

Temperature Programmer



FEATURES

- Multi-zone (1,2 or 3 zones)
- 32 programs
- Up to 32 segments per program
- 1 controlled heating / cooling ramp + 1 soak per segment
- Ideal for glass or ceramics use
- Soak times up to 99hr 59min
- Ramp rates 0.1 to 999°/hour + FULL
- Programs can be reviewed or altered while firing
- Program Pause & Segment Advance facilities
- Keyboard lockable
- Delayed start facility - up to 99hr 59min
- Power failure recovery
- Energy used display
- Worldwide operation
- °C/°F switchable display
- Standard alarm / safety relay with alarm buzzer
- Standard event / damper / fan relay

DESCRIPTION

The ST535 is an 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. Green LED displays are fitted. The ST535 is designed to control multi zone kilns.

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

For a traditional pottery firing controller please see our ST536 (separate datasheet). This is in the same product range as the ST535 controller and has 99 programs.

For simpler requirements i.e. for single zone electric kilns with only 2 control outputs please see our ST215/ST216 datasheets.

DESCRIPTION

GENERAL

The ST535 is a 32-program multi-zone controller designed for glass, ceramics & pottery use. Each program can have up to 32 segments. It is fully adjustable with a detailed 4-lamp mimic display & continuous display of segment number. 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.

SETTING UP

Press the ► key to display the program number – 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 to the next segment. 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 ST535 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 number of zones, power failure recovery enable/disable, error message handling and control parameters.

The ST535 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 (5)

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

Lead & Connector

3m flexible grey polyurethane lead
Harting 15DX plug

(Other lead & connector options available)

Enclosure

Material: ABS flame retardant UL 94V-0
Sealing: IP50
Size: 100/86mm(W), 210mm(L), 32mm(D)
Colour: Black/Dark Grey
RAL9011/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

32 programs each with 1-32 segments
1 ramp & 1 soak per segment
ramp rate: 0.1 to 9.9°/hour then
10 to 999°/hour or FULL
Ramps can be heating or cooling

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 & segment advance features

Weight

Instrument + wall bracket + standard
cable: 0.841kg
Shipping weight: 1.025kg

Wall Bracket

Material: ABS flame retardant UL 94V-0
Colour: Dark Grey RAL7012
Fixing slot centres (vertical): 100mm
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

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www.staffordinstruments.co.uk/docs/st535/data535.pdf

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