



**SET 3E**  
*Electronic 24 Hour Programmer  
for Heating and Hot Water*

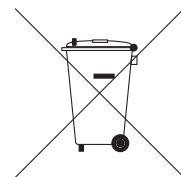
**For a large print version of these instructions  
please call Marketing on 0845 121 7400.**

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Certification Mark

This product complies with the following EC Directives:  
Electro-Magnetic Compatibility Directive.  
(EMC) (2004/108/EC)  
Low Voltage Directive.  
(LVD) (2006/95/EC)



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# Installation Instructions

## SET3E

*Electronic 24-Hour Programmer  
for Heating and Hot Water*

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## 1.0 Installation Guide

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### 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.*

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## 2.0 System Overview

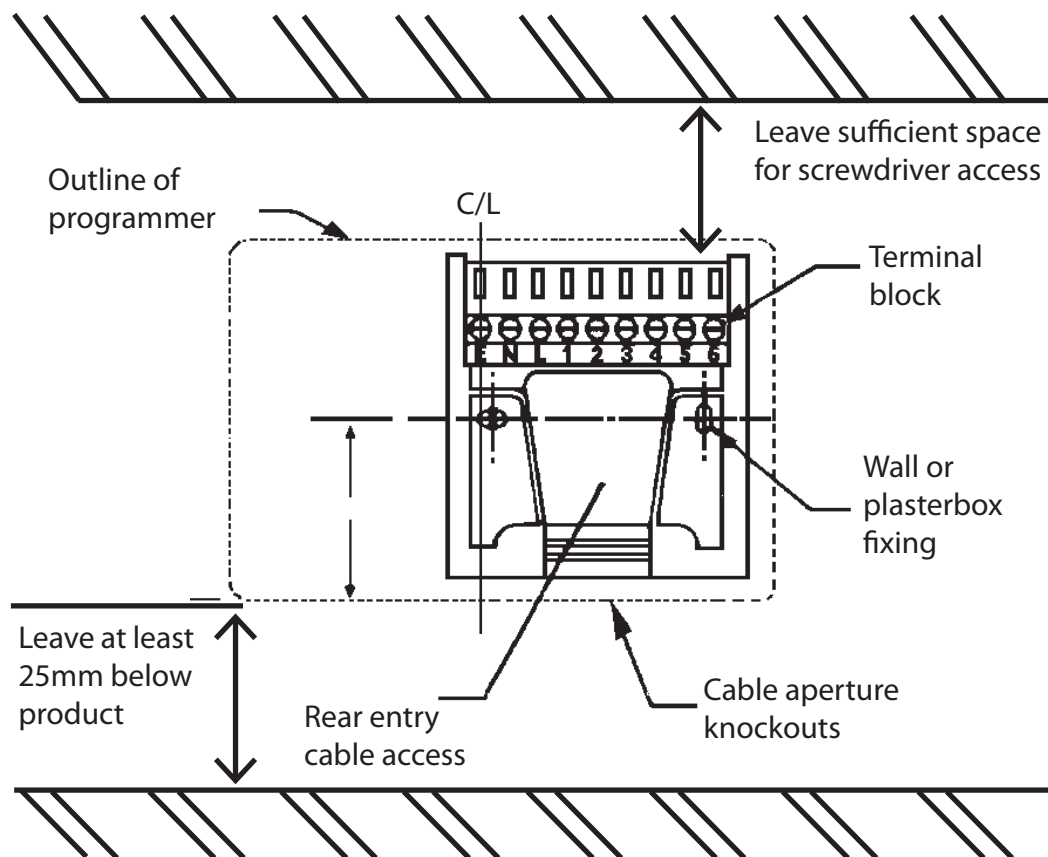
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Specification	
Power supply	230 ± 15% Vac, 50/60Hz
Switch action	2 x SPDT Type 1B
Switch rating	Max 264Vac, 50/60Hz, 3(1) A
Timing accuracy	± 1 min/month
Power reserve	minimum 10 hours
Enclosure rating	IP30
Max. ambient temperature	45°C
Dimensions, mm (W, H, D)	158 x 99 x 38
Design standard	EN 60730-2-7
Control Pollution Situation	Degree 2
Rated Impulse Voltage	2.5kV
Ball Pressure Test	75°C

## 3.0 Installation

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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 C/L (in line with terminal  $\perp$ ).
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, 2 and 5.
4. Whilst the unit does not require an Earth connection, a terminal is provided on the wallplate for Earth continuity purposes.



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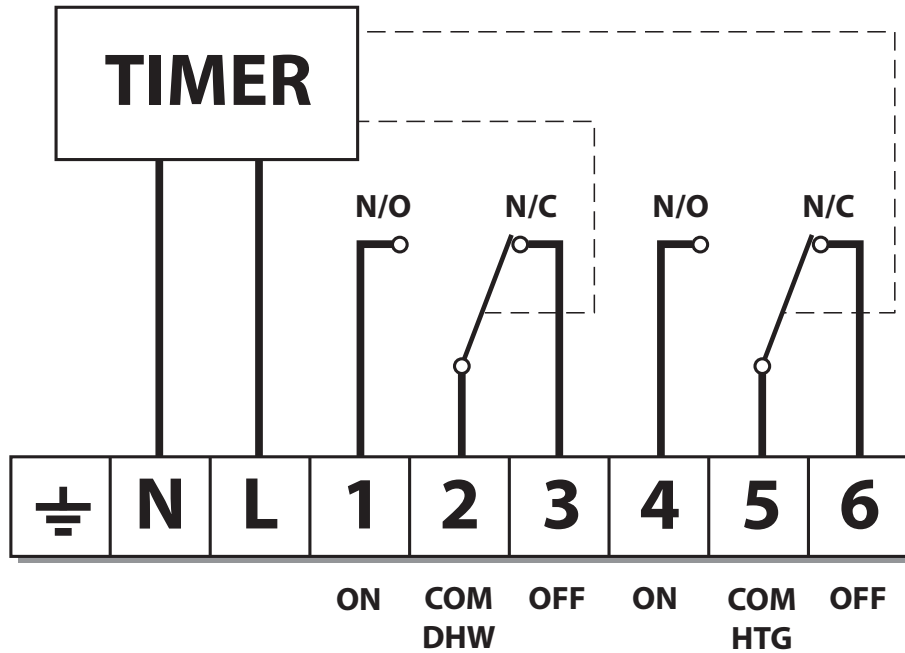
5. Referring to the wiring diagrams on page 6-12, connect the unit as shown.
6. The unit is supplied ready for use in systems having PUMPED primaries. Should the unit be required for use in a system having GRAVITY primaries, remove the small link located on the rear of the unit. The link, which is clearly labelled can be found on the bottom RIGHT hand side of the unit.
7. Ensure all dust and debris are cleared from the area.
8. 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.
9. Before setting the programme, check the unit and circuit. Switch ON the mains supply and press both **WATER & HEATING** rocker switches to the **ON** position - both red LED's should now be illuminated. Adjust any remote thermostat to check the services operate correctly.
10. Then press both **WATER** and **HEATING** rocker switches to the **OFF** position and check that both services do not operate.
11. Finally, press both **WATER** and **HEATING** rocker switches to **TIMED** position prior to programming the unit.

### 3.1 Wiring

Typical wiring diagrams for various types of systems are shown on the following pages.

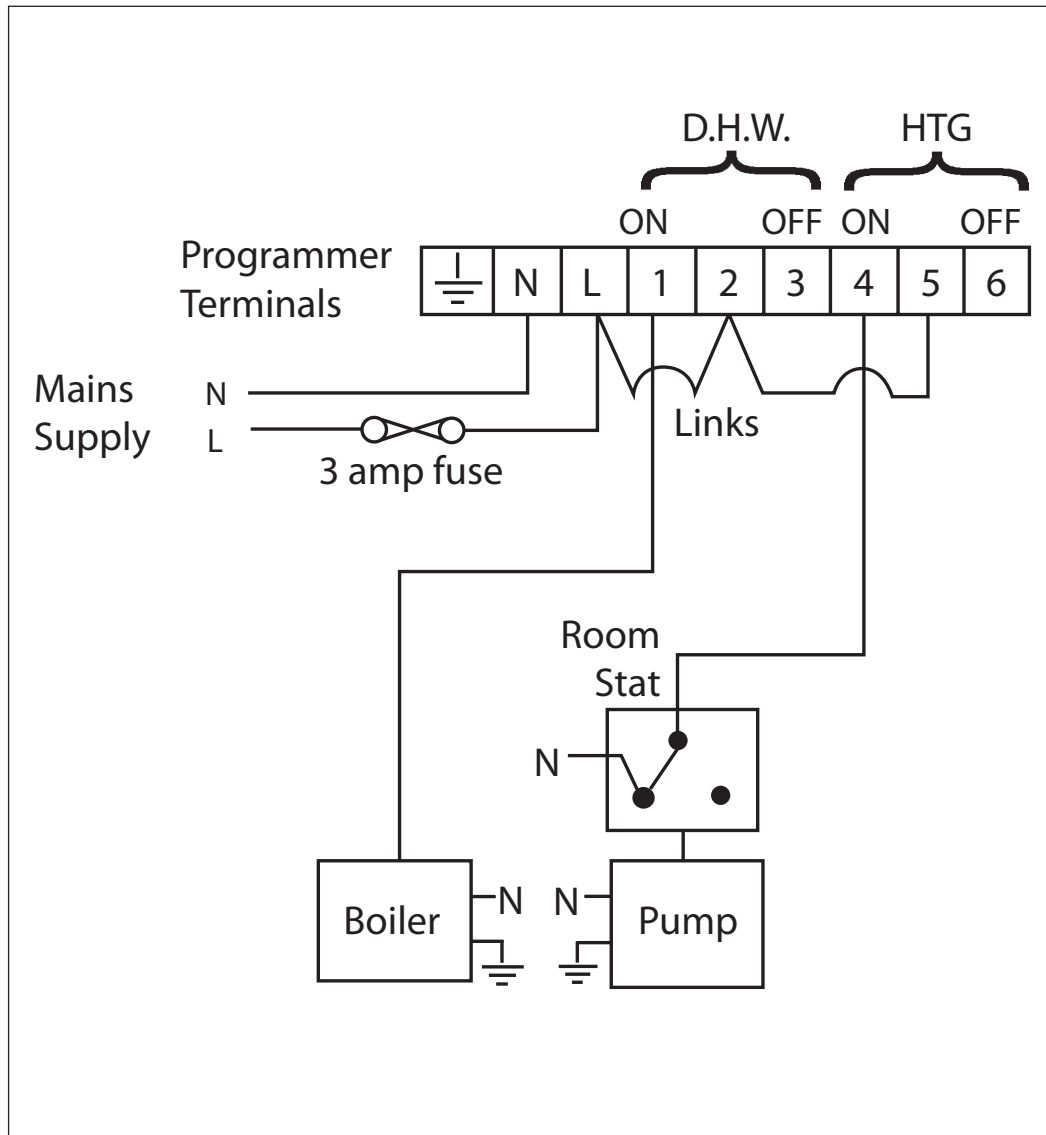
*Note: Whilst every attempt has been made to ensure the accuracy of this information it is recommended that the specific information relating to the ancillary controls is obtained from the manufacturers concerned.*

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

### 3.2 Typical Gravity DHW Pumped HTG

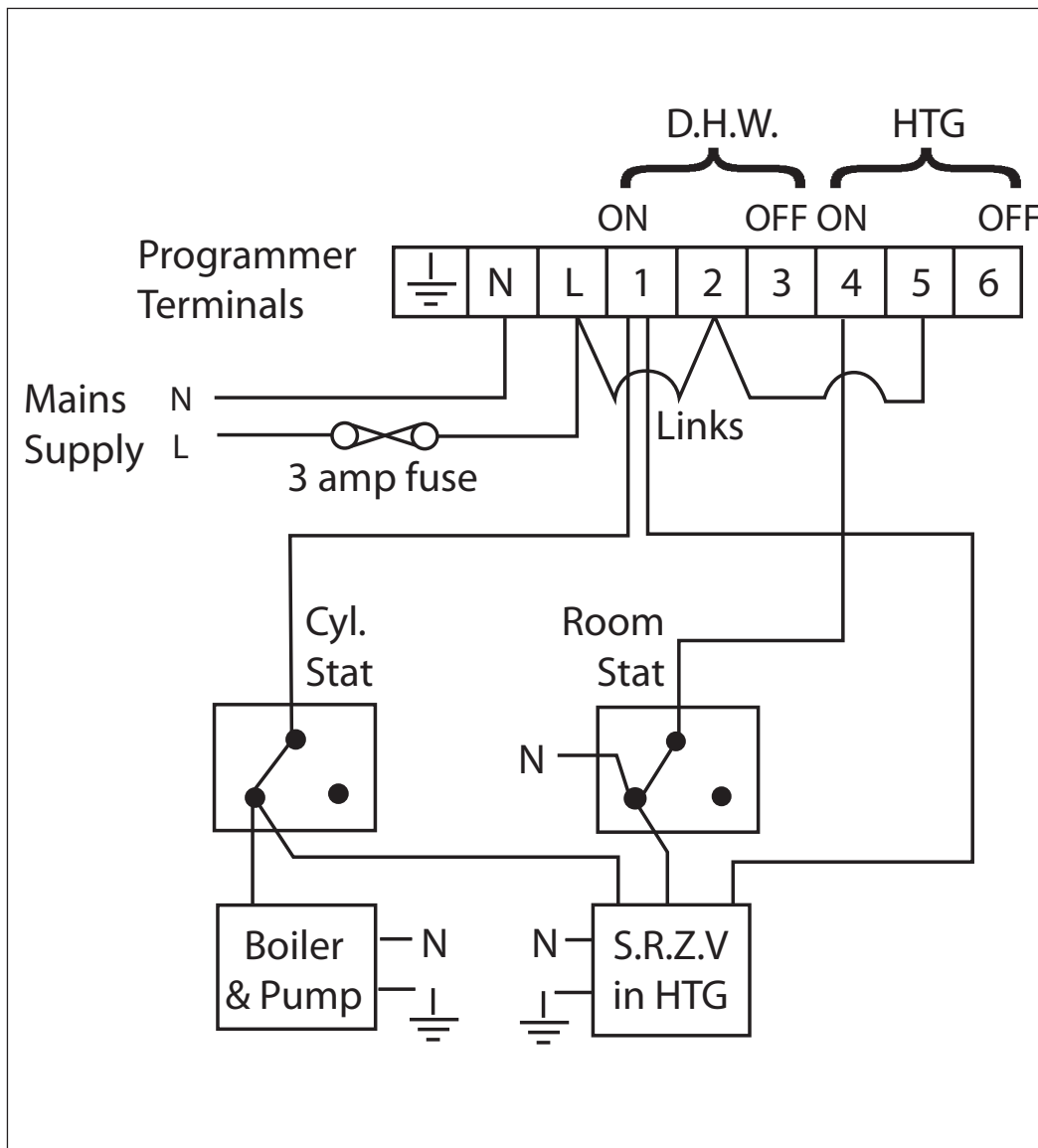


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DHW = Domestic Hot Water

### 3.3 Typical Fully Pumped System with Spring Return Zone Valve in Heating

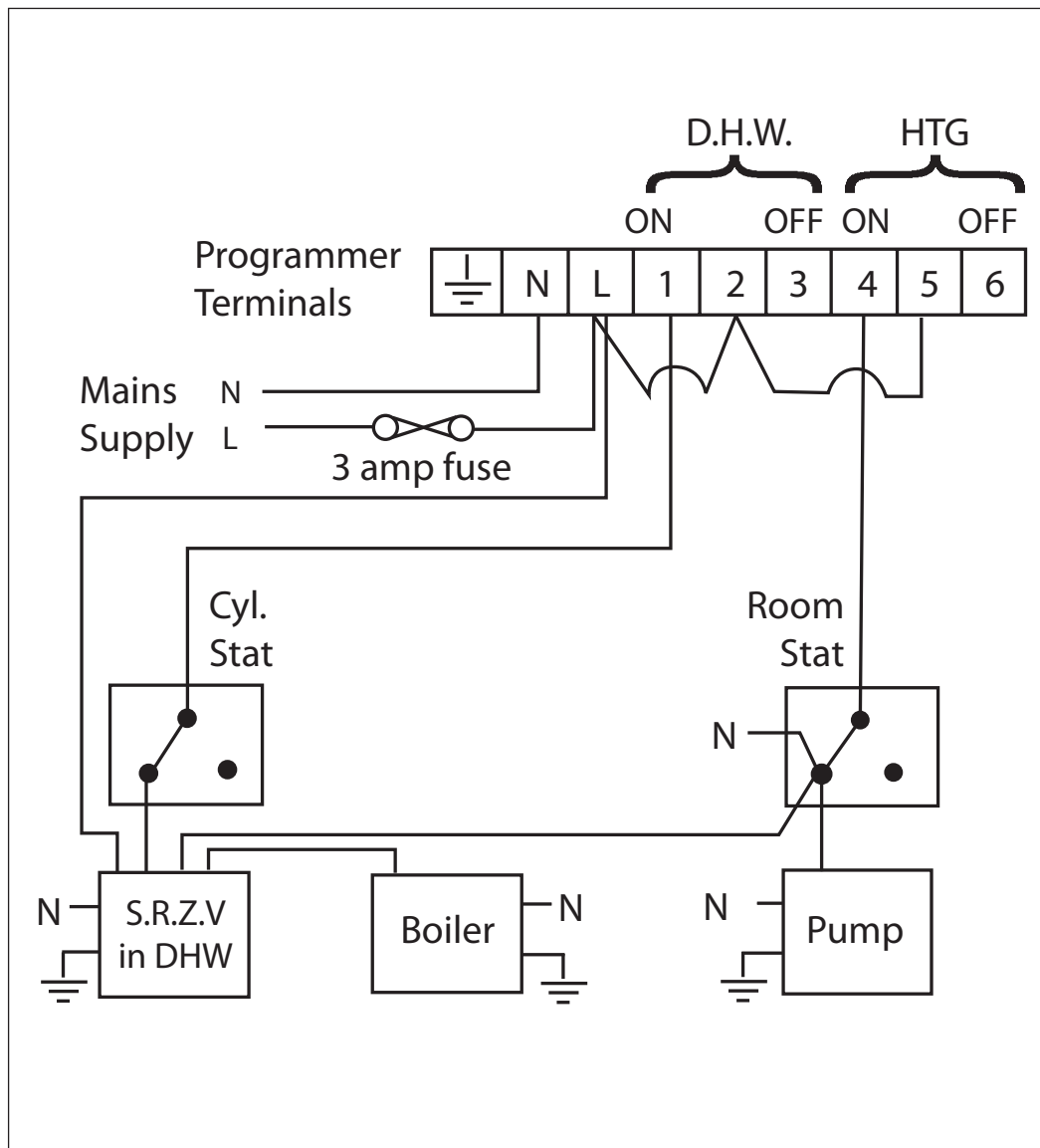
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Other Danfoss Randall products suitable for use with above circuit:-  
 AT cylinder thermostat;  
 2 x HP22 or HP28 motorised zone valve with spring return actuator  
 and SPST auxiliary switch.



### 3.4 Typical Gravity DHW Pumped HTG with Spring Return Zone Valve in DHW

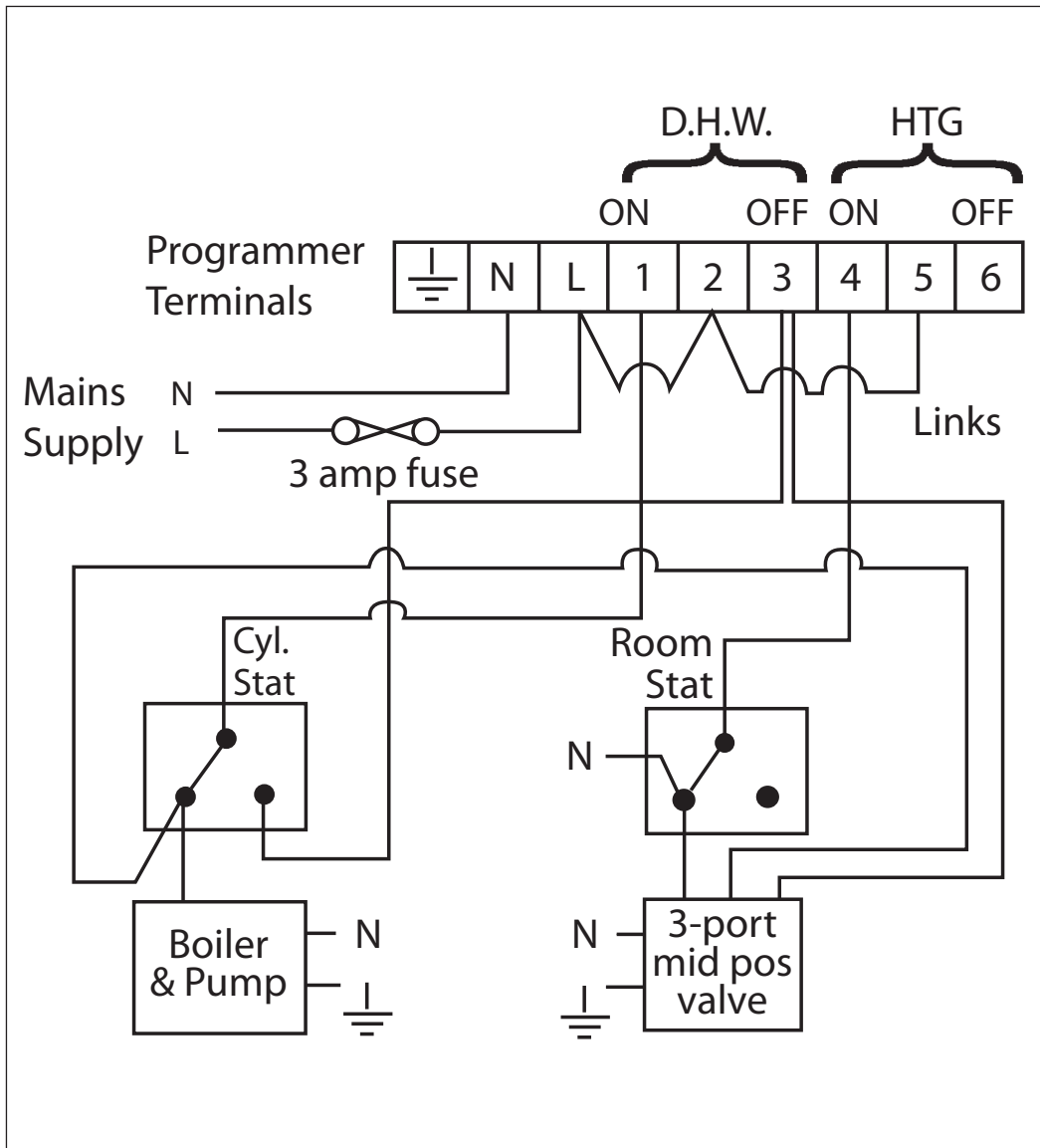


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Other Danfoss Randall products suitable for use with above circuit:-  
 AT cylinder thermostat;  
 HP28C motorised zone valve with spring return actuator and SPDT auxiliary switch.

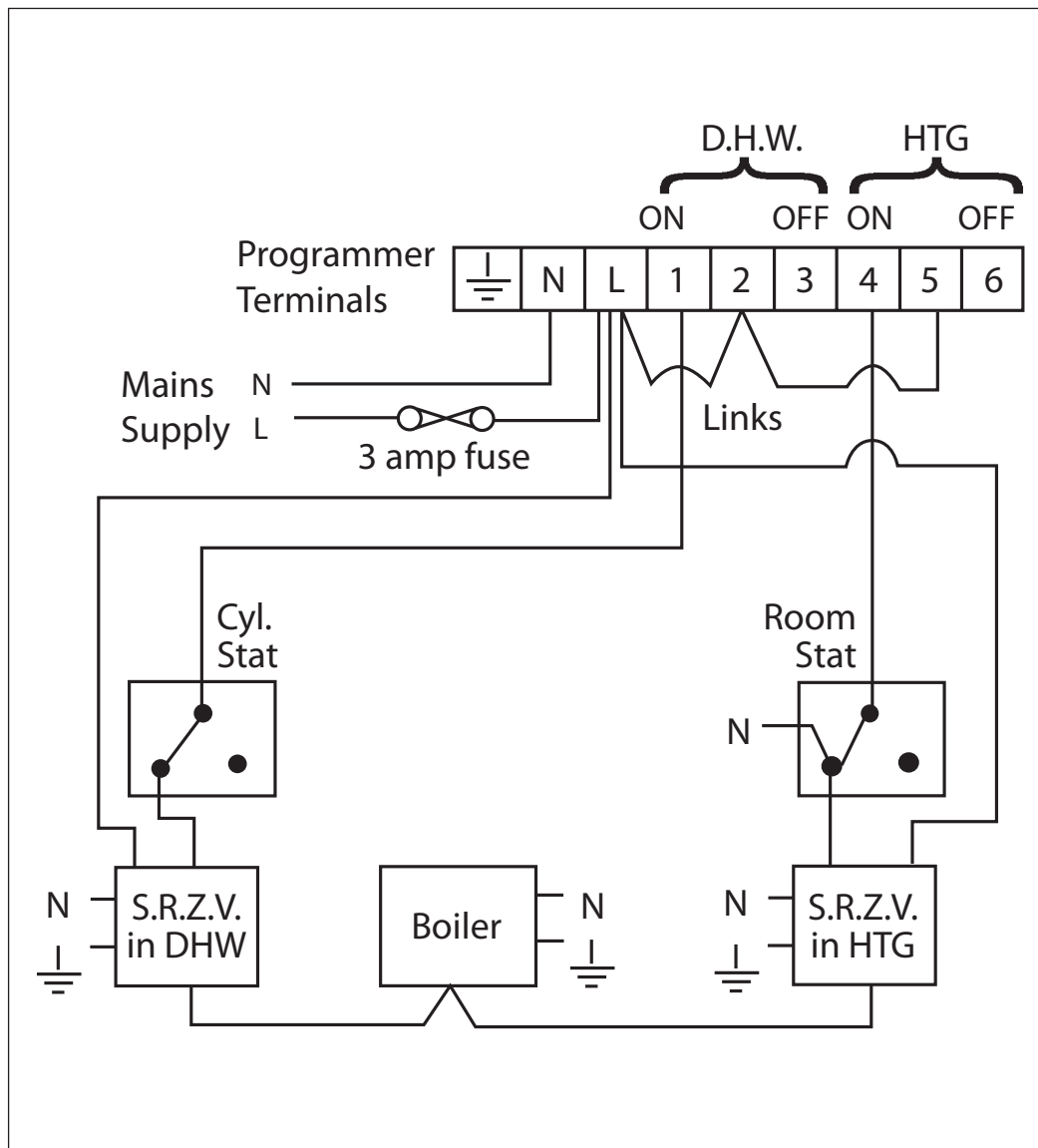
### 3.5 Typical Fully Pumped System with 3-Port Mid-Position Valve

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Other Danfoss Randall products suitable for use with above circuit:-  
 AT cylinder thermostat  
 HS3 3-port mid-position valve with spring return actuator.

### 3.6 Typical Fully Pumped System with Spring Return Zone Valve in each Service

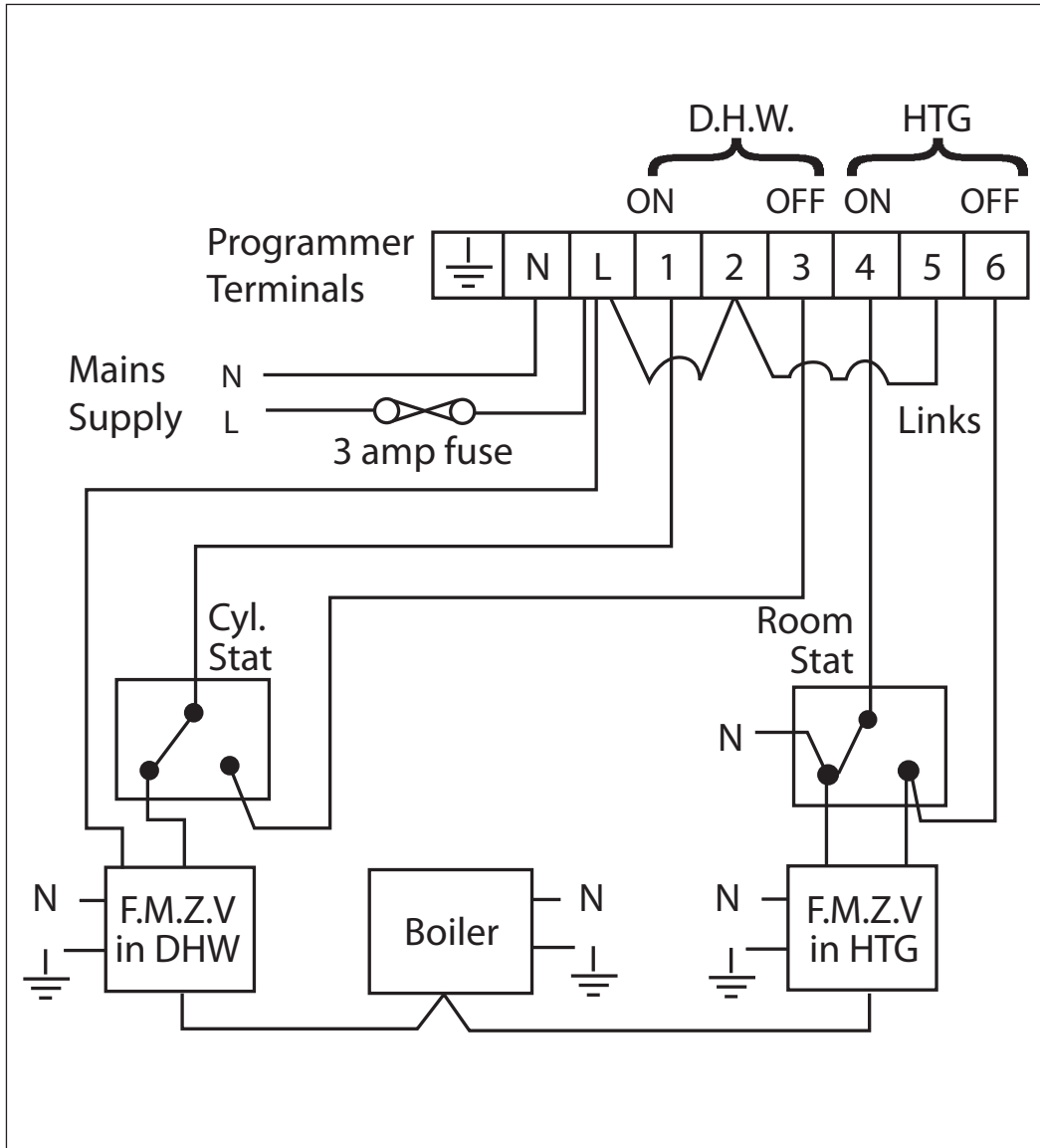


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Other Danfoss Randall products suitable for use with above circuit:-  
 AT cylinder thermostat  
 2 x HP22 or HP28 motorised zone valve with spring return actuator  
 and SPST auxiliary switch

### 3.7 Typical Fully Pumped System with Fully Motorised Zone Valve in each Service

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Other Danfoss Randall products suitable for use with above circuit:-  
AT cylinder thermostat.

## 4.0 Replacement

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Please see overleaf for a table containing replacement wiring information.

Some timecontrols are connected in different ways depending upon the type of system and/or the controls which are fitted. Consult the column headed "**NOTE: The conversion applies only if...**" to determine whether the SET3E GRAVITY or PUMPED is the correct conversion.

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If there is any doubt about the way in which the existing programmer is connected, please contact our Technical Services Department before proceeding with replacement.

**Note: The SET3E is a direct plug-in replacement for a Danfoss Randall SET5, although it does not offer 5/2 day programming option.**

	MAINS			WATER			HEATING			NOTE This conversion applies only if..	An additional terminal block is required where these (or pairs of leads) should be terminated			
	⏏	N	L	ON	COM	OFF	ON	COM	OFF		A	B	C	D
<b>DANFOSS RANDALL SET3E (PUMPED)</b>														
DANFOSS RANDALL 922/972	⏏	N	L	1	2	3	4	5	6					
DANFOSS RANDALL 4033	⏏	N	L	3	2	1	6	5	4	Pumped/Gravity link is set to pumped				
DANFOSS RANDALL SET5	⏏	7	6	4	1	5	2	-	3					
GLOWWORM MASTERMIND	⏏	N	L	1	2	3	4	5	6	Pumped/Gravity link is set to pumped				
HONEYWELL ST7100	⏏	N	L	3	-	1	4	-	2	Pumped/Gravity link is set to pumped				
HONEYWELL ST6300	⏏	N	L	8	6	7	5	3	4					
HONEYWELL ST6400	⏏	N	L	3	-	1	4	-	2					
HORSTMANN 423 AMETHYST 7 & 10	⏏	N	L	3	-	1	4	-	2					
HORSTMANN 424 GEM	⏏	2,3	1	5	-	4	7	-	6				8	
HORSTMANN LEUCITE 423 & 424	⏏	2,3	1,10	4	5	6	7	8	9	Terminal 5, 8 & 10 are linked				
HONEYWELL ST669	⏏	2	1	3	5	4	6	7	8	Terminals 5 & 7 are linked				
LANDIS & GYR RWB2	⏏	N	L	6	8	7	3	5	4					
	⏏	N	L	3	-	1	4	-	2	Pumped/Gravity link is set to pumped				

POTTERTON MINI-MINDER	⏏	N	L	3	-	1	4	-	2	Pumped/Gravity link is set to pumped			
POTTERTON EP2000, EP3000	⏏	N	L	3	-	1	4	5	2	Pumped/Gravity link is set to pumped	A	B	C D
RANDALL 3033	⏏	1,7	6	4	-	5	2	-	3				
SANGAMO FORM 1 410 & 414	⏏	4,5	6	1	3	2	8	-	7				
SANGAMO S409/1	⏏	N, 1,3	L	2	-	-	5	-	-		6,4		
SANGAMO S409/3	⏏	3,6	7	5	-	4	1	-	2				
SATCHWELL LIBRA & DHP 2201	⏏	1	2	6	7	8	3	4	5				
SATCHWELL ET1401 & ET1451	⏏	1	2	7	6	8	4	3	5				
SMITH IND CENTROLLER 90	⏏	1	2	5	-	-	4	-	-		3	6	
SMITH IND CENTROLLER 1000	⏏	N	L	3	-	1	4	-	2	Pumped/Gravity link is set to pumped			
SWITCHMASTER 800 & 805	⏏	N	L	3	-	4	1	-	2				
SWITCHMASTER 900 & 9000	⏏	N	L	3	-	4	1	-	2	Pumped/Gravity link is set to pumped	A	B	C
VENNER CHC/W2 (with stat)	⏏	N, 2, 4	L	1	-	-	A/S	-	-		A/S 3A/S,3		
VENNER CHC/W2 (air stat linked)	⏏	N, 2, 4	L	1	-	-	3	-	-				
VENNER VENOTROL 80M & 80PM (with air stat)	⏏	N, 3	L	2	-	1	A/S	-	4		A/S,5		
VENNER VENOTROL 80M & 80PM (air stat linked)	⏏	N, 3	L	2	-	1	5	-	4				





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