

Operating Instructions

**Model : HC
HC-N**



This product should be installed by a qualified electrician. Improper installation may result in injury, death or property damage.

Contents Table

Contents	1
What is a room thermostat	2-3
What is a programmable thermostat	4-6
Installation	7-8
Initial Setup Procedure	9-12
Symbols Explained	13
Button Layout	14
Temperature Display	15
Setting the Clock	15
Temperature Override	16
Fan Speed Select	16
Heating Mode Operation	17-18
Cooling Mode Operation	19
Auto Heating & Cooling Operation	20-21
Keylock	22
Wiring	
Wiring Diagram	23-28

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.

Turning a room thermostat to a higher setting will not make the room heat up any faster. How quickly the room heats up depends on the design of the heating system, for example, the size of the boiler and radiators.

Neither does the setting effect how quickly the rooms cools down. Turning a room thermostat to a lower setting will result in the room being controlled at a lower temperature, and saves energy.

The heating system will not work if a time switch or programmer has switched it off.

The way to set and use your room thermostat is to find the lowest temperature setting 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 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 (TRV's) 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 prevent the thermostat from working properly.

What is a programmable room thermostat ?

A programmable room thermostat is both a programmer and a room thermostat. A programmer allows you to set On and "Off time periods to suit your own lifestyle. A room thermostat 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.

So, a programmable room thermostat lets you choose what times you want the heating to be on, and what temperature it should reach while it is on. It will allow you to select different temperatures in your home at different times of the day (and days of the week) to meet your particular needs.

Turning a programmable room thermostat to a higher setting will not make the room heat up any faster. How quickly the room heats up depends on the design of the heating system, for example, the size of the boiler and radiators.

Neither does the setting effect how quickly the room cools down. Turning a programmable room thermostat to a lower setting will result in the room being controlled at a lower temperature, and saves energy.

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

The best way to do this is to set low temperatures first, say 18°C, and then turn them up by one degree each day until you are comfortable with the temperatures. You won't have to adjust the thermostat further. Any adjustment above these settings will waste energy and cost you more money.

If your heating system is a boiler with radiators, there will usually be only one programmable 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.

The time on the programmer must be correct. Some types have to be adjusted in spring and Autumn at the change between Greenwich Mean Time and British Summer Time.

You may be able to temporarily adjust the heating programme, for example “Override”, “Advance” or “Boost” These are explained in the manufacturers instructions.

Programmable 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 prevent the thermostat from working properly.

Installation Procedure

DO's

1. Do mount the thermostat at eye level.
2. Do read the instructions fully so that you get the best from our product.

DON'T's

1. Do not install near a direct heat source as this will effect the workings of the thermostat.
2. Do not push hard on the LCD otherwise you will damage the liquid crystal display and this is not repairable.

Installation

The thermostat is designed to be flush mount, a back box of 35mm should have been sunk in 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 in to the slots on the bottom face of the thermostat.

Step 2

Carefully unplug the ribbon connector which is plugged in to the front half of the thermostat.

Place the thermostat front half somewhere safe.

Terminate the thermostat as shown in the diagrams at the back of this booklet.

Screw the thermostat back plate on to the back box

Step 3

Re-connect the thermostat ribbon cable and clip the two halves together.

Step 4

Turn on the power to the thermostat and allow the thermostat to stabilise for 1 hour before calibrating.

How To Setup Your Thermostat

This thermostat has many options available to you. Once you have set these settings you can leave them. They will be stored in the thermostat memory and do not need to be adjusted later.

You need to use the table opposite as a reference guide when initially setting up the thermostat.

We strongly suggest you read the next few pages so that you fully understand the features available and the intended use.

You should also understand that by enabling one feature, another feature maybe made unavailable. This is because the feature is not available in that mode.

Please read the features now, and then follow the setup routine on the following pages.

Feature Table

Feature	Feature	Setting
01	Temperature Format	°C 01=°F
02	Switching Differential	01=1°C/F, 02=2°C/F 03=3°C/F
03	Temp Calibrate	Enter value
04	Frost Mode	00 Disabled 01 Enabled (01 - default)
05	Frost Protection	07-17°C (12°C default)
06	Output Delay	Enter Value (00 min default)
07	Comms No (HE-N)	01 - 32
08	Optimum Start	00 Disabled (Default) 01-hr 02hr 03=3hr
09	Rate of Change	Information Only
10	Mode	00=Heating 01=Cooling 02=Heating & Cooling
11	Heat/Cool Deadband	Range = 02°C - 10°C default = 02

Understanding the Features

The installer should read the following features and then setup the thermostat according to the features required.

Temperature Format: Select between °C or °F

Switching Differential: This is the number of degrees the heating switches back on below the set temperature.

Temperature Calibrate: The thermostat is calibrated from the factory, but you can use this function to calibrate if required.

Frost Mode: You can set whether the thermostat will maintain the frost temperature even when the thermostat has been turned off with the power button. As a default, this is enabled.

Frost Protection Temperature: This is used to set the required frost temperature. The range is 07 - 17°C

Output Delay: To prevent rapid switching, an output delay can be entered. This can be from 00 - 30 minutes.

Understanding the Features (Cont)


Optimum Start: (This feature is only available on the PRT model) Optimum start will delay the start up of the heating system to the latest possible moment, to avoid unnecessary heating, so that the dwelling is comfortably warm by the programmed time.

Rate of Change: (This feature is only available on the PRT model) This setting is calculated by the thermostat.

Mode: In heating mode, the thermostat will be active when the room temperature is below the set temperature. In cooling mode, the thermostat will be active when the room temperature is above the set temperature. In Heating & Cooling (Auto) mode, the thermostat will automatically switch between heating and cooling.


Deadband: The deadband setting is used in Heating & Cooling (Auto) mode and is used to ensure there is no conflict between heating and cooling. With a deadband setting of 02 and a heating set temperature of 20°C, the minimum cooling temperature is 22°C.







Setting up the Features:

With the HC turned off, press  for 3 seconds

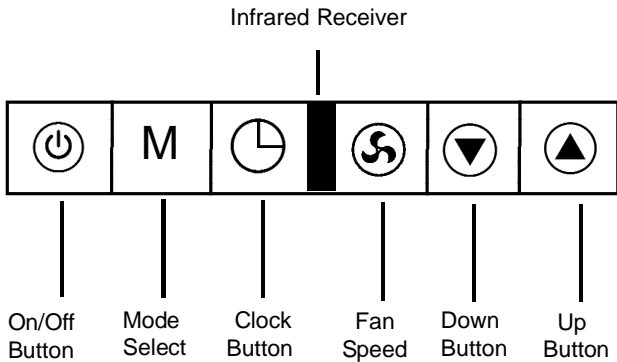
On the LCD you will see 01 (small) to the top right, and 00 (large) in the centre.

Small setting = Feature # Large setting = Setting

- Use the Up/Down arrow key to change the setting.
- Press  to accept and proceed to the next feature.

LCD Symbols	
	Clock Indicator
	Heat Active
	Cool Active
Auto	Auto Heat/Cool Active
	Frost Mode On
	Keylock On
 Flashing	Optimum Start Active

3. Button Layout



Temperature Display

Room Temp = Current room temperature

SET = Displayed when you are adjusting the temperature setting.


Setting the Clock

To set the clock within the HE, follow the steps below.

- With the thermostat on, press ⊖ until you see the clock flash
- You are now able to set the minutes using the up/down keys
- Press M to accept
- You are now able to set the hours using the up/down keys
- Press M to accept
- You are now able to set the day of the week using the up/down keys
- Press ⊖ to store and exit

The clock is now set. The HE has a battery which maintains the clock on a power failure. All program settings are retained in flash memory for 10 years.

Temperature Override





Using the Up/Down arrow keys you can adjust the current set temperature. On the screen, you will see SET and the new temperature displayed. This temperature will be maintained until the next programmed comfort level. Press  to accept and exit.

In Auto mode, if you have increased the heating set point using this function, the cooling set point will adjust automatically ensuring the deadband setting is maintained.

Fan Control

In all modes, there are 4 fan modes which you can select using the fan button. You can select between Auto, High, Medium or Low. In Auto fan speed, the thermostat will automatically switch the fan between high, medium or low as described below.

Heating: 1°C below = Low, 2°C below = Medium, 3°C below = High
Cooling: 1°C above = Low, 2°C above = Medium, 3°C above = High

- | | |
|---|--|
|  Auto Fan Speed Selected |  High Fan Speed |
|  Medium Fan Speed |  Low Fan Speed |


The fan will be off when there is no switching time programmed.

Heating Mode

In heating mode, there are two temperature settings and four switching times for the weekday and 4 different switching times for the weekend.

Timer ON temperature: During a switching time, this temperature setting is maintained.

Timer OFF temperature: When the thermostat is not in a programmed switching time, the thermostat will maintain this temperature to protect the building against frost.

Press  to store or wait 30s and the setting will be stored automatically.

Programming the temperature settings.

Press  once

You can now set the Timer ON temperature using the Up/Down arrow keys.


Press  again

You can now set the Timer OFF temperature using the Up/Down arrow keys.

Programming the Switching Times

You can program 4 switching for the weekday and 4 different switching times for the weekend.

To do this follow the steps below;


Press  three times.

You can now enter the 1st Timer On setting

Press M

You can now enter the 1st Timer Off setting

You can repeat this for the remaining switching times for the week and weekend. For unused switching times, set --.--

Press  to store or wait 30s and the setting will be stored automatically.

Manual Override

Pressing the M button will override the current state of the timer. If the thermostat is in a Timer On condition, pressing M will override the thermostat into Timer Off mode and vice versa.


Cooling Mode

In cooling mode, there is a single temperature setting and four switching times for the weekday and 4 different switching times for the weekend.

Programming the cooling temperature setting.

Press  once

You can now set the cooling temperature using the Up/Down arrow keys.

Press  to store or wait 30s and the setting will be stored automatically.

Programming the Switching Times


You can program 4 switching for the weekday and 4 different switching times for the weekend.

Press  twice

You can now enter the 1st Timer On setting

Press M

You can now enter the 1st Timer Off setting

Repeat this for the remaining switching times. For unused switching times enter --.-- Press  to store or wait 30s and the setting will be stored automatically.

Auto Heating & Cooling

In Auto mode, there are two temperatures for heating and a single temperature for cooling. Four switching times for the weekday and 4 different switching times for the weekend can be programmed.

Heating Timer ON temperature: During a switching time, this temperature setting is maintained.

Heating Timer OFF temperature: When the thermostat is not in a programmed switching time, the thermostat will maintain this temperature to protect the building against frost.

Cooling temperature: During a programmed switching time, should the room temperature rise above the programmed cooling set temperature, the cooling output is activated.

Note: In this mode, the deadband setting is used. The minimum deadband setting is 02 which means the lowest cooling temperature is 02°C above the heating set temperature. The deadband is adjustable between 02-10.

Programming the temperature settings.

Press  once


You can now set the Heating Timer ON temperature using the Up/Down arrow keys.

Press  again

You can now set the Heating Timer OFF temperature using the Up/Down arrow keys.


Press  again

You can now set the Cooling temperature using the Up/Down arrow keys.

Press  to store or wait 30s and the setting will be stored automatically.

Programming the Switching Times


You can program 4 switching for the weekday and 4 different switching times for the weekend.

Press  four times


You can now enter the 1st Timer On setting


Press M

You can now enter the 1st Timer Off setting

Repeat this for the remaining switching times. For unused switching times enter --.-- Press  to store or wait 30s and the setting will be stored automatically.

Enabling Keylock

The thermostat has a keylock facility. To enable this press the  and “Down” arrow key for 10 seconds.

When the keylock function has been activated, you will see  on screen.

To cancel, repeat the steps above.

