Model 1096A Dual Type IV Power Meter - DISCONTINUED

The Arbiter Systems®, Inc. Model 1096A Dual Type IV Power Meter is a standards-lab quality instrument based on a design of the USA National Institute of Standards and Technology (NIST). The Model 1096A is used with thermistor power sensors and an external digital voltmeter to make RF power measurements of the highest accuracy. Compare the unbeatable combination of system-oriented features along with a price well below older products, and you'll see why metrologists everywhere are making the Model 1096A Dual Type IV Power Meter the standard in precision RF and microwave power measurement.

Ease of Integration

The Model 1096A simplifies system integration with its two complete Type IV power meter circuits, built-in IEEE-488 interface and multiplexed DVM output, eliminating the need for additional interfacing hardware.

The Model 1096A also provides for temperature stabilization of ovenized thermistor mounts such as the Weinschel 1109, 1110, and 1111 mounts, in addition to supporting both uncompensated and temperature-compensated operation of mounts such as the HP 478A, 8478A, and 486A Thermistor Mounts.

Accuracy

Type IV power meters deliver the highest accuracy RF and microwave power measurements possible, and have become the standard for demanding measurements at national standards laboratories and major calibration facilities. The accuracy of the Type IV Power Meter is a complex function of the DVM being used to measure its output voltage, reference resistor errors, offset voltages and bias currents in the self-balancing current loop, and the power level being measured. Due to the demanding nature of the applications in which the Type IV power meter is used, a simple accuracy specification is not possible, at least not without seriously overstating the errors under some conditions. Therefore, a detailed error analysis is recommended in each application. For a complete discussion of the accuracy of power measurements made with the Type IV Power Meter, including the methods for performing this error analysis, refer to "A New Self-Balancing DC-Substitution RF Power Meter," by NIST's Neil T. Larson, in the IEEE Transactions on Instrumentation and Measurement, Vol. IM-25, No. 4, December 1976. If you have difficulty finding this article, please contact Arbiter Systems, Inc.

Model 1096A Specifications

Reference Resistor:

- Resistance 100 or 200 ohms, selectable
- Accuracy 100 ppm (0.01 %)
- Temperature Coefficient ≤ 0.8 ppm/°C
- Drift 20 ppm, first year

Operational Amplifiers:

- Type OP-77EZ, Analog Devices
- Offset Voltage 10 µV, initial 23 °C ± 5 °C
- Stability 0.3 µV/°C
- Drift 0.3 µV/month, typical
- Bias Current 2 x 10^{-9}A
- Noise Voltage 0.6 µVpp, 0.1 Hz to 10 Hz bandwidth
- DC Gain 2 V/µVCMRR 1 µV/V

DVM Multiplexer:

- Type Sealed, latching, low thermal offset relays; A, B, or Off

Temperature Stabilizers:

- Type Isolated, regulated power supply with balancing amplifier compatible with the Weinschel 1109, 1110, and 1111 ounts, or other 75-ohm nickel/constantan self-heating bridges.

Remote Programming Interface:

- Type IEEE-488

General:

- Line Power 100 Vac, 120 Vac, 220 Vac, or 240 Vac, ± 10 %, 47 Hz to 63Hz, 43 VA maximum
- Weight 5 kg (11 lbs), net.
- Size 100 mm x 210 mm x 400 mm (3.95 in x 8.25 in x 15.8 in),IEC standard (19 in) rack mount with accessory kit.

Available Accessories:

Order Number: Description

- 10962A: Weinschel Mount Cable
- 10963A: HP Mount Cable (non-compensated)
- 10964A: HP Mount Cable (uses second channel for compensation)
- 10965A: Pigtail Leaded Mount Cable
- 10966A: Test and Adjustment Kit
- AS0014401A: Rack Mount Kit, single unit
- AS0014601A: Rack Mount Kit, two units side-by-side