



### FEATURES

- 80 programs
- 2 fully programmable ramps + soak per program
- Programs can be linked together
- Ideal for pottery / ceramics use
- Soak time up to 99hr 59min
- Ramp rates from 1 to 999°/hour + FULL
- Programs can be reviewed or altered while firing
- Program Pause & Advance facilities
- Keyboard lockable
- Delayed start facility - up 99hr 59min
- Power failure recovery
- Energy used display
- Worldwide operation
- °C/°F switchable display
- Standard alarm / safety relay with alarm buzzer

### DESCRIPTION

The ST216 is a small easy to use ergonomically designed controller in a hand-held case with rubber hand grips. It is supplied with a wall mounting holster bracket and a flexible lead and plug as standard. Bright orange LED displays are fitted. The ST216 is designed to control single zone electric kilns and is derived from our long established ST316 controller.

It is suitable for worldwide use with a universal power supply and selectable °C/°F operation.

For a controller suitable for glass (& ceramics) please see our ST215 (separate datasheet). This is in the same product range as the ST216 controller and has 10 programs.

For more complex requirements i.e. multi-zone, multiple outputs, gas, damper, event etc please see our ST515/ST516/ST535/ST536 datasheets.

## DESCRIPTION

### GENERAL

The ST216 is a simple 80-program controller designed for ceramics & pottery use. Each program has 2 ramps followed by a soak. It is fully adjustable with a detailed 5-lamp mimic display & continuous display of program number. It executes a controlled ramp to an intermediate temperature then another ramp to the soak temperature where it dwells for the required period. Natural cooling then follows.

### SETTING UP

Press the ► key to make the program number flash. 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 a temperature, ramp rate or time icon. 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 ►■ key is used to commence a firing. An optional start delay can be entered. 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 program settings can be reviewed and altered if required and the program can be paused/resumed or advanced. The current set-point and the current energy used can be viewed by pressing the ◀ key at any time. 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 ST216 can be configured to the kiln using a configuration menu. The thermocouple type and kiln power rating (for the energy used function) can be configured together with °C/°F operation. Other installer-configurable items include program linking enable/disable, power failure recovery enable/disable, error message handling and control parameters.

The ST216 is supplied with a moulded ABS holster style wall mounting bracket and a flexible lead & plug.

## SPECIFICATION

#### Electrical

##### **Power supply**

Line voltage range: 90 - 264VAC  
Frequency: 50/60Hz

Power: Controller 4VA (max)  
Switched outputs: 125VA

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

##### **Control Relays (2)**

Contact type: SPST NO  
Switched Live -  
Line voltage output  
@500mA max

##### **Lead & Connector**

2m flexible grey polyurethane lead  
Harting 7D plug

(Other lead & connector options  
available)

##### **Enclosure**

Material: ABS flame retardant UL 94V-0  
Sealing: IP50  
Size: 80/68mm(W), 165mm(L), 28mm(D)  
Colour: Black/Dark Grey  
RAL 9011/RAL7012

#### Temperature

##### **Temperature setting**

Range: 0 to 1400°C (R/S) 0 to 1250°C (K/N)  
Resolution: 1°C

##### **Control Accuracy**

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

##### **Thermocouple**

R,S,K & N type (selectable)

##### **Cold Junction Compensation**

Yes - precision thermistor type

##### **Time**

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

##### **Programs**

80 programs each with 2 ramps & 1 soak  
Ramp rate: 1 to 999°/hour or FULL  
Ramps can be heating or cooling  
Selectable program linking feature

#### Environmental

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

#### Error Handling

Thermocouple failure detection  
Thermocouple reversal detection  
Heater failure detection  
Kiln over-temperature detection  
Room over-temperature detection  
Lock-up on error facility  
Audible Alarm (buzzer)

#### Other

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

#### Weight

Instrument + wall bracket + standard  
cable: 0.410kg  
Shipping weight: 0.530kg

#### Wall Bracket

Material: ABS flame retardant UL 94V-0  
Colour: Black RAL9011  
Fixing slot centres (vertical): 70mm  
Fixing slot size: 8mm x 4mm

## FURTHER DETAILS

Complete operating & installation  
instruction handbooks can be  
downloaded from our web site at  
[www.staffordinstruments.co.uk](http://www.staffordinstruments.co.uk)

Issue: 1.01 dated: 14 July 2014  
[www.staffordinstruments.co.uk/docs/st216/data216.pdf](http://www.staffordinstruments.co.uk/docs/st216/data216.pdf)

Stafford Instruments Ltd.  
Unit 22 Wolseley Court,  
Staffordshire Technology Park,  
Stafford, ST18 0GA U.K.  
Tel: +44 (0)1785 255588  
Fax: +44 (0)1785 255589  
[sales@staffordinstruments.co.uk](mailto:sales@staffordinstruments.co.uk)

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