

# Fluke 80 Series III Digital Multimeters

Includes Fluke 83 III, 85 III, 87 III and 87/E

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## Introducing the new and improved Fluke 80 Series III digital multimeters

The most versatile meters on the market just got better. Since their introduction, Fluke 80 Series digital multimeters (DMMs) have led the industry in versatile performance, accuracy, and rugged durability. Now the new Fluke 80 Series III DMMs push that lead even further. With a host of new features that increase accuracy, improve safety, and make the 80 Series III easier than ever to use. Look at everything the new 80 Series III has to offer:

- An LED backlight on all models for easier reading under virtually any light conditions
- New LCD display with larger digits and better viewing angle for easy reading from a distance
- 4 1/2-digit resolution to detect subtle changes (Model 87, 87/E)
- MIN/MAX to record the

minimum, maximum, and average reading over time. The 87 III and 87/E now offer 250  $\mu$ S peak MIN/MAX for true peak transient capture

- Significantly improved basic dc accuracy on all models
- CAT III 1000V safety rated to withstand overvoltage transients up to 8 kV
- Battery access door that enables changing batteries without breaking the calibration seal
- Alligator clips
- [Lifetime warranty](#)



Download [application notes](#) for more information on multimeter procedures.



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# Fluke 80 Series III Digital Multimeters Features

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- [Safety Features](#)
- [Lifetime warranty](#)

## Features at a Glance:

The following features are on all models unless otherwise noted. See chart below for more details.

- Digital Display
  - 83 III, 85 III - 4,000 count
  - 87 III, 87/E - 4,000 count, 20,000 count in high-resolution mode
- Analog Display
  - 83 III, 85 III - 43 Seg Bar Graph
  - 87 III, 87/E - 32 Seg Pointer
- True-rms (85 III, 87 III and 87/E only)
- Touch Hold,
- Fused Current Inputs
- Continuity
- MIN/MAX Mode
- Peak MIN/MAX - 250  $\mu$ Sec (87 III and 87/E only)
- Relative Mode
- Diode Test

Fluke 80 Series III	83/III	85/III	87/III	87/E
True-rms ac readings to deliver the correct measurement, even when harmonics are present.		•	•	•
Large, high-contrast, easy-to-read digital display with an analog pointer.			•	•
Large, high-contrast, easy-to-read digital display with an analog bar graph.	•	•		
Backlit display with on/off controls for easy viewing in all light conditions.	•	•	•	•
Automatic Touch Hold® automatically triggers the meter to capture stable non-zero readings, freeing you to focus on the test probes.	•	•	•	•
Meets IEC 61010 safety standards for CAT III 1000V. Protected from overvoltage transients to 8 kV per IEC 61010-1.	•	•	•	•
250 µS Peak MIN/MAX for capturing fast transients.			•	•
4½-digit mode, 20,000-count display for high-resolution readings.			•	•

## Safety Features

What the IEC 1010-1 safety standard means to you

As electrical systems grow more and more complex, spikes, transients, surges, and sudden overvoltage events become more common. These can trigger a sequence of events that may lead to serious injury. Which is why test equipment must be designed to protect people who work in this high-voltage high-current environment.

The IEC 1010 safety standard was established to define four overvoltage categories (CAT I, CAT II, CAT III, and CAT IV) based on the magnitude of danger from transient impulses.

The new Fluke 80 Series III DMMs feature enhanced protection to IEC 61010

overvoltage category III. This helps protect from transients in three-phase distribution systems, including:

- Single-phase commercial lighting.
- Equipment in fixed installations, such as switch gear and polyphase motors.
- Bus and feeder in industrial plants.
- Lighting systems in larger buildings.
- Appliance outlets with short connections to the service entrance.

## Lifetime warranty

Now when you purchase a Fluke digital multimeter, not only do you get a test tool known for its unsurpassed quality, reliability, accuracy, and ruggedness, you also get a [lifetime warranty](#) with most models. That means for as long as the original purchaser owns the product, Fluke will repair or replace the meter according to the conditions specified in the warranty. The following meters all include lifetime warranties:

80 Series III  
70 Series III  
20 Series III  
Fluke 27



## How to beat a leader.

The industry-leading Fluke 80 Series III digital multimeters just got better.



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# Fluke 80 Series III Digital Multimeters Specifications

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DCV	<p>Maximum Voltage: 1000V</p> <p>Accuracy: <b>Fluke 83 III:</b> <math>\pm (0.1\%+1)</math> <b>Fluke 85 III:</b> <math>\pm (0.08\%+1)</math> <b>Fluke 87 III:</b> <math>\pm (0.05\%+1)</math> <b>Fluke 87/E:</b> <math>\pm (0.05\%+1)</math></p> <p>Maximum Resolution: 0.1 mV</p>
ACV	<p>Maximum Voltage: 1000V</p> <p>Accuracy: <b>Fluke 83 III:</b> <math>\pm (0.5\%+2)</math> <b>Fluke 85 III:</b> <math>\pm (0.7\%+2)</math> <b>Fluke 87 III:</b> <math>\pm (0.7\%+2)</math> <b>Fluke 87/E:</b> <math>\pm (0.7\%+2)</math></p> <p>Maximum Resolution: 0.1 mV</p>
DC Current	<p>Maximum Amps: 10A</p> <p>Amps Accuracy: <b>Fluke 83 III:</b> <math>\pm (0.4\%+2)</math> <b>Fluke 85 III:</b> <math>\pm (0.2\%+2)</math> <b>Fluke 87 III:</b> <math>\pm (0.2\%+2)</math> <b>Fluke 87/E:</b> <math>\pm (0.2\%+2)</math></p> <p>Maximum Resolution: <b>Fluke 83 III:</b> 0.01 mA <b>Fluke 85 III:</b> 0.1 <math>\mu</math>A <b>Fluke 87 III:</b> 0.1 <math>\mu</math>A <b>Fluke 87/E:</b> 0.1 <math>\mu</math>A</p>
AC Current	<p>Maximum Amps: 10A</p> <p>Amps Accuracy: <b>Fluke 83 III:</b> <math>\pm (1.2\%+2)</math> <b>Fluke 85 III:</b> <math>\pm (1.0\%+2)</math> <b>Fluke 87 III:</b> <math>\pm (1.0\%+2)</math> <b>Fluke 87/E:</b> <math>\pm (1.0\%+2)</math></p> <p>Maximum Resolution: 0.1 <math>\mu</math>A</p>

Resistance	<p>Max Resistance: <b>40 MΩ</b></p> <p>Accuracy:</p> <p>Fluke 83 III: <math>\pm (0.4\% + 1)</math></p> <p>Fluke 85 III: <math>\pm (0.2\% + 1)</math></p> <p>Fluke 87 III: <math>\pm (0.2\% + 1)</math></p> <p>Fluke 87/E: <math>\pm (0.2\% + 1)</math></p> <p>Maximum Resolution: <b>0.1Ω</b></p>
Capacitance	<b>1 nF-5μF</b>
Frequency	<b>0.5 Hz to 200 kHz</b>

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# Fluke 80 Series III Digital Multimeters Models, Options & Accessories

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Model Name	Product Description
Fluke 83 *	Series III digital multimeter
Fluke 85 *	Series III digital multimeter
Fluke 87 *	Series III digital multimeter
Fluke 87/E **	Series III digital multimeter

\*Included accessories

C81Y yellow protective holster and Flex-Stand™, Users Manual, 9V battery installed, 83, 85, and 87 include a TL75 Hard Point™ Lead Set with AC70A Alligator Clips.

Test probes customized for local electrical standards.

\*\* A special 87/E Series III bonus

Each Fluke 87/E Series III digital multimeter includes a premium electrician's test lead set consisting of extra-long silicone test leads, removable test probes, and one black alligator clip to make convenient ground connections.

Test probes customized for local electrical standards.

## Available Accessories and Options

Model Name	Accessory or Option Description
<a href="#">80i-400</a>	AC Current Clamp
80K-40	High Voltage Probe (DC only)
80K-6	High Voltage Probe (DC only)
<a href="#">80T-150U</a>	Universal Temperature Probe
<a href="#">80T-IR</a>	Non-Contact Infrared Temperature Probe



<a href="#">80TK</a>	Thermocouple Module
85RF	High Frequency Probe, 500 MHz
<a href="#">C100</a>	Universal Carrying Case
<a href="#">C25</a>	Soft Case DMM with Holster
<a href="#">C530</a>	Leather Accessory Case
<a href="#">C550</a>	Tool bag
<a href="#">C800</a>	Hard Storage Case
<a href="#">C81G</a>	Holster (Grey)
<a href="#">FOM</a>	Fiber Optic Meter includes an optical power meter, two multimode ST-ST patch cables, one multimode ST-ST adapter, instruction sheet and instrument case.
FVF-SC1	<a href="#">FlukeView Forms 1.5 Software</a> with cable for Fluke 50 Series-II thermometers and 80 Series-IV digital multimeters
FVF-UG	<a href="#">FlukeView Forms Software</a> Upgrade (no cable)
<a href="#">i-1010</a>	Clamp-on AC/DC Current Probe
<a href="#">i-410</a>	Clamp-on AC/DC Current Probe
<a href="#">i200</a>	AC Current Clamp
<a href="#">PV350</a>	Pressure/Vacuum Module (0 to 350 PSI)
<a href="#">TL20</a>	63" Test Lead Set
<a href="#">TL22</a>	63" Right Angle Silicone Test Lead Set
<a href="#">TL23F</a>	Electrical Test Lead Set
<a href="#">TL23R</a>	Electrical Test Lead Set
<a href="#">TL24</a>	63" Right Angle/Straight Silicone Test Leads
<a href="#">TL26A</a>	60" 5-Way Test Lead Set
<a href="#">TL28A</a>	63" Alligator Clip Test Lead Set
<a href="#">TL71</a>	Premium DMM Test Lead Assembly
<a href="#">TL74</a>	4 mm Diameter Test Leads
<a href="#">TL75</a>	48" Hardpoint Test Lead Set
<a href="#">Y8140A</a>	48" Slim Flex Test Lead Set