

FLUKE®

Model 77 Series IV

Digital Multimeter

Users Manual

PN 2695884

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Specifications

Accuracy is specified for 1 year after calibration, at operating temperatures of 18 °C to 28 °C, with relative humidity at 0 % to 90 %. Accuracy specifications take the form of the following calculations:

$$\pm ([\% \text{ of Reading }] + [\text{ Counts }])$$

Maximum voltage between any terminal and earth ground:

1000

Surge Protection:

8 kV peak per IEC 61010

△ Fuse for mA inputs:

440 mA, 1000 V FAST Fuse

△ Fuse for A input:

11 A, 1000 V FAST Fuse

Display:

Digital: 6000 counts, updates 4/sec
 Bar Graph: 33 segments; updates 32/sec
 Frequency: 10,000 counts
 Capacitance: 1,000 counts

Altitude:

Operating: 2000 m; Storage: 12,000 m

Temperature:

Operating: -10 °C to +50 °C;
 Storage: -40 °C to +60 °C

Temperature coefficient:

0.1 X (specified accuracy) / °C
 (<18 °C or >28 °C)

Electromagnetic Compatibility (EN 61326-1:1997):

In an RF field of 3 V/M, accuracy = specified accuracy.

Relative Humidity:

Maximum, noncondensing
 90 % to 35 °C
 75 % to 40 °C;
 45 % to 50 °C

Battery Life:

Alkaline: 400 hrs typical

Size (H x W x L):

4.3 cm x 9 cm x 18.5 cm


Weight:

420 g

Safety Compliances:

ANSI/ISA S82.02.01, CSA C22.2-1010.1, IEC 61010 to 1000 V Measurement Category III, 600 V Measurement Category IV

Certifications:

CSA, TÜV (EN61010), UL, CE,  (N10140), VDE

Model 77 Series IV
Users Manual

Function	Range	Resolution	Accuracy ± ([% of Reading] + [Counts])
AC Volts (Average responding)	6.000 V	0.001 V	2.0 % + 2 (45 Hz to 1 kHz)
	60.00 V	0.01 V	
	600.0 V	0.1 V	
	1000 V	1 V	
DC mV	600.0 mV	0.1 mV	0.3 % + 1
DC Volts	6.000 V	0.001 V	0.3 % + 1
	60.00 V	0.01 V	
	600.0 V	0.1 V	
	1000 V	1 V	
Continuity	600 Ω	1 Ω	Meter beeps at <25 Ω, beeper turns off at >250 Ω; detects opens or shorts of 250 μs or longer.
Ohms	600.0 Ω	0.1 Ω	0.5 % + 2 0.5 % + 1 0.5 % + 1 0.5 % + 1 0.5 % + 1 0.5 % + 1 2.0 % + 1
	6.000 kΩ	0.001 kΩ	
	60.00 kΩ	0.01 kΩ	
	600.0 kΩ	0.1 kΩ	
	6.000 MΩ	0.001 MΩ	
	50.00 MΩ	0.01 MΩ	
Diode test	2.400 V	0.001 V	1 % + 2
Capacitance	1000 nF	1 nF	1.2 % + 2 1.2 % + 2 1.2 % + 2 10 % typical
	10.00 μF	0.01 μF	
	100.0 μF	0.1 μF	
	9999 μF ^[1]	1 μF	
AC Amps (Average responding) ^[2]	60.00 mA	0.01 mA	2.5 % + 2 (45 Hz to 1 kHz)
	400.0 mA ^[3]	0.1 mA	
	6.000 A	0.001 A	
	10.00 A ^[4]	0.01 A	
<p>[1] In the 9999 μF range for measurements to 1000 μF, the measurement accuracy is 1.2 % + 2. [2] Amps input burden voltage (typical): 400 mA input 2 mV/mA, 10 A input 37 mV/A. [3] 400.0 mA accuracy specified up to 600 mA overload. [4] >10 A unspecified.</p>			

Specifications

Function	Range	Resolution	Accuracy ± ([% of Reading] + [Counts])
DC Amps ^[3]	60.00 mA ^[4] 400.0 mA ^[4] 6.000 A 10.00 A ^[5]	0.01 mA 0.1 mA 0.001 A 0.01 A	1.5 % + 2
Hz ^{[1][2]} (ac voltage input)	99.99 Hz 999.9 Hz 9.999 kHz 99.99 kHz	0.01 Hz 0.1 Hz 0.001 kHz 0.01 kHz	0.1 % + 1
MIN MAX AVG	For dc functions, accuracy is the specified accuracy of the measurement function ±12 counts for changes longer than 275 ms in duration. For ac functions, accuracy is the specified accuracy of the measurement function ±40 counts for changes longer than 1.2 s in duration.		
<p>[1] Frequency is specified from 2 Hz to 99.99 kHz. [2] Below 2 Hz, the display shows zero Hz. [3] Amps input burden voltage (typical): 400 mA input 2 mV/mA, 10 A input 37 mV/A. [4] 400.0 mA accuracy specified up to 600 mA overload. [5] >10 A unspecified.</p>			

Model 77 Series IV
Users Manual

Function	Overload Protection ^[1]	Input Impedance (Nominal)	Common Mode Rejection Ratio (1 k Ω Unbalanced)	Normal Mode Rejection
Volts AC	1000 V	>10 M Ω <100 pF	>60 dB @ dc, 50 Hz or 60 Hz	
Volts DC	1000 V	>10 M Ω <100 pF	>120 dB @ dc, 50 Hz or 60 Hz	>60 dB @ 50 Hz or 60 Hz
mV	1000 V ^[2]	>10 M Ω <100 pF	>120 dB @ dc, 50 Hz or 60 Hz	>60 dB @ 50 Hz or 60 Hz
		Open Circuit Test Voltage	Full Scale Voltage To: 6.0 MΩ	Short Circuit Current
Ohms/Capacitance	1000 V ^[2]	<8.0 V dc	<660 mV dc	<1.1 mA
Continuity/Diode test	1000 V ^[2]	<8.0 V dc	2.4 V dc	<1.1 mA

[1] 10⁷ V-Hz maximum.
[2] For circuits <0.3 A short circuit. 660 V for high energy circuits.

Function	Overload Protection	Overload
mA	Fused, 440 mA, 1000 V FAST Fuse	600 mA overload for 2 minutes maximum, 10 minutes rest.
A	Fused, 11 A, 1000 V FAST Fuse	20 A overload for 30 seconds maximum, 10 minutes rest.