

WATER HEATER CONTROLLER

INSTALLATION INSTRUCTIONS – **WARNING** – ISOLATE MAINS BEFORE INSTALLATION.

THE INSTALLATION OF THE CONTROLLER SHOULD BE CARRIED OUT BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH THE CURRENT EDITION OF THE IEE WIRING REGULATIONS.

SANGAMO LIMITED
 INDUSTRIAL ESTATE, PORT GLASGOW, RENFREWSHIRE, PA14 5XG, SCOTLAND
 TEL: 01475 745131 FAX: 01475 744567
 EMAIL: enquiries@sangamo.co.uk

This product is guaranteed for one year. Should it become defective, please contact your supplier.

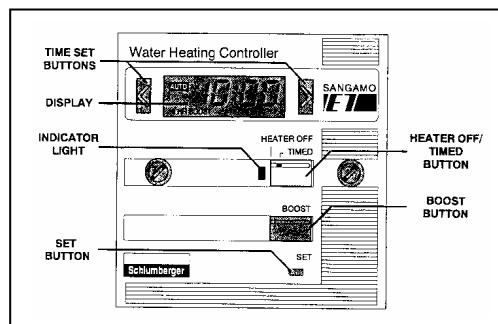
WARNING

This product contains a lithium battery. Do not incinerate, open or attempt to recharge. The Sangamo E7 must be earthed. Terminals are for fixed/flexible wiring. Provision must be made in the fixed wiring for a means of disconnection from the supply having a contact separation of at least 3mm on all poles. This can be provided by the Consumer Unit.

For the E7 to provide low cost heating it must be used in conjunction with an Economy 7, off peak or white meter supply.

Fig. 1

E7 Diagram



The Sangamo E7 can be surface or flush mounted. For flush fitting an MK flushmetal B66ZIC (35mm) box of at least 32mm internal depth must be fitted with the earth terminal at the bottom. For surface mounting use a pattrass box with a minimum internal depth of 32mm an MK 2140/WH1 is recommended.

Do not remove the E7 from its protective polythene bag until the pattrass/wall box is fitted and cleared of dust and debris.

The two securing screws for the controller and collar are held captive to the controller with sticky tape. The screws must be removed and used.

Cable of 1.5mm² to 4.0mm² should be used for power supply to the E7. Outgoing cable(s) to the immersion heater(s) must be 1.5mm² or 2.5mm², heat resistant or high temperature cables. The cables clamp at the rear of the unit is for outgoing cable(s) to immersion heater(s) only.

CONNECTION

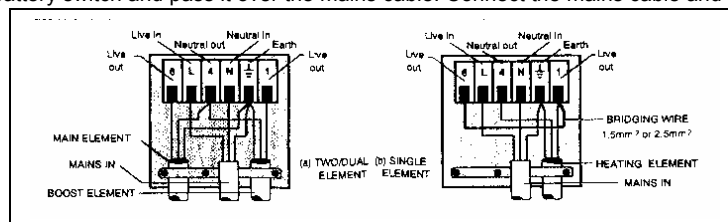
WARNING -Isolate mains before installing. Supply Terminals are for fixed wiring only. Load terminals are for fixed or flexible wiring. Remove 8mm of insulation from each wire and twist any multiple connection together.

- Terminal 1 – Live out to Boost Heater
- ≡ Earth
- N – Neutral In
- 4 – Neutral out to Heater
- L – Live In
- 6 – Live out to OFF peak Heater

Remove protective cover from terminals by loosening screws and sliding off, connect and clamp heater cable(s) (Fig. 2) Align collar with cut out (Fig. 3) giving access to battery switch and pass it over the mains cable. Connect the mains cable and refit the protective terminal cover. (Fig. 2)

Fig. 2

Electrical Connections



NOTE: When replacing a double pole switch both supply and heater connections are for fixed wiring so the collar must be in place before any cables are connected. This installation would be for the control of one heater only. Fig No. 2B.

SANGAMO E7

When all connections are secure, ensure the battery switch is in the OFF (UP) position. Using the screws provided secure the E7 to the wall. Turn on the mains supply, the LCD will now show P.M. 11:00 program on. **N.B. Some E7 switches are factory preset. This would be indicated by a notice in the packaging and such units need no further installation as programme and clock are already set up.**

An optional output connection check can be made at this stage by pressing the recessed "SET" button with a screwdriver. Doing this will cause the controller to energise the main and boost outputs in turn (The red LED will light when boost action occurs and the green LED will light when the main element is activated).

This cycle will occur twice and output connection can be checked using text lamps on heater terminals.

PROGRAMMING

The LCD should show 11:00 with program "ON" flashing:

1. Using < and > buttons set the time of the 1st On operation (time adjusts in 15 min segments) and press the blue BOOST button to enter this on the time. Programmes "OFF" is now flashing.
2. Now use < and > again to select the OFF time required and press the blue BOOST button to enter this off time. Program "ON" is now flashing.
3. A complete ON/OFF cycle is now programmed and any further ON/OFF times can be set by repeating the above. (up to 5 ON/OFF times are possible).
4. When the ON/OFF time(s) has been set, you now have the option of going into the "REVIEW" mode, to check, alter or delete settings. If you are happy with what has been set, go straight to Para 6.
5. To go into "REVIEW" mode, press < and > together. The 1st on time programmed will appear with the PROGRAMME "ON" message showing. By repeatedly pressing the BOOST button each programmed on and off time will be displayed in turn. If a change to any of the programmed times is required at this stage use the < or > buttons to show the new time required and press the BOOST button.

NOTES

If when trying to alter a setting, the <> buttons will not change beyond a certain time, it is because you are trying to overlap an existing time setting.

If you wish to delete a pair of ON/OFF settings, press the BOOST button till the ON time to be deleted appears. Press the recessed SET button with a screwdriver. That ON time and its corresponding OFF time are now deleted.

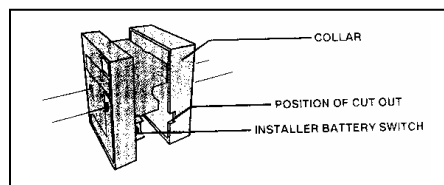
6. The real time clock should now be set as follows.

With the aid of a small screwdriver, put the battery switch to the "ON" (down) position. The LCD now shows 12:00. (access to the battery switch is by the small cut out in the collar. Fig 3).

Using a small screwdriver press and hold in the recessed SET button and using the < and > buttons adjust the LCD display until actual time is displayed and then release the SET button. At the top of the minute press the BOOST button and the real time clock will start up at time shown, the colon will be flashing. The E7 is now operational.

Fig. 3

Alignment of Collar



Specification

Contact Rating	13A 24V-	Minimum Operation Temperature	0°C continuous
Contact Type	Microgap on control. 3mm disconnection to immersion heater(s) on double pole isolator switch.	Battery Reserve	Approximately 2 years total power disconnection.
Supply	240V~ 50Hz	Display	8mm character height. Liquid crystal display, am/pm indication.
Power Consumption	10VA max	Programme settings	Up to 5 ON/OFF time periods.
Live Parts Protection		- OFF Peak	One hour push button operation.
Enclosed	This timer is totally protected by its inclosure.	- BOOST	Two hour push button operation.
Direct Protection	Normal domestic dust deposits only.	Dimensions	87mm wide x 87mm high x 36mm deep.
Moisture Protection	Ordinary: has no special protection against moisture.		
Shock Protection	Class I, (this timer must be earthed).		
Case Material	Bayblend KF 1441		
Maximum Operation Temperature	+35°C continuous		

IMPORTANT – PLEASE TAKE NOTE OF THE FOLLOWING POINTS

1. A 24hr electrical supply which uses an off peak tariff during the Economy 7 period is required. This supply must be provided on a dedicated fused immersion heater circuit via the consumer unit. The fuse rating must not exceed 15 amps and should be less for specified equipment.
2. Providing the conditions described above are met, the Sangamo E7 can be used to replace an existing double-pole isolating switch.
3. Please consult your local electricity showroom, before programming the controller for the Economy 7 period. The electricity company will advise on the preferred ON/OFF time settings.
4. Please ensure that the protective terminal cover is refitted during installation.
5. REMEMBER – Flexible cables must be clamped by their outer insulation.

USER INSTRUCTIONS

Introduction

The controller operates by automatically turning on the water heating during the Economy 7 period, to provide a tankful of low-cost hot water, and it will already have been set for this function by the installer. If however, extra hot water is required, you can also turn on the water heater manually at any time by pressing the BOOST button.

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Boost Switch: To Boost hot water during the day simply press the blue BOOST button, the LCD will show 1hr boost and the E7 will automatically time out after 1hr. Pressing the BOOST button a second time will increase the boost time to 2hrs and the LCD will display 2hr boost. A third press of the BOOST button will cancel the boost and no water heating will take place.

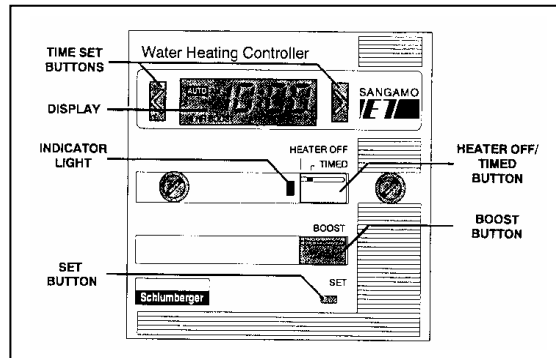
Disconnect Immersion-Heaters: The slider switch marked HEATER OFF/TIMED can be used to prevent the E7 from switching on the immersion element(s). With this switch in the OFF position, the clock will remain on but no water heating will take place, useful if you are going away on holiday for example. In the TIMED position, the E7 will work normally.

Indicator Light: The indicator light glows green when water heating takes place during the preset economy tariff period. It will glow red when boost heating is taking place i.e. during normal daytime tariff.

How to adjust the clock: The Sangamo E7 clock is very accurate and under normal circumstances it should not require any adjustment. Please note that the time display is set for GMT only, and it should not be altered to BST in the summer months. However, if adjustment becomes necessary, the procedure is as follows:

1. Using a suitable implement, press AND HOLD IN, the recessed "SET" button.
2. The time shown on the LCD can now be adjusted using the < and > buttons. The > button advances the time and the < button sets is back. To make the time change rapidly, hold the appropriate button. The display will change slowly at first but after a few seconds it will start to change more rapidly. Release the button when close to the required time setting and make any final adjustments with single presses.
3. When the clock shows the correct time, release the SET button and then press the BOOST button to restart.

Cleaning: Please use a dry, soft, lint-free cloth to clean the E7. Do not use any solvents on the E7, as it will damage the unit.



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Battery Reserve

Should a power cut occur, the Sangamo E7 is fitted with a battery which will maintain the programming for 2 years (Water heating will NOT take place).