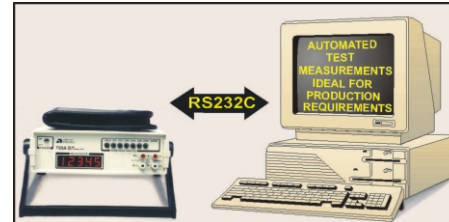


Low Resistance Measurements



Automated "RS232" control and Auto-range

The AMPTEC 720A Micro-Ohmmeter comes with a **N.I.S.T. traceable calibration certificate** at "No Extra Charge". It's also National Stock Number (NSN) listed with a multi year USAF contract award having been selected as the ideal replacement for the obsolete Keithley 580 Ohmmeter. For automated resistance measurements (sorting, recording results printing and more.) of "parts", it has an optional RS232C serial interface. The option "232" provides full remote range and resistance measurement control. The readings can be automatically taken over via the serial interface to a controller (PC). The option "232" (isolated RS232) microprocessor I/O also provides the AMPTEC 720A Micro-Ohmmeter with local autorange capability (automatic optimal range selection).

Resistance Measurements made Easy and Accurate - AMPTEC 720A Micro-ohmmeter

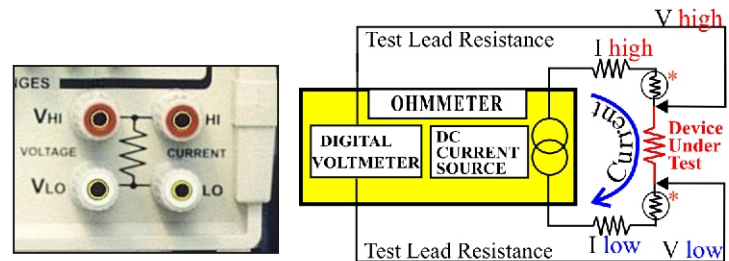
The AMPTEC 720A digital micro-ohmmeter makes 4 terminal Kelvin resistance measurements on a variety of devices including the following:

Winding resistance and shorted turns of: small motors, alternators, transformers, generators, coils, solenoids, relays, wire spools, chokes and ballasts.

Contact resistance of: switches, resistive trimmers, mating connectors, relay contacts, circuit breakers.

Bonding or Connection resistance measurement: any metal to metal connection, crimp lug connections for cables, weld joints, copper coils, PCB to switch or connector integrity testing, bolted joint cable connections and earth ground testing.

Component testing, matching and sorting: Resistors (all types -metal film, wirewounds), pots, strain gauges, shunts, I.C. substrates, thick film circuits, small motors and small transformers, chokes, thermistors, fuses, coils, extruded copper wire, Ni-Chrome wire, all alloys of wire, heating elements, printed circuit board clad resistance.



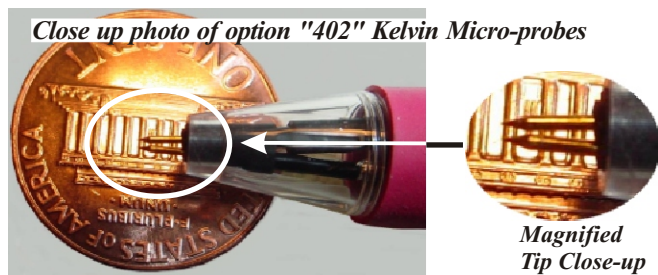
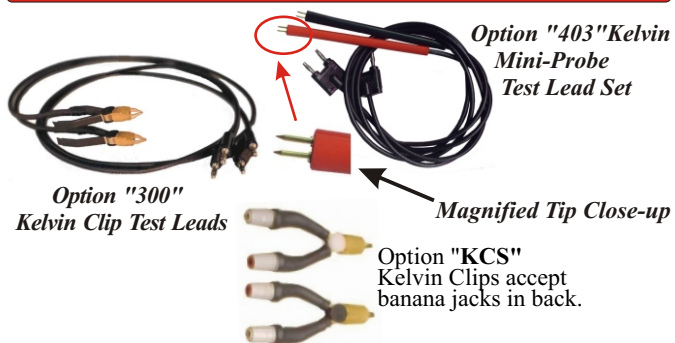
* connection contact resistance

Four Terminal Kelvin - Eliminates Test Lead and Connection Contact Resistance Errors

Many critical military, aerospace and industrial applications require resistance characterization of components, bonds, connections, at levels well below an ohm. In many applications, if a 2 wire (in-series) test lead set is used with an ohmmeter, a large resistance offset error is introduced, often times many orders of magnitude larger than the test items resistance. **ALL AMPTEC Micro-ohmmeters use a 4 Terminal or 4 Wire Kelvin Output (2 wires output a constant DC current and 2 wires sense the voltage drop across the resistance being measured)** to insure test lead length and test lead contact resistance are **eliminated as sources of error**.

Even the AMPTEC 720A's 5way binding posts make test wiring connections easy and direct. The 720A's *gold plated low thermal emf* 5way *output posts* allow simple connections to spade lugs, banana jacks, or even direct connection to bare wires. Competitive ohmmeters make it difficult to connect wire harnesses or spade lug terminal wiring. The 720A ohmmeter gold plated copper tellurium binding post provides a very low thermal emf connection. This avoids the common thermocouple error associated with different metals in contact with the binding posts of the 720A.

Kelvin Leads, Probes Accessories and Options



All AMPTEC 720 series test lead and probe sets are a minimum 48" length, dual banana termination at the ohmmeter end (call the Sales Department at AMPTEC RESEARCH for any custom requirement).

Option "232" *Isolated RS232C and Autorange* - provides both full remote readings/range control via serial interface plus local or manual autorange capability.

Option "300" *Gold Plated Four Terminal Kelvin Clip Test Lead Set* The Kelvin Clips open to a 1/2" to connect to wires, lugs, etc.

Option "350" *Large Four Terminal Kelvin Clip Lead Set* - The large Kelvin Clip ends (PVC composition handles) with attached cables, open to a 1 1/4" for connection to larger lugs, bus bars and bolt heads.

Option "402" *4 Terminal Kelvin Microprobes* - similar to Option 403, (see photo above) except each probe has two fine steel tips (spring loaded) with 0.05" separation (red and black handheld probes - 1 ea).

Option "403" *4 Terminal Kelvin Mini-probes* - (photo shown above) *Each probe has two spring loaded, gold plated, steel tips* with 0.18" separation. (one red and one black handheld probe). Excellent general purpose Mini-Probe, and along with the Option "300" Kelvin Clip Leads is included with the 720A Pouch Test Lead Package.

Option "519" *Rack Mount Adapter* includes support tray, flush panel with cutout for a standard NEMA 19" rack cabinet.

Option "720-BAT" Twin rechargeable battery packs (8 ea. 5.0 AHr "D"cells) with AC/DC Wall Adapter Charger.

Portable Battery Powered Operation (optional)

Now you can get the battery powered version of AMPTEC 720A Digital Micro-Ohmmeter. Option "720-BAT" provides twin heavy duty battery packs to power the 720A Ohmmeter for hours. Twin battery packs with 4 each 5.0 ampere hour heavy duty "D" cell packs give the AMPTEC 720A ohmmeter *portable take it anywhere "in-the-field"* use/capability. The AC/DC Wall Adapter not only charges the unit's batteries, it can also be used to power the meter while charging.



Ambient Temperature Correction Option

Option "20C" for copper automatically compensates and corrects for ambient temperature effecting the resistance of the copper device. The temperature coefficient (T.C. = 0.3931% per °C) of copper is used (option 20A for aluminum) and readings are referenced to a 20°C ambient temperature. *Heat Rise Determination* based upon the *Change in Resistance Method* for motors, transformers and ballasts can be performed with this option.

R_{HOT} and **R_{COLD}** determination

Equipped with a Test Lead Pouch and more . .

AMPTEC 720 ohmmeter commercial package comes with a test lead pouch, operator manual, Gold plated 4-Wire Kelvin Clip Leads, Mini-probes, and is configured for 120VAC / 220VAC 60Hz AC power. AMPTEC RESEARCH also offers full assortment of 4 wire Kelvin test leads and probes, along with all of AMPTEC's meter accessories, detailed at our website <http://www.amptec.com>

720A Range / Resolution / Test Current

200mΩ	2.0Ω	20.0Ω	200.0Ω	2.0KΩ	20.0KΩ	200KΩ
10μΩ	100μΩ	1.0mΩ	10mΩ	0.1Ω	1.0Ω	10Ω
100mA	100mA	10mA	1mA	100μA	10μA	1μA

AMPTEC 720A Micro-Ohmmeter Specifications

Accuracy: (1 year 0° - 40°C) ± 0.02% of reading ± 0.05% of range for 200 milliohm (fullscale), 0.02% of reading ± 0.03 % of range to the 200 Kohm range.

Display: Daybright 4 1/2 digit 19999 L.E.D.-20,000 counts

Terminal Configuration: 4-wire Kelvin resistance measurement

Operating Temperature Range: 0°C to 40°C

Conversion Rate: 3 per second, Display flashes for Overrange or "Open Circuit" state

Maximum Test Current: 100 mA,

Maximum Open Circuit Voltage: 1.5 VDC

Power: 115 VAC/220VAC 50-60 Hz or Rechargeable NICADS

Size: 235mm/9" D x 254mm/10" W x 76mm/3" H

Weight: 1.3 KG/3.0 lbs NET 2.8 KG/6.0 lbs shipping



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