

Frequently Asked Questions

About the Martel M2001 Calibrator

1. Is the M2001 traceable to NIST? Does it come with certificate of calibration?

The M2001 is fully traceable to NIST and is calibrated to ANSI-Z540. A certificate of calibration with test point data is provided with each unit.

2. What is the basic electrical accuracy?

The basic electrical accuracy is .003% of reading for voltage range and .01% of reading for milliAmp range.

3. What is the basic temperature accuracy for RTD? T/C?

The M2001 can measure RTD with accuracies to .018 °C and T/C accuracies to .15 °C.

4. What is the basic accuracy for pressure?

The M2001 is compatible with all Fluke Pressure Modules which carry accuracies of .025% to .05% F.S. The M2001 adds no additional error. Also, coming soon the M2001 will support the new Mensor 6100 Series Modules with .01% F.S. accuracy.

5. Does the M2001 have a serial interface and is it supported by third party software?

The M2001 has an RS232 interface and is supported by Fluke's MetCal® software. It is also compatible with Windows® Hyper Terminal.

6. Does the M2001 have an optional 488 interface?

The M2001 will have an optional IEEE-488.1 and IEEE488.2 interface. Please contact factory for availability.

7. Does the M2001 support user defined RTD's?

The M2001 has five user definable RTDs. The user can enter R_0 and A, B, C coefficients. User defined RTDs use the Calendar-Van Dusen equation.

8. Can the M2001 calibrate all my portable process calibrators?

Combined with a high accuracy DMM, such as the Hewlett Packard 34-401 or a Wavetek Datron, the M2001 can be used to calibrate all your hand-held voltage, current, temperature and pressure calibrators.

9. What is an SPRT and how is it used with M2001?

An SPRT is a Standard Platinum Resistance Thermometer. It is used as a highly accurate temperature reference. When an SPRT is calibrated, deviations from absolute temperature references are recorded. The deviations can be expressed as an R_0 and coefficients of the SPRT deviation equation. This data is typically provided with the SPRT probe. The M2001 allows users to enter R_0 and the deviation coefficients so they can get an extremely accurate reading from the SPRT.

10. How is thermocouple cold junction compensation accomplished and how accurate is it?

Cold junction compensation is achieved using a precision platinum RTD inside the TC jack. Compensation is accurate to ± 0.1 °C.

11. How does the M2001 source ohms?

The M2001 sources Ohms in 2 ranges: 5-400 and 5-4000. It can handle excitation currents up to 10 mA in the low ohms range and 1 mA currents in the high Ohms range. The M2001 will work with all pulsed RTD devices.

12. Will the M2001 work with RTD probes other than those from Martel?

The M2001 will work with all RTD probes that read under 4000 Ohms. The interface for RTD read is a 4 pin Lemo® Connector, a spare Lemo Connector can be ordered to wire up the probe or the optional "URA-1 RTD breakout box" can be used.

13. Will the M2001 support RTD probes other than 4-wire?

For maximum accuracy the M2001 has a 4-wire RTD interface. It can read 2-wire and 3-wire probes but does not support true 3-wire read functionality.

14. Are calibration curves based on ITS-68 or ITS-90?

All calibration for the M2001 is based on ITS-90.

15. Does the M2001 have protected inputs/outputs?

The M2001 uses solid-state resettable fuses combined with the automatic standby mode which puts the unit in standby during an overload condition.

16. How stable is the M2001? What is used for a reference?

The M2001 is specified to maintain its accuracy for a one year period. The internal A/D converter performs a self-calibration against a very accurate, temperature-compensated voltage reference.