

CT124 8-channel Temperature Monitor

Overview

The CT124 8-channel Temperature Monitor offers flexible protection and control of temperature-critical equipment and processes. It scans up to eight RTDs and activates four relays plus a built-in audible alarm.

In a typical application, the CT124 provides early warning of possible large machine failure by monitoring the temperature of bearings, stators, transformer coils, and oil outlets. You can configure the CT124 to many other situations such as on/off control or undertemperature alarms. The CT124 can even monitor and control several loops at one time since you can group input zones with output relays in any combination.

- Protect motors, generators, transformers, other equipment
- Monitor 1 to 8 resistance temperature detectors (RTDs)
- 4 internal relays and audible alarm with independent trip points
- Overtemperature or undertemperature protection
- Microprocessor based; fully programmable
- Large, bright LED display shows °F or °C
- Stores high and low temperature peaks
- Trip points, programs, peaks stored in non-volatile memory
- Programmable silence button
- Versatile override switch permits manual relay toggling
- Rugged enclosure with sealed front panel

Operation

The CT124 continuously scans all RTD inputs. The display normally shows the highest, lowest, or any other zone temperature according to your instructions. Press up and down arrows to display other zones, Peak Temp to recall high and low peaks, and Trip Temp to indicate trip temperatures.

Each relay has its own trip temperature, either high or low, and may be programmed to react to any or all scanned input zones. Relays may control cooling fans, remote alarms, contactors, or programmable controller inputs. You can set the audible alarm to sound when certain relays trip, and also at its own setpoint. The silence button quiets the alarm for a programmed length of time.



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Programming

In the CT124's program mode you simply step through the included setup worksheet, change each parameter with the up and down arrows, and press Done to proceed. The CT124 retains all program data and setpoints with power off.

Installation

The CT124 fits in a standard ¾ DIN panel cutout. Plug-in terminal blocks at the rear let you remove the unit without disconnecting wires. Front panel keys and indicators are sealed against dust and moisture.

Special features

Override: The programmable Override button manually toggles a selected set of relays on and off. With it you can bypass automatic functions to assume direct control. For example, you could turn on fans or shut a machine down at temperatures below the trip point.

Sensor failure protection: If any scanned RTD circuit shorts or opens, the CT124 sounds its alarm and locks out that zone. Other zones continue to scan normally. The Error light stays on until the faulty input is repaired and the Self-test is run.

Self-test: Press the Test button to test all panel lights and inputs. You can also program the Test button to trip relays connected to external alarms, fans, etc.

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Specifications

Range: Platinum input: -40 to 530°C or -40 to 986°F.

Copper or nickel input: -40 to 250°C or -40 to 500°F.

Input: 1 to 8 RTDs (Resistance Temperature Detectors), 2 or 3 wire.

| Element | TCR ($\Omega / \Omega / ^\circ\text{C}$) | Code |
|--------------------------------|--|------|
| Platinum, 100 Ω at 0°C | 0.00392 | PA |
| Platinum, 100 Ω at 0°C | 0.00391 | PB |
| Platinum, 100 Ω at 0°C | 0.00385 | PD |
| Platinum, 1000 Ω at 0°C | 0.00385 | PF |
| Copper, 10 Ω at 25°C | 0.00427 | CA |
| Nickel, 120 Ω at 0°C | 0.00672 | NA |

Input scan rate: 8 readings per second.

Input fault detection: Open or shorted circuit sounds alarm and locks out faulty zone. Other zones unaffected.

Input protection: ± 30 VDC continuous, any input to ground.

Output: 5 independent trip points: 4 relays and one audible alarm. Alarm may be programmed to sound when selected relays trip.

Relays: Form C, SPDT, 10 Amps at 250 VAC resistive load, ¼ HP at 120 VAC.

Trip point hysteresis (deadband): Programmable from 2 to 20°C or °F.

Display: 0.56" (14 mm) LED, 1°C or 1°F resolution. 16 LED indicators.

Accuracy: $\pm 2^\circ\text{C}$ (3°F) at 10 to 30°C (50 to 86°F) ambient. $\pm 3^\circ\text{C}$ (5°F) at 0 to 55°C (32 to 131°F) ambient.

Zone and relay labels: Replaceable from rear for custom labeling.

Supply power: 115 or 230 VAC $\pm 10\%$, 50/60 Hz. 15 W max. Selection switch inside enclosure. 24 VDC factory option.

Power loss protection: Trip points, peaks, and program parameters stored in non-volatile memory. Normal operation resumes when power is restored.

Keyboard: 10 membrane type keys with audible feedback.

Programming: Programmable from front panel. Access to program mode requires special key sequence.

Program fault protection: Watchdog circuit resets micro-processor if it fails to perform program sequence.

Enclosure: ABS case, water and dust resistant front panel.

Ambient temperature rating: 0 to 55°C (32 to 131°F).

Connections: Plug-in terminal boards at rear accept wires to 14 AWG.

Mounting: ¾ DIN (DIN 43700). Panel-mounted in 5.51" \times 7.32" (140 \times 186 mm) opening. Extends behind panel 5.1" (130 mm) max.

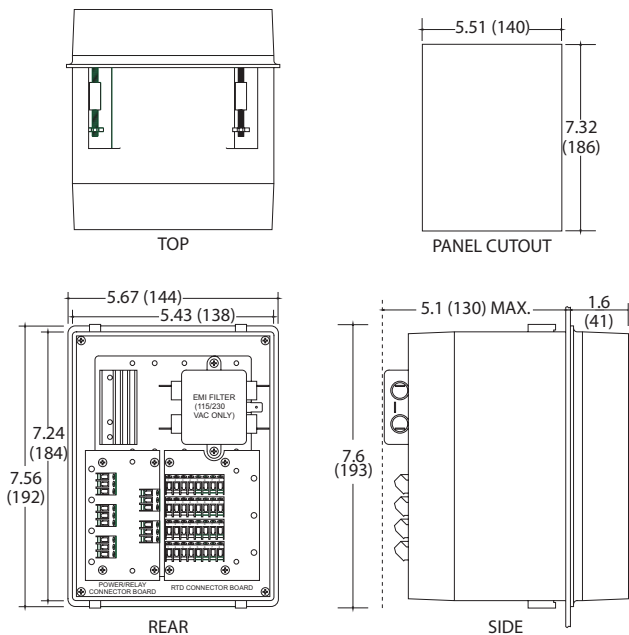
Instructions: Instruction manual and setup worksheets furnished with each unit.

Weight: 4 lb. (1.8 kg).

Specification options

| CT124 | Model number CT124 |
|-------------------------------|--|
| PA | RTD type: CA = 10 Ω copper NA = 120 Ω nickel PA = 100 Ω platinum, TCR = 0.00392 PB = 100 Ω platinum, TCR = 0.00391 PD = 100 Ω platinum, TCR = 0.00385 PF = 1000 Ω platinum, TCR = 0.00385 |
| 1 | Supply power: 1 = 115/230 VAC 2 = 24 VDC |
| CT124PA1 = Sample part number | |

Dimensions shown in inches (mm)



Worldwide Headquarters
 7300 Commerce Lane
 Minneapolis, MN 55432 USA
 Tel: 1.763.571.3121
 Fax: 1.763.571.0927
 Sales Tel: 1.763.571.3123
 sales@minco.com
 www.minco.com

European Headquarters
 Usine et Service
 Commercial, Z.I.
 09310 Aston, France
 Tel: (33) 5 61 03 24 01
 Fax: (33) 5 61 03 24 09

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