

169/Digital Multimeter

3½-Digit LCD Portable/Bench

- 2000-count display
- 1-year battery life
- Function & range annunciators
- Battery eliminator option

The Keithley 169 provides full capability for many general purpose applications. It has five functions: DC volts, DC amps, AC volts, AC amps and ohms. Input protection prevents damage on all functions. Voltage ranges are protected to 1400V peak, ohms is protected to 300V rms, and current ranges are protected by an externally accessible 2A (250V) fuse.

Easy to use. The 169 has both range and function annunciators. Pushbutton switches are color-coded to the front panel. Two input jacks and auto polarity mean no lead changing. Zeroing is automatic. Low battery condition is automatically indicated.

By using alkaline batteries, 2000 hours (1 year) of operation can be expected. Thus, battery life can be the same as the calibration cycle. Only 1 adjustment is required. MTBF is 20,000 hours, so most units will never need repair. If they do, all components are on one easily accessible PC board.



DC VOLTS

RANGE	RESOLUTION	ACCURACY (1 YEAR) 18°-28°C
200mV	100 μV	
2 V	1mV	
20 V	10mV	±(0.25% of reading + 1 digit)
200 V	100mV	
1000 V	1 V	

MAXIMUM ALLOWABLE INPUT: 1000VDC, 1400V peak AC.

INPUT RESISTANCE: 10MΩ.

NORMAL MODE REJECTION RATIO: Greater than 50dB at 50Hz, 60Hz.

COMMON MODE REJECTION RATIO: Greater than 100dB at DC, 50Hz and 60Hz (1kΩ unbalance, 500V).

DC AMPS

RANGE	RESOLUTION	ACCURACY (1 YEAR) 18°-28°C	MAXIMUM VOLTAGE BURDEN
200 μA	100 nA		0.25V
2mA	1 μA		0.25V
20mA	10 μA	±(0.75% rdg + 1d)	0.25V
200mA	100 μA		0.3 V
2000mA	1mA		0.7 V

OVERLOAD PROTECTION: 2A fuse (250V), externally accessible.

OHMS

RANGE	RESOLUTION	ACCURACY (1 YEAR) 18°-28°C	FULL SCALE VOLTAGE
200 Ω	100mΩ	±(0.3% rdg + 3d)	< 0.5V
2k Ω	1 Ω	±(0.2% rdg + 1d)	< 0.5V
20k Ω	10 Ω	±(0.2% rdg + 1d)	> 0.7V
200k Ω	100 Ω	±(0.2% rdg + 1d)	> 0.7V
2000k Ω	1k Ω	±(0.2% rdg + 1d)	> 0.7V
20MΩ	10k Ω	±(2.0% rdg + 1d)	> 0.7V

MAXIMUM OPEN CIRCUIT VOLTAGE: 1.5V except 200Ω range: 3.5V.

MAXIMUM ALLOWABLE INPUT: 300V DC or rms.

GENERAL

DISPLAY: 3½-digit LCD, 0.6" numeral height, with polarity, range and function indicators.

OVERRANGE INDICATION: 3 least significant digits blanked.

MAXIMUM COMMON MODE VOLTAGE: 1400V peak.

OPERATING ENVIRONMENT: 0° to 50°C; less than 80% RH up to 35°C, less than 70% RH from 35° to 60°C.

STORAGE ENVIRONMENT: -35° to 60°C.

AC VOLTS

RANGE	RESOLUTION	ACCURACY (1 YEAR) 18°-28°C	
		45Hz-1kHz	1kHz-5kHz
200mV	100 μV		
2 V	1mV		
20 V	10mV	±(0.75% rdg + 5d)	±(5% rdg + 7d)
200 V	100mV		
1000 V	1 V		

MAXIMUM ALLOWABLE INPUT: 1000V rms, 1400V peak, 10°V•Hz, continuous except 200mV range: 350V continuous, 15s maximum above 350V.

INPUT IMPEDANCE: 10MΩ shunted by less than 100pF.

RESPONSE: Average responding, calibrated in rms of a sine wave.

AC AMPS

RANGE	RESOLUTION	ACCURACY (1 YEAR) 18°-28°C (45Hz-1kHz)	MAXIMUM VOLTAGE BURDEN
200 μA			0.25V rms
2mA			0.25V rms
20mA		±(1.5% rdg + 5d)	0.25V rms
200mA			0.3 V rms
2000mA			0.7 V rms

OVERLOAD PROTECTION: 2A fuse (250V), externally accessible.

TEMPERATURE COEFFICIENT (0°-18°C & 28°-50°C): Less than 0.1 % applicable accuracy specification per °C.

POWER: Six 1.5V "C" cells.

BATTERY LIFE: 1000 hours typical with carbon zinc cells; 2000 hours with alkaline cells.

BATTERY INDICATOR: Display indicates "BAT" when less than 5% of life remains.

DIMENSIONS, WEIGHT: 85mm high × 235mm wide × 275mm deep (3½" × 9¼" × 10¾"). Net weight 1.4kg (3 lbs.).

ACCESSORIES AVAILABLE:

Model 1010: Single Rack Mounting Kit

Model 1017: Dual Rack Mounting Kit

Model 1301: Temperature Probe

Model 1600A: High Voltage Probe

Model 1651: 50A Current Shunt

Model 1681: Clip-On Test Lead Set

Model 1682A: RF Probe

Model 1683: Universal Test Lead Kit

Model 1684: Hard Shell Carrying Case

Model 1685: Clamp-On Current Probe

Model 1691: General Purpose Test Leads

Model 1699: Spare Parts Kit

Model 1766: Battery Eliminator

Model 1768: Battery Pack (for converting 169/1766 to battery power)