

Characteristics

Electrical

Power supply
 Voltage range: 216.2 - 253V
 Frequency: 50Hz (nom)
 Phases: 1
 Power: Programmer 5VA (max)
 Fuse: 1.0A slow-blow

Power Switch Relay

Contact type: SPST NO
 Switched Live -
 nominal 230VAC output
 @30A max.

Thermocouple

Type: R

Error Handling

Thermocouple failure detection
 Thermocouple reversal detection
 Heater failure detection
 Over-temperature detection



This instrument complies with Council Directive 89/336/EEC (electromagnetic compatibility) & Council Directive 73/23/EEC (low voltage safety)

Temperature

Temperature Setting (t1 & t2)
 Range: 0 to 1320°C
 Resolution: 1°C

Control Accuracy

P.I.D. Control
 Reading accuracy: $\pm 0.3\%$ FSD ± 1 digit

Time

Start delay range 00:00 to 19hr 59min
 Soak time range 00:00 to 19hr 59min
 Resolution: 1 min

Program

1 program with 2 ramps & 1 soak
 1st ramp rate: 10 to 399°C/hour or full power
 2nd ramp rate: full power

Environmental

Operating temperature range: 0 to +40°C
 Storage temperature range: -10° to +55°C

Enclosure

Sealing: IP53
 Material: ABS
 Colour: Light Grey RAL 7035
 Size: 120x122x58mm



Hobbymaster 2 Temperature Programmer

User Handbook

Potclay Kilns Ltd.,
 Etruria,
 Stoke-on-Trent,
 ST4 7BP

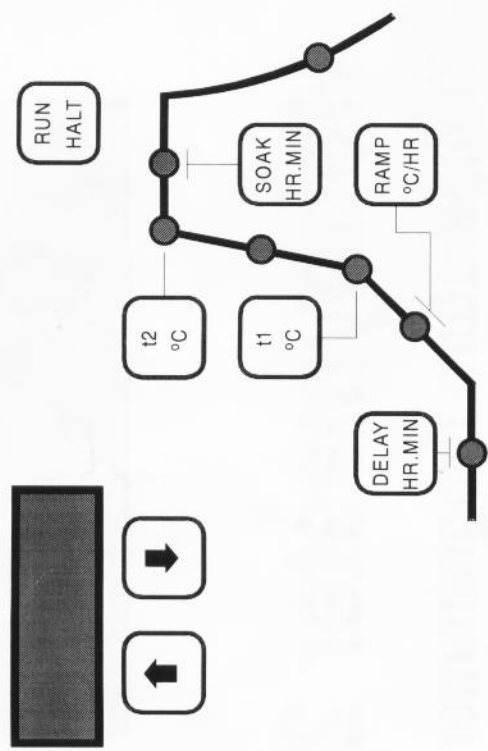
Tel: 01782 219816
 Fax: 01782 286506
 e-mail: potclays@btinternet.com



Issue: 1.0A
 Date: 17 July 2000

Characteristics

Setting



When the programmer is halted no lamps on the firing mimic curve are illuminated and the display shows the kiln temperature. The programmer settings can be changed, if necessary, by pressing the appropriate key. The corresponding lamp on the mimic curve will flash and the currently-stored value will be displayed. This can be altered using the **↑** & **↓** keys. Holding these keys down allows rapid change in the displayed value. If no keys are pressed for 5 seconds the display will revert to showing kiln temperature. All settings are remembered when the programmer is turned off.

- DELAY** HR. MIN This allows the start of a firing to be delayed in the range 00.00 to 19.59 hours.mins.
- RAMP** °C/HR This sets the initial ramp rate in the range 10 to 399°C per hour or to FULL power. This is the rate of rise to temperature t1.
- t1** °C This can be set in the range 0 to 1320°C and is the target temperature for the initial ramp.
- t2** °C This can be set in the range 0 to 1320°C and is the final or soak temperature. The ramp rate from t1 to t2 is FULL power.
- SOAK** HR. MIN This can be set in the range 00.00 to 19.59 hours.mins. and is the time the programmer dwells or soaks at temperature t2.

Firing

Pressing this key will start a firing or halt a firing that is in progress. The status of the firing is shown on the firing mimic curve. If a start delay has been requested then the mimic **DELAY** lamp will light and the delay time remaining will be displayed.

On commencing a firing the kiln is heated from the starting temperature to temperature **t1** at a rate determined by the **RAMP** setting. Upon reaching **t1** the kiln will be heated at full power to temperature **t2**, the soak temperature. It will soak at this temperature for the **SOAK** period. It will then cool naturally with the lamp on the cooling section of the firing mimic curve lit. This lamp will stay on until the kiln has cooled to 40°C.

During firing the kiln temperature is displayed. The value of any of the controller settings can also be displayed by pressing and holding down the appropriate key. During soaking the soak time *remaining* is displayed.

An indicator at the top left of the display lights when the kiln is being heated. Another indicator in the top centre of the display lights when the keyboard is *locked* – this is an anti-tamper feature. To lock or unlock the keyboard press the **↑** & **↓** keys simultaneously.

Errors

The kiln temperature is not increasing as required. Possible causes are: kiln door / lid not closed properly, heater element failure, programmer power switch failure or thermocouple short-circuit.

Thermocouple or thermocouple wiring open circuit. Check wiring / replace thermocouple.

Thermocouple reversed (temperature less than -50°C). Check wiring.

Kiln temperature has exceeded required temperature by more than 20°C for 15 minutes. This indicates a programmer power switch fault – **SWITCH KILN OFF!**

Err1

Err2

Err3

Err4

Errors

Installation

Safety Warnings

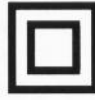


ISOLATE
BEFORE
REMOVING
COVER

WARNING

ISOLATE KILN & PROGRAMMER FROM ELECTRICAL SUPPLY BEFORE OPENING THIS INSTRUMENT FOR INSTALLATION, CONFIGURATION OR REPAIR PURPOSES

Installer Information



IP53

Installation Category: II
Pollution Class: 2

230V ~ 50HZ 30A

Fuse: 1.0A Anti-surge

Wickmann type TR5 T1A

250V



EMC

To meet Electromagnetic Compatibility requirements both the thermocouple lead and the power leads should not exceed 3.0m in length.

This instrument is designed for use mainly in Domestic & Light Industrial environments where electromagnetic interference may cause a loss of accuracy of the displayed temperature reading of up to 3°C. Specified accuracy will be restored when the interference is removed.

Mounting

Mounting Location

Mount the instrument on a suitable vertical surface which will not get hot. Choose a position where the instrument is not exposed to direct heat from the kiln - especially when the kiln door or lid is open.

Mounting Holes

The instrument is mounted using 2 keyhole slots spaced 80mm. A mounting template is shown below.

Mounting Centres



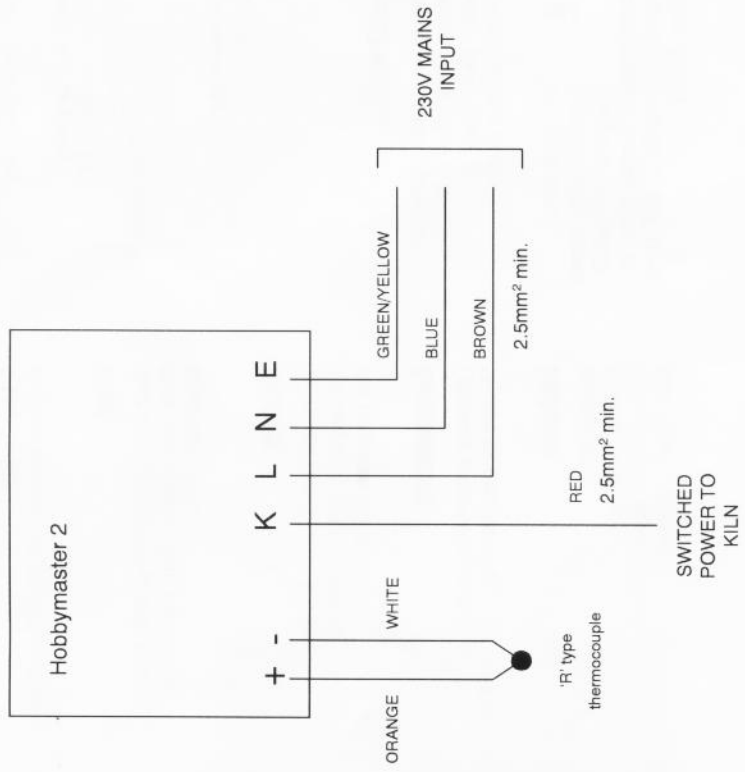
80mm

Installation

Notes

Kiln Connections

The programmer will normally be supplied pre-wired to the kiln. The wiring requirements are shown below. Note that live (brown) and switched live (red) wires should be at least 2.5mm². The neutral (blue) and earth (green/yellow) wires should be at least 0.5mm². The thermocouple cable should be 'R' type compensating.



Wiring

IMPORTANT

This programmer incorporates a single phase power switch with a maximum rating of 30A suitable for kilns with a power rating not exceeding 6.5kW. The kiln, wiring & programmer must be protected with a suitably rated mains fuse