

INFORMATION & SPECIFICATIONS DATA SHEET

TEMPERATURE & PROCESS INSTRUMENTS - INC

PTC-8010 Precision Universal Thermocouple and RTD Temperature Calibrator

The PTC-8010 Precision Temperature Calibrator with the New ClearBrite™ High Graphic Display is an ideal device to handle all of your temperature calibration needs in a truly rugged, low-cost package. It combines virtually all widely used thermocouples and RTDs in one device, you will never have to worry about finding a temperature device you can not calibrate. This is especially true when calibrating smart or pulsed RTD transmitters, where many other calibrators fail to work or operate at reduced accuracy specs. The PTC-8010 handles those applications with ease.

Features

- ▶ New ClearBrite High Graphic Display
- ▶ 3 Key Martel Menu System
- ▶ Calibrate thermocouples and RTDs with one unit
- ▶ Works with Rosemount 3144 and all other smart transmitters
- ▶ Direct keyboard entry enables quick output changes
- ▶ High accuracy $\pm 0.4^{\circ}\text{C}$ J T/C and $\pm 0.3^{\circ}\text{C}$ 4W Pt385 RTD; all errors included
- ▶ Measure or Read Ten (10) T/C types and eight (8) RTD types including PT 385 (1,000 Ohm) and Cu (10 Ohm)
- ▶ NEMA 4 rated case, rugged design
- ▶ RTD simulation works with all pulsed (smart) transmitters
- ▶ YSI 400 series thermistor range for medical applications
- ▶ Store up to nine (9) setpoints for each output function
- ▶ RTD function compatible with all pulsed transmitters
- ▶ RS232 interface

Specifications

Thermocouple Types: J, K, T, E, R, S, N, B, L, U including 10 to 70 mV range

Temperature scale: ITS90

RTD Types: Pt 385 (100, 200, 500, 1000 ohms) Pt 392, JIS, Ni 120, CU10, YSI 400

Input Ranges: See Tables below

Accuracy: See Tables below

Ohms Ranges: 0 to 400.00 and 400.0 to

3200.0

RTD IEX-range: 0.01mA to 3mA

RTD Frequency Response: 10mS works with all pulsed transmitters

Operating Temperature: -10°C to 50°C

Storage Temperature: -40°C to 60°C

Power Supply: 4 AA Alkaline Cells, 30 hours typical operating time

Size: 7.5" x 4" x 1.5"



Each instrument includes Instruction Manual, Rubber Boot and NIST Certificate.



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Thermocouple Read and Source (All errors included)		
Type	Min/Max Temperature Range	Accuracy
J	-200.0 to 0.0°C (-328 to 32°F)	0.6°C (1.1°F)
	0.0 to 1200.0°C (32 to 2192°F)	0.4°C (0.7°F)
K	-200.0 to 0.0°C (-328 to 32°F)	0.8°C (1.4°F)
	0.0 to 1370.0°C (32 to 2498°F)	0.5°C (0.9°F)
T	-200.0 to 0.0°C (-328 to 32°F)	0.8°C (1.4°F)
	0.0 to 400.0°C (32 to 752°F)	0.5°C (0.9°F)
E	-200.0 to 0.0°C (-328 to 32°F)	0.5°C (0.9°F)
	0.0 to 950.0°C (32 to 1752°F)	0.4°C (0.7°F)
R	-20 to 0.0°C (-4 to 32°F)	2.49°C (4.5°F)
	0 to 500 (32 to 932°F)	1.7°C (3.1°F)
	500 to 1750 (932 to 3182°F)	1.3°C (2.3°F)
S	-20 to 0 (-4 to 32°F)	2.4°C (4.3°F)
	0 to 500 (32 to 932°F)	1.7°C (3.1°F)
	500 to 1750 (932 to 3182°F)	1.4°C (2.5°F)
B	600 to 800 (1112 to 1472°F)	2.1°C (3.8°F)
	800 to 1000 (1472 to 1832°F)	1.7°C (3.1°F)
	1000 to 1800 (1832 to 3272°F)	1.3°C (2.3°F)
L	-200 to 0.0°C (-328 to 32°F)	0.45°C (0.8°F)
	0.0 to 900.0°C (32 to 1652°F)	0.4°C (0.7°F)
U	-200 to 0.0°C (-328 to 32°F)	0.7°C (1.3°F)
	0.0 to 400.0°C (32 to 752°F)	0.45°C (0.8°F)
N	-200 to 0.0°C (-328 to 32°F)	1.1°C (2.0°F)
	0.0 to 1300.0°C (32 to 2372°F)	0.6°C (1.1°F)
mV Read/Source	-10.00 to 75.00 mV	0.015% ±.02 mV

RTD Read and Source		
Type	Min/Max Temperature Range	Accuracy
Pt100 (385)	-200.0 to 800.0°C (-328 to 1472°F)	0.33°C (0.6°F)
Pt100 (3926)	-200.0 to 630.0°C (-328 to 1166°F)	0.3°C (0.5°F)
Pt100 (3916)	-200.0 to 630.0°C (-328 to 1166°F)	0.3°C (0.5°F)
Pt200 (385)	-200.0 to 630.0 (-328 to 1166°F)	0.8°C (1.4°F)
Pt500 (385)	-200.0 to 500.0°C (-328 to 932°F)	0.3°C (0.5°F)
	500.0 to 630.0°C (932F to 1166°F)	0.4°C (0.7°F)
Pt1000 (385)	-200.0 to 100.0°C (-328 to 212°F)	0.2°C (0.5°F)
	100.0 to 630.0°C (212 to 1166°F)	0.3°C (0.4°F)
Cu10	-100.0 to 250.0 (-148 to 482°F)	2.2°C (4.0°F)
CU50	-180.0 to 200.0°C (-292 to 392°F)	0.5°C (0.9°F)
CU100	-180.0 to 200.0°C (-292 to 392°F)	0.3°C (0.5°F)
Ni120 (672)	-80.0 to 260.0°C (-112 to 500°F)	0.2°C (0.5°F)
YSI400	15.00 to 50.00°C (58 to 122°F)	0.05°C (0.09°F)



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Signal Type	Minimum Range	Maximum Range	Excitation Current	Accuracy
Ohms Read (low)	0.00	400.00	NA	0.1 Ohm
Ohms Read (high)	400.0	1500.0	NA	0.5 Ohm
	1500.1	3200.0	NA	1.0 Ohm
Ohms Source (low)	5.00	400.00	0.1 to 0.5 mA	0.15 Ohm
	5.00	400.00	0.5 to 3 mA	0.1 Ohm
Ohms Source (high)	400.0	1500.0	0.05 to 0.8 mA	0.5 Ohm
	1500.0	3200.0	0.05 to 0.4 mA	1.0 Ohm

Order Information

Part Number	Description	Price
PTC-8010	Universal Thermocouple & RTD Calibrator, Each instrument includes Instruction Manual, Protective Rubber Boot and NIST Calibration Certificate.	\$1195.00
Accessories		
Description		
80340	AC Adapter Charger (Universal voltage with international adapters)	\$44.00
10077	AA Nicad Battery (4 required)	\$9.50 ea
MRBK204	Rechargeable Battery Kit includes 4 AA 2500 mAH Nickel-Metal Hydride rechargeable batteries, external quick charger/battery conditioner, power cord and world-wide connector kit.	\$92.00
C232SJ RS232	Communications Cable with miniature plug	\$32.00
80029	T/C wire kit J, K, T, E with mini plug	\$110.00
80036	T/C wire kit R, S, N, B with mini plug	\$126.00

* Price Subject to change without notice, please visit our web site for the latest pricing and specifications

Ordering is easy fast and secure just go to our web site at:

<http://www.tnp-instruments.com>

and Click on the Online Store Link, for your convenience we accept the following credit cards



Need more performance and features in the field?

Try the MC-1210 Multi-Function Calibrator Measure and source 13 Thermocouple types, 13 RTD types, Ohms, current, voltage, frequency, and source pulse trains. Calibrate transmitters with the isolated mA/V read-back circuit. Measure pressure with BETA pressure modules. Drive 4-20 mA loops up to 1000 Ohms with the built-in 24 V supply. Directly enter custom RTD coefficients. Program dedicated setpoints in all source modes. Calibrate almost anything with the highest accuracy in its class $\pm 0.015\%$ of reading!

Visit <http://www.tnp-instruments.com> for details.

Pricing for the MC-1210 start at \$2095.00.

