

103

*electro-mechanical 24 hour
timeswitch for controlling
hot water and heating*

Installation & User Instructions

including Factory Replacement Units (FRU)



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

Index

Installation

Product specification	3
Installation	4-5
Wiring	6

User

Your timeswitch	7
Setting the time of day	8
Setting the programme	8-9
Selecting operating mode	10
Temporary overrides	11
Contact details	12

Installation Instructions

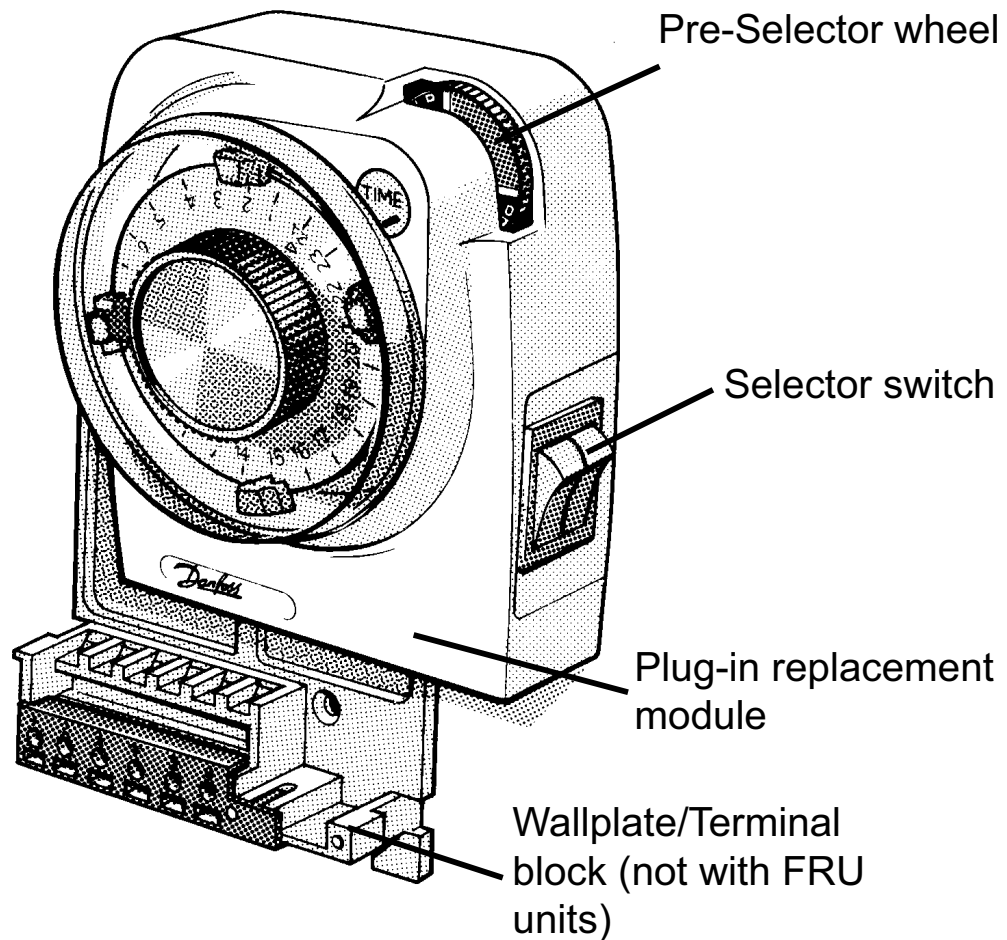
Please Note:

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 IEE wiring regulations.

Product specification

Specification	
Power supply	230 Vac \pm 15%, 50 Hz
Switching action	1 x SPST, Type 1B
Max. Switch Rating	264Vac, 50/60Hz, 6(2)A
Timing Accuracy	\pm 1 min./month
Enclosure Rating	IP20
Max. Ambient Temperature	55°C
Dimensions, mm (W, H, D)	112 x 135 x 69
Design standard	EN 60730-2-7
Control Pollution Situation	Degree 2
Rated Impulse Voltage	2.5kV
Ball Pressure Test	75°C

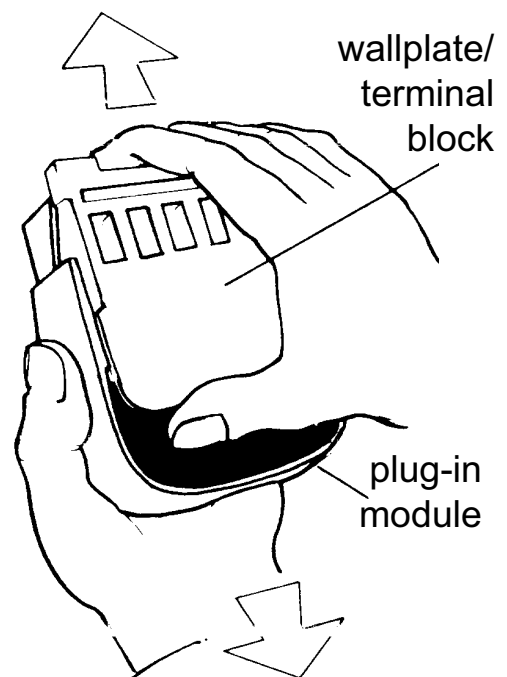
Installation



Installation

NB. For FRU units - go straight to to point 4 on page 5

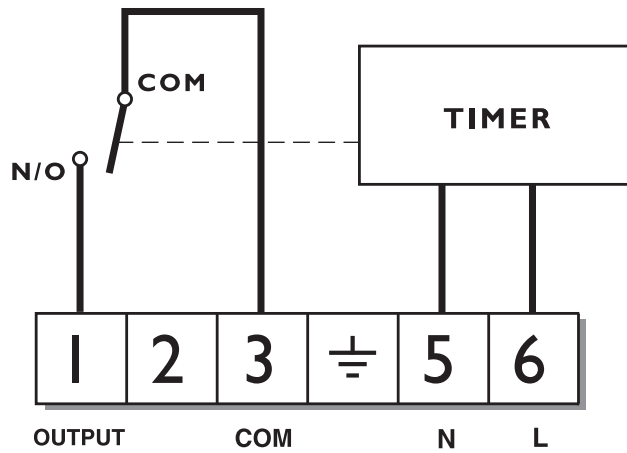
1. Loosen the fixing screw in the base of the unit to release the grey plastic Wiring Cover. Ensure the protective tape over the thumbwheel remains in place.
2. Holding the unit clockface downwards, press firmly in the centre of the wallplate and slide it from the module as shown.



3. Fix the Wallplate/Terminal Block to the wall with countersunk No.8 woodscrews or to a steel box to BS 4662. 1970 or a surface mounting steel or moulded box having centres of 23/8" (60.3mm).
4. Referring to the Wiring Diagrams on page 6, connect the unit as shown. Ensure that terminals 3 and 6 are linked where required (Mains Voltage applications) with insulated cable capable of carrying full load current.
5. Ensure all dust and debris has been cleared away from the area, then plug the module firmly into the wallplate ensuring that the hook at the top of the wallplate engages with the slot at the back of the body. Press the module down until it locates solidly.
6. Cut a cable aperture in the Wiring Cover if necessary; replace the Wiring Cover, and tighten the fixing screw.
7. Switch on Mains & test for correct operation as follows:
 - i) Remove protective tape from pre-selector wheel.
 - ii) Remove dial cover & rotate the clock dial two complete revolutions to clear the mechanism.
 - ii) Check that all positions of the Selector Switch and Tappets operate correctly. (See instructions in User Booklet.)
8. Replace the dial cover. Finally leave this booklet, containing the USER instructions with the Householder.
9. If the unit is to be left turned off and is in a dusty atmosphere, protect the pre-selector wheel by re-affixing the protective tape.

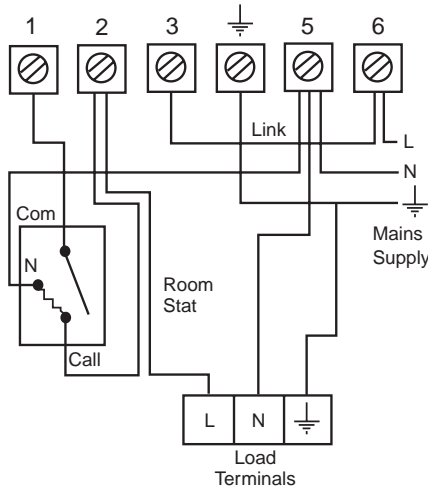
IMPORTANT: Remove tape prior to putting unit into service.

Wiring



TYPICAL EXTERNAL CIRCUITS

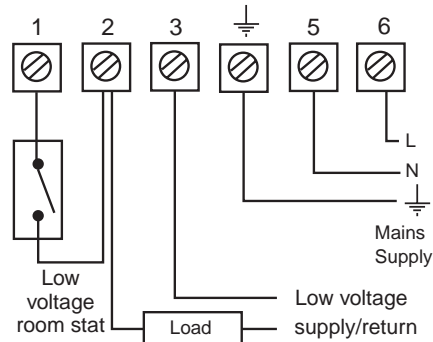
103 Terminals



1) Control of Heating Function only (Mains Voltage)

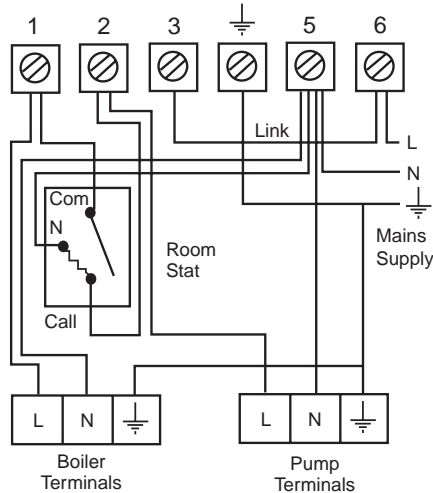
Note: If room thermostat is not required, join timeswitch terminals 1 and 2 with a link suitable for full load current).

103 Terminals



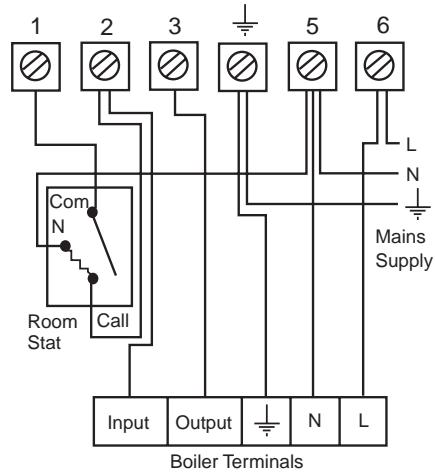
2) Control of Low Voltage Systems (e.g. warm air gas valves, low voltage burners)

103 Terminals



3) Typical gas or oil fired heating system with gravity hot water primary and pumped heating

103 Terminals



4) Typical control of heating when used with combination type boilers

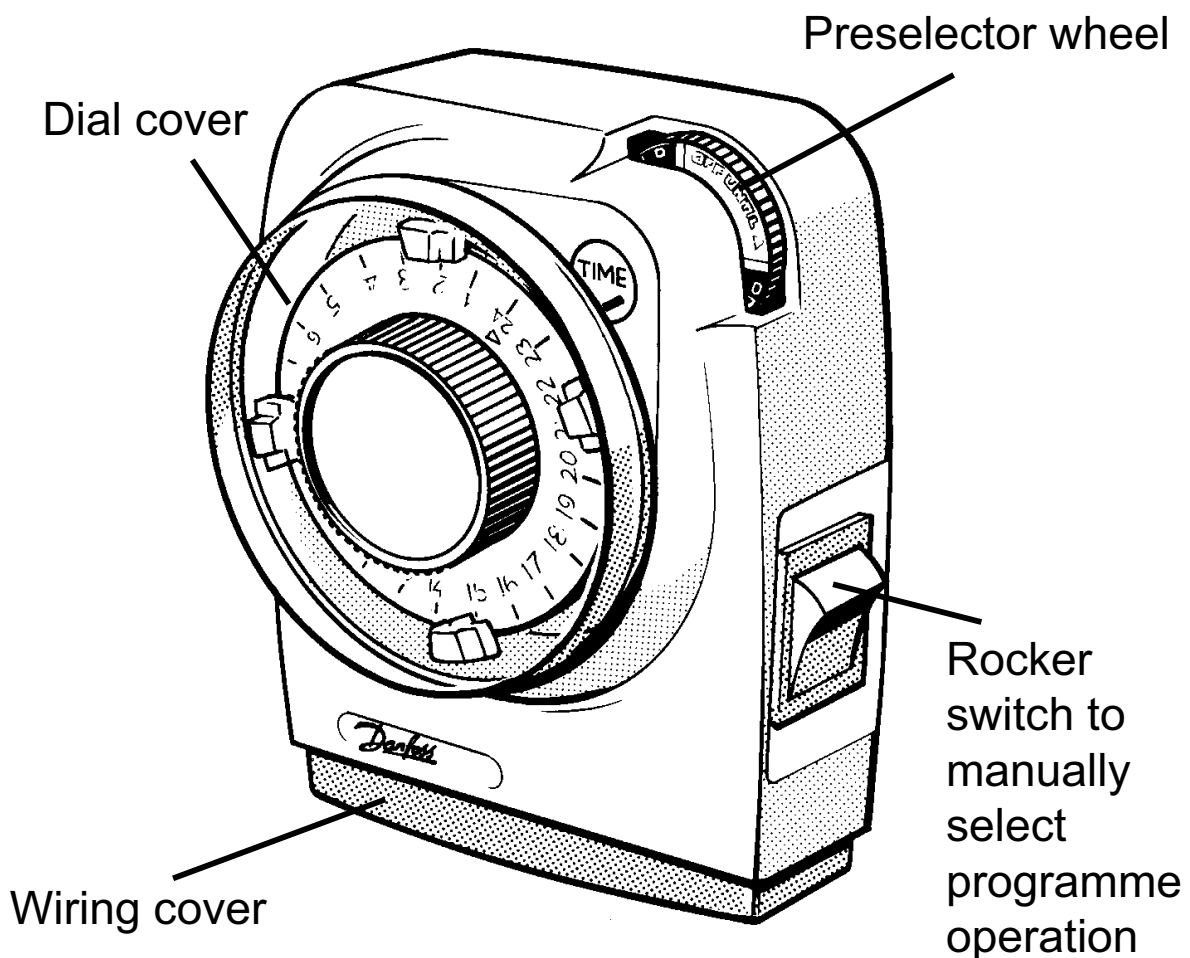
User Instructions

Your timeswitch

Your 103 timeswitch has one time output which can be used to control your heating and hot water at the same times.

Normally the 103 provides 2 ON periods and 2 OFF periods each day. However 1 ON and 1 OFF period can be obtained by using the Pre-Selector Wheel (see page 11).

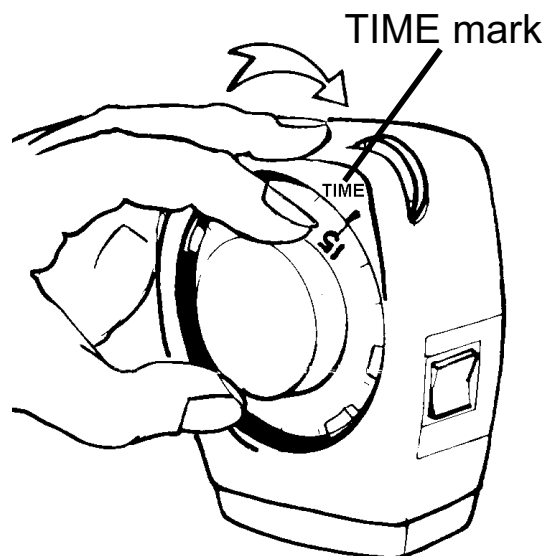
You can choose whether the 103 controls your hot water & heating at the programmed times, constantly ON or constantly OFF.



Setting the time of day

The dial on the front of the 103 displays the hours of the day using the 24hour clock.

- ❑ Remove dial cover (turn slightly to the left and pull off)
- ❑ Turn the dial clockwise until the correct time is aligned to the TIME mark (as shown).



IMPORTANT: turn the dial **clockwise only**



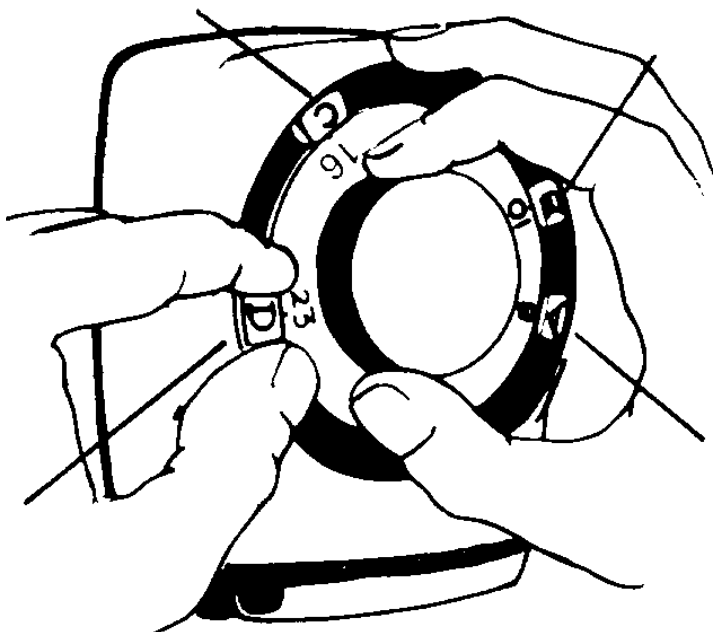
Remember you will have to re-set the time after a power-cut, and also when the clocks change in Spring and Autumn.

Setting the programme (Tappets A, B, C, D)

1. If not already done so, remove the dial cover (turn slightly to the left & pull off)
2. Decide when you want your hot water and heating to come on and go off. While gripping the dial knob slide the RED tappets to the required ON times and the BLUE tappets to the required OFF times (the tappets may be quite stiff to move)

Example:

If you want your system ON between 8am and 10am and again between 4pm and 11pm, set the tappets as shown. (A to 8, B to 10, C to 16, D to 23).



A = 1st ON
B = 1st OFF
C = 2nd ON
D = 2nd OFF

Remember:

Red tappets (A and C) switch ON
Blue tappets (B and D) switch OFF

3. Ensure that the installer has removed the protective tape covering the pre-selector wheel.
4. Using the dial knob, rotate the dial completely at least twice, clockwise only, to clear the mechanism.

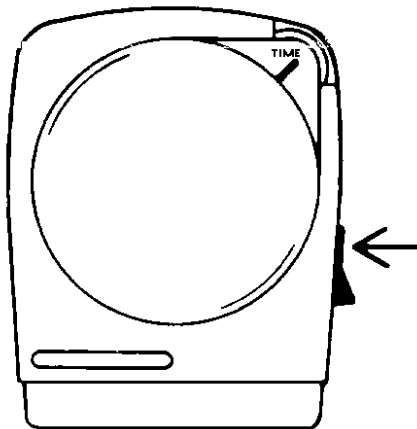
Note: Tappets can be moved around the dial in a clockwise or anti-clockwise direction, as convenient.

Selecting operating mode

The Rocker Switch on the side of the unit is used to select how your 103 controls your hot water & heating system. You can manually select either:

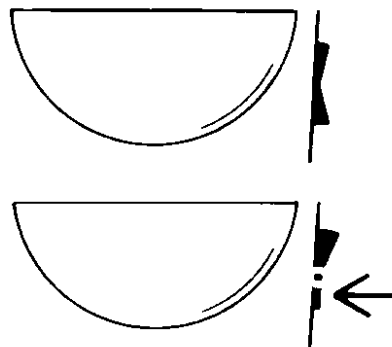
- hot water & heating follow set programmed
- hot water & heating constantly ON
- hot water & heating constantly OFF

Switch positions



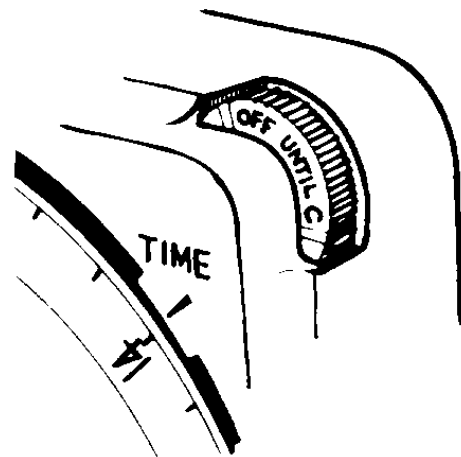
TIMED - system follows set programme

System OFF



CONSTANT - system remains permanently ON

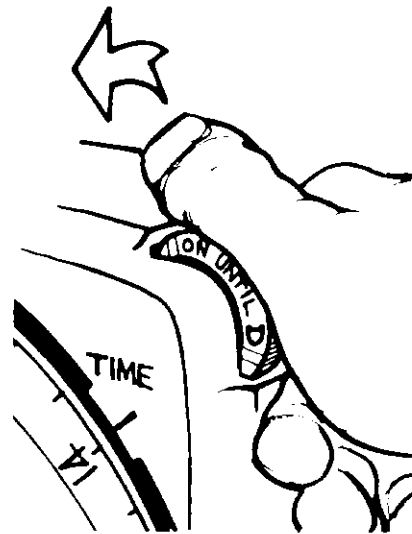
The 103 unit is now set, and the current status of the timeswitch can be seen on the wheel at the top righthand corner of the unit, (e.g. "OFF UNTIL C").



Overriding the programme using the Pre-Selector wheel

The pre-selector wheel can be used to override the set programme on occasions when you need to change from your normal heating routine.

By turning the wheel **anti-clockwise** you can turn the unit ON when it is OFF and vice versa.



Example:

- Your programme is set so that your heating comes on at 4pm but you arrive home earlier than usual, at 2pm and need the heating ON immediately.
- Turn the wheel anti-clockwise until it displays ON UNTIL `D` as shown.
- Thus the system is turned ON manually at 2pm but will revert to the set programme at the next operation (i.e. OFF at 11pm)

Some other useful pre-selections are:

ALL DAY ON (1 ON/1 OFF)

Turn the Wheel to display "ON UNTIL D".

ALL DAY OFF

Turn the Wheel to display "OFF UNTIL A".



Note: Do not operate the pre-selector whilst a tappet is close to the TIME mark. This may cause the time of day setting of the clock to be altered, and the time would then need to be reset as shown on page 8.

Still having problems?

Call your local heating engineer:

Name:

Tel:

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.



Danfoss Randall Ltd

Amphill Road

Bedford

MK42 9ER

Tel: 01234 364621

Fax: 01234 219705