# 5. Troubleshooting

| | Troubleshooting |
|---|---|
| First, | Items to be checked first |
| Second, | Check the corrective actions in the case of occurrence of self-diagnosis mode |
| Third, | When the trouble is not related to the 1st or 2nd items above, check the troubled area in detail in accordance with the fault analysis method by symptom. |

## 5-1 Items to be checked first

1) Is the supply voltage appropriate?
   The supply voltage: should be AC 187V-AC 253V/60Hz
2) Is the connecting wire between the indoor unit and outdoor unit appropriate?
   Be sure to check whether the cables for the indoor unit and outdoor unit are securely connected by the same terminal number.
3) When any claim occurs according to the contents of the table below, it is not related the trouble of the air-conditioner at all.

| No. | Operation of air-conditioner | Description |
|---|---|---|
| 1 | The compressor does not operate even though the desired temperature is set lower than room temperature (during the cooling operation) | The compressor operation is delayed for 3 minutes for the protection of it during the restart of compressor. It operates normally after 3 minutes delay even at the initial operation. |
| 2 | The hot wind does not come out even though the desired temperature is set higher than the room temperature. (heating operation) | In order to prevent the discharging of cool wind, the room fan motor operates only when the temperature of indoor heat exchanger is kept higher than a constant one. |
| 3 | The wind quantity is not controlled during the automatic (cooling/heating) turbo operation. | The wind quantity is set by the micom during the automatic turbo operation. |
| 4 | The temperature can not be set during the automatic (cooling/heating) turbo blowing operation. | The desired temperature is set automatically during the automatic turbo operation. The wind blowing operation is simply the operation mode for the circulation of indoor air. |

## 5-2 Self-diagnosis and corrective actions

| No. | Temperature display | Cause | Corrective actions |
|---|---|---|---|
| 1 | E1 | Short of indoor temperature sensor<br>Open of Indoor temperature sensor | Check of departure of indoor temperature sensor<br>Check of PCB open/short |
| 2 | E5 | Short of indoor heat exchanger sensor<br>Open of indoor heat exchanger sensor | Check of indoor exchanger sensor departure<br>Check of PCB open/short<br>Replacement of sensor |
| 3 | E6 | Short of outdoor heat exchanger sensor<br>Open of outdoor heat exchanger sensor | Check of outdoor exchanger sensor departure<br>Check of PCB open/short<br>Replacement of sensor |
| 4 | E7 | Short of heater temperature sensor<br>Open of heater temperature sensor | Check of heater wiring diagram<br>Check of sensor attachment location |
| 5 | EL | When the electrical heater is over heated | Check of heater temperature sensor departure<br>Check of PCB open/shore<br>Replacement of sensor |

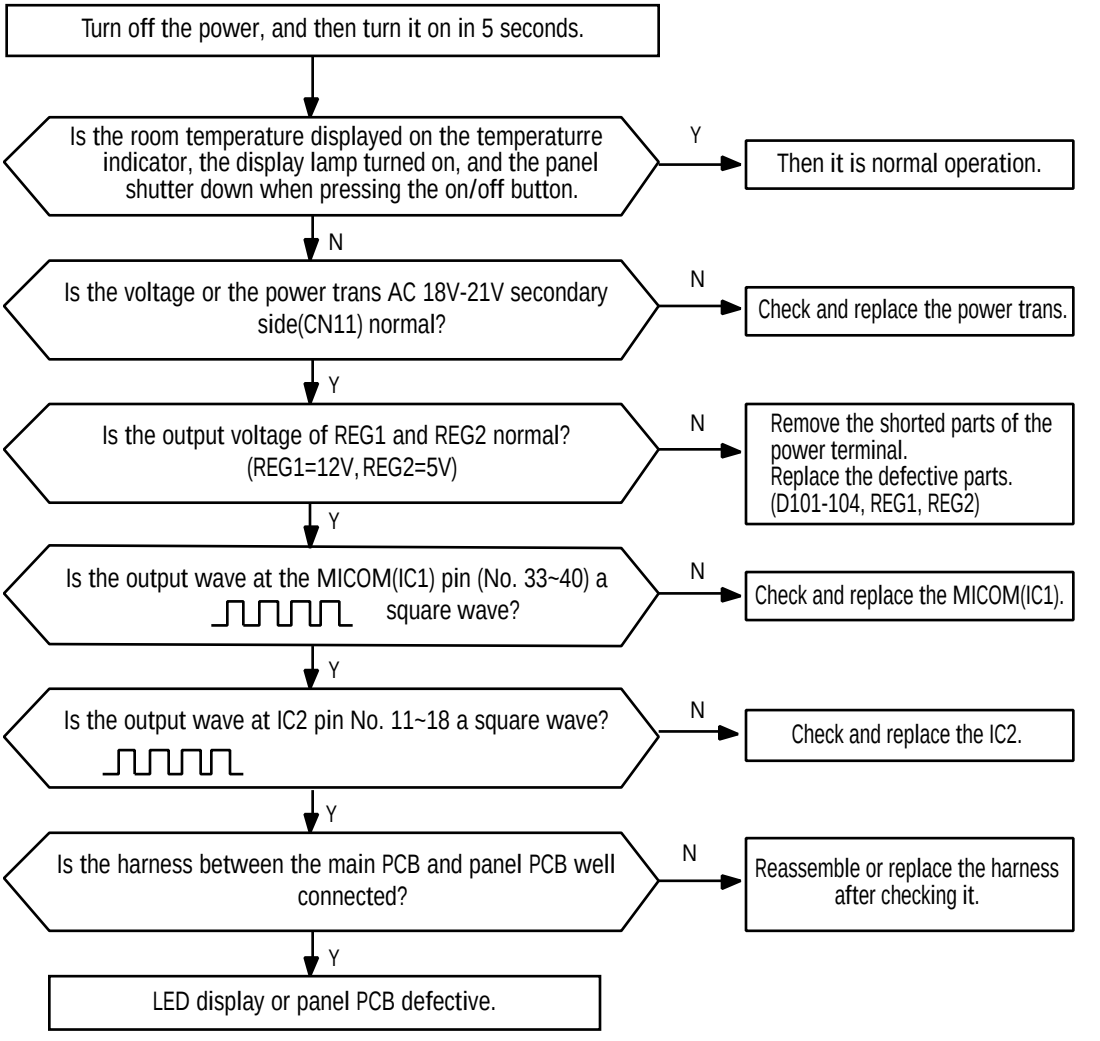
## 5-3 Fault Analysis by Symptom

### 5-3-1 No Power (No display)

1) Checkpoints

(1) Is the voltage of the power source normal?(AC 187V - AC 253V)
(2) Is the power line in good contact?
(3) Check the power fuse(F701, F702) and PCB fuse(F101) for open.
(4) Are the primary and secondary sides of the power-trans in good contact with the connector?
(5) Is the output voltage of REG1(KA7812) normal?(DC 11.5V - DC 12.5V)
(6) Is the output voltage of REG2(KA 7805) normal?(DC 4.5V - DC 5.5V)

2) Checking procedures(after checking the checkpoints of clause 1)

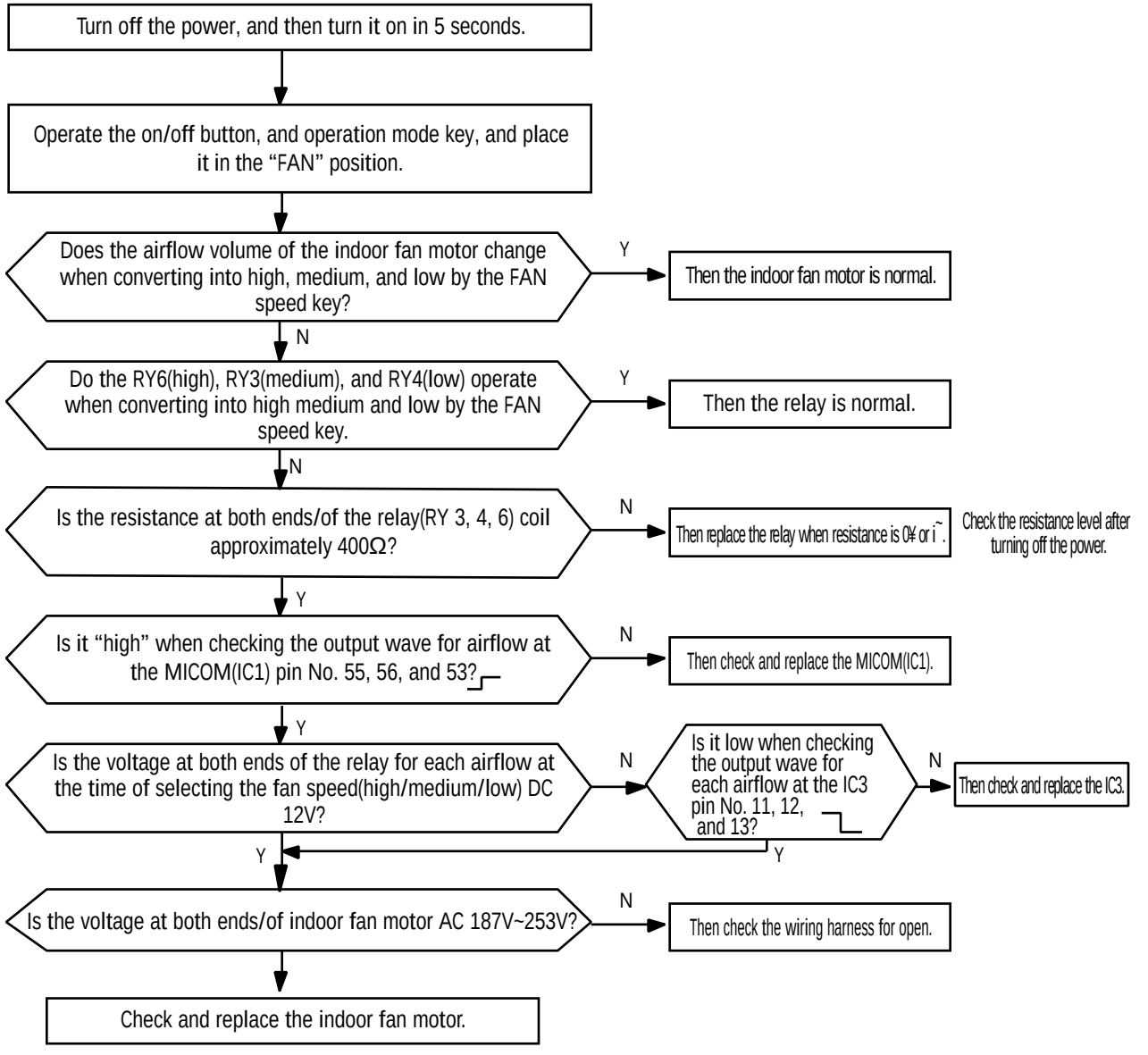


## 5-3-2 When the Indoor Fan Motor does not Operate.

1) Checkpoints

(1) Is the voltage of the power source normal?(AC 187V-AC 253V)
(2) Is the indoor fan connector (CN71) in good contact?
(3) Is the starting condensor of the fan motor in good contact with the terminal?
(4) Is the resistance at both ends of the relay coil approximately 400Ω?

2) Checking procedures(after checking the checkpoints of clause 1)

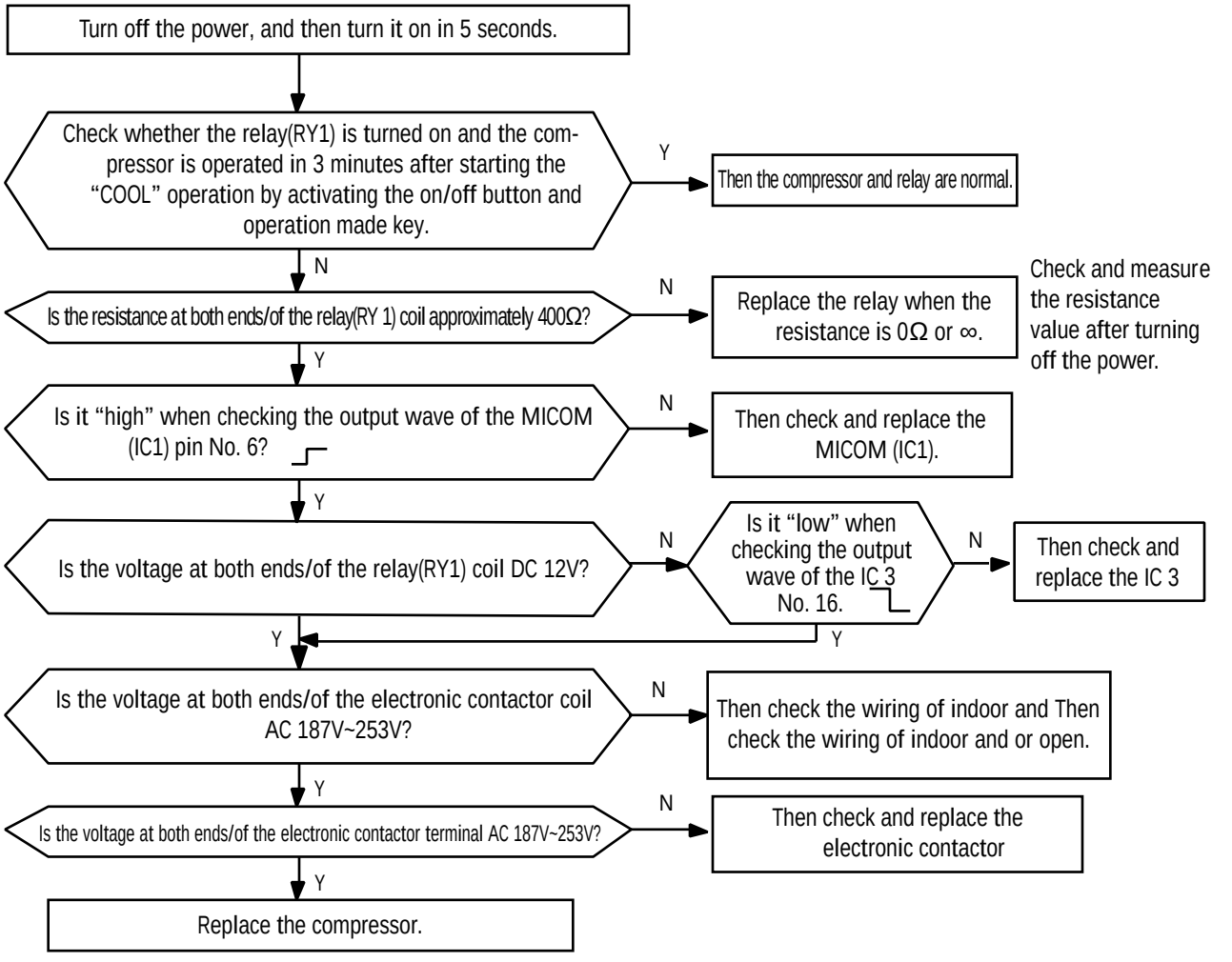


### 5-3-3 When the Compressor Does not Operate

1) Checkpoints

(1) Is the voltage of the power source normal?(AC 187V - AC 253V)
(2) Is the desired temperature set at a higher level than the current temperature at the time of “Cool” operation?
(3) Is the power-in good contact with the comp. connector(GT 1, 2, 3, 4, 5)?
(4) Check the wirings of the outdoor and indoor unit for a wrong connection or poor contact.
(5) Isn’t the compressor in a 3-minute stand-by state?

2) Checking procedures(after checking the checkpoints of clause 1)

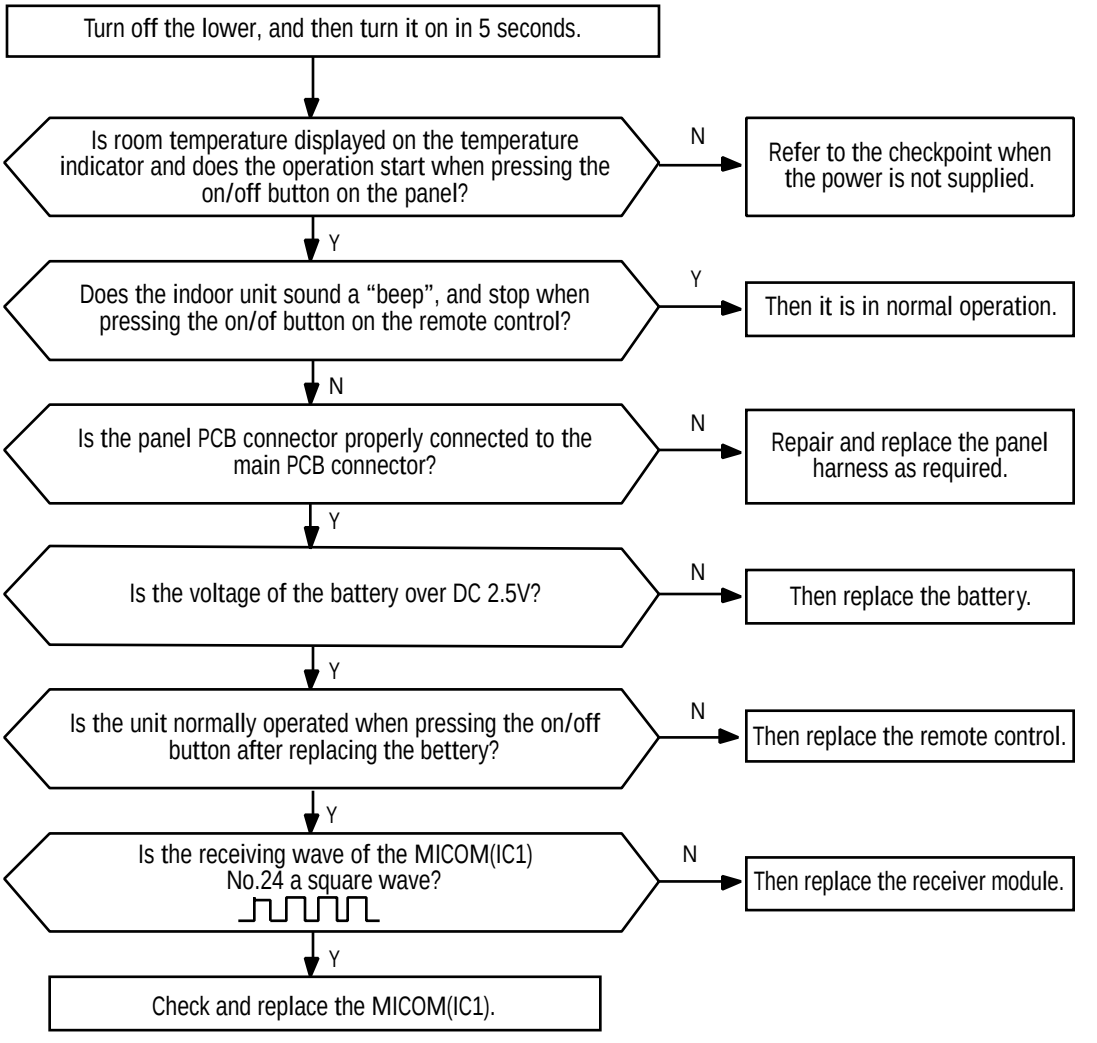


### 5-3-4 When the remote control does not operate

1) Checkpoint

The sounds “beep” when it receives the signal of the remote control.

2) Checking procedures



## 5-4 PCB Inspection

### 5-4-1 Inspection Precautions

1. Be sure to check whether the AC sub power switch is removed when removing the main PCB or panel PCB.
2. Do not hold the outside of the main PCB or panel PCB with the hand or aply excessive force to it.
3. When connecting or removing the connector to the main PCB or panel PCB, do not pull the lead wire, but hold the entire assembly with the hand.

### 5-4-2. Inspecting procedures

1. When there is any trouble with the main PCB or panel PCB, check the connector for a poor connection, and the PCB or copper-clad pattern for separation.
2. The PCB is composed of the following two parts;
   - Main PCB: The main PCB is composed of the micom and peripheral circuit, relay drive sensor drive circuit, DC 5V power circuit, DC 12V power circuit and buzzer drive circuit.
   - Panel PCB: The panel PCB is composed of the LED display key and remote control.

### 5-4-3. Detailed inspection procedures

| NO | Procedures | Checking method | Cause of trouble |
|---|---|---|---|
| 1 | Turn off the sub power switch, and then check PCB fuse. | 1) Is the fuse blown? | 1) Overvoltage?<br>2) Indoor fan motor short? |
| 2 | 1. Apply the supply voltage<br>2. When power lamp and LED display operate after pressing the on/off button, it is not related to items 1)~4). | Check the supply voltage<br>1) Is the voltage between both ends/of the trans connector “AC187V~AC253V” (GT6, GT7)<br>2) Voltage between both terminals of the CN 11 AC15V~ AC22V<br>3) Is the voltage between both terminals of the REG1 (KA 7812) out and GND DC 12V?<br>4) Is the voltage between both terminals of the REG2 (KA7805) out and GND DC 5V? | 1) Power cord faulty, poor connection of indoor and outdoor unit, fuse blown, wrong wiring of power cables.<br>2) Power trans faulty.<br>Power circuit faulty.<br>3) Power circuit faulty load short.<br>4) Power circuit faulty, load short. |
| 3 | Set the unit to “COOL” operation mode by the “ON/OFF” button and mode selector key.<br>1. Cool operation<br>2. Set the desired temperature at a sufficiently lower level than the current temperature. | 1) The compressor does not operate. | 1) The relay(RY1) for driving the electronic contractor does not operate.<br>2) Electronic contactor faulty. |
| 4 | Set the unit to “HEAT” operation mode by the “ON/OFF” button and mode selector key.<br>1. Heat operation<br>2. Set the desired temperature at a sufficiently lower level than the current temperature. | 1) The compressor does not operate. | 1) The relay(RY1) for driving the electronic contactor does not operate.<br>2) Electronic contactor faulty. |
| 5 | Set the unit to “HEAT” operation mode by the “ON/OFF” button and mode selector key.<br>1. Heat operation<br>2. Set the desired temperature at a sufficiently lower level than the current temperature. | 1) Is the voltage between the com terminal and the high, medium, and low terminal of the indoor fan motor connector AC187V~AC253V? (When selecting each fan speed)<br>2) The indoor fan motor does not turn. | 1) Indoor fan motor faulty.<br>2) Starting condenser faulty. |

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