

# Universal Heating Controller

## Installation and User Manual for UNI/H version

### Quick Guide



Increase a value.



Enter the settings menu.



Decrease a value.



Initiate or quickly override a time program on or off



Accept a newly entered value.



Initiate a holiday period.



Cancel overtime, holiday, edited value or current submenu.



End overtime, holiday or reset time logs in engineers menu.



Select Summer mode (hot water only) and Winter mode (heating and hot water)



Toggle the display between time and sensor readings

# Universal Heating Controller

## *Installation and User Manual*

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# Introduction

This manual describes the installation and operation of the [Universal Heating Controller](#) (UNI/H).

This control unit must be installed according to the current IEE wiring Regulations and should include full disconnection means and fusing appropriate to the connected loads.

[Universal Heating Controller](#) is a simple to use and flexible controller designed to offer the energy saving features of Building Management Systems for medium and smaller buildings.

## 1 TECHNICAL SPECIFICATIONS

### 1.1 Operating Environment

Operating temperature range:  
0° C to 40° C

Operating humidity range:  
0 to 90% RH.

Control IP rating:  
IP30

Pollution degree:  
II environment

Control safety construction:  
Class II

Mains supply:  
230Vac nominal, 200Vac to  
265Vac actual, 50Hz.

On board supply fuse: 1AT

Rated impulse voltage: 2500V

Recommended control supply fuse:  
3A

Rated impulse voltage: 2500V

Dimensions: 216mm X 124mm X  
62mm

**Conformities: EMC – 89/336/EEC  
LVD – 73/23/EEC**

### 1.2 Performance Specifications

An independently mounted electronic control for surface mounting.

*Operation is by Class A software and Type 1A action.*

The mains supply to the electronic circuit is to be protected by a fuse.

*Remote switch inputs will be volt free, 12Vdc/5mA*

Occupancy sensor inputs are volt free, normally closed (contacts open on detection of occupancy) as BW/MINI and PIR/CM.

Maximum sensor rating: 90)

Temperature sensor input is from a thermistor sensor, as UNI/RS (room sensor), UNI/EXT (outside sensor), UNI/CS (clamp on sensor), UNI/WIM (immersion sensor probe).

### 1.3 Electrical Specifications

The power supply is SELV isolated, therefore all remote sensor and remote switch wiring to the control does not need to be mains level rated, but should be insulated to the highest voltage present where entering the control box.

Relay 1 is rated:  
16A/240Vac resistive  
6A/240Vac inductive  
550W motor load

Relay 2 is rated:  
16A/240Vac resistive  
6A/240Vac inductive  
550W motor load

**Total maximum load for relays 1 and 2 is 12A.**

Relays 3 to 7 are rated:  
10A/240Vac resistive  
4A/240Vac inductive  
370W motor load

**Maximum load for each of relays 3 and 4 is 6A.**

**Total maximum load for relays 5 to 7 is 12A.**

Where the plant has a higher rating, it is recommended that the relays are used to operate suitably rated contactor relays.

0 – 10V signal:

A 0 to 10Vdc output signal is provided for modulating valve control. Output impedance is 50 Ohm and maximum current drive capacity is 5mA. The output signal is not isolated from the control circuit but the common ground may be Earthed.

Sensors can be sited up to 100m from the control; the cable may be screened to improve noise rejection. Cable resistance must be less than 10 Ohms to minimise errors.

## 2 INSTALLATION INSTRUCTIONS

### 2.1 Mounting the Control Assembly

Ensure that the controller is installed no less than 1.5m above the floor level.

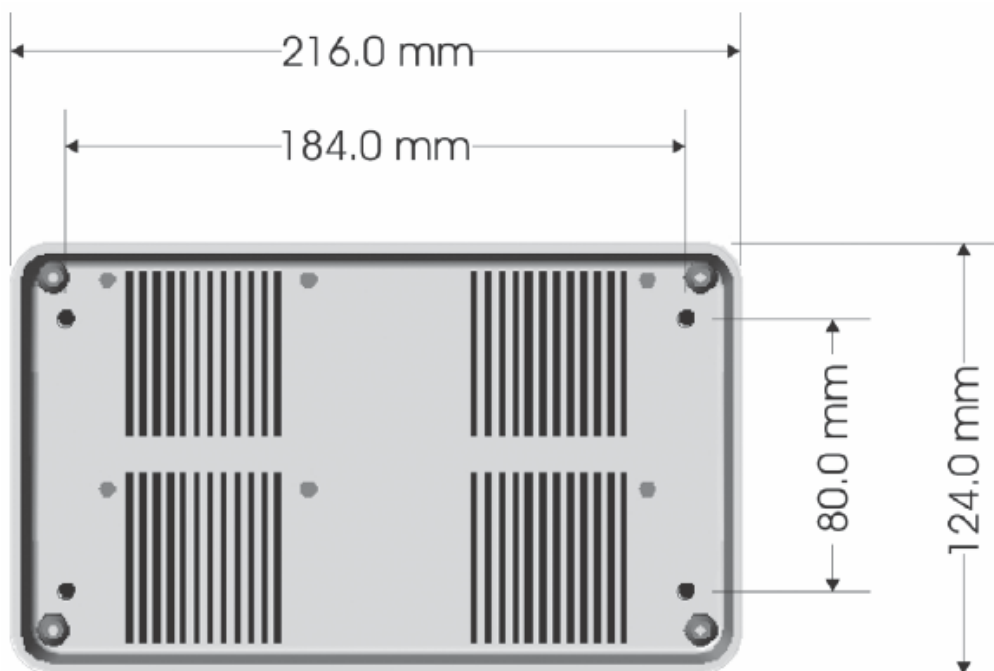
The controller should be positioned to allow the user easy access to the push buttons and to read the LCD display.

The controller can be positioned with the cable entry to the bottom or the top depending on the cable routing.

The lid with the controller circuit board can be rotated through 180 degrees to accommodate top or bottom cable entry.

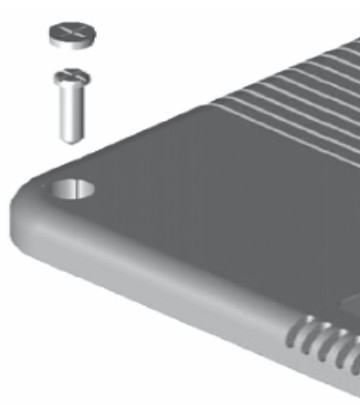
Do not mount the controller on a warm surface or where it could be affected by direct sunlight or other heat sources.

The mounting surface should be non-conducting or earth bonded and should prevent access to the rear of the control.



The housing consists of a two part plastic moulding held together by four screws.

Plugs are supplied to cover the screws following installation.



Knockouts are provided for cable glands to allow mains and remote sensor and switch cables to be fitted to the control assembly.

Knock the plastic out to fit the glands as required. Never leave holes that allow finger access.



Whenever possible, keep mains wiring and signal wiring separated and use separate knockouts for each type of wiring system. Consider the termination points when selecting the appropriate knockouts.

## 2.2 General Wiring Specifications

A suitably qualified person must make all wiring connections. Please refer to the following wiring connection drawing (see 2.3) and observe the notes referring to cable type and length. Failure to follow these guidelines may result in electrical interference or unsatisfactory operation. When making connections to screw terminals please ensure that no more than 6mm of insulation is stripped back and that no stray wire strands escape.

0-12V outputs, Analogue 0 – 10V output and remote switch inputs for occupancy sensors should be connected by 0.75mm<sup>2</sup> cable of maximum length 100m.

The remote temperature sensors can be sited up to 100m from the control; the cable may be screened to improve noise rejection. Cable resistance must be less than 10 Ohms to minimise errors. Connect the screen to the ground terminal (GND).

All sensor and signal wiring should be kept separate from mains wiring to minimise noise pick-up.

### 2.3 Wiring Connections

External connections are by 27 screw terminals as follows:

Screw terminals are 7.5mm and 5mm spacing rising clamp style with 2.5mm<sup>2</sup> wire entry size for power connections and with 1.5mm<sup>2</sup> wire entry size for signal connections.

The terminal identification and description are provided below, together with the maximum terminal capacity in mm<sup>2</sup> (shown in brackets). Note that some terminals may require more than one cable to be terminated, and therefore cable sizing should be selected accordingly. The 12V dc and 0V dc terminals may require several cables to be terminated in a separate connector, according to the number of remote sensors required. Any series wiring for occupancy or sensor inputs should be achieved using a separate connector.

#### CONTROLS SUPPLY

LIVE Live supply input (2.5)  
 NEUT Neutral supply input (2.5)

E stud Earth termination point (2.5)  
 (not shown)

#### INPUTS

S1+ Zone 1 room sensor + (1.5)  
 S1- Zone 1 room sensor - (1.5)  
 S2+ Zone 2 room sensor + (1.5)  
 S2- Zone 2 room sensor - (1.5)  
 S3+ External outside sensor + (1.5)  
 S3- External outside sensor - (1.5)  
 S4+ DHW sensor + (1.5)  
 S4- DHW sensor - (1.5)  
 S5+ Boiler flow/Z1 occupancy+ (1.5)  
 S5- Boiler flow/Z1 occupancy - (1.5)  
 S6+ Boiler return/Z2 occupancy+(1.5)  
 S6- Boiler return/Z2 occupancy -(1.5)

#### OUTPUTS

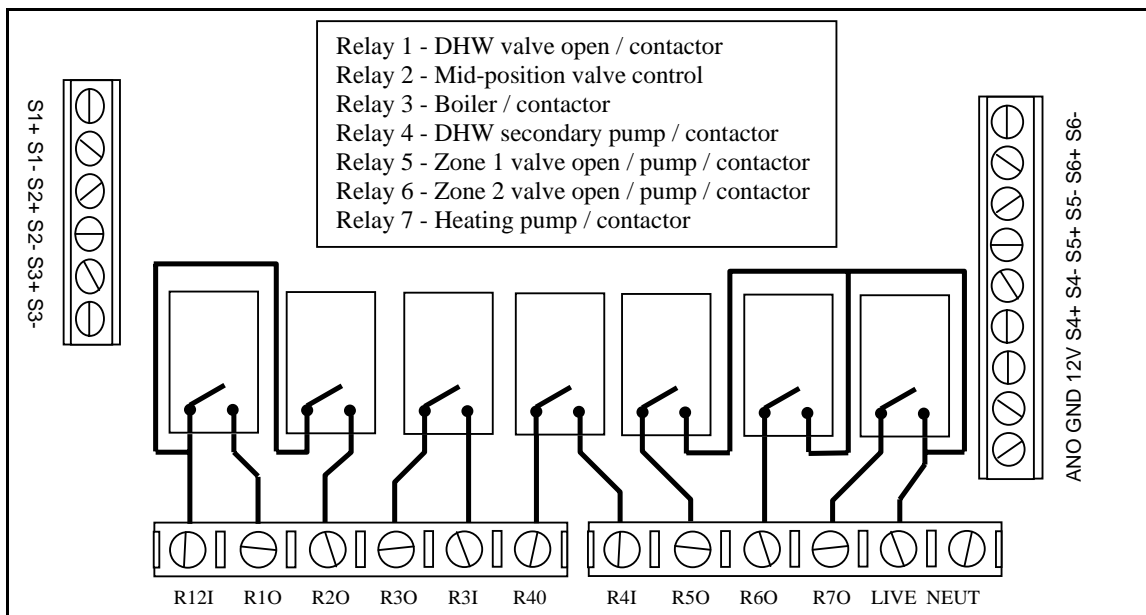
ANO Analogue output 0 – 10V (1.5)  
 GND 0V dc output (1.5)  
 12V 12V dc output (1.5)

#### RELAY CONNECTIONS (see table below)

R12I Relay 1 and 2 common input(2.5)  
 R1O Relay 1 output (2.5)  
 R2O Relay 2 output (2.5)  
 R3O Relay 3 output (2.5)  
 R3I Relay 3 input (2.5)  
 R4O Relay 4 output (2.5)  
 R4I Relay 4 input (2.5)  
 R5O Relay 5 output (Live) (2.5)  
 R6O Relay 6 output (Live) (2.5)  
 R7O Relay 7 output (Live) (2.5)

**Figure – Terminal connections**

\*NOTE: RELAYS 1-4 ARE VOLT FREE. CONNECT SUITABLE VOLTAGE TO R12I, R3I, R4I\*





## 2.4 Remote Temperature Sensor Wiring Connections

<u>Universal Controller</u>	<u>Temperature sensor</u>
S+ →	+
S- →	-

(Note that un-marked sensors are not polarity sensitive)

## 2.5 Occupancy Sensor Wiring Connections

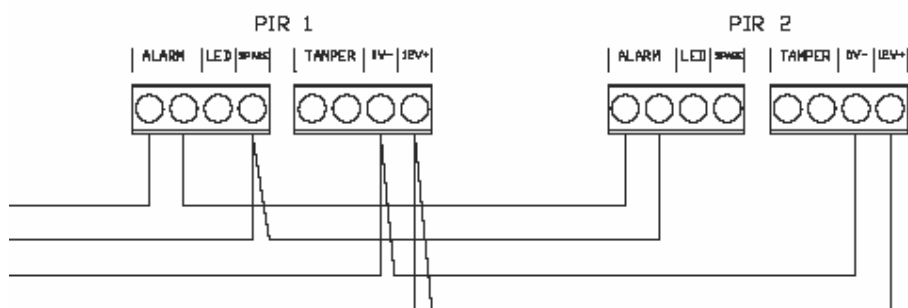
Where occupancy detection is required, a range of BlueWave sensors are designed for use with the Universal Heating Controller.

The preferred cable is 4-core stranded and connections will be as follows:

<u>Universal Controller</u>	<u>BlueWave Sensor</u>
12V	+
GND	-
S +	ALM (ALARM)
S -	ALM (ALARM)

Note – Tamper and LED terminals on the BlueWave sensor(s) are not used.

Where more than one sensor is required for a sensor input, installation should be as above with the exception of the wiring. To use two or more sensors connect + & - in parallel and connect ALM contacts (ALARM) in series. The connections on different versions of sensors may vary slightly to the drawing below:



## 3 OPERATING INSTRUCTIONS

### 3.1 The buttons



The ten buttons have the following functions:



Increase a value



Decrease a value



Accept a newly entered value



Cancel overtime, holiday, edited value or current submenu



Select Summer mode (hot water only) and Winter mode (heating and hot water)



Enter the settings menu



Initiate or quickly override a time program on or off



Initiate a holiday period



End overtime, holiday or reset time logs in engineers menu



Toggle the display between time and sensor readings

Note if no keypad action takes place for 60 seconds, the current selection is cancelled and the display returns to day and time and previously set operating mode.

### 3.2 The display

During normal operation the time and day will be displayed. If the system needs servicing then the service icon is displayed here.



The display will normally cycle through the status of each zone, showing where appropriate the target temperature for each zone, the operating mode and heating status.

### 3.3 Setting User Parameters

Press the SET button when in normal display mode allows the user to set various parameters within the unit. Repeat presses of the SET button will cycle through the following options:

1. Set Clock
2. Set Auto Mode
3. Set Time Program
4. Set Temperature Levels

### 3.4 Setting the Clock

Press the SET button. (Enter your PIN if prompted.)

The icons SET, CLOCK and OK? Will be displayed with the CLOCK icon flashing.



Press the OK button to accept the set clock function.

The current clock setting will be displayed and one of the days will now flash.



Press + or - until the correct day is displayed and press OK to accept.

Next the hours display will flash.

Press + or – until the correct hours are displayed and press OK to accept.

Next the minutes display will flash.

Press + or – until the correct minutes are displayed and press OK to accept.

The controller will return to normal operation.

### 3.5 Setting the Mode

The Mode defines whether a zone is permanently on (ON), permanently off (OFF), or controlled by the time program (AUTO).

Press the set button (enter the PIN if prompted) to access the SET AUTO option. The icons SET and OK? will be displayed with the AUTO, ON and OFF icons flashing.



Press OK to accept the SET AUTO function.

A prompt for the applied zone will appear to the right of the display, with “A” meaning that the setting will be applied to all zones.



Use the + and – keys to select the zone to be configured, then press OK. The current auto setting for that zone will be shown.

Use the + and – keys to cycle through the modes “ON”, “OFF” or “AUTO” and press OK to accept the required operating mode.

### 3.6 Setting the Program (on / off times)

Each zone can be programmed to be active during certain times of the day. Three active periods can be programmed, between ON 1 and OFF 1, between ON 2 and OFF 2 and between ON 3 and OFF 3. The second and third on/off periods can be skipped if not required. A different program can be set for each day of the week.

Press the set button (enter the PIN if prompted) to access the SET PROGRAM option.

The icons SET and OK? Will be displayed with the PROGRAM icon flashing.



Press OK to accept the Set Program function.

Zone number 1 will be displayed flashing.

Use the + and – keys to cycle through to the zone which needs to be programmed. Press OK.

The day of the week will flash (The time area will be blank) Press the + and – keys if you want to chose another day to be programmed and press OK to accept.

The timeslot icon [ON 1] will be displayed and the hours and minutes display will flash. Press + or – until the required ON time is displayed. The time will change in ten minute steps. Press OK to accept.



Press OK will advance the display as follows:

- An ON time will advance to its corresponding OFF time. If an ON time is programmed its corresponding OFF time must be programmed for that same day.
- The default value for ON2 and ON3 time is unused, "--:--". To change this to a usable ON/OFF slot, press the – button.

- If ON2 time is set to unused, "--:--", pressing OK will then allow you to select a different day.
- Similarly, if ON3 is set to unused, "--:--", pressing OK will then allow you to select a different day.
- ON2 cannot be set to unused and ON3 set to used.
- If a day, eg Saturday, does not require a program, then set ON1 time for that day to unused, "--:--". (Press the + button until it changes from "23:50" to "--:--".)
- When the time programme for the week is completed, press OK to review the programme or press + and – to select another zone.

Three timeslots per day are allowed for each zone, where each timeslot includes an ON and OFF time. For heating zones, the ON 1 time is the target time and the optimiser will switch heating on in advance aiming to achieve the target temperature by the ON 1 time. Subsequent ON times are fixed and are not affected by the optimiser.

Once a day's time program has been completed the day icon will flash for the next day.

To finish with the program settings press cancel or reset after pressing OK for the last programmed day.

### 3.7 Setting the Temperatures

Target temperature levels can be programmed for each zone. During operation the boiler, valves and pumps or contactors will operate as required to achieve this target.



Press the set button (enter the PIN if prompted) to access the SET TEMP option. The SET and OK? icons will be displayed, with the TEMP icon flashing.

Press OK to accept the SET TEMP function.



A zone number will now be flashing to the right of the display. Use the + and – keys to select the required zone and press OK.

A temperature level will flash in the centre of the display.



Use the + and – keys to adjust the required temperature level. The temperature level can range from 10°C to 30°C for heating zones and 30°C to 60°C for domestic hot water (DHW). Pressing and holding a key will force an accelerated cycle through values. Press OK to confirm the required level.

A prompt to program the next zone in sequence will now appear. Continue programming temperature levels as required, and press the CANCEL button when finished.

### 3.8 Setting Summer or Winter operation

The SUMMER/WINTER key offers a quick means to change between providing heating and domestic hot water (winter) to domestic hot water only (summer).

Press the SUMMER/WINTER key when in normal (winter) display mode.



The “OK?” icon will be displayed with the “HW” icon and an “S” (indicating summer) to the right of the display.

Press OK to accept the summer setting.

When in summer mode the time display shows an “S” on the right side of the display, along with the day and time as usual.



When in summer mode, press the SUMMER/WINTER key. The “OK?” icon will be displayed with the “CH” and “HW” icons flashing.



Press OK to accept the winter setting.

### 3.9 Extend (Initiate or quickly override a time program on or off)

The EXTEND key can be used to provide a time limited extension to the program for use outside normal hours, or to turn the heating system off for a time limited period.

Press the EXTEND key to access the Extend function.

The Set, Overtime and OK? icons will be displayed with “ON” flashing in the centre display.



Use + and – to choose between an *ON* overtime period (program is on for a limited period) or an *OFF* overtime period (program is off for a limited period)



Press OK to select.

Now choose the zones the overtime will be applied to, using + and -. You will first be offered the option to apply the overtime period to all zones (“A” will flash as the zone). Enter yes to choose all zones, or use + and – to change



and enter “no” to go on and individually select which zones will be applied. Press OK to select.



Enter the length of the overtime period with + and -. The time duration will advance in units of ten minutes. The maximum overtime period is set in the engineering functions.



Press OK to initiate the overtime period. The normal clock display will be replaced with an overtime countdown that will show OFF OVERTIME or ON OVERTIME and remaining overtime in minutes according to the selection made for each zone.

While in overtime mode the extend period can be increased or decreased by pressing the extend key. The time can be modified without having to reprogram the extend type or applicable zones. Adjusting the time to zero will cancel the overtime period.

An overtime period can be quickly cancelled at any time by pressing the CANCEL or RESET key.

(It is not possible to have one zone with override on and another with override off at the same time. The override will apply regardless of the operating mode for each zone selected.)

### 3.10 Holiday

Press the HOLIDAY key when in normal display mode to set a holiday period of a number of days. During a holiday period, all zones are off and will only be active according to frost level settings.

Enter the length of the holiday period with + and -. The time duration will advance in units of days, to a maximum of 99 days.



Press OK to initiate the holiday period. The normal clock display will now include the holiday icon in the lower left corner, indicating that a holiday is scheduled. The holiday will not become active until midnight.



When in an active holiday period the normal clock display will be replaced with a holiday countdown.



While in holiday mode the holiday period can be increased or decreased by pressing the HOLIDAY key. The number of days can be modified if required. Adjusting the number of days to zero will cancel the holiday period.

An holiday period can be quickly cancelled at any time by pressing the CANCEL or RESET key.

(Holiday mode is applied to all zones.)

### 3.11 Viewing info

When in the normal display mode the status of each of the sensor inputs can be viewed by pressing the INFO key. Consecutive presses of the info key will cycle through all sensors, followed by the target boiler return temperature and the calculated minutes per degree for optimum start.

The status of PIR sensors (when the unit is configured for electric heating) will be shown as either ON or OFF.

Temperature sensors will show the temperature reading in degrees Celsius.

The optimum start value will be shown in minutes per degrees Celsius.

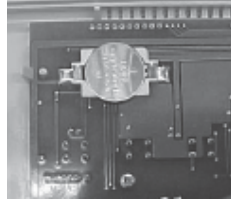
The sequence of values displayed is as follows:

- |   |                         |   |                            |
|---|-------------------------|---|----------------------------|
| 1 | Zone 1 room sensor      | 5 | Boiler flow/Z1 occupancy   |
| 2 | Zone 2 room sensor      | 6 | Boiler return/Z2 occupancy |
| 3 | External outside sensor | h | Target boiler return temp  |
| 4 | Hot Eater (DHW) sensor  | O | Optimiser: minutes per 1°C |

### 3.12 Battery Type & Replacement

The real time clock and program information is battery backed up by a lithium coin cell. When mains power is interrupted, the clock, backed by the battery, will continue to operate normally for seven days after which it will stop. The battery will continue to back up the program information.

The battery has a service life of approximately five years. The condition of the battery is monitored and when replacement becomes necessary, this will be indicated on the display. Replacement will be indicated on the display only if mains supply is present.



To replace the battery, isolate the control from the mains electricity supply and remove the plugs / screws securing the front panel to the rear case. Carefully remove the panel and detach the ribbon cable from the power PCB assembly. Remove the old battery and fit the new battery as shown in the photograph.

## 4. ENGINEER FUNCTIONS

The engineer functions allow you to program various advanced parameters. In order to access the engineer function press and hold the + button and press the SET button.

### 4.1 General password (PIN Protection)

When the engineers area is accessed, the controller will prompt you for the engineers password; the PIN will be displayed and four zeros will be displayed with the first zero flashing.



Press the + or – buttons until the correct first digit of the PIN code is displayed. Press OK to enter this digit.

Once accepted the second zero will flash. Press the + or – buttons until the correct second digit of the PIN code is displayed. Press OK to enter this digit.

The third zero will flash. Press the + or – buttons until the correct third digit of the PIN code is displayed. Press OK to enter this digit.

Next the fourth zero will flash. Press the + or – buttons until the correct fourth digit of the PIN code is displayed. Press OK to enter this digit.

Once the PIN code has been set and accepted, you will immediately gain access to the control settings (explained below)

- Access will remain available for 60 seconds after the last button press, after which the PIN code will have to be entered again to get access to the settings.
- If the PIN code is not available, contact the manufacturer for the master PIN code.

## 4.2 Programming the engineering functions

Once the PIN code has been entered the [SET] and [ENGINEER] icons are displayed with the first parameter H1.



All engineer functions are displayed as a code in the first two digits if the display, e.g. C1, t1, t2 and a variable in the second two digits.

Press the SET button to cycle through the engineering variables until the desired variable is displayed.

Press OK button to accept this variable. The variable value (second two digits) will start flashing.

Press the + or – buttons until the desired variable value is displayed.

Press OK to accept this value. The variable value will stop flashing.

Press the SET button to advance to another variable.

Pressing the CANCEL button twice consecutively, at any time while in the engineer function, will cause the controller to exit the engineer function and return to normal operation. Only items that have been OK'd will be changed.

If no keypad action takes place for 60 seconds while in the engineer function, the controller will exit the engineer function and return to normal operation. Only items that have been OK'd will be changed.

### 4.3 The Engineer Variables

Code	Name	Properties	Default	Values	Meaning
H1	Boiler On Hours	Read Only	0000	0000 to 9999	Displays the boiler "on" hours since the last reset.
H2	Service Hours	Read/Write	0.0	0.0 to 9.9	The number of boiler "on" hours allowed before the SERVICE icon is displayed. The value is given in units of 1000h.
C1	Compensation Type	Read/Write	02	00 to 02	0=Electric Heating (No compensation) 1=Load Compensation 2=Weather Compensation (requires outside sensor)
C2	Compensation Gradient / Electric Heating Setback	Read/Write	12	00 to 20	When C1=00 this gives the number of degrees to set back the room temperature when the zone is unoccupied. Target temperature is still used for ON1 time before setback applies.  When C1 = 01 or 02 this controls the gradient of the target boiler return temperature.
C3	Compensation Offset	Read/Write	15	00 to 40	When C1=00 this value has no effect.  When C1 = 01, C3 controls the speed of response.  When C1 = 02, C3 controls the offset of the target boiler return temperature.
C4	Outside temperature cut off	Read/Write	18	10 to 25	C1 = 00, no effect  When C1=01 or 02, zone heating is not provided if the outside temperature is greater than this value.
C5	Minimum Return Temperature	Read/Write	30	20 to 50	The minimum boiler return temperature that must be maintained during heating periods.

b1	Heating start compensation boost %	Read/Write	25	00 to 50	C1 = 00 or 01 this value has no effect.  C1 = 02 Controls the percentage boost applied to the target boiler return temperature at the start
b2	Heating tail off compensation reduction %	Read/Write	10	00 to 50	C1 = 00 or 01 this value has no effect.  C1 = 02 Controls the tail off compensation reduction.
b3	Heating tail off delay	Read/Write	12	00 to 24	C1 = 00 or 01 this value has no effect.  C1 = 02 Controls the tail off delay period in units of 10 minutes.
U1	Pump run on time after hot water	Read/Write	10	00 to 99	C1 = 00 PIR runback time in minutes (occupancy detected time before set back)  C1 = 01 or 02. Pump run on time after hot water operation.
U2	Pump run on until return temperature in °C	Read/Write	28	20 to 50	The pump runs until boiler return temperature falls to this value.
U3	Pump run on time after central heating	Read/Write	06	00 to 24	Pump run on time after central heating demand in units of 10 minutes.
U4	Minimum boiler cycle	Read/Write	05	00 to 90	Minimum boiler cycle in minutes.
t1	Maximum overtime	Read/Write	06	00 to 60	The maximum allowed overtime in units of 10 minutes.
t2	Maximum optimum start	Read/Write	06	00 to 24	Maximum optimum start time in units of 10 minutes.
t3	Maximum optimum stop	Read/Write	03	00 to 12	Maximum optimum stop time in units of 10 minutes.
F1	Frost protection enable	Read/Write	01	00 to 01	00 = Frost protection disabled.  01 = Frost protection enabled.
F2	Frost protection set point	Read/Write	05	00 to 20	The temperature at which frost protection is enforced, in deg.C
E1	Regular run	Read/Write	00	00 to 01	00= Pumps do not have regular run.  01= Pumps have a regular run of 5 seconds every 24 hours.

E2	Hot water control	Read/Write	00	00 to 02	<p>00=Hot water (DHW) demand is defined by the zone 3 time program only. Hot water demand controls the hot water relay only (relay 1). Intended for immersion heater based hot water with its own thermostat.</p> <p>01=Hot water (DHW) demand is defined by the zone 3 time program and the hot water sensor. Hot water demand controls the hot water relay and 2ndry pump relay. Intended for independent boiler based hot water.</p> <p>02=Hot water (DHW) demand is defined by the zone 3 time program and the hot water sensor. Hot water demand controls the hot water relay, the boiler relay the pump relay and the 2ndry pump relay. Intended for single boiler system.</p>
E3	Hot water temperature boost	Read/Write	00	00 to 01	<p>00= No boost of hot water applied.</p> <p>01= Hot water (DHW) temperature set point is raised to 65 deg. C at 1am on Wednesday to eliminate bacteria in the water.</p>
E4	Active zones	Read/Write	01	00 to 02	<p>00=Central heating zone 1 active, central heating zone 2 inactive, hot water zone 3 active.</p> <p>01=Central heating zone 1 active, central heating zone 2 inactive, hot water zone 3 inactive.</p> <p>02=Central heating zone 1 active, central heating zone 2 active, hot water zone 3 inactive.</p> <p>03=Central heating zone 1 active, central heating zone 2 active, hot water zone 3 active.</p>



E5	Slave Zone Selection	Read/Write	00	00 to 03	00= No zones are slaves.  01=Zone 2 is a slave with zone 1 times.  02=Zone 3 is a slave to zone 1 times.  03=Zones 2 and 3 are slaves to zone 1 times.
E6	Boiler Type Selection	Read/Write	00	00 to 01	00=Normal boiler with separate boiler and pump control.  01=Combi-boiler without separate boiler and pump control.
E7	Mixing Valve Control	Read/Write	00	00 to 01	00=No mixing valve control.  01=Mixing valve control enabled.
S1	Temperature offset (Zone 1)	Read/Write	00	-5 to 05	The temperature reading offset applied to S1(zone 1 room temperature sensor).
S2	Temperature offset (Zone 2)	Read/Write	00	-5 to 05	The temperature reading offset applied to S2 (zone 2 room temperature sensor).
S3	Temperature offset (Outside)	Read/Write	00	-5 to 05	The temperature reading offset applied to the S3 (outside temperature sensor).
P1	PIN Protection	Read/Write	01	00 to 01	00=settings menu not protected by PIN.  01=settings menu protected by PIN.
P2	PIN Number	Read/Write	00	0000 to 9999	The PIN number for the settings menu.
P3	Factory Reset	Read/Write	00	00 to 01	00=do not reset all of program and engineering data to default settings.  01=reset all of program and engineering data to default settings.





Document reference: UNI/H ~ Universal Heating Controller Instructions -  
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