

## Fluke 170 Series True-rms Digital Multimeters Detailed Specifications

### For all detailed specifications

Accuracy is specified for 1 year after calibration, at operating temperatures of 18°C to 28°C, with relative humidity at 0% to 75%. The accuracy specifications take the form of:  
 $\pm ( [ \% \text{ of Reading } ] + [ \text{ Counts } ] )$



### 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% |

### 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<br>The timeout feature can be disabled with a power-up option   |
| HOLD & Auto HOLD               | HOLD: freezes the display at the push of a button<br><br>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 $\mu$ s   |
| Test lead alert                | The message "LEAd" appears briefly on the display when the rotary switch is moved to or from any A (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  |

## 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 μF   |                   |
| 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%  |                   |

## 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<br>6.000V<br>60.00V<br>600.0V<br>1000V   | 0.1 mV<br>0.001V<br>0.01V<br>0.1V<br>1V  | 1.0 % + 3<br>(45 Hz to 500 Hz)   | 1.0 % + 3<br>(45 Hz to 500 Hz) | 1.0 % + 3<br>(45 Hz to 500 Hz) |
|  |   |  | 2.0 % + 3<br>(500 Hz to 1 kHz)   | 2.0 % + 3<br>(500 Hz to 1 kHz) | 2.0 % + 3<br>(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<br>60.00V<br>600.0V  | 0.001V<br>0.01V<br>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<br>(True-rms)<br><br>(45 Hz to 1 kHz)                  | 60.00 mA<br>400.0 mA<br>(600 mA for 18 hrs)<br>6.000A<br>10.00A<br>(20A for 30s)  | 0.01 mA<br>0.1 mA<br>0.001A<br><br>0.01A   | 1.5 % + 3  | 1.5 % + 3                      | 1.5 % + 3                      |
|  | DC Amps   | 60.00 mA<br>400.0 mA<br>(600 mA for 18 hrs)<br>6.000A<br>10.00A<br>(20A for 30s) | 0.01 mA<br>0.1 mA<br><br>0.001A<br>0.01A   | 1.0 % + 3                      | 1.0 % + 3                      |
| Hz<br>(AC- or DC-<br>coupled,<br>V or A <sup>4,5</sup> input ) | 99.99 Hz<br>999.9 Hz<br>9.999 kHz<br>99.99 kHz  | 0.01 Hz<br>0.1 Hz<br>0.001 kHz<br>0.01 kHz                                       | 0.1 % + 1  | 0.1 % + 1                      | 0.1 % + 1                      |
| Temperature  | -40 °C to +400 °C<br>-40 °F to +752 °F  | 0.1 °C<br>0.1 °F   | NA   | NA                             | 1 % + 1.0 °C<br>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.<br>For AC functions, accuracy is the specified of the measurement function ± 40 counts for changes longer than 1.2 s in duration. |  |  |                                |                                |

- All AC voltage and AC current ranges are specified from 5 % of range to 100 % of range.
- Crest factor of ≤ 3 at full scale up to 500 V, decreasing linearly to crest factor ≤ 1.5 at 1000 V.
- In the 9999 μF range for measurements to 1000 μF, the measurement accuracy is 1.2 % for all models.
- In mA and A ranges, frequency measurement is specified to 30 kHz.
- Frequency < 10 kHz are not specified in 600 mV AC, 60 mA AC, and 6 A AC ranges.

| 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     |
|                                  |                                  | <b>Open Circuit Test Voltage</b> | <b>Full Scale Voltage To:</b><br>6.0 MΩ                      50 MΩ |            | <b>Short Circuit Current</b> |
| 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. |                                  |                                  |  |            |                              |

## General Specifications

|  |  |
|--|--|
| <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>                                      | 11 A, 1000V FAST Fuse  |
| <b>Display</b>   | Digital: 6,000 counts, updates 4/sec<br>Bar Graph: 33 segments, updates 40/sec<br>Frequency: 9,999 counts<br>Capacitance: 9,999 counts |
| <b>Altitude</b>  | Operating: 2000 m; Storage: 12000 m  |
| <b>Temperature</b>   | Operating: -10 °C to +50 °C<br>Storage: -30 °C to +60 °C   |
| <b>Temperature coefficient</b>                               | 0.1 X (specified accuracy / °C)<br>(< 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 ± 5 °C, ± 9 °F                        |
| <b>Relative Humidity</b>                                     | 0 % to 90 % @ 0 °C to 35 °C;<br>0 % to 70 % @ 36 °C to 50 °C   |
| <b>Relative Humidity in 50 MΩ Range</b>                      | 0 % to 80 % @ 0°C to 35°C;<br>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),<br>Australian (N10140)   |

# FLUKE®

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

**Fluke Corporation**

P.O. Box 9090  
Everett, WA USA 98206

**Fluke Europe B.V.**

P.O. Box 1186  
5602 BD Eindhoven  
The Netherlands

**For more information call:**

In the U.S.A. (800) 443-5853

or Fax (425) 446 -5116

In Europe/M-East/Africa +31 (0)40 2 675  
200

or Fax +31 (0)40 2 675 222

In Canada (905) 890-7600

or Fax (905) 890-6866

From other countries +1 (425) 446 -5500

or Fax +1 (425) 446 -5116

Visit us on the world wide web at:

**<http://www.fluke.com>**

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Digital Multimeters](#) category:*

*Click to view products by [Fluke](#) manufacturer:*

Other Similar products are found below :

[2727795](#) [2727486](#) [40705X](#) [3026976](#) [DT-5505](#) [FLK-87VMAX-PVLEAD1](#) [1664FC SCH FTT KIT](#) [34420A](#) [FLUKE 179/TL-223](#) [FLUKE 117/C11XT/TPAK](#) [1013-099](#) [30XR](#) [34XR](#) [35XP](#) [TESTO 745](#) [0590 7450](#) [TESTO 750-1](#) [0590 7501](#) [TESTO 760-2](#) [0590 7602](#) [440012](#) [AX-174](#) [AX-178](#) [AX-18B](#) [AX-594](#) [AX-LCR42A](#) [AX-MS8250](#) [BAT-250-EUR](#) [BM525S](#) [BM817S](#) [BM827S](#) [BM829S](#) [BM857S](#) [BM859S](#) [BM867S](#) [33XR](#) [37XR](#) [UT58C](#) [KIT BRUA-19X](#) [38XR](#) [05005655001](#) [8045VDE](#) [FLUKE 1663](#) [FLUKE-287](#) [FLUKE 289/FVF/IR3000](#) [FLUKE 28 II EX](#) [FLUKE 3000 FC](#) [FLUKE T110](#) [FLUKE T150/VDE](#) [FLUKE T5-600](#) [T2272A](#) [TESTO 760-1](#) [0590 7601](#) [UT71D](#)