

MEG

1865 Megohmmeter/IR Tester

USES:

- Production Testing of Insulation on Switches, Connectors, Cables, Printed Circuit Boards, Transformers, Motors and other Devices
- Insulation Properties of Natural and Synthetic Materials such as Oils, Plastics, Rubber or Porcelains
- Screening and Sorting of High Resistance Components
- Incoming Inspection and Quality Assurance Testing
- Product Design and Evaluation of Insulation Properties

FEATURES:

- Measurement Range to 100T Ω
- Programmable Test Voltage from 1 to 1000 V DC
- 0.5% Measurement Accuracy
- Automatic Ranging
- Programmable Test Times
- High Resolution LCD Display
- Storage of Test Setup and Results
- Automatic Zeroing of Test Leads
- Limit Entry for Pass/Fail Testing
- Direct Reading of Measured Current
- Keypad Lockout with Password Protection
- RS-232 and I/O Interfaces
- Optional IEEE-488 Interface

High Resistance Meter

Introduction

The 1865 Megohmmeter/IR tester, with digital display, is used for high accuracy measurements of insulation resistance on a wide variety of components, materials and electronic devices. Resistance values greater than 100 teraohms can be measured with a basic accuracy of 0.5% at DC voltages up to 1000V. A programmable limit makes the unit ideal for pass/fail testing in a production environment and is also adaptable for use in automated system applications with its optional IEEE-488 interface.

Description

Precision Measurements: The 1865 provides resistance measurement capability over a range of 1k Ω to 100T Ω (test voltage dependent), with a basic accuracy of 0.5%. To meet the test requirements for a wide range of devices, the test voltage is fully programmable up to 1000V DC. Sensing the proper resistance measurement range is done automatically, thus eliminating setup errors: and in order to eliminate lead or fixture errors, the operator can easily initiate an automatic zeroing routine of test leads.

Easy To Use: The 1865's menu programming system, simple controls and indicators combine for efficiency of test and productivity. It's multi-function keypad provides the operator with an easy way to program and make measurements.

Pass/Fail: Measured results are automatically compared to an operator programmed limit for pass/fail testing. Pass/Fail indicator lights or a pass/fail output from the instruments I/O interface give a clear indication of the measurement results.

Program Data Storage: Test setup conditions and measured results can be stored in instrument memory or on 3 1/2" disk when using the extended program storage option.

Automated Testing: For automated system applications, the 1865 includes an I/O interface connection with remote start and pass/fail outputs. An optional IEEE-488 interface is also available (or added later) which enables the 1865 to be used under computer control.

Current Display Mode: Besides a readout of insulation resistance in ohms, the operator can select a display mode for reading the measured current directly.

Safety Features: The 1865 provides safety features such as current limiting, a warning indicator when high voltage is active, and safety interlock, all for protection of the operator.

Component Test Fixture: An accessory fixture is available for use with the 1865 which accommodates a variety of component types, including radial, axial, and chip components. Its shielded case reduces electrical noise and interference and includes a cover interlock switch and remote start for maximum operator safety.



For more detailed specifications, visit
www.quadtech.com



For more information about special purchase, rent & lease options, call

1-800-253-1230
Fax 1-978-461-4295
Intl. 1-978-461-2100



1865 Megohmmeter

Resistance Range:	7 ranges (automatic or manual) $1 \times 10^3 \Omega$ to $>1 \times 10^{14} \Omega$ (voltage dependent) $1 \times 10^6 \Omega$ to $>1 \times 10^{14} \Omega$ at 1000V DC $1 \times 10^5 \Omega$ to $1 \times 10^{13} \Omega$ at 100V DC $1 \times 10^4 \Omega$ to $1 \times 10^{12} \Omega$ at 10V DC $1 \times 10^3 \Omega$ to $1 \times 10^{11} \Omega$ at 1V DC
Resistance Accuracy:	$\pm [0.45\% + \{(Rx/Vx)(0.0005 \text{ FS} + 2\text{pA}) + 30 \Omega / Rx\}100\%]$ Rx: Measured resistance in ohms Vx: Programmed voltage in volts FS: Full scale current range in amperes
Voltage Range:	1 to 1000 volts programmable in two ranges
Voltage Accuracy:	1 - 100V: 1% of setting + 1V, 25mV resolution 100 - 1000V: 1% of setting + 2V, 250mV resolution
Output Voltage Impedance:	1k Ω , $\pm 5\%$
Current Limited:	< 2mA
Current Measure:	1×10^{-13} - 1×10^{-3} A
Current* Accuracy:	1nA- 1mA $\pm [0.5\% + (0.0005\text{FS} + 2 \text{ pA})]$ 100pA- 1nA $\pm [1\% + (0.0005\text{FS} + 2\text{pA})]$ 1pA - 100pA $\pm [10\% + (0.0005\text{FS} + 2 \text{ pA})]$ *Specified at front panel connectors
Input Impedance:	5k Ω , $\pm 5\%$
Measure Limits:	Pass/Fail (1 limit)
Display:	<ul style="list-style-type: none"> • LCD graphics display • Voltage warning indicator • Pass/Fail indicator
Test Cycle:	Manual: Charge, Measure, Discharge Automatic: Charge: (0 - 300 sec), Measure: (0 - 300 sec), Dwell: (0 - 300 sec), Discharge: (0 - 300 sec)
Interfaces:	Standard: RS-232,I/O Port (w/safety interlock) Optional: IEEE-488 & Data/ Program Storage 3 1/2" disk
Input Terminals:	Four sheathed banana jacks, front or rear (optional) mount <ul style="list-style-type: none"> <li style="width: 50%;">• + unknown (red) <li style="width: 50%;">• guard (blue) <li style="width: 50%;">• - unknown (black) <li style="width: 50%;">• ground (green)
Other Features:	<ul style="list-style-type: none"> <li style="width: 50%;">• Menu Programming <li style="width: 50%;">• Stop on Pass <li style="width: 50%;">• Automatic Zeroing <li style="width: 50%;">• Safety Interlock <li style="width: 50%;">• Stored Test Conditions <li style="width: 50%;">• Keypad Lockout <li style="width: 50%;">• Measurement units (engineering or scientific) <li style="width: 50%;">• Measurement averaging (1 - 400)

Dimensions:	Benchtop unit with tilt back bail (w x h x d) : (17.5 x 5.25 x 16in) (444.5 x 133.4 x 406.4mm)
Weight:	18 lbs (8.2kg) - Net 26 lbs (11.8kg) - Shipping
Power:	90 to 250V, 47 or 63 Hz 60W max
Environmental:	In accordance with MIL-T-28800D, Type 3, Class 5, Syle E & F Operating: 0°C to +50°C, Storage: -40°C to +70°C



1865-52 Component Test Fixture

Components Accomodated:	Leaded Module: Body Size < 1inch Lead Size < 1.4mm dia
	SMD Module: Width: 0.5 to 10mm Height: 0.5 to 10mm (Diameter 0.5 to 3.0mm) Length: 0.1 to 8mm
	Alligator Clips: < 5mm diameter
Dimensions:	(w x h x d): (8 x 5.5 x 9in), (203 x 140 x 230mm)
Weight:	5 lbs (2.3kg) - Net, 9 lbs (4kg) - Shipping

Ordering Information

1865-00 Megohmmeter/IR Tester	Optional Accessories:
Includes:	1865-01 IEEE Interface Option (factory installed)
150073 Instruction Manual	1865-02 Data/Extended Program Storage Option (factory installed)
XX Calibration Certificate Traceable to NIST	1865-03 Rear Panel Input Option (factory installed)
700070 AC Power Cable	1865-50 Rack Mount Kit
800014 100k Ω Capacitor Adaptor	1865-51 Shielded Lead Set
800015 1M Ω Capacitor Adaptor	1865-52 Component Test Fixture
520049 Spare T2.5A, 250V Power Line Fuse	1865-70 IEEE Interface Option (field retrofit)
	Calibration Data

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5 Clock Tower Place, 210 East, Maynard MA 01754

