

Model 923

1/16 DIN Microprocessor-Based Temperature Controller

FEATURES

AUTO-TUNE®

On-demand AUTO-TUNE automatically adjusts PID parameters to optimize control even in the most demanding applications.

Configurable Control Modes

ON/OFF, P, PI, PD, PID, PID AUTO-TUNE.

Front Key Operation

Only four tactile-feedback keys are required for configuration. Parameters are easily changed by scrolling through two simple menus.

Dual Digital Displays

Set point and process variable are constantly shown on two, four-digit, seven-segment, red LED displays. Displays also indicate menu parameters, symbols and error codes.

Loop Break Alarm (optional; requires one alarm)

Monitors and protects an entire temperature control system. Detects heater breaks, thermocouple or RTD failure, short circuits or the failure of operating devices such as mechanical relays, SSR's and SCRs.

Selectable Process Variable Readout

Temperature ranges may be displayed in °F or °C. When current (mA) or voltage (VDC) process inputs are used, the readout is scaled in engineering units from 0-100% of range.

Adjustable Range Limits

Range limits can be configured from the front panel to restrict set point adjustments.

Sensor Failure

Sensor failure causes an error code to be displayed and output to be discontinued immediately (to less than 0% if reverse acting, greater than 100% if direct acting).

Nonvolatile EEPROM Memory

Retains configuration parameters without battery backup in the event of a power failure.

System Calibration

System offset can be compensated for through a selectable input bias which adds to or subtracts from the process variable.

Universal Operating Voltages

Accepts operating voltages from 85 to 264 VAC, 50/60 HZ.

Security

A multi-level key lock function, which prevents unauthorized adjustments, can be engaged.

Overshoot Suppression

Reset inhibitor minimizes overshoot on start-up

Two Alarm Relays (optional)

Each relay can be configured as a high, low or deviation alarm and also configured to actuate auxiliary (ON/OFF) switching for heating and or cooling.

Heater Break Alarm (optional)

Monitors the load via an external current transformer and signals when the current falls below the preset value.

Warranty Three years.

SPECIFICATIONS

Inputs/Range/Accuracy

| Input | Range | Accuracy |
|---------------------|---------------------|---|
| TC | | |
| K | 0 to 2502°F | 0 to 1372°C |
| J | 0 to 2192°F | 0 to 1200°C |
| L | 0 to 1600°F | 0 to 800°C |
| E | 0 to 1832°F | 0 to 1000°C |
| N | 0 to 2372°F | 0 to 1300°C |
| R,S | 0 to 3216°F | 0 to 1769°C |
| B | 0 to 3308°F | 0 to 1820°C |
| W5Re, W26Re | 0 to 4000°F | 0 to 2320°C |
| PI II | 0 to 2534°F | 0 to 1390°C |
| T | -199.9 to +752.0°F | -199.9 to +400.0°C |
| U | -199.9 to +999.9°F | -199.9 to +600.0°C |
| RTD | | |
| Pt100Ω (JIS/IEC) | -199.9 to +999.9°F | -199.9 to +649.0°C |
| JPt100Ω (JIS) | | ±0.5% of SP ±1 digit or ±1.6°F whichever is greater |
| Voltage | | |
| 0 to 5V DC | 0 to 100.0% (Fixed) | 0.5% of setting range |
| 1 to 5V DC | 0 to 100.0% (Fixed) | |
| Current | | |
| 4 to 20mA DC | 0 to 100.0% (Fixed) | 0.5% of setting range |

Control Outputs (dedicated)

| Output | Ratings |
|---------------|--|
| Relay | 3A, 250 VAC, resistive, SPST |
| Voltage Pulse | 0 to 12 VDC Load Resistance: 600 ohms min. |
| Current | 4 to 20 mA Load Resistance: 600 ohms max. |
| Triac Trigger | Medium capacity triac (less than 100 A) |
| Alarm Relay | 1 A, 250 VAC, resistive, SPST |

Control Modes

Primary Set point (Field Selectable): ON/OFF, P, PI, PD, PID,
PID AUTO-TUNE

Alarm Set Point: ON/OFF.

Control Adjustments

Proportional Band 0.1 to 100% of span in eng. units
Integral Time 0 to 3600 seconds
Derivative Time 0 to 3600 seconds
Cycle Time - Relay, SSR Driver 1 to 100 seconds
ON/OFF Hysteresis 0 to 100°

Control Action

Configurable, supplied as reverse acting.

Heater Break Alarm

Heater current accuracy $\pm 5\%$ FS, .1A resolution.

Displays

Set Point and Process Variable 4-digit, 7-segment red LED (Parameter symbols and error code are also displayed)
Range For thermocouple, RTD or DC voltage input: 0 to 100% of the instrument range

Indicators

Alarm (Red)

AL1 Lights when Alarm 1 relay is activated
AL2 Lights when Alarm 2 relay is activated

Status (Green)

AT Flashes when AUTO-TUNE is in operation

Output (Red)

OUT Lights when relay or voltage pulse output is on for 4 to 20 mA output, flashes in correlation to output percentage.

System Calibration (bias setting)

TC and RTD For a resolution of 1°: -199.9 to 999.9°F(°C)
RTD For a resolution of 0.1°: 199.9 to 999.9°F(°C)
V and mA -199.9 to 200.0%

Additional Input Specifications

Input sampling period 500 ms
Input resistance TC: More than 250 k Ω
DC voltage: Approximately 250 k Ω
Allowable signal source resistance TC: Less than 250 Ω
DC voltage: Less than 2K Ω
Allowable wiring resistance RTD: Less than 10 Ω /lead (However, there should be no resistance difference between three wires.)
Allowable input voltage TC: Less than ± 10 V
DC voltage: Less than ± 10 V
Noise rejection ratio Normal mode: 40 dB (50/60 Hz)
Common mode: 120 dB (50/60 Hz)
Applicable standard TC & RTD JIS, IEC

Environmental Specifications

Continuous Operation Under Normal Conditions

Ambient temperature 32 to 122°F, operating
-13 to 158°F, storage
Relative humidity 40 to 85%, operating
(noncondensing) 5 to 95%, storage

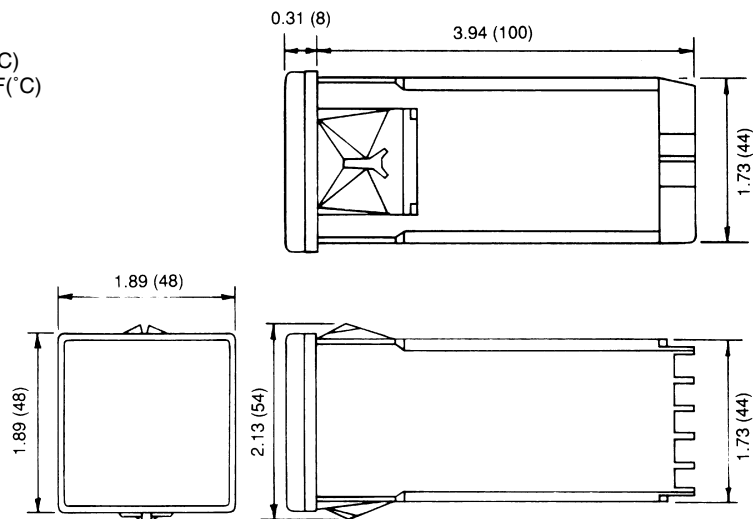
Construction and Installation

Case Panlight LN 1250 Black 0500N
Front Panel Conforms to NEMA 1
Mounting Flush mount, nonhazardous indoor location

Agency Approvals

CSA Certified: LR 46566M7 Class 2252 01
UL Recognized: File Nbr. E113411 Guide QUXY2

OUTLINE DIMENSIONS



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