VARIABLE RESISTANCE REFERENCE PAR-809C

User Manual

PROSTAT®

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PROSTAT® PAR-809C VARIABLE RESISTANCE REFERENCE

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I. Introduction

A. The Prostat PAR-809C Variable Resistance Reference is a precision wide range resistance instrument used to measure the resistance range performance of wrist strap testers, footwear testers and other resistance indicating meters, fixtures and instruments.

1. The device under test's resistance performance range is indicated by the device's Pass/Fail lights when the PAR-809C is positioned to a selected resistance.

2. Every PAR-809C is individually inspected and measured for precise resistance of each reference position before leaving the factory and recorded.

B. The PAR-809C is intended as a resistance reference for DC circuits of 100 volts or less.

1. The factory resistance references are documented at 10 and 100 volts DC.

2. Inspection and re-certification of resistance reference values should be conducted annually.

II. Cautions & Warnings

A. Do not use the PAR-809C on circuits exceeding 100 volts DC.

B. As with any electrical device, use proper electrical precautions to avoid personnel shock.

C. Only qualified instrument repair personnel should open or repair the PAR-809C.

D. Do not store or use in damp environments.

E. PAR-809C Equipment and Accessories

1. One PAR-809C Variable Resistance Reference Instrument
2. One 9 volt DC battery used to power position indication lights.
3. Two (2) 24 – 30 inch test leads equipped with male banana plugs.

III. Inspection & Preparation for use

A. Install provided 9 volt battery by sliding battery compartment open and firmly snapping battery terminals to the appropriate connectors. Battery can only be connected in one way. Re-close the battery compartment.

B. Turn ON the **ON/OFF** slide switch located at the side of the unit: vary the rotating position knob to insure all indicating lights are functional.

1. Slide **ON/OFF** switch to OFF position until unit is intended for use.

2. NOTE that the battery provides power to indicating lights only.

    a. The battery does not affect the function of the instrument as a resistance reference.

    b. The position lights are provided as a convenience for the operation of the unit during use.

IV. Applications

A. The PAR-809C is a precision resistance reference constructed using 1 percent tolerance resistors to assure accuracy. It is designed to functionally test the resistance range and performance of a variety of equipment during routine audits, including: in-plant wrist strap checker **PASS/FAIL** range, footwear checker **PASS/FAIL** range, and other resistance indicating devices.

B. Used in conjunction with the Prostat PRS-812 or PRS-801 Resistance Meters, the PAR-809C functionally tests performance of the Prostat PWA-805 Wrist Strap Auditor. Calibration of resistance meters is easily confirmed using the PAR-809C.

C. Proper use of the PAR-809C insures accurate, functional performance confirmation of critical ESD control tools.

V. General Operations

A. Confirming Wrist Strap Tester Resistance Performance Range

1. Plug the two supplied test leads into the PAR-809C receptacles.

2. Plug one PAR-809C test lead into the wrist strap tester's Wrist strap Ground Cord receptacle.

3. Rotate the PAR-809C's Position Selector knob to Position 1, the lowest resistance reference.

4. Turn ON the PAR-809c'S position indicating lights by sliding the **ON/OFF** switch located on the side of the instrument to the ON position.

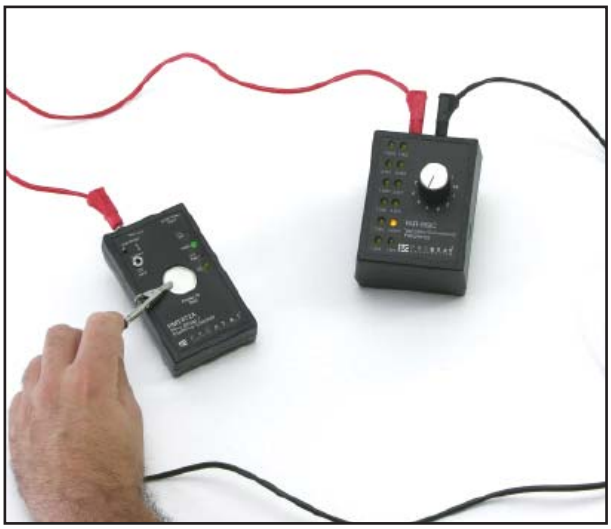
5. Insure the wrist strap device under test is ON and functional.

6. Using the second PAR-809C test lead with metal alligator clip installed, press the Push to Test button or plate on the wrist strap tester.

    a. The wrist strap tester **PASS** or **REJECT/FAIL** indication should actuate upon contact with the PAR-809C test lead alligator clip to the wrist strap tester's push to test button or plate.

    b. Note the reference resistance value and the response of the wrist strap device under test.

7. Vary the PAR-809C reference resistance by rotating the Position Selector Knob on the face of the PAR-809C to the next position and repeat step 6.



8. The resistance range positions where the device under test indicates **PASS** are those resistance values accepted by the wrist strap tester.

    a. Resistance positions below the **PASS** range should all be rejected by the device under test as too low.

    b. Resistance positions above the **PASS** range should all be rejected by the device under test as too high.

B. Confirming Foot Wear Tester Resistance Performance Range

1. Plug the two supplied test leads into the PAR-809C receptacles.

2. Attach an alligator clip to one PAR-809C test lead. Attach the alligator clip to the Foot Wear test plate.

3. Rotate the PAR-809C's Position Selector knob to Position 1, the lowest resistance reference.

4. Turn ON the PAR-809C'S position indicating lights by sliding the **ON/OFF** switch located on the side of the instrument to the ON position.

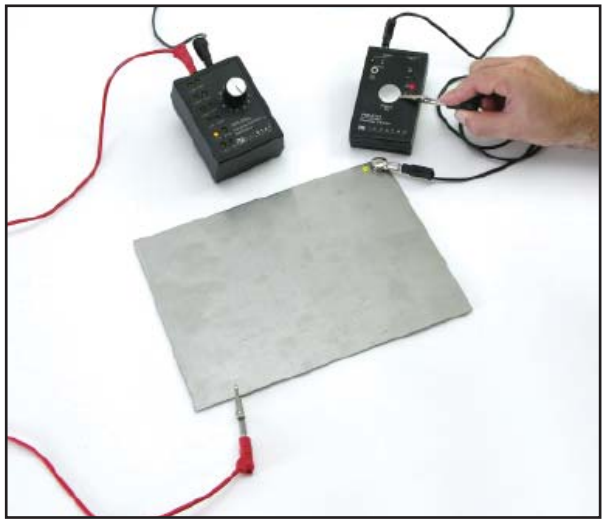
5. Insure the Foot Wear device under test is ON and functional.

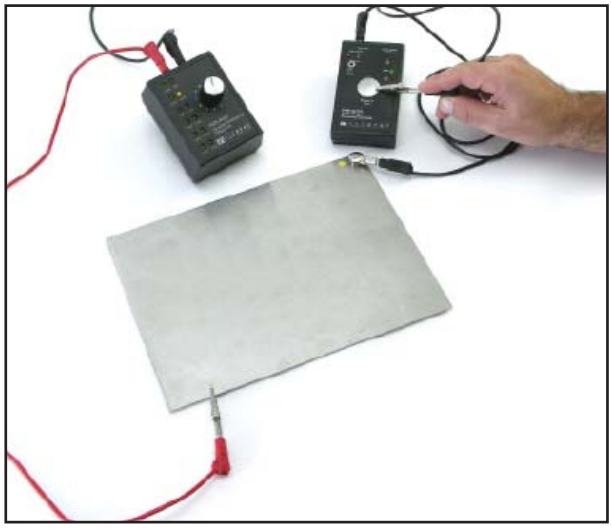
6. Using the second PAR-809C test lead with a metal alligator clip installed, press the push to **Test Button** or plate on the Footwear tester.

    a. The Foot Wear **PASS** or **REJECT/FAIL** indication should actuate upon contact with the PAR-809C test lead alligator clip to the Foot Wear tester's push to test button or plate.

    b. Note the reference resistance value and the response of the Foot Wear device under test.

7. Vary the PAR-809C reference resistance by rotating the Position Selector Knob on the face of the PAR-809C to the next position and repeat step 6.





8. The resistance range positions where the device under test indicates **PASS** are those resistance values accepted by the Foot Wear tester.

    a. Resistance positions below the **PASS** range should all be rejected by the device under test as too low.

    b. Resistance positions above the **PASS** range should all be rejected by the device under test as too high.

C. Confirming Resistance Measurement Performance of analog Megohmmeters (Prostat PRS-800, 3-M-701 or similar)

1. Check the BATTERY function of the meter; replace batteries if indication is **LOW**.

2. Turn the meter to its **OFF** position.

3. Install the meter test leads in the meter lead receptacles.

4. Plug the two meter test lead banana plugs into the PAR-809C receptacles.

5. Rotate the PAR-809C's Position Selector knob to Position 1, the lowest resistance reference.

6. Turn ON the PAR-809C's position indicating lights by sliding the **ON/OFF** switch located on the side of the instrument to the ON position.

7. Turn the Meter switch to the continuity position, push the test button on the meter and record the measurement.

8. Vary the PAR-809C reference resistance by rotating the **Position Selector Knob** on the face of the PAR-809C to the next position; record measurement as in step 7.

9. Select the 10 V position on the Megohmmeters, push the **Test Button** on the Megohmmeter and record measurement.

10. Vary the PAR-809C reference resistance by rotating the position Selector Knob on the face of the PAR-809C to successive positions, and record measurements as in step 9.

11. The indicated resistance of the Megohmmeter should be within 10 percent of the factory resistance indicated on the PAR-809C Calibration sheet for each position tested.

D. Confirming Functional Performance of the PWA-805 Wrist Strap Auditor

> **NOTE**
> The PRS-812 or PRS-801 is used for this functional test procedure.

1. Check the **BATTERY** function of the Resistance Meter; replace batteries if indication is **LOW**.

2. Turn the Resistance Meter to its **OFF** position

3. Install the meter test leads into the proper receptacles.

4. Plug the tow test lead banana plugs into the PWA-805 Meter receptacles

5. Plug the two supplies test leads into the PAR-809C receptacles

6. Attach an alligator clip (not provided) to one PAR-809C test lead. Attach the alligator clip to the Right hand cuff cylinder of the PWA-805 Wrist Strap Auditor.

7. Install the second PAR-809C test lead banana plug in the PWA-805 Cord receptacle

8. Position the PWA-805 three way rocker switch to its middle position, marked "**Cord & Cuff**".

9. Rotate the PAR-809C's position Selector knob to Position 1, the lowest resistance reference

10. Turn ON the PAR-809C position indicating lights by sliding the **ON/OFF** switch located on the side of the instrument to the ON position.

11. Turn the resistance meter on in the **AUTO** mode. Push the Test button on the meter and record the measurement.

12. Vary the PAR-809C reference resistance by rotating the Position Selector Knob on the face of the PAR-809C to successive positions and record measurements as in step 11.

13. The indicated resistance of the resistance meter should be within 10 percent of the factory resistance documented.

SUMMARY COMMENT
The PAR-809C is a wired test fixture and switch assembly. There are no resistors or electronic devices employed in this fixture.

VI. Maintenance

A. Replace 9 volt battery at least once each year. Remove battery when device is in extended storage, i.e. six months or greater

B. Periodically confirm resistance values of each resistance position at 10 volts using precision wide range ohmmeter. Contact Prostat Corporation for calibration Service if necessary.

C. Resistance measurement confirmation should be conducted once each year using a precision wide range ohmmeter traceable to NIST.

D. Wipe foreign materials from case, receptacles and controls using a soft dry cloth.

PAR-809C Variable Resistance Reference Specifications

Resistance Reference & Position: Resistance in Ohms

Position #1: $1.2x10^4$	Position #5: $1.5x10^6$	Position #9: $3.7x10^7$
Position #2: $1.0x10^5$	Position #6: $9.5x10^6$	Position #10: $9.5x10^7$
Position #3: $7.6x10^5$	Position #7: $1.05x10^7$	Position #11: $1.05x10^8$
Position #4: $8.45x10^5$	Position #8: $3.3x10^7$	Position #12: $1.0x10^9$

Case Size (L x W x H):	4.0” x 3.0” x 2.0” (11.4 cm x 9.5 cm x 5.1 cm)
Controls:	12 Position Rotary Range selector knob selects reference resistance – Knob Height 1.0” ON/OFF Slide Switch controls 12 LED position indicator lights
Connections:	2 Banana receptacles at end of case (Used to connect device under test in series with selected resistance)
Indication:	12 LED Range & Position indicator lights
Accessories:	2 each 24” (min) output cables with standard male banana plugs at each end.
Power:	One 9 Volts battery (included) for indicator light operation only. Battery does not influence performance of the resistor references.
Weight:	10.2 oz
Accuracy:	±2% Tolerance

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