Resistance System Meter
PRS-812

Portable, precision resistance measurement from 0.1 to >9.9 x 10^{12} ohms

The Prostat PRS-812 is a unique, constant voltage, wide range ohmmeter with data logging and calculat¬ing capabilities. Fully portable and battery operated, the PRS-812 measures resis¬tance from 0.1 to >9.9x10^{12} ohms with measurement accuracy of <±5%. It can be operated in fully Automatic, Automatic-Manual and Manual modes.

The PRS-812 records and stores up to 80 measurements, and calculates Minimum, Maximum and Average of all stored data.Fully automatic, the PRS-812 controls test voltage, resistance ranging and electrification period to make the most accurate and repeatable measurements available to ESD Auditors and technicians.

RANGE

Resistance from 0.1 (1.0E-1)Ω to 9.99 Tera Ω (9.99E+12Ω). Maximum resistance indication: 200 Tera ohms (2.0E+14 ohms).

TEST VOLTAGES

Automatic Mode (Default):
0.01V to 10V Variable 1.0E-1 to 1.0E+4Ω

Constant Voltage:
10V: ± <0.2V 1.0E+4 to <1.0E+6Ω
100V: ± <2.0V 1.0E+6 to 2.0E+14Ω

Manual Mode:
0.01V to 10V Variable 1.0E-1 to <1.0E+5Ω
10V: ± <0.2V 1.0E+2 to 1.0E+9Ω
100V: ± <2.0V 2.0E+5 to 2.0E+14Ω

ACCURACY

Overall:
± <5% at ambient conditions (at 23°C and 30% Rh)

Nominal Range Tolerances:
1.00E-1 to 1.00E+2Ω: ±5%
1.01E+2 to 9.99E+9Ω: ±2%
1.00E+10 to 9.99E+11: ±5%
1.00E+12 to 9.99E+12: ±12%

DISPLAY

Multi-function 2-5/8" × 1-5/8" Liquid Crystal Display with 1/2" digit height

Displays 3-1/2 digits in Ω, or 1.0EXX in exponential format

Ω Display indicators: Ω, KΩ, MΩ, GΩ and TΩ. Includes 19-segment analog scale (1-10 with 0.5 indication) with ×1, ×10, & ×100 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 100V)

LED INDICATORS

14 color LEDs from <10E-3 to >10E+14Ω. Colors (red, green, yellow/orange or blank/OFF)

TIMER

Time measurements in seconds up to 99 seconds (displayed on LCD)

MEMORY

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

ELECTRIFICATION

Resistance Range Electrification Period

0.1Ω to <1.0E+6Ω	<3.0 seconds
1.0E+6Ω to <1.0E+12Ω	8.0 seconds
1.0E+12Ω and greater	15.0 seconds

Note: Electrification period varies based on conditions and material stability.

POWER

Two 9-VDC alkaline batteries
Nominal battery life 25 hours in Automatic
Greater than 35 hours in Automatic Manual

DIMENSIONS

4.0" wide × 6.0" long × 2.0" deep

WEIGHT

22 ounces, with batteries

OPEN CIRCUIT CURRENT (I)

<4 ma @ 100V

RESISTANCE RANGE SELECT

2 Triangular Arrow Buttons: UP and DOWN ¯. Select Resistance Range in single decades in Manual and Automatic/Manual modes.

TEST VOLTS

Manual selection of <10, 10 or 100V in Manual Mode

RECORD/RECALL

Turns Memory Register ON if OFF

Provides access to all data in Memory Register

Calculates and Displays Minimum, Maximum and Average of data stored in Memory Register

CLEAR

Erases all data in Memory Register; if in HOLD mode, discards the most recent Held Value

ON/OFF

Power-up, perform functional and battery tests

Power down if ON

BATT. TEST

Displays GOOD on LCD if acceptable voltage or Lo if unacceptable

RESET

Enters (saves) data into Memory Register, Clears HOLD and Display

TEST

Begins measurement sequence

BATTERY BUSS CUT OFF

ON/OFF Switch isolates batteries from instrument circuits for storage & transport

USEFUL MODES OF OPERATIONS

Auto Mode:
The instrument automatically selects and adjusts test voltage, resistance range, electrification period, then displays and Holds the measurement. The displayed measurement is the average of eight consecutive measurements, all within ±5% of each other. The measurement is "saved" in the Memory Register by pressing RESET. The instrument is now ready for the next measurement.

Manual Mode:
Allows operator to select resistance decade, test voltage and electrification period (EP)

Automatic Manual:
Same as Auto Mode with following exceptions:

- Allows operator to select starting resistance decade
- Always starts measurement from the last measurement value without resetting to zero. This extends battery life and speeds up measurement sequence.

DATA LOG & CALCULATION

In RECORD mode, the PRS-812 stores up to 80 measurements, and on demand will calculate and display the Minimum, Maximum and Average measurements stored in the register.

USAGE RECOMMENDATION

Designed for Intermittent use. Not intended for continuous use or production applications.

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