heatmiser®

Model: **TM1-TS WiFi RF**

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🔧 Installation Procedure

✓ **Do**
Mount the time clock 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 time clock 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 time clock from the back plate by placing a small flat head terminal driver into the slots on the bottom face of the time clock.
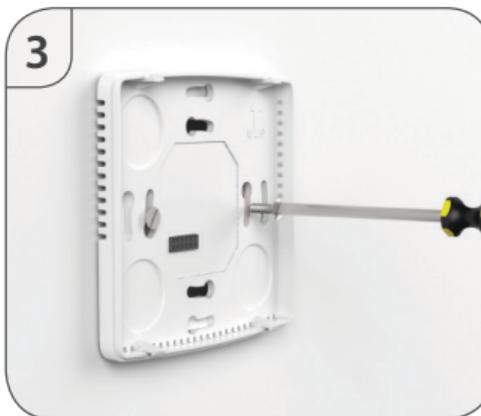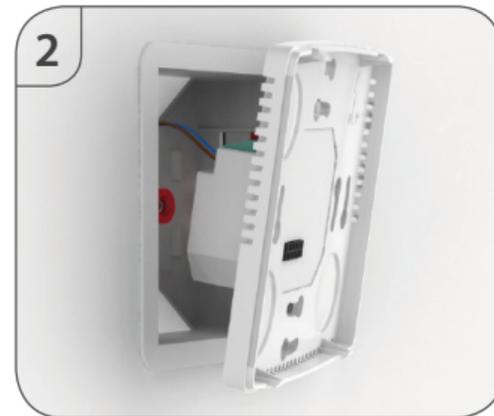
Step 2
Place the time clock front somewhere safe.
Terminate the time clock as shown in the diagrams on pages 28-30 of this booklet.

Step 3
Screw the time clock back plate securely into the back box.

Step 4
Clip the front of the time clock back onto the time clock back plate.
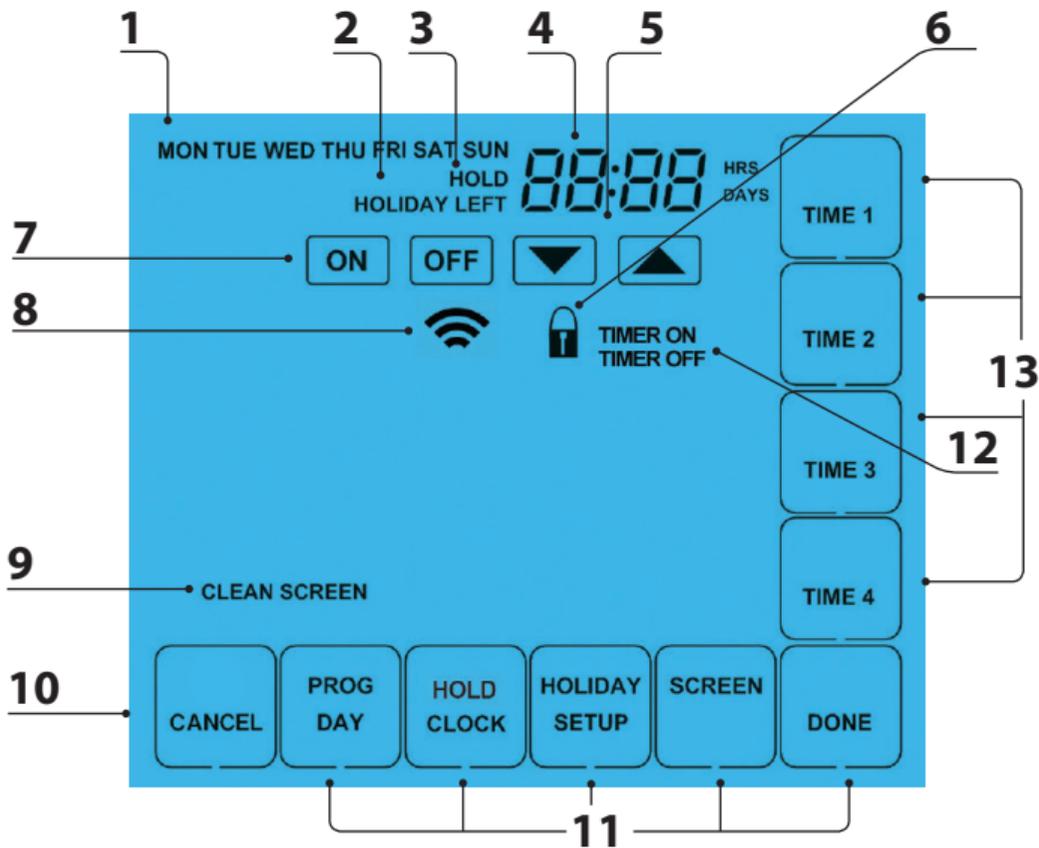
LCD Display

1. Day Indicator - Displays the day.
2. Holiday Indicator - Displayed when the time clock is in Holiday mode.
3. Output Hold - Displayed when the time clock is in Hold mode.
4. Clock - Displays time in normal operation, time left in hold or days left in holiday mode.
5. Up/Down Keys - Increase or decrease values shown on top digit group.
6. Keypad Lock Icon - Displayed when the keypad is locked.
7. ON/OFF Keys - Use to override the timed output. Press and hold OFF to turn the display off.
8. WiFi Icon - Displayed when a WiFi connection is established.
9. Clean Screen - Freezes screen temporarily to enable cleaning.
10. Cancel - Used to exit setup/program operations.
11. Setup/Programming Keys - Used to navigate setup options.
12. Timer Status - Displays the current status of the timed output.
13. Comfort Level Selection Keys - Used in comfort level setup (see page 17).

Setting Up Your WiFi Time Clock

Step 1:
Download and install the WiFi thermostat setup utility from our web site:
www.heatmiser.co.uk/wifi

Step 2:
Connect the time clock to your PC with the USB cable provided. This will power the time clock through the USB port and will allow you to test the WiFi connection.
Open the setup utility and press Read to view the current time clock 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 time clock 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 time clock 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 time clock 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 time clock 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 time clock 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 time clock LCD should go blank).
Reconnect the USB cable to the WiFi time clock, when the time clock 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 time clock 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 time clock 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 time clock 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 time clock 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 time clock 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 time clock 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 time clock you must forward a port within your router to your WiFi time clock.

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 time clock.

Remote Access via Web Browser

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

To connect to your time clock, open your preferred browser and enter the IP address that you gave the time clock 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.

Setting the Clock

To set the clock, follow these steps.

- Press PROG and then CLOCK .... `PROG` `CLOCK`
- Use the Down key to set the hours .... ▼
- Use the Up key to set the minutes .... ▲
- Press the CLOCK key .... `CLOCK`
- Use the Down key to set the day .... ▼
- Use the Up key to set the month .... ▲
- Press the CLOCK key .... `CLOCK`
- Use the Up/Down keys to set the year .... ▲ ▼
- Press DONE to confirm and exit .... `DONE`

Hours ⟶   ⟵ Minutes
Change Hours ⟶ ▼ ▲ ⟵ Change Minutes

SET

CANCEL   CLOCK   DONE
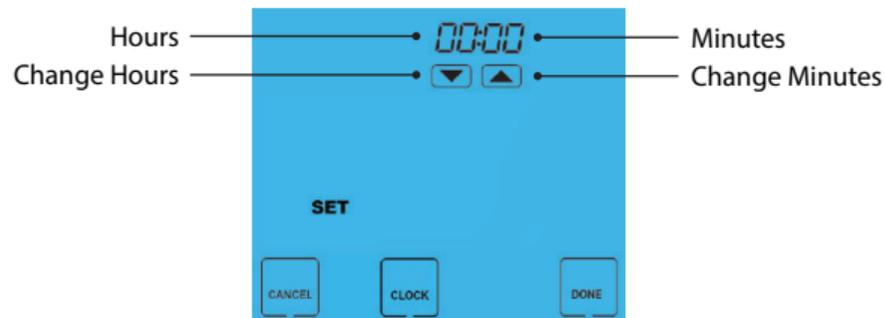
Pairing with the RC1-W Receiver

If using with the UH1-W wiring centre, turn to page 15.

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

On the receiver;
Press the and hold the Pairing button until the Communication LED lights up.

On the time clock;
- Press PROG and then SETUP .... `PROG` `SETUP`

- The display will now show feature 06 (Receiver Type) at the top
  The options within feature 06 are: 00 = UH1-W or 01 = RC1-W receiver.

- Use the central Up/Down keys to set feature 06 to 01 (RC1-W) .... `▲` `▼`

- Use the Up key at the top 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 TM1-TS WiFi RF time clocks to one RC1-W receiver.
  Use the Up/Down keys to select the zone this time clock
  controls (01 or 02) .... `▲` `▼`

- Press DONE to confirm and exit .... `DONE`

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

✓ **Pair Successful**
The address of the receiver will flash on the time clock 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 .... `DONE`

✗ **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 time clock 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.

SET BOARD ID NUMBER HERE 1 TO 9

On the time clock:

• Press PROG and then SETUP .... `PROG` `SETUP`

• The display will now show feature 06 (Receiver Type) at the top.
The options within feature 06 are: 00 = UH1-W or 01 = RC1-W receiver.

• Use the central Up/Down keys to set feature 06 to 00 (UH1-W) .... `▲` `▼`

• Use the Up key at the top 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 / time clocks to one UH1-W.
Use the Up/Down keys to select the zone this time clock
• 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
time clock will bring on the pump & boiler outputs .... `▲` `▼`
00 = UFH Zone (Outputs enabled)
01 = Radiator Zone (Outputs not enabled)

• Press DONE to confirm and exit .... `DONE`

⚭ Testing Communications with the UH1-W

• On the time clock use the Up key to adjust the set temperature
above the room temperature .... `▲`

• Press DONE .... `DONE`

✓ You will now see the flame icon and 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
time clock and the UH1-W and check features 06-09 have been setup
correctly, then repeat the above process.

M Operating Modes

The time clock has three main operating modes.

MODE	DESCRIPTION
00	**5/2 Day Time Clock** In this mode, you can program 4 switching times for the weekdays and 4 different switching times for the weekend.
01	**7 Day Time Clock** In this mode, you can program 4 switching times for each day of the week.
02	**Countdown Timer** In this mode, the time clock will activate the output during the countdown period.

The time clock can be used to control various electrical devices in and around your home e.g. lighting, electric towel rails, hot tubs, sauna's etc.

Refer to the manufacturer instructions for wiring to these devices.

Common time clock wiring requirements are shown in the diagrams on pages 28-30.

Setting the Operating Mode

To select the mode, follow these steps.

• Press the PROG key .... PROG

• Press the SETUP key .... SETUP

• Use the Up/Down keys at the top of the screen to select feature number 16 .... ▲ ▼

• Use the Up/Down keys in the center to adjust the setting .... ▲ ▼
00 = 5/2 Day, 01 = 7 Day, 02 = Countdown timer.

• Press DONE to confirm settings and exit .... DONE

Feature

Mode
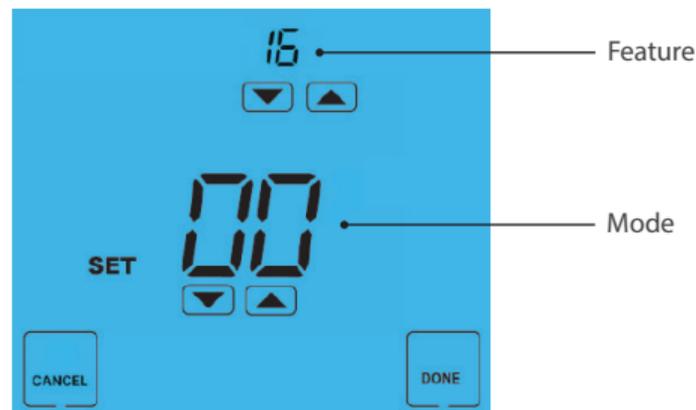
Clean Screen

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 time clock has a keypad lock facility.

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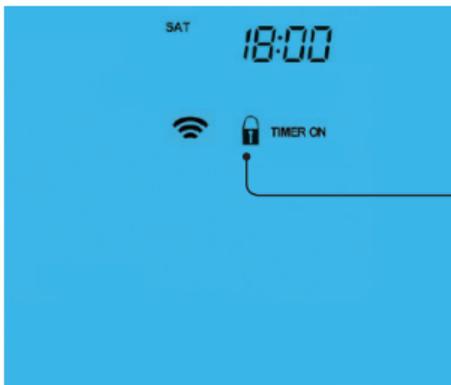
Keypad Lock Indicator

Holiday

During a holiday, the time clock will maintain TIMER OFF.
At the end of your holiday, the time clock will revert back to the programmed setting.

- Press HOLIDAY .... `HOLIDAY`
- Enter the desired duration in days .... ▼ ▲
- Press DONE to confirm and exit .... `DONE`

Note: A holiday period does not start until 00:00 the next day. For example, if you set a holiday period on Friday for 2 days, Saturday will be counted as the first day and the time clock will revert back to the programmed schedule at 00:00 on Monday.

Holiday Icon
Holiday Days
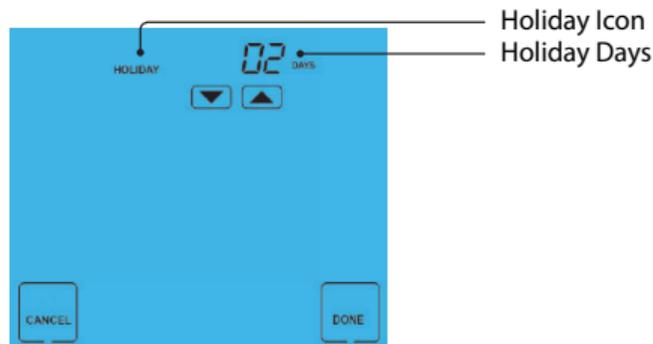
To cancel a Holiday setting, reduce the holiday time to 00 days.

Programming 5/2 Day and 7 Day Modes

Default switching times are pre-programmed but you can change them easily.

Weekday	On Time	Off Time
Wake	07:00	09:00
Leave	16:00	20:00
Return	--;--	--;--
Sleep	--;--	--;--
Weekend	**On Time**	**Off Time**
Wake	07:00	09:00
Leave	16:00	20:00
Return	--;--	--;--
Sleep	--;--	--;--

To set the switching times, follow these steps.

- Press PROG .... `PROG`
- Select TIME 1 .... `TIME 1`
- TIME 1 and ON will flash.
- Use the Up/Down keys to set the ON time for TIME 1 .... `▲` `▼`
- Press OFF .... `OFF`

- Use the Up/Down keys to set the OFF time for TIME 1 .... `▲` `▼`
- Repeat these steps for the TIME 2, TIME 3 & TIME 4 .... `TIME 2` `TIME 3` `TIME 4`
- Press DAY to select the next day to program and repeat .... `DAY`

In 5/2 Day mode the time clock will display "Sat Sun" prompting you to program the switching times for the weekend.

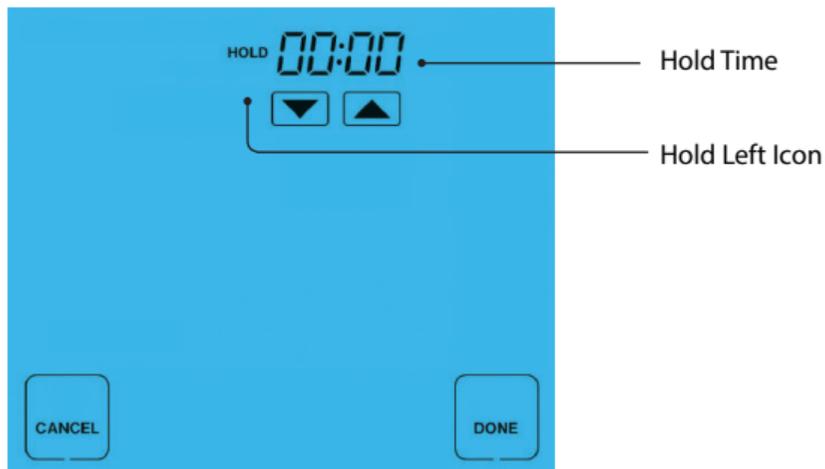*In 7 Day mode, the time clock will display Tue.*

- When complete, press DONE to confirm settings and exit .... `DONE`

⏲ Countdown Mode

- Use the Up/Down keys to set the countdown duration .... ▲ ▼
- Press DONE to confirm and exit .... DONE
- Hold Left will appear showing the time left.

When Hold Left is displayed on screen, the output will be active.

HOLD 00:00 ────── Hold Time

────── Hold Left Icon

CANCEL   DONE

To cancel the Countdown, follow the same steps but reduce the time to 00:00.

⌁ Timer Override

The time clock is able to override its current timer status.

- Press HOLD .... HOLD
- If the timer status is currently on press OFF .... OFF
- If the timer status is currently off press ON .... ON

You will see the timer status change and flash to confirm it has been overridden.

The time clock will return to the program at the next programmed time.

ON   OFF ────── ON/OFF keys

TIMER ON ────── Timer Status
(Flashes in Override)
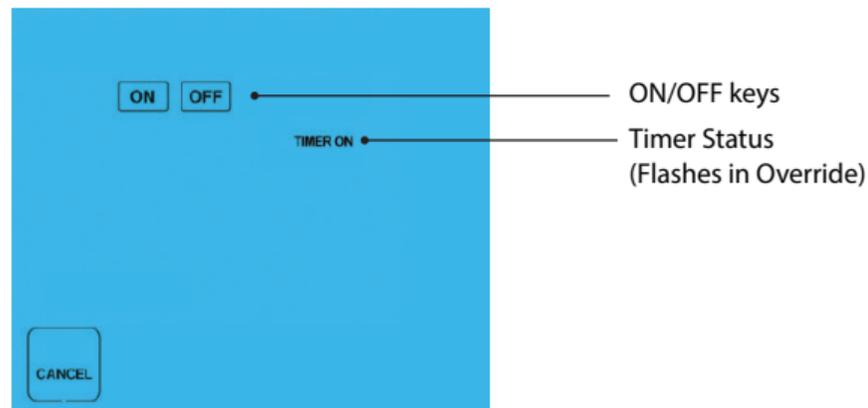
CANCEL

To cancel the Override, repeat the steps above.

Optional Features Explained

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

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 16 - Programming Mode: This function allows you to select between 5/2 Mode, 7 Day mode or Countdown timer.

Optional Settings - Feature Table

FEATURE	DESCRIPTION	SETTING
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
16	Program Mode	00 = Weekday/Weekend (Default) 01 = 7 Day Programming 02 = Countdown mode

Adjusting the Optional Settings

To adjust the optional settings, follow these steps.

- Press PROG .... `PROG`
- Press SETUP .... `SETUP`
- Use the Up/Down keys at the top of the screen to select the feature number (shown above) and then use the Up/Down keys in the center to adjust the setting .... `▼` `▲`
- Press DONE to confirm settings and exit .... `DONE`

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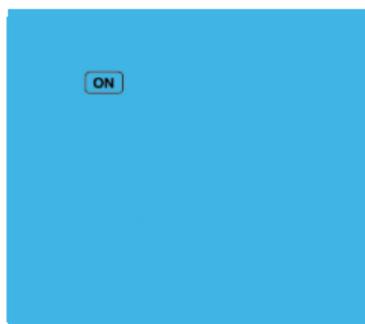
The thermostat has a reset function to restore all settings to their factory defaults.

To perform a factory reset, follow these steps.

- Press & hold the OFF key to turn the thermostat display OFF .... `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 .... `ON`
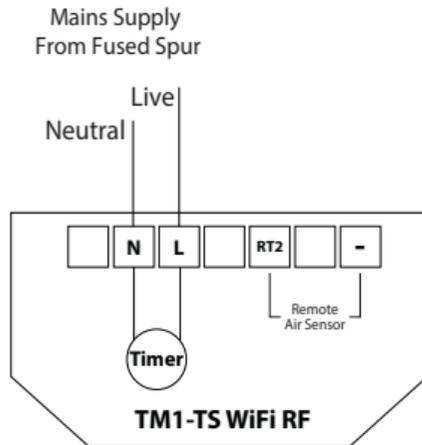
All icons displayed simultaneously.

Factory reset is complete.

Wiring Diagram - TM-TS WiFi RF

Mains Supply
From Fused Spur

Live
Neutral

N L   RT2   -

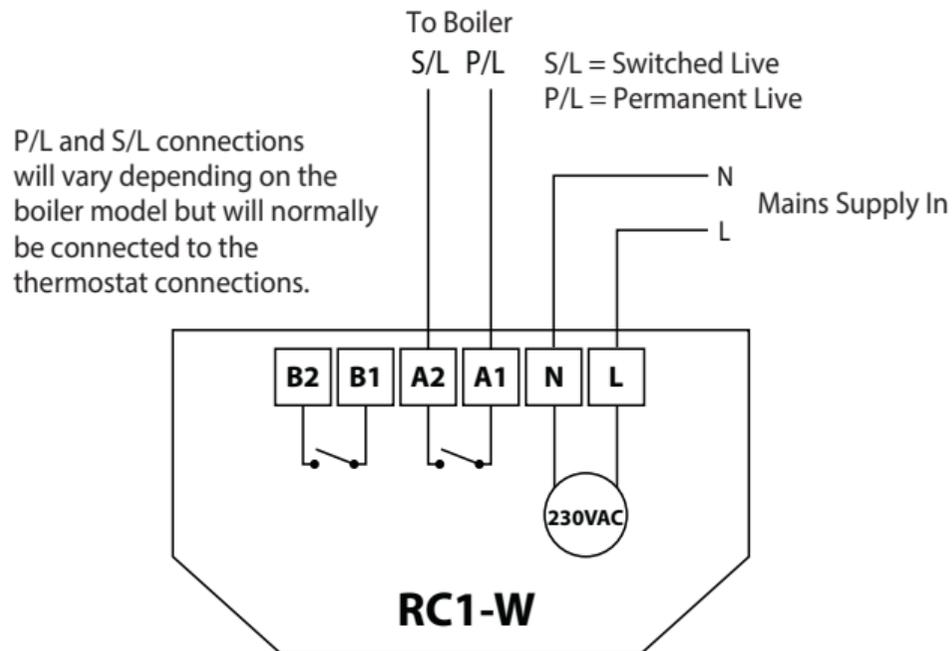Remote
Air Sensor

Timer

TM1-TS WiFi RF

N.B. The TM1-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.
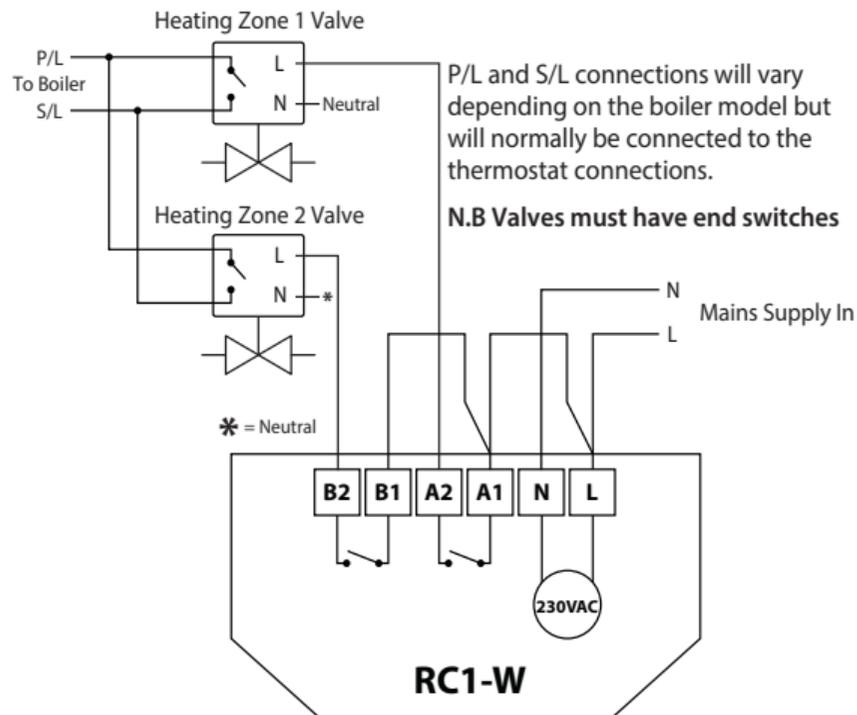
Recommendations
Max Cable Size - 1.5mm
Back Box Depth - 35mm

Wiring Diagram - TM-TS WiFi RF with RC1-W Receiver, Combination Boiler System

To Boiler
S/L P/L

S/L = Switched Live
P/L = Permanent Live

P/L and S/L connections will vary depending on the boiler model but will normally be connected to the thermostat connections.

N
L
Mains Supply In

| B2 | B1 | A2 | A1 | N | L |

230VAC

RC1-W

Wiring Diagram 2x TM1-TS WiFi RF with RC1-W Receiver

Heating Zone 1 Valve

P/L
To Boiler
S/L

L
N — Neutral

P/L and S/L connections will vary depending on the boiler model but will normally be connected to the thermostat connections.

N.B Valves must have end switches

Heating Zone 2 Valve

L
N — *

* = Neutral

N
L
Mains Supply In

| B2 | B1 | A2 | A1 | N | L |

230VAC

RC1-W

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