



FEATURES

- Single program
- 2 controlled heating / cooling ramps + soak
- Suitable for pottery & ceramics use
- Soak times up to nearly 100 hours
- Ramp rates from 1 to 999°C/hour + full
- Program can be reviewed or altered while firing
- Program pause & program advance facilities
- Keyboard lockable
- Delayed start facility - up to 4 days
- Power failure recovery
- Energy used display
- Standard alarm / safety relay with alarm buzzer

DESCRIPTION

GENERAL

The ST312B is a single program controller designed for pottery & ceramics firing. It is fully adjustable with a detailed 6-lamp mimic display. The program comprises 2 ramps followed by a soak. Ramps can be heating or cooling. It executes a controlled ramp to intermediate temperature t1 then it executes another controlled ramp to final temperature t2. It soaks at t2 for the required soak period. Natural cooling then follows.

PROGRAMMING

To change any of the controller's firing program settings press the ► key until the required lamp on the mimic display flashes. The current value will be displayed together with the units (°C, °C/hr or hr.min). Change the displayed settings with the ▲ & ▼ keys which can be held down for acceleration. Use the ◀ key to correct mistakes. All settings are remembered while the controller is powered off. The keyboard can be locked to prevent tampering.

FIRING

The ►■ (START/STOP) key is used to commence or halt a firing. The progress of the firing is shown on the mimic display. If a start delay has been set then the delay time remaining will be displayed. During firing the settings can be reviewed and altered if required, the program can be paused/resumed or advanced. During soaking the soak time remaining and the soak temperature are alternately displayed. In the event of a power failure the controller will intelligently re-commence firing when power returns.

CONFIGURATION

The ST312B is configured as a signal controller to drive kiln with contactors. Such kilns are often fitted with an industry standard control socket and the ST312B can be supplied fitted with a mating controller plug lead if required.

The ST312B is supplied with a metal holster style wall mounting bracket. A User Handbook and an Installation Handbook are provided.

SPECIFICATION

Electrical

Power supply

Voltage range: 100 - 253V
Frequency: 50/60Hz
Phases: 1
Power: Controller 3VA

Fuse: 3.15A slow-blow HRC
20mm x 5mm ceramic

Control Relays

Contact type: SPST NO
Switched mains live outputs
@300mA max
(for driving contactors)

Connectors

Thermocouple: 3.5mm plug/socket
Power: 5mm plug/sockets

Temperature

Temperature setting (t1 & t2)

Range: 0 to 1400°C (R/S) 0 to 1200°C (K/N)
Resolution: 1°C

Control Accuracy

P.I.D. Control
Reading accuracy: ±0.25% FSD ±1 digit

Thermocouple

R,S,K & N type (selectable)

Cold Junction Compensation

Yes - precision semiconductor type

Time

Start delay range: 00:00 to 99hr 59min
Soak time range: 00:00 to 99hr 59min
Resolution: 1 min

Programs

Single program.
2 ramps & 1 soak
1st ramp rate: 1 to 999°C/hour or full power
2nd ramp rate: 1 to 999°C/hour or full power
Ramps can be heating or cooling

Environmental

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

Enclosure

Material: ABS
Sealing: IP65
Colour: Light Grey
RAL 7035

Size: 120x122x58mm
Fixings: 90x110mm
(4 off) + wall mounting
bracket

Error Handling

Thermocouple failure detection
Thermocouple reversal detection
Heater failure detection
Kiln over-temperature detection
Room over-temperature detection
Lock-up on error facility

Other

Keyboard lock facility + indicator
Program running & kiln heating-on indicators
Energy used display
Program pause & program advance features

Weight

Instrument + wall bracket: 0.505kg
Shipping weight: 0.915kg
(weight does not include any fitted leads)

FURTHER DETAILS

Complete operating & installation instruction handbooks can be downloaded from our web site at www.staffordinstruments.co.uk

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www.staffordinstruments.co.uk/docs/st312b/data312b.pdf

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