PCT503 Smart Thermostat (EU)

Quick Start Guide

Safety Notice

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

- 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 on yourself.
- Do not expose the unit or its accessories to flammable liquids, gases or other explosives.

Technical specifications

Thermostat:

Compatibility	
Compatible systems	• Y-PLAN /S-PLAN Central Heating and hot water • 230V combi boiler • Dry contact combi boiler
Temp. Sensing Range	• — 10° C to 125° C
Temp. Resolution	• 0.1° C, 0.2° F
Temp. Setpoint Span	• 0.5° C, 1° F
Humidity Sensing Range	• 0 to 100% RH
Humidity Accuracy	• ±4% Accuracy through the range of 0% RH to 80% RH
Humidity Response Time	• 18 seconds to reach 63% of the next step value

Wireless Connectivity	
Wi-Fi	• ZigBee 2.4GHz IEEE 802.15.4
Output Power	• +3dBm (up to +8dBm)
Receive Sensitivity	• -100dBm
ZigBee profile	• Home Automation Profile
RF Characteristics	• Operating frequency: 2.4GHz • Internal PCB Antenna • Range outdoor/indoor: 100m / 30m

Physical Specifications

Embedded Platform	• MCU: 32-bit Cortex M4; RAM: 192K; SPI Flash: 16M
LCD Screen	• 3.5" TFT Color LCD, 480*320 pixels
LED	• 3-color LED (Red, Blue, Green)
Buttons	• One rotary control wheel, 3 side-buttons
PIR Sensor	• Sensing Distance 5m, Angle 30°
Speaker	• Click sound
Data Port	• Micro USB
Power Supply	• DC 5V • Rated power consumption: 5 W
Dimensions	• 160(L) × 87.4(W)× 33(H) mm
Weight	• 227g
Mounting Type	• Stand
Operating environment	• Temperature: -20° C ~ +50° C • Humidity: up to 90% non- condensing
Storage Temperature	• -30° C to 60° C

Heat receiver:

Wireless Connectivity	• ZigBee 2.4GHz IEEE 802.15.4
RF Characteristics	• Operating frequency: 2.4GHz • Internal PCB Antenna • Range outdoor/indoor: 100m / 30m
Power input	• 100-240 Vac
Dimensions	• 64 x 45 x 15 (L) mm
Weight	• 63g
Wiring	• 18 AWG

1 Welcome

The PCT503 thermostat makes it easier to control your household temperature and hot water. It is designed to work with the ZigBee gateway so that you could remotely control the temperature anytime through your mobile phone. You can schedule your thermostat working hours so it will work based on your plan.

This guide will provide you with an overview of the product and will help you understand how to use it.

2 In the box

PCT503 Smart Thermostat

Heat Receiver

Stand

User guide

Screws

3 **Installation Guide**

Warning!
• High voltage! The PCT503 thermostat must be installed and serviced only by a qualified electrical personnel.
• Do not touch the terminals of the device during testing.
• Turn off all the power supply for this equipment before installing.
• Make sure that the power supply is off before connecting or disconnecting it to an auxiliary device.
• Always use a properly rated voltage sensing device to confirm power is off.
• Replace all devices, doors and covers before applying power to the equipment.
**Failure to follow these instructions will result in death or serious injury.**

Before the installation, please notice:

You should install the receiver first. The Heat Receiver is necessary and do not connect the thermostat directly to your heating system,even if there are low-voltage wires.High voltage current will ruin your thermostat.

3-1 Installing the Heat Receiver

Step 1. Switch off the power

Before you get started, please turn off the heating system and the thermostat . Remember! You are working with mains voltage, so protect yourself.Adjust the temperature in your old thermostat to double check the system is off.

OFF
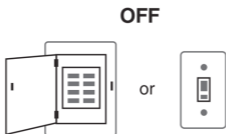
Step 2. Position the Heat Receiver

Use the screws to mount the Heat Receiver near the boiler or junction box.
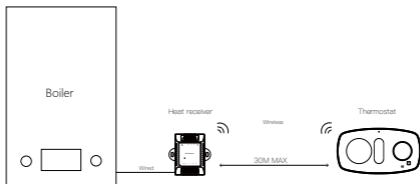
Note: The Thermostat and Heat Receiver communicate wirelessly within 30 meters. Walls and large objects (boiler, hot water tank, etc.) between them can affect the communication range, and metal objects can block the signal.Please try to avoid those objects between the Heat Receiver and the thermostat when installing.

Step 3. Connect the wires

Connect the wires correspondingly from the boiler or junction box to the Heat Receiver according to your heating system:

- Connect the L (live) and N (neutral) terminals on the Heat Recevirer to the L and
N circuit on the boiler or junction box to power the Heat Recevirer.
Connect the heating control circuit to the Heat Recevirer 4 (normally open), 5 (common), 6 (normally closed) as needed.
- If your system has a hot water control circuit, connect it to 1 (normally closed), 2 (common), 3 (normally open) as needed.
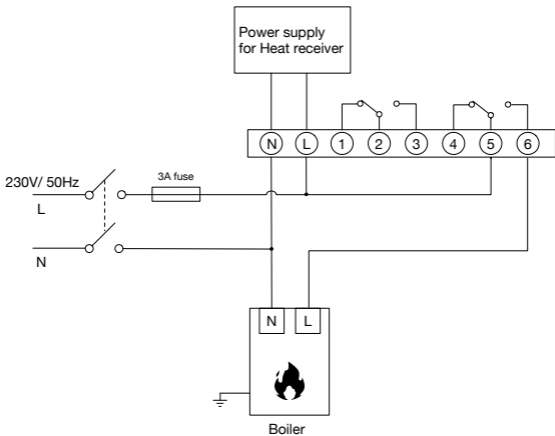

Terminal designation:

Terminals	What it means
L	Live wire
N	Neutral wires
1	Hot water relay normally closed, (3A resistive,1A inductive)
2	Hot water relay common, (3A resistive,1A inductive)
3	Hot water relay normally open, (3A resistive,1A inductive)
4	Heating relay normally open, (3A resistive,1A inductive)
5	Heating relay common, (3A resistive,1A inductive)
6	Heating relay normally closed, (3A resistive,1A inductive)
❤	Hot water LED indicator
♨	Heating LED indicator

Wiring diagrams

Below is the wiring diagrams for different system.

230V combi boiler

Power supply for Heat receiver

230V/ 50Hz

3A fuse

N L 1 2 3 4 5 6

Boiler

Dry contact combi boiler

Power supply for Heat receiver

N L 1 2 3 4 5 6

230V/ 50Hz
L

3A fuse

N

A B

Boiler

S-plan

Power supply for Heat receiver

(N) (L) (1) (2) (3) (4) (5) (6)

230V/ 50Hz
L
N

3A fuse

| N | L |
Boiler

| O | GR | BW |
Heating valve

| O | GR | BW |
Water valve

| N/O | Com |
Hot water tank

Y-plan

Power supply for Heat receiver

N L 1 2 3 4 5 6

230V/ 50Hz
L

3A fuse

N

| N | L | | BL | GR | O | W | | N.O | N.C | Com |

Boiler

Zone valve

Hot water tank
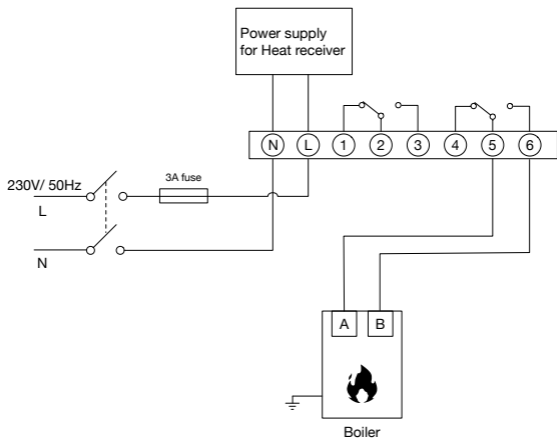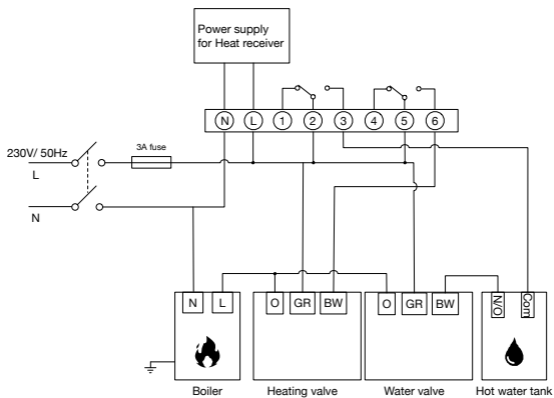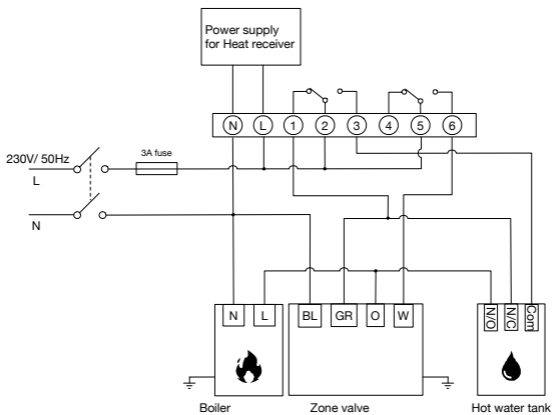
3-2 Installing the thermostat

Position the thermostat

The PCT503 Smart Thermostat should be:

- Away from the heat source and in a room that`s used often, so the thermostat can read the right temperature and the homeowner can easily use it .
- Communicate wirelessly with Heat Receiver within 30 metres and avoid blocking the signal mentioned on page 6.

Step 1. Place the stand

Find a desk, shelf or other flat surface with a socket. Then place the stand on it.

Step 2. Attach the PCT503 to the stand

Gently press the PCT503 into the stand until it clicks. Then connect the power cable through the port on the stand to the Micro Usb port on the back of the thermostat.Plug the power cable into the wall socket.
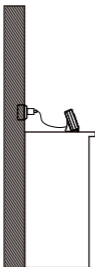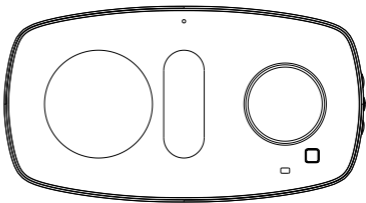
To place it on a flat surface, please use:

Congratulations!
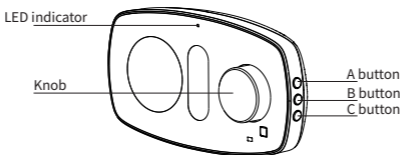**You have completed the Installation.**
Now power on your system.

To complete your setup, follow the instructions on the configuration guide below.

In here you'll find:
— Setup your thermostat
— Device user guide
— Troubleshooting

4 Get to know your device

Thermostat:

LED indicator

Knob

A button
B button
C button

Knob
Rotate to choose from different given options, press to select.

A button
Time and date. Press to show time and date.

B button
Away/Home mode. Press to switch between Away and Home mode.

C button
**Manual**. Press to enter "Manual" mode. Hold current target temperature regardless of the schedule.This will over ride the current schedule settings. This function is not available when your device is in "Away" mode.

LED status
The LED status gives the following information:

LED status	What it means
Flashing in Red	Device has not joined a network.
No light	Device has joined a network

Heat Receiver:

Reset button

Hot water LED indicator

Heating LED indicator
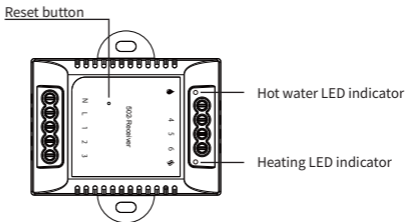
Reset:

Hold the reset button for ten seconds until the LED indicator will flash in green quikly, then release the button and the LED indicator will flash in red.

LED status

The LED status gives the following information:

| LED status	What it means
Flashing in Red	Device has not joined a network.
Steady red light	1. Device has joined a network. 2. The heating/hot water is OFF.
Steady green light	1. Device has joined a network 2. The heating/hot water is ON.
Flashing in green	Disconnected with PCT503.

5 **Configure Network**

Note: Follow the Installation Guide to install the Heat Recevier and the thermostat first.

To get started, you will need:
 • A Zigbee Gateway
 • A mobile phone with a mobile APP installed

5.1 Some simple settings

Follow the wizard on the thermostat to select your settings and preference.
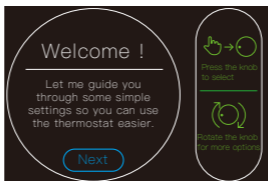
5.2 Connect to the gateway

① Ensure the LED indicator of thermostat is flashing red, if not, please reset the device by following the step below.

RESET:
• Press the rotary button to enter menu page
• Rotate to Setting
• Press to enter Setting
• Rotate to Reset
• Select the item to reset

② Ensure the LED indicator of the Heat Receiver is flashing red, if not, please reset it.

③ Set your gateway to permit joining

④ The PCT503 and the Heat Receiver will add into the gateway system automatically. The LED indicator of the thermostat will be off when joining is successful. And the thermostat and the Heat Receiver will automatically bind with each other, the LED indicator of the Heat Receiver will become steady when they are bound successfully.

⑤ Please check the application to make sure the thermostat has been added to the system.

Now the network setup is done, you can use your mobile app to schedule your desired temperature at anytime and anywhere. Hope you will enjoy the PCT503.

6 Device user guide

Overview
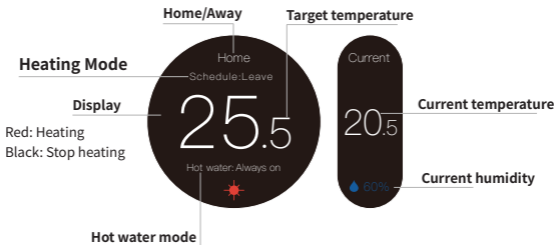
Device menu (Press the Knob to enter).

☀ **Heating mode.**
Off: Turn off Heating
Schedule: Follow schedule to heat
Boost: Ignore the schedule, maintain the current target temperature for one hour to boost heating
Manual: Always maintain the current target temperature to heat

💧 **Hot water mode**.
Always OFF: Always maintain the hot water off
Schedule: Follow schedule to turn the hot water on or off
Boost: Ignore the schedule, maintain the hot water on for one hour to boost the hot water
Always ON: Always maintain the hot water on

⚙ **Setting**.
Date&Time: Set date and time.
Time Zone. Change time zone setting.
Brightness: Adjust screen brightness.
Away setting: Set the temperatures for away mode.
F/C: Celsius or Fahrenheit.
Equipment: Reconfigure your heating system for the thermostat.
Click sound: Turn on/off the click sound.
Device info: Show device information.
Reset: Reset Network setting. Reset schedule (Clear all Schedule).
Reset all settings (reset the thermostat to default factory setting).
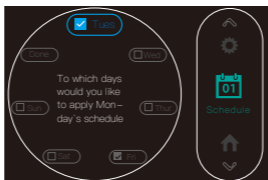
📅 **Schedule**.
Set schedule to change automatically

• Heating schedule:
-Press the button to get into heating schedule setting and rotate to select the day you want to set.

-Press the button and modify your start time and target temperature.

-You can copy this Schedule to other day, or you can select "done" to complete your configuration.

Note: You can rotate the button to change target temperature at the main interface, but it will get into "Boost" for one hour.

• Hot water schedule:

The setting method is the same as the heating schedule, you can set the schedule to turn hot water on or off automatically.

Home/Away. Switch between home and away mode to save energy.
Away: Switch to Away mode.
Home: Switch to Home mode.

Done. Complete the configuration and return to main interface.

5 FAQ

1.What if one of the devices is disconnected?

If one of the thermostat or receiver is disconnected, both the thermostat and receiver need to be restored. Reset the network on the thermostat and restore the receiver to factory. Then reconnect them to the same gateway.

2.Can the hot water be controlled or scheduled on the App?

So far, the hot water can't be controlled and scheduled on the App. You can control and schedule it on the thermostat device.