MAKING MODERN LIVING POSSIBLE

SET3M

Electro-Mechanical 24 Hour Programmer for Heating and Hot Water

Danfoss Heating

Installation Guide

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

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

CE

Installation Instructions

SET3M

Electro-Mechanical 24 Hour Programmer for Heating and Hot Water

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1.0 Installation Guide

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

Specification	
Power supply	230 ± 15% Vac, 50/60Hz
Switch action	2 x SPDT Type 1B
Switch rating	Max 264 Vac, 50/60Hz, 3(1) A
Setting accuracy	± 5 minutes
Timing accuracy	± 1 min/month
Enclosure rating	IP30
Max. ambient temperature	45°C
Dimensions, mm (W, H, D)	158 x 98 x 58
Design standard	EN 60730-2-7
Control Pollution Situation	Degree 2
Rated Impulse Voltage	2.5kV
Ball Pressure Test	75°C

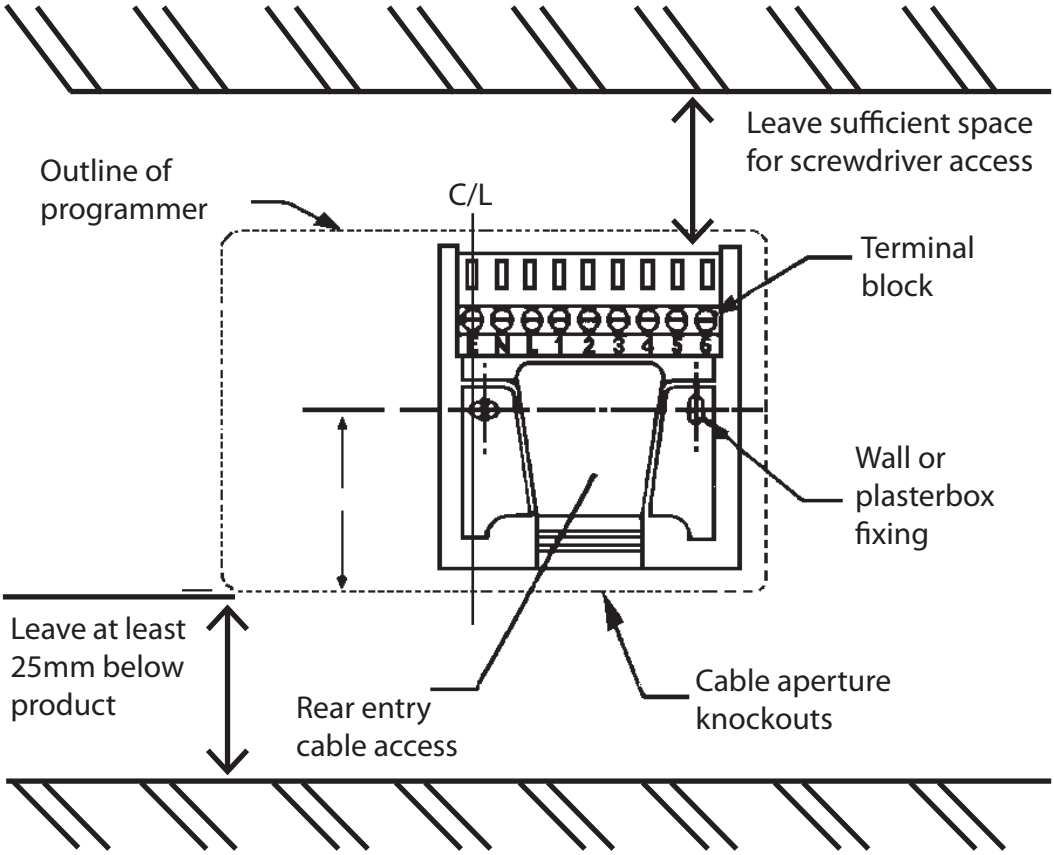
3.0 Installation

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 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, 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, fit the small plastic shorting link (which can be found taped below the left hand fixing screw hole of the wallplate) over the two pins on the rear of the plug-in module. These pins can be found in the recess near to the bottom edge of the plug-in module.

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** and **HEATING** rocker switches to the **CONSTANT** 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

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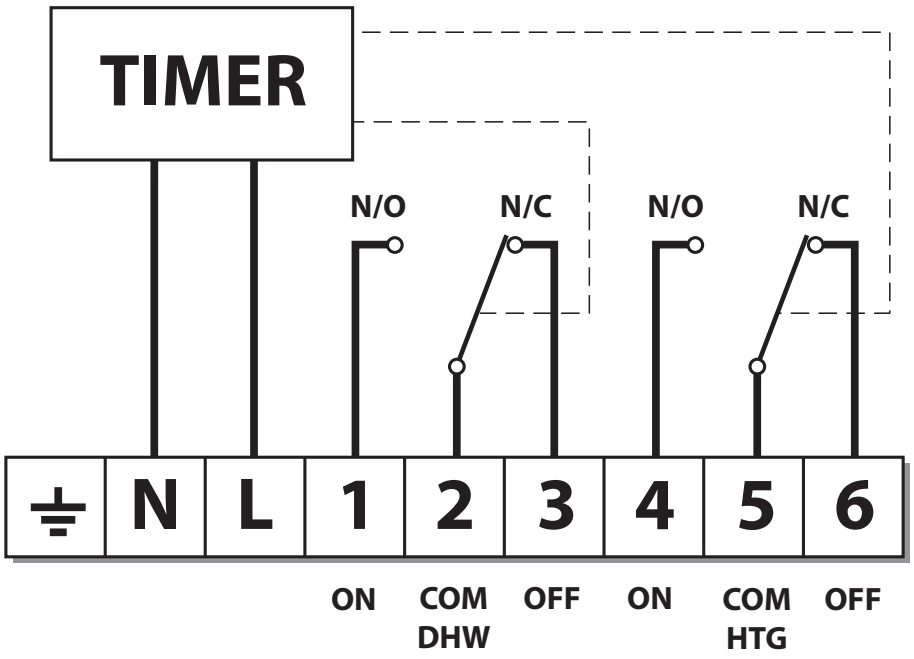
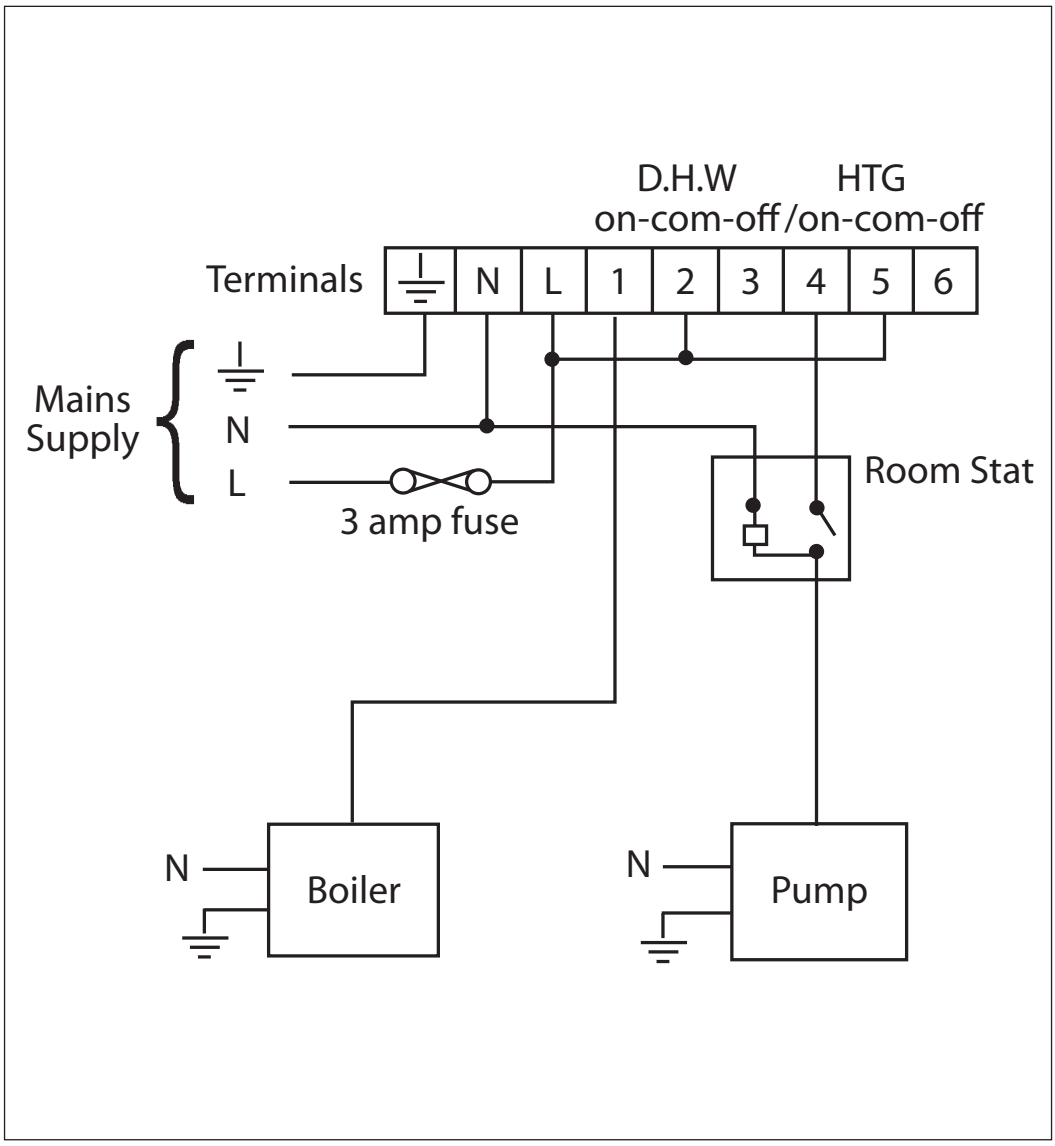
Typical wiring diagrams for various types of systems are shown on the following pages.

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.



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

3.2 Typical Gravity DHW Pumped HTG



Other Danfoss Randall products suitable for use with above circuit:-
RMT room thermostat.

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

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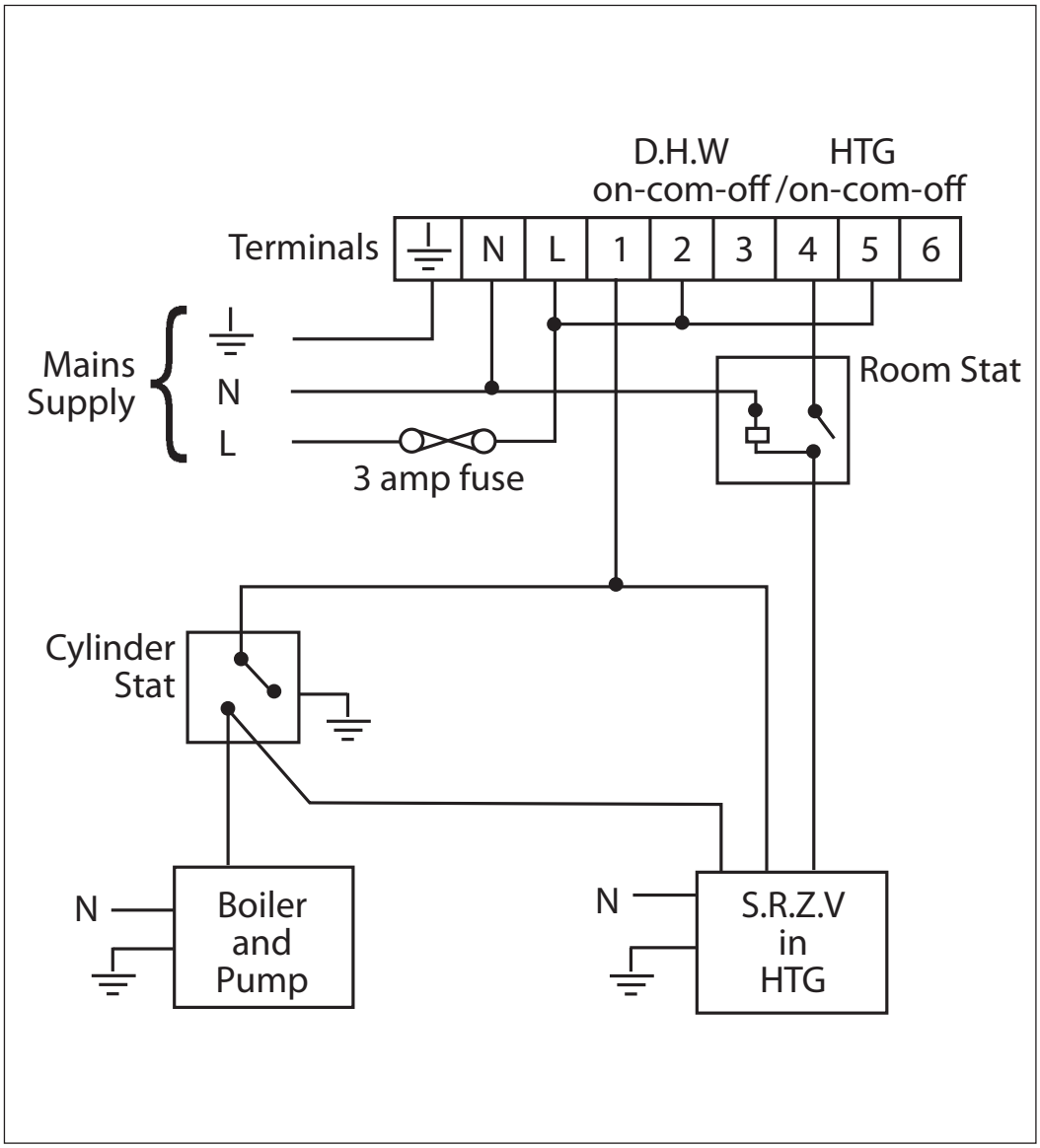
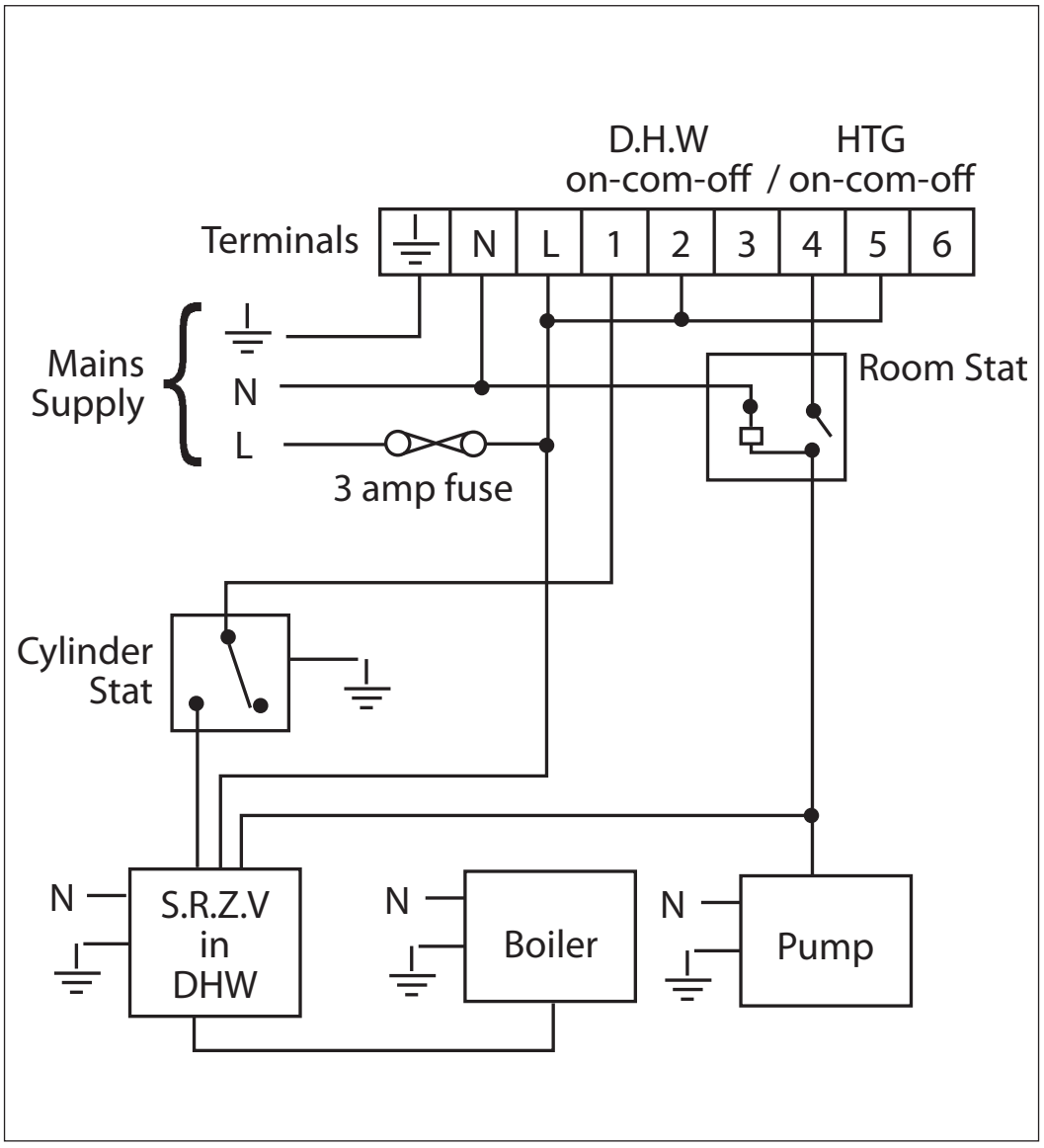


Other Danfoss Randall products suitable for use with above circuit:-
AT cylinder thermostat;
RMT room thermostat;
HP22 or HP28 motorised zone valve with spring return actuator and SPST auxiliary switch.

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



Other Danfoss Randall products suitable for use with above circuit:-
AT cylinder thermostat;
RMT room 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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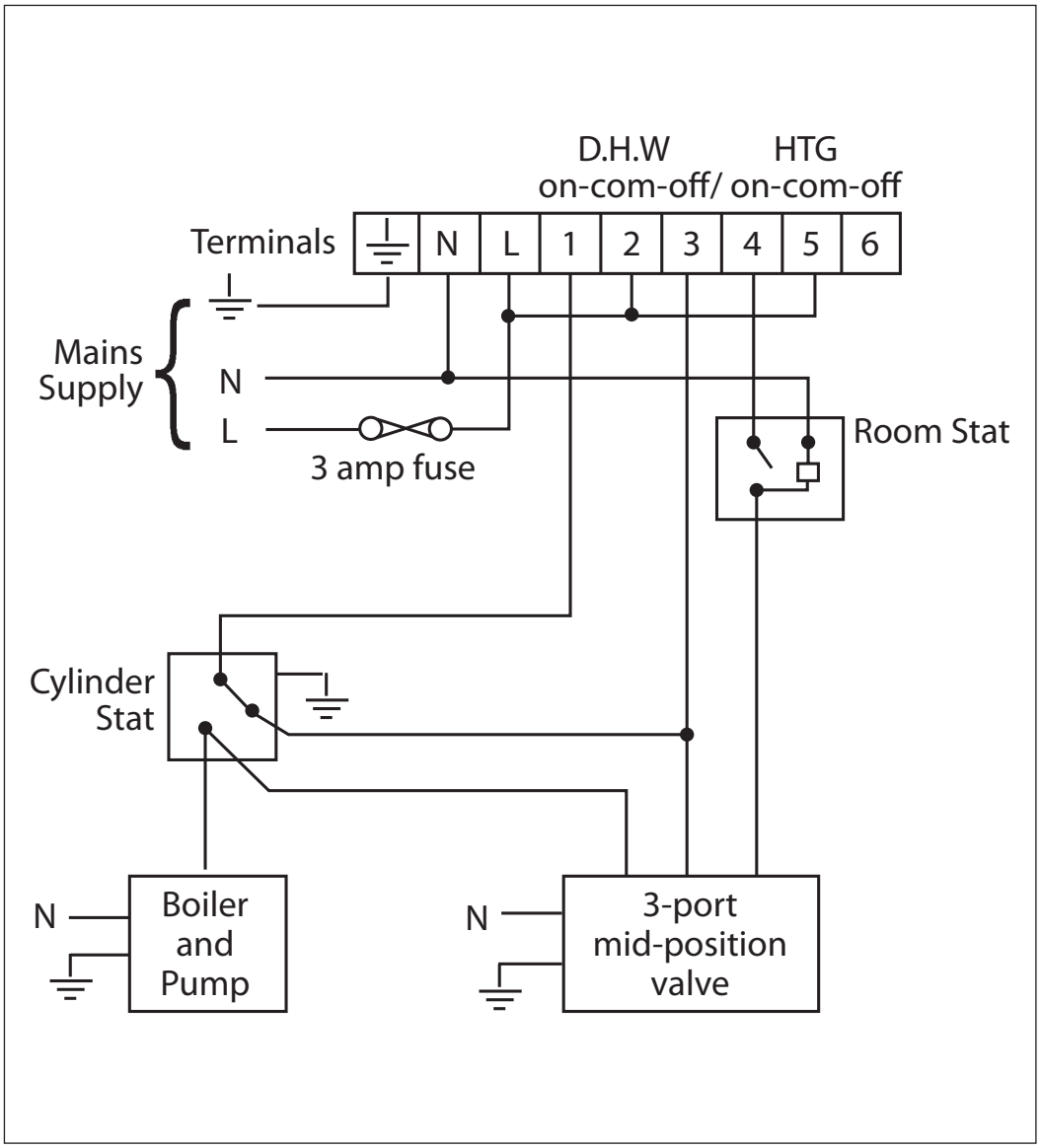
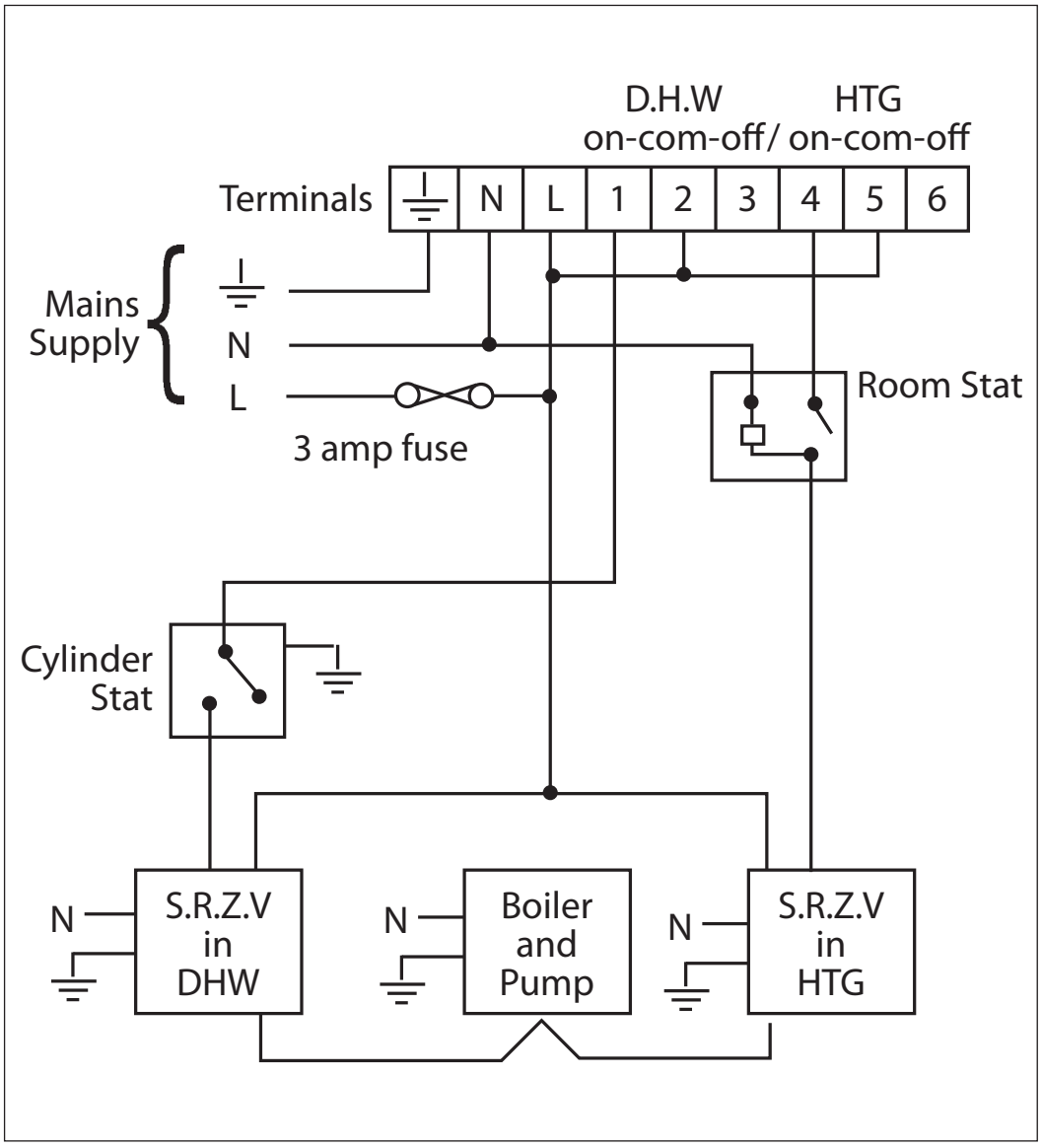


Other Danfoss Randall products suitable for use with above circuit:-
AT cylinder thermostat;
RMT room thermostat;
HS3 3-port mid-position valve with spring return actuator.

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



Other Danfoss Randall products suitable for use with above circuit:-
AT cylinder thermostat;
RMT room 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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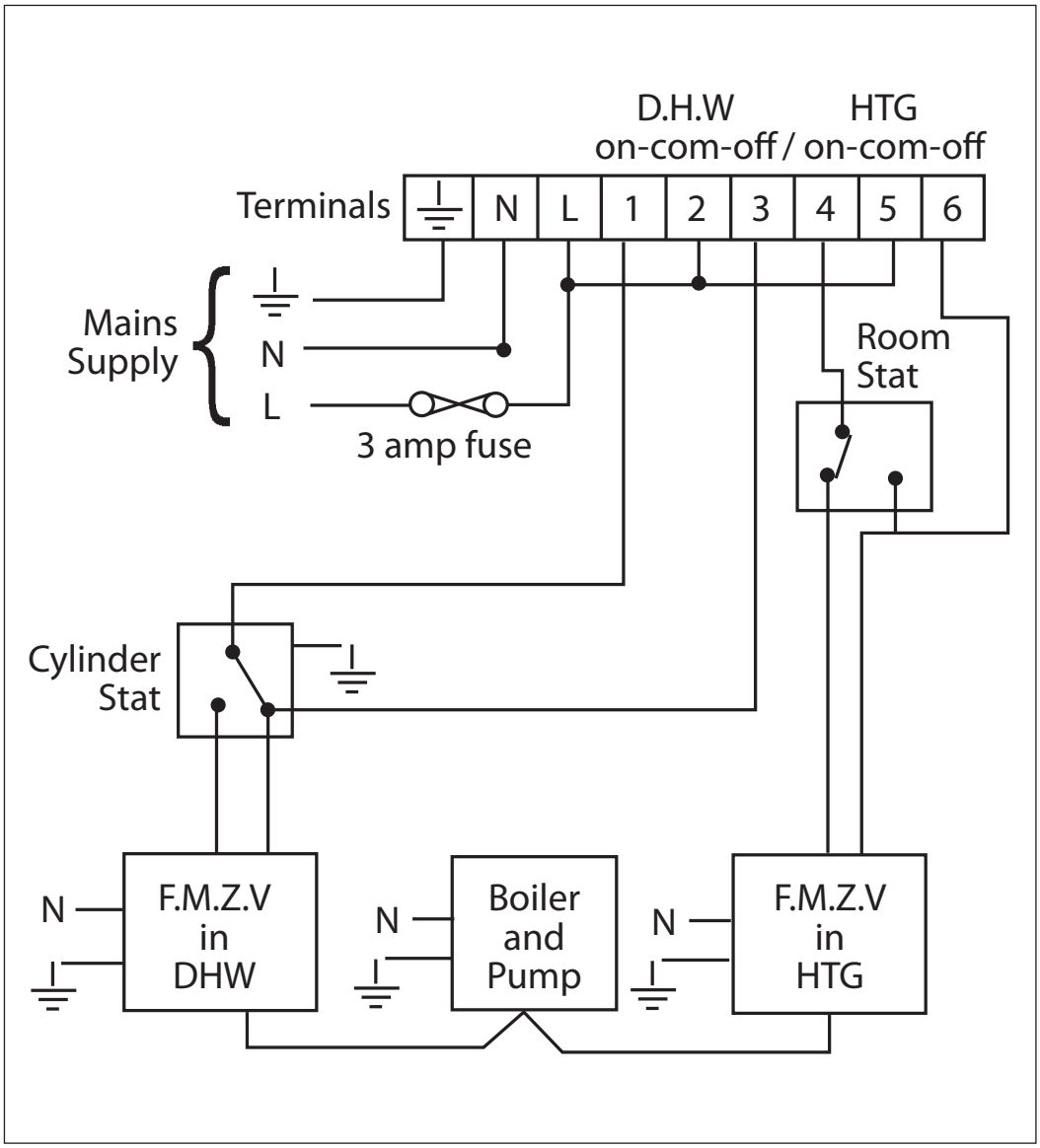

Other Danfoss Randall products suitable for use with above circuit:-
AT cylinder thermostat;
RMT room thermostat.

4.0 Replacement

Please see overleaf for a table containing replacement wiring information.

Some time controls 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 how the SET3M programmer's GRAVITY or PUMPED link should be set. 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.

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Note: The SET3M is a direct plug-in replacement for any existing programmers using the British Gas Standard Wallplate. This includes the Horstmann 425 Tiara and Diadem electro-mechanical and 525 & 527 electronic programmers.

Danfoss Randall SET3M (PUMPED)	**MAINS**			**WATER**			**HEATING**			**NOTE: This conversion only applies if...**				
	⏚	**N**	**L**	**ON**	**COM**	**OFF**	**ON**	**COM**	**OFF**					
	⏚	**N**	**L**	**1**	**2**	**3**	**4**	**5**	**6**		**A**	**B**	**C**	**D**
Danfoss Randall 922/972	⏚	N	L	3	2	1	6	5	4	Pumped/Gravity link is set to pumped				
Glowworm Mastermind	⏚	N	L	3	-	1	4	-	2					
Horstmann 423 Amethyst 7 & 10	⏚	2,3	1	5	-	4	7	-	6		8			
Horstmann 424 GEM	⏚	2,3	1, 1-0	4	5	6	7	8	9	Terminals 5,8 & 10 are linked				
Horstmann Leucite 423 & 424	⏚	2	1	3	5	4	6	7	8	Terminals 5 & 7 are linked				
Honeywell ST669	⏚	N	L	6	8	7	3	5	4					
Landis & Gyr RWB2	⏚	N	L	3	-	1	4	-	2	Pumped/Gravity link is set to pumped				
Potterton Mini-Minder	⏚	N	L	3	-	1	4	-	2					
Potterton EP2000, EP3000	⏚	N	L	3	-	1	4	5	2		A	B	C	D
Randall 3033	⏚	1,7	6	4	-	5	2	-	3					
Danfoss Randall 4033	⏚	7	6	4	1	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			

Danfoss Randall SET3M (PUMPED)	**MAINS**			**WATER**			**HEATING**			**NOTE: This conversion only applies if...**				
	⏚	**N**	**L**	**ON**	**COM**	**OFF**	**ON**	**COM**	**OFF**					
	⏚	N	L	1	2	3	4	5	6		A	B	C	D
Sangamo S409/3	⏚	3,6	7	5	-	4	1	-	2					
Satchwell 'Libra' & DHP 2201	⏚	1	2	6	7	8	3	4	5					
Satchwell ET 1401 & ET 1451	⏚	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 Ventrolnol 80M & 80PM (with air stat)	⏚	N,3	L	2	-	1	A/S	-	4	Used in a system having independent control of hot water	A/-S,5			
Venner Ventrolnol 80M & 80PM (air stat linked)	⏚	N,3	L	2	-	1	5	-	4					

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