GenRad 1864-1644 Positive Polarity Megohmmeter

IET Labs features the 1864-1644 which has "reverse polarity" to operate in the same way as a GR 1644-A, while maintaining the higher performance of the GR 1864s.

Although the 1864-1644 and 1864 instruments are similar in appearance and accuracy, the polarity of the output voltage is inverted making the 1864-1644 ideal for cable testing on submarines or a direct replacement for the GenRad 1644.

1864-1644 Megohmmeter

See also:

- Megohmmeters: 1863 and **1864**
- Digital Megohmmeter/IR Tester: **1865 Plus**

Features:

- Reverse Polarity
- Rugged portable carrying case
- Charge current up to 5 mA
- High-accuracy: 0.01% (100 ppm)
- 200 test voltages: 10 Vdc to 1090 Vdc
- 50 kΩ to 200 TΩ (2 x 10^{14})
- Analog output
- 3 % basic accuracy
- Simple operation
- Direct reading, safe and reliable

Uses:

- Insulation resistance measurements for wire and cable on submarines
- Insulation resistance for capacitors
- A wide variety of insulation resistance measurements for components and devices
- Replacement for GenRad 1644

The 1864-1644 Megohmmeter is the choice for more demanding applications. It is the more flexible of the two megohmmeters. The test voltage can be set to any value from 10 Vdc to 109 Vdc in 1 V steps and 10 Vdc steps from 100 Vdc to 1090 Vdc. The 1864-1644 can be set to common test voltages for various capacitors. The 1864-1644 can measure resistances from 50 kΩ to 200 TΩ (2 x 10^{14} Ω).

The instrument is easy to use with direct-reading meter indication and lighted range switch that shows the multiplier for each range and voltage. The maximum current possible at the terminals is limited to 5 mA. A danger light near the terminals warns when voltage is present.

Stable power supplies and feedback voltmeter circuit minimizes drift and time wasting adjustments. Guard and ground terminals permit measurements of grounded or ungrounded two or three terminal devices.

The instruments are supplied in a convenient, portable, flip-tilt case that is a stand for the meter when in use and protects the megohmmeter during transit and storage.

GenRad 1864-1644 Positive Polarity Megohmmeter

SPECIFICATIONS

Resistance Range:
50 kΩ - 200 TΩ
Resistance Accuracy:
1864: (minimum reading is 0.5):
Range 1-5: ±2(meter reading+1)%
(For example, if meter reading is 0.5, accuracy is ±2(0.5+1)% = ±3%
Range 6: ±(2(meter reading+1)%+2%)
Range 7: ±(2(meter reading+1)%+3%)
Range 8: ±(2(meter reading+1)%+5%)

Accuracy applies for >100 V;
For ≤100 V add 2%.

An alternate way to write the accuracy specification would be:
1 Mohm to 10 Gohm: +/-4% of indication.
10 Gohm to 1 Tohm: ±7% of indication.
1 Tohm to 10 Tohm: +/-9% of indication
10 Tohm to 100 Tohm: +/-27% of indication

Meter Display:
Analog Meter
Caution High Voltage Indicator

Voltage Accuracy (across unknown)**:**
For ≥100 V ± 2%
For <100 V ± (3% + 0.5 V)

Short-Circuit Current:
6 mA maximum

Input Terminals:
Front Panel Mounted:
(+) Unknown (Red)
(-) Unknown (Red)
Guard (Red)
Ground (Gold)

Power:
100 - 125 *or* 200 - 250 V, Switch Selectable
50 - 400 Hz 13 W

Fuse:
For 90 to 240 V operation: T 250mA, 250 Vac, 5 x 20 mm fuse

Dimensions 8.5 x 7 x 5.5 in

Weight
4.4 kg (9.5 lbs) - Net
7.0 kg (14 lbs) - Shipping

Environmental:
Operating: 0 °C to + 45 °C,
Stated Accuracy, < 70% RH
Altitude: 0 to 2000 m operating, 0 to 4600 m non-operating

Storage:
-20 °C to + 60 °C,

1864-1644 Specifications

Voltage Setting	Rmin (Full Scale left end) (0.5 rdg.)	Rmax (right end)		Useful Ranges
		(10% of scale) (5 rdg.)	(2.5% of scale) (20 rdg.)	
10 Vdc to 50 Vdc	50 kΩ	500 GΩ	2 TΩ	7*
50 Vdc to 100 Vdc	200 kΩ	5 TΩ	20 TΩ	8
100 Vdc to 500 Vdc	500 kΩ	5 TΩ	20 TΩ	7*
500 Vdc to 1090 Vdc	5 MΩ	50 TΩ	200 TΩ	8

***Recommended Limit**

ORDERING INFORMATION

1864-1644	1864-1644 Megohmmeter
Includes:	Instruction Manual
	Calibration Certificate Traceable to SI

Available Accessories:	
630018	Lead Set
630018/S	Shielded Lead Set
1863-11	Resistivity Test Fixture