

# Millennium Series M2000 Bench Calibrator Lab Standard Voltage/Current Calibrator

**MARTEL**  
ELECTRONICS

MODEL 2000

RANGE: 100 mVDC  
Stby 0.000mVDC



Millennium Series

Precision Calibrator

The **Martel M2000 Bench Calibrator** sets a new standard in lab calibrator value — the M2000 features the accuracy and stability of calibration sources costing twice as much — and provides useful features no other calibrator offers in its class! Despite its world-class performance and powerful operating features, the M2000 Calibrator is very simple to setup and use.

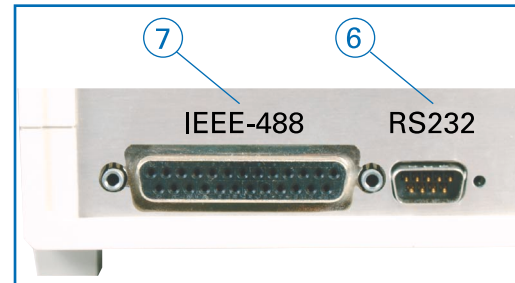
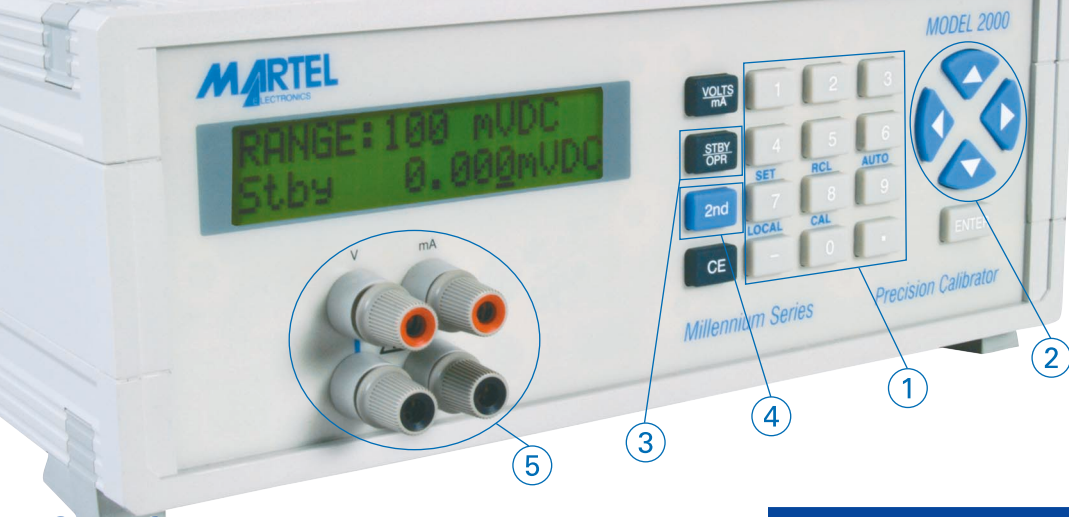
## Features:

- ▲ Superior calibration accuracy
- ▲ Direct keyboard entry or cursor entry with decade control
- ▲ Automatic standby function protects device under test
- ▲ Nine (9) manual/automatic setpoints per output range
- ▲ Tellurium-Copper binding posts reduce thermal EMFs to  $<1\mu\text{V}$
- ▲ Local or RS232 remote control
- ▲ Optional IEEE-488 control available
- ▲ Compatible with Fluke Met/Cal<sup>®</sup> software
- ▲ Optional rack/panel mount kit available



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## Specifications (1 year at 23°C ±5°C unless otherwise noted)

### Output Voltage

Range	0 to 100.000 mV 0 to 1.00000 V 0 to 10.0000 V 0 to 100.000 V
Resolution	0 to 100 mV Range 1 $\mu$ V 0 to 1 V Range 10 $\mu$ V 0 to 10 V Range 100 $\mu$ V 0 to 100 V Range 1 mV
Accuracy (% of reading)	0 to 100 mV Range $\pm 0.003\%$ (30ppm) $\pm 3.0 \mu$ V 0 to 1 V Range $\pm 0.003\%$ (30ppm) $\pm 20.0 \mu$ V 0 to 10 V Range $\pm 0.003\%$ (30ppm) $\pm 200.0 \mu$ V 0 to 100 V Range $\pm 0.003\%$ (30ppm) $\pm 2.0$ mV
Maximum Burden ( $\leq 1$ Ohm output impedance)	0 to 100 mV Range 10 mA 0 to 1 V Range 10 mA 0 to 10 V Range 10 mA 0 to 100 V Range 1 mA

### Output Current

Range	0 to 100.000 mA
Resolution	1 $\mu$ A
Accuracy (% of reading)	$\pm 0.01\% \pm 2 \mu$ A
Maximum Burden	10 V

### Stability

Warm-up Time 30 minutes to rated accuracy

### Temp Co. ( $\leq 18^\circ\text{C}/>28^\circ\text{C}$ )

10% of accuracy spec/°C

### Temperature Range

Operating 0°C to +50°C  
Storage -20°C to +70°C

### Power Requirements

Voltage range 90 to 240 VAC  
<15 VA

### Mechanical

Dimensions 11.5" x 4.7" x 8.75"  
(29.21 cm x 11.93 cm x 22.00cm)  
Weight Approximately 5 pounds (2.27 kg)  
Display 16 x 2 large character  
alphanumeric, backlit LCD

## Simple Data Entry

The M2000 provides simple, front-panel entry of output voltage or current using either direct keyboard entry (1) or cursor entry (2).

The M2000 calibrator has an automatic OPERATE/STANDBY function (3), which not only protects the device under test and the M2000 from overload conditions, but also provides UL/CSA-certified safe operation when ranging to output voltages over 30V.

A second function key (4) provides easy access for up to nine setpoints for each output range that can be recalled individually at the touch of a button, or can be stepped through automatically with control of the setpoint dwell time. The M2000 five way copper alloy binding posts (5) provide a wide range of connection options.

## Remote Control

All of the M2000 operating functions can be accessed via RS232 (6), using a standard PC running Fluke Met/Cal® software, HyperTerminal under Windows, Visual Basic, or any other software using an ASCII interface. An IEEE-488 bus interface is available as an option (7).

## Rock-Solid Stability

The M2000 stability and accuracy is traceable to NIST standards. The accuracy of the M2000 is specified for both 90-day and one-year intervals. A self-calibration may be performed at any time via the front panel or the remote interface.



## Need M2000 capability for field applications?

If you need a reliable calibrator for field use, the Martel IVC-222-HPII Field Calibrator provides the calibration performance you expect from Martel in a compact, rugged, field-portable form.



## Need even more performance?

If your calibration needs also require temperature and pressure, the Martel M2001 Bench Calibrator provides all of the performance, functionality, and ease of use of the M2000, plus calibration source/measurement for RTDs, thermocouples, and pressure modules. The Martel M2001 is truly a process calibration laboratory in a box, at a significantly lower price than any other product even remotely competitive in function!