

# 175A 4<sup>1</sup>/<sub>2</sub>-Digit Multimeter

## 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:** 1MΩ 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:** 1s 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	—

**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.

\*Above 1800 counts. \*\*Up to 1kHz.

**MAXIMUM ALLOWABLE INPUT:** 750V rms, 1000V peak (<10 seconds per minute on 200mV range; 300V rms continuous). 10<sup>3</sup>V-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.

## 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	MAX. VOLTAGE BURDEN	ACCURACY (1 Year)*		
		18°–28°C ± (%rdg + counts)		
		20Hz–50Hz	50Hz–10kHz	10kHz–30kHz
200 µA–20 mA	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*		MAX. VOLTAGE ACROSS UNKNOWN ON RANGE
		18°–28°C ±(%rdg + counts)		
200 Ω	10 mΩ	0.05 + 2*		0.2V
2 kΩ	100 mΩ	0.05 + 1		2.0V
20 kΩ	1 Ω	0.05 + 2		0.2V
200 kΩ	10 Ω	0.05 + 1		2.0V
2 MΩ	100 Ω	0.05 + 2		0.2V
20 MΩ	1 kΩ	0.2 + 1		2.0V
200 MΩ	100 kΩ	2.0 + 1		2.0V

\*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, LA, LE0, SRI, RL2, PPO, DC1, DT1, CO, EI.

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

## GENERAL

**DISPLAY:** Backlit 4<sup>1</sup>/<sub>2</sub>-digit LCD, 0.5 in height; polarity, function, range, and status indication. Backlighting is switch-selectable.

**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.

**OVERRRANGE 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 (3<sup>1</sup>/<sub>2</sub> in × 9<sup>1</sup>/<sub>4</sub> in × 10<sup>3</sup>/<sub>4</sub> in). Net weight 1.8kg (3 lbs, 14 oz).

**ACCESSORIES SUPPLIED:** Model 1751 Shrouded Test Leads, instructional manual.