SET2E
electronic 24-hour mini-programmer for heating & hot water

Installation & User Instructions

Danfoss

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Installation Instructions

Please Note:

This product should only be installed by a qualified electrician or competent heating installer, and should be in accordance with the current edition of the IEEE wiring regulations.

Product specification

Specification	
Power supply	230 ± 15% Vac, 50/60Hz
Switch action	2 x SPDT Type 1B
Switch rating	Max 264Vac, 50/60Hz, 3(1) A
Timing accuracy	± 1 min/month
Power reserve	minimum 10 hours
Enclosure rating	IP30
Max. ambient temperature	45°C
Dimensions, mm (W, H, D)	158 x 98 x 38
Design standard	EN 60730-2-7
Control Pollution Situation	Degree 2
Rated Impulse Voltage	2.5kV
Ball Pressure Test	75°C

Specification

Installation

1. Fix the wallplate to the wall or flush mounted box as required. The connections are at the top and the vertical centre line of the unit, at the position shown on the diagram below C/L (in line with terminal ⏚)
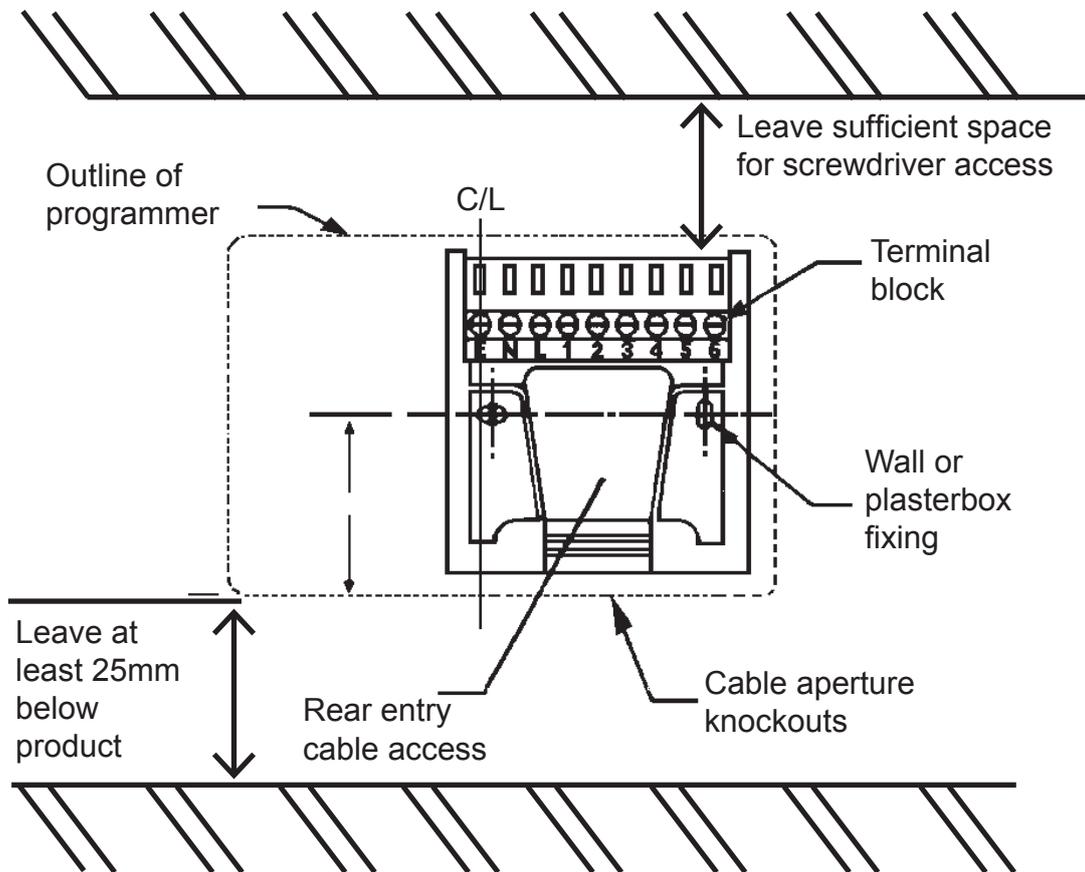
2. Surface cables can only enter from below the unit. If mounted on a flush mounted box, cables can enter from the rear through the aperture in the wallplate.

3. For mains voltage applications a link must be fitted between terminals L and 2 and between 1 and 5.

4. Whilst the unit does not require an Earth connection, a terminal is provided on the wallplate for Earth continuity purposes.

5. Referring to the wiring diagrams on page 5-7, connect the unit as shown.

6. Ensure all dust and debris are cleared from the area.

7. Locate the module on the latches at the bottom of the wallplate and hinge upwards to fully engage the unit connectors into the wallplate. Tighten the two fixing screws to secure the unit to the wallplate.

8. Before setting the programme, check the unit and circuit.

   Switch on the mains supply and set the left-hand rocker switch to the **CONSTANT** position and the right-hand rocker switch to the **HW + CH** position. The red LED should now be illuminated. Adjust any remote thermostats to check the services operate correctly.

9. Press the left-hand rocker switch to the **OFF** position and check that both services do not operate.

10. Finally, return the left-hand rocker switch to **TIMED** and the right-hand rocker switch back to **HW + CH** (winter) or **HW** (summer).

Wiring

SET2E
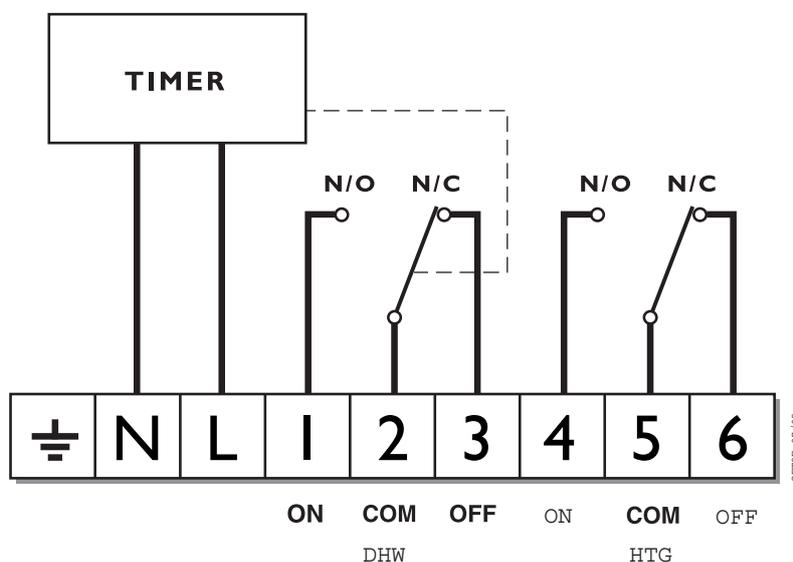
NOTE: For mains voltage applications links must be fitted between terminals L and 2 and between 1 and 5.

Given below are typical wiring diagrams for various types of systems.

Note: Whilst every attempt has been made to ensure the accuracy of this information it is recommended that the specific information relating to the ancillary controls is obtained from the manufacturers concerned.

Typical Gravity DHW
with pumped central heating

DHW = Domestic Hot Water
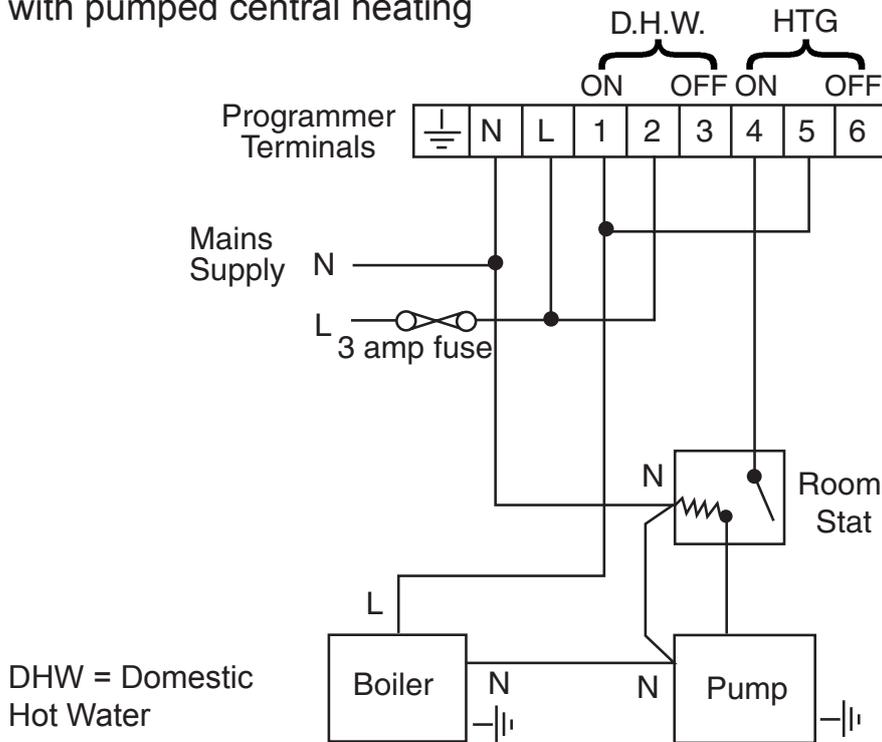
Typical fully pumped system
with spring return zone valve in heating
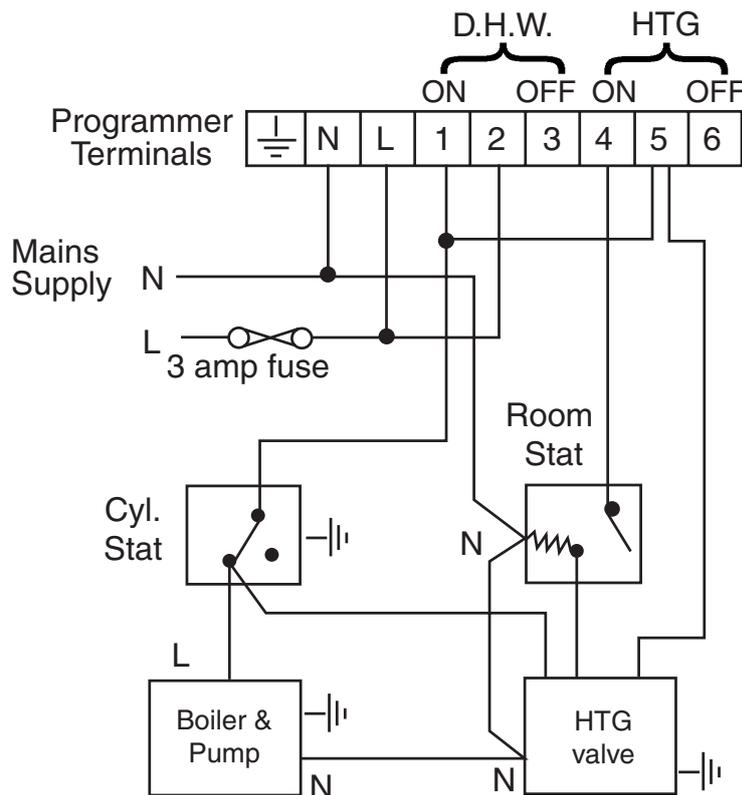
Typical fully pumped system
with 3-port mid-position valve
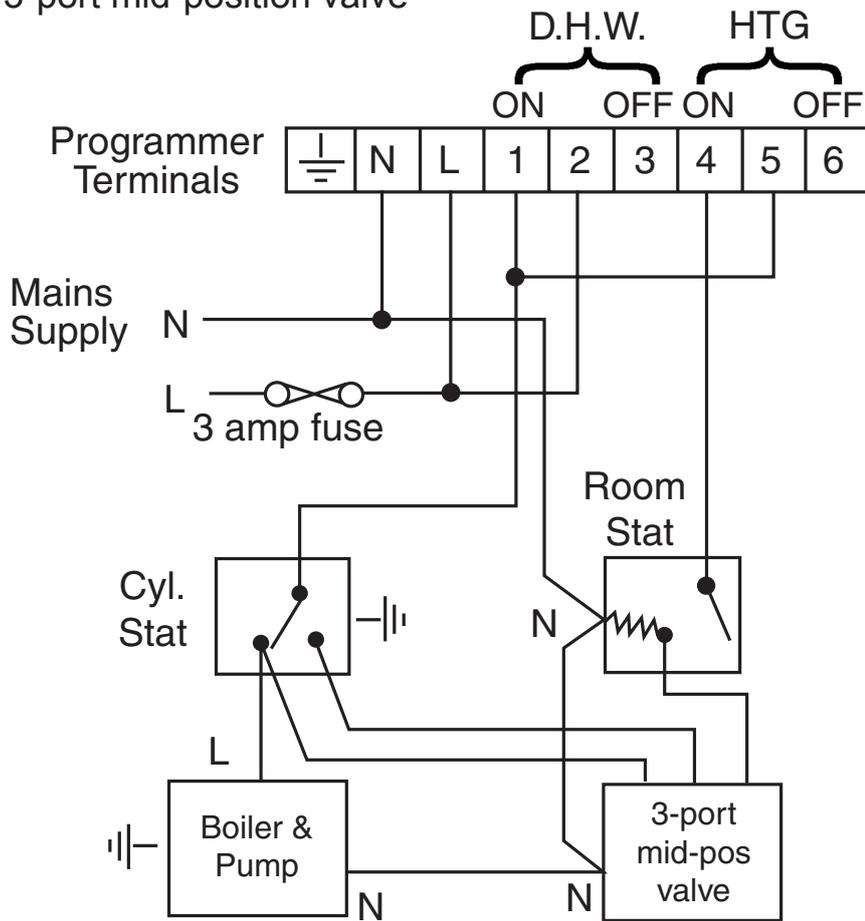
Replacement

Please see overleaf for a table containing replacement wiring information.

Some controls are connected in different ways depending upon the type of system and/or the controls which are fitted. If there is any doubt about the way in which the existing unit is connected, please contact our Technical Services Department before proceeding with replacement.

> **!** *If the unit is to be used in association with a 6 wire Honeywell Y Plan, a special wiring diagram may be required. Contact the Danfoss Randall Technical Services Department for details.*

Note: The SET2E is a direct replacement for a Danfoss Randall SET2.

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SET2E with terminals L - 2 and 1 - 5 linked

	MAINS			WATER			HEATING			NOTE	A	B	C	D
	⏚	N	L	ON	COM	OFF	ON	COM	OFF	This conversion applies only if..				
	⏚	N	L	1	2	3	4	5	6					
DANFOSS RANDALL SET 2	⏚	N	L	1	2	3	4	5	6	Direct plug-in replacement				
DANFOSS RANDALL TSR2P	⏚	3	1,2	5,6	-	-	7	-	-	Terminals 1 & 2 are linked and 5 & 6 are linked	4			
DANFOSS RANDALL 3060 & 3020P	⏚	1,7	6	4	-	-	2	-	-		3	5		
DANFOSS RANDALL 102/102E	⏚	5	3,6	1	-	-	2	-	-					
DANFOSS RANDALL 701	⏚	N	L	3	6	4	1	5	2					
HONEYWELL ST6200	⏚	N	L	3	-	1	4	-	2					
HORSTMANN CORAL 423 & 424	⏚	2,3	1	Boiler (8)	-	-	AirStat (8)	-	-		4,7	5	6	
HORSTMANN DIADEM 425	⏚	N	L	1	2	3	4	5	6	Programme selectors linked				
HORSTMANN DIADEM 525	⏚	N	L	1	2	3	4	5	6	Programme selectors linked				
HORSTMANN DIAMOND 423	⏚	N	L,1,3	2	-	-	4	-	-		5	6		
HORSTMANN DIAMOND 424	⏚	N	L,1,3	2	-	-	4	-	-		5			
LANDIS & GYR RWB2	⏚	N	L	3	-	1	4	-	2	Programme selectors linked				
POTTERTON 423	⏚	N	L,1,3	2	-	-	4	-	-		5	6		
POTTERTON MINI-MINDER	⏚	N	L	3	-	1	4	-	2	Programme selectors linked				

An additional terminal block is required where these disconnected leads (or pairs of leads) should be terminated

POTTERTON EP2000	⏚	N	L	3	-	1	4	5	2	Programme selectors linked	A	B	C	D
SANGAMO M5 410 FORM 4	⏚	4,5	3	1,6	-	2	8	-	7	Terminals 1 & 6 are linked	4,6			
SANGAMO S409 FORMS 1 & 4	⏚	N,1,3	L	2	-	-	5	-	-					
SANGAMO (EARLY MODEL) S410 FORM 4	⏚	N,2	L	1,3	-	-	4	-	-	Terminals 1 & 3 are linked				
SMITH IND. CENTROLLER 100	⏚	N	L	3	-	-	2	-	-		1	4		
SMITH IND. CENTROLLER 60	⏚	1	2	5	-	-	4	-	-		3			
SMITH IND. CENTROLLER 10	⏚	N	L	3	-	-	2	-	-		1,4			
SMITH IND. CENTROLLER 70	⏚	1	2	5	-	-	4	-	-		3	6		
SMITH IND. CENTROLLER 1000	⏚	N	L	3	-	1	4	-	2	Programme selectors linked				
SWITCHMASTER 320 & 350	⏚	N	4,L	3	-	-	1	-	-	Terminals L & 4 are linked	2			
SWITCHMASTER 400	⏚	N	L	3	-	-	1	-	4		2			
SWITCHMASTER 600	⏚	N	L	3	-	-	1	-	-		2			
SWITCHMASTER 900 & 9000	⏚	N	L	3	-	4	1	-	2	Programme Selectors Linked	A	B	C	
VENNER VENOTROL	⏚	N,A,M	L,L,1	V	-	-	S,F	-	-		T,P	O		
VENNER VENOTROL 80 (Air Stat)	⏚	N,1 3,4	L	2	-	-	A/S	-	-		A/ S, 5			
VENNER VENOTROL 80 (Air Stat Linked)	⏚	N,1 3,4	L	2	-	-	5	-	-					

TACMA

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MANUFACTURERS

11385

Crystal
Mark

Clarity
approved by
Plain English Campaign

The text below has been edited and approved by the Plain English Campaign, who has issued a Crystal Mark to be displayed with it.

What is a programmer?

... an explanation for householders.

Programmers allow you to set 'On' and 'Off' time periods. Some models switch the central heating and domestic hot water on and off at the same time, while others allow the domestic hot water and heating to come on and go off at different times.

Set the 'On' and 'Off' time periods to suit your own lifestyle. On some programmers you must also set whether you want the heating and hot water to run continuously, run under the chosen 'On' and 'Off' heating periods, or be permanently off.

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.

The heating will not work if the room thermostat has switched the heating off. And, if you have a hot-water cylinder, the water heating will not work if the cylinder thermostat detects that the hot water has reached the correct temperature.

User Instructions

Your programmer

The SET2E allows you to switch your hot water & heating on and off automatically, at times that suit you.

The programmer provides 2 ON times and 2 OFF times per day, and by the use of a simple rocker switch you can run the system at the set times, constantly ON or constantly OFF.

During the summer the central heating can be turned off, whilst still controlling the hot water at the set times.

◀ and
ADVANCE
button

▶ and
+1 HOUR
button

ADVANCE   7:20 PM   +1 HOUR

RUN SET TIME 1 ON 1 OFF 2 ON 2 OFF

ADVANCE   +1 HOUR

OFF / TIMED / CONST.   HW / HW / CH

Slider
switch

Rocker
switches
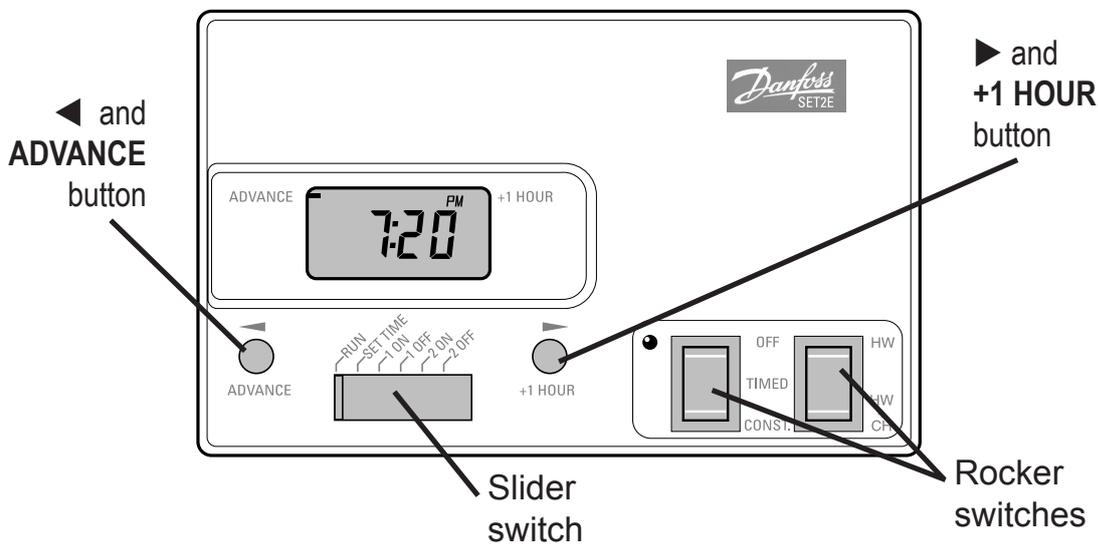
Resetting the Unit

IMPORTANT: Before you start you should reset the unit. This will reinstate the preset programmes.

To do this:

❏ move slide switch to **SET TIME** position
❏ using something non-metallic (i.e a matchstick) press into the small hole as shown opposite

RUN SET TIME 1 ON 1 OFF 2 ON 2 OFF
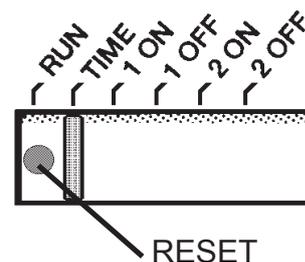
RESET

Setting the Clock

❏ Move the slider to **SET TIME** position

❏ Use ◀ and ▶ keys to set the correct time
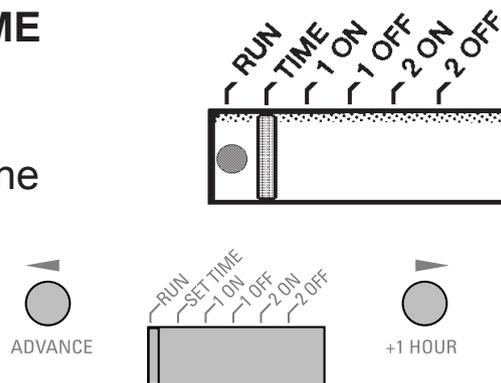
Preset programme

The unit is supplied with the following preset programme which will be active after the unit has been RESET (see page 10):

> ON at 6:30am, OFF at 8:30am.
> ON at 5:00pm, OFF at 10:30pm.

To alter these times to suit your requirements, follow the instructions on page 12.

Accepting the preset programmes

If you are happy to use the preset programmes above you don't need to do anything else.

Just return the slider to the **RUN** position.
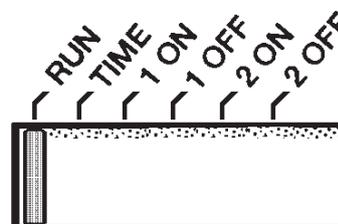
Programming the unit

You can programme your heating to come on and go off twice a day, to suit your requirements. To programme your unit:

❏ Move the slider to the 1st ON position and use ◀ and ▶ keys to set the time you want the programmer to first come on
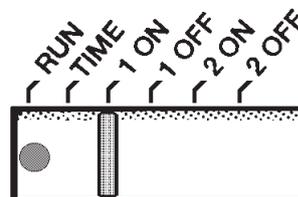
❏ Move the slider to the 1st OFF position and use ◀ and ▶ keys to set the time you want the programmer to first go off
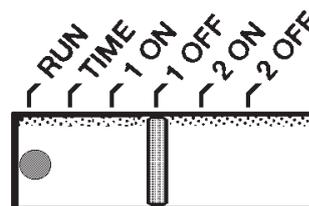
❏ Move the slider to the 2nd ON position and use ◀ and ▶ keys to set the time you want the programmer to next come on
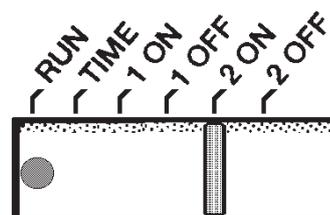
❏ Move the slider to the 2nd OFF position and use ◀ and ▶ keys to set the time you want the programmer to next go off

!
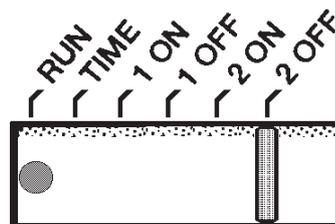
Remember to return the slider switch to the RUN position after programming

Programming the unit

Temporary User Overrides

Sometimes you may need to change the way you use your heating temporarily, i.e. due to unusually cold weather. The SET2E has two convenient overrides which can be selected without affecting the set programme.

Note: This will only work when the slider switch is in the RUN position and will automatically cancel at the start of the next programmed event.

Advance

❏ Press the **ADVANCE** button once to move forward to the next programmed event

❏ **If the system is on it will go off. If it is off it will come on**

❏ A bar on the left of the LCD will remind you that you have selected Advance

❏ To cancel the override, press the **ADVANCE** button again
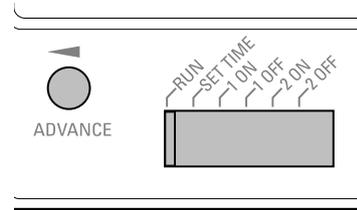
1 Hour Extra

❏ Press **+1 HOUR** button once if you need an extra hour of operation

❏ **If the system is off it will come on. If it is already on it will add an extra hour so the system stays on for an extra hour**

❏ A bar on the right of the LCD will remind you that you have selected +1 hour

❏ To cancel the override, press the **+1 HOUR** button again
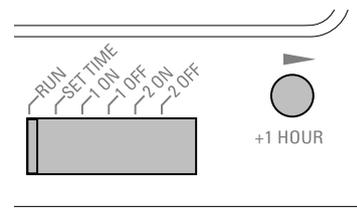
Manual Switch Settings

The 2 rocker switches are used to select how the SET2E controls your hot water and heating:

Left-hand switch

❏ **OFF** - the heating is manually switched OFF and will stay off until you change the position of the switch
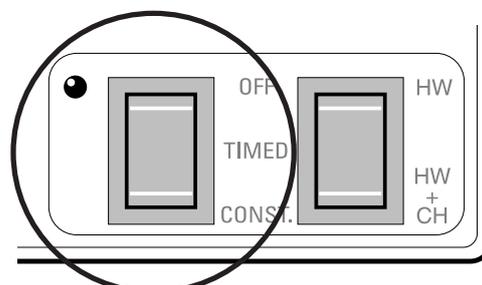
❏ **TIMED** - the heating will come on and go off at the times you have programmed (including any temporary overrides you may select)

❏ **CONSTANT** - the heating will come on manually and stay on constantly until you change the position of the switch

Right-hand switch

❏ **HW + CH** - both heating and hot water are controlled according to the set programme

❏ **HW** - heating is turned off and only the hot water is controlled according to the set programme
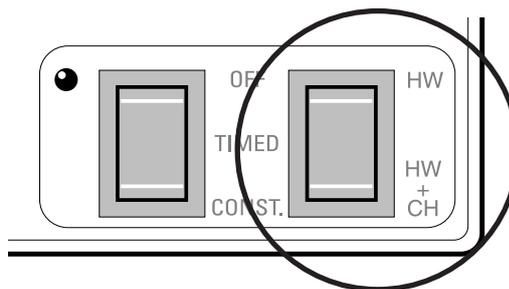
Memory Backup

IMPORTANT
If the SET2E is ever disconnected from the mains the display will go blank but the unit will keep your programme time and settings for up to 10 hours.

When power is restored the unit will continue to function as normal.

For power cuts or disconnections of greater then 10 hours, when mains power is restored you must reset the unit (see page 10). This will reinstate the factory preset programmes and set the time of day to noon.

Still having problems?