



FEATURES

- Easy to use single program controller
- Fully adjustable
- Temperatures from 0 to 1320°C
- Soak time up to 20 hours
- Ramp rate from 10 to 399°C/hour + full
- Delayed start facility (up to 20 hours)
- Power failure recovery
- Optional over-temperature alarm relay

DESCRIPTION

GENERAL The ST301 is a single program 2-ramp controller designed for pottery and ceramics firing. It is fully adjustable and is easy to set up and use having a dedicated key for each function and a large detailed 7-lamp mimic display. The controller heats at a controlled ramp rate to temperature t1. It then switches to full power until temperature t2. It soaks at t2 for the required period then cools naturally. The start of firing can be delayed – for example to fire overnight on low-tariff electricity.

SETTING UP To change any of the controller's settings press the appropriate key. The corresponding lamp on the mimic display will flash & the current value will be displayed. Change the displayed settings with the ↑ & ↓ keys which can be held down for acceleration. All settings are remembered while the controller is powered off. The keyboard can be locked to prevent tampering.

FIRING The RUN/HALT key is used to commence or abort 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 checked by pressing the appropriate key. If the SOAK key is pressed while soaking then the soak time remaining will be displayed. In the event of a power failure the controller will intelligently re-commence firing when power returns. After firing is complete a lamp on the cooling curve of the mimic display stays illuminated until the kiln has cooled to 40°C.

OPTIONS

ALARM RELAY

This can be used to control a second contactor for safety purposes. It closes at the start of firing & opens when the firing is complete. It also opens if the kiln temperature exceeds the required temperature by 20°C for more than 15 minutes.

CABLE & CONNECTOR

This is a 2m or 3m cord fitted with a standard Harting style HAN 7D connector. Mating pre-wired kiln connectors can also be supplied.

THERMOCOUPLE

Standard thermocouple is 'R' type. K, N & S type also available.

SPECIFICATION

Electrical

Power supply

Voltage range: 216.2 - 253V
Frequency: 50Hz (nom)
Phases: 1
Power: Controller 3VA (max)
Switched outputs 75VA
Fuse: 1.0A slow-blow

Control Relay(s)

Contact type: SPST NO
Switched Live -
nominal 230VAC output
@300mA max.

Thermocouple

R Type standard
(K, N & S type also available)

Connectors

2-part connectors -
Max. wire size 2.5mm²

Temperature

Temperature setting (t1 & t2)

Range: 0 to 1320°C
Resolution: 1°C

Control Accuracy

P.I.D. Control
Reading accuracy: ±0.25% 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

Material: ABS Size: 120x122x58mm
Sealing: IP65 Fixings: 90x110mm
Colour: Light Grey (4 off)
RAL 7035

Error Handling

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

Other

Keyboard lock facility + indicator
Heater-on indicator

FURTHER DETAILS

Complete operating & installation instruction handbooks can be downloaded from our web site at <http://www.stafford-inst.co.uk>

<http://www.stafford-inst.co.uk/docs/st301/data301.pdf>

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