Bellway

USER GUIDES
Heat only boiler

ideal

USERS GUIDE

LOGIC Heat
12, 15, 18, 24, 30

For installation guide see reverse of book

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require.
Do not use reconditioned or copy parts that have not been clearly authorised by Ideal.

Introduction

The **Logic Heat** is a wall mounted, room sealed, condensing heating only boiler, featuring full sequence automatic spark ignition and fan assisted combustion.

Due to the high efficiency of the boiler, condensate is produced from the flue gases and this is drained to a suitable disposal point through a plastic waste pipe at the base of the boiler. A condensate 'plume' will also be visible at the flue terminal.

Safety
Current Gas Safety (Installation & Use) Regulations or rules in force.

In your own interest, and that of safety, it is the law that this boiler must be installed by a Gas Safe Registered Engineer, in accordance with the above regulations.

In IE, the installation must be carried out by a Registered Gas Installer (RGII) and installed in accordance with the current edition of I.S. 813 "Domestic Gas Installations", the current Building Regulations and reference should be made to the current ETCI rules for electrical installation.

It is essential that the instructions in this booklet are strictly followed, for safe and economical operation of the boiler.

Electricity Supply
This appliance must be earthed.

Supply: 230 V ~ 50 Hz. The fusing should be 3A.

Important Notes

- This appliance must not be operated without the casing correctly fitted and forming an adequate seal.

- If the boiler is installed in a compartment then the compartment MUST NOT be used for storage purposes.

- If it is known or suspected that a fault exists on the boiler then it MUST NOT BE USED until the fault has been corrected by a Gas Safe Registered Engineer or in IE a Registered Gas Installer (RGII).

- Under NO circumstances should any of the sealed components on this appliance be used incorrectly or tampered with.

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instructions concerning use of the appliance by a person responsible for their safety.

- Children should be supervised to ensure that they do not play with the appliance.

In cases of repeated or continuous shutdown a Gas Safe Registered Engineer or in IE a Registered Gas Installer (RGII) should be called to investigate and rectify the condition causing this and carry out an operational test. Only the manufacturers original parts should be used for replacement.

Minimum Clearances

Clearances of **100mm (4")** above, **100mm (4")** below, **2.5mm (1/8")** at the sides and **450mm (17 3/4")** at the front of the boiler casing must be allowed for servicing.

Bottom clearance
Bottom clearance after installation can be reduced to 5mm.

This must be obtained with an easily removable panel, to enable the consumer to view the system pressure gauge, and to provide the 100mm clearance required for servicing.

To Light the Boiler. Refer to Frame 1

If a programmer is fitted refer to separate instructions for the programmer before continuing.

1. CHECK THAT THE ELECTRICITY SUPPLY TO BOILER IS OFF.
2. Set the mode control knob (B) to 'Off'.
3. Set the Heating temperature control (A) to 'max'.
4. Switch ON electricity to the boiler and check that all external controls, e.g. programmer, room thermostat and cylinder thermostat, are ON.
5. Set the mode control knob to ON.

The boiler will commence the ignition sequence supplying heat to the central heating, if required.

Note. *In normal operation the boiler status display (C) will show codes:*

$\mathcal{O}$ Standby - no demand for heat.

$\mathcal{C}$ Heat being supplied.

$\mathcal{F}$ Boiler frost protection - boiler will fire if temperature is below 5 degrees C.

During normal operation the burner on indicator (D) will remain illuminated when the burner is lit.

Note: If the boiler fails to light after five attempts the fault code *L-2* will be displayed.

RESET PROCEDURE

To reset boiler, turn the mode control knob (B) to reset position and immediately turn knob back to ON. The boiler will repeat the ignition sequence. If the boiler still fails to light consult a Gas Safe Registered Engineer or in IE a Registered Gas Installer (RGII).

Operation

Control of Water Temperature

The boiler controls the central heating radiator temperature to a maximum of 80°C, adjustable via the temperature control (A).

The Logic Heat is a high efficiency condensing boiler which is most efficient when operating in condensing mode.

The boiler will operate in this mode if the temperature control (A) is set to the 'e' position (economy mode). This control should be set to maximum for very cold periods

Weather Compensation

When the Weather Compensation option is fitted to the system then the CH Temperature Control (A) becomes a method of controlling room temperature. Turn the knob clockwise to increase room temperature and anti-clockwise to decrease room temperature. Once the desired setting has been achieved, leave the knob in this position and the system will automatically achieve the desired room temperature for all outside weather conditions.

To Shut Down the Boiler

Set the mode control knob to OFF.

To Relight the Boiler

Repeat the procedure detailed in 'To light the boiler'.

Frost Protection

If no system frost protection is provided and frost is likely during a short absence from home, leave the heating controls (if fitted) at a reduced temperature setting. For longer periods, the entire system should be drained.

If the system includes a frost thermostat then, during cold weather, the boiler should be turned OFF at the time switch (if fitted) ONLY. The mains supply should be left switched ON, with the boiler thermostat left in the normal running position.

Boiler Overheat Protection

The boiler controls will shut down the boiler in the event of overheating. Should this occur, a fault code L-l will be displayed Refer to fault chart.
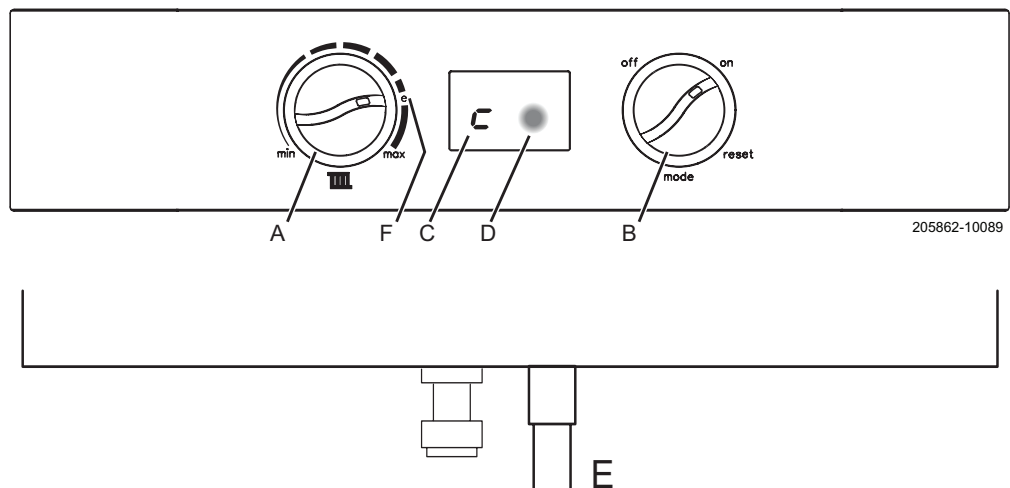
Flame Failure

Should this occur a fault code L-2 will be displayed. Refer to fault chart.

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1   BOILER CONTROLS

Legend

A. Temperature Control

B. Mode Control

C. Boiler Status

D. Burner 'on' Indicator

E. Condensate Drain

F. Economy Mode

205862-10089

Condensate Drain

This appliance is fitted with a siphonic condensate trap system that reduces the risk of the appliance condensate from freezing. However should the condensate pipe to this appliance freeze, please follow these instructions:

a. If you do not feel competent to carry out the defrosting instructions below please call your local Gas Safe Registered installer for assistance.

b. If you do feel competent to carry out the following instructions please do so with care when handling hot utensils. Do not attempt to thaw pipework above ground level.

If this appliance develops a blockage in its condensate pipe, its condensate will build up to a point where it will make a gurgling noise prior to locking out an "L2" fault code. If the appliance is reset it will make a gurgling noise prior to it locking out on a failed ignition "L2" code.

To unblock a frozen condensate pipe;

1. Follow the routing of the plastic pipe from its exit point on the appliance, through its route to its termination point.

    Locate the frozen blockage. It is likely that the pipe is frozen at the most exposed point external to the building or where there is some obstruction to flow. This could be at the open end of the pipe, at a bend or elbow, or where there is a dip in the pipe in which condensate can collect. The location of the blockage should be identified as closely as possible before taking further action.

2. Apply a hot water bottle, microwaveable heat pack or a warm damp cloth to the frozen blockage area. Several applications may have to be made before it fully defrosts. Warm water can also be poured onto the pipe from a watering can or similar. DO NOT use boiling water.

3. Caution when using warm water as this may freeze and cause other localised hazards.

4. Once the blockage is removed and the condensate can flow freely, reset the appliance. (Refer to "To Light the boiler")

5. If the appliance fails to ignite, call your Gas Safe Registered engineer.

Preventative solutions

During cold weather, set the boiler stat to maximum, (Must return to original setting once cold spell is over)

Place the heating on continuous and turn the room stat down to 15ºC overnight or when unoccupied. (Return to normal after cold spell).

Escape of Gas

Should a gas leak or fault be suspected contact the National Gas Emergency Service without delay. **Telephone 0800 111 999**

Do NOT search for gas leaks with a naked flame.

Cleaning

For normal cleaning simply dust with a dry cloth.

To remove stubborn marks and stains, wipe with a damp cloth and finish off with a dry cloth.

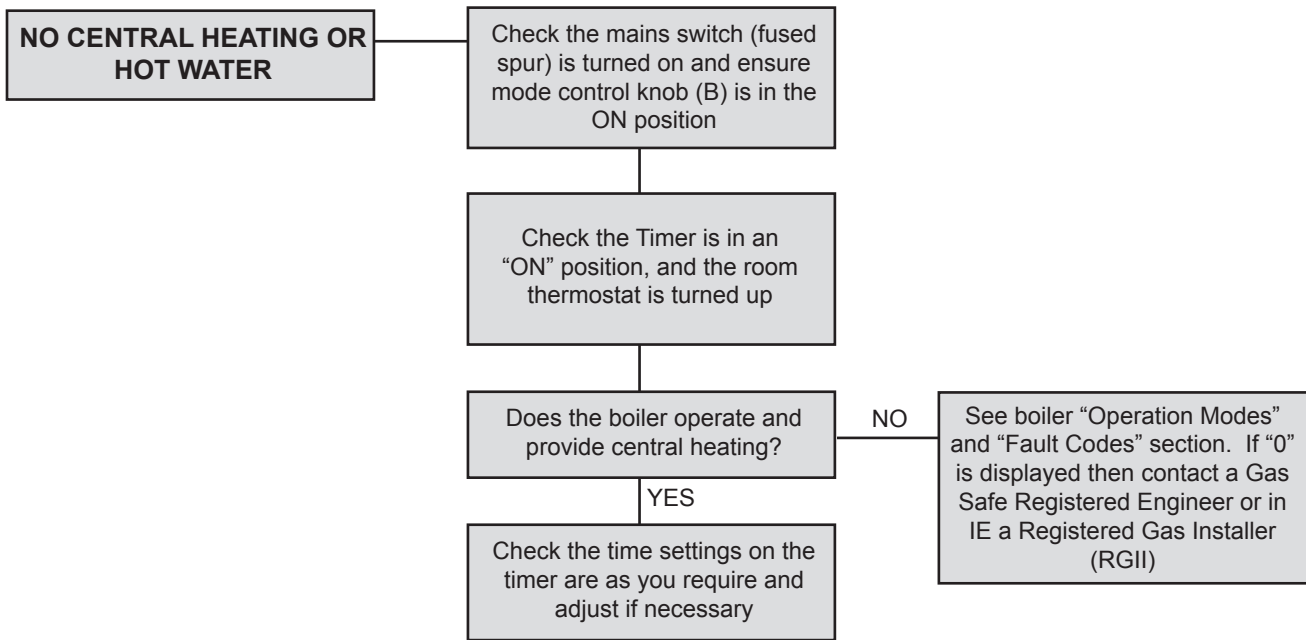*DO NOT use abrasive cleaning materials.*

Maintenance

The appliance should be serviced at least once a year by a Gas Safe Registered Engineer or in IE a Registered Gas Installer (RGII).
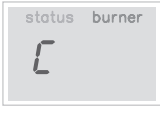
POINTS FOR THE BOILER USER

Note. *In line with our current warranty policy we would ask that you check through the following guide to identify any problems external to the boiler prior to requesting a service engineers visit. Should the problem be found to be other than with the appliance we reserve the right to levy a charge for the visit, or for any pre-arranged visit where access is not gained by the engineer.*

TROUBLESHOOTING

| NO CENTRAL HEATING OR HOT WATER | → | Check the mains switch (fused spur) is turned on and ensure mode control knob (B) is in the ON position |

Check the Timer is in an "ON" position, and the room thermostat is turned up

Does the boiler operate and provide central heating? — **NO** → See boiler "Operation Modes" and "Fault Codes" section. If "0" is displayed then contact a Gas Safe Registered Engineer or in IE a Registered Gas Installer (RGII)
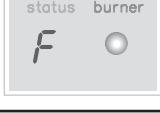
YES

Check the time settings on the timer are as you require and adjust if necessary

OPERATION MODES

DISPLAY CODE ON BOILER	DESCRIPTION
status burner **0**	The boiler is in standby mode awaiting either a central heating call or hot water demand.
status burner **C**	The boiler has a call for heating but the appliance has reached the desired temperature set on the boiler.
status burner **C** ○	The boiler is operating in heating mode.
status burner **F** ○	The boiler is operating in frost mode.

FAULT CODES

DISPLAY CODE ON BOILER		DESCRIPTION	ACTION
C	0	BCC Activation Fault	Reset the appliance - if the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
C	2	BCC Fault	
F	0	Unconfigured PCB	Reset the appliance - if the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
F	2	Flame Loss	See Action - Fault Code L 2
F	3	Fan Fault	Reset the appliance - if the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
F	4	Flow Thermistor	Reset the appliance - if the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
F	5	Return Thermistor	Reset the appliance - if the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
F	6	Outside Sensor Failure	Reset the appliance - if the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
F	7	Low Mains Voltage	Contact a qualified electrician or your electricity provider.
F	9	PCB Fault	Please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
F	A	Flow/Return Reversed	Please contact a Gas Safe Registered Engineer. In IE contact a Registered Gas Installer (RGII).
F	d	No Water Flow	Please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
L	1	Flow Temperature Overheat or Unconfigured PCB	Check system pressure is between 1 & 1.5bar on the pressure gauge. If the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
L	2	Ignition Lockout	1. Check other gas appliances in the house are working to confirm a supply is present in the property. 2. If other appliances do not work or there are no other appliances, check the gas supply is on at the meter and/or pre payment meter has credit. If the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
L	5	5 Boiler Resets in 15 minutes	1. Turn power off and on at the fused spur. 2. If the boiler fails to operate please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).
L	6	False Flame Lockout	Reset the appliance - if the boiler fails to operate then please contact Ideal (if under warranty) or alternatively a Gas Safe Registered Engineer if outside of the warranty period. In IE contact a Registered Gas Installer (RGII).

Self-contained
Carbon Monoxide Alarm
"The Professional's Choice"

Our products and services protect millions of people every day. Why would you trust your life or the safety of your family to anyone else?

H450EN Self-contained Carbon Monoxide Alarm

Why choose the H450EN Carbon Monoxide (CO) alarm:

- 6 year guarantee, up to 7 year life of alarm
- Superior electrochemical cell sensing technology
- Easy to install and use
- Automatic sensor adjustment function ensures complete accuracy
- Approved to EN50291-1:2010 and Kitemarked
- Continuous self test function
- Batteries pre-fitted in alarm
- No sensors to replace
- No mains power
- No maintenance
- End of unit life indication

The H450EN is an easy to use and reliable self-contained Carbon Monoxide alarm. Designed for use in all domestic environments such as homes, static caravans and home parks.

All gas appliances should be checked for safety annually.

The H450EN has a unique fold down flap on the front of the unit which provides a range of useful information to the user without having to refer back to the comprehensive instruction manual. This includes:

- A description of the potential alarm and fault signals that the unit can give
- What to do if the full alarm sounds and a contact telephone number
- Contact details for our CO Advice Line and CO alarm replacements
- Contact details for Gas Safe Register (ensure gas installers are properly registered)

Sensor Technology

The latest electrochemical cell technology ensures complete accuracy and reliability giving a 6 year guarantee and up to 7 year life under normal operating conditions. It is officially approved and Kitemarked to the stringent performance requirements of EN50291-1:2010 - the European Standard for domestic Carbon Monoxide alarms.

Installation

The H450EN is easily attached using the fixing kit provided, with no need for any wiring. No maintenance is required for the full 7 year life of the alarm, with no sensors or any parts to replace.

Maintenance-free Operation

This alarm, including batteries, is guaranteed for 6 years. The batteries are sealed inside the alarm, preventing access by the user and do not require replacement for the whole life of the alarm (up to 7 years).

The Professional's Choice

The H450EN is widely regarded as the professional's choice of Carbon Monoxide alarm and is the chosen unit of numerous major organisations such as gas suppliers, energy companies, local authorities and housing associations etc.

Visual signalling

The H450EN provides a visual signalling in addition to its audible alarm. It enables the user to clearly distinguish between a dangerous alarm situation, a fault situation like almost empty batteries, and normal operation. This is achieved with the new dual-colour status light, which will flash green to indicate normal operation, and yellow in case of a fault. This also provides a clear end of unit life indication for the unit.

Honeywell is a leading manufacturer of Carbon Monoxide alarms

BS EN50291-1:2010

General Specification

Specification	
Detection Principle	Electrochemical cell
Operating Voltage	3V
Alarm Life	Up to 7 years under normal operating conditions
Alarm Indication	Audible and visual alarm
Buzzer Output	> 85 decibels (dB) at 1m
Operating Temperature Range	-10 to +40°C
Humidity Range	30 to 90% RH non condensing
Alarm Levels	50ppm between 60 to 90 minutes 100ppm between 10 to 40 minutes 300ppm < 3 minutes (as required by EN50291-1:2010)
Weight	0.1kg (100g) approx.
Dimensions	110mm x 76mm x 34mm
Test Facility	Yes
Self Check Function	Yes

Ordering Information	
Blister Pack (UK/FR/DE/NL)	H2109B0181SE
Trade Box (UK/FR/DE/NL)	H2109B0180SE
Trade Box (UK/IT/ES/PT)	H2109B0180SEB

Customer Branding
For specific volume contracts, we are able to screen print a customer logo on the front of the unit. This is particularly popular with Local Authorities, Housing Associations and Utilities. Terms and conditions apply - full details on request.

The H450EN is available in a blister pack or trade box.

Contact Us
We also provide a **UK CO Advice Line/Call Centre** facility which is available Monday to Thursday 8.30am to 5pm and Friday 8.30am to 3.30pm. The Call Centre will answer any queries on our products and on CO. Please call **01202 645 577** for more information.

From 1 April 2009, all gas engineers in Great Britain and Isle of Man must be on the new Gas Safe Register® to do gas work lawfully. We fully support the efforts of Gas Safe Register® and will only recommend the use of Gas Safe registered engineers for the servicing of gas appliances.

Honeywell Analytics is a keen supporter of numerous national awareness campaigns designed to raise the profile of CO safety and the use of officially approved CO alarms. These include the *Be Alarmed* campaign, *CO Awareness Week* and *Gas Safety Week*. Honeywell Analytics is actively committed to reducing the injuries and deaths resulting from CO poisoning and works with government and key lobby groups to evolve domestic safety legislation.

Carbon Monoxide - Be Alarmed! is the national campaign to encourage the use of properly approved CO alarms to reduce the number of deaths and injuries caused by Carbon Monoxide. For more information about how to stay safe please visit the campaign website: www.co-bealarmed.co.uk

TP5000 + RF

Electronic 5/2 day programmable room thermostat

Danfoss RX1

PROG   CH1

13:50₂ℹ

Danfoss

energy saving®
recommended
Certification Mark

GB Installation Instructions
User Instructions

F Instructions d'installation
Instructions d'utilisateur

D Installationsanweisungen
Inbetriebnahme-Instruktion

ES Instrucciones de instalación
Instrucciones del usuario

DK Instruktions vejledning
Brugervejleding

NL Installatie handleiding
Instructiesevoor Gebruik

GR Οδηγίες εγκατάστασης
Οδηγίες χρήσης

P Instrukcja instalacji
Instrukcja Użytkownika

LT Montavimo instrukcijos
Informacija Vartotojui

I Istruzioni per l'uso
Istruzioni per l'utente

Danfoss

Installation

❏ First, remove the wallplate from the back of the unit.
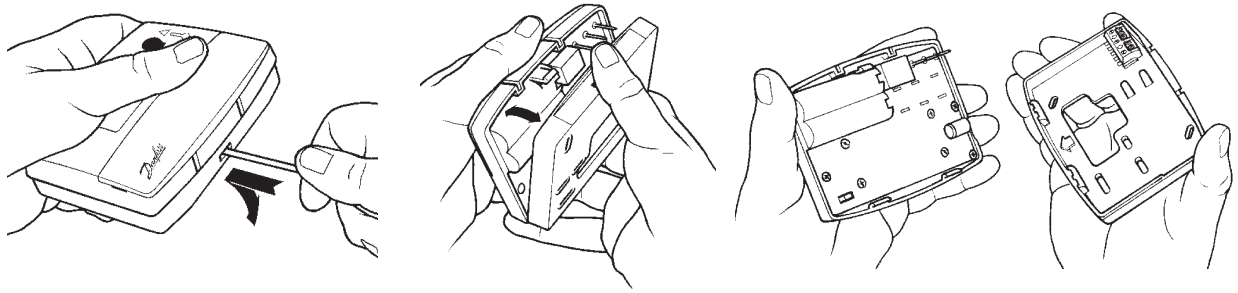
❏ From the top left hand corner of the wallplate, there must be clearances of at least 140mm to the right, 15mm to the left, 30mm above and 100mm below in order to mount the plug-in module.

❏ Fix at a height of approximately 1.5m from the floor, away from draughts or heat sources such as radiators, open fires or direct sunlight.
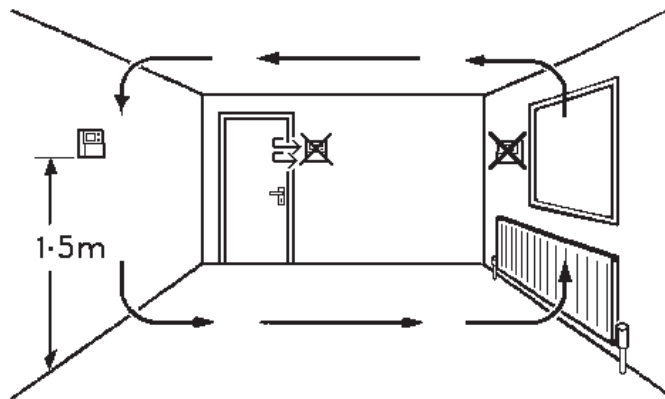
❏ Prior to mounting the unit should be set in either ON/OFF or chrono-proportional control mode (see below).

1) ON/OFF   2) CHRONO
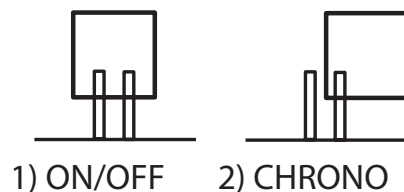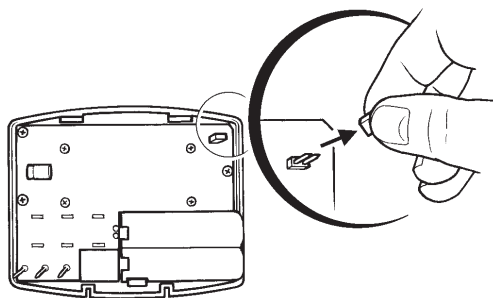
1) **ON/OFF** - boiler switches ON when below set temperature and OFF when above.

Your programmable room thermostat

The TP5000 allows you to programme up to 6 times and temperatures at which your heating will come on and go off each day. You can programme one set of times and temperatures for weekdays and another set for weekends.

It features several user overrides including frost protection, thermostat mode and time or temperature display.

Preset Programmes

Your TP5000 comes ready programmed with a set of operating times and temperatures which often suit most people.

Weekdays (Mon-Fri)		
Event	Time	Temp °C
1	06:30	20
2	08:30	15
3	11:30	20
4	13:30	15
5	16:30	21
6	22:30	15

Weekend (Sat-Sun)		
Event	Time	Temp °C
1	07:00	20
2	16:00	21
3	23:00	15
4	00:00	15
5	01:00	15
6	01:59	15

If you want to change any of these settings you can do so by following the instructions on pages 10-11.

First, follow the steps on page 9 to set the correct time and date.

Before you start

Open the flap on the front of the programmer.

Press the **+ & – AND** ▲ & ▼ buttons simultaneously to reset the unit.

This will reinstate the preset programmes and will set the time to 12:00 on Day 1 and the temperature to 20°C.
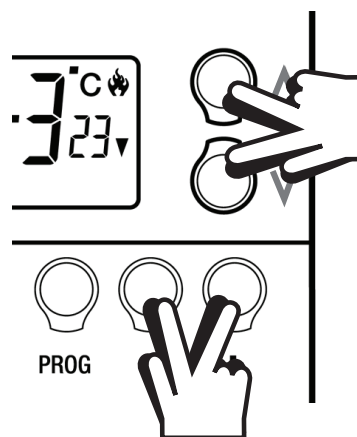
Setting the Clock & Day

Note: clock is displayed in 24 hour mode.

CLOCK

Press **PROG** to begin programming.

Use **+ or -** to adjust the TIME (press and hold to change in 10 min increments).

DAY

Press **PROG** again.

Use **+ or -** buttons until correct DAY is shown (1 = Monday, 2 = Tuesday, etc).

!
●
Remember - you will have to reset the time when the clocks change in Spring and Autumn.
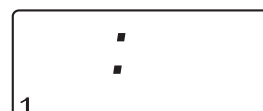
Running your programme

If you are happy to use the preset programmes on page 8, you don't need to do anything else.

To accept the presets close the front cover and after 2 minutes the pre settings will automatically be accepted (& colon will blink).
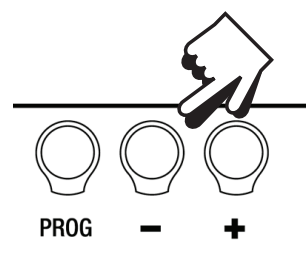
Your unit is now in RUN mode.

Before you change the preset programmes

Please Note

The unit must be programmed in sequence and ON/OFF times cannot be programmed out of sequence.

If you want to leave a preset time as it is, simply press **PROG** to move on to the next setting.

During programming, if no buttons are pressed for 2 to 3 minutes the unit will automatically return to RUN mode, and the programme set up to that minute will be active.

! *If at any time you get confused and need to reset the unit to the preset programmes press the* **+ & – AND ▲ & ▼** *buttons simultaneously.*

Changing the preset programmes

For Days 1-5 (weekdays)

a) Press **PROG** until 1st pre-set time and temperature (Event 1, Days 1,2,3,4,5) appears in display.

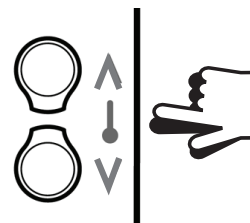b) Use **+ or –** buttons to adjust the TIME (press and hold to change in 10 min increments).

c) Use ▲ **or** ▼ buttons to adjust the TEMPERATURE.

d) Press **PROG** to move to next preset time & temperature (Event 2).

e) Repeat steps b, c & d for programming Events 3, 4, 5 & 6.
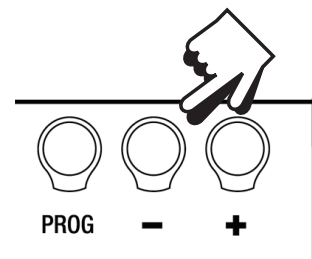
For Days 6-7 (weekends)

❏ Press **PROG** until 1st pre-set time and temperature (Event 1 Days 6-7) appears in display.

❏ Repeat steps b, c and d above to programme time and temperature events for the weekend.

If you require just 2 Events per day (1 ON / 1 OFF)

❏ Follow steps a, b & c above to programme Event 1 (ON).

❏ Press and hold ▼ **and - buttons** together for 3 seconds to skip events 2,3,4 & 5.

❏ Follow steps b & c to programme Event 6 (OFF).

To revert back to six events per day, reset the thermostat (see page 9).

Running your programme

Press **PROG** – the colon in the LCD display will start to flash. The heating will now come on and go off at the programmed times.

User Overrides

Sometimes you may need to change the way you use your heating temporarily, i.e. due to unusually cold weather. The TP5000 has several user overrides, which can be selected without affecting the thermostat programming.

Altering display to show either time or actual room temperature

❏   Press **+ and – together** to change between settings.
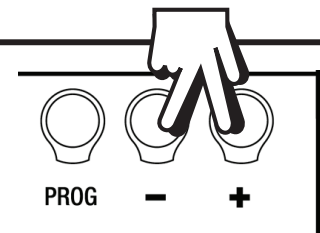
To temporarily alter the current programmed temperature

❏   Press ▲ **or** ▼ until required temperature is displayed.
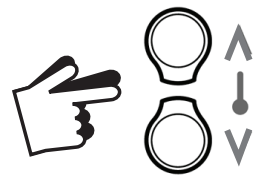
This override will automatically cancel at beginning of next programmed event)

To temporarily use your weekend programme during the week *(i.e. you have a days holiday or are off sick)*

❏   Press ▲ **and** ▼ **together once.**

This override cancels at 2:00am.

About the heating in your home....

What is a programmable room thermostat?

A Programmer allows you to set 'On' and 'Off' time periods to suit your own lifestyle. A room thermostat works by sensing the air temperature and switching on the heating when the air temperature falls below the thermostat setting, switching it off once this set temperature has been reached. A programmable room thermostat is a combination of both. It lets you choose what times you want the heating to be on and what temperature it should reach while it is on. It allows you to select different temperatures in your home at different times of the day and on different days of the week to meet your particular needs.

Accepting The Factory Pre-settings

The TP5000 SI has pre-set times already programmed in, which often suit most people. (see table below).

Mon-Fri

Event	Time	Temp °C
1	06:30	20
2	08:30	15
3	11:30	20
4	13:30	15
5	16:30	21
6	22:30	15

Sat-Sun

Event	Time	Temp °C
1	07:30	20
2	09:30	20
3	11:30	20
4	13:30	20
5	16:30	20
6	22:30	15

Note: if set up for 4 events per day, events 3 & 4 are skipped. If set up for 2 events per day, events 2,3,4 & 5 are skipped and the events are

Battery Replacement

- A low battery symbol will flash in the LCD display
- You have 15 days in which to replace the battery before the unit will switch off
- Remove old batteries and insert new ones, all settings including time are maintained
- Press and release the **RESET** button to restart the unit

NB. If the display ever goes blank during normel operation, the batteries will need to be renewed with high quality alkaline cells. The reset button should be pressed to restart the unit. All times, dates and events will be retained and do not need to be reprogrammed.

Temporary Override Buttons

The TP5000 SI has several useful overide buttons which can be selected without affecting the thermostat programming.

Temporary Overide Of Programmed Temperature

Press ∧ or ∨ until required temperature is displayed (overide will automatically cancel at beginning of next programmed event)

Frost Protection

A constant low temperature can be selected whilst away from home by pressing ∧ and ∨ together. Then use ∧ or ∨ to select the required temerature. To return to automatic programming ∧ and ∨ together

Select Display Of Time Or Actual Room Temperature

Press - and + together to change between settings

Reset Button

Partial reset: If the display freezes for any reason press the **RESET** button. This will not reset any programme, clock or date. It is recomended that this is done at time of installation.
User full reset: Press **RESET** whilst holding down the **PROG** button. This resets event times and any user advanced programme setting, but does not reset time or date.

Installer Details

PLEASE RESET (R/S) THERMOSTAT AFTER INSERTING BATTERIES

TP4000/TP5000Si/TP5000/TP5001+RF

Boiler Service

If your property is owned by a landlord he may have set the boiler service timer for gas safety reasons. If this has been set you will hear an alarm when your boiler needs servicing. Contact your landlord immediatley to arrange the boiler service. Failure to do so will result in your heating and hot water system operating at a reduced level.

TP9000 Si
User Instructions

Danfoss

The TP9000 is a programmable room thermostat with combined hot water time control.

A programmer allows you to set On and Off time periods to suit the lifestyle of the occupier.

A room thermostat works by sensing the air temperature, switching on the heating when the air temperature falls below the thermostat setting, and switching it off once this set temperature has been reached. A programmable room thermostat lets the occupier choose what times they want the heating to be on and what temperature it should reach while it is on. It will allow you to select different temperatures in your home at different times of the day (and days of the week) to meet your particular needs.

The TP9000 controller is also unique in that it also controls the hot water timings in your home.

Before beginning programming, you should reset the unit. Open the flap on the front of the clock. Press the RESET button using a non-metallic **object (e.g. end of a bic biro pen top). (Fig 1)**
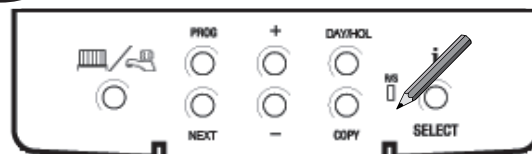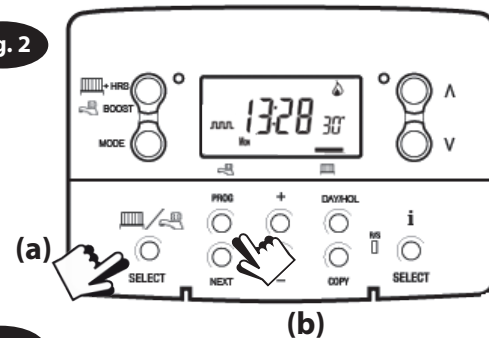
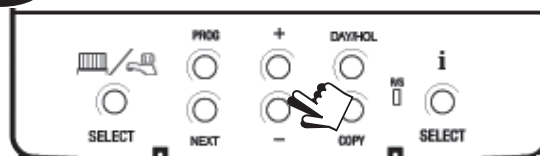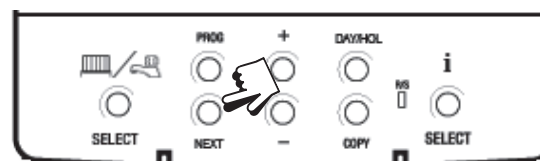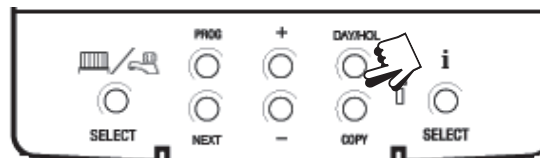## A. Setting the correct Time and Day

The time and date are factory set and do not need to be set.

B. Accepting the Factory Settings

The TP9000 comes ready programmed with a set of Hot Water times and Central Heating times and temperatures to suit the average household. If you wish to alter these settings follow instructions below.

Your unit is set to operate in 7 day mode.

7 day – different settings for each day of the week

Please follow the instructions below:

C. Programming your central heating - 7 day mode

- •   A)Press the **CH/HW** button until the **CH** mode is selected **(Fig 2a)**
- •   B) Press **PROG** to show the 1st pre-set time and temperature (Event 1 Mon) **(Fig 2b)**
- •   C) Use **+** or **–** buttons to adjust the TIME (press and hold to change in 10 min increments). **(Fig 3)**
- •   D) Use **Λ** or **V** buttons to adjust the TEMPERATURE. **(Fig 4)**
- •   E) Press **NEXT** to move to next preset time & temp (Event 2) **(Fig 5)**
- •   F) Repeat steps c, d and e for programming Events 3, 4, 5 & 6.
- •   G) to select the next day, press DAY/HOL and repeat steps c, d, and e **(Fig 6)**
- •   H) repeat process as necessary to complete programming for all 7 days

To return to normal operating mode press and hold ***PROG*** *until screen returns to the current time.* **(Fig 7)**

D. Programming your hot water - 7 day mode

- •   A)Press the CH/HW button until the HW mode is selected **(Fig 8)**
- •   B) Press PROG to show the 1st pre-set time (Event 1 Mon)
- •   C) Use + or – buttons to adjust the TIME (press and hold to change in 10 min increments). **(Fig 9)**
- •   D) Press NEXT to move to next preset time(Event 2) **(Fig 10)**
- •   E) Repeat steps c and d for programming Events 3, 4, 5 & 6.
- •   F) To select the next day, press DAY/HOL and repeat steps c, d, and e **(Fig 11)**
- •   G) Repeat process as necessary to complete programming for all 7 days

To return to normal operating mode press and hold ***PROG*** *until screen returns to the current time.* **(Fig 12)**

Fig. 1

Fig. 2

(a)   (b)

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

E. Temporary User Overrides

Central Heating:
(ensure Central Heating mode is selected by using the **CH/HW** button)

- **Temporarily alter the current programmed temperature:** Simply press **Λ** and **V** until the required temperature is selected. The unit will now maintain this setting until the start of the next timed event at which point it will revert to pre-programmed user settings. **(Fig 13)**
- **Temporarily override the current time period:** Pressing the **+HRS BOOST** button will extend the current time/temperature period for 1,2 or 3 hours depending on how many times it is pressed. At the end of the extended period normal operation resumes. **(Fig 13)**
- **Frost Protection Mode:** Pressing **Λ** and **V** together puts the unit in frost protection mode. A constant low temperature can be selected and this will be maintained until **Λ** and **V** is pressed again to resume normal operation. **(Fig 13)**

Hot water:

Temporarily override the current time period: Pressing the **+HRS BOOST** button will extend the current time period for 1,2 or 3 hours depending on how many times it is pressed. At the end of the extended period normal operation resumes.

Guide to symbols

⎍ Indicates that unit is in **ALLDAY** or **AUTO** mode with 2 events per day for 1 On/Off for Hot Water.

⎍⎍ Indicates that the unit is in **AUTO** mode with 4 events per day for heat or 2 ON/OFF for Hot Water.

⎍⎍⎍ Indicates that the unit is in **AUTO** mode with 6 events per day for heat or 3 for Hot Water.

ON Indicates Hot Water is permanently on (Applies to Hot Water only)

OFF Indicates permanently off for Hot Water or Thermostat mode (see 2.5 on page 16) for Heating

i The INFO button is used to display information about either the next programmed event for the currently selected mode (central Heating or Hot Water) to display the outdoor temperature (if outdoor sensor is fitted) and to show the Service Due Date if set.

Fig. 8

(a)

(b)
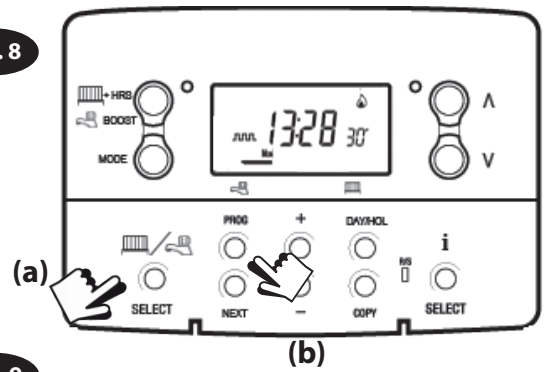
Fig. 9
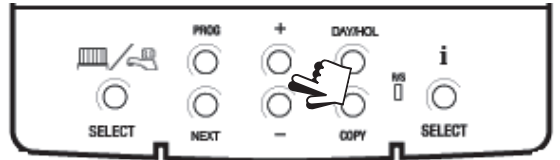
Fig. 10
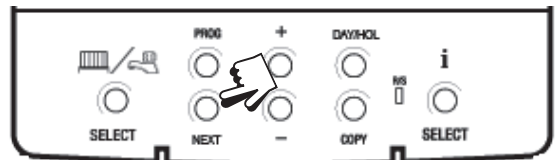
Fig. 11

Fig. 12
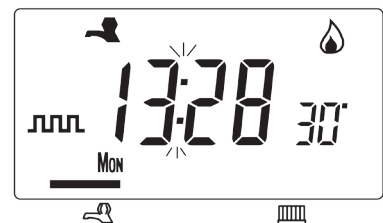
Fig. 13

+hour boost buttons
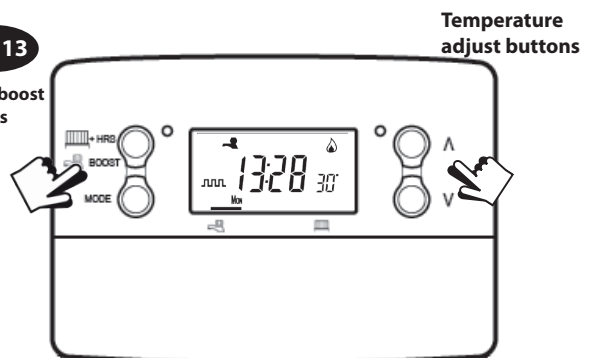
Temperature adjust buttons

TP9000

Electronic Programmable Room Thermostat plus Domestic Hot Water Timer

Installation Instructions
User Instructions

Danfoss

Index

Installer advanced programming options

TP9000 incorporates a number of advanced features which can be set by the user. These are accessed via a User Advanced Programming Mode, please refer to **User Advanced Programming** in the user instructions for details (see page 33)

Installer advanced programming options

TP9000 incorporates an additional number of advanced features which can be set by the installer to improve the operating efficiency of the system and where required, to change the user functionality of the product. These are accessed via an Installer Advanced Programming Mode. These settings are optional and need only be made if there is a demand for the enhanced functions.

Service Interval Timer

Instructions on how to access this feature are available from our customer support desk. Please note these are only issued to boni-fide Heating installers.

Entering Installer Advanced Programming Mode

To access the Installer Advanced Programming Mode follow the steps below:

a) Press and hold **V** and **PROG** for 3 seconds to enter User Advanced Programming, the display will change to figure opposite.

b) Press and hold **V**, **Λ** and **PROG** for 5 seconds to enter Installer Advanced Programming, the display will change to figure opposite.

c) Use **+** and **-** keys to scroll backwards and forwards between options then **V** and **Λ** keys to change the option settings. The flashing digit on the right hand of the display indicates the number of the selected option. The large characters display the option value selected.

d) To return to **RUN**, press and hold **PROG** until the display returns to **RUN** mde.

Option 30 - Set upper limit of temperature range	
This allows the upper limit of the thermostat setting range to be electronically limited. Press **+** until Option 30 is displayed, use **V** and **Λ** to select required setting.	_30·0℃_ 30
Setting	40 - 5°C (factory setting is 30°C)

Option 31 - Set lower limit of temperature range	
This allows the lower limit of the thermostat setting range to be electronically limited. Press **+** until Option 31 is displayed, use **V** and **Λ** to select required setting.	_5·0℃_ 31
Setting	5 - 40°C (factory setting is 5°C)

Option 32 - Enable Off at lower limit	
This enables an **OFF** function to be selected if a set point below the lower limit is selected. Press **+** until Option 32 is displayed, use **V** and **Λ** to select required setting.	_1_ 32
Setting 0	Disabled
Setting 1	Enabled (factory setting)
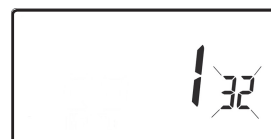
Option 33 - Enable On at upper limit	
This enables an **ON** function to be selected if a set point above the upper limit is selected. Press **+** until Option 33 is displayed, use **V** and **Λ** to select required setting.	_0_ 33
Setting 0	Disabled (factory setting)
Setting 1	Enabled

Option 34 - Select On/Off or Chrono-proportional

This allows the thermostat to be set to run in On/Off mode or for a chrono-proportional cycle rate to be selected. Press **+** until Option 34 is displayed, use **V** and **Λ** to select required setting.

0	On/Off
3	3 cycles per hour
6	6 cycles per hour (factory setting)
9	9 cycles per hour
12	12 cycles per hour

Option 35 - Set integration time (Option 34 set to 3, 6, 9 or 12) (seek advice prior to adjusting)

This adjusts the integration time of the PI algorithm to increase control accuracy. It is only active if option 34 has been set to Chrono 3, 6, 9 or 12. It should only be adjusted after seeking advice from the manufacturer. Press **+** until Option 35 is displayed, use **V** and **Λ** to select required setting.

2.5	Integration time set to 2.5% (factory setting)
5	Integration time set to 5%
10	Integration time set to 10%

Option 36 - Set temperature override rule

This establishes the degree of temperature override available to the user. Press **+** until Option 36 is displayed, use **V** and **Λ** to select required setting.

Setting 0	No limit (factory setting)
Setting 1	Limited to ±2°C
Setting 2	No override allowed

Option 37 - Set time duration of override rule (Option 36 set to 1 or 2)

This establishes the duration of a temperature override available to the user. Press **+** until Option 37 is displayed, use **V** and **Λ** to select required setting.	*0* 37

Setting 0	Next event (factory setting)
Setting 1	1 hour
Setting 2	2 hours
Setting 3	3 hours
Setting 4	4 hours

Option 40 - Number of Events per Day (Heating)

This sets the thermostat to operate with either 2, 4 or 6 switching events per day or to run it in stat mode. Press **+** until option 40 is displayed, use **Λ** or **V** to select required setting.	*6* 40
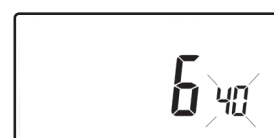
1	Stat mode
2	Two switching events per day
4	Four switching events per day
6	Six switching events per day (factory setting)

Option 41 - Operating Mode (Heating) (option 40 set to 2, 4, or 6)

This sets the thermostat to operate using either 5/2 day or 24 hour mode. Press **+** until option 41 is displayed, use **Λ** or **V** to select required setting.	*52* 41
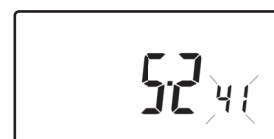
7	7 Day programming (factory setting)
5-2 or A-B	5-2 Day programming or A-B programming
24	24 hour programming

Option 60 - Number of events per day (Hot Water

This sets the number of Hot Water on/off switching times per day. Press **+** until option 60 is displayed, use **Λ** or **V** to select required setting.	*3* 60
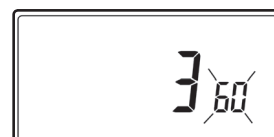
Setting 1	1 on/off event per day
Setting 2	2 on/off events per day
Setting 3	3 on/off events per day (factory setting)

Option 61 - Hot Water Event - Days per week	
This sets the schedule of Hot Water on/off switching times per week. Press **+** until Option 61 is displayed, use **V** and **Λ** to select required setting.	7 61
24	24 Hour
5-2	Either 5+2 day or A+B days depending on user APM setting
7	7 Day (factory setting)

Option 70 - Keyboard disable rules	
This establishes the degree of functionality of the keyboard available to the user. It is only active if DIL switch 1 is set to "Disabled". Press **+** until Option 70 is displayed, use **V** and **Λ** to select required setting.	0 70
Setting 0	Normal lock: Programming functions locked (factory setting)
Setting 1	Full lock: All keys are disabled

Option 71 - Random start rules (24V/230 Volt models only)	
This enables a random start on power-up following a power cut to reduce load on the electrical network. Random delay is in the range of 2 - 90 seconds. Press **+** until Option 71 is displayed, use **V** and **Λ** to select required setting.	0 71
Setting 0	Disabled (factory setting)
Setting 1	Enabled

Option 72 - Owner site reference number	
This enables multi-site owners to store a site reference number in the thermostat. Press **+** until Option 72 is displayed, use **V** and **Λ** to select required setting.	00 72
Setting	Any value between 00 and 99 can be set
Factory setting is 00	

Option 73 - Owner thermostat reference number

This enables site owners to store a thermostat reference number in the thermostat. Press **+** until Option 73 is displayed, use **V** and **Λ** to select required setting.

Setting	Any value between 000 and 999 can be set

Factory setting is 000

Option 74 - Date format for calendar clock

This allows date format to be chosen. Press **+** until Option 74 is displayed, use **V** and **Λ** to select required setting.

Setting 0	European format (dd/mm/yy), (Factory setting)
Setting 1	North American format (mm/dd/yy)

Option 80 - Enable/Disable + Hrs Boost

Enables or disables the +Hrs button. use **V** and **Λ** to select required setting. Press **+** until Option 80 is displayed, use **V** and **Λ** to select required setting.

Setting 0	+Hrs Boost button disabled
Setting 1	+Hrs Boost button enabled (factory setting)

Option 81 - Thermostat calibration bias

This allows the thermostat calibration to be biased by up to ±1.5°C. Press **+** until Option 81 is displayed, use **V** and **Λ** to select required setting.

Setting	Any value between ±1.5 in 0.5°C steps (Factory setting is 0°C)

Option 90 - Define remote sensor type	
This allows type of remote sensor input type to be defined. Press **+** until Option 90 is displayed, use **V** and **Λ** to select required setting.	*0* ₉₀

Setting 0	No remote sensor fitted
Setting 1	Remote room or duct sensor fitted, internal sensor disabled (factory setting)
Setting 2	Remote limit sensor fitted, refer to option 93 to define set-point
Setting 3	Configured as digital input for window, card reader or teleswitch, refer to option 94 to define o/c or s/c.
Setting 4	Outdoor sensor fitted internal sensor active, outdoor sensor used for display purposes only

Option 93 - Set limit sensor set-point (option 90 set to 2)	
This allows the thermostat limit sensor to be set, typical application is floor Heating. Press **+** until Option 93 is displayed, use **V** and **Λ** to select required setting. If the temperature sensed by the limit sensor exceeds the limit setting the output will be turned off until the temperature has dropped by 2°C. "F10" will flash in the display while the output is disabled.	*27.0*°C ₉₃
Setting	Any value between 20 - 50°C (Factory setting is 27°C)

Option 94 - Configure digital input switch type, "A" models only, (option 90 set to 3)	
This allows switch type of digital input to be configured. Press **+** until Option 94 is displayed, use **V** and **Λ** to select required setting.	*0* ₉₄
Setting 0	Contacts NC, open circuit contact to force unit into thermostat mode, short circuit contacts to return to normal operation
Setting 1	Contacts NO, short circuit contacts to force unit into thermostat mode, open circuit contacts to return to normal operation (Factory setting)
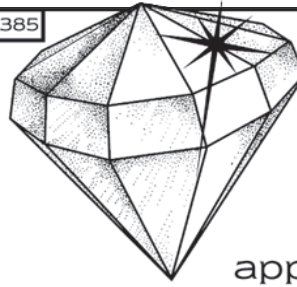
What is a programmable room thermostat?

... an explanation for householders

A programmable room thermostat is both a programmer and a room thermostat. A programmer allows you to set 'On' and 'Off' time periods to suit your own lifestyle. A room thermostat works by sensing the air temperature, switching on the heating when the air temperature falls below the thermostat setting, and switching it off once this set temperature has been reached.

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

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

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

The way to set and use your programmable room thermostat is to find the lowest temperature settings that you are comfortable with at the different times you have chosen, and then leave it alone to do its job. The best way to do this is to set low temperatures first, say 18°C, and then turn them up by one degree each day until you are comfortable with the temperatures. You won't have to adjust the thermostat further. Any adjustments above these settings will waste energy and cost you more money.

If your heating system is a boiler with radiators, there will usually be only one programmable room thermostat to control the whole house. But you can have different temperatures in individual rooms by installing thermostatic radiator valves (TRVs) on individual radiators. If you don't have TRVs, you should choose a temperature that is reasonable for the whole house. If you do have TRVs, you can choose a slightly higher setting to make sure that even the coldest room is comfortable, then prevent any overheating in other rooms by adjusting the TRVs.

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

You may be able to temporarily adjust the heating programme, for example, 'Override', 'Advance' or 'Boost'. These are explained in the manufacturer's instructions.

Programmable room thermostats need a free flow of air to sense the temperature, so they must not be covered by curtains or blocked by furniture. Nearby electric fires, televisions, wall or table lamps may prevent the thermostat from working properly.

ⓖⓑ User Instructions

An introduction to your
programmable room thermostat

The TP9000 is a programmable thermostat designed to control both your Hot Water and Heating.

Depending on the setting value in the Installer Advanced Programming (option 41) you can have 7-day, 5-2 day or 24 hour programming. A full explanation of these different methods is located on page 20.
The thermostat can also be set by you to provide two different programming blocks which can then be assigned to any day of the week, this is referred to as A/B programme operation.

The Heating side of the TP9000 can be set by your installer to provide up to 2, 4 or 6 time and temperature settings each day, whereas the Hot Water can be set to provide 1, 2 or 3 on/off periods each day.

The thermostat also features useful overrides, including a programmable frost setting.

The TP9000 has some advanced features which the installer will set-up if they are required. There are also a number of advanced features which can be set up by you. These advanced settings alter the way that your thermostat operates, some also affect the programming functions and the user overrides. Please read the **User Advanced Programming** instructions before programming the unit (see page 33).

General Operation

The TP9000 has two distinct display modes - one for Hot Water, one for Central Heating. The currently selected mode is indicated by a bar at the bottom of the LCD screen when in run mode. The right bar is for Heating, the left bar is for Hot Water.

When programming the TP9000 it is important to be aware of which mode is active before beginning programming. To toggle between modes, press the CH/HW button. The display will change and the indicator bar at the bottom will move to reflect which mode is selected. The flame (⬧) and tap (⬧) symbols are used in conjunction with the LED's to show the current output status (on/off). The output status is always shown for both Heating and Hot Water regardless of the display mode.

Preset programmes

Your TP9000 comes ready programmed with a set of operating times and temperatures which suit most people. Please remember that some of the options available will depend on how the installer has set up the unit.

Central Heating

Weekdays (Mon-Fri)			Weekend (Sat-Sun)		
Event	Time	Temp. °C	Event	Time	Temp. °C
1	06:30	20	1	07:30	20
2	08:30	15	2	09:30	20
3	11:30	20	3	11:30	20
4	13:30	15	4	13:30	20
5	16:30	21	5	16:30	21
6	22:30	15	6	22:30	15
Note: these are also times for Block "A" programmes			Note: these are also times for Block "B" programmes		

Note: If set up for 4 events per day, events 3 & 4 are skipped. If set up for 2 events per day, events 2, 3, 4 & 5 are skipped. In both cases the events are re-numbered.

Hot Water

Weekdays (Mon-Fri)				Weekend (Sat-Sun)		
Event	**Time**	**Temp. °C**		**Event**	**Time**	**Temp. °C**
1	06:30	On		1	07:30	On
2	08:30	Off		2	09:30	Off
3	11:30	On		3	11:30	On
4	13:30	Off		4	13:30	Off
5	16:30	On		5	16:30	On
6	22:30	Off		6	22:30	Off
Note: these are also times for Block "A" programmes				Note: these are also times for Block "B" programmes		

Note: If set up for two on/off events per day, events 3 and 4 are skipped. If set up for one on/off event per day, events 2, 3, 4 & 5 are skipped. In both cases the events are re-numbered.

Customising the display

For the sake of clarity, the instructions assume that the display setting uses a 24 hour clock, °C and that days of the week are shown as text. All of these settings can be personalised after the thermostat has been programmed, see page 27

Setting the correct date and time

Your TP9000 incorporates a real time clock with calendar function that automatically changes time in both Spring and Autumn. The time and date is set in the factory for the UK time zone, and does not normally require adjustment. If you live in another time zone refer to "Time zone offset" on page 34. However, should it be found necessary to adjust time or date for any other reason refer to the following instructions.

Setting the date

Press and hold **Λ** and **PROG** for 3 seconds, to display date in dd/mm/yy format.
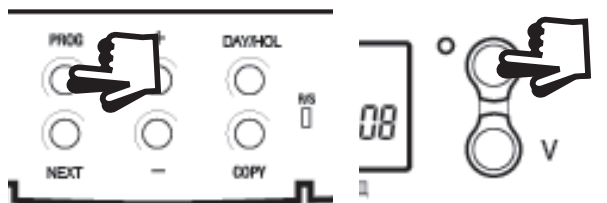
The **YEAR** number will flash, use **Λ** or **V** to correct the year.
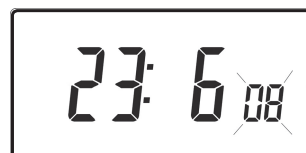
Use **-** or **+** to move to **MONTH**, then use **Λ** or **V** to correct month.
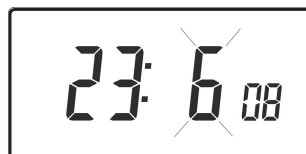
Use **-** or **+** to move to **DATE** in month, then use **Λ** or **V** to correct day in month.

If you attempt to select an invalid date the unit software will reject it and apply the nearest valid date. It is recommended that date is set in the order, yy/mm/dd.

Setting the correct time

After setting the date press **PROG** to display the time. The time display will flash on and off.

Use the **+** and **-** buttons to set the correct time (press and hold to change in 10 min. increments).

Setting the correct day

The day of the week is set automatically. Press **PROG** to return to normal operation (**RUN**).

Accepting the preset programmes

If you are happy with the preset times shown in the table on page 17 you need take no further action.

Changing the preset programmes

Before you change the preset programmes
Your installer will have set the unit to operate in one of the following modes:

● 7 day - each day has independent times and temperatures offering full flexibility of programming (page 21).

● 5/2 day - one set of programmes for weekdays and another for weekends (page 21).

● 24 hr - one set of programmes for the whole of the week (page 22).

Alternatively

● A/B - The unit can also be set by you to provide two programme blocks, either of which can be applied to different days of the week. If this is required refer to page 23 for instructions on how to turn on this feature.

Please Note

The unit must be programmed in sequence, event times cannot be set out of sequence.

If you want to leave a preset time as it is, simply press **NEXT** to move to the next setting.

If you want to return the unit to **RUN**, press **PROG** and hold until the display returns to the previous **RUN** mode. Alternatively leave alone and the unit will automatically return to **RUN** after 2 minutes.

Your installer will have set your unit to programme 6, 4 or 2 events per day for Heating, or 1, 2 or 3 events per day for Hot Water. This will determine the number of events per day that you are able to programme.

Before beginning programming the unit remember to check that the correct function is selected i.e. Heating or Hot Water by using the CH/HW button.

Changing the preset programmes in 7 day mode

a)   Press PROG once until the display shows the first preset time and temperature

b)   Use the + and - buttons to adjust the time (press and hold to adjust in 10 minute increments)

c)   Use the **Λ** and **V** buttons to adjust the required temperature (CH only)

d)   Press NEXT to move to the next preset time and/or temperature (Event 2)

e)   Once all events for the day have been programmed, press DAY/HOL to move to the next day

f)   Repeat steps **b, c, d & e** to programme the remaining weeks events.

g)   Press and hold PROG to return to the main screen.

Changing the preset programmes in 5/2 day mode

For Weekdays

a)   Press **PROG** until the first preset time and temperature (Event 1 Days MON, TUE, WED, THU, FRI)

b)   Use the **+** and **-** buttons to adjust the **TIME** (press and hold to change in 10 minute increments).

c)   Use the **Λ** and **V** buttons to adjust the required **TEMPERATURE** (CH only).

d)   Press **NEXT** to move to the next preset time and/or temperature (Event 2).

e)   Repeat steps b, c, & d to programme the remaining weekday events.

f) Press **DAY/HOL** to move on to weekend events.

For Weekends

Press **PROG** until the first preset time and temperature (Event 1 Days SAT, SUN) appears in display.

Repeat steps **b, c, & d** above to programme the remaining weekend events.

Press **PROG** to return to the main screen.

Changing the preset programmes in 24 hour mode

a) Press **PROG** until the first preset time and temperature (Event 1 for all days of the week) appears in display.

b) Use the **+** and **-** buttons to adjust the **TIME** (press and hold to change in 10 min increments).

c) Use the **Λ** and **V** buttons to adjust the required **TEMPERATURE (CH only)**.

d) Press **NEXT** to move to the next preset time and/or temperature (Event 2).

e) Repeat steps b, c, & d to programme the remaining events.

f) Press **DAY/HOL** to move on to weekend events.

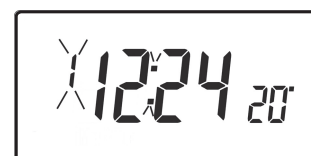# Changing preset programmes for AB programming

(Installer option 41 must be set to 5-2 day mode)

Press and hold **PROG** and **V** for 3 seconds. The display will change to the figure opposite. This will take you into **User Advanced Programming** option 1.

Use **Λ** and **V** keys to enable or disable the function (1=enabled, 0=disabled).

Press **PROG** for 5 seconds until the display returns to previous **RUN** mode.

Press **PROG** once, the display will change to show the default days assigned to programme "A" (days MON, TUE, WED, THU, FRI).
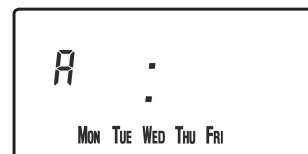
Use the **+** and **-** keys to scroll forwards or backwards through the days of the week.

To deselect a day press **V**, (for example TUE). To select a day press **Λ** (for example SUN).
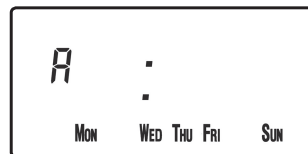
Any deselected days are automatically assigned to programme "B".

Programming "A" programme days and events

a) Press **PROG** until the first preset time and/ or temperature (Event 1 for Programme A) appears in display.

b) Use the **+** and **-** buttons to adjust the **TIME** (press and hold to change in 10 minute increments).

c) Use the **Λ** and **V** buttons to adjust the required **TEMPERATURE**.

d) Press **NEXT** to move to the next preset time and temperature (CH only) (Event 2).

e) Repeat steps b, c, & d to programme the remaining events.

Programming "B" programme days and events

a) Press **DAY/HOL** until the first preset time and temperature (Event 1 for Programme B) appears in the display.

b) Use the **+** and **-** buttons to adjust the **TIME** (press and hold to change in 10 minute increments).

c) Use the **Λ** and **V** buttons to adjust the required **TEMPERATURE (CH only)**.

d) Press **NEXT** to move to the next preset time and/or temperature (Event 2).

e) Repeat steps b, c, & d to programme the remaining events.

Running the programme

Press **PROG** to return to previous **RUN** mode. The Heating will now follow the times and temperatures programmed.

Copy functions explained

There are 2 possible copy functions available. These are; Standard Copy and Enhanced Copy. Copy functions are enabled/disabled in the Advanced Programming Options (page 33)

Standard Copy: Pressing copy will copy the previous days events into the displayed day. The unit will then display the 1st event for the new day. This copy function is present only if the unit is set to run in 5+2 or 7 day mode.

Enhanced copy: The enhanced copy function is available in 7 day mode only. This allows any day to be copied to any other day, or days. To use the enhanced copy function, go into the event programming using the **PROG** button, then:

1) use the **DAY** button to find the day to be copied from
2) press the **COPY** button to select the day to be copied from. When selected, the day should begin to flash.
3) use the **DAY** button to find the day to be copied to
4) press **COPY** button to copy the selected day
5) repeat steps 3 and 4 to select and copy other days
6) to stop copying, use the **DAY** button to go back to the flashing day and press the **COPY** button. The previously flashing day will stop flashing to indicate it has been de-selected.

Holiday programme

The TP9000 is equipped with a holiday mode that enables it to automatically bring back on the Heating and Hot Water when returning from holiday. During the period when the unit is in holiday mode, the Hot Water is turned off, and the central Heating is placed in frost protection mode ❄

To set up the holiday programme, please follow the below steps:

a) Press and hold **DAY/HOL**

b) Use the **Λ** and **V** buttons to set the year

c) Use the + button to move to the month. Use the **Λ** and **V** buttons to set the month

d) Use the + button to move to the day. Use the **Λ** and **V** buttons to set the day

e) To exit and activate the holiday mode press

DAY/HOL once. The display will change, Heating and Hot Water will be switched off. The unit will stay in this state until the programmed return date, at which point it will resume normal operation.

f)   Once in holiday mode, the return modes for both the heating and hot water can be set. Use the CH/HW button to change betweenheating and hot water display mode.

g)   The Heating set temperature for the duration of the holiday mode can be adjusted by selecting the Heating display mode with the CH/HW button and then adjusting the set temperature using the (image of Up button) and image of Down button) buttons.

h)   Holiday mode can be manually ended at any time by pressing the DAY button

User Overrides

Altering the display to show time or temperature (Heating Mode)

Press **+** and **-** together to change between settings.

Temporarily alter current programmed temperature

Press **Λ** or **V** until required temperature is displayed. Please note that your installer may have restricted both upper and lower temperature settings and the temperature override limits.

This override will automatically be cancelled at the beginning of the next programmed event. Please note that your installer may have restricted the duration of the override to something other than next event. In this case the override arrow will flash to indicate a timed override is active during the next event

To change day of week legends from numbers to text

Press **Λ** and **-** together to toggle between day numbers and text.
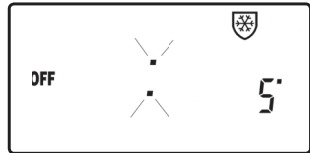
To change time display between 12 hour and 24 hour clock

Press **Λ** and **+** together to toggle between 12 and 24 hour clock.

To change between °C and °F scaling

Press **V** and - together to toggle between °C and °F temperature scaling.

Thermostat mode (Heating mode only)

a) A constant temperature of between 5-30°C can be selected if required. This can provide frost protection for periods away from home, it can also be used to provide untimed higher temperatures if, for example, a family member is sick.

b) Press **Λ** and **V** together to enter thermostat mode. The default setting is 5°C, but this can be reprogrammed, see **User Advanced Programming**, step 10, (page 34).

c) A frost protection symbol (snowflake in a shield) will appear in the display when the selected temperature is equal to or less than the programmed frost protection setting.

d) Use the **Λ** or **V** buttons to change the temperature away from the programmed frost protection temperature to another value.

e) To return to automatic programming press both **Λ** and **V** together.

f) Alternately, Thermostat mode can be accessed via the **MODE** button (see page 31)

Changing the clock forwards and backwards

This is handled automatically, however, if the manual changeover has been selected (User Advanced Programming step 3 on page 34) follow the instructions below.

To change from Summer to Winter (clocks back)
With clock display showing, press and hold **-** button until time moves back.
To change from Winter to summer (clocks forward)
With clock display showing, press and hold **+** button until time moves forward.

Remote override into and out of thermostat mode

Selected models are available with a feature which allows a telephone activated switch or window contacts to step the unit into or out of thermostat mode.

The required temperature to be maintained when the building is unoccupied, or when windows are open, must first be set up in User **Advanced Programming**, step 10, (page 34).

To locally override this feature press either both **Λ** and **V** together, or press the **MODE** button.

Delay start feature

Your thermostat includes an optional delay start feature to hold off the Heating for a time on mild days when the room temperature at the start of an event is close to the programmed value. If you have enabled this function it can be overridden by pressing either **Λ** or **V** buttons. To enable this feature, please refer to **User Advanced Programming**, step 11, (page 35).

When this function is active, the set temperature will flash on the display and an hourglass symbol will be displayed.

Optimum start control (OSC)

Your thermostat includes an optional optimum start control. This feature allows you to set the time at which you require a room temperature by. The thermostat then calculates how soon before the event time the system must be turned up to ensure that the room is at the temperature by the required time. A full description of this and how to enable it and set it up is given in **User Advanced Programming**, steps 12 & 13, (page 36). When this function is active, the set temperature will flash on the display

User Instructions

Sometimes you may need to change the way you use your Heating temporarily, i.e. due to unusually cold weather. The TP9000 has two convenient overrides which can be selected without affecting the set programme.

+1/+2/+3 hr override

Mode select button (auto/all day/on/off)

CH/HW button

Temperature adjustment buttons

INFO button

RESET
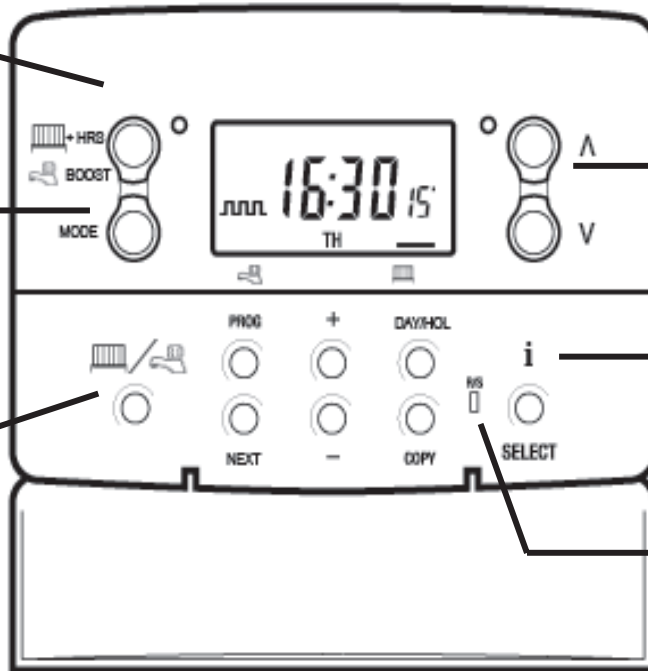
The grey buttons next to the **radiator and tap symbol** is the + HRS button for heating and the **BOOST** button for the Hot Water.

For Water display mode, pressing this button once, twice or three times when the system is in **OFF**, **AUTO** or **ALLDAY** mode will cause the Hot Water to remain on for an extra 1, 2 or 3 hours if already on, or will switch the water on for 1, 2 or 3 hours if currently off. **BOOST +1, +2 or +3 HRS** will be shown in the display.

For Heating display mode, pressing the +HRS button once, twice or three times will extend the current time/temperature period for 1, 2 or 3 hours, but **does not** operate if the thermostat is in the **OFF** or **FROST PROTECTION** mode. +1, +2 or +3 **HRS** will be shown in the display. Pressing this button for a fourth time will cancel the **+HRS BOOST** function.

MODE Pressing this button will alternate between setting the unit in **OFF** (Thermostat), **AUTO** or **ALLDAY** modes for **HEATING** or **ON**, **OFF**, **AUTO** or **ALLDAY** modes for **WATER**. In **AUTO** mode, all programmed events will run, whereas in **ALLDAY** mode, only the first and last events will run. If set for two events per day for Heating, or one **ON/OFF** event for Water then **AUTO** and **ALLDAY** modes are the same. The display will show how many events are to run:

Indicates that unit is in **ALLDAY** or **AUTO** mode with 2 events per day for 1 On/Off for Hot Water.

Indicates that the unit is in **AUTO** mode with 4 events per day for heat or 2 ON/OFF for Hot Water.

Indicates that the unit is in **AUTO** mode with 6 events per day for heat or 3 for Hot Water.

ON Indicates Hot Water is permanently on (Applies to Hot Water only)

OFF Indicates permanently off for Hot Water or Thermostat mode (see page 28) for Heating

i The INFO button is used to display information about either the next programmed event for the currently selected mode (central Heating or Hot Water) to display the outdoor temperature (if outdoor sensor is fitted) and to show the Service Due Date if set. Below is a more detailed explanation of operation:

If no outdoor sensor is fitted:
Pressing the INFO button will display the time of the next event according to the programmed times. The event time shown will include any +HRS or BOOST extensions. If the next event time is shown flashing, this represents an approximate time due to Optimum Start, Delayed Start or a timed override being active.

If an outdoor sensor is fitted:
Pressing the INFO button will display the current outdoor temperature, followed by the lowest and highest outdoor temperatures in the last 24 hours.

If Service Due date is set:
Pressing the INFO button will display the date the service is due.

If in holiday mode:
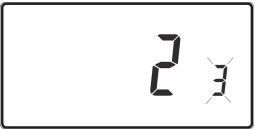Pressing the INFO button will display the holiday end date.

User Advanced Programming Options

Important: The thermostat has been set in the factory to suit most situations, however, there are additional optional settings which can improve the comfort, convenience and energy effectiveness of your thermostat. These are set in the **User Advanced Programming** and **Installer Advanced Programming** modes.

To access User Advanced Programming

Press and hold **V** and **PROG** for 3 seconds. This will take you into **User Advanced Programming**. Use **+** and **-** keys to scroll backwards and forwards between options then **Λ** and **V** keys to change option settings. The flashing digit on the right hand of the display indicates the number of the selected option.

Option 1 - Enable or disable A/B programming (Option 41 and/or 61 set to 5+2)	
This enables or disables the A/B programming option. Press **+** until Option 1 is displayed, use **Λ** and **V** to select required setting.	*0 ₁*
Setting 0	Disabled, unit operates as 5+2
Setting 1	Enabled: activates A/B programming

Option 2 - Enable/Disable Advanced Programming (Option 41 and/or 61 set to 7 Day)	
This option enables or disables the Advanced Copy Functionality. Press + until option 2 is selected, use **Λ** or **V** to select required setting	*2 ₃*
Setting 0	Advanced Copy disabled (standard copy mode)
Setting 1	Advanced Copy enabled

Option 3 - Calendar clock rules

This establishes the rules that the automatic calendar clock follows to calculate changes between summer and winter time. Press **+** until Option 3 is displayed, use **Λ** and **V** to select required setting	*2 3*

Setting 0	Disabled.
Setting 1	Manual: user must change using **+** to advance and **-** to retard displayed time.
Setting 2	European rules. (Factory Setting)
Setting 3	USA rules (2007 onwards)
Setting 4	USA rules (pre-2007)

Option 4 - Time zone offset

This feature allows the time zone to be established and corrects time display. Press **+** until Option 4 is displayed, use **Λ** and **V** to select required setting	*0:00 4*

Setting 0	UK models: this feature should be left at the factory setting of 0.
Setting 1	Central European time models: this feature should be left at the factory setting of +1:00.

-12 Hours +14 Hours
Rest of World: use **Λ** and **V** keys to select offset from Universal time (GMT) for the location in which the thermostat is being installed.

Option 10 - Frost/ thermostat mode setting

This feature allows the default frost/thermostat mode temperature to be set. Press **+** until Option 10 is displayed, use **Λ** and **V** to select required setting.	*5.0°C 10*

5-40°C - Factory setting is 5°C, but can be changed to any value between 5-40°C.

Option 11 - Start-up method	
Your thermostat can start up the system in three different ways. Press **+** until Option 11 is displayed, use **Λ** and **V** to select required setting.	*(display shows "0 11")*

Setting 0	Normal: Heating is turned up or down at the programmed times.
Setting 1	Optimum start control (OSC) (or Comfort Setting): This allows you to programme the time at which you would like to be up to the required temperature. The thermostat then calculates how soon before the required time the Heating is turned up. This will vary with weather conditions ranging from a maximum of 120 minutes to 0 minutes before the programmed event time. This setting must be used together with option 12 to match the optimiser setting to the building in which it is installed.
Setting 2	Delay start (or Economy Setting): This is an alternative to OSC. Set the event times in the normal way taking into account the time that the building takes to heat on an average day. The thermostat monitors switch on time, actual temperature and wanted temperature and delays the start of the Heating if the actual temperature is close to the programmed temperature.

GB

User Instructions

Option 12 - Optimum start control pre-heat setting (Option 11 set to 1)

Press **+** until Option 12 is displayed, use **Λ** and **V** to select required setting (only active if Option 11 is set to 1).

`0:15` 12

The optimum start control must be adjusted to match the building energy characteristics. Use the **Λ** and **V** keys to selected the required pre-heat period. The table below suggests typical settings.
If the building fails to reach temperature on time, increase the setting by 15 minute steps each day until the correct setting is found.
If the building reaches temperature ahead of time, decrease the setting by 15 minute steps each day until the correct setting is found.

0:15	15 mins, warm air systems, well insulated building.
0:30	30 mins, warm air systems, well insulated building.
0:45	45 mins, warm air system poorly insulated building.
1:00	60 mins, radiator system, light weight well insulated building. (Factory setting)
1:15	75 mins, radiator system, light weight medium insulation.
1:30	90 mins, radiator system, medium weight poorly insulation.
1:45	105 mins, radiator system, heavy weight building, well insulated.
2:00	120 mins, radiator system, heavy weight building, poorly insulated.

Option 13 - Optimum start control/Delayed start event setting (Option 11 set to 1 or 2)

The Optimum start or delayed start control can be applied to event 1 only or to each event of the day which requires a higher temperature than the previous event. Press **+** until Option 13 is displayed, use **Λ** and **V** to select required setting (only active if Option 11 is set to 1 or 2).

`0` 13

Setting 0	Applies only to first event of day. (Factory setting)
Setting 1	Applies to each event of the day that requires a higher temperature compared to previous event.

Overview of installer selectable features which may affect the operation of your thermostat

Temperature range limitation

This allows the installer to programme both upper and lower temperature limits. It may limit the upper and lower temperature that you are able to set on the thermostat.

## Temperature override limitation

This allows the installer to limit the number of degrees that you can override the programmed temperature by, it also allows the installer to set rules regarding how long a temperature override will remain in place.

Keyboard lock

This allows the installer to limit or lock the keyboard to prevent unauthorised changes to programme values and limits overrides.

Service Interval Timer

- If the property is owned by a landlord he may, for gas safety reasons, have instructed the installer to set the service interval timer.
- If set, 28 days prior to the service due date, a visual and audible warning will start each day at noon. The audible warning will last for 10 seconds and will be repeated every hour until a button is pressed to cancel it. If cancelled the alarm will recommence the following day at noon.

Service Interval Date

- If the boiler is not serviced before the due date, a visual and audible warning will start each day at noon. The audible warning will last for 1 minute and will be repeated every hour until a button is pressed to cancel it. If cancelled the alarm will recommence the following day at noon.
- In addition, all overrides and programming buttons will be disabled and the Heating and Hot Water may operate for a limited amount of time each hour.
- The installer may cancel or reset the service interval timer as part of the boiler service.
- This is a gas safety feature that can only be accessed by an installer.
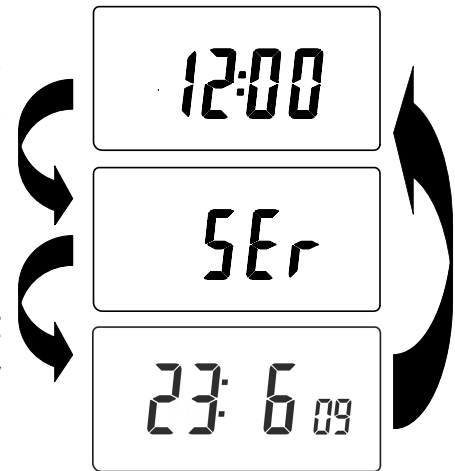
Resetting the unit

Partial reset: Press **RESET** (used to restart micro-computer) if display freezes for any reason. This does not reset any programme, clock or date. It is recommended that this is done at time of installation.

User full reset: Press **RESET** whilst holding down **PROG** button. This resets event times and any User Advanced Programme setting, but does not reset time or date.

Installer full reset: This is only available to the installer. In addition to the above all of the Installer Advanced Programming settings are returned to factory settings, however, time, date and service due date are not reset.

Installer Settings		
Option	**Description**	**Installer Setting**
Option 30	Set upper limit of temperature range	
Option 31	Set lower limit of temperature range	
Option 32	Enable Off at lower limit	
Option 33	Enable On at upper limit	
Option 34	Select On/Off or Chrono-proportional	
Option 35	Set Integration Time	
Option 36	Set temperature override rule	
Option 37	Set time duration of override rule	
Option 40	Number of events per day (Heating)	
Option 41	Operating mode (Heating)	
Option 60	Number of events per day (Hot Water)	
Option 61	Operating Mode (Water)	
Option 70	Keyboard disable rules	
Option 71	Random start rules	
Option 72	Owner site reference number	
Option 73	Owner thermostat reference number	
Option 74	Date format for calendar clock	
Option 80	Enable/Disable + hrs boost	
Option 81	Thermostat calibration bias	
Option 90	Define remote sensor type	
Option 93	Set limit sensor set-point	
Option 94	Configure digital input switch type	

User Settings		
Option	**Description**	**User Settings**
Option 1	Enable/disable A/B programming	
Option 2	Enable/Disable advanced programming	
Option 3	Calendar clock rules	
Option 4	Time zone offset	
Option 10	Frost/thermostat mode setting	
Option 11	Start-up method	
Option 12	Optimum start control pre-heat setting	
Option 13	Optimum start control/delayed start event setting	