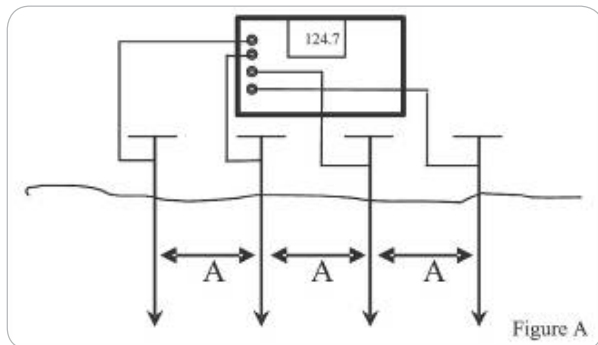


Soil Resistance Test System



The Model R1L-C is a series of portable ground resistance ohmmeters designed to measure grounding system resistance, as well as soil resistivity, over ranges from milliohms to 20KΩ full scale. The R1L-C is capable of Wenner, Fall of Potential, 62% methods as well as bond and continuity measurements. Two, three and four point measurements are standard for this instrument.

Application



Two and three wire configurations can be used when measuring grounding effectiveness of existing ground rods and other grounding systems. In the four wire mode, the R1L-C measures soil resistivity over areas where the test rods can be placed as close as desired and up to 150 ft apart (see **Figure A**: an example of 4 wire soil resistivity measurement). Using a resistivity chart or simple formula, the ohmic reading is converted to a soil resistivity measurement in ohm-cm.

Physical and Power

The R1L-C is housed in a rugged heavy-duty plastic case that seals against water and dirt. The Model R1L-C is powered by an internal rechargeable NiCad battery. The NiCad battery may be recharged from either an external 12-28 VDC source via front panel binding posts or AC power. Recharging from an external 12 to 28V DC source allows simple use of automotive or other portable power where ac outlets may not be available, making the R1L-C a fully field-grade rechargeable ground test system.

Prices and specifications subject to change without notice.

- Rugged: MIL PRF2880F Class 2
- Simple: One Button Test, Auto Range
- Ranges: 2Ω to 20kΩ (Auto and Manual)
- Accuracy: 1% of reading on 2Ω range
- Resolution: 1mΩ
- 2, 3 or 4 point measurements
- Offset Compensation
- Operates from -10 to 55 °C
- Complete Accessory Kit Including SS Ground Rods

Controls and Displays

Readings are displayed on a 3.5 digit LCD display with decimal points. Indications are displayed for “low battery”, “excessive stray current”, “excessive current electrode resistance”, and “excessive potential electrode resistance”. Battery charging is indicated by an LED. A “Push to TEST” pushbutton turns on power and takes a reading. Range selection is automatic with “UP” and “DOWN” pushbuttons providing manual override by one range. Four five-way binding posts are used to connect the test leads. Two binding posts allow connection of the external DC source for field recharging.

Accessory Kit



Ground Rods Included with R1L-C and CRA only
Rods may be purchased separately for model R1L-CR

The accessory kit is built for tough field duty in PPM's “Ready Rugged Right” tradition. It houses the 4 stainless steel test rods, electrical insulating gloves consisting of a rubber insulating insert and outer leather glove to protect against cuts and tears, 2 rugged rewind 250 ft test leads and a pair of 75 ft test leads wrapped on tough plastic holders. The kit is designed for quick setup and teardown in the field. The stainless steel ground rods are solid rods with welded handles and wing nut connectors. A helix is ground into the ½ inch diameter rods enabling them to cut through very rough terrain.

VOLTAGE AND RESISTANCE PRODUCTS

Specifications

Range	2Ω	20Ω	200Ω	2000Ω	20,000Ω
Resolution	1mΩ	10mΩ	100mΩ	1Ω	10Ω
Test Current	40mA	4mA	4mA	0.4 mA	0.4mA
Max Resistance in Current Path`	1.5KΩ	15KΩ	15KΩ	150KΩ	150KΩ
Test Voltage	80mV	80mV	800mV	800mV	8V
Max Resistance in Voltage Path Connections	20KΩ	20KΩ	20KΩ	20KΩ	20KΩ
Open Circuit Voltage	<35VPk	<35VPk	<35VPk	<35VPk	<35VPk
Accuracy (of Reading) + 2 digits	±1%	±2%	±2%	±2%	±2%

Test Frequency	25.6 Hz
Internal Rechargeable Battery	4 NiCd cells
Battery Life	>1000- 15 second tests
Recharge Source	110 VAC 50/60 Hz and external 12 to 28V DC
Display	3.5 Digit, 4.5 digit at 20KΩ range
Autorange	Includes Manual Over-ride ± one range
Indicators	Battery Condition, Battery Charging, Over Range, Excessive Stray Current, Excessive Noise
Weight of Instrument	8.5 Lbs
Weight of Accessory Case	27 Lbs with all accessories
Accessories Supplied R1L-C & CRA	1 carrying case that holds: 4 Stainless Steel Helix Heavy Duty Ground Rods, Linemens Gloves, 2-250 Ft. Wire spools on take up reels with handles, 2 sets 75 Ft test leads on tough plastic holders for easy storage, plus line cord, batteries and instruction manual
Accessories Supplied R1L-CR	Same as above without Stainless Steel Helix Heavy duty Ground Rods
Operating Temperature	-40°C to +55°C
Storage Temperature	-51°C to +71°C

Options
62.5: for measuring 62.5% procedure ground test
Converts model R1L-CR as follows:

- Adds 2 Ground Rods
- Removes all wire accessories
 - Adds 1 105 ft 14 Ga spool of test lead wire packaged same as the 250 ft roll
 - Adds Qty 1- 65 ft 14 Ga test leads packaged same as the 75ft test leads
 - Adds Qty 1 6 ft 14 Ga test lead terminated same as the 75 ft test leads

R1L-C NSN 6625-01-377-6166
R1L-CR NSN 6625-01-494-2684
R1L-CRA NSN 6625-01-520-4267
Meets Mil-Std. PRF 28800, Class 2, for Navy shipboard, submarine and shore applications