

PCT503-Z Thermostat

Quick Start Guide

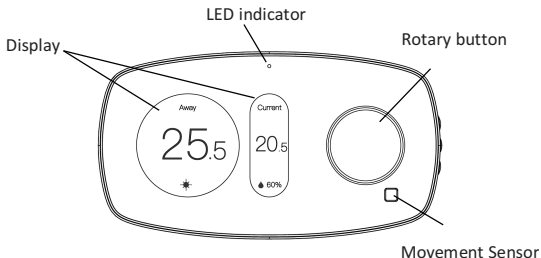
1. Introduction

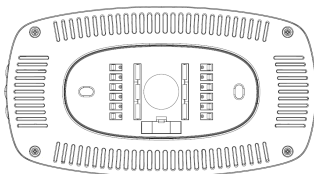
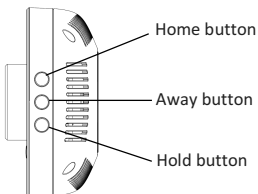
The PCT503-Z ZigBee Thermostat is designed to work with the ZigBee gateway so that you could control your Thermostat remotely. It can control:

- Heating: one and two stages (W1, W2)
- Cooling: one and two stages (Y1, Y2)
- Heat pump: with auxiliary and emergency heat
- Fan (G)
- Power (C, RH, RC)

2. Get to know your device

2.1. PCT503 at a glance





2.2. Buttons Introduction

Rotary button

- Choose options
- Confirm options

Home button

- Switch between home screen and date & time screen

Away button

- Switch between home screen and away screen

Hold button

- Enter “Permanent hold”

Tips: operational details will be described below.

2.3. LED Indicator

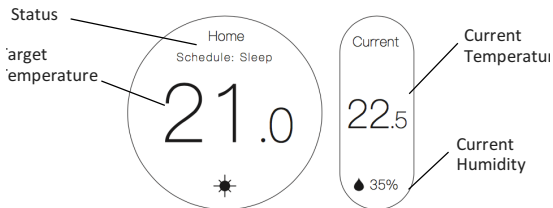
The LED indicator status is as below:

LED status	What it means
Red Flashes	The device has not joined a network.
Alternately flashing in RGB	Thermostat initializing.
Green solid on	Entering update mode.
Green flashes	In the process of updating

2.4. Activity sensor

Activity sensor is used to detect the activity so that the display could be on/off automatically.

2.5. Display



2.6. Icon introduction

icon	What it means
	System
	Fan
	Home
	Schedule
	Settings
	Done

3. Get started

To get started, you will need:

- A Smart Gateway
- A PCT503-Z Thermostat
- The mobile app

Then follow the steps below:

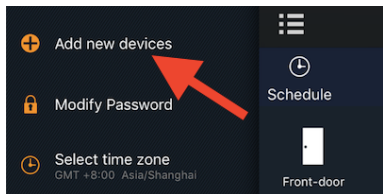
Step 1: Install the PCT503 Thermostat.

Please follow *the Installation Guide* on page 10 to install this device.

Step 2: Set to suit your HVAC.

After installing, press the rotary button, and then follow the setup guide.

Step 3: Select “Add new devices” in the menu of the app.



Tips: for this step, you could also press the “Z” button of the gateway for two seconds until the LED indicator turns blue.

Step 4: The PCT503 will add into the gateway system, the LED indicator will be off when pairing is successful. Please check the app to ensure if it is added to the system.



pct503_c893467004b9



Heat To
16.5



22.3 °C

057%



Cool To
29.5



Mode

Following Schedule



System

Auto



Fan

Auto



Away



Schedule

4. Technical Specifications

SOC Embedded Platform	CPU: Cortex –M4 RAM: 192K
Wireless Connectivity	ZigBee 2.4GHz IEEE 802.15.4
ZigBee Profile	Home Automation Profile
Multiple Sensor	Temperature, Humidity, Motion
Power Supply	AC 24V
LCD Screen	3.5'' TFT Color LCD 320 x 480 pixels
Dimensions	160 (L) x 87.4(W) x 33 (H) mm

5. Safety Notice

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.



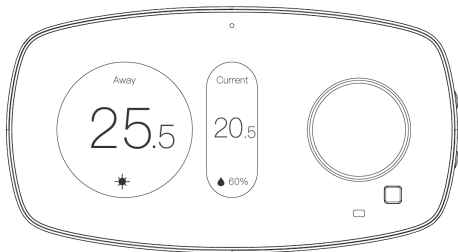
WARNING: Failure to follow these safety notices could result in fire, electric shock, other injuries, or damage to the device or other property. Read all the safety notices below before using the device.

- Avoid high humidity or extreme temperatures.
- Avoid long exposure to direct sunlight or strong ultraviolet light.
- Do not drop or expose the unit to intense vibration.
- Do not disassemble or try to repair the unit yourself.
- Do not expose the unit or its accessories to flammable liquids, gases or other explosives.

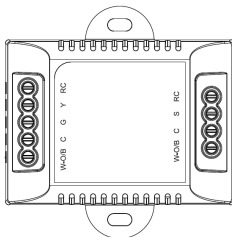
6. Installation Guide

6.1. In the box

Thermostat



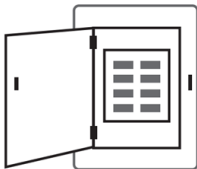
Wiring Module SWB511 (Optional)



6.2. Thermostat Installation

Step 1: Turn power off

This protects yourself and your equipment. Turn off the power at the breaker box or switch that controls your heating/cooling system. And please check that your system is off.



Breaker box

or



Switch

Step 2: Remove the old thermostat's cover

Some covers pop off, while others need to be unscrewed

Step 3: Check your system

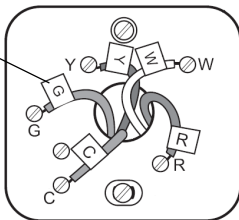


CAUTION: Do not connect PCT503 thermostat to high voltage wires.

If your old thermostat is labeled 120V or 240V or has thick wires with wire nuts, your system is high voltage. If you are not sure, please contact support.

Step 4: label wires with Tags

Label the wires using wire labels as you disconnect them



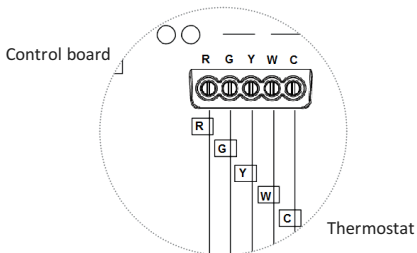
Terminals	What it means
RC	24V AC power from Cooling transformer
RH	24V AC power from Heating transformer
W1	1st stage Primary heating relay / Aux heat
W2	2nd stage Secondary heating relay / Aux heat
Y1	1st stage Primary cooling compressor contactor
Y2	2nd stage Secondary cooling compressor contactor
G	Fan relay
C	*24V AC common
O/B	Changeover valve for heat pumps
S	Wiring Module Connection
*	Multiple use reserved, including but not limited to: emergency heat line, humidifier control

Step 5: Install the wiring module (Optional)

Note: Check your wires, see if there's C-wire. If you have the C-wire, skip this step 5 and go to step 6, if you don't have the C-wire, go on step 5.

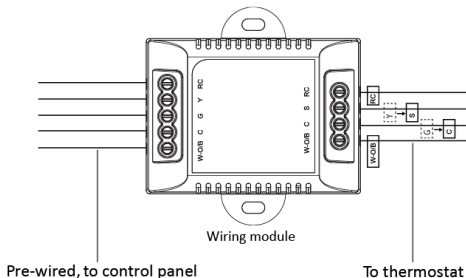
The C-wire provides power to the smart thermostat, if you don't have a C-wire in your old system, you need to install the wiring module to use the existing wires to power your thermostat.

1. Find the control board of your HVAC system, use the tags provided to label the wires from the control board to the thermostat.



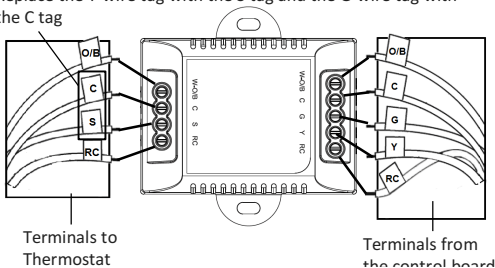
2. Disconnect the R/RC, W-O/B, Y, G wires from the control board and reconnect them correspondingly to the 4 terminals side of the wiring module. For Y-wire and G-wire, you can connect the Y-wire to S-terminal, G-wire to C terminal, then change the label of the Y-wire to the S-wire, the G-wire to the C-wire. Take a picture of your wires with new label to help you remember.

3. Generally the control board will have R, G, Y, W, C terminal, connect the prewired side of the wiring module (5 terminals) to the corresponding terminals.



4. Install your control board

Replace the Y-wire tag with the S tag and the G-wire tag with the C tag

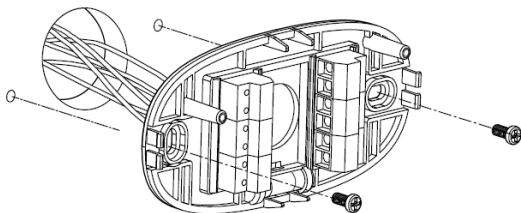


Step 6: Remove the old thermostat base

Unscrew the old thermostat base from the wall, gently pull it out and ensure wires not fall back into the hole in the wall.

Step 7: Attach the base of the PCT503 to the wall

Bundle and insert wires through the hole in the base of the PCT503, then attach the base to the wall with the screws.



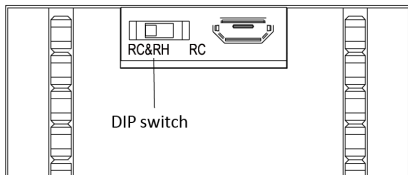
Step 8: Connect wires

Connect wires to the corresponding terminal in the base. If you have installed a wiring module in step 5, use the picture to help you remember the name of wires.

Take a picture of the wires when you done to help you remember, you will be asked for the wiring configuration in the setup wizard.

Step 9: Switch the DIP switch

Switch the DIP switch in the back of the thermostat to RC if you have connected both RC-wire and RH-wire to the wall plate, otherwise switch it to the RC&RH side.



Step 10: Attach the PCT503 to the base

Gently push the PCT503 to the base until it clicks.

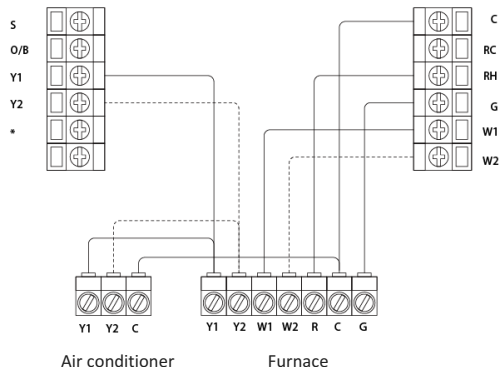
Step 11: Power on your system

Turn the power back on to the Heating/Cooling system.

6.3. Wiring Diagrams

Below will show you the wiring diagrams for common HVAC equipment.

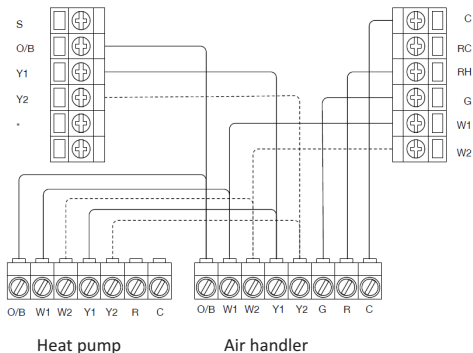
1. Conventional heating and cooling system



----- For 2 heat and cool if applicable

Remove the jumper for RC or RH, switch the DIP switch in the back of the thermostat to RC if you have connected both RC-wire and RH-wire to the wall plate, otherwise switch it to the RC&RH side.

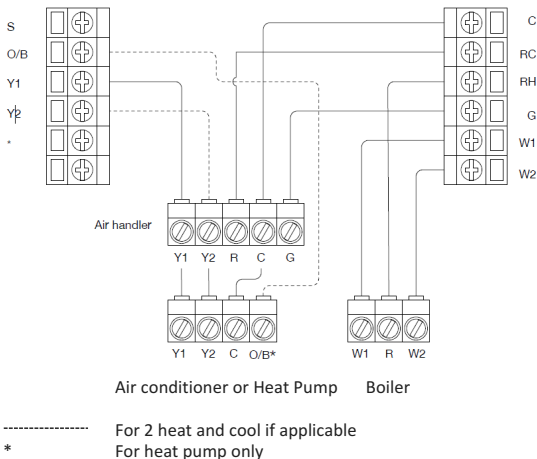
2. Heat pump (air or geothermal) with auxiliary heat



----- For 2 heat and cool if applicable

Remove the jumper for RC or RH, switch the DIP switch in the back of the thermostat to RC if you have connected both RC-wire and RH-wire to the wall plate, otherwise switch it to the RC&RH side.

3. Boiler or radiant system with air handler and conventional cooling or heat pump



Remove the jumper for RC or RH, switch the DIP switch in the back of the thermostat to RC if you have connected both RC-wire and RH-wire to the wall plate, otherwise switch it to the RC&RH side.