

TOWERSTAT RF

Selectable Volt Free

Warning – Please read this manual prior to installation or use

Shock Hazard

This unit must be installed by a competent person, in accordance with BS 7671 (the IEE Wiring Regulations), or other relevant national regulations and codes of good practice.

Always isolate the AC Mains supply before removing the unit from the wall box.

CE

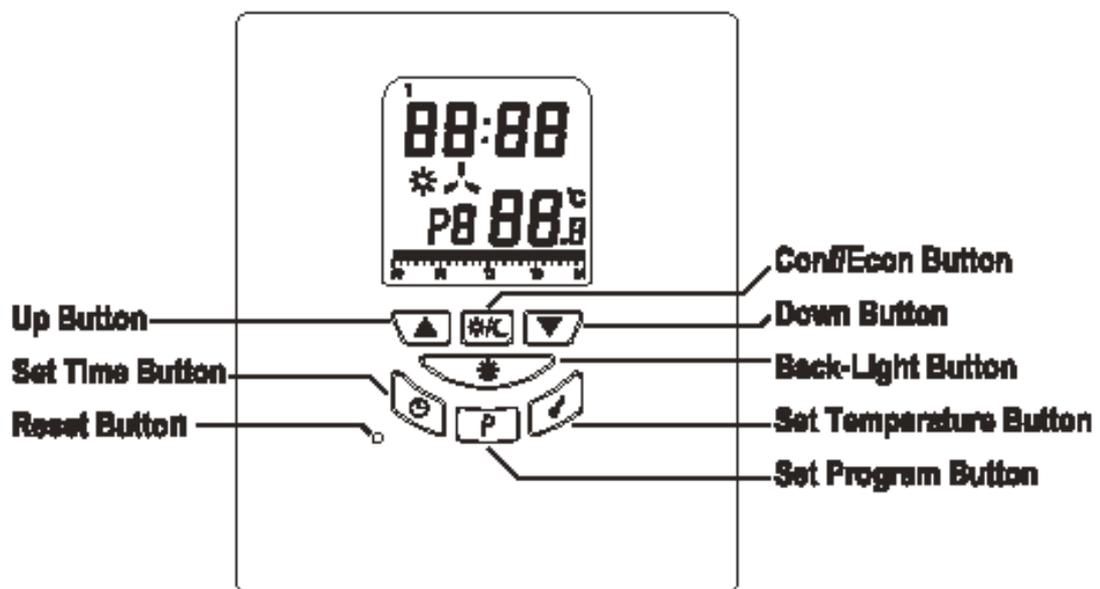
INTRODUCTION

This thermostat can replace most common residential thermostats and is designed to be used with electric, gas or oil heating control systems or cooling systems.

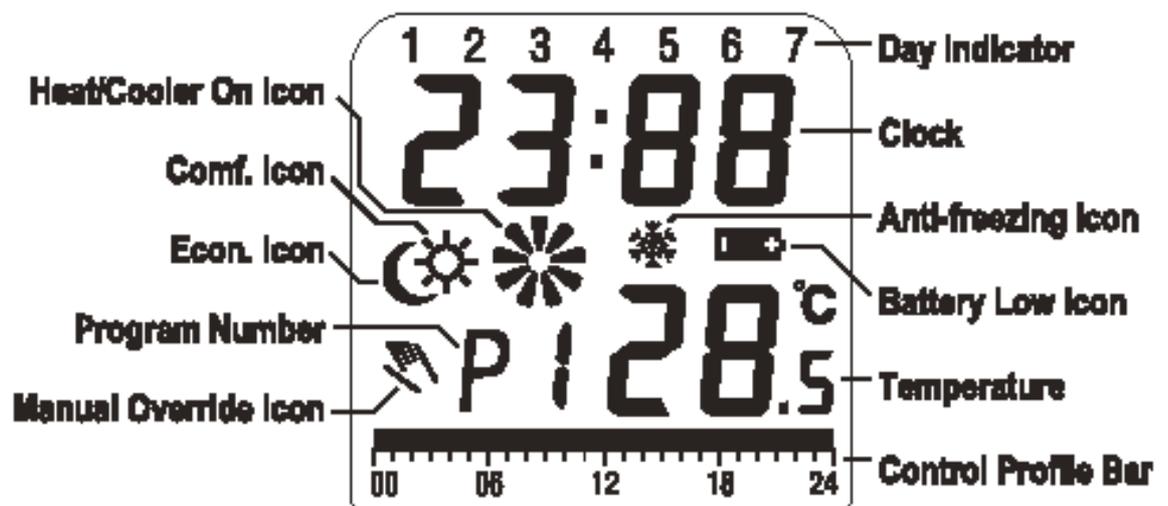
Unlike conventional thermostat devices, this control is a new type of thermostat which separates the functions into two units. The Receiver serves for wiring connections and heat/cool on/off control. The Transmitter serves as the user interface and for temperature sensing / control. the two units are linked by radio frequency (RF)

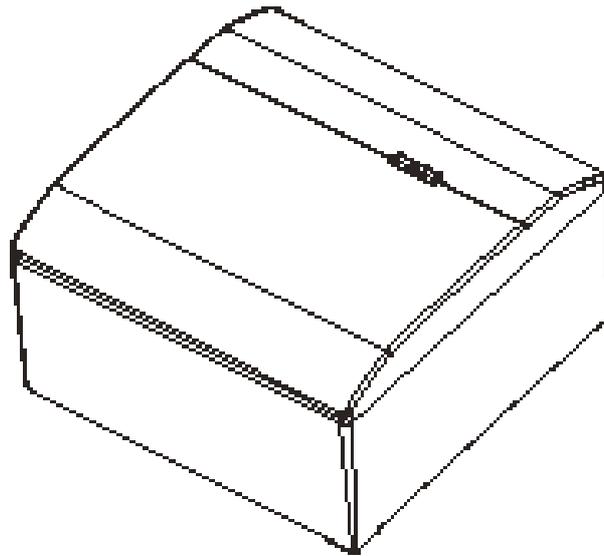
The advantage is that the user can keep the Transmitter nearby and can read / control the temperature of the living area in immediate use.

Transmitter layout:

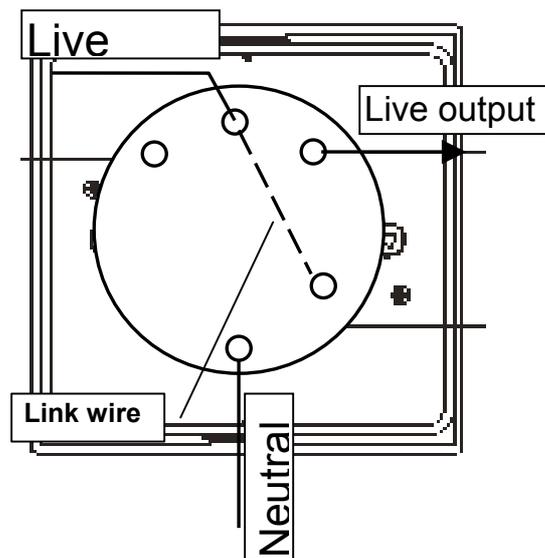
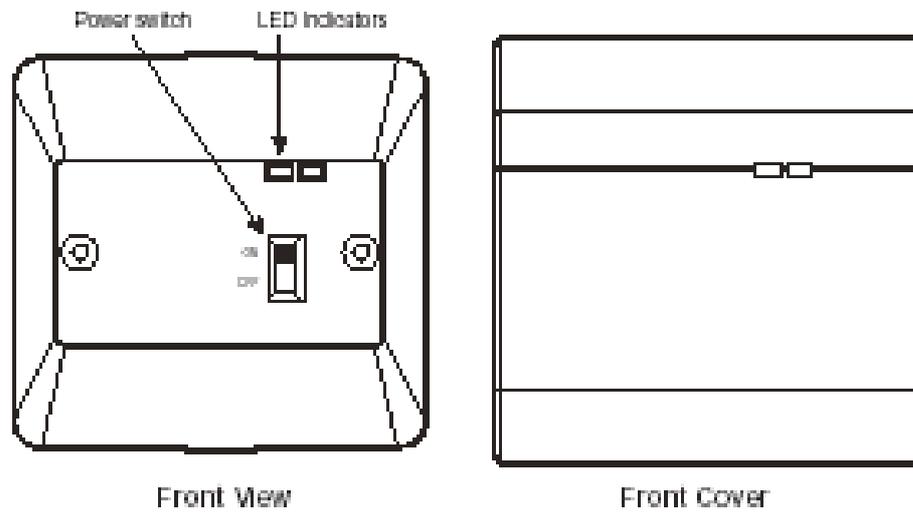


LCD :





Receiver installed on wall box



Features :

Several useful functions and operating modes have been incorporated to adapt to a variety of customer needs, as well as all the features associated with a state of the art programmable thermostat.

Transmitter:

- Can be placed anywhere in the home to detect and control the temperature of an area of the user's choice. Not limited by power control wiring locations.
- Linked with the Receiver via RF. Control distance 100m in free space.
- LCD shows the 'need to know' information only, which is easier to understand.
- Real time clock with day of the week display
- Room temperature display
- Control profile display
- Simplified temperature adjustment – Simplified programming procedure
- 6 pre-defined control profiles, 3 user programmable control profiles
- Protection against frost damage within the heating system
- Temporary override set temperature
- User selectable temperature span
- User selectable heater/cooler operation mode
- Battery level detection
- 2 AA size alkaline batteries
- Slim housing design
- backlit display

Receiver

- Linked with Transmitter via RF
- Power rating up to 230VAC 16A resistive
- Powered by line voltage only. No battery required.
- Two l.e.d. indicators for power and output status

INSTALLATION OF RECEIVER

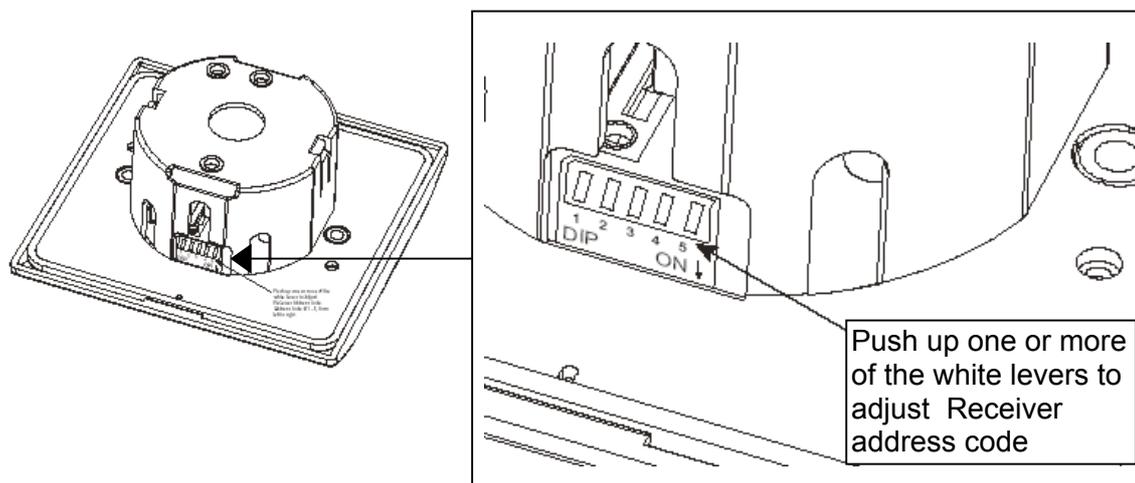
Caution:

1. It is recommended that this device is installed by a qualified electrician
2. The appliance can only be mounted indoors and in areas free from any water or moisture
3. A suitable fuse with a rating not exceeding 13A should be in the power line
4. Wiring must conform to I.E.E. regulations

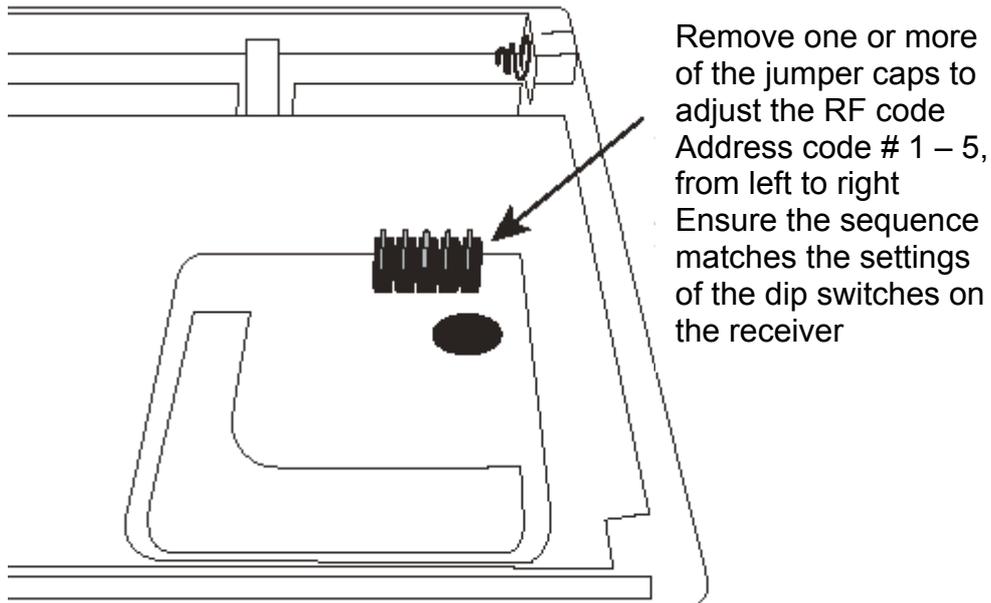
RF Address Code Setting

If there is another user nearby, e.g. in the next dwelling, your Receiver may be operated in error by their Transmitter. You may select a different RF address code to prevent this. The Receiver can only respond to a Transmitter with the same RF coding as its own address code. Please see the information below for an explanation of coding changes.

1. To change the address code of the Receiver, simply push up one or more of the 5 'dip' switch levers (see illustration below)



2. To change the address code of the Transmitter, open the Transmitter housing (refer to battery replacement section to open housing).
3. Remove one or more of the jumper links as shown in the illustration below.



Caution:

1. Address code of the Transmitter must be the same as address code of Receiver. For any jumper link removed at the Transmitter, the corresponding dip switch lever(s) must be put to the 'up' position.
2. Disconnect AC power and remove batteries prior to adjusting address code.

Removing your old thermostat

Caution : to avoid electric shock, isolate the power of the heating / cooling system at the main consumer unit in your home. Read the following instructions carefully before disconnecting the wires.

1. Turn off your old thermostat
2. Remove the cover from the old thermostat
3. Unscrew the old thermostat from the wall plate
4. Now find the screws attaching the wall plate to the wall, and remove them. You should now be able to pull the wall plate a small distance from the wall. Do not disconnect any wires yet, simply locate the wires.

Warning: After removing the wall plate, if you find that it is mounted on a junction box (e.g. a box similar to one behind a light switch or electric outlet) it may connect to a mains voltage circuit and there is a danger of electric shock. Please consult a qualified electrician.

Mounting the Receiver onto the wall / junction box:

The Receiver fixing centres may align with the screw fixings of the existing back box. In this case:

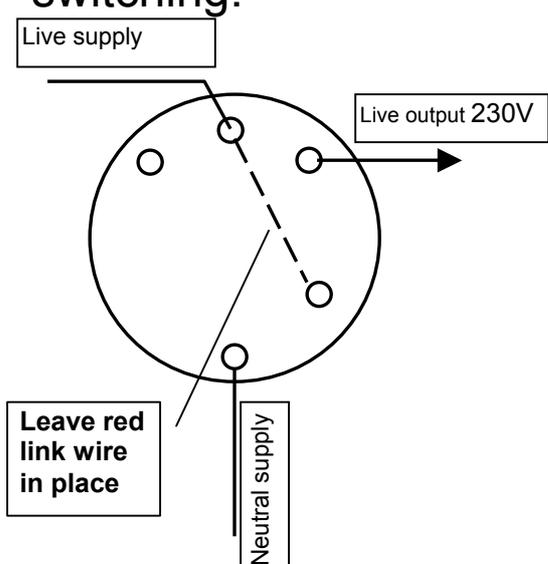
1. Remove the front cover of the Receiver.
2. Connect the wires (see wiring diagram)
3. Securely fasten the Receiver using the machine screws provided.
4. Replace the front cover and installation is complete.

Mounting the Receiver onto the optional wall box:

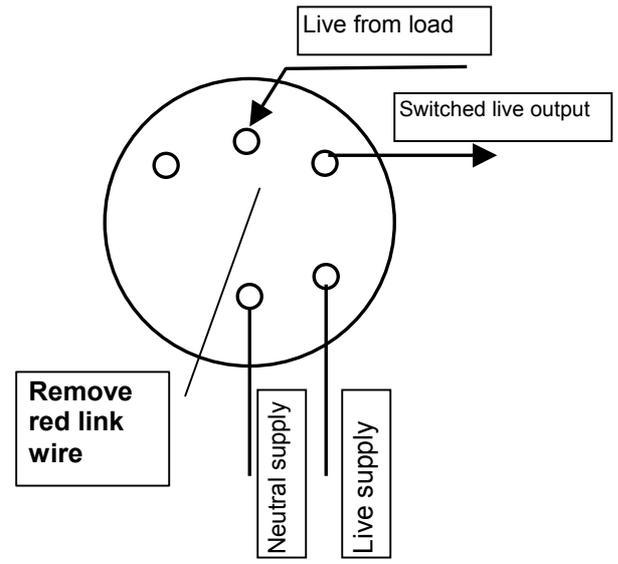
1. Remove the front cover of the Receiver
2. Mark the holes position for the wall box
3. Drill two holes and insert the wall plugs until they are flush with the wall surface
4. Pull the wires into the wall box and fasten the wall box onto the wall
5. Connect the wires (see wiring diagram)
6. Securely fasten the Receiver to the wall box with the two machine screws provided
7. Replace the front cover and installation is complete.

Wiring for 230v or volt-free applications

The Receiver has a volt-free contact, but comes from the factory with a pre-wired red link wire which puts volts onto the switch. Leave the link in place for mains switching, or remove the link for volt-free switching.



Connections for mains switched load:
Leave the link wire in place, and connect the switched-live input of the load to the normally open contact (marked SL (on))

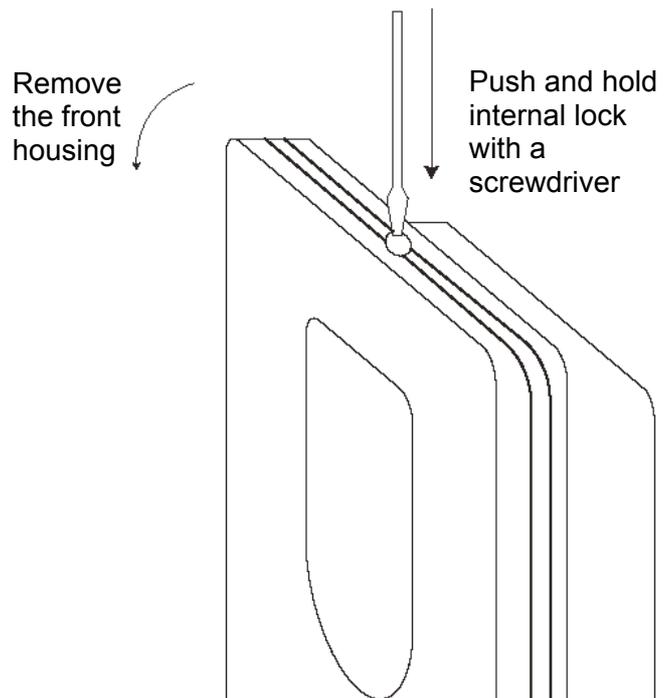


Connections for volt-free switching:
Remove the link wire. Connect the looped terminals of the boiler between common (marked L in) and normally open contact (marked SL (on))

Setting of Transmitter Heating / Cooling Selection

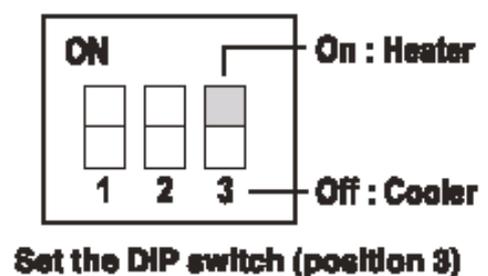
To adjust the Transmitter for heating or cooling function, also for code changes, and to insert / remove batteries, the Transmitter back housing must be removed:

Once the back housing is removed, inside the Transmitter you can find a three-position dip switch. The three switches control the temperature span and set the output for heating or cooling function. Set the dip switches according to your requirements

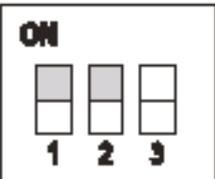


Temperature span selection

Span is the difference between the turn on and turn off temperatures. For example, in heating systems, if you set temperature to 20°C and span to 1°C , the heater will operate when the room temperature drops to 19.5°C and turns off when the temperature rises to 20.5°C . Set the dip switches (positions 1 and 2) according to your selection of temperature span as in the following diagram.



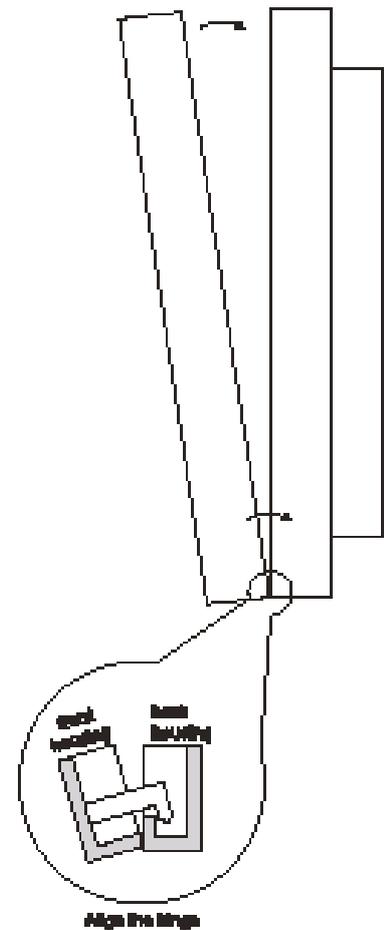
1	2	Span
ON	ON	1 °C
OFF	ON	2 °C
ON	OFF	3 °C
OFF	OFF	4 °C



Battery installation

Your thermostat uses two 'AA' size batteries to operate. To power-up the unit, insert two 'AA' batteries into the battery compartment of the front housing. When power is applied for the first time, the display should show time and the day as well as the room temperature. Press the RESET button after insertion of batteries (use a fine instrument such as a straightened paper clip to gently push the RESET button).

After installation of the batteries, push back the rear housing to the control centre and then the stand. The Transmitter is now ready to be programmed.



Setting the clock (refer to Transmitter layout, p.1)

1. Press the SET TIME button to clear all digits except the day indicator the time display. The day indicator is flashing.
2. While day indicator is flashing, press UP or DOWN button to change the day (Day 1 = Monday)
3. Press the SET TIME button again, the hour digits flash. Now change the hour by pressing the UP or DOWN button. Press and hold the UP or DOWN buttons to speed up the adjustment rate.
4. Press the SET TIME button again, and the minute digits flash. Now change the minutes by pressing the UP or DOWN button.
5. Press the SET TIME button again to return to normal operation mode.
6. The unit will return to normal operation mode if no key is pressed for 10 seconds.

Setting control temperature

1. Press the SET TEMPERATURE button to display the pre-defined set temperature. The sun symbol denotes the comfort (heating ON) temperature setting, and the moon symbol denotes the set-back (heating OFF) temperature setting. Having pressed the SET TEMPERATURE button, toggle between the comfort or set-back temperatures by pressing the comf/econ button.
2. Adjust either temperature to your required level with the UP or DOWN button.

3. Press the SET TEMPERATURE button again to return to normal operation mode.
4. The unit will return to normal operation mode if no button is pressed for 10 seconds
5. The default setting of comfortable mode is 21⁰C for heater mode and 23⁰C for cooler mode. And the economic mode is 10⁰C for heater mode and 26⁰C for cooler mode.

Setting Program

Please read through the whole of the next section before starting to set your own programme – whilst programming, if no button is pressed for 10 seconds, the unit will revert to the automatic running mode.

i) Select Week-day

Press the SET PROGRAM button. The day indicator shows the program day and is flashing. Press the UP or DOWN button repeatedly to select the day or days for which you wish to set a programme. You can select: individual days; the whole week; the working week, or the weekend.

ii) Select a pre-set programme

1. Press the SET PROGRAM button again, the day indicator stops flashing and the program number starts to flash.

2. Scroll through the pre-set program options with the UP or DOWN buttons – these programs can be selected, but they cannot be altered. Use one of the programs if they are suitable for your requirement, or scroll to one of P7, P8 or P9. These three program positions can be user-adjusted to your requirement.
3. Pre-set program choices are shown below:
(solid blocks indicate comfort temperature periods, no blocks indicate economic temperature periods)

Program number	Program profile
Program 1 : Factory Preset "Whole day Comfort"	
Program 2 : Factory Preset "Whole day Econ"	
Program 3 : Factory Preset "Holiday"	
Program 4 : Factory Preset "Whole day (A)"	
Program 5 : Factory Preset "Whole day (B)"	
Program 6 : Factory Preset "Half-day work"	

4. **If you wish to set your own programme** (using any of P7, P8 or P9) select one of those program numbers and press the SET PROGRAM button again.
5. Reading from the top, the display will show your day selection, the hour (starting at 0 = midnight), the sun symbol, the programme number, and a full line of blocks along the bottom of the screen. You can now set your own programme, in one-hour blocks, defining when you require comfort or economic temperature.
6. Press the comf/econ button repeatedly to scroll forward in one-hour periods – this will remove the blocks visible at the bottom of the display, thus setting economic temperature from midnight onwards.
7. Beginning with the time you require comfort temperature, start to scroll forward using the UP arrow button, this will move forward in one hour periods, leaving the blocks in place, thus setting comfort temperature for those periods.
8. Continue setting your required programme as in steps 6 & 7 above. You can go backwards with the DOWN arrow button, and restore a deleted block to set comfort temperature, or delete a block to set economic temperature, by pressing the comf/econ button (this button ‘toggles’ the temperature setting for the hour)
9. Once you have completed your own programme setting, press the SET PROGRAM button again to return to normal operating mode.

Testing the RF transmission range

1. Ensure the receiver is correctly wired to the output, and that it has a mains supply (indicated by a continuous red LED at the receiver)
2. The transmitter display shows the current actual temperature. Press the UP button until the set temperature is higher than the actual temperature.
3. After a few seconds the heater/cooler on icon is shown – it appears as a rotating symbol above the P number.
4. Check the green LED on the receiver. It should be On.
5. If the LED is not On, move the Transmitter closer to the Receiver.
6. Press the DOWN button to reduce the set temperature below the current temperature to turn off the demand from the receiver. The rotating symbol will disappear, and the green LED will go Off.

TEMPORARY OVERRIDE

Override between comfort and economic modes

1. During normal operating mode, press the COMF/ECON button to toggle the current set temperature to comfort or economic mode. The HAND symbol will show with the COMF or ECON symbol.
2. The temporary override will self-reset with the next programmed change of temperature. Alternatively press the COMF/ECON button to revert to automatic operating mode

Overriding the set temperature

1. During normal operating mode, press the UP or DOWN arrow buttons to adjust the set temperature point to the desired value.
2. After 10 seconds the unit will revert to normal operating mode, but using the new adjusted temperature as the set point. The hand symbol will be shown in the display.
3. The temporary override will self-reset with the next programmed change of temperature. Alternatively revert to automatic mode by pressing the COMF/ECON button.

FROST-PROTECTION MODE

The unit can quickly be put into frost protection mode, for instance for periods when the property is empty, but you wish to prevent frost damage during cold weather.

1. Press the UP and DOWN buttons simultaneously. The Frost Protection and Hand symbols will be displayed.
2. Whilst Frost Protection is enabled, the Transmitter will maintain heating to prevent the temperature falling below 7°C.

BACK-LIGHT

Press the BACK-LIGHT button to turn on the back-light. The back-light will switch off when no button is pressed for 10 seconds.

RECEIVER POWER SWITCH

There is a power switch on the Receiver. When there is no demand for heating / cooling, it is

recommended to turn the power switch to the Off position.

BATTERY REPLACEMENT

The batteries should be replaced as soon as the battery-low symbol is showing in the display. There is a short capacitive memory which retains the display and programme for one minute to allow for the exchange of batteries.

1. Turn off the receiver.
2. Remove the back housing and stand of the Transmitter.
3. Replace the old batteries with 2 good quality AA alkaline batteries.
4. Replace the back housing and stand.
5. If operation is not as expected following battery replacement, press reset and re-programme.
6. Turn On the power switch of the Receiver.

SPECIFICATION

Transmitter dimensions 116 x 100 x 23.5mm, weight 126g

Receiver dimensions 91.5 x 91.5 x 42mm, weight 176g

Power supply: Transmitter 2 x AA(LR6) batteries.

Receiver 230VAC 50Hz

Accuracy	+ / - 60 seconds / month
Temp. measurement	0 ⁰ C to 40 ⁰ C in 0.5 ⁰ C resolution
Temp. accuracy	+ / - 1 ⁰ at 20 ⁰ C
Temperature Control	7 ⁰ C to 30 ⁰ C in 0.5 ⁰ C increments
Span	1,2,3, or 4 ⁰ C
Air conditioner cycle time	3 minutes
Operation temperature	0 ⁰ C to 40 ⁰ C
Storage temperature	-10 ⁰ C to 60 ⁰ C
Operating frequency	434 MHz