



## PRS-801 Resistance System Set

The Prostat PRS-801 is a unique, constant voltage, wide range ohmmeter with data logging, calculating and computer communication capabilities. Fully portable and battery operated, the PRS-801 measures resistance from  $<0.1$  to  $2.0 \times 10^{14}$  ohms with measurement accuracy of  $\pm 5\%$ . It can be operated in Automatic, Automatic-Manual and Manual modes.

This sophisticated instrument digitally displays measurements in  $\Omega$ ,  $K\Omega$ ,  $M\Omega$ ,  $G\Omega$  and  $T\Omega$ , and in exponential format, e.g.,  $1.5E08$ .

It simultaneously displays data with a fully synchronous analog scale using  $\times 1$ ,  $\times 10$  and  $\times 100$  multipliers, and a bank of color programmable LED's ( $<10^3$  to  $>10^{14}$  Ohm). Multiple test voltages include 0.01-10V, 10V and 100V ranges, which may be selected automatically by the instrument to comply with industry measurement practices or manually by the operator.

The PRS-801 records and stores up to 80 measurements, and calculates Minimum, Maximum and Average of all stored data.

Data may be downloaded to standard computer systems via the instrument's RS-232 Output Port, serial cable and supplied software for ESD Program documentation in Windows<sup>®</sup> Excel<sup>®</sup> spread sheets.

Fully automatic, the PRS-801 controls test voltage, resistance ranging and electrification period to make the most accurate and repeatable measurements available to ESD Auditors and laboratory technicians.

## Specifications

**Range:**

Resistance from  $< 0.1$  ( $1.0E-1$ ) Ohms to 200 Tera ohms ( $2.0E+14$  ohms). Maximum Resistivity with S11.11 concentric ring  $2.0E+15$  ohms/square

**TEST VOLTAGES**

**Automatic mode Default:**

$< 0.01$  to 10 Volts Variable  $1.0E-1$  to  $1.0E+4$  Ohms

**Constant Voltage:**

10 Volts  $\pm < 0.2$  Volts  $1.0E+4$  to  $1.0E+6$  Ohms

At 10 & 100 Volts                      100 Volts  $\pm$  < 2.0 Volts                      1.0E+6 to 2.0E+14 Ohms

**Manual Mode:**

< 0.01 to 10 Volts Variable      1.0E-1 to 1.0E+5 Ohms  
10 Volts  $\pm$  < 0.2 Volts      1.0E+3 to 1.0E+9 Ohms  
100 Volts  $\pm$  < 2.0 Volts              2.0E+5 to 2.0E+14 Ohms

**Accuracy:**

Overall:  $\pm$  <5% at ambient conditions (at 23°C and 30% Rh).

Specific Range Tolerances:

1.0E-1 to 1.0E+1 ohms:  $\pm$ 5% Corrected for Test Lead Resistance

1.0E+1 to 1.0E+12 ohms:  $\pm$ 2.0% with 10-foot Test Leads

1.0E+12 to 2.0E+14 ohms:  $\pm$ 40% or  $\pm$ 0.25 Decade with Grounded, Shielded Leads

**Display:**

Multi-function 2-5/8" x 1-5/8" Liquid Crystal Display with 0.5" digit height. Displays 3-1/2 digits in Ohms, or 1.0EXX in exponential format. Ohms Display indicators:  $\Omega$ , K $\Omega$ , M $\Omega$ , G $\Omega$  and T $\Omega$ . Includes 19-segment analog scale (1-10 with 0.5 indication) with x1, x10, & x100 multipliers. Number of Data Points in Memory (0 – 80). Automatic Electrification Time (seconds), or Time required to Manually obtain steady state measurement. Displays data HOLD, BATTERY status, MIN, MAX, AVG, REC and Test Voltage (<10, 10, or 100 V)

**LED Indicators:**

14 Color Programmable LED's from  $<10^3$  to  $>10^{14}$  ohms. Colors (RED, GREEN, YELLOW, or Blank/OFF) may be operator programmed in SETUP mode.

**Timer:**

Times measurements In Seconds up to 99 seconds (Displayed on LCD)

**Memory:**

Register stores up to 80 data points (MEM # Displayed after RESET)

**RS-232 Output:**

Digital format: Exponential Power followed by Integer.

**Response & Electrification:**

Response from  $> 0.1$  to  $< 1.0E+06$  Ohms:  $< 2.0$  seconds  
Average Measurement Period from 0.1 ohms to 1.0E12 Ohms **2.5** Seconds. Calculated Electrification Period per ESD S11.11, **7.5** seconds 0.1 ohms to 10E+12 Ohms.  
Programmed Electrification 1.0E+12 to  $>2.0E14$  Ohms: **15.0+** seconds

**Power:** Two 9 Volts alkaline batteries. Nominal battery life 25 hours.

**Dimensions (W x L x D):** 4.0" x 6.0" x 2.0" (10 cm x 15 cm x 5 cm)

**Weight:** 22 oz with batteries (624g)

**Open Circuit Current (I):** < 4 mA @ 100 Volts

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