Nu-Heat
UNDERFLOOR & RENEWABLES

Underfloor heating

user guide

neoAir V2

UNDERFLOOR HEATING
HEAT PUMPS
SOLAR THERMAL

working with you

before, during & after

your project

Nu-Heat Know-How

Contents

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. Any adjustment above this setting will waste energy and increase fuel cost.

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 neoAir 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 14.

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.

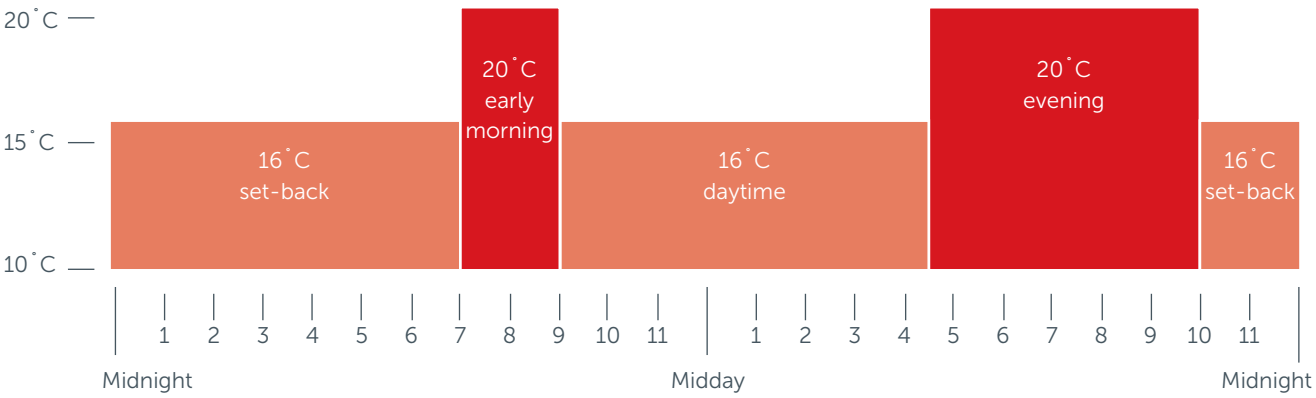
Boiler Plus legislation

Following a report called *Heat in Buildings*, ***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

Programmable room thermostats offer 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 neoAir

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.

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

neoAir 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 once the neoHub+ has connected to your network.
3. Connect your smartphone or tablet device to the same WiFi network as your router.
4. Download the FREE Nu-Heat neoApp from Apple App Store, Google Play Store, Amazon App Store or Windows Phone App Store and register an account.
5. Once you have registered your account, press the SIGN IN button then press the ADD LOCATION option.
6. Press the CONNECT button on the neoHub+ to add the location to your account.
7. When connected, enter a title for the new location (e.g. Home) and configure the time zone for the system.

PAIRING THE NEOAIR THERMOSTATS

The next step is to pair each neoAir to the neoHub+, starting with the neoAir located nearest to the neoHub+. We recommend joining any wired neoStat or neoPlug (if used) to the neoHub first. This will help to extend the wireless network for areas where radio signals are problematic. To add a neoAir, follow these steps:

1. From the neoApp, select +, then ADD THERMOSTAT, enter a zone title and press NEXT.
2. You now have two minutes to pair the neoAir to the neoHub+.
3. On the neoAir, use the < / > keys to select ⏻ and press and hold ✓.
4. SETUP will be highlighted, press ✓ once. Feature 01 is displayed.
5. Press the ✓ key to pair the neoAir to the neoHub+.
6. The COMMS symbol appears flashing on the display.

Once the neoAir has successfully paired to the neoHub+ the COMMS symbol will remain permanently displayed.

7. Press ADD ANOTHER to add more zones or press FINISH to complete the setup.

Note: you only have to pair the hub to your account once. To pair any additional neoAir's, select +, then ADD THERMOSTAT in the neoApp.

Wireless communications coverage

Where building size or construction results in inadequate wireless coverage, this can be extended by use of a neoPlug (available from Nu-Heat). To pair the neoPlug:

1. Plug in the neoPlug.
2. Pair to the neoApp using ADD ACCESSORY option.
3. When prompted, press and hold PAIRING button for 5 seconds. The green LED will start to flash; when paired it will stay lit for 2 seconds then go off. If pairing is not successful, the LED will flash continuously.
4. Access can be controlled from anywhere. To reset the neoPlug, press and hold the button for 10 seconds until the red LED starts to flash.

Mode Select

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

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

1. Use the < / > keys to scroll to ⏻. Press and hold ✓ 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 **Mode 3** = Thermostat with additional Time Clock

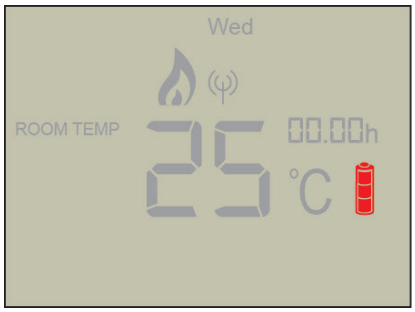
   Note: the selected option will flash.
4. Press the ✓ key to confirm selection

Note: The neoAir 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 above, then turn to page 17.

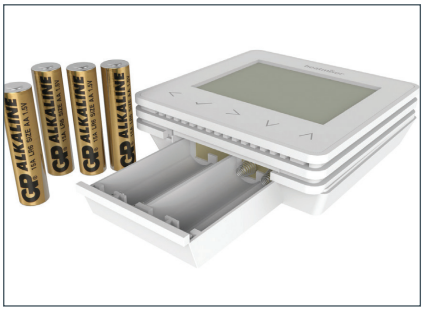
Setting up neoAir

REPLACING THE BATTERIES

Batteries will need to be replaced occasionally to ensure the thermostat operates correctly.



The thermostat will inform you when the batteries need to be replaced by displaying the battery icon on screen.



To access the battery holder, push and release the compartment door located on the bottom face of the thermostat.

4 x AAA batteries have been supplied with this thermostat.

Do not use rechargeable batteries with this product!

Insert the batteries in the empty battery holder, ensuring that each battery is orientated for the correct polarity + / -.

Push the battery holder back inside the thermostat until it is secured in its closed position.

PAIRING WITH THE UH8RF WIRING CENTRE

On the UH8-RF, take note of the numbers set on the rotary switches (UH8-RF ID numbers 01-99).

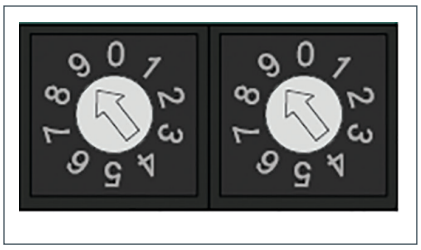
Each UH8-RF on the system needs to have a different ID number.

Set your first UH8-RF to 01.

WARNING: **Mains voltages are present within the wiring centre.**

At the thermostat:

1. Use the < / > keys to scroll to ⏻. Press and hold ✓ for 3 seconds. SETUP will be highlighted, now press ✓ once.
2. The display will now show 01 in the top right hand corner.
3. Press the ▼ key twice so that P2 shows on the display. Press ✓ once.
4. Use the ▼ / ▲ keys to set the large digits to the board address of the UH8-RF. This is the number set on the UH8-RF rotary switches (you must set a unique board address for each UH8-RF installed).
5. Press ✓ once. Small digits in the top right hand corner of the display will now flash.
6. The UH8-RF is an 8 zone receiver. Use the ▼ / ▲ buttons to select the zone this thermostat should be linked to.
7. Press ✓ to select zone type (Underfloor Heating)
8. Use the ▼ / ▲ buttons to select UF (Underfloor Heating).
9. Press ✓ to finish and confirm settings. Display will return to the main screen.



Example: Rotary Switch showing ID No. 99.

PAIRING WITH THE RF-SWITCH

At the thermostat:

1. Use the < / > keys to scroll to ⏻. Press and hold ✓ for 3 seconds. SETUP will be highlighted, now press ✓ once.
2. The display will now show 01 in the top right hand corner.
3. Press the ▼ key once. The display will show P1.
4. Press ✓ again to start 99 second countdown.
5. During the countdown press and hold either Boiler or CH1 pairing buttons on the RF-Switch for 5 seconds.

   Boiler = when wiring to terminal marked SL & LR

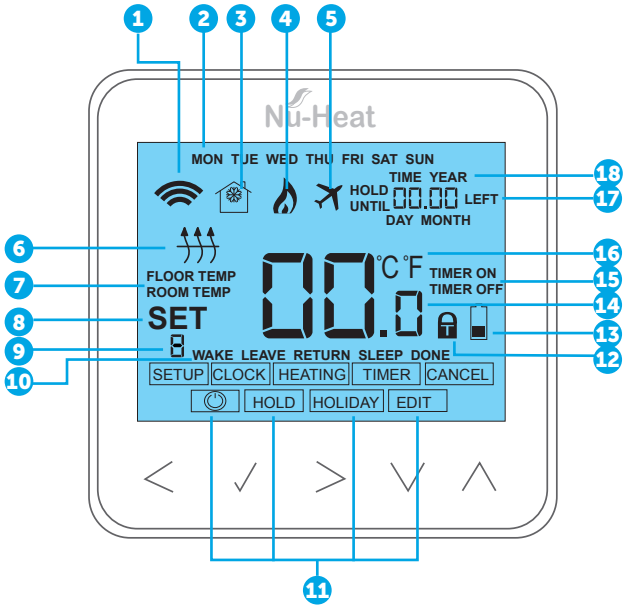
   CH1 = when wiring to terminals marked COM1 & N01

Note: The LED on the RF-Switch will flash to indicate it is in pairing mode. Once paired the LED will stop flashing.

Wireless communications coverage

Where building size or construction results in inadequate wireless coverage, this can be extended by use of a neoPlug (available from Nu-Heat).

Mode 1 – thermostat operation



1. Comms symbol
2. Day
3. Frost protection
4. Flame symbol
5. Holiday
6. Floor limit
7. Floor/room temp
8. Set*
9. Programme indicator (4 level mode)
10. Programme indicator (6 level mode)
11. Main menu
12. Key lock indicator
13. Battery indicator
14. Temperature (current)
15. Timer status
16. Temperature format
17. Hold left
18. Time/Day/Month/Year

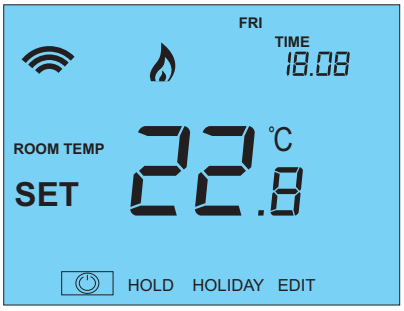
*SET = Displayed when changes are being made to the program schedule or current set point.

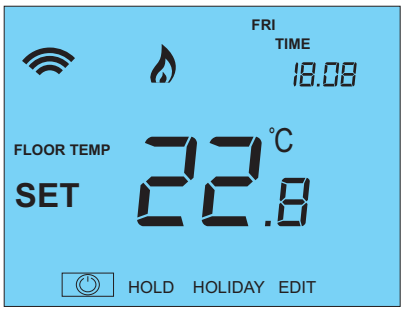
ERROR CODES

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.

E2 = The remote probe has not been connected / has not been wired correctly / is faulty.

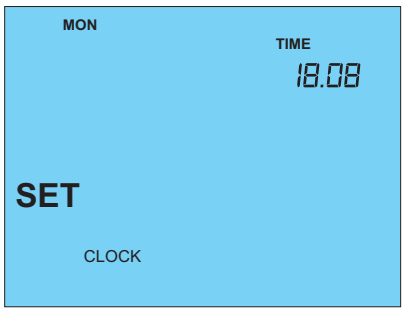




Temperature display

The neoAir can be configured for different sensor options such as remote air sensor or floor sensor, see pages 14-15. The display will clearly indicate which sensor is being used by showing either ROOM TEMP or FLOOR TEMP before the actual temperature value.

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 ⏻. Press and hold ✓ for 3 seconds
2. Use the < / > keys to scroll to CLOCK. Press ✓ to confirm selection
3. Use the ▼ / ▲ keys to set the year
4. Press ✓ to confirm selection
5. Repeat steps to set month, date and time (24 hour format)
6. Press ✓ to confirm selection
7. Use ▼ key to select ⏻
8. Press ✓ to confirm selection and return to the main display

Setting the heating periods and temperatures

The neoAir 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. To change the programming mode see Optional Features on pages 14-15.

When neoHub+ is used the program mode for the system is configured by using the neoApp.

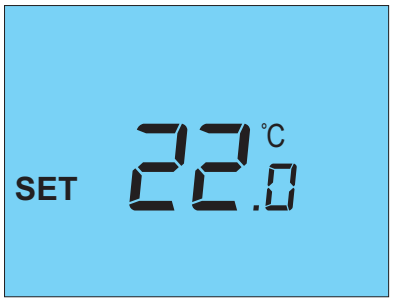
The thermostat is supplied with comfort levels already programmed, but these can be changed easily. The default times and temperature settings are;

07:00 / 21˚C (wake)
09:00 / 16˚C (leave the house)

16:00 / 21˚C (return home)
22:00 / 16˚C (sleep)

To program the comfort levels, use the < / > keys to scroll to EDIT

1. Press ✓ to confirm selection
2. Use the < / > keys to select day / period of week (the selection will flash).
3. Press ✓ to confirm selection
4. WAKE will 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
13. LEAVE will flash and current settings will be displayed.
14. Press ✓ to alter leave settings
15. Repeat these steps to set all comfort levels.
16. For any unused periods set time to --:--
17. Use the < / > keys to scroll to done and press ✓

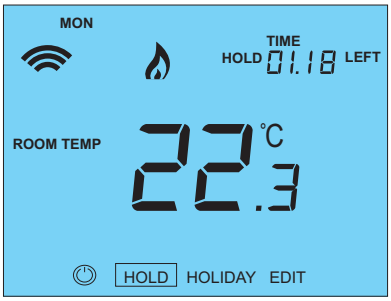


Temperature control

1 The ▼/▲ 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 ▼/▲ keys to adjust the set value.

2 Press ✓ 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 < / > keys to scroll to HOLD
2 Press ✓ to confirm selection
3 Use the ▼/▲ keys to set the desired Hold period
4 Press ✓ to confirm selection
5 Use the ▼/▲ keys to set the desired Hold temperature
6 Press ✓ 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, select HOLD on the main menu. Press ✓ key, then press ✓ key again whilst CANCEL is highlighted.

Locking the neoAir

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

1 Use the < / > keys to scroll to HOLD & press ✓ for 10 seconds.
2 The display will show 00:00 and you will need to set a four digit pin number.
3 Use the ▼/▲ keys to enter the first two digits
4 Press ✓ to confirm
5 Use the ▼/▲ keys to enter the second two digits
6 Press ✓ to confirm

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

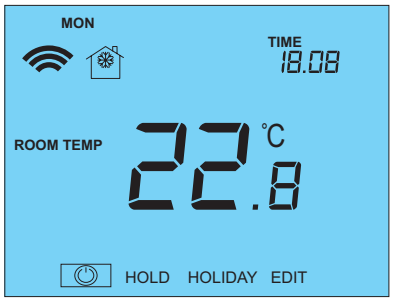
Note: The keypad lock indicator is only displayed when the lock is active.

Unlocking the neoAir

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

1 Use the ▼/▲ and ✓ keys to enter the first two digits
2 Use the ▼/▲ and ✓ keys to enter the second two digits

The display will unlock and return to the main screen.



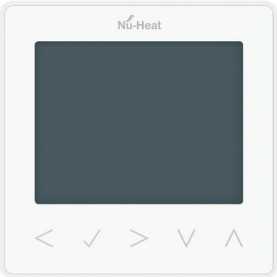
Frost mode

1 Use the < / > keys to scroll to the ⏻ icon. The FROST icon will toggle ON/OFF each time ✓ is pressed.

In this mode, the neoAir will display the frost icon and will only turn the heating ON should the room temperature drop below the set frost temperature (see pages 14–15).

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 ✓.



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 neoAir remains active.

1 To turn the neoAir off completely, scroll to the POWER icon and hold the ✓ key for 3 seconds until the SETUP/CLOCK menu is displayed.

   Wait for the display to go blank; the ⏻ icon is still visible.

The display and heating output will be turned OFF. 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 14–15).

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.

To set the date and time for a 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, then press ✓ to confirm.

3 Use the ▼ / ▲ keys to set the month, then press ✓ to confirm.

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 normal programme settings at the time/date set.

To cancel:

1 Use the < / > keys to select HOLIDAY. Press ✓.

2 CANCEL will be highlighted, press ✓ to cancel.

OPTIONAL FEATURES EXPLAINED

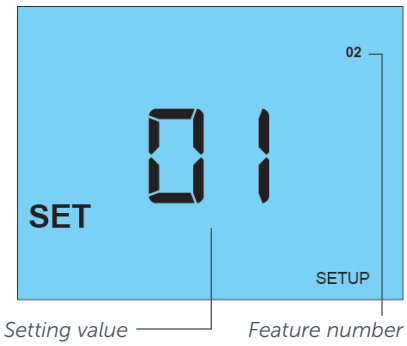
The following settings are optional and in most cases need not be adjusted.

FEATURE	DESCRIPTION	SETTING	EXPLANATION
01	Pairing	Used to add zone to neoHub+	Used to connect the thermostat to the neoHub+
02	Switching differential	00 = 0.5˚C 01=01˚C (default) 02=2˚C 03=3˚C	Allows you to increase the switching differential of the thermostat.
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	Selects the active sensors. 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 02 or 03. Set to the required floor temperature limit.
08	Optimum Start	00 – 05 Hours; (00 = Default)	Adjusts the start time within the preheat range to allow for current conditions. Heating is brought on before the start time, but at the latest possible moment to avoid unnecessary heating whilst ensuring that the building is warm at the programmed time.
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	00 = Disabled	Not used on this model
11	Cool set temp	Not enabled	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.

Feature P1 - Pairing: to the RF-Switch.

Feature P2 - Setting the UH8-RF address: This is the number to set on the rotary dials inside the UH8-RF unit.

Feature P3 - Failsafe: If the RF-Switch of UH8-RF fails to receive a signal from the thermostat within a 40 minute period, it will activate to output for 12 minutes every hour. The RF-Switch/UH8-RF will continue to do this until it receives a new signal from the thermostat.



Adjusting the Optional Settings

To adjust the settings, follow these steps:

1. Use the < / > keys to select ⏻
2. Press and hold ✓ for 3 seconds, SETUP will be highlighted, press ✓ to confirm selection
3. Use the ▼ / ▲ keys to scroll through features
4. Use the < / > keys to adjust the setting within each feature
5. Press ✓ to confirm settings

Re-calibrating the thermostat

Warning: The thermostat must be fixed on 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 ✓ until SETUP/CLOCK is shown. Wait for display to turn off
3. Press and hold the ✓ and ▼ keys together for 10 seconds
4. The current temperature will appear on the display
5. Use the ▼ / ▲ keys to configure the new temerature value
6. Press the ✓ key to confirm change and the display will go blank
7. Press the ▼ key to highlight ⏻
8. Press the ✓ key once to turn the thermostat ON

Factory reset

To return all settings to their factory default:

1. Use the < / > keys to scroll to ⏻. Press and hold ✓ for 3 seconds
2. SETUP will be highlighted; now press and hold the ✓ key for 10 seconds. All of the icons on the display will appear for 2 seconds, then the display will show options 1, 2 or 3.
3. Use the < / > keys to scroll between modes (selection will flash)
   - Mode 1 = Thermostat
   - Mode 2 = Time Clock
   - Mode 3 = Thermostat with additional 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 neoAir 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 ⏻. Press and hold ✓ for 3 seconds.
2. SETUP will be highlighted; now press and hold the ✓ key for 10 seconds
3. Use the < / > keys to scroll between modes

   mode 1 = Thermostat

   mode 2 = Time Clock

   mode 3 = Thermostat with additional Time Clock

   Note: the selected option will flash.
4. Press the ✓ key to confirm selection

   Note: MODE SELECT will cancel all the parameters that were entered during setup and pairing operations. These processes must be repeated when the mode is changed.

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

Pairing the neoAir to UH8-RF as a Hot Water Timer

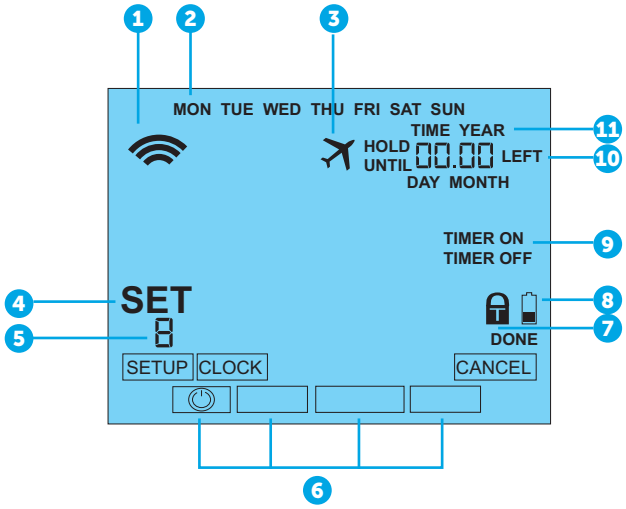
Follow these steps:

1. Set the thermostat into TIME CLOCK mode (See mode 2, above)
2. Use the < / > keys to scroll to ⏻. Press and hold ✓ for 3 seconds. SETUP will be highlighted, now press ✓ once.
3. The display will now show 01 in the top right hand corner.
4. Press the ▼ key twice so that P2 shows on the display. Press ✓ once.
5. Use the ▼/▲ keys to set the large digits to the board address of the UH8-RF. This is the number set on the UH8-RF rotary switches (you must set a unique board address for each UH8-RF installed).
6. Press ✓ once. Small digits in the top right hand corner of the display will now flash.
7. Use the ▼/▲ buttons to select Zone 9.
8. Zone type is automatically selected.
9. Press ✓ to finish and confirm settings. Display will return to the main screen.

The neoAir unit will now operate as a timeclock controlling the Hot Water output on the wiring centre.

Mode 2
Time clock operation

DISPLAY SYMBOLS AND FUNCTIONS



1. Comms symbol
2. Day
3. Holiday
4. Set
5. Programme indicator
6. Main menu
7. Key lock indicator
8. Battery indicator
9. Timer status
10. Hold left
11. Time/Day/Month/Year

OPTIONAL FEATURES EXPLAINED

Feature 01 – Pairing 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.

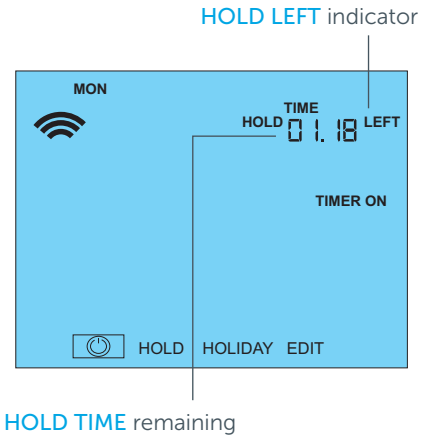
OPTIONAL SETTINGS – FEATURE TABLE

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

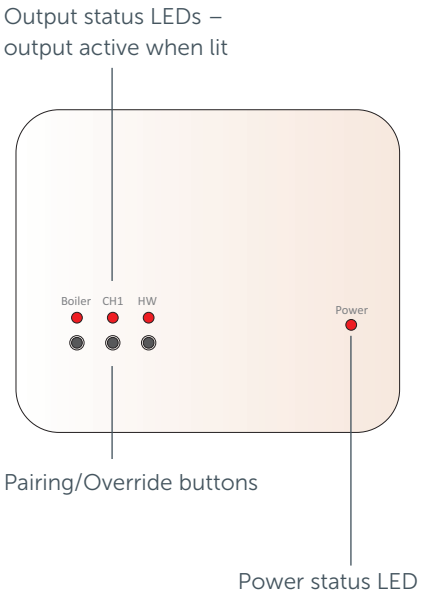


Timer override

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.



Pairing the RF-Switch to UH8-RF

Follow these steps:

1. On the RF-Switch, press and hold the BOILER pairing button for 5 seconds. The Boiler status LED will switch on.
2. Press and release the PAIRING button on the UH8-RF. When the RF-Switch detects the pairing signal from the UH8-RF, the Boiler LED will switch off.
3. Repeat for each UH8-RF wiring centre.

Overriding the RF Switch outputs

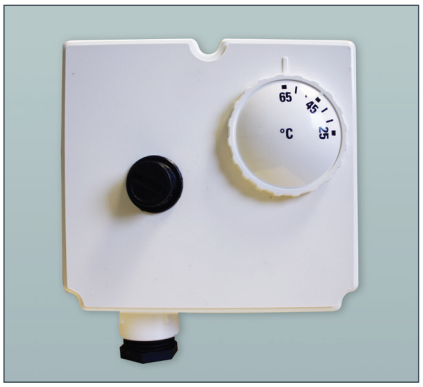
To override an output on the RF Switch:

1. Press the OVERRIDE button once; the output LED will then be activated.
2. To override the 'output off', press the OVERRIDE button once.

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 looses 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.

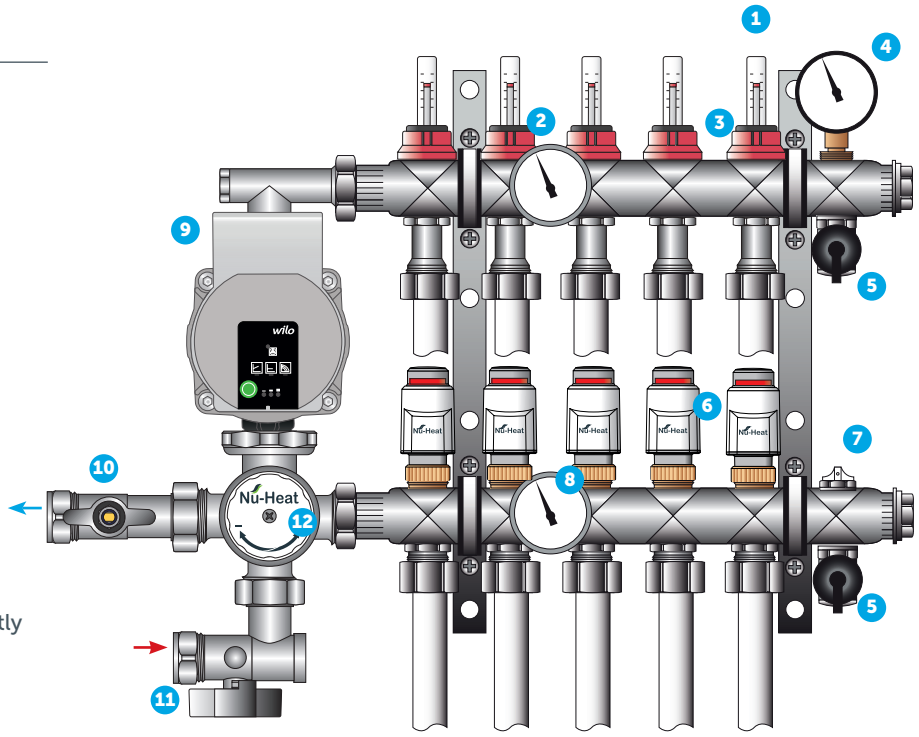
Over a period of time as the room comes up to temperature, the return pipe will warm up as well.

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 guage
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 12), which detail how the thermostat can be put into a hold mode and the required frost protection temperature adjusted.

Geo-Location (systems with neoHub+)

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

Things to remember

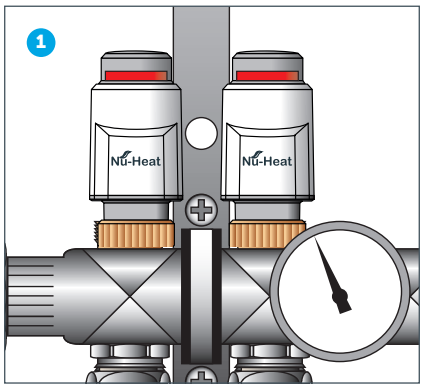
1. **Account per User** – To use Geo Location – each user in the home must have their own Share Account.
2. **Enable Location Services** – Geo Location uses your phones location services, so you must have this enabled for the Geo Location feature to work.
3. **Enable WiFi** – Geo Location uses WiFi to 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.

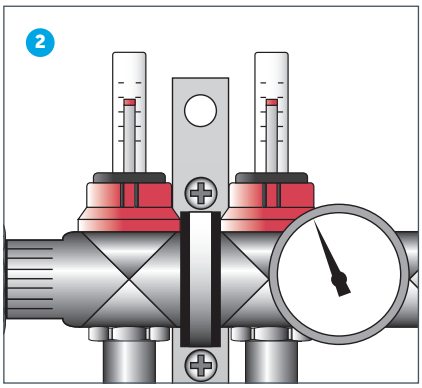
Privacy

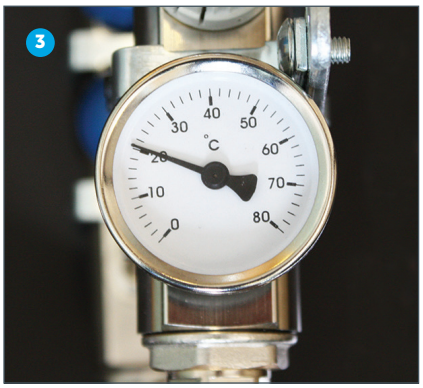
- Neither Nu-Heat nor the manufacturer ever knows or stores your home location or your current position.
- Only your mobile phone knows your home location and your current position. Using this data it calculates when you have passed the configured trigger points.
- The state (Home/Away) is stored on 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).**

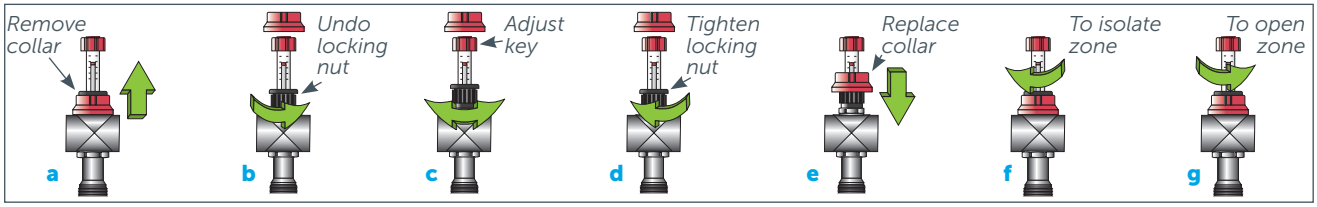
Please note that the button can take up to 3 minutes to respond.

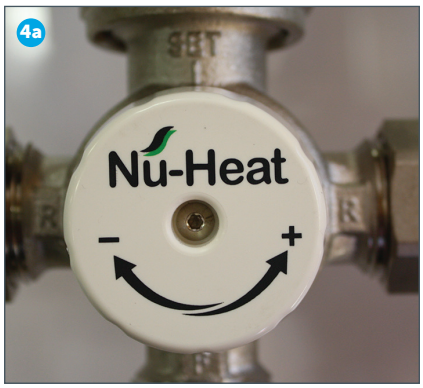
To adjust flow rates on the flow gauge (see diagrams below):

- **a** Remove red collar
- **b** Undo the black locking nut
- **c** Adjust the flow rate as required, by turning the gauge with the red 'key'
- **d** Re-tighten the black locking nut
- **e** Replace red collar
- **f** Zone can be isolated by winding flow gauge all the way down
- **g** 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.**

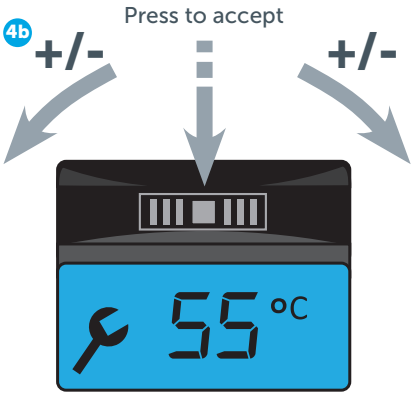
To do this:-
With the system running note the water flow temperature on the gauge (3) on the top rail of the manifold. This temperature can be increased (see 4a and 4b below).
Note: **Adjust a little at a time to suit your requirements.**





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 19) 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.

AS REQUIRED

Replacing the batteries
See instructions on page 9.

Energy efficiency (ErP)

The neoAir 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.

Nu-Heat
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Follow us @nuheatuk
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Freephone 0800 731 1976 or 01404 549770

Nu-Heat UK Ltd | Heathpark House | Devonshire Road | Heathpark Industrial Estate | Honiton | Devon EX14 1SD