TECHNICAL DATA

Fluke 170 Series True-rms Digital Multimeters

Fluke 170 Series DMMs are the industry-standard troubleshooting tools for electrical and electronic systems

Fluke 170 Series digital multimeters are the preferred solutions for professional technicians around the world. They include the features you need to troubleshoot and repair electrical and electronic systems, combined with Fluke's unparalleled reputation for ruggedness, reliability and accuracy.

All 170 Series DMMs are true-rms responding. In today's electrical environment full of harmonics and variable speed drives, these DMMs will provide accurate ac voltage and current readings on complex, non-sinusoidal signals.

Fluke pioneered the analog bar graph in DMMs and it remains the industry standard today. For signals that change over time, the bar graph can be easier to understand than changing numbers.

Fluke 170 Series DMMs all carry a limited lifetime warranty. When your job depends on your tools, make sure a Fluke 170 Series DMM is on your toolbelt.

EXCEPTIONAL EASE-OF-USE, RUGGEDNESS AND RELIABILITY

The Fluke 175, 177 and 179 are the perfect choice for everyday use when your job depends on your meter

INCREASED ACCURACY WITH TRUE-RMS MEASUREMENTS

Get accurate voltage and current readings when measuring complex ac signals

EASY UNDERSTANDING OF CHANGING SIGNALS

An analog bar graph makes it easy to see trends in fluctuating signals

TEMPERATURE MEASUREMENTS AT YOUR FINGERTIPS (179 ONLY)

Built-in thermometer conveniently allows you to take temperature readings without having to carry a separate instrument

General specifications	
Environmental specifications	
Operating temperature	-10 °C to +50 °C
Storage temperature	-30 °C to +60 °C
Humidity (without condensation)	0 % – 90 % (0 °C – 35 °C) 0 % – 70 % (35 °C – 50 °C)
Safety specifications	
Overvoltage category	EN 61010–1 to 1000 V CAT III EN 61010–1 to 600 V CAT IV
Agency approvals	CSA, CE
Mechanical and general specifications	
Size	43 x 90 x 185 mm
Weight	420 g
Warranty	Limited lifetime
Battery life	Alkaline ~200 hours typical, without backlight

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: ± ([% of Reading] + [Counts])

Function	Range ±([% of reading] + [counts])[1]	Resolution	Accuracy		
			Model 175	Model 177	Model 179
AC volts [2,3]	600.0 mV	0.1 mV	1.0 % + 3 (45 Hz to 500 Hz)	1.0 % + 3 (45 Hz to 500 Hz)	1.0 % + 3 (45 Hz to 500 Hz)
	6.000 V	0.001 V			
	60.00 V	0.01 V			
	600.0 V	0.1 V			
	1000 V	1 V	2.0 % + 3 (500 Hz to 1 kHz)	2.0 % + 3 (500 Hz to 1 kHz)	2.0 % + 3 (500 Hz to 1 kHz)
DC mV	600.0 mV	0.1 mV	0.15 % + 2	0.09 % + 2	0.09 % + 2
DC volts	6.000 V	0.001 V	0.15 % + 2	0.09 % + 2	0.09 % + 2
	60.00 V	0.01 V			
	600.0 V	0.1 V			
	1000 V	1 V	0.15 % + 2	0.15 % + 2	0.15 % + 2
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	0.9 % + 2	0.9 % + 2	0.9 % + 2
	6.000 kΩ	0.001 kΩ	0.9 % + 1	0.9 % + 1	0.9 % + 1
	60.00 kΩ	0.01 kΩ	0.9 % + 1	0.9 % + 1	0.9 % + 1
	600.0 kΩ	0.1 kΩ	0.9 % + 1	0.9 % + 1	0.9 % + 1
	6.000 MΩ	0.001 MΩ	0.9 % + 1	0.9 % + 1	0.9 % + 1
	50.00 MΩ	0.01 MΩ	1.5 % + 3	1.5 % + 3	1.5 % + 3
Diode test	2.400 V	0.001 V	1 % + 2		
Capacitance	1000 nF	1 nF	1.2 % + 2	1.2 % + 2	1.2 % + 2
	10.00 µF	0.01 µF	1.2 % + 2	1.2 % + 2	1.2 % + 2
	100.0 µF	0.1 µF	1.2 % + 2	1.2 % + 2	1.2 % + 2
	9999 µF[4]	1 µF	10 % typical	10 % typical	10 % typical
AC amps[5] (True-rms) (45 Hz to 1kHz)	60.00 mA	0.01 mA	1.5 % + 3	1.5 % + 3	1.5 % + 3
	400.0 mA[6]	0.1 mA			
	6.000 A	0.001 A			
	10.00 A[7]	0.01 A			
DC amps[4]	60.00 mA	0.01 mA	1.0 % + 3	1.0 % + 3	1.0 % + 3
	400.0 mA[6]	0.1 mA			
	6.000 A	0.001 A			
	10.00 A[7]	0.01 A			
Hz	99.99 Hz	0.01 Hz	0.1 % + 1	0.1 % + 1	0.1 % + 1
(AC- or DC-coupled, V or A[2,3] input)	999.9 Hz	0.1 Hz			
	9.999 kHz	0.001 kHz			
	99.99 kHz	0.01 kHz			
Temperature	-40 °C to +400 °C -40 °F to +752 °F	0.1 °C 0.1 °F	NA	NA	1 % + 10[5] 1 % + 18[5]
Min-max avg	For DC functions, accuracy is the specified accuracy of the measurement function ± 12 counts for changes longer than 350 ms in duration. For AC functions, accuracy is the specified accuracy of the measurement function ± 40 counts for changes longer than 900 ms in duration				

[1] All AC voltage and AC current ranges are specified from 5 % of range to 100 % of range.
[2] Crest factor of ≤ 3 at full scale up to 500 V, decreasing linearly to crest factor ≤ 1.5 at 1000 V.
[3] For non-sinusoidal waveforms, add -(2 % reading + 2 % full scale) typical, for crest factors up to 3.
[4] In the 9999 µF range for measurements to 1000 µF, the measurement accuracy is 1.2 % + 2 for all models.
[5] Amps input burden voltage (typical): 400 mA input 2 mV/mA, 10 A input 37 mV/A.
[6] 400.0 mA accuracy specified up to 600 mA overload.
[7] > 10A unspecified.

Models	175	177	179
	General purpose	Troubleshooting Repair	Built-in thermometer Troubleshooting Repair
Basic features			
Counts	6000	6000	6000
True-rms readings	Ac	Ac	Ac
Basic dc accuracy	0.09 %	0.09 %	0.09 %
Auto/manual ranging	• / •	• / •	• / •
Digits	3-1/2	3-1/2	3-1/2
Measurements			
Voltage ac/dc	1000 V	1000 V	1000 V
Current ac/dc	10 A	10 A	10 A
Resistance	50 MΩ	50 MΩ	50 MΩ
Frequency	100 kHz	100 kHz	100 kHz
Capacitance	10,000 µF	10,000 µF	10,000 µF
Temperature			(+) 400 °C
Continuity/diode test	•	•	•
Display			
Analog bargraph	•	•	•
Backlight		•	•
Diagnostics and data			
Min-max recording	•	•	•
Display hold/Auto (touch) hold	• / •	• / •	• / •
Other features			
Overmolded case, integrated holster	•	•	•
Operating temperature range	-10 °C, +50 °C	-10 °C, +50 °C	-10 °C, +50 °C
Warranty and electrical safety			
Warranty (years)	Limited lifetime	Limited lifetime	Limited lifetime
Dangerous voltage indication	•	•	•
EN61010-1 CAT III	1000 V	1000 V	1000 V
EN61010-1 CAT IV	600 V	600 V	600 V
Recommended accessory test leads	TL75, TL175	TL75, TL175	TL75, TL175

Denotes features only available with this model

Ordering information

Fluke 179 True-rms Digital Multimeter
Fluke 177 True-rms Digital Multimeter
Fluke 175 True-rms Digital Multimeter

Included accessories

Installed 9V battery
TL75 test leads
User's manual
80BK-A Temperature Probe (Fluke 179 only)

Fluke. *Keeping your world up and running.®*

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