



INFORMATION & SPECIFICATIONS DATA SHEET

TEMPERATURE & PROCESS INSTRUMENTS - INC

MC1000 High Accuracy Multi-Function Process Calibrator

The MC-1000 Multi-Function Calibrator provides the combination of a high accuracy calibrator and common DMM functions. This single instrument will calibrate virtually any process device - read and source thermocouples, RTDs, Ohms, Voltage, current, frequency, pressure - and test continuity as well. The MC-1000 is compatible with both Fluke 700 Series and BETA pressure modules with the addition of a simple connector/adaptor. The MC-1000 features a simple user interface, large display, and an RS232 interface.

Features

- ▶ $\pm 0.4^{\circ}\text{C}$ thermocouple/ $\pm 0.3^{\circ}\text{C}$ RTD accuracy
- ▶ $\pm 0.015\%$ of reading electrical accuracy
- ▶ Ten (10) T/C types and eight (8) RTD types, plus YSI 400 Thermistors
- ▶ Read and source modes
- ▶ Full function 4 to 20 mA read, source, simulate, and read/power modes with $\pm 0.015\%$ of reading accuracy
- ▶ Source or read 0 to 20 Volts ($\pm 0.015\%$ of reading accuracy)
- ▶ Measure 0 to 250 VDC or VAC
- ▶ Direct keyboard entry enables quick output changes
- ▶ Store up to nine (9) setpoints for each output function
- ▶ RTD function compatible with all pulsed transmitters
- ▶ RS-232 interface

Specifications

Input Ranges: See Tables below

Accuracy: See Tables below

Continuity: 0 to 400.0 Ohms; audible tone when under 10 Ohms

mA Compliance: Up to 1,000 load

Voltage Drive Capability: 1 mA

RTD IEX-Range: 0.01 mA to 3 mA

RTD Frequency Response: 10 ms - works with all pulsed transmitters



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

Operating Temperature: -10°C to $+50^{\circ}\text{C}$
(14°F to 122°F)

Storage Temperature: -20°C to 70°C (-4°F
to $+158^{\circ}\text{F}$)

Power Requirements: 6 VDC Batteries 4 AA alkaline batteries, 25 hours typical operating time.

Dimensions: 8.7" H x 4.2" W x 2.3" D
(220.9 x 106.6 x 58.4 mm)

Weight: 30.5 ounces (863 gms)



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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)
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)

Signal Type	Minimum Range	Maximum Range	Excitation Current	Accuracy
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



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Process Signal Type	Min - Max Range	Accuracy (% of reading ±counts)
V Read (low)	0.000 to 20.000	0.015% ±2
VDC Read (high)	0.0 to 250.0	0.05% ±2
VAC Read (high)	0.0 to 250.0	0.5% ±2
V Source	0.000 to 20.000	0.015% ±2
mV Read	-10.00 to 75.00	0.015% ±2
mV Source	-10.00 to 75.00	0.015% ±2
mA Read	0.000 to 24.000	0.015% ± 2
mA Source	0.000 to 24.000	0.015% ± 2
CPM Source	2.0 to 1000.0	0.05%
Hz Source	1 to 1000	0.05%
KHz Source	1.0 to 10.0	0.25%
CPM Read	0.0 to 1000.0	0.05% ±1
Hz Read	0.0 to 1000.0	0.05% ±1
KHz Read	0.00 to 10.00	0.05% ±1
	Min - Max Range	Accuracy
Ohms Read (low)	0.00 to 400.00	0.1
Ohms Read (high)	400.0 to 1500.0	0.5
	1500.1 to 3200.0	1.0

Order Information		
Part Number	Description	Price
MC1000	Multifunction Calibrator, Each instrument includes Instruction Manual, Test Leads, Protective Rubber Boot and NIST Calibration Certificate.	\$1360.00
Accessories	Description	
80000	AC Adapter/Charger	\$23.00
10077	AA Nicad Battery (4 required)	\$9.00 ea
80029	T/C wire kit J, K, T, E with mini plug	\$89.00
80036	T/C wire kit R, S, N, B with mini plug	\$110.00

* 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-1200 Multi-Function Calibrator Measure and source 13 T/C 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 ±0.015% of reading! Visit <http://www.tnp-instruments.com> for details. Pricing for the MC1200 start at \$1895.00.



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