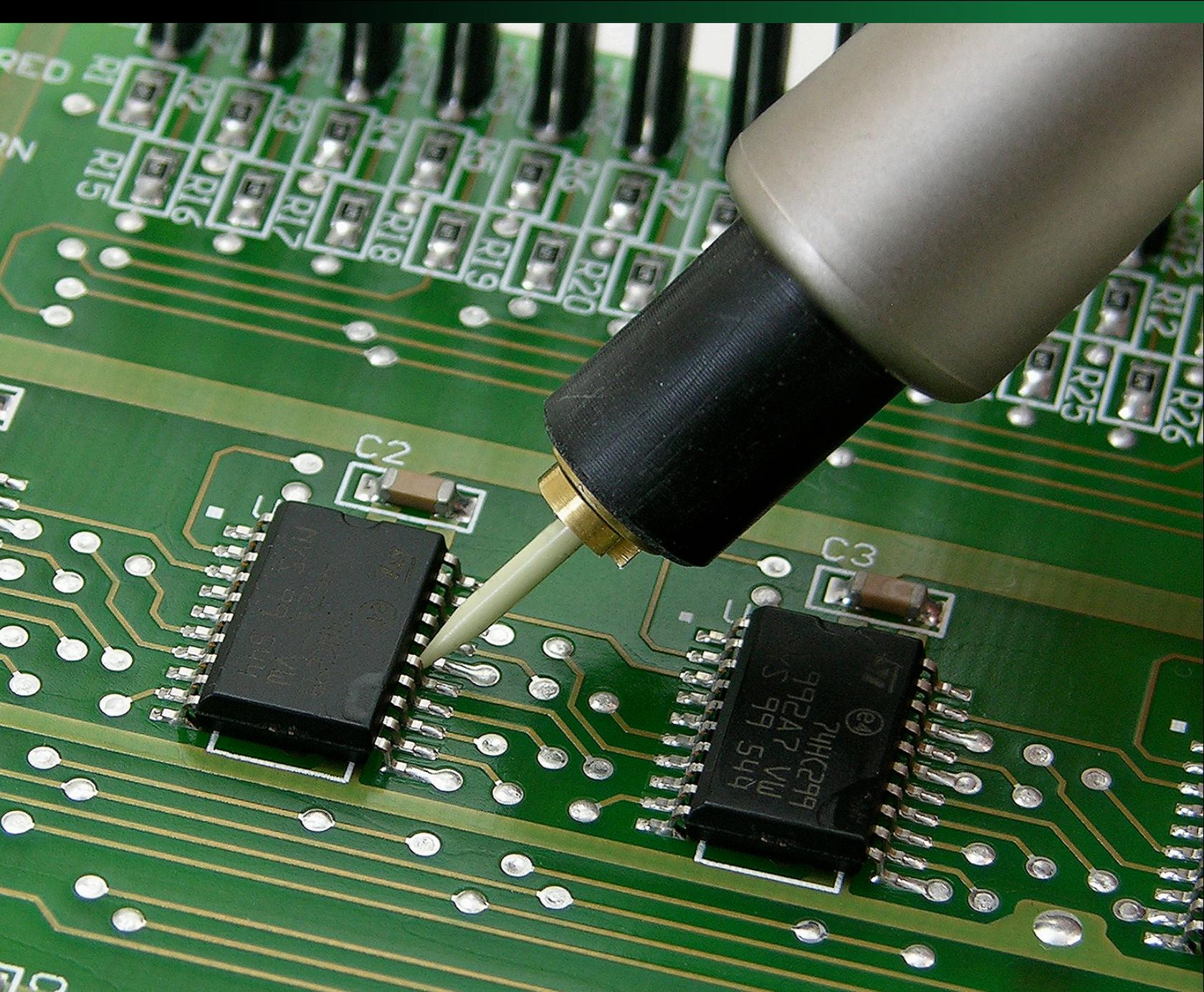


# CVM-780

## Contact Voltmeter



# CVM-780 Contact Voltmeter

HIGH IMPEDANCE ELECTROSTATIC VOLTMETER MEETING REQUIREMENTS OF ANSI/ESD S20.20

## Product Highlights

- High Impedance Hand-Held Electrostatic Contact Voltmeter
- Easily Measure Voltages on Conductors with Pinpoint Accuracy
- Measures actual Potential on any Conductor
- Includes 2 Ceramic Tips to Prevent Discharge
- Ranges from 0 to  $\pm 525$  Volts with an accuracy of  $< \pm 1\%$
- Powered by Rechargeable Nickel Metal Hydride Batteries
- Large, Easy to Read LCD Display
- Meets requirements of ANSI/ESD S20.20
- Certificate of Calibration Traceable to NIST included



## Product Overview

### A True Electrostatic Voltmeter

The CVM-780 Contact Voltmeter™ combines the ease of use of a digital voltmeter with the high input impedance and low input capacitance of a true electrostatic voltmeter in a small, portable, battery operated package. Being a true electrostatic voltmeter, not a field meter means that it reads actual voltage, without confusing it with electrostatic field strength, which is quite different.

### A Valuable ESD Analysis Tool

The CVM-780 Contact Voltmeter™ is powered by rechargeable Nickel Metal Hydride batteries and is the professional ESD practitioner's most valuable ESD Analysis Tool. It measures voltages on conductors in the manufacturing process that can make contact with ESD sensitive devices causing Machine Model (MM) ESD events. It easily measures voltages on devices and subassemblies that cause Charge Device Model (CDM) and Charged Board (CBE) ESD events.

### Unique Probe Design

The CVM-780 Contact Voltmeter™ uses a unique active probe design which is fully guarded and shielded for minimal environmental interference. It comes supplied with two specially designed ceramic tips and two plated metal tips. The ceramic tips are used to measure voltage on ESDS devices and subassemblies where discharge and production of transmitted EMI and RFI are major concerns.

### The Perfect Tip for the Right Measurement

Whenever two metal parts make contact an ESD event that creates EMI and RFI is likely to occur. The CVM-780's ceramic tips prevent arc discharges that cause disruptive transmitted energy and equipment interference. Metal tips are used to measure machine tools, production aids, chairs, carts and other objects in the static sensitive environment. The ceramic tips are quite strong but brittle and are used only for ESDS devices, while the plated metal tips are very robust and are used to measure non-ESD sensitive tools and equipment, and to perform routine audit measurements.

### Portable, Easy to Use and Accurate

The CVM-780 is designed for general auditing as well as detailed manufacturing process analysis to locate ESD problems and their causes. Use it to measure all critical points in the static sensitive manufacturing process. Until now, revealing the potential for such ESD events has never been possible. The CVM-780 is a must have for the serious ESD Control Team. One can measure electrostatic voltage at virtually any point in the manufacturing process without discharge, without RFI, without device damage.

### Meets the Requirements of ANSI/ESD S20.20 for Isolated Conductors

The CVM-780 is a High Impedance Contact Voltmeter meeting the requirements of ANSI/ESD S20.20 when measuring isolated conductors present in the ESD protected area (EPA). With its ability to measure up to 525 volts, the CVM-780 has more than enough range to meet the requirements of less than 35 volts on isolated conductors in the EPA.

Per ANSI/ESD S20.20, a Field Meter cannot be used to measure voltages on small conductors.





# CVM-780 Contact Voltmeter Set

| Voltage   | Accuracy <sup>1</sup>               |                                    |
|-----------|-------------------------------------|------------------------------------|
|           | When measuring DC voltage reference | When measuring floating conductors |
| 500 Volts | ≤±5 Volts                           | ≤±5% ±2 Counts                     |
| 100 Volts | ≤±2 Volts                           | ≤±5% ±2 Counts                     |
| 50 Volts  | ≤±2 Volts                           | ≤±5% ±2 Counts                     |
| 10 Volts  | ≤±1 Volt                            | ≤±10% ±2 Counts                    |



| Characteristics                       | CVM-780  |
|---------------------------------------|--|
| Intended Operating Range <sup>1</sup> | 0 to ±525 volts  |
| Resolution                            | 1 volt, 3 digit display  |
| Circuit Accuracy                      | <±1%   |
| Response Time                         | Approximately 1ms for a voltage step of 200V at the probe tip to the monitor output.       |
| Digital Display Update                | 3 readings per second  |
| Input Charge/Measurement              | Approximately 100 femptocoulomb/volt (1.0x10 <sup>-13</sup> C/V)                           |
| Input Impedance                       | ≥10 <sup>14</sup> ohm in Parallel with <1pF Capacitance                                    |
| Monitor Output                        | Scale Factor: 10,000:1; 100uV/V<br>(Compatible with Prostat PGA-710B Autoanalysis System™) |
| Recording Deviation                   | Typically < ±10 volts at ± 500 Volts   |
| Probe Tips                            | Metal: Nominally 0.95 and 0.45 inch<br>Ceramic: 0.90 and 0.40 inch ±0.05"                  |
| Portable Operation                    | Approximately 3.5 hours on Full Battery Charge<br>(Operates during Battery Charge)         |
| Power                                 | 4 each Rechargeable AA NiMH Batteries - 1.2V, 2700mAh                                      |
| Charger                               | 9V 20 W AC/DC External Wall Mount (Class II)<br>Adapter Multi-Blade - 90 ~ 264 VAC         |
| Meter Dimensions without boot (WxHxD) | 10.8 cm x 4.0 cm x 16.5 cm<br>4.25 in x 1.57 in x 6.5 in                                   |
| Meter Dimensions with boot (WxHxD)    | 10.8 cm x 6.0 cm x 19.1 cm<br>4.25 in x 2.36 in x 7.5 in                                   |
| Probe Dimensions (WxHxL)              | 3.7 cm x 2.0 cm x 23.5 cm<br>1.5 in x 0.78 in x 9.25 in                                    |
| Meter Weight with boot                | 24 oz (1.5 lb)   |
| Probe Weight                          | 3.6 oz (0.225 lb)  |
| Warranty                              | 1 Year Limited Warranty  |

<sup>1</sup> Maximum measurement range is ±575 Volts for brief periods.



# FOR MORE INFORMATION

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