

## 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, put the rocker switch in the TIMED position.  
The battery requires charging before the clock will rotate, this can take up to 15 minutes

### QUESTIONS AND ANSWERS

On installation the clock does not rotate	The battery requires charging before the clock will rotate, this can take up to 15 minutes.
How do I know if the is still under warranty	Economy 7 Quartz comes with a 2 year guarantee from the date of manufacture. This date is located on the rear of the unit, indicated by a month over a year. The Economy 7 Quartz must only be removed from it's backbox by a qualified electrician.
How long will the battery back-up last on the Economy 7 Quartz.	The battery will continue the clock rotating for 150 Hours and will be recharged when the mains power supply is restored.

### SPECIFICATION

13A 230V AC 50Hz  
Electro-Mechanical  
Suitable for immersion heaters up to 3kW  
Live Parts - Enclosed  
Dirt protection - Normal situation  
Moisture protection - Ordinary  
Operating Temperature - 0 - 35°C  
Shock protection - Class 1  
Contacts - Micro-disconnection  
Battery reserve - 150 Hours  
Size - 170mm x 115mm x 56mm (excluding rocker switch)

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**ECONOMY 7 QUARTZ  
INSTALLATION INSTRUCTIONS**



**HORSTMANN**

The Horstmann Economy 7 Quartz is an Electro-mechanical water heating control, which can be set 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 IEE WIRING REGULATIONS.**

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

The Economy 7 Quartz is supplied with it's 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 recommend 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 Economy 7 Quartz. Installation of a 100 mA RCD will provide additional protection for the unit. If the Economy 7 Quartz is to be connected to a ring main then the spur feeding the controller should be protected in the same way.

### MOUNTING

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

### 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

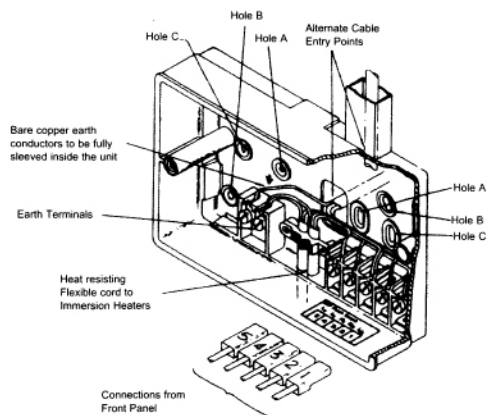
Use the two holes marked 'B' in Fig.1 Cable entry is through the most appropriate cut-out

# CONNECTIONS

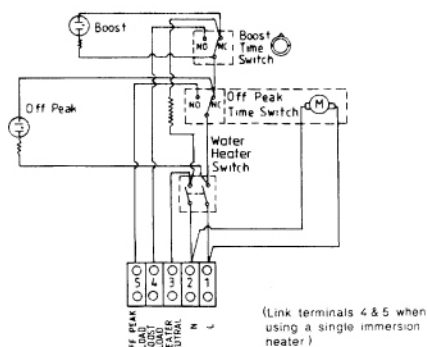
Use a three-core cable with a minimum conductor size of 1.0mm<sup>2</sup> for a 2kW heater, or 1.5mm<sup>2</sup> for a 3kW heater to connect the unit to the supply. Connect the incoming wires to the terminal block as follows;

- 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.



Internal circuit diagram of Economy 7 Quartz.



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

## ADJUSTING THE OFF-PEAK TIME PERIOD

After removing the mechanism from its pack, removing the fixing screws, check the Off-Peak time period. (The Off-peak switching times are available from the supplying Regional Electricity Company.) If necessary this can be adjusted as detailed below.

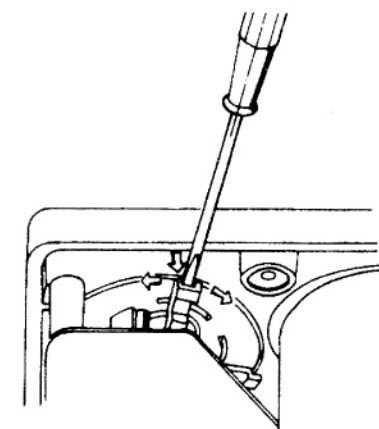
Ensure that the Timeswitch is not connected to the mains supply.

The adjustable dial has been designed so that the ON and OFF time cams can be set between 11:30pm and 9:00am in steps of 15 minutes.

The cams can be set between the minimum setting of 4<sup>1/2</sup> hours to maximum of 7 hours. The cams will have been pre-set on production, if a different time setting is required the cams should be adjusted before installation. All adjustments are made from the back of the front cover.

First, rotate the dial until the Orange ON cam is visible (See diagram). Locate a screwdriver in the slot and press cam away from the underside of dial. Because of the stops the Blue OFF cam may have to be re-positioned before the ON cam can be set.

The cam can now be positioned at the desired time, by sliding it clock-wise or anticlockwise on the dial. Through the clear pannel located on the face of the dial you can observe the position of the cam. Removing the screwdriver will automatically lock the cam in position. Both the Blue and Orange cams are set with a similar operation.



## 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 TERMINAL3 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

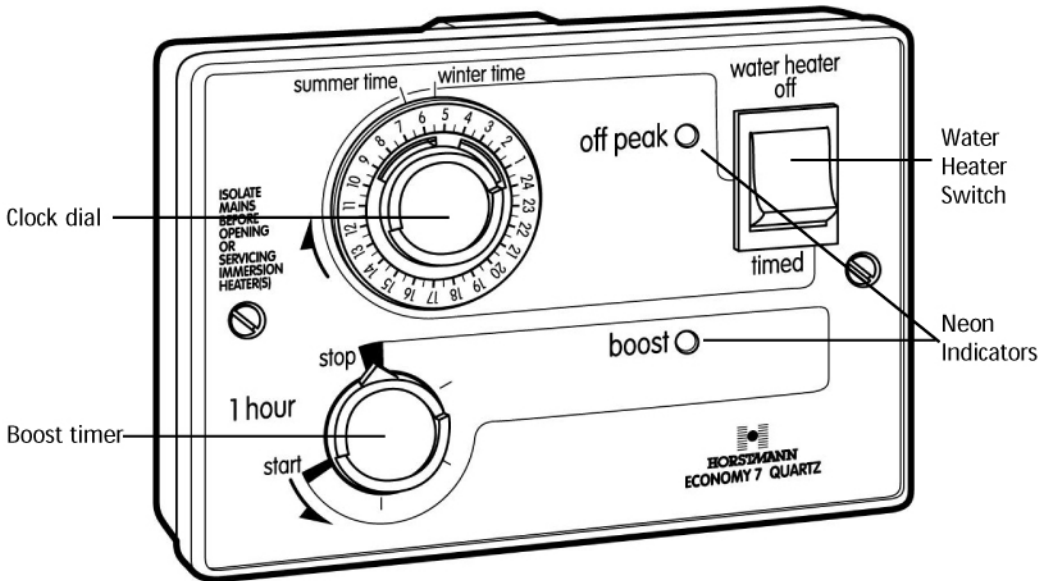
The thermostat for the top immersion element should be set lower than the thermostat for the bottom immersion heater.  
The 3 core flexible cords should be heat-resistant and rated 85°C. TERMINAL 4 (boost live output) should be connected to the top immersion heater and TERMINAL 5 (off-peak live output)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



## HORSTMANN

The Horstmann Economy 7 Quartz is an Electro-mechanical water heating control, which can be set to take advantage of cheap night-rate electricity, so that there is a tank of hot water available for the morning.

### FRONT VIEW OF ECONOMY 7 QUARTZ



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# THE CLOCK

The 24 Hour dial rotates once each day. It should be set so that the time line is against the 'WINTER TIME' line in Winter or the 'SUMMER TIME' line during British Summer Time.

Adjust the clock by turning the dial clockwise. A battery reserve will keep the clock running even if the mains supply is interrupted for up to 6 days.

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## WATER HEATER SWITCH

In the WATER HEATER OFF position the heaters remain OFF but the clock will run and the stand-by battery will remain charged.

In the TIMED position the over-night immersion heaters will be switched ON and OFF at the pre-set times.

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## BOOST TIMER

When extra Hot water is required during the day the Boost Timer can be used. Where two immersion elements are fitted in the tank the Boost Timer switches on the upper heater only.

Turn the knob anti-clockwise to the 'START' position to operate the Boost Timer. The Boost period can be limited by turning the knob anti-clockwise to one of the intermediate positions if less than the maximum Boost period is required. The immersion heater will be switched OFF after the selected period, or when the temperature of the water reaches the thermostat setting. If required, further Boost periods can be selected. The electricity used will be at the appropriate day tariff rate.

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## NEON INDICATORS

The OFF-PEAK neon will illuminate when the immersion heater is activated

The BOOST neon will illuminate when the Boost timer is in use.

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## OFF-PEAK HEATING PERIOD

Your Installer would have already set the Off-Peak heating time to suit local switching times as supplied by your Regional Electricity Company.

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