

# heatmiser®



Model: **DT-TS WiFi RF**



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## What is a Room Thermostat?

A room thermostat simply switches the heating system on and off as necessary.

It works by sensing the air temperature, switching on the heating when the air temperature falls below the thermostat setting, and switching it off once this set temperature has been reached.

Setting a room thermostat to a higher temperature will not make the room heat up any faster. How quickly the room heats up depends on the design & size of the heating system.

Similarly reducing the temperature setting does not affect how quickly the room cools down. Setting a room thermostat to a lower temperature will result in the room being controlled at a lower temperature, and saves energy.

The way to set and use your room thermostat is to find the lowest temperature settings that you are comfortable with, and then leave it alone to do its job.

The best way to do this is to set the room thermostat to a low temperature – say 18°C, and then turn it up by 1°C each day until you are comfortable with the temperature. You won't have to adjust the thermostat further. Any adjustment above this setting will waste energy and cost you more money.

If your heating system is a boiler with radiators, there will usually be only one room thermostat to control the whole house. But you can have different temperatures in individual rooms by installing thermostatic radiator valves (TRVs) on individual radiators.

If you don't have TRVs, you should choose a temperature that is reasonable for the whole house. If you do have TRVs, you can choose a slightly higher setting to make sure that even the coldest room is comfortable, then prevent any overheating in other rooms by adjusting the TRVs.

Room thermostats need a free flow of air to sense the temperature, so they must not be covered by curtains or blocked by furniture. Nearby electric fires, televisions, wall or table lamps may also prevent the thermostat from working properly.



## Installation Procedure



**Do**  
Mount the thermostat at eye level.  
Read the instructions fully so you get the best from our product.



**Don't**  
Do not install near to a direct heat source as this will affect functionality.  
Do not push hard on the LCD screen as this may cause irreparable damage.

*This WiFi Series thermostat is designed to be flush mounted and requires a back box of 35mm (minimum depth) to be sunk into the wall prior to installation.*

### Step 1

Carefully separate the front half of the thermostat from the back plate by placing a small flat head terminal driver into the slots on the bottom face of the thermostat.

### Step 2

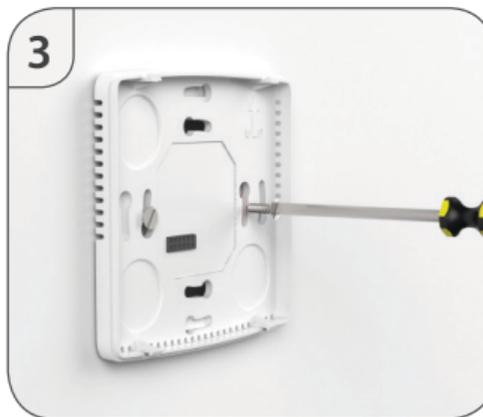
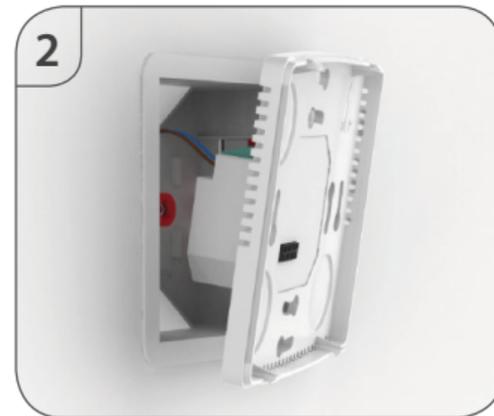
Place the thermostat front somewhere safe.  
Terminate the thermostat as shown in the diagrams on pages 29-31 of this booklet.

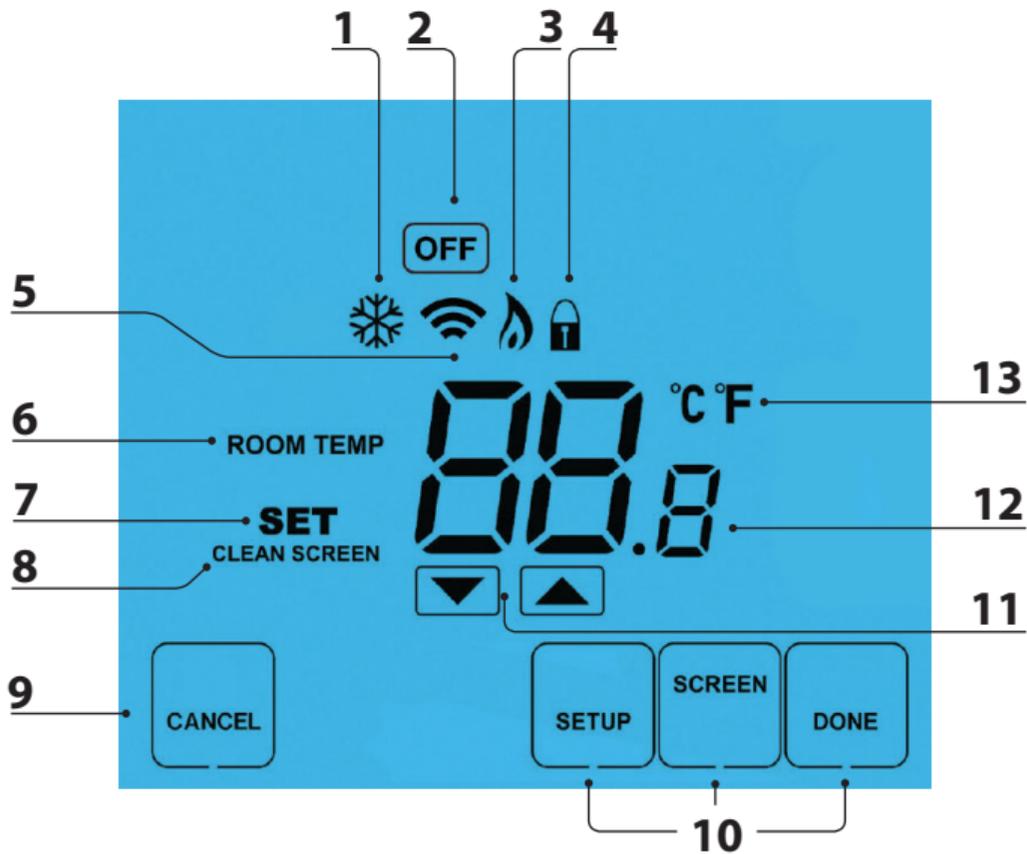
### Step 3

Screw the thermostat back plate securely into the back box.

### Step 4

Clip the front of the thermostat back onto the thermostat back plate.





## LCD LCD Display

1. Frost Icon - Displayed when the thermostat is in frost protection mode.
2. OFF Key - Single press to enable/disable frost protection or press and hold to turn off display.
3. Flame Icon - Displayed when the thermostat is calling for heat.
4. Keypad Lock Icon - Displayed when the keypad is locked.
5. WiFi Icon - Displayed when a WiFi connection is established
6. Room Temp - Indicates the current temperature sensor mode.
7. Set - Displayed when the target temperature is adjusted.
8. Clean Screen - Freezes screen temporarily to enable cleaning.
9. Cancel - Used to exit setup/program operations.
10. Setup/Programming Keys - Used to navigate setup options.
11. Up/Down Keys - Increase or decrease values shown on bottom digit group.
12. Current Temp - Indicates the current sensor temperature.
13. Units of Temperature - Degrees Celsius or Fahrenheit.



## Setting Up Your WiFi Thermostat

### Step 1:

Download and install the WiFi thermostat setup utility from our web site: [www.heatmiser.co.uk/wifi](http://www.heatmiser.co.uk/wifi)

### Step 2:

Connect the thermostat to your PC with the USB cable provided. This will power the thermostat through the USB port and will allow you to test the WiFi connection. Open the setup utility and press Read to view the current thermostat configuration.

### Step 3:

Enter the SSID, Security Type and Security Code of your wireless network. These settings can usually be found on the underside of your wireless router. For more information please consult your router manual. See page 11 for additional information on security types and compatibility.

### Step 4:

Enter a fixed IP address for your WiFi thermostat outside of the router DHCP range. It is likely that your network will be configured to operate on a DHCP basis. This means your router automatically issues an IP address to a device that successfully connects to the network.

Your WiFi thermostat needs a fixed IP address in order for local and remote access to operate and you must set this up manually.

Log into your wireless router and navigate to the LAN settings page.

Find and select the DHCP setup details.

This should define the IP range that can be assigned to devices connecting to the network.

As an example, you may have an IP starting range 192.168.1.1 and ending 192.168.1.99. This means you can safely provide your WiFi thermostat the IP address 192.168.1.100 as no other devices will be assigned this address by the router.

If your DHCP range is from 192.168.1.1 to 192.168.1.253 you cannot use 254 or above.

You need to change the DHCP range, taking care not to change any of the first 3 numbers.

***Tip!** When setting up an IP address, the first three sets of numbers must be the same as the router IP address and the fourth set must not be used elsewhere on the network.*

### Step 5:

Enter the Subnet mask for the network. This information can usually be found on the underside of your wireless router.

### Step 6:

Enter the IP address of your gateway and DNS. In most cases, this is the IP address of your wireless router.

If you have a multi-zone system and are using the Multi-Link, the Gateway of the thermostat will need to be configured as the IP address of the Multi-Link.

### Step 7:

Create a unique username and password that will be used to access your thermostat from a web browser.

**Default Username:** admin

**Default Password:** admin

Change these settings to your personal preference and record for future use.

A 4 digit access PIN is required to use the smartphone/tablet app and also helps to secure your system.

### Step 8:

When you have entered the details of your WiFi network press Apply and disconnect the USB cable, (the thermostat LCD should go blank).

Reconnect the USB cable to the WiFi thermostat, when the thermostat has rebooted it will attempt to connect to your network. This process takes approximately one minute and is complete when the WiFi symbol is displayed on screen.



## Security Types and Compatibility

The WiFi Thermostats operate on the 802.11b standard.

If your router is a G model, you must ensure it is setup to work in B&G mode.

You will not be able to connect to your thermostat without changing this setting on G model routers.

There are currently 4 common methods of securing your wireless connection:

OPEN/DISABLED (not recommended)

W.P.A. (medium security)

W.E.P. (lowest security level)

W.P.A.2. (highest security)

Your choice of security settings in the thermostat must match the setting in your router. Often you will find WPA and WPA2 are a single option in the router. This is perfectly normal as the router automatically selects the correct security level and you can set the thermostat up using either one of these settings.

Passwords can be up to 63 characters in length including spaces \_ . / \ characters. The W.E.P. option is not so simple. Some routers generate a hidden password from a pass phrase whilst others require a 10 or 26 digit hex password and won't accept anything else. Your thermostat utility can deal with both options but the following restrictions may apply:

A hex password can only be made up of the numbers 0 to 9 and the letters a to f (lower case only).

Hex passwords can only be 10 characters or 26 characters in length.

If a passphrase is used it must be either 5 or 13 characters in length but can be any letter or number.

Your thermostat will automatically calculate the same hidden password your router creates from the same phrase.

These restrictions are common to most routers but you should refer to the router manual for specific restrictions that apply to your model.



## Remote Access via App

To remotely connect to your WiFi Thermostat you must forward a port within your router to your WiFi Thermostat.

As all routers are setup differently, you should consult your user manual or the manufacturer's website for more information.

Generally you should create a new service within your router. Within this service you must open **TCP port 8068**.

Use the port forwarding function to forward the new service to the IP address of your WiFi thermostat.



## Remote Access via Web Browser

To remotely access your WiFi Thermostat via a web browser you must first open port 80 and forward this to the IP address of your WiFi Thermostat.

To connect to your thermostat, open your preferred browser and enter the IP address that you gave the thermostat during setup and press enter.

You will be asked to enter a password and username. These are both set to "admin" as default.

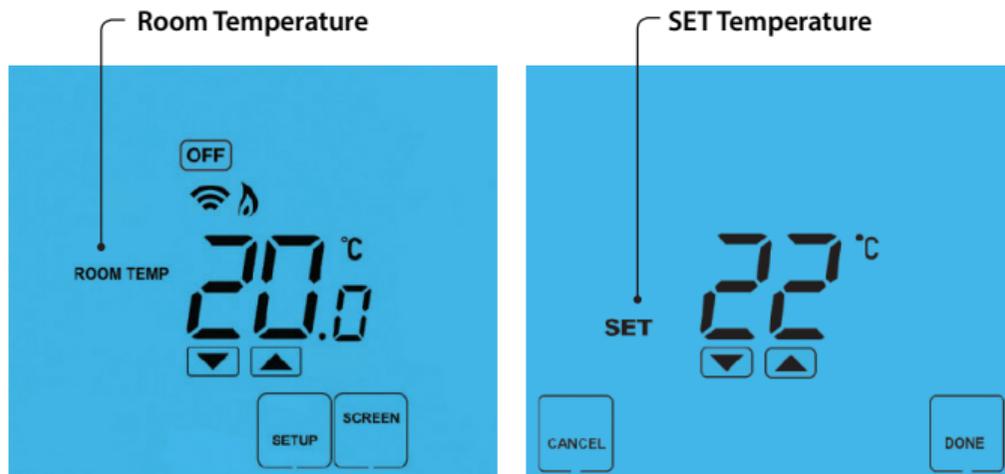
We recommend you change these settings to ensure the security of your system.

For further information, click the help link within the browser.



## Temperature Display

The temperature display information is driven by two different inputs; the sensor measurement and the target temperature you have set.



This is the current room temperature.

This is the temperature you are trying to achieve in your home.



## Pairing with the RC1-W Receiver

If using with the UH1-W wiring centre, turn to page 17.

To pair the thermostat with the RC1-W receiver, follow these steps.

### On the receiver;

Press and hold the pairing button until the communication LED lights up.

### On the thermostat;

- Press PROG and then SETUP .....  
- The small number 01 in the top right corner of the LCD is the feature number.
- Use the Up key to select 06 (Receiver Type) .....   
*The options within feature 06 are: 00 = UH1-W or 01 = RC1-W receiver.*
- Use the Up/Down keys to set feature 06 to 01 (RC1-W) .....  
- Use the Up key to select 07 (Receiver Address) ..... 
- You can now select a Receiver Address from 01-32.  
Use the Up/Down keys to set the RC1-W Receiver address .....    
*(You must set a unique receiver address for each receiver installed).*
- Use the Up key to select 08 (Zone Number) ..... 
- You are able to connect two WiFi RF thermostats to one RC1-W receiver.  
Use the Up/Down keys to select the zone this thermostat controls (01 or 02) .....  
- Press DONE to confirm and exit ..... 

- To pair the thermostat with the receiver, press and hold the SCREEN button for 10 seconds ..... 



### Pair Successful

The address of the receiver will flash on the thermostat display and the Comms LED on the receiver will flash and then go out to indicate the pair is successful.

- Press DONE to confirm the pairing ..... 



### Pair Fail

If the Comms LED does not flash there is a problem with the RF signal and you should reduce the distance between the thermostat and receiver. Where possible ensure there are no metal objects blocking the signal. Check features 06 - 08 have been configured correctly.



Comms LED



## Pairing with the UH1-W

### On the UH1-W:

Set the board address number, choose from 01-09 on the rotary switch.

Note: Each UH1-W will need a different address.



### On the thermostat:

- Press PROG and then SETUP .....  
- The small number 01 in the top right corner of the LCD is the feature number.
- Use the Up key to select 06 (Receiver Type) ..... 

The options within feature 06 are: 00 = UH1-W or 01 = RC1-W receiver.
- Use the Up/Down keys to set feature 06 to 00 (UH1-W) .....  
- Use the Up key to select 07 (Receiver Address) ..... 
- You can now select a board address from 01-09.  
Use the Up/Down keys to set the UH1-W board address .....  
- Use the Up key to select 08 (Zone Number) ..... 
- You are able to connect eight WiFi RF thermostats to one UH1-W.  
Use the Up/Down keys to select the zone this thermostat controls (01 - 08) .....  
- Press the Up key at the top of the screen to select feature 09 ..... 

- Use the Up/Down keys in the centre of the screen to select if the thermostat will bring on the pump & boiler outputs .....  

00 = UFH Zone (Outputs enabled)  
01 = Radiator Zone (Outputs not enabled)
- Press DONE to confirm and exit ..... 



## Testing Communications with the UH1-W

- On the thermostat use the Up key to adjust the set temperature above the room temperature ..... 
  - Press DONE ..... 
-  You will now see the flame icon and after a few seconds the RF symbol will appear. The assigned zone on the UH1-W should now be active.
-  If the output on the UH1-W is not activated, reduce the distance between the thermostat and the UH1-W and check features 06-09 have been setup correctly, then repeat the above process.



## Clean Screen

Pressing **SCREEN** will disable all keys, providing you 15 seconds to wipe the screen clean before the keys are re-activated.



## Locking the Keypad

The thermostat has a keypad lock facility.

- To activate the lock press the bottom right corner of the display and hold for 10s.
- When activated, you will see the Keypad Lock symbol. 
- To cancel, press the bottom right corner of the display again for 10 secs.



Keypad Lock Indicator

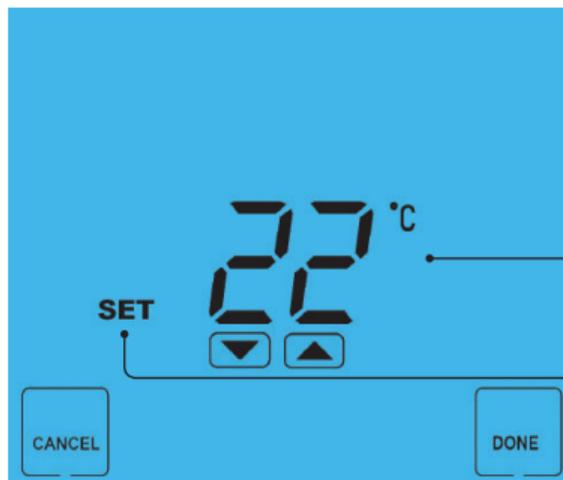


## Temperature Control

The   keys under the temperature display allow you to adjust the set temperature.

When you press either of these keys, you will see the temperature and the word SET appear on screen.

Select the desired temperature and press **DONE** to confirm and exit.



Set Temperature

Set Icon

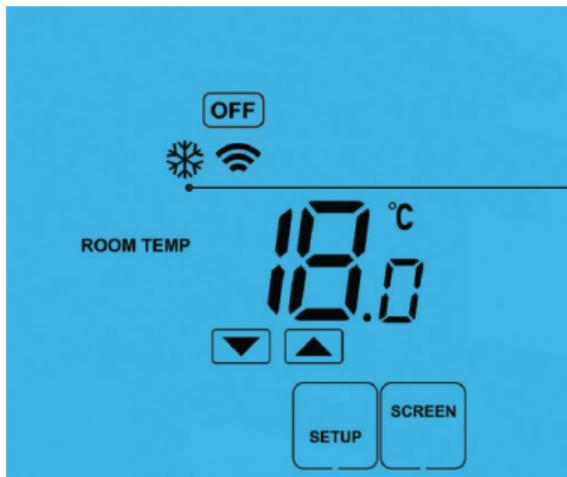
## Frost Mode

Pressing the **OFF** key once will place the thermostat in frost protect mode.

In this mode, the thermostat will display the frost icon and will only turn the heating on should the room temperature drop below the set frost temperature (see page 23).

Should the heating be turned on whilst in frost mode, the flame symbol will be displayed.

To cancel the frost protect mode, press the **OFF** key once.



Frost Protection Mode Enabled

## Heating On/Off

The heating is indicated ON when the flame icon is displayed.

When the flame icon is absent, there is no requirement for heating to achieve the set temperature but the thermostat remains active.

To turn the thermostat OFF completely, press and hold the OFF key ..... **OFF**  
The display and heating output will be turned off completely.\*

To turn the thermostat back ON, press the ON key once ..... **ON**

Thermostat completely OFF



Thermostat powered ON



\*See Feature 3 on page 23



## Optional Features Explained

THE FOLLOWING SETTINGS ARE OPTIONAL AND IN MOST CASES NEED NOT BE ADJUSTED

**Feature 01 – Temperature Format:** This function allows you to select between °C or °F.

**Feature 02 - Switching Differential:** This function allows you to increase the switching differential of the thermostat. The default is 1°C which means the thermostat will switch the heating on 1°C below the set temperature and will turn it off when the set temperature is achieved. With a 2°C differential, the heating will switch on 2°C below the set temperature and will switch off when the set temperature is achieved.

**Feature 03 - Frost Protect:** You can set whether the thermostat will maintain the frost temperature when the thermostat display is turned off. As a default, this is enabled.

**Feature 04 – Frost Protect Temperature:** This is the temperature maintained when the thermostat is in frost mode. The range is 07-17°C. The default is 12°C and is suitable for most applications.

**Feature 05 – Output Delay:** To prevent rapid switching, an output delay can be entered. This can be set from 00 - 15 minutes. The default is 00 which means there is no delay.

**Feature 06 – UH1-W or RC1-W Receiver:** The thermostat can work with our UH1-W 8 zone wiring centre or RC1-W 2 channel receiver. This setting determines which is being used.

**Feature 07 – Receiver Address:** Within one building, up to 9 UH1-W's or 32 RC1-W's can be used. Each receiver must have a unique receiver address.

**Feature 08 – Zone Number:** This is the zone number you are assigning the thermostat to on either the UH1-W or the RC1-W receiver. 01 - 08 - UH1-W, 01 - 02 – RC1-W.

**Feature 09 – Underfloor Heating or Radiator Zone (UH1-W Only):** This setting determines whether the thermostat will activate the pump & boiler output on the UH1-W. If set to 00 the outputs will be activated. 00 = UFH, 01 = Radiators.

**Feature 10 – Fail Safe:** If enabled, the thermostat will send a signal to the receiver every 20 minutes. Should the receiver fail to receive two signals, the receiver will activate the output for 20% of the time. This is to protect the system against a loss of wireless signal and in case the thermostat battery fails whilst you are away.

**Feature 11 – Temperature Up/Down Limit:** This function allows you to limit the use of the up and down keys. This limit is also applicable when the thermostat is locked and so allows you to give others limited control over the heating system.

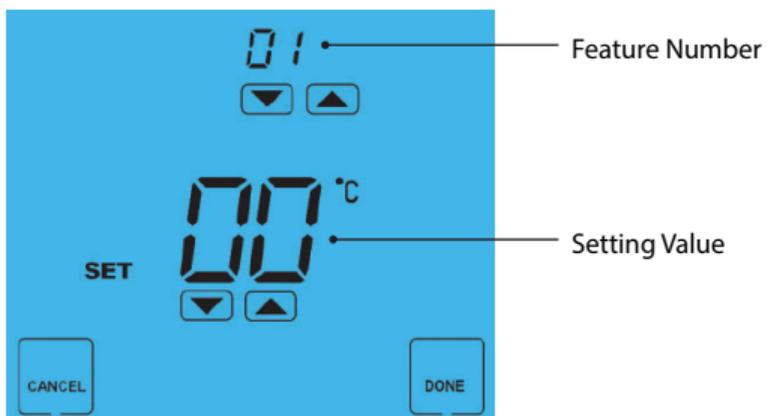
**Feature 12 – Air Sensor Selection:** On this thermostat, you can select which sensor should be used. Built in sensor or remote air sensor.



## Adjusting the Optional Settings

To adjust the optional settings, follow these steps.

- Press SETUP ..... 



- Use the Up/Down keys at the top of the screen to select the feature number (shown on page 26) and then use the Up/Down keys in the center to adjust the setting .....  
- Press DONE to confirm and exit ..... 



## Optional Settings - Feature Table

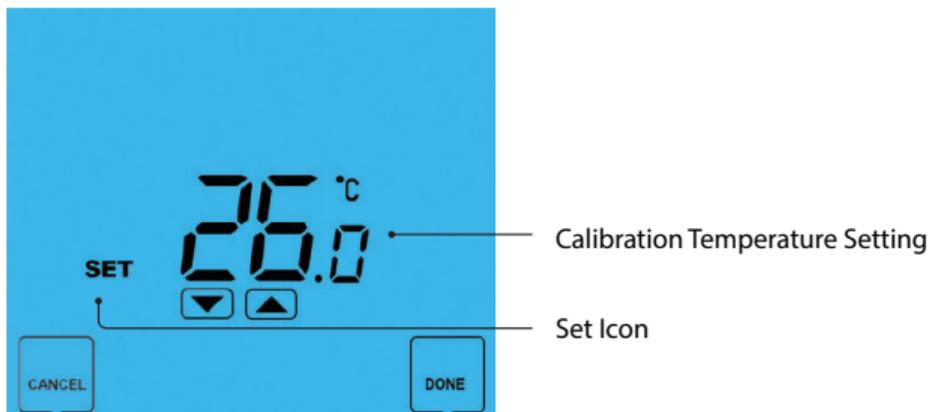
FEATURE	DESCRIPTION	SETTING
01	Temperature Format	00 = °C 01 = °F (°C = Default)
02	Switching Differential	0.5° - 3.0°C (1.0°C = Default)
03	Frost Protect	00 = Disabled 01 = Enabled (01 = Default)
04	Frost Protection Temperature	07° - 17°C (12°C = Default)
05	Output Delay	00 - 15 Minutes (00 = Default)
06	Receiver Type	00 = UH1-W, 01 = RC1-W
07	Receiver Address	UH1-W = 01-09, RC1-W = 01-32
08	Zone Number	UH1-W = 01-08, RC1-W = 01-02
09	UFH or Radiators (UH1-W only)	00 = UFH, 01 = Radiators
10	Fail Safe	00 = Disabled, 01 = Enabled
11	Up/Down Temperature Limit	00° - 10°C (00°C = Default)
12	Sensor Selection	00 = Built in sensor, 01 = Remote air sensor



## Re-calibrating the Thermostat

If you need to re-calibrate the thermostat, follow these steps.

- Press and hold the OFF key to turn the thermostat off .....
- Press and hold the ON key until the temperature appears on the screen .....
- Use the Up/Down keys to configure the new temperature .....
- Press DONE to confirm the new temperature .....
- Press the ON key once to turn the thermostat back on .....



## Factory Reset

The thermostat has a reset function to restore all settings to their factory defaults.

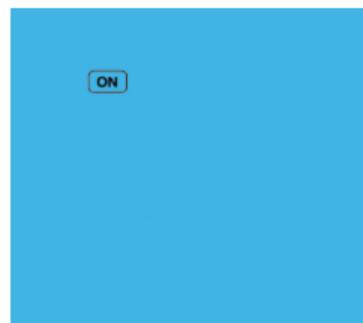
To perform a factory reset, follow these steps.

- Press & hold the OFF key to turn the thermostat display off .....
- Press and hold the bottom left corner of the LCD for 10 seconds.
- All of the screen icons will appear for 2 seconds and then disappear.
- Press the ON key once to turn the thermostat display back on .....

All icons displayed simultaneously.

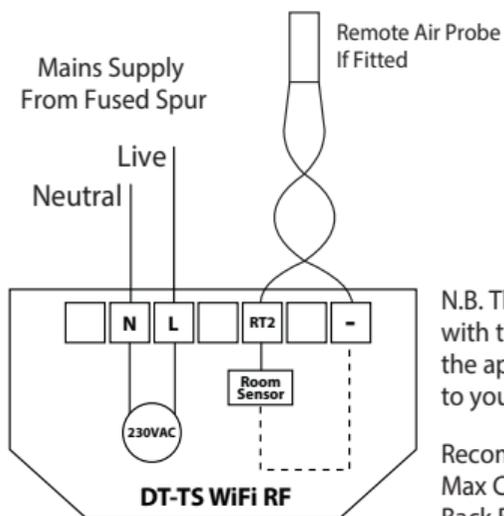


Factory reset is complete.





## Wiring Diagram - DT-TS WiFi RF

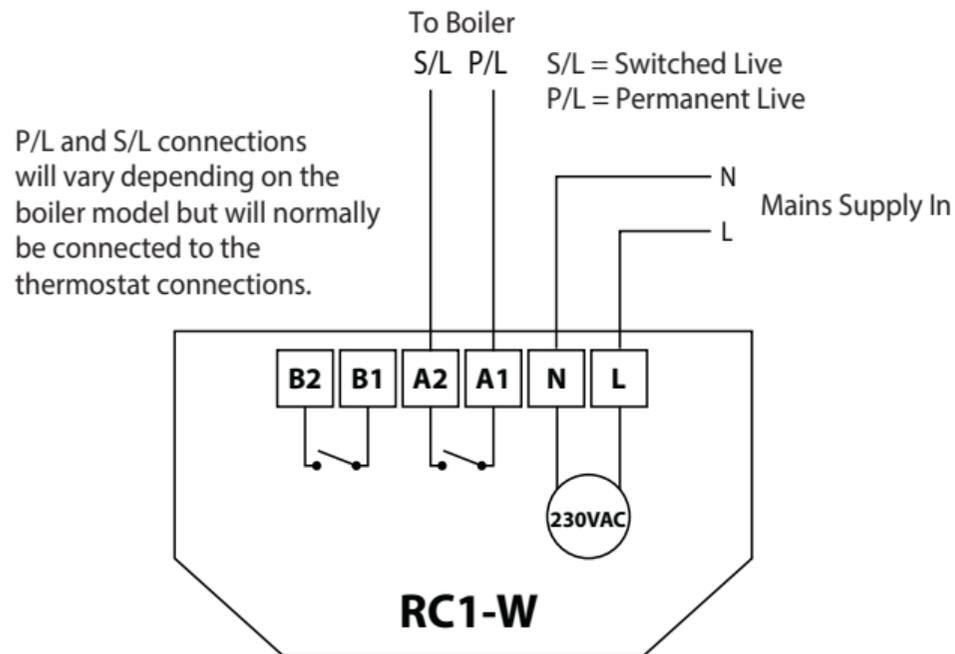


N.B. The DT-TS WiFi RF is designed to work with the RC1-W and the UH1-W. Please refer to the appropriate diagram for connections to your heating system.

Recommendations  
Max Cable Size - 1.5mm  
Back Box Depth - 35mm



## DT-TS WiFi RF with RC1-W Receiver Combination Boiler System









**Heating Professionals:**  
Request a copy of our product installation guide containing detailed technical specifications for our complete product range:  
[www.heatmiser.com/guide](http://www.heatmiser.com/guide)

## Want More Information?

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