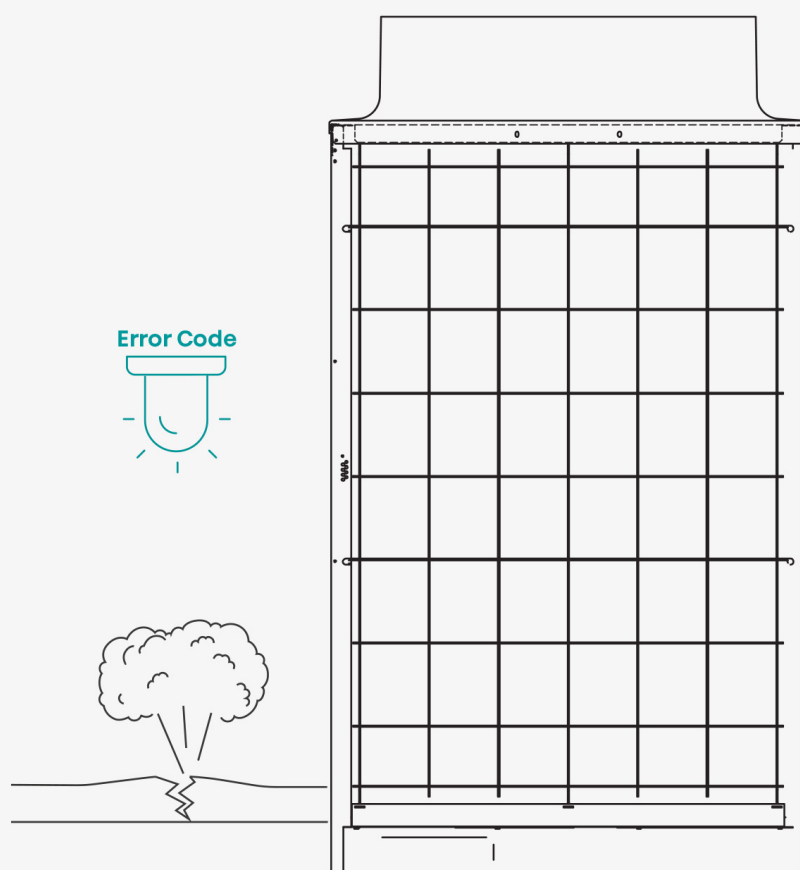


STORINGSLIJST VRF R-SERIE



CLIMATE
SOLUTIONS

Hisense

De Hisense Hi-Flexi R-serie staat bekend om zijn flexibiliteit en veelzijdigheid in diverse toepassingen. Dit VRF systeem is ontworpen om koeling, verwarming of een combinatie van beide te bieden, afhankelijk van de behoeften van de gebruiker. Met de mogelijkheid om te schakelen tussen 2- of 3-pijps uitvoeringen, biedt dit systeem maatwerk en efficiëntie. Hieronder volgt een overzicht van de storingslijst voor de Hisense Hi-Flexi R-serie, inclusief verwijzingen naar de relevante pagina's in de gebruikershandleiding voor gedetailleerde instructies.

Bij het optreden van een storingscode is het raadzaam de Hisense Hi-Flexi R-serie handleiding te raadplegen voor specifieke instructies met betrekking tot de betreffende code. Voor complexe problemen wordt geadviseerd om de serviceafdeling te contacteren.

1. **Alarmcode identificeren:**

Wanneer zich een storing voordoet, observeert u de alarmcode die op het display verschijnt. Deze code is essentieel voor een snelle diagnose.

2. **Stapsgewijze oplossingen in de Storingslijst:**

Op onze storingslijst hebben we elke mogelijke storing georganiseerd op basis van de bijbehorende alarmcodes. Op de eerste pagina van de storingslijst vindt u een overzicht van alarmcodes.

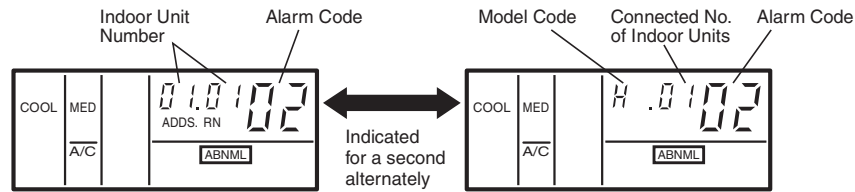
3. **Directe toegang tot oplossingen:**

Klik eenvoudigweg op de alarmcode die overeenkomt met de storing op de unit. Deze klik leidt u onmiddellijk naar de juiste pagina in het document met gedetailleerde instructies en oplossingen voor de specifieke storing.



Troubleshooting Procedure

● Alarm Code Indication of Remote Control Switch



2.1 Alarm Code Table

Code	Category	Content of Abnormality	Leading Cause
01	Indoor Unit	Activation of Protection Device (Float Switch)	Activation of Float Switch (High Water Level in Drain Pan, Abnormality of Drain Pipe, Float Switch or Drain Pan)
02	Outdoor Unit	Activation of Protection Device (High Pressure Cut)	Activation of PSH (Pipe Clogging, Excessive Refrigerant, Inert Gas Mixing)
03	Transmission	Abnormality between Indoor and Outdoor	Incorrect Wiring, Loose Terminals, Disconnect Wire, Blowout of Fuse, Outdoor Unit Power OFF
04		Abnormality between Inverter PCB and Outdoor PCB	Inverter PCB - Outdoor PCB Transmission Failure (Loose Connector, Wire Breaking, Blowout of Fuse)
04.		Abnormality between Fan Controller and Outdoor PCB	Fan Controller - Outdoor PCB Transmission Failure (Loose Connector, Wire Breaking, Blowout of Fuse)
05	Supply Phase	Abnormality Power Source Phases	Incorrect Power Source, Connection to Reversed Phase, Open-Phase
06	Voltage	Abnormal Inverter Voltage	Outdoor Voltage Drop, Insufficient Power Capacity
06.		Abnormal Fan Controller Voltage	Outdoor Voltage Drop, Insufficient Power Capacity
07	Cycle	Decrease in Discharge Gas Superheat	Excessive Refrigerant Charge, Failure of Thermistor, Incorrect Wiring, Incorrect Piping Connection, Expansion Valve Locking at Opened Position (Disconnect Connector)
08		Increase in Discharge Gas Temperature	Insufficient Refrigerant Charge, Pipe Clogging, Failure of Thermistor, Incorrect Wiring, Incorrect Piping Connection, Expansion Valve Locking at Closed Position (Disconnect Connector)
0A	Transmission	Abnormality between Outdoor and Outdoor	Incorrect Wiring, Breaking Wire, Loose Terminals
0b	Outdoor Unit	Incorrect Outdoor Unit Address Setting	Duplication of Address Setting for Outdoor Units (Sub Units) in Same Refrigerant Cycle System
0C		Incorrect Outdoor Unit Main Unit Setting	Two (or more) Outdoor Units Set as "Main Unit" Exist in Same Refrigerant Cycle System
11	Sensor on Indoor Unit	Inlet Air Thermistor	Incorrect Wiring, Disconnecting Wiring Breaking Wire, Short Circuit
12		Outlet Air Thermistor	
13		Freeze Protection Thermistor	
14		Gas Piping Thermistor	
19	Fan Motor	Activation of Protection Device for Indoor Fan	Fan Motor Overheat, Locking
21	Sensor on Outdoor Unit	High Pressure Sensor	Incorrect Wiring, Disconnecting Wiring Breaking Wire, Short Circuit
22		Outdoor Air Thermistor	
23		Discharge Gas Thermistor on Top of Compressor	
24		Heat Exchanger Liquid Pipe Thermistor	
25		Heat Exchanger Gas Pipe Thermistor	
29		Low Pressure Sensor	

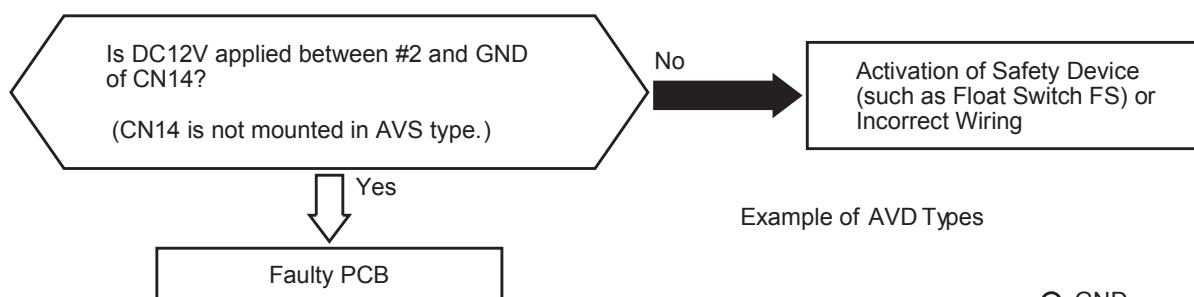
Code	Category	Content of Abnormality	Leading Cause
31	System	Incorrect Capacity Setting of Outdoor Unit and Indoor Unit	Incorrect Capacity Code Setting of Combination Excessive or Insufficient Indoor Unit Total Capacity Code
35		Incorrect Setting of Indoor Unit No.	Duplication of Indoor Unit No. in same Ref. Gr.
36		Incorrect of Indoor Unit Combination	Indoor Unit is Designed for R22
38		Abnormality of Picking up Circuit for Protection in Outdoor Unit	Failure of Protection Detecting Device (Incorrect Wiring of Outdoor PCB)
39	Compressor	Abnormality Running Current at Constant Speed Compressor	Overcurrent, Blowout Fuse, Current Sensor Failure, Instantaneous Power Failure, Voltage Drop, Abnormal Power Supply
3A	Outdoor Unit	Abnormality of Outdoor Unit Capacity	Outdoor Unit Capacity > 510kBTu/h
3b		Incorrect Setting of Outdoor Unit Models Combination or Voltage	Incorrect Setting of Main and Sub Unit(s) Combination or Voltage
3d		Abnormality Transmission between Main Unit and Sub Unit(s)	Incorrect Wiring, Disconnect Wire, Breaking Wire, PCB Failure
43	Protection Device	Activation of Low Compression Ratio Protection Device	Defective Compression (Failure of Compressor or Inverter, Loose Power Supply Connection)
44		Activation of Low Pressure Increase Protection Device	Overload at Cooling, High Temperature at Heating, Expansion Valve Locking (Loose Connector)
45		Activation of High Pressure Increase Protection Device	Overload Operation (Clogging, Short-Pass), Pipe Clogging, Excessive Refrigerant, Inert Gas Mixing
47		Activation of Low Pressure Decrease Protection Device (Vacuum Operation Protection)	Insufficient Refrigerant, Refrigerant Piping, Clogging, Expansion Valve Locking at Open Position (Loose Connector)
48		Activation of Inverter Overcurrent Protection Device	Overload Operation, Compressor Failure
51	Sensor	Abnormal Inverter Current Sensor	Current Sensor Failure
53	Inverter	Inverter Error Signal Detection	Driver IC Error Signal Detection (Protection for Overcurrent, Low Voltage, Short Circuit)
54		Abnormality of Inverter Fin Temperature	Abnormal Inverter Fin Thermistor, Heat Exchanger Clogging, Fan Motor Failure
55		Inverter Failure	Inverter PCB Failure
57	Fan Controller	Activation of Fan Controller Protection	Driver IC Error Signal Detection (Protection for Overcurrent, Low Voltage, Short Circuit), Instantaneous Overcurrent
5A		Abnormality of Fan Controller Fin Temperature	Fin Thermistor Failure, Heat Exchanger Clogging, Fan Motor Failure
5b		Activation of Overcurrent Protection	Fan Motor Failure
5C		Abnormality of Fan Controller Sensor	Failure of Current Sensor (Instantaneous Overcurrent, Increase of Fin Temperature, Low Voltage, Earth Fault, Step-Out)
EE	Compressor	Compressor Protection Alarm (It is can not be reset from remote Controller)	This alarm code appears when the following alarms* occurs three times within 6 hours. *02, 07, 08, 39, 43 to 45, 47
b1	Outdoor Unit No. Setting	Incorrect Setting of Unit and Refrigerant Cycle No.	Over 64 Number is Set for Address or Refrigerant Cycle.
b5	Indoor Unit No. Setting	Incorrect Indoor Unit Connection Number Setting	More than 17 Non-Corresponding to Hi-NET Units are Connected to One System.
C1	Switch Box	Incorrect Indoor Unit Connection	2 or more Switch Boxes are connected between outdoor unit and indoor unit.
C2		Incorrect Indoor Unit Connection No. Setting	9 or More Indoor Units Connected to Switch Box
C3		Incorrect Indoor Unit Connection	The indoor units of different refrigerant cycle is connected to Switch Box.

2.2 Troubleshooting by Alarm Code

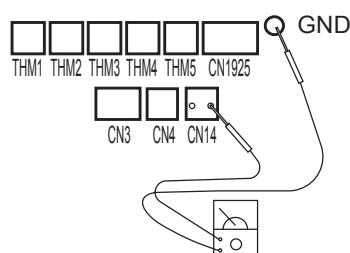
Alarm Code	01	Activation of Protection Device in Indoor Unit
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- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the contact between #1 and #2 of CN14 is not closed over 120 seconds during the cooling, fan or heating operation.

PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB

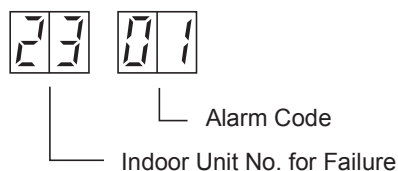


Example of AVD Types



Phenomenon	Cause		Check Item	Action (Turn OFF Main Switch)
Activation of Float Switch	High Drain Level	Clogging of Drainage	Check drain pan.	Remove clogged foreign particles.
	Faulty Float Switch	Fault	Check continuity when drain level is low.	Replace float switch if faulty.
		Faulty Contacting	Measure resistance by tester.	Repair looseness and replace connector.
		Faulty Connection	Check connections.	Repair connection.
Faulty Indoor Unit PCB			Check PCB by self-checking.	Replace it if faulty.

<Outdoor Unit PCB1 Display Indication>



Alarm
Code

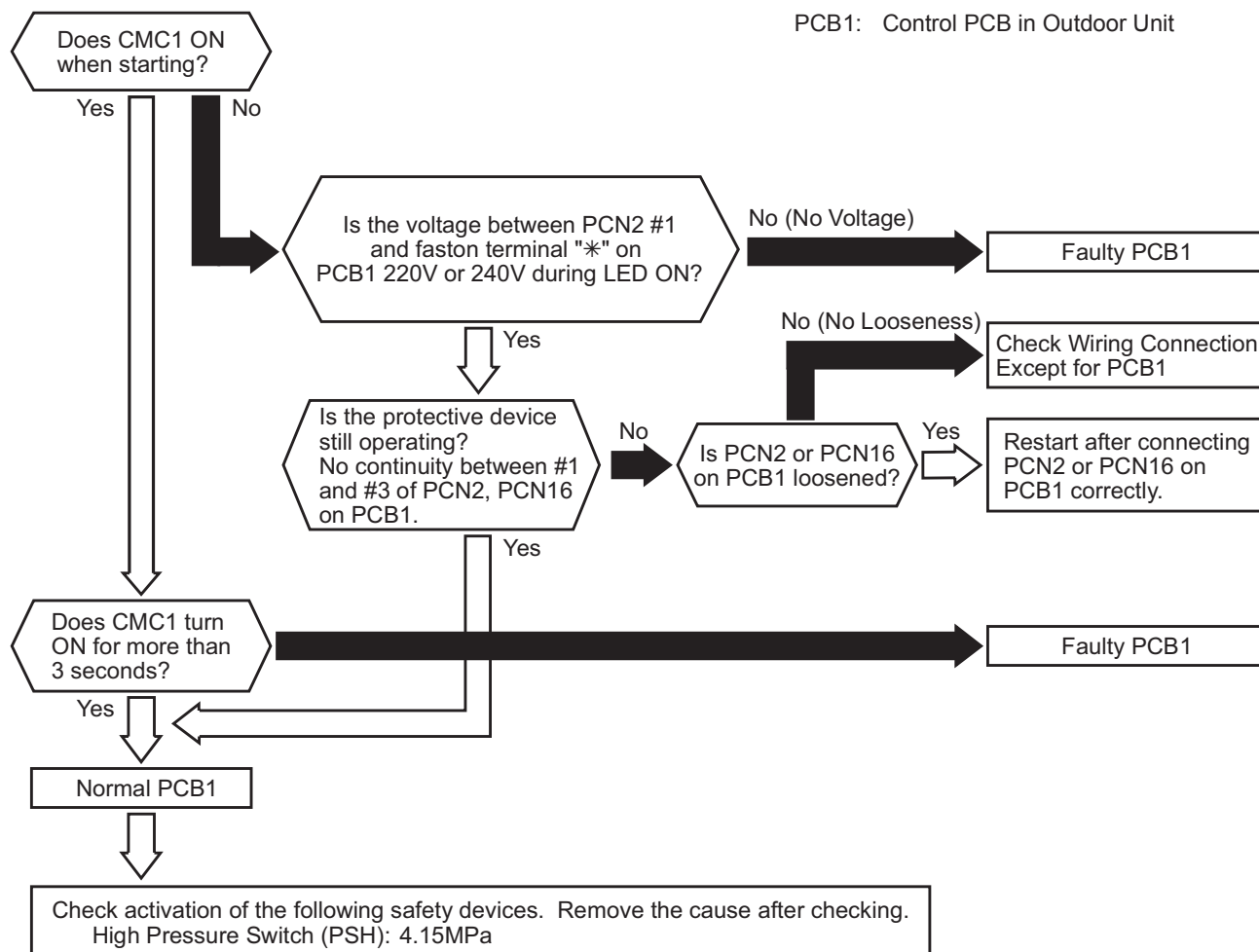
02

Activation of Protection Device in Outdoor Unit

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

★ This alarm is indicated when one of safety devices is activated during compressor running.

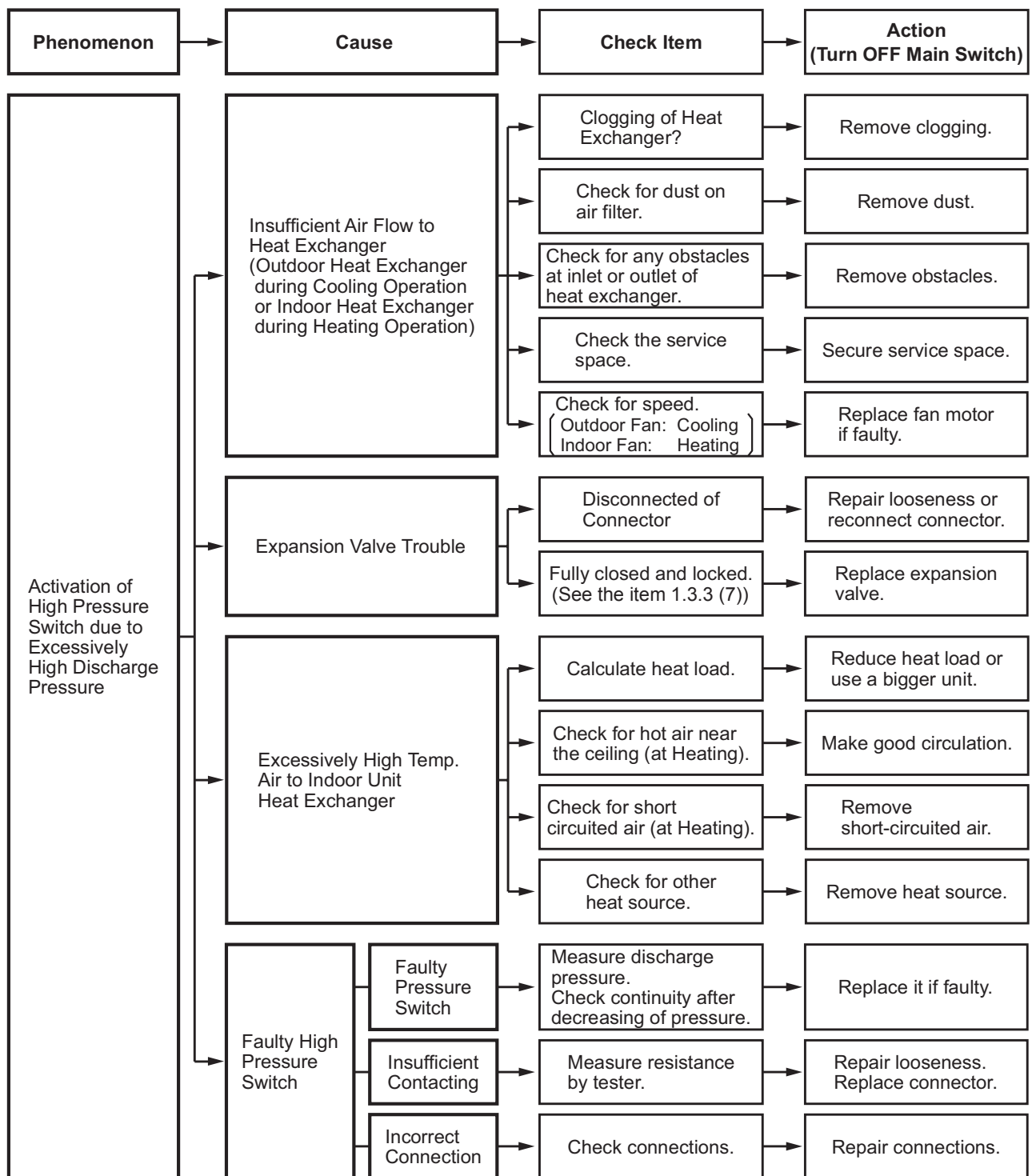
PCB1: Control PCB in Outdoor Unit

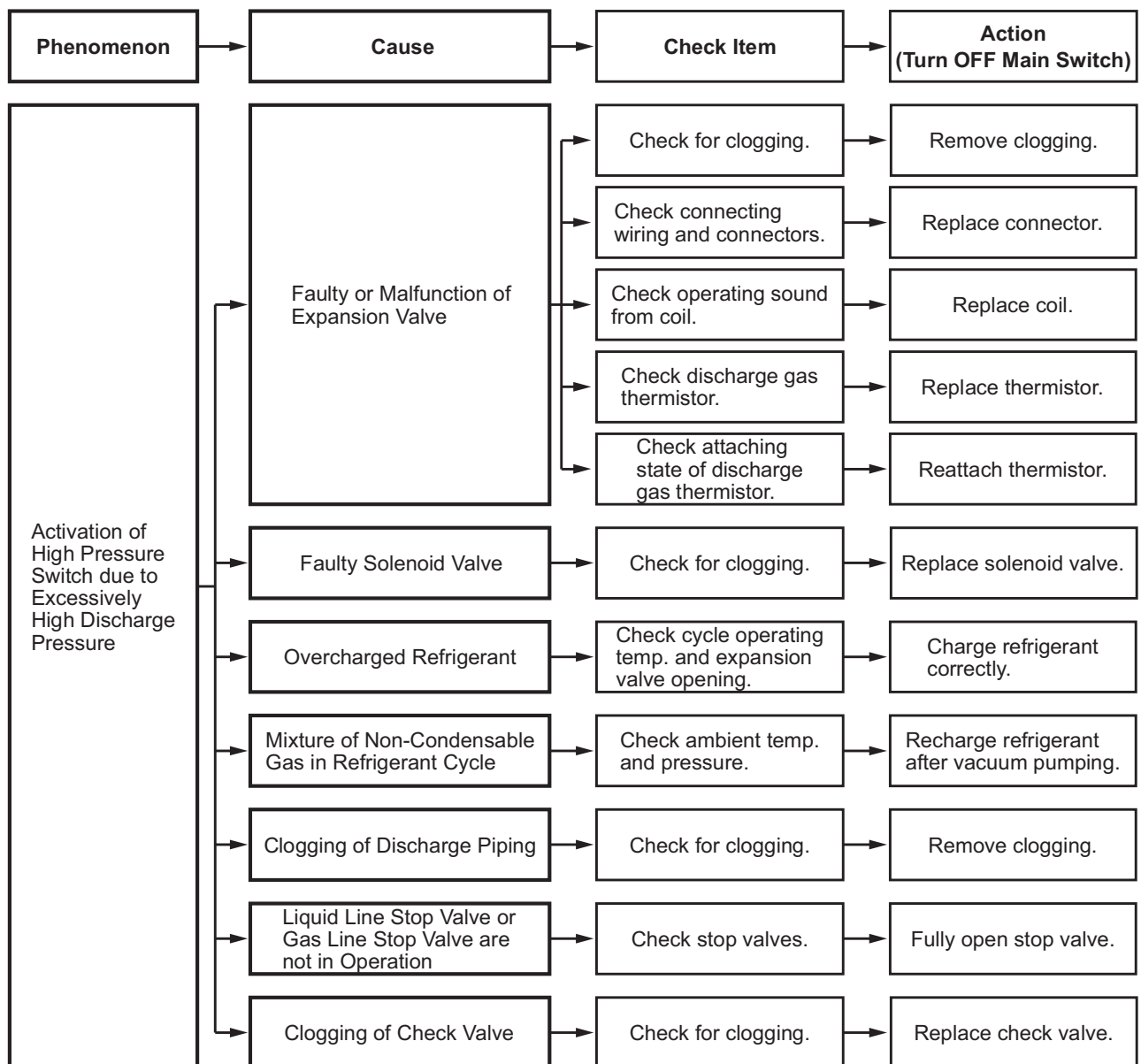


Check Item

Connector for CMC1	Faston Terminal *		Connector for Protection Device
PCN3	380-415V/50Hz	N1	PCN2 or PCN16

Model	High Pressure Switch (Connector No.)	
	63H1 (PCN2)	63H2 (PCN16)
AVWT-76 to AVWT-114	○	-
AVWT-136 to AVWT-170	○	○





Heat Pump System

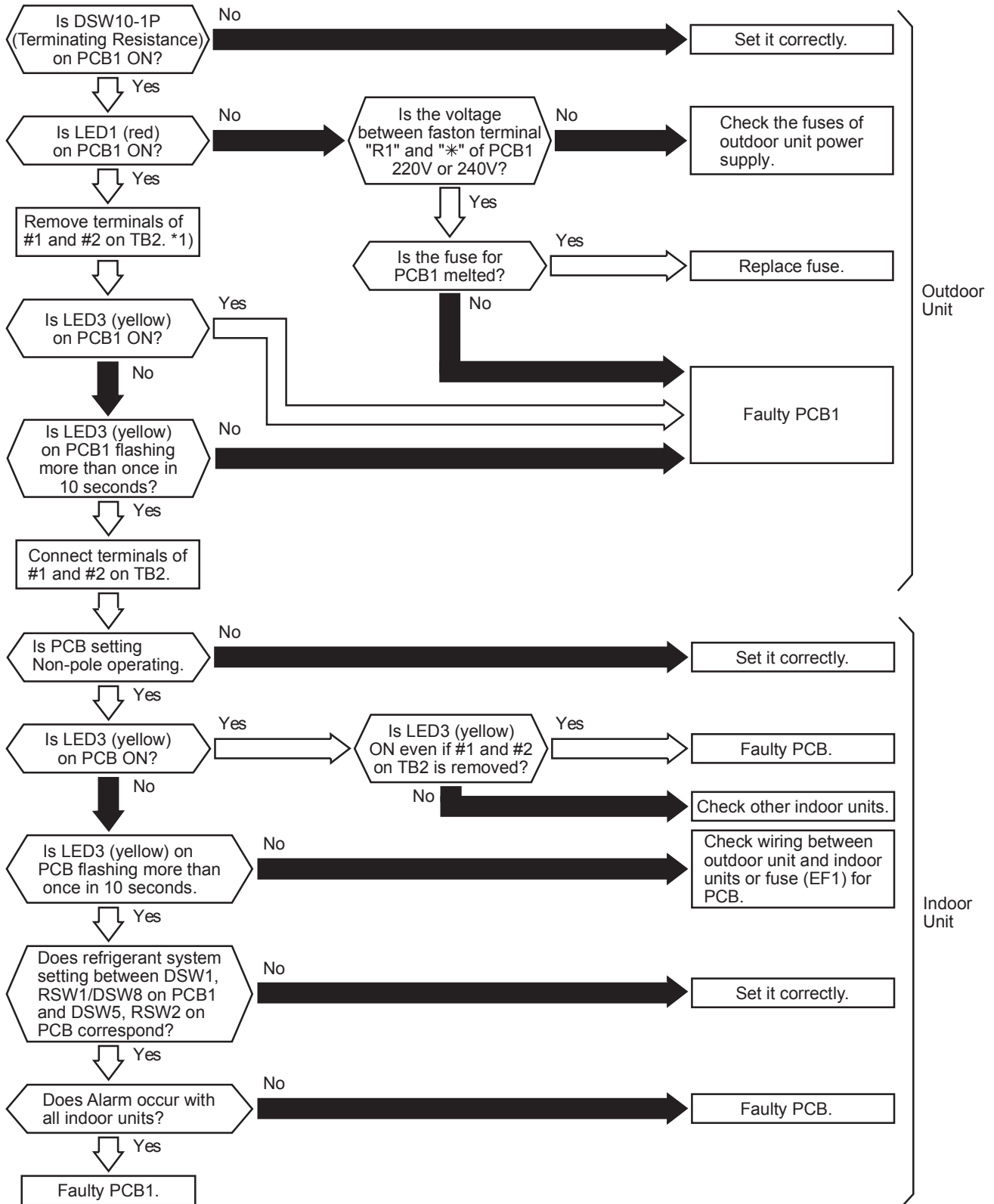
Alarm
Code

03

Abnormal Transmitting between Indoor Units and Outdoor Units

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, or the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when abnormality is maintained for 3 minutes after normal transmitting between indoor units and outdoor unit, and also abnormality is maintained for 30 seconds after the micro-computer is automatically reset.
The alarm is indicated when the abnormal transmitting is maintained for 30 seconds from starting of the outdoor unit.
- ★ Investigate the cause of overcurrent and take necessary action when fuses are melted or the breakers for the outdoor unit are activated.

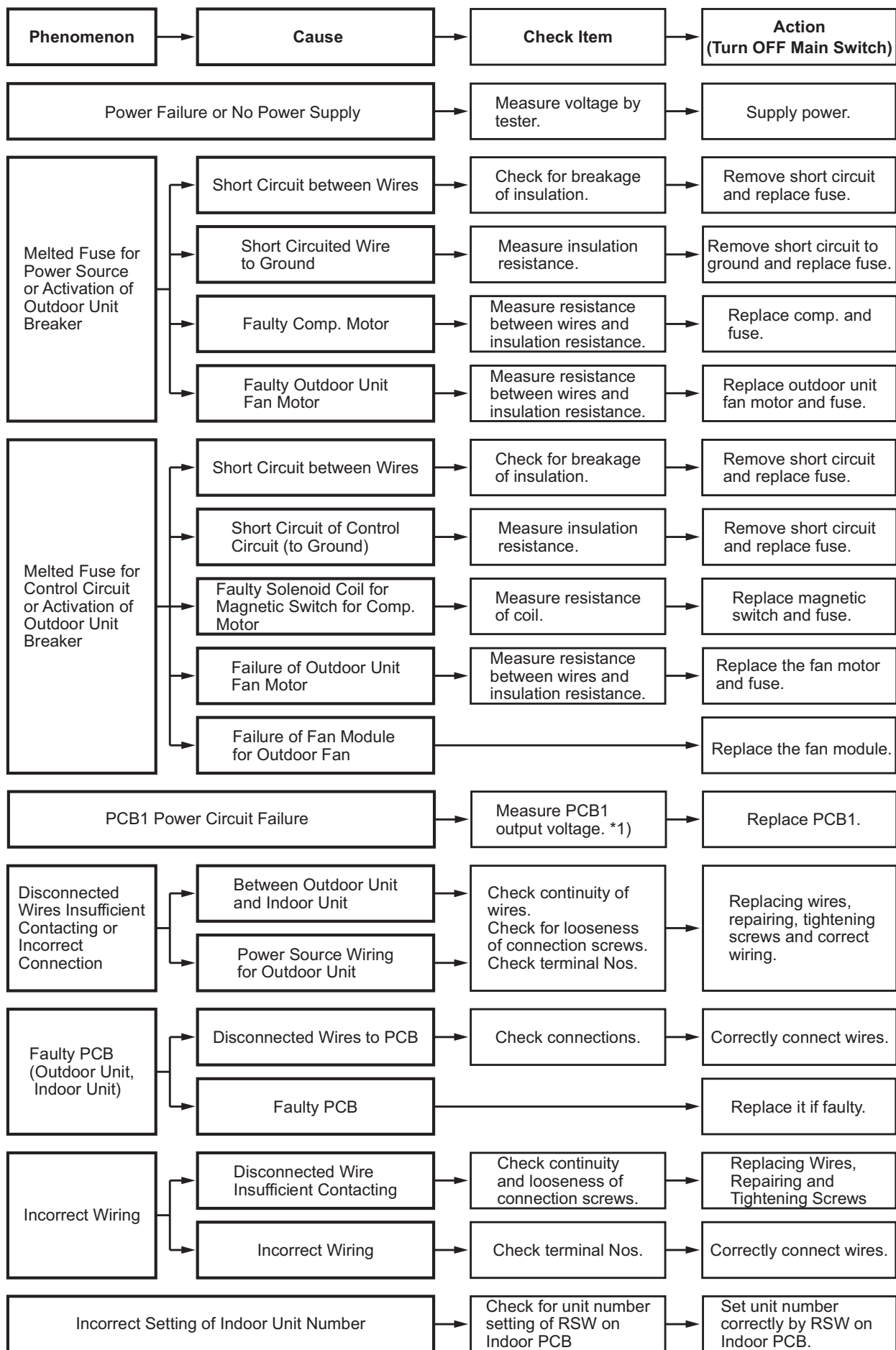
PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB



*1): In case that terminating resistance (DSW10-1P) is OFF when Hi-NET Connection is performed.
Set the terminating resistance to ON when #1 and #2 on TB2 is removed.
Set the terminating resistance to OFF when #1 and #2 on TB2 is reconnected.

*Check Item

Power Supply	Faston Terminal
380-415V/50Hz	N1



*1): 12VDC between VCC12 and GND2, 5VDC between VCC05 and GND1,
12VDC between VCC12 and GND1, 15VDC between VCC15 and GND1,
24VDC between VCC24 and GND1, 12VDC between VCC12T and GND1

Heat Recovery System

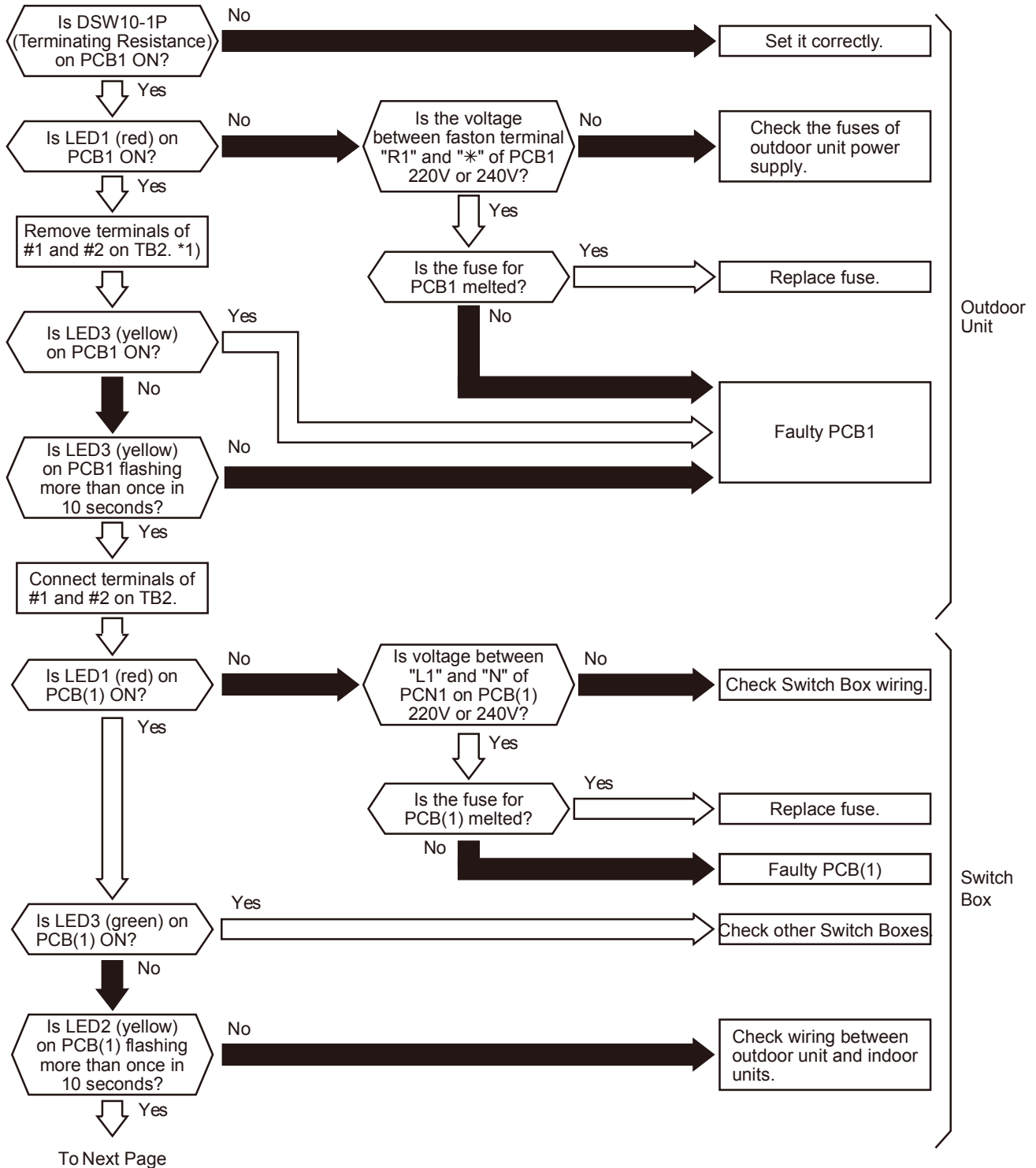
Alarm
Code

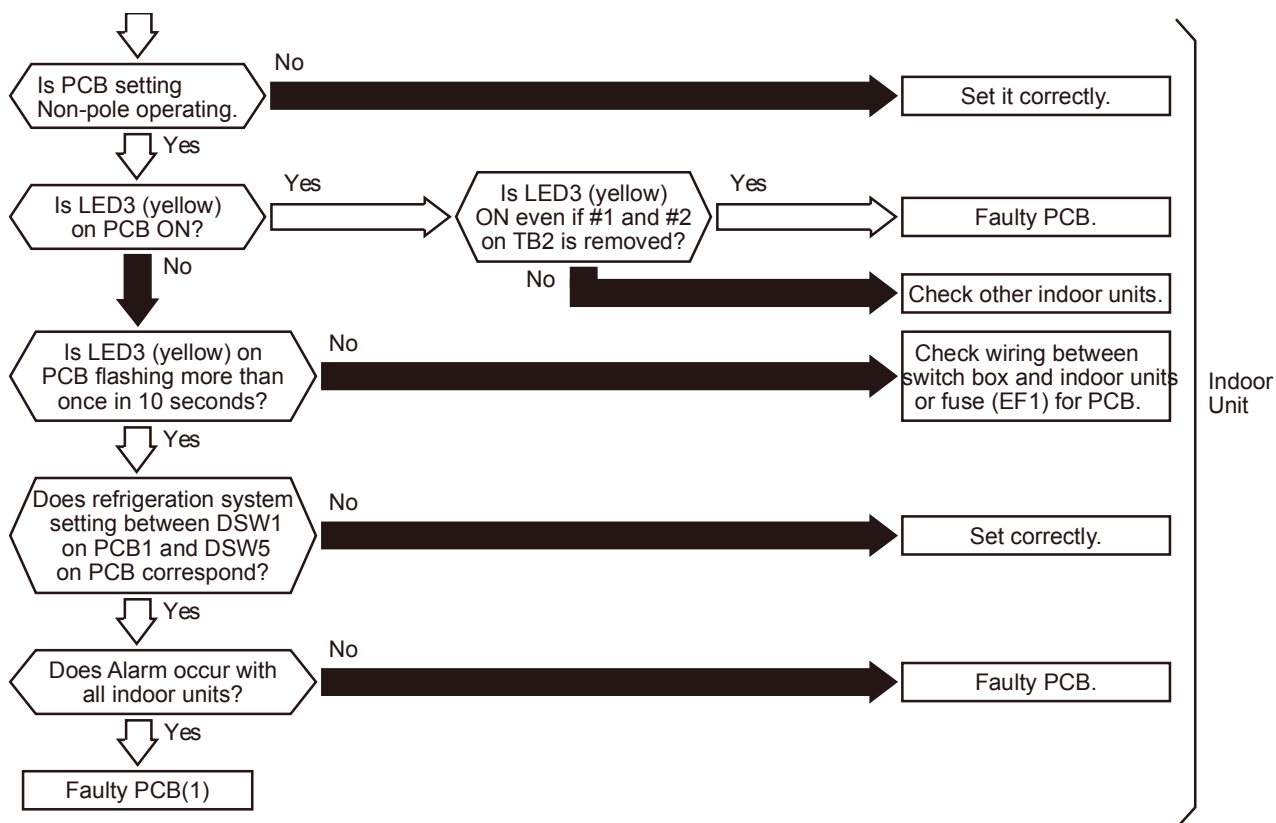
03

Abnormal Transmitting between Indoor Units and Outdoor Units

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, or the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when abnormality is maintained for 3 minutes after normal transmitting between indoor units, switch box and outdoor unit, and also abnormality is maintained for 30 seconds after the micro-computer is automatically reset.
The alarm is indicated when the abnormal transmitting is maintained for 30 seconds from starting of the outdoor unit.
- ★ Investigate the cause of overcurrent and take necessary action when fuses are melted or the breakers for the outdoor unit are activated.

PCB1: Control PCB in Outdoor Unit
 PCB: Indoor Unit PCB
 PCB(1): Switch box PCB

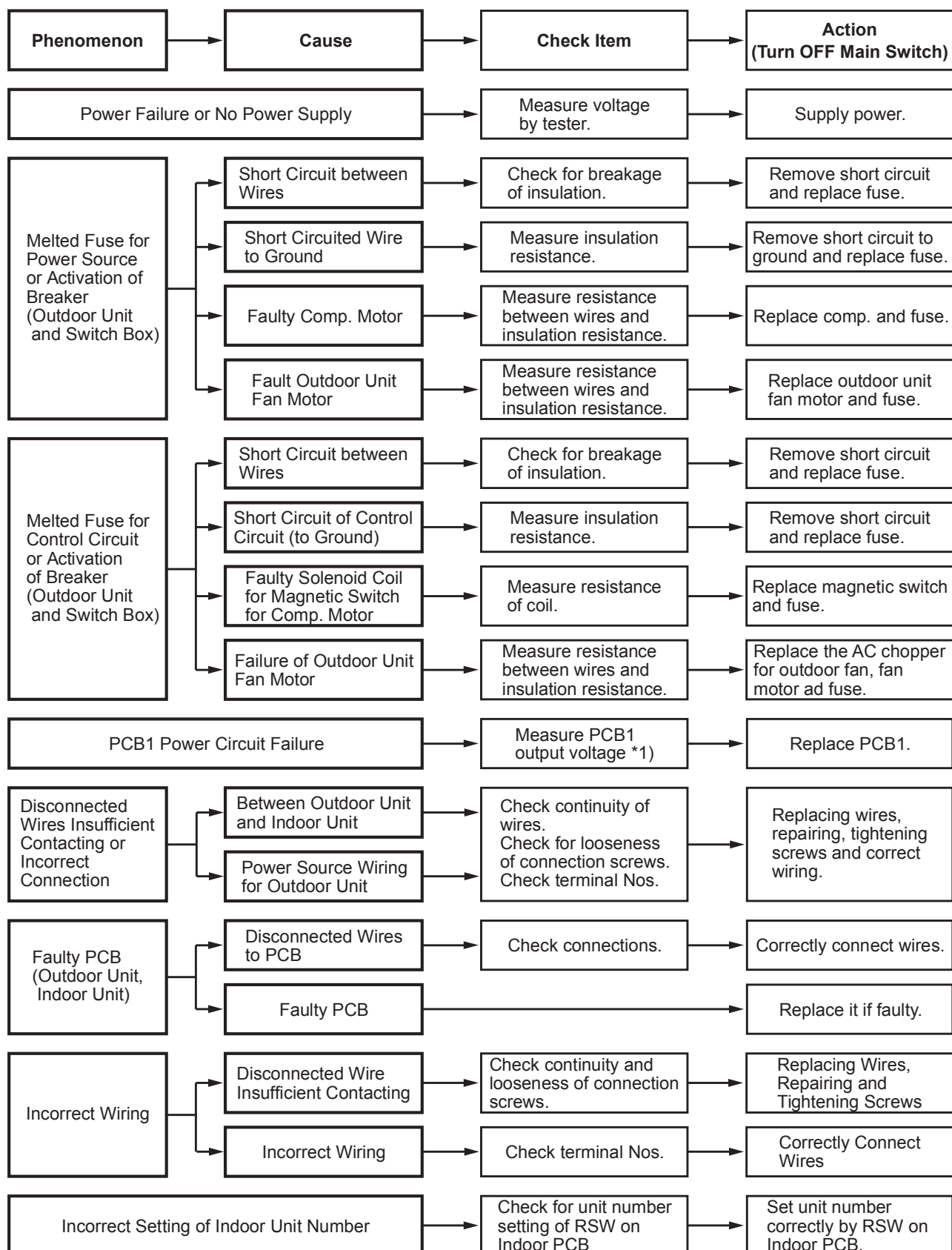




*1): In case that terminating resistance (DSW10-1P) is OFF when Hi-NETff Connection is performed.
Set the terminating resistance to ON when #1 and #2 on TB2 is removed.
Set the terminating resistance to OFF when #1 and #2 on TB2 is reconnected.

* Check Item

Power Supply	Faston Terminal
380-415V/50Hz	N1



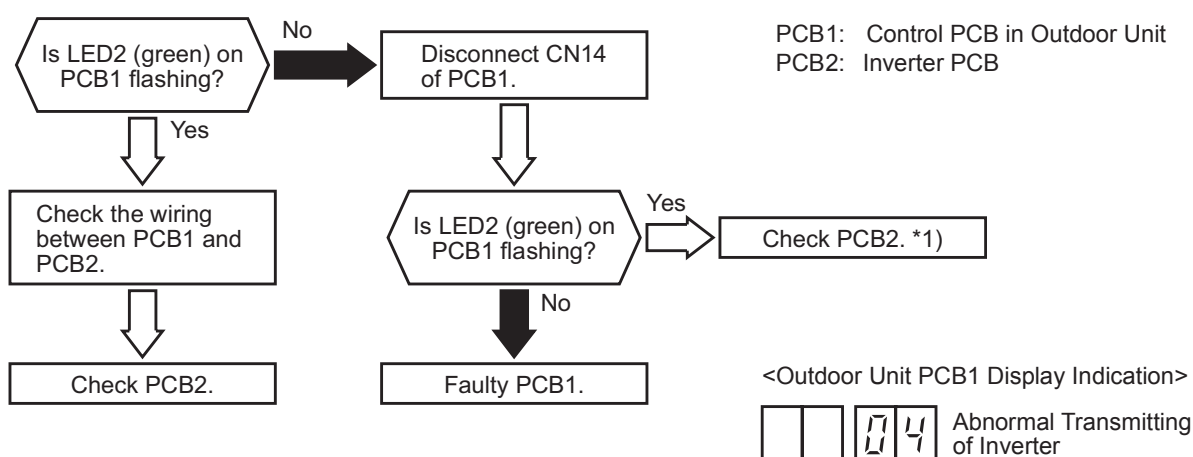
*1): 12VDC between VCC12 and GND2, 5VDC between VCC05 and GND1,
12VDC between VCC12 and GND1, 15VDC between VCC15 and GND1,
24VDC between VCC24 and GND1, 12VDC between VCC12T and GND1

Alarm
Code

04

Abnormal Transmitting between Inverter PCB and Outdoor PCB

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when abnormality is maintained for 30 seconds after normal transmitting between the outdoor unit PCB1 and PCB2, and also abnormality is maintained for 30 seconds after the micro-computer is automatically reset. The alarm is indicated when the abnormal transmitting is maintained for 30 seconds from starting of the outdoor unit.

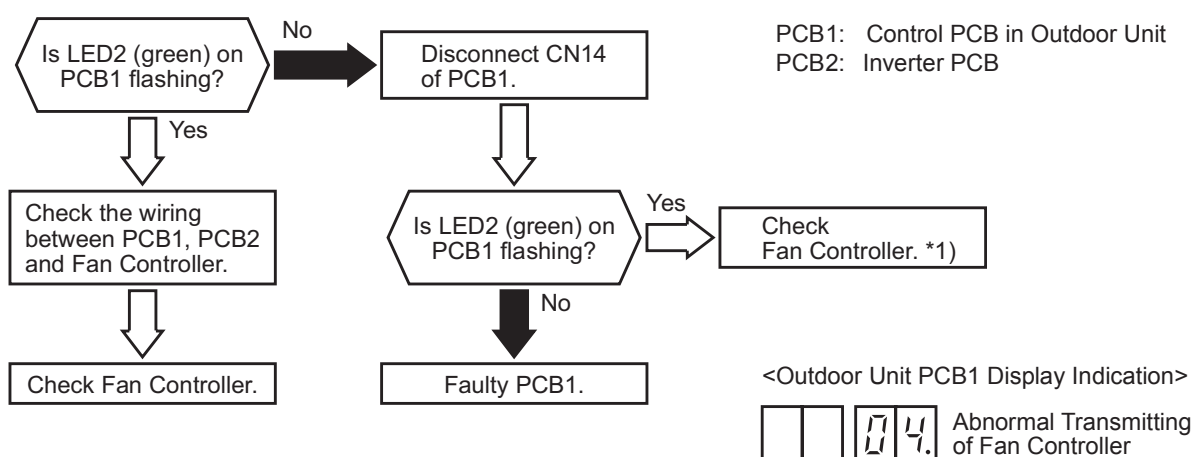


Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Disconnected Wires, Insufficient Contacting or Incorrect Connection	Between PCB1 and PCB2	Check continuity of wires. Check for looseness of connection screws. Check connection No.	Replacing wires, repairing, tightening screws and incorrect wiring.
	Power Source Wiring for Outdoor Unit		
Faulty PCB (PCB1 and PCB2)	Disconnected Wires to PCB	Check connections.	Repair wiring connections.
	Faulty PCB		Replace PCB if faulty.
Faulty Electrical Components (Power Fuse, Resistance)	Melted Power Fuse	Check conductivity of power fuse, power transistor, diode module.	Replace power fuse, power transistor, and diode module.
	Disconnected Incoming Current Limit Resistance	Check resistance of incoming current limit resistance.	Replace incoming current limit resistance.
Incorrect Wiring	Disconnected Wires Insufficient Contacting	Check continuity. Check for looseness of connection screws.	Replacing Wires, Repairing and Tightening Screws
	Incorrect Wiring	Check connection Nos.	Correctly Connect Wires

Alarm Code 04.

Abnormal Transmitting between Fan Controller and Outdoor PCB

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when abnormality is maintained for 30 seconds after normal transmitting between the outdoor unit PCB1 and fan controller, and also abnormality is maintained for 30 seconds after the micro-computer is automatically reset. The alarm is indicated when the abnormal transmitting is maintained for 30 seconds from starting of the outdoor unit.



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Disconnected Wires, Insufficient Contacting or Incorrect Connection	Between PCB1, PCB2 and Fan Controller	Check continuity of wires. Check for looseness of connection screws. Check connection No.	Replacing wires, repairing, tightening screws and incorrect wiring.
	Power Source Wiring for Outdoor Unit		
Faulty PCB (PCB1 and PCB2) Fan Controller	Disconnected Wires to PCB	Check connections.	Repair wiring connections.
	Faulty PCB		Replace PCB if faulty.
	Melted Fuse (Fan Controller)	Check conductivity of fuse.	Replace fan controller. *1)
Faulty Electrical Components (Power Fuse, Resistance)	Melted Power Fuse	Check conductivity of power fuse, power transistor, diode module.	Replace power fuse, power transistor, and diode module.
	Disconnected Incoming Current Limit Resistance	Check resistance of incoming current limit resistance.	Replace incoming current limit resistance.
Incorrect Wiring	Disconnected Wires Insufficient Contacting	Check continuity. Check for looseness of connection screws.	Replacing Wires, Repairing and Tightening Screws
	Incorrect Wiring	Check connection Nos.	Correctly Connect Wires

*1): The fan controller may be damaged if the fuse of fan controller is melted. In that case, replace the fan controller.

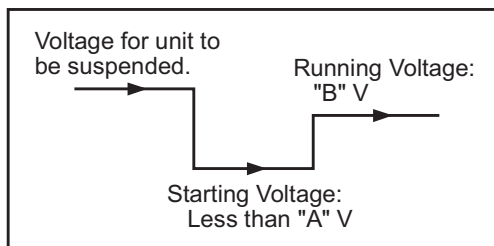
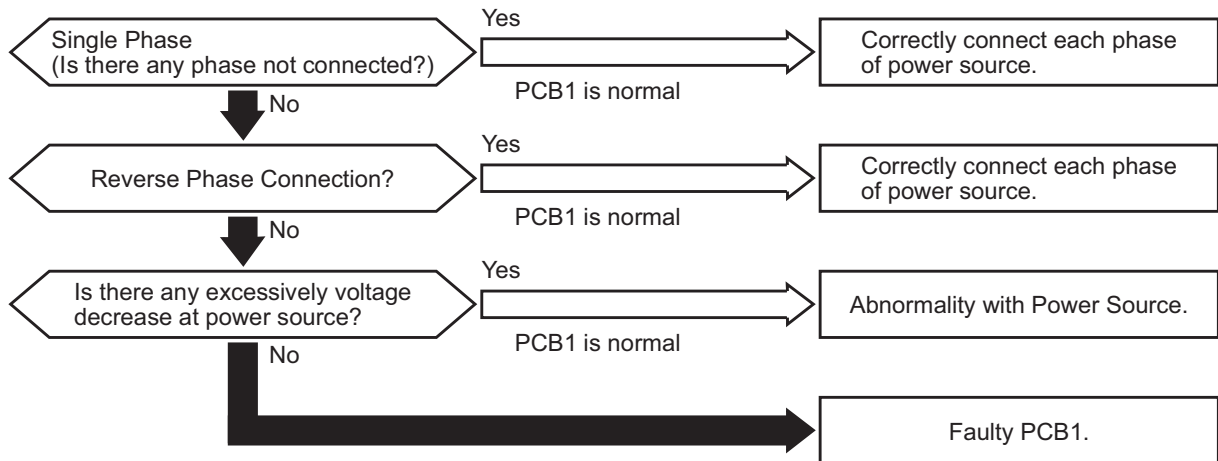
Alarm
Code

05

Abnormality Power Source Phase

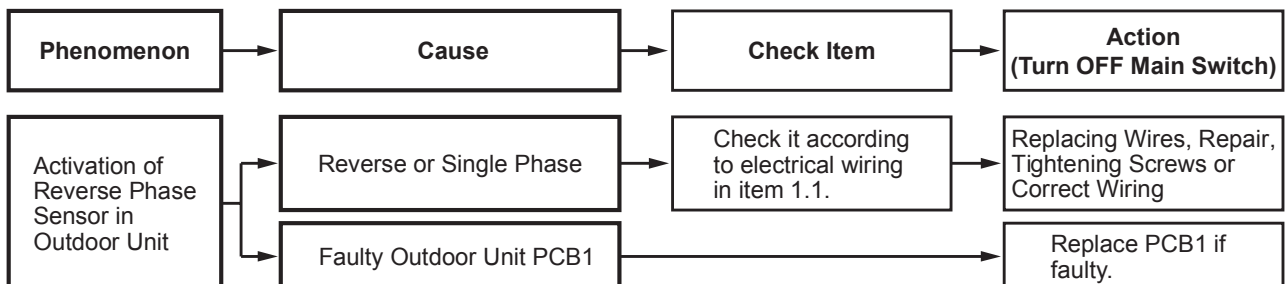
- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the main power source phase is reversely connected or one phase is not connected.

PCB1: Control PCB in Outdoor Unit



Check Item

Power Supply	"A"	"B"
380-415V/50Hz	323	342 to 456



Alarm Code **06**

Abnormal Inverter Voltage

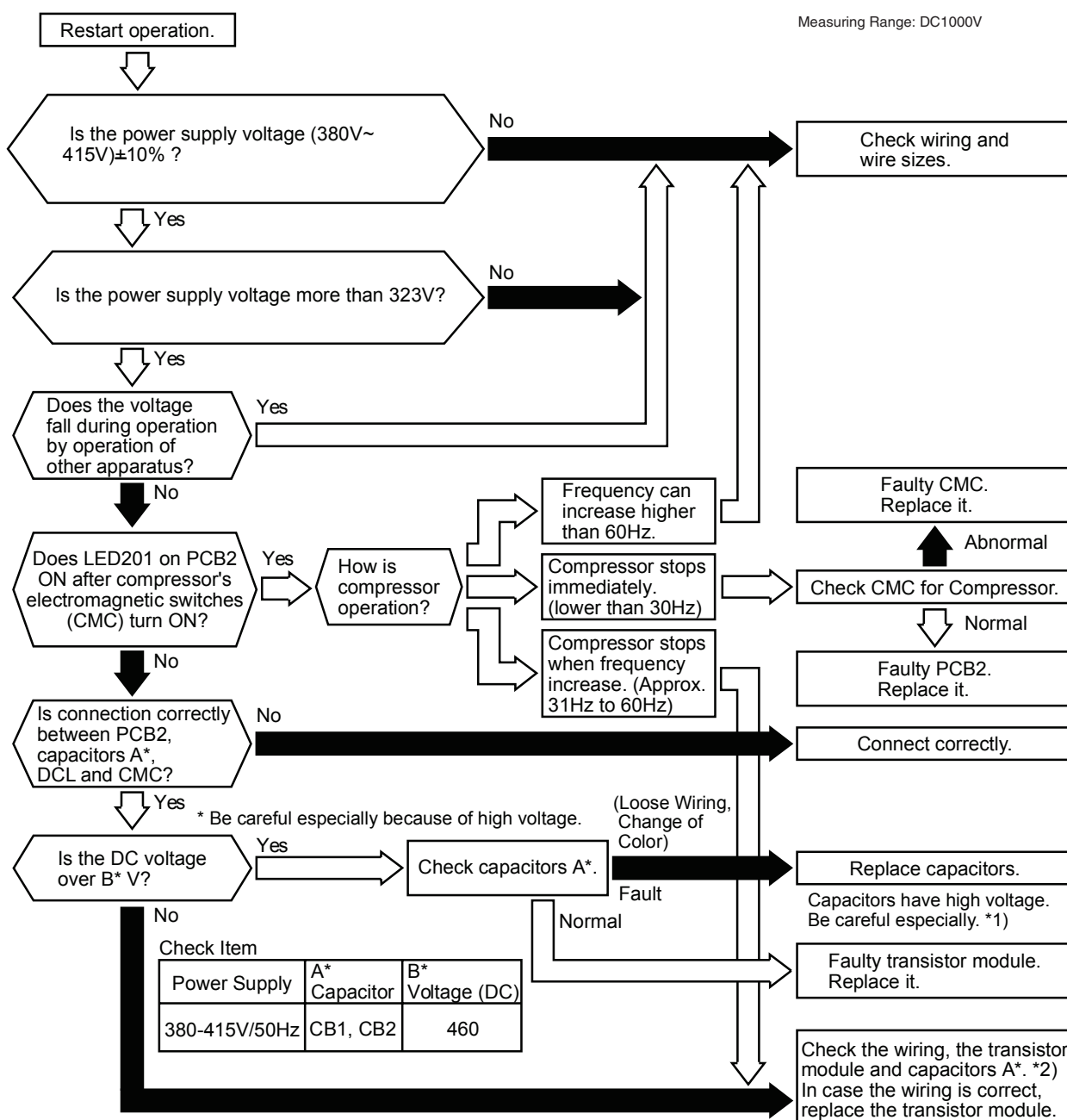
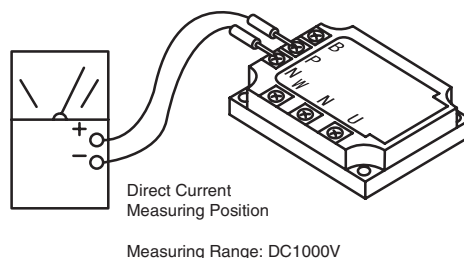
- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the alarm code is indicated on the display of the outdoor unit PCB1.

- ★ This alarm is indicated when voltage between terminal "P" and "N" of transistor module (IPM) is insufficient and its occurrence is three times in 30 minutes. In the case that the occurrence is smaller than 2 times, retry is performed.

PCB1: Control PCB in Outdoor Unit
PCB2: Inverter PCB

<Outdoor Unit PCB1 Display Indication>

06 Abnormal of Inverter



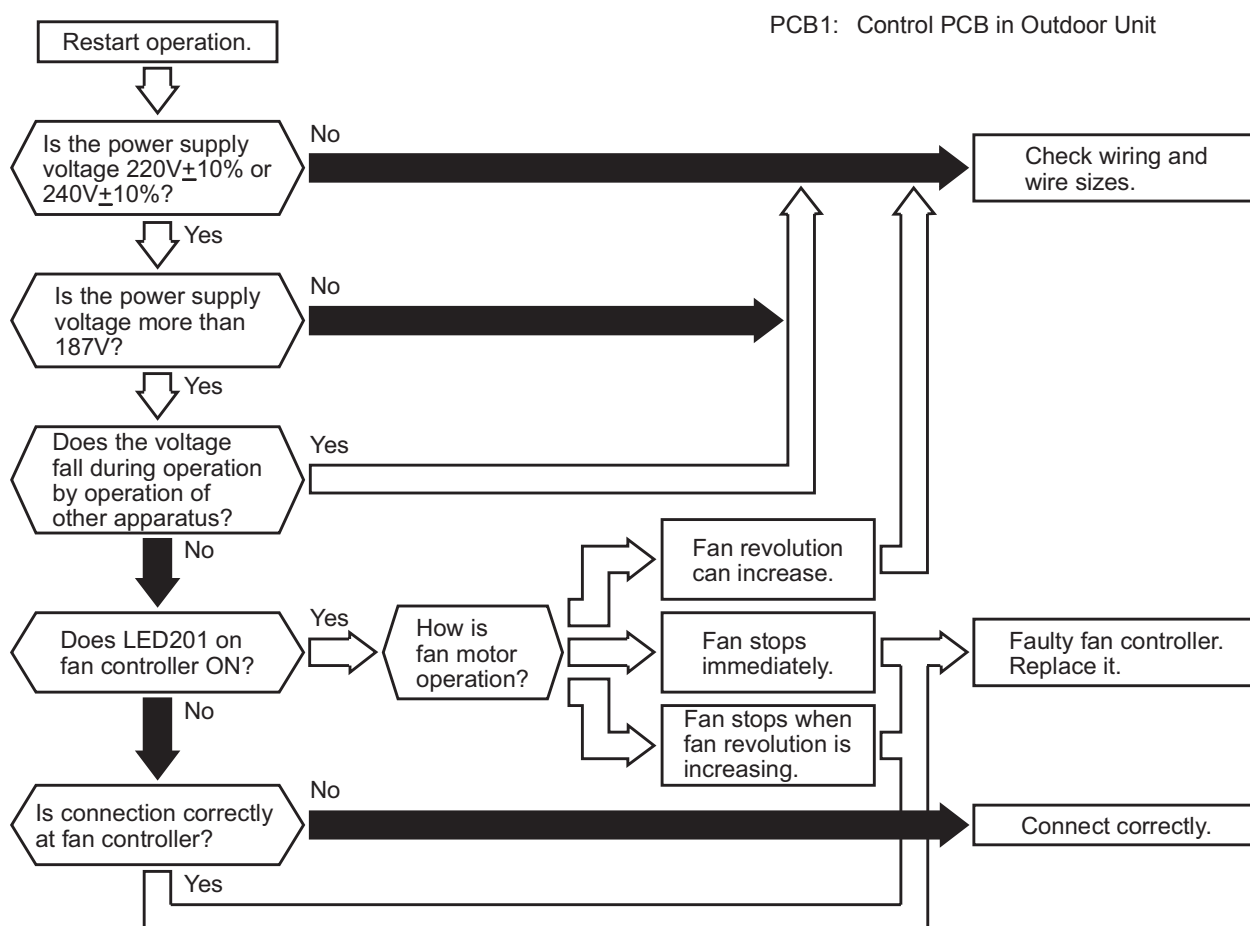
*1): If capacitor has high voltage, perform the high voltage discharge work according to the item 3.3.

*2): Checking procedures of transistor module is indicated in the item 3.3.

Alarm
Code 06.

Abnormal Fan Controller Voltage

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the alarm code is indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when voltage between terminal "R" and "S" of Fan Controller is insufficient and its occurrence is three times in 30 minutes. In the case that the occurrence is smaller than 2 times, retry is performed.



<Outdoor Unit PCB1 Display Indication>



Abnormal of Fan Controller

NOTES:

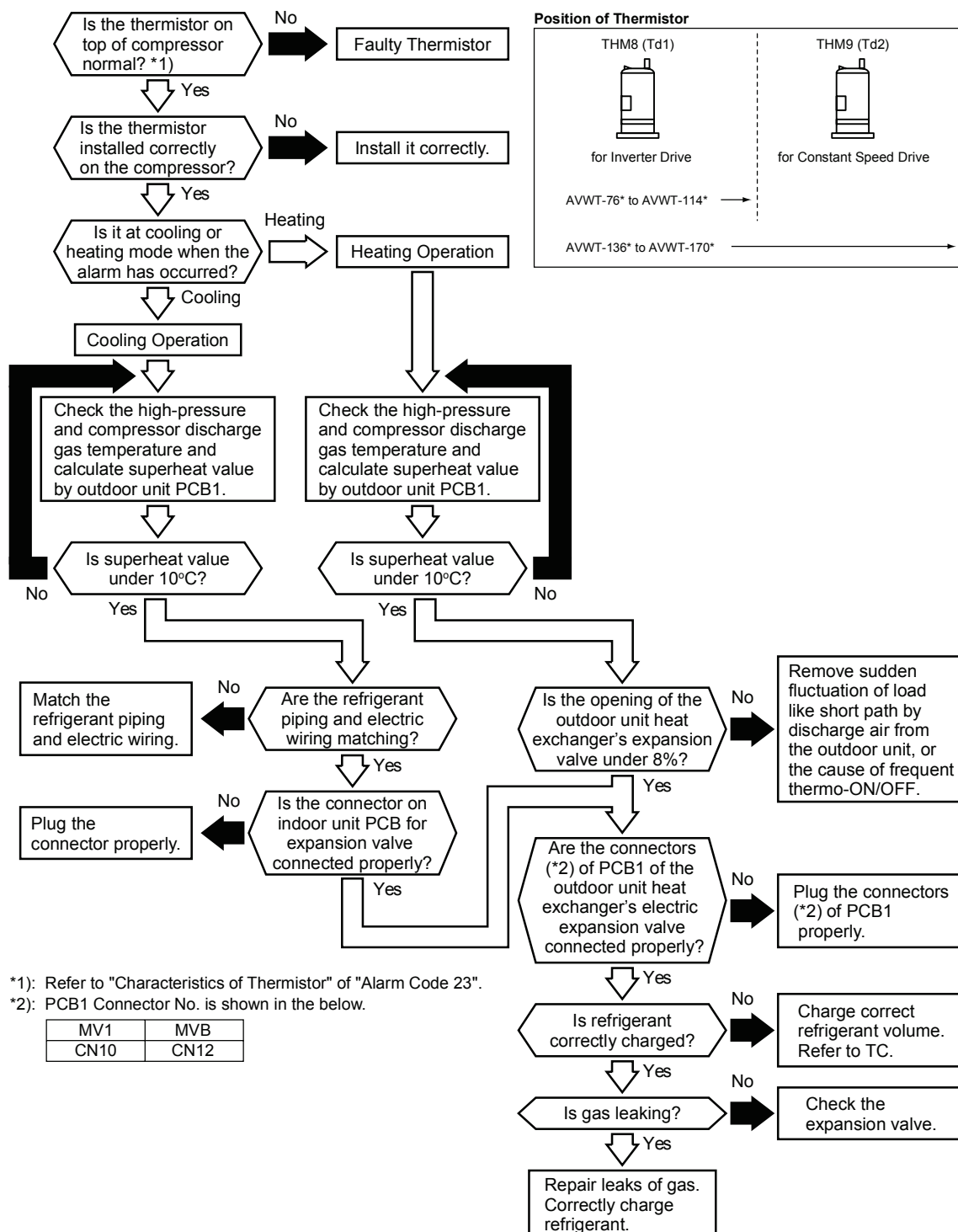
- If fan controller has high voltage, perform the high voltage discharge work according to the item 3.3.
- Check the wiring connection according to the checking procedure of fan controller indicated in the item 3.3.

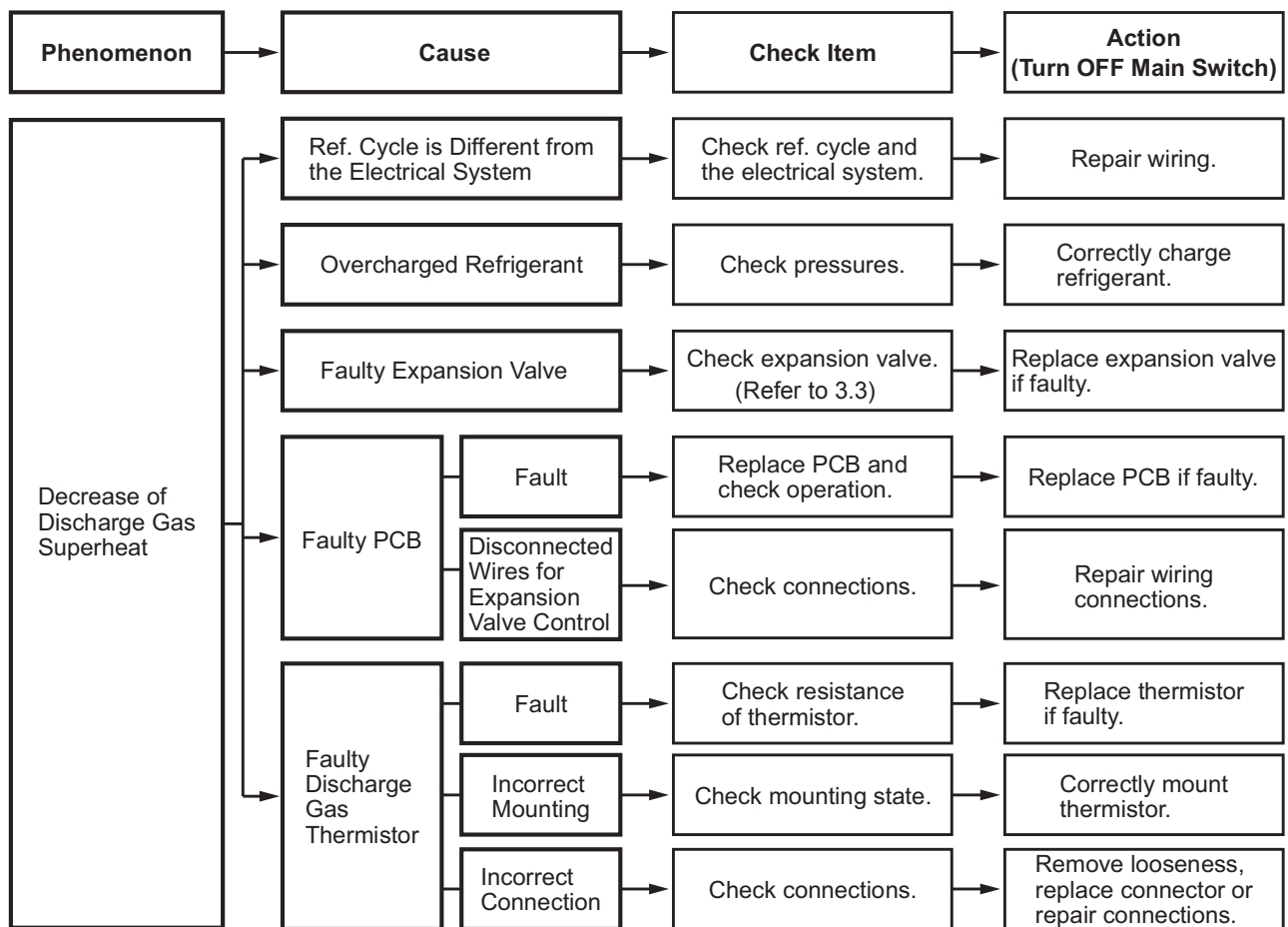
Alarm Code 07

Decrease in Discharge Gas Superheat

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ In the case that the discharge gas superheat less than 10 deg. at the top of the compressor is maintained for 30 minutes, retry operation is performed. However, when the alarm occurs twice within two hours, this alarm code is indicated.

PCB1: Control PCB in Outdoor Unit





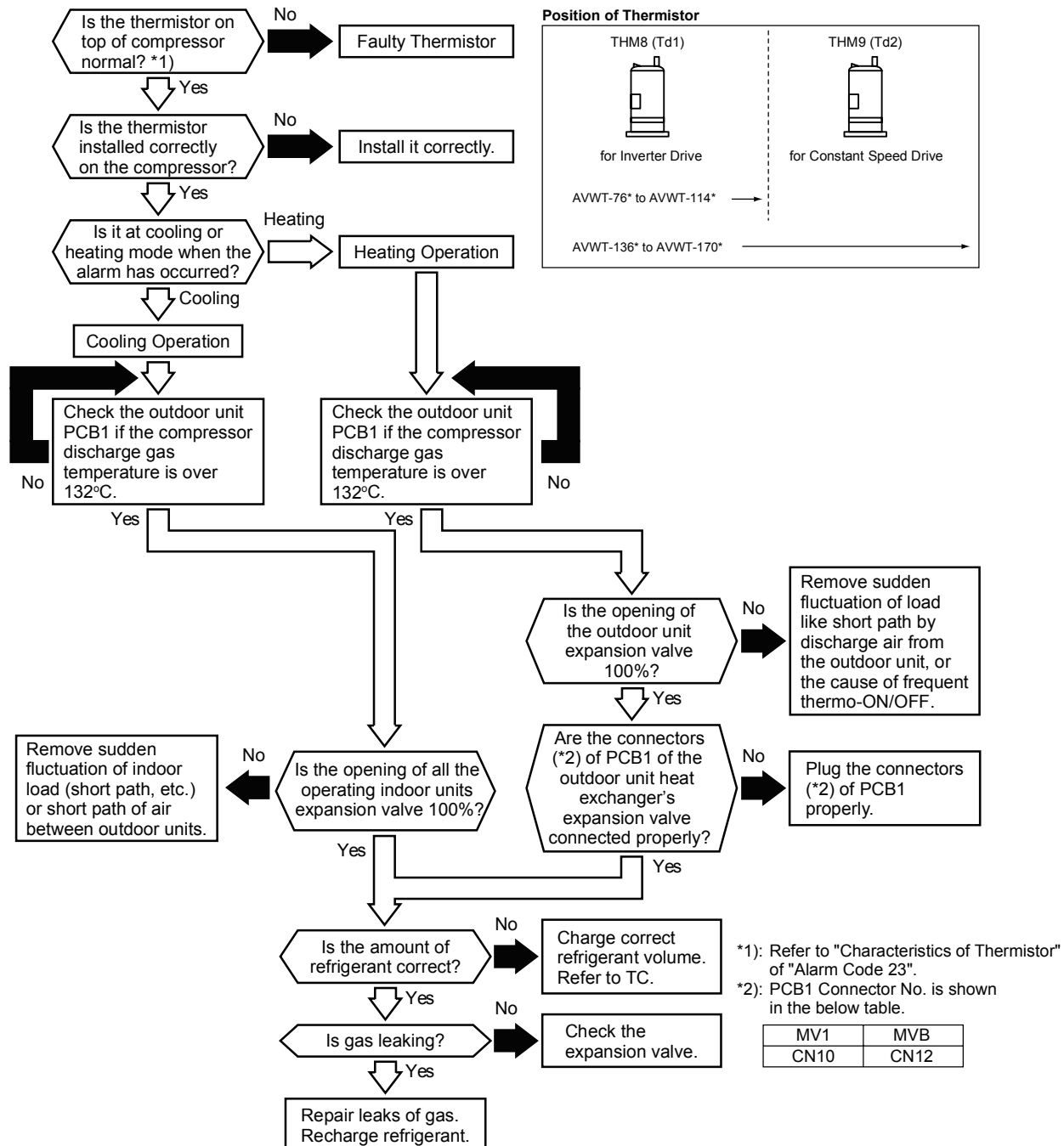
Alarm
Code

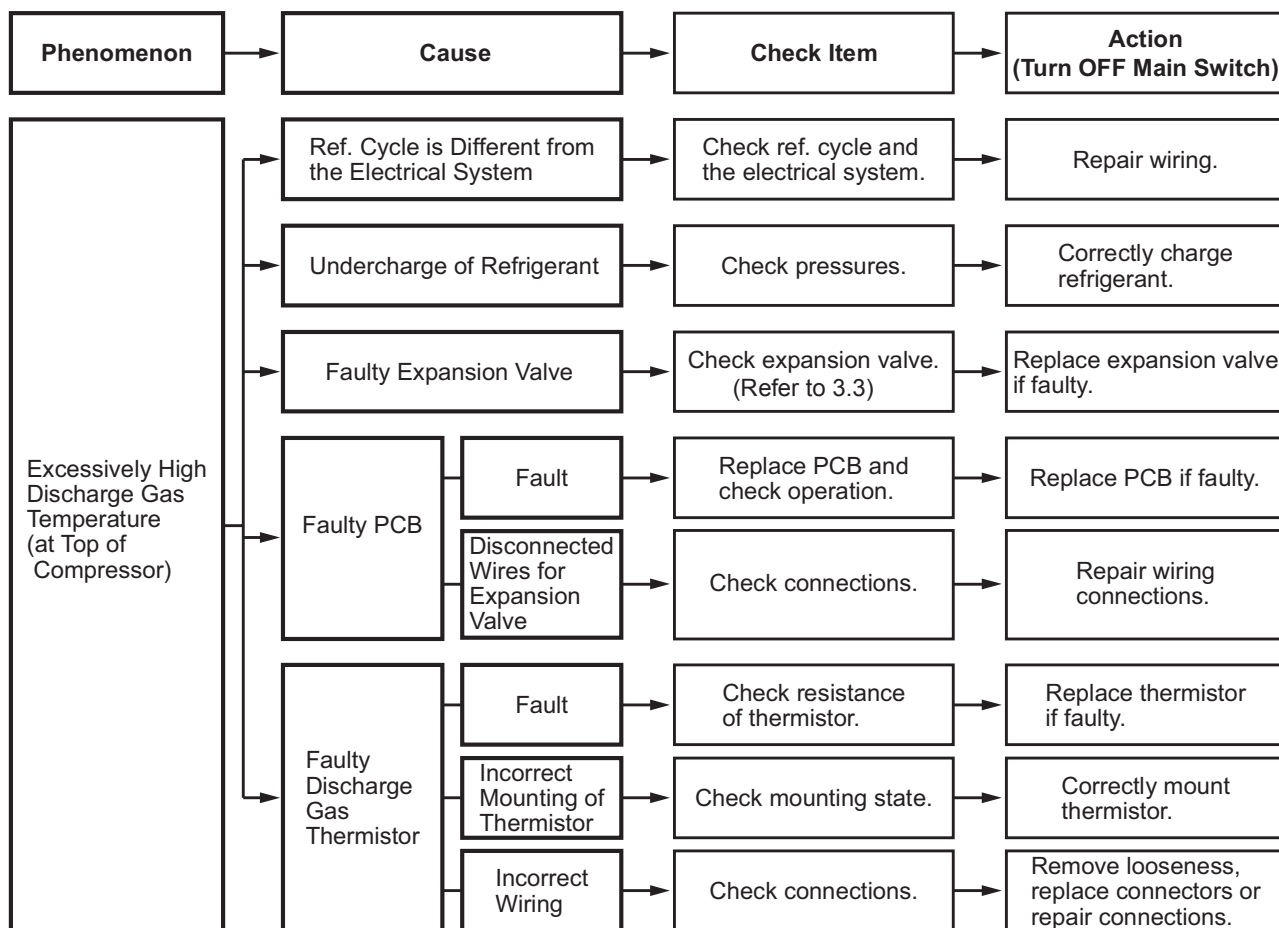
08

Increase in Discharge Gas Temperature at the Top of Compressor

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the following conditions occurs three times within one hour;
(1) The temperature of the thermistor on the top of the compressor is maintained higher than 132°C for 10 minutes, or (2) The temperature of the thermistor on the top of the compressor is maintained higher than 140°C for 5 seconds.

PCB1: Control PCB in Outdoor Unit





Alarm
Code

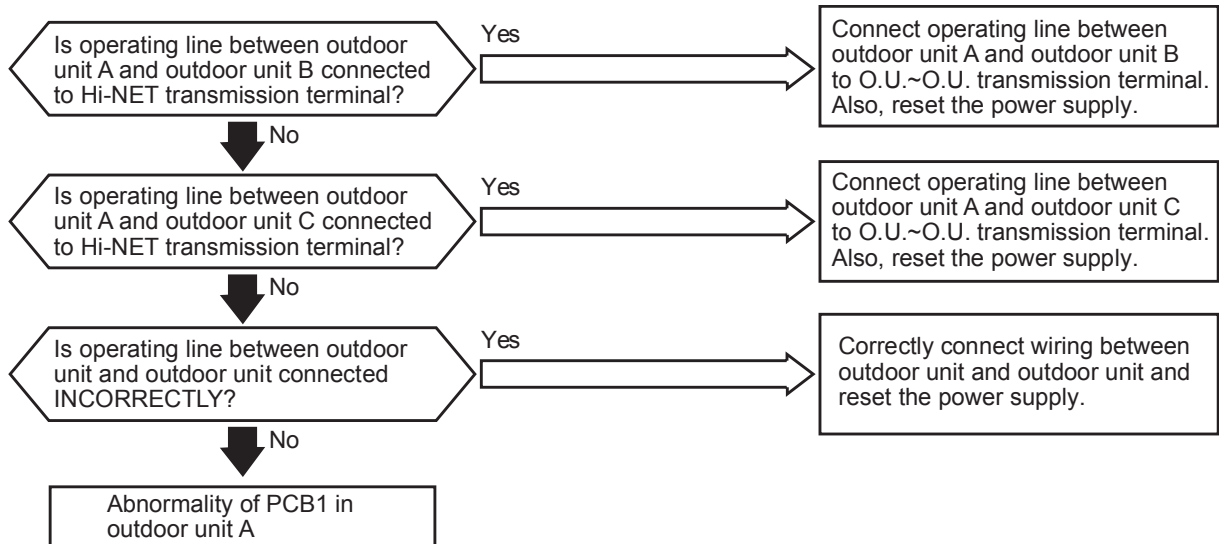
09

Abnormality Transmitting between Outdoor Units

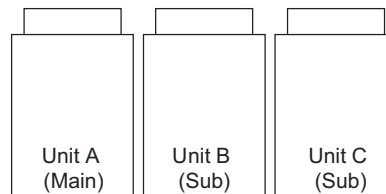
- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

PCB1: Control PCB in Outdoor Unit

O.U.: Outdoor Unit



Outdoor Unit



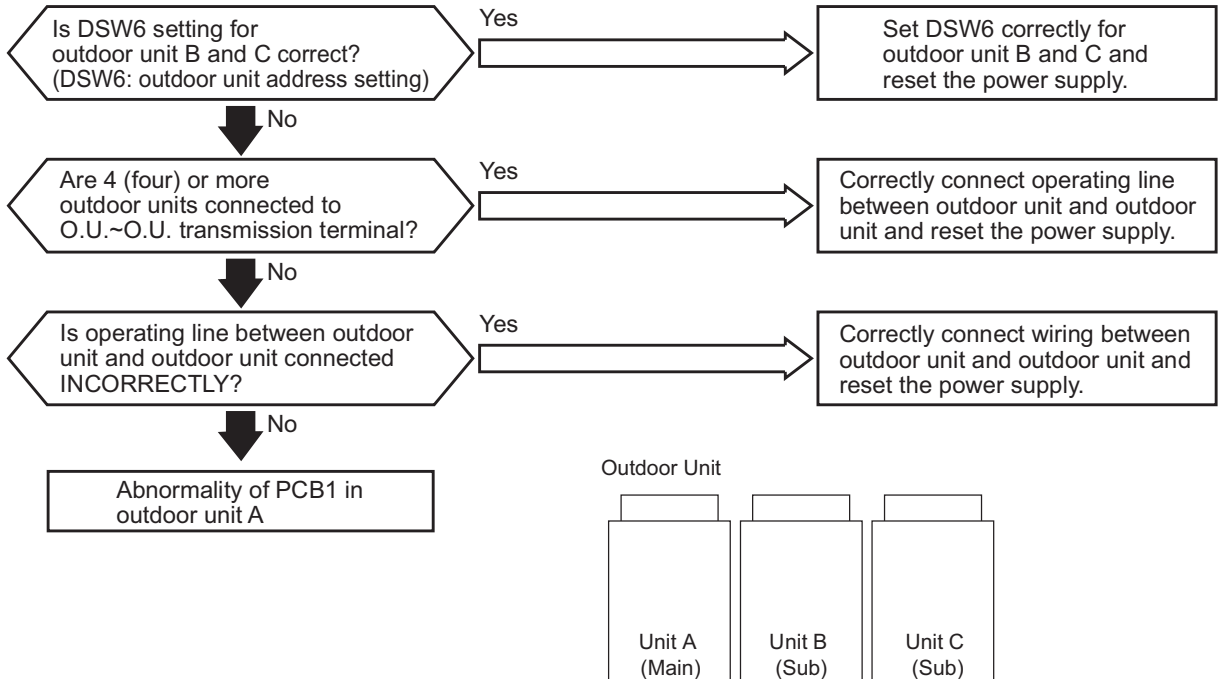
Alarm
Code

06

Incorrect Outdoor Unit Address Setting

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

PCB1: Control PCB in Outdoor Unit
O.U.: Outdoor Unit



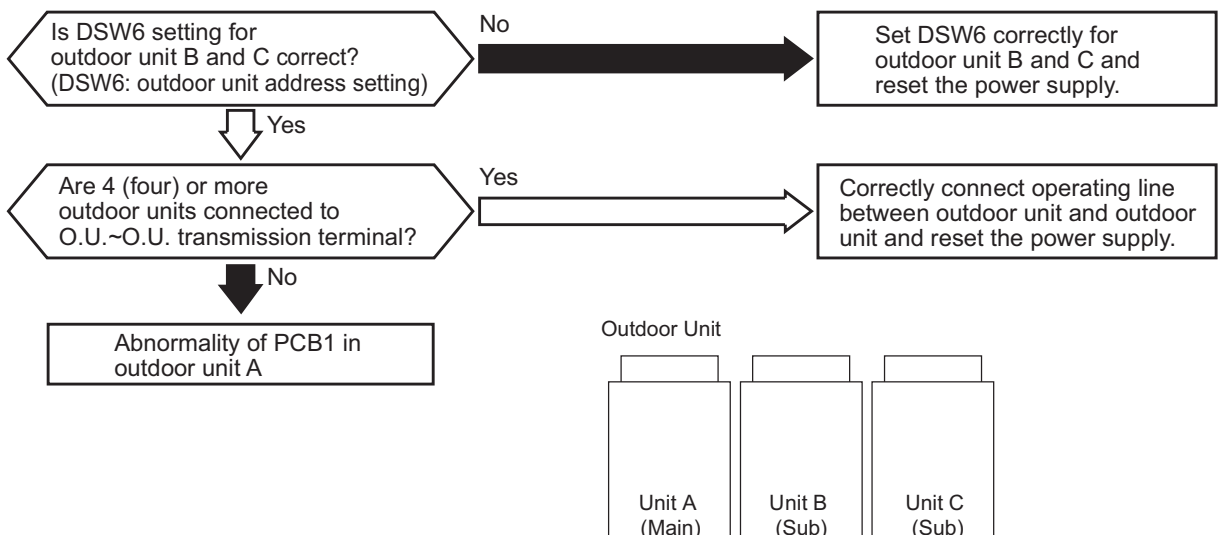
Alarm
Code

07

Incorrect Outdoor Main Unit Setting

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

PCB1: Control PCB in Outdoor Unit
O.U.: Outdoor Unit

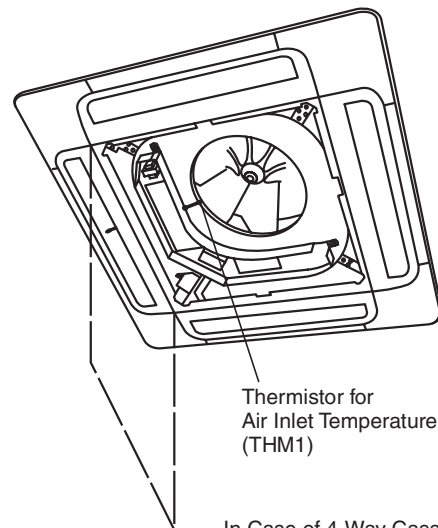
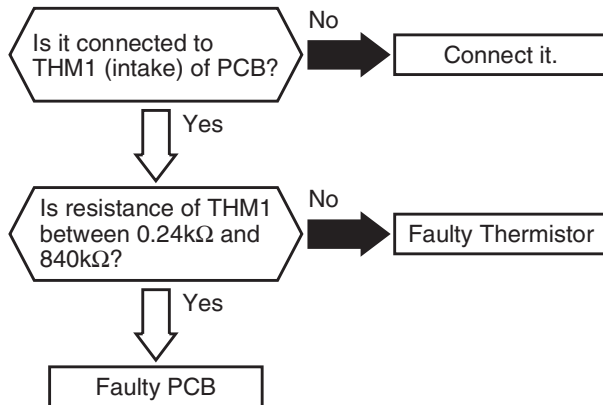


Alarm Code	11	Abnormality of Thermistor for Indoor Unit Inlet Air Temperature (Air Inlet Thermistor)
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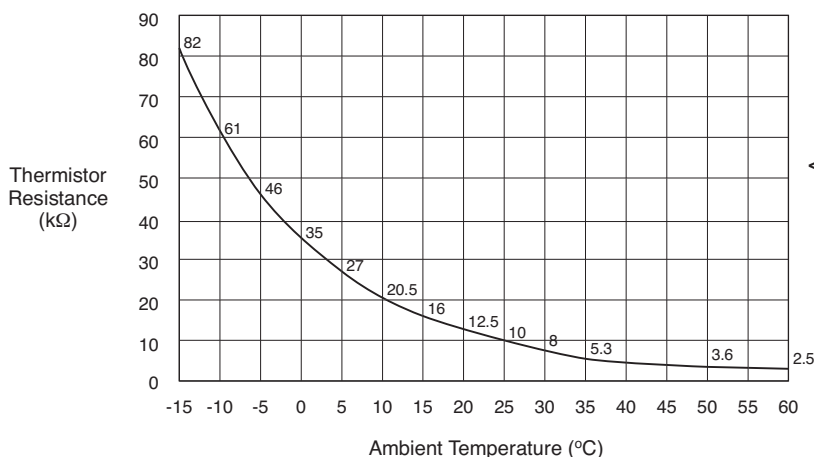
- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

★ This alarm is indicated when the thermistor is short-circuited (less than 0.24 kΩ) or cut (greater than 840 kΩ) during the cooling or heating operation. The system is automatically restarted when the fault is removed.

PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty Intake Air Thermistor	Fault	Check resistance.	Replace thermistor if faulty.
	Incorrect Connection	Check connection.	Connect wiring correctly.
Faulty PCB		Replace PCB and check operation.	Replace PCB if faulty.



<Outdoor Unit PCB1 Display Indication>
(Alarm Code 11~19)



Alarm Code (11~19)
Indoor Unit No. for Failure

NOTE:

This data is applicable to the following thermistors;

1. Indoor Unit Discharge Air Temperature, 2. Indoor Unit Intake Air Temperature, 3. Indoor Unit Liquid Piping Temperature, 4. Indoor Unit Gas Piping Temperature, 5. Outdoor Air Temperature, 6. Outdoor Unit Liquid Piping Temperature, 7. Outdoor Unit Gas Piping Temperature

Alarm
Code

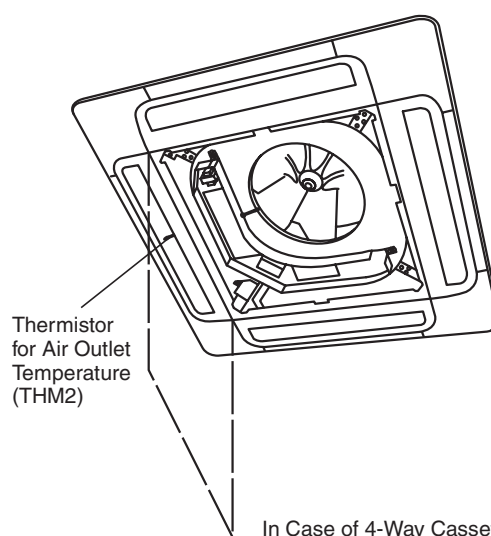
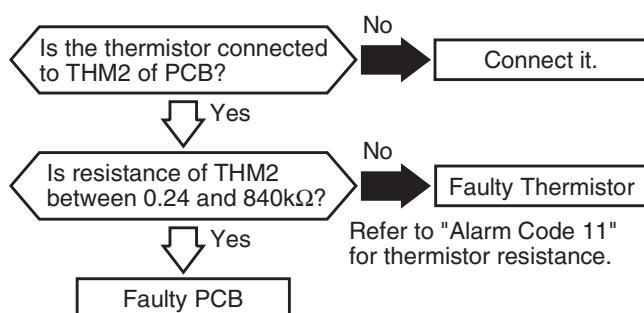
12

Abnormality of Thermistor for Indoor Unit Discharge Air Temperature (Air Outlet Thermistor)

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the thermistor is short-circuited (less than 0.24 k Ω) or cut (greater than 840 k Ω) during the cooling or heating operation. The system is automatically restarted when the fault is removed.

PCB1: Control PCB in Outdoor Unit

PCB: Indoor Unit PCB



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty Air Outlet Thermistor	Fault	Check resistance.	Replace thermistor if faulty.
	Incorrect Connection	Check wiring to PCB.	Connect wiring correctly.
Faulty PCB		Replace PCB and check operation.	Replace PCB if faulty.

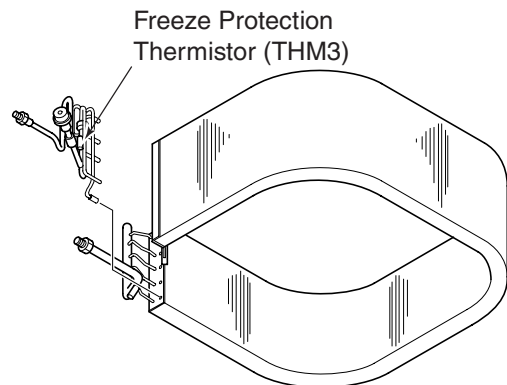
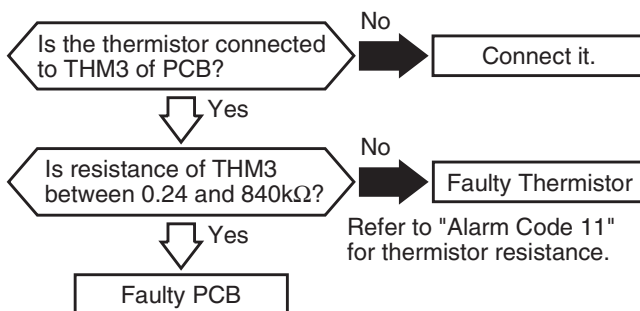
Alarm
Code

13

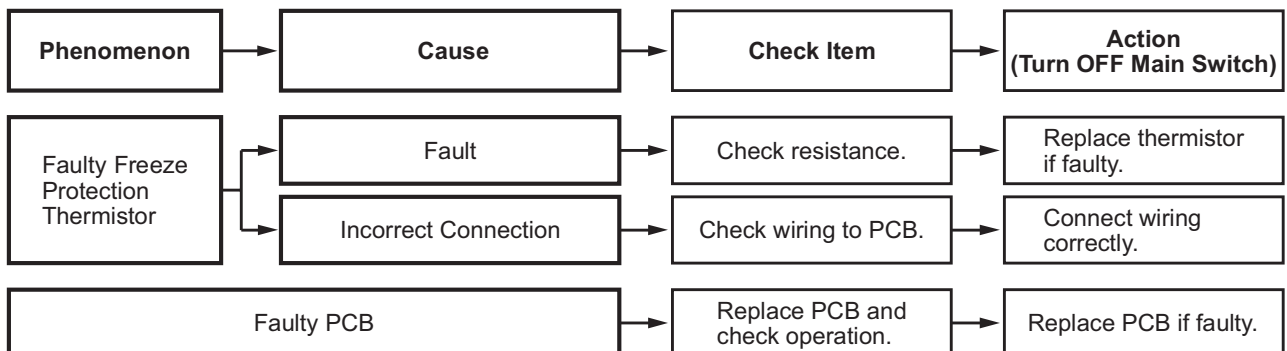
Abnormality of Thermistor for Indoor Unit Heat Exchanger Liquid
Refrigerant Pipe Temperature (Freeze Protection Thermistor)

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the thermistor is short-circuited (less than 0.24 k Ω) or cut (greater than 840 k Ω) during the cooling operation or heating operation. The system is automatically restarted when the fault is removed.

PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB



In Case of 4-Way Cassette Type



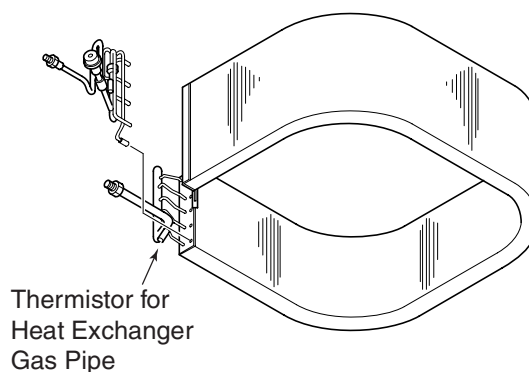
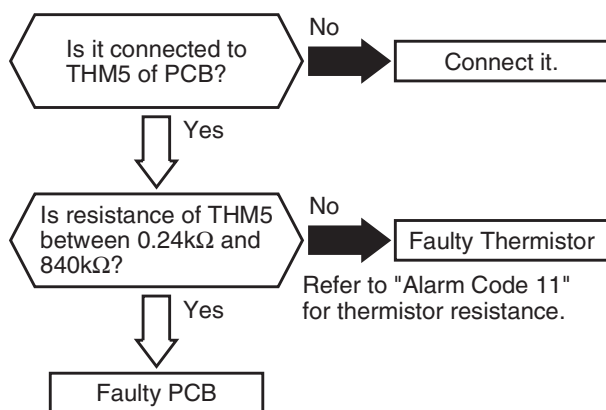
Alarm
Code

14

Abnormality of Thermistor for Indoor Unit Heat Exchanger
Gas Refrigerant Pipe Temperature (Gas Piping Thermistor)

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the thermistor is short-circuited (less than 0.24 k Ω) or cut (greater than 840 k Ω) during the cooling or heating operation. The system is automatically restarted when the fault is removed.

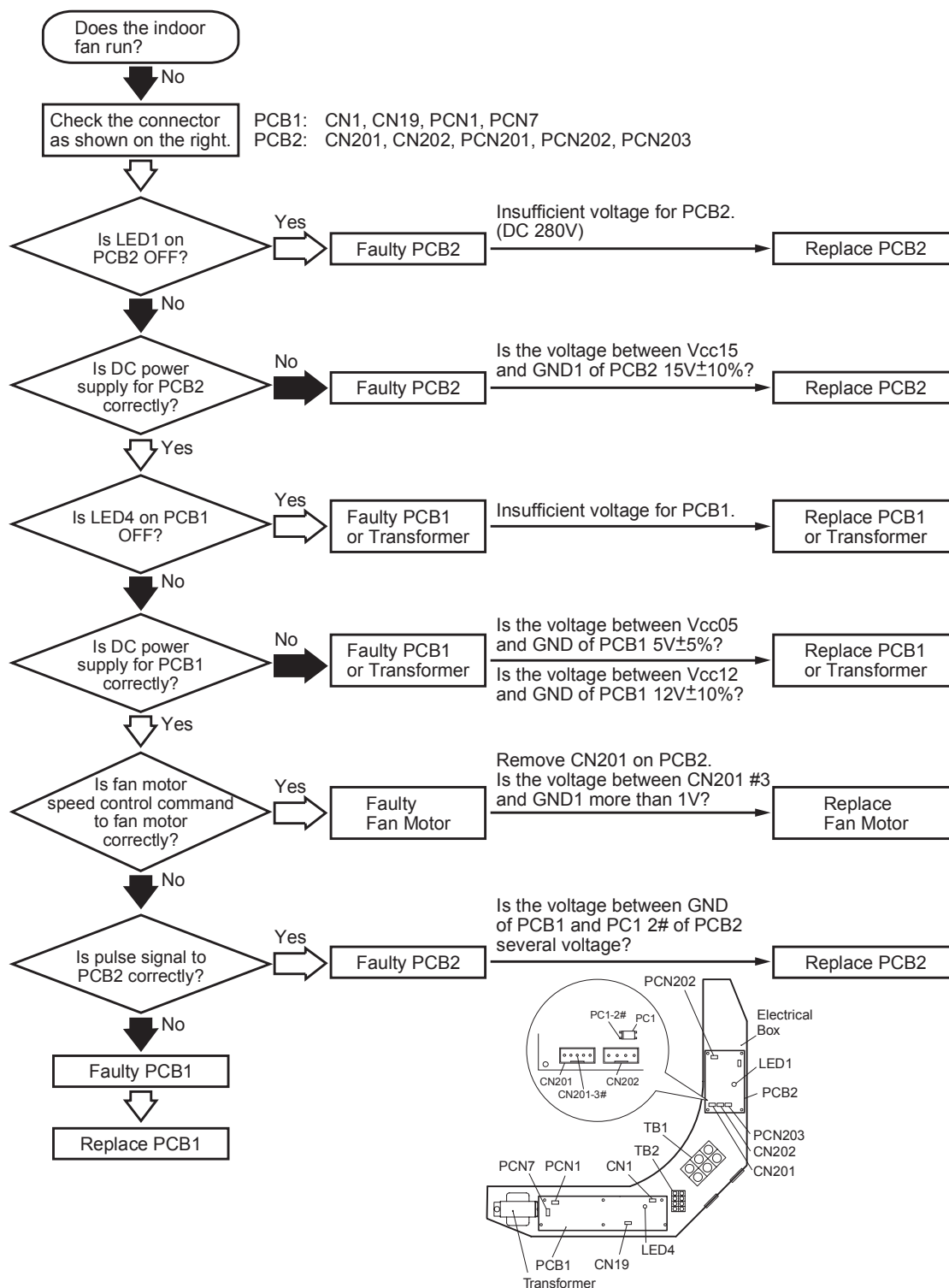
PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB



In Case of 4-Way Cassette Type

Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty Gas Pipe Thermistor	Fault	Check resistance.	Replace thermistor if faulty.
	Incorrect Connection	Check wiring to PCB.	Connect wiring correctly.
Faulty PCB		Replace PCB and check operation.	Replace PCB if faulty.

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the alarm code is indicated on the display of the outdoor unit PCB.
- ★ This alarm is indicated when the following conditions occurs three times in 30 minutes.
 - * Indoor fan rotates less than 70rpm for 5 seconds during operation.
- ★ Check to ensure that power is OFF before checking the connector connections. If not, PCB and fan motor may be damaged.



Alarm
Code

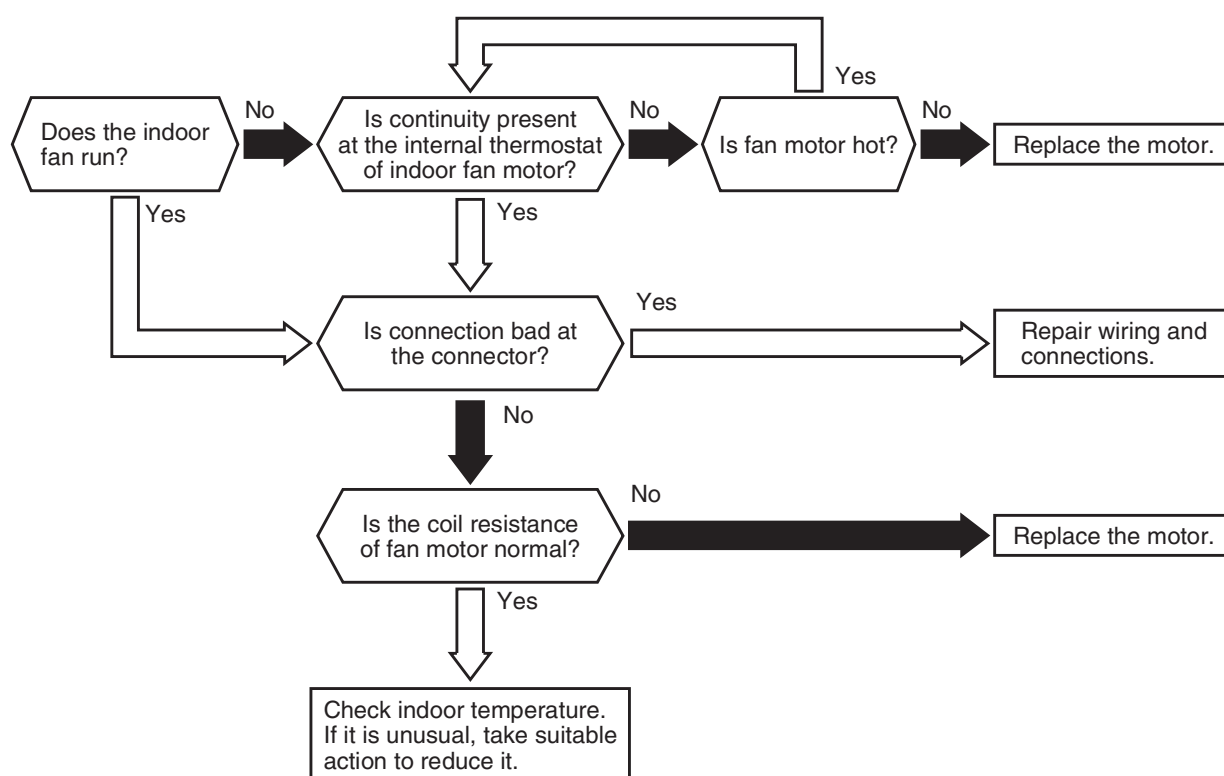
19

Activation of Protection Device for Indoor Fan Motor (except AVC Model)

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and alarm code is indicated on the display of the outdoor unit PCB1.

★ This alarm is indicated when the temperature of the internal thermostat for the indoor fan motor is higher than 130°C.

PCB1: Control PCB in Outdoor Unit



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Activation of Internal Thermostat for Indoor Unit Fan Motor	Faulty Indoor Unit Fan Motor	Measure coil resistance and insulation resistance.	Replace motor if faulty.
	Faulty Internal Thermostat	Fault	Check continuity after fan motor temperature decreases to room temp.
		Insufficient Contacting	Measure resistance by tester.
		Incorrect Connection	Check connections.
			Repair connections.

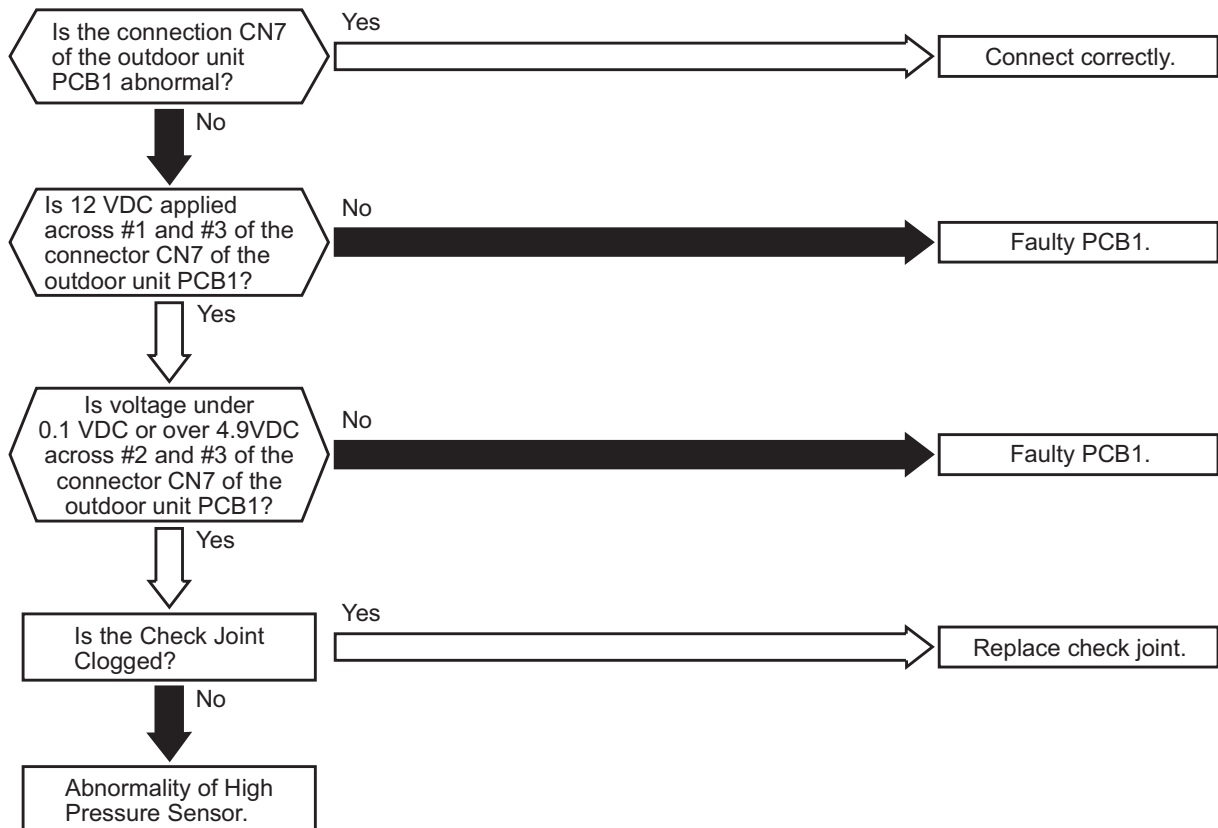
Alarm
Code

21

Abnormality of High Pressure Sensor for Outdoor Unit

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the pressure sensor voltage decreases lower than 0.1V or increases higher than 4.9V during running.

PCB1: Control PCB in Outdoor Unit



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty High Pressure Sensor	Fault	Check output voltage is correct.	Replace pressure sensor if faulty.
	Incorrect Connection	Check connections.	Repair wiring and connections.
Faulty PCB1		Replace PCB1 and check operation.	Replace PCB1 if faulty.
Indicated Pressure Value is Excessively High or Low	Malfunction of Pressure Sensor due to Faulty Check Joint	Check for clogging of check joint.	Replace check joint.

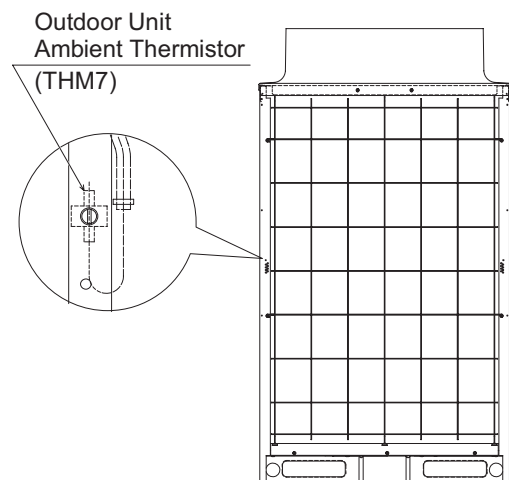
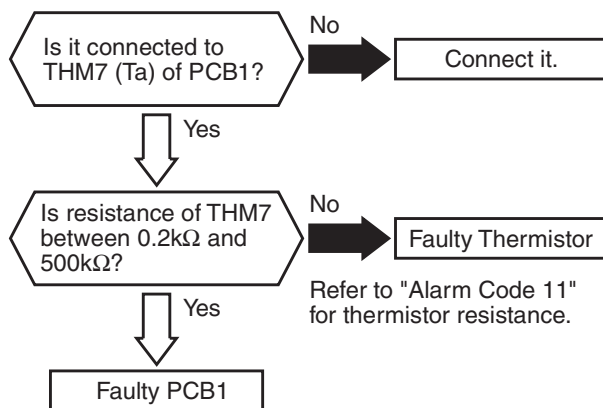
Alarm
Code

22

Abnormality of Thermistor for Outdoor Air Temperature (Outdoor Unit Ambient Thermistor)

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the thermistor is short-circuited (less than 0.2 k Ω) or cut (greater than 500 k Ω) during running.

PCB1: Control PCB in Outdoor Unit



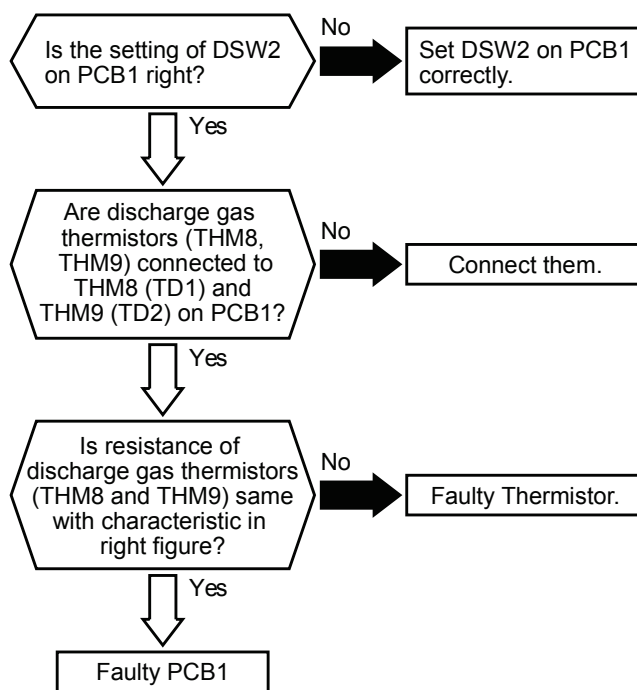
Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty Outdoor Unit Ambient Thermistor	Fault	Check resistance.	Replace thermistor if faulty.
	Incorrect Connection	Check wiring to PCB1.	Repair wiring and connections.
Faulty PCB1		Replace PCB1 and check operation.	Replace PCB1 if faulty.

Alarm Code **23**

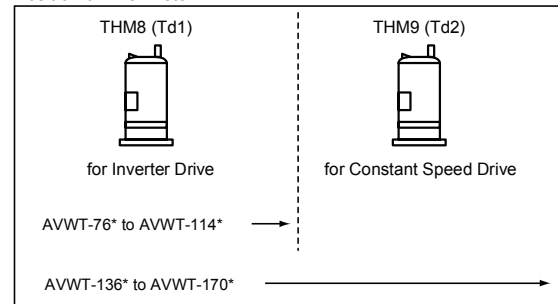
Abnormality of Thermistor for Discharge Gas Temperature on the Top of Compressor

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, or the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
If abnormality with the thermistor is found, check all the thermistors as shown below.
- ★ This alarm is indicated when the thermistor is short-circuited (less than 0.9 kΩ) or cut (greater than 5,946 kΩ) during running.

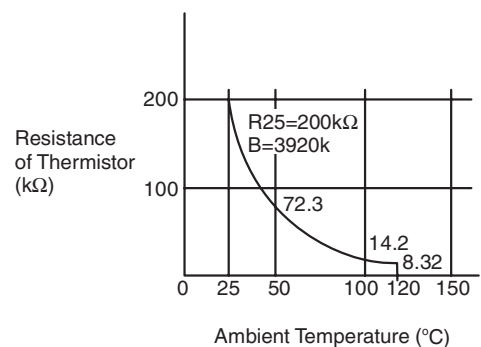
PCB1: Control PCB in Outdoor Unit



Position of Thermistor



Characteristics of Thermistor



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty Discharge Gas Thermistor	Fault	Check resistance.	Replace thermistor if faulty.
	Incorrect Connection	Check wiring to PCB1.	Repair wiring and connections.
Faulty PCB1		Replace PCB1 and check operation.	Replace PCB1 if faulty.
Incorrect Setting of DSW2 on PCB1		Check setting of DSW2 on PCB1.	Correctly set DSW2 on PCB1.

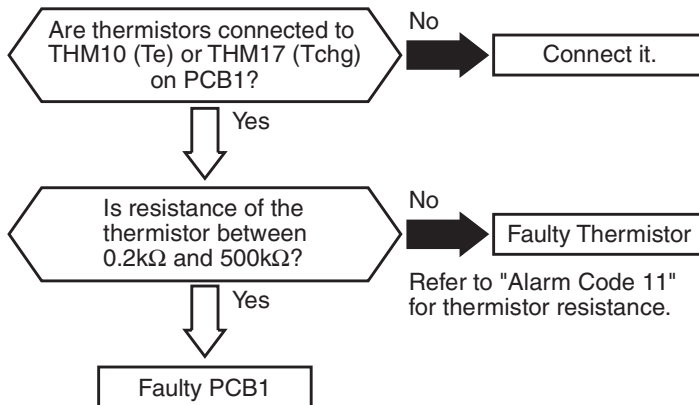
Alarm
Code

24

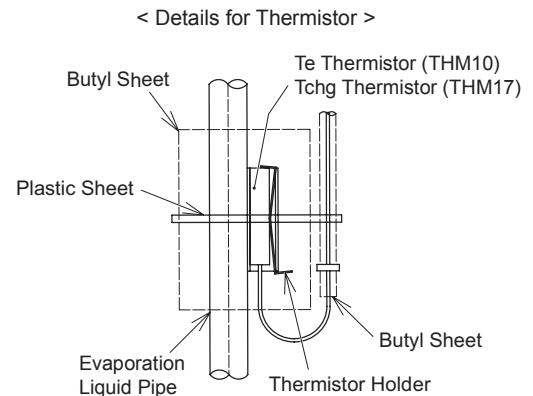
Abnormality of Thermistor for Outdoor Unit Heat Exchanger Liquid Pipe (Te/Tchg)

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
If abnormality with the thermistor is found, check the thermistors as shown below.
- ★ This alarm is indicated when the thermistor is short-circuited (less than $0.2\text{k}\Omega$) or cut (greater than $840\text{k}\Omega$) for 8 minutes during running.

If this thermistor is faulty, this alarm is indicated.



Te: Thermistor for Outdoor Liquid Pipe
Tchg: Thermistor for Super Cooling Main Line
PCB1: Control PCB in Outdoor Unit



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty Outdoor Unit Liquid Pipe Thermistor	Fault	Check resistance.	Replace thermistor if faulty.
	Incorrect Connection	Check wiring to PCB1.	Repair wiring and connections.
Faulty PCB1		Replace PCB1 and check operation.	Replace PCB1 if faulty.

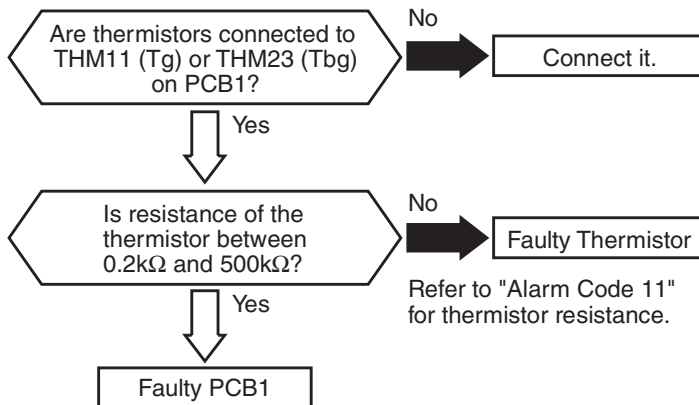
Alarm
Code

25

Abnormality of Thermistor for Outdoor Unit Heat Exchanger Gas Pipe (Tg/Tbg)

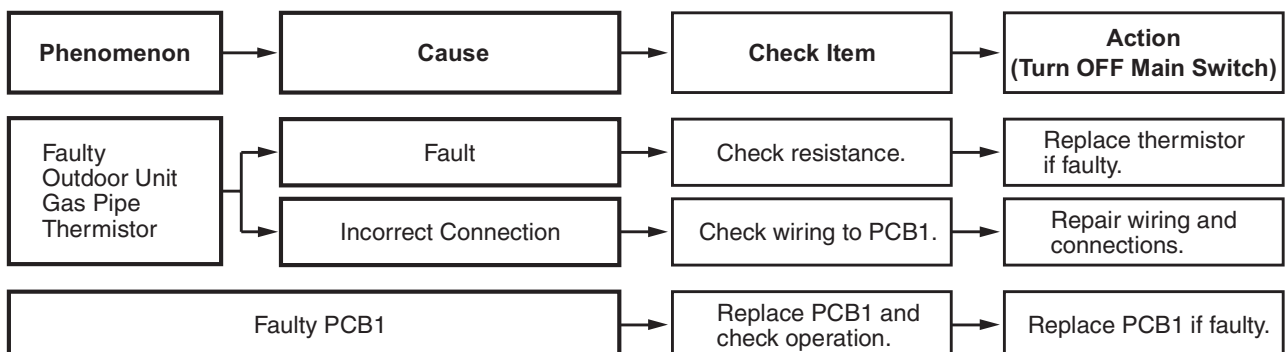
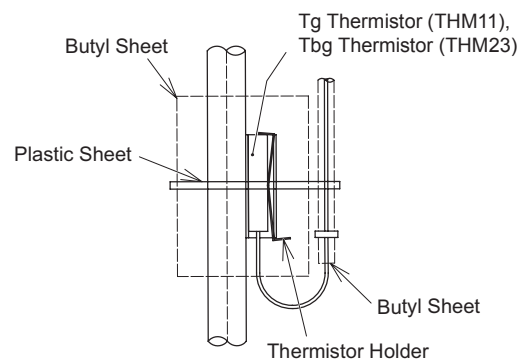
- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
If abnormality with the thermistor is found, check all the thermistors as shown below.
- ★ This alarm is indicated when the thermistor is short-circuited (less than $0.2\text{k}\Omega$) or cut (greater than $840\text{k}\Omega$) for 8 minutes during running.

If this thermistor is faulty, this alarm is indicated.



Tg: Thermistor for Outdoor Gas Pipe
Tbg: Thermistor for Super Cooling Bypass Line
PCB1: Control PCB in Outdoor Unit

< Details for Thermistor >



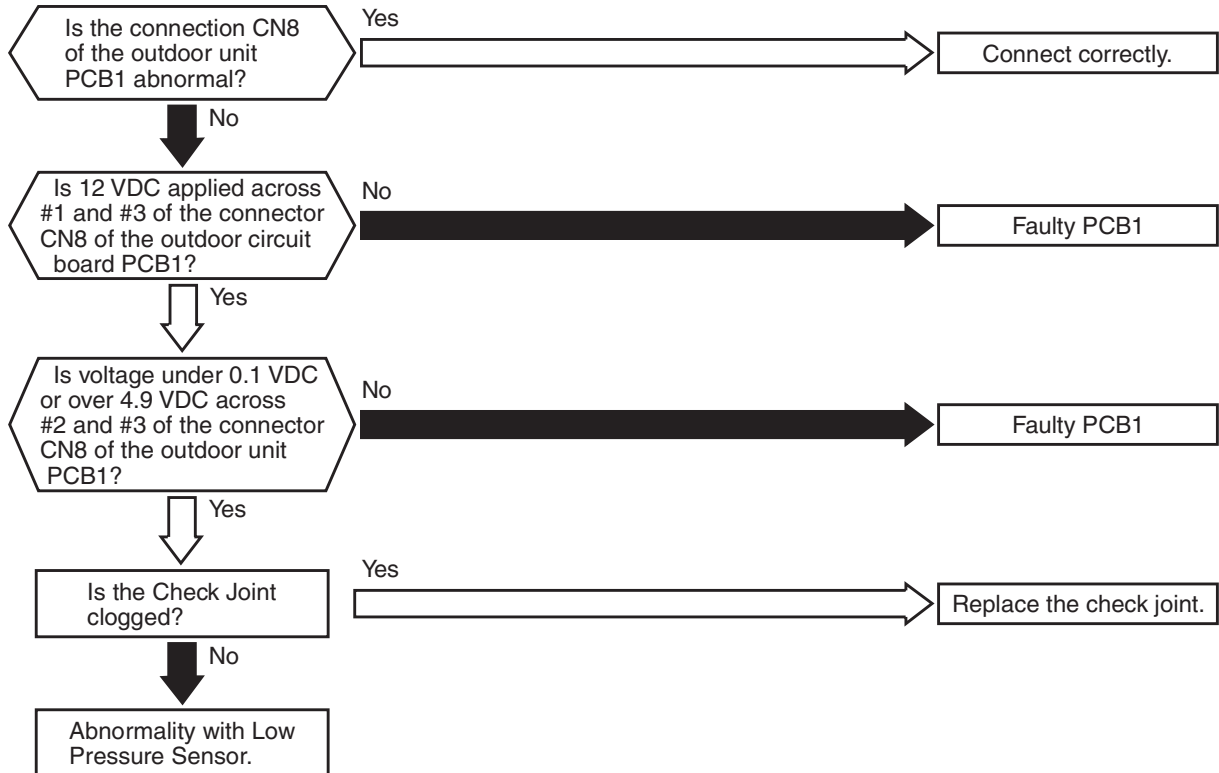
Alarm
Code

29

Abnormality of Low Pressure Sensor for Outdoor Unit

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the pressure sensor voltage decreases lower than 0.1V or increases higher than 4.9V during running.

PCB1: Control PCB in Outdoor Unit



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Faulty Low Pressure Sensor	Fault	Check output voltage is correct.	Replace pressure sensor if faulty.
	Incorrect Connection	Check connections.	Repair wiring and connections.
Faulty PCB1		Replace PCB1 and check operation.	Replace PCB1 if faulty.
Indicated Pressure Value is Excessively High or Low	Malfunction of Pressure Sensor due to Faulty Check Joint	Check for clogging of check joint.	Replace check joint.

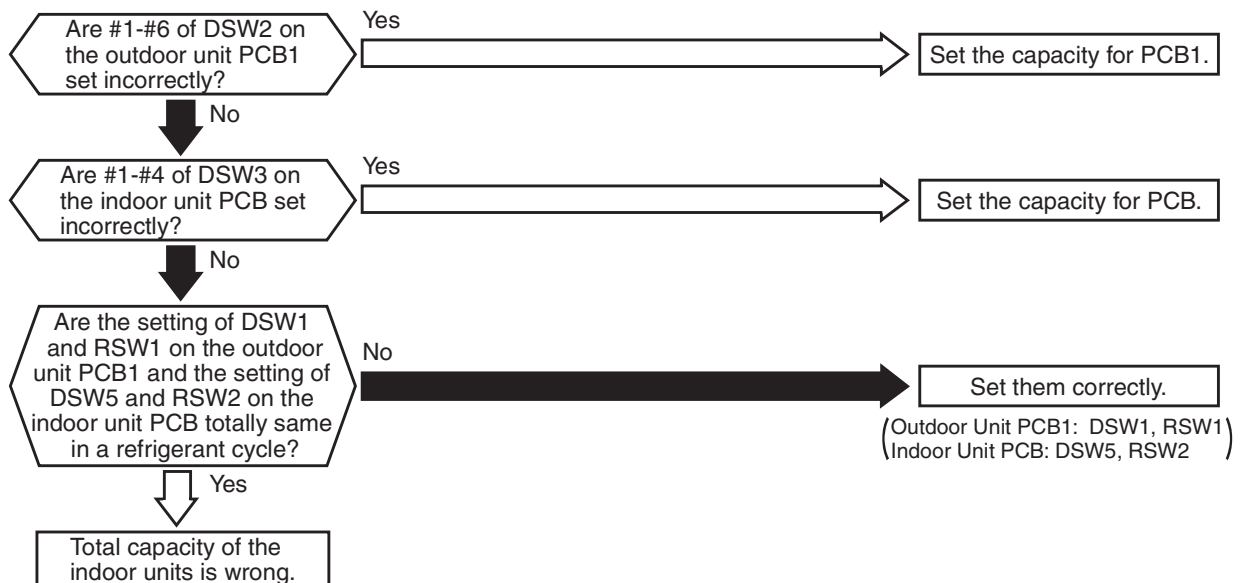
Alarm
Code

31

Incorrect Capacity Setting of Indoor Unit and Outdoor Unit

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the capacity setting dip switch, DSW2 on the outdoor unit PCB1, is not set (all the settings from #1 to #6 are OFF) or mis-setting.
- ★ This alarm is indicated when the total indoor unit capacity is smaller than 50% or greater than 130% of the combined outdoor unit capacity.

PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Incorrect Capacity Setting of Indoor Unit		Check combination of indoor units and capacity setting on PCB.	Correctly set dip switch, DSW3.
Incorrect Capacity Setting of Outdoor Unit		Check capacity setting on outdoor unit PCB1.	Correctly set dip switch, DSW2.
Total Indoor Unit Capacity Connected to the Outdoor Unit is Beyond Permissible Range		Check outdoor unit model by calculating total indoor units capacity.	Ensure that total indoor unit capacity is from 50% to 130%.
Refrigeration Cycle Setting of Outdoor Unit and Indoor Unit is Different		Check refrigeration cycle setting on outdoor unit PCB1 and indoor unit PCB.	Set them correctly.

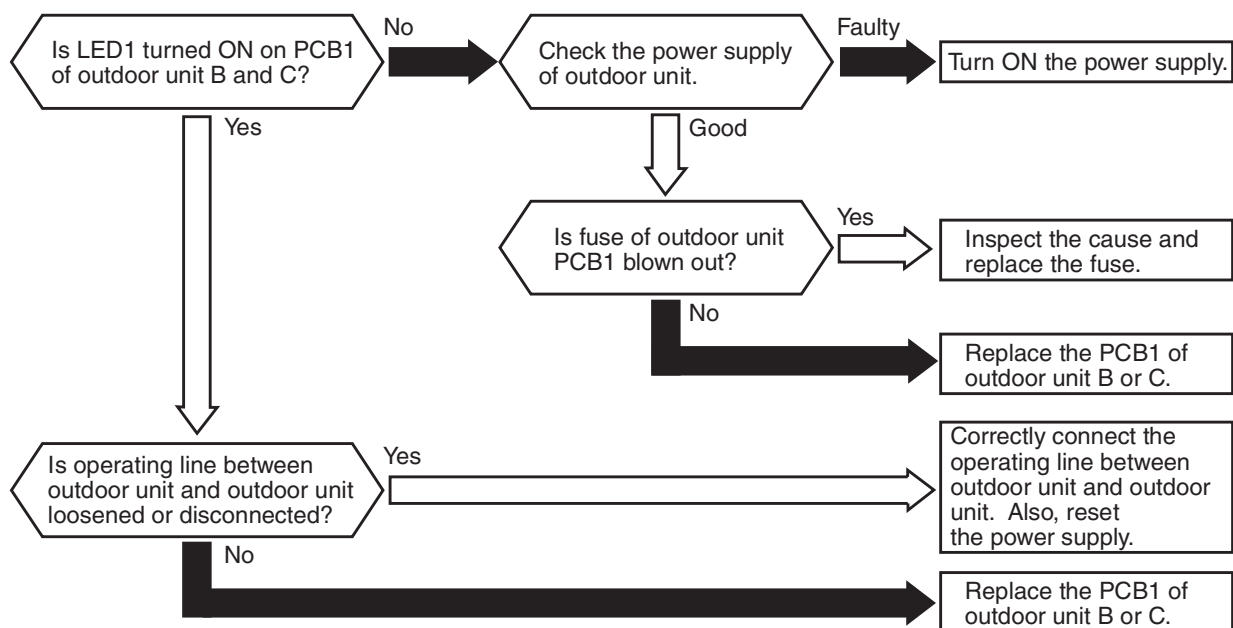
Alarm
Code

31

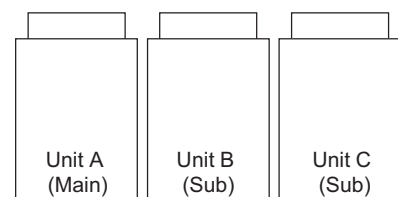
Abnormal Transmitting between Outdoor Units

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the following condition occurs after normal transmitting between outdoor unit and outdoor unit is maintained;
 - Abnormality is maintained for 30 seconds.
 - Abnormality is maintained for 30 seconds even after micro-computer reset (automatically).

PCB1: Control PCB in Outdoor Unit



Outdoor Unit



Alarm Code	35	Incorrect Indoor Unit No. Setting
------------	----	-----------------------------------

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the alarm code is indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated 5 minutes after power is supplied to the outdoor unit when the indoor unit No. connected to the outdoor unit is duplicated by setting of DSW and RSW.

Alarm Code	36	Incorrect Indoor Unit Combination
------------	----	-----------------------------------

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the alarm code is indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the indoor unit connected to outdoor unit is designed for refrigerant R22 type.

PCB1: Control PCB in Outdoor Unit

Alarm
Code

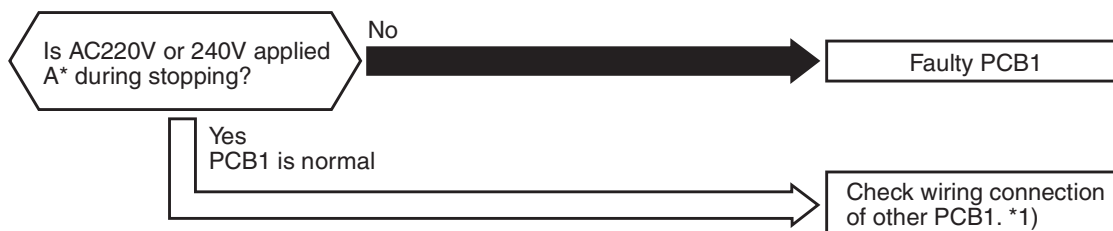
38

Abnormality of Picking up Circuit for Protection in Outdoor Unit

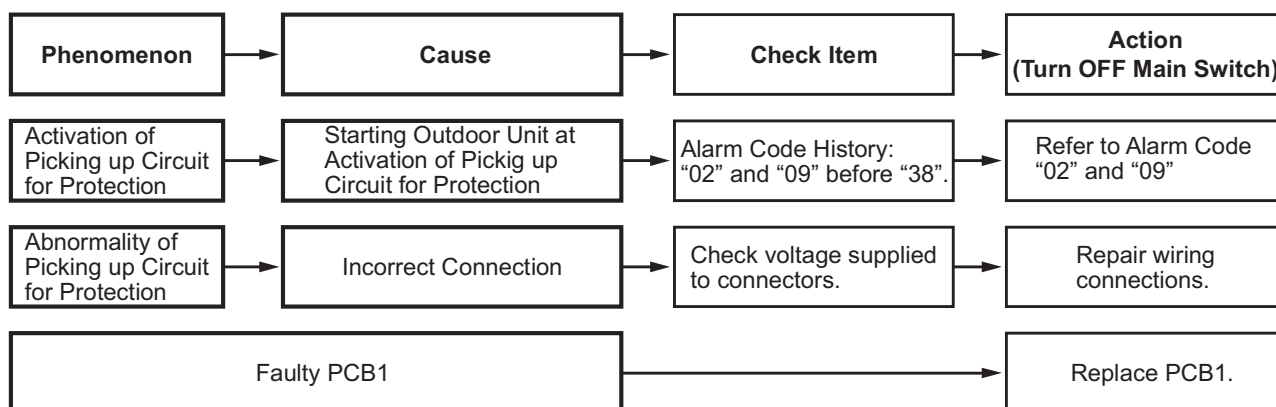
- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and the alarm code are indicated on the display of the outdoor unit PCB1.

- ★ This alarm is indicated when AC 220V or 240V is not detected in A* during inverter compressor stoppage.

PCB1: Control PCB in Outdoor Unit



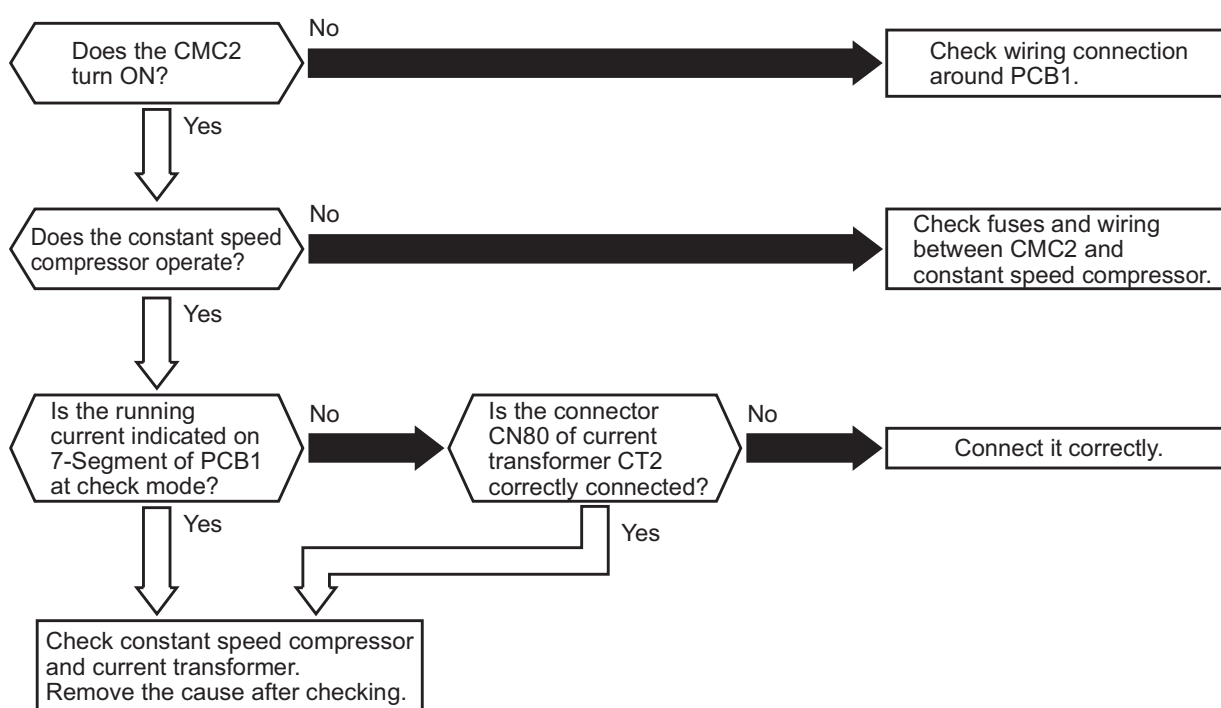
Power Supply	A*
380-415V/50Hz	Between terminal #3 of PCN2, PCN16 and faston terminal "N1" on PCB1

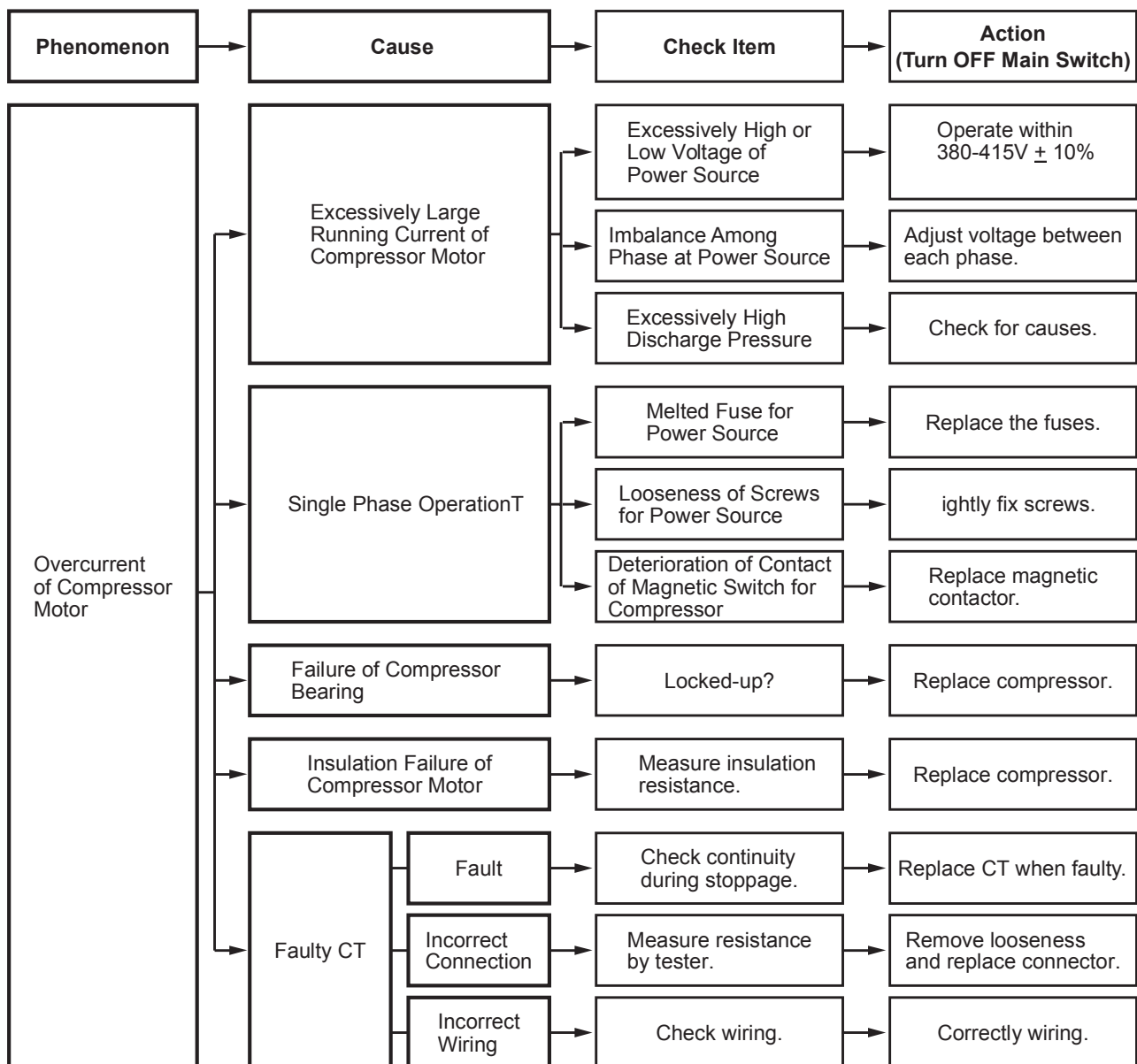


*1): Check wiring system connecting to PCN2 and PCN16 on PCB1.

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the following conditions occurs;
- The running current of the constant speed compressor exceeds the value of overcurrent limitation during operating.
 - The running current of the constant speed compressor is detected 0A and retry when 3 minutes are passed after all compressors are stopped, and this phenomenon occurs three times within 30 minutes.

PCB1: Control PCB in Outdoor Unit



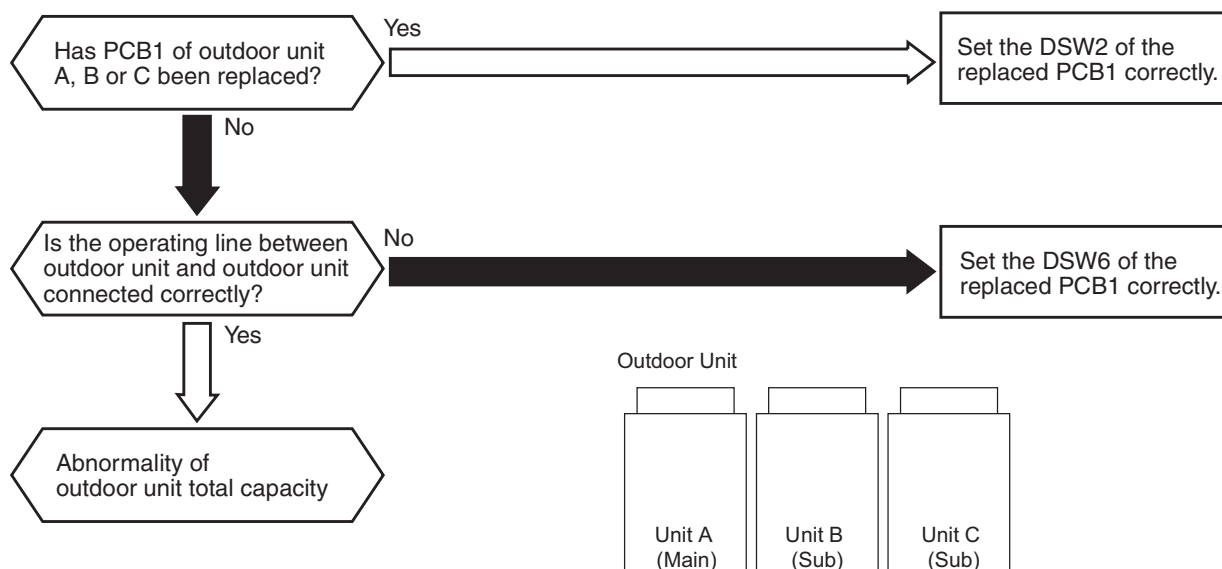


Alarm
Code 3A

Abnormality of Outdoor Unit Capacity

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the total capacity of outdoor unit connected to O.U.~O.U. transmission terminal exceeds 54HP.

PCB1: Control PCB in Outdoor Unit
O.U. Outdoor Unit

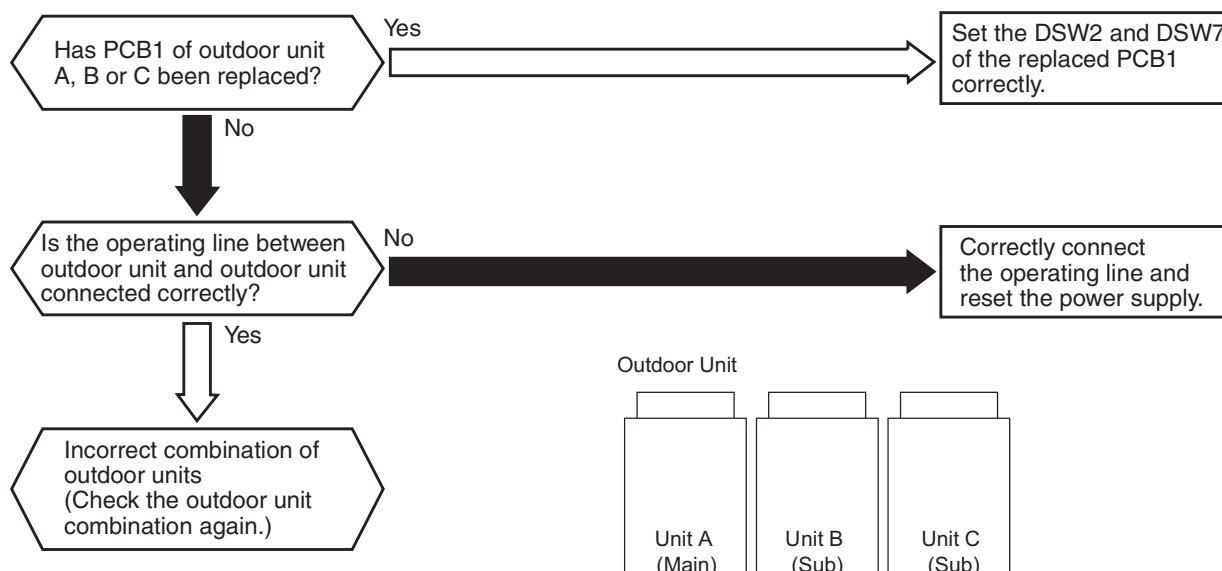


Alarm
Code 3B

Incorrect Setting of Outdoor Unit Model Combination or Voltage

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the model setting for outdoor unit connected to O.U.~O.U. transmission terminal is incorrect.

PCB1: Control PCB in Outdoor Unit
O.U. Outdoor Unit



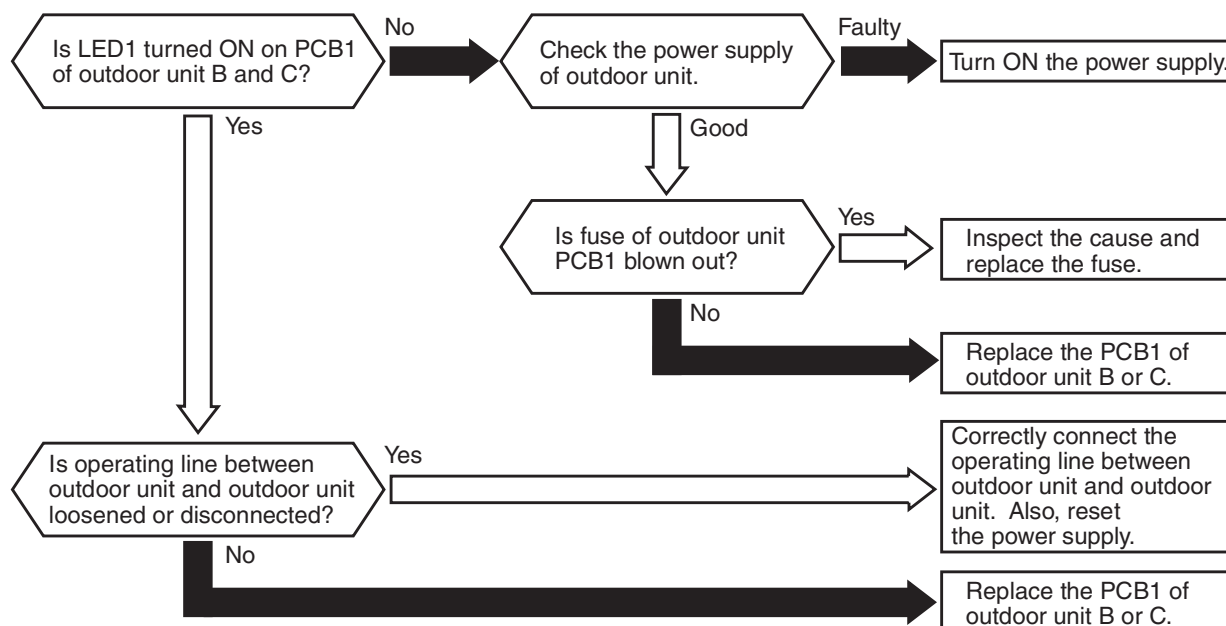
Alarm
Code

3d

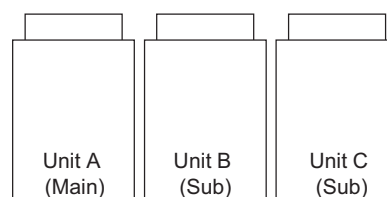
Abnormality Transmitting between Main Unit and Sub Unit(s)

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when transmission to outdoor unit B or C is NOT maintained for 30 seconds.
(Alarm code “31” will be indicated when transmission to all the outdoor units connected to O.U.~O.U. transmission terminal is NOT maintained.)

PCB1: Control PCB in Outdoor Unit
O.U.: Outdoor Unit



Outdoor Unit



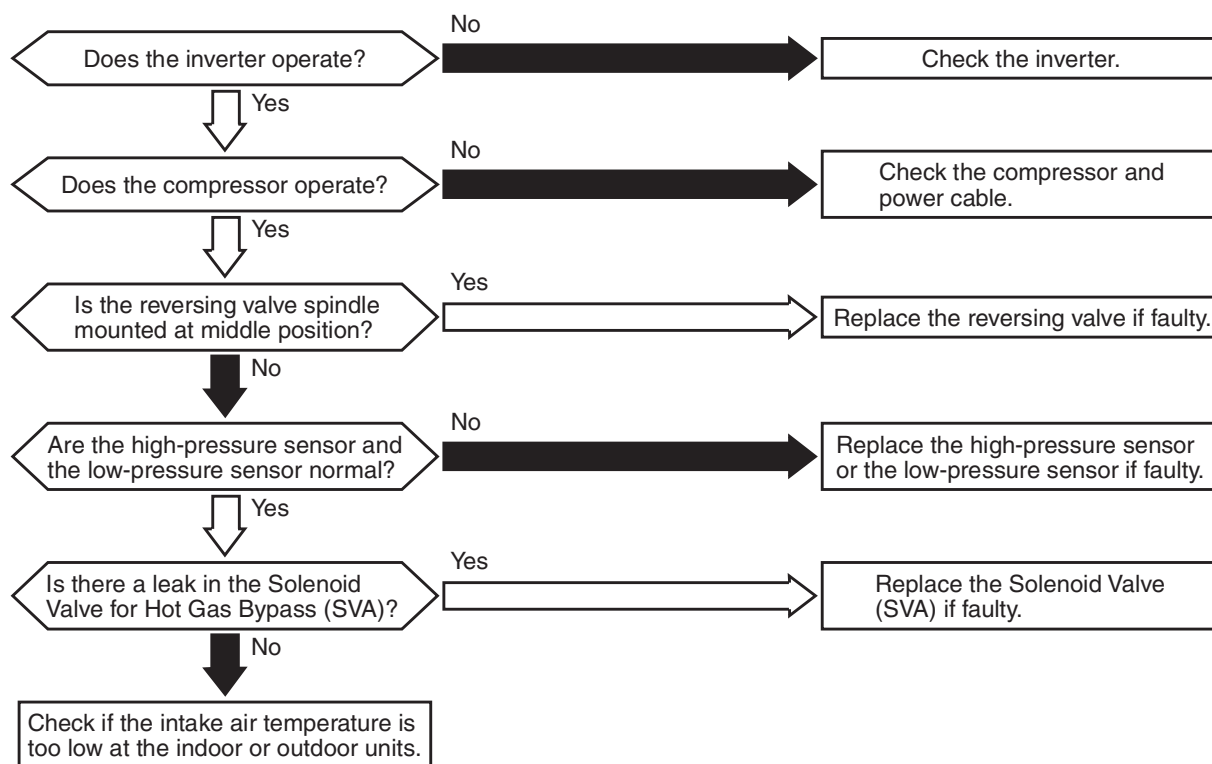
Alarm
Code

43

Activation of Low Compression Ratio Protection Device

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when a compression ratio, $\varepsilon = \{(P_d + 0.1) / (P_s + 0.06)\}$ is calculated from a discharge pressure (P_d MPa) and suction pressure (P_s MPa) and the condition lower than $\varepsilon < 1.8$ occurs more than three times (including three) in one hour.

PCB1: Control PCB in Outdoor Unit



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Excessively Low Compression Ratio	Inverter is not Functioning	Check inverter.	Repair faulty part.
	Compressor is not Operating	Check compressor.	Replace comp. if faulty.
	Valve Stoppage at Middle Position of Reversing Valve	Measure suction pipe temp. of reversing valve.	Replace reversing valve if faulty.
	Abnormality of High or Low Pressure Sensor	Check connector for PCB1, power source and pressure indication.	Replace sensor if faulty.
	Excessively Low Indoor Intake Air Temperature	Check indoor unit and outdoor unit air temp. thermistor.	Replace thermistor if faulty.
	Leakage from Solenoid Valve (SVA)	Check Solenoid Valve.	Replace SVA if leaking.

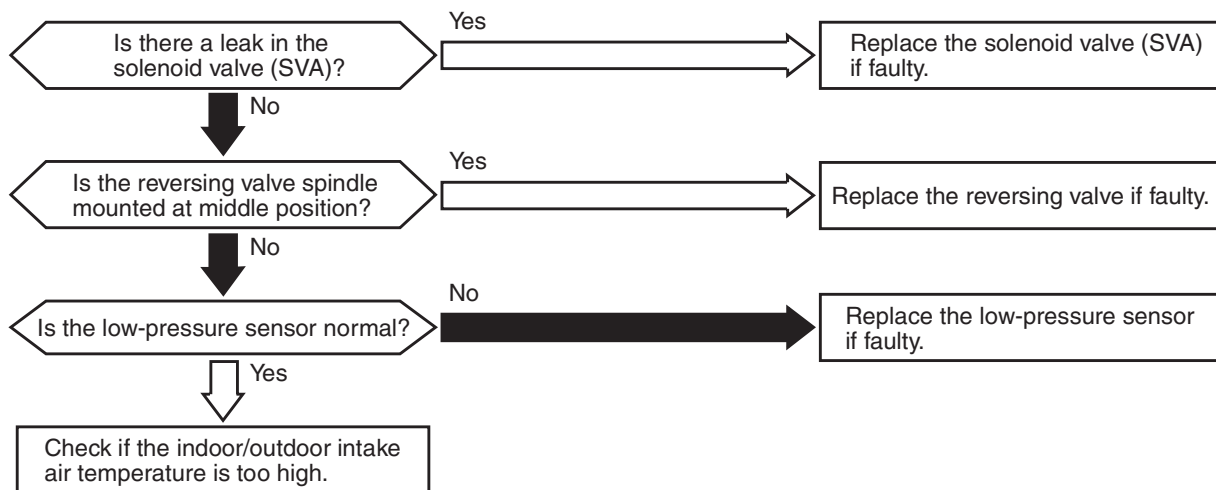
Alarm
Code

44

Activation of Low Pressure Increase Protection Device

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ In case that compressor is operated under the condition that is higher than 1.4MPa of suction pressure (Ps) for 1 minute, all compressors are stopped and retry operation is started after 3 minutes. However this alarm is indicated when same phenomenon is occurred at two times within the next 30 minutes.

PCB1: Control PCB in Outdoor Unit



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Excessively Low Suction Pressure	Leakage of Solenoid Valve (SVA)	Check outlet pipe temp. of solenoid valve (SVA).	Check connecting wires. Replace solenoid valve (SVA) if faulty.
	Valve Stoppage at Middle Position of Reversing Valve	Measure suction gas pipe temp. of reversing valve.	Replace reversing valve if faulty.
	Abnormal Suction Pressure Sensor	Check connectors of PCB1 and power source.	Replace sensor if faulty.
	Excessively High Indoor Unit and Outdoor Unit Suction Air Temperature	Check indoor unit and outdoor unit suction air temp. thermistor.	Replace thermistor if faulty.

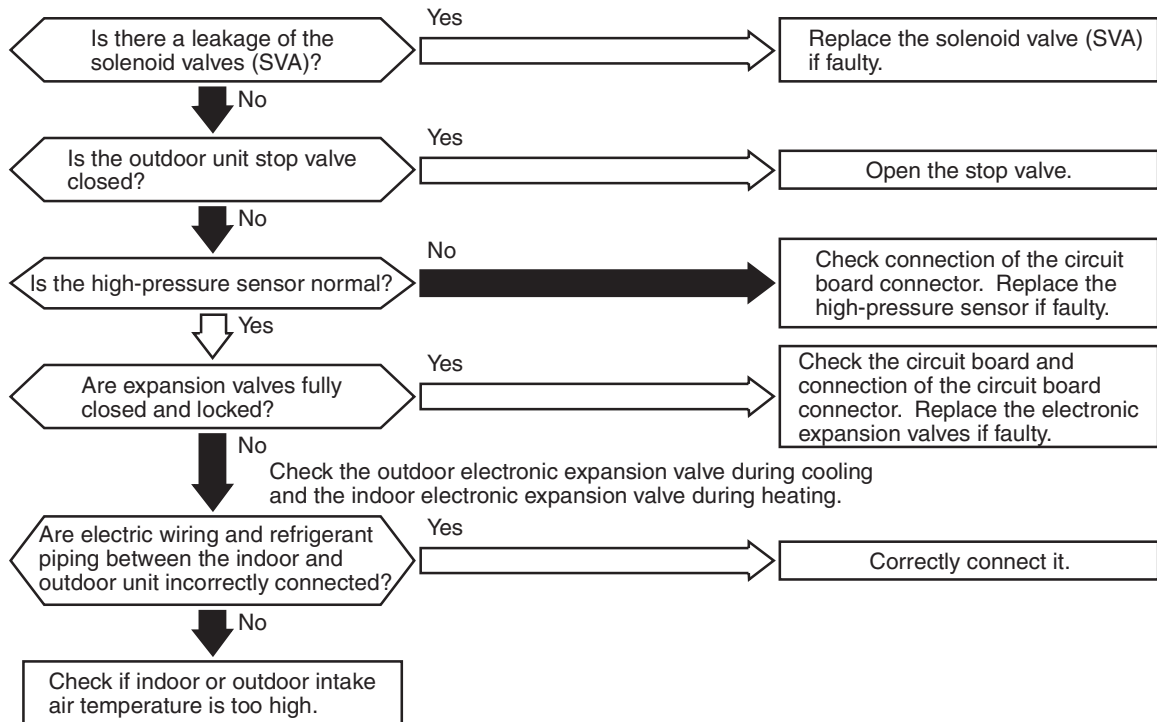
Alarm
Code

45

Activation of High Pressure Increase Protection Device

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ In case that compressor is operated under the condition that is higher than 3.8MPa of discharge pressure (Pd) for 1 minute, all compressors are stopped and retry operation is started after 3 minutes. However this alarm is indicated when same phenomenon is occurred at two times within the next 30 minutes.

PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB



Phenomenon	Cause	Check Item	Action (Turn OFF Main Switch)
Excessively High Discharge Pressure	Leakage of Solenoid Valve (SVA)	Check outlet temp. of solenoid valve (SVA).	Check connection. Replace solenoid valve (SVA) if faulty.
	Closed Stop Valve	Check stop valve.	Open stop valve.
	Abnormal High Pressure Sensor	Check connectors for PCB1.	Replace pressure sensor if faulty.
	Excessively High Indoor Unit and Outdoor Unit Inlet Air Temp.	Check thermistor for indoor unit and outdoor unit inlet air temp.	Replace thermistor if faulty.
	Incorrect Connection between Indoor Unit and Outdoor Unit	Check electrical system and ref. cycle.	Correctly connect.
	Locked Expansion Valve with Fully Closed	Check connector for PCB.	Repair connector for PCB or expansion valve. Replace it if faulty.

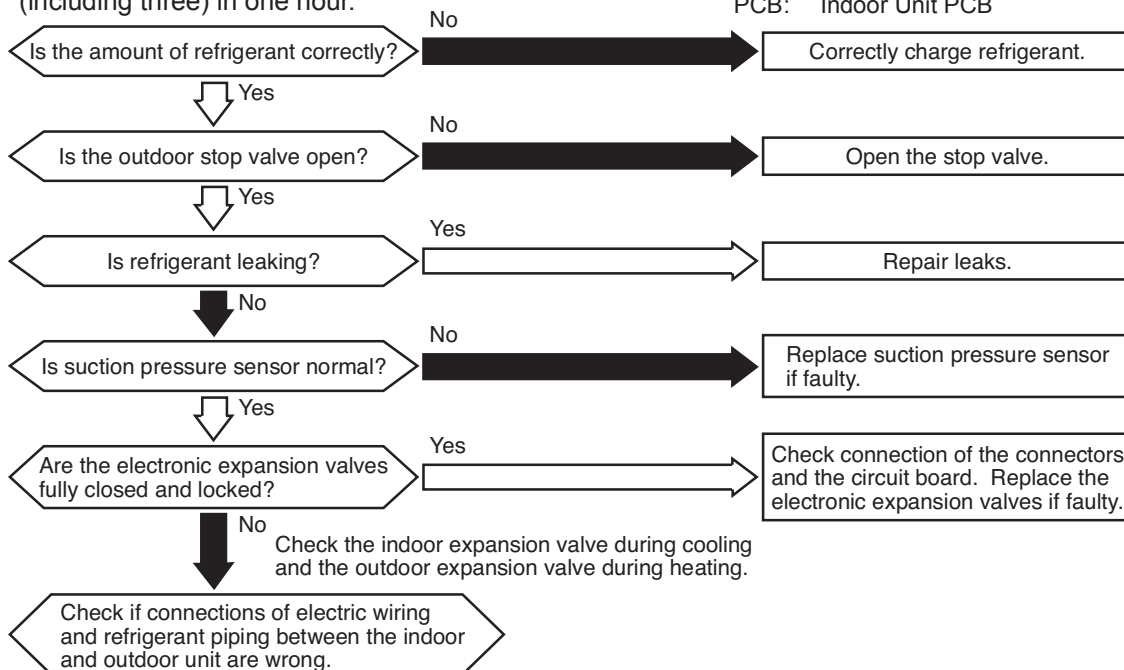
Alarm
Code

47

Activation of Low Pressure Decrease Protection Device (Vacuum Operation Protection)

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when a suction pressure (Ps) is lower than 0.09 MPa for over 12 minutes and its state occurs more than three times (including three) in one hour.

PCB1: Control PCB in Outdoor Unit
PCB: Indoor Unit PCB



Phenomenon	Cause		Check Item	Action (Turn OFF Main Switch)
Excessively Low Suction Pressure (in Vacuum)	Shortage of Ref.		Check ref. charged volume or check for leakage.	Repair leakage and correctly charge.
	Closed Stop Valve		Check stop valve.	Open stop valve.
	Abnormal Low or High Pressure Sensor		Check connector for PCB1.	Replace pressure sensor if faulty.
	Incorrect Connection between Indoor Unit and Outdoor Unit		Check electrical system and ref. cycle.	Correctly connect between indoor unit and outdoor unit.
	Locked Expansion Valve with Fully Closed		Check connector for PCB.	Repair connector for PCB or expansion valve. Replace it if faulty.
	Closed Expansion Valve by Disconnecting Td Thermistor		Check Td thermistors for compressors and measure Td thermistor resistance.	Repair or replace Td thermistor.
Internal Thermostat for Outdoor Fan is Activated in Heating Operation	Faulty Outdoor Fan Motor		Measure coil resistance and insulation resistance.	Replace outdoor fan motor if faulty.
	Faulty Internal Thermostat	Fault	Check for conduction after temperature of outdoor fan motor is decreased.	Replace outdoor fan motor.
		Incorrect Contact	Measure resistance by tester.	Remove looseness and replace connector.
		Incorrect Connection	Check connection.	Connect correctly.

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

- ★ This alarm is indicated when inverter electronic thermal protection is activated at six times within 30 minutes. (Retry operation is performed up to the occurrence of five times.)

Conditions of Activation:

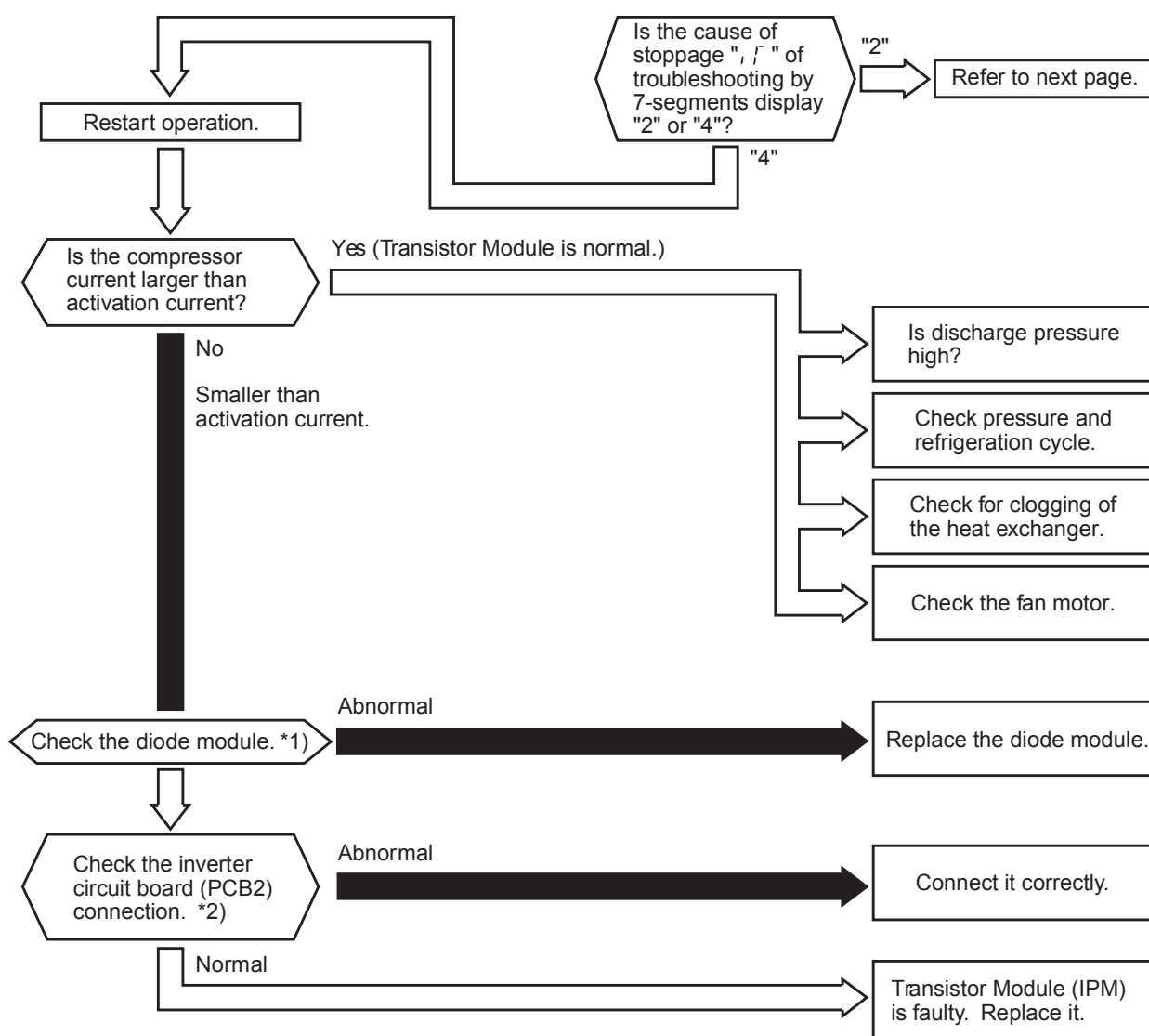
Inverter current with 105% of the rated current runs for 30 seconds continuously.

or

Inverter current runs intermittently and the accumulated time reaches up to 3 minutes, in 10 minutes.

PCB1: Control PCB in Outdoor Unit

PCB2: Inverter PCB



*1): Regarding replacing or the checking diode module, refer to the item 3.3 in *Troubleshooting*.

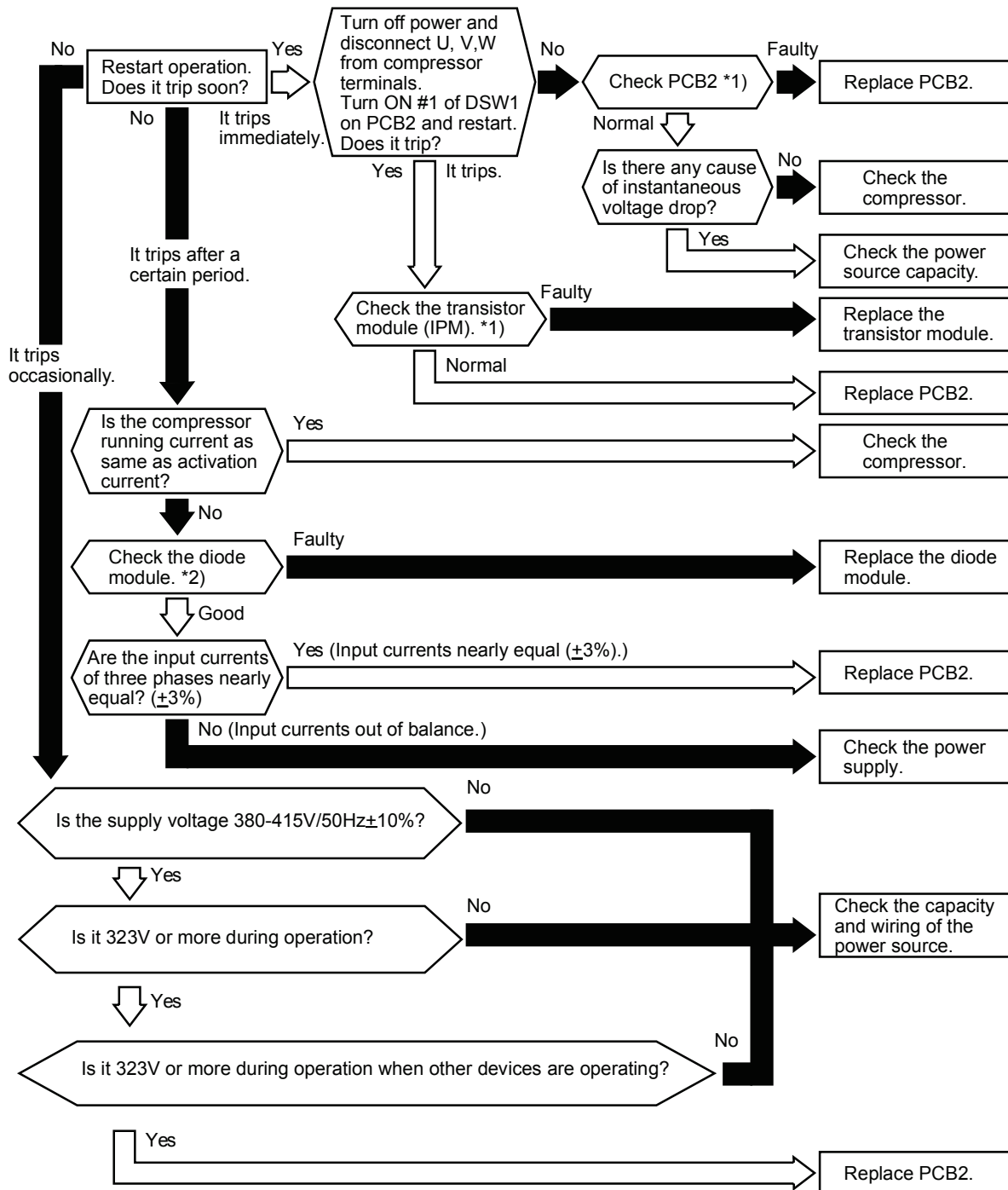
*2): Regarding replacing or checking method for inverter parts, refer to the item 3.3 in *Troubleshooting*.

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

- ★ This alarm is indicated when instantaneous overcurrent occurs at six times within 30 minutes.
(Retry operation is performed up to the occurrence of five times.)

Conditions of Activation: Inverter current with 150% of the rated current

PCB1: Control PCB in Outdoor Unit
PCB2: Inverter PCB

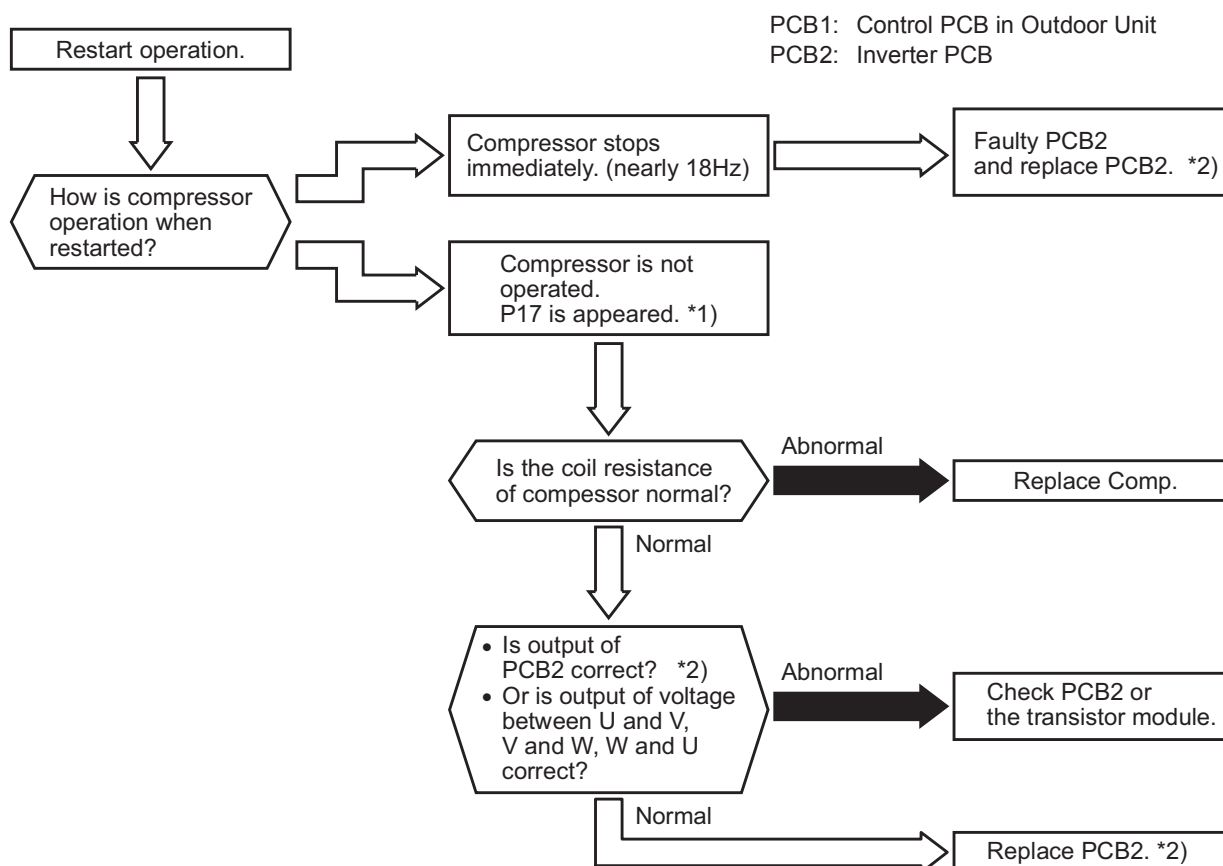


*1): Perform electrical discharge when replacing or the checking for inverter parts by referring to the item 3.3 in *Troubleshooting*.

*2): Before checking of diode module, refer to the item 3.3 in *Troubleshooting*.

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ In case that the abnormality of current transformer (0A detecting) occurs three times within 30 minutes, this alarm is indicated at the third time.
(Retry operation is performed up to second time of abnormality occurrence.)

Condition of Activation: When the frequency of compressor is maintained at 15 to 18Hz after compressor is started, one of the absolute value of running current detected by the current transformer at each phase U+, U-, V+ and V- is less than 1.5A (including 1.5A).



*1): P17 is shown at 7-segment on the outdoor unit PCB1.

*2): Perform the high voltage discharge work by referring to the item 3.3 in *Troubleshooting* before checking and replacing the inverter parts.

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

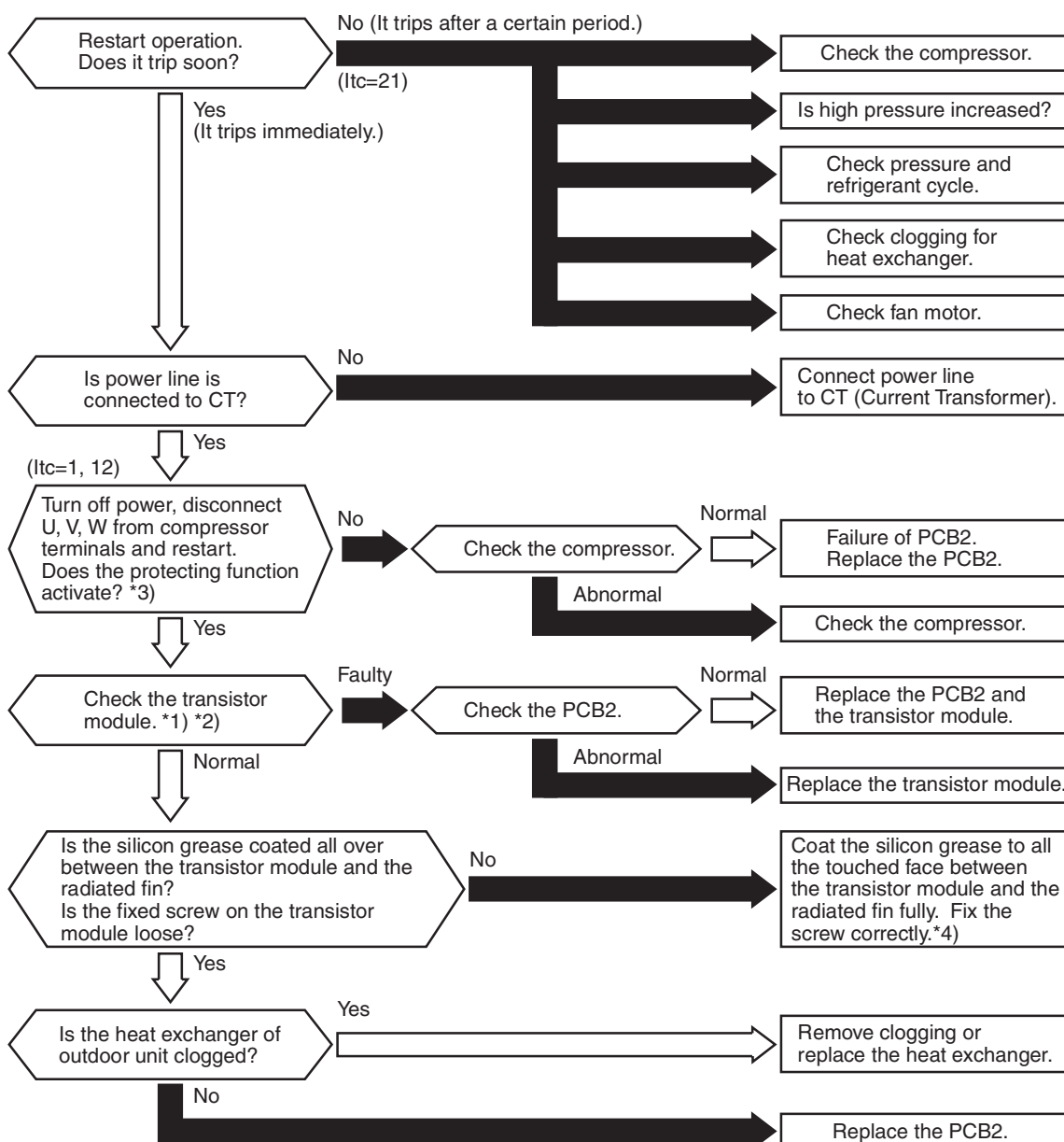
- ★ IPM (Transistor Module) has detecting function of abnormality.
This alarm is indicated when the transistor module detects the abnormality seven times in 30 minutes.
(Retry operation is performed up to the occurrence of six times.)

Conditions of Activation:

Abnormal Current to the Transistor Module such as Short Circuited or Grounded or
Abnormal Temperature of the Transistor Module or Control Voltage Decrease

PCB1: Control PCB in Outdoor Unit

PCB2: Inverter PCB



*1): Perform electrical discharge when replacing or checking inverter parts by referring to the item 3.3 in *Troubleshooting*.

*2): Regarding checking method of transistor module, refer to the item 3.3 in *Troubleshooting*.

*3): Turn ON the No.1 switch of the dip switch DSW1 on PCB2 when restarting with disconnecting the terminals of the compressor. After troubleshooting, turn OFF the No.1 switch of the dip switch DSW1 on PCB2.

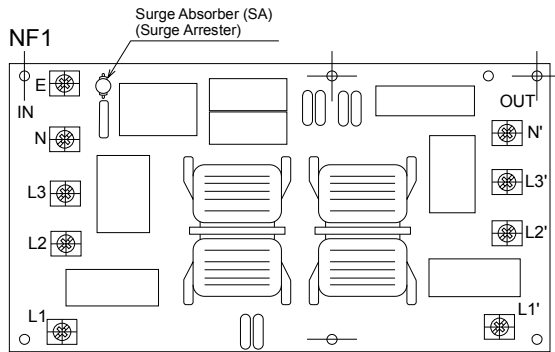
*4): Use the silicon grease provided as accessory.

NOTE:

When the unit is applied the excessive surge current due to lightning or other causes, this alarm code “53” or the inverter stoppage code (IT) “11” will be indicated and the unit can not be operated. In this case, check to ensure the surge absorber/surge arrester (SA) on the noise filter (NF1). The surge absorber may be damaged if the inner surface of the surge absorber is black. In that case, replace the surge absorber.

If the inside of the surge absorber is normal, turn OFF the power once and wait for PCB2's LED201 (red) OFF (approx. 5 min.) and turn ON again.

< Position of Surge Absorber >



Alarm Code **54**

Abnormality of Inverter Fin Temperature

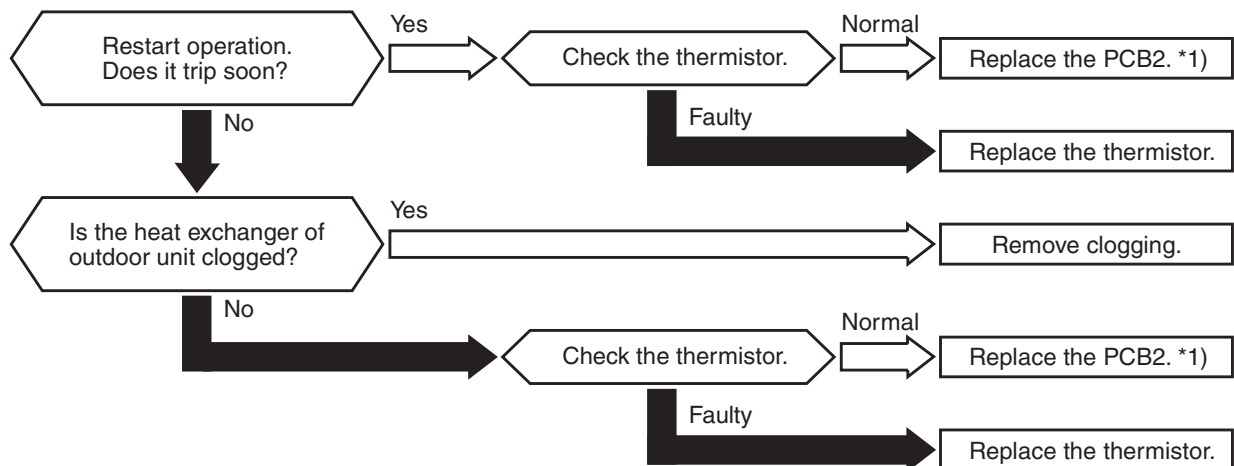
- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

- ★ In case that the abnormality of inverter fin temperature occurs three times within 30 minutes, this alarm is indicated at the third time.

(Retry operation is performed up to second time of abnormality occurrence.)

Conditions of Activation: This alarm is indicated when the temperature of the inverter fin thermistor for Transistor Module is higher than 90°C.

PCB1: Control PCB in Outdoor Unit
PCB2: Inverter PCB



*1): Perform electrical discharge when replacing or checking inverter parts by referring to the item 3.3 in *Troubleshooting*.

Alarm
Code

55

Inverter Failure

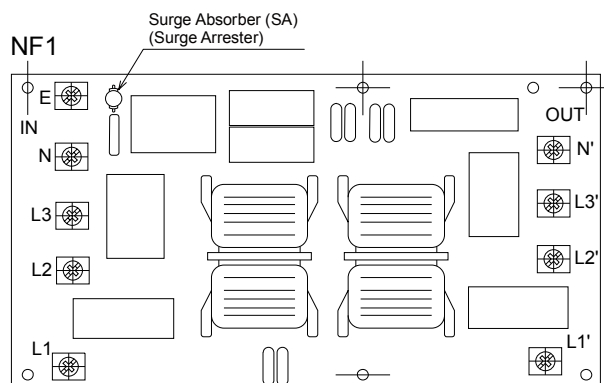
- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the following phenomenon occurs three times in 30 minutes.
(Retry operation is performed up to the occurrence of two times.)
Actual frequency from PCB2 is less than 10Hz (after inverter frequency output from PCB1).
Conditions of Activation: This alarm is indicated when PCB2 is not performed normally.

PCB1: Control PCB in Outdoor Unit
PCB2: Inverter PCB



*1): When the unit is applied the excessive surge current due to lightning or other causes, this alarm code "55" or the inverter stoppage code (IT) "11" will be indicated and the unit can not be operated. In this case, check to ensure the surge absorber/surge arrester (SA) on the noise filter (NF1). The surge absorber may be damaged if the inner surface of the surge absorber is black. In that case, replace the surge absorber. If the inside of the surge absorber is normal, turn OFF the power once and wait for PCB2's LED201 (red) OFF (approx. 5 min.) and turn ON again.

< Position of Surge Absorber >



Alarm
Code

57

Activation of Fan Controller Protection

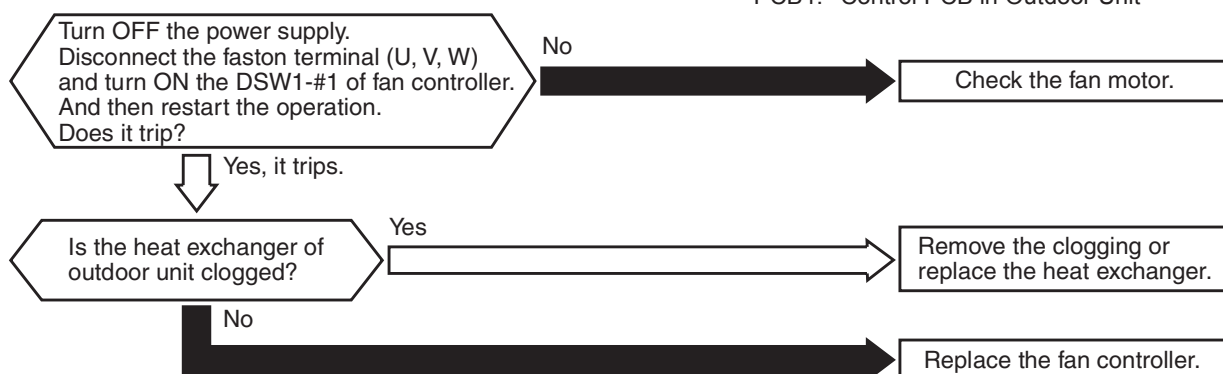
- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

- ★ IPM (Transistor Module) has detecting function of abnormality.
This alarm is indicated when the abnormality is detected ten times within 30 minutes.
(Retry operation is performed up to the occurrence of nine times.)

Conditions of Activation:

Abnormal Current to the Transistor Module such as Short Circuited or Grounded
or Overcurrent
or Control Voltage Decrease

PCB1: Control PCB in Outdoor Unit

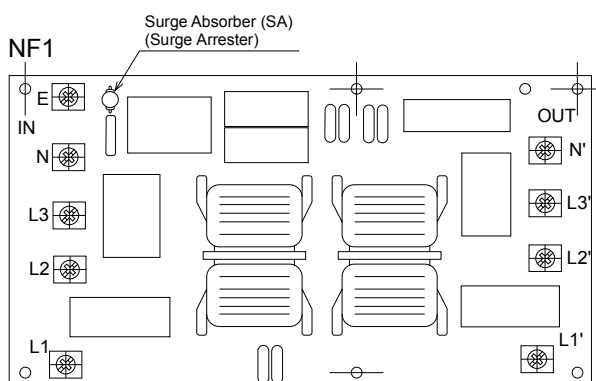


NOTE:

When the unit is applied the excessive surge current due to lightning or other causes, this alarm code "57" or the inverter stoppage code (IT) "11" will be indicated and the unit can not be operated. In this case, check to ensure the surge absorber/surge arrester (SA) on the noise filter (NF1). The surge absorber may be damaged if the inner surface of the surge absorber is black. In that case, replace the surge absorber.

If the inside of the surge absorber is normal, turn OFF the power once and wait for PCB2's LED201 (red) OFF (approx. 5 min.) and turn ON again.

< Position of Surge Absorber >



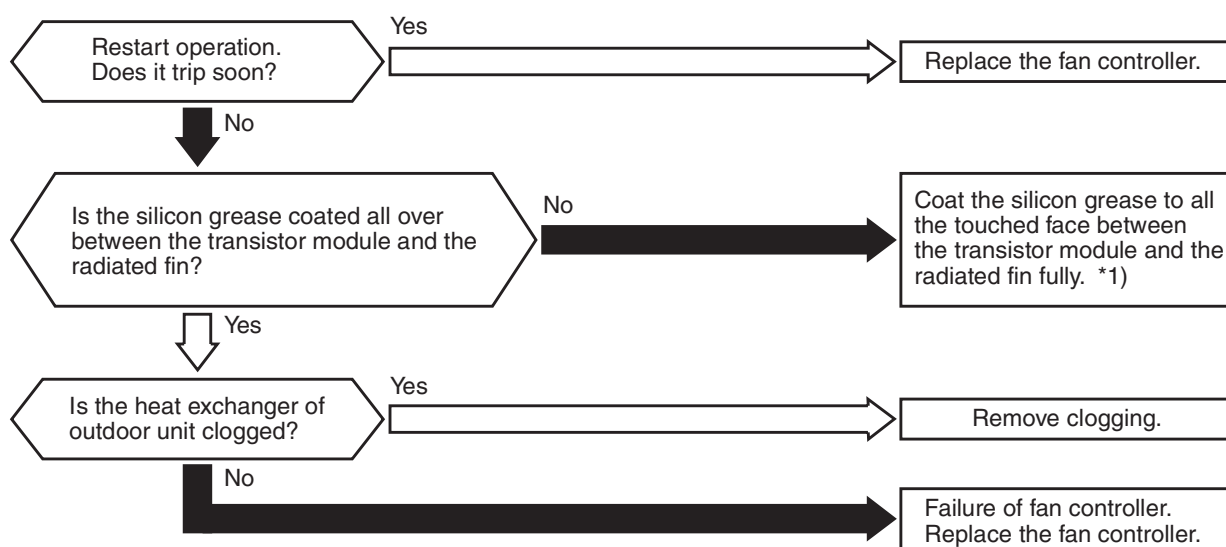
Alarm
Code

5A

Abnormality of Fan Controller Fin Temperature

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when the abnormality of fin temperature occurs ten times within 30 minutes. (Retry operation is performed up to the occurrence of nine times.)
- Conditions of Activation: This alarm is indicated when the thermistor temperature inside the transistor module exceeds 100°C.

PCB1: Control PCB in Outdoor Unit



*1): Use the silicon grease provided as accessory.

Alarm
Code

5b

Activation of Fan Controller Overcurrent Protection Device (1)

- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.
- ★ This alarm is indicated when fan controller electronic thermal protection is activated at ten times within 30 minutes.
(Retry operation is performed up to the occurrence of nine times.)

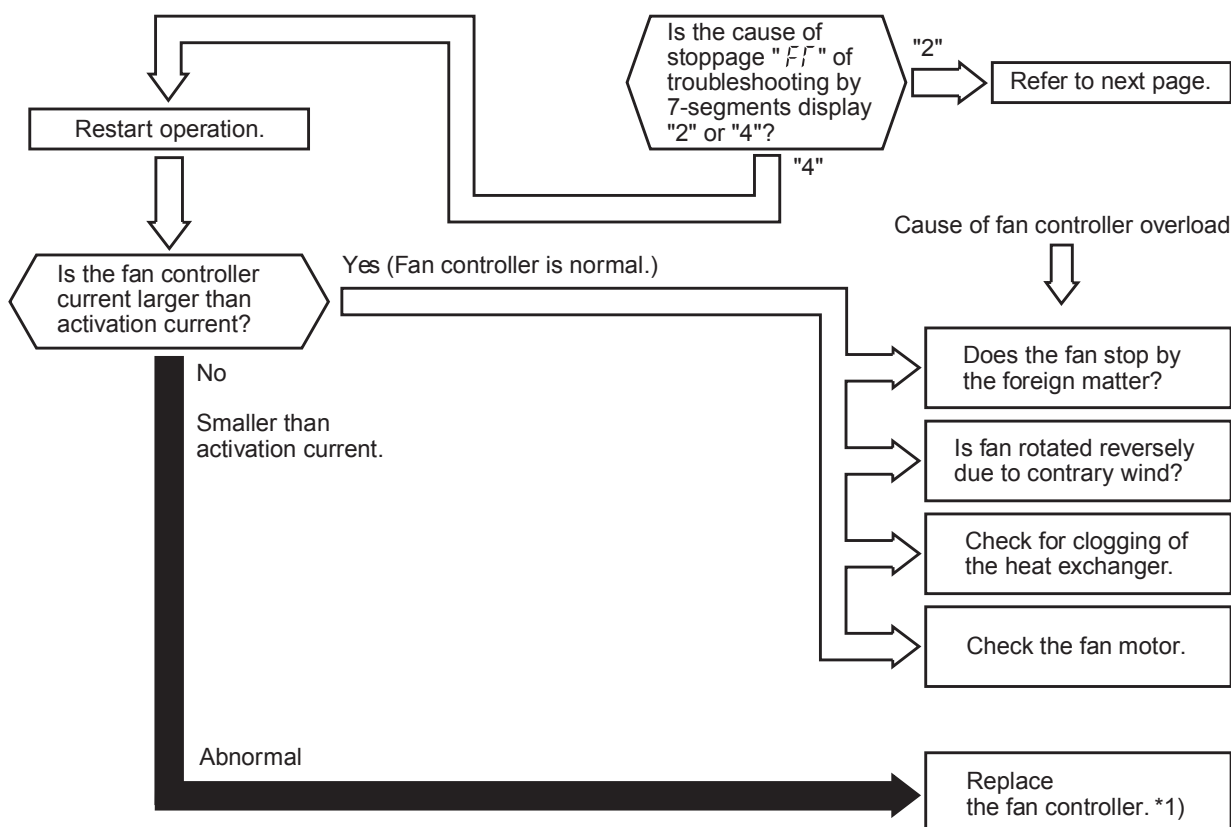
Conditions of Activation:

Electric current with 105% of the rated current runs for 30 seconds continuously.

or

Electric current runs intermittently and the accumulated time reaches up to 3 minutes, in 10 minutes.

PCB1: Control PCB in Outdoor Unit



*1): Perform electrical discharge when replacing or checking fan controller by referring to the item 3.3 in *Troubleshooting*.

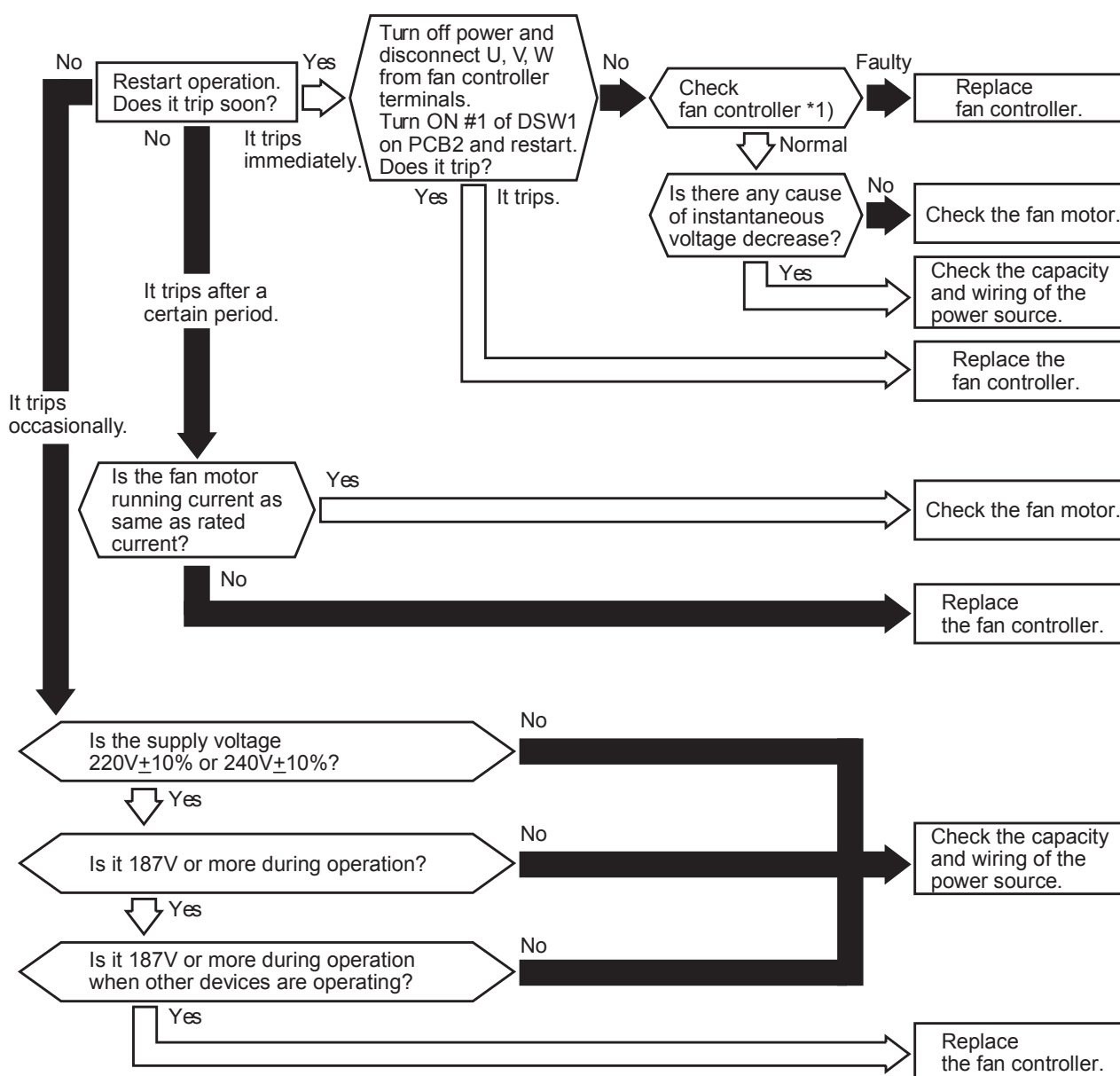
- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

★ This alarm is indicated when instantaneous overcurrent occurs at ten times within 30 minutes.
(Retry operation is performed up to the occurrence of nine times.)

Conditions of Activation: Fan controller current with 150% of the rated current.

PCB1: Control PCB in Outdoor Unit

PCB2: Inverter PCB



*1): Perform electrical discharge when checking or replacing fan controller by referring to the item 3.3 in *Troubleshooting*.

Alarm
Code

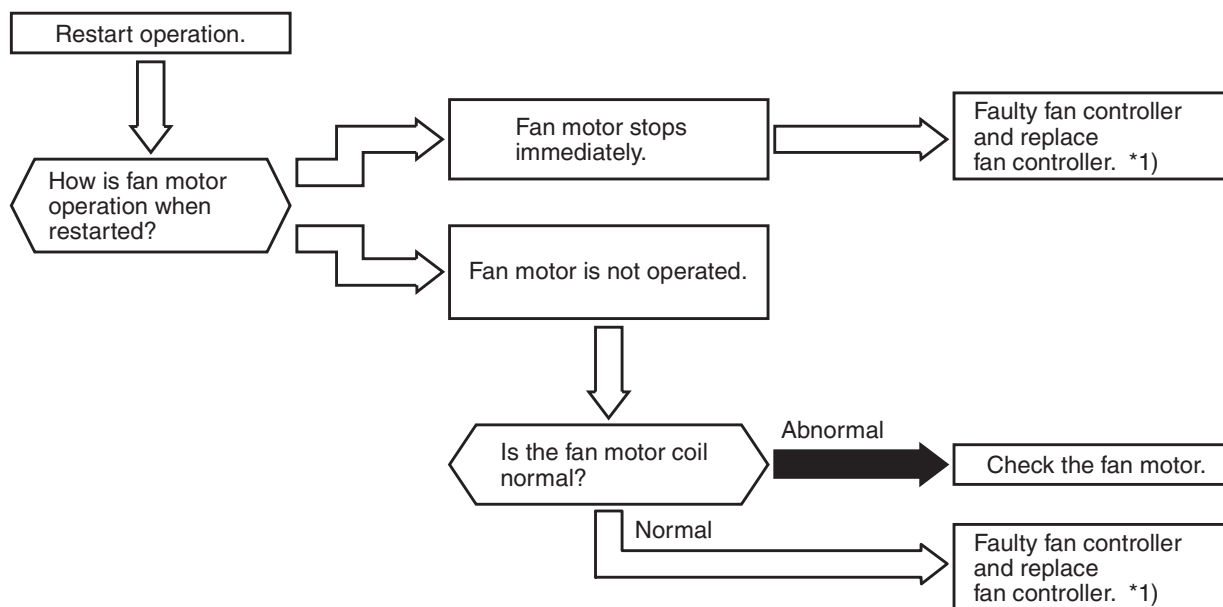
5E

Abnormality of Fan Controller Sensor

★ Conditions of Activation:

This alarm is indicated when the following condition occurs.

- After fan motor operation is started, fan controller current does NOT exceed 1.5A.
- Before fan motor operation is started, fan controller peak current does NOT exceed 4A.



*1): Perform electrical discharge when checking or replacing fan controller by referring to the item 3.3 in *Troubleshooting*.

Alarm
Code

EE

Compressor Protection Alarm

- ★ This alarm code appears when one of the following alarms occurs three times within 6 hours, which may result in serious compressor damages, if the outdoor unit is continuously operated without removing the cause.

Alarm Code:

Content of Abnormality

02	Activation of Protection Device (High Pressure Cut)
07	Decrease in Discharge Gas Superheat
08	Increase in Discharge Gas Temperature
39	Abnormality of Running Current at Constant Speed Compressor
43	Activation of Low Compression Ratio Protection Device
44	Activation of Low Pressure Increase Protection Device
45	Activation of High Pressure Increase Protection Device
47	Activation of Low Pressure Decrease Protection Device (Vacuum Operation Protection)

These alarms are able to be checked by the CHECK Mode 1. Follow the action indicated in each alarm chart.

These alarms are cleared only by turning OFF the main power switch to the system. **However, careful attention is required before starting, since there is a possibility which will result in serious damages to the compressors.**

Alarm Code	b1	Incorrect Setting of Unit and Refrigerant Cycle No.
------------	-----------	---

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
 - The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and alarm code is indicated on the display of the outdoor unit PCB.
- ★ This alarm is indicated under the following conditions. Turn off the power source and check for DSW and RSW settings.

Conditions	Action
Unit No. (DSW6 and RSW1) or Refrigerant Cycle No. (DSW5 and RSW2) are set above “64”. Or, more than 2 pins are set at DSW5 and DSW6.	Set Unit No. and Refrigerant Cycle No. below “63”.

Alarm Code	b5	Incorrect Indoor Unit Connection No. Setting
------------	-----------	--

- “RUN” light flashes and “ALARM” is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code is indicated on the display of the outdoor unit PCB1.
(“35” is indicated on the display of the remote control switch.)

Alarm
Code

[1]

Incorrect Indoor Unit Connection (Switch Box)

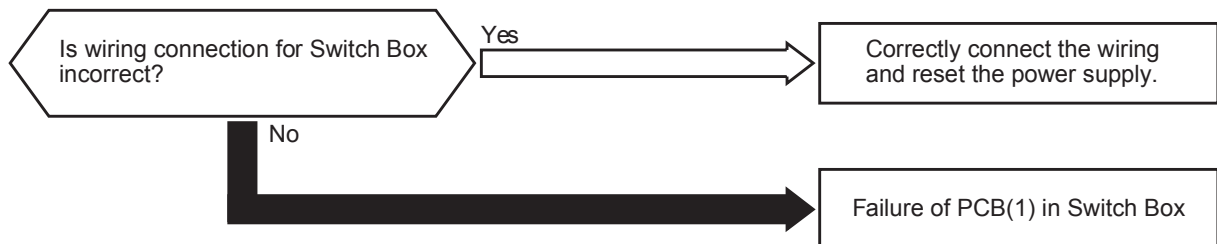
- "RUN" light flashes and "ALARM" is indicated on the remote control switch.
- The unit No., alarm code and the unit code is alternately indicated on the set temperature section, and the unit No. and alarm code are indicated on the display of the outdoor unit PCB1.

★ <Heat Recovery System>

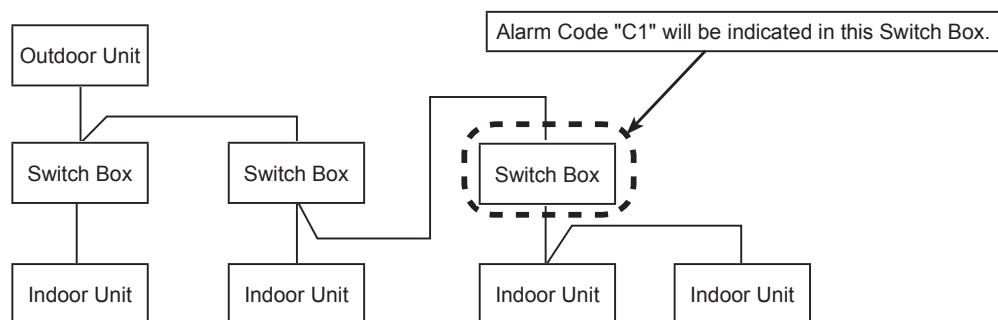
This alarm is indicated when two or more Switch Boxes are connected between outdoor unit and indoor unit.

PCB1: Control PCB in Outdoor Unit

PCB(1): Switch Box PCB



- Alarm Code "C1" will be indicated when the units are connected as follows.



Alarm
Code

C2

Incorrect Indoor Unit Connection No. Setting (Switch Box)

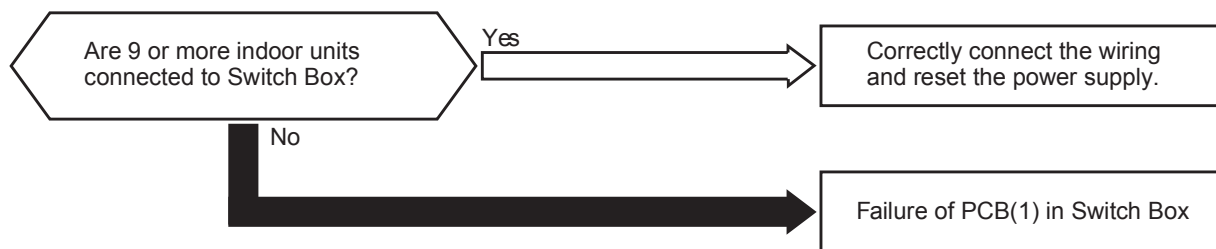
- The unit No., alarm code ("35") and the unit code is alternately indicated on the set temperature section of indoor unit connected to Switch Box.
- LED (LED4, 5, 6) on PCB(1) in Switch Box flashes.

★ <Heat Recovery System>

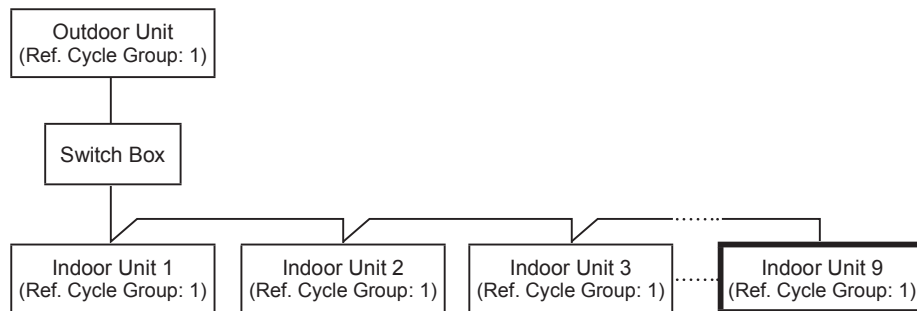
This alarm is indicated when nine or more indoor units are connected to Switch Box.

PCB1: Control PCB in Outdoor Unit

PCB(1): Switch Box PCB



- Alarm Code "C2" will be indicated when the units are connected as follows.



Alarm
Code

C3

Incorrect Indoor Unit Connection (Switch Box)

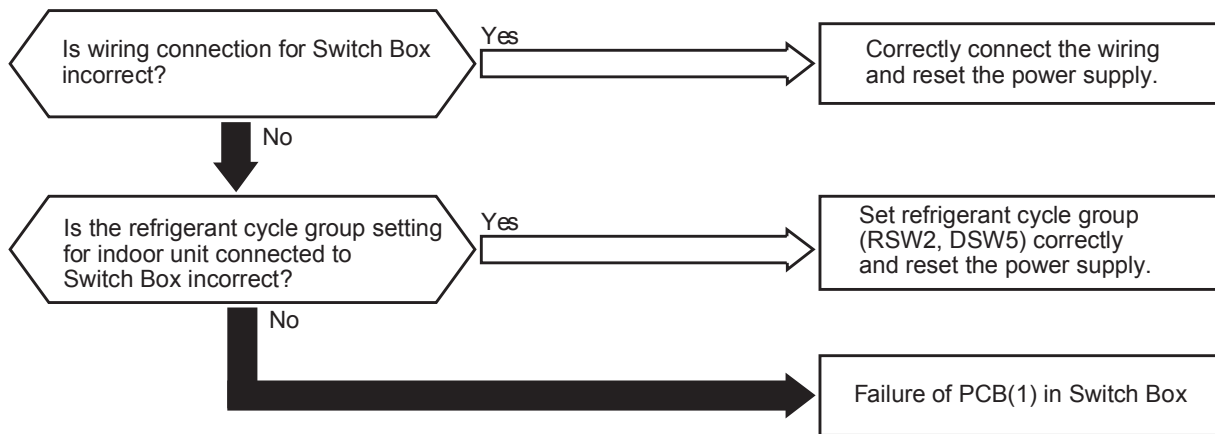
- The unit No., alarm code ("35") and the unit code is alternately indicated on the set temperature section of indoor unit connected to Switch Box.
- LED (LED5, 6) on PCB(1) in Switch Box flashes.

★ <Heat Recovery System>

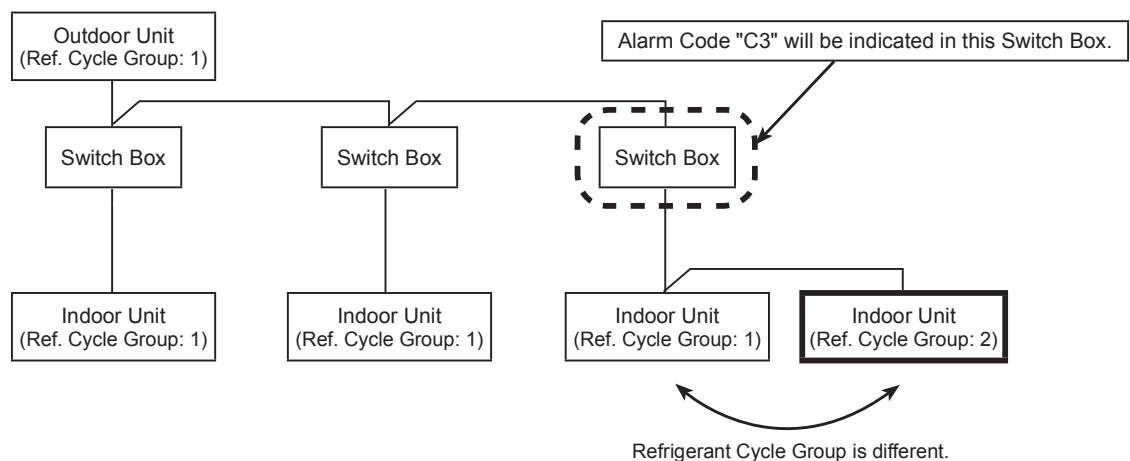
This alarm is indicated when indoor unit with different refrigerant cycle group is connected to Switch Box.

PCB1: Control PCB in Outdoor Unit

PCB(1): Switch Box PCB

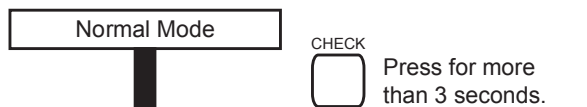
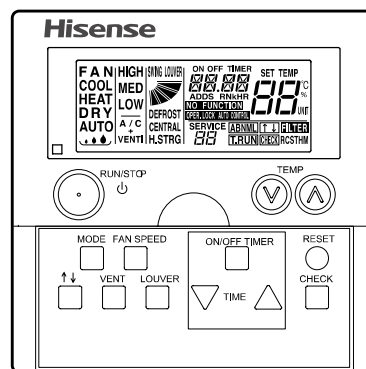
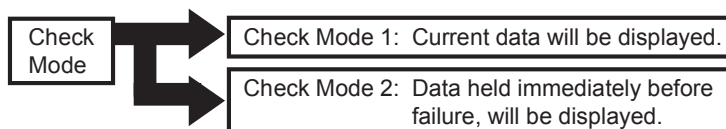


- Alarm Code "C3" will be indicated when the units are connected as follows.



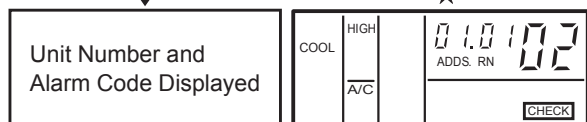
2.3 Troubleshooting in Check Mode by Remote Control Switch

- Use the remote control CHECK switch in the following cases.
 - (1) When the RUN lamp is flashing.
 - (2) To trace back the cause of trouble after restarting from stoppage with the RUN lamp flashing.
 - (3) To check during normal operation or stoppage.
 - (4) To monitor the temperatures of intake and discharge air.

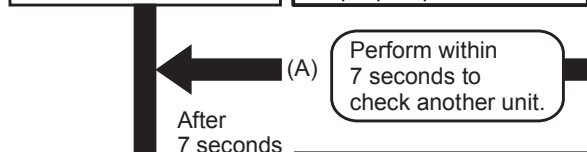


NOTES:

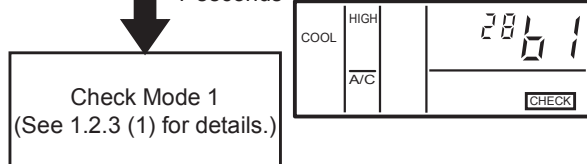
- Indication will delay as transmission between the remote control switch and indoor unit takes about 10 seconds.
- All data may be displayed as "FF" or "-1" or "255". These transient data produced temporarily by software do not affect device functions at all. (The alarm code may also be indicated as "FF".)
- If it is not indicated check mode 1, it has possibilities that the transmission between remote control switch and indoor unit is not correct.



- Alarm code identifying the last fault that has occurred in the indicated unit.
- Unit number of connected unit or unit number for which checking mode was selected previously.



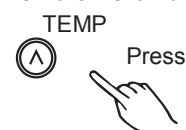
- Forward: Press the \wedge switch to rise from 00 to 01 to 02
- Backward: Press the \vee switch to descend from 15 to 14 to 13



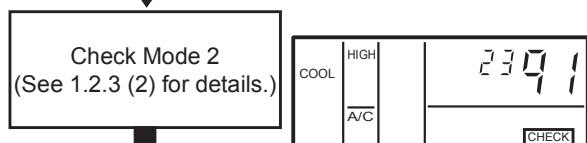
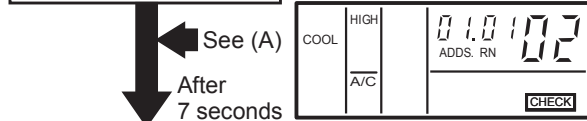
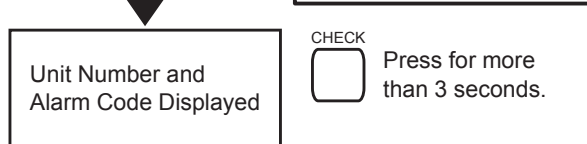
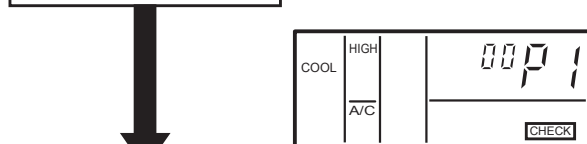
To View the Previous Indication TEMP



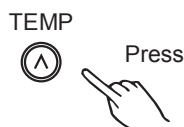
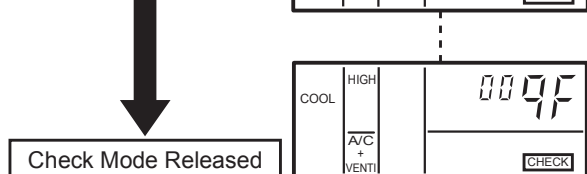
To View the Next Indication TEMP



Press \wedge to view the next data.
Press \vee to view the previous data.



★ ADDS: Number of Indoor Unit in No. ** Cycle
RN: No. ** Refrigerant Cycle



- In Check Mode 2, Data of the first three units connected serially to a remote control switch are available.
- You can press the CHECK switch to release Check Mode 2. Check Mode 1 cannot be released even if you press the CHECK switch.



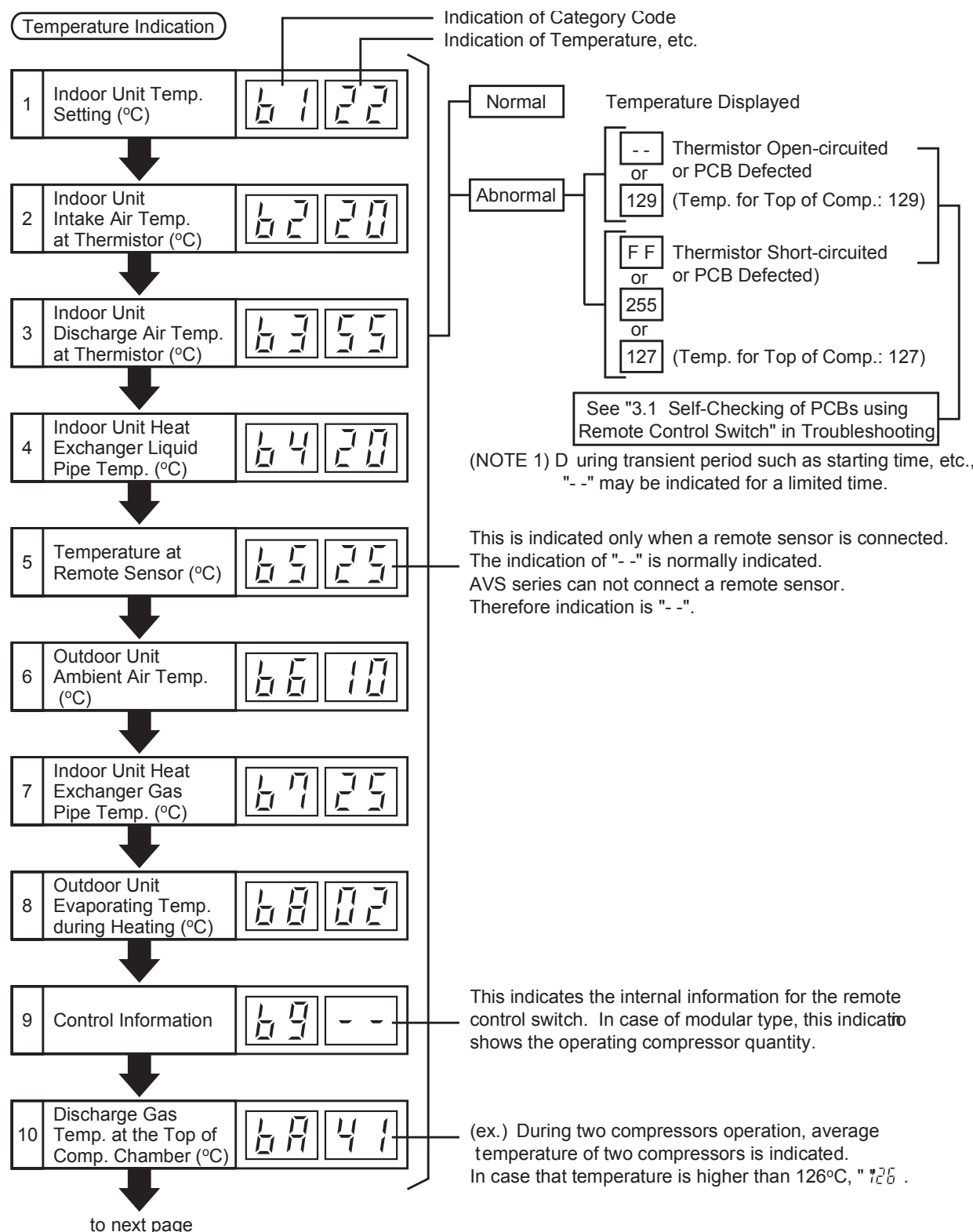
Although the wireless remote controller is used for wall type indoor unit with built-in receiver part, the alarm code can be checked by connecting wired controller to the connector of the unit and pressing the operation switch.

NOTES:

1. The unit is not operated by pressing operation switch.
2. The above function is available only when alarm occurs.
3. The PCB check by remote controller is not available.
4. The indication is the data when connecting wired controller, not the data before the alarm occurs.

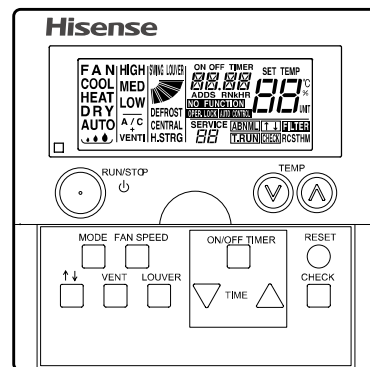
(1) Contents of Check Mode 1

The next indication is shown by pressing the \wedge part of "TEMP" switch. If the \vee part of "TEMP" switch is pressed the previous indication is shown.



Indication on Micro-Computer Input/Output

Micro-Computer	<input type="checkbox"/>	<input type="checkbox"/>
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Indication of Unit Stoppage Cause

Abnormality Occurrence Counter

Indication of Automatic Louver Condition

to next page

00	Operation OFF, Power OFF
01	Thermo-OFF (NOTE 1), Activating Float Switch
02	Alarm (NOTE 2)
03	Freeze Protection, Overheating Protection
05	Instantaneous Power Failure at Outdoor Unit, Reset (NOTE 3)
06	Instantaneous Power Failure at Indoor Unit, Reset (NOTE 4)
07	Stoppage of Cooling Operation due to Low Outdoor Air Temperature, Stoppage of Heating Operation due to High Outdoor Air Temperature
09	Reversing Valve Changeover, Stoppage
10	Demand, Enforced Stoppage
11	Retry due to Pressure Ratio Decrease
12	Retry due to Low Pressure Increase
13	Retry due to High Pressure Increase
14	Retry due to Abnormal Current of Constant Compressor
15	Retry due to Abnormal High Temperature of Discharge Gas, Excessively Low Suction Pressure
16	Retry due to Decrease of Discharge Gas Superheat
17	Retry due to Inverter Abnormality
18	Retry due to Voltage Decrease, Other Retry due to Inverter
19	Expansion Valve Opening Change Protection
21	Thermo-OFF by Oil Return Control
22	Hot Start of Outdoor Unit
26	Retry due to High Pressure Decrease
28	Cold Draft Control
30	Thermo-OFF due to Compressor Forced Stop
32	Retry due to Excessive Outdoor Unit Number

(NOTE 1) Explanation of Term,

Thermo-ON: A condition that an indoor unit is requesting compressor to operate.

Thermo-OFF: A condition that an indoor unit is not requesting compressor to operate.

(NOTE 2) Even if stoppage is caused by "Alarm", "02" is not always indicated.

(NOTE 3) If transmission between the inverter printed circuit board and the control printed circuit board is not performed during 30 seconds, the outdoor unit is stopped. In this case, stoppage is d1-05 cause and the alarm code "04" may be indicated.

(NOTE 4) If transmission between the indoor unit and the outdoor unit is not performed during 3 minutes, indoor units are stopped.
In this case, stoppage is d1-06 cause and the alarm code "03" may be indicated.

- Countable up to 99.

Over 99 times, "99" is always indicated.

(NOTE 1) If a transmitting error continues for 3 minutes, one is added to the occurrence times.

Compressor Pressure/Frequency Indication

20 Discharge Pressure (High) (x 0.1 MPa) H1 18

21 Suction Pressure (Low) (x 0.01 MPa) H2 04

22 Control Information H3 44

This is an indication for internal information for the remote control switch. This does not have any specific meaning.

23 Operation Frequency (Hz) H4 44

This is an indication for frequency of Inverter.

Indoor Unit Capacity Indication

24 Indoor Unit Capacity J1 00

The capacity of the indoor unit is indicated as shown in the table below.

Capacity Code of Indoor Unit

Indication Code	Equivalent Capacity (kBtu/h)
06	07
08	09
10	12
13	14
14	17
16	18
18	22
20	24
22	26
26	27
32	38
40	48
64	76
80	96

25 Outdoor Unit Code J2 Fn

26 Refrigerant Cycle Number J3 01

27 Refrigerant Cycle Number J4 00

"n" indicates total number of indoor units;

n = 1~9, A, b, C, d, E, F, U
(10) (11) (12) (13) (14) (15) (16)

Expansion Opening Indication

28 Indoor Unit Expansion Valve Opening (%) L1 20

J3: 01 to 16

(01: when shipment (DSW5), Decimal Indication)

J4: 00 to 0F

(00: when shipment (DSW5), Indication with 16 numbers)

29 Outdoor Unit Expansion Valve MV1 Opening (%) L2 99

30 Outdoor Unit Expansion Valve MV2 Opening (%) L3 99

In case of models without Expansion Valve (MV2), the same figure is indicated.

31 Outdoor Unit Expansion Valve MVB Opening (%) L4 00

Estimated Electric Current Indication

32 Compressor Running Current (A) P1 25

The total current is indicated when several compressors are running.

In case of inverter compressor, the running current of primary side of inverter is indicated.

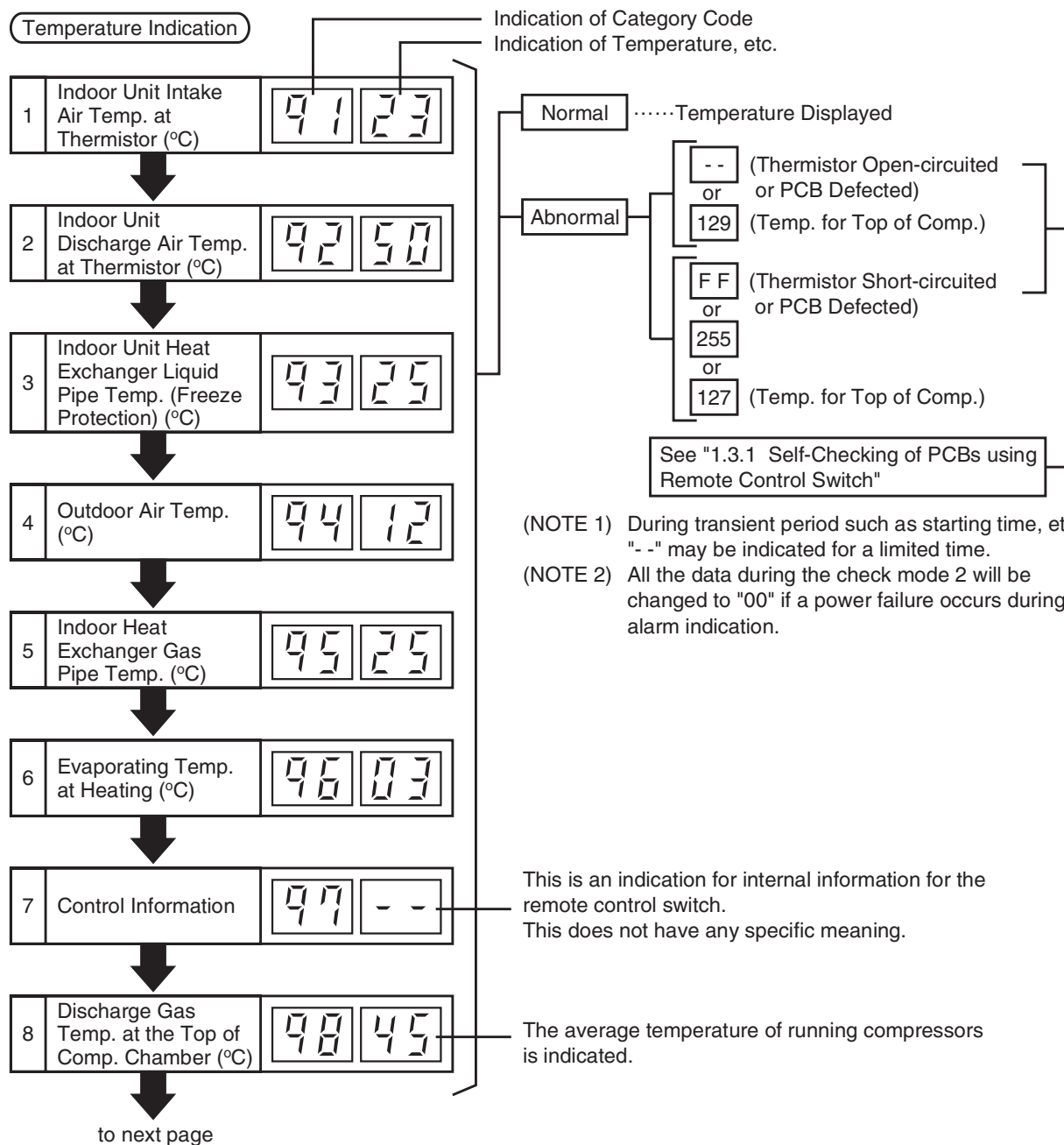
Returns to Temperature Indication

Temperature Indication

(2) Contents of Check Mode 2

The latest data of the first three indoor units only connected serially are indicated when more than three indoor units are connected to one remote control switch.

By pressing the \wedge part of "TEMP" switch, the next display is indicated, If the \vee part of "TEMP" switch is pressed, the previous display is indicated.



Compressor Pressure/Frequency Indication

9	Discharge Pressure (High) (x 0.1 MPa)	99	18
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10	Suction Pressure (Low) (x 0.01 MPa)	99	04
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11	Control Information	96	44
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This is an indication for internal information for the remote control switch. This does not have any specific meaning.



12	Operating Frequency (Hz)	97	44
----	-----------------------------	----	----

This is an indication for frequency of inverter.



Expansion Opening Indication

13	Indoor Unit Expansion Valve Opening (%)	96	20
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14	Outdoor Unit Expansion Valve MV1 Opening (%)	97	99
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Estimated Electric Current Indication

15	Compressor Running Current (A)	97	20
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The total value is indicated when two compressors are running.



Returns to Temperature Indication

Temperature Indication



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