



Underfloor heating

user guide

neoStat v2





working with you
**before,
during
& after**
your project

**Nu-Heat
Know-How**

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System Ref: _____

Every Nu-Heat system is a custom design. Please record your unique system reference number above for future reference.

Welcome

Congratulations, you are the owner of a Nu-Heat warm water underfloor heating system, designed and supplied by Nu-Heat UK Ltd., the largest supplier of domestic underfloor systems in the UK.

This manual is provided to help you understand how the system operates and the correct settings required to get the most from your heating.

Nu-Heat did not install your system, therefore any installation matters should be referred to the contractor concerned. Please record the installer's details below.

For more information on the operation of your system and also troubleshooting help, please visit the Nu-Heat website at nu-heat.co.uk.

Installer details

Company: _____

Contact name: _____

Contact telephone no.: _____

Address: _____



About the Nu-Heat System

Description

Underfloor heating works by pumping warm water through special plastic tubing embedded in the floor. This warms the floor and maintains the room at a comfortable temperature.

Benefits

In particular, underfloor heating systems:

- Provide a more comfortable heated environment,
- Permit unlimited interior design options,
- Increase the useable space within a property.

Moreover, all these benefits are available from a system which can be significantly less expensive to run than a conventional, radiator-based system.

System startup

Once your system has been commissioned it should be fully operational. To initially check that your system is turned on and working please follow these simple steps:

Underfloor heating

Locate the main components of your installation: the boiler, hot water cylinder, underfloor heating pump/Optiflo manifold assembly(s), thermostats, timeclocks, underfloor heating wiring box.

Electricity supply

Ensure that the electrical installation is complete and that the heating system is turned on. The location of the main supply **on/off** switch may vary but is often positioned next to the boiler. There may be additional switches located at each underfloor heating wiring box which also need to be on.

Water supply

Ensure that the water is turned on ready for domestic hot water operation, check that a high flow of water is available from the cold taps. If there is poor flow or none at all, check that the stop-cock for the property is fully open.



Operation

Your underfloor system is designed for performance and economy. Each heating zone is controlled by its own wall-mounted thermostat. If a room has no thermostat it will be connected to, and controlled by, an adjacent zone.

UNDERFLOOR HEATING

Unlike traditional dial thermostats controlled by a timeclock, programmable thermostats do not work on the basis of **ON** and **OFF** times. Instead different temperatures are set at different times throughout the day. If the property is to be unoccupied during the day, for example, then the temperature can be set low (setback temperature), whereas during the morning and evening it can be set at the desired comfort temperature.

The best way to find the optimum temperature setting is to set a low comfort temperature (e.g.18°C) and then turn it up by 1°C each day until the temperature is right.

Consideration should be given to the different floor constructions and finishes used in your property, as these factors will affect the time the system will take to achieve comfort conditions. However, the neoStat incorporates Optimum Start, a self-learning feature that enables it to manage when the heating should be switched on, in order to hit the target temperature that has been programmed. This means that the thermostats can be set to the comfort temperature at the times that heating is required. It will then automatically manage the varying floor response times, and bring the heating on in time.

The Optimum Start feature will need to be set up in the thermostat – for details see page 13.

The temperature chosen as the setback temperature will depend upon the situation:

- For new build properties this will generally be 4-6°C lower than the comfort setting, although again, this can be experimented with.
- Renovated properties may work best with a lower setback temperature, in order that the heating remains off outside of the times at which the comfort temperature is selected. The fast response time of LoProMax™ makes this method particularly suitable.
- Less thermally responsive floors, in particular screed floors greater than 65mm thick, will achieve comfort temperatures more quickly when the setback temperature is closer to the comfort temperature.

Boiler Plus legislation

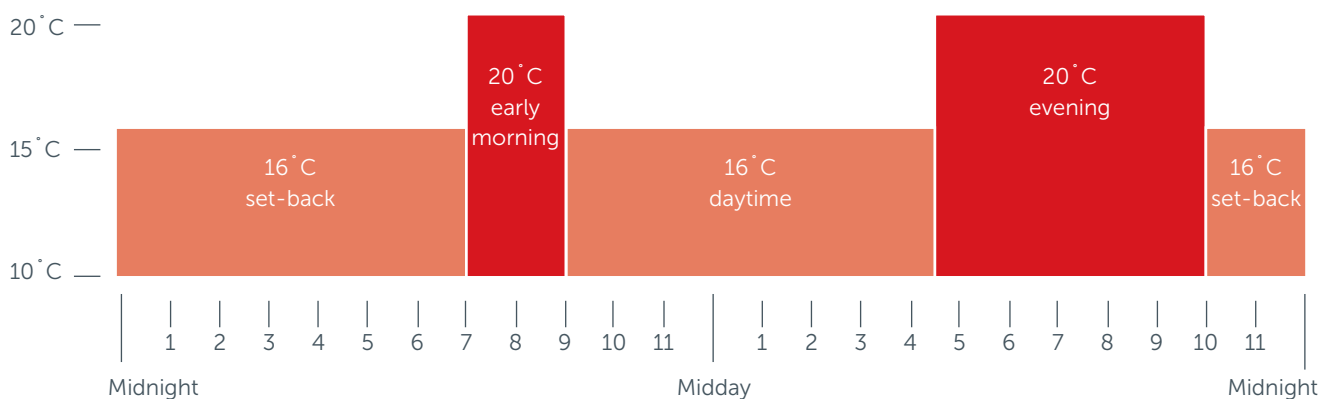
Following a report called *Heat in Buildings*, published in October 2017, *Boiler Plus* legislation came into force in April 2018. It states that:

Time and temperature controls must be installed with any new boiler, if not already present

Systems with programmable thermostats

The ideal solution to maintaining different background temperatures at different times. They can easily be set to achieve the desired temperature at all times of day and night.

THE EFFECT OF SETBACK (for illustration only)



Systems with neoStat

Each room thermostat combines the functions of a room thermostat, timeclock and set-back thermostat.



For enhanced heating performance and efficiency the unit also provides self-learning *Optimum Start* in the morning.

To comply with Boiler Plus legislation with a new gas combi boiler, select the *Optimum Start* feature on all thermostats during installation.

Four adjustable time/temperature zones are available for the days of the week, and a further four during the weekend as standard, giving enhanced heating control. A 7-day mode is also available.

HOT WATER CONTROL OPTION

A supplementary neoStat can be configured as a timer to control your hot water. See page 16 for details of how to set this up.

Optional control from a SmartPhone (systems with neoHub+)

PAIRING THE NEOHUB+

To pair the neoHub+ with the neoApp, follow these steps:

- 1 Connect the power supply to the neoHub+.
- 2 Connect the neoHub+ to your router with the Ethernet cable provided. The router will automatically assign an IP address to the neoHub+, the 'Link' LED will light up RED once the neoHub+ has connected to your network. Once connected to the cloud server, the Link LED will turn GREEN.
- 3 Connect your smartphone or tablet to the same WiFi network as your router.
- 3 Download the FREE Nu-Heat [neoApp](#) from the Apple App Store, Google Play Store or Windows Phone App Store and register an account.
- 4 Once you have registered your account, press [SIGN IN](#) then press [ADD LOCATION](#).
- 5 Press the [CONNECT](#) button on the neoHub+ to add the location to your account.
- 6 When successfully connected, enter a title for the new location (e.g. Home).

PAIRING THE NEOSTATS

The next step is to pair each neoStat to the neoHub+, starting with the neoStat located nearest to the neoHub+.

To add a neoStat, follow these steps:

- 1 From the neoApp, select [ADD NEOSTAT](#), enter a zone title and press [NEXT](#).
- 2 You now have two minutes to pair the neoStat to the neoHub+.
- 3 On the neoStat, use the [< / >](#) keys to select setup and press [POWER](#). Press and hold [✓](#).
- 4 [SETUP](#) will be highlighted, now press the [✓](#) key once.
- 5 Feature 01 is displayed on the screen.
- 6 Press the Tick key once again to pair the neoStat to the neoHub.
- 7 The [MESH](#) symbol appears flashing on the display.
- 8 When the neoStat successfully connects to the neoHub the [MESH](#) symbol will be permanently displayed.
- 9 Press [ADD ANOTHER](#) for additional zones or press [FINISH](#) to complete setup.

Please note, you only have to pair the hub to your account once. To pair any additional neoStats, select [ZONES](#), edit, then [ADD ZONE](#).

WHAT IS A MESH NETWORK?

NeoStats work using a mesh network, meaning neoStats have the ability to send and receive signals via other thermostats on the network. This signal is relayed from one thermostat to another until it reaches its destination. This communication method extends the communication range whilst offering increased network stability when compared with standard RF thermostats.

The [MESH](#) symbol is shown when the device is communicating with the neoHub, if the mesh symbol disappears this indicates connection to the neoHub+ has been lost.

APPROACH SENSOR

The neoStat V2 uses proximity to detect when you are about to use the touch keys. As you approach the neoStat V2, the touch keys and backlight will light up.

This can be useful if you need to adjust the set temp or timer in a dark room.

SHARING ACCESS TO THE NEO SYSTEM

At this stage access to other users may be granted, on a full or restricted basis.

Ideal uses for the Share Feature.

- Where there is more than one household member.
- To give restricted access to tenants in a rented property.
- To give temporary control to a heating engineer or service partner.

To setup a Share Access, follow these steps:

- 1 Select [Share Access](#)
- 2 Press **+** to add a user
- 3 Enter the User Details and press [User Mode](#)
- 4 Select [Admin](#) or [Guest](#)

Admin or Guest?

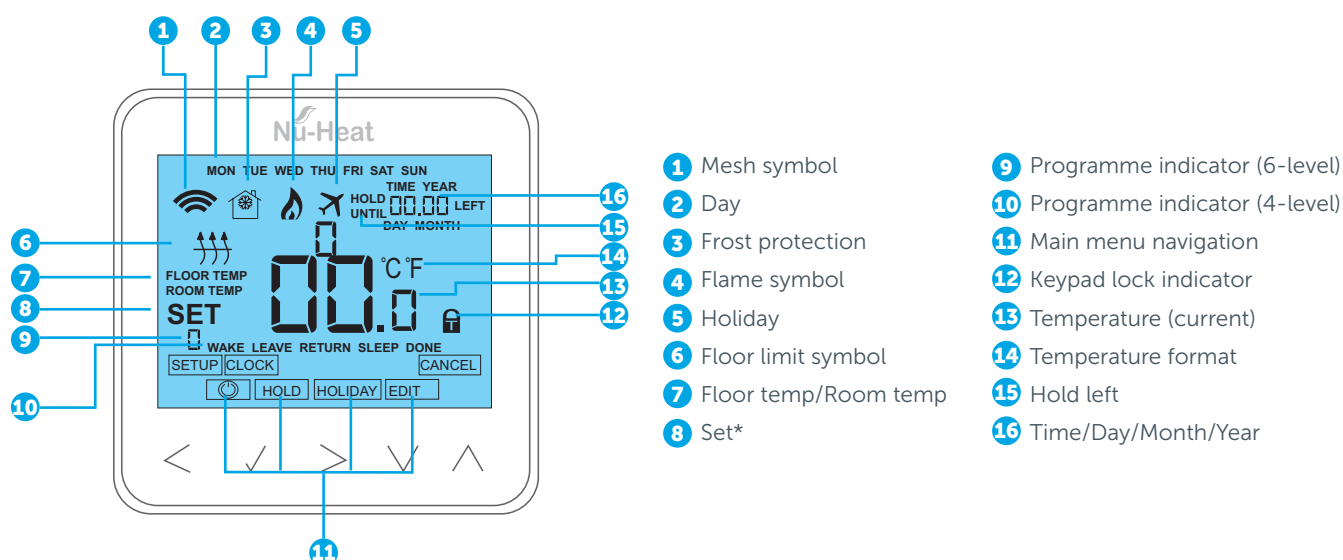
Admin users have complete control. They can add and remove zones, adjust heating times and temperatures and can setup Geo Location.

Guest users have temporary control – so they can adjust the temperature using the scroll wheel but they can't reprogram the heating times and temperatures or add and remove zones. They also don't have access to the Geo Location feature.

Note: To use Geo Location – each user in the home must have their own Share Account.

You can remove a user at any time by going in the [Share Access](#) menu and selecting the [Delete User](#) option.

Mode 1 – thermostat operation



*SET = Displayed when changes are being made to the program schedule or current set point.

ERROR CODES

When used as a thermostat the screen will display an error code if a fault is detected.

E0 = The internal sensor has developed a fault.

E1 = The remote FLOOR probe has not been connected.

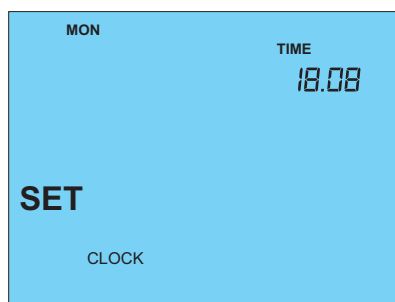
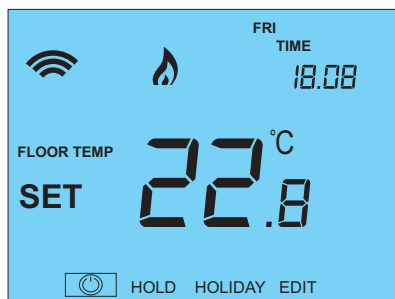
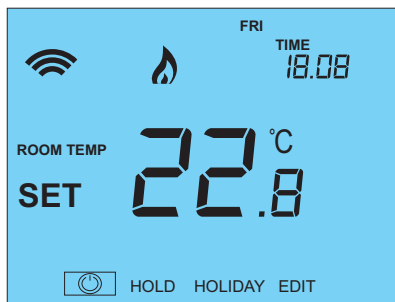
The remote FLOOR probe has not been wired correctly.

The remote FLOOR probe is faulty.

E2 = The remote AIR probe has not been connected.

The remote AIR probe has not been wired correctly.

The remote AIR probe is faulty.



Temperature display

The neoStat V2 can be configured for different sensor options such as built in air sensor, floor sensor or both. The display will clearly indicate which sensor is being used by showing either **ROOM TEMP** or **FLOOR TEMP** before the actual temperature value.

When the neoStat is set to use both the air and the floor sensor, the room temperature will be displayed by default.

- 1 To view the current floor temperature, press and hold the < and > arrow keys for 5 seconds, the floor temperature will then be displayed.

Setting the clock

To set the clock, follow these steps.

- 1 Use the < / > keys to scroll to **POWER**
- 2 Press and hold ✓ to turn off the display
- 3 Use the > key to select **CLOCK**
- 4 Press ✓ to confirm selection
- 5 Use the ▼ / ▲ keys to set the Year
- 6 Press ✓ to confirm selection
- 7 Repeat the steps to set the Month, Date & Time
- 8 Press ✓ to confirm the new clock settings
- 9 Use ▼ arrow to scroll to **POWER**
- 10 Press ✓ to turn the display on

Comfort levels explained

The neoStat offers three program mode options: Weekday/Weekend programming, 7 Day programming and 24 Hour programming. There is also the option to use the thermostat as a Non-Programmable thermostat.

When thermostats are connected to the mesh network, the program mode for the system is configured by using the neoApp.

The thermostat is supplied with comfort levels already programmed, but these can be changed easily. The default times and temperature settings are;

07:00 / 21 °C (wake)
09:00 / 16 °C (leave the house)
16:30 / 21 °C (return home)
22:00 / 16 °C (sleep)

If you only want to use 2 levels, you should program the unused levels to --:--.

For Weekday/Weekend programming, the four comfort levels are the same for Mon-Fri, but can be different for Sat-Sun. For 7 Day programming each day of the week can have four different comfort levels. In 24 Hour mode all days are programmed with the same comfort levels.

To program the comfort levels:

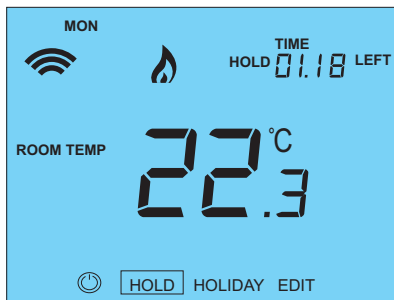
- 1 Use the < / > keys to scroll to **EDIT**
- 2 Press ✓ to confirm selection
- 3 Use the < / > keys to select day / period of week (the selection will flash).
- 4 Press ✓ to confirm selection
- WAKE** will now flash and current time and temperature setting will be shown.
- 5 Press ✓ to alter **WAKE** settings
- 6 Use the ▼ / ▲ keys to set the hours
- 7 Press ✓ to confirm
- 8 Use the ▼ / ▲ keys to set the minutes
- 9 Press ✓ to confirm
- 10 Use the ▼ / ▲ keys to set the temperature
- 11 Press ✓ to confirm the settings
- 12 Press the > arrow key
- LEAVE** will now flash and the current settings will be displayed.
- 13 Press ✓ to alter **LEAVE** settings
- 14 Repeat these steps to set all comfort levels.
- 15 For any unused periods set time to --:--
- 16 Use the < / > keys to scroll to **DONE** and press ✓



Temperature control

- 1 The ∇/\blacktriangle allow you to adjust the set temperature. When you press either key, you will see the word **SET** and the desired temperature value. Use the ∇/\blacktriangle keys to adjust the **SET** value.
- 2 Press \checkmark to confirm settings and return to the main display.

Note: This new temperature is maintained only until the next programmed comfort level. At this time, the thermostat will revert back to the programmed levels.



Temperature hold

The temperature hold function allows you to manually override the current operating program and set a different temperature for a desired period.

- 1 Use the ∇/\blacktriangle keys to scroll to **HOLD**
- 2 Press \checkmark to confirm selection
- 3 Use the ∇/\blacktriangle keys to set the desired Hold period
- 4 Press \checkmark to confirm selection
- 5 Use the ∇/\blacktriangle keys to set the desired Hold temperature
- 6 Press \checkmark to confirm selection

You will see the **HOLD LEFT** indication is displayed on screen. The time will countdown the set duration and then revert to the normal program.

To cancel a temperature Hold, with hold selected on the main menu, press the \checkmark key and then press tick again while Cancel is highlighted.

Locking the neoStat

The thermostat has a keypad lock facility. To activate the lock follow these steps:

- 1 Use the ∇/\blacktriangle keys to scroll to **HOLD** & press \checkmark for 10 seconds.
- 2 The display will show 00:00 and you will need to set a four digit pin number.
- 3 Use the ∇/\blacktriangle keys to enter the first two digits
- 4 Press \checkmark to confirm
- 5 Use the ∇/\blacktriangle keys to enter the second two digits
- 6 Press \checkmark to confirm

The display will return to the main screen and display the keypad lock indicator .

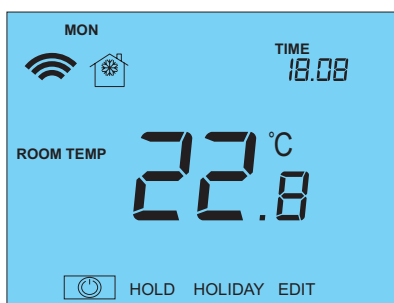
Note: The keypad lock indicator is only displayed when the lock is active.

Unlocking the neoStat

To unlock the neoStat press \checkmark once. The display will show 00:00 and you will need to enter the four digit pin number you set previously.

- 1 Use the ∇/\blacktriangle and \checkmark keys to enter the first two digits
- 2 Use the ∇/\blacktriangle and \checkmark keys to enter the second two digits

The display will unlock and return to the main screen.



Frost mode

- 1 Use the ∇/\blacktriangle keys to scroll to the **POWER** icon. The **FROST** icon will toggle **ON/OFF** each time \checkmark is pressed.

In this mode, the neoStat will display the frost icon and will only turn the heating **ON** should the room temperature drop below the set frost temperature (see pages 13–14).

If the heating is turned **ON** whilst in frost mode, the flame symbol will be displayed.

To cancel the frost protect mode, navigate to the **POWER** button again and press \checkmark .



Thermostat completely OFF



Thermostat powered ON

Power 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 neoStat remains active.

- 1 To turn the neoStat off completely, scroll to the **POWER** icon and hold the ✓ key for approximately 3 seconds until the display goes blank.

The display and heating output will be turned **OFF**.

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

Holiday

In thermostat mode, the **HOLIDAY** function reduces the set temperature in your home to the frost protection temperature setting (see pages 13–14).

In time clock mode, the holiday function maintains the timed output as **OFF**. The thermostat will maintain this setting for the duration of the holiday and will then automatically return to the program mode on your return.

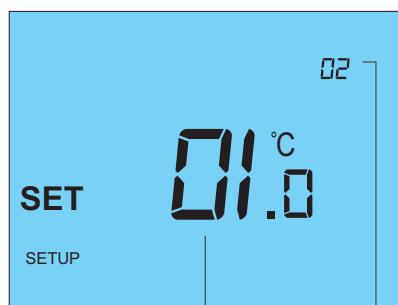
In time clock mode, the holiday function maintains the timed output as **OFF**. To set a date and time for the holiday period to end, use the steps below:

- 1 Use the < / > keys to scroll to **HOLIDAY** and press ✓
- 2 Use the ▼ / ▲ keys to set the Year and press ✓
- 3 Use the ▼ / ▲ keys to set the Month and press ✓
- 4 Repeat the steps to set the Date and Time
- 5 Press ✓ to confirm selection

Note: The holiday period will start immediately, and will return to the normal program at the time and date you have configured.

To cancel:

- 6 Use the < / > keys to scroll to **HOLIDAY** and press ✓
- 7 **CANCEL** will be highlighted, press ✓ to cancel



Setting value — Feature number

Adjusting the Optional Settings (see table opposite)

To adjust the settings, follow these steps:

- 1 Use the < / > keys to select **POWER**
- 2 Press and hold the ✓ for 3 seconds
- 3 **SETUP** will be highlighted, now press ✓ once
- 4 Use the ▼ / ▲ keys to scroll through features
- 5 Use the < / > keys to adjust the setting within each feature
- 6 Press ✓ to confirm and exit setup menu

OPTIONAL FEATURES EXPLAINED

The following settings are optional and in most cases need not be adjusted.

FEATURE	DESCRIPTION	SETTING	EXPLANATION
01	Pairing to neoHub+	Used to add zone to neoHub	Used to connect the thermostat to the neoHub
02	Switching differential	00.5 = 0.5°C 01 = 1.0°C (Default) 02 = 2.0°C 03 = 3.0°C	Allows you to increase the switching differential of the thermostat. The default is 1°C – with a set temperature of 20°C, the thermostat will switch the heating on at 19°C and off at 20°C.
03	Frost protection temp.	07° – 17° C (12° C = default)	The temperature maintained when the thermostat is in Frost Mode.
04	Output delay	00 – 15 Minutes; (00 = Default)	To prevent rapid switching, an output delay can be entered. This can be set from 00–15 minutes.
05	Up/Down Temp limit	00° – 10° C; (00 = Default)	Limit the use of the up and down temperature arrow keys. This limit is also applicable when the thermostat is locked and so allows you to give others limited control over the heating system.
06	Sensor selection	00 = Built in Sensor (Default) 01 = Remote Air Sensor 02 = Floor Sensor Only 03 = Built in & Floor Sensor 04 = Remote Air & Floor Sensor	Selects the active sensors. Select between air temperature, floor temperature, or both. When both sensors are enabled, the floor sensor is used as a floor limiting sensor to prevent the floor from overheating.
07	Floor temp limit	20–45° C (28° C default)	Available when feature 06 is set to 03 or 04. Set to the required floor temperature limit (see instructions on page 10)
08	Optimum Start	00 – 05 Hours; (00 = Default)	Delays the start up of the heating system to the latest possible moment to avoid unnecessary heating and ensure the building is warm at the programmed time. The thermostat uses the rate of change information to calculate how long the heating needs to raise the building temperature 1°C and starts the heating accordingly.
09	Rate of change	Minutes to raise by 1° C	This setting is calculated by the thermostat. Number of minutes for 1° C temperature rise.
10	Cool enable	Not used on this model	
11	Cool set temp	Not used on this model	
12	Program mode	00 = Non – Programmable 01 = Weekday/Weekend (Default) 02 = 7 Day Programming 03 = 24 Hour Mode	Weekday/ Weekend – 4 comfort levels for the weekday and 4 different comfort levels for the weekend. 7 Day Program Mode – Each day has 4 comfort levels that can be programmed independently. 24 Hour Mode – All days are programmed the same and repeat continuously.
13	Temperature format	00 = °C, 01 = °F; (00 = Default)	Select between °C and °F.

Re-calibrating the thermostat

Warning: The thermostat must be fixed in a wall. When re-calibrating the thermostat avoid warming it with your hands or breath, as this will cause an inaccurate setting.

To re-calibrate the thermostat, follow these steps:

- 1 Use the < / > keys to scroll to the **POWER** icon
- 2 Press and hold ✓ to turn the display **OFF**
- 3 Press and hold the ✓ and ▼ keys together for 10 secs
- 4 The current temperature will appear on the display.
- 5 Use the ▼ / ▲ keys to configure the new temperature value
- 6 Press the ✓ key to confirm change and the display will go blank
- 7 Press the ▼ arrow to highlight the **POWER** icon
- 8 Press the ✓ key once to turn the thermostat **ON**

Factory reset

To reset the device to factory default settings, follow these steps:

- 1 Use the < / > keys to scroll to the **POWER** icon
- 2 Press and hold the ✓ key to turn the display **OFF**
- 3 **SETUP** will be highlighted
- 2 Press and hold the ✓ key for 10 seconds. All of the icons on the display will appear for 2 seconds, then the number 1 or 2 will flash.
- 3 Use the < / > keys to scroll between modes (selection will flash)
Mode 1 = Thermostat
Mode 2 = Time Clock
- 4 Press the ✓ key to confirm selection

The thermostat will revert to the main display screen for the selected mode.

Note: Factory reset will cancel all parameters that were entered during the set-up and pairing operations. These processes must be repeated after factory reset is completed.

Mode Select

The neoStat can either be used as a thermostat or a time clock. Thermostat mode is the default setting.

To change between **THERMOSTAT** or **TIME CLOCK** modes, follow these steps:

- 1** Use the < / > keys to scroll to the **POWER** icon
- 2** Press and hold the ✓ button for 3 seconds
- 2** SETUP will be highlighted. Now press and hold the ✓ button for 10 seconds
- 3** Use the < / > keys to scroll between modes
 - Mode 1 = Thermostat
 - Mode 2 = Time Clock
- 4** Press the ✓ key to confirm selection

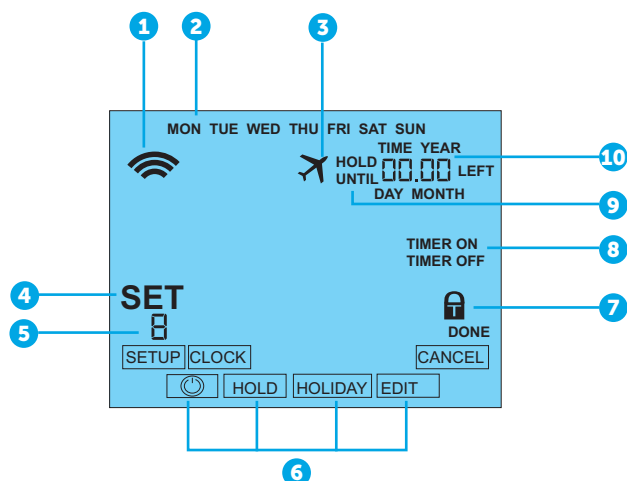
The neoStat will revert to the main display screen for the selected mode.

For time clock mode instructions, first pair the time clock with the neoHub as explained on page 8, then turn to page 33.

Mode 2

Time clock operation

DISPLAY SYMBOLS AND FUNCTIONS



- 1** Mesh Symbol – Displayed when connected to the neoHub+.
- 2** Day Indicator – Displays the day of the week.
- 3** Holiday – Displayed when the time clock is in holiday mode.
- 4** Set – Displayed when changes are being made to the current set point.
- 5** Program Indicator – Displayed during programming to show which level is being altered.
- 6** Main Menu – Displays which option is currently selected.
- 7** Keypad Lock Indicator – Displayed when the keypad is locked.
- 8** Timer Status – Displays the current state of the timed output.
- 9** Hold Left – Displayed when a timer hold is active, the remaining time will be shown.
- 10** Time/Day/Month/Year – Displays when setting the Clock/Calendar or a Holiday Period.

OPTIONAL FEATURES EXPLAINED

Feature 01 – Pairing To neoHub: This function is used to connect the time clock to neoHub+.

Feature 02 – Weekday/Weekend (5/2), 7 Day Programming or 24 Hour Mode:

The time clock offers three programming methods;

Weekday/ Weekend (5/2) – Allows you to program 4 on/off switching times for weekdays and 4 on/off switching times for the weekend.

7 Day Program Mode – Each day has 4 on/off switching times that can be programmed independently.

24 Hour Mode – All days are programmed with the same on/off switching times.

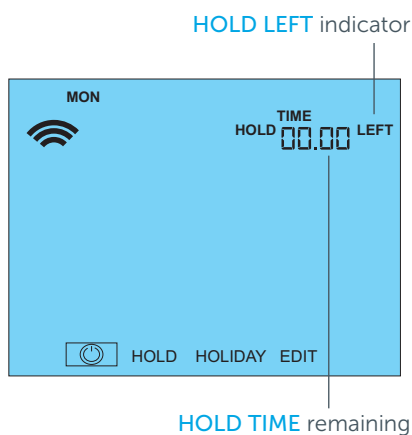
OPTIONAL SETTINGS – FEATURE TABLE

Feature	Description	Setting
01	Pairing	Used to pair to the neoHub+
02	Program mode	01 = Weekday/Weekend Programming (Default)
		02 = 7 Day Programming
		03 = 24 Hour Mode

Setting the switching times

To program the switching times, follow these steps:

- 1 Use the < / > keys to scroll to **EDIT** and press ✓
- 2 Use the < / > keys to select day/period of the week
- 3 Press ✓ to confirm selection
1 will now flash and the current **ON** time will be displayed. The **OFF** time can be viewed by pressing the ▼ key.
- 4 Select a switching time and press the ✓ key
- 5 Use the ▼ / ▲ keys to select **ON** time **HOURS** and press ✓
- 6 Use the ▼ / ▲ keys to select the **ON** time **MINUTES**
- 7 Press ✓ to confirm selection
- 8 Use the ▼ / ▲ keys to select **OFF** time **HOURS** and press ✓
- 9 Use the ▼ / ▲ keys to select the **OFF** time **MINUTES**
- 10 Press ✓ to confirm selection
- 11 Press the > arrow key
- 12 2 will flash and current **ON** time will be displayed.
- 13 Repeat the steps above to set all periods. For any unused periods enter -- : --
- 14 When complete, use < / > keys to scroll to **DONE**
- 15 Press ✓ to confirm all changes



Timer override

To override the **TIMED OUTPUT ON**, follow these steps:

- 1 Use the ▼ / ▲ keys to set the override duration, e.g. 02:00 hours
 - 2 Press ✓ to confirm settings and return to main display
- HOLD LEFT** and the remaining time will now be displayed.

General system checks



The expansion vessel and filling loop is usually positioned near the boiler.



Adjust the temperature of the boiler water by turning the boiler control thermostat.



Never set the boiler water temperature lower than the cylinder thermostat.

System pressure

The majority of heating systems are sealed and include an expansion vessel which maintains the system pressure. This red vessel would normally be found positioned near to the boiler.

If you have a combination boiler or system boiler the main pump and expansion vessel will be inside the boiler. The best way to identify this is that the boiler will have a pressure gauge on its panel.

You will need to check the system pressure regularly as it is normal for a system to lose a small amount of pressure. The gauge should read

approximately between 1 and 2 bar depending on whether the system is cold or hot.

If the pressure is below 1 bar, top the pressure up to 1 bar by opening the valve on the filling loop connected to the red vessel (or boiler if no red vessel is fitted). Only top up when the system is cold. If your system rapidly loses pressure you need to consult a heating engineer.

If there is no red expansion vessel or gauge on the boiler then your system is not sealed but open vented and will be topped up automatically by a feed tank and ballcock in the loft.

Boiler thermostat

The temperature of water generated by your boiler is altered by adjusting the boiler control thermostat dial.

If you have a hot water cylinder it is important that the boiler water temperature is always at least 5°C above the temperature of your cylinder thermostat.

General sequence of operation

Every time heat is required in a room the following sequence is initiated:

If the heating is in an on period and the room requires heating, the room thermostat will call for heat :-

- 1 A flame symbol will appear on the display.

The floor pump, either on the Optiflo manifold serving that zone, or on the remote-mounted pump module will be switched on.

The actuator on the Optiflo manifold circuit connected to the

zone will open, indicated by the button on top of the actuator head rising.

The flow gauge on this circuit will indicate flow and the flow pipe will get warm.

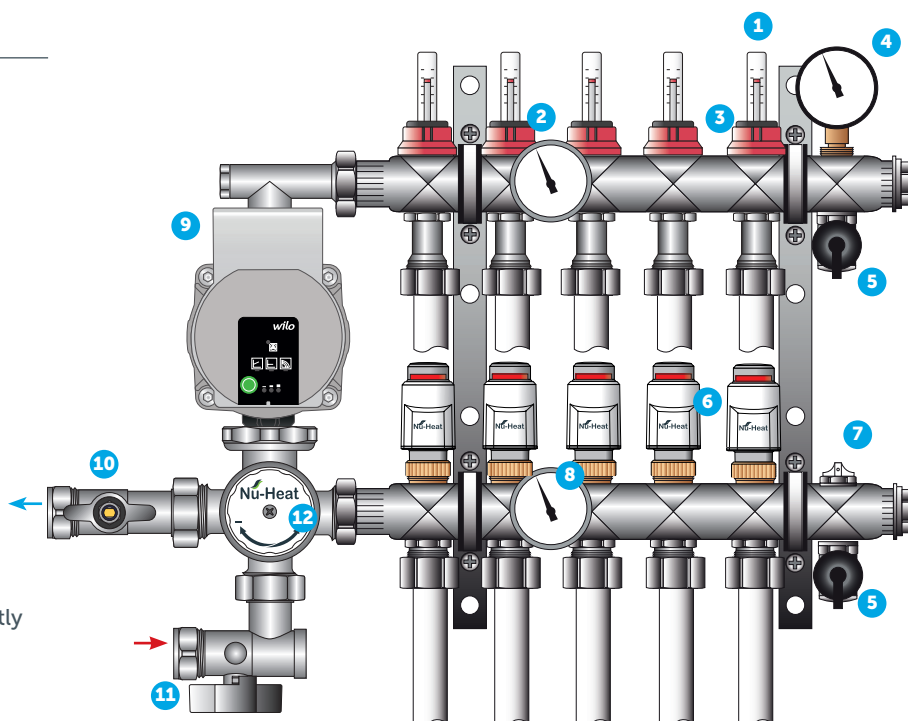
Over a period of time as the room comes up to temperature, the return pipe will warm up as well.

For standard systems with conventional boilers/cylinders or combination boilers the boiler and boiler pump are turned on to supply and circulate heat.

MANIFOLD COMPONENTS

- 1 Flow gauges
- 2 Flow temperature gauge
- 3 Flow adjustment
- 4 Pressure gauge
- 5 Filling/drain off valve
- 6 Actuators
- 7 Manual air vent
- 8 Return temperature gauge
- 9 Floor heating pump (direct mounted)
- 10 Main isolating valve (return)
- 11 Main isolating valve (flow)
- 12 Temperature blending valve

Note: Pump may be mounted directly or installed remotely.



Seasonal adjustments

Underfloor heating can be left active all year round as it is thermostatically controlled by the room temperature. In warm weather it will simply not come on.



If you require to turn the heating off (for example when servicing) always use the main heating isolation switch.

Leaving the property unoccupied in winter

Rather than turning the heating system off, it is possible to leave background heating on as frost protection.

Each room/zone can be set to frost protection individually. Please refer to the instructions (Frost Protection on page 11), which detail how the thermostat can be put into a hold mode and the required frost protection temperature adjusted.

Instant hot water and heated towel rail

Hot water and heated towel rails will be available all year round regardless of your requirement for underfloor heating.

Geo-Location

UNDERSTANDING & SETTING UP GEO-LOCATION

Geo Location is a feature that makes use of a smart phone's location services to turn the heating off when the homeowner is out and back on for their return.

It works by the setting of a Leave and Return Trigger distance along with a required temperature. When the triggers are activated, Neo will automatically adjust the temperature in the home. It also works with multi users, so will only adjust the heating when the last person leaves and the first person arrives home.

Ideal uses for the Geo Location

- Automatically turn the heating off when you're out, perfect for weekends when you may have your heating programmed to be on all day.
- Always return to a warm home. For those occasions when you return home outside a programmed heating period, Geo Location will automatically turn the heating on and then turn it off when you leave.

Note: Geo-Location works well for radiators and for LoPro™Max, which respond quickly. However, for other UFH floor constructions, with longer response times, Geo-Location will not necessarily give the desired performance and comfort.

- | | | |
|---|--|--|
| 1 Select Geo Location | 4 Press Home Location to locate your home. | 7 Enter the Return Trigger Distance |
| 2 Turn on Geo Location | | 8 Enter the Leave & Return Temperatures |
| 3 Work through the settings to Configure | 5 Press Selected Rooms , ✓ the applicable rooms | |
| | 6 Enter the Leaving Trigger Distance | |

Things to remember

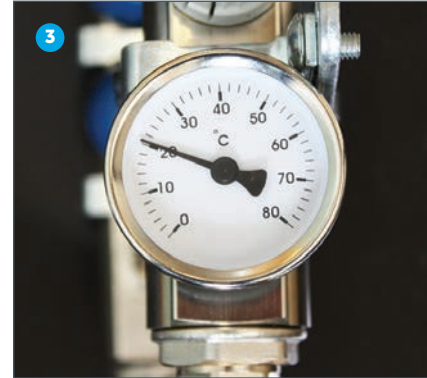
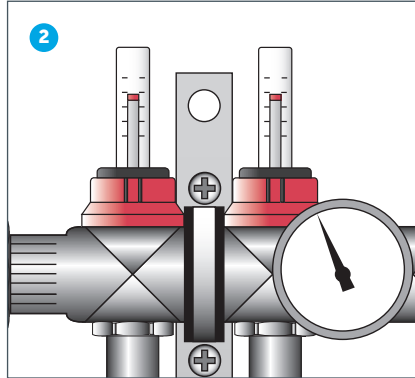
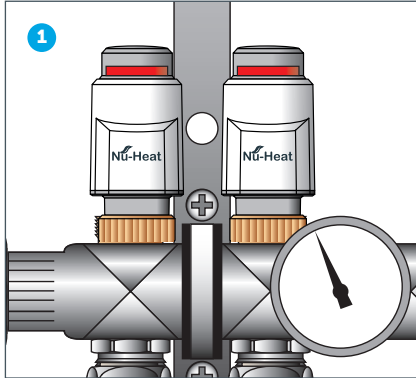
- 1 **Account per User** – To use Geo Location – each user in the home must have their own Share Account.
- 2 **Enable Location Services** – Geo Location uses your phones location services, so you must have this enabled for the Geo Location feature to work.
- 3 **Enable WiFi** – Geo Location uses WiFi to get a more accurate lock on your position. Your phone doesn't need to be connected to a WiFi network for this to work, your phone will constantly scan available networks and use this data to more accurately determine your location.
- 4 **Last Out – First Home** – Remember that Geo Location will only turn the heating off when the last person has left and back on when the first person arrives home. You will receive a notification on your phone if the temperature in your home has been adjusted because of your location.
- 5 **Location Services** – If you setup a 1 mile leave trigger, your phone will send a signal to your neoHub+ to reduce the temperature in your home once your phone's location services indicates to the neoApp that you have passed this point. Your phone will determine how often to update your location – it does this to reduce the impact on battery performance. Therefore, you should expect a slight delay after passing the trigger point before Neo adjusts the temperature in your home.

Privacy

- Neither Nu-Heat nor the manufacturer ever knows or stores your home location or your current position.
- Only your mobile phone knows your home location and your current position. Using this data it calculates when you have passed the configured trigger points.
- The state (Home/Away) is stored on the neo Server per user, and this is used to calculate when everyone has left home therefore allowing neo to reduce the temperature or to calculate when the first person is arriving home.

System adjustments

If additional heat is required in a selected room or rooms the water flow rate(s) serving these areas can be increased.



To do this:

When the system is operating, turn the thermostat up in that room.

Identify from the pipe markings at the manifold which actuator head serves the zone you want to change.

Note: If the zones are not clearly marked turn off all the other room stats. The zone that is operating will be shown by a raised button on the top of the actuator (1) and the flow gauge will indicate a flow reading (2).

Please note that the button can take up to 3 minutes to respond.

To adjust flow rates on the flow gauge (see diagrams below):

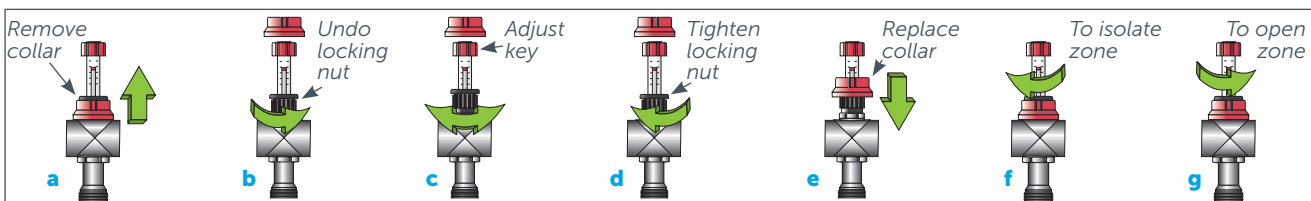
- Remove red collar
- Undo the black locking nut
- Adjust the flow rate as required, by turning the gauge with the red 'key'
- Re-tighten the black locking nut
- Replace red collar
- Zone can be isolated by winding flow gauge all the way down
- Re-open zone by winding flow gauge up until stopped by the locking nut

Note: Adjust a little at a time to suit your requirements. Increasing the flow to one zone may decrease the flow to others. There is a limit to how much extra flow can be achieved and if, after adjusting one or several zones, further action is required the flow temperature can be increased.

To do this:-

With the system running note the water flow temperature on the gauge (3) on the top rail of the manifold. This temperature can be increased (see 4a and 4b below).

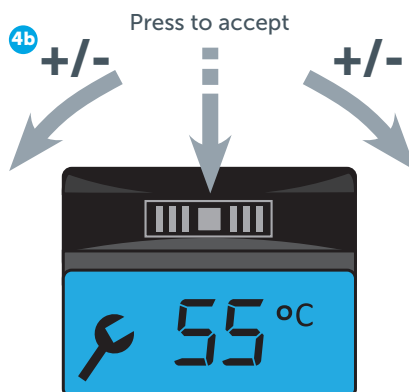
Note: Adjust a little at a time to suit your requirements.



Direct-mounted pump module (4a)

To increase the temperature:

- 1 Turn the control head anticlockwise



Remote pump module (4b)

To increase the temperature:

- 1 Push the button above the illuminated display in and across to the right to scroll to the temperature menu.
- 2 Adjust the temperature by pushing the button to the left or right.
- 3 Press the button again to confirm the change.

Servicing requirements

MONTHLY

Check the expansion vessel water pressure as displayed on the gauge, the pressure should normally be between 1 bar and 2 bar depending on whether the system is cold or hot.

Please refer to the System Checks section (page 18) for further-information.

ANNUALLY

Underfloor heating

Whilst there is no requirement for annual servicing it is important that the level of central heating inhibitor is sufficient to protect the system.

Energy efficiency (ErP)


The neoStat is rated as Class I under Section 5.2.1.2 Temperature control, of EU Commission Delegated Regulation No. 811/2013.



Product support

For further information on the operation of your underfloor heating system and also troubleshooting help, please visit the Nu-Heat website at nu-heat.co.uk.



 Online
www.nu-heat.co.uk

 Follow us
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 See our videos
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