Model 175A Autoranging DMM

DC VOLTS

RANGE	RESOLUTION	ACCURACY (1 Year) 18°-28°C ±(%rdg + counts)
200 mV	10 µV	0.03 + 2
2 V	100 µV	0.03 + 1
20 V	1 mV	0.03 + 1
200 V	10 mV	0.03 + 1
1000 V	100 mV	0.03 + 1

INPUT RESISTANCE: 11MΩ on 200mV, 2V, and 20V ranges. 10MΩ on 200V and 1000V ranges. (>1000MΩ on the 200mV and 2V ranges with all function buttons in the out position.)

NORMAL MODE REJECTION RATIO: >60dB at 50Hz, 60Hz ±0.15%.

MAXIMUM ALLOWABLE INPUT: 1000V DC or peak AC (<10s per minute on 200mV and 2V ranges; 300V rms continuous).

SETTLING TIME: 1 second to within 1 count of final reading on range.

dB MODE (ref: 600Ω): Accuracy: ±(0.02dB + 1 count) above –78dBm.

RESOLUTION: 0.01dB above 5% of range.

TRMS AC VOLTS

RANGE	ACCURACY (1 Year)* 18°-28°C ±(%rdg + counts) 20Hz-50Hz	50Hz-10kHz	10kHz-20kHz	20kHz-50kHz	50kHz-100kHz
2V-750V	1 + 20	0.5 + 20	1 + 40	2.5 + 75	5 + 200
200 mV	1 + 20	0.5 + 20	1.5 + 40	8 + 75	—

*Above 1800 counts.

MAXIMUM ALLOWABLE INPUT: 750V rms, 1000V peak (<10 seconds per minute on 200mV range; 300V rms continuous). 10^7V•Hz maximum.

3dB BANDWIDTH: 300kHz typical.

INPUT IMPEDANCE: 10MΩ paralleled by <75pF on 20V, 200V, and 1000V ranges. 11MΩ on 200mV and 2V ranges. Capacitively coupled.

SETTLING TIME: 2 seconds to within 15 counts of final reading on range.

dB MODE (ref: 600Ω):

RANGE	INPUT	ACCURACY (±dBm) 20Hz-10kHz	10kHz-20kHz	20kHz-50kHz	50kHz-100kHz
2V-750V	200 mV to 750 V (–12 to +59.8dBm)	0.2	0.26	0.56	1.2
200 mV	20 mV to 200 mV (–32 to –12 dBm)	0.2	0.3	1	—
	2 mV to 20 mV (–52 to –32 dBm)	2	3	—	—
	1 mV to 2 mV (–58 to –52 dBm)	2*	—	—	—

RESOLUTION: 0.01dB above 5% of range. *Up to 1kHz.

DC AMPS

RANGE	RESOLUTION	MAXIMUM VOLTAGE BURDEN	ACCURACY (1 Year) 18°-28°C ±(%rdg + counts)
200 µA	10 nA	0.3 V	0.15 + 2
2 mA	100 nA	0.3 V	0.15 + 2
20 mA	1 µA	0.3 V	0.15 + 2
200 mA	10 µA	0.3 V	0.2 + 2
2000 mA	100 µA	0.8 V	0.2 + 2
10 A	1 mA	0.3 V	0.5 + 2*

*Above 5A derate 0.15% rdg per amp for self-heating.

OVERLOAD PROTECTION: mA Input: 2A fuse (250V), externally accessible. **10A Input:** 20A for 15s, unfused.

SETTLING TIME: 1 second to within 1 count of final reading.

TRMS AC AMPS

RANGE	MAXIMUM VOLTAGE BURDEN	ACCURACY (1 Year)* 18°-28°C ±(%rdg+counts) 20Hz-50Hz	50Hz-10kHz	10kHz-30kHz
200µA–20mA	0.3 V	1 + 20	0.8 + 20	2 + 50
200 mA	0.3 V	1 + 20	0.8 + 20	—
2000 mA	0.8 V	1 + 20	0.8 + 20	—
10 A	0.3 V	1.5 + 20**	1 + 20**	—

*Above 1800 counts. **1kHz max. Above 5A derate 0.15% rdg./amp for self-heating.

SETTLING TIME: 2 seconds to within 15 counts of final reading.

OHMS

RANGE	RESOLUTION	ACCURACY (1 Year) 18°-28°C ±(%rdg + counts)	MAX. VOLTAGE ACROSS UNKNOWN ON RANGE
200 Ω	10 mΩ	0.05 + 2*	0.2 V
2 kΩ →|←	100 mΩ	0.05 + 1	2.0 V
20 kΩ	1 Ω	0.05 + 2	0.2 V
200 kΩ →|←	10 Ω	0.05 + 1	2.0 V
2MΩ **	100 Ω	0.05 + 2	0.2 V
20MΩ **	1 kΩ	0.2 + 1	2.0 V
200MΩ **	100 kΩ	2.0 + 1	2.0 V

*When properly zeroed. **Appropriate range selected automatically.

MAXIMUM ALLOWABLE INPUT: 450V DC or peak AC.

OPEN-CIRCUIT VOLTAGE: +5V.

DIODE TEST: Display reads junction voltage up to 2V. Test current: 0.7mA nominal.

SETTLING TIME: 2 seconds to within 1 count of final reading on range.

IEEE-488 BUS IMPLEMENTATION (Model 1753A Option)

MULTILINE COMMANDS: DCL, SDC, GET, GTL, UNT, UNL, SPE, SPD.

UNILINE COMMANDS: IFC, REN, EOI, SRQ, ATN.

INTERFACE FUNCTIONS: SH1, AH1, T5, TE0, L4, LE0, SR1, RL2, PP0, DC1, DT1, C0, E1.

PROGRAMMABLE PARAMETERS: Range, REL, dB, EOI, Trigger, Calibration, SRQ, Status, Output Format, Terminator.

GENERAL

DISPLAY: 4½-digit LCD with backlight (switch selectable), 0.5 in. height; polarity, function, range, and status indication.

RANGING: Auto or manual on DC volts, AC volts, ohms; manual on AC amps, DC amps.

AUTORANGING TIME: 300ms per range.

RELATIVE: Pushbutton allows zeroing of on range readings. Allows readings to be made with respect to baseline value. Front panel annunciator indicates REL mode.

DATA LOGGER and MIN/MAX: 100 reading storage capacity; records data at one of six selectable rates from 3 readings/second to 1 reading/hour. Also detects and stores maximum and minimum readings continuously in data logger mode.

CONVERSION RATE: 3 readings per second.

OVERRANGE INDICATION: "OL" displayed.

CREST FACTOR (ratio of peak value to rms value), AC FUNCTIONS: 3.

MAXIMUM COMMON MODE VOLTAGE: 500V peak.

COMMON MODE REJECTION RATIO (1kΩ unbalance): >120dB at DC, 50Hz, 60Hz ±0.15%. >60dB in AC volts.

TEMPERATURE COEFFICIENT (0°-18°C & 28°-50°C): ±(0.1 × applicable accuracy specification)/°C except ±(0.07%+2)/°C for 50Hz-10kHz in AC volts.

ENVIRONMENT: Operating: 0° to 50°C; <80% relative humidity up to 35°C; linearly derate 3% RH/°C, 35° to 50°C. **Storage:** -40° to +70°C.

WARM-UP: 1 hour to rated accuracy.

POWER: 105–125V or 210–250V (external switch selected), 90–110V available; 50–60Hz, 12VA. Removable power cord. Optional 6-hour battery pack, Model 1758.

DIMENSIONS, WEIGHT: 89mm high × 235mm wide × 275mm deep (3½ in. × 9¼ in. × 10¾ in.). Net weight 1.8kg (3 lbs., 14 oz.).

ACCESSORIES SUPPLIED: Model 1751 Shrouded Test Leads, instruction manual.

Specifications subject to change without notice.