compressor Temperature Sensor Abnormality

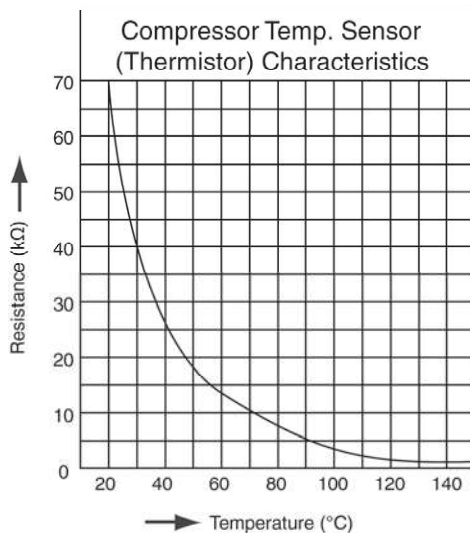
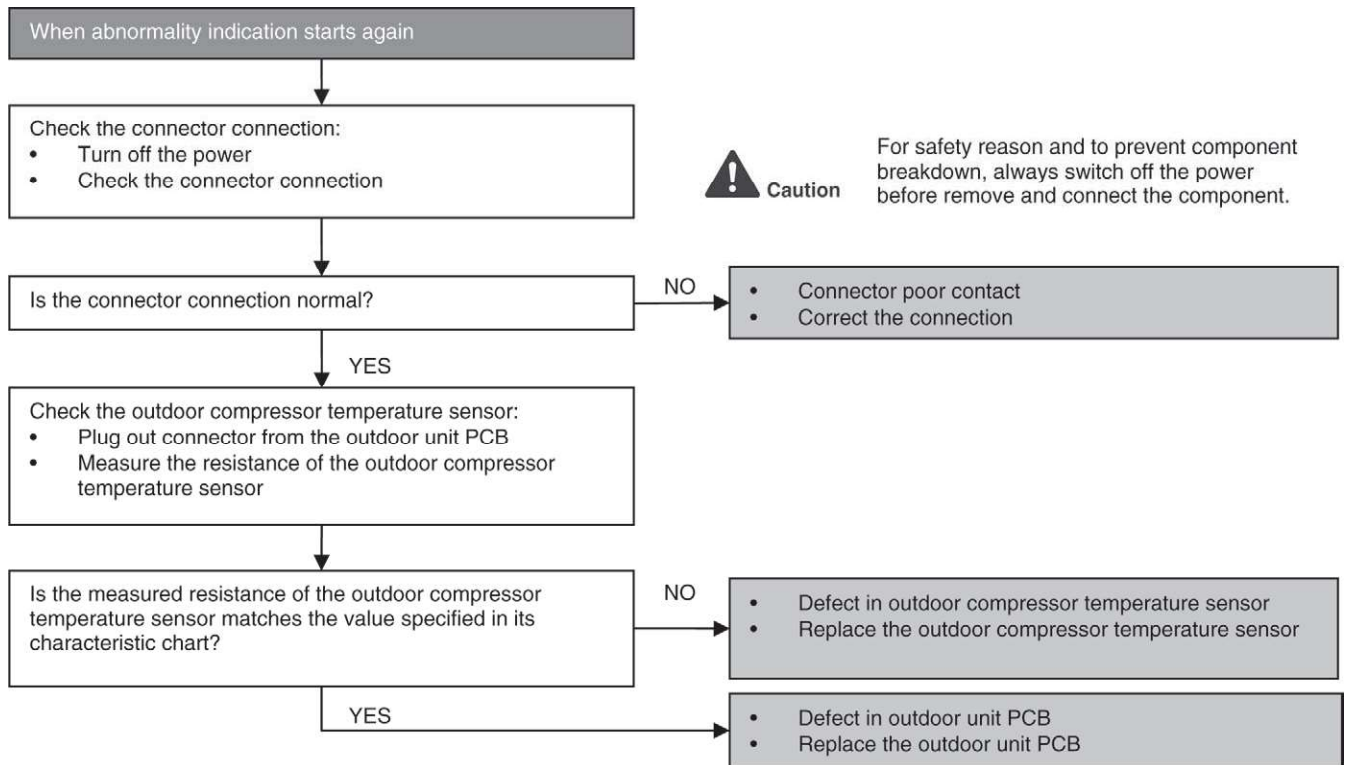
Malfunction Decision Conditions

- During startup and operation of cooling and heating, the temperatures detected by the outdoor compressor temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting



F06 Outdoor Pipe Temperature Sensor Abnormality

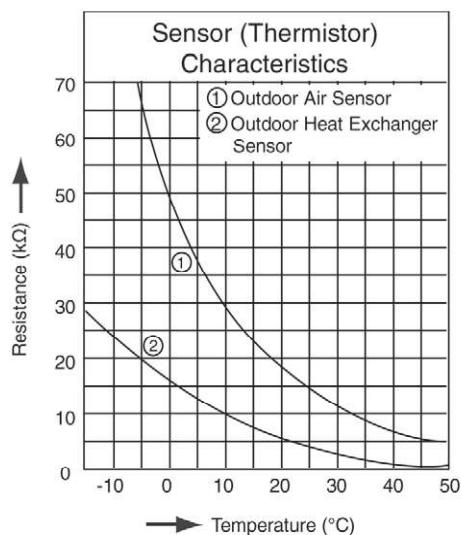
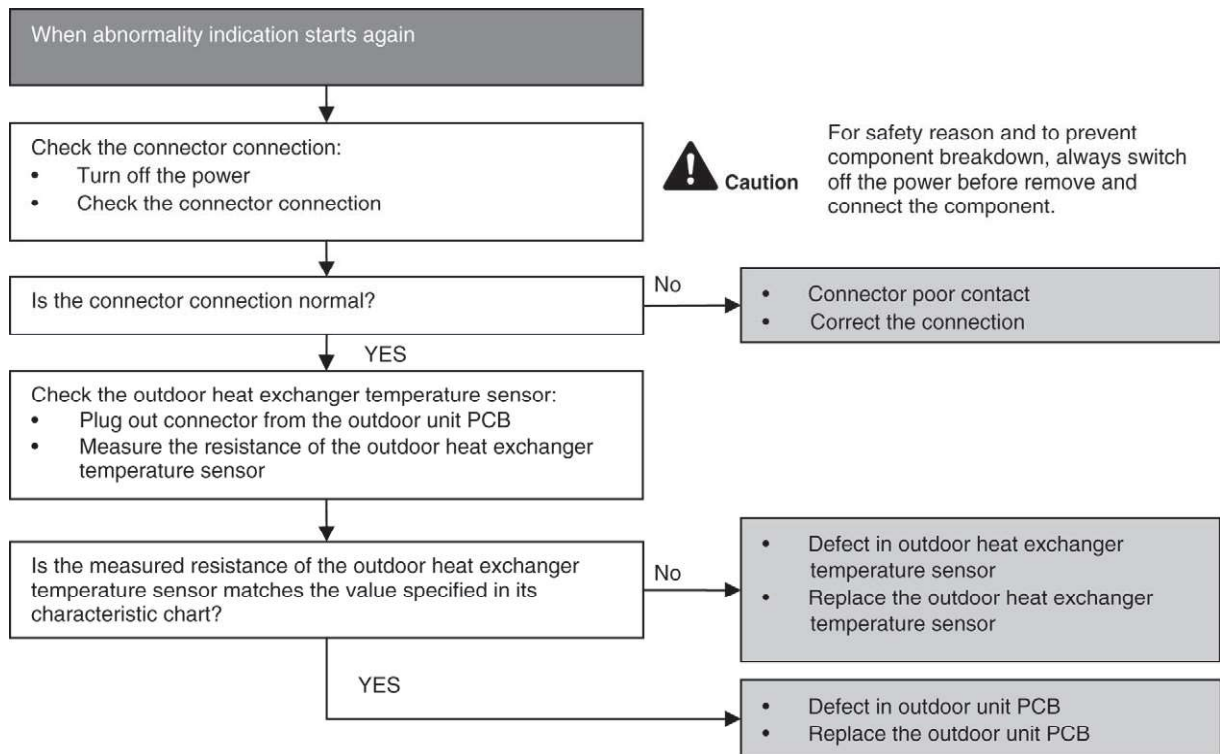
Malfunction Decision Conditions

- During startup and operation of cooling and heating, the temperatures detected by the outdoor pipe temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting



F08 Outdoor Air Temperature Sensor Abnormality

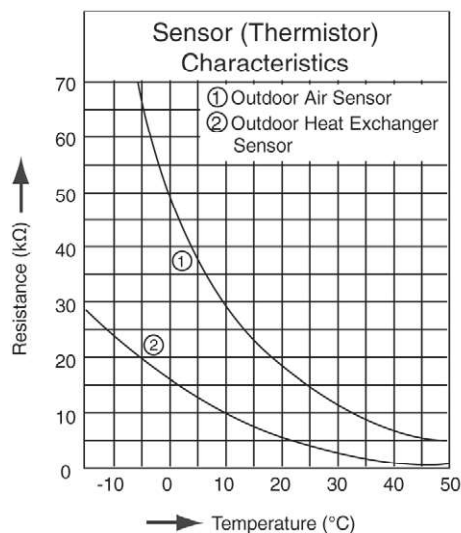
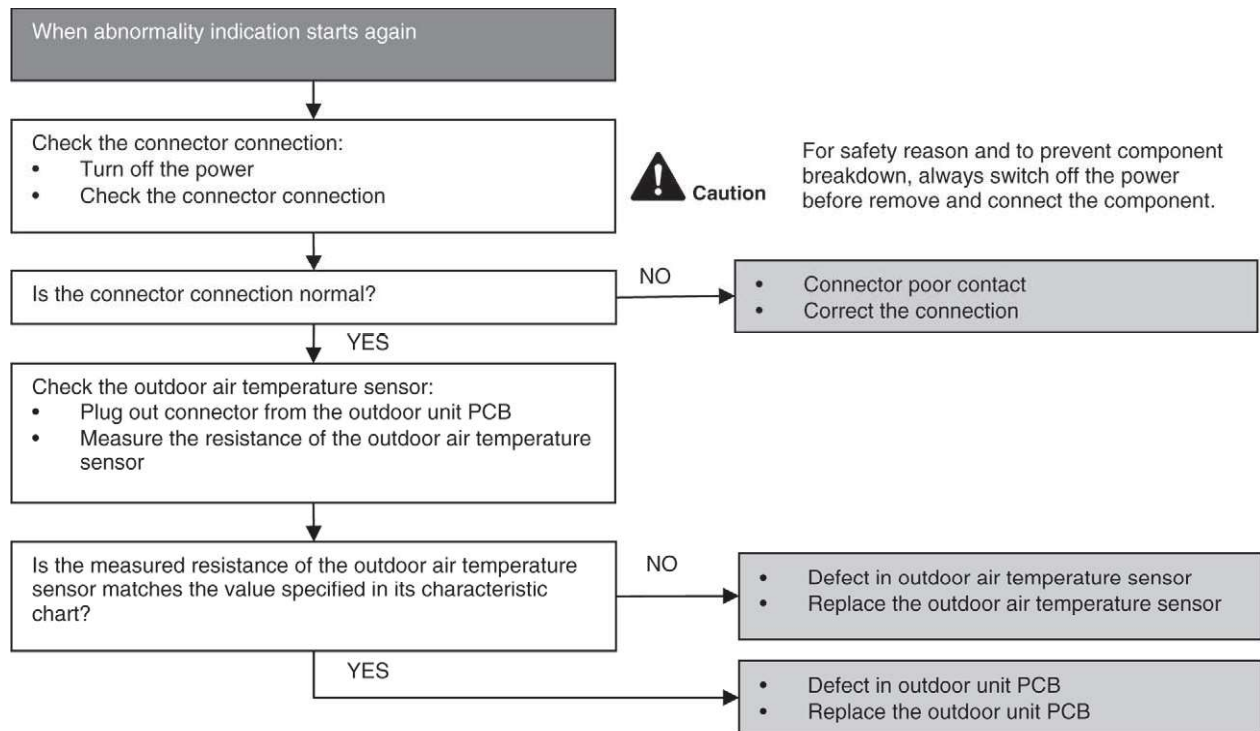
Malfunction Decision Conditions

- During startup and operation of cooling and heating, the temperatures detected by the outdoor air temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting



H01 Error Code Stored in Memory and no alarm is triggered / no TIMER LED flashing

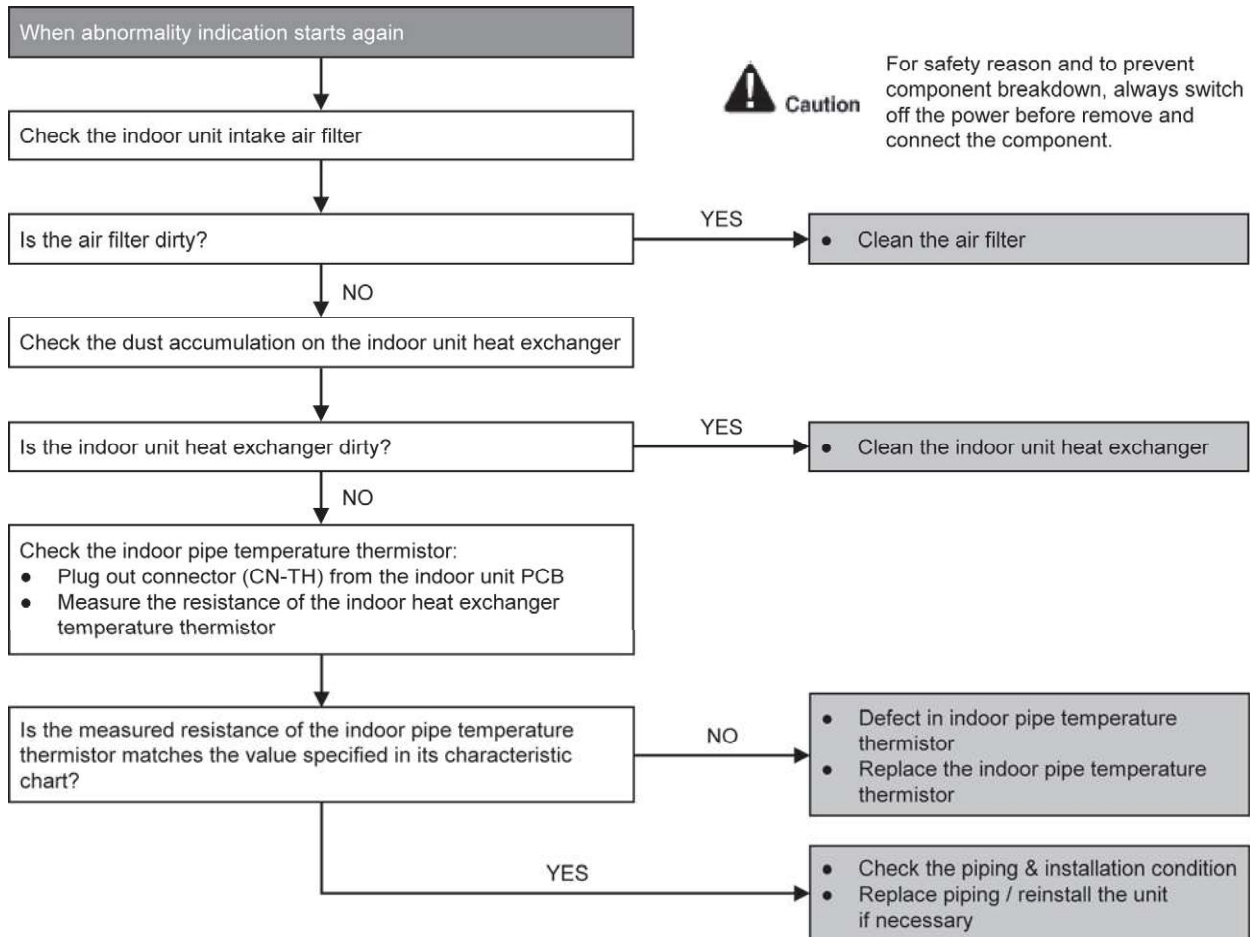
Malfunction Decision Conditions

- Indoor high pressure is detected when indoor heat exchanger is detecting very high temperature when the unit is operating in heating operation.
- Phenomena: unit is stopping and re-starting very often in heating mode

Malfunction Caused

- Indoor heat exchanger thermistor
- Clogged air filter or heat exchanger
- Over-bent pipe (liquid side)

Troubleshooting



H02 Power Factor Correction Protection

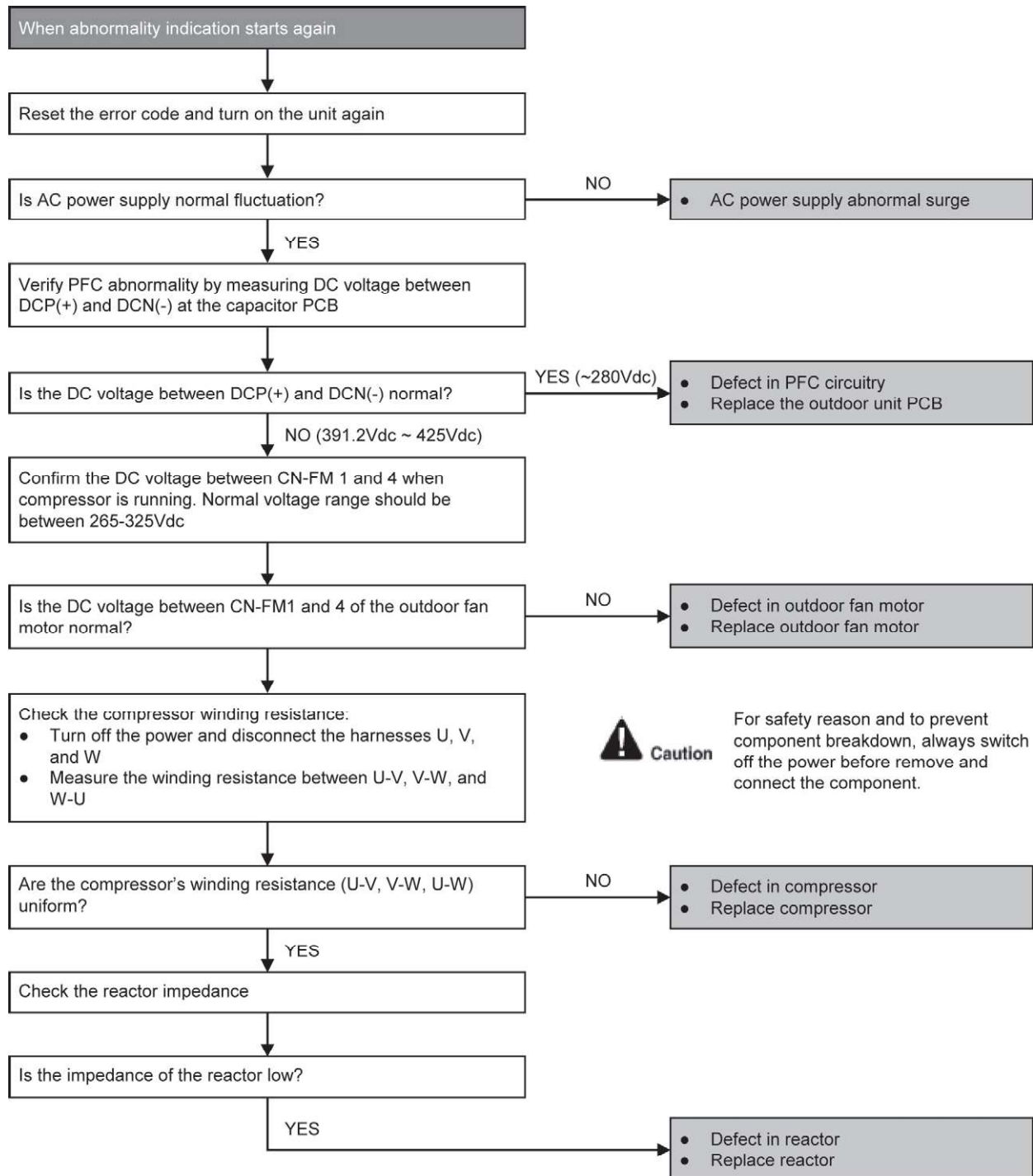
Malfunction Decision Conditions

- To maintain DC voltage level supply to power transistor.
- To detect high DC voltage level after rectification.

Malfunction Caused

- During startup and operation of cooling and heating, when Power Factor Correction (PFC) protection circuitry at the outdoor unit main PCB senses abnormal DC voltage level for power transistors.
- When DC voltage detected is LOW, transistor switching will turn ON by controller to push-up the DC level.
- When DC voltage detected is HIGH (391Vdc – 425Vdc), active LOW signal will send by the controller to turn OFF relay RY-C.

Troubleshooting



H03 Outdoor Current Transformer

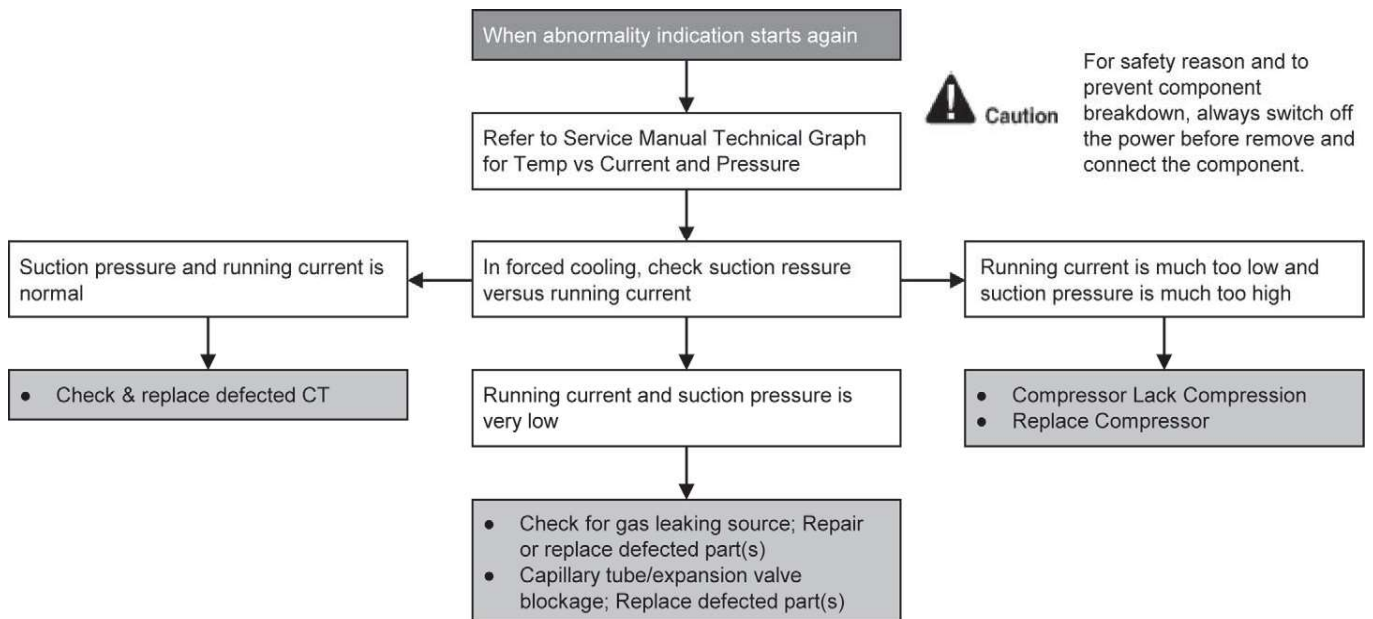
Malfunction Decision Conditions

- An input current, detected by Current Transformer CT, is below threshold value when the compressor is operating at certain frequency value for 3 minutes.

Malfunction Caused

- Lack of gas
- Broken CT (current transformer)
- Broken Outdoor PCB

Troubleshooting



L18 4-way Valve Switching Failure

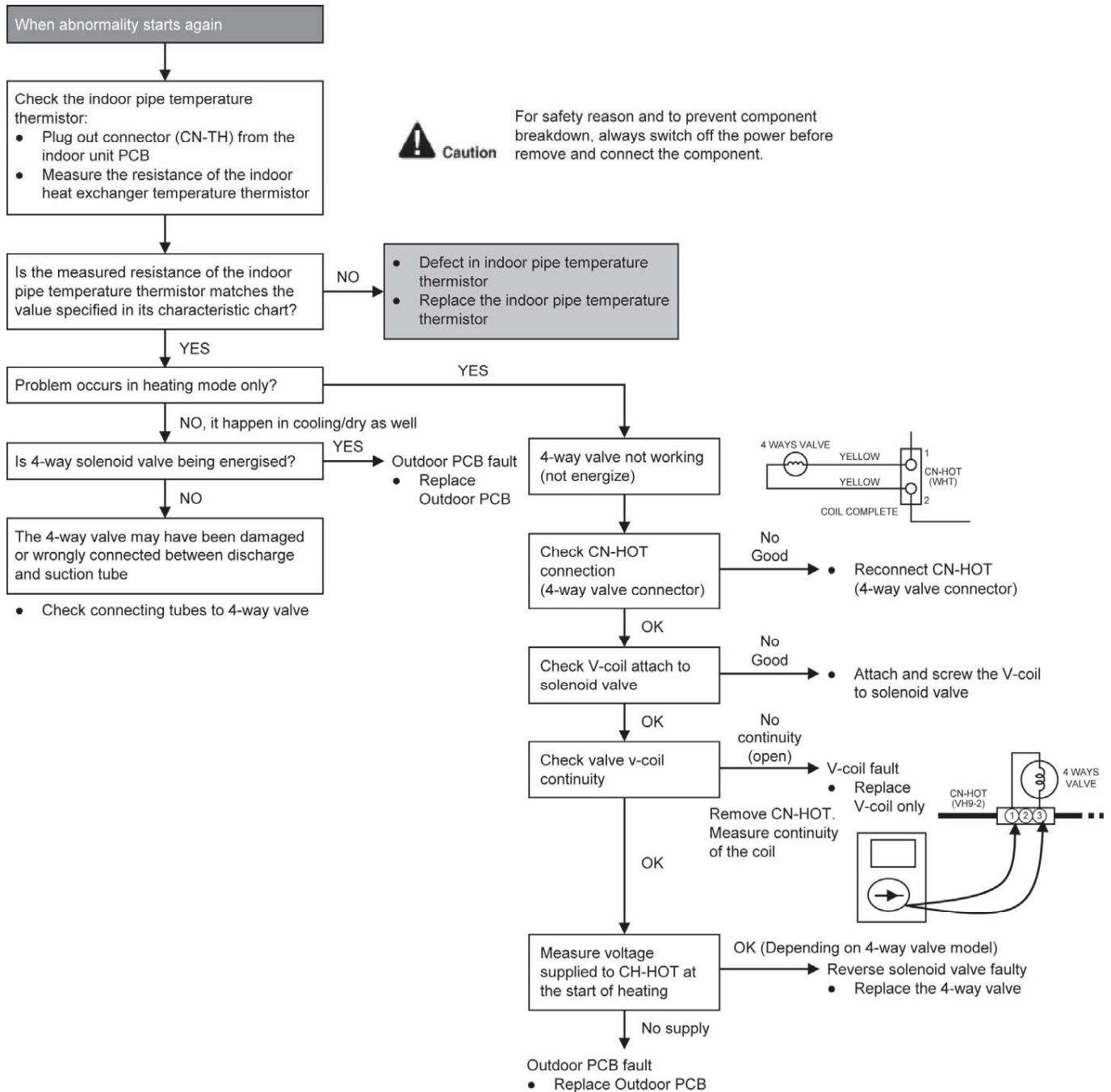
Malfunction Decision Conditions

- When indoor heat exchanger is cold during heating (except deice) or when indoor heat exchanger is hot during cooling and compressor operating, the 4-way valve is detected as malfunction.

Malfunction Caused

- Indoor heat exchanger (pipe) thermistor
- 4-way valve malfunction

Troubleshooting



* Check gas side pipe – for hot gas flow in cooling mode

P03 Compressor Overheating

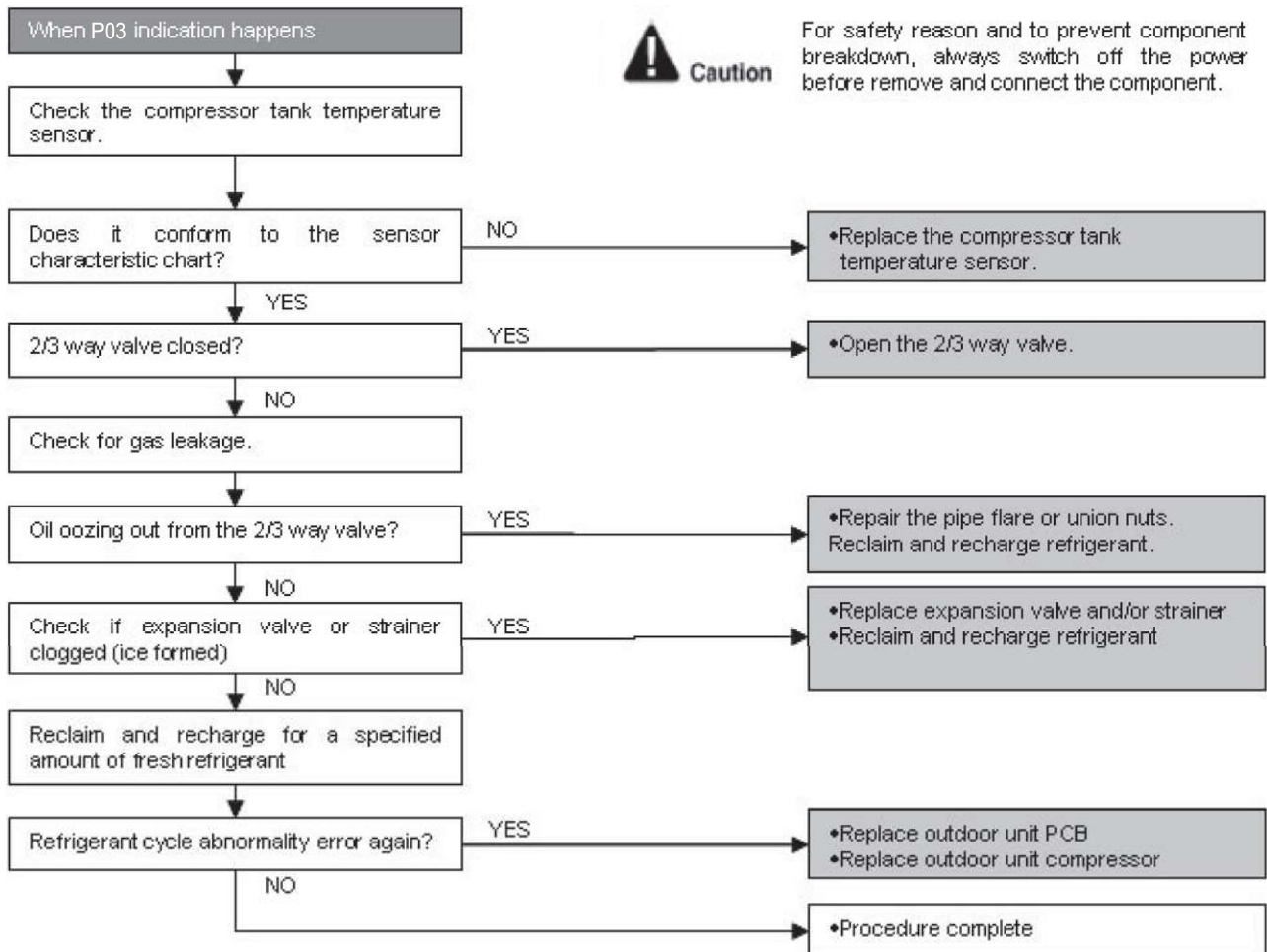
Malfunction Decision Conditions

- During operation of cooling and heating, when compressor tank temperature data (103°C) is detected by the compressor tank temperature sensor.

Malfunction Caused

- Faulty compressor tank temperature sensor
- 2/3 way valve closed
- Refrigerant shortage (refrigerant leakage)
- Faulty outdoor unit PCB
- Faulty compressor

Troubleshooting



P04 Outdoor High Pressure Protection: Cooling or Soft Dry

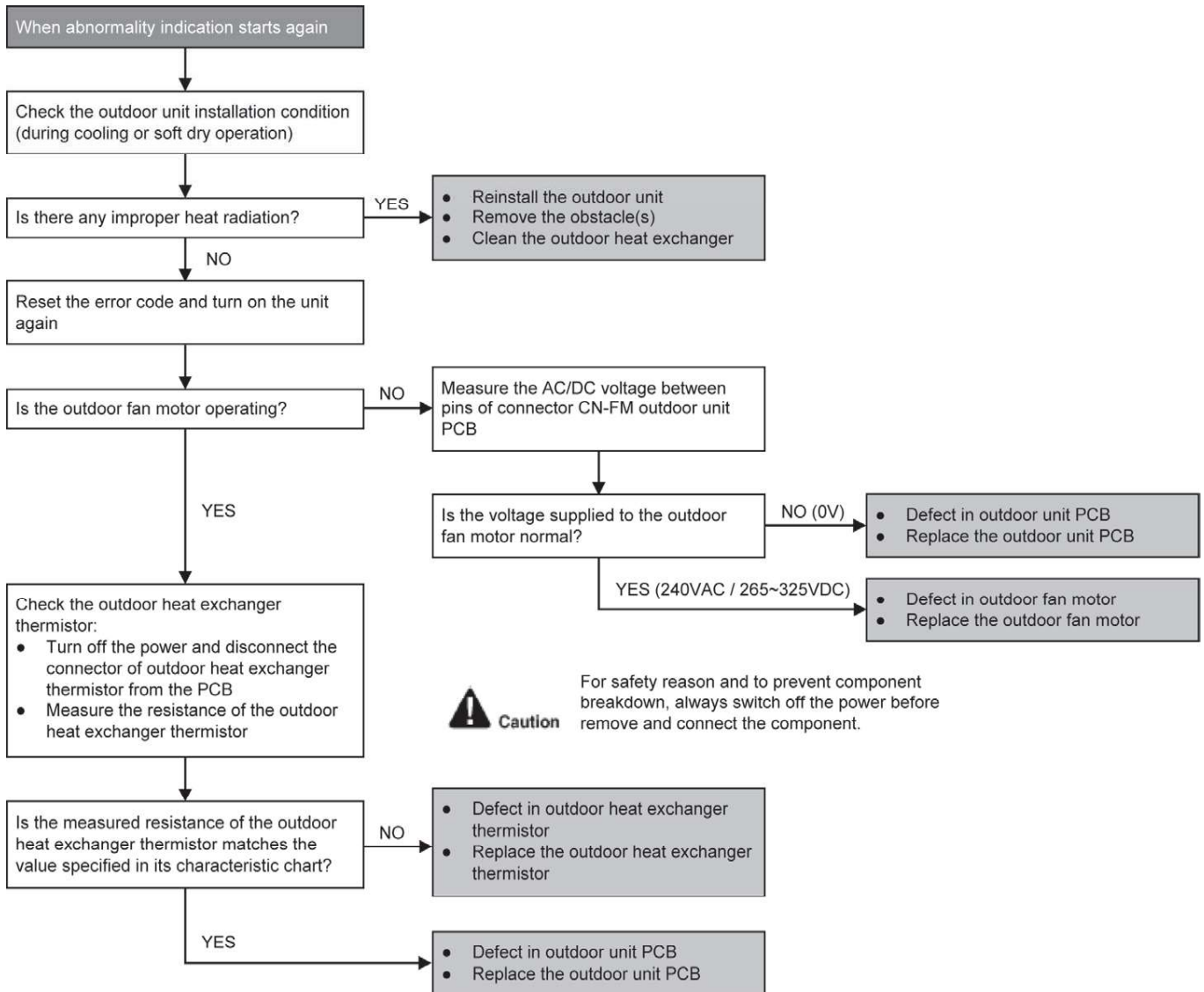
Malfunction Decision Conditions

- During operation of cooling or soft dry, when outdoor unit heat exchanger high temperature data is detected by the outdoor unit heat exchanger thermistor.

Malfunction Caused

- Outdoor heat exchanger temperature rise due to short-circuit of hot discharge air flow.
- Outdoor heat exchanger temperature rise due to defective of outdoor fan motor.
- Outdoor heat exchange temperature rise due to defective outdoor heat exchanger thermistor.
- Outdoor heat exchanger temperature rise due to defective of outdoor unit PCB.

Troubleshooting



P05 Unspecified Voltage between Indoor and Outdoor

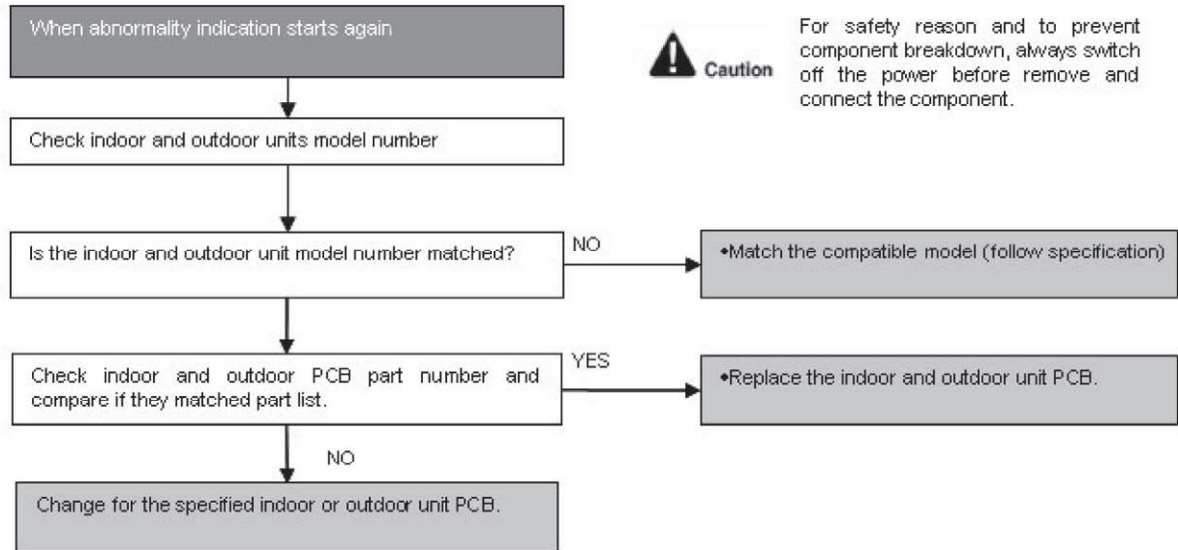
Malfunction Decision Conditions

- The supply power is detected for its requirement by the indoor/outdoor transmission.

Malfunction Caused

- Wrong models interconnected.
- Wrong indoor unit and outdoor unit PCBs used.
- Indoor unit or outdoor unit PCB defective.

Troubleshooting



P15 Refrigeration Cycle Abnormality

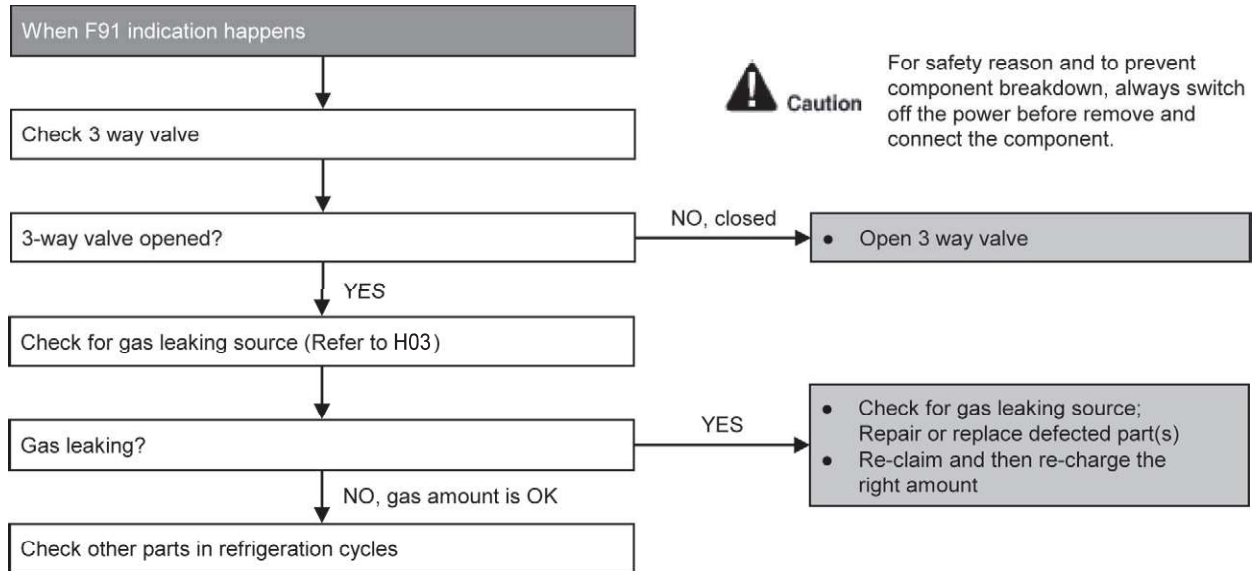
Malfunction Decision Conditions

- The input current is low while the compressor is running at higher than the setting frequency.

Malfunction Caused

- Lack of gas.
- 3-way valve close.

Troubleshooting



P16 DC Peak Detection

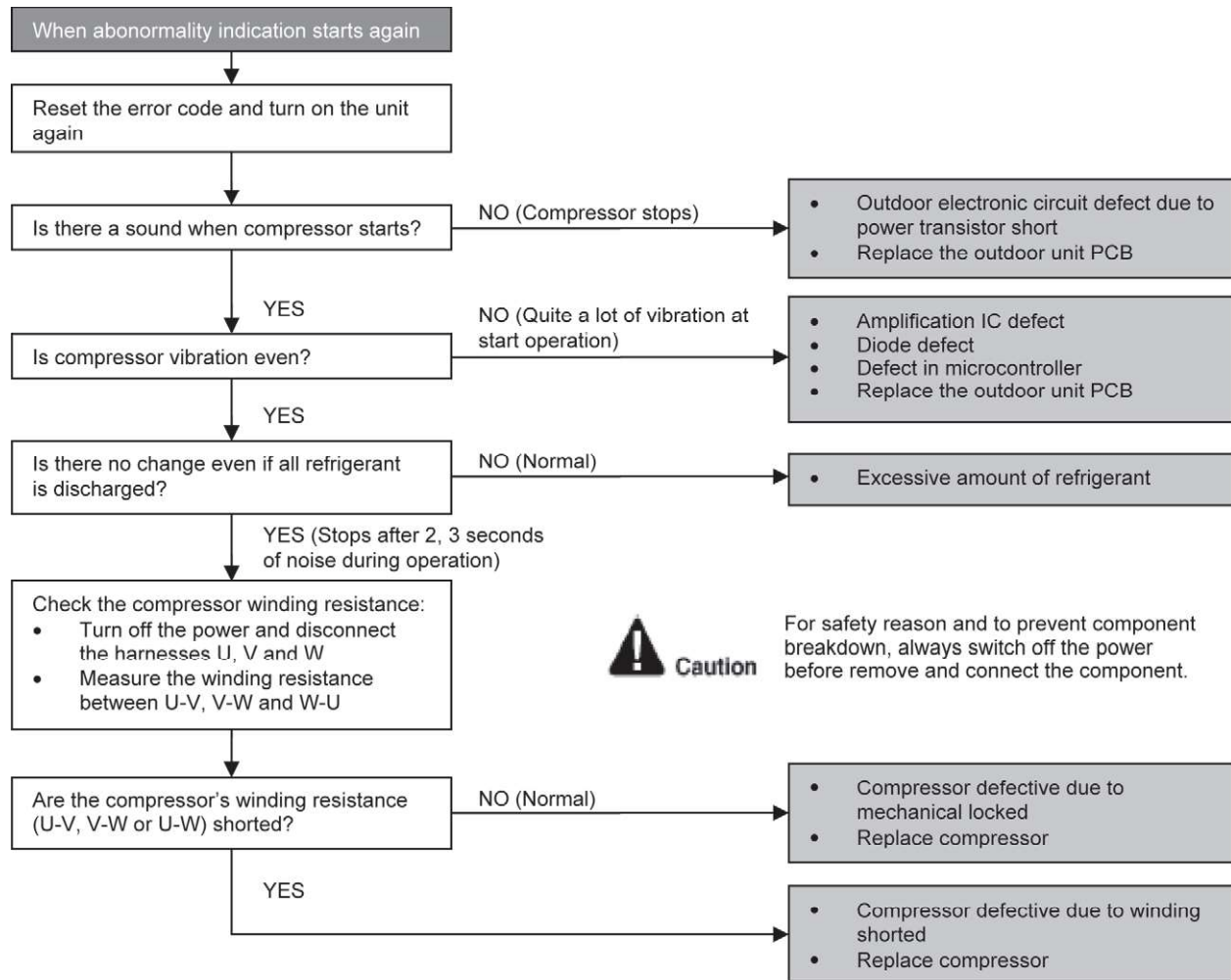
Malfunction Decision Conditions

During startup and operation of cooling and heating, when inverter DC peak data is received by the outdoor internal DC Peak sensing circuitry.

Malfunction Caused

- DC current peak due to compressor failure.
- DC current peak due to defective power transistor(s).
- DC current peak due to defective outdoor unit PCB.
- DC current peak due to short circuit.

Troubleshooting



P22 Outdoor Fan Motor – DC Motor Mechanism Locked

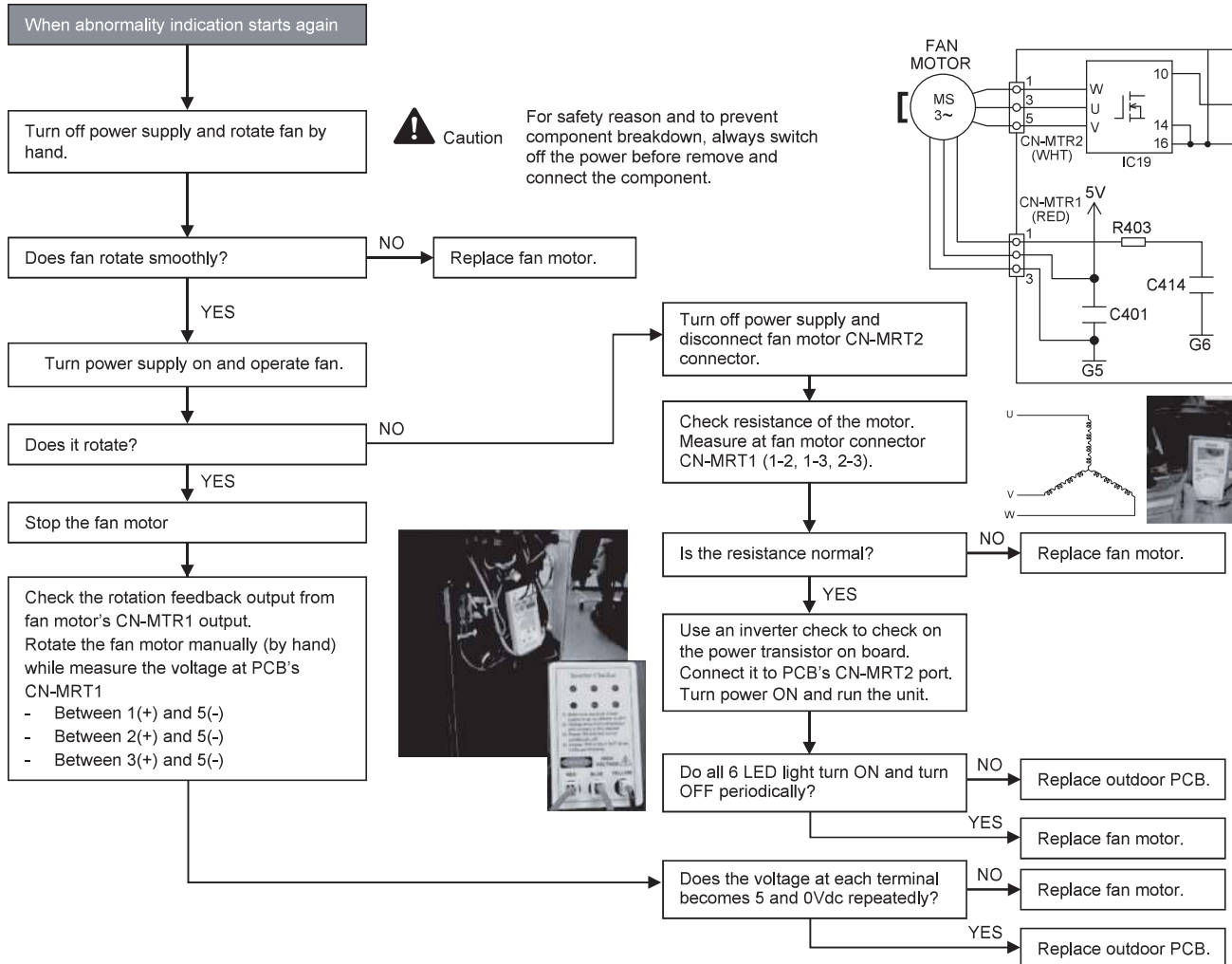
Malfunction Decision Conditions

- The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor.

Malfunction Caused

- Operation stops due to short circuit inside the fan motor winding.
- Operation stops due to breaking of wire inside the fan motor.
- Operation stops due to breaking of fan motor lead wires.
- Operation stops due to Hall IC malfunction.
- Operation error due to faulty outdoor unit PCB.

Troubleshooting



P29 Compressor Rotation Failure

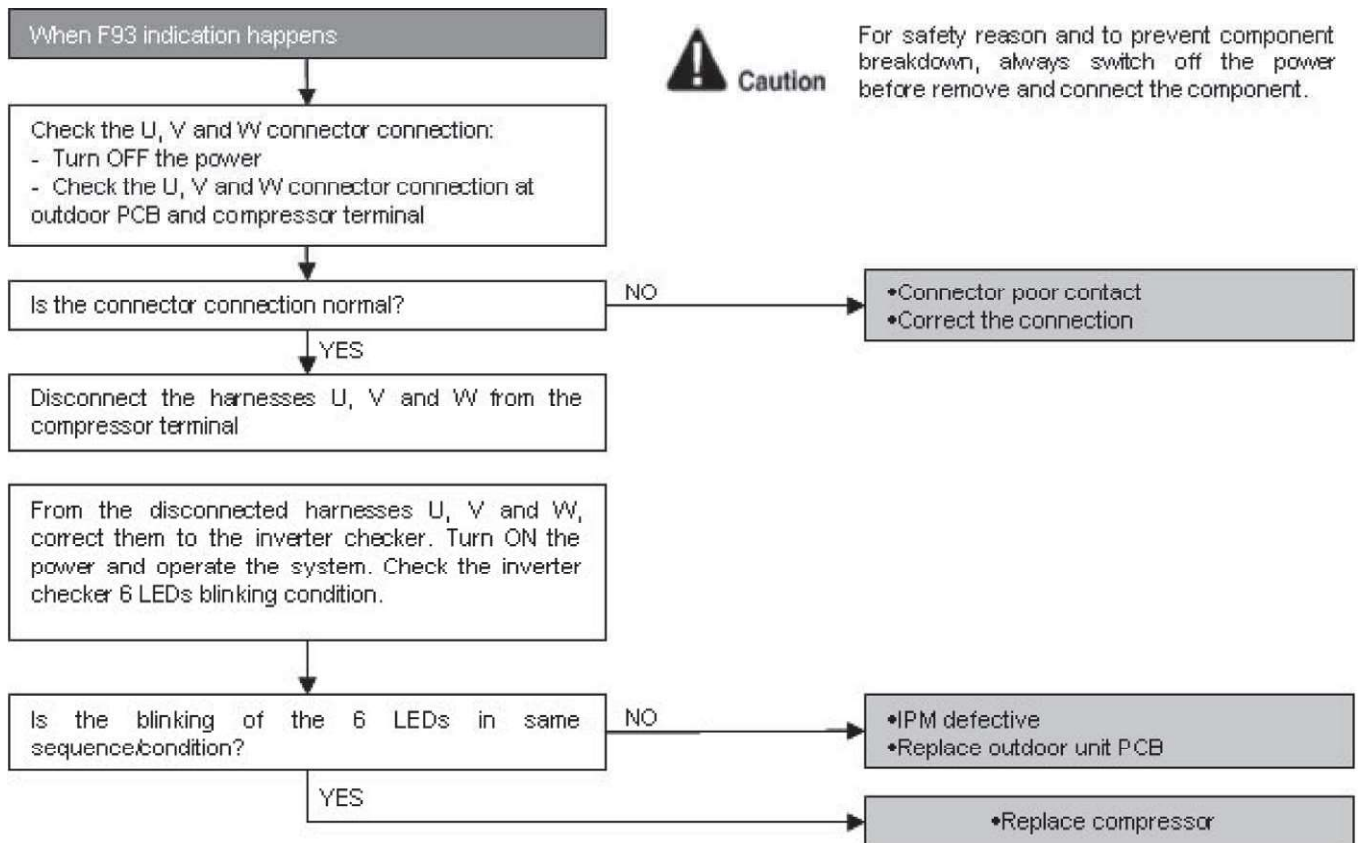
Malfunction Decision Conditions

- A compressor rotation failure is detected by checking the compressor running condition through the position detection circuit.

Malfunction Caused

- Compressor terminal disconnect
- Faulty Outdoor PCB
- Faulty compressor

Troubleshooting



5-3. Inspection of Parts (Outdoor Unit)

(1) Electronic control valve (MOV1)

- STM/STM1: Measure the voltage between plug pin 5 and pins 1 through 4 at the CN-STM/CN-STM1 connector (white) on the outdoor unit control PCB. (Because of the pulse output, a simplified measurement method is used. Set the tester to the 12 V range; if the value displayed is approximately 4 V, then the voltage is normal.) If the voltage is normal, measure the resistance between connector pin 5 and pins 1 through 4. Resistance between pin 5 and pins 1 through 4 should be approximately 46 Ω for all. (If the result is 0 Ω or, ∞ then replace the coil.)

(2) Outdoor Unit Fan Motor

Model No.	Part No. (Panasonic)	Part No.
U-36PZ3E5	L6CAYYYL0064	NFD-52FV-D840-16
U-50PZ3E5	L6CAYYYL0064	NFD-52FV-D840-16
U-60PZ3E5	L6CAYYYL0076	NFD-62FV-D840-6
U-71PZ3E5	L6CAYYYL0076	NFD-62FV-D840-6

(3) Coil Resistance of Compressor

Model No.	Part No. (Panasonic)	Part No.	Inverter compressor (at 20°C)		
			U - V	V - W	U - W
U-36PZ3E5	ACXB09-03470	9RS102XFA21	1.211	1.211	1.211
U-50PZ3E5	ACXB09-04960	9RD132XAB21	1.897	1.882	1.907
U-60PZ3E5	ACXB09-04940	9RD132XAA21	1.897	1.882	1.907
U-71PZ3E5	ACXB09-04950	9KD240XBA21	0.720	0.708	0.726

5-4. How to Replace Fan Motor

Type F3

Removing Fan Motor

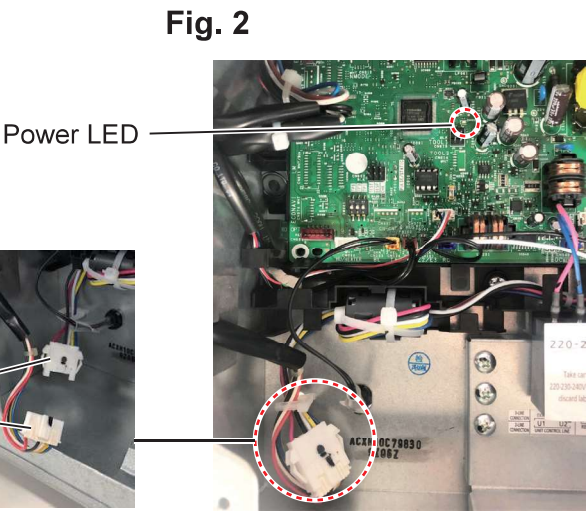
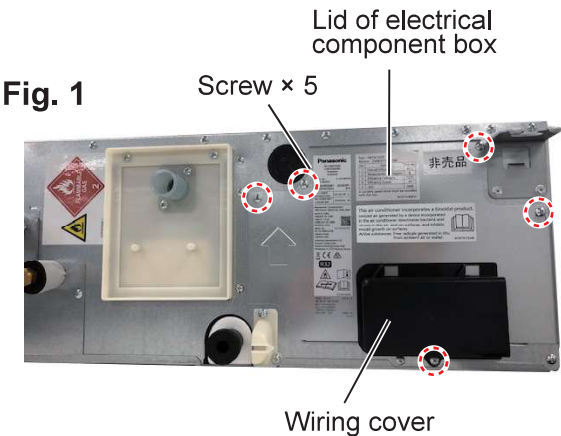
1. Turn off the power supply.

WARNING

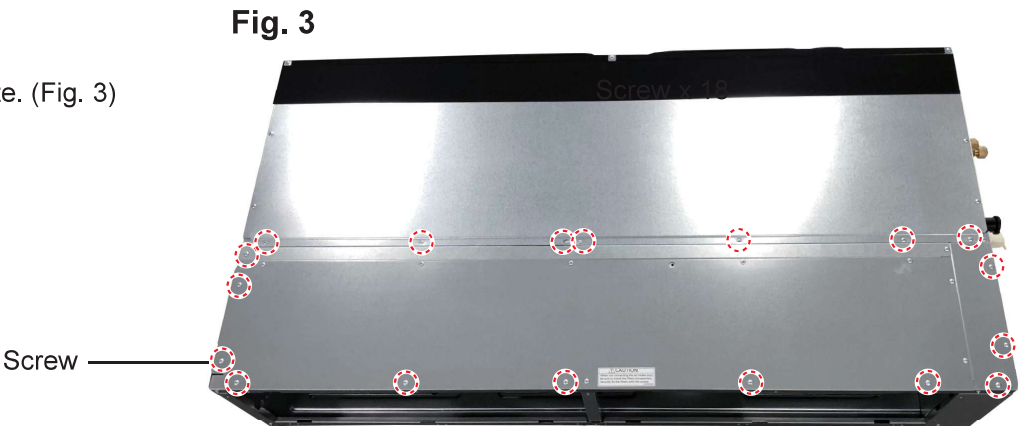


ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

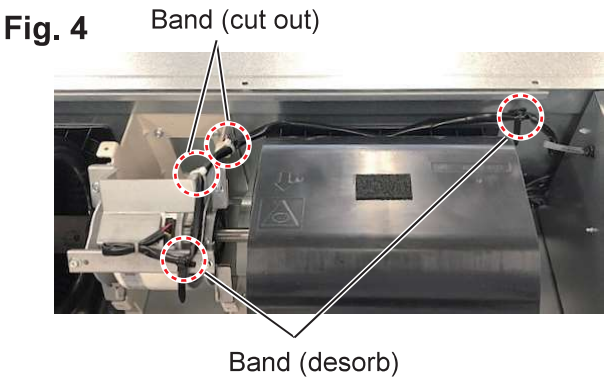
2. Remove the Lid of electrical component box and the wiring cover. (Screws × 5 locations: Fig. 1)
Make sure the PC board should not be electrified.
Power supply LED should be lit off on PC board. (Fig. 2)
3. Disconnect the interconnector in the middle of the wiring to the fan motor. (Fig. 2)



4. Remove the bottom plate. (Fig. 3)



5. Disconnect the wires. (Fig. 4)



6. Peel off the tape on the fan casing and remove two screws. (Fig. 6, Fig. 7, Fig. 8)
Disconnect four (4) clutches (Fig. 7, Fig. 8) fixing the lower side of the fan casing.
Then pull off the fan casing.

Fig. 5

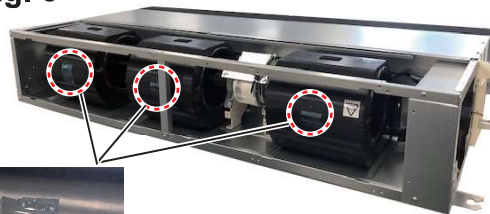
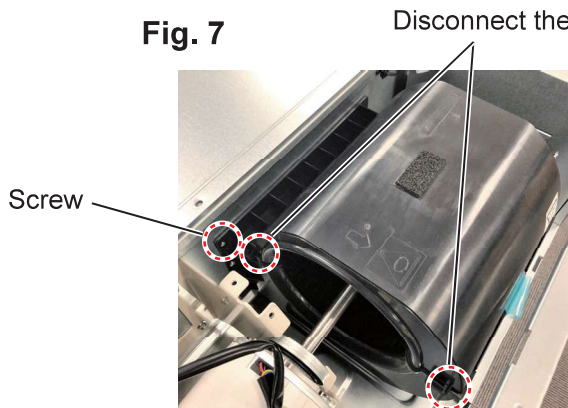


Fig. 6



Peel off the tape

Fig. 7



Disconnect the clutches

Screw

Fig. 8



Fig. 9

7. Remove the screws (M5 × 2 locations: Fig. 9) fixing the fan motor. It is recommended that a nutdriver (8mm) be used.

8. Remove the bracket and then remove the fan and fan motor (Fig. 9).

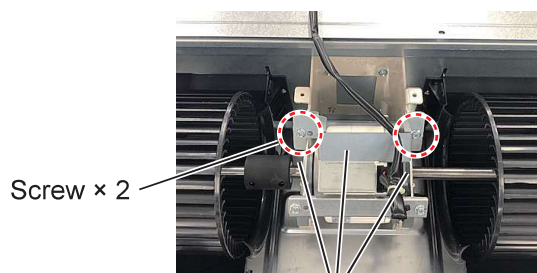
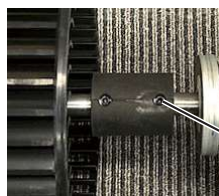


Fig. 10

Bracket

9. Loosen the fixed screw with a hexagon wrench (3mm, over 100mm in length) and remove the fan (Fig. 10).

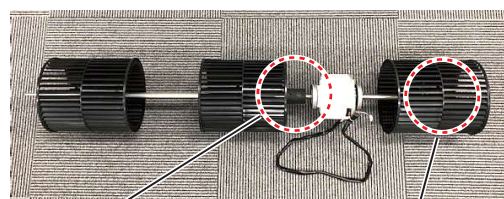
Fig. 11



Hexagon wrench

Fixed screw

Fixed screw



Installing Fan Motor

1. For installation, reverse the procedure above.
2. Fine tune so that the fan can be positioned in the center of the fan casing.

Fig. 12

