

# MARTEL

ELECTRONICS



*Calibration Technology Starts Here*

*Precision  
Dual Display Multifunction Calibrator*

*Accuracy  
by  
Any  
Measure*



## MARTEL Beta MC-1200

### The MC-1200

The MC-1200 Multi-Function Calibrator provides a feature set unmatched in high accuracy, hand-held calibrators in its price range. The MC-1200 provides the functions and accuracy associated with fixed installation, laboratory instruments, and has everything needed for virtually any calibration task. Measure and source thermocouples, RTDs, current, voltage, and frequency, and source pulse trains. A communications port compatible with both Fluke 700 Series and BETA pressure modules is provided, as is an isolated mA/V read-back circuit. Arrow keys, direct numeric keypad entry, and three software-driven function buttons, plus a large backlit, menu-driven graphics display combine to provide a highly intuitive, simple yet powerful operator interface. Built-in 250 Ohm resistor for HART™ compatibility, compatibility with smart transmitters and PLCs, full fuseless protection, and a serial communications port for full control with ASCII commands, are just some of the additional features that make the MC-1200 the single, most indispensable tool available for virtually any calibration task. The MC-1200 is supplied in a tough, rubber boot; a carrying case is also available as an option.

### General Features

- Measure and source T/Cs (13 types), RTDs (13 types), Ohms, current, voltage, frequency; source pulse trains
- Isolated mA/V read-back circuit for complete transmitter calibration
- Pressure module communication port compatible with BETA pressure modules
- Built-in 24 V supply can drive 4 – 20 mA loops up to 1000 Ohms
- Direct entry of custom RTD coefficients (R0, A, B, C)
- All source modes can be programmed with dedicated setpoints to speed calibration and linearity tests
- Highest accuracy in class to 0.015% of reading
- Meets CE requirements and is designed to IEC 1010 safety standards
- Supplied in full rubber boot

For more information:

- Call us toll free at 800-821-0023 or 603-434-1433
- Fax us at 603-434-1653
- Email us at [sales@martelcorp.com](mailto:sales@martelcorp.com) and ask for a MC-1200 brochure
- Or go to our website, [www.martelcalibrators.com](http://www.martelcalibrators.com) and click on MC-1200
- **Online Demo**

### Specifications (23 °C ±5 °C unless otherwise noted)

#### Voltage Read and Source

Source	0.000 to 20.000 VDC
Read	
Isolated	0.000 to 30.000 VDC
Non Isolated	0.000 to 20.000 VDC

#### Thermocouple mV

Read/Source	-10.000 to +75.000 mV
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#### Current (mA)

Source	0.000 to 24.000 mA
Read	
Isolated	0.000 to 24.000 mA
Non-Isolated	0.000 to 24.000 mA

#### Frequency (1 to 20 V selectable amplitude)

CPM Source and Read	2.0 to 600.0 CPM
Hz Source and Read	1.0 to 1000.0 Hz
kHz Source and Read	1.00 to 10.00 kHz

#### Pulse (Source only; 1 to 20 V selectable amplitude)

Pulses	1 to 30,000.0
	2 CPM to 10 kHz

#### Ohms

Source	5.0 to 4000 Ohms
Read	0.00 to 4000.0 Ohms

#### Thermocouple Read and Source

J Thermocouple	-200.0 to +1200.0 °C
K Thermocouple	-200.0 to +1370.0 °C
T Thermocouple	-200.0 to +400.0 °C
E Thermocouple	-200.0 to +950.0 °C
R Thermocouple	-20.0 to +1750.0 °C
S Thermocouple	-20.0 to +1750.0 °C
B Thermocouple	+600.0 to +1800.0 °C
C Thermocouple	0 to +2316.0 °C
XK Thermocouple	-200.0 to +800.0 °C
BP Thermocouple	0 to +2500.0 °C
L Thermocouple	-200.0 to +900.0 °C
U Thermocouple	-200.0 to +400.0 °C
N Thermocouple	-200.0 to +1300.0 °C

#### RTD Read and Source

Ni120 (672)	-80.0 to +260.0 °C
Pt100 (385)	-200.0 to +800.0 °C
Pt100 (3926)	-200.0 to +630.0 °C
Pt100 (3916)	-200.0 to +630.0 °C
Pt200 (385)	-200.0 to +630.0 °C
Pt500 (385)	-200.0 to +630.0 °C
Pt1000 (385)	-200.0 to +630.0 °C
Cu10	-100.0 to +260.0 °C
YSI400	+15.00 to +50.00 °C
Cu50	-180.0 to +200.0 °C
Cu100	-180.0 to +200.0 °C
Pt385	-10-200.0 to +800.0 °C
Pt385	-50-200.0 to +800.0 °C

#### Environmental

Operating Temperature	-10 °C to +50 °C
Storage Temperature	-20 °C to +70 °C
Stability	±0.005% of reading/°C outside of 23 °C ± 5°C

#### Power Requirements

Batteries	4 AA; alkaline or optional rechargeable
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#### Mechanical

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)

#### Accessories Included

Test leads, 4 AA alkaline batteries, NIST Certificate, instruction manual

#### Optional Accessories

Carrying Case; Model CC572  
T/C lead kits  
Pressure Modules

#### Accuracy

Voltage	±0.015% of reading, ±2 mV
Thermocouple mV	±0.02% of reading, ±10 µV
Thermocouple Errors	(in °C; add 0.2 for Cold Junction Compensation error)

RDT Read and Source	
Type J	0.2 °C
Type K	0.3 °C
Type T	0.2 °C
Type E	0.2 °C
Type R	1.2 °C
Type S	1.2 °C
Type B	1.2 °C
Type C	0.6 °C
Type XK	0.2 °C
Type BP	0.9 °C
Type L	0.2 °C
Type U	0.25 °
Type N	0.4 °

	Read	Source
Current (mA)	±0.015% of reading, ±2 µA	±0.015% of reading, ±2µA
CPM	±0.05% of reading, ±1 LSD	±0.05% of reading
Hz	±0.05% of reading, ±1 LSD	±0.05% of reading
kHz	±0.05% of reading, ±1 LSD	±0.125% of reading
Ohms	works with all pulsed transmitters down to 5 ms	
400 Ohm Range	±0.025% of reading, ±0.05Ω	±0.025% of reading, ±0.05Ω
4000 Ohm Range	±0.025% of reading, ±0.5Ω	±0.025% of reading, ±0.5Ω

#### The MC-1200 At A Glance



**PRESSURE MODULE COMMUNICATIONS PORT** - Pressure module connector; compatible with BETA pressure modules (not shown). Pressure measurements from 1" H2O to 10,000 PSI, module dependent.

**READ-BACK DISPLAY** - The top half of the display is dedicated to read-back from the device-under-test, or a pressure module.

**MAIN DISPLAY** - The lower half of the display is for all input and output combinations.

**FUNCTION KEYS** - Three software-controlled function keys; functions displayed over each button at bottom of display.

**POWER ON/OFF** - Turns power on/off. Auto shut-off function.

**COMPUTER COMMUNICATION CONNECTION** - Mini-jack (stereo) serial communications connection. Allows full remote control.

**ARROW KEYS** - Arrow keys allow rapid movement of cursor and setting of output values.

**HOME KEY** - HOME key displays main operating screen.

**CLEAR ENTRY KEY** - Allows clearing of entry..

**ENTER KEY** - Accepts entries into memory and updates outputs.

**NUMERIC KEYPAD** - Rapid numeric entry of data values

**ISOLATED READ-BACK JACKS** - Volts, mA, and mV with loop power.

**THERMOCOUPLE** - Input/output for thermocouple.

**VOLTAGE/OHMS/HERTZ** - Input/output for voltage, Ohms, and frequency.

**CURRENT** - (mA) Input/output for current.

### Measuring Pressure with the MC-1200

The MC-1200 is compatible with both Fluke 700 Series and BETA pressure modules, with the use of an adapter kit.\* Please refer to the separate Pressure Modules data sheet for module ranges and model numbers, as well as information about the adapter kit.

\*BetaPort Pressure Adapter, Model BPPA-100.

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