Part 4 Troubleshooting

1. Normal Air Conditioner Phenomenon

1.1 When outdoor unit appears white vapor or water, the reasons is as follows:

1) The fan of outdoor unit stops to begin defrosting.

2) The electromagnet valve sends out the noise when the defrosting begins and ends.

3) There is sound like water flowing when running or off; and the noise enlarges after running for 3 minutes. This is the sound of refrigerant flowing or discharging water gathered by dehumidifying.

1.2 Outdoor units send out the noise of “pupu”, for temperature changes to heat exchanger heat expanded or cool compact.

1.3 Indoor units send out odor smell, because it absorbs the smell of house, furniture or smoking.

1.4 The running light of indoor unit flickers, the reasons are general as follows:

1) Power supply ever failed during running period.

2) For 1-to-several, the following induces the director lighting and the operation stopping

① Other indoor units running at heating mode induce to this indoor unit cannot run at cooling mode

② Setting mode conflicts with the fixed mode.

③ Stop fan to prevent discharging cool air.

1.5 The “no priority” or “waiting” director light of operation board lights.

1.6 Auto running or stopping for the timer wrong operation.

1.7 Cannot run, the reasons are as follows:

① Power is off.

② Manual switch is pulled to off side.

③ Fuse is cut.

④ Protect device starts, at the same time running director lights.

⑤ Timer’s setting time is over, at the time running director lights.

1.8 Heating or cooling is inefficient.

① Filter is block by duct or rubbish.

② The place of air deflector is unfit.

③ Fan mode is “slight” or running mode is “fan”.

④ Setting temperature is unfit.

⑤ Simultaneously choose the heating and cooling mode, at the time the “no priority” or “waiting” director light of panel lights.

2. Air Conditioner Protection in Common

2.1 Compressor protection.

When power is on, or machine stops then restarts right away, outdoor unit will run in 3 minutes to protect the compressor from too frequent starts and stops.

2.2 When the protection device functions, running stops. Refer to the following:

① Forced to start but not possess the start article, and display light lights.

② When cooling running, inlet and outlet of outdoor unit are blocked, outside strong air blows into outdoor unit’s outlet.

③ When heating running, dust adheres to air filter to block inlet or outlet of outdoor unit.

Note: When protecting, please cut manual power switch. After checking the reason and solving it, restart.

2.3 Power fails.

① If power supply fails while machine is running normally, system will record this.

② When the machine is powered on again, the running light of wire controller would flash to inform user about this.

③ Press the on/off key of wire controller to confirm this before restart the system.

Note: When running, if system takes place mistaken operation or lighter, please pull down the power

supply switch to cut it off. Before restarting machines, please press the on/off key again as above.

3. Malfunction Code and Troubleshooting

If there is phenomenon as follows, please stop air conditioner running and cut power supply and refer to the following. However, if the problem insists, please contact the customer service center of Midea commercial air conditioner company, and offer machine's model and detailed malfunction**.**

12~16Kw malfunction code

Display	Malfunction or Protection
E0	EEPROM malfunction
E2	Communication malfunction between indoor/outdoor units
E3	Communication malfunction in outdoor PCB
E4	T3&T4 temperature sensor malfunction
E5	Outdoor unit voltage protection
E6	DC fan motor malfunction
E7	A fan in the A region run for more than 5 minutes in Heat mode
E8	There are two times E6 fault in 10 minutes (recovery after power off)
P0	Radiator high temperature protection
P1	High pressure protection
P2	Low pressure protection
P3	Compressor current protection
P4	Compressor discharge temperature protection
P5	Condenser high temperature protection
P6	IPDU modules protection
P7	Evaporator high temperature protection
P8	Typhoon protection

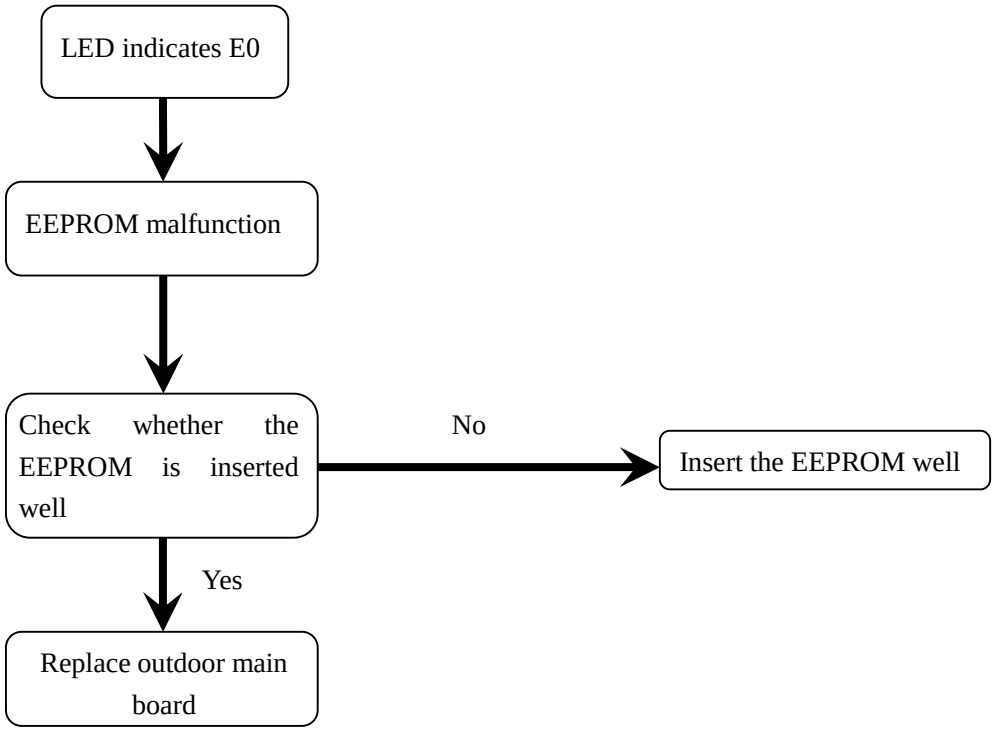
18kW malfunction code

Display	Malfunction or Protection
HF	Not matched with M_HOME indoor unit
E9	EEPROM malfunction
E2	Communication malfunction between indoor and outdoor units
H0	Communication malfunction in outdoor PCB
E4	T3&T4 temperature sensor malfunction
E5	Outdoor unit voltage protection
E6	DC fan motor malfunction
EA	A fan in the A region run for more than 5 minutes in Heat mode
Eb	There are two times E6 fault in 10 minutes (recovery after power off)
E7	Discharge sensor malfunction
PL	Radiator high temperature protection
P1	High pressure protection
P2	Low pressure protection
P3	Compressor current protection
P4	Compressor discharge temperature protection
P5	Condenser high temperature protection
P6	IPDU modules protection
PE	Evaporator high temperature protection
P8	Typhoon protection

3.1 "E0"/"E9": EEPROM malfunction

Outdoor Unit Display	**E0/E9**
Error Explanation	**EEPROM malfunction.**
Supposed Causes	**1. The EEPROM is not inserted well.** **2. Outdoor main board broken.**

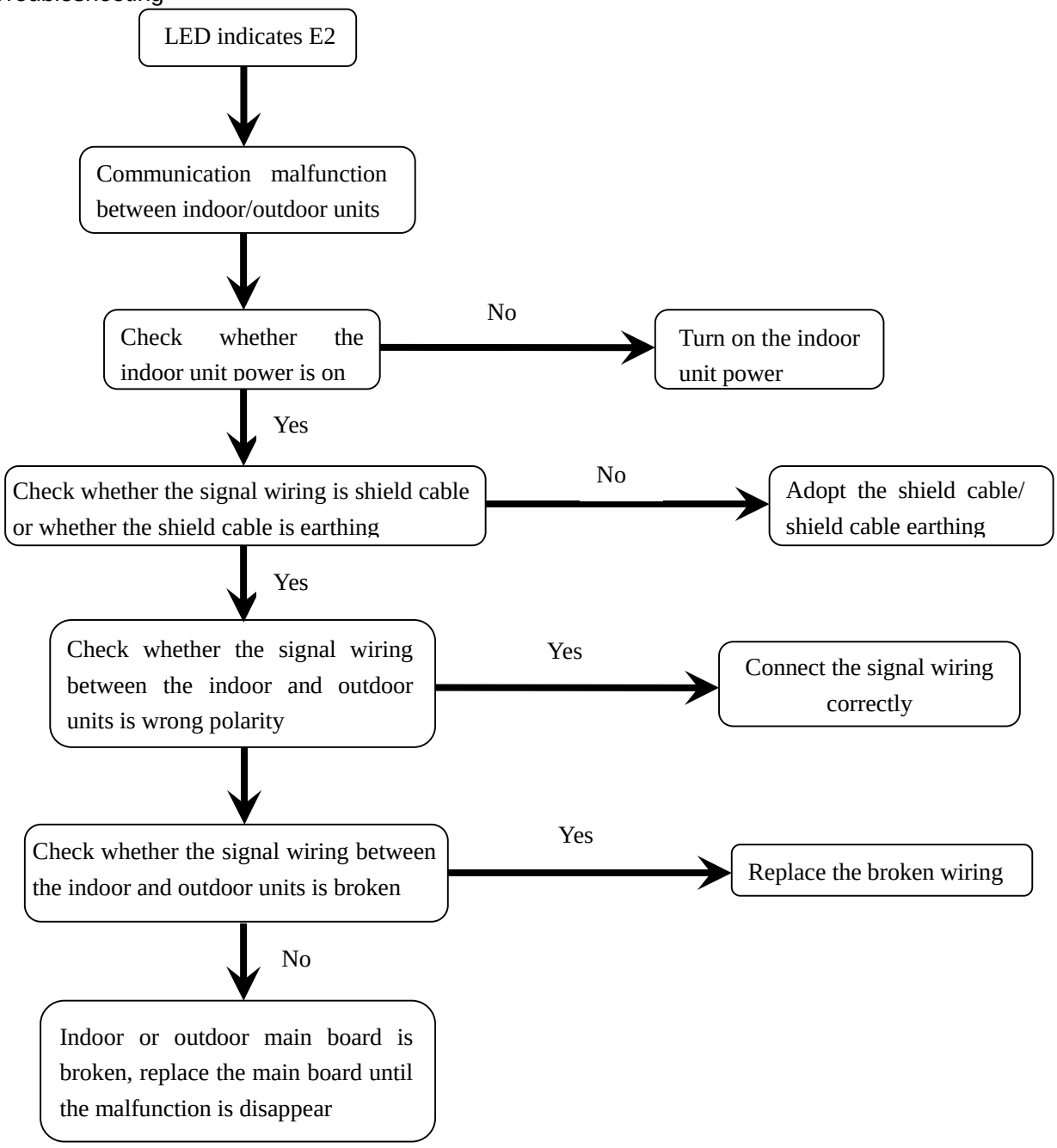
Troubleshooting



3.2 "E2": Communication malfunction between indoor/outdoor units

Outdoor Unit Display	**E2**
Error Explanation	**Communication malfunction between indoor/outdoor units**
Supposed Causes	**1. Indoor unit power is off** **2. The signal wiring is not shield cable or the shield cable is not earthed.** **3. The signal wiring between the indoor and outdoor units is wrong polarity.** **4. The signal wiring between the indoor and outdoor units is broken.** **5. Indoor or outdoor main board is broken.**

Troubleshooting

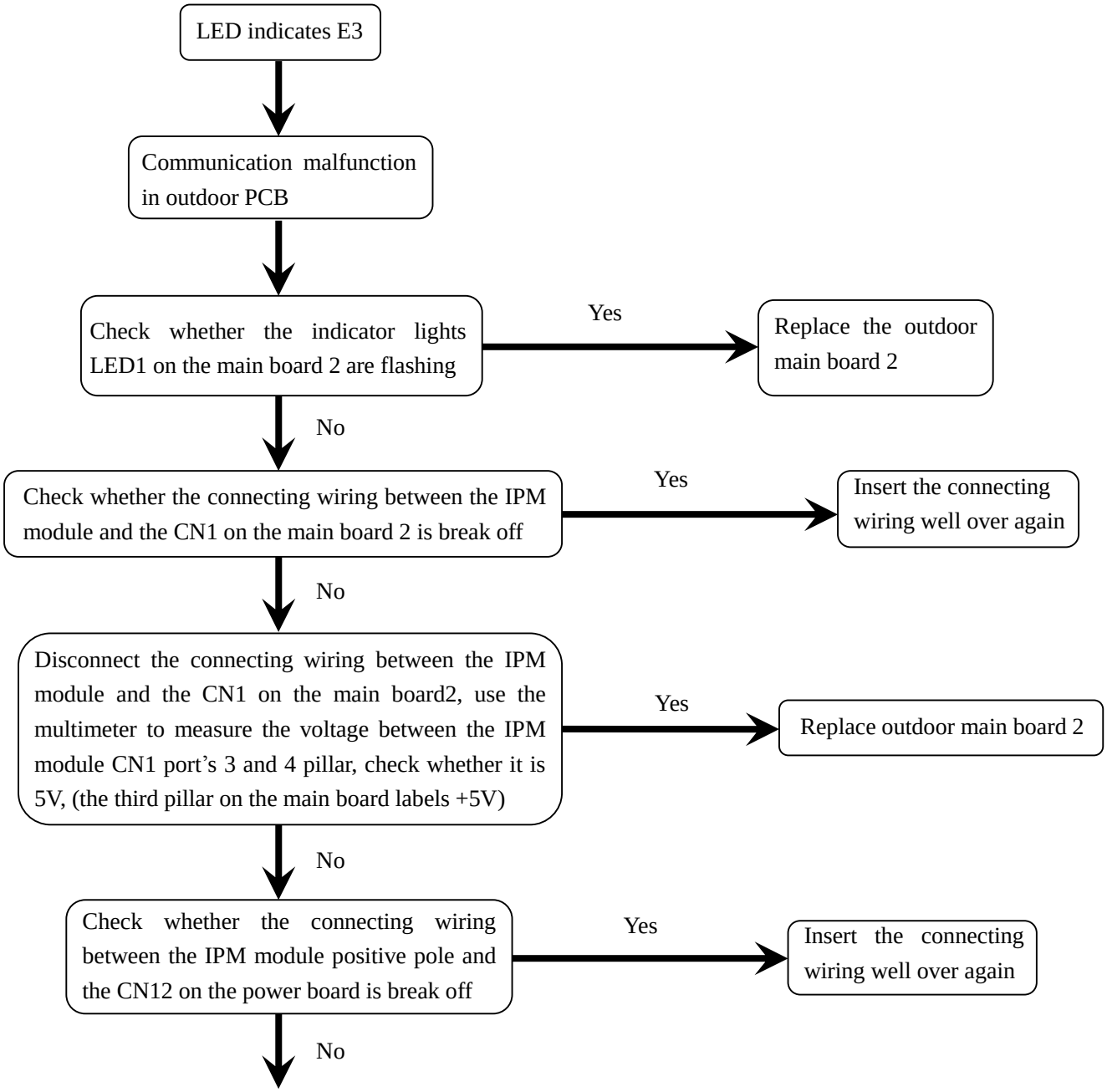


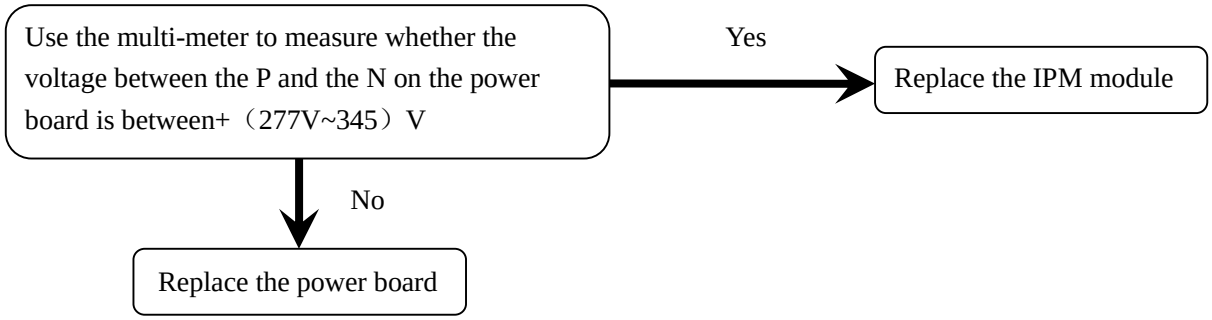
3.3 "E3"/"H0":

Communication malfunction in outdoor PCB

Outdoor Unit Display	**E3/H0**
Error Explanation	**Communication malfunction in outdoor PCB**
Supposed Causes	**1. The outdoor main board 2 is broken** **2. The connecting wiring between the IPM module and the CN1 on the main board 2 is break off**

Troubleshooting

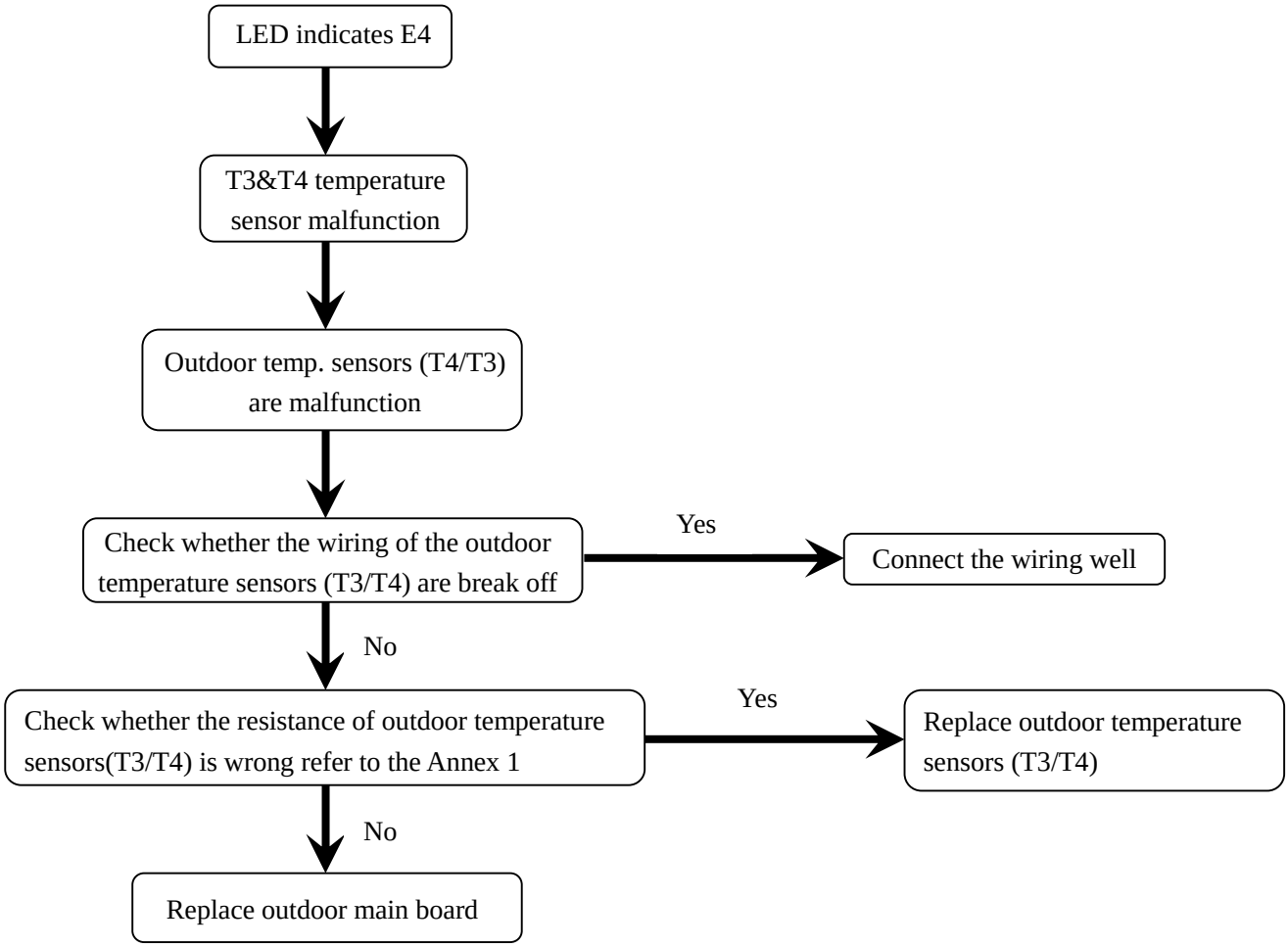



Use the multi-meter to measure whether the voltage between the P and the N on the power board is between+（277V~345）V
Yes
Replace the IPM module
No
Replace the power board

3.4 "E4": T3&T4 temperature sensor malfunction

Outdoor Unit Display	**E4**
Error Explanation	**T3&T4 temperature sensor malfunction.**
Supposed Causes	**1. Outdoor temperature sensors (T4/T3) are malfunction.** **2. The resistance of outdoor temperature sensors(T3/T4) is wrong**

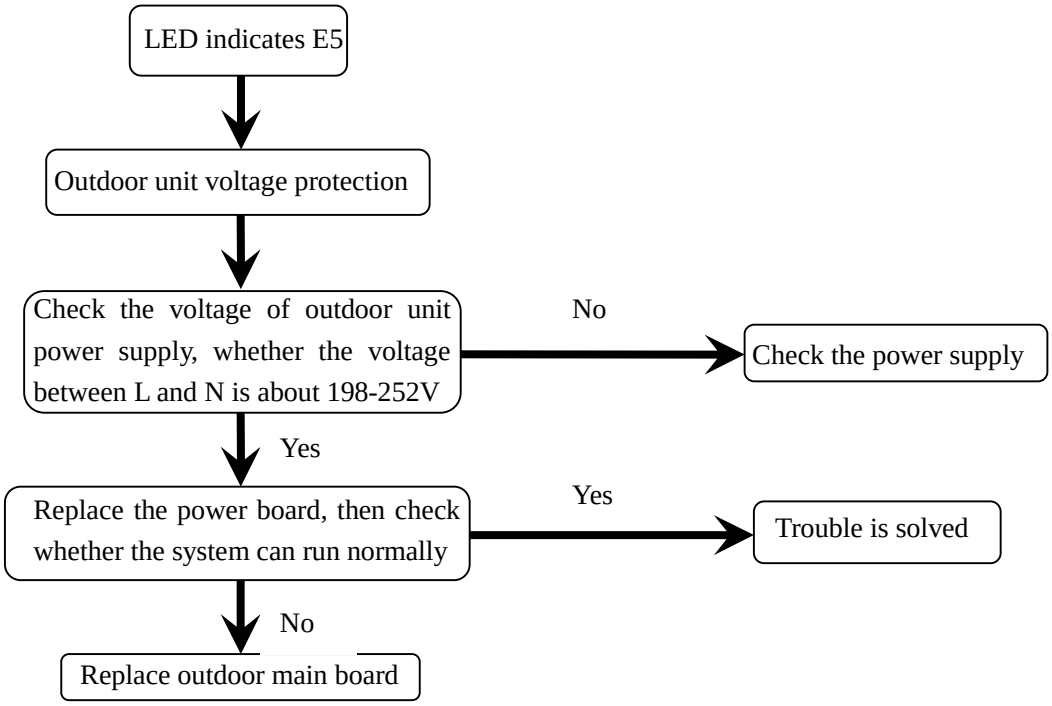
Troubleshooting



3.5 "E5": Outdoor unit voltage protection

Outdoor Unit Display	**E5**
Error Explanation	**Outdoor unit voltage protection.**
Supposed Causes	**1. Power supply fault.** **2. Power board broken.**

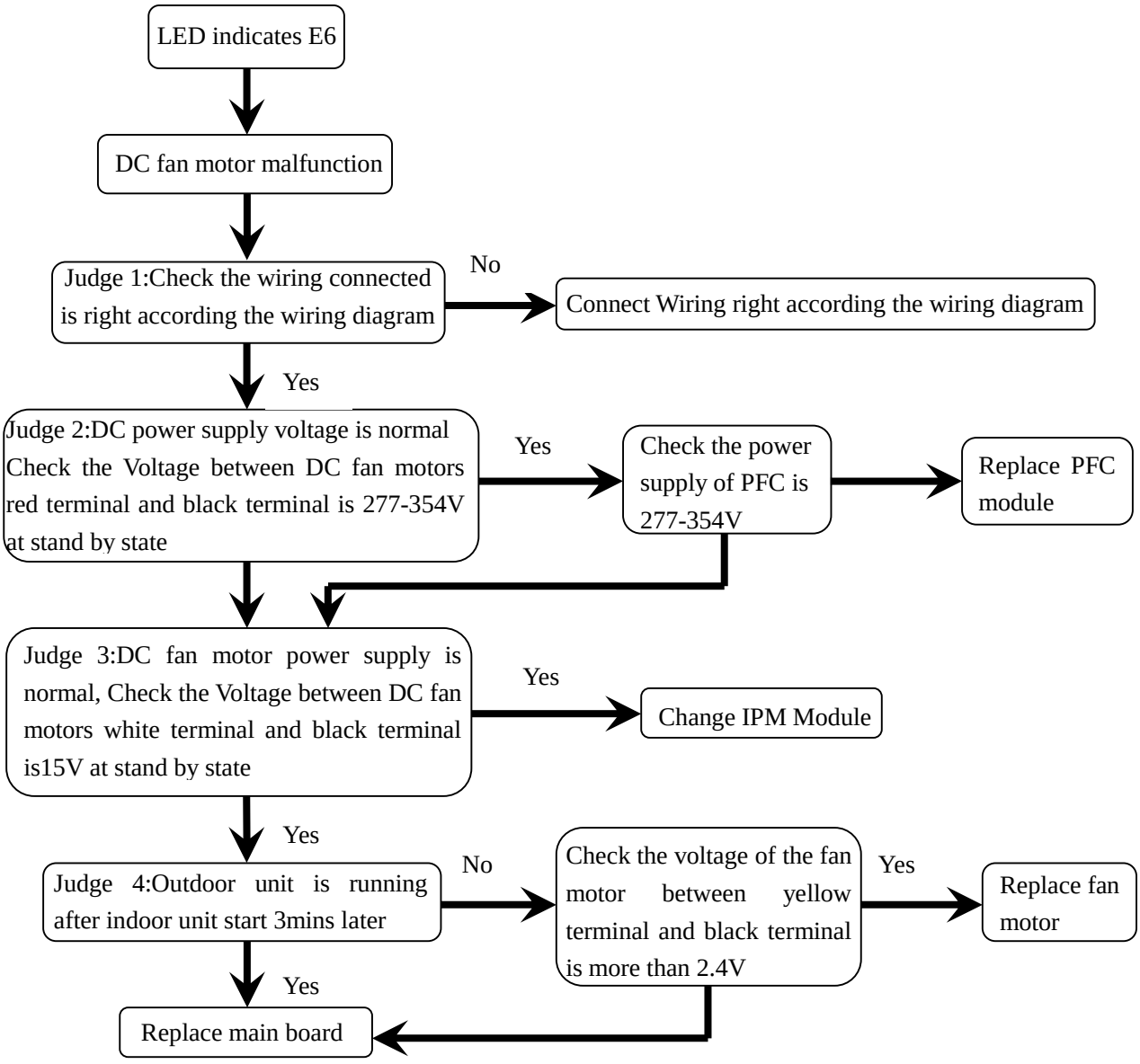
Troubleshooting



3.6 "E6": DC fan motor malfunction

Outdoor Unit Display	**E6**
Error Explanation	**Direct current fan motor malfunction**
Supposed Causes	**1. The wiring connected is fault.** **2. Power supply voltage is not normal.**

Troubleshooting



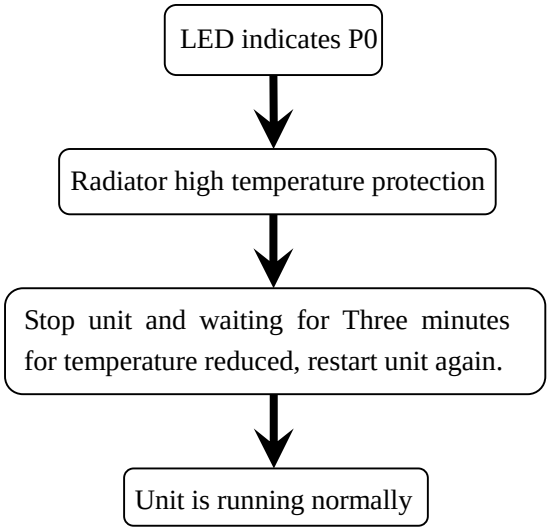
3.7 "E7"/"EA": A fan in the A region run for more than 5 minutes in Heating model

Outdoor Unit Display	**E7/EA**
Error Explanation	**A fan in the A region run for more than 5 minutes in Heat model.**
Supposed Causes	
Troubleshooting	**When LED indicates E7, please connect local branch company.**

3.8 "P0"/"PL":

Radiator high temperature protection

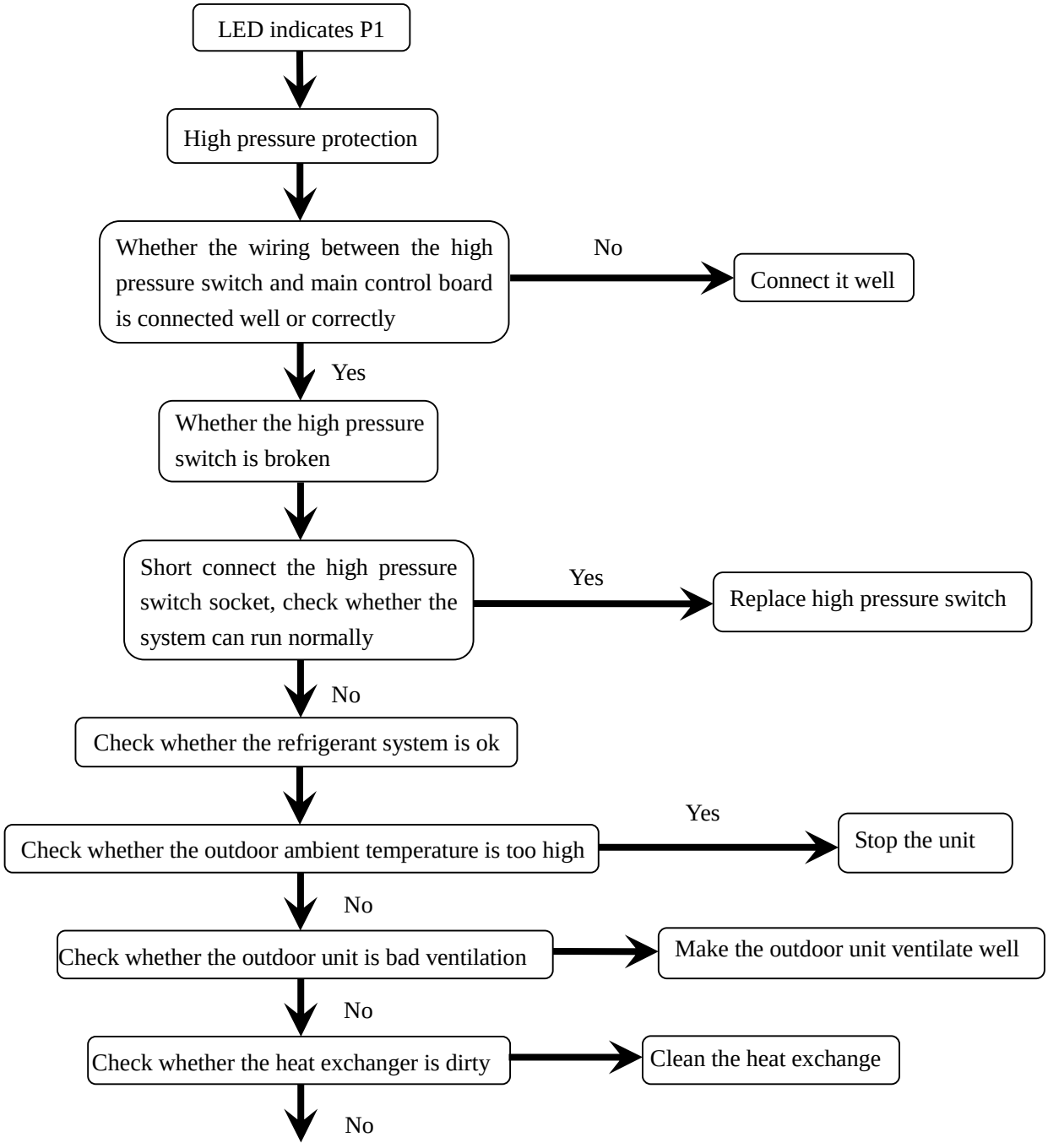
Outdoor Unit Display	**P0/PL**
Error Explanation	**Recovery the compressor stop three minutes later for temperature reduced.**
Supposed Causes	
Troubleshooting	

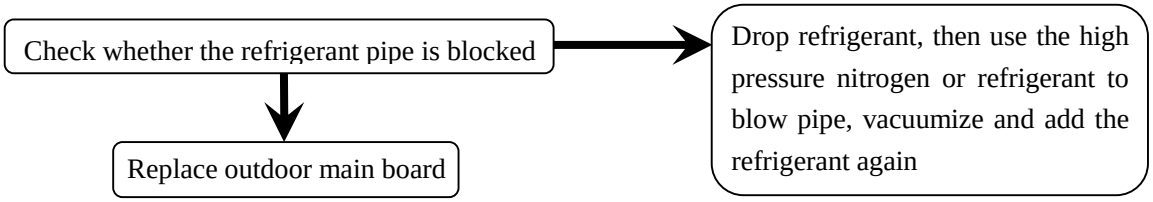


3.9 "P1": High pressure protection

Outdoor Unit Display	**P1**
Error Explanation	**High pressure protection.**
Supposed Causes	**1.Wiring between the high pressure switch and main control board is not connected well or correctly.** **2.The high pressure switch is broken.** **3.The outdoor unit is bad ventilation.** **4.The heat exchanger is dirty.** **5.The refrigerant pipe is blocked.**

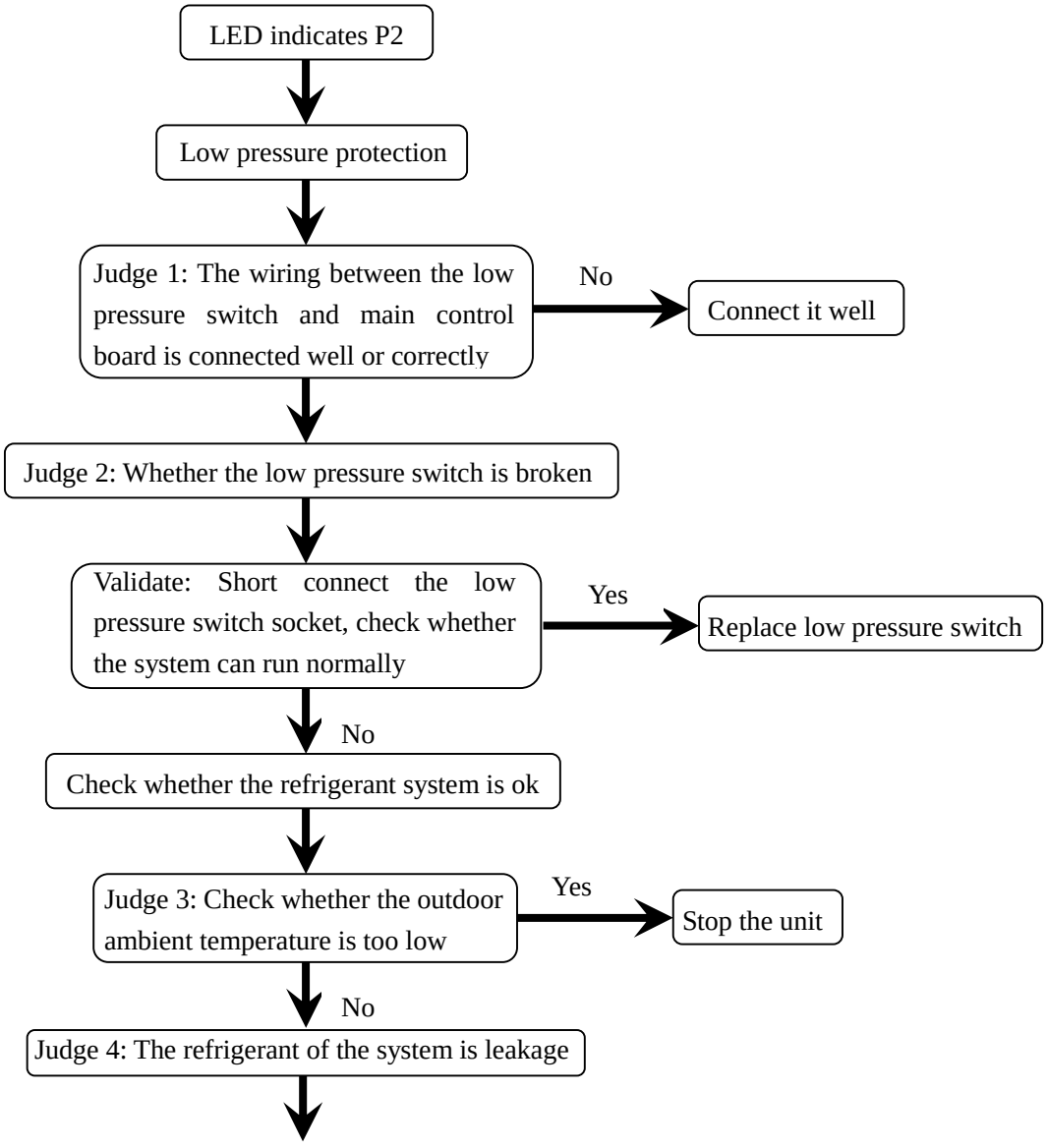
Troubleshooting

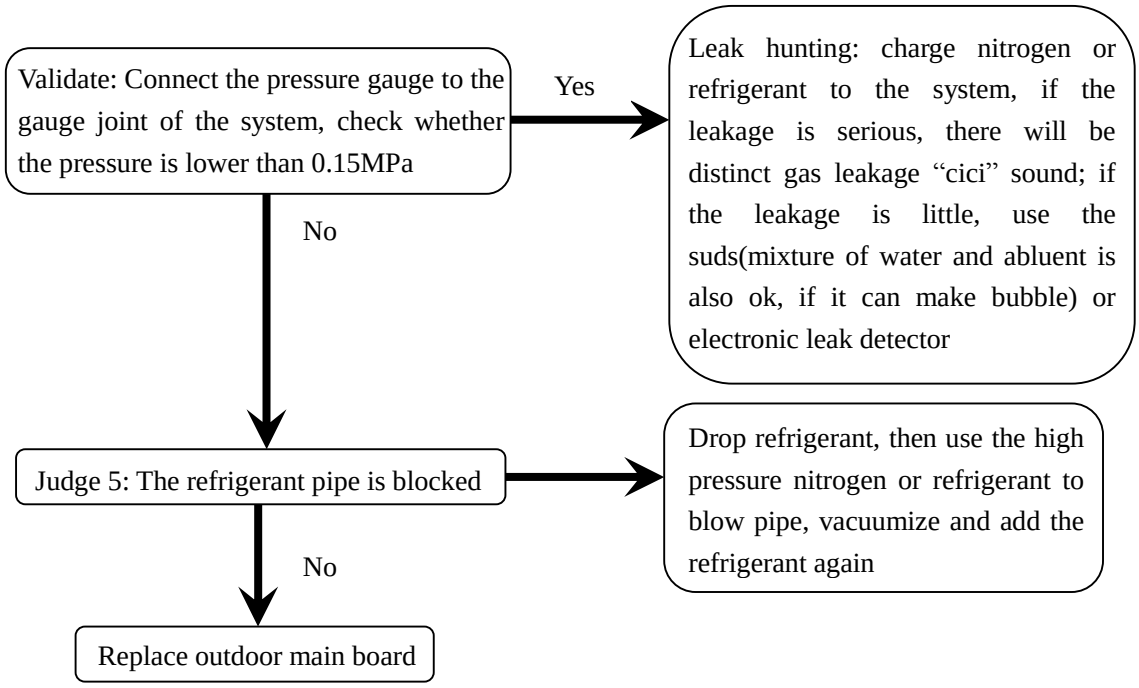



Check whether the refrigerant pipe is blocked
Drop refrigerant, then use the high pressure nitrogen or refrigerant to blow pipe, vacuumize and add the refrigerant again
Replace outdoor main board

3.10 "P2": Low pressure protection

Outdoor Unit Display	**P2**
Error Explanation	**Low pressure protection**
Supposed Causes	**1. The wiring between the low pressure switch and main control board is not connected well or not correctly.** **2. The low pressure switch is broken.** **3. The outdoor ambient temperature is too low.** **4. The refrigerant of the system is leakage.** **5. The refrigerant pipe is blocked.**
Troubleshooting	**Normally the only way to deal with is to replace the main control board.**

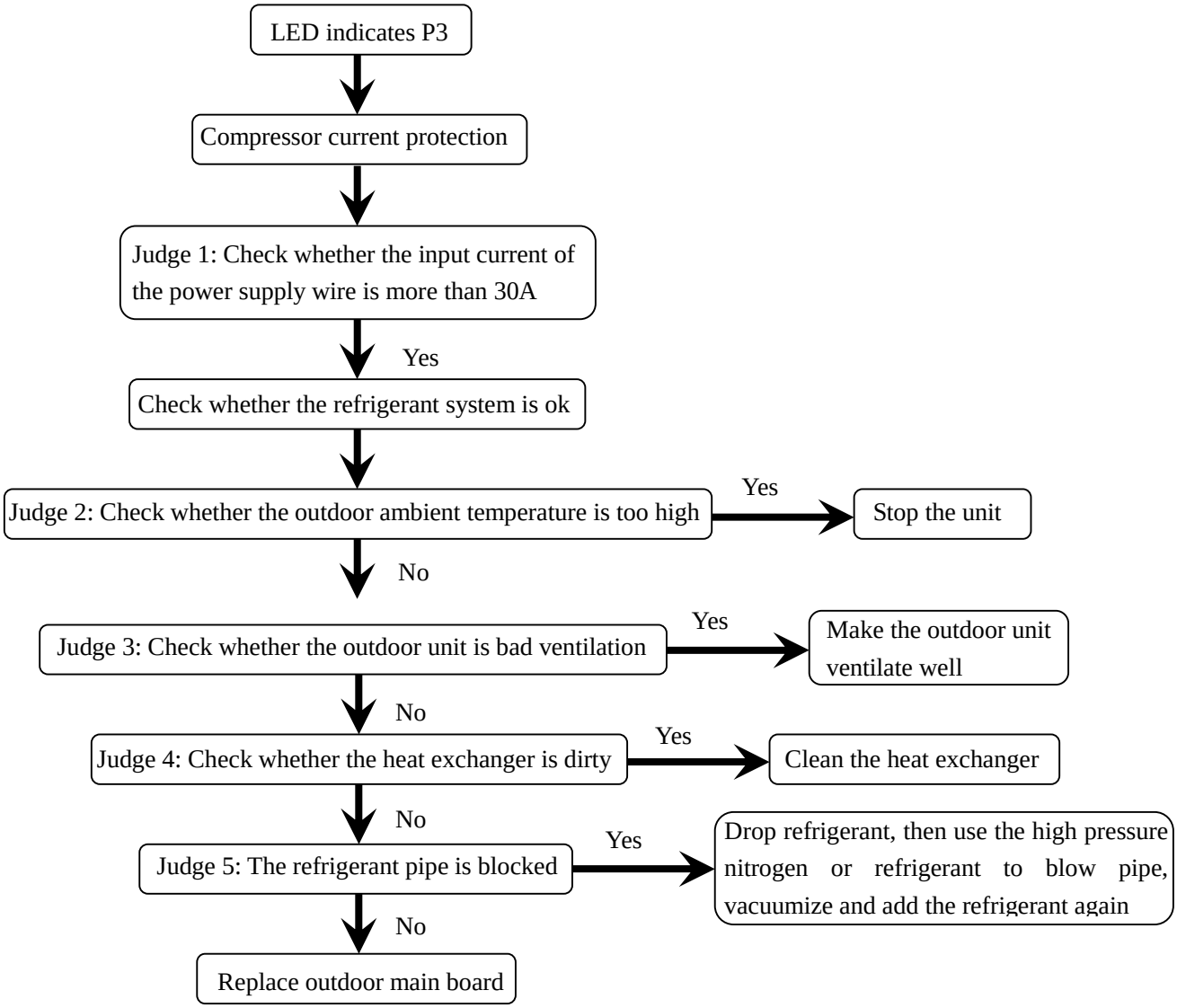




Remarks: When system appear P2 protection for 3 times in 30 minutes, system will auto shut down and display H5 malfunction, which can recover only by restarting the machine. Malfunction should be promptly treated to avoid further damage.

3.11 "P3": Compressor current protection

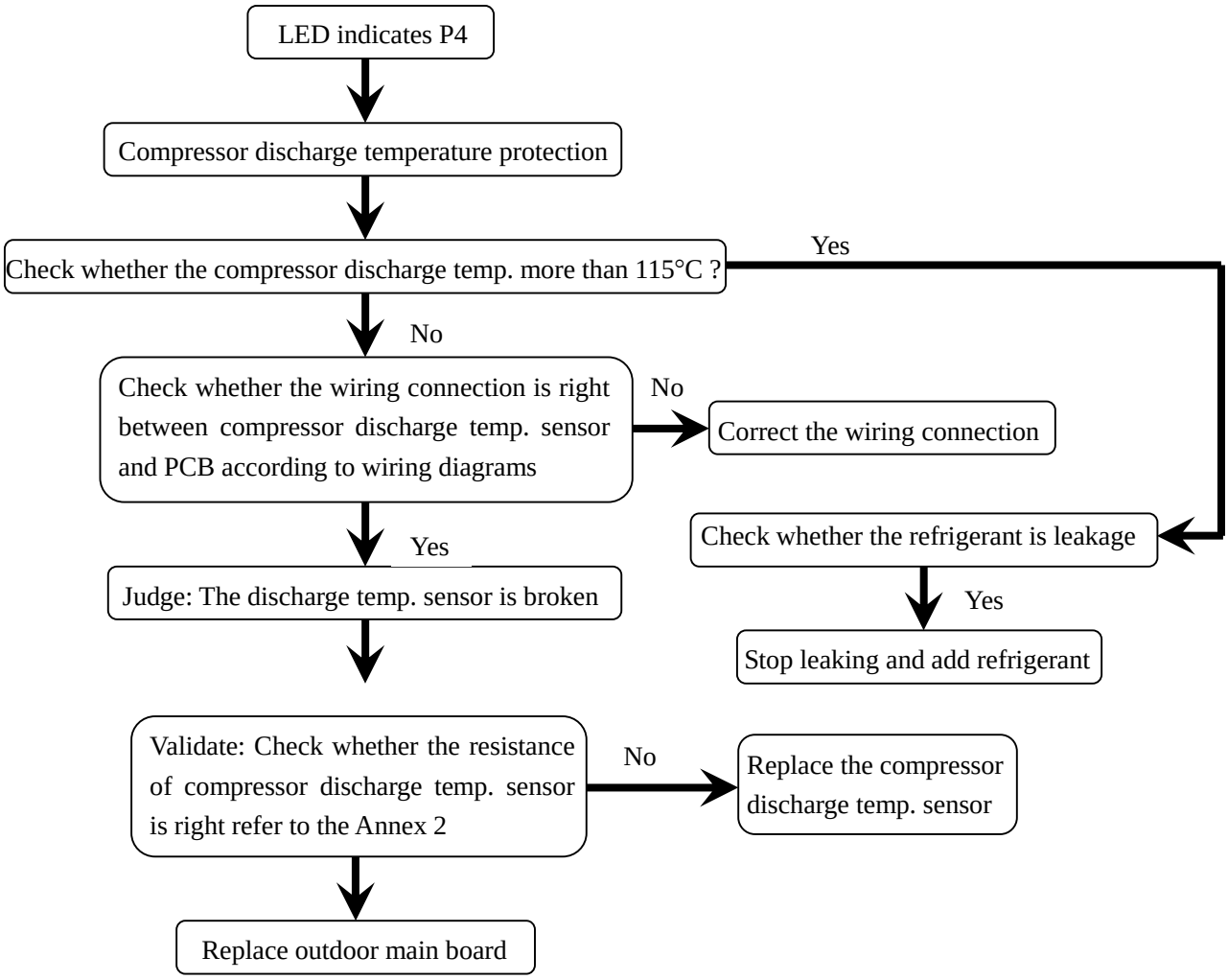
Outdoor Unit Display	**P3**
Error Explanation	**Compressor current protection**
Supposed Causes	**1. The outdoor ambient temperature is too high.** **2. The outdoor unit is bad ventilation.** **3. The heat exchanger is dirty.** **4. The refrigerant pipe is blocked.**
Troubleshooting	**Normally the only way to deal with is to replace the main control board.**



3.12 "P4": Compressor discharge temperature protection

Outdoor Unit Display	**P4**
Error Explanation	**When compressor discharge temperature is more than 115°C, the unit will stop, and unit runs again when compressor discharge temperature is less than 90°C.**
Supposed Causes	**1.The wiring connection is not right between compressor discharge temp. sensor and PCB according to wiring diagrams.** **2.The refrigerant is leakage.** **3.The discharge temp. sensor is broken.**

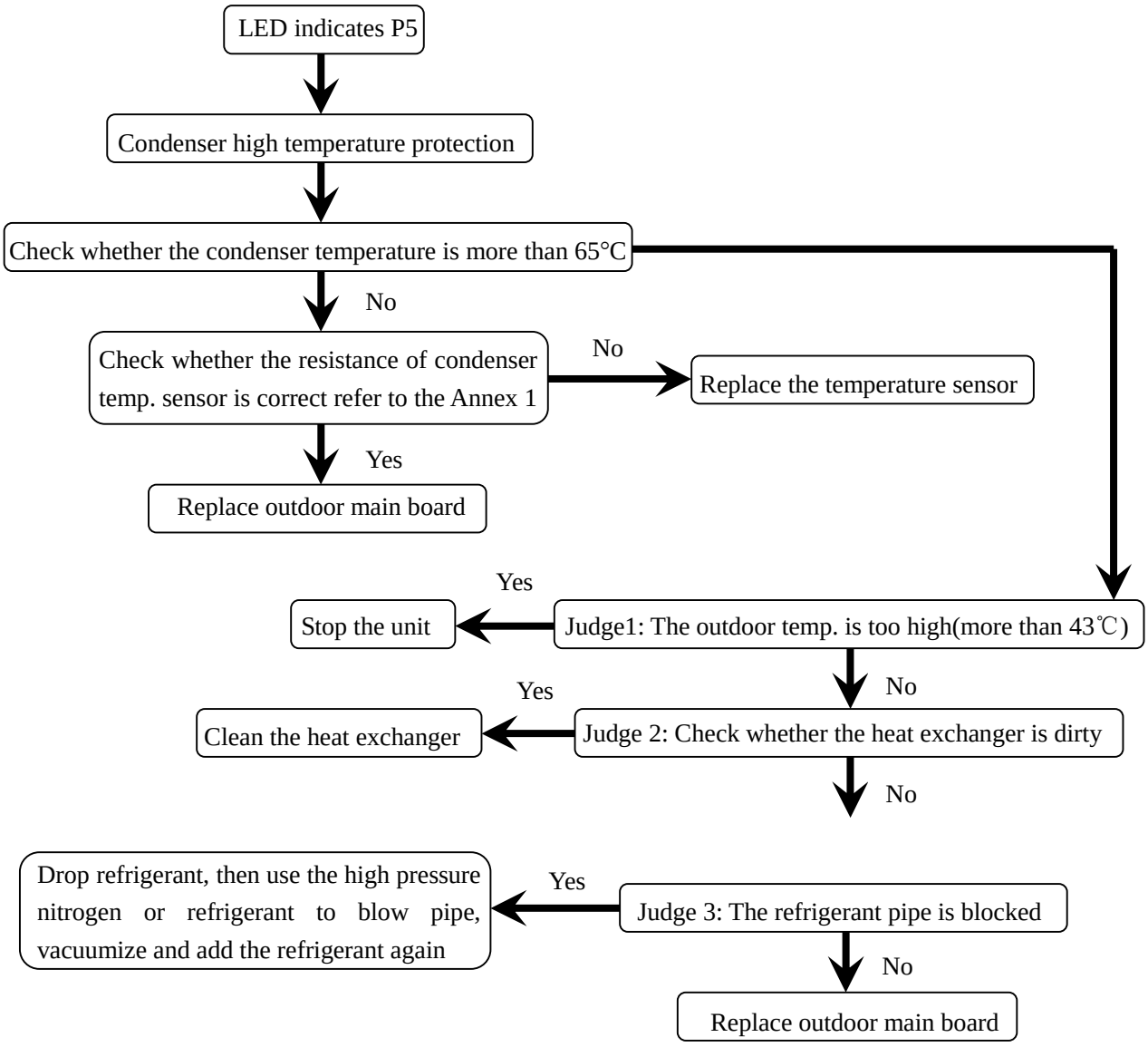
Troubleshooting



3.13 "P5": Condenser high temperature protection

Outdoor Unit Display	**P5**
Error Explanation	**When condenser high temp. is more than 65°C, the unit will stop, and unit runs again when outdoor pipe temp. less than 52°C.**
Supposed Causes	**1. The temperature sensor is broken.** **2. The voltage transformer of IDU is defective.** **3. The heat exchanger is dirty.** **4. The refrigerant pipe is blocked.**

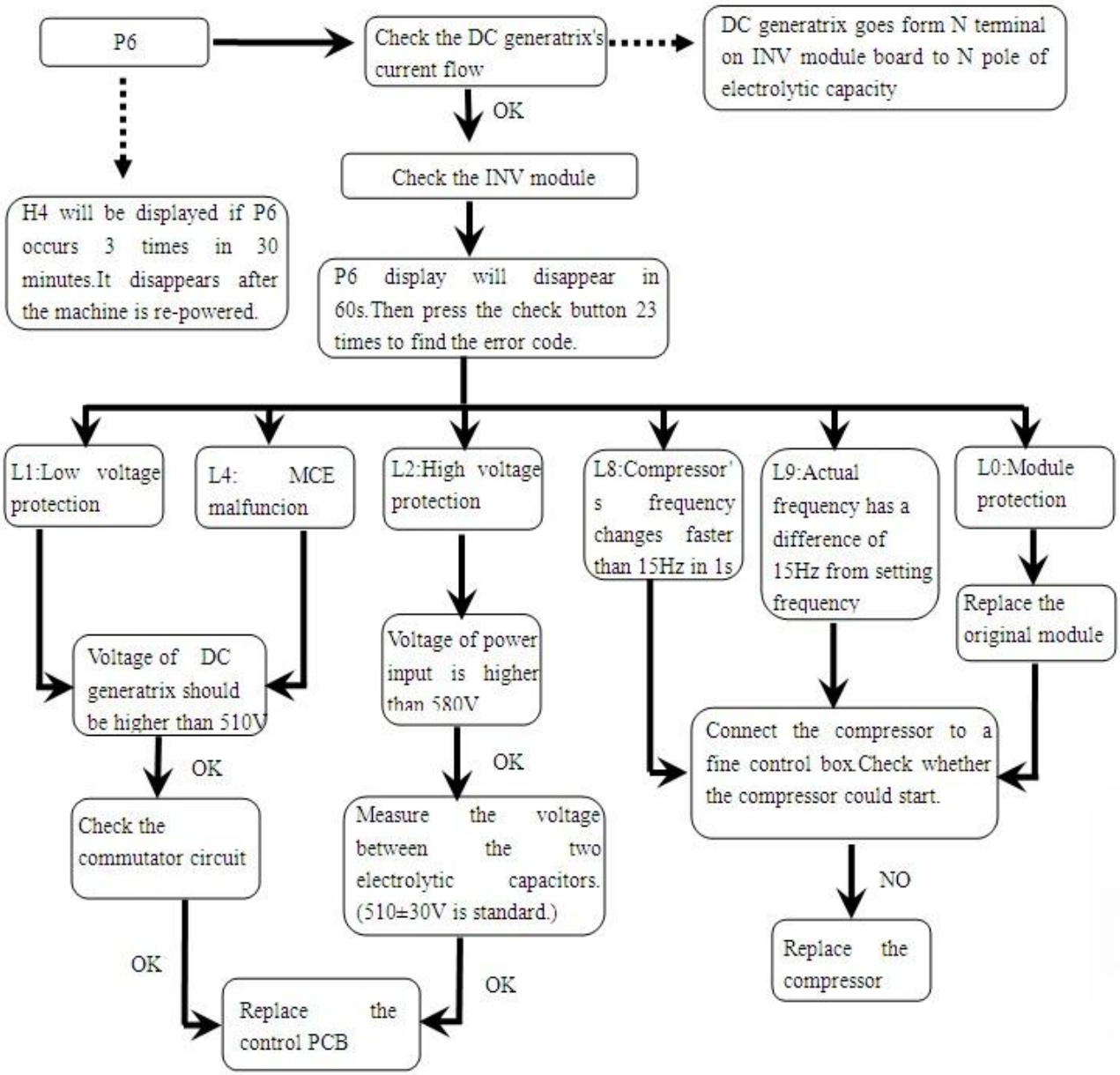
Troubleshooting



3.14 "P6": IPDU modules protection

Outdoor Unit Display	**P6**
Error Explanation	**IPDU modules protection.**
Supposed Causes	**1. DC generatrix is not lined correctly.** **2. DC generatrix low or high voltage protection.** **3. MCE malfunction.** **4. Compressor's frequency changes incorrectly.**

Troubleshooting

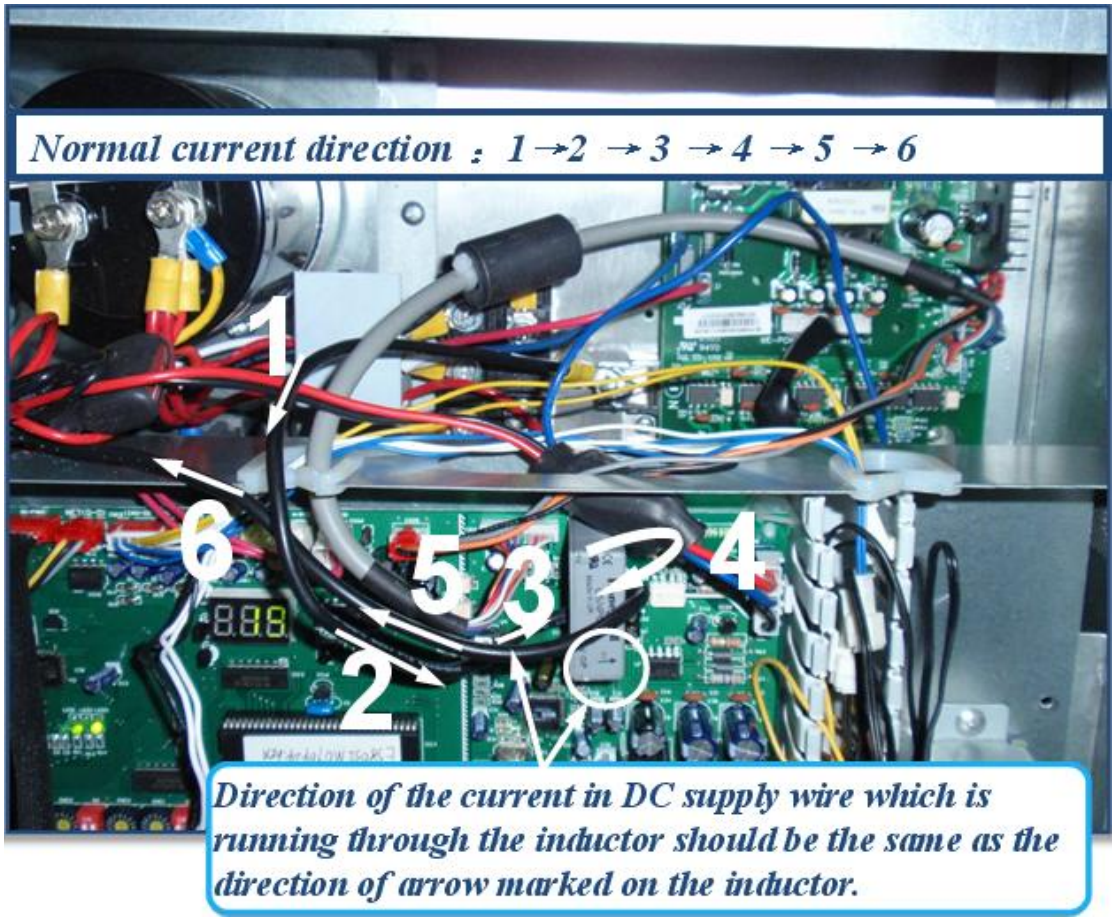


Detailed Malfunction Code of Module Protection (P6) (Only for 18kW)

Display	Malfunction or Protection definition	Note
L0	Module Malfunction	Module or compressor
L1	Low voltage protection of DC generatrix	Check power supply of module
L2	High voltage protection of DC generatrix	Check power supply of module
L3	Reserved	---
L4	MCE Malfunction/synchronization/ cycle loop	Check module or electric circuit
L5	Zero speed protection	Check compressor or electric circuit
L6	Reserved	----
L7	Phase sequence protection	Check module or wiring connection
L8	Speed change between two border upon moment more than 15Hz protection	Out of step checking compressor
L9	Difference between setting speed and actual speed more than 15Hz protection	Out of step checking compressor

MCE: Motion Control Engine

1.1 DC generatrix detection



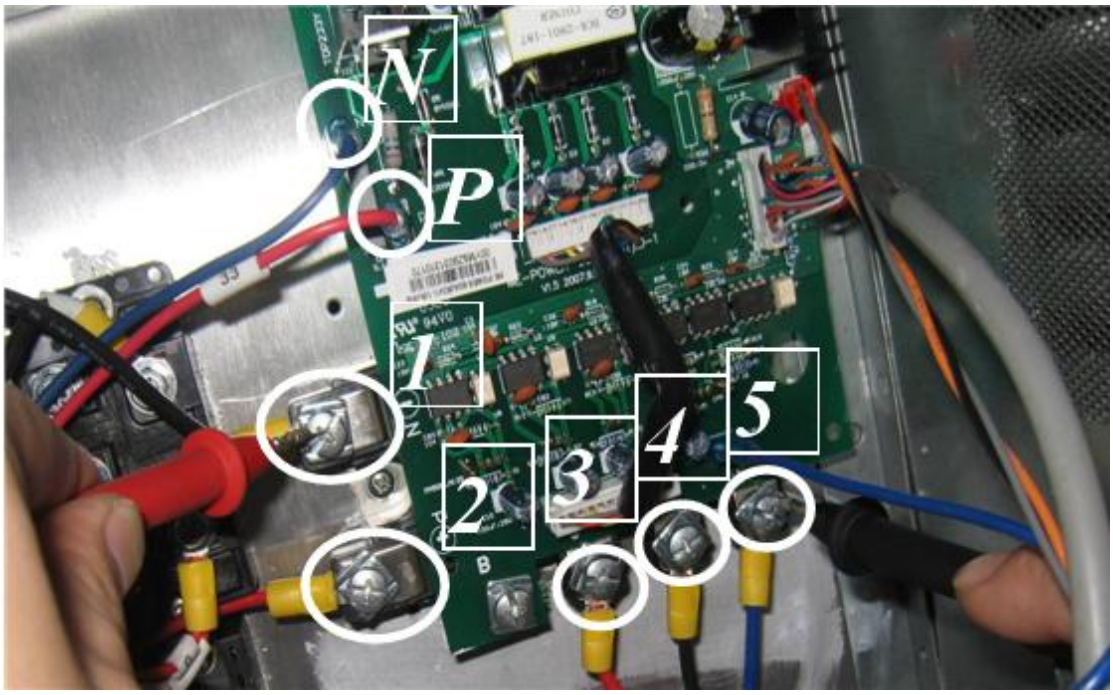
1.2 Voltage check of DC generatrix

1.2.1 Check the voltage of DC generatrix, which is normal between 510V and 580V. If less , go to next step.

1.2.2 Check the rectification circuit. Find out any loose in the circuit. Moreover check the filter board, rectifier stacks. Mind DC and AC switch on the meter while doing this.

1.2.3 If none of the above works, replace the main control board.

2 Voltage check of module



2.1 The voltage between N and P should be 1.41times to local power supply.

2.2 The voltage between 1 and 2 should range from 510V to 580V

2.3 The resistance between 1,2,3,4,5 should be infinite. If any of them is about 0, which means the module has already been broken down, we need to replace the module.

3 Compressor's characteristics

3.1 Measure the resistance among the compressor's U,V,W respectively. The resistance should range from 0.9 to 5 Ohms and be the same.

3.2 Measure the resistance between the compressor's U,V,W and GND respectively. The resistance should be more or less mega-Ohms.


Fig. C

Fig. D

3.3 Measure the current of the compressor's U,V,W terminal respectively, which should be more or less the same, by e.g. current flow table clamp.They should be 4A at the frequency of 35 Hertz.

4 P6 appears after the compressor turns on with difficulties
4.1 Check the module according to step 3 first.
4.2 If the module works, make the machine standby for 4 hours with power supply, which can help heating the refrigerant and oil adequately.
4.3 Start the fixed frequency compressor only for 3S to 5S.The great startup pressure could wash the impurity away in the tube.
4.4 If the compressor's frequency climb to 37 Hertz or above in 2S after turning on, then there's something wrong with the compressor. Check the compressor.
4.5 If the compressor 's current is normal, the malfunction appears on the control board. Please replace it.
5 The machine is powered on and “0” will appear for few seconds, then quantities of indoor units that have been connected will appear if the machine is normal.

In normal situation:
LED 1: Flash in 1Hz (slowly flash) when standby
LED 1: On when running
LED 2: Off
Phenomenon A
LED 2 red ON
LED 1 green Flashes 8 times and stops for 1S, then repeat.
Error: Inverter module failure
Phenomenon B
LED 2 red ON
LED 1 green Flashes 9 times and stops for 1S, then repeat.

Error: Low voltage protection

Here are 3 circumstances:
a) The voltage between the two electrolytic capacitors is less than 450V. The AC contactor should be picked up. If not, there's something wrong with the main control board or the PTC resistors, which need to be replace correspondingly.
b) Somewhere is loose in the circuit.
c) The voltage between P and N of CN12 on the main control board should range from 450V to 570V. If the voltage between N terminal and middle terminal of CN12 is 15V while error displays, it means that the main control board fails. Please replace the main control board.

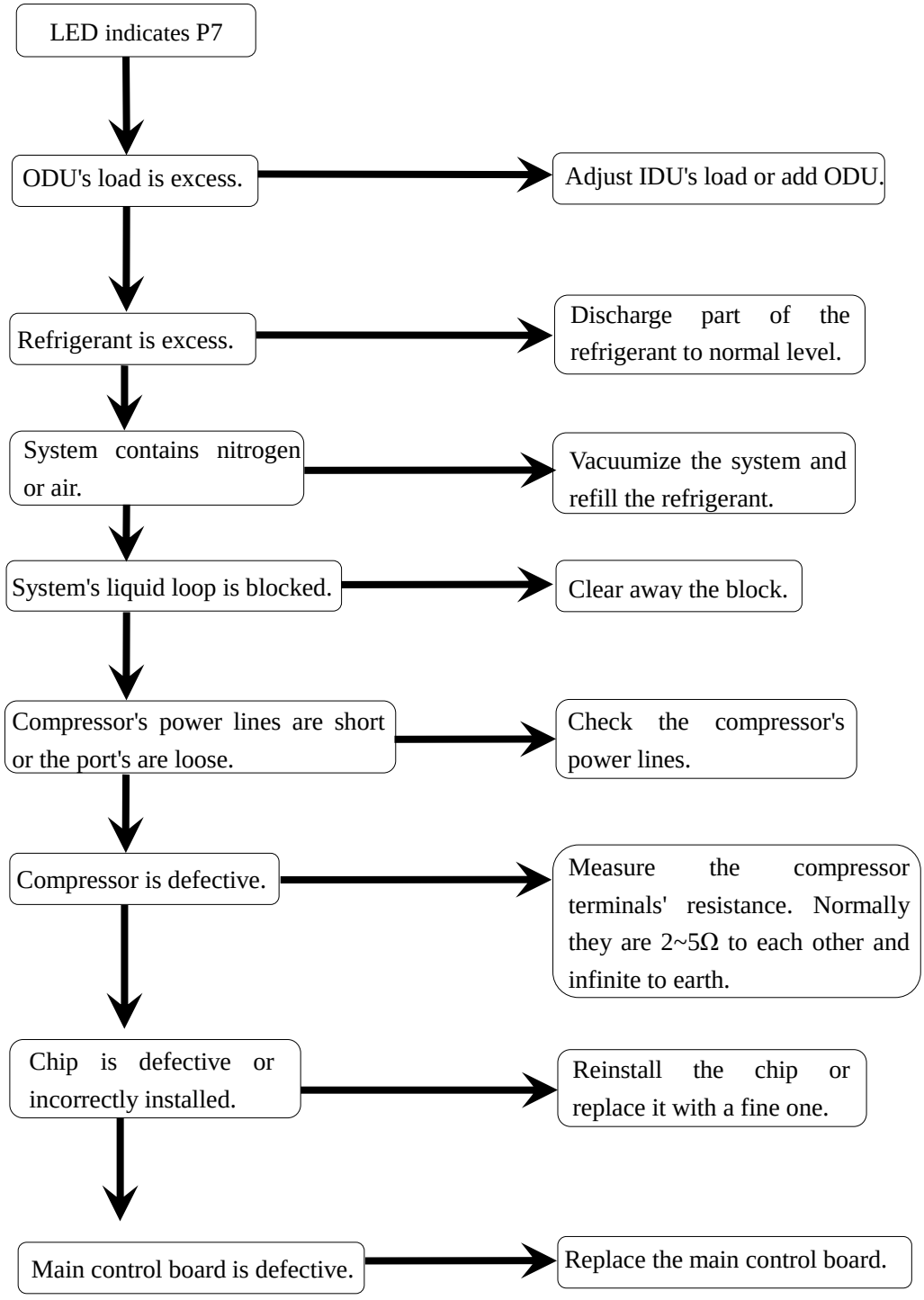
Phenomenon C
LED 2 Red ON
LED1 Green Flashes 10 times and stops for 1S, then repeat.
Error: High voltage protection
Here are 2 circumstances:
6. Three-phase power supply 's voltage is more than 440V
7. Main control board fails. Please replace it.

3.15 "P7"/"PE":

Evaporator high temperature protection

Outdoor Unit Display	**P7/PE**
Error Explanation	**Evaporator high temperature protection.**
Supposed Causes	**Temperature sensor port connected is not right.**

Troubleshooting



3.16 "P8": Typhoon protection

Outdoor Unit Display	**P8**
Error Explanation	**Typhoon protection.**
Supposed Causes	**Typhoon**

Troubleshooting