IR Thermostat
IR2900

IR2900 is a Z-Wave 700 series thermostat which is compliant to Z-Wave-to-IR bridge to control split air conditioner by receiving Z-Wave command and converting to Infrared command. IR2900 can control various brands and models of air conditioner globally combination with the all-around built-in and cloud-stores IR database. With distinct display, you can intuitively read the room temperature with setting buttons to have a peace-in-mind smart home control experience.

Specification

- Power Supply: rechargeable battery/ 5V USB Type-C
- Z-Wave 700 series
- Support S2 encryption
- Temperature Range: 0～55℃（32-131℉）
- Humidity Range: 0%～90%RH
- Working Environment:-10~+55℃ <90%RH
- Dimension: 105*105*15.6 mm
- Z-Wave Frequency: Operating frequency range, defined by the regulatory bodies (for Z-wave inEurope: 868.4 MHz, or other regions 908.4/916.0 MHz , 921.4 MHz)
- Maximum Transmitting Power: +3dBm
- Housing: PC+ABS
- Hole pitch: 60.3mm
- Installation: wall-mounted or tabletop placing

- **Declaration of Conformity**

Hereby, we declare that the device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

- **WEEE Directive Compliance**

The device marked with this symbol should not be disposed of with household waste. It is the user's responsibility to deliver the used appliance to a designated recycling point.

- **Z-Wave Compliance**

The thermostat is a fully compatible Z-Wave Plus V2 device.

Important Safety Instruction

Read the instructions before starting up the unit!

This product is not a toy. Keep out of reach of children and animals!

Do not expose the device to moisture, water or other liquids. Do not place liquids near or on the device!

Do not attempt to disassemble, repair or modify the device yourself!

This product is for indoor use only. Do not use outdoors!

CAUTIONS!

Flush-mount only into a UL/ETL/CE certified plastic junction box. The minimum size should be 65*65*45mm, minimum Volume is 190cm³. Use Copper Conductors Only.

Installation

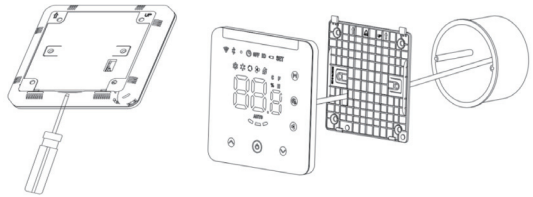
Preparation

CAUTION:

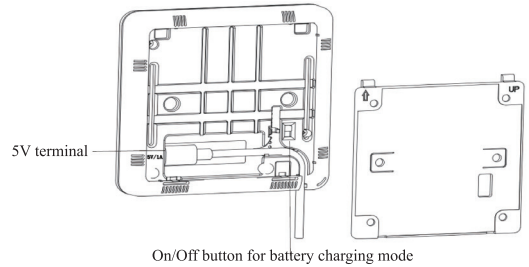
Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!

Installation

Step 1: Separate the device into two parts: the front panel and the mounting plate.



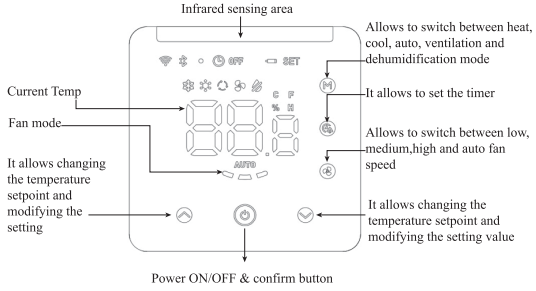
Step 2: Put 5V adapter into the junction box, insert the wire into the 5V terminal by following the wiring diagram as below.



Step 3: Secure the bottom part onto a junction box with screws, and then mount the front panel back.

Paso 4: Confirm the device is well mounted, power on and it is ready to operate.

Display



1. Network Indicator
2. Bluetooth Indicator
3. Battery Charging Indicator
4. Timer Indicator
5. OFF Power OFF Indicator
6. ID Z-Wave ID
7. Low Battery-Power Warning
8. SET Setpoint Temp

Operation

On/Off Setting

In battery charge mode: remove the mounting plate at the back, switch the power button to ON, then the device will be powered on. Note: If the rechargeable battery has run out of the power, please charge the device by 5V USB Type-C.

In 5V USB Type-C charge mode: remove the mounting plate at the back, put the charging wire into 5V USB Type-C charging port, if switch the power button to ON, then the rechargeable battery will be charged in the meantime, if switch the power button to OFF, then only the device is charged and the rechargeable battery will not be charged.

Match the infrared code of the air conditioner via Bluetooth

1. Connect Bluetooth to IR2900

When there is no infrared code library in the device (the device has not downloaded the infrared code or the device has restored into factory setting), the device automatically enters the Bluetooth pairing mode when powered by USB, the Bluetooth indicator flashes, the ID number of Bluetooth is displayed on the Home page, tap any key to exit the Bluetooth pairing mode. When the device is powered by battery, tap any key to exit the Bluetooth pairing mode or it will automatically exit the Bluetooth paring mode after 30 minutes.

When the infrared code needs to be modified, long press M + key of the device synchronously for 3sec until the bluetooth icon in the upper left corner flashes. The last 3 digits of bluetooth ID will be displayed on the screen (e.g. 123)； Click "Next" of APP, APP will scan Bluetooth device, and "IR2900_X123" will appear on the APP. Then click to complete the connection. The Bluetooth icon of IR2900 will light up after successful connection. Here is App's download information:

2. Choose a brand of air conditioner

Enter air conditioner brand search, or manually find the corresponding brand, if it is not able to know the model then just select the brand of the air conditioner. Then click to enter the next step.

3. Pair the infrared code of the air conditioner

Place the device in front of the air conditioner as close as possible (within 7 meters). If the air conditioner can be correctly controlled by testing more than three keys on the APP interface, the pairing will be considered successful. If it is not working, click "Next" and repeat the test until a successful pair.

4. Download infrared code

After successfully paired the infrared code, click "Yes, Use this" button, enter the download interface, wait for the progress bar to complete, click "Home" to complete and exit.

5. Local control test

If local operation mode, fan, setting temperature etc can control the air conditioner normally, indicating that the infrared code pairing has been downloaded successfully, and can be used normally.

Problems that you may encounter

1. Some keys are not being able to control the air conditioner. Maybe it is not being chose the most appropriate infrared code, please follow the above steps on the APP to choose the most matching set of infrared code.

2. Tried everything but couldn't control the air conditioner
Please take a picture of the model of the remote control and send it back to the manufacturer.

Batch download infrared code library:

1. If the device has downloaded the infrared code, then restore the device into factory setting first.

2. Power on multiple devices (IR2900) within 5 meters from the mobile phone (As the Bluetooth paring mode will automatically exit after 30 minutes if the device is powered by battery, we suggest that there is no more than 280 units of devices to be download the infrared code library in batch at a time when the devices are powered by battery, otherwise some devices may not be downloaded successfully. But there is no limit if the devices are powered by USB). All devices (IR2900) enter the Bluetooth pairing mode, and the ID number of Bluetooth will be displayed on the screens.

3. Open the "IR thermostat"APP, click the Batch Download, check the infrared code to be downloaded, and then click Start Batch Download. The mobile APP will automatically connect the devices (IR2900) and download the infrared code one by one. Keep the devices powered on and do not manually operate the devices until the download is completed. After infrared codes are download completely, the device Bluetooth indicator will automatically turn off. If the device is powered by battery, it will enter the sleep mode automatically. If the device is powered by USB, it will automatically enter the Home page and after a period of time to transfer to sleep mode.

Temperature Setting

1. Indoor temperature is displayed on the home page.

2. Setting temperature of current mode is displayed on the interface when pressing or , "SET" icon will be displayed on upper right side, the setting temperature value is adjustable.

Brightness Setting

1. In the home page, long press for 3 seconds, xx.x%（x indicates digit）will be displayed on the interface, it is the current value of LED brightness.

2. Press or to set the LED brightness, there are eight levels can be set from 100%-87%-75%-62%-50%-37%-25%-12%. Click to confirm and exit.

Battery Level Display

In the home page, long press for 3 sec, "xx.x%（x indicates digit）" will be displayed on the interface, it is the percentage value of the remaining capacity of the battery, then press any key to exit.

Humidity Value Display

In the home page, long press for 3 sec, "xx.x%（x indicates digit）"will be displayed on the interface, it is the percentage value of current humidity, then press any key to exit.

Timer Function

Set timer to turn off the air conditioner regularly

1. In the home page, short press to enter the timer setting interface, the timer indicator icon will flash constantly.

2. Short press or to set the timer of turning off the air conditioner regularly (setting range is 0.5-24H), after the timer is set, short press again to enable the timer shutdown function, then timer indicator icon will be always on.

Disable timer function

In the home page, short press twice to disable the timer function, the timer indicator icon will be disappeared.

Temperature Deadband Setting (when the device is controlled by IR)

Long press + + synchronously for 3 sec, it displays current value of deadband, short press or to adjust the value then press to confirm and exit.

Notice:

1. When deadband is 0 (default value), the control logic of the device is the same as the AC remote control, that means the setting temperature on the device is the same as the AC.

2.When deadband is set to 1-3, the device will follow thermostat's internal control logic to control AC's setting temperature, in order that the indoor temperature reaches the setting temperature of the device. Note: In this mode, it is normal that the setting temperature of the device differs from that of air conditioner, if you want to keep the indoor temperature value close to the setting temperature of the device, set deadband to 1.)

Restore Factory Setting

Long press + + synchronously for 3 sec, it displays "333" then press for 4 times, the display will change from "333"->"222"->"111"->"000"->"OFF", then factory restore setting succeeds.

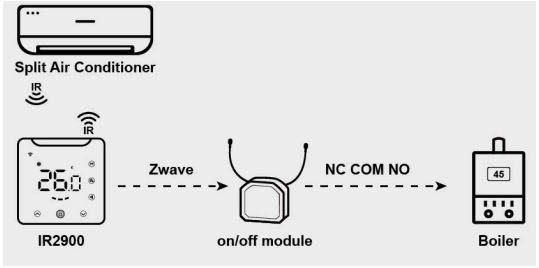
Including & Excluding of Z-Wave Network

1. In the home page, long press and synchronously for 3 sec enter into Z-Wave interface, Product ID will be displayed on the interface.

2. If Product ID is 0, press to include the device into Z-Wave network, if the inclusion is successful, it will not show 000 on the interface.

3. If Product ID is not 0, press to exclude the device from Z-Wave network, if the Exclusion is successful, it will show 000 on the interface.

• Scene Application of IR2900 :



There are four scene applications for IR2900.

Scene application 1:

Heating and cooling with IR control(choose 1 for Z-Wave parameter No.4 & No.5),under this application, IR2900 is able to directly associate with a Z-Wave on/off module to control a heating equipment like wall-mounted boiler as well as controlling an IR split air conditioner for cooling.
(**Note:** it is able to associate with at most 5 pieces of Z-Wave on/off modules, the heating equipment can be replaced by a cooling equipment or a fan or other on/off equipments)

Scene application 2:

Heating and cooling with association group control (choose 0 for Z-Wave parameter No.4 & No.5),under this application, IR command is not used for cooling and heating neither. IR2900 will work as a general wireless Z-Wave thermostat.

Scene application 3:

Heating with IR control, cooling with association group control（choose 1 for Z-Wave parameter No.4 and choose 0 for Z-Wave parameter No.5 ） under this application, IR command is used for heating only.

Scene application 4:

Cooling with IR control, heating with association group control（choose 0 for Z-Wave parameter No.4 and choose 1 for Z-Wave parameter No.5） under this application, IR command is used for cooling only.

• Association Group

AG identifier	Max Node ID	Command Classes	Trigger situation
1	1	COMMAND_CLASS_SENSOR_MULTILEVEL_V5, SENSOR_MULTILEVEL_REPORT_V5	*1.* When temperature unit is Celsius degree, the parameter 2 set to 1,variation of detected temperature is greater than the setting value of parameter 3. *2.* The parameter 2 set to 2, when the report is that the interval time is greater than the setting value of parameter 5. *3.* When temperature unit is Celsius degree, the parameter 2 set to 3,variation of detected temperature is greater than the setting value of parameter 3 or the reported time is greater than the setting value of parameter 5.
		COMMAND_CLASS_THERMOSTAT_MODE_V2, THERMOSTAT_MODE_REPORT	Device Mode changes
		COMMAND_CLASS_THERMOSTAT_OPERATING_STATE, THERMOSTAT_OPERATING_STATE_REPORT	Device status changes
		COMMAND_CLASS_THERMOSTAT_SETPOINT_V2, THERMOSTAT_SETPOINT_REPORT_V2	Set point value changes
		COMMAND_CLASS_THERMOSTAT_FAN_MODE, THERMOSTAT_FAN_MODE_REPORT	Fan mode changes
		COMMAND_CLASS_THERMOSTAT_FAN_STATE, THERMOSTAT_FAN_STATE_REPORT	Fan status changes
		COMMAND_CLASS_BATTERY,BATTERY_REPORT	Variation of battery capacity is greater than 5%
		COMMAND_CLASS_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Restore the factory setting
2	5	COMMAND CLASS_BASIC, BASIC_SET	Variation of working status of the device in the heating mode
3	5	COMMAND_CLASS_BASIC, BASIC_SET	Variation of working status of the device in the cooling mode

• Z-Wave Parameter Setting:

Number	Function	size	description	Default	Possible values
2	Variation of reported temperature(℃)	2	Unit 0.1℃ 0：not report to gateway when temperature varies 3-255： n *0.1℃ automatically report to gateway when variation of temperature greater than this value	5	0，3-255
3	Variation of reported humidity	1	0：not report to gateway when humidity varies 1-99: automatically report to gateway when variation of humidity greater than this value	6	0-99
4	whether to send IR command when the device is in the heating mode	1	0：not send 1：send	1	0-1
5	whether to send IR command when the device is in the cooling mode	1	0：not send 1：send	1	0-1
6	The number of times to verify and resend after sending a command to the device of association group 2	1	0：not verify 1-9：the number of times to resend if verification failure 10：always verify till success	3	0-10
7	The number of times to verify and resend after sending a command to the device of association group 3	1	0：not verify 1-9：the number of times to resend if verification failure 10：always verify till success	3	0-10
10	Lock key	1	0:OFF--key works 1:ON --keys of up and down not works（this function is invalid for menu interface ）	0	0-1
11	Beep	1	0:OFF 1:ON	1	0-1
12	Temperature deadband setting when the device is controlled by IR	1	0: Local setting temperature is same as setting temperature of air conditioner. 1-3: Value of temperature deadband (n*1℃), the device will follow thermostat ' s internal control logic to control AC ' s setting temperature, in order that the indoor temperature reaches the setting temperature of the device. (In this case, it is normal that the setting temperature of the device differs from that of air conditioner)	0	0-3
13	Temperature calibration	1	Value of temperature calibration (n*0.1℃)	0	(-100~+100)
14	Screen on	1	0: always on； 1-60: time ofscreen on，unit: minute	1	0-60
15	LED Brightness	1	0：Off 1-8：8 levels brightness，1 means darkest，8 means brightest	8	0-8
16	Temperature deadband when the device is controlled by association group	1	Value of temperature deadband (n* 0.1℃)	10	5-30
FF	Factory restore	1	write 85：restore factory setting； Other Value: invalid (write only)		85

1-Year Limited Warranty

We warrant this product to be free from defects in material and workmanship under normal and proper use for one year from purchase date of the original purchaser. We will, at its option, either repair or replace any part of its products that prove defective by reason of improper workmanship or materials. THIS LIMITED WARRANTY DOES NOT COVER ANY DAMAGE TO THIS PRODUCT THAT RESULTS FROM IMPROPER INSTALLATION, ACCIDENT, ABUSE, MISUSE, NATURAL DISASTER, INSUFFICIENT OR EXCESSIVE ELECTRICAL SUPPLY, ABNORMALMECHANICAL OR ENVIRONMENTAL CONDITIONS, OR ANY UNAUTHORIZED DISASSEMBLY, REPAIR OR MODIFICATION. This limited warranty shall not apply if: (i) the product was not used in accordance with any accompanying instructions, or (ii) the product was not used for its intended function. This limited warranty also does not apply to any product on which the original identification information has been altered, obliterated or removed, that has not been handled or packaged correctly, that has been sold as second-hand or that has been resold contrary to Country and other applicable export regulations.