



DM 504A

The DM 504A Autoranging Digital Multimeter extends the functionality of the Tektronix TM 500 line of modular, digital multimeters with true RMS measurements, a "beeper" mode for indication of short circuits, and diode testing capability. The DM 504A also provides standard ac/dc voltage and current, and resistance measurements, and will operate in any compartment of a TM 500 or TM 5000 power module.

All measurement ranges, except temperature, diode measurements, and audible continuity (beeper), can be automatically or manually selected.

An audible "beeper" mode is provided for testing continuity. A beeper symbol is displayed when the 200 Ω mode is selected, indicating that a beeper will sound a continuous tone for measurements less than 10 Ω . In the 2 M Ω , 200 k Ω and 2 k Ω ranges a diode measurement indicator will illuminate on the display, indicating that V max is adequate for diode testing.

CHARACTERISTICS

DC Volts

Ranges – 200 mV, 2 V, 20 V, 200 V, 1000 V.

Accuracy^{*1} – For automatic or manual ranging 18 to 28°C: All ranges $\pm(0.05\%$ of reading $\pm 0.02\%$ of full scale).

CMMR – (Within 1 k Ω unbalanced) 100 dB at dc, 80 dB at 50/60 Hz.

NMMR – 60 dB at 50/60 Hz (± 0.2 Hz).

Max. Resolution – 10 μ V.

Step Response Time – < 1 s.

Input Resistance – 10 M Ω $\pm 0.5\%$.

Max. Input Voltage – 1000 V peak.

TRUE RMS AC VOLTS

Ranges – 200 mV, 2 V, 20 V, 200 V, 500 V.

Accuracy^{*1} – For automatic or manual ranging – 18° to 28°C: 200 mV to 200 V range, 30 Hz to 20 kHz. For input signals >10% to 100% of full range, accuracy is $\pm(0.6\%$ of reading + 0.06% of full scale). For signals >25%, and 10 kHz to 20 kHz add 4.1% additional error.

500 V range, 60 Hz to 20 kHz. For input signals >100 V to 500 V RMS, accuracy is $\pm(0.6\%$ of reading + 0.1% of full scale).

40 Hz to 60 Hz $\pm(1\%$ of reading + 0.1% of full scale)

CMMR – (With 1 k Ω unbalance) – 60 dB at 50 or 60 Hz.

Max. Resolution – 10 μ V.

Response Time – < 2 s.

Input Impedance – 10 M Ω $\pm 0.5\%$ paralleled by <100 pF.

Max. Input Voltage – Volts/Ohms/TEMP to LOW: 500 V RMS or 600 V DC, VOLTS/ohms/TEMP to GND: 1000 V peak. LOW to GND: 1000 V peak.

Crest Factor – 5 at full scale on all ranges except 500 V (500 V = 2).

RESISTANCE

Accuracy^{*1} – for automatic or manual ranging 18° to 28°C.

Range	% of Reading + % Full Scale	Source	Vmax full- scale
200 Ω (beeper)	$\pm(0.05\% + 0.05\%)$	1.0 mA	0.2 V
200 Ω	$\pm(0.05\% + 0.02\%)$	1.0 mA	0.2 V
2 k Ω	$\pm(0.05\% + 0.01\%)$	1.0 mA	2.0 V
20 k Ω	$\pm(0.05\% + 0.02\%)$	10 μ A	0.2 V
200 k Ω	$\pm(0.05\% + 0.01\%)$	10 μ A	2.0 V
2 M Ω	$\pm(0.1\% + 0.02\%)$	0.1 μ A	0.2 V
20 M Ω	$\pm(0.1\% + 0.01\%)$	0.1 μ A	2.0 V

DC CURRENT/AC CURRENT

Ranges – 200 μ A, 2 mA, 20 mA, 200 mA, 2 A.

Accuracy^{*1} – DC current: for automatic or manual ranging 18° to 28°C. $\pm(0.1\%$ of reading + 0.01% of full scale). AC Current: for automatic or manual ranging 18° to 28°C. $\pm(0.6\%$ of reading + 0.6% of full scale.)

Response Time – DC Current: < 1 s. AC Current: < 2 s.

Input Resistance

Range	Resistances	
	DC current	AC current
200 μ A	1.0 k Ω	1.0 k Ω
2 mA	100.0 Ω	100 Ω
20 mA	10.2 Ω	10.2 Ω
200 mA	1.2 Ω	1.2 Ω
2000 mA	0.28 Ω	0.4 Ω

Max. Open-Circuit Input Voltage (mA to LOW) – 250 V peak.

Max. Input Current – 2 A any range.

Max. Floating Voltage – mA to GND, 1000 V peak; LOW to GND, 1000 V peak.

Max. Resolution – 10 nA.

Max. Floating Voltage – mA to GND, 1000 V peak; LOW to GND, 1000 V peak.

TEMPERATURE

Range – – 62° to +230°C.

Accuracy – Using Tektronix P6602 Temperature Probe: 18° to 28°C ambient. Probe calibrated to instrument (probe/DMM calibration performed at 0°C).

$\pm 0.6^\circ\text{C}$ from – 62° to 150°C. $\pm 1.6^\circ\text{C}$ from 150° to 230°C. Any probe: $\pm 3.5^\circ\text{C}$ from – 62° to 150°C.

$\pm 1.6^\circ\text{C}$ from 150° to 230°C.

OTHER CHARACTERISTICS

Reading Rate – > 2.0 times/s.

Over-range Indication – Flashing display.

Warm-up Time – 30 minutes (50 minutes after storage in high humidity environment).

Dimensions – Single TM 500/TM 5000 compartment.

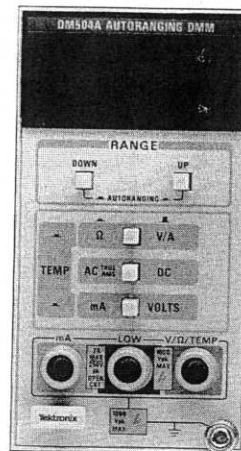
Weight – 0.93 kg (2.04 lb).

^{*1} Valid for six months or 1000 hours, whichever occurs first.

DM 504A

Digital Multimeter

- 4 1/2 Digit Autoranging
- True RMS AC Functions
- Five Manually Selectable Voltage, Current and Resistance Ranges
- DC Volts, AC Volts, DC mAmps, AC mAmps, Ohms and Temperature Functions
- Diode Test and Audible Continuity (Beeper) Modes



ORDERING INFORMATION

DM 504A Digital Multimeter Includes: Instruction manual (070-6945-00); one set of test leads.	\$645
Opt. 02 – Adds P6602 Temperature Probe calibrated for use with DM 504A.	\$260

OPTIONAL ACCESSORIES	
Service Manual – 070-7135-00	\$25