

TRC - 2700

Temperature Calibrator (RTD+TC)



Features

- Combination of RTD and Thermocouple (TC) calibration
- Simulate and measure 14 types of RTD and resistance
- Simulate and measure 11 types of thermocouples (TC)
- 2W, 3W, and 4W connections for RTD simulation and measurement
- Accept wide range of excitation current (0.05mA to 5mA) for RTD simulation
- Individual cold junction compensation (CJC) for simulation and measurement of thermocouples. CJC can be used to fine tune temperature calibration.
- Easy 0% and 100% setup and operation
- Easy 25%▲ (up) and 25%▼ (down) for temperature calibration.
- Individual memory of storing 0% and 100% setup for different RTD types and thermocouple types
- Auto step and auto ramp for easy linear calibration
- Warning of too low or too high excitation current (LO or HI) from the measurement device
- Warning of exceeding calibrator driving current (IEX)
- Memory of last setup when power off
- Easy numerical keypad for input
- Dot Matrix LCD with backlight
- Very low power consumption of 30mA with backlight off
- 15 minutes easy auto-power-off. 15 minutes timer resets itself when any input changes
- 2 minutes easy auto-backlight-off. 2 minutes timer resets itself when any input changes

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Specifications are based on a one year calibration cycle and apply from +18 °C to +28 °C unless stated otherwise. All specifications assume a 5-minute warmup period.

Ohms Measure

Range(Ω)	Accuracy (% of Reading + digits)	Range(Ω)	Resolution
0.00Ω to 400.00Ω	0.015%+0.05Ω	0 to 100	0.001
400.0Ω to 4000.0Ω	0.015%+0.5Ω	100 to 1000	0.01
4000.0Ω to 7000.0Ω	0.03%+1.0Ω	1000 to 7000	0.1

Read accuracy is based on 4-wire input. For 3-wire ohm measurements, assuming all three leads are matched, add 0.05 Ω (0.00 Ω~400.00 Ω), 0.2 Ω (400.0 Ω~4000.0 Ω) to the specifications. Temperature coefficient : ±(0.002% of reading + 0.002% of range)/°C (<18°C or >28°C)

Ohms Source

Range(Ω)	Excitation Current from Measurement Device	Accuracy (% of Output + digits)	Resolution (Ω)
1.0Ω to 400.0Ω	0.05mA to 5mA	0.015%+0.1Ω	0.1Ω
1.00Ω to 400.00Ω		0.015%+0.05Ω	
400.0Ω to 1500.0Ω		0.015%+0.5Ω	
1500.0Ω to 4000.0Ω		0.015%+0.5Ω	
4000.0Ω to 7000.0Ω		0.03%+1Ω	

Driving voltage<1.7V and Temperature coefficient : ±(0.002% of reading + 0.002% of range)/°C (<18°C or >28°C)

Temperature of Thermocouples

(MEASURE & SOURCE, 0.1°C & 0.1°F Resolution, Internal Cold Junction Compensation, thermocouples accuracy not included, 3 minutes after plugging in thermocouples.)

	°C		°F	
	Range	Accuracy	Range	Accuracy
K	-200 to -150	0.7	-382 to -238	1.26
	-150 to 0	0.6	-238 to 32	1.08
	0 to 1000	0.5	32 to 1832	0.9
	1000 to 1370	0.7	1832 to 2498	1.26
J	-200 to -150	1.0	-382 to -238	1.8
	-150 to 0	0.6	-238 to 32	1.08
	0 to 1050	0.7	32 to 1922	1.26
E	-200 to -150	0.8	-382 to -238	1.44
	-150 to 0	0.5	-238 to 32	0.9
	0 to 850	0.4	32 to 1562	0.72
	850 to 1000	0.7	1562 to 1832	1.26
T	-200 to -150	0.8	-382 to -238	1.44
	-150 to 0	0.7	-238 to 32	1.26
	0 to 400	0.3	32 to 752	0.54
R	0 to 500	1.5	32 to 932	2.7
	500 to 1760	1.0	932 to 3200	1.8
S	0 to 500	1.5	32 to 932	2.7
	500 to 1760	1.0	932 to 3200	1.8
N	-200 to 0	1.0	-328 to 32	1.8
	0 to 1300	0.6	32 to 2372	1.08
L	-200 to 0	0.8	-328 to 32	1.44
	0 to 900	0.6	32 to 1652	1.08
U	-200 to 0	1.1	-328 to 32	1.98
	0 to 600	0.5	32 to 1112	0.9
B	600 to 800	0.6	1112 to 1472	1.08
	800 to 1000	0.6	1472 to 1832	1.08
	1000 to 1820	0.6	1832 to 3308	1.08
C	0 to 1800	0.8	32 to 3272	1.44
	1800 to 2310	1.2	3272 to 4190	2.16

Temperature of RTD

RTD Sensor inaccuracies not included. Temperature coefficient : ±0.05°C/°C for Measure, ±0.05°C/°C (<18°C or >28°C) for Source.

MEASURE

Range (°C)	Resolution (°C)
-200°C to 0°C	0.1°C
0°C to 800°C	0.01°C

SOURCE

Range (°C)	Resolution (°C)
-200°C to 800°C	0.1°C

RTD Type (α)	Source (°C)		Measure (°C)		Source Current
	Range	Accuracy	Range	Accuracy	
10Ω	-200 to 100	1.5	-200 to 100	1.5	2mA
Pt(385)	100 to 800	1.8	100 to 800	1.8	2mA
50Ω	-200 to 100	0.4	-200 to 100	0.4	
Pt(385)	100 to 800	0.5	100 to 800	0.5	1mA
100Ω	-200 to 100	0.2	-200 to 100	0.2	
Pt(385)	100 to 800	0.015%+0.18	100 to 800	0.015%+0.18	1mA
200Ω	-200 to 100	0.2	-200 to 100	0.2	
Pt(385)	100 to 630	0.015%+0.18	100 to 630	0.015%+0.18	250µA
500Ω	-200 to 100	0.3	-200 to 100	0.3	
Pt(385)	100 to 630	0.015%+0.28	100 to 630	0.015%+0.28	100µA
1000Ω	-200 to 100	0.2	-200 to 100	0.2	
Pt(385)	100 to 630	0.015%+0.18	100 to 630	0.015%+0.18	1mA
100Ω	-200 to 100	0.2	-200 to 100	0.2	
Pt(3902)	100 to 500	0.015%+0.18	100 to 500	0.015%+0.18	1mA
100Ω	-200 to 100	0.2	-200 to 100	0.2	
Pt(3916)	100 to 630	0.015%+0.18	100 to 630	0.015%+0.18	1mA
100Ω	-200 to 100	0.2°C	-200 to 100	0.2	
Pt(3926)	100 to 630	0.015%+0.18	100 to 630	0.015%+0.18	100µA
10Ω Cu(427)	-100 to 260	1.5	-100 to 260	1.5	
120Ω Ni(672)	-80 to 260	0.15	-80 to 260	0.15	1mA
50Ω Cu(427)	-180 to 200	0.4	-180 to 200	0.4	2mA
100Ω Cu(427)	-180 to 200	0.2	-180 to 200	0.2	2mA
YSI400	15 to 50	0.2	15 to 50	0.2	100µA

Read accuracy is based on 4-wire input. For 3-wire RTD measurements, assuming all three RTD leads are matched, add 1.0 °C (Pt10 and Cu10), 0.6 °C (Pt50 and Cu50), 0.4 °C (Other RTD types) to the specifications. As long as driving voltage is less than 1.7V, excitation current is 0.05mA~5mA for all range. (0Ω to 7000Ω)

General Specifications

Dimension	214.0 (L) x 98.7 (W) x 56.0 (H) mm 8.4" (L) x 3.9" (W) x 2.2" (H)
Weight	480g / 16.9oz (batteries included)
Operation Environment	0°C ~ 50°C, <85% RH
Accessories	Carrying case x 1, User manual x 1, 1.5V SUM-3 battery x 5, K-type thermocouples (1M, single plug) x 1, K-type thermocouples (1M, double plugs) x 1, Test leads with prods (red/black) and alligator clips (red/black) x 2 sets, Test leads (banana plugs, red/black) and alligator clips (red/black) x 1 set, Stackable test leads for short circuit (10cm, black) x 1

* Specifications are subject to change without notice.