



Electronic 7 Installation Instructions



The Electronic 7 is an advanced water heating control, which can be programmed to take advantage of cheap night-rate electricity, so that there is a tank of hot water available for the morning.

INSTALLATION AND CONNECTION SHOULD ONLY BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE IET WIRING REGULATIONS.

WARNING : ISOLATE MAINS SUPPLY. BEFORE COMMENCING INSTALLATION ENSURE THE UNIT IS PROPERLY EARTHED.

The Electronic 7 is supplied with its own surface mounting box, which can also be mounted over a single or double gang flush wall box. It should NOT be mounted on an unearthed metal surface. Means of disconnection from the supply having at least 3mm contact separation in both poles must be incorporated in the fixed wiring.

We recommends a separate fused circuit from the consumer unit (24 Hour supply) protected by a 15 amp HRC fuse or, preferably, a 16 amp MCB. In some cases immersion heater failure can damage the ELECTRONIC 7. Installation of a 100 mA RCD will provide additional protection for the unit. If the ELECTRONIC 7 is to be connected to a ring main then the spur feeding the controller should be protected in the same way.

Mounting

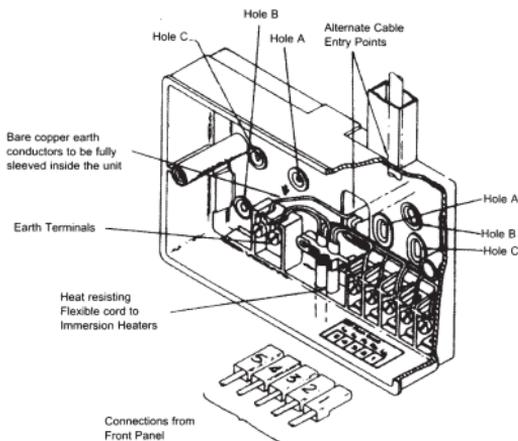
The Electronic 7 should be removed from the mounting box by unscrewing the 2 captive screws securing the unit.

Conduit Box Mounting

Use either holes marked 'A' in Fig.1 to secure to a single gang box, or the two holes marked 'C' for a double gang box. Cable entry is through the cut-out between the 2 fixing holes 'A'.

Surface Mounting

Use the two holes marked 'B' in Fig. 1 Cable entry is through the most appropriate cut-out



REMOVE THE APPROPRIATE CABLE ENTRY CUT-OUTS BEFORE FIXING THE BOX, WHERE POSSIBLE DRILL THE BOX TO PROVIDE A CLOSE FITTING ENTRY FOR CABLES AND HEAT-RESISTANT FLEXIBLE CORDS. TAKE CARE TO REMOVE SHARP EDGES.

Connections

Use a three-core cable with a minimum conductor size of 1.0mm for a 2kW heater, or 1.5mm for a 3kW heater to connect the unit to the supply. Connect the incoming wires to the terminal block as follows;

TERMINAL 1 - LIVE in

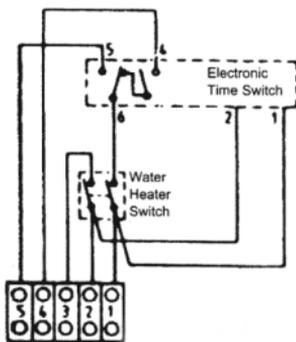
TERMINAL 2 - NEUTRAL in

TERMINAL 3 - NEUTRAL(s) out to immersion heater(s)

TERMINAL 4 - LIVE out to Boost immersion heater

TERMINAL 5 - LIVE out to Off-Peak immersion heater

Clamp all surface wiring adjacent to the box or use trunking where appropriate. Secure the heat resistant flexible cords from the immersion heaters using the cable clamp in the box.



Link terminals 4 & 5 when using a single immersion heater

Single Element Immersion Heaters

The 3 core flexible cord should be heat-resistant and rated to 85°C.

TERMINAL 4 (Boost live output) should be connected to TERMINAL 5 (Off-Peak live output) and to the immersion heater.

The Neutral connection should go to TERMINAL 3 and the Earth connection to the EARTH TERMINALS.

Dual Element Immersion Heaters

The elements should be controlled through separate thermostats. In practice the thermostat for the top (short) element is usually set 5-10°C less than the thermostat for the long Off-Peak element. The 3 core flexible cords should be heat-resistant and rated 85°C.

TERMINAL 4 (boost live output) should be connected to the short element and TERMINAL 5 (Off-Peak live output) to the long element.

The Neutral connections should go to TERMINAL 3 and the Earth connection to the EARTH TERMINALS.

Twin Immersion Heaters

The thermostat for the top immersion element should be set lower than the thermostat for the bottom immersion heater.

The 3 core flexible cords should be heat-resistant and rated 85°C. TERMINAL 4 (boost live output) should be connected to the top immersion heater and TERMINAL 5 (off-peak live output) to the bottom immersion heater. The two Neutral connections should go to TERMINAL 3 and the Earth connections to the EARTH TERMINALS.

When wiring is complete ensure that all terminal screws, including the earth terminal screws are securely tightened to achieve a minimum torque of .75Nm.

Commissioning Instructions

The commissioning switch is on the rear of the unit (once removed from the back box) and must now be set to achieve the correct operation of the controller and to engage the BATTERY RESERVE. The display will remain blank with the switch in the "OFF" position.

It is essential that the correct commissioning switch position is selected. Incorrect setting of the commissioning switch may result in inefficient use of the available off-peak supply. On installation the installer needs to select whether the Electronic 7 will switch at GMT times throughout the year or whether the timings need to alter as the clocks change.

For example:

GMT/BST – Switching time will be changed by one hour. In the GMT/BST mode the clock display will match the actual switching time.

GMT ONLY – Switching will always take place at GMT times (summer and winter). The clock display will tell the correct time of day.

If Connection is to be made where a 2-Rate electricity meter is controlled by a Radio Teleswitch or other equipment which control tariffs remotely or seasonally, it is essential that before setting the commissioning switch you find out how the off-peak times are controlled.

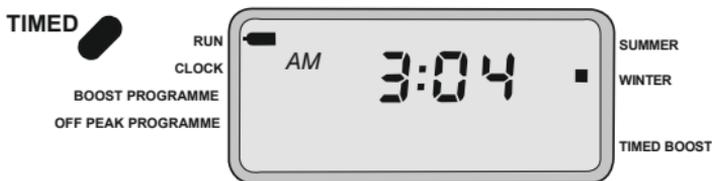
The Customer Service Centre of your Electricity Supplier will confirm information regarding Off-Peak electricity timing and the switching method used for your area. On installations where the 2-Rate electricity meter is controlled by a mechanical Tariff Timeswitch the commissioning switch should be set to GMT ONLY.

Time Display

The Electronic 7 is fitted with an automatic clock that is pre-set on manufacture and should not normally require any adjustments by the user.

The clock will automatically adjust the time to Summertime (BST) or Wintertime (GMT) as appropriate and this setting is always shown on the clock display.

No adjustment is needed to be made by the installer/user.



Resetting The Unit

Sometimes electronic equipment can become scrambled or frozen. To overcome this you should reset the unit.

This can be achieved by holding down the buttons marked "BOOST, MINUS, PLUS & SELECT" simultaneously.

The clock should now be adjusted to the correct time of day by following Setting Time of Day on page 5.

Setting Time of Day

Press the green "SET" button until the indicator on the left hand side of the screen is next to "CLOCK".



Adjust the hour by pressing the white "MINUS" or "PLUS" buttons. Once you are happy with the hour selected, press the blue "SELECT" button.



The minutes will now flash. To adjust the minutes you need to once again press the "MINUS" or "PLUS" buttons.



Once you are happy with the time selected, press the blue "SELECT" button, this will now take it back to the "RUN" position on the left hand side of the screen.

Setting Off-Peak Heating Periods

Press the green SET button until the indicator on the left hand side of the screen is next to "OFF PEAK PROGRAMME"



The hour will now flash for the 1st on time, this can be adjusted by pressing the "MINUS" and "PLUS" buttons. Once you are happy with the hour you have selected press the "SELECT" button



This will then make the minutes flash, which can be adjusted by pressing the "MINUS" and "PLUS" buttons as required. Once you are happy with the minutes, press the "SELECT" button to take you to the 1st off time



The hour will be flashing on the 2nd on time, if this is not required then press the green "SET" button which will take you back to the main screen.



Use the "MINUS" and "PLUS" buttons to adjust the hour. When you are happy with the hour selected then press the "SELECT" button which shall now take you to the minutes. Press the "MINUS" and "PLUS" buttons to SELECT the minutes you require and once you are happy with the minutes press the "SELECT" button.

If your electricity tariff offers multiple off peak periods then the 2nd and 3rd off peak periods should be set up by repeating the above procedure. Should you not require any further off-peak settings ensure that the remaining periods are set at the same time. For example; 2nd On 12:00am - 2nd Off 12:00am; 3rd On 12:00am - 3rd Off 12:00am (These are de-fault settings).

Default Time Settings

Default Times					
1st ON	1st OFF	2nd ON	2nd OFF	3rd ON	3rd OFF
2:15am	7:15am	12:00am	12:00am	12:00am	12:00am

Note: These are the default settings assuming the immersion heater is ON only during the night hours and OFF during daytime hours.

After re-setting the unit the off-peak heating times will revert back to the default factory settings, these are shown above, however if you wish to change these times please proceed as instructed in the SETTING OFF-PEAK HEATINGS PERIODS part of this manual on page 5.

Completing The Installation

To assemble the controller to its mounting box, first push the connectors numbered 1-5 into the corresponding numbered terminal as shown in Fig.1

Carefully offer the controller to the box and secure with the fixing screws, ensuring the wiring does not become damaged.

Switch on the mains supply and put the rocker switch in the TIMED position.

Questions

(Q) There is no display on the screen?

(A) Ensure there is mains supply getting to the unit and that the battery switch on the rear of the unit is in either the GMT /BST or GMT ONLY position.

(Q) The display has become frozen?

(A) This could be due to local electrical interference. Using the RESET procedure in this manual may rectify the fault.

(Q) How do I change the back-up battery?

(A) The back-up battery is integral to the unit and will save the settings for at least two years if the power is disconnected. The battery is NOT replaceable and any attempt to remove it will invalidate the warranty.

Specification

Electrical

Purpose of Control	Electronic Immersion Heater Control for E7
Tariffs	
Contact Rating	13A Amp 230V AC (Suitable for Immersion Heaters up to 3kW)
Contact Type	Micro-disconnection
Switch Type	Rocker switch, double-pole micro-disconnection
Supply	230V AC 50Hz only
Protection	Class I
Control Action	Type 1B,R
Operating Time Limitation	Intermittent
Software Class	Class A
Battery Type	Lithium
Battery Life	2 Years
Display	Custom LCD, Backlit
Clock	12 hour AM/PM
Display Time Adjustment	1 Minute Intervals
Switch Time Adjustment	1 Minute Steps
Programme Selection	Off-Peak, 3 periods per day. Programmable Boost & 1 Hour Manual Boost

Mechanical

Dimensions	170mm x 115mm x 60mm
Case Material	Thermoplastic, flame retardant
Ball Pressure Test Temperature	75°C
Mounting	Custom surface mounted back box,.Independantly mounted

Environmental

Impulse Voltage Rating	Cat III 4000V
Enclosure Protection	Ip30
Pollution Degree	Degree 2
Operating Temperature Range	0°C to +35°C
Compliance	
Design Standard	EN 60730-2-7, BS EN 60730-1, BS EN 60720-2-7, BEAB Approved

RoHS

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