



# Fluke 170 Series True-rms Digital Multimeter Extended Specifications

## Model Differences (all other specifications are the same for each model)

Feature	Model		
	175	177	179
Backlight		•	•
Temperature Measurement			•
Basic dc voltage accuracy	0.15%	0.09%	0.09%


## Nominal Specifications

Function	Absolute Range or Description	
AC Voltage, True-rms	0.1 mV to 1000V (1 kHz)	
DC Voltage	0.1 mV to 1000V	
Continuity	Beeper guaranteed on < 25 Ω, guaranteed off > 250 Ω; detects opens or shorts of 250 μs or longer.	
Resistance	0.1Ω to 50.00 MΩ	
Diode Test	2.400V	
Capacitance	1 nF to 9999 uF	
AC Current, True-rms	0.01 mA to 10.00A (20.00 A over-range for 30 seconds)	
DC Current	0.01 mA to 10.00A (20.00 A over-range for 30 seconds)	
Frequency	2 Hz to 50 kHz	
Temperature (179 Only)	-40 °C to +400 °C; -40 °F to +752 °F	
Basic dc voltage accuracy	0.15% (175)	0.09% (177 & 179)
Basic ac voltage accuracy	1.0%	

## Features

Feature	Description
Digital Display	6000 counts, updates 4 x second
Analog Bargraph Display	33 segments, updates 40 x second
Backlight (177 & 179 only)	Automatically turns off after 2 minutes to save battery life The timeout feature can be disabled with a power-up option
HOLD & Auto HOLD	HOLD: freezes the display at the push of a button  Auto HOLD: Display holds present reading until it detects new stable input, then the meter beeps and displays new reading
MIN MAX AVG	Minimum, maximum, and average reading memory
Manual or auto ranging	In auto range, the meter selects the range with the best resolution for the present measurement value
Fast continuity/open detection	The beeper sounds with a stretched pulse for opens or shorts as brief as 250 μs
Test lead alert	The message "LEAd" appears briefly on the display when the rotary switch is moved to or from any <b>A</b> (Amps) position
Power-up options	(1) Turn on all LCD segments, (2) Disable beeper, (3) Disable sleep mode, (4) Enable smoothing, (5) Disable backlight timeout (Models 177 & 179 only)
Closed-case calibration	No internal adjustments needed
Probe holders	The instrument comes with built-in probe holders for probe storage and for convenience when making measurements
Battery access door	Battery replacement without voiding calibration
High-impact overmold case	Integrated overmolded protection provides superior impact protection for your meter

## General Specifications

Accuracy is specified for 1 year after calibration, at operating temperatures of 18 °C to 28 °C, with relative humidity of 0 % to 75 %. Accuracy specifications take the form of: $\pm ( [ \% \text{ of Reading } ] + [ \text{ Counts } ] )$	
<b>Maximum voltage between any terminal and earth ground</b>	1000V DC or AC RMS
<b>Surge Protection</b>	8 kV peak per IEC 61010
<b>Fuse for mA inputs</b>	440 mA, 1000 V FAST Fuse
<b>Fuse for A input</b>	11A, 1000V FAST Fuse
<b>Display</b>	Digital: 6,000 counts, updates 4/sec Bar Graph: 33 segments, updates 40/sec Frequency: 9,999 counts Capacitance: 9,999 counts
<b>Altitude</b>	Operating: 2000 m; Storage: 12000 m
<b>Temperature</b>	Operating: -10 °C to +50 °C Storage: -30 °C to +60 °C
<b>Temperature coefficient</b>	0.1 X (specified accuracy / °C) (< 18 °C or > 28 °C)
<b>Electromagnetic Compatibility (EN 61326-1:1997)</b>	In an RF field of 3 V/M, accuracy = specified accuracy except in temperature: specified accuracy $\pm 5$ °C, $\pm 9$ °F
<b>Relative Humidity</b>	0 % to 90 % @ 0 °C to 35 °C; 0 % to 70 % @ 36 °C to 50 °C
<b>Relative Humidity in 50 M<math>\Omega</math> Range</b>	0 % to 80 % @ 0°C to 35°C; 0 % to 70 % @ 36 °C to 50 °C
<b>Battery Life</b>	Alkaline: ~200 hrs typical
<b>Size, with Holster (H x W x L)</b>	4.3 cm x 9 cm x 18.5 cm
<b>Weight</b>	420g
<b>Safety Compliances</b>	ANSI/ISA S82.02.01, CSA C22.2-1010.1, IEC 61010 to 1000 V Overvoltage Category III, 600 V Overvoltage Category IV
<b>Certifications</b>	CSA, TÜV (EN61010), Australian  (N10140)

## Detailed Specifications

Function	Range <sup>1</sup>	Resolution	Accuracy ± ( [ % of Reading ] + [ Counts ] )		
			Model 175	Model 177	Model 179
AC Volts <sup>2</sup>	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)
	6.000V 60.00V 600.0V 1000V	0.001V 0.01V 0.1V 1V	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	6.000V 60.00V 600.0V	0.001V 0.01V 0.01V	0.15 % + 2	0.09 % + 2	0.09 % + 2
	1000V	1V	0.15 % + 2	0.1 % + 2	0.1 % + 2
Continuity	600Ω	1Ω	Meter beeps at < 25 Ω, beeper turns off at > 250 Ω; detects opens or shorts of 250 ms or longer.		
Ohms	600.0Ω	0.1Ω	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	2.400V	0.001V	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 <sup>3</sup>	1 μF	10 % typical	10 % typical	10 % typical
AC Amps (True-rms)  (45 Hz to 1 kHz)	60.00 mA 400.0 mA (600 mA for 18 hrs) 6.000A 10.00A (20A for 30s)	0.01 mA 0.1 mA 0.001A  0.01A	1.5 % + 3	1.5 % + 3	1.5 % + 3
	DC Amps	60.00 mA 400.0 mA (600 mA for 18 hrs) 6.000A 10.00A (20A for 30s)	0.01 mA 0.1 mA  0.001A 0.01A	1.0 % + 3	1.0 % + 3
Hz (AC- or DC- coupled, V or A <sup>4,5</sup> 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	0.1 % + 1	0.1 % + 1
Temperature	-40 °C to +400 °C -40 °F to +752 °F	0.1 °C 0.1 °F	NA	NA	1 % + 1.0 °C 1 % + 1.8 °F
MIN MAX AVG	For DC functions, accuracy is the specified of the measurement function ± 12 counts for changes longer than 275 ms in duration. For AC functions, accuracy is the specified of the measurement function ± 40 counts for changes longer than 1.2 s 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. In the 9999 μF range for measurements to 1000 μF, the measurement accuracy is 1.2 % for all models.  
 4. In mA and A ranges, frequency measurement is specified to 30 kHz.  
 5. Frequency < 10 kHz are not specified in 600 mV AC, 60 mA AC, and 6 A AC ranges.

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

Function	Overload Protection <sup>1</sup>	Input Impedance (Nominal)	Common Mode Rejection Ratio (1 kΩ Unbalanced)		Normal Mode Rejection
Volts AC	1000 V RMS or DC	> 10 MΩ < 100 pF	> 60 dB @ DC, 50 or 60 Hz		
Volts DC	1000 V RMS or DC	> 10 MΩ < 100 pF	> 120 dB @ DC, 50 or 60 Hz		> 60 dB @ 50 Hz or 60 Hz
		Open Circuit Test Voltage	Full Scale Voltage To: 6.0 MΩ      50 MΩ		Short Circuit Current
Ohms	1000V RMS or DC	< 1.5 V DC	< 600 mV DC	< 1.5 V DC	< 500 μA
Diode test	1000V RMS or DC	2.4 to 3.0 V DC	2.4 V DC		< 1.2 mA typical

1. 10<sup>7</sup> V-Hz maximum.

**Fluke Corporation**  
 PO Box 9090, Everett, WA USA 98206  
 Fluke Europe B.V.  
 PO Box 1186, 5602 BD  
 Eindhoven, The Netherlands  
 For more information call:  
 U.S.A. (800) 443-5853 or  
 Fax (425) 446-5116  
 Europe (31 40) 2 675 200 or  
 Fax (31 40) 2 675 222  
 Canada (905) 890-7600 or  
 Fax (905) 890-6866  
 Other countries (425) 446-5500 or  
 Fax (425) 446-5116  
 Web access: <http://www.fluke.com>

©2001 Fluke Corporation. All rights reserved.  
 Specifications subject to change without notice.  
 Printed in U.S.A. 3/2001

Printed on recycled paper.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.