



## FEATURES

- 32 programs—each with up to 32 segments
- 1 controlled heating / cooling ramp + 1 soak per segment
- Ideal for glass or ceramics use
- Soak times up to nearly 100 hours
- Ramp rates from 1 to 999°C/hour + full
- Programs can be reviewed or altered while firing
- Program Pause & Segment 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 ST315C is a 32-program controller designed for glass, ceramics & pottery use. Each program can have up to 32 segments. It is fully adjustable with a detailed 5-lamp mimic display & continuous display of program & segment numbers. Each segment comprises of a ramp followed by a soak. Ramps can be heating or cooling. It executes a controlled ramp to the soak temperature where it dwells for the required period then executes the next segment. The end of the program is marked by selecting 'End' while entering a ramp rate. Natural cooling then follows.

### PROGRAMMING

Press the ► key to flash the program number display – this can be changed if required with the ▲ & ▼ keys. To change any of the controller's settings press the ► key (or reverse with 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. 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. A start delay can be set before the firing starts. During firing the settings can be reviewed and altered if required, the program can be paused/resumed or a segment can be 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 ST315C is configured as a signal controller to drive kilns with contactors. Such kilns are often fitted with an industry standard control socket and the ST315C can be supplied fitted with a mating controller plug and lead if required.

The ST315C can be supplied as a Power controller 'ST315C.P'. These are used to directly switch power to smaller kilns (up to 4.5kW power rating) which do not have control gear.

The ST315C is supplied with a metal holster style wall mounting bracket. A User Handbook and combined 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**

Range: 0 to 1400°C (R/S) 0 to 1300°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

32 programs each with 1-32 segments  
1 ramp & 1 soak per segment  
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                      Size: 120x122x58mm  
Sealing: IP65                      Fixings: 90x110mm  
Colour: Light Grey (4 off) + wall mounting  
RAL 7035                              bracket (optional)

#### 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 & segment 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](http://www.staffordinstruments.co.uk)

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