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Android download



iPhone download

# PB565

Operation instruction

Depending on the system configuration, some of the content mentioned in this manual may not appear on your system.

V0.2 English

Warning	01-02
Control Panel Specifications and Installation Instructions	03-06
Main interface introduction	07-08
Music	09
Lights	10-11
Setting instructions	12-23
1.1 How to enter the setting interface	12
1.2 Settings	12
1.2.1 Settings / Heat&Cool	13
1.2.2 Settings / Clim8zone	15
1.2.3 Settings / Filter	16
1.2.4 Settings / General	18
1.2.5 Settings / User Mode	21
1.2.6 Settings / Wifi	21
1.2.7 Settings / Overview	22
1.2.8 Settings / Information	23
Panel warning information	24-31

### WIFI:

Operating Frequency: 2012-2472MHz

Output Power: Max 20dBm

RF Hardware Version: xxx

RF Software Version: xxx

### EMF:

These devices comply with RF specifications when the device is used at 20 cm from your body.

### EMC:

These devices can be connected only to a supply with system impedance no more than 0.099 ohm for Single-phase input or 0.001 ohm for Multi-phase input. In case necessary, please consult your supply authority for system impedance information.

Importer: xxx

### RSS-Gen & RSS-247 statement:

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### RSS-102 Statement:

This equipment complies with Industry Canada radiation exposure limits set forth for an uncontrolled environment.

Cet équipement est conforme à l'exposition aux rayonnements Industry Canada limites établies pour un environnement non contrôlé.

## Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### FCC Caution:

Changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

### FCC Statement:

"This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help."

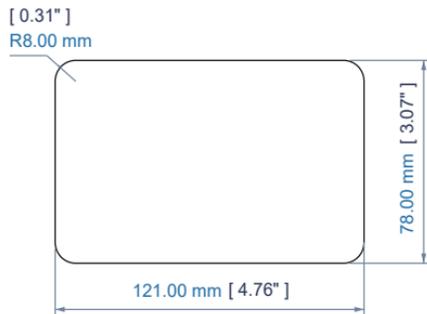
This controller is not intend for transportable pool use.

## Control Panel Specifications and Installation Instructions

5.0 inch TFT color display screen, touch screen

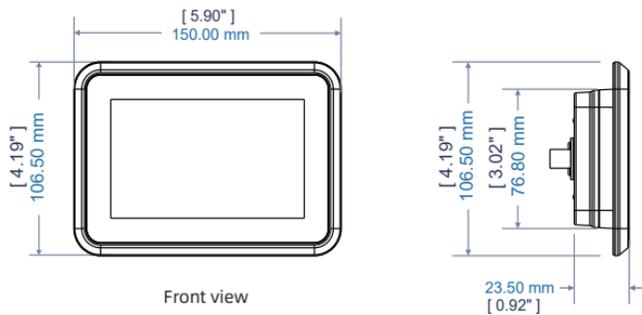


PB565 control panel design



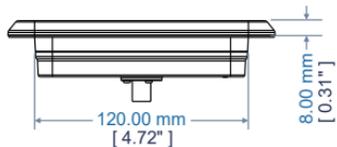
Suggested hole size

## Control Panel Specifications and Installation Instructions

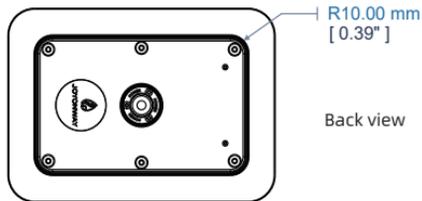


Front view

Left view



Vertical view

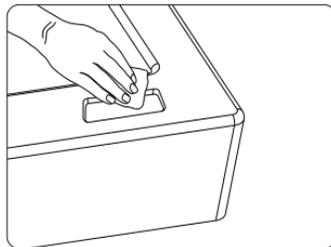


Back view

## Control Panel Specifications and Installation Instructions

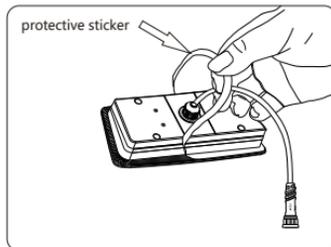
### Control Panel Installation Instructions

1



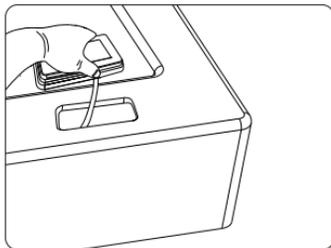
Make a hole in the appropriate position of the hot tub according to the size of the control panel, and clean the surrounding area of the hole, especially burrs, debris, etc., to ensure that the control panel can stick on firmly.

2



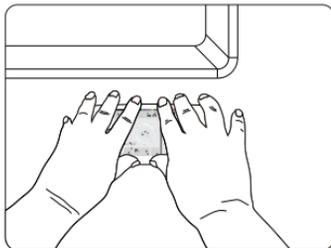
As shown in the figure, remove the adhesive protective sticker from the control panel. Special attention: It is strictly prohibited to touch adhesive with hands; It is prohibited to have water or other impurities from touching the adhesive surface; Install the control panel onto the tub within 60 seconds after removing the adhesive sticker.

3



As shown in the figure, after removing the with the adhesive protective sticker, install the control panel at the cleaned hole.

4



As shown in the figure, after the control panel is installed, press the control panel tightly with hands for 60 seconds and push the control panel back and forth for 5-10 times.

### Warning

1. Please connect power by strictly following the SPA wiring diagram.
2. Please do not power on the SPA until the water level reaches the water level line inside the tub.

### Warning

Please set the date and time before using the SPA control system.

### Main interface



Details are as follows

1



Screen reverse icon

2



Current time

3



The status of the functions in operation

## Button description

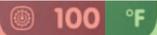
- |   |  |
|---|--|
|  Ozone working                        |  WIFI not connected     |
|  Heater working                       |  WIFI is connected      |
|  Heat pump cooling                    |  NOR mode is on         |
|  Heat pump heating                    |  ECO mode is on         |
|  The circulating pump is in operation |  Bluetooth is connected |

-     Pack number: Displayed when multiple packs are connected at the same time

-       User mode in operation

-  Temperature and power curve icons

-  Current water temperature °F/°C

-  Preset heating temperature °F/°C
- Click to switch temperature units
- Click to enter the temperature setting interface

## Music

7



Slide to find more functions in Function control area.

Touch the function icon to change the function status or enters the function page.

The water pump will automatically shut down after working for 30 minutes.

The blower will automatically shut down after working for 30 minutes.



Pump 1



Music



Pump 2



Blower



Pump 3



Light off



Pump 4

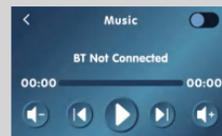


Light on



Settings

### Music connection

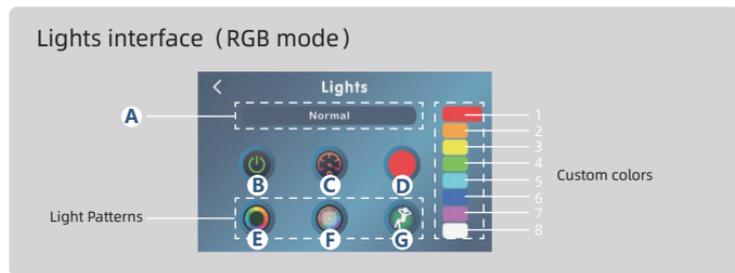


The music icon will appear and music function can be used only when the system is connected to a Bluetooth audio amplifier.

## Music connection steps:

- ① In the function control area of the Home screen, slide left and right to find the music icon , and touch this icon to enter the music interface.
- ② Find the "  " function icon in the music interface. Touch this icon to activate the Bluetooth function. 
- ③ Turn on the Bluetooth function on your phone, find the Bluetooth name with the prefix "JOYONWAY\_", press Connect, enter the PIN code: 2288, and make the connection.
- ④ When the "BT Not Connected" prompt on the music interface of the control panel becomes "BT Connected", the Bluetooth connection is completed.
- ⑤ Then, you can use the music software on your phone to play music. The control panel can synchronize the phone's operations of pause/play, previous/next song, and high/low volume.

Reminder: Bluetooth connection failed. Please find the function icon  in the music interface with Bluetooth function enabled. Try pressing and holding the icon  for 5 seconds to clear Bluetooth connection information.



In the function control area of the Home screen, slide left and right to find the lights icon "  " / "  ", and touch this icon to enter the lights interface.

- (A) Mode toggle button. Click the button to toggle "Normal"/"Water Temp." mode.
- (B) Power button. It powers On/Off all User-Controlled lights. If the button icon has a white ring, at least some User-Controlled lights are powered On. If the button doesn't have a white ring, all User-Controlled lights are powered Off.
- (C) Speed control for light patterns.
- (D) Go to the color palette button.
- (E) Color wheel light pattern. This smoothly cycles through the full color spectrum.
- (F) Party light pattern. This cycles through a festive pattern.
- (G) Lounge light pattern. This smoothly cycles through a soothing pattern.

## Water Temperature color chat

**RED** Above 108°F.  
 Approximately 42.2°C.

**ORANGE** Between 2°F above the set temperature and 107°F.  
 Approximately 1°C above the set temperature and 41.6°C.

**GREEN** Within +/- 2°F of the set temperature.  
*Approximately within +/- 1°C of the set temperature.*

**BLUE** Between 46°F and 2°F below the set temperature.  
*Approximately between 7.7°C and 1°C below the set temperature.*

**WHITE** Less than 45°F.  
*Approximately less than 7.2°C.*

**PURPLE** Temperature unknown because the water has not been cycled.

## Color interface (RGB mode)



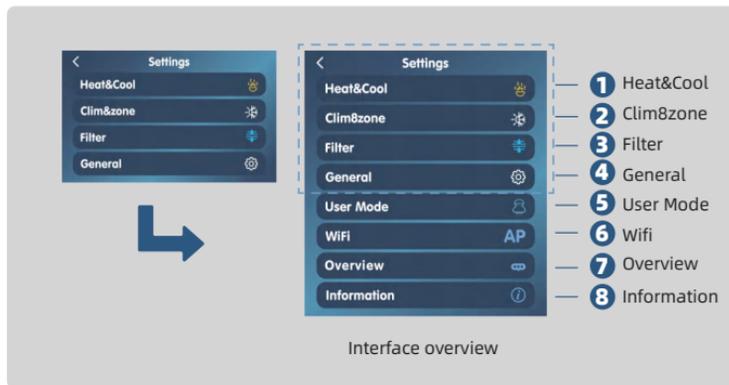
In the lights interface, find the "Go to the color palette button (D)", and touch this icon to enter the color interface.

## 1.1 How to enter the setting interface



Slide in the function control area to find "⚙️" icon. Touch the icon to enter the setting interface.

## 1.2 Settings



Details are as follows

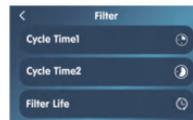
### 1 Heat&Cool



### 2 Clim&zone



### 3 Filter



### 4 General



### 5 User Mode



### 6 Wifi



### 7 Overview



### 8 Information



## 1.2.1 Settings / Heat&Cool

### 1 Heat&Cool



- (1) Temperature
- (2) Mode
- (3) Cycle Time
- (4) Unit

Interface overview

Details are as follows

#### (1) Temperature



Adjust the preset temperature value. Find the "Temperature" function by sliding up and down. Touch "Temperature" and enter its interface. Slide white box up and down to adjust the value.

The temperature setting range is from 50 °F to 104 °F/10 °C to 40 °C.

When the heating function is activated, this temperature value will be the operating target.

### (2) Mode



NOR: The heating/cooling is turned on all day long  
ECO: The heating/cooling is only turned on during Cycle Time.

### (3) Cycle Time 1/2



How to adjust the heating time period: Slide the screen to select "Cycle Time 1" or "Cycle Time 2" to enter the interface, touch "1" to start, and then adjust the value by sliding the white box up and down.

Set the daily heating operation time period and its on or off.

**1** On: The heating will start running within the set time period everyday.

**1** Off: This time period has no effect on the heating operation.

### (4) Unit



Find "Unit" by sliding up and down. Touch "Temperature Unit" to switch between °C/°F temperature units.

After setting the °C/°F temperature unit, all the temperature units in the system will be based on it.

## 1.2.2 Settings / Clim8zone

### 2 Clim8zone (This set option will only appear when the system is equipped with a Clim8zone)



- (1) Clim8zone
- (2) Speed
- (3) eHeater

Interface overview

Details are as follows

### (1) Clim8zone

Clim8zone Disabled

Clim8zone Heat Only

Clim8zone Cool Only

Clim8zone Heat&Cool

Set the heat pump mode. Touch the "Clim8zone" function, and then cycle through Disabled/Heat Only/Cool Only/Heat&Cool.

Disabled: The heat pump does not operate in any circumstances.

Heat Only: The heat pump only operates the heating function.

Cool Only: The heat pump only operates the cooling function.

Heat&Cool: The heat pump operates heating and cooling functions.

### (2) Speed

Speed Low

Speed High

Speed Auto

Set the running speed of the heat pump. Touch the "Speed" function, and then cycle among Low/High/Auto.

Low: Low speed, the heat pump only operates in low speed mode, consuming less energy.

High: High speed, the heat pump only operates in high-speed mode and can quickly reach the preset temperature.

Auto: Automatic, the heat pump automatically adjusts its operating speed according to the environment, taking into account energy consumption and quickly reaching the preset temperature.

### (3) eHeater

eHeater Continuous

eHeater eBOOST

eHeater Disabled

Set the electric heating collaboration mode. Touch the "eHeater" function, and then cycle through Continuous/eBOOST/Disabled.

Continuous: eHeater will continue to operate when heating is needed. (Clim8zone and eHeater operate simultaneously during heating)

eBOOST: eHeater will only be activated when there is a significant difference between the current temperature and the preset temperature. (During heating, the Clim8zone operates first)

Disabled: eHeater does not operate. (Only Clim8zone runs during heating)

If the "Clim8zone" mode is set to Disabled or Cool Only, the "eHeater" mode can only be Continuous.

If the "Clim8zone" mode is set to Heat Only or Heat&Cool, the "eHeater" mode can be set as Continuous/eBOOST/Disabled.

### 1.2.3 Settings / Filter

#### 3 Filter



Interface overview

Details are as follows

#### (1) Cycle Time 1/2



How to adjust the filtering time period: Slide the screen to select "Cycle Time 1" or "Cycle Time 2" to enter the interface, touch "1" to start. And then adjust the value by sliding the white box up and down.

Set the daily filtering running time period and its on and off.

- 1 On: filtering will start running within the set time period everyday.
- 1 Off: This time period has no impact on the system filtering operation.

#### (2) Filter Life

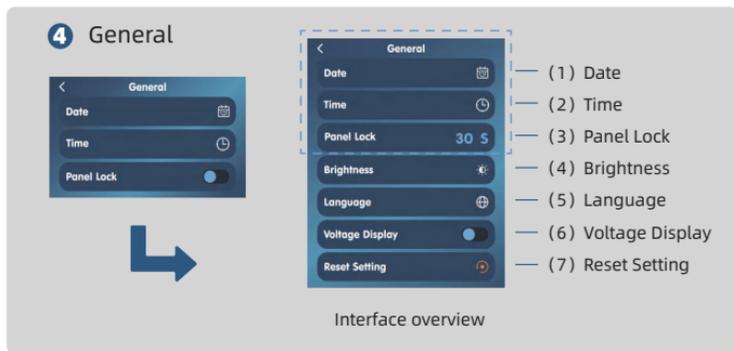


On the filter usage interface, slide the screen to select the "Filter Usage" function, and adjust the value by sliding the white box up and down. Press and hold "110" to reset the used time to 0.

The number of days the filter has been used is displayed.

The preset usage days of the filter are displayed.

## 1.2.4 Settings / General



Details are as follows

### (1) Date



Adjust the date. Touch the "Date" function to enter this interface, and then adjust the value by sliding the white box up and down.

Set the current date, and the system date will be based on this.

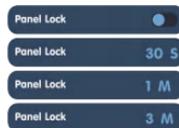
### (2) Time



Adjust the time. Touch the "Time" function to enter this interface, and then adjust the value by sliding the white box up and down.

Set the current time, and the system time will be based on this.

### (3) Panel Lock



Adjust the automatic screen lock time. Touch the "Panel Lock" function to cycle through /30S/1M/3M.

: Automatic screen lock turned off.

30S: When it reaches 30 seconds without operating on the system, the screen will be locked.

1M: When it reaches 1 minute without operating on the system, the screen will be locked.

3M: When it reaches 3 minute without operating on the system, the screen will be locked.

When locked, the screen brightness decreases and the " 9" icon appears on the screen, and the functions cannot be controlled by touches.

Unlocking the screen: When the screen is locked, press on the screen and slide to unlock it.

### (4) Brightness



Adjust the screen brightness: press "Brightness" to enter this interface, and then adjust the value by sliding up and down.

The screen brightness range is 1-16.

### (5) Language



Language change: Press "Language" to enter this interface. After selecting the language by pressing "", press "" in the upper left corner to return to the main interface.

The system will display the interface in the corresponding language.

### (6) Voltage Display



Turn on or off the display of electrical parameters in the Overview interface: press the "Voltage Display" to switch between / .

- : Display electrical parameters on the Overview interface.
- : Do not display electrical parameters on the Overview interface.



Press "Voltage Display", and select "" to complete the setup.

- : Return
- : Voltage Display confirmation

### (7) Reset Setting



Reset: press "Reset Setting", and select "" to complete the reset.

- : Return
- : Reset confirmation

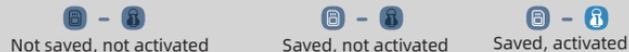
The reset operation restores all settings to their factory default values.

### 1.2.5 Settings / User Mode

#### 5 User Mode



Save and activate user mode: touch the "User Mode" function to enter this interface. Touch "" to complete saving (and activating) the data. When it displays " - " or after selecting a save location, touch "" to activate the data stored (when there is data stored in this location)



The stored data includes temperature units, automatic locking time, screen brightness, heating cycle time, filtering cycle time, etc.

### 1.2.6 Settings / Wifi

#### 6 Wifi



- Wifi is turned off
- Wifi is in a hotspot state
- Wifi is connected
- Connection record cleared

### WiFi connection steps:

- 1 Install the "JOYONWAY" app on your phone. Register and log on the APP. Please first enable your phone's location information, and then connect your phone to a 2.4G WiFi network;
  - 2 Connection record clearing: Find Wifi function on the control panel and press and hold "Wifi" for 5 seconds to change the state to Clear.
  - 3 In the WiFi interface of the control panel, press "WiFi" to switch to AP status.  

  - 4 In the app, find the "Device" interface, press the " + " icon, and add a SPA controller;
  - 5 Press Next and go to the "Connect WiFi" interface. Enter the name and password of the WiFi that the phone is connecting to;
  - 6 Press "Connect" and the "Device Connecting" interface will appear. Go to your phone's WiFi and find the WiFi name starting with the "adh" and connect. When connected, return to the APP;
  - 7 When the progress bar of the "Device Connecting" interface reaches 100%, Sta will appear on the Wifi interface of the control panel , indicating that the connection is made.
  - 8 Then, you can control your SPA on your mobile app "JOYONWAY" through the internet.
- Scan the QR code on the back of the manual and download the APP .

### 1.2.7 Settings / Overview

#### 7 Overview



Display current temperature



Display current voltage



Display current power



Display changes in temperature and power within 24 hours

### 1.2.8 Settings / Information

#### 8 Information



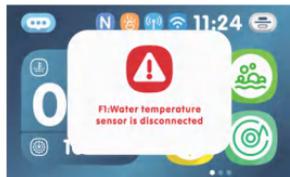
Interface overview

In the "Information" interface, relevant information about the system is displayed.

## Panel warning information

When there are some states that require user attention in the control system, the control panel will display warning information of the state on the control panel. If there are several types of information that need to be displayed at the same time, these information will be loop displayed.

The following is the screen status when these information are displayed, as shown in the figure:



Warning message display location

When the following fault message appears, first try to power off the SPA and then power on again a few minutes later to clear the fault; if the fault occurs again, please follow the instructions below to handle the fault; During the troubleshooting process, ensure that the power connection to the SPA is disconnected.

### F1:Water temperature sensor is disconnected

#### Temperature sensor disconnected

The control system has detected that the temperature sensor is not connected. Please check the temperature sensor and its connections, and replace it if necessary.

### F2:Water temperature sensor is short circuit

#### Temperature sensor short circuit

The control system has detected a short circuit in the temperature sensor. Check the temperature sensor and its connections, and replace it if necessary.

### F3:Water temperature is too high

#### Water temperature too high

The control system has detected that the temperature of temperature sensor is too high. When the heater is started, if there is no water or water flow is small in the heating tube, this message may appear.  
Measure: Please ensure that there is sufficient water in the SPA and the heating circulation pipeline is unobstructed.

## Panel warning information

### F4:Water temperature is too low

#### Water temperature too low

The control system has detected that the temperature of the temperature sensor is too low.  
Please pay attention to frost protection.

### F5:EEPROM error

#### Memory Fault

When a memory fault occurs, please power off the SPA and power it back on after a few minutes. If the memory fault occurs again, contact the service provider or manufacturer.

### F6:Manual-reset thermal switch is open

#### Overheat protection switch (manual reset) on

If the overheat protection switch is turned on, there may be overheating in the heating tube. Please manually reset the overheat protection switch or contact the service provider and manufacturer.

### F9:System setting error

#### System settings error

Reason: The system configuration item read from the motherboard memory by the control system after power on was verified not correct.  
Action: Please turn off the power and wait for 10 seconds before powering on again. If this message appears again, please contact the service provider or manufacturer.

### F10:Communications error

#### Control panel and control pack cannot communicate

Reason: The control panel cannot exchange information with the control pack.  
Measure: Please turn off the power, and check if the wiring connection between the control panel and the control pack is good and if the connectors are tightly connected. After confirmation, power on again. If this fault cannot be eliminated, please contact the service provider or manufacturer.

### F12:Heater PT temperature is too high

**Heating tube protection temperature too high**  
The control system has detected that the surface temperature of the heating tube is too high.  
Measure: Please ensure that there is sufficient water in the SPA and the heating circulation pipeline is unobstructed

### F13:Heater PT temperature is too low

**Heating tube protection temperature too low**  
The control system has detected that the surface temperature of the heating tube is too low.  
Please pay attention to frost protection.

### F14:Heater PT temperature sensor is disconnected

**Heating tube protecting temperature sensor disconnected**  
The control system has detected that the heating tube protecting temperature sensor is not connected.  
Measure: Please check the heating tube protecting temperature sensor and its connection, and replace it if necessary.

### F15:Heater PT temperature sensor is short circuit

**Heating tube protecting temperature sensor short circuit**  
The control system has detected a short circuit in the heating tube protecting temperature sensor.  
Measure: check the heating tube protecting temperature sensor and its connection and replace it if necessary.

### F20:Controller fault

**When a microelectronic malfunction occurs**  
Please power off the SPA and power it on again after a few minutes. If a microelectronic malfunction occurs again, contact the service provider or manufacturer.

### Heat Pump ER03: Water flow failure

**Water flow failure**  
Cause:  
1. The water flow switch fault  
2. Low water flow  
3. The inlet and outlet water are reversed  
4. There is air in the pipe  
5. The pipe blocked

Action:  
1.Check the water flow switch and replace it if it is faulty  
2.Check the water valve and the temperature difference between inlet and outlet water  
3.Whether the inlet and outlet water pipes are correctly connected  
4.Emptying water system  
5.Pipe cleaning

### Heat Pump ER04: Winter anti-freezing

**Winter anti-freezing**  
Cause:  
The ambient temperature is lower than the antifreeze setting value  
Action:  
Normal protection procedure

### Heat Pump ER05: High pressure protection

**High pressure protection**  
Cause:  
1. Low water flow  
2.. Pressure switch fault  
3. The fan motor unwork or the speed too low  
4.Overcharged the refrigerant  
Action:  
1. Check whether the temperature difference between inlet and outlet water is too large, and whether the outlet water temperature is too high  
2. Use a multimeter to check whether the high voltage protection switch works  
3. Check the water flow of the water pump and the speed of the fan  
4. Refill the refrigerant

## Panel warning information

---

### Heat Pump ER06:

#### Low Pressure Failure

Cause:

Action:

### Heat Pump ER09: Communication with the upper computer failed

#### Communication with the upper computer failed (Communication with Balboa system failed)

Cause:

Action:

1. Replace the main board
2. Check the communication cables between the main board and Balboa system
3. Check whether the Balboa system software matches

### Heat Pump ER10: Communication fault of frequency conversion module

#### Communication fault of frequency conversion module (alarm when communication is disconnected between external board and drive board)

Cause:

1. The mainboard or driver board damaged
2. The connector of the communication cable between the mainboard and the driver board is in poor contact or falls off
3. The communication cable is damaged

Action:

1. Replace the main board or driver board
2. Check the communication cables between the main board and driver board
3. Replace the communication cable

## Panel warning information

---

### Heat Pump ER12: Exhaust too high protection

#### Exhaust too high protection

Cause:

1. Less refrigerant or leakage
2. The system blocked
3. Compressor refrigerant oil is insufficient
4. The resistance value of the exhaust probe is offset, and the inlet temperature probe is dropped

Action:

1. Refill the refrigerant
2. Replace the filter
3. Add refrigerant oil to the compressor
4. Replace the exhaust probe and reconnect the water inlet temperature probe

### Heat Pump ER15: Inlet water temp. Error

#### Inlet water temp. Error

Cause:

The sensor plug is in poor contact or off, or the sensor is damaged

Action:

Check and replace the water inlet temperature sensor (T2 sensor)

### Heat Pump ER16: Outer coil pipe temp. Error

#### Outer coil pipe temp. Error

Cause:

The sensor plug is in poor contact or off, or the sensor is damaged

Action:

Check and replace the coil pipe temperature sensor(T3)

### Heat Pump ER18: Exhaust gas temp. Error

#### Exhaust gas temp. Error

Cause:

The sensor plug is in poor contact or off, or the sensor is damaged

Action:

Check and replace the exhaust gas temperature sensor(T1)

### Heat Pump ER19:

#### DC Fan Motor Failure

Cause:

Action:

## Panel warning information

---

### Heat Pump ER20: Abnormal protection of frequency conversion module

**Abnormal protection of frequency conversion module**  
Cause:  
IPM module internal fault, check related problems according to the attached table  
Action:

### Heat Pump ER21: Ambient temp. Error

**Ambient temp. Error**  
Cause:  
The sensor plug is in poor contact or off, or the sensor is damaged  
Action:  
Check and replace the ambient temperature sensor(T4)

### Heat Pump ER23:

**Cooling outlet water temperature low protection**  
Cause:  
  
Action:

### Heat Pump ER27: Outlet temperature fault

**Outlet temperature fault**  
Cause:  
The sensor plug is in poor contact or off, or the sensor is damaged  
Action:  
Check and replace the water outlet temperature sensor(T6)

### Heat Pump ER29: Return gas temp. Error

**Return gas temp. Error**  
Cause:  
The sensor plug is in poor contact or off, or the sensor is damaged  
Action:  
Check and replace the suction gas sensor(T5)

## Panel warning information

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### Heat Pump ER32: Heating outlet water high temperature protection

**Heating outlet water high temperature protection**  
Cause:  
  
Action:

### Heat Pump ER33: Outer Door Coil High Temperature Protection

**Outer Door Coil High Temperature Protection**  
Cause:  
  
Action:

### Heat Pump ER35: Compressor Current Protection

**Compressor Current Protection**  
Cause:  
  
Action:

### Heat Pump ER42: Internal Coil Temperature Failure

**Internal Coil Temperature Failure**  
Cause:  
  
Action:

### Heat Pump ER44: Ambient Temperature Too Low Protection

**Ambient Temperature Too Low Protection**  
Cause:  
  
Action:

### Heat Pump ER46: DC Fan Error

**DC Fan Error**  
Cause:  
1.Dc fan failure  
2.Plug is in poor contact or off  
Action:  
1. Replace the DC fan  
2. Reconnect cables to the DC fan