



# OMEGA VRF

TECHNOLOGY

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# Modular VRF Trouble Shooting

# VRF Error Table

<b>Definitions of malfunction</b>	<b>Contents appearing</b>
The first time to switch on and there is no address	FE
Errors of phase sequence or fault of losing phase	E0
Communication failure of indoor and outdoor unit	E1
T1 sensor fault	E2
T2 sensor fault	E3
T2B sensor fault	E4
Malfunction of outdoor unit	E5
Testing fault of zero-crossing signal	E6
EEPROM malfunction	E7
Wind testing fault of PG electric motor	E8
Communication fault of wire controller	E9
Alarming fault of water level switch	EE
Model conflict	EF

# VRF Operating Parameters Table

## LED display:

LED running indicators shine slowly when it is electrified and reset. All of them will go out when it is on standby, while starting up, they will light up. When it is a

nti-cold or defrost, the preheating light /defrost light will turn on. If timing function is turned on, timing light will light up. When it encounters fault, it manifests the following contents:

Definitions of malfunction	Contents appearing
The first time to switch on and there is no address	LED timing light and running light shine slowly at the same time.
Communication failure of indoor and outdoor unit	LED timing light shines quickly
Fault of indoor temperature sensor	LED running shines quickly
Alarming fault of water level	LED alarming light shines quickly
Mode impact fault	LED defrost light shines quickly
Outdoor unit fault	LED alarming light shines slowly
EEPROM malfunction	LED defrost light shines slowly

It shines slowly with a cycle of 2 seconds and quickly with a cycle of 0.4 second

## **FE: No address when indoor unit first time power on**

**Reason:** There is no communication with the indoor unit when the outdoor unit is power on

### **Solution :**

1. Confirm whether the indoor unit communication wire for PQE terminal is connected properly ( Main board → Terminal block → communication wire ) , If there is no problem with the communication wire, proceed to the next step ;
2. Check if the address of the indoor unit is repeated , Use the controller to set the address of the indoor unit, then power on the outdoor unit again. If the indoor unit still reports FE, replace the main board

## E1: Communication error between indoor and outdoor units

**Reason :** Communication between indoor and outdoor units is interrupted ( The address of the indoor unit has been set )

### Solution :

1. Confirm whether the indoor unit communication wire for PQE terminal is connected properly ( Main board → Terminal block → communication wire ) , If there is no problem with the communication wire, proceed to the next step ;
2. Check whether the address of the indoor unit is repeated, if the address is repeated, set a new address to ensure that there is no repeated;
3. If the address is not repeated, if it still shows E1, check whether the communication wire is broken or short-circuited/ is open-circuit. Use a multimeter to measure the resistance between PQ to check whether there is a short-circuit; if there is no short-circuit, then measure whether it is open-circuit from the PQ terminal of the outdoor unit;
4. If it is confirmed that there is no open circuit/short circuit, it may be communication interference. Connect a 100Ω resistor between the PQ of the last indoor unit of system. If it still cannot be solved, check the interference source and eliminate it. If it still does not solve it, replace the main board.

# VRF Trouble Shooting

## E5: Outdoor unit error

**Reason:** Outdoor unit is showing error

**Solution :**

1. Please refer to outdoor unit error and troubleshooting

## E7: EEPROM error

**Reason:** Indoor unit main board failure

**Solution :**

1. Replace the Indoor unit main board

## E6: Testing fault of zero-crossing signal

**Reason:** Indoor unit main board failure

**Solution :**

1. Replace the Indoor unit main board

## E8: Wind testing fault of PG motor

**Reason:** The PG motor failure

**Solution :**

1. Check the motor connect terminal in the Indoor unit main board

## E9: Communication fault of wire controller

**Reason:** The communication between the wire controller and the main board is interrupted

### **Solution :**

1. Check whether the communication wire of the wire controller is firmly connected, confirm that the communication wire is not damaged, open/short-circuited, and reconnect it firmly;
2. replace the wire controller, if it can't be solved, replace the main board;



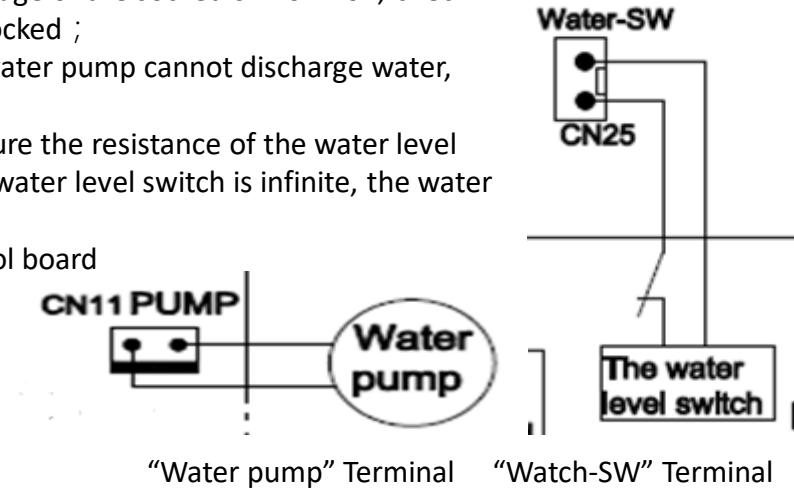
# VRF Trouble Shooting

## EE: Water level alarm error

**Reason:** Water level switch failure

### Solution :

1. Check whether the water level switch is firmly connected, and confirm that the connection is secure;;
2. Check whether the power socket of the water pump is normal, and the voltage of the socket is 220-240V; check whether the drain port of the water pump is abnormal and whether it is blocked ;
3. If the power socket and drain port of the water pump are normal and the water pump cannot discharge water, replace the water pump ;
4. Check whether the water level switch is normal. Use a multimeter to measure the resistance of the water level switch. If the water pump is in working condition and the resistance of the water level switch is infinite, the water level switch is damaged ,release the switch.
5. If the water level switch and water pump is normal, replace the main control board



# VRF Trouble Shooting



## **EF: Mode conflict**

**Reason:** In the same system, part of the indoor unit running cooling mode and part of the indoor unit run in heating mode

## **Solution :**

1. Change the mode of the indoor unit showed EF, otherwise replace the main control board

# VRF Error Table

## Fault or protect definition

Code	Fault or protect definition	XH9	3 times P9 protection in 30 minutes
E0	Outdoor communication failures	P0	Reserve
E1	Sequence fault	P1	High pressure protection
E2	Indoor and host communication failures	P2	Low pressure protection
E3	Exhaust temperature sensor fault	XP3	INV over AC current protection
E4	Environmental temperature sensor T4 fault	P4	Exhaust temperature is too high to protect
E5	T6A Plate heat exchanger inlet sensor fault	P5	Condensate T3 high temperature protection
E6	T3 Condensate temperature sensor fault	XP6	IPM module protection
E7	T6B Plate heat exchanger outlet sensor fault	P7	The lack of the degree of superheat
E8	Outdoor address fault	XPA	Temperature sensor T8 is too high to protect
E9	AC voltage protection	XP9	DC fan module protection
EA	Refrigerant cooling copper tube temperature sensor fault	XL0	DC compressor module fault
XH0	Communication failures between module board and main control board	XL1	DC low voltage protection
H1	Communication failures between main chip and slave chip of the main control board	XL2	DC high voltage protection
H2	The decrease in the number of outdoor failures	XL4	MCE fault/synchronous/closed loop
H3	The increase in the number of outdoor failures	XL5	Zero speed protection
XH4	3 times P6 protection in 60 minutes	XL7	Phase sequence error protection
H5	3 times P2 protection in 60 minutes	XL8	A moment before and after the speed change > 15 Hz
H6	3 times P4 protection in 100 minutes	XL9	Set speed and the actual speed difference > 15 Hz
H7	The decrease in the number of indoor failures	PA----	Need to enter password prompt for password
H8	Pressure sensor fault	XP8	Drive type mismatch
XH9	3 times P9 protection in 30 minutes	XH9	3 times P9 protection in 30 minutes

# VRF Operating Parameters Table

## LED display in check procedures

No.	Display	Reference values	No.	Display	Reference values
	Current frequency (indoor unit quantity when unit in standby mode)				
1	This outdoor unit address	0, 1, 2, 3	35	Secondary side current of inverter compressor B	Actual value (A)
2	This outdoor unit capacity address	0-F: The corresponding number of outdoor units is shown in the table on the nameplate of the outdoor unit	36	AC voltage	Actual value (A)
3	Number of online outdoor units	Available for master unit only	37	DC bus line voltage of compressor A	Actual value = Display value * 4(V)
4	Total capacity of outdoor units	When paralleling, available for master unit only	38	DC bus line voltage of compressor B	Actual value = Display value * 4(V)
5	Number of outdoor units in operation	Master display only	39	Priority mode	0: Auto priority 1: Heating priority 2: Cooling priority 3: Heating only 4: Cooling only 5: VIP priority and auto priority
6	Total HP of outdoor units in operation	Master-slave display			
7	Maximum online indoor units quantities	The maximum total number of indoor units used to communicate with outdoor units	40	Silence mode	0: Standard mode; 1: Silence mode 1 ; 2: Silence mode 2 ; 3: Silence mode 3 ; 4: Night silence mode
8	Current online indoor units quantities	Current total number of indoor units communicating with outdoor units			
9	Quantities of indoor units in operation	Current total number of indoor units with cooling or heating mode	41	Static pressure mode	0: Standard mode; 1: Low pressure ; 2: Medium pressure; 3: High pressure; 4: Super high pressure
10	Running mode	0: Off or fan only 2: Cooling only 3: Heating only 4: Forced cooling 5: Forced heating	42	VIP indoor unit address	
11	Total capacity demand of indoor units	Available for master unit only	43	Refrigerant status	0: Normal 1: Excessive refrigerant 2: Serious excessive refrigerant 11: Lack of refrigerant 12: Lack of much refrigerant 13: Lack of too much refrigerant
12	Amended capacity demand for the master unit	Available for master unit only	44	T2B condition A	Factory default 8, setting range: 5-15
13	Output capacity of outdoor unit	Actual output HP	45	T2 condition B	Factory default 44, setting range: 40-50
14	Low pressure value	Actual value = Display value * 0.01 (Mpa)	46	Energy saving value	Factory default 100%, setting range: 100%-40%
15	High pressure value	Actual value = Display value * 0.1 (Mpa)	47	Maximum defrost time	Factory default 10 minutes, setting range: 5-20 minutes
16	Fan speed range	0-36	48	Defrosting T3 temperature exit condition	Factory default 15°C, setting range: 10-18°C
17	Average temperature of evaporators T2/T2B	Actual value (°C)	49	Allowed offline time of indoor unit	Factory default 60 minutes, can be set as 60,120,180,240,480
18	Temperature of condenser outlet T3	Actual value (°C)	50	Number of allowed offline indoor units	Factory default 2, setting range: 0-6
19	Ambient temperature T4	Actual value (°C)	51	Reserve	Reserve
20	Temperature sensor T5	Reserve	52	T2B correction plus or minus	0: No correction 4: Unit number correction (No T2B average correction) 5: Number of units + T2B average correction * 3 6: Number of units * T2B
21	Inlet temperature (T6A) of plate heat exchanger	Actual value (°C)	53	Reserve	Reserve
22	Outlet temperature (T6B) of plate heat exchanger	Actual value (°C)	54	Reserve	Reserve
23	Discharge temperature of inverter compressor A	Actual value (°C)	55	Compressor A drive code	
24	Discharge temperature of inverter compressor B	Actual value (°C)	56	Compressor B drive code	
25	Temperature sensor T8	Refrigerant cooling copper tube temperature	57	Frequency limitation of inverter compressor A	0: Unlimited frequency 1: T4 frequency limiting 2: Pressure frequency limiting 3: Voltage frequency limiting 4: Exhaust frequency limiting 5: Current frequency limiting 6: P6 frequency limiting 7: Module temperature limiting
26	Temperature of IPM A	Actual value (°C), Internal temperature of IPM	58	Frequency limitation of inverter compressor B	0: Unlimited frequency 1: T4 frequency limiting 2: Pressure frequency limiting 3: Voltage frequency limiting 4: Exhaust frequency limiting 5: Current frequency limiting 6: P6 frequency limiting 7: Module temperature limiting
27	Temperature of IPM B	Actual value (°C), Internal temperature of IPM	59	Reserve	Reserve
28	Superheat degree of compressor	Actual value (°C)	60	Last time error fault or protection code	No protection or fault display 00
29	Opening degree of EXV A	5-24HP: Actual value = Display value * 8 26-32HP: Actual value = Display value * 8 * 6			
30	Opening degree of EXV C	Actual value = Display value * 8			
31	Auxiliary valve adjustment interval	0-OFF; 1-Minimum opening; 2-Automatic adjustment			
32	Current of inverter compressor A	Actual value (A)			
33	Current of inverter compressor B	Actual value (A)			
34	Secondary side current of inverter compressor A	Actual value (A)			

## **E0: Outdoor unit communication error**

**Reason:** The communication between the slave unit and the master unit is lost, and the slave show error.

### **Solution:**

1. Check whether the connection wire between the main board of the master and slave unit to the communication terminal is normal and whether the connection is firm ;
2. Check whether the communication wire H1H2E of the master and slave unit is connected correctly, connect the corresponding letters hand in hand, use a multimeter to measure whether the communication wire is open current/short current;
3. If there is no problem with the above steps, replace the communication board or main control board

## E1: Phase sequence malfunction

**Reason:** the phase sequence of the power supply is error ( phase B is missing will show E1. If phase A is missing , the main control board is out of power, If phase C is missing, the fan module is out of power )

### Solution:

1. Use a multimeter to measure the phase voltage, whether it is between 220-240V, to ensure that there is no lack of phase ;
2. Check whether the power supply of the filter board is normal, the line voltage is 380V, if it is not normal, replace the filter board ;
3. The above steps are normal, replace the main control board ;

# VRF Trouble Shooting

## E2: Communication failure between indoor unit and outdoor unit ;

**Reason :** Communication failure between indoor unit and outdoor unit (This troubleshooting is the same as E1 faults of indoor unit)

### **Solution :**

1. Check whether the communication wire between the communication board and the main control board is normal, confirm that the wiring is firm and the wiring harness is not damaged, then proceed to the next step ;
2. Check whether the communication wire PQE uses 2-core shielded wire and connect it correctly. Star connection is forbidden. It must be P to P, Q to Q, E to E ;
3. Check whether there is an open circuit/short circuit in the communication wire. Use a multimeter to measure the resistance between PQ to see if there is a short circuit; if there is no short circuit, short circuit PQ, and measure whether there is open circuit from the PQ terminal of outdoor unit;
4. Confirm that there is no problem with the communication wire, then check whether all the indoor unit are powered on, whether the indoor unit have addresses, make sure that the indoor unit are powered on and have addresses, if there is no address, please refer to the internal machine FE troubleshooting ;
5. If there is no problem with the above steps, it may be communication interference. Connect a 100Ω resistance between the PQ of the last indoor unit of system. If it still cannot be solved, check the interference source and eliminate it. If it still does not solve the problem, replace the communication board/main board ;

**E3/E4/E5/E6/E7/EA:** Exhaust gas temperature sensor TP/ambient temperature sensor T4/plate exchange inlet T6A sensor/condenser temperature T3 sensor/plate exchange outlet T6B sensor failure/refrigerant heat dissipation copper pipe sensor T8

**Reason:** Sensor reading error or sensor is damaged

**Solution:**

1. Confirm whether the sensor is firmly connected to the main board ,Check if the wire is damaged;
2. Unplug the sensor, measure the resistance of the sensor, whether it is open/short, if yes, replace the sensor group, otherwise replace the main board;



# VRF Trouble Shooting

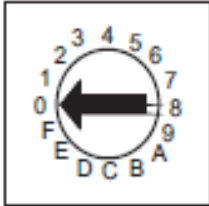
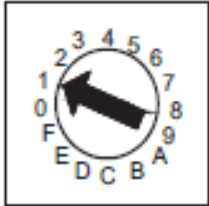
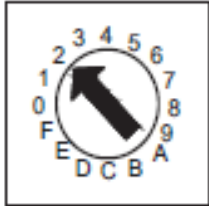
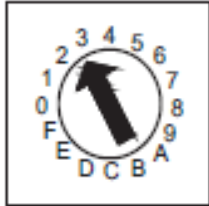
## E8: Outdoor unit address error

**Reason:** Outdoor unit address dialing error

### Solution:

1. Check the dialing codes of the master and slave unit, perform the dialing according to the SW6 dialing introduction, and power on again.

### SW6 Outdoor address setting

			
0	1	2	3
Master	Slave 1	Slave 2	Slave 3

# VRF Trouble Shooting



## **E9: AC voltage protection**

**Reason:** AC supply voltage problem

### **Solution:**

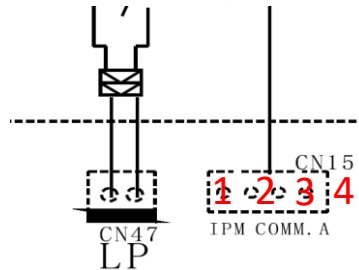
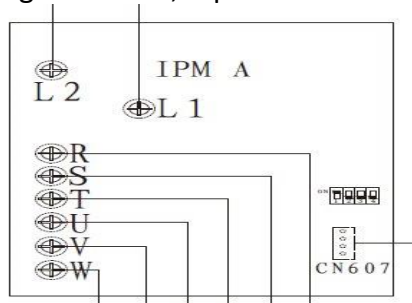
1. Use a multimeter to measure the voltage of the power supply phase to confirm the supply voltage (below 165V or higher than 265V)
2. If the power supply voltage is no problem, replace the main board ;

## XH0: Communication failure between main control board and IPM module board

**Reason:** Communication failure between main control board chip and module ( The values for X are 1 or 2, where 1H0 indicates a fault in module A and 2H0 indicates a fault in module B )

### Solution:

1. Use a multimeter to measure the RST voltage to confirm whether the voltage is 380V, if not, check the power supply voltage of the filter board, otherwise proceed to the next step ;
2. Check whether the connection wire of the module board and the main control board is open current/short current, confirm that it is normal and connect firmly ;
3. Check the IPM communication port on the mainboard, measure voltage V1 between 1-2, and voltage V2 between 1-3 . If V1 and V2 are both fluctuating or constant voltages, replace the main control board; if only one voltage of V1 and V2 fluctuates and the other voltage does not, replace the IPM board.



# VRF Trouble Shooting

## **H1: Communication error between master chip and slave chip**

**Reason:** The internal chip communication problem of the main control board

### **Solution:**

1. Replace the outdoor unit main board ;

# VRF Trouble Shooting

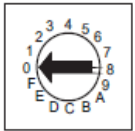
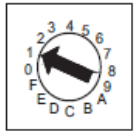
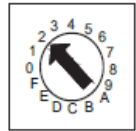
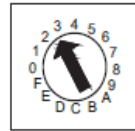
## H2: Outdoor units decrease

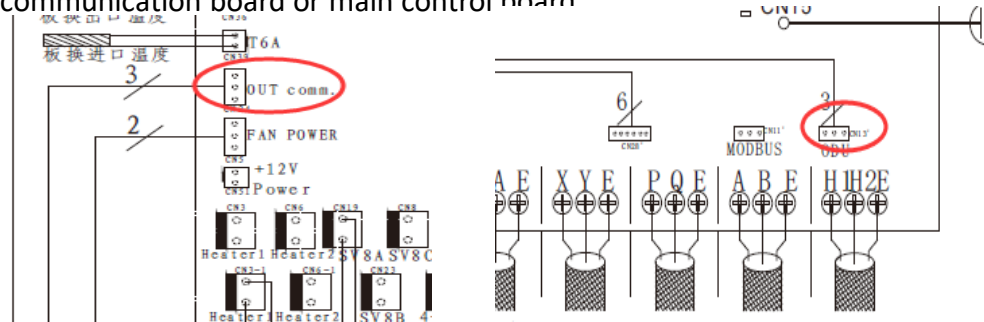
**Reason:** Slave unit communication lost on parallel system

### Solution:

1. Check if any slave unit is powered off, and confirm that all outdoor unit are powered on ;
2. Check whether the slave dialing code is wrong, refer to the introduction of SW6 dialing code, correct the dialing code and power on again ;
3. Check whether the connection wire from the main board to the communication terminal is normal and whether it is firmly connected ;
4. Check whether the slave communication wire H1H2E is connected correctly, hand in hand connection, use a multimeter to measure whether the communication wire is open current/short current ;
5. If there is no problem with the above steps, replace the communication board or main control board

SW6 Outdoor address setting

			
0	1	2	3
Master	Slave 1	Slave 2	Slave 3



## H3: Outdoor units increase

**Reason:** Master unit read slave unit quantity increase (usually caused by a slave unit delaying the master unit for too long to power on)

### **Solution:**

1. Check whether the number of master unit and slave unit is correct, and whether other system slave unit communication is incorrectly connected to this system ;
2. Confirm that the actual number of outdoor unit in the system is correct, then power on again ;

# VRF Trouble Shooting

**XH4: There are 3 times P6 protection in 60 minutes**

**Solution:** Refer to P6

**H5: There are 3 times P2 protection in 60 minutes**

**Solution:** Refer to P2

**H6: There are 3 times P4 protection in 100 minutes**

**Solution:** Refer to P4

**H7: Indoor unit quantities decreasing malfunction over 3 minutes**

**Reason:** Part of the indoor unit communication is lost

**Solution:**

1. Refer to the indoor unit error code FE&E1;

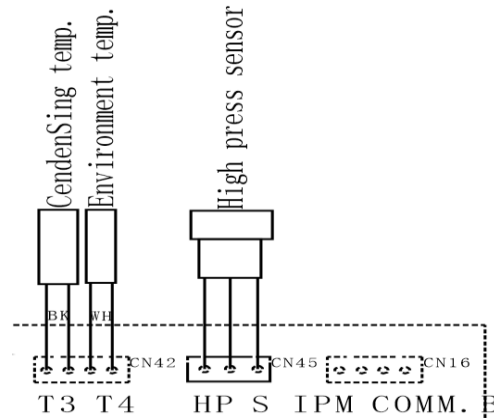
# VRF Trouble Shooting

## H8: Pressure sensor error

**Reason:** The main control board detects exhaust pressure < 0.3MPa

### Solution:

1. Check whether the pressure sensor is firmly connected, and confirm that the connection is secure ;
2. replace the pressure sensor/main control board





# VRF Trouble Shooting



**XH9: There are 3 times P9 protection in 30 minutes**

**Solution: Refer to P9**



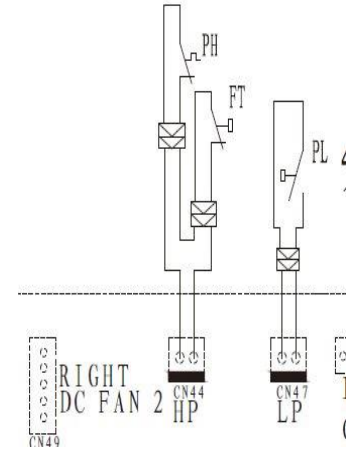
# VRF Trouble Shooting

## P1: High pressure protection

**Reason:** The open circuit state is detected at the high pressure switch detection port

### Solution:

1. Check whether the wiring of the high pressure switch is firm and confirm that the wiring is normal;
2. Check whether the condenser has poor heat exchange and ensure that there is no problem with heat dissipation ;
3. Check parameter item 23/24 exhaust temperature to see if it is less than 120°C, if yes, short-circuit the exhaust thermostat, if the fault disappears, replace the exhaust thermostat; if the exhaust is  $\geq 120^{\circ}\text{C}$ , refer to P4 fault; otherwise Go to the next step ;
4. Connect the pressure gauge, run the unit, check the high and low pressure, if the pressure is normal, remove the pressure switch to measure the resistance, if it is infinite, replace the pressure switch; if the pressure switch resistance is 0, replace the main board ;
5. Connecting the pressure gauge to test, if the pressure of the pressure gauge is too high, it is the system Reason, and it is necessary to troubleshoot problems such as system blockage, vacuum, and excessive refrigerant;



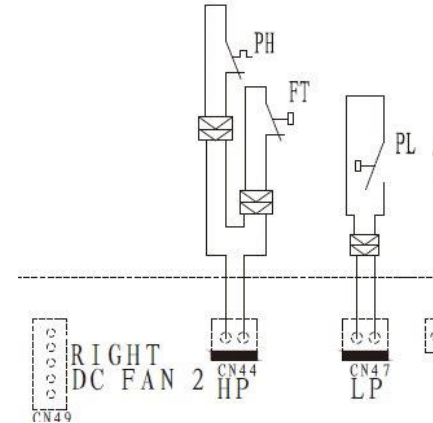
# VRF Trouble Shooting

## P2: Low pressure protection

**Reason:** The open circuit state is detected at the low pressure switch detection port

### Solution:

1. Check whether the wiring of the low pressure switch is firm and confirm that the wiring is normal ;
2. Check whether the evaporator has poor heat exchange and ensure that there is no problem with heat dissipation ;
3. Connect the pressure gauge, run the unit, check the high and low pressure, if the pressure is normal, remove the pressure switch to measure the resistance, if it is infinite, replace the pressure switch; if the pressure switch resistance is 0, replace the main board ;
4. Connecting the pressure gauge to test, if the pressure of the pressure gauge is too low, it is the system Reason, and it is necessary to troubleshoot problems such as system blockage, leakage, and lack refrigerant;



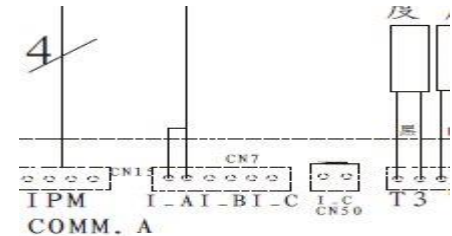
# VRF Trouble Shooting

## XP3: Inverter compressor over current protection

**Reason:** The main board detects that the operating current is too large

### Solution:

1. Check whether the wiring of the motor and compressor is tight and confirm that the wiring is normal;
2. Check whether the current transformer is firmly connected ;
3. Use the clamp meter to check the primary side AC current and the secondary side compressor DC current, and check items 32/33/34/35, compare the difference between the check value and the clamp meter, if the difference is large, it means there is a problem with the current transformer or the main control board. Try to use a normal transformer, if not resolved, replace the main control board ;
4. If the difference between the clamp meter and the check value is not large, check the compressor and pipe system.

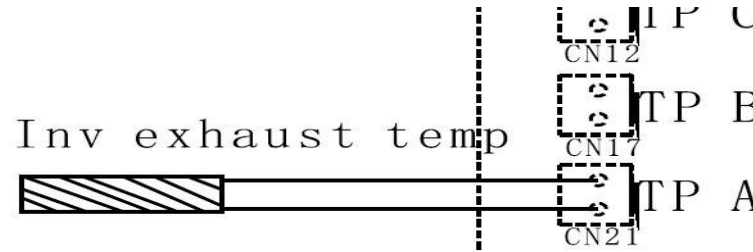
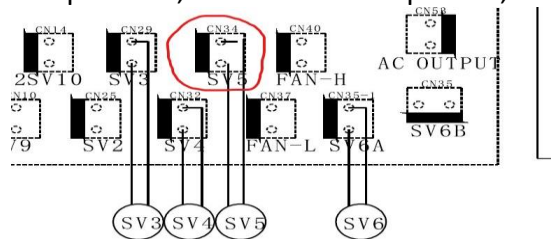


## P4: Discharge temperature sensor protection

**Reason:** Exhaust temperature sensor reads that the temperature is too high

### Solution:

1. Connect a pressure gauge to measure whether the low pressure is too low (normally 0.7-0.9MPa). If the pressure is too low, add refrigerant. At the same time, check whether the SV5 spray cooling valve on the main control board has output 220V before the failure. If there is no output, replace the main board. If there is a output valve but sv5 does not work, replace the SV5 coil ;
2. Measure the resistance of the temperature sensor, If it is inaccurate, replace the sensor ;
3. If the temperature sensor reading is accurate, check the exhaust temperature of item 11 and compare it. If the temperature of the main control board is inaccurate, replace the main control board ;
4. If the above steps are normal, check whether the refrigerant system is normal, such as blockage of the air return pipe, poor evaporation, wear of the compressor, etc. ;

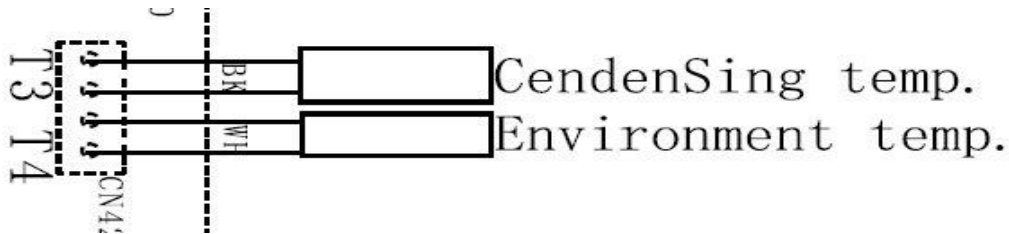


## P5: Heat exchanger high temperature protection

**Reason:** The condenser temperature sensor reads that the temperature is too high

### Solution:

1. Check whether the heat exchange of the condenser is normal, to ensure that there is no dirty block, poor return air, etc.;
2. Measure the resistance of the temperature sensor, If it is inaccurate, replace the sensor;
3. If the temperature sensor reading is accurate, Check the middle and outlet temperature of the condenser for items 8 & 9 and compare it, If the temperature of the main control board is unreasonable, replace the main control board.;
4. The above steps are all normal, check whether the system is normal, such as the indoor unit load is too large, or the vacuum problem ;



## XP6: IPM module protection

**Reason:** Compressor drive module abnormal

### **Solution:**

1. Check whether the power supply is normal, the power supply phase voltage is 220-240V, and confirm that the power supply is normal ;
2. Check whether the heat exchange of the condenser is normal, to ensure that there is no dirty blockage, poor return air, etc. ;
3. Measure the resistance between compressor UWV (normally within  $20\Omega$ ) and UVW resistance to ground (normally infinite, M $\Omega$  level), if the compressor resistance is abnormal, replace the compressor, otherwise proceed to the next step ;
4. Check whether the module heat dissipation silicone grease is applied evenly and normally, if abnormal, apply silicone grease again, otherwise proceed to the next step ;
5. The above steps are normal, then run the unit and observe whether the compressor is abnormal, such as abnormal noise, excessive current, etc., otherwise replace the compressor ;
6. Observe whether the system has poor heat dissipation or module overheating and overcurrent caused by mixing with air or other gas, otherwise replace the main control board ;

## **P7: Insufficient exhaust gas overheat protection**

**Reason:** Too much refrigerant in the system, liquid back in the compressor, problems with the refrigerant system

### **Solution:**

1. Check whether the exhaust temperature sensor, replace it if it is inaccurate, otherwise it is a refrigerant system problem ;
2. Connect the pressure gauge to check the high and low pressures, and check items 15/23/24 to see if there is too much refrigerant. If there is too much refrigerant, release the refrigerant ;
3. Check whether the indoor unit is poorly evaporated and other problems 。



# VRF Trouble Shooting

**XP8: The outdoor unit capacity dial code does not match the compressor drive model protection**

**Reason:** Dial code problem, fan module detection is abnormal

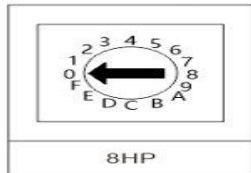
**Solution:**

1. Check whether the SW11 capability dialing code of the main control board is correct, correct it if it is incorrect ;
2. Check whether the dialing code of the IPM module board is correct, ;
3. After correcting the dialing code, power on again, if the problem is not resolved, replace the main control board .

DIP switch on IPM:

ON					8-18HP
ON					20-22HP
ON					24-32HP (IPM. A&B)

Sw11 setting for outdoor unit capacity:



Set	0	1	2	3	4	5	6	7	8	9
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	26HP
Set	A	B	C	D	E	F				
Capacity	28HP	30HP	32HP	Reserved	Reserved	Reserved				

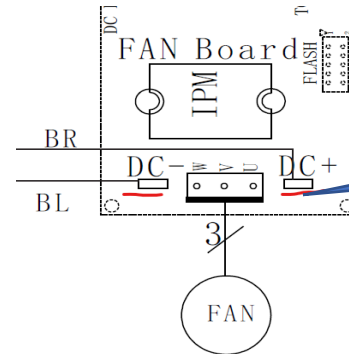
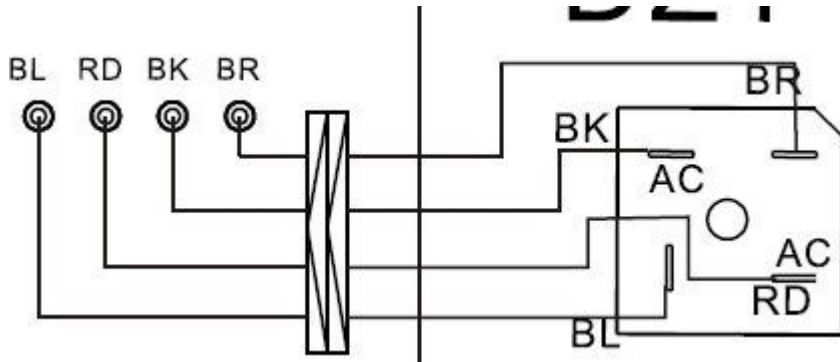
# VRF Trouble Shooting

## XP9: : DC fan module protection

**Reason:** Fan drive module abnormal

### Solution:

1. Check whether the power supply is normal, the power supply phase voltage is 220-240V, and confirm that the power supply is normal
2. Check whether the input voltage of the rectifier (point 1 and 3) is 220V, if not, replace the filter board;
3. Check whether the output of the rectifier (point 2 and 4) is 310V, otherwise replace the rectifier bridge, if yes, proceed to the next step
4. Check if the DC+/DC- of the fan module board is 310V, otherwise replace the filter board, if yes, proceed to the next step



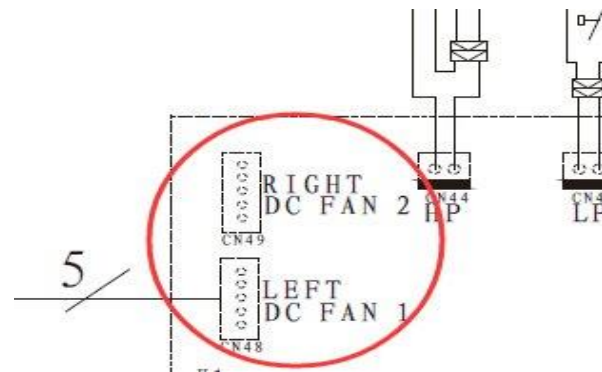
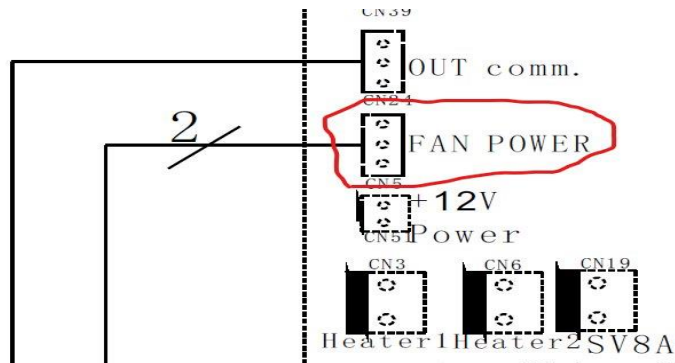
DC310V

# VRF Trouble Shooting

## XP9: DC fan module protection

### Solution:

5. Check whether the FAN POWER interface of the main control board is DC12V, otherwise replace the main control board, if yes proceed to the next step;
6. Check whether the communication wire between the main control board and the fan module is firmly connected, whether it is open/short current, otherwise replace the communication wire and proceed to the next step ;
7. The resistance between motor UVW is normally within  $20\Omega$ , and the resistance between UVW and ground is infinite。 Use a multimeter to measure the resistance, If the resistance is abnormal , replace the motor; ;

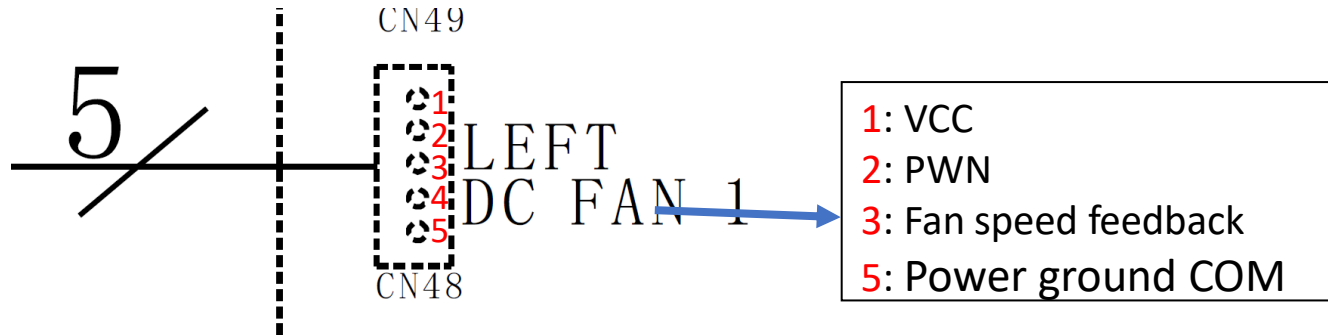


## XP9: DC fan module protection

**Reason:** Fan drive module abnormal

### Solution:

8. Measure if the voltage between 1 and 5 is DC5V. If yes, proceed to the next step. if not, replace the main control board;
9. Measure the voltage between 2 and 5. When the unit is turned off, the voltage is DC0V. When the unit is operated, the voltage is DC2.5V. If the voltage is abnormal, replace the main control board;
10. If the voltages of 1-5 and 2-5 are normal, replace the module board. If it still cannot be solved, replace the motor.



## **XPA: Module temperature sensor over-temperature protection**

**Reason:** IPM module board temperature is too high

### **Solution:**

1. Check whether the heat exchange of the condenser is normal, to ensure that there is no dirty block, short circuit of the return air, etc. ;
2. Check whether the module heat exchange silicone grease is applied evenly and normally, if it is abnormal, apply silicone grease again, otherwise proceed to the next step ;
3. Replace the IPM board. If the fault is still unresolved, proceed to the next step .
4. Drain all refrigerant, clean the system and Vacuum it, charge refrigerant, and be careful not to mix air or other gases with refrigerant



# OMEGA

## VRF

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