

## **Electric** underfloor heating user guide EneoStat v2







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

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### Welcome

Congratulations, you are the owner of a Nu-Heat electric 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, please visit the Nu-Heat website at nu-heat.co.uk.

#### **Installer details**

Company:	
Contact name:	
Contact telephone no.:	
Address:	



### Operation

Your underfloor system is designed for performance and economy. Each electric UFH zone is controlled by its own wall-mounted programmable thermostat.

#### WHAT IS A PROGRAMMABLE ROOM THERMOSTAT?

A programmable room thermostat is a programmer and a room thermostat. 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 unoccupied during the day, for example, then the electric UFH can be turned off or set to a low 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 floor finishes fitted, as this will affect the time the system will take to achieve comfort conditions.

The EneoStat V2 is Lot 20 compliant when used with Nu-Heat's ElectroMat<sup>®</sup> underfloor heating system. It incorporates electronic temperature control plus a weekly timer and adaptive start control.

### **EneoStat**

### Each thermostat combines the functions of a room thermostat and timeclock.



Setting a programmable room thermostat to a higher temperature will not make the room heat up any faster. How quickly the room heats up depends on the design and size of the heating system.

Similarly reducing the temperature setting does not affect how quickly the room cools down. Setting a programmable room thermostat to a lower temperature will result in the room being controlled at a lower temperature, and saves energy.

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.

### **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 EneoStat V2

The next step is to pair the EneoStat to the neoHub+, starting with the EneoStat located nearest to the neoHub+. To add an EneoStat, 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 ✓ key once again to pair the EneoStat to the neoHub+
- 7 The MESH symbol appears flashing on the display.
- 8 When the EneoStat successfully connects to the neoHub+ the MESH symbol will be permanently displayed.
- 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 EneoStats, select ZONES, edit, then ADD ZONE.

#### What is a mesh network?

EneoStats work using a mesh network, meaning EneoStats 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 EneoStat V2 uses proximity to detect when you are about to use the touch keys. As you approach the EneoStat 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.

### **EneoStat V2 operation**



#### **Error codes**

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 EneoStat 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 EneoStat 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

- 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 EneoStat 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 <sup>°</sup> C (wake)	16:30 / 21 <sup>°</sup> C (return home)
09:00 / 16 C (leave the house)	22:00 / 16 <sup>°</sup> 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
- 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 ✓

# SET

#### **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  $\checkmark$  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 < / > keys to scroll to HOLD
- 2 Press  $\checkmark$  to confirm selection
- 3 Use the  $\checkmark$  /  $\checkmark$  keys to set the desired Hold period
- 4 Press ✓ to confirm selection
- 5 Use the  $\checkmark$  /  $\checkmark$  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, with hold selected on the main menu, press the  $\checkmark$  key and then press  $\checkmark$  again while CANCEL is highlighted.

#### Locking the EneoStat V2

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

- 1 Use the < / > 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  $\checkmark$  /  $\checkmark$  keys to enter the first two digits
- 4 Press ✓ to confirm
- 5 Use the  $\checkmark / \land$  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 EneoStat V2**

To unlock the EneoStat press  $\checkmark$  once. The display will show 00:00 and you will need to enter the four digit pin number 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**

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

In this mode, the EneoStat will display the frost icon and will only turn the heating ON should the room temperature drop below the set frost temperature

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  $\checkmark$ .



#### **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 EneoStat remains active.

1 To turn the EneoStat 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.





Thermostat OFF

Thermostat ON

#### Holiday

In thermostat mode, the HOLIDAY function reduces the set temperature in your home to the frost protection temperature setting.

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  $\checkmark$
- 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

#### **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.

- 1 Use the < / > keys to scroll to the POWER icon
- 2 Press and hold 🗸 to turn the display OFF
- 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

#### **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.

SETUP

#### **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	
01	Pairing to neoHub+	Used to add zone to neoHub	Used to connect the thermostat to the neoHub+
02	Switching differential	00 = 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 <sup>°</sup> -17 <sup>°</sup> C (12 <sup>°</sup> C = default)	The temperature maintained when the
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. An air sensor only <b>MUST NOT</b> be used to control EUFH – the floor sensor or both must be used.
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		Not used on this model	
11		Not used on this model	
12	Program mode	00 = Non-programmable 01 = Weekday/Weekend (Default) 02 = 7 Day Programming 03 = 24 Hour Mode	<ul> <li>Weekday/ Weekend – 4 comfort levels for the weekday and 4 different comfort levels for the weekend.</li> <li>7 Day Program Mode – Each day has 4 comfort levels that can be programmed independently.</li> <li>24 Hour Mode – All days are programmed the same and repeat continuously.</li> </ul>
13	Temperature format	00 = °C, 01 = °F; (00 = Default)	Select between °C and °F.
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### Seasonal adjustments

If you require to turn the heating off 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 9), which detail how the thermostat can be put into a hold mode and the required frost protection temperature adjusted.







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.











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