



Sun Hydraulics (China) Co., Ltd. Dongguan Branch

ADD: Room 302, Building 10, 38 Dongke Road, Dongcheng Street,
Dongguan city, Guangdong Province

TEL: +86 (755) 26010708

Sales Tel: +86 (755) 26010859

Oversea sales: (+86) 13925211653

China sales: (+86) 13602627256

P.C.: 523127

WEB: www.joyonway.com

After-sales service: service@joyonway.com



Scan QR code with mobile device
to download JOW SPA APP



PB565

Operation instruction

All features and functions available are described in this document.
Your system display may vary.

V 1.0 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 Heat&Cool | 13 |
| 1.2.2 Clim8zone | 15 |
| 1.2.3 Filter | 16 |
| 1.2.4 General | 18 |
| 1.2.5 User Mode | 21 |
| 1.2.6 Wifi | 21 |
| 1.2.7 Overview | 22 |
| 1.2.8 Information | 23 |
| Panel warning information | 24-33 |

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."

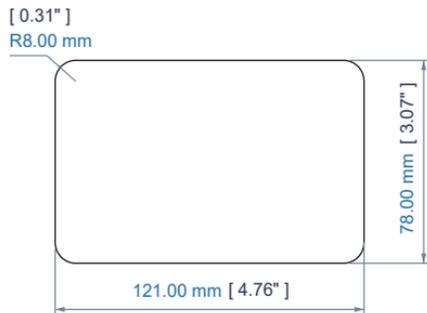
This controller is not intend for transportable pool use.

Control Panel Specifications and Installation Instructions

5.0 inch TFT color display screen, touch screen

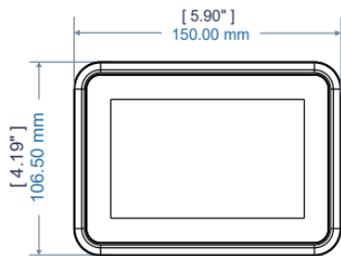


PB565 control panel design

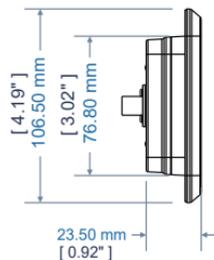


Suggested hole size

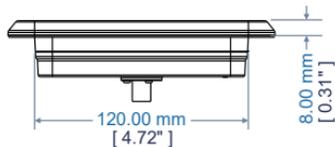
Control Panel Specifications and Installation Instructions



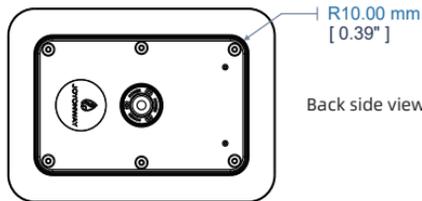
Front side view



Left side view



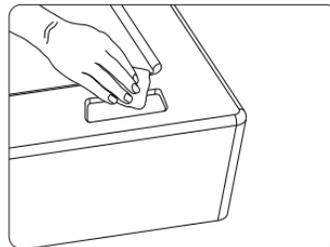
Vertical side view



Control Panel Specifications and Installation Instructions

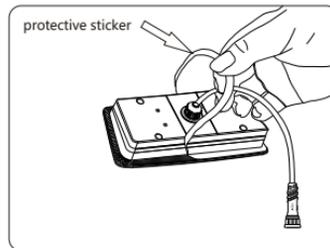
Control Panel Installation Instructions

1



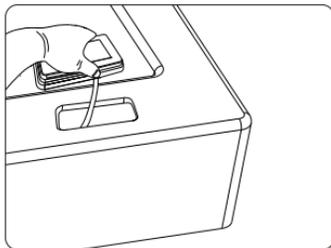
Make a hole in the appropriate position of the hot tub according to the size of the control panel, and clean the surrounding area of the hole, especially burrs, debris, etc., to ensure that the control panel can stick on firmly.

2



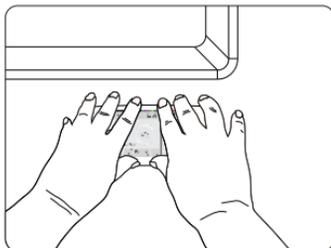
As shown in the figure, remove the adhesive protective sticker from the control panel. Special attention: It is strictly prohibited to touch adhesive with hands; it is prohibited to have water or other impurities from touching the adhesive surface; install the control panel onto the tub within 60 seconds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

| | | | |
|----------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------|--------------------|
|  | Disinfecting |  | 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 |  | BT is connected |

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

      User mode in operation

4  Temperature and power curve icons

5  Current water temperature °F/°C

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

Music



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.

The light will automatically turn off after being on for 1 hour.

 Pump 1

 Pump 2

 Pump 3

 Pump 4

 Settings

 Music

 Blower

 Light off

 Light on

Music connection



The music icon will appear and music function can be used only when the system is connected to a BT 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 "BT" function icon in the music interface. Touch this icon to activate the BT function. 
- ③ Turn on the BT function on your phone, find the BT 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 BT 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: BT connection failed. Please find the function icon  in the music interface with BT function enabled. Try pressing and holding the icon  for 5 seconds to clear BT connection information.

BT: 2.4 GHz ISM band short-range wireless communication, IEEE 802.15.1 support, BLE support.

Lights interface (RGB mode)



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)



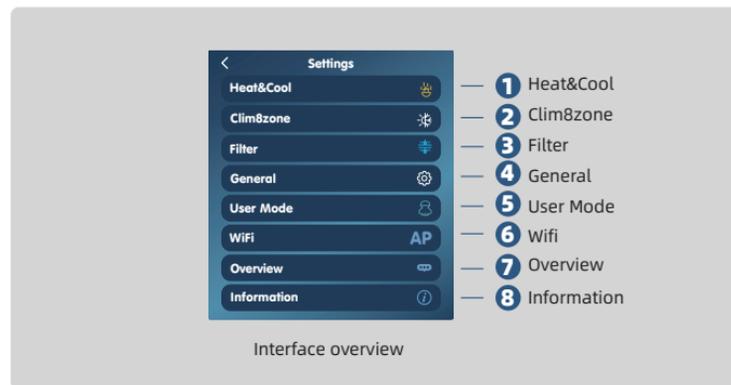
In the lights interface, find the "Go to the color palette button (D)", and touch this icon to enter the color interface.

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

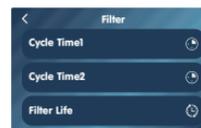
1 Heat&Cool



2 Clim8zone



3 Filter



4 General



Setting instructions

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.

Setting instructions

(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

(2) Speed

Speed Low

Speed High

Speed Auto

(3) eHeater

eHeater Continuous

eHeater eBOOST

eHeater Disabled

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.

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.

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 or 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

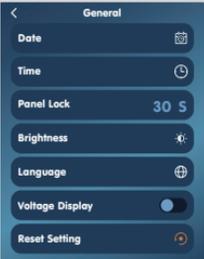


On the filter usage interface, slide the screen to select the "Filter Usage" function, and adjust the value by sliding the white box up and down. Press and hold "100" to reset the used time to 0.

- 1 The number of days the filter has been used is displayed.
- 90 100 110 The preset usage days of the filter are displayed.

1.2.4 Settings / General

4 General



Interface overview

- (1) Date
- (2) Time
- (3) Panel Lock
- (4) Brightness
- (5) Language
- (6) Voltage Display
- (7) Reset Setting

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.

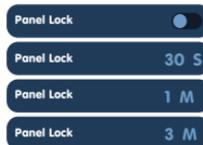
(2) Time



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.

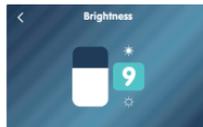
1M: When it reaches 1 minute without operating on the system, the screen will be locked.

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

When locked, the screen brightness decreases and the 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  /  .

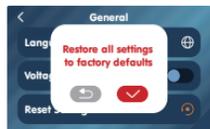
-  : Display electrical parameters on the Overview interface.
-  : Do not display electrical parameters on the Overview interface.

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)



Not saved, not activated



Saved, not activated



Saved, activated

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

If the panel doesn't have a WiFi module, skip this chapter.



— WiFi is turned off



— WiFi is on EZ Pairing



— WiFi is on AP Pairing



— WiFi is connected

Details are as follows

WiFi connection steps:

Scan the QR code on the control panel (Settings->WiFi interface) or search for the "JOW SPA" app on the APP store and download the app.

- 1 Install the "JOW SPA" APP on your mobile device. Register and log on to the APP. Please first your mobile device's location information.
- 2 In the WiFi interface (Settings->WiFi interface) of the control panel, press " **WiFi** " to switch to EZ/AP status.



- 3 In the APP, find the "Home" interface, press the " + " icon, and add a device.
- 4 Please follow the APP instructions to enable the related permissions.
- 5 Then it will show a device on "JOW SPA" if this device is on pairing status, select the device to join the net.
- 6 Follow the joining net step on "JOW SPA" .
- 7 When the device is added successfully, status will appear on the WiFi interface of the control panel " **WiFi** **STA** ", indicating that the connection is made.
- 8 Then, you can control your device on your mobile APP "JOW SPA" through the internet.

1.2.7 Settings / Overview

7 Overview



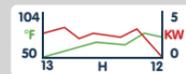
— Display current temperature



— Display current voltage



— Display current power



Display changes in temperature and power within 24 hours

1.2.8 Settings / Information

8 Information

| Information | |
|--------------|-------------|
| Jets 1 | 1 SPD |
| Jets 2 | 1 SPD |
| Jets 3 | 1 SPD |
| Jets 4 | 1 SPD |
| Light | RGB |
| Light V | 5V |
| Blower | Yes |
| Disinfection | Yes |
| Cpump | Cpump |
| Power Limit | Off |
| WiFi Module | Yes |
| Panel ID | No.1 |
| Panel VER | P8565 V10 |
| Pack VER | P69B133 V10 |

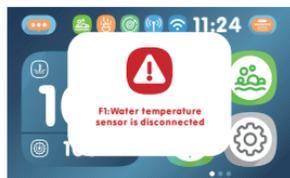
Interface overview

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

Cause: 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

Cause:

The control panel cannot exchange information with the control pack.

Action:

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.

Panel warning information

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.

Panel warning information

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.

Heat Pump ER06: Low Pressure Failure

Low Pressure Failure

Cause:

1. The evaporator fin is dirty and blocked.
2. Refrigerant leakage and dirty fin clogging lead to poor defrosting.

Action:

1. Clean the evaporator fins.
2. Find the leak point and weld it well, and then refill the refrigerant.

Heat Pump ER09: Communication with the upper computer failed

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

Cause:

1. The communication cable is in bad contact or damaged.
2. The mainboard and control panel are damaged.

Action:

1. Check and replace the communication cable.
2. Replace the mainboard and control panel.

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.

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.
5. 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:

The DC fan is damaged, the plug is in poor contact, or the plug is off.

Action:

1. Replace the DC fan.
2. Reconnect cables to the DC fan.

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:

Internal fault of IPM module, see attached table to check related problems.

Panel warning information

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 temp. supercooling protection

Cooling outlet water temperature low protection

Cause:
1. The water outlet temperature is lower than the system protection value, the water flow is small, and the pump is abnormal.
2. The pipe has air or is blocked.
3. The inlet water temperature probe is off.
Action:
1. Check whether the water valve or water pump is started.
2. Clean the pipes and exhaust the air in the pipes.
3. Reconnect the water outlet temperature probe.

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).

Heat Pump ER32: Heating outlet water high temperature protection

Heating outlet water high temperature protection

Cause:
1. The water outlet temperature is higher than the system protection value, the water flow is small, and the pump is abnormal.
2. The pipe has air or is blocked.
3. The inlet water temperature probe is off.
Action:
1. Check whether the water valve or water pump is started.
2. Clean the pipes and exhaust the air in the system.
3. Reconnect the water outlet temperature probe.

Panel warning information

Heat Pump ER33: Outer Door Coil High Temperature Protection

Outer Door Coil High Temperature Protection

Cause:
The condenser Temp. is higher than the protection setting point, usually appeared with Er32, Priority display Er32.
Action:
solution like the E32.

Heat Pump ER35: Compressor Current Protection

Compressor Current Protection

Cause:
1. The incoming voltage supply is too low.
2. The compressor is overloaded.
3. The thermal relay is damaged.
Action:
1. Ensure the incoming voltage supply is normal.
2. Reduce compressor load, if damage, replace it.
3. Replace the thermal relay.

Heat Pump ER42: Internal Coil Temperature Failure

Internal Coil Temperature Failure

Cause:
The sensor plug is in bad contact or falls off, and the sensor is damaged.
Action:
Check and replace the inner coil temperature sensor.

Heat Pump ER44: Ambient Temperature Too Low Protection

Ambient Temperature Too Low Protection

Cause:
The ambient temperature is too low.
Action: /

Heat Pump I-45: Ambient Temperature Too High Protection

Ambient Temperature Too High Protection

Cause:
The ambient temperature is too high.
Action: /

Panel warning information

ER20 fault will display the following error codes at the same time, the error codes will switch every 3 seconds. Among them, error codes 1-128 are displayed in priority.

When error codes 1-128 don't appear, then error codes 257-384 can show.

If two or more error codes appear at the same time, then display error codes accumulation.

For example, 16 and 32 occur at the same time, display 48.

| Error Code | Name | Description | Solution suggestion |
|------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | IPM Over-current | 1.The IPM overloaded or overheated. 2.The U,V,W driver short-circuited. 3.The IPM module fault. 4.The compressor damaged. | 1.Ensure that the ring temperature, water temperature, water flow, etc. are within the operating range of the unit. 2.Use a multimeter to measure the motor U,V,W in ohmic gear to ensure no short circuit. 3.Replace the frequency conversion module. 4.Replace the compressor. |
| 2 | compressor synchronous abnormal | 1.The compressor overloaded, instantaneously. 2.The compressor does not match the program. 3.The difference between high and low pressure starts the compressor excessively. | 1.Ensure that the ring temperature, water temperature, water flow, etc. are within the operating range of the unit. 2.Replace the driver board with the correct program. 3.Ensure that the high and low pressure difference starts normally. |
| 8 | compressor output phase absent | 1.The U, V, and W cables of the compressor are missing or improperly connected. 2.The compressor does not match the program. 3.The difference between high and low pressure starts the compressor excessively. | 1.Check whether the U, V, and W wires of the compressor are missing or in poor contact. 2.Update the driver. 3.Ensure that the high and low pressure difference starts normally. |
| 16 | DC bus low voltage | 1.The power supply voltage too high. 2.The capacitor fault. 3.The PFC module fault. | 1.Ensure that the power supply is stable. 2.Check the capacitor after it is powered off. 3.Replace the faulty frequency conversion module. |
| 32 | DC bus high voltage | 1. The fan on the host is faulty. 2. The air duct is blocked. | 1.Ensure that the power supply voltage is normal. 2.Replace the capacitor. 3.Replace the faulty frequency conversion module. |

Panel warning information

| | | | |
|-----|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 64 | Radiator over temperature | 1.The fan on the host is faulty. 2.The air duct is blocked. | 1.Check and replace the fan. 2.Ensure proper ventilation. |
| 128 | Radiator temperature error | 1.The heat sink sensor is short-circuited or open. 2.Heat sink fouling. 3.The ambient temperature too high. | 1.Replace the frequency conversion module. 2.Remove dust and scale from the heat sink. 3.Lower the ambient temperature. |
| 257 | communication failure | 1.The connector of the communication cable between the main board and the driver board is in poor contact or falls off. 2.Internal components of the heat pump damaged. 3. The output voltage of the power supply board in the module abnormal or no output. | 1.Reconnect and ensure stability. 2.Replace the internal components. 3.Replace the power module. |
| 264 | AC Input low voltage | 1.The input voltage too low. 2.The current transformer damaged during transportation. | 1.Ensure that the input voltage is normal. 2.Ensure that the current transformer works properly. |
| 288 | IPM too high temperature | 1.The fan is faulty or the air duct blocked. 2.The ring temperature rises too fast, resulting in over-temperature drop too late to react. 3.The power supply voltage and current too high or too low. | 1.Replace the fan. 2.Ensure that the air duct unblocked. 3.Reduce the ring temperature. 4.Ensure that the power supply voltage and current are normal. |
| 320 | Compressor peak current too high | 1.Compressor load is too large. 2.The driver board is faulty. 3.The compressor is damaged. | 1.Ensure that the ring temperature, water temperature, water flow, etc. are within the operating range of the unit. 2.Replace the compressor driver plate. 3.Replace the compressor. |