

SET1E

*Electronic timeswitch
for heating & hot water*

Installation & User Instructions



Certification Mark

This product complies with the following EC Directives:
Electro-Magnetic Compatibility Directive.
(EMC) (89\336\EEC), (92\31\EEC)
Low Voltage Directive.
(LVD) (73\23\EEC), (93\68\EEC)

CE

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.

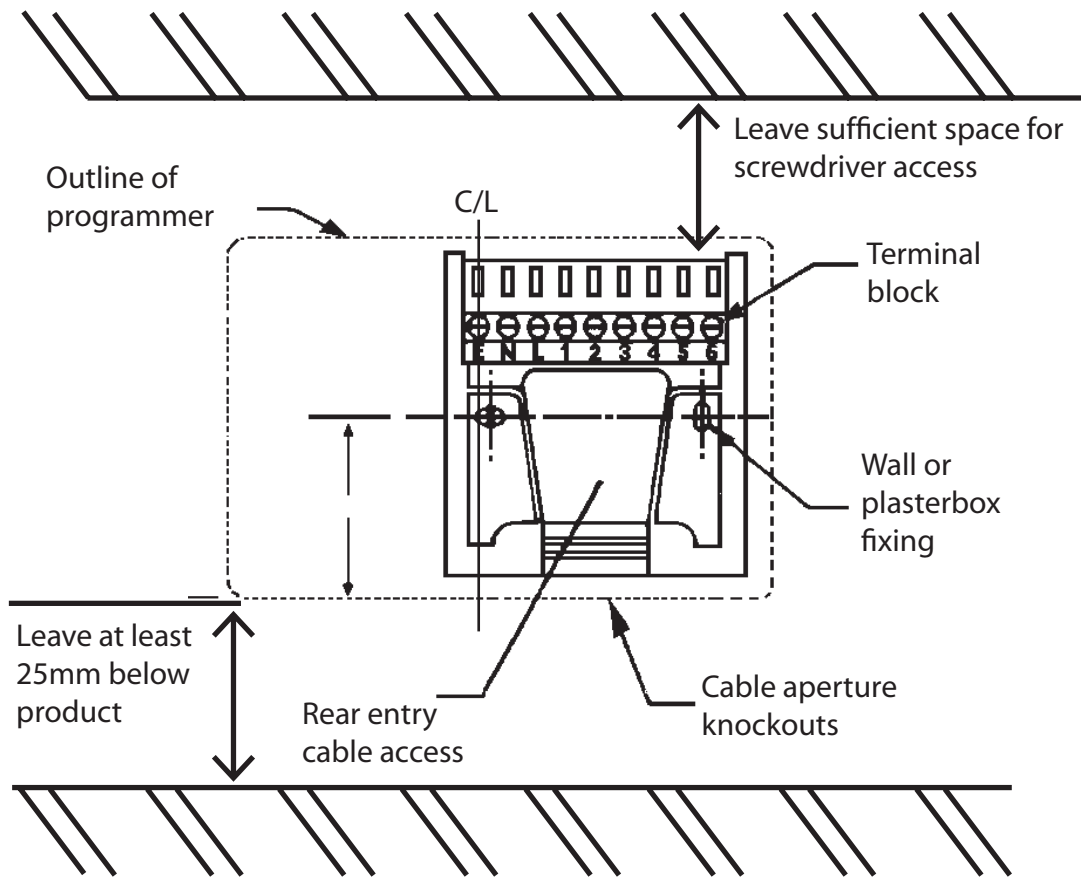
Product specification

Specification	
Power supply	230 ± 15% Vac, 50/60Hz
Switch action	1 x SPDT voltage free 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

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 $\frac{\perp}{=}$).



Installation

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 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 5-10, connect the unit as shown.
6. Ensure all dust and debris are cleared from the area.

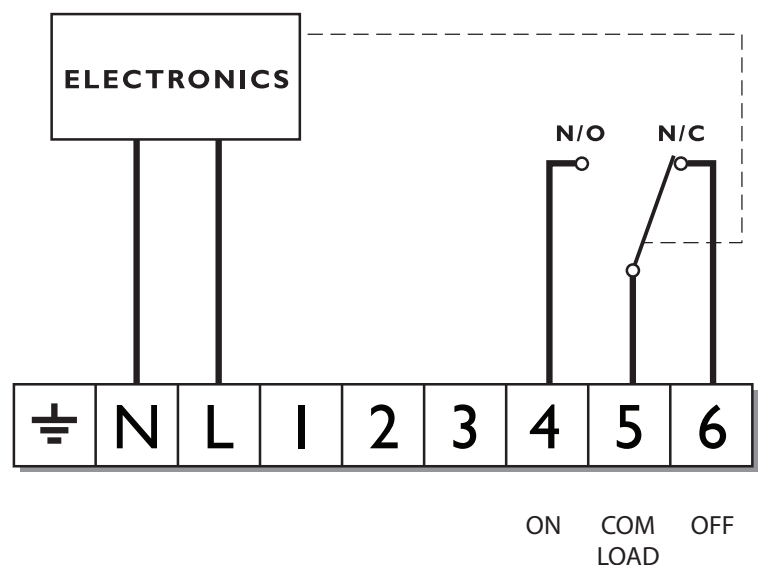
7. Locate the module on the latches at the bottom of the wallplate and hinge upwards to fully engage the unit connectors into the wallplate. Tighten the two fixing screws to secure the unit to the wallplate.
8. Before setting the programme, check the unit and circuit. Switch on the mains supply and press the rocker switch to the **CONSTANT** position - the red LED should now be illuminated. Adjust any remote thermostat to check the services operate correctly.
9. Press the rocker switch to the **OFF** position and check that the system does not operate.
10. Finally, press the rocker switch to **TIMED** position prior to programming the unit.

Wiring

On the following pages 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.

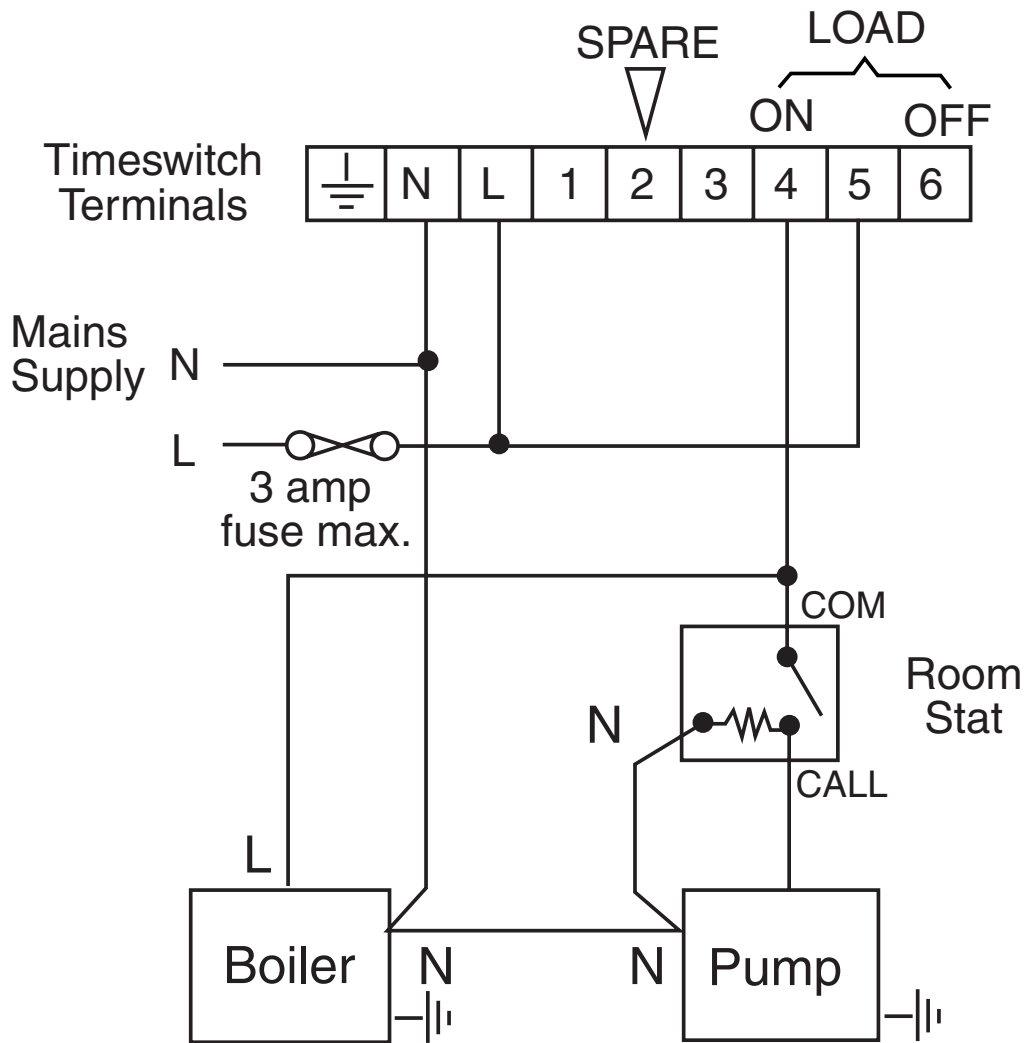
SET1E



NOTE: For mains voltage applications a link must be fitted between terminals L and 5.

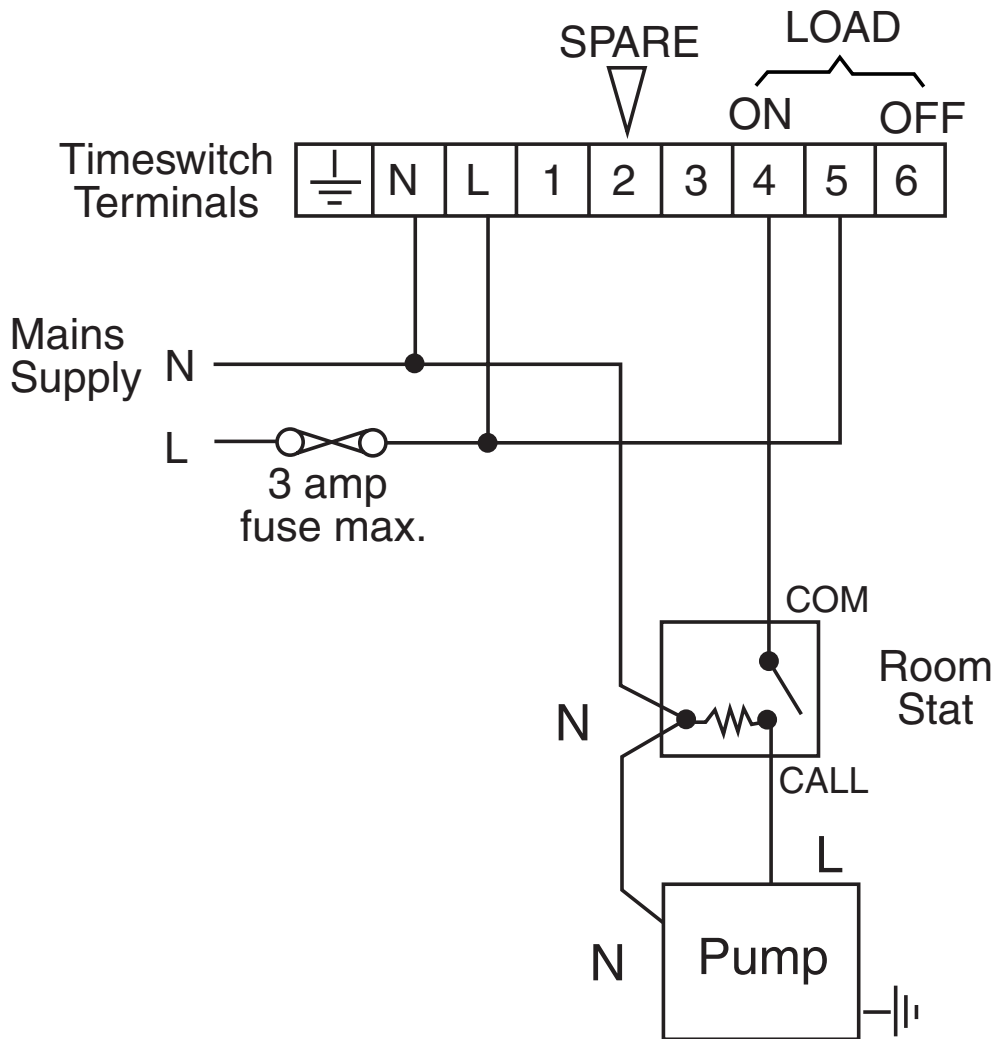
Typical Gravity DHW with pumped central heating

Wiring



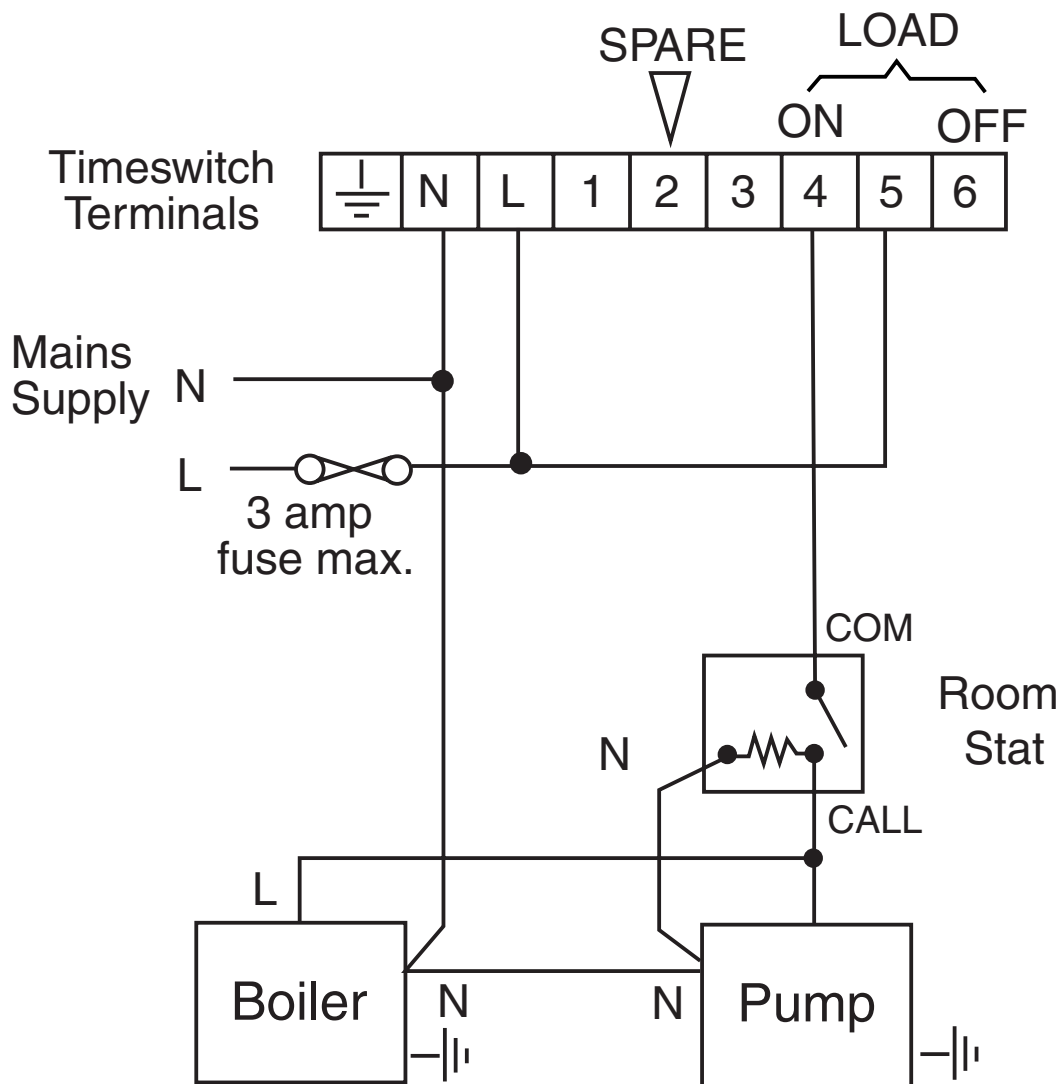
DHW = Domestic Hot Water

Typical control of pump for central heating on a solid fuel system



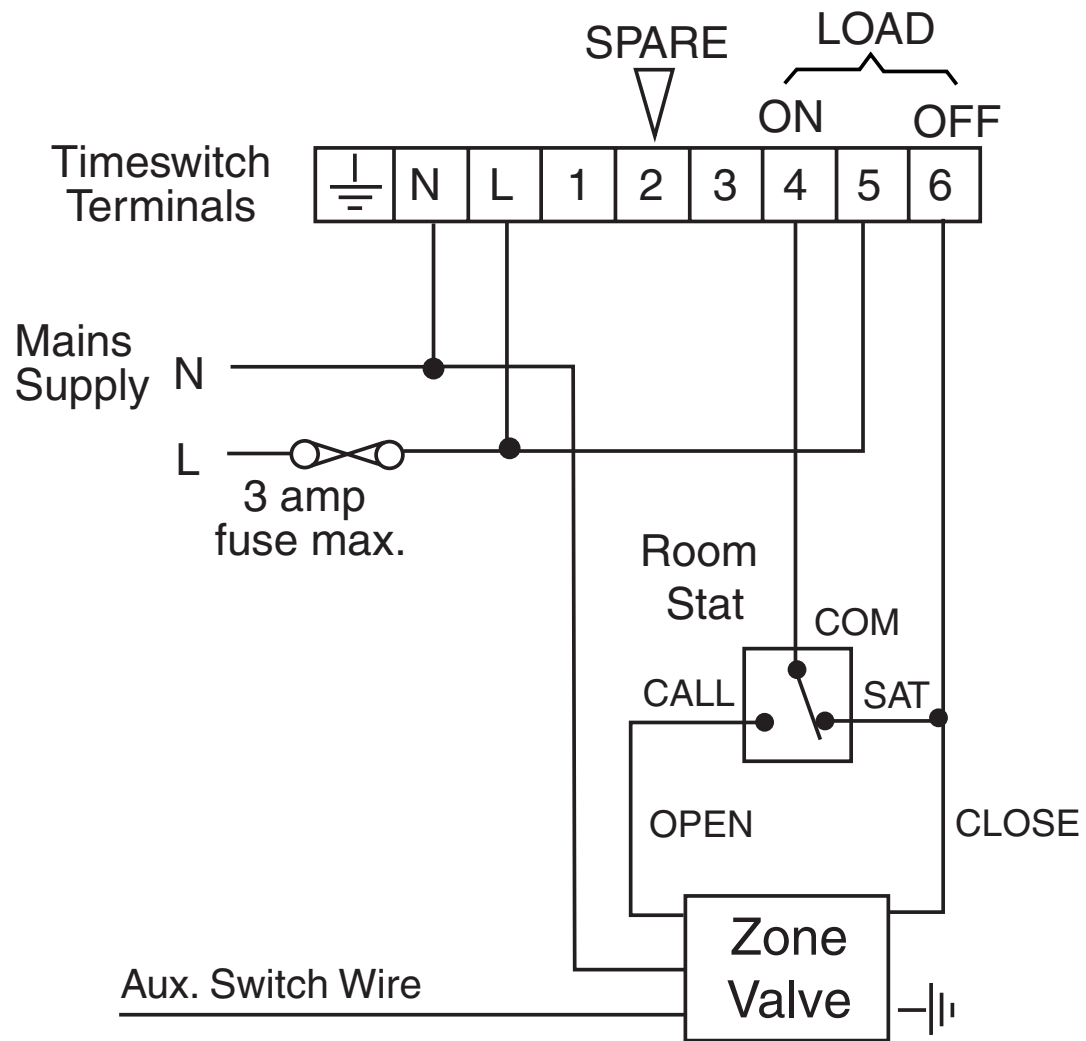
Wiring

Typical control heating function only with boiler and pump



Wiring

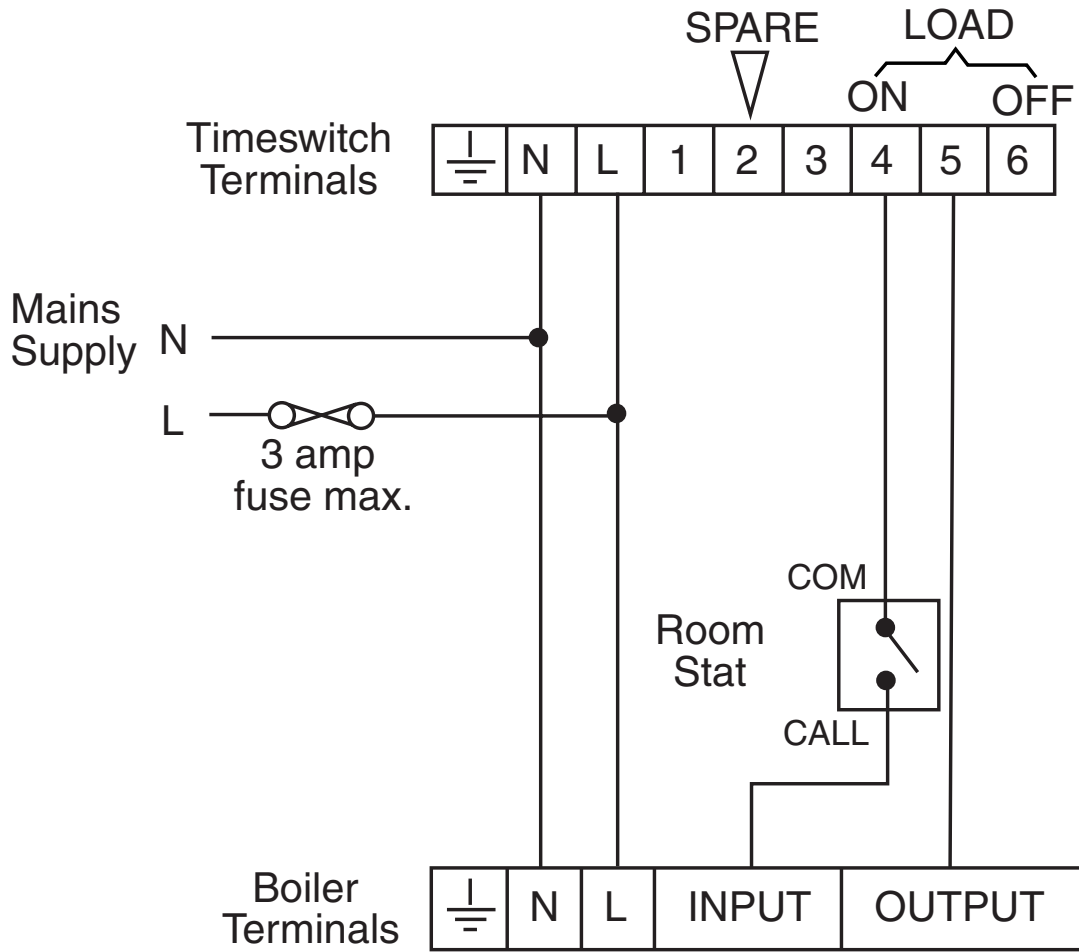
Typical control of a motorised zone valve requiring an open and close signal



Wiring

Typical control of heating

when used with combination type boilers














Wiring


















Replacement

Please see overleaf for a table containing replacement wiring information.

Some timeswitches 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 timeswitch is connected, please contact our Technical Services Department before proceeding with replacement.

Note: The SET1E is a direct replacement for a Danfoss Randall SET1.

DANFOSS RANDALL SET1E	SPARE TERMINAL Where disconnected leads should be terminated			LOAD			Additional terminal block is required where these disconnected leads (or pairs) should be terminated			
	MAINS		ON	COM	OFF	A	B	C	D	
		N								L
ACLS111		N	L	4	5	6				
DANFOSS RANDALL SET 1		N	L	3	1	2				
DANFOSS RANDALL 911		N	L	4	5	6				
DANFOSS RANDALL 103/103E		N	L	6	5	4				
DANFOSS RANDALL 3020		5	6	1	3	-				
DANFOSS RANDALL TSR2		1,7	6	4	-	-	3	5		
GRASSLIN 45, 45A, 45E		2	1	4	3	-				
HORSTMANN 424 EMERALD & PEARL AUTO RANGE		N	L1	4	3	-	5			
HORSTMANN 423 PEARL EMERALD & TOPAZ		N	L	4	3	-	2	5	6	
HORSTMANN KMK2A YMK2		3	4	2	1	-				
HONEYWELL ST6100A		N	L	4	1	2				
HONEYWELL ST6100C		N	L	4	1	2				
HORSTMANN 425 CORONET		N	L	4	5	6	2	3		
LANDIS & GYR RWB3		N	L	4	-	3	2			

		N	L	1	4	2	3			
LANDIS & GYR RWB30										
SANGAMO M6		4,5	6	7	1	3	2	8		
SANGAMO 410 F8		4,5	3	6	1	-	2	7	8	
SANGAMO S254 F2, S408 F5, S251 F2		N	L		LOAD	-	-			
SANGAMO S610 F2, S611 F2, S162 F2, S408 F4, S408 F6, S253 F2, S255 F2		N	MOTOR LIVE		LOAD	SWITCH LIVE	-			
SANGAMO S409 F8		3,N	5,L	1	2	6	-			
SANGAMO S263 F2, S264 F2		N	L		ON	-	OFF			
SMITH IND. MKI, MKII		N	L	P1	P3	P2	-			
SMITH IND. CENTROLLER 30		1	2	3	4,5	-	-	6		
SMITH IND. CENTROLLER 40		1	2	3	4,5	-	-			
SWITCHMASTER 300		N	L	2	1	4	-	3		
TOWERCHRON TC		2	1	3	7	4	-	8	9	11
VENNER VENNERETTE MK.IIA		N	L		LOAD	LINE	-			
VENNER VENNERETTE MK.IVA		2	3		1	4	-			
VENNER VENOTIME (WITH NEON INDICATING CIRCUIT ON)		N	L	2	3	-	1			
VENNER VENOTIME (WITH NEON INDICATING POWER ON)		N	L		3	2	1			
VENNER VENNERON, VENNERON P		3	2		4	1				



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.

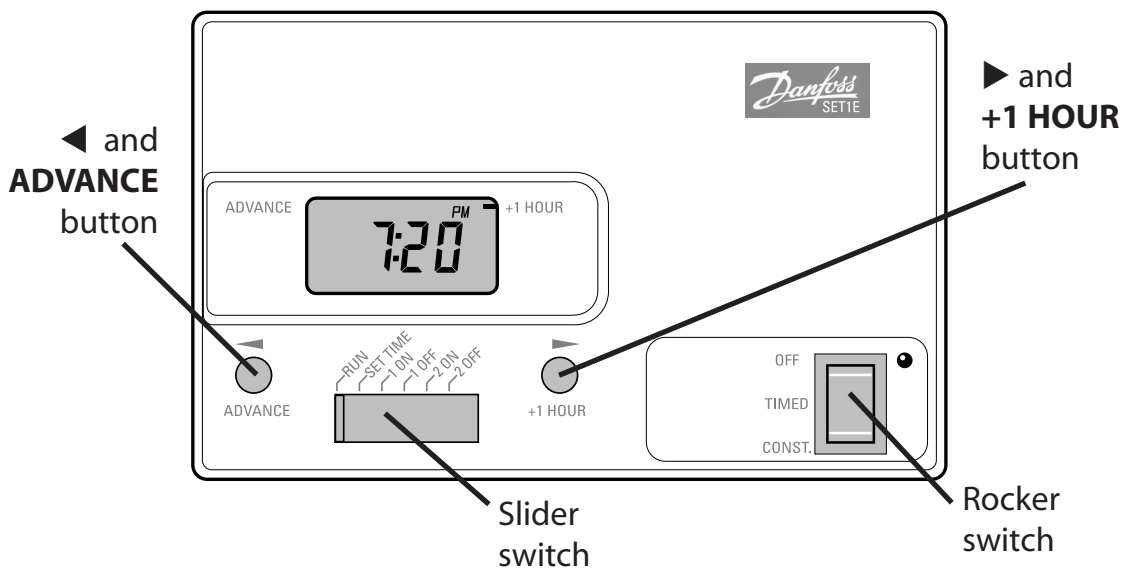
Please note: A timeswitch is a single channel programmer. It will allow you to set your system's On and Off periods.

User Instructions

Your timeswitch

The SET1E allows you to switch your heating on and off at times that suit you.

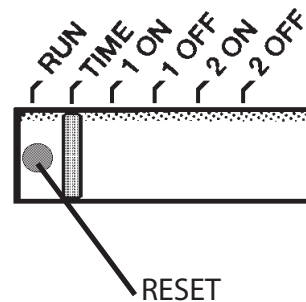
It provides 2 ON times and 2 OFF times per day, and by the use of a simple rocker switch allows you to run your heating at the set times, constantly ON or constantly OFF.



Resetting the Unit

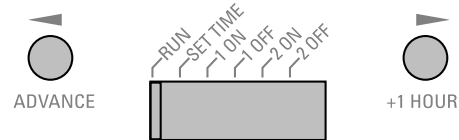
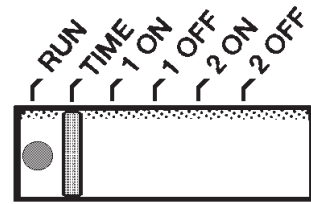
IMPORTANT: Before you start you should reset the unit. This will reinstate the preset programmes.

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



Setting the Clock

- Move the slider to **SET TIME** position.
- Use ◀ and ▶ keys to set the correct time.



Preset programme

Setting the time & factory presets

The unit is supplied with the following pre-set programme which will be active after the unit has been RESET (see page 15):

ON at 6:30am, OFF at 8:30am.

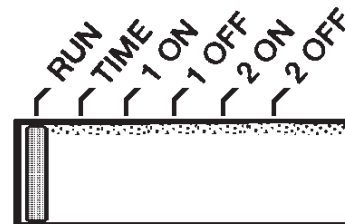
ON at 5:00pm, OFF at 10:30pm.

To alter these times to suit your requirements, follow the instructions on page 17.

Accepting the preset programmes

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

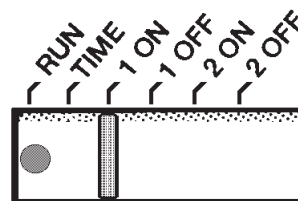
Just return the slider to the **RUN** position.



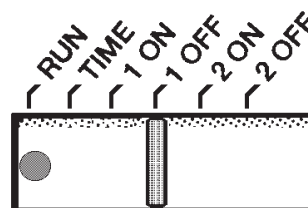
Programming the unit

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

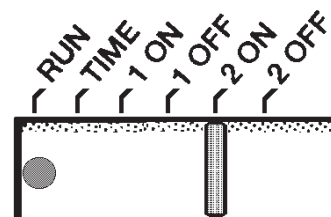
- ❑ Move the slider to the 1st ON position and use ◀ and ▶ keys to set the time you want the programmer to first come on.



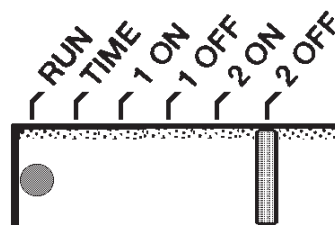
- ❑ Move the slider to the 1st OFF position and use ◀ and ▶ keys to set the time you want the programmer to first go off.



- ❑ 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.



Programming the unit



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

Temporary User Overrides

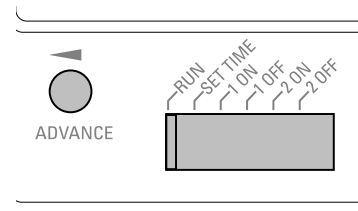
Sometimes you may need to change the way you use your heating temporarily, i.e. due to unusually cold weather. The SET1E has two convenient overrides which can be selected without affecting the set programme.

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.

Temporary User Overrides

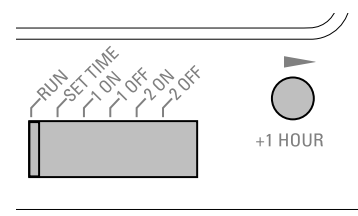
Advance

- 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.



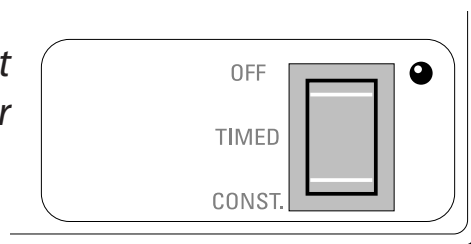
1 Hour Extra

- 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 rocker switch is used to select how the SET1E controls your heating:



- ❑ **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.

Memory Backup

IMPORTANT

If the SET1E 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 than 10 hours, when mains power is restored you must reset the unit (see page 15). This will reinstate the factory preset programmes and set the time of day to noon.

Still having problems?

Call your local heating engineer:

Name:

Tel:

For problems relating to your heating controls ...

Visit our website:

www.danfoss-randall.co.uk

Email our technical department:

drl_technical@danfoss.com

Call our technical department

0845 121 7505

(8.45-5.15 Mon-Thurs, 8.45-4.45 Fri)

**For a large print version of these instructions
please contact the Marketing Services
Department on 0845 121 7400.**



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