PCAL450 - Process Calibrator with Temperature

Source & Measure DC Voltage, Current, and Temperature

The PCAL450 is designed for measuring, sourcing, and simulating DC voltage and current signals, as well as temperature signals, in industrial control and instrumentation systems. It supports 11 types of thermocouples and 5 types of RTDs for comprehensive temperature calibration and verification. Ideal for calibration, troubleshooting, and loop testing, it delivers accurate signal validation with DC voltage/current input and output functions, active and passive current sourcing, and manual step or waveform simulation capabilities. An integrated 24V loop power supply enables efficient transmitter testing, while simultaneous measurement and output with a dual display improves productivity during setup, diagnostics, and maintenance. Additional features, including mA percentage display mode, provide greater flexibility for process calibration applications.



Key Features:

- **Simultaneously measure and source with large dual backlit display**
- **High accuracy of ±0.05% DCV and ±0.02% DCmA for measuring and ±0.05% for sourcing**
- **Temperature function supports 11 types of Thermocouples and 5 types of RTDs**
- **Resistance function with support for 2-wire, 3-wire, and 4-wire configurations for accurate RTD simulation and measurement**
- **Switchable 0 to 20mA and 4 to 20mA ranges with % readout for rapid loop verification**
- **Auto sawtooth and triangular current outputs for efficient loop testing**
- **0 to 10VDC output with high resolution for precise calibration**
- **Built-in flashlight, auto power off, and low-battery indicator for field use**
- **Optional Traceable Calibration model includes a Certificate of Traceability to N.I.S.T. for quality assurance and compliance documentation**

Applications:

- Calibration Labs
- Process Control
- Electronic Circuit Testing
- Instrumentation Development
- Automotive manufacturing and testing
- Laboratories and Research & Development

Users:

- Electrical and electronics engineers
- Calibration and metrology technicians
- Maintenance and service engineers
- Process control engineers
- QA/QC, test engineers, field service technicians
- R&D engineers and lab technicians

Specifications

Specifications	Range	Resolution	Basic Accuracy
Measure:			
DC Voltage	100mV, 1V, 35V	0.001mV, 0.1mV, 1mV	±(0.05%+0.03mV)
DC Current	30mA	0.001mA	±(0.02%+4μA)
Resistance (2-wire, 3-wire, 4-wire)	500Ω, 5kΩ	0.01Ω, 0.1Ω	±(0.05%+0.2Ω)
Type K Thermocouple (w/Reference Junction Compensation)	-148°F to 2501°F (-100.0°C to 1372.0°C)	0.1°	±1.5°F/0.8°C (32°F to 752°F/ 0°C to 1372.0°C)
Thermocouple Types	J, K, R, S, E, T, N, A, B, C, D		

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Specifications (continued)

Specifications	Range	Resolution	Basic Accuracy
RTD Types - 3-wire	Pt100 (385), Pt200 (385), Pt500 (385), Pt1000 (385), Cu50		
Source:			
DC Voltage	100mV, 1V, 10V	0.01mV, 0.1mV, 1mV	±(0.05%+0.03mV)
DC Current	20mA	0.001mA	±(0.05%+4µA)
Resistance	400Ω, 4000Ω	0.1Ω, 1Ω	±(0.05%+0.2Ω)
Type K Thermocouple (w/Reference Junction Compensation)	-328°F to 2501°F (-200.0°C to 1372.0°C)	0.1°	±0.9°F/0.5°C (-148 to 752°F/ -100.0 to 400.0°C)
Thermocouple Types	J, K, R, S, E, T, N, A, B, C, D		
RTD Types - 3-wire	Pt100 (385), Pt200 (385), Pt500 (385), Pt1000 (385), Cu50		
Loop Supply	24V (±10% accuracy)		
Power	3 × AA batteries (included)		
Dimensions	7 × 3.6 × 2" (180 × 90 × 52mm)		
Weight	2.2lbs (1kg)		

Ordering Information

PCAL450 ..... Process Calibrator with Temperature
PCAL450-NIST ..... Process Calibrator with Temperature with Certificate Traceable to NIST



What's In the Box

- PCAL450 Calibrator
- Industrial Test Leads with Clips
- Spare Fuses
- Thermocouple Adapter
- Latch Key
- 3 × AA Batteries
- Quick Start Guide

For more information about PCAL450, please scan or click:

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