Summary of unit alarm messages

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General topics and troubleshooting

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Alarm code and description

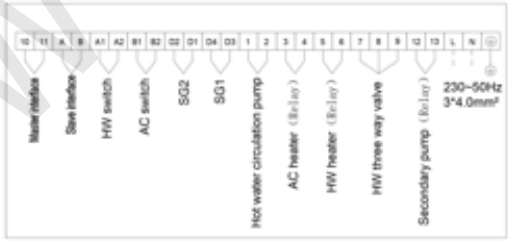
1) Communication connection failure (Code AL00)

This indicates a communication failure between the touchscreen and the heat pump main control board.

Typically manifested as:
- After power-on, the touchscreen displays "Loading" and cannot enter the normal page.
- During use, the touchscreen displays an AL00 alarm and cannot correctly set parameter data.

Possible causes:
- Incorrect wiring of the communication line between the touchscreen and the heat pump main control board, not connected to the correct communication slave port (A-B);
- The communication line between the touchscreen and the heat pump does not use standard shielded signal wire, resulting in signal interference;
- Error in the touchscreen program;
- Error in the heat pump main control board program, which can be resolved by re-downloading the program following the steps;

Solutions:
- Change the communication port wiring and connect to the correct communication slave port;
- Use standard shielded signal wire for the communication line between the touchscreen and the heat pump, and keep it away from high-voltage and high-current circuits;
- The touchscreen program can be re-downloaded following the steps;
- The heat pump main control board program can be re-downloaded following the steps;



Alarm code and description

1) Low-pressure protection alarm (Code AL01)

After the compressor starts, it checks the low pressure after an AR09 delay. If LPS (low-pressure sensor) ≤ AR31 for 120 seconds, the compressor is switched off. Five seconds later, the fan motor is switched off, and other parts remain in their original state. The alarm code AL01 is displayed on the touchscreen. After LPS ≥ AR31 + AR32 for 10 seconds, the unit returns to normal operation.

Typical manifestations:
- The touchscreen triggers a fault code prompt, which will automatically reset the alarm later and return to normal operation.

Possible causes:
1. Insufficient or leaking refrigerant;
2. Dirty blockage of the expansion valve;
3. Dirty or frosted fin evaporator;
4. Damage to the low-pressure sensor or signal failure;
5. Outdoor unit fan motor failure;
6. Compressor issues;

Solutions:
1. Check for refrigerant leaks and replenish the refrigerant;
2. Switch the cooling/heating mode to allow the refrigerant to flow in both directions, blowing out foreign objects; in severe cases, the electronic expansion valve needs to be replaced;
3. Clean the fin evaporator; manually defrost the unit and adjust the correct defrost temperature difference parameters (DF04);
4. Check whether the sensor data changes with the operation of the machine, or use a mechanical pressure gauge for value comparison;
5. Check whether the motor shaft is dirty, whether the motor is damaged, and whether the fan drive board is functioning normally (check the input and output voltage of the fan drive board);
6. Check the operating status of the compressor (whether there is abnormal vibration) and operating noise (whether there is abnormal noise); in severe cases, the compressor needs to be replaced.

Alarm code and description

1) High-pressure protection alarm (Code AL02)

The system does not trigger high-pressure protection during the defrosting process or within 10 seconds after the end of defrosting. At other times, if the high-pressure sensor (HPS) reading is greater than or equal to AR33 for 5 seconds, the compressor is switched off. After a 5-second delay, the fan motor is switched off, and other components remain in their original state. The alarm code AL02 is displayed on the touchscreen. After the HPS reading drops below AR33 - AR34, the unit returns to normal operation.

Typical manifestations:
- The touchscreen triggers a fault code prompt, which will automatically reset the alarm later and return to normal operation.

Possible causes:
1. Insufficient water flow in the system;
2. Fouling or blockage of the plate heat exchanger, or ice formation inside the pipes;
3. Damage to the high-pressure sensor or signal failure;
4. Excessive refrigerant or air mixed into the system;
5. Overly high outlet water temperature, causing the system pressure to rise;

Solutions:
1. Check whether the circulation pump is operating normally, the actual water volume in the system, the pipe emptying, and clean the water filter. When designing and installing the system, pay attention to the water resistance of the pipes;
2. Clean the water scale inside the pipes. Ensure normal power supply to the system to allow the heat pump to operate normally and prevent pipe freezing. Install anti-freeze valves on the pipes to reduce the risk of pipe freezing;
3. Check whether the sensor data changes with the operation of the machine, or use a mechanical pressure gauge for value comparison;
4. Charge the refrigerant according to the nameplate identification, ensuring that no air enters during the vacuuming and refrigerant addition process;
5. Check whether the hot water temperature sensor and return water temperature sensor have incorrect readings.

Alarm code and description

1）Indoor low outlet water protection alarm (Code AL03)

The system does not trigger high-pressure protection during the defrosting process or within 10 seconds after the end of defrosting. At other times, if the high-pressure sensor (HPS) reading is greater than or equal to AR33 for 5 seconds, the compressor is switched off. After a 5-second delay, the fan motor is switched off, and other components remain in their original state. The alarm code AL02 is displayed on the touchscreen. After the HPS reading drops below AR33 - AR34, the unit returns to normal operation.

Typical manifestations:
- The touchscreen triggers a fault code prompt, which will automatically reset the alarm later and return to normal operation.

Possible causes:
1. Insufficient water flow in the system;
2. Fouling or blockage of the plate heat exchanger, or ice formation inside the pipes;
3. Damage to the high-pressure sensor or signal failure;
4. Excessive refrigerant or air mixed into the system;
5. Overly high outlet water temperature, causing the system pressure to rise;

Solutions:
1. Check whether the circulation pump is operating normally, the actual water volume in the system, the pipe emptying, and clean the water filter. When designing and installing the system, pay attention to the water resistance of the pipes;
2. Clean the water scale inside the pipes. Ensure normal power supply to the system to allow the heat pump to operate normally and prevent pipe freezing. Install anti-freeze valves on the pipes to reduce the risk of pipe freezing;
3. Check whether the sensor data changes with the operation of the machine, or use a mechanical pressure gauge for value comparison;
4. Charge the refrigerant according to the nameplate identification, ensuring that no air enters during the vacuuming and refrigerant addition process;
5. Check whether the hot water temperature sensor and return water temperature sensor have incorrect readings.

Alarm code and description

1）Indoor high outlet water protection alarm (Code AL05)

The system does not trigger high-pressure protection during the defrosting process or within 10 seconds after the end of defrosting. At other times, if the high-pressure sensor (HPS) reading is greater than or equal to AR33 for 5 seconds, the compressor is switched off. After a 5-second delay, the fan motor is switched off, and other components remain in their original state. The alarm code AL02 is displayed on the touchscreen. After the HPS reading drops below AR33 - AR34, the unit returns to normal operation.

Typical manifestations:
- The touchscreen triggers a fault code prompt, which will automatically reset the alarm later and return to normal operation.

Possible causes:
1. Insufficient water flow in the system;
2. Fouling or blockage of the plate heat exchanger, or ice formation inside the pipes;
3. Damage to the high-pressure sensor or signal failure;
4. Excessive refrigerant or air mixed into the system;
5. Overly high outlet water temperature, causing the system pressure to rise;

Solutions:
1. Check whether the circulation pump is operating normally, the actual water volume in the system, the pipe emptying, and clean the water filter. When designing and installing the system, pay attention to the water resistance of the pipes;
2. Clean the water scale inside the pipes. Ensure normal power supply to the system to allow the heat pump to operate normally and prevent pipe freezing. Install anti-freeze valves on the pipes to reduce the risk of pipe freezing;
3. Check whether the sensor data changes with the operation of the machine, or use a mechanical pressure gauge for value comparison;
4. Charge the refrigerant according to the nameplate identification, ensuring that no air enters during the vacuuming and refrigerant addition process;
5. Check whether the hot water temperature sensor and return water temperature sensor have incorrect readings.

Alarm code and description

1）Water flow protection alarm (Code AL17)

A.) After the circulation pump is switched on, there is an AR04 time delay. If the pump flow feedback is lower than the minimum flow rate EV07 (cooling/defrosting) or EV25 (heating) *0.8 for 5 seconds, and the circulation pump PWM output is 100% for 5 seconds, the AL17 alarm is triggered.

B.) During the running process, if the pump PWM output is 100%, and the pump flow feedback is lower than EV07 (cooling/defrosting) or EV25 (heating) *0.8 for 5 seconds, the AL17 alarm is triggered. The compressor is switched off, and 5 seconds later, the fan motor is switched off. Other parts remain in their original state. The alarm code AL17 is displayed on the touchscreen. The unit can return to normal operation if the pump flow feedback is over EV06/EV25 for 5 seconds.

Typical manifestations:
- The touchscreen triggers a fault code prompt, indicating water flow protection, and the heat pump stops operating.

Possible causes:
1. Abnormal pump operation;
2. Waterway blockage or valve malfunction;
3. Insufficient water volume in the system or leakage;
4. Air accumulation in the pipeline;
5. Design and installation issues;

Solutions:
1. Check whether the circulation pump is operating normally and whether the pump flow feedback signal is normal. Replace the circulation pump if necessary.
2. Check the filter for dirt blockage and installation direction, and ensure all pipeline valves are fully open.
3. Check whether the system water replenishment is normal and whether there are any leaks in the pipeline.
4. Air vent the system, check the installation position of the air valve, and it is easier to vent air at the highest point of the pipeline.
5. Check whether the main pipe diameter selection of the system is reasonable and whether the water resistance of the pipeline is too high.

Alarm code and description

1）24-hour low-pressure protection limit exceeded alarm (Code AL18)

Within a 24-hour period, if AL01 is triggered more than AR06 times, a manual reset alarm AL18 is triggered. Then the compressor is switched off, and 5 seconds later, the fan motor is switched off. Other parts remain in their original state. The alarm code AL18 is displayed on the touchscreen.

Typical manifestations:
- The touchscreen triggers a fault code prompt, indicating that this fault will lock the unit and prevent it from operating normally.

Cause:
- The number of low-pressure alarms in the system exceeds the limit.

Solutions:
- Reset the fault by pressing the button.
- Handle it according to the situation of the system's low-pressure protection alarm.

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Alarm code and description

1）24-hour high-pressure protection limit exceeded alarm (Code AL19)

In a 24-hour period, if AL02 is triggered more than AR07 times, a manual reset alarm AL19 is triggered. The compressor is switched off, and 5 seconds later, the fan motor is switched off. Other parts remain in their original state. The alarm code AL19 is displayed on the touchscreen.

Typical manifestations:
- The touchscreen triggers a fault code prompt, indicating that this fault will lock the unit and prevent it from operating normally.

Cause:
- The number of high-pressure alarms in the system exceeds the limit.

Solutions:
- Reset the fault by pressing the button.
- Handle it according to the situation of the system's high-pressure protection alarm.

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Alarm code and description

1）Low evaporation temperature protection alarm (Code AL20)

The protection function is valid in COOLING mode. AL20 low evaporation temperature protection is triggered when any of the following conditions are met:

1.) LPS ≤ AR08 for 60 seconds continuously;

2.) LPS ≤ AR08 - 2 for 40 seconds continuously;

3.) LPS ≤ AR08 - 4 for 10 seconds continuously;

4.) Outlet water temperature < 8℃

The compressor is switched off, and 5 seconds later, the fan motor is switched off. Other parts remain in their original state. The alarm code AL20 is displayed on the touchscreen. It will recover to normal operation 5 minutes later.

Typical manifestations:
- The evaporator surface may be covered with obvious frost or ice layer;
- The heating efficiency of the unit decreases, and its capacity drops;
- The low-pressure gauge shows pressure continuously below 0.1 MPa;
- The compressor working current is low, and there may be abnormal noise or frequent start-stop cycles;

Causes:
1. Refrigerant leakage or insufficient refrigerant charge;
2. Dirty blockage of the fin evaporator; poor ventilation of the fin evaporator; unreasonable installation location;
3. Expansion valve blockage;
4. Insufficient water flow in the system;
5. Low-pressure sensor damage;

Alarm code and description

1）Low evaporation temperature protection alarm (Code AL20)

Solutions:
1. Check for any leaks in the refrigerant circuit inside the machine; re-evacuate and charge the refrigerant according to the nameplate identification;
2. Inspect the appearance of the fin evaporator and clean any dirt. Move the unit to a reasonable installation location;
3. Switch the cooling/heating mode to allow the refrigerant to flow in both directions and blow out any foreign objects; in severe cases, replace the electronic expansion valve;
4. Check the system water flow issue, and handle it in the same way as the AL17 alarm;
5. Check whether the low-pressure sensor data changes with the operation of the machine, or use a mechanical pressure gauge for value comparison;

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Alarm code and description

1）High exhaust temperature protection alarm (Code AL21)

If the discharge gas temperature (PT) exceeds AR13 for 5 seconds continuously, the high exhaust gas temperature protection alarm AL21 is triggered. The compressor is switched off, and 5 seconds later, the fan motor is switched off. Other parts remain in their original state. The alarm code AL21 is displayed on the touchscreen. It will recover to normal operation if PT is below AR13 - AR14 for 5 seconds continuously.

Typical manifestations:
- The surface temperature of the exhaust pipe rises significantly, which may be accompanied by metal expansion and abnormal noise;
- The compressor housing temperature is too high;
- The high-pressure side pressure (condensing pressure) may be normal or high, but the low-pressure side pressure (evaporating pressure) is low or fluctuates;
- The compressor operating current may be high (due to increased load) or fluctuate abnormally;
- The heating capacity decreases;
- The system starts and stops frequently or operates at high load for a long time;

Causes:
1. Insufficient or leaking refrigerant: The reduced refrigerant circulation causes the compressor suction superheat to increase, leading to a sharp rise in exhaust temperature;
2. System blockage: The dryer filter or expansion valve is blocked, causing the refrigerant flow to be obstructed and the compressor exhaust temperature to soar;
3. Dirty condenser: Insufficient water flow;
4. Insufficient compressor lubricating oil; compressor wear;
5. Four-way valve leakage;
6. Abnormal opening of the electronic expansion valve;

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Alarm code and description

1）High exhaust temperature protection alarm (Code AL21)

Solutions:
1. Check for any leaks in the refrigerant circuit inside the machine; re-evacuate and charge the refrigerant according to the nameplate identification;
2. Switch the cooling/heating mode to allow the refrigerant to flow in both directions and blow out any foreign objects; in severe cases, replace the electronic expansion valve;
3. Check the water flow related signals and the actual operating status of the water pump;
4. Replace the compressor;
5. Replace the four-way valve;
6. Observe the changes in the unit's superheat and the opening of the electronic expansion valve to confirm that the electronic expansion valve is working properly;

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Alarm code and description

1）24-hour low evaporation protection limit exceeded alarm (Code AL31)

In a 24-hour period, if AL20 is triggered more than AR16 times, a manual reset alarm AL31 is triggered. The compressor is switched off, and 5 seconds later, the fan motor is switched off. Other parts remain in their original state. The alarm code AL31 is displayed on the touchscreen.

Typical manifestations:
- The touchscreen triggers a fault code prompt, indicating that this fault will lock the unit and prevent it from operating normally.

Cause:
- The number of low evaporation protection alarms in the system exceeds the limit.

Solutions:
- Reset the fault by pressing the button.
- Handle it according to the situation of the system's low evaporation protection alarm.

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Alarm code and description

1）Communication fault between IO board and main control board (Code AL30)

Typical manifestations:
- The touchscreen triggers a fault code. After selecting the IO board configuration parameters, the hot water temperature sensor cannot read correct data, causing an error, and other data cannot be read or controlled.

Causes:
- Poor contact of the communication line between the IO board and the touchscreen.
- Error in the touchscreen program.
- Damage to the IO board.

Solutions:
1. Check whether the wire is damaged, short-circuited, missed, or connected incorrectly.
2. Check whether the communication line is interfered with. If necessary, cut the line shorter, straighten it, wind it around a magnetic ring, or replace it with a shielded cable (with the shield layer connected to GND at one end).
3. Check whether the communication indicator light of the main control board is flashing. If it is not flashing, it indicates a problem with the communication port of the main control board.
4. Check whether the power indicator light of the IO board is on. If it is not on, check whether the power supply voltage of the IO board is normal and whether the communication chip is burnt out.
5. Check whether the communication settings are correct (if they can be set).

Alarm code and description

1）Low-pressure sensor fault (Code AL37)

Typical manifestations:
- The system low-pressure value cannot be displayed normally.
- The system low-pressure display value exceeds the limit.

Causes:
- Low-pressure sensor is damaged.
- Incorrect wiring of the low-pressure sensor.

Solutions:
1. Check whether there is a 5VDC voltage between Vcc (red) and GND (black), and whether there is a 0~5VDC voltage between Vout (white) and GND (black).
2. Check whether the sensor wire is poorly connected or short-circuited.

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Alarm code and description

1）High-pressure sensor fault (Code AL38)

Typical manifestations:
- The system high-pressure value cannot be displayed normally.
- The system high-pressure display value exceeds the limit.

Causes:
- High-pressure sensor is damaged.
- Incorrect wiring of the high-pressure sensor.

Solutions:
1. Check whether there is a 5VDC voltage between Vcc (red) and GND (black), and whether there is a 0~5VDC voltage between Vout (white) and GND (black).
2. Check whether the sensor wire is poorly connected or short-circuited.

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Alarm code and description

1）Return water temperature sensor fault (Code AL71)

Typical manifestations:
- The heat pump return water temperature sensor value cannot be displayed normally.
- The heat pump return water temperature sensor display value exceeds the limit.

Causes:
- The return water temperature sensor is damaged.
- Incorrect wiring of the return water temperature sensor.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.

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Alarm code and description

1）Outlet water temperature sensor fault (Code AL72)

Typical manifestations:
- The heat pump outlet water temperature sensor value cannot be displayed normally.
- The heat pump outlet water temperature sensor display value exceeds the limit.

Causes:
- The outlet water temperature sensor is damaged.
- Incorrect wiring of the outlet water temperature sensor.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.

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Alarm code and description

1）Ambient temperature sensor fault (Code AL73)

Typical manifestations:
- The heat pump ambient temperature sensor value cannot be displayed normally.
- The heat pump ambient temperature sensor display value exceeds the limit.

Causes:
- The ambient temperature sensor is damaged.
- Incorrect wiring of the ambient temperature sensor.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.

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Alarm code and description

1）Ambient temperature sensor fault (Code AL74)

Typical manifestations:
- The heat pump hot water temperature sensor value cannot be displayed normally.
- The hot water temperature sensor display value exceeds the limit.

Causes:
- The hot water temperature sensor is damaged.
- Incorrect wiring of the hot water temperature sensor.
-The I/O board has not been configured, but the SF200 functional parameters have been activated.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.
3.Disable SF200 IO board configuration function.

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Alarm code and description

1）Exhaust temperature sensor fault (Code AL75)

Typical manifestations:
- The heat pump exhaust temperature sensor value cannot be displayed normally.
- The exhaust temperature sensor display value exceeds the limit.

Causes:
- The exhaust temperature sensor is damaged.
- Incorrect wiring of the exhaust temperature sensor.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 50kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.

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Alarm code and description

1）Return gas temperature sensor fault (Code AL76)

Typical manifestations:
- The heat pump return gas temperature sensor value cannot be displayed normally.
- The return gas temperature sensor display value exceeds the limit.

Causes:
- The return gas temperature sensor is damaged.
- Incorrect wiring of the return gas temperature sensor.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.

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Alarm code and description

1）Abnormal operation of the circulation pump (Code AL79)

Typical manifestations:
- The alarm is triggered when the pump feedback PWM signal is greater than 75% or less than 5%. The fault can be automatically reset after the pump feedback PWM signal is less than 75% and greater than 5% and remains stable for 10 minutes.

Causes:
- The pump is running empty.
- The pump is faulty.

Solutions:
1. Check whether there is air in the water pipe, and if necessary, open the water pipe to release the air.
2. When the machine is on, check whether there is a 220VAC voltage at the pump output port.
3. Remove the signal line of the pump, supply power to the pump separately, and check whether the pump operates normally at 100% PWM. Check whether the pump indicator lights are all green (refer to the pump specification book).

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Alarm code and description

1）Compressor variable frequency drive board protection (Code AL98)

Typical manifestations:
- The compressor stops running or operates at a reduced frequency, and the touchscreen displays the fault code. This includes all alarm causes from AL100 to AL115.

AL100, AL101, AL102, AL103, AL104:
1. There may be a short circuit between output phases, insulation abnormality, or incorrect wiring. Check whether the wiring is correct and whether the wire is damaged.
2. The drive board may be damaged.
3. The compressor may be stalled or damaged.
4. If the hardware is normal, the fault can be automatically reset after the fault is cleared.

AL104, AL105: Spare alarm signals.

AL106: The compressor drive board capacitor may be damaged.

AL107: The power supply line may be connected incorrectly, causing the heat pump supply voltage to be too high.

AL108:
1. The power supply line may be connected incorrectly, preventing the heat pump from being powered normally.
2. The grid voltage may be unstable. The fault can be automatically reset after the voltage is restored.

AL109:
1. The power supply line may be connected incorrectly, preventing the heat pump from being powered normally.
2. The drive board may be damaged.

AL110:
1. The grid voltage may be unstable. The fault can be automatically reset after the voltage is restored.
2. The drive board may be damaged.

Alarm code and description

1）Compressor variable frequency drive board protection (Code AL98)

Typical manifestations:
- The compressor stops running or operates at a reduced frequency, and the touchscreen displays the fault code. This includes all alarm causes from AL100 to AL115.

AL111: Spare fault signal.

AL112:
1. Connect the fan to another fan interface to see if it runs. If it runs normally, the drive board is the problem. If it does not run normally, continue to investigate.
2. Turn on the fan and measure the voltage between VDC and SGND to see if there is a DC310V voltage, measure the voltage between 15VCC and SGND to see if there is a DC15V voltage, and measure the voltage between VSP and SGND to see if there is a 0~6.5VDC voltage. If all three voltages are normal and the motor does not run normally, the motor is damaged. If one of the voltages is not normal, the drive board may be damaged.

AL113: The drive board IPM temperature sensor may be damaged.

Alarm code and description

1）Compressor variable frequency drive board protection (Code AL98)

AL114:
1. Connect the fan to another fan interface to see if it runs. If it runs normally, the drive board is the problem. If it does not run normally, continue to investigate.
2. Turn on the fan and measure the voltage between VDC and SGND to see if there is a DC310V voltage, measure the voltage between 15VCC and SGND to see if there is a DC15V voltage, and measure the voltage between VSP and SGND to see if there is a 0~6.5VDC voltage. If all three voltages are normal and the motor does not run normally, the motor is damaged. If one of the voltages is not normal, the drive board may be damaged.

AL115:
1. Check whether the communication line is damaged, short-circuited, missed, or connected incorrectly.
2. Check whether the power supply voltage of the drive board communication port is normal and whether there is a DC12V voltage.
3. Check whether the communication line is interfered with. If necessary, cut the line shorter, straighten it, wind it around a magnetic ring, or replace it with a shielded cable (with the shield layer connected to GND at one end).
4. Check whether the communication indicator light of the main control board is flashing. If it is not flashing, there is a problem with the communication port of the main control board.
5. If there is no hardware problem, it can be automatically restored.

Alarm code and description

1）Compressor variable frequency drive board overheating protection (Code AL133)

Typical manifestations:
- The compressor stops running or operates at a reduced frequency, and the touchscreen displays the fault code.

Causes:
- The compressor drive board is damaged.
- The compressor drive board has poor heat dissipation.
- The outdoor ambient temperature is too high.

Solutions:
1. Replace the compressor drive board.
2. Reduce the maximum frequency of compressor cooling to decrease heat generation.
3. Check whether the compressor drive heatsink is dirty and clean it if necessary.

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Alarm code and description

1）Compressor model setting error (Code AL134)

Typical manifestations:
- The compressor makes abnormal noise during operation, and the operating current and power consumption are abnormal.

Causes:
- Incorrect compressor model parameter setting.

Solutions:
1. Set the correct compressor model according to the parameter table.

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Code	Content	
AL100	Bit0:IPM over-current	
AL101	Bit1:Compressor drive failure	
AL102	Bit2:Compressor over-current	
AL103	Bit3:The input voltage phase is missing	
AL104	Bit4:IPM current sampling is faulty	
AL105	Bit5:The radiator overheats and stops running	
AL106	Bit6:Precharge failure	
AL107	Bit7:Dc bus voltage overvoltage	
AL108	Bit8:Dc bus voltage undervoltage	
AL109	Bit9:Ac input undervoltage	
AL110	Bit10:Ac input over-current	
AL111	Bit11:The input voltage sampling is faulty	
AL112	Bit12:DC draught fan 1 is fault	
AL113	Bit13:Temperature sensor fault	
AL114	Bit14:DC draught fan 2 is fault	
AL115	Bit15:The communication with the main control board is abnormal	

Code	Content	
AL133	Bit0：IPM module overheats and stops running	
AL134	Bit1：Compressor machine type fault	

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Alarm code and description

1）Communication fault between variable frequency drive board and main control board (Code AL57)

Typical manifestations:
- The compressor stops running or operates at a reduced frequency, and the touchscreen displays the fault code.

Solutions:
1. Check whether the communication line is damaged, short-circuited, missed, or connected incorrectly.
2. Check whether the power supply voltage of the drive board communication port is normal and whether there is a DC12V voltage.
3. Check whether the communication line is interfered with. If necessary, cut the line shorter, straighten it, wind it around a magnetic ring, or replace it with a shielded cable (with the shield layer connected to GND at one end).
4. Check whether the communication indicator light of the main control board is flashing. If it is not flashing, there is a problem with the communication port of the main control board.
5. If there is no hardware problem, it can be automatically restored.

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Alarm code and description

1）Indoor anti-freeze protection alarm (Code WN01)

1.) If the pump has been switched off for more than AR29 time and OT < SF06, the pump is switched on and runs at PWM 100%. 180 seconds later, if RT > AR01, the pump is switched off. If RT < AR01, the WN01 warning is triggered and the unit is switched on to run in heating mode until RT > 20℃, then the warning is reset.
2.) If the RT sensor is faulty, the ST is used instead of RT for the anti-freezing protection water temperature reference. If the ST sensor is also faulty when OT < SF06, the pump runs continuously at PWM 100%.

Typical manifestations:
- The touchscreen displays the fault code. The unit's pump starts running, and when the temperature is low, the compressor will start to increase the water temperature in the pipes to provide low-temperature freeze protection for the pipes.

This alarm signal is a system protective alarm. After the anti-freeze protection operation is completed, the alarm signal will be automatically reset.

2）Main controller memory EEPROM data memory protection (Code ALEP)
Typical manifestations:
- The touchscreen displays the fault code.
Causes:
- There are data limit errors in the heat pump operating state parameters, and there are data setting errors in the system settings (service level parameters and factory level parameters), exceeding the program setting range.

Solutions:
1. Manual reset.
2. Power off and then power on again to reset.
3. Re-flash the program.

Alarm code and description

1）IO board: Solar temperature fault (Code AL202)

Typical manifestations:
- The value of the solar temperature sensor cannot be displayed normally.
- The display value of the solar temperature sensor exceeds the limit.

Causes:
- The solar temperature sensor is damaged.
- Incorrect wiring of the solar temperature sensor.
- Incorrect configuration of the IO board.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.
3. Select the IO configuration function.

Dentwi ton

Alarm code and description

1）IO board: Low-temperature zone temperature fault (Code AL203)

Typical manifestations:
- The value of the low-temperature zone temperature sensor cannot be displayed normally.
- The display value of the low-temperature zone temperature sensor exceeds the limit.

Causes:
- The low-temperature zone temperature sensor is damaged.
- Incorrect wiring of the low-temperature zone temperature sensor.
- Incorrect configuration of the IO board.
- Incorrect setting of the zone function.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.
3. Select the IO configuration function.
4. Choose the zone function setting according to the actual usage.

Dentwi ton

Alarm code and description

1）IO board: High-temperature zone temperature fault (Code AL204)

Typical manifestations:
- The value of the high-temperature zone temperature sensor cannot be displayed normally.
- The display value of the high-temperature zone temperature sensor exceeds the limit.

Causes:
- The high-temperature zone temperature sensor is damaged.
- Incorrect wiring of the high-temperature zone temperature sensor.
- Incorrect configuration of the IO board.
- Incorrect setting of the zone function.

Solutions:
1. Power off, unplug and measure the sensor's resistance, which should be around 10kΩ.
2. Check whether the sensor wire is poorly connected or short-circuited.
3. Select the IO configuration function.
4. Choose the zone function setting according to the actual usage.

Dentwi ton

Thanks for watching!

Dentwi ton