

FLUKE®

76

True-rms Multimeter

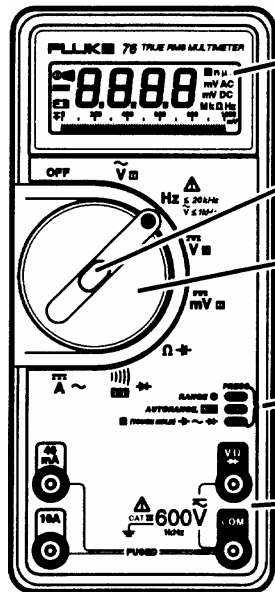
Users Manual

PN 106275

May 1995, Rev. 3, 7/96

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DISPLAY
AFFICHAGE
ANZEIGE

PUSHBUTTON
BOUTON-POUSOI R
DRUCKTASTE

ROTARY SWITCH
SELECTEUR ROTATIF
DREHSCHALTER

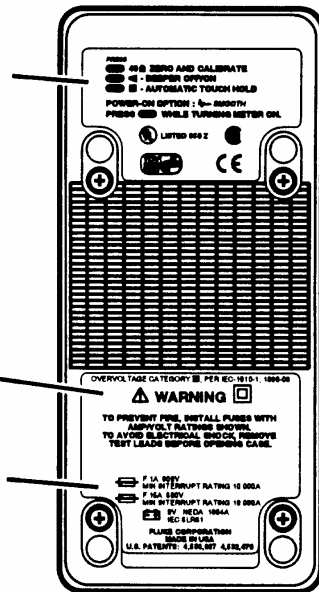
PUSHBUTTON OPERATIONS
FONCTIONS DU BOUTON-POUSOIR
DRUCKTASTEN-FUNKTIONEN

JACKS
BORNES
ANSCHLUSSE

PUSHBUTTON OPERATION
FONCTIONS DU BOUTON-POUSOIR
DRUCKTASTEN-FUNKTIONEN

SAFETY OPERATION
SECURITE
SICHERHEITSHINWEISE

FUSE INFORMATION
FUSIBLES
SICHERUNGSDATEN



HOLD
 0.00 ZERO AND CALIBRATE
 0.00 0.00 DEEPER OPTION
 0.00 0.00 AUTOMATIC TOUCH HOLD
 POWER-ON OPTION : 0.00 0.00 0.00
 POWER 0.00 WHILE TURNING METERS ON

LIMITED 600 V

OVERVOLTAGE CATEGORY III PER IEC 61010-1:1990-06

WARNING

TO PREVENT FIRE, METALL FUSES WITH
AMP/VOLT RATINGS SHOWN
TO AVOID ELECTRICAL SHOCK, REMOVE
TEST LEADS BEFORE OPERATING CASE.

1.5A 100V MIN INTERRUPT RATING 10 000A

1.5A 600V MIN INTERRUPT RATING 10 000A

BY MESA 1984A

IC 01081

FLUKE CORPORATION

MADE IN USA

U.S. PATENTS: 4,581,007 4,581,079

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READ THIS FIRST: SAFTY INFORMATION

The Fluke 76 complies with IEC-1010-1, 1990-09 and ANSI/ISA-S82.01-94, for use in Overvoltage Category III locations. Measurements on power systems should be made only by trained and qualified electricians. Use the Fluke 76 to make AC or DC voltage measurements on electrical distribution systems to

600V where transients do not exceed 6 kV, per ANSI/IEEE standard C62.41-1991.



Warning

To avoid electric shock or serious injury:

- Never use the meter if the meter or test leads look damaged.
- Always turn off power to the circuit before cutting, unsoldering or breaking the circuit.

Small amounts of current can be dangerous.

- Never measure resistance in a circuit when power is applied to the circuit.
- Never touch the probes to a voltage source when the test leads are plugged into the 10A or 40 mA input jack.

- Never apply more than 600V dc or 600V ac rms (sine) between any input jack and earth ground.
- Always be careful when working with voltages above 60V dc or 30V ac rms. Such voltages pose a shock hazard.



Warning

To avoid electric shock or serious injury:

• Always keep your fingers behind the finger guards on the probe when making measurements.

• Always use the high voltage probe to measure voltage if the peak voltage might exceed 933V.

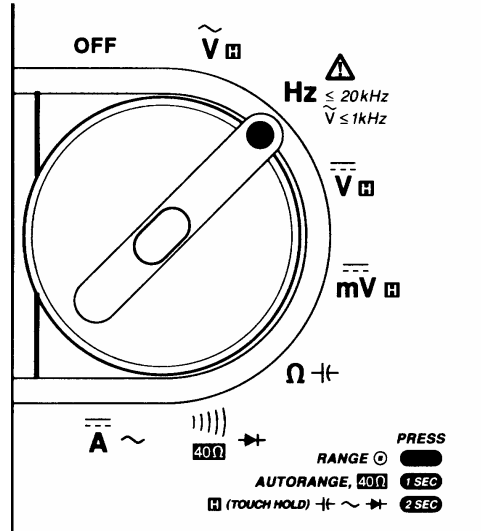
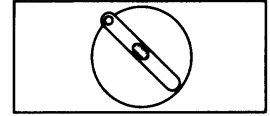
•  To avoid false readings, replace battery immediately.

• To avoid possible electric shock, ensure that frequency of the measured voltage is ≤ 1 kHz. Above 1kHz the meter will display a voltage lower than the actual voltage.



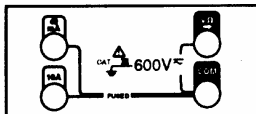
Symbols

	Important Safety Information. Manual contains explanation.		AC or DC		Continuity Beeper
	Dangerous Voltage May Be Present		Ground		Diode
	AC		Fuse		Capacitor
	DC		Double Insulation (Protection Class II)		Manual Range
			Replace Battery		Automatic Touch Hold



Rotary Switch

To turn the meter on, turn the rotary switch from the OFF position. The meter performs a selftest, then starts taking readings. Each switch position (except Hz) has a primary and secondary function.

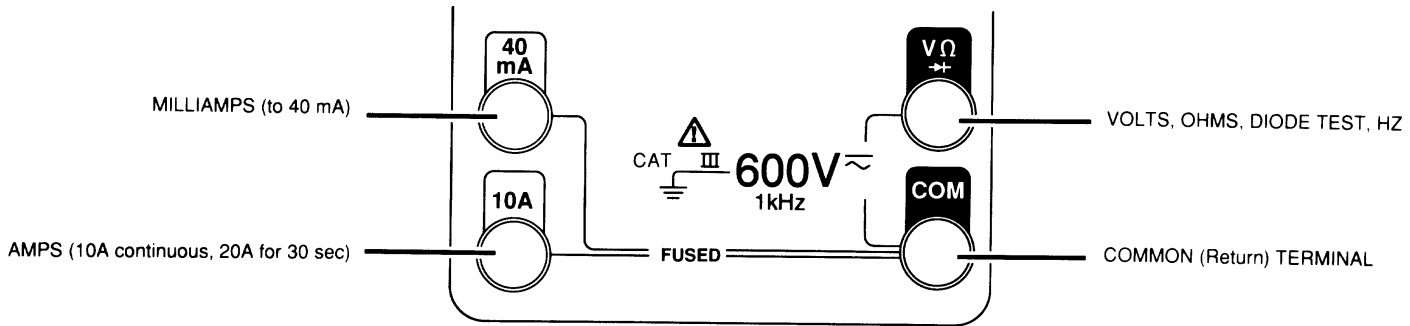


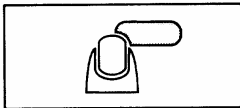
Input Jacks

The meter has four input jacks that are protected against overloads to the limits shown. Do not exceed these limits. See SPECIFICATIONS for fuse protection.

Function Fonction Funktion	Red Lead Pointe rouge Rotes Meßkabel	Overload Protection Limits* Limites de protection de surtension* Grenzen des Überlastschutzes*
\bar{V}	$V\Omega \rightarrow \rightarrow$	600V dc, 600V ac rms (sine)
Hz	$V\Omega \rightarrow \rightarrow$	600V dc, 600V ac rms (sine)
\bar{V}	$V\Omega \rightarrow \rightarrow$	600V dc, 600V ac rms (sine)
\bar{mV}	$V\Omega \rightarrow \rightarrow$	600V dc, 600V ac rms (sine)
$\Omega \rightarrow (-$	$V\Omega \rightarrow \rightarrow$	600V dc, 600V ac rms (sine)
$\rightarrow \rightarrow)$	$V\Omega \rightarrow \rightarrow$	600V dc, 600V ac rms (sine)
\equiv	10A	10A/600V
A ~	40 mA	40 mA/600V

* 10⁷ V-Hz maximum





Pushbutton

In general, press pushbutton to select a fixed range. Hold 1 second to return to autorange; hold 2 seconds to select a secondary function. To select SMOOTHING™ mode, hold for 2 seconds while turning the meter ON.

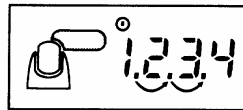
Autorange


In most functions, the meter defaults to autorange. In autorange, the meter selects the range with the best resolution.


Manual range


In manual range, you select a fixed range. If the range is too low, OL (overload) is displayed; if the range is too high, the displayed value will be less accurate. Manual ranging is not available in Touch Hold or the 40Ω (Lo-Ohms) function.

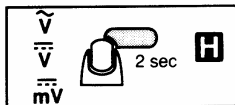
™SMOOTHING is a trademark of the Fluke Corporation.



⊙ is displayed when the meter is in a fixed range and autoranging is disabled. To select a fixed range, press . The meter enters the manual range mode in the range it is in.

Press  to step up a range. When the highest range is reached, the meter wraps back to the lowest range. If OL is displayed, the reading is too large to display; select the next higher range.



To return to autorange, hold  for 1 second. ⊙ disappears from display.





Automatic Touch Hold ® Mode

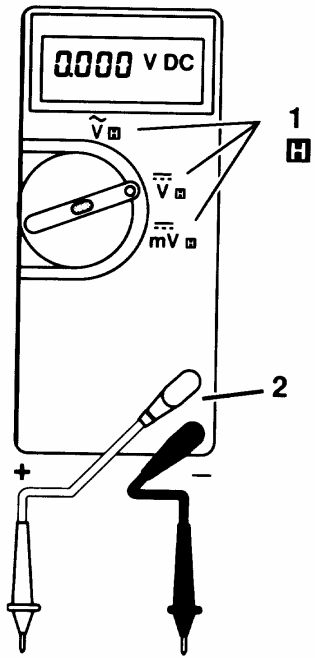
⚠ WARNING

DO NOT USE TOUCH HOLD TO DETERMINE IF A CIRCUIT WITH HIGH VOLTAGE IS DEAD.

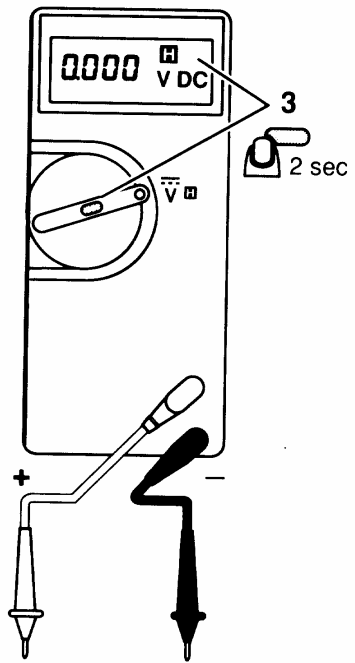
To select automatic Touch Hold, turn switch to a voltage function. Hold  for 2 seconds.  is displayed. Touch probes to test points. When a stable voltage is detected, the meter beeps. Lift probes. The reading is AUTOMATICALLY held on the display.

When the meter captures a new input, it beeps and a **new** reading is displayed. To manually reset, press . NOTE: Stray voltages may force a new reading. To exit, hold  for 2 seconds or turn the rotary switch.

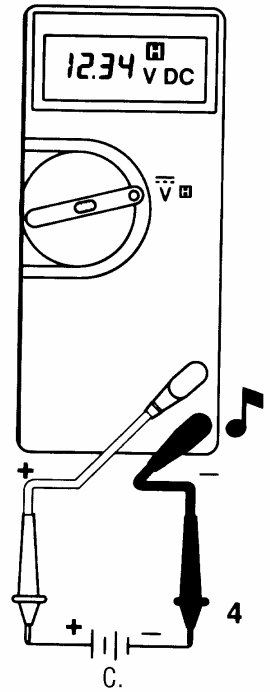
Touch Hold is a registered trademark of the Fluke Corporation.



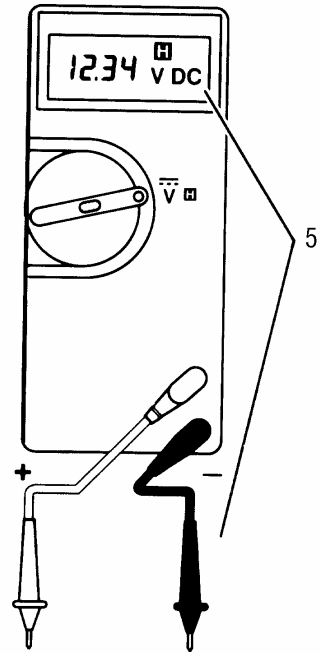
A.



B.



C.




D.

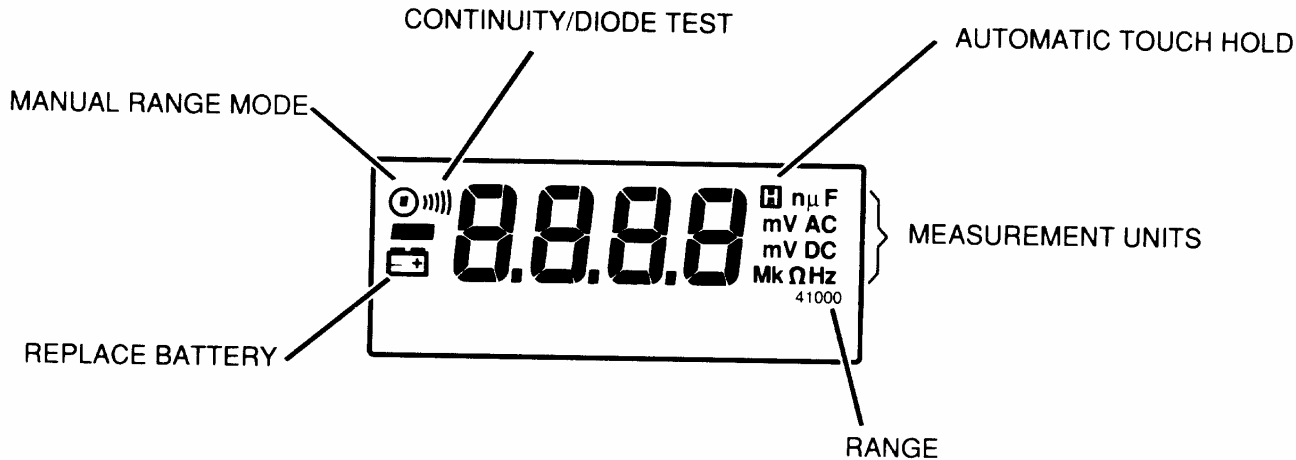


Digital Display

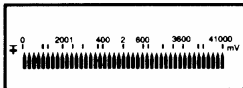
Digital readings are shown on the liquid-crystal display. The decimal point is placed automatically. If negative polarity is detected, a minus sign (-) is displayed.

When the  symbol is displayed, replace the battery immediately. (See MAINTENANCE.)

The meter has a standby mode that extends battery life. If the meter is on but not used for an hour, the meter enters standby, and the display goes blank. To resume operation, turn the rotary switch or press .



OL
OVERLOAD

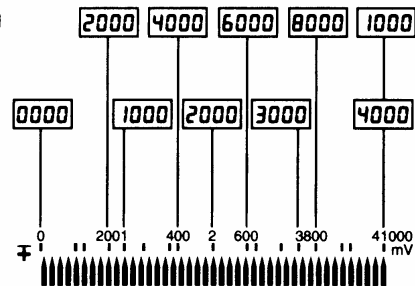


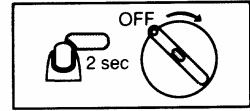
Bar Graph

The bar graph shows readings relative to the full scale value of a range. Polarity is indicated. The bar graph has a faster response time than the digital display, so it is useful for peaking and nulling and observing rapidly changing signals. NOTE: In frequency, the bar graph indicates the ac voltage present. Above 1 kHz the meter will display a voltage lower than the actual voltage.

Overloads


If the input is too large, OL (overload) is displayed, and the entire bar graph lights up. Select a higher range. Does not apply to 600V range.




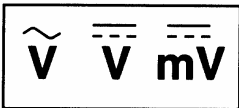


Smoothing Displayed Readings

SMOOTHING displays the average of 8 readings. When the input signal changes rapidly, SMOOTHING makes digital display readings more stable. The bar graph is unaffected.

To select SMOOTHING, hold  for 2 seconds while turning the meter on. SMOOTHING does not work in continuity, Lo-Ohms, or capacitance.

SMOOTHING is disabled in the automatic Touch Hold mode. If you exit Touch Hold by holding  for 2 seconds, SMOOTHING is re-enabled. To exit, turn meter OFF.



Measuring Voltage

⚠ Warning

To avoid damage or injury, never attempt to measure voltage with a test lead in the 10A or 40 mA jack.

⚠ Warning

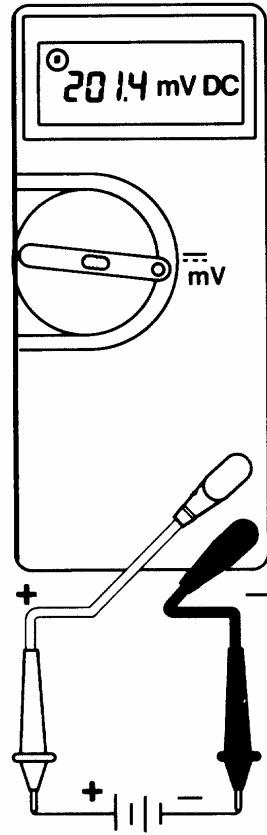
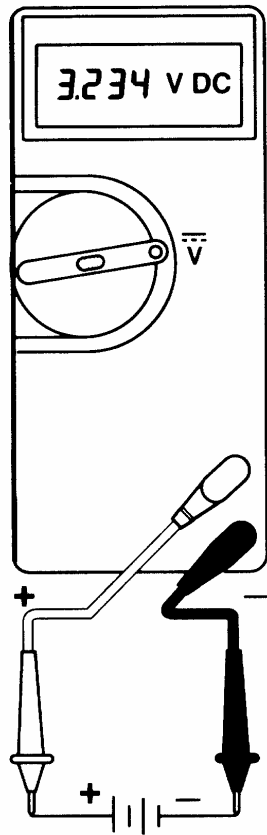
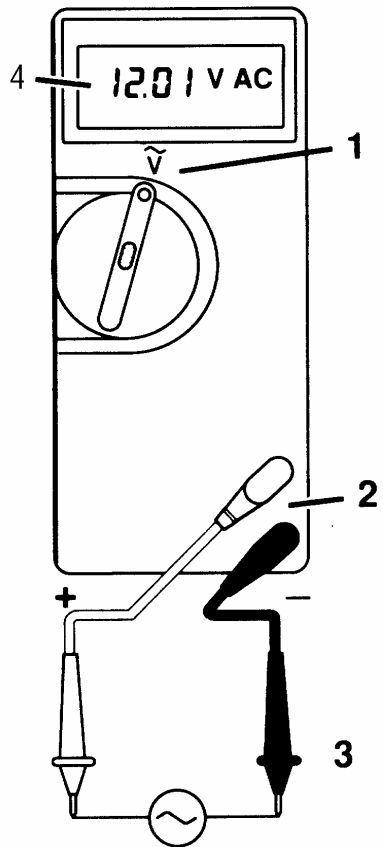
To avoid possible electric shock, ensure that frequency of the measured voltage is ≤ 1 kHz.

Above 1kHz the meter will display a voltage lower than the actual voltage.

Turn the rotary switch to a voltage function. For dc voltages below 400 mV, use the mVdc function to get better resolution. NOTE: In the mV dc function, the meter defaults to the 400 mV (manual) range. To enter the 40 mV

range, press . To select autorange, hold for 1 second.


Insert the leads in the jacks shown. Touch probes to test points on the circuit.



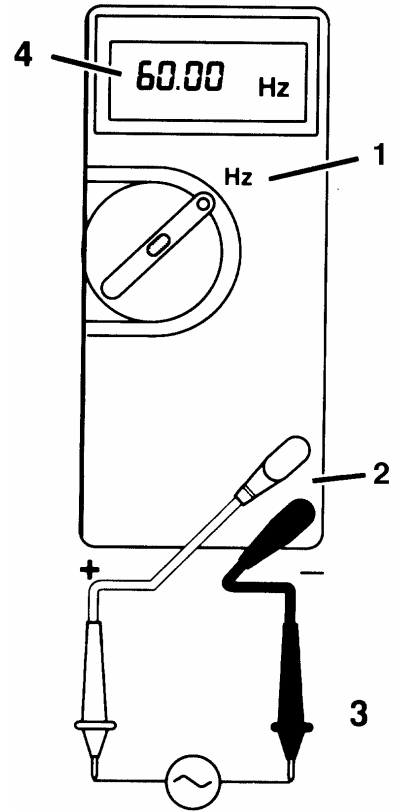
Hz

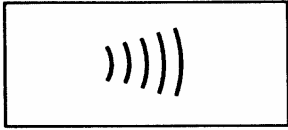
Measuring Frequency

Turn switch to Hz , and insert leads as shown. Touch the probes to the circuit. Below 5 Hz, the update rate of the display slows noticeably. Below 0.8 Hz, the display shows 00.00.



The minimum signal required for frequency readings depends on the range and the frequency (see SPECIFICATIONS). If readings are unstable, use  to select a lower voltage range.

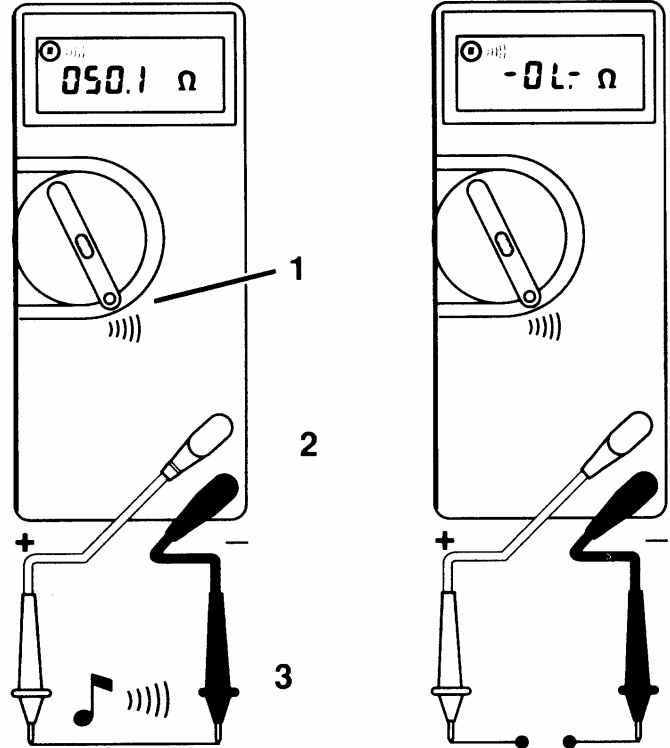
Frequency is shown only on the digital display. Voltage is shown on the bar graph when the meter is in the autorange mode. In manual range, no bar graph is displayed. Above 1 kHz the meter will display a lower voltage than the actual voltage.

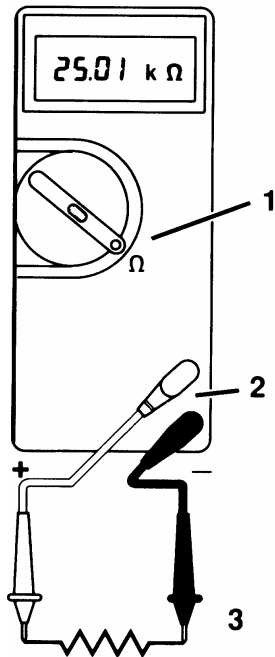




Continuity Test

Turn OFF power to circuit. Turn rotary switch to . The meter enters continuity test in a 400Ω fixed range. Insert test leads as shown. Touch probes to the circuit. If continuity exists (i.e., resistance $<20\Omega$), beeper emits a continuous tone. Opens or shorts longer than 1 ms are detected. To turn OFF continuity beeper, hold  for 1 second.





Measuring Resistance



Turn OFF power to the circuit, and discharge all capacitors. An external voltage across a component will give invalid resistance readings.

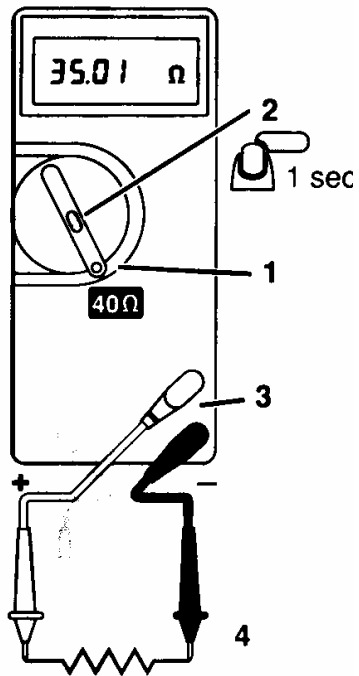
Turn rotary switch to Ω , and insert test leads as shown. Touch the probes to the circuit. Be sure you have good contact between the probes and the circuit. Dirt, oil, solder, or other foreign matter seriously affects the resistance.

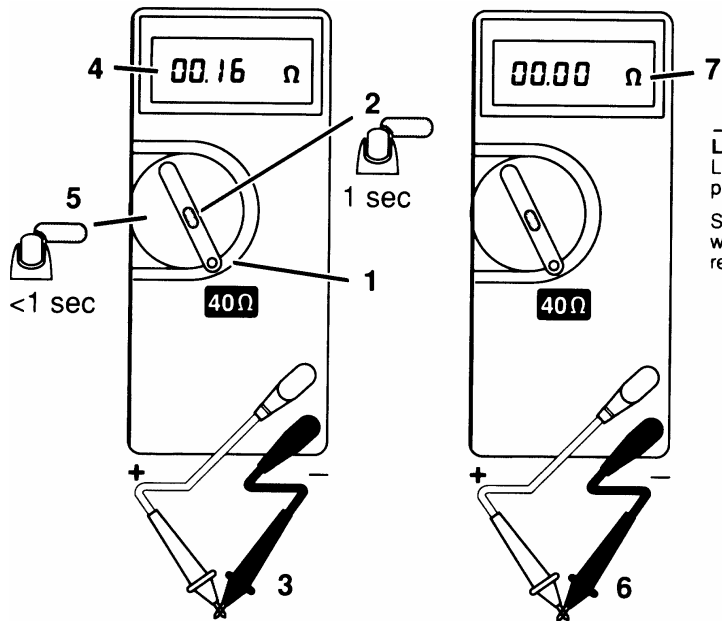


Measuring Low Resistance

Below 8 k Ω , the Lo-Ohms (40 Ω) function improves noise rejection and resolution, but is less accurate than the primary ohms function. In Lo-Ohms the meter is always in autorange.


Turn switch to 40 Ω . Hold  for 1 second to select Lo-Ohms (and disable beeper). Insert leads and touch probes to circuit as shown. Press  for 1 second to re-enable beeper and return to 400 Ω fixed range.

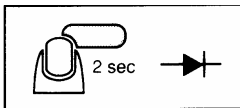






Lo-Ohms Zero Calibration

Lo-Ohms zero compensates for resistance in the leads and the meter's internal protection circuitry. First select the Lo-Ohms function (40Ω) as described previously.



Short test leads while pressing  for less than a second. Continue to short leads while CAL is displayed. When 0 is displayed, a "calibration" has occurred. Lo-Ohms remains "calibrated" until you change functions.

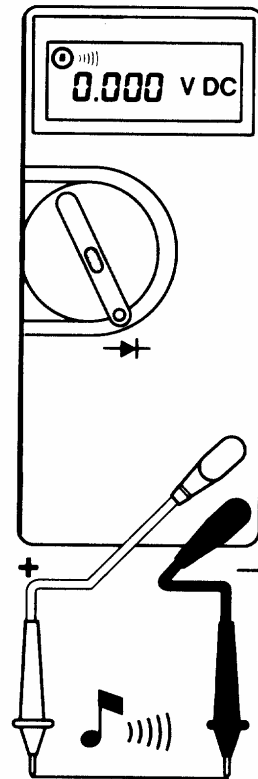
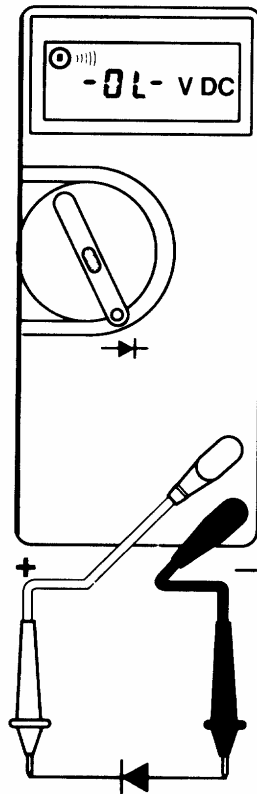
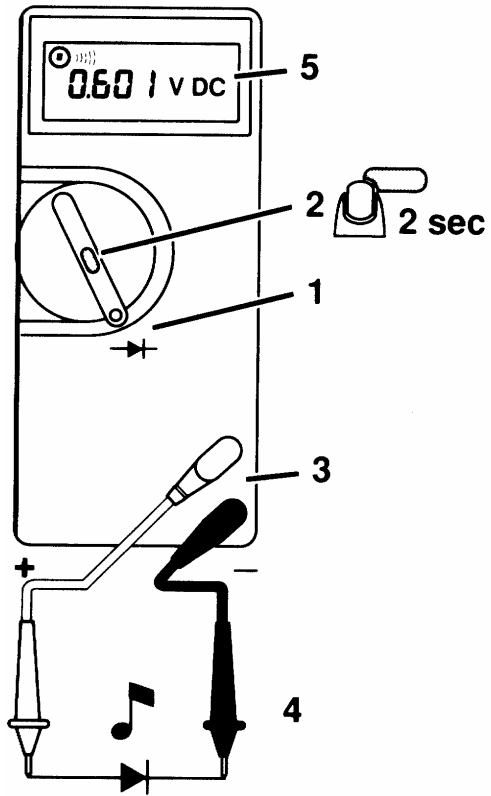


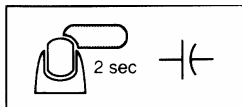
Testing Diodes

Turn rotary switch to , and hold  for 2 seconds. VDC is displayed. Insert test leads and touch probes to diode. The meter displays voltage up to 2.45V. Typical voltage drop for a silicon diode is less than 0.7V and causes the meter to beep.

Reverse probes: if diode is good, OL is displayed; if diode is shorted, 0 voltage drop is displayed in both directions, and the beeper sounds continuously; if diode is open, OL is displayed in both directions.

Hold  for 1 second to disable beeper. To exit diode test and return to continuity testing, hold  for 2 seconds.



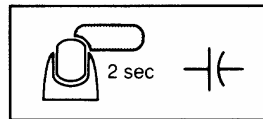
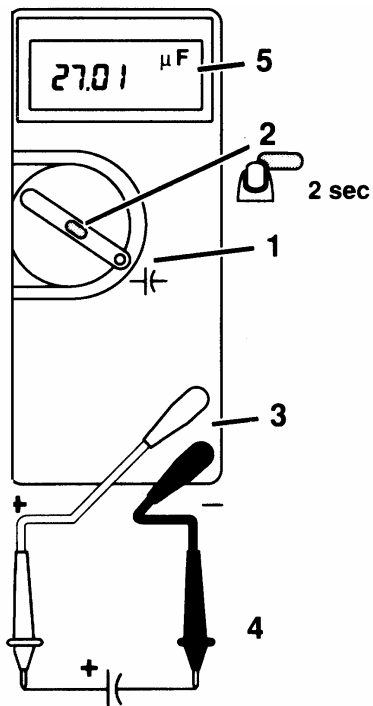


Measuring Capacitance


Turn OFF power to the circuit and discharge capacitor. Turn rotary switch to + , and insert test leads as shown. Hold $\text{}$ for 2 seconds; nF is displayed.

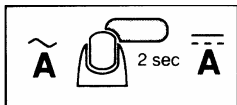
Touch probes to capacitor as shown. NOTE: When measuring polarized capacitors, connect $\text{V}\Omega\text{+}$ to positive and COM to negative.

Residual voltage on the capacitor or dielectric absorption can cause measurement errors. If discharge is necessary, the meter displays "dISC" while discharging the capacitor.



When measuring capacitance in the lower 2 ranges (99.99 nF or 999.9 nF), be sure to note the test lead and input capacitance (which will be measured by the meter) and subtract it from the displayed reading.


To exit capacitance and return to Ω , hold  for 2 seconds.



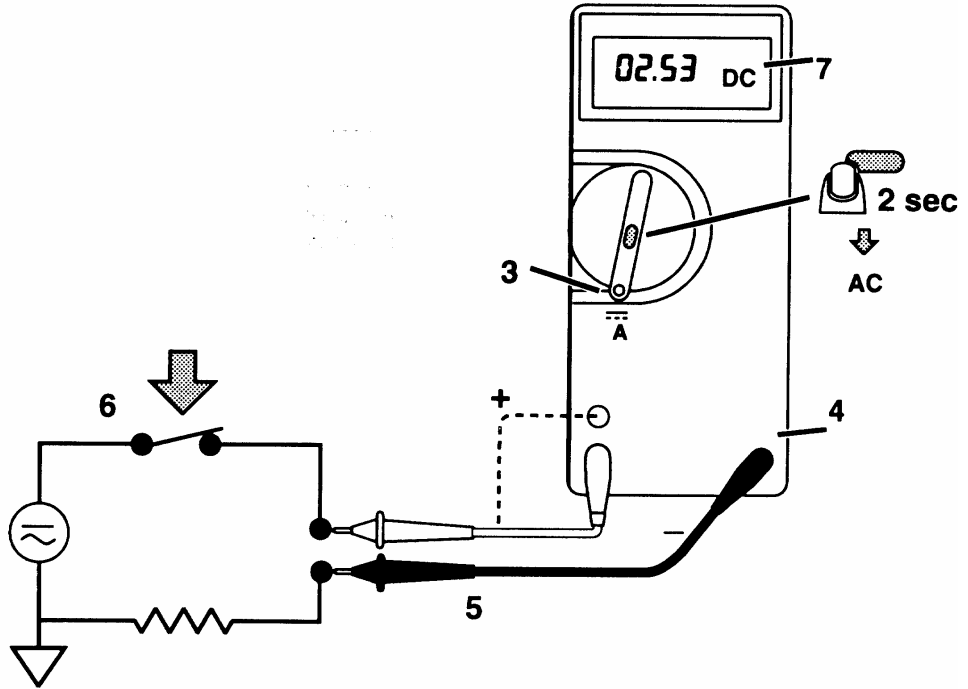
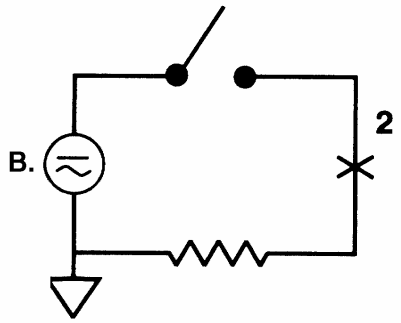
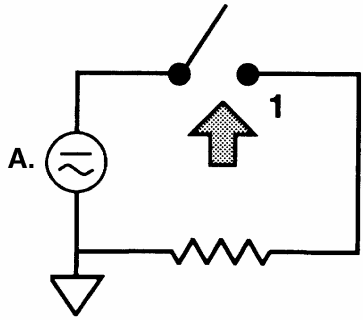
Measuring Current

⚠ WARNING

TO AVOID DAMAGE OR INJURY, DO NOT ATTEMPT A CURRENT MEASUREMENT IF THE VOLTAGE IS ABOVE 600V.

Rotate switch to the amp function; dc current is selected. To toggle to ac current, hold  for 2 seconds. Insert test leads. To avoid blowing an input fuse, use the 10A jack until you are sure that the current draw is less than 40 mA.

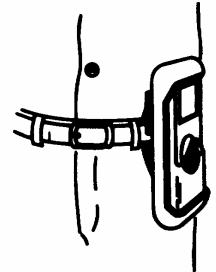
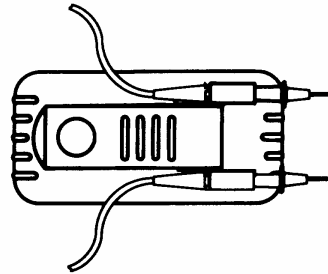
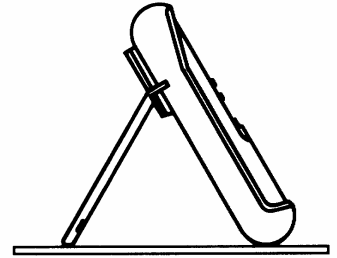
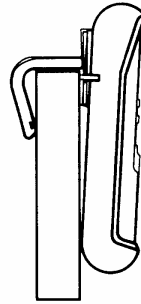
Turn OFF power to the circuit. Break the circuit. (For circuits of more than 10 amps, use a current clamp; see Specifications.) Put the meter in series with the circuit as shown and turn power on. AC clamps with 1 mA/A output measure up to 40A with the 40 mA jack. Above 40A, use 10A jack and multiply reading by 1000.



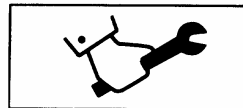


Holster

The snap-on holster protects the meter. The holster comes with a Flex-Stand™. Put the meter face down in the holster to protect the front of the meter. Store the Quick Reference Card in the holster behind the meter. Some uses of the holster and Flex-Stand are shown.



™Flex-Stand is a trademark of the Fluke Corporation.



Maintenance

⚠ WARNING

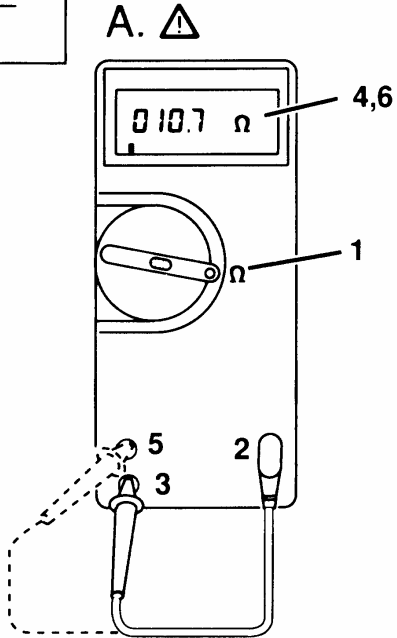
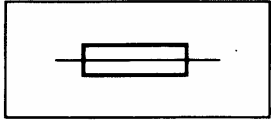
TO AVOID SHOCK, REMOVE LEADS BEFORE OPENING CASE. CLOSE CASE BEFORE USING METER. TO AVOID FIRE, ONLY USE FUSES WITH RATING SHOWN ON BACK OF METER.







CAUTION

To avoid damaging components, do not lift battery straight out. Lift end of battery up as shown. To avoid contamination or static damage, do not touch rotary switch or circuit board.

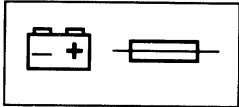
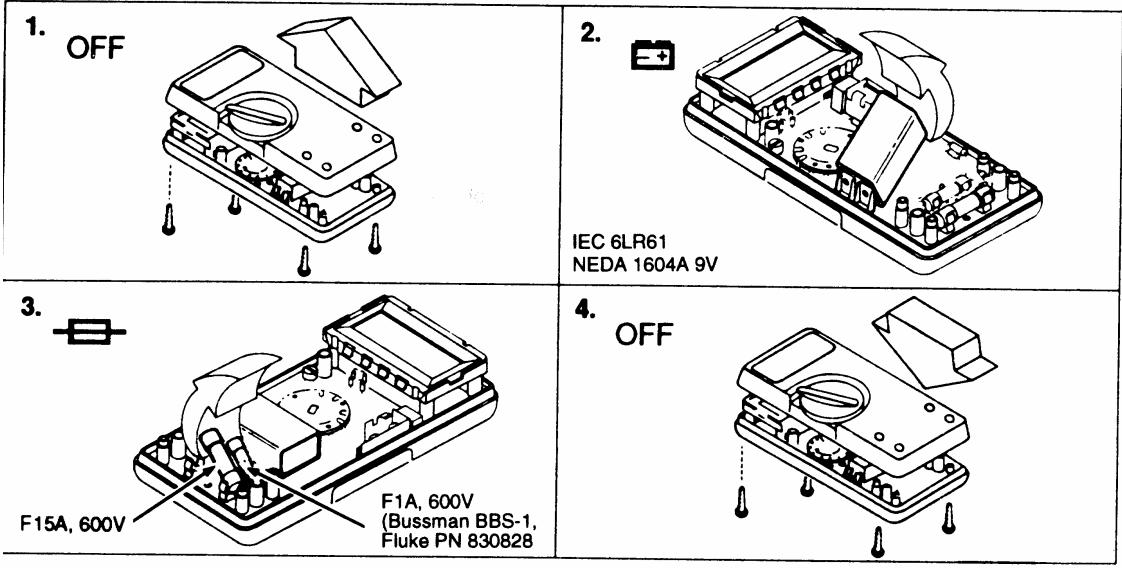
Do not use abrasives or solvents on the meter; use a damp cloth and mild detergent. Complete service information is in the 76 Service Manual (PN 103926).

- A. Internal Fuse Test
- B. Battery/Fuse Replacement

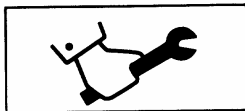


40 mA			10 A		
10-12Ω		OK	0.1 - <0.5Ω		OK
OL			OL		

B. ⚠



WARNING
See Safety Information.

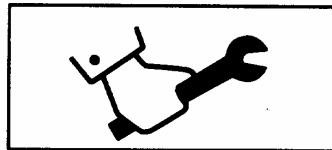
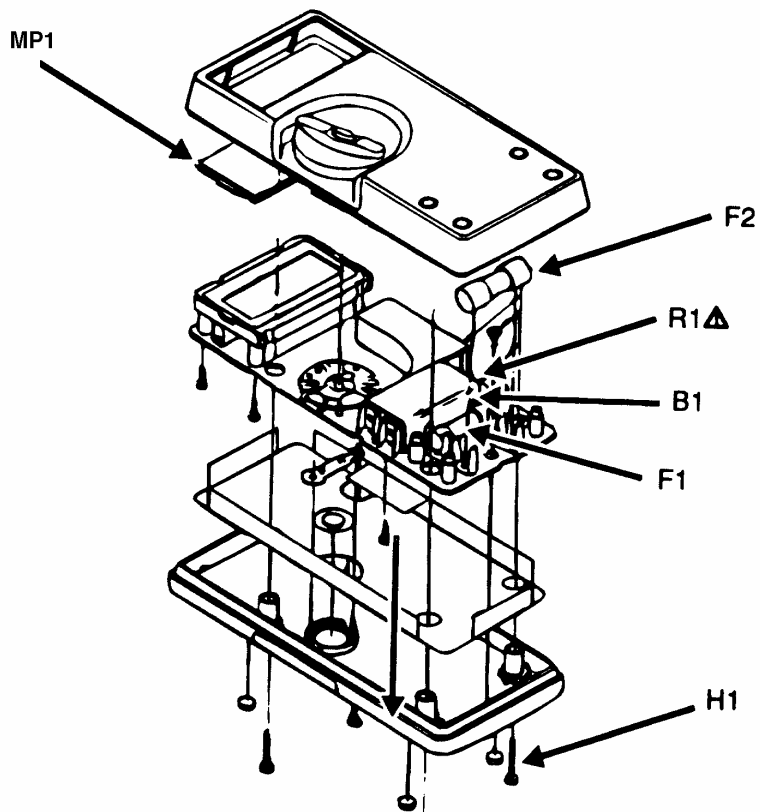


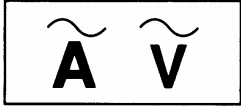
SERVICE & PARTS

Use only the replacement parts shown in the table. In USA, to order parts, call 1-800-526-4731. Outside of USA, contact nearest service center. See list of Service Centers.

Item	Description	Fluke Part No.	Quantity
BT1	Battery 9V (NEDA 1604A or IEC 6LR61)	614487	1
C70Y	Yellow Holster	—	1
C70G	Gray Holster	—	1
F1*	Fuse,F1A,600V,Min Interrupt Rating 10 kA	830828	1
F2	Fuse,F15A,600V,Min Interrupt Rating 10 kA	820829	1
H1	Screw, Case	519116	4
MP1	LCD Window	791343	1
R1**	Res,WW,470,±5%,2.5W	602838	1
TL75	Test Leads, Right-Angle (One Set)	855742	1
TM1	76 Users Manual, Multilingual	106275	1
TM2	76 Service Manual	103926	—
TM3	76 Quick Reference Card	106278	1

* For safety, replace with Bussman BBS-1 or Fluke PN 830828 only.
 ** For safety, use exact replacement only.





TRUE RMS AND CREST FACTOR

The Fluke 76 ac converter calculates the rms value through analog computation. This means the Fluke 76 readings are accurate rms values not only for harmonic-free, pure sinusoids, but also for square waves, sawtooths, distorted waveforms and other nonsinusoidal signals.

Crest Factor (CF) is defined as the peak value divided by the rms signal value. A sinewave has a CF of 1.4. Most waveforms encountered have CF of less than 3. The CF specification defines the dynamic capability of the meter.

The Fluke 76 is ac-coupled and measures the ac component of a waveform independent of any dc component. The dc component is obtained by using the dc functions of the meter. Total rms value of both can be obtained by a root-sum-squared calculation:

$$(\text{ac} + \text{dc}) \text{ rms} = \sqrt{(\text{ac}_{\text{rms}})^2 + (\text{dc})^2}$$

SPECIFICATIONS

Accuracy is specified for a period of one year after calibration, at 18°C to 28°C (64°F to 82°F) with relative humidity to 90%. AC conversions are ac-coupled, true rms responding.

Input signal crest factor can be up to 3 at full scale and 6 at half scale. For non-sinusoidal waveforms add $\pm(2\%$ of reading + 2% of range) for crest factor up to 3.

Accuracy Specifications are given as:

$\pm([\% \text{ of reading}] + [\text{number of least significant digits}])$

Maximum Rated Voltage Between any Terminal and Earth Ground

600V dc, 600V ac rms (sine)

Fuse Protection:

40 mA. 1A 600V FAST Fuse
10A. 15A 600V FAST Fuse

Display:

Digital: 4000 counts, updates 4/sec
Analog: 63 segments, updates 40/sec
Frequency: 9,999 counts
Capacitance: 9,999 counts

Response Time of

Vac <1.5s (for upscale only)

Digital Display:

Vdc <1s
 Ω <1s to 40 k Ω , <2s to 4 M Ω , <10s to 40 M Ω

Operating Temperature:

0°C to 55°C

Storage Temperature:

-40°C to 60°C

Temperature

0.1 x (specified accuracy)/ °C

Coefficient:

(<18°C or >28°C)

Relative Humidity

90% (0°C to 30°C)
75% (30°C to 40°C)
45% (40°C to 50°C)
35% (50°C to 55°C)

Altitude:

Operating: 2,000 meters
Storage: 12,000 meters

Battery Type:

9V, NEDA 1604A or IEC 6LR61

Battery Life:

500 hrs typical with alkaline

Continuity Beeper:

4096 Hz

Vibration:

Per MIL-T-28800E, Class III
Sinusoidal, Non Operating

Drop:

ANSI/ISA-S82.01-1994 and EN61010-1, 1993
1 meter drop to hardwood on concrete

Enclosure:

Conforms to IP-40 Per IEC-529

Size (HxWxL):

2.8 cm x 7.5 cm x 16.6 cm
(1.12 in x 2.95 in x 6.55 in)

Weight:

12 oz (340g)

EMC:

EN 50081-1, EN 50082-1

Surge Protection:

6KV peak per IEC 1010-1, 1990-09 and ANSI/IEEE
C62.41-1991

Safety:

600V AC, 600V DC maximum voltage between any terminal and earth ground.

Complies with IEC-1010-1, 1990-09 and ANSI/ISA-S82.01-94 for use in overvoltage category III locations, $\leq 600V$, UL3111, CSA/CAN C22.2 No.1010.1-92 and EN61010 part 1-1993.

Certifications:

CE CSA and TUV
UL pending

Function	Range	Resolution	Accuracy	Burden Voltage (Typical)
\bar{V} (45 Hz to 1 kHz)	400.0 mV	0.1 mV	$\pm(1.9\%+4)\dagger$	Not Applicable
	4.000V	0.001V	$\pm(1.9\%+2)\dagger$	
	40.00V	0.01V	$\pm(1.5\%+2)\dagger$	
	400.0V	0.1V	$\pm(1.5\%+2)\dagger$	
	600V	1V	$\pm(1.5\%+2)\dagger$	
\bar{V}	4.000V	0.001V	$\pm(0.3\%+1)$	Not Applicable
	40.00V	0.01V	$\pm(0.3\%+1)$	
	400.0V	0.1V	$\pm(0.3\%+1)$	
	600V	1V	$\pm(0.3\%+1)$	
\overline{mV}	40.00 mV*	0.01 mV	$\pm(0.3\%+5)$	Not Applicable
	400.0 mV	0.1 mV	$\pm(0.3\%+1)$	
Ω	400.0 Ω	0.1 Ω	$\pm(0.4\%+2)$	Not Applicable
	4.000 k Ω	0.001 k Ω	$\pm(0.4\%+1)$	
	40.00 k Ω	0.01 k Ω	$\pm(0.4\%+1)$	
	400.0 k Ω	0.1 k Ω	$\pm(0.4\%+1)$	
	4.000 M Ω	0.001 M Ω	$\pm(0.4\%+1)$	
	40.00 M Ω	0.01 M Ω	$\pm(1\%+3)$	
Capacitance	99.99 nF	0.01 nF	$\pm(1.9\%+2)**$	Not Applicable
	999.9 nF	0.1 nF	$\pm(1.9\%+2)**$	
	9.999 μ F	0.001 μ F	$\pm(1.9\%+2)**$	
	99.99 μ F	0.01 μ F	$\pm(1.9\%+2)**$	
	999.9 μ F	0.1 μ F	$\pm(1.9\%+2)**$	
	9999 μ F	1 μ F	$\pm 10\%$ Typical	
)	400 Ω	0.1 Ω	5% Typical	Not Applicable

Function	Range	Resolution	Accuracy	Burden Voltage (Typical)
40 Ω (Lo-Ohms)	40 Ω^*	0.01 Ω	5% Typical	Not Applicable
	400 Ω	0.1 Ω	5% Typical	
	8 k Ω	1 Ω	10% Typical	
Diode Test	2.450V	0.001V	$\pm 2\%$ Typical	Not Applicable
\bar{A} (45 Hz to 1 kHz)	4.000 mA	0.001 mA	$\pm(1.5\%+4)\dagger$	11 mV/mA
	40.00 mA	0.01 mA	$\pm(1.5\%+2)\dagger$	11 mV/mA
	4A	0.001A	$\pm(1.5\%+4)\dagger$	0.03 V/A
	10.00A***	0.01A	$\pm(1.5\%+2)\dagger$	0.03 V/A
\overline{A}	4.000 mA	0.001 mA	$\pm(0.5\%+5)$	11 mV/mA
	40.00 mA	0.01 mA	$\pm(0.5\%+2)$	11 mV/mA
	4A	0.001A	$\pm(0.5\%+5)$	0.03 V/A
	10.00A***	0.01A	$\pm(0.5\%+2)$	0.03 V/A
Frequency‡ (1 Hz to 20 kHz)	99.99	0.01 Hz	$\pm(0.01\%+1)$	Not Applicable
	999.9	0.1 Hz	$\pm(0.01\%+1)$	
	9.999 kHz	0.001 kHz	$\pm(0.01\%+1)$	
	20.00 kHz	0.01 kHz	$\pm(0.01\%+1)$	

* In 40 Ω and 40 mV ranges, thermals may introduce additional errors. Maximum accuracy is obtained when both probe tips are maintained at the same temperature.

** With film capacitor or better and residual (open lead reading) subtracted from measurement. This meter uses a dc-type measurement technique.

*** 10A continuous, 20A for 30 seconds.

† From 5% to 100% of specified range.

‡ For rectangular waveforms $25\% \leq$ duty cycle $\leq 75\%$. VAC \leq 1 kHz.

Frequency Counter Sensitivity

Input Range*	Minimum Sensitivity (RMS Sine Wave)	
	500 Hz to 20 kHz	1.0 Hz to 500 Hz**
400 mV ac	Not Applicable	Not Applicable
4V ac	0.3V	0.7V
40V ac	3V	7V
400V ac	30V	70V
600V ac	300V	Not Applicable

* Maximum input for specified accuracy = 10 x Range or 600V.
 ** Display rattle for sine waves below 500 Hz = 5 counts.

Function	Overload Protection*	Input Impedance (Nominal)	Common Mode Rejection Ratio (1 K Ω Unbalance)	Normal Mode Rejection
$\overline{\text{V}}$	600V dc 600V ac rms (sine)	>10 M Ω , <100 pF	>120 dB at dc, 50 Hz, or 60 Hz	>60 dB at 50 Hz or 60 Hz
$\overline{\text{mV}}$	600V dc 600V ac rms (sine)	10 M Ω , <100 pF	>120 dB at dc, 50 Hz, or 60 Hz	>60 dB at 50 Hz or 60 Hz
$\hat{\text{V}}$	600V dc 600V ac rms (sine)	>10 M Ω , <100 pF (ac-coupled)	>60 dB, dc to 60 Hz	
Ω		Open Circuit Test Voltage	Full Scale Voltage To 4.0 M Ω 40 M Ω	Short Circuit Current
	600V dc, 600V rms (sine)	<1.3V dc	<450 mV dc <1.3V dc	<500 μ A
$\rightarrow \vdash$	600V dc, 600V rms (sine)	<3.1V dc	2.45V dc	800 μ A typical

* 10⁷ V-Hz max.

