

# WIDE RANGE RESISTANCE METER

## Model 871

Autoranging, microcomputer-based resistance meter measures from Ohms to Terraohms. Meets specification requirements of ESDA, ASTM, EIA, SAE, DOD plus international documents including IEC and CECC specifying test voltages of 10 and 100 Volts.

### Features:

- **Measurement range:**  
 $1 \times 10^3 - 5 \times 10^9 \Omega @ 10V$   
 $1 \times 10^5 - 5 \times 10^{12} \Omega @ 100V$

- **Autoranging**

### Accuracy:

- $\pm 2\%, 10^3 - 10^9 \Omega$
- $\pm 5\%, 10^9 - 10^{12} \Omega$

- **Large 2-line alphanumeric display**
- **Remote measurement activation**
- **Compatible with most resistance probes**
- **PC compatible COMM port**
- **Battery or AC powered**



### Applications:

Many applications such as static control require measuring the resistance characteristics of packaging, work surfaces, flooring and material or objects where the build-up and dissipation of static charge is of concern. In addition, some materials are nonlinear and require a precise open circuit test voltage when measuring resistance.

The ETS Model 871 Wide Range Resistance Meter is a precision, battery or AC powered, autoranging, microcomputer-based instrument that meets the requirements for measuring resistance from  $1 \times 10^2 - 5 \times 10^{12}$  Ohms using selectable test voltages of 10 or 100 Volts.



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## Description:

The ETS Model 871 Wide Range Resistance Meter is a precision, microcomputer-based instrument that measures resistance from  $1 \times 10^2 - 5 \times 10^{12}$  Ohms using selectable test voltages of 10 or 100 Volts. The Meter is activated when the **MEASURE** select paddle switch is moved from **STANDBY** to either the  $V_e=10V$  or  $100V$  position. An optional foot switch enables remote activation of the instrument making it very convenient when measurements are being performed in a test chamber. A universal power module (90-265 VAC, 50/60 Hz) is included that permits continuous operation of the Meter without draining the batteries. A 2-line alphanumeric LCD readout displays the measured resistance on the top line and the test voltage ( $V_e=10$  or  $100V$ ) on the bottom line. Resistance is displayed in engineering units (ex.  $6.35e+8\Omega = 6.35 \times 10^8 \Omega$ ) plus **UNDERSCALE** and **OVERSCALE** indication. The lowest measurable resistance is  $100\Omega$  at  $10V$  and  $10k\Omega$  at  $100V$ . The highest measurable resistance is approximately  $5 \times 10^9 \Omega$  at  $10V$  and  $5 \times 10^{12} \Omega$  at  $100V$ . Measurement accuracy is better than  $\pm 2\%$  over the entire measurement range. A separate ON/OFF switch plus deactivating the backlight when battery power is used extends battery life. When battery voltage is low, **Low Battery** is automatically displayed.

A 9-pin sub-D COMM port provides real time data to the Hyper Terminal of a PC running Windows®. This data can then be transferred to a spreadsheet or other program to obtain the desired data logging and/or analysis.

The dual capability of operating from either battery or AC power makes the Model 871 an ideal instrument for both laboratory and field use.

Any resistance probe that can be connected to the Model 871 via standard banana jacks located on the rear of the instrument can be used. Refer to available ETS Series 800 Resistance/Resistivity Probes literature sheets for probes to meet virtually any surface, volume (solids, liquids and powders) and point-to-point resistance measurement requirement.

## Specifications:

### Measurement range:

$1 \times 10^3 - 5 \times 10^{11} \Omega @ 10V$

$1 \times 10^5 - 5 \times 10^{12} \Omega @ 100V$

**Test voltage:** 10 & 100V  $\pm 5\%$

**Voltage Select:** Manual

**Display:** 2-line LCD alphanumeric

Backlite OFF with battery pwr.

Backlite ON with AC pwr

**Resolution:**  $\pm 0.01$

**Accuracy:**  $\pm 2\% @ 10^3 - 10^9 \Omega$ ;  $\pm 5\% @ 10^9 - 10^{12} \Omega$

**Reading display:** Engineering units (ex: 2.33 e8)  
Optional (ex: 233 M $\Omega$ )

**Under scale display:** UNDERSCALE

**Over scale display:** OVERSCALE

### Communication properties:

Hyper Terminal program

Baud rate: 9600

Data bit: 8

Stop bit: 1

Parity: None

Flow Control: None

### Connectors:

Measuring Probe:

0.161" (41mm) Banana jacks

$V_e$  (Red), SENSE (Blk), GND (Grn)

Ground: 0.161" (41mm) Banana jack

Foot switch: 3.5mm

COMM PORT: 9-pin sub-D serial

**Cable:** 3' (92cm) 3-cond., shielded, Teflon™

**Power:** 2x9 V Alkaline batteries

Low Battery display:  $<13 V$

15 VDC Universal pwr module

N. American plug (90-265 VAC, 50/60 Hz)

**Enclosure:** Aluminum with tilt stand

**Dimensions:** 7.3"Wx2.5"Hx9.0"D

(17.8x6.4x22.9cm)

**Foot switch:** (Optional)

**Warranty:** One (1) year