



TEGAM®

VOLTAGE AND RESISTANCE PRODUCTS

Model R1L-D1



High Accuracy Microohmmeter and RTD Monitor

- NSN: 6625-01-456-9125
- Rugged: MIL PRF2880F Class 3
- Portable: Longest Rechargeable Battery Life **(140 Hours)**
- Ranges: 200 mΩ to 2 kΩ (Auto and Manual)
- High Accuracy: 0.05 % of reading
- Resolution: 1 μΩ
- 2, 3, or 4 wire measurement
- Offset Compensation
- Back Lit Display



The Model R1L-D1 Digital High Resolution Ohmmeter is a portable digital ohmmeter and RTD monitor for measuring low resistance values. It is optimized for measuring 100 and 1000 Ω three and four wire RTDs and utilizes the four-wire technique to eliminate errors caused by the connection resistances. Two leads source and sink a regulated constant current through the resistance under test, and two separate leads measure the voltage drop across this resistance. The R1L-D1 then calculates the value of the resistor under test, and indicates the value on an LCD display. Three and two-wire measurement methods can also be selected.

To maintain accuracy, an automatic zero circuit turns off the test current and resets the zero of the instrument prior to each resistance reading. This also serves to null out any thermally-generated voltages in the test leads or in the resistance being tested.

Physical

The Model R1L-D1 is packaged in a rugged heavy-duty case that doubles as the instrument's transit case. When closed, a gasket seals the lid to protect the instrument against water and dirt. When the lid is open for operation of the instrument, a second front panel gasket provides additional protection against the environment. Panel seal switches are used for the controls. The front panel is aluminum, with durable markings. Connection to the device under test is via four front panel mounted 3-way binding posts.

Controls and Display

Resistance values are displayed on a 5½-digit LCD with decimal points, reading from 1.99999 to 19,9999. Over range and battery status conditions are indicated. Backlighting may be switched on for visibility in low light conditions. Over range and battery condition are indicated. Controls include: POWER ON/OFF, RANGE to select full scale resistance range, MODE to select 2, 3, or 4-wire measurements, and BACKLIGHT ON/OFF.

Power

Power is from internal rechargeable NiCad cells, and/or 110/220 VAC, 50/60 Hz power line. Power consumption is less than 10 W. The battery charges any time the line cord is plugged into a power receptacle. Battery charge time, from a discharged condition, is less than 8 hours for a full charge. Battery charge lasts for 140 operating hours maximum, and typically 60 hours.



TEGAM BKP-10 Kelvin probes used to measure contact resistance between shunt and circuit board trace



Specifications

| Resistance Ranges and Test Currents | | | |
|-------------------------------------|--|-----------------------------|--------------|
| Full Scale | Resolution | Accuracy* | Test Current |
| 199.999 mΩ | 1 μΩ | 0.05% of reading ± 15 count | 50 mA |
| 1.99999 Ω | 10 μΩ | 0.05% of reading ± 2 count | 50 mA |
| 19.9999 Ω | 0.1 mΩ | 0.05% of reading ± 1 count | 50 mA |
| 199.999 Ω | 1 mΩ | 0.05% of reading ± 1 count | 0.5 mA |
| 1999.99 Ω | 10 mΩ | 0.05% of reading ± 1 count | 0.5 mA |
| Recommended Calibration Cycle | 1 year | | |
| Physical and Power | | | |
| Operating Temperature | 0 °C to 50 °C | | |
| Storage Temperature | 40 °C to +71 °C | | |
| Size | 14” W x 11” D x 6” H | | |
| Weight | 8 lb | | |
| Power | 120/240 VAC 50/60 Hz | | |
| Battery | Five rechargeable NiCad batteries (included) | | |

*Accuracy based on recommended calibration cycle.

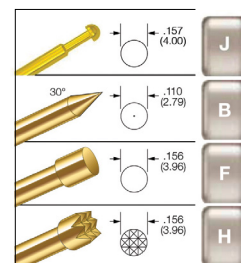
Optional Accessories

| Model | Description |
|--|----------------------------|
| KTL-100 | Kelvin Clip Leads |
| KAK-1M | Kelvin Alligator Clips |
| BKP-10 | Standard Kelvin Probe |
| MKP-6 | Kelvin Probe |
| HTP-100 | Pistol Grip Probes |
| HKC-100 | Large Kelvin Test Lead Set |
| View Accessory Datasheet | |



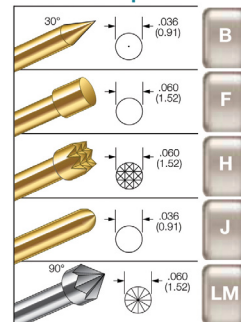
BKP-10 Probe Set with "B" Style Pins Installed

BKP Pin Options



MKP-6 Probe Set with "B" Style Pins Installed

MKP Pin Options



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