DICORE

# CÓDIGOS AVERÍA
# EQUIPOS CLIMATIZACIÓN DICORE
# CASSETTE - CONDUCTOS R410A

---

ASDGR18EAYIRDC1(2)(3)

www.dicore.es

# MAINTENANCE

## 1 TROUBLE TABLE

### 1.1 Main Control Malfunction

Table 4-1-1 Fault Display on Indoor Wired Controller

| No. | Error code | Malfunction name | Origin of malfunction signal | Control description |
|---|---|---|---|---|
| 1 | E1 | High pressure protection | High pressure switch | When outdoor unit detects the high pressure switch is cut off for 3s successively, high pressure protection will occur. All the loads (except the 4-way valve in heating mode) will be switched off. In this case, all the buttons and remote control signals except ON/OFF button will be disabled and cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection. |
| 2 | E2 | Freeze protection | Indoor evaporator temperature sensor | If detecting that the evaporator temperature is lower than protective temp. value after the unit has been running for a period of time under cooling or dry mode, the unit will report this fault, in which case the compressor and outdoor fan motor will be stopped. The unit will not run until evaporator temperature is higher than the protective temp. value and the compressor is stopped for 3min. |
| 3 | E3 | Low pressure protection | Low pressure switch | If it is detected within 30s successively that the low-pressure switch is cut off under ON or standby state, the unit will report low pressure protection. If the fault occurs successively 3 times within 30min, the unit cannot be recovered automatically. |
| | | Refrigerant lacking protection | | If the unit reports system refrigerant lacking within 10min after turning on the unit, the unit will stop operation. If the fault occurs successively 3 times, the unit cannot be recovered automatically. |
| | | Refrigerant recycling mode | | If enter refrigerant recycling mode through special operation, E3 will be displayed. After exiting refrigerant recycling mode, the code will disappear. |
| 4 | E4 | Compressor high discharge temperature protection | Compressor discharge temperature is high | If outdoor unit detects that the discharge temperature is higher than protective temp. value, the unit will report high discharge temperature protection. If the protection occurs over 6 times, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection. |
| 5 | E6 | Communication malfunction | Communication between indoor and outdoor mainboard | If the outdoor unit does not receive data from indoor unit, communication malfunction will be reported. If there is communication abnormity between display board and indoor unit, communication malfunction will be reported too. |
| 6 | E8 | Malfunction of indoor fan motor | Indoor fan motor | If the indoor unit does not receive signal from indoor fan motor for 30s successively when the fan motor is operating, indoor fan motor malfunction will be reported. In this case, the unit can automatically resume operation after stopping. If the malfunction occurs 6 times within one hour, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this malfunction. |
| 7 | E9 | Full water protection | Water level switch | If cut-off of water level switch is detected for 8s successively once energized, the system will enter full water protection. In this case, switch off the unit and then switch it on to eliminate this malfunction. |
| 8 | F0 | Malfunction of indoor ambient temperature sensor at air return port | Indoor ambient temperature sensor | If the indoor ambient temperature sensor is detected of open circuit or short circuit for 5s successively, indoor ambient temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If indoor ambient temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally. |
| 9 | F1 | Malfunction of evaporator temperature sensor | Evaporator temperature sensor | If the indoor evaporator temperature sensor is detected of open circuit or short circuit for 5s successively, evaporator temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If evaporator temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally. |

| | | | | |
|---|---|---|---|---|
| 10 | F2 | Malfunction of condenser temperature sensor | Condenser temperature sensor | If the outdoor condenser temperature sensor is detected of open circuit or short circuit for 5s successively, condenser temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If condenser temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally. |
| 11 | F3 | Malfunction of outdoor ambient temperature sensor | Outdoor ambient temperature sensor | If the outdoor ambient temperature sensor is detected of open circuit or short circuit for 5s successively, outdoor ambient temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. If outdoor ambient temperature sensor malfunction occurs in fan mode, only the error code is displayed and the indoor unit can work normally. |
| 12 | F4 | Malfunction of discharge temperature sensor | Discharge temperature sensor | If the outdoor discharge temperature sensor is detected of open circuit or short circuit for 5s successively after the compressor has been operating for 3min, outdoor discharge temperature sensor malfunction will be reported. The unit can automatically resume operation after the malfunction disappears. |
| 13 | F5 | Malfunction wired controller temperature sensor | Wired controller | If the wired controller detects open circuit or short circuit of its temperature sensor for 5s successively, wired controller temperature sensor malfunction will be reported. |
| 14 | ee | Malfunction of outdoor drive memory chip | Outdoor drive board | If the memory chip of outdoor drive board is broken, the unit cannot be started. The unit cannot be recovered automatically. If the malfunction cannot be eliminated after switching off the unit and then energizing the unit for several times, please replace the outdoor drive board. |
| 15 | H3 | Compressor overload protection | Compressor overload switch | If it is detected within 3s successively that the overload switch is cut off under ON or standby state, the unit will report overload protection. If the fault occurs successively 3 times, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection. |
| 16 | H4 | Overload protection | Evaporator temperature, condenser temperature | If outdoor unit detects that the tube temperature is higher than protective temp. value, the unit will report overload protection. The unit will not restart operation until tube temperature is lower than the protective temp. value and the compressor is stopped for 3min. If the protection occurs over 6 times, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this protection. |
| 17 | H6 | Malfunction of outdoor fan motor | Outdoor fan motor | If the outdoor unit does not receive signal from outdoor fan motor for 30s successively when the fan motor is operating, outdoor fan motor malfunction will be reported. In this case, the unit can automatically resume operation after stopping. If the malfunction occurs 6 times within one hour, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this malfunction. |
| 18 | U7 | Direction changing malfunction of 4-way valve | 4-way valve | After the compressor starts operation in heating mode, if the outdoor unit detects the difference between evaporator temperature and indoor ambient temperature is lower than the protective value for 10min successively, direction changing malfunction of 4-way valve will be reported and the outdoor unit will stop operation. The unit can automatically resume operation in the first two malfunctions. If the malfunction occurs 3 times, the unit cannot be recovered automatically. Switch off the unit or re-energize the unit after cutting off power to eliminate this malfunction. |
| 19 | P6 | Communication malfunction between main control and drive | Communication between main control board and drive board | If the outdoor main control board does not receive data from drive board, communication malfunction between main control and drive will be reported. This malfunction can be eliminated automatically. |
| 20 | EE | Malfunction of outdoor main control memory chip | Outdoor main control board | If the memory chip of outdoor main control board is broken, the unit cannot be started. The unit cannot be recovered automatically. If the malfunction cannot be eliminated after switching off the unit and then energizing the unit for several times, please replace the outdoor main control board. |

## 1.2 Description of Drive Malfunction

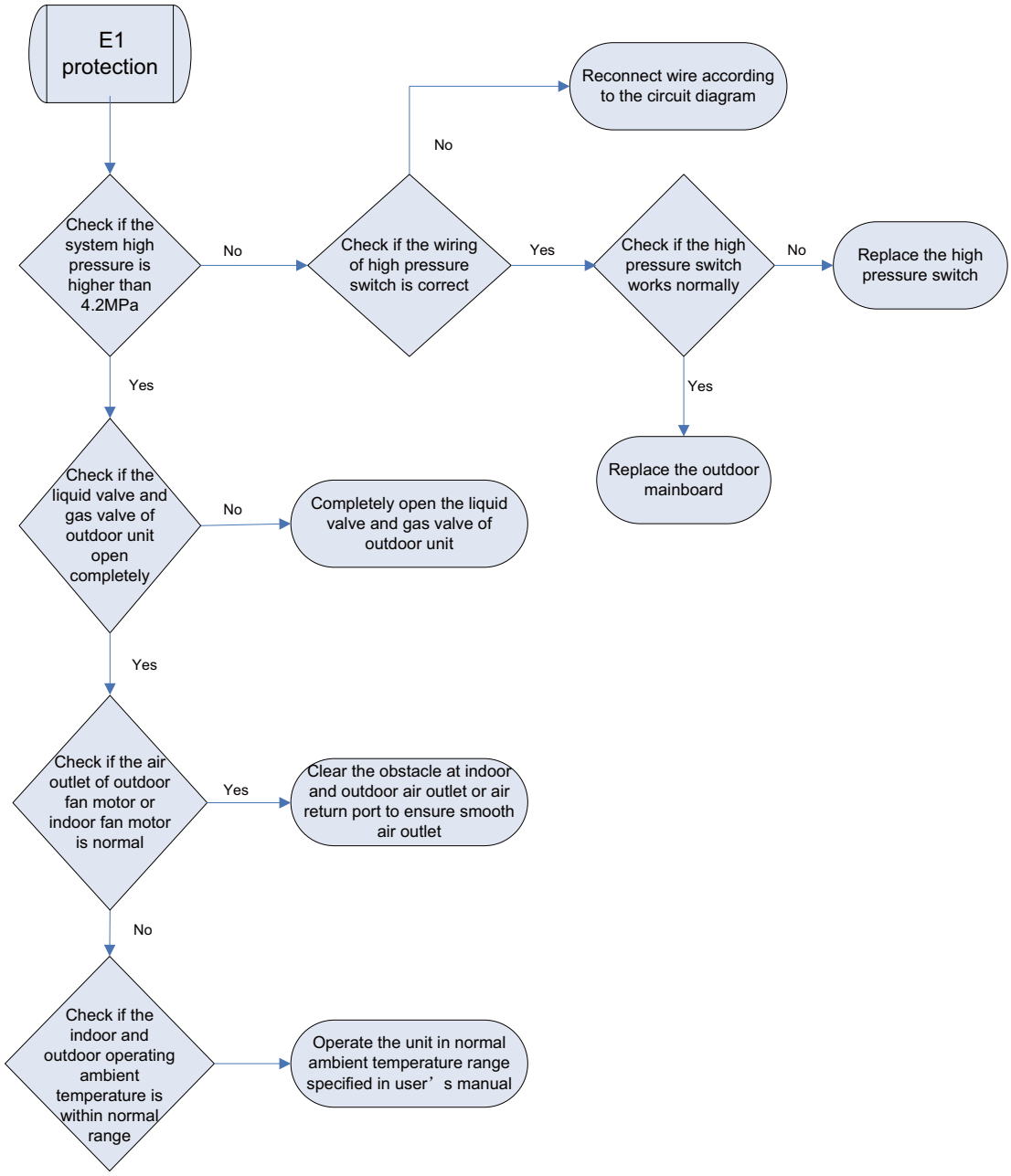
Main board dual 8 numeral tube Display Codes for Outdoor Unit of 09~48k

| Malfunction Item | Indoor Unit Display | Outdoor unit display of dual 8 numeral tube |
|---|---|---|
| DC busbar over-voltage protection | PH | PH |
| IPM or PFC over-temperature protection | P8 | P8 |
| Current sense circuit error | Pc | Pc |
| IPM or PFC temperature sensor error | P7 | P7 |
| Compressor current protection | P5 | P5 |
| DC busbar under-voltage protection | PL | PL |
| Compressor startup failure | Lc | Lc |
| Drive module reset | P0 | P0 |
| Compressor motor desynchronizing | H7 | H7 |
| Phase loss | Ld | Ld |
| Drive-to-main-control communication error | P6 | P6 |
| IPM protection | H5 | H5 |
| Compressor overload protection | H3 | H3 |
| AC current protection (input side) | PA | PA |
| Charging circuit error | PU | PU |
| PFC protection | Hc(48K only) | Hc(48K only) |
| DC fan error | H6 | H6 |
| Input AC voltage abnormality | PP | PP |
| Driving board memory chip error | ee(09-42K) | ee(09-42K) |

# 2 FLOW CHART OF TROUBLESHOOTING

## 2.1 Troubleshooting Flow Chart of Main Control Malfunction

◆ E1 High Pressure Protection



◆ E2 Freeze Protection

Freeze protection is normal protection but not abnormal malfunction. If freeze protection occurs frequently during operation, please check if the indoor filter is with filth blockage or if the indoor air outlet is abnormal. The user is required to clean the filter, check the air outlet and air return pipe periodically to ensure smooth air return and air outlet.

◆ E3 stands for three statuses:

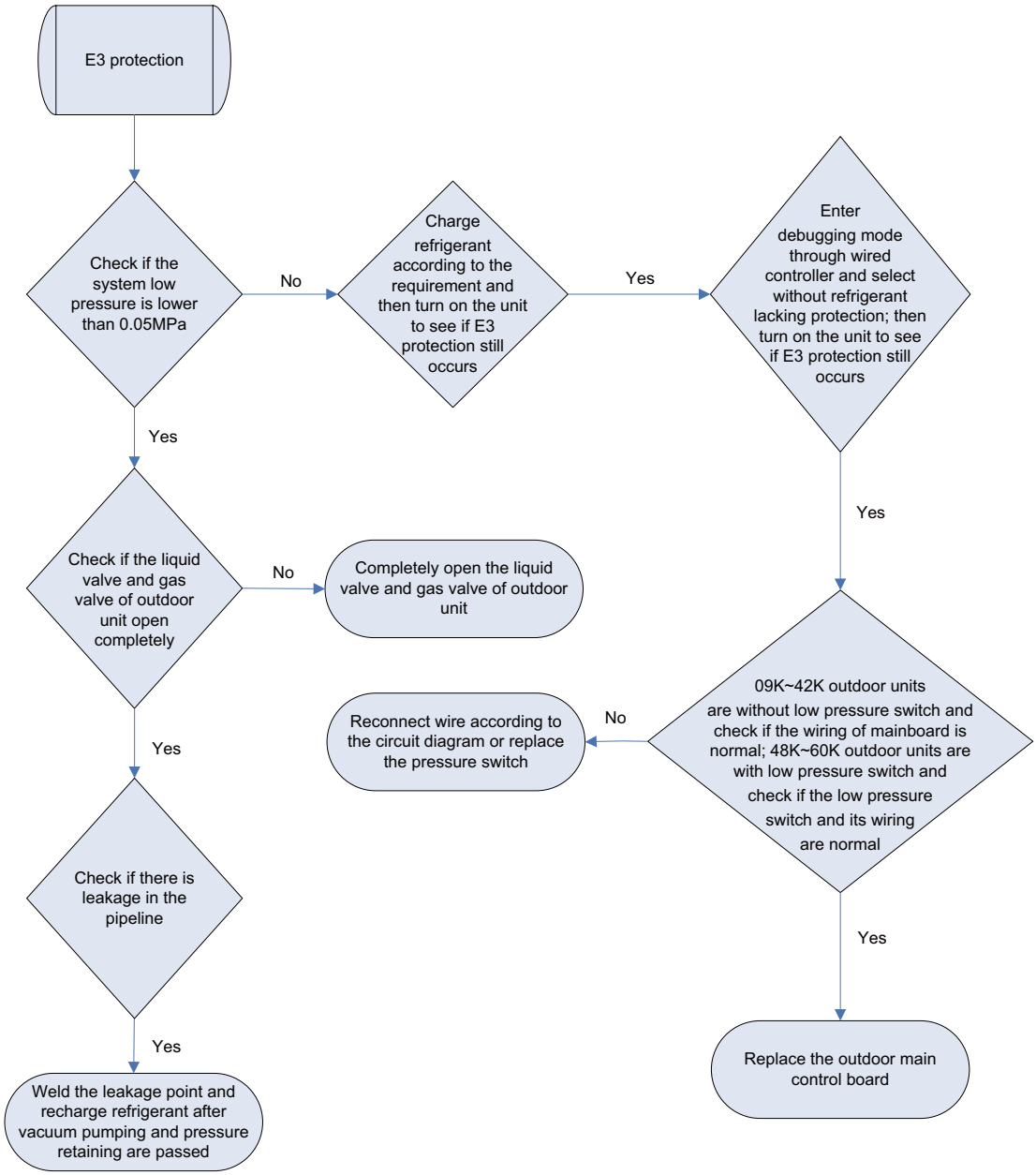
(1). Low pressure protection (48K\60K);

(2). Refrigerant lacking protection;

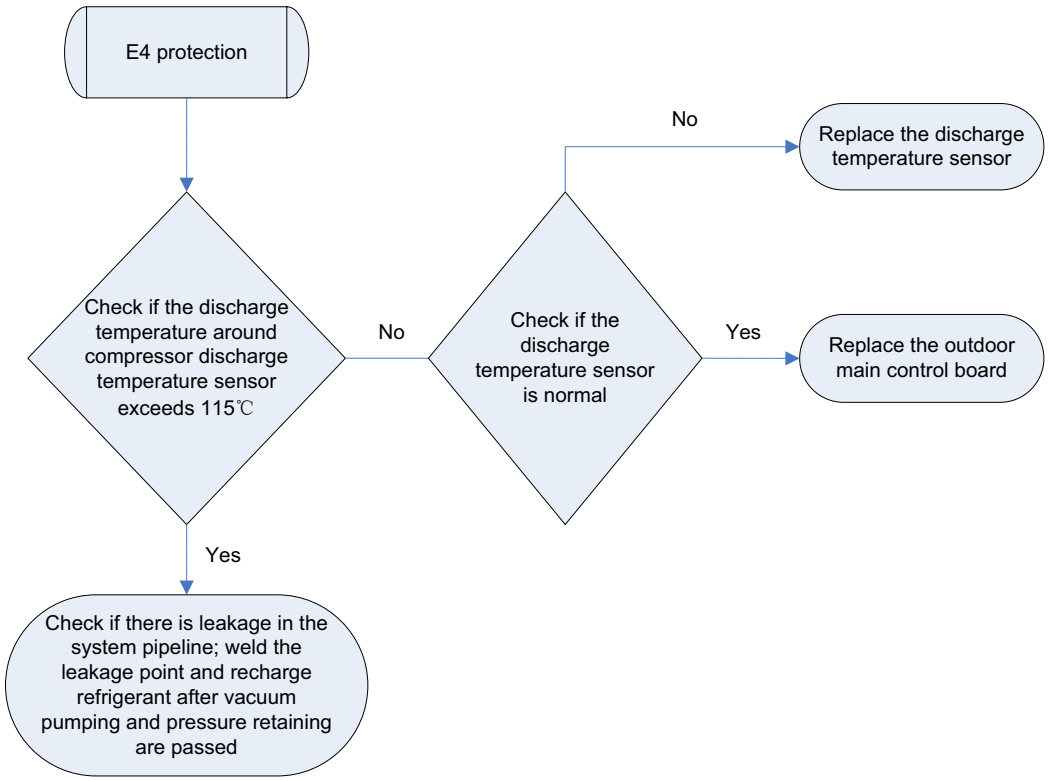
(3). Refrigerant recycling mode;

①. If enter refrigerant recycling mode through special operation, the displayed E3 is not an error code. It will be eliminated when exiting refrigerant recycling mode.

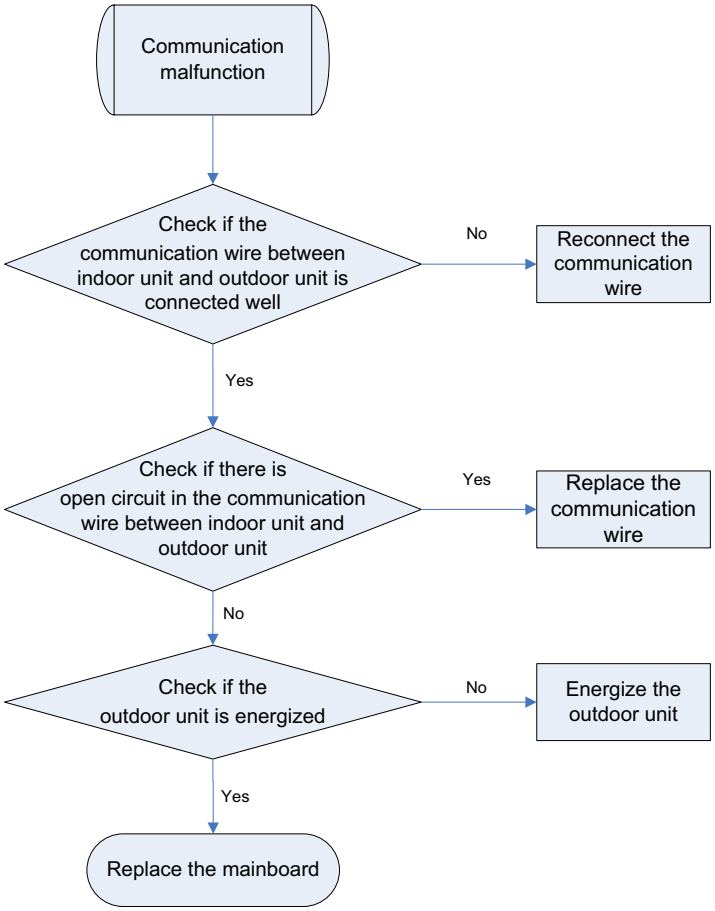
②. If you do not want to have refrigerant lacking protection, you can enter the debugging mode through wired controller and then cancel the refrigerant lacking protection mode.



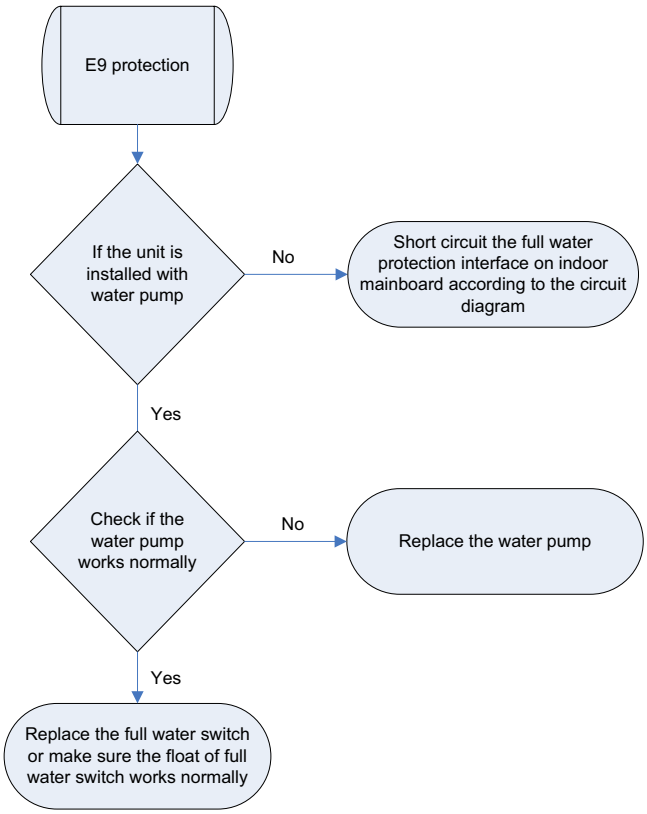
◆ E4 Discharge Protection



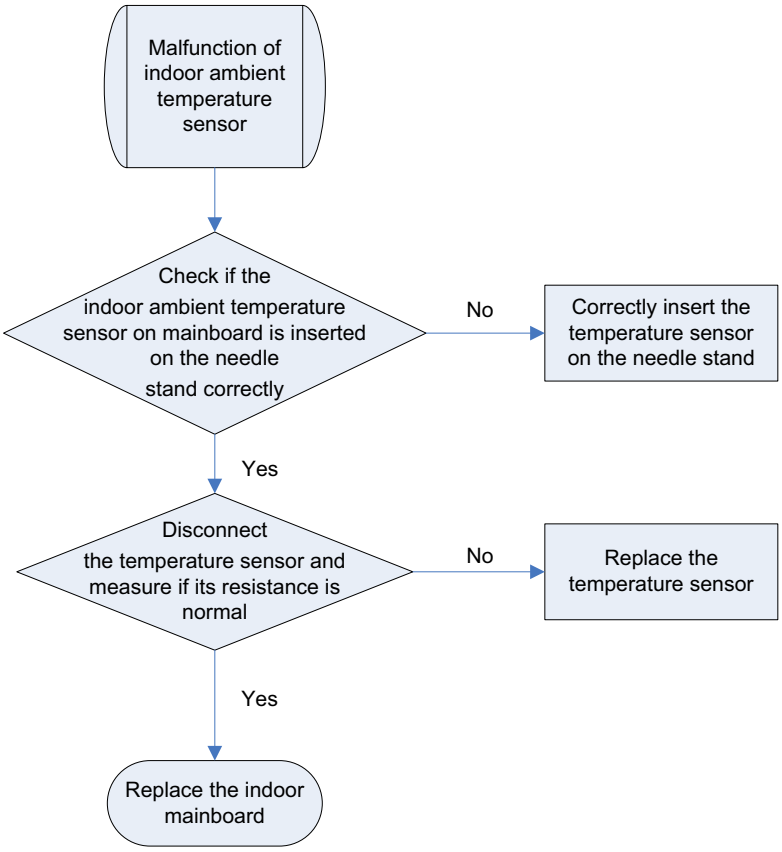

◆ E6 Communication Malfunction



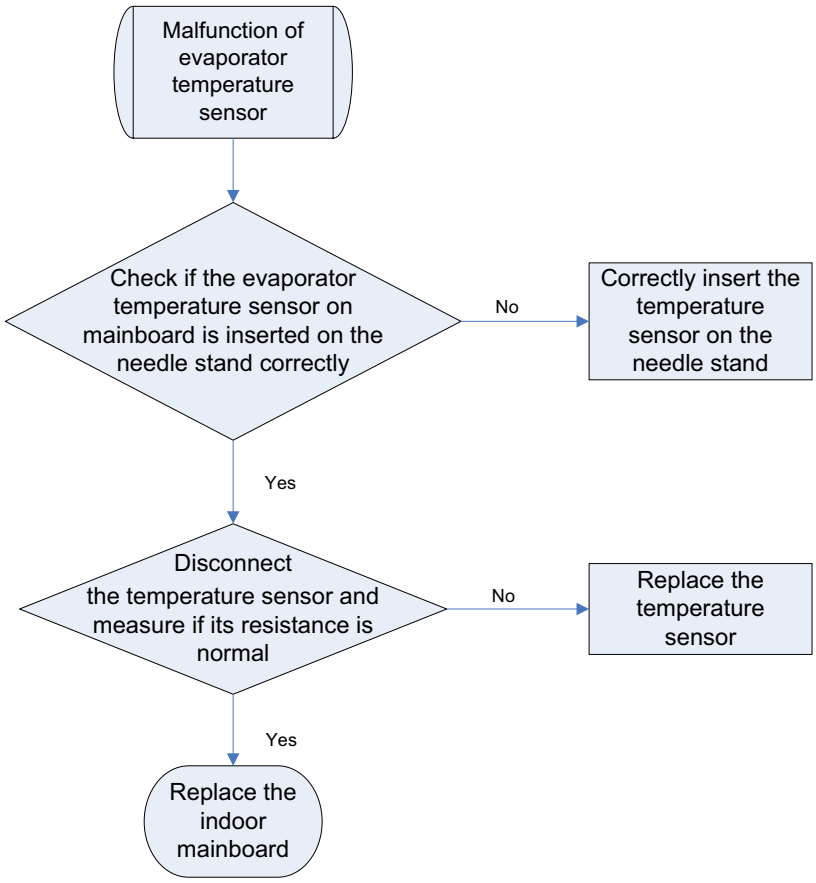
◆ E9 Full Water Protection



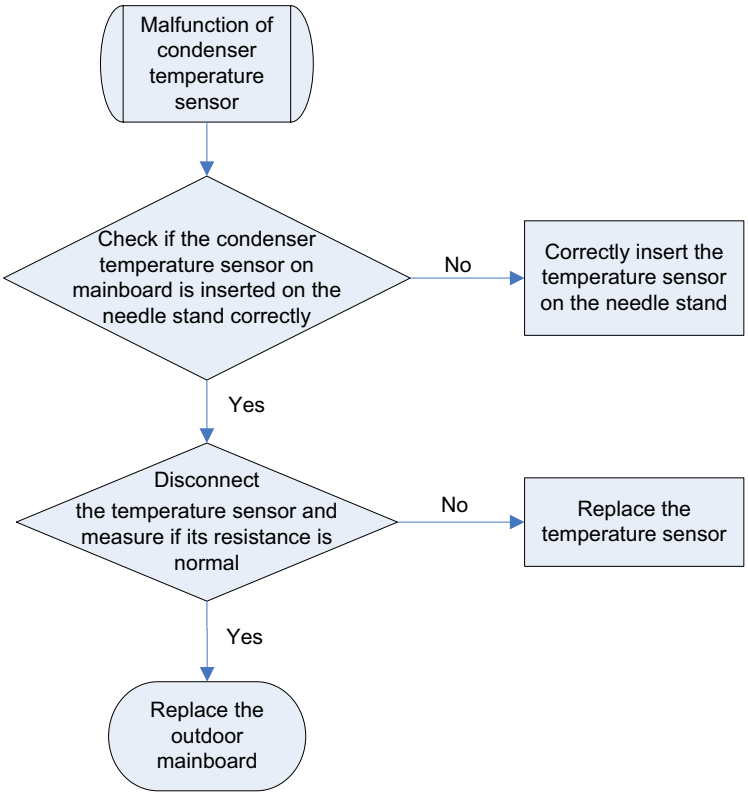

◆ F0 Malfunction of Indoor Ambient Temperature Sensor



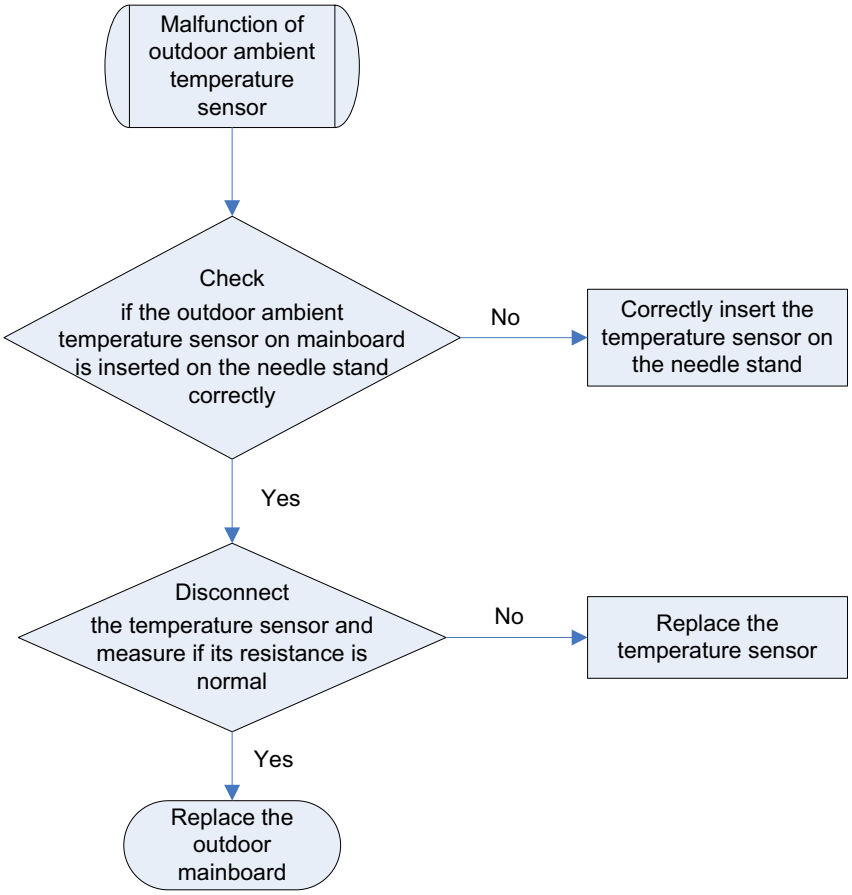
◆ F1 Malfunction of Evaporator Temperature Sensor



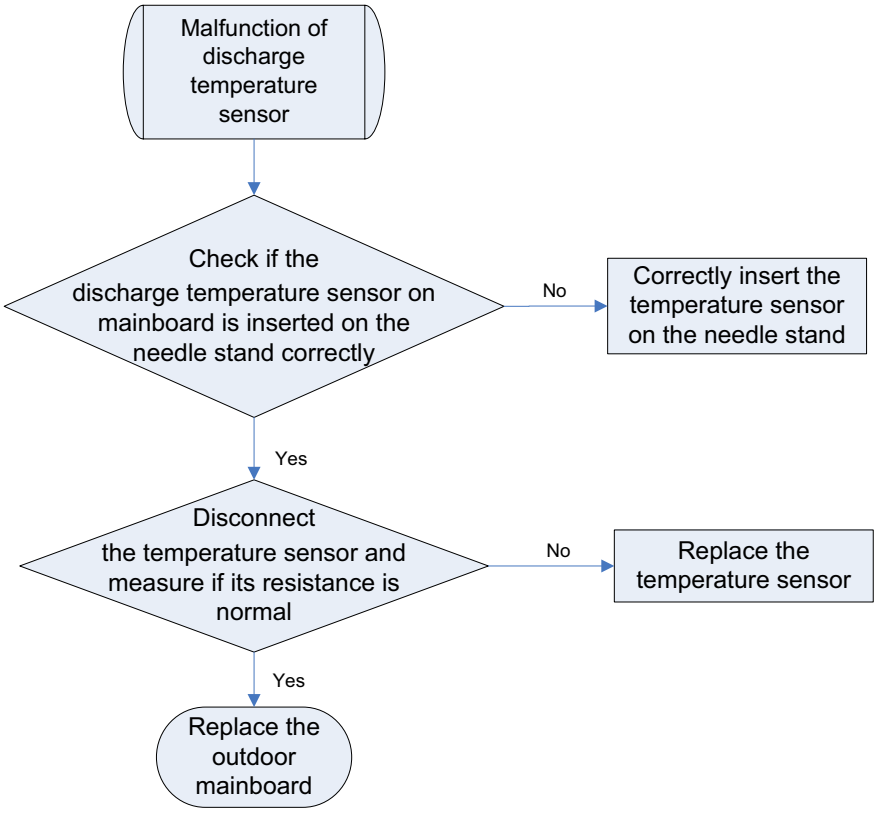

◆ F2 Malfunction of Condenser Temperature Sensor



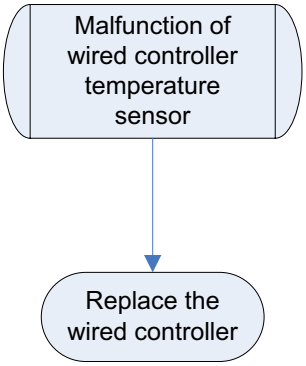
◆ F3 Malfunction of Outdoor Ambient Temperature Sensor



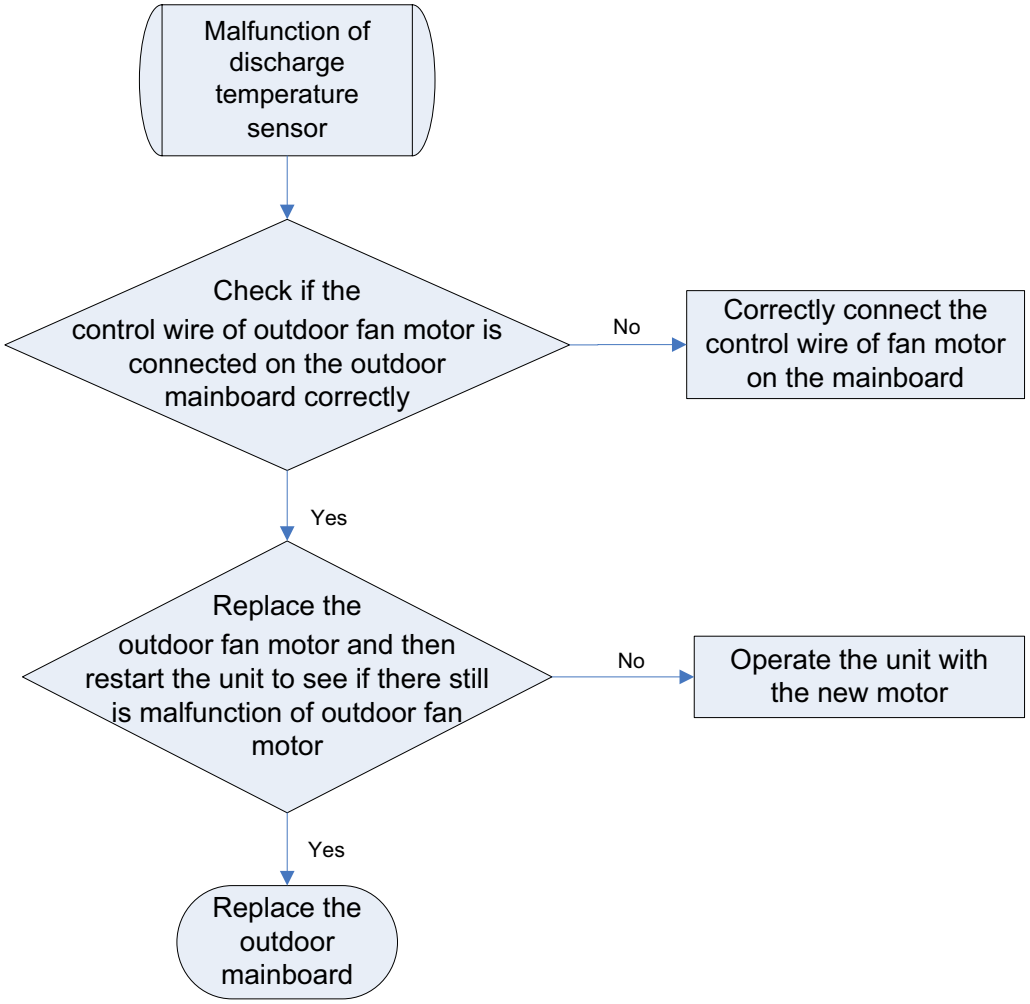

◆ F4 Malfunction of Discharge Temperature Sensor



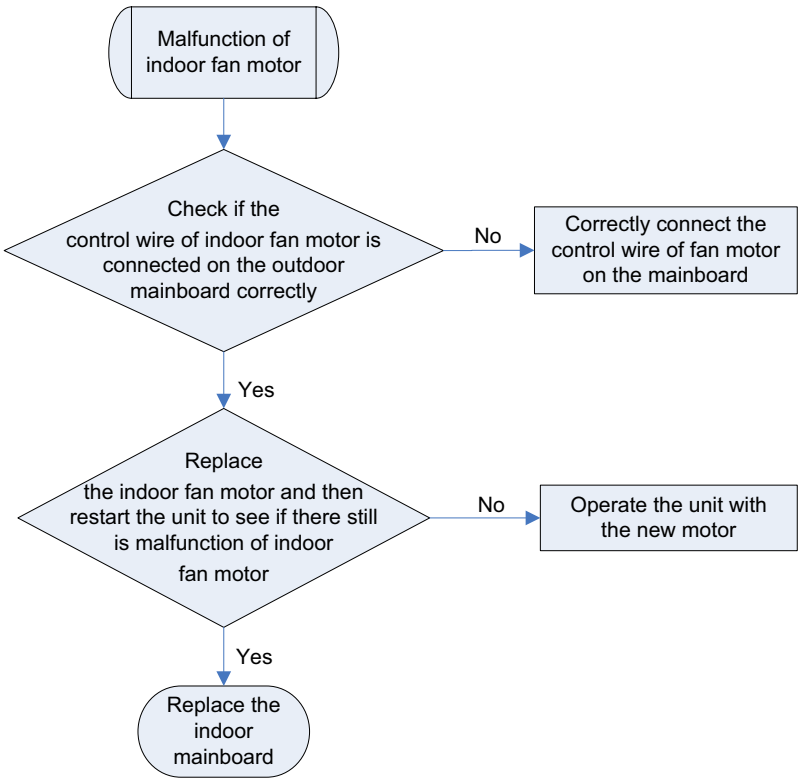
◆ F5 Malfunction of Wired Controller Temperature Sensor




◆ H6 Malfunction of Outdoor Fan Motor



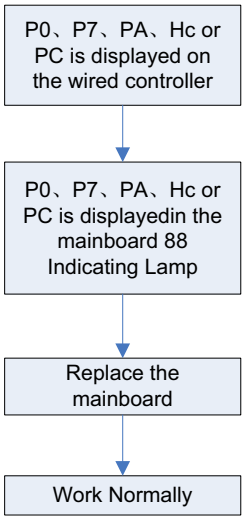
◆ E8 Malfunction of Indoor Fan Motor



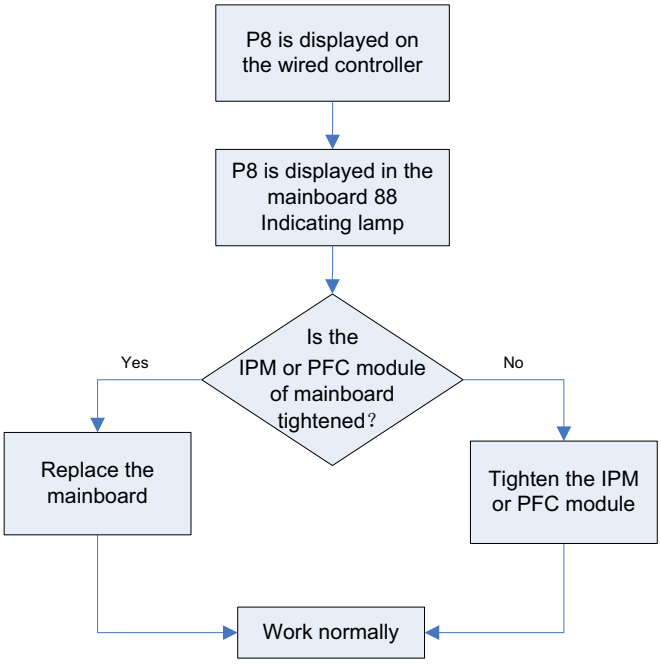

## 2.2 Troubleshooting Flow Chart of Drive Malfunction

**Note:** For Outdoor Unit Drive (Inverter) by Single-phase Motor
(Applicable to GUHD09NK3FO/GUHD12NK3FO/GUHD18NK3FO/GUHD24NK3FO/ GUHD30NK3FO/ GUHD36NK3FO/ GUHD42NK3FO/ GUHD48NK3FO)

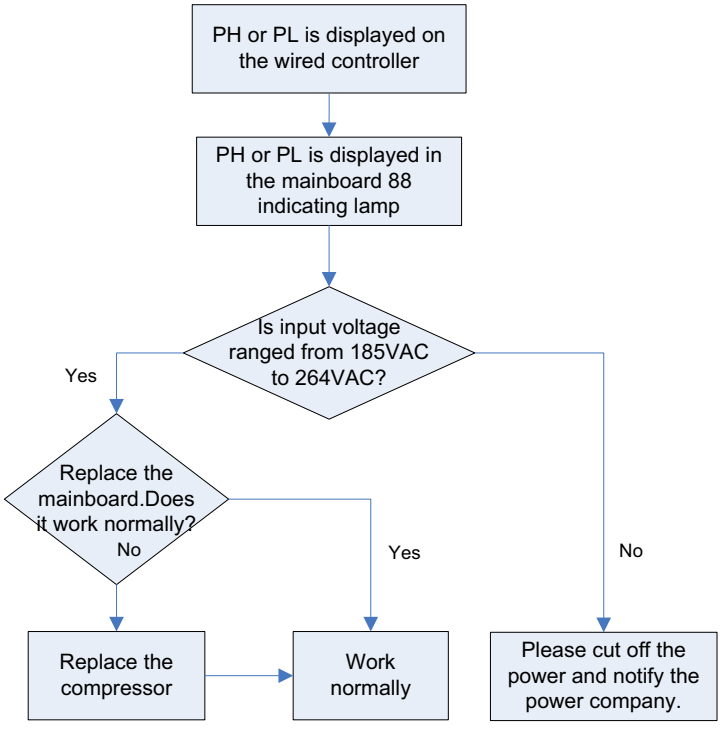
◆ P0 Drive module reset
◆ P7 IPM or PFC temperature sensor error
◆ PA AC current protection (input side)
◆ PC Current sense circuit error
◆ Hc PFC protection(48K only)



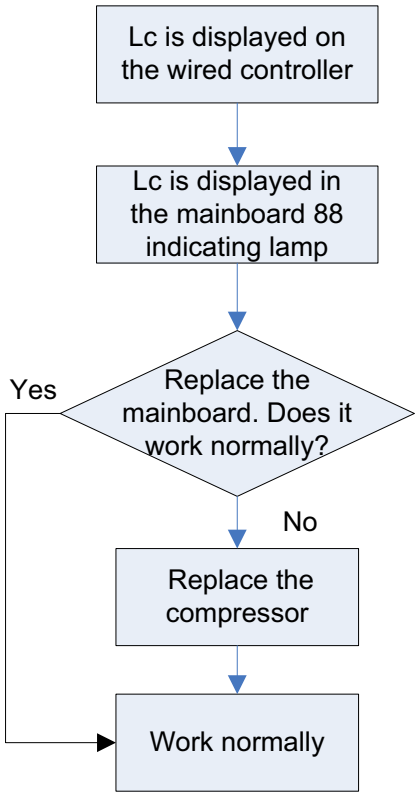
- P8 IPM or PFC over-temperature protection



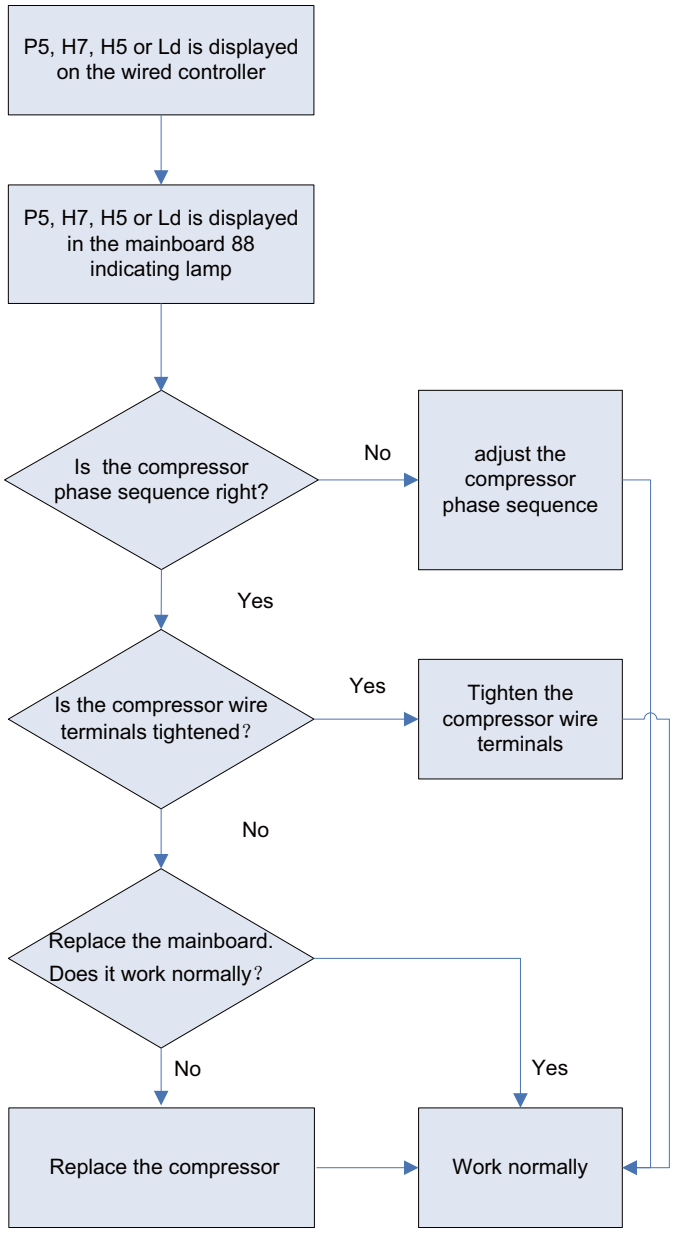

- PH DC busbar over-voltage protection
- PL DC busbar under-voltage protection



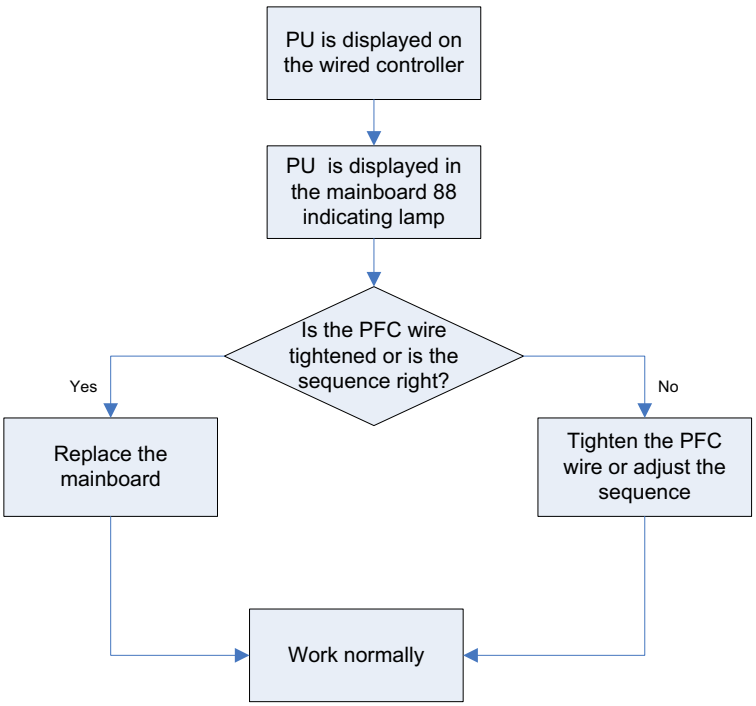
- P6 Drive-to-main-control communication error
- Lc Compressor Startup Failure



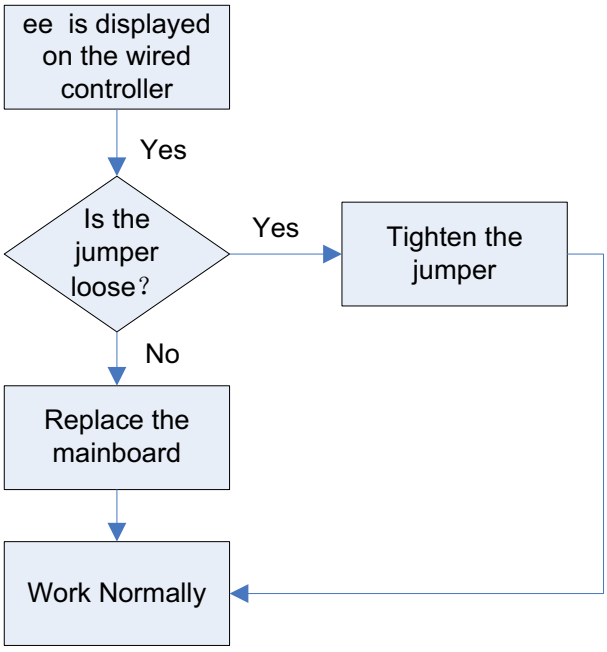
- P5 Compressor current protection
- H7 Compressor motor desynchronizing
- H5 IPM protection
- Ld Phase loss



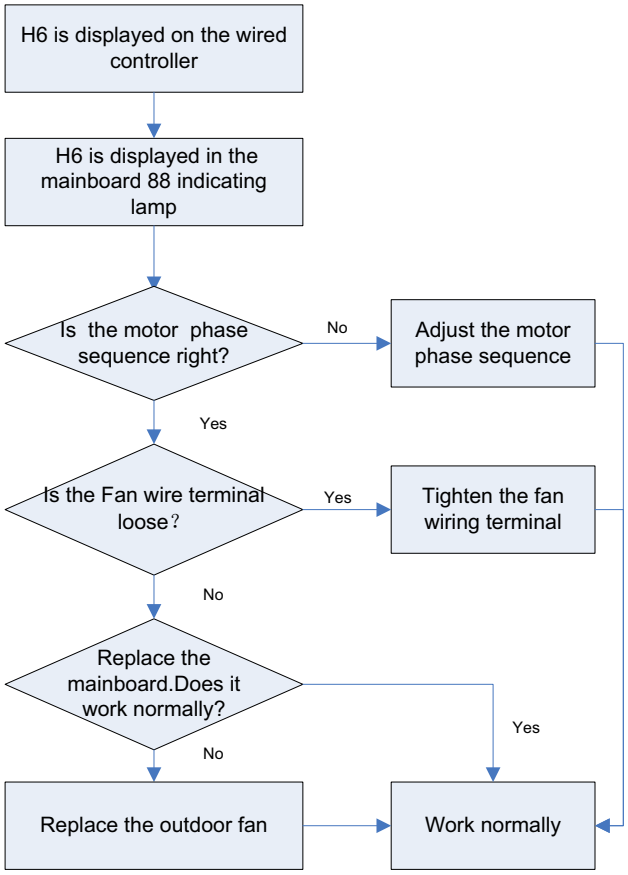
◆ PU Charging circuit error




◆ ee driving boar

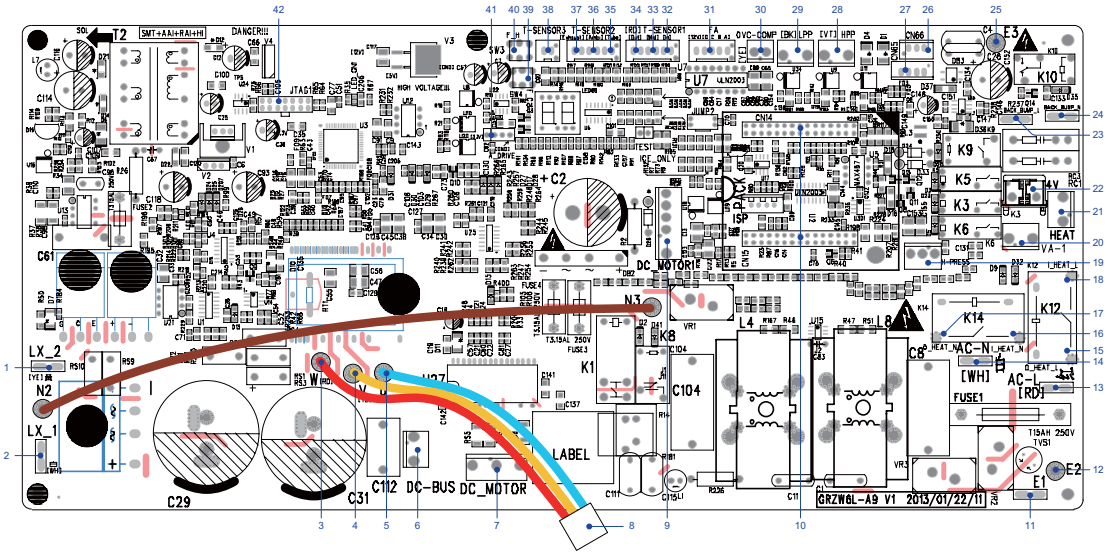


◆ H6 DC fan error



## 2.3 Interface

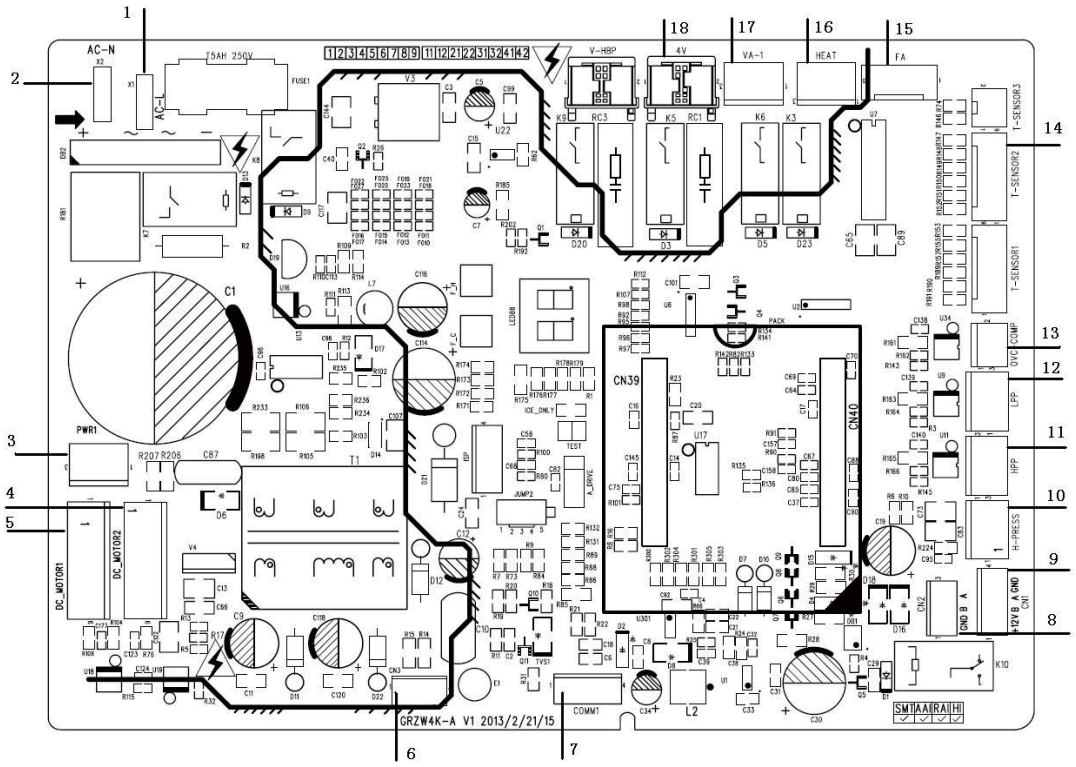
(1). GUHD09NK3FO/GUHD12NK3FO Mainboard




| No. | SILK-SCREEN | INTERFACE INSTRUCTION | No. | SILK-SCREEN | INTERFACE INSTRUCTION |
|---|---|---|---|---|---|
| 1 | LX_2 | PFC reactor wire (yellow) | 2 | LX_1 | PFC reactor wire (white) |
| 3 | W | Compressor Phase W | 4 | V | Compressor Phase V |
| 5 | U | Compressor Phase U | 6 | DC-BUS | (Reserved) |
| 7 | DC_MOTOR | (Reserved) | 8 | - | Compressor interface |
| 9 | DC-MOTOR1 | Interface of outdoor fan motor | 10 | CN14/CN15 | Interface of CPU board |
| 11 | E1 | (Reserved) | 12 | E2 | Grounding wire (yellow-green lead-out wire) |
| 13 | AC-L | Live wire input (red) | 14 | AC-N | Neutral wire input (white) |
| 15 | O_HEAT_L | (Reserved) | 16 | I_HEAT_N | (Reserved) |
| 17 | O_HEAT_N | (Reserved) | 18 | I_HEAT_L | (Reserved) |
| 19 | H-PRESS | Pressure switch | 20 | VA-1 | Chassis electric heating belt |
| 21 | HEAT | Compressor electric heating belt | 22 | 4V | 4-way valve |
| 23 | BACK_BUMP_L | (Reserved) | 24 | BACK_BUMP_N | (Reserved) |
| 25 | E3 | Grounding wire (yellow-green lead-out wire) | 26 | CN66 | Communication interface between indoor unit and outdoor unit |
| 27 | CN65 | (Reserved) | 28 | HPP | High pressure switch (reserved) |
| 29 | LPP | Low pressure switch (reserved) | 30 | OVC-COMP | Compressor overload switch |
| 31 | FA | Electronic expansion valve | 32 | T-SENSOR1(In) | (Reserved) |
| 33 | T-SENSOR1(Mid) | (Reserved) | 34 | T-SENSOR1(Out) | (Reserved) |
| 35 | T-SENSOR2(Tube) | Tube temperature sensor | 36 | T-SENSOR2(Ambi) | Ambient temperature sensor |
| 37 | T-SENSOR2(Exhaust) | Discharge temperature sensor | 38 | T-SENSOR3 | (Reserved) |
| 39 | SW4 | (Reserved) | 40 | SW3 | (Reserved) |
| 41 | A-DRIVE | (Reserved) | 42 | JTAG1 | (Reserved) |

(2). GUHD18NK3FO/GUHD24NK3FO/GUHD30NK3FO/GUHD36NK3FO/GUHD42NK3FO / GUHD48NK3FO/ GUHD36NM3FO/GUHD42NM3FO/GUHD48NM3FO/GUHD60NM3FO

Main Control Board

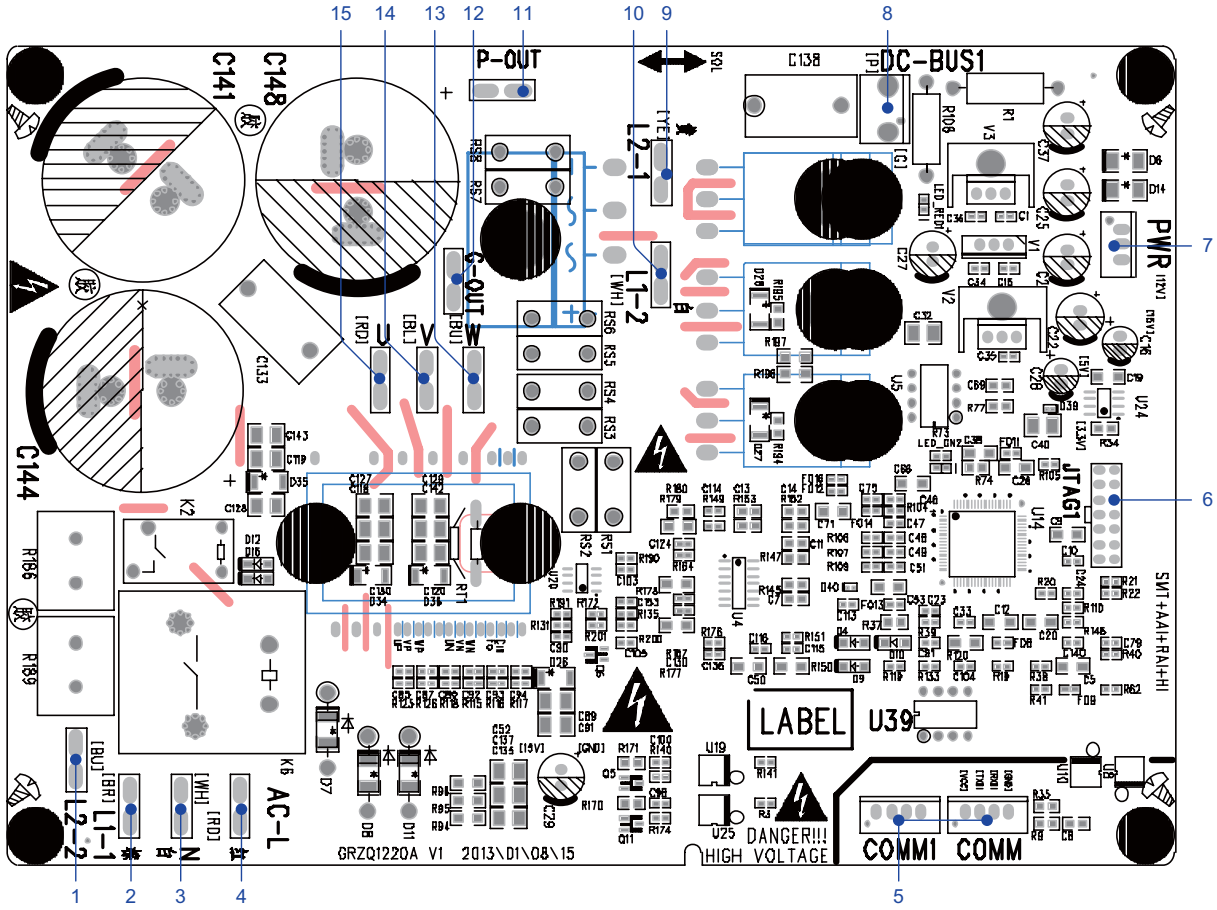



| NO. | SILK-SCREEN | INTERFACE INSTRUCTION | NO. | SILK-SCREEN | INTERFACE INSTRUCTION |
|---|---|---|---|---|---|
| 1 | AC-L | Live wire input | 10 | H-PRESS | Pressure protection switch for fan speed adjustment |
| 2 | AC-N | Neutral wire input | 11 | HPP | Interface of high pressure protection |
| 3 | PWR 1 | Power supply interface to the drive<br>1-pin: DC bus voltage<br>3-pin: DC bus GND | 12 | LPP | Interface of low pressure protection |
| 4 | DC_MOTOR2 | Interface of DC fan motor<br>1-pin: DC bus voltage<br>2-pin: Suspended<br>3-pin: DC bus GND<br>4-pin: +15V<br>5-pin: Control signal input<br>6-pin: Not connected | 13 | OVC-COMP | Interface of compressor overload protection |
| 5 | DC_MOTOR1 | Interface of DC fan motor<br>1-pin: DC bus voltage<br>2-pin: Suspended<br>3-pin: DC bus GND<br>4-pin: +15V<br>5-pin: Control signal input<br>6-pin: DC fan motor feedback | 14 | T-SENSOR2 | 1&2 pin: Case temperature sensor<br>3&4 pin: Ambient temperature sensor<br>5&6 pin: Discharge temperature sensor |
| 6 | CN3 | Power supply interface to the drive<br>1-pin: GND<br>2-pin: +18V<br>3-pin: +15V | 15 | FA | Interface of electronic expansion valve:<br>1 to 4-pin: Drive impulse output;<br>5-pin: +12V; |

| | | | | | |
|---|---|---|---|---|---|
| 7 | COMM1 | Communication needle stand of main control drive<br>1-pin: +3.3V,<br>2-pin: TXD<br>3-pin: RXD,<br>4-pin: GND | 16 | HEAT | Compressor electric heating belt |
| 8 | CN2 | Communication needle stand with indoor unit<br>1-pin: GND,<br>2-pin: B,<br>3-pin: A | 17 | VA-1 | Chassis electric heating belt |
| 9 | CN1 | Communication interface (reserved):<br>1-pin: +12V, 2-pin: B,<br>3-pin: A, 4-pin: GND | 18 | 4V | 4-way valve |

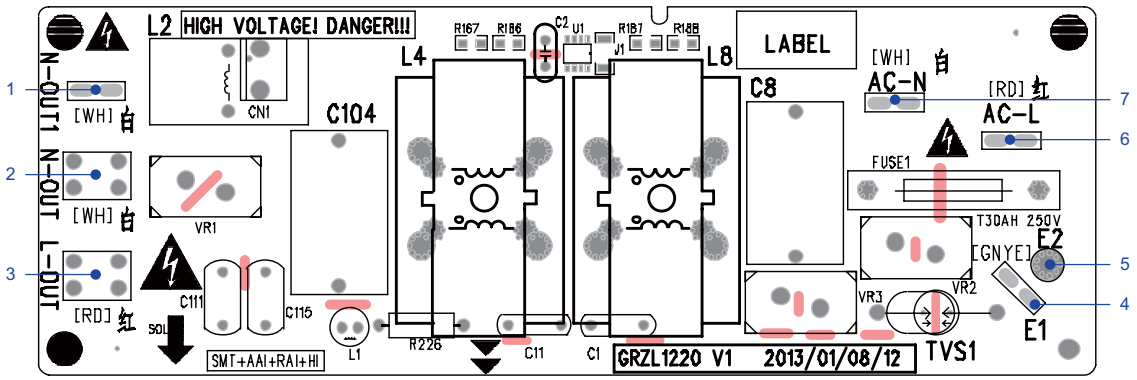
(3). GUHD18NK3FO/GUHD24NK3FO/GUHD30NK3FO/GUHD36NK3FO/GUHD42NK3FO

1). Driving Board




| No. | Printing | Interface | No. | Printing | Interface |
|---|---|---|---|---|---|
| 1 | L2_2 | PFC induction wire (blue) | 2 | L1_1 | PFC induction wire (brown) |
| 3 | N | Neutral wire input (white) | 4 | AC-L | Live wire input (red) |
| 5 | COMM/COMM1 | Communication interface | 6 | JTAG1 | (Reserved) |
| 7 | PWR | Control power input | 8 | DC-BUS1 | Bus electric discharging interface (for testing) |
| 9 | L2-1 | PFC induction wire (yellow) | 10 | L1-2 | PFC induction wire (white) |
| 11 | P-OUT | (Reserved) | 12 | G-OUT | (Reserved) |
| 13 | W | Compressor Phase W | 14 | V | Compressor Phase V |
| 15 | U | Compressor Phase U | | | |

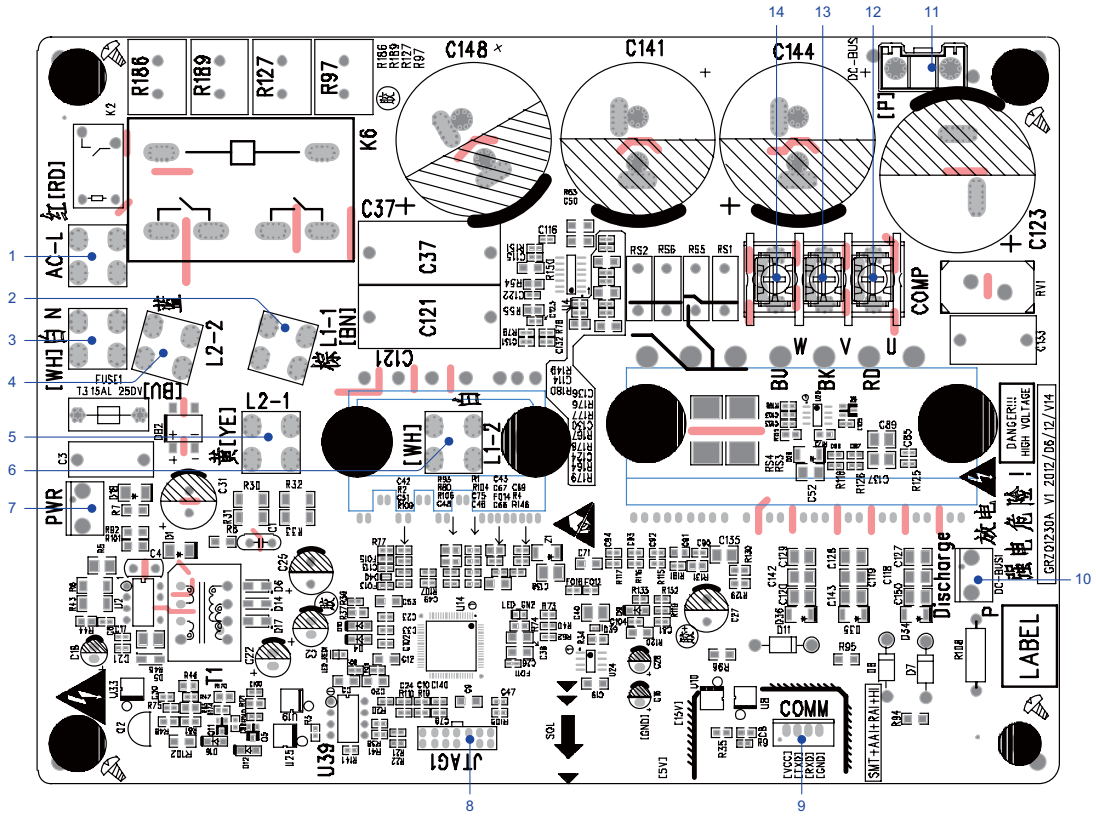
2). Filtering Board




| No. | Printing | Interface | No. | Printing | Interface |
|---|---|---|---|---|---|
| 1 | N-OUT1 | Neutral wire output 1 (white) (only for 18K) | 2 | N-OUT | Neutral wire output (white) |
| 3 | L-OUT | Live wire output (red) | 4 | E1 | Grounding wire |
| 5 | E2 | (Reserved) | 6 | AC-L | Live wire input (red) |
| 7 | AC-N | Neutral wire input (white) | | | |

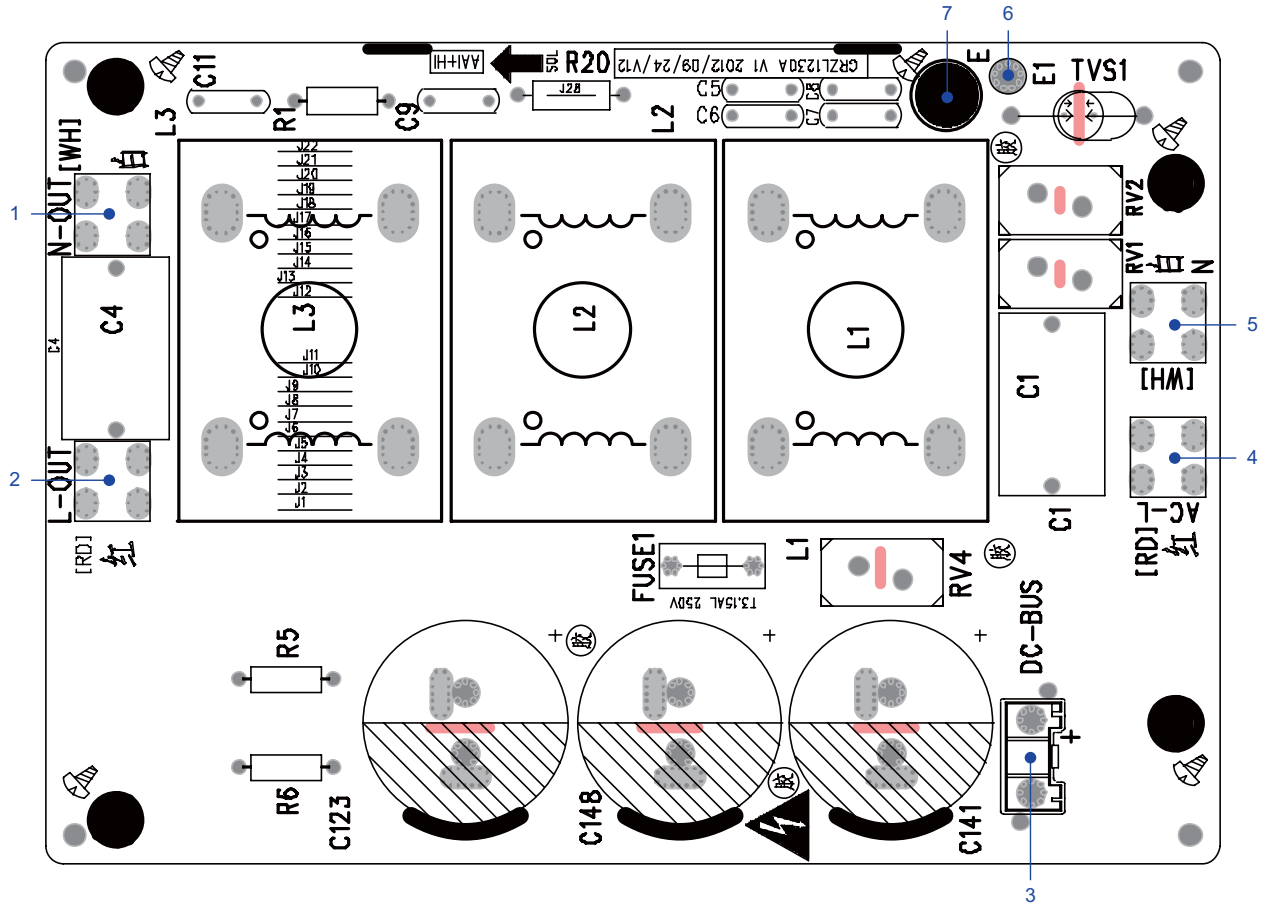
(4). GUHD48NK3FO

1). Drive Board:




| No. | Printing | Interface | No. | Printing | Interface |
|---|---|---|---|---|---|
| 1 | AC-L | Live wire input (red) | 2 | L1-1 | PFC induction wire (brown) |
| 3 | N | Neutral wire input (white) | 4 | L2-2 | PFC induction wire (blue) |
| 5 | L2-1 | PFC induction wire (yellow) | 6 | L1-2 | PFC induction wire (white) |
| 7 | PWR | Control power input | 8 | JTAG1 | (Reserved) |
| 9 | COMM | Communication interface | 10 | DC-BUS1 | DC bus electric discharging needle stand (for testing) |
| 11 | DC-BUS | DC bus interface (connect to filtering board) | 12 | U | Compressor Phase U |
| 13 | V | Compressor Phase V | 14 | W | Compressor Phase W |

2). Filtering Board:




| No. | Printing | Interface | No. | Printing | Interface |
|---|---|---|---|---|---|
| 1 | N-OUT | Neutral wire output (white) | 2 | L-OUT | Live wire output (red) |
| 3 | DC-BUS | DC bus interface (connect to drive board) | 4 | AC-L | Live wire input (red) |
| 5 | N | Neutral wire input (white) | 6 | E1 | (Reserved) |
| 7 | E | Grounding wire (screw hole) | | | |
| | | | | | |

## 2.4 IPM, PFC Testing Method

2.4.1 Method of Testing IPM Module

(1). Preparation before test: prepare a universal meter and turn to its diode option, and then remove the wires U, V, W of the compressor after it is powered off for one minute.

(2). Testing Steps

Step 1: put the black probe on the place P and the red one on the wiring terminal U, V, W respectively as shown in the following figure to measure the voltage between UP, VP and WP.

Step 2: put the red probe on the place N and the black one on the wiring terminal U, V, W respectively as shown in the following figure to measure the voltage between NU, NV and NW.

(3). If the measured voltages between UP, VP, WP, NU, NV, NV are all among 0.3V-0.7V, then it indicates the IPM module is normal; If any measured valve is 0, it indicates the IPM is damaged.

2.4.2 Method of Testing PFC Module Short Circuit(only for GUHD48NK3FO):

(1). Preparation before test: prepare a universal meter and turn to its diode option, and then remove the wires L1-2, L2-1 after it is powered off for one minute.

(2). Testing Steps

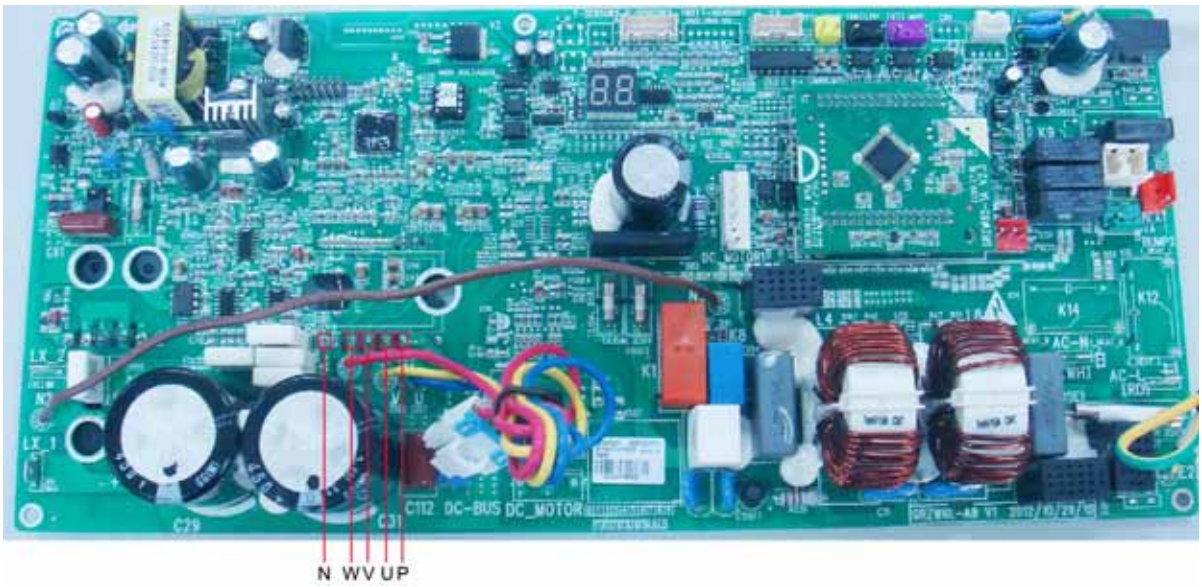
Step 1: put the black probe on the place P and the red one on the wiring terminal L1-2, L2-1respectively as shown in the following figure to measure the voltage between L1-2P and.L2-1 P.

Step 2: put the red probe on the place N and the black one on the wiring terminal L1-2, L2-1respectively

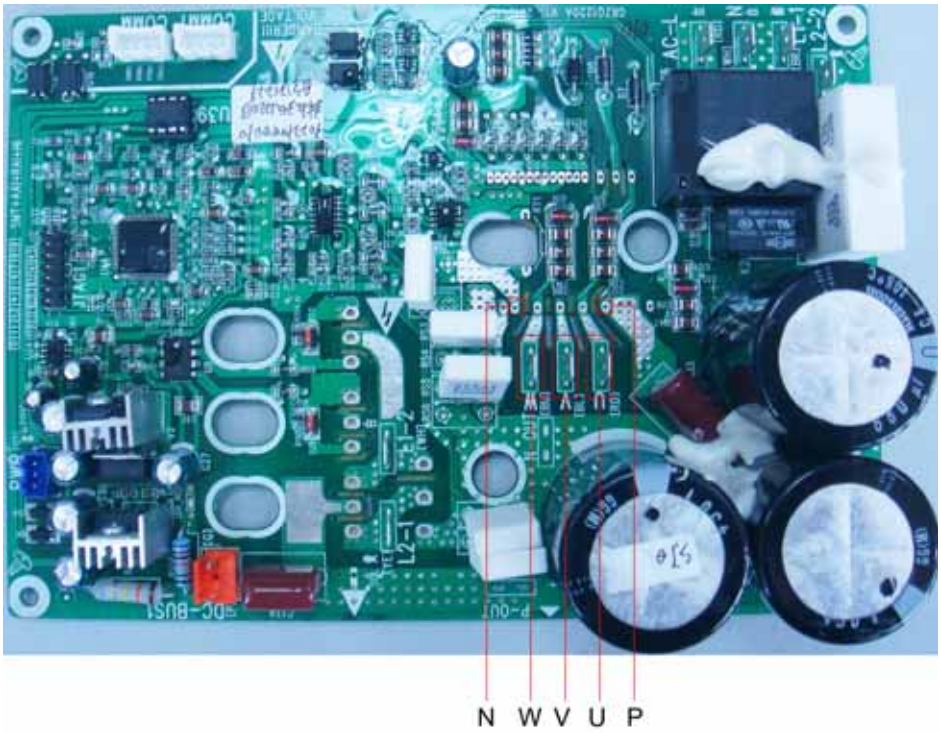
as shown in the following figure to measure the voltage between N L1-2 and NL2-1.

(3). If the measured voltages between L1-2P ,L2-1 P, N L1-2 , NL2-1 are all among 0.3V-0.7V, then it indicates the PFC module is normal; If any measured valve is 0, it indicates the PFC is damaged.

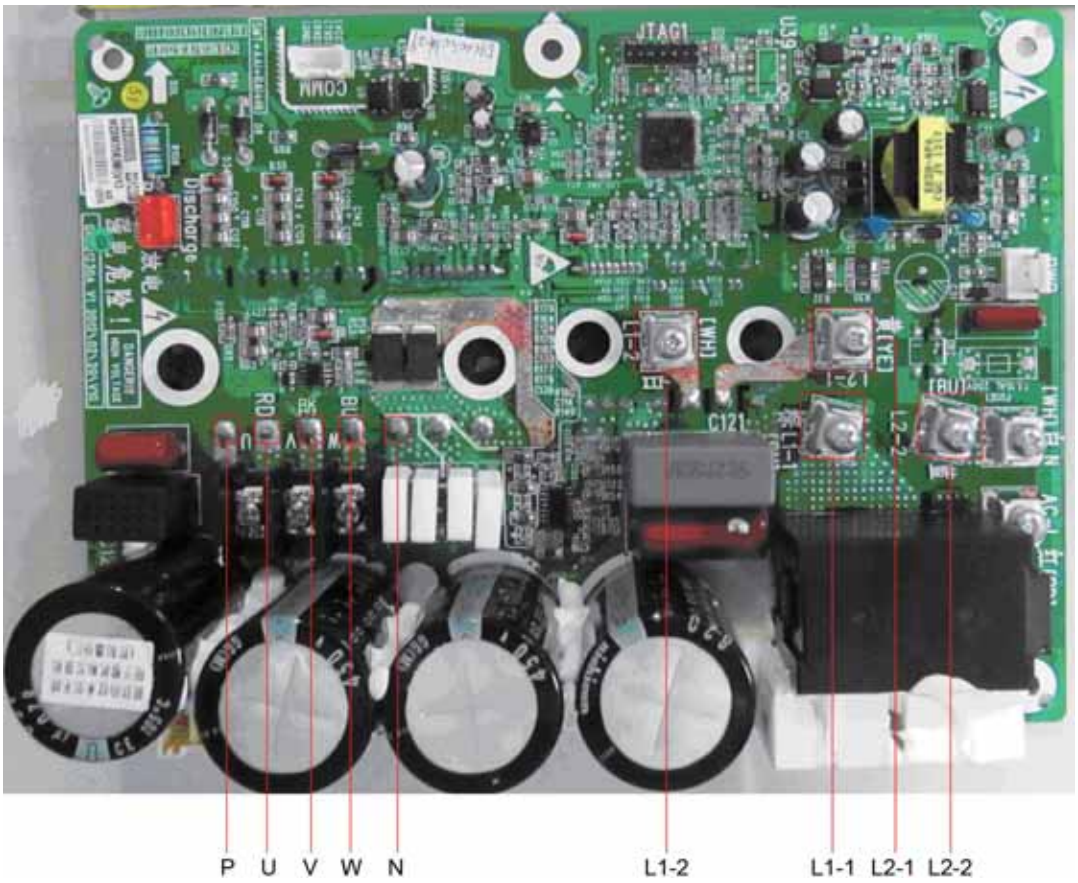
◆ GUHD09NK3FO/GUHD12NK3FO




◆ GUHD18NK3FO/GUHD24NK3FO/ GUHD30NK3FO/GUHD36NK3FO/ GUHD42NK3FO/



◆ GUHD48NK3FO

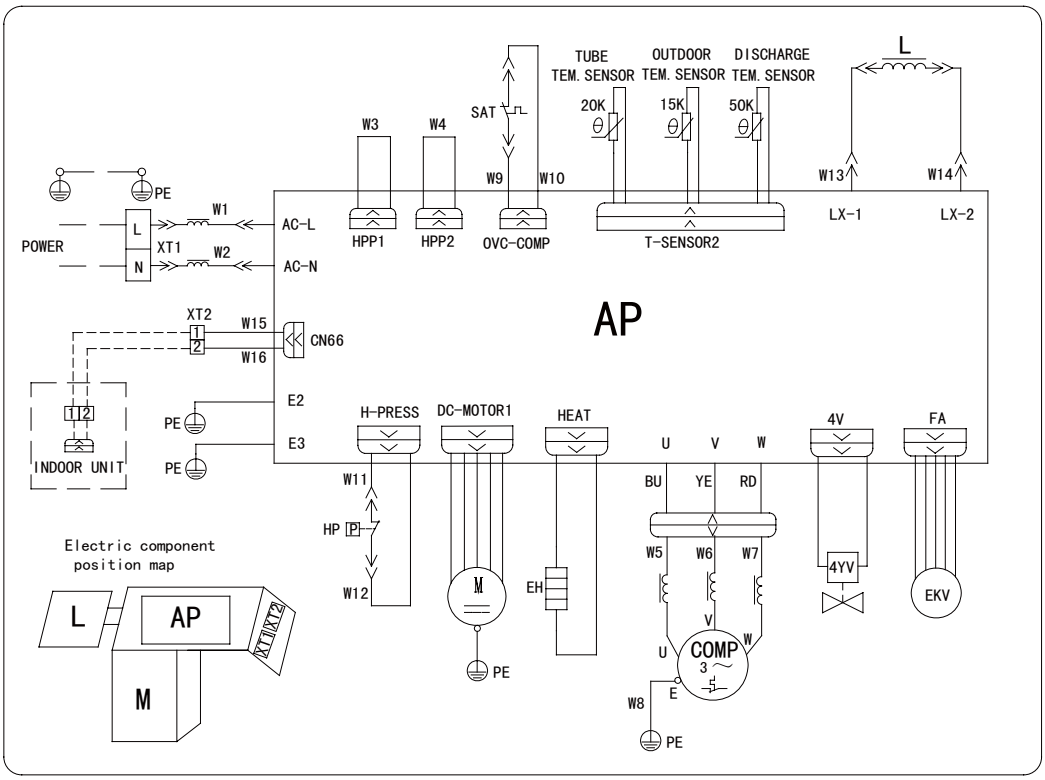



# 3 WIRING DIADRAM

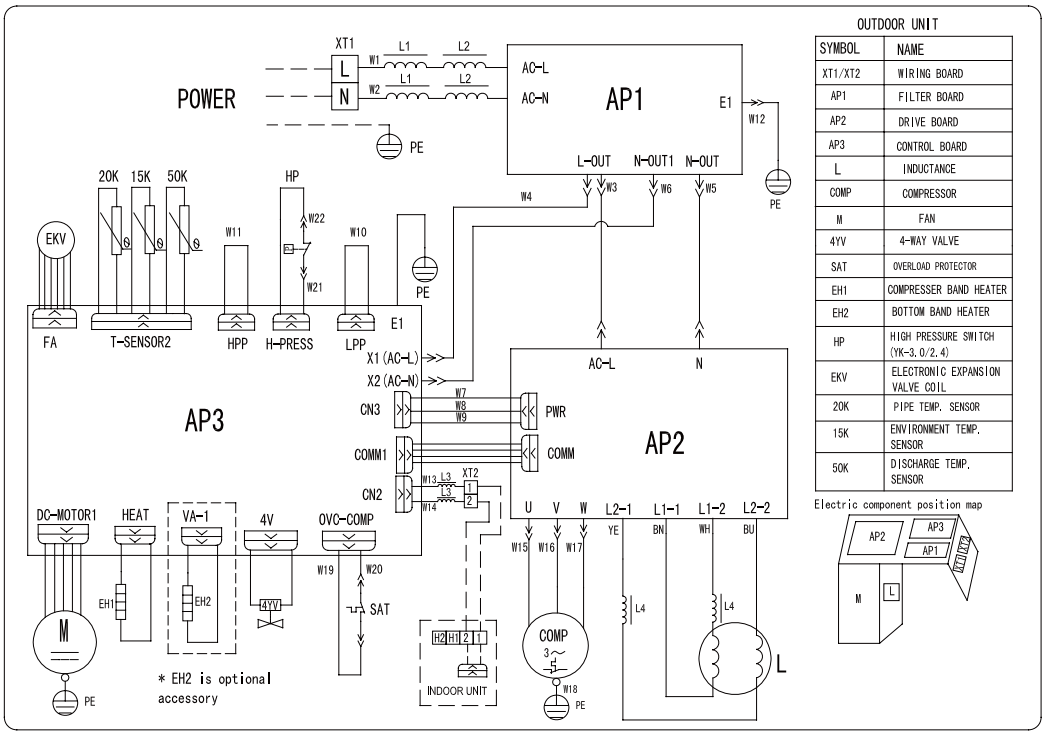
## 3.1 Outdoor unit

The actual wiring should always refer to the wiring diagram of the unit.

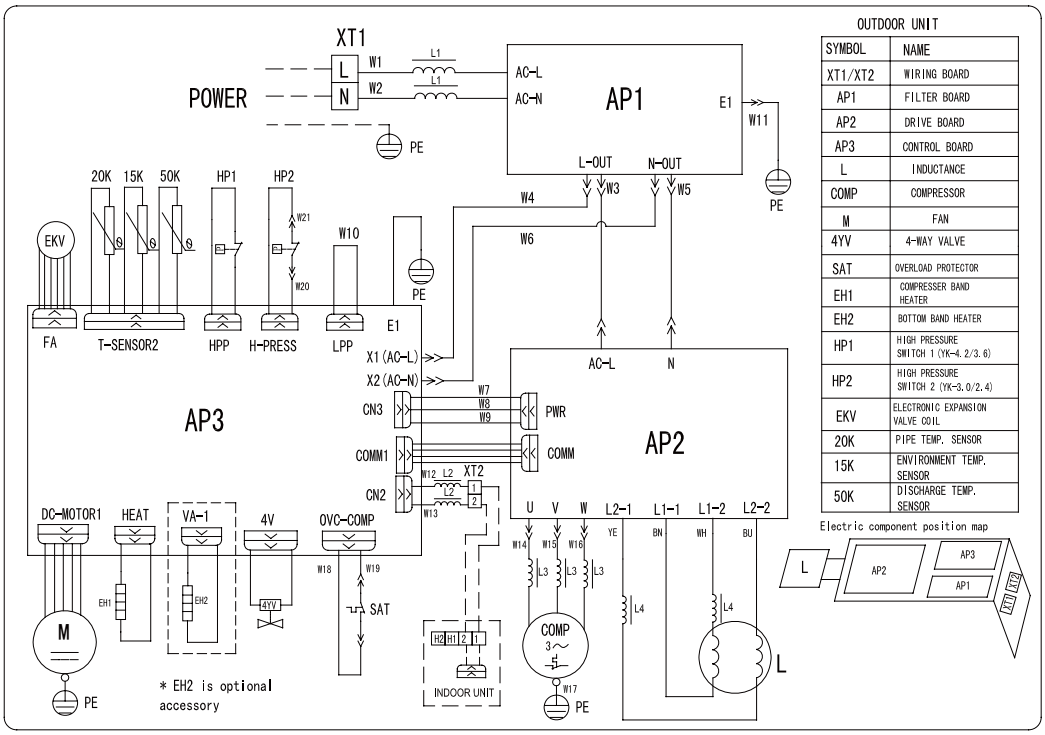
◆ Model: GUHD09NK3FO, GUHD12NK3FO



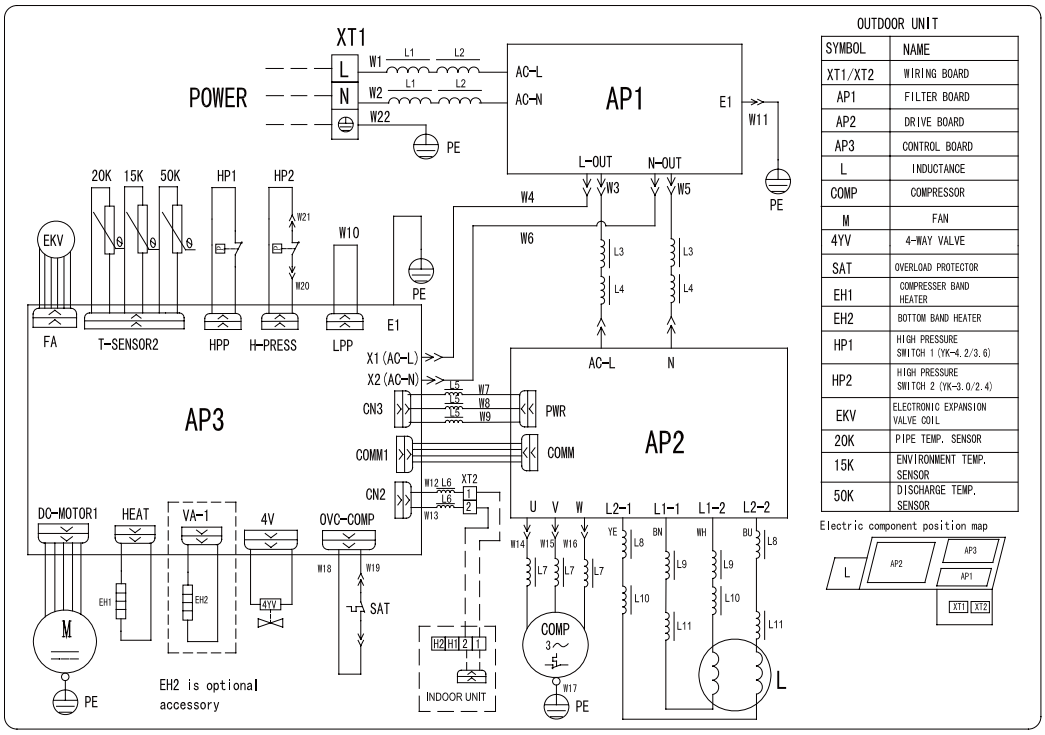
◆ Model: GUHD18NK3FO



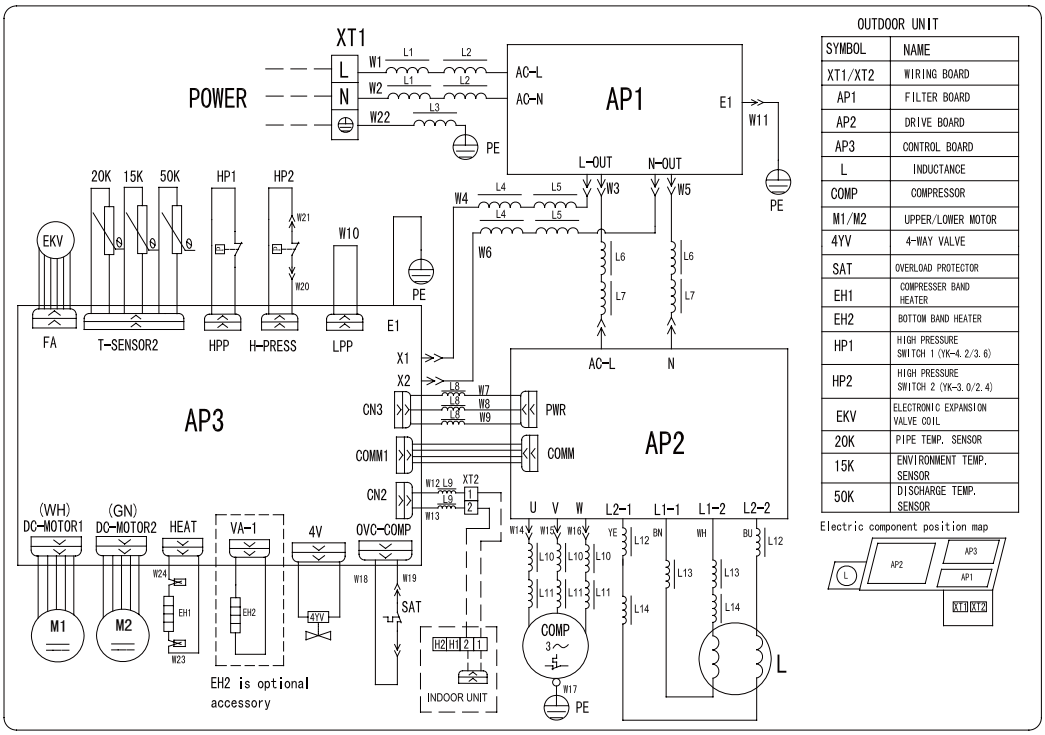

◆ Model: GUHD24NK3FO, GUHD30NK3FO



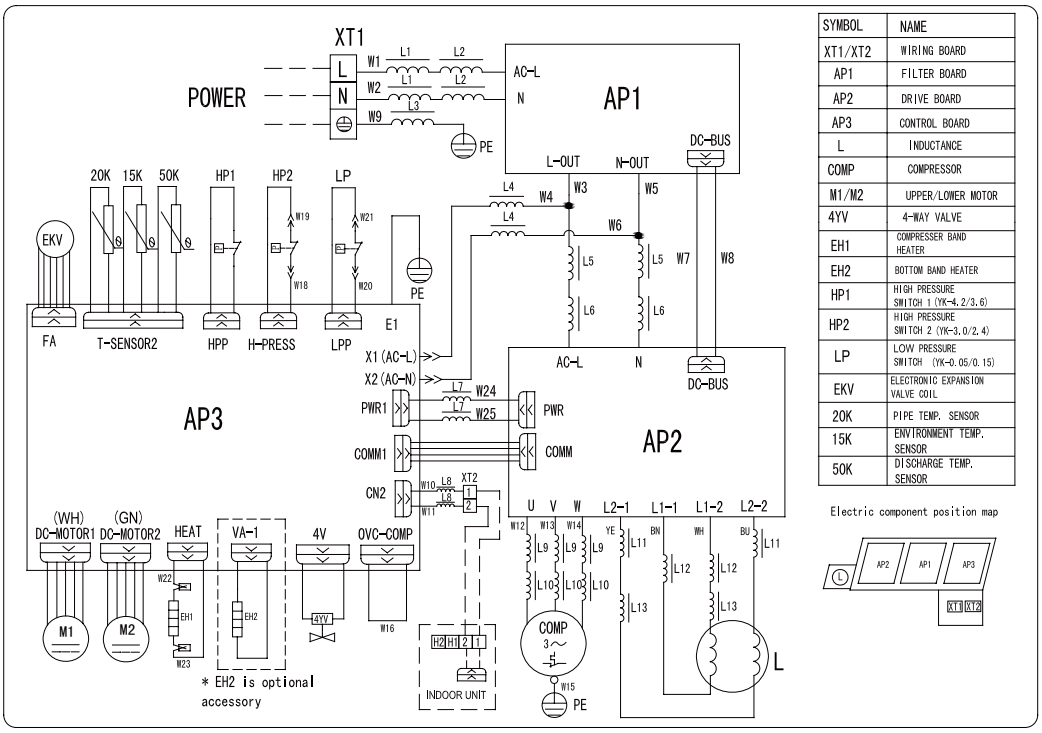
◆ Model: GUHD36NK3FO




◆ Model: GUHD42NK3FO



◆ Model: GUHD48NK3FO



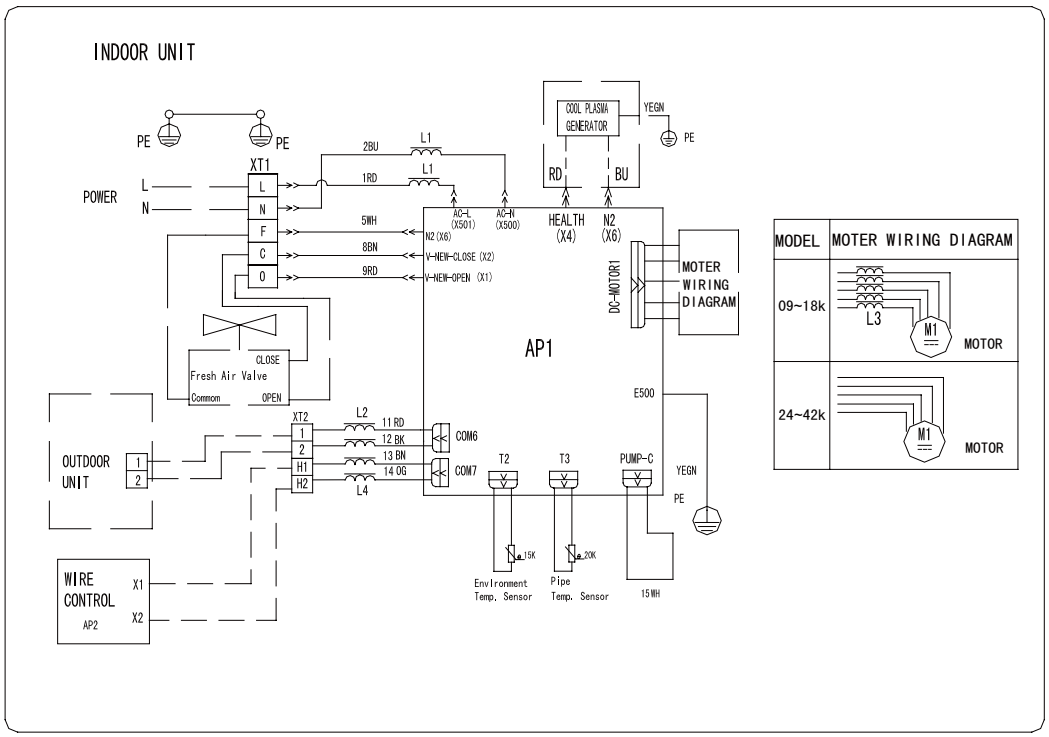

| SYMBOL | NAME |
|---|---|
| XT1/XT2 | WIRING BOARD |
| AP1 | FILTER BOARD |
| AP2 | DRIVE BOARD |
| AP3 | CONTROL BOARD |
| L | INDUCTANCE |
| COMP | COMPRESSOR |
| M1/M2 | UPPER/LOWER MOTOR |
| 4YV | 4-WAY VALVE |
| EH1 | COMPRESSER BAND HEATER |
| EH2 | BOTTOM BAND HEATER |
| HP1 | HIGH PRESSURE SWITCH 1 (YK-4.2/3.6) |
| HP2 | HIGH PRESSURE SWITCH 2 (YK-3.0/2.4) |
| LP | LOW PRESSURE SWITCH (YK-0.05/0.15) |
| EKV | ELECTRONIC EXPANSION VALVE COIL |
| 20K | PIPE TEMP. SENSOR |
| 15K | ENVIRONMENT TEMP. SENSOR |
| 50K | DISCHARGE TEMP. SENSOR |

## 3.2 Indoor unit

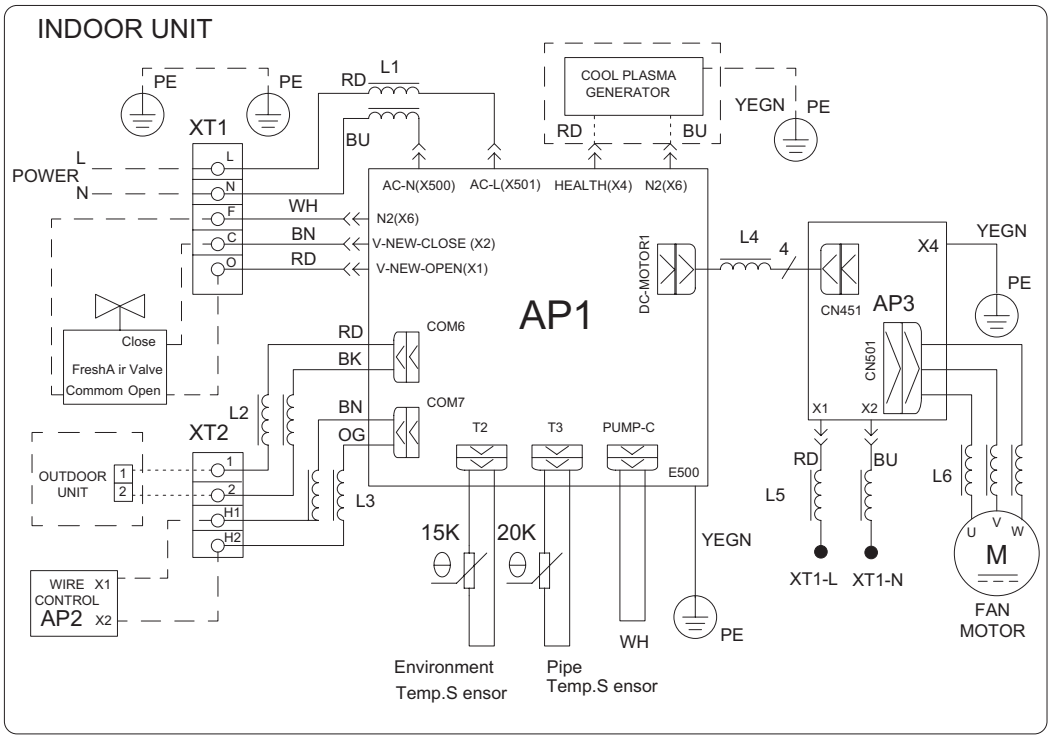
The actual wiring should always refer to the wiring diagram of the unit.

3.2.1 Duct Type

◆ Model: GFH09K3FI, GFH12K3FI, GFH18K3FI, GFH24K3FI, GFH30K3FI, GFH36K3FI, GFH42K3FI

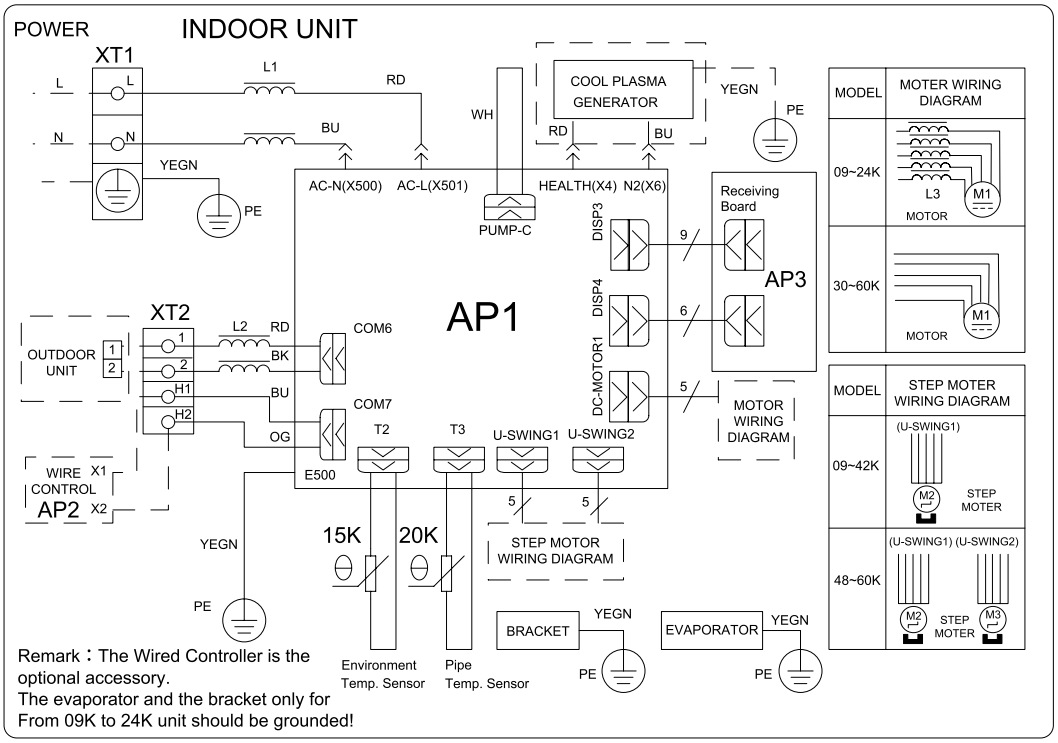


◆ Model: GFH48K3FI



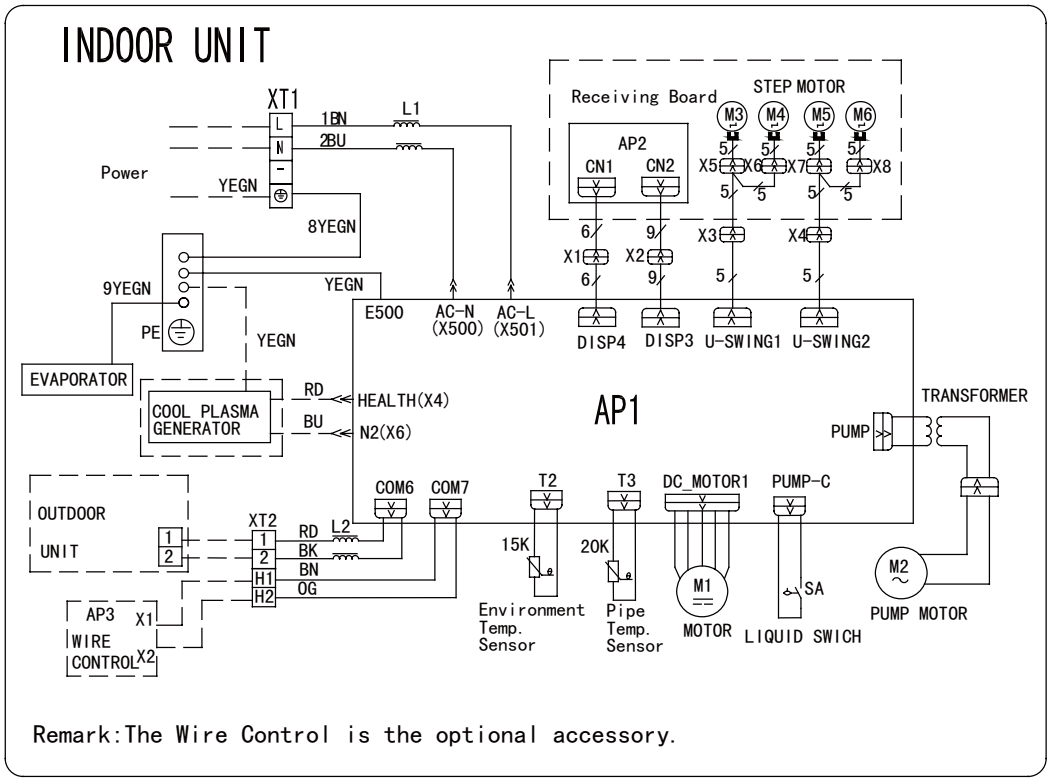

3.2.2 Floor Ceiling Type

◆ Model: GTH09K3FI, GTH12K3FI, GTH18K3FI, GTH24K3FI, GTH30K3FI, GTH36K3FI, GTH42K3FI, GTH48K3FI



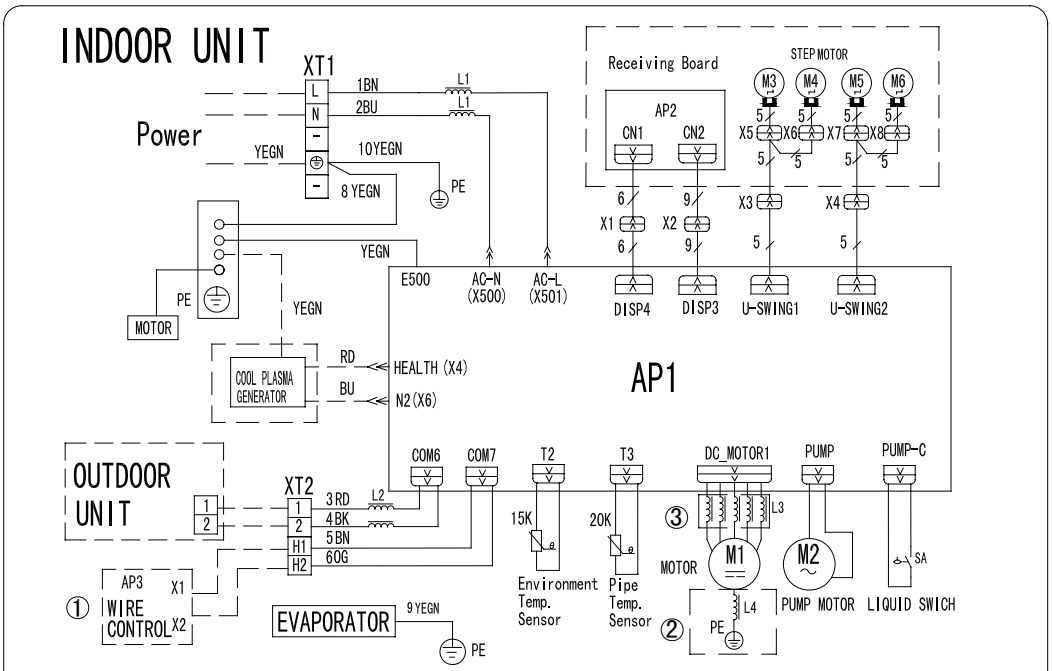
3.2.3 Cassette Type

◆ Model: GKH12K3FI, GKH18K3FI



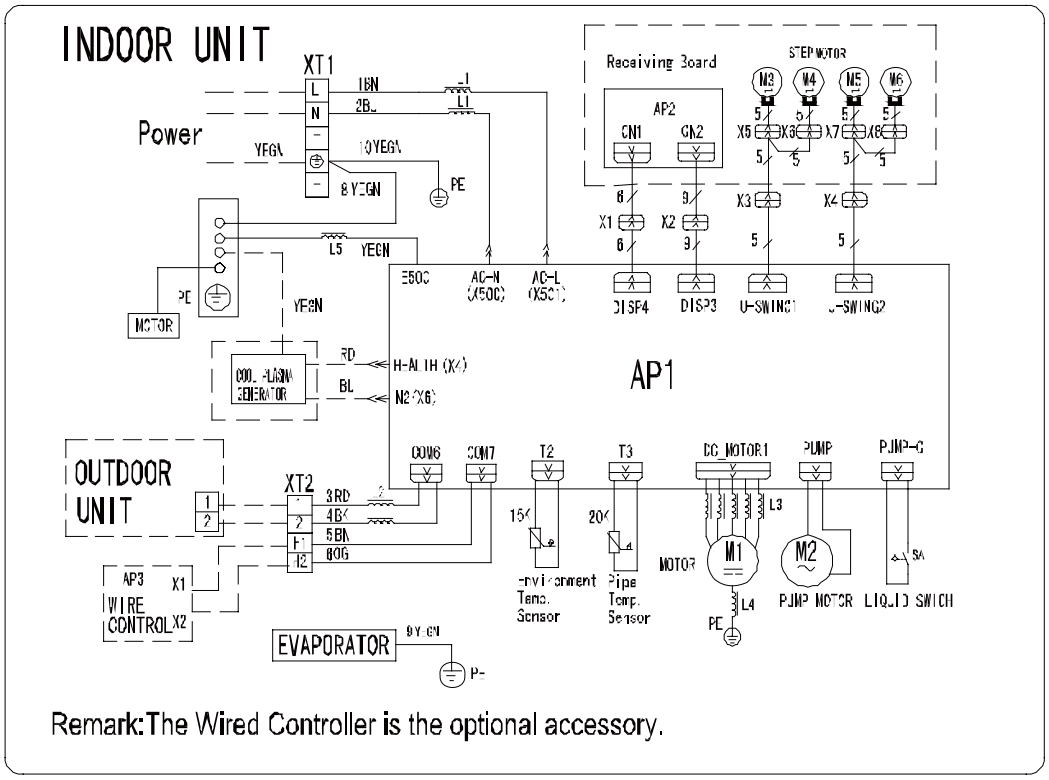

Remark:The Wire Control is the optional accessory.

◆ Model: GKH24K3FI, GKH30K3FI



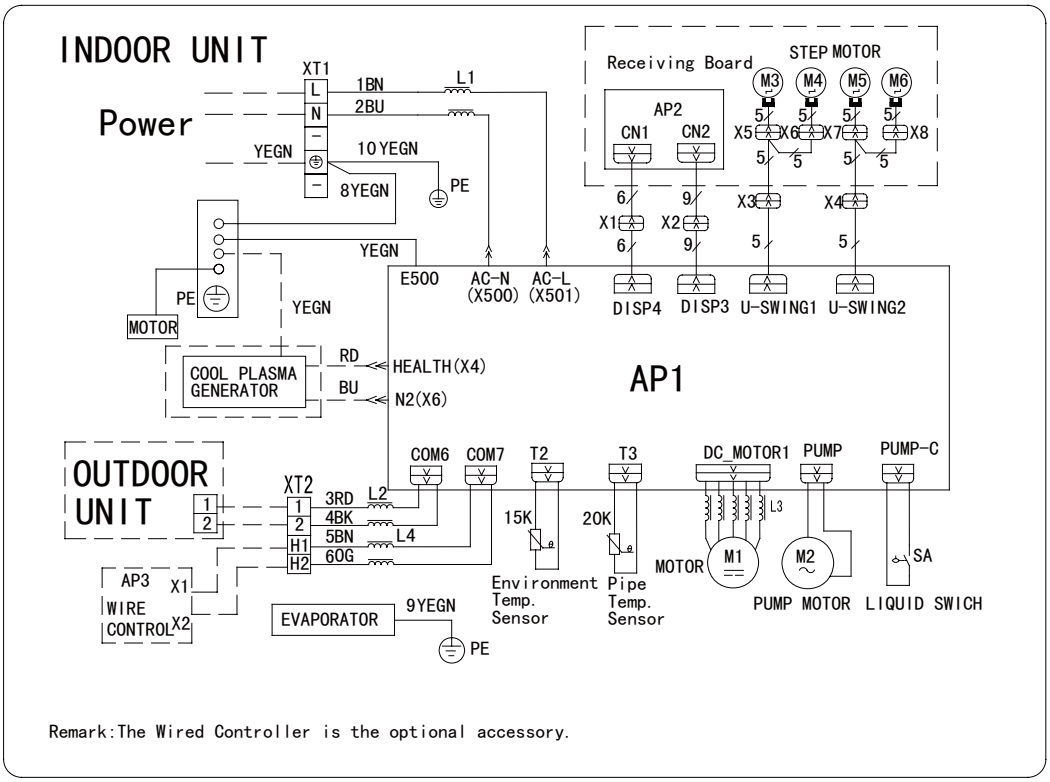

① Remark:The Wired Controller is the optional accessory.
② The motor equipped with the earth line should be grounded well.
③ The motors terminal of the 30~42K units should go through a magnetic loop.

◆ Model: GKH36K3FI, GKH42K3FI




Remark:The Wired Controller is the optional accessory.

◆ Model: GKH48K3FI




Remark:The Wired Controller is the optional accessory.