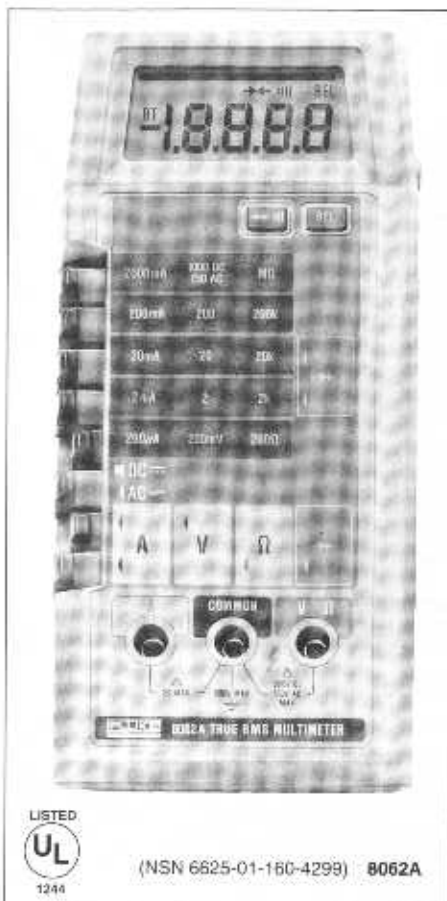


# Handheld Multimeters

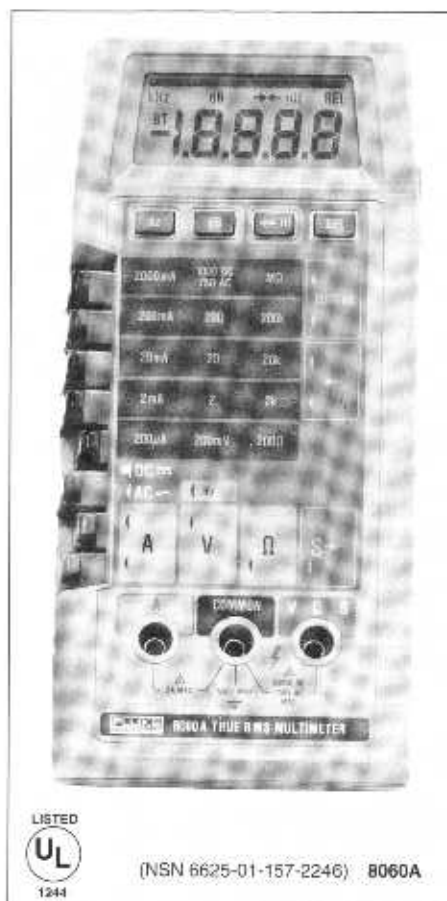
## 8060A & 8062A

Available through Distributors



### 8062A 4½ Digit DMM

- 4½ digit (20,000 count) resolution
- True-rms ac measurements
- Fast audible/visual continuity tests
- Relative reference (offset)
- Low-power ohms all resistance ranges
- Constant-current diode test mode
- Measure resistances to 300 MΩ
- True-rms ac voltages to 30 kHz
- 0.05% basic dc accuracy
- Self diagnostics
- UL 1244 listed
- 1-year warranty



### 8060A 4½ Digit DMM

- 4½ digit (20,000 count) resolution
- True-rms ac measurements
- Fast audible/visual continuity tests
- Relative reference (offset)
- Low-power ohms all resistance ranges
- Constant-current diode test mode
- Measure resistances to 300 MΩ
- True-rms ac voltages to 100 kHz
- 0.04% basic dc accuracy
- Self diagnostics
- UL 1244 listed
- 1-year warranty
- Plus
- Frequency Counter...12 Hz to 200 kHz  
functional to 700 kHz
- dBm or relative dB measurements
- Conductance measurements

The 8060A and 8062A 4½ digit handheld DMMs offer more measurement capabilities than found in most bench/portable models. They are Fluke's finest microcomputer-based handheld DMMs offering unique features never before found in a small low-cost DMM. The 8060A even measures frequency – from 12 Hz to more than 200 kHz – autoranging over four ranges from 200 Hz to 200 kHz.

At the touch of a single button you can select V, Hz, and dB.

### Relative Reference

When measuring ohms, the microcomputer lets you automatically subtract lead resistance, displaying only the difference between a stored reference value and a measured value. The relative mode is great for measuring changes, especially in dB and frequency measurements.

### Overload Protected & Rugged

The 8060A and 8062A are well-suited to the needs of engineers and technicians skilled in audio, video, telecommunication, or computer technology. They have rugged cases, safety engineered jacks and test leads, double-fused current inputs, and extensive overload protection for all other functions and ranges.

### Automatic MΩ Range Selection

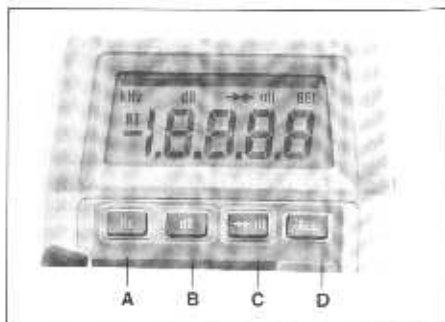
To keep the front panel simple, there is only one manually-selectable position above 200 kΩ. When that position is used, the appropriate 2 MΩ, 20 MΩ, or 300 MΩ range is automatically selected.

### Frequency Counter

It is easy to accurately measure the dB gain or loss of amplifiers, filters, attenuators, etc. with a DMM that has dB readout. To combine that feature in a handheld DMM that also measures frequency provides a nearly ideal test instrument for many applications. When you need the best in a handheld DMM, you should buy the 8060A. It has features you won't find even in most bench/portable DMMs.

### True-RMS AC

Because true-rms measurements of ac yield accurate results on non-sinusoidal waveforms as well as sine waves, the 4½ digit resolution, wide



bandwidth, and exceptional accuracy of the 8060A and 8062A make them a superior tool for exacting technical people.

### Special Functions

Several special annunciator symbols appear in the display as a reminder of what mode or modes have been selected when pushbuttons **A**, **B**, **C**, and **D** are used. Only pushbuttons **C** and **D** and corresponding functions appear on the 8062A.

**(A)** Pushing the Hz button when in the ac voltage mode selects the frequency function. The best of four ranges (200 Hz, 2 kHz, 20 kHz, and 200 kHz) is then automatically selected for frequencies between 12 Hz and 200 kHz. Readings are updated every 1.3 seconds or less even for low-frequency ranges.

**(B)** Pushing the dB button converts voltage readings to the equivalent in decibels. The reading may be relative to 1 milliwatt (dBm) and a 600 ohm load, or they may be relative to any level previously stored as a "relative reference."

**(C)** This pushbutton converts resistance measurements to fast indications of continuity, either audibly with a beep tone or quietly by the appearance of the solid black bar across the top of the display. Continuity as brief as 50 microseconds is enough to be recognized, stored, and indicated.

**(D)** When you first push the REL button it stores the displayed reading and subsequently subtracts that value from all subsequent readings for that measurement function. REL appears in the display as a reminder until the 8060A or 8062A is turned off or the pushbutton is pressed a second time.

## Specifications

### Technical Specifications

All accuracy specifications apply for one year after purchase or recalibration when operated in a temperature of 18°C to 28°C and a relative humidity of up to 80%, unless otherwise noted.

#### DC Voltage

**Ranges:**  $\pm 200$  mV,  $\pm 2$ V,  $\pm 20$ V,  $\pm 200$ V,  $\pm 1000$ V  
**Resolution:** 10  $\mu$ V on the 200 mV range  
**Input Impedance:** 10 M $\Omega$  on all ranges, >1000 M $\Omega$  selectable for 200 mV and 2V ranges

**Accuracy:**  $\pm$ (% of rdg + digits)

Range	8060A	8062A
200 mV, 2V	0.04% + 2*	0.05% + 2
20V, 200V, 1000V	0.05% + 2	0.07% + 2

\*Accuracy  $\pm$  (0.05% of reading + 2 digits) for >1000 M $\Omega$  input impedance

**Normal Mode Noise Rejection:**  $\geq 60$  dB at 50 Hz and 60 Hz

**Common Mode Noise Rejection:**  $\geq 120$  dB at dc,  $\geq 90$  dB at 50 Hz and 60 Hz, with 1 k $\Omega$  unbalance

**Overload Protection:** 1000V dc, 750V rms ac (not to exceed a volt-hertz product of  $10^7$ ) on all ranges, continuous except limited to 20 seconds on 200 mV and 2V ranges

**Response Time:**  $\leq 1$  second to rated accuracy

#### AC Voltage (True-RMS, AC Coupled)

**Ranges:** 200 mV, 2V, 20V, 200V, 750V

**Resolution:** 10  $\mu$ V on the 200 mV range

**Input Impedance:** 10 M $\Omega$ ,  $\leq 100$  pF (dBm mode also)

**Crest Factor:** Waveforms with peak/rms ratio of 1:1 to 3:1

**Voltage Readout, 8060A:** From 5% to 100% of range

Range	Accuracy: $\pm$ (% of Rdg + Digits)					
	20 Hz	45 Hz	1 kHz	10 kHz	30 kHz	50 100 kHz
200 mV		0.2% +10	0.2% +20	0.5% +40	1% +100	
2V	1% +10	0.5% +10	0.5% +20	1% +40	2% +100	3% +200
20V						
200V						
750V	Not Spec'd	1% +10	Not Specified			

**Voltage Readout, 8062A:** From 5% to 100% of range

Range	Accuracy: $\pm$ (% of Rdg + Digits)				
	20 Hz	45 Hz	500 Hz	1 kHz	10 30 kHz
200 mV				0.5% +20	1% +40
2V	1% +10	0.5% +10		5% +20	5% +40
20V					
200V					
750V	Not Spec	2% +10	Not Spec'd		

**dBm, 600 $\Omega$  Reference, 8060A:** From 5% to 100% of range (-50 to +60 dBm)

Range	Accuracy in dB					
	20 Hz	45 Hz	1 kHz	10 kHz	30 kHz	50 100 kHz
2.45 mV-10.23 mV	$\pm 0.5$	$\pm 1.0$	$\pm 3.0$	Not Spec'd		
10.24 mV-19.99 mV		$\pm 0.2$	$\pm 0.5$	$\pm 1.0$	$\pm 2.2$	
20 mV-199.99V		$\pm 0.15$	$\pm 0.3$	$\pm 0.65$	$\pm 1.2$	
200V-750V	$\pm 0.5$	Not specified				

**Useful Frequency Range:** -3 dB at 420 kHz at 100% of range, 220 kHz at 5% of range, typical

**Common Mode Noise Rejection:**  $\geq 60$  dB at 50 Hz and 60 Hz, 1 k $\Omega$  unbalance

**Overload Protection:** 1000V dc or peak ac, 750V rms ac (not to exceed a volt-hertz product of  $10^7$ ) on all ranges, continuous, except 300V dc or rms ac on the 200 mV and 2V ranges for 20 seconds maximum

**Response Time:**  $\leq 5$  seconds to rated accuracy, any range

#### DC Current

Range	Resolution	Accuracy: $\pm$ (% Rdg + Digits)		Burden Voltage
		8060A	8062A	
200 $\mu$ A	0.01 $\mu$ A	0.2% + 2	0.3% + 2	$\leq 0.3$ V
2 mA	0.1 $\mu$ A			
20 mA	1 $\mu$ A	0.3% + 2	0.7% + 2	
200 mA	10 $\mu$ A			
2000 mA	100 $\mu$ A			$\leq 0.9$ V

**Input Protection:** 2A/250V fuse in series with 3A/600V fuse

**Response Time:**  $\leq 1$  second to rated accuracy

#### AC Current (True-RMS)

Has dc-coupled current path, ac-coupled voltage-sensing circuits

**Ranges, Resolution, Burden Voltage:** Same as for dc current

**Accuracy, 8060A:**  $\pm$ (% of Rdg + Digits) from 5% to 100% of range

Range	20 Hz-45 Hz	45 Hz-3 kHz	3 kHz-10 kHz	10 kHz-30 kHz
	200 $\mu$ A			
2 mA	1%	0.75%	2%	2%
20 mA	+10	+10	+20	+40
200 mA				
2000 mA			Not Specified	

**Accuracy, 8062A:**  $\pm$ (% of Rdg + Digits) from 5% to 100% of range

Range	20 Hz-45 Hz	45 Hz-3 kHz	3 kHz-10 kHz	10 kHz-30 kHz
	200 $\mu$ A			
2 mA	1%	0.75%	2%	2%
20 mA	+10	+10	+20	+40
200 mA	1.5%	1%		
2000 mA	+10	+10	Not Specified	

**Crest Factor:** 1:1 to 3:1

**Response Time:**  $\leq 5$  seconds to rated accuracy

# Handheld Multimeters

## 8060A & 8062A

### Resistance

**Ranges:** 200 $\Omega$ , 2 $\Omega$ , 20 k $\Omega$ , and 200 k $\Omega$  manually selected plus 2 M $\Omega$ , 20 M $\Omega$ , 100 M $\Omega$ , and 300 M $\Omega$  automatically selected in the M $\Omega$  range

### Resolution and Accuracy

Range	Resolution	Accuracy: $\pm$ (% of Rdg + Digits)	
		8060A	8062A
200 $\Omega$	0.01 $\Omega$	0.07% + 2 + 0.02 $\Omega$	0.1% + 2 + 0.02 $\Omega$
2 k $\Omega$	0.1 $\Omega$		
20 k $\Omega$	1 $\Omega$	0.07% + 2	0.1% + 2
200 k $\Omega$	10 $\Omega$		
2 M $\Omega$ *	100 $\Omega$	0.15% + 2	0.2% + 2
20 M $\Omega$ *	10 k $\Omega$	0.2% + 3	0.25% + 3
100 M $\Omega$ *	100 k $\Omega$	1% + 3	1% + 3
300 M $\Omega$ *	1 M $\Omega$	2% + 3	2% + 3

\*These four autoranging M $\Omega$  ranges have a high enough source voltage to turn on a silicon junction.

**Open Circuit Voltage:**  $\leq$ 2.5V all ranges, except  $\leq$ 4.8V on 200 $\Omega$  range

**Overload Protection:** 500V dc or rms ac on all ranges

**Response Time:**  $\leq$ 2 seconds to rated accuracy except  $\leq$ 8 seconds on M $\Omega$  ranges

### Continuity

**Ranges:** All resistance ranges

**Threshold:** For 8060A,  $\leq$ 10% of any range used through 200 k $\Omega$  range and  $\leq$ 20 k $\Omega$  above 200 k $\Omega$  range. For 8062A  $\leq$ 50% of range and nominally  $\leq$ 100 k $\Omega$  above 200 k $\Omega$  range

**Indication:** Horizontal bar in display, plus audible tone when desired

**Response Time:**  $\leq$ 50  $\mu$ s continuity,  $\geq$ 200 ms indication

### Diode Test

The diode test function displays the voltage-drop across a semiconductor junction using a 1 mA ( $\pm$ 10%) constant current supply and a 2V range. All resistance ranges up to and including the 200 k $\Omega$  range have less than enough source voltage to forward-bias a semiconductor junction, so that they can be used for in-circuit measurements.

**Reading Accuracy:**  $\pm$ (0.05% + 2 digits) for 8060A,  $\pm$ (0.06% + 2 digits) for 8062A

**Overload Protection:** 500V dc or rms ac

**Response Time:**  $\leq$ 2 seconds to rated accuracy

### Conductance (8060A only)

**Range:** 2000 nS (equivalent to 500 k $\Omega$ )

**Resolution:** 0.1 nS

**Accuracy:** (0.5% of reading + 20 digits)

**Overload Protection:** 500V dc or rms ac

### Relative Reference

When the REL button is pushed the displayed reading is stored as a reference and subtracted from subsequent readings to indicate the amount of deviation.

**Accuracy:** Error will not exceed the sum of the errors of the reference reading and subsequent readings

### Frequency (8060A only)

**Ranges:** 200 Hz, 2000 Hz, 20 kHz, and 200 kHz, automatically selected in the Hz mode, ac voltage function. Measures down to 12 Hz. Will measure to 700 kHz in Extended Frequency Mode.

**Resolution:** 0.005% of range, e.g., 0.01 Hz in 200 Hz range

**Accuracy:**  $\pm$ (0.05% of reading + 1 digit)

**Input Impedance:** AC coupled into 10 M $\Omega$ , 100 pF

**Sensitivity:** For sine waves,  $\geq$ 10% of voltage range to 20 kHz,  $\geq$ 25% of voltage range to 100 kHz,  $\geq$ 75% of voltage range to 200 kHz

**Response Time:**  $\leq$ 1 second above 16 Hz,  $\leq$ 1.3 seconds from 12.2 Hz to 16 Hz, to rated accuracy

### General Specifications

**Calibration Cycle:** One-year for specified accuracy

**Display:** 4 1/2 digits (20,000 counts), LCD, auto-zero, autopolarity, low battery (BT) indicator

**Max Common Mode Voltage:** 500V dc or rms ac

**Temperature:** 0°C to 50°C operating; -35°C to 60°C non-operating

**Temperature Coefficient:**  $\leq$ 0.1 times the applicable accuracy specification per °C from 18°C to 0°C or 28°C to 50°C

**Relative Humidity:**  $\leq$ 70% to 50°C or  $\leq$ 80% to 35°C but  $\leq$ 70% when measuring resistance above 20 M $\Omega$

**Shock and Vibration:** Per MIL-T-28800, Class 5

**Safety:** UL 1244 listed, ANSI C39.5, IEC 348 Class II, and CSA Bulletin 556B

**Power:** Single 9V battery, NEDA 1604, typically 170 hours of operation with alkaline type

**Size:** 180 mm L x 86 mm W x 45 mm H (7.1 in L x 3.4 in W x 1.8 in H)

**Weight:** 0.41 kg (0.90 lb)

## Ordering Information

### Models

8060A Digital Multimeter

8062A Digital Multimeter

### Included with Instrument

One-year product warranty, Instruction manual, TL70A test leads, 9V battery, Operator's card and spare fuse.

### Accessories (Also see Section 7)

TL20 Industrial Test Lead Set

TL70A Test Lead Set

Y8132 Test Lead Set

Y8134 Universal Test Lead Kit

Y8140 Test Lead Set

C25 Soft Carrying Case

C90 Vinyl Carrying Case

C100 Hard Carrying Case

A81 Battery Charger/Eliminator

83RF High Frequency Probe, 100 MHz

85RF High Frequency Probe, 500 MHz

80TK Thermocouple Converter

80T-150U Universal Temperature Probe

80K-6 High Voltage Probe

80K-40 High Voltage Probe

80J-10 Current Shunt

Y8100 DC/AC Current Probe

Y8101 AC Current Probe

80I-400 AC Current Probe

80I-410 DC/AC Current Probe

80I-600 AC Clamp-on Current Probe

80I-1010 DC/AC Current Probe

80I-kW Current/Power Probe

### Manuals

8060A Instruction\*

8060A Operator Card\*

8062A Instruction\*

8062A Operator Card\*

\*No charge with purchase of unit

### Factory Warranty

One-year product warranty.



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