

# Instructions For Use and Operation of The Safefire 4000 Series 2 Controller

The Safefire 4000 controller is a combined programmer and temperature controller using state of the art micro-processor technology. It has been designed specifically for use with small pottery kilns. The controller has a wide range of extra facilities which provide the user with a versatile, easy to use instrument. Control of the entire firing cycle is fully automatic, to give both accurate and repeatable firings. The controller contains a mimic display as a guide for both firing and programming, and to enable the user to determine what stage the controller is at whilst the program is in operation.

Programs are retained in memory for up to 3 months while the unit is switched off. The actual retention time will depend on the charge condition of the internal battery, which is trickle charge during normal operation.

Another useful feature is the automatic continuation of a firing after a power cut. If a power cut occurs during a firing, the program will re-start as long as there has not been a temperature drop in the kiln over 100°C. If the temperature drop has exceeded this amount, the RUN mode will be cancelled, the program will terminate, and power to the kiln will be cut off. Pressing and holding down the DISPLAY button shows the highest temperature that the kiln reached just before the power cut. A decision may then be made on the best way to complete the firing. The program may be skipped to the next segment, by pressing the UP button when the display is showing kiln temperature. This facility allows programs to be started at any required point, without changing the complete program.

## Principal features include the following;

- \* Delay start facility, 0 to 99Hr. 59 mins.
- \* Heating ramp, 1 to 1000°C per hour, to first 'Set Point'.
- \* Soak period, 00:00 to 99Hr. 59 mins.
- \* Heat/Cool ramp, 2 to 1000°C per hour, to second 'Set Point'.
- \* Soak period, 00:00 to 99Hr. 59 mins.
- \* Cooling ramp, 3 to 1000°C per hour, to find setpoint.
- \* Automatic switch off at the end of each program.
- \* Facility to store up to 10 programs.
- \* Auxiliary relay for control of dampers or other apparatus.
- \* Front panel 'mimic display' shows program sequence and operation.
- \* Lock off key.

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**ALL CROMARTIE KILNS ARE MANUFACTURED  
IN THE UK AND CARRY CE APPROVAL**



## 1 Installation

Check that the controller and thermocouple type are the same, otherwise proper control will not be possible. The letter prefix of the serial number of the instrument (R,S or N) indicates the thermocouple type.

The unit should be fixed to a wall near to the kiln using the 4 bracket attachments.

Do not position closer than 600mm to the kiln, (so that the unit is not damaged by heat radiation from the kiln).

N.B. Always isolate from mains supply before opening case.

## 2 Front Panel

Digital Display and Indicator LED's.

The four-digit display gives numerical values; units ( $^{\circ}\text{C}$ ,  $^{\circ}\text{C}/\text{Hr}$ . or Hr. Mn.) are shown by red LED's.

During normal operation, kiln temperature is constantly displayed. For reviewing or modifying firing sequences, the values set for each step can be viewed in turn.

