



FEATURES

- Fully configurable
- Temperature indicator
- Selectable trip / alarm modes
- Ambient over temperature trip
- Worldwide operation
- Changeover relay with volt free contacts
- Fused supply available for relay contacts
- Alarm buzzer
- Relay energised indicator
- Anti-tamper keyboard lock
- DIN rail mounting
- Wall mounting box accessory available

DESCRIPTION

The ST131 is a fully installer configurable indicating trip module with a bright orange LED display, an internal alarm buzzer and a volt-free changeover relay. It has a universal power supply suitable for world wide use. The trip feature can be configured to operate in several modes.

OPERATING MODES

Mode 1: Over-temperature trip

T1 is the trip temperature. T2 not used. Relay energised while $t < T1$. Relay de-energised and internal buzzer sounds when $t \geq T1$. Internal buzzer can be muted by pressing any key. "Err1" is intermittently displayed. Ambient temperature trip is active (unless disabled). Power cycle to reset.

Mode 2: Damper / Heat Lock

T1 is damper/lock closing temperature. T2 is damper/lock opening temperature. Relay initially de-energised. Relay energised when $t \geq T1$. Then, if $T2 \geq T1$, waits for $t \geq (T2 + TH)$. Relay de-energises when $t \leq T2$. Ambient trip inactive.

Mode 3: Damper / Heat Lock - Relay operation reversed

Same as mode 2 but the operation of the relay is reversed

Mode 4: Temperature Window Detector

T1 is warning start temperature. T2 is warning finish temperature. Ambient trip inactive.

If $T2 > T1$: Heating window detector

Relay energises and buzzer sounds when $t \geq T1$

Relay de-energises and buzzer mutes either when $t \geq T2$ or any key is pressed

If $T2 < T1$: Cooling window detector

Waits until $t \geq (T1 + TH)$.

Relay energises and buzzer sounds when $t \leq T1$

Relay de-energises and buzzer mutes either when $t \leq T2$ or any key is pressed

Mode 5: Temperature Window Detector - Relay operation reversed

Same as mode 4 but the operation of the relay is reversed

Mode 6: On/Off Temperature Control

T1 is set-point. T2 not used. Ambient temperature trip is active (unless disabled).

If $t \leq (T1 - TH)$ relay is energised. If $t \geq T1$ relay is de-energised.



Wall mounting box accessory

SETUP PARAMETERS

Installer / Setup mode is entered by pressing and holding the ► key for 5 seconds.. To exit this mode do not press any keys for 10 seconds - ST131 will reboot.

Setup Parameter	Default Value	Range
P00 Thermocouple type	2	0 - 3 (0=K, 1=N, 2=R, 3=S)
P01 Trip temperature T1	1320°C	30 - 1400°C
P02 Trip temperature T2	600°C	30 - 1400°C
P03 Operating mode	1	1 - 7
P04 Hysterisis TH	5°C	2 - 50°C
P05 Display brightness	3	0 - 6
P06 Internal buzzer disable	0	0 - 1 (1= disabled)
P07 Ambient trip temperature	50°C	40 - 71°C (71= disabled)
P08 Lockout for engineer enable	0	0 - 1 (1 = lockout enabled)

ERROR MESSAGES

Err1: Over-temperature alarm in mode 1

Err2: Thermocouple open circuit

Err3: Thermocouple reads less than -40°C. This could be an installation error (thermocouple reversed)

Err7: Ambient trip temperature exceeded

ORDERING DETAILS

Part Number	Description
ST131	ST131 Indicator / Trip Module
ST131-BOX	Wall mounting box accessory for ST131

SPECIFICATION

Electrical

Power supply

Voltage range: 85 - 265V
Frequency: 50/60Hz
Power: 2.5VA
Fuse: 3.15A(T) 20mm x 5mm

Relay

Contact type: SPCO Volt-free
3A max. @230VAC

Thermocouple

R,S,K,N (installer selectable)

Connector

Pluggable screw terminal block with 'rising clamp' connector on 5mm pitch

Temperature

Accuracy

±1°C typical, ±3°C maximum

Cold Junction Compensation

Yes

Weight

Unit weight: 144g (with mating connector)
Packaged weight: 176g

Size

Unit size (mm): 103(L) x 53(W) x 58(D)
Packaged size (mm): 108(L) x 95(W) x 67(D)

Environmental

Operating temperature range: -10°C to +70°C
Storage temperature range: -10°C to +70°C

Enclosure

Material: Polycarbonate (UL 94 V0)
Sealing: none
Colour: light grey (RAL 7035)
IP20

Error Handling

Thermocouple failure detection
Ambient over-temperature trip
Warning buzzer

FURTHER DETAILS

Further information can be found at:
www.staffordinstruments.co.uk

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