

ELECTRAFLOW

THERMAL STORE RANGE
FOR ELECTRIC HEATING AND HOT WATER



ELECTRAFLOW CONTROLLER USER INSTRUCTIONS



McDonald
Water Storage

Hot Water Storage Solutions

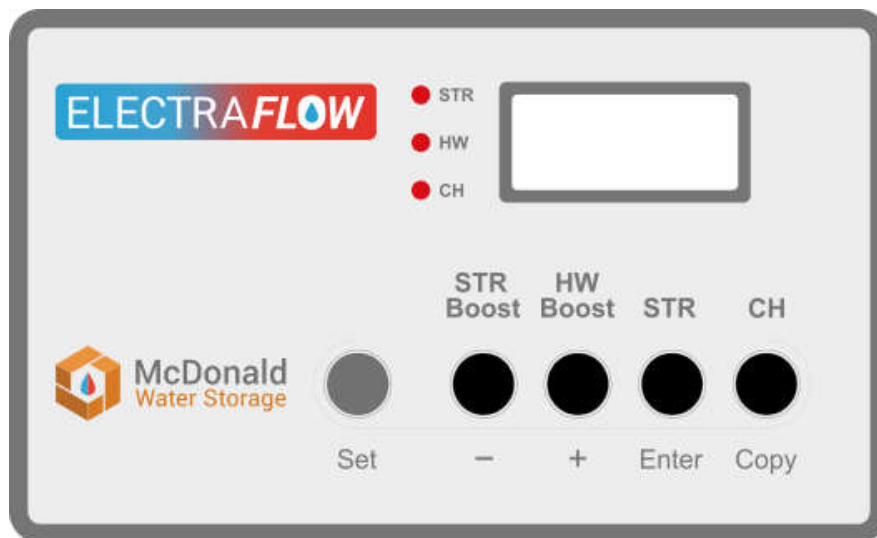
INTRODUCTION

This Controller has been specifically developed for the Electraflow Thermal Store heating system, to efficiently provide you with both hot water and central heating at times tailored to meet the needs of your household.

The timer allows you to charge the store with off peak electricity and heat the complete volume of hot water for the following day.

The two boost options provide the flexibility to either boost the store using the bottom immersions for heating or the top immersion during the Summer for hot water.

USER CONTROLS



The Controller has a backlit display and 3 indicators to show the system status during normal operation. The display is also used to change the controller's settings via an easily accessible configuration menu.

The display will fully illuminate for approx. 1 minute whenever a button is pressed.

When setting or adjusting, the Controller will return automatically to normal operation after no buttons are pressed after approximately 1 minute.

GENERAL FUNCTIONALITY

During normal operation the first line of the Controller's display shows the current time, whilst the second line shows the status of the Off-peak charging of the Store (STR), the hot water (HW) and central heating (CH).

The 3 indicators to the left hand side of the display show which channels of the Controller are active:

- STR - The Off-Peak Timer is on or if flashing the STR Boost is on
- HW - The Hot Water Boost in on when flashing
- CH - The Central Heating Timer is on

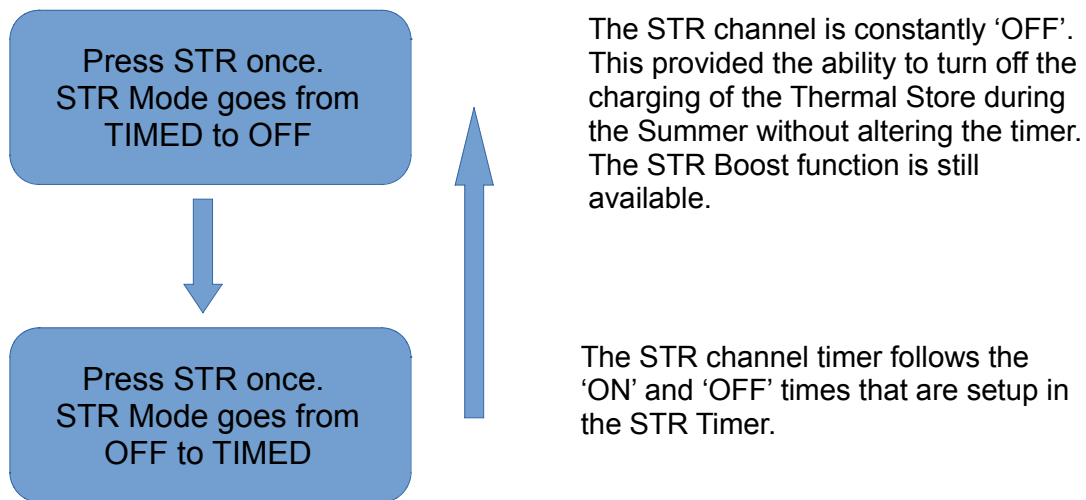
THERMAL STORE OPERATION

The 24hr STR timer will have been set during installation to follow the off-peak tariff offered by your electricity provider. However if you wish to change the times, follow the instructions given in the section ADJUSTING THE OFF-PEAK TIMES.

STORE OPERATING MODE

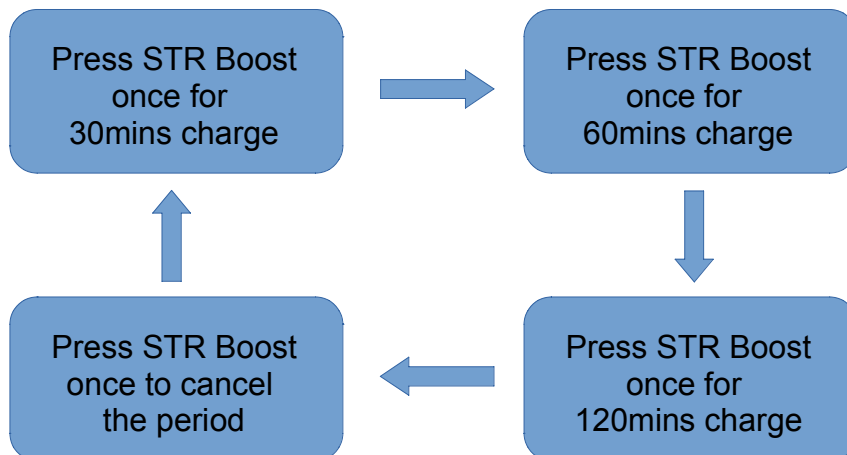
With the Controller in normal operation, the STR 24hr timer is used so that the Thermal Store is charged during off peak electricity periods.

The STR mode may be changed by the STR button. The setting is permanent until it is again changed by the user. It provides 2 options:



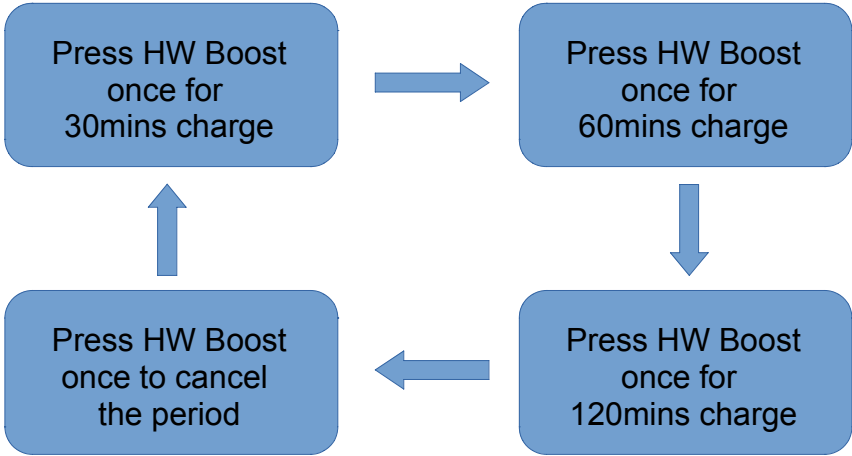
STORE BOOST

The STR boost facility allows the Thermal Store to be charged for 30, 60 or 120 minutes when the STR Timer is not in an off-peak time period, or the STR Mode has been set to OFF.



HOTWATER BOOST

This boost facility allows the Thermal Store to be topped up, for occasions when there is additional demand for hot water.



CENTRAL HEATING OPERATION

The Controller provides a 7-day programmable timer to turn on the central heating, up to 3 times each day of the week.

BUILT IN CENTRAL HEATING TIMER

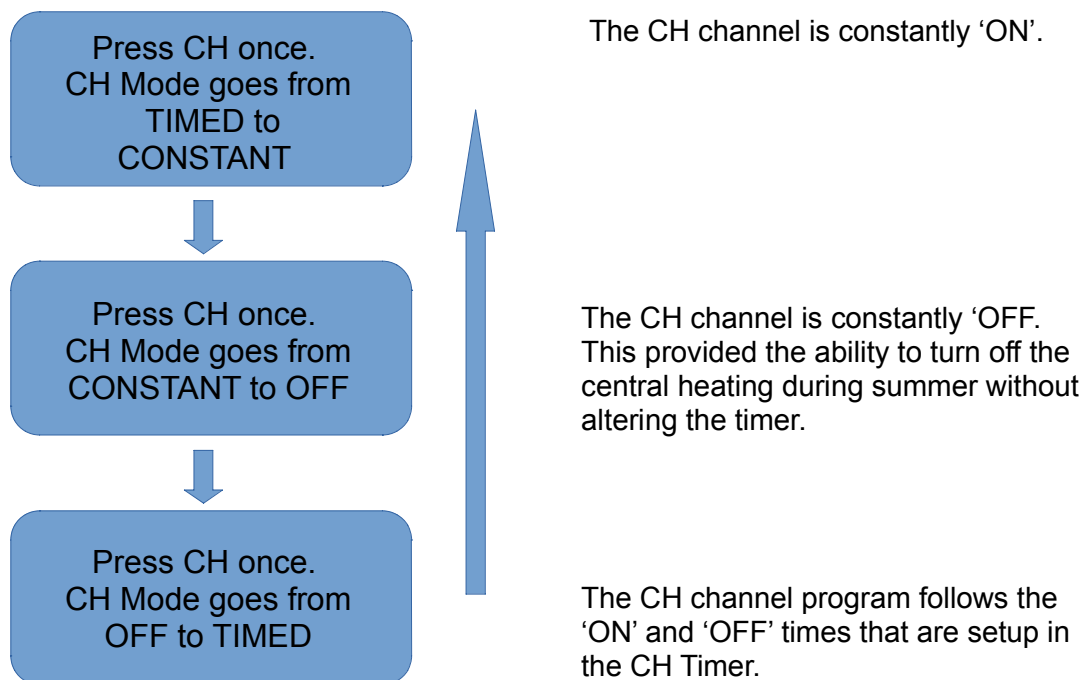
For your convenience the Controller's central heating timer has been pre-programmed with commonly used heating time periods during a typical week-day and weekend.

For many people these times will be satisfactory. However if you wish to change the times, follow the instructions given in the section CHANGING CENTRAL HEATING TIMES.

CENTRAL HEATING OPERATING MODE

With the Controller in normal operation, the CH 7-day timer is used to turn on the central heating.

The CH mode may be changed by the CH button. The setting is permanent until it is again altered by the user. It provides 3 options:



ADJUSTING DEFAULT SETTINGS

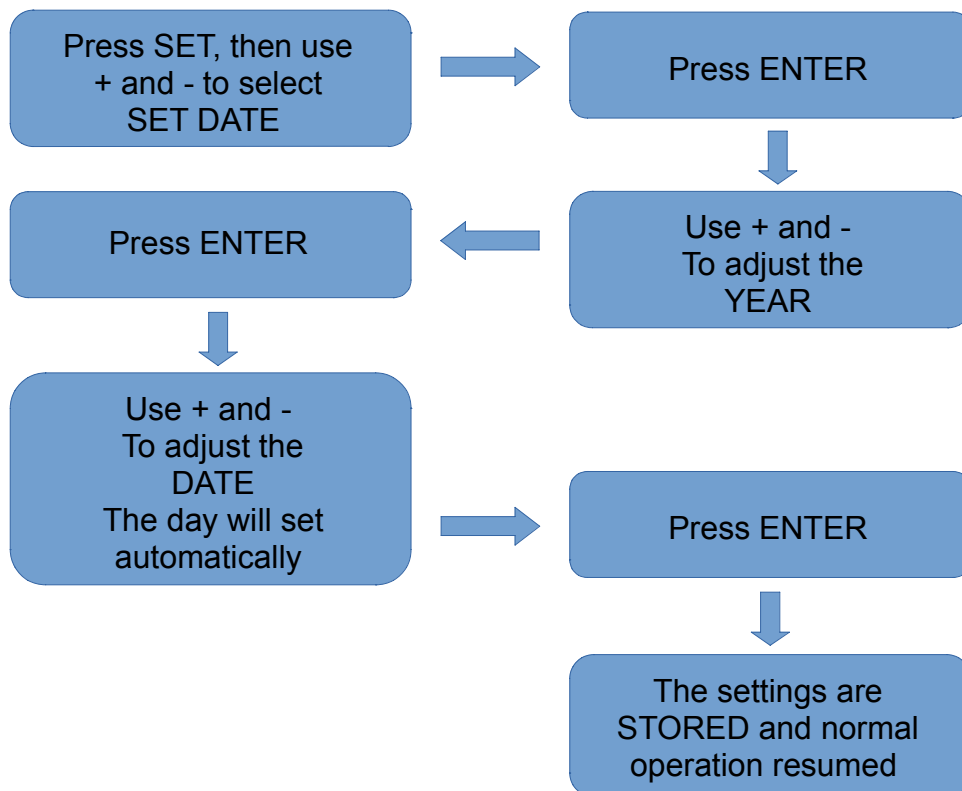
The Controller has a number of default settings suitable for normal usage. These settings are provided to reduce the user intervention during the installation of the Controller.

It is possible to adjust these settings if required by following the procedures detailed below.

SETTING AND ADJUSTING THE DATE

The first time the Controller is powered, the current date will need to be set. No alteration should be required after this even if the Controller is turned off for a period. To set or adjust the date use **Set Date** as detailed below.

The Controller automatically switches between GMT and BST at the appropriate date and time during the year.



Note. Once in any adjustment menu, pressing SET will return the Controller to normal operation without making any changes.

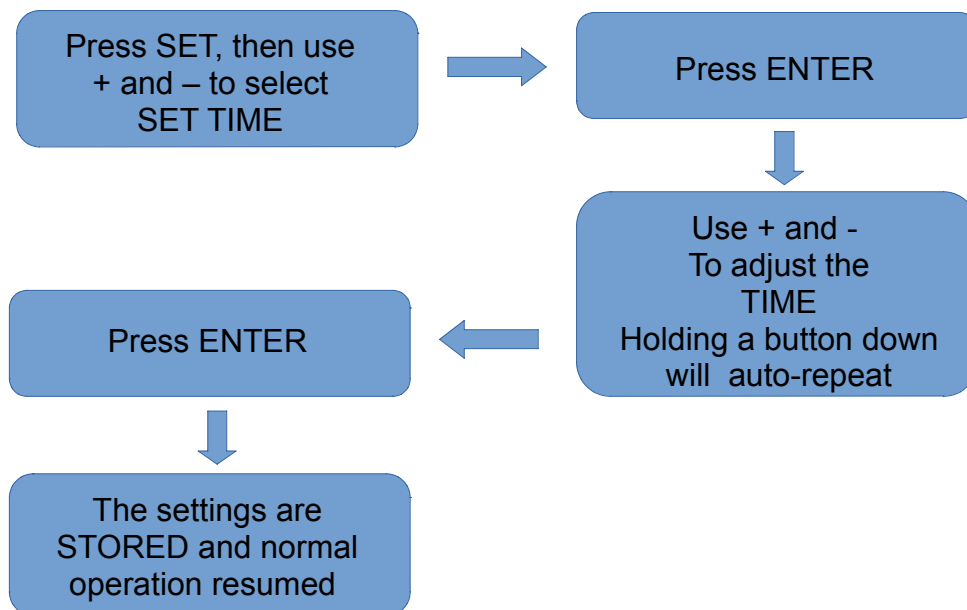
SETTING AND ADJUSTING THE TIME

The first time the Controller is powered, the current time will need to be set. No alteration should be required after this even if the Controller is turned off for a period. To set or adjust the time use **Set Time** as detailed below.

The Controller automatically switches between GMT and BST at the appropriate date and time during the year.

Note:

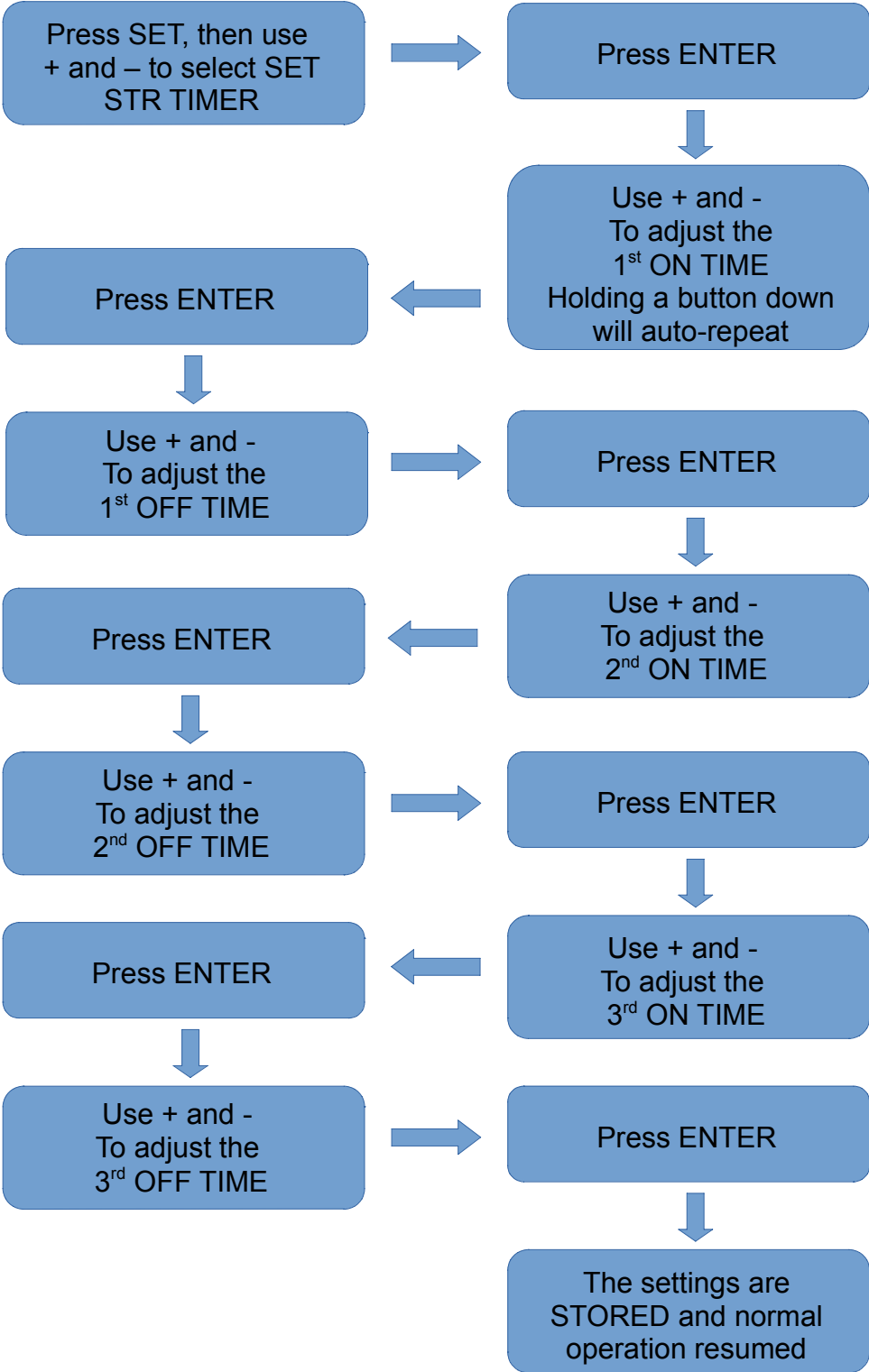
It is important that the date is set before attempting to set the current time. If the date is incorrect the user may find that they have to change the time again after setting the date as the GMT/BST setting may change.



Note. Once in any adjustment menu, pressing SET will return the Controller to normal operation without making any changes.

ADJUSTING THE OFF-PEAK TIMES

The 24hr STR timer will have been set during installation to follow the off-peak tariff offered by your electricity provider. However if you wish to change these times, use **Set STR Timer** as detailed below:



Note. Once in any adjustment menu, pressing SET will return the Controller to normal operation without making any changes.

CHANGING THE CH PROGRAMME TIMES

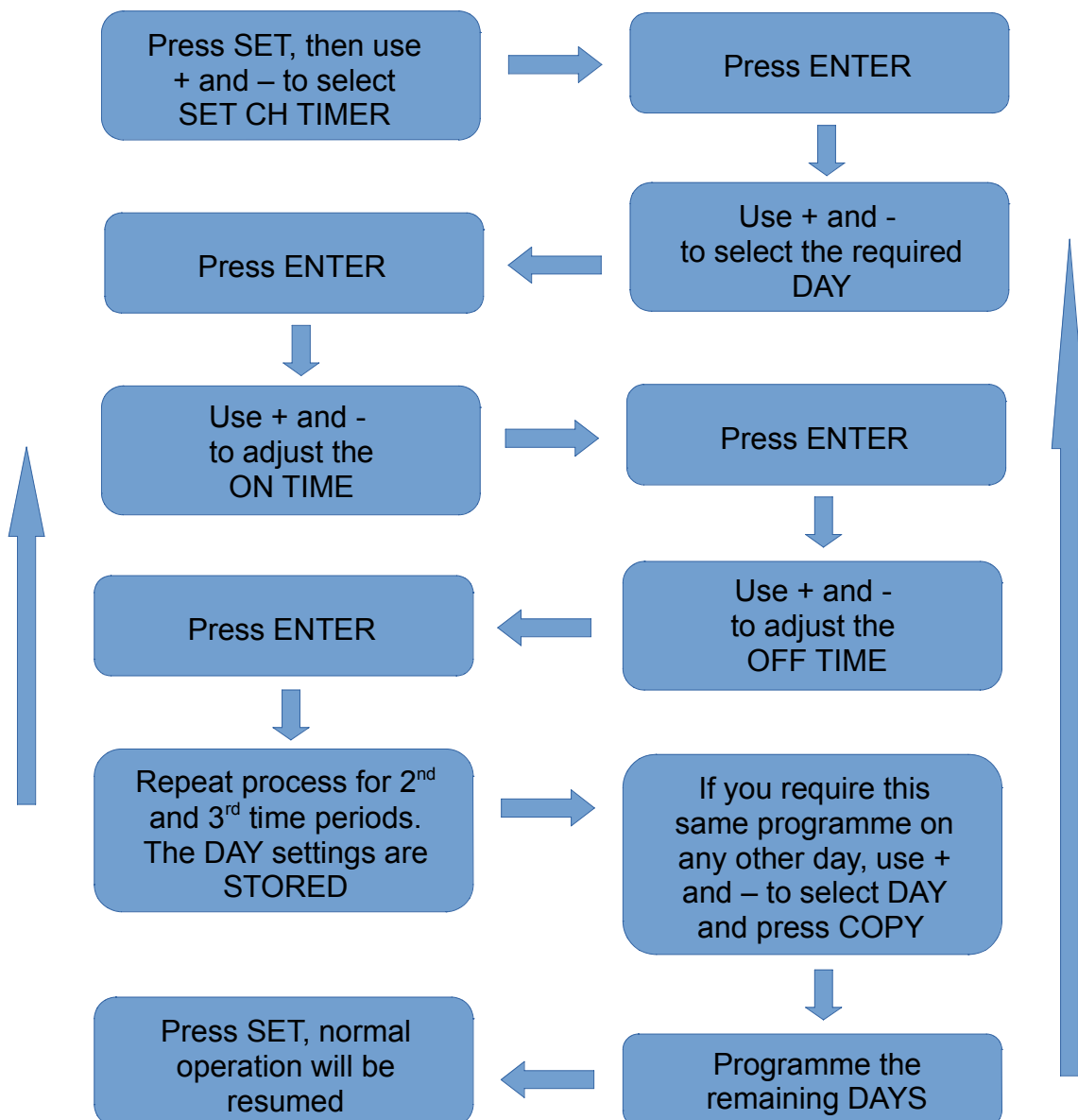
The Controller's Central Heating 7-day timer has three time periods for each day of the week.

The default time settings for the timer are as follows:

Day	Time Period	On Time	Off Time
Weekend	1 st	07:30	10:00
	2 nd	12:00	12:00
	3 rd	17:00	23:00
Week Day	1 st	06:30	8:30
	2 nd	12:00	12:00
	3 rd	16:30	22:30

If you wish to adjust these times, use **Set CH Timer** as detailed below:

Note that any specific on-time period is disabled by setting the **On** and **Off** times to exactly the same time.



ADJUSTING ADVANCED SETTINGS

The Controller has a number of advanced settings which may be required to be set or verified during the installation.

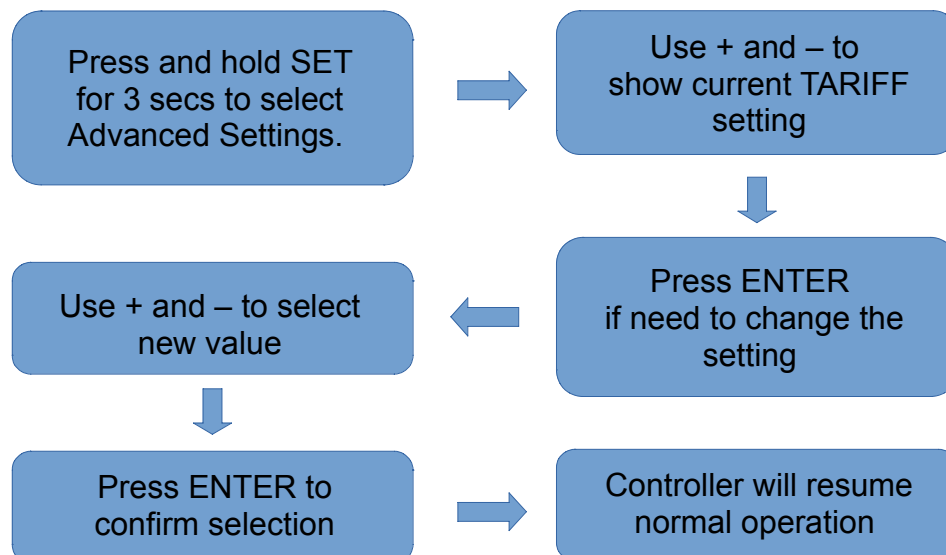
These advanced settings should only be used by the heating engineer. It is possible to adjust these settings if required by following the procedures detailed below.

LOADING PRESET OFF-PEAK TIMES

The Controller's Off-Peak times may be pre-configured with a standard tariff. When selected the 3 time periods will be set as shown in the following table:

Tariff	Time Period	On Time	Off Time
E c o n 7	1 st	00:00	07:00
	2 nd	12:00	12:00
	3 rd	16:00	16:00
E c o n 10	1 st	00:00	05:00
	2 nd	13:00	16:00
	3 rd	20:00	22:00

If you wish to adjust these times, use **Tariff** as detailed below:

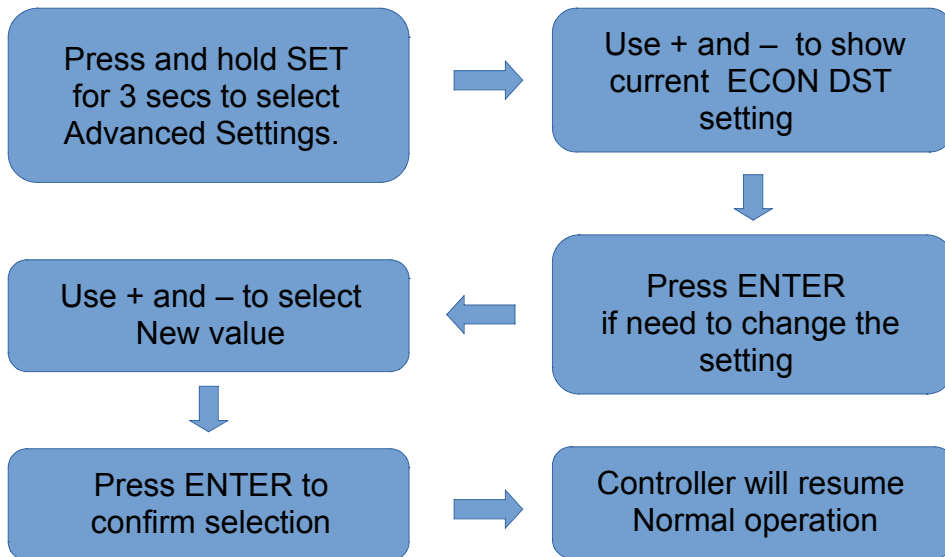


SETTING DAYLIGHT SAVING TIME

The Controller Daylight Saving Time (ECON DST) setting determines how the time periods of the STR Timer are interpreted with respect to the current time zone (BST or GMT).

- Disabled - The time periods will always operate with respect to GMT, regardless of the season, winter or summer.
- Enabled - The time periods will always be with respect to the clock time.

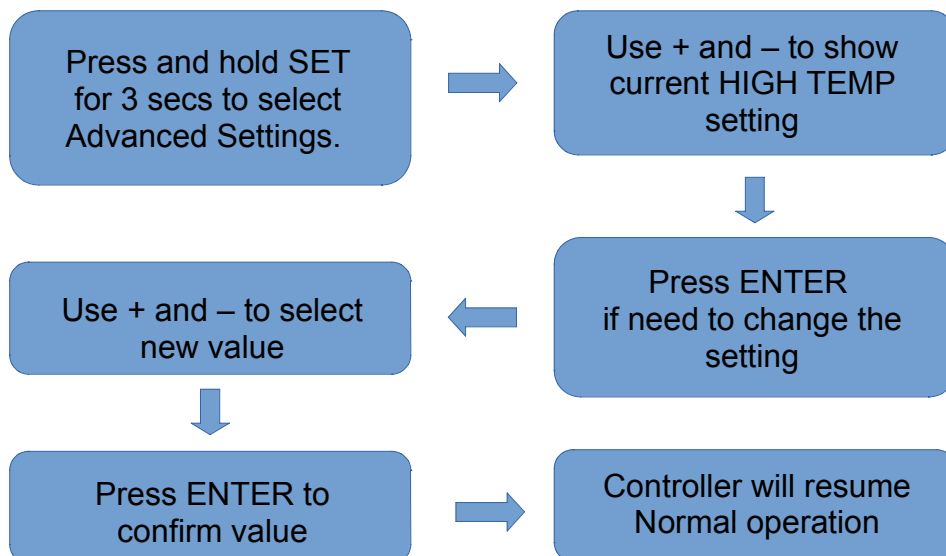
If you wish to adjust these times, use **ECON DST** as detailed below:



SETTING THE HIGH TEMPERATURE CUT-OFF

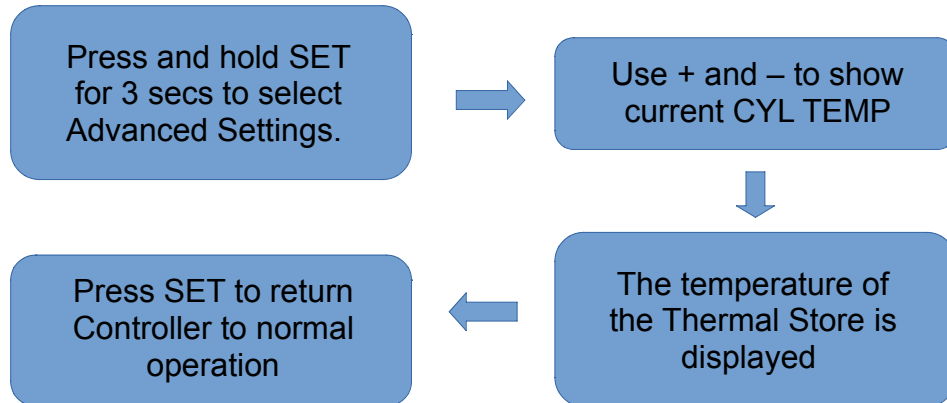
The Controller uses a dedicated sensor to monitor the temperature at the top of the Thermal Store. When the top of the cylinder reaches the Controller's High Temp setting, all of the immersion heaters will be turned off. They will be automatically re-enabled once the water temperature has dropped by a suitable amount.

If you wish to adjust pre-configure these times, use **High Temp** as detailed below:



MONITORING THE SENSOR TEMPERATURE

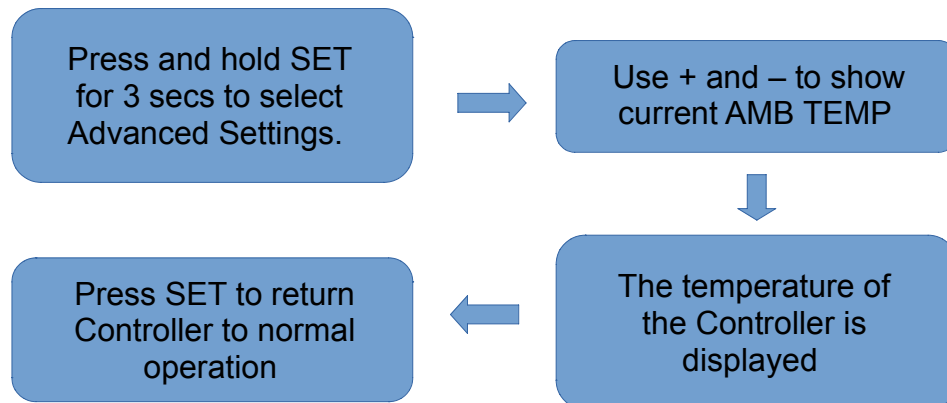
The Controller uses a dedicated sensor to monitor the temperature at the top of the Thermal Store. When the top of the cylinder reaches the Controller's High Temp temperature setting, all of the immersion heaters will be turned off. They will be automatically re-enabled once the water temperature has dropped by a suitable amount.



MONITORING THE AMBIENT TEMPERATURE

The Controller uses an internal sensor to monitor the ambient temperature of the Controller. If a high temperature condition occurs, all of the immersion heaters will be turned off.

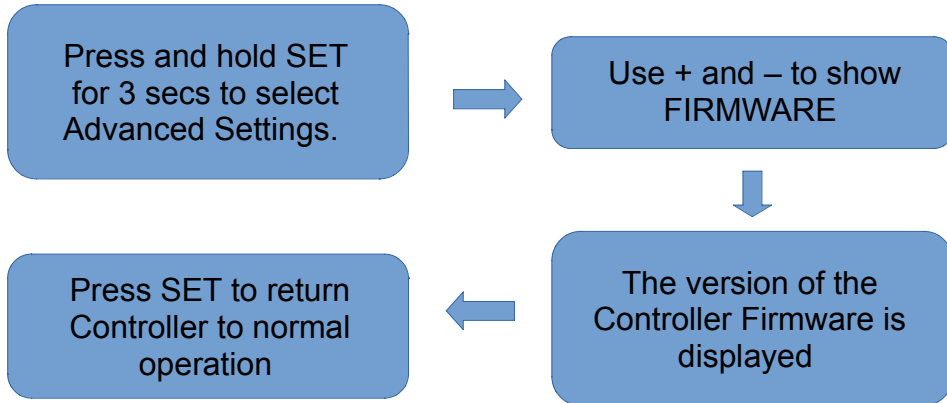
The Controller will not clear a high ambient temperature fault itself. To return to normal operation requires the SET key to be pressed. This ensures that the fault has been witnessed by an operator. The fault can also only be cleared once the ambient temperature has returned to a safe lower level.



FIRMWARE VERSION

The firmware version for the Controller is available within the advanced settings.

If you experience unexpected behaviour from the Controller, it is useful to supply the firmware version in the report to your supplier.



GENERAL INFORMATION

POWER INTERRUPTION

The Controller uses a long-life non-rechargeable battery which will maintain the configuration settings without any mains electricity supply. This should be sufficient to cover all unexpected power interruptions during the life of the Controller.

During power interruptions the Controller will be off and the display will be blank.

REPAIR AND SERVICE

The Controller is NOT user serviceable.

Do not dismantle the Controller.

The Controller has several in-built safety features to ensure that it functions correctly. In the unlikely event of a fault developing please contact your installer or a qualified electrician.



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