

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: \pm ([% of Reading] + [Counts])

Function	Range \pm ([% 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 μ s or longer.		
Ohms	600.0 Ω	0.1 Ω	0.9 % + 2	0.9 % + 2	0.9 % + 2
	6.000 k Ω	0.001 k Ω	0.9 % + 1	0.9 % + 1	0.9 % + 1
	60.00 k Ω	0.01 k Ω	0.9 % + 1	0.9 % + 1	0.9 % + 1
	600.0 k Ω	0.1 k Ω	0.9 % + 1	0.9 % + 1	0.9 % + 1
	6.000 M Ω	0.001 M Ω	0.9 % + 1	0.9 % + 1	0.9 % + 1
	50.00 M Ω	0.01 M Ω	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 μ F	0.01 μ F	1.2 % + 2	1.2 % + 2	1.2 % + 2
	100.0 μ F	0.1 μ F	1.2 % + 2	1.2 % + 2	1.2 % + 2
	9999 μ F ⁴	1 μ F	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 \pm 12 counts for changes longer than 350 ms in duration. For AC functions, accuracy is the specified accuracy of the measurement function \pm 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 \leq 3 at full scale up to 500 V, decreasing linearly to crest factor \leq 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 μ F range for measurements to 1000 μ F, 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)



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Accessories



CPAK8 Magnetic Hanging Pouch

- Multiple pockets.
- Protected inside.
- Magnetic hanging strap.
- Holds up to 3 pliers and 7 screwdrivers.



RUP8 Roll-up Pouch

- Space for up to 3 pliers and 5 screwdrivers.
- Rolls shut.
- Closes with hook and loop fasteners.

Tools not included with Roll-up Pouch

Ordering information

Fluke insulated hand tools are available from your favorite distributor, as well as the Fluke Online Store (<https://www.flukeonlinestore.com>).

Tool	Description
ISLS3	Insulated Slotted Screwdriver 3/32x3 in, 2.5 mm x 75 mm, 1,000 V
ISLS5	Insulated Slotted Screwdriver 5/32x4 in, 4 mm x 100 mm, 1,000 V
ISLS8	Insulated Slotted Screwdriver 1/4x5 in, 6 mm x 125 mm, 1,000 V
IPHS1	Insulated Phillips Screwdriver #1, 3 in, 75 mm, 1,000 V
IPHS2	Insulated Phillips Screwdriver #2, 4 in, 100 mm, 1,000 V
ISQS1	Insulated Squared Screwdriver #1, 4 in, 100 mm, 1,000 V
ISQS2	Insulated Squared Screwdriver #2, 5 in, 125 mm, 1,000 V
INLP8	Insulated Long Nose with Side Cutter, 8 in, 200 mm, 1,000 V
INDC8	Insulated High Leverage Diagonal Cutter, 8 in, 200 mm, 1,000 V
INPP10	Insulated Pump Pliers Fast adjustable, 10 in, 250 mm, 1,000 V
INCP8	Insulated Lineman Combination Pliers, 8 in, 200 mm, 1,000 V
IKSC7	Insulated 7 Piece Screwdriver Kit
IKPL3	Insulated 3 Piece Plier Kit
IKST7	Insulated Hand Tools Starter Kit—5 insulated screwdrivers and 3 insulated pliers
IKPK7	Fluke Pack30 Professional Tool Backpack + Insulated Hand Tools Starter Kit (5 insulated screwdrivers and 3 insulated pliers)
IBT6K	T6 Electrical Tester + Insulated Hand Tools Starter Kit (5 insulated screwdrivers and 3 insulated pliers)
IB875K	87V Industrial Multimeter + Insulated Hand Tools Starter Kit (5 insulated screwdrivers and 3 insulated pliers)
IB117K	117 Electrician's Multimeter + Insulated Hand Tools Starter Kit (5 insulated screwdrivers and 3 insulated pliers)
CPAK8	Magnetic Hanging Pouch
RUP8	Roll-up Pouch

Fluke. Keeping your world up and running.®

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Safe. Rugged. Fluke.

1000 volt insulated hand tools. Lifetime warranty.



Insulated hand tools brochure

Insulated hand tools

Why insulated hand tools

Safety is critical when working with electricity. Follow the right procedures. Wear the proper clothes. Use eye and hearing protection. And make sure you use the right tools.

It is always best practice to work on deenergized equipment. But sometimes that's just not possible. Wiring changes made by someone else may provide an unplanned energy path to where you are working. You need to take every precaution you can. That means using high quality insulated hand tools.

Most hand tools have rubber or plastic on the handles. That's not the same as offering protection from electric shock, and limiting the possibility of arc faults due to short circuits. That's what makes insulated tools different.

- They are designed to block potentially hazardous voltages from reaching you.
- They are subjected to a 10,000 V dielectric strength test, to prove the protection works.
- They are certified to 1,000 V ac and 1,500 V dc by VDE, an independent third-party lab.
- They comply to international standards such as IEC 60900 and ASTM F1505.
- They are a critical part of NFPA 70E, which requires personal protective equipment and insulated tools rated for the electrical installation.

Insulated tools are a critical protective component between you and an unplanned incident.

Why Fluke insulated hand tools

Fluke is the world leader in handheld test tools. Everything that you know about Fluke multimeters, clamp meters and electrical test tools applies to our insulated hand tools.

Forged from German steel, these rugged hand tools are built to last a lifetime. That's why they carry a lifetime warranty.* If a Fluke insulated hand tool is defective, take it to a distributor for replacement. Or contact Fluke (www.fluke.com/tools/warranty).

Fluke insulated tools always feel right. From the moment you first put them in your hand, you're ready to go to work. The pliers offer a smooth, solid motion, without a need for break-in. The screwdrivers give you maximum torque and a comfortable grip that reduces fatigue.

Take everything that makes Fluke test tools great, and put that into insulated hand tools. That's what you'll have on your toolbelt.



*** Industrial products limited Lifetime Warranty**
 Each Fluke insulated hand tool will be free from defects in material and workmanship for its lifetime. Lifetime is defined as seven years after Fluke discontinues manufacturing the product, but the warranty period shall be at least fifteen years from date of purchase. The warranty does not cover damage from neglect, misuse, contamination, alteration, accident or abnormal conditions of operation or handling, including damage caused by use outside of the product's intended use. This warranty covers the original purchaser only and is not transferable. To establish original ownership proof of purchase is required.

Pliers and cutters

Fluke insulated pliers and cutters

Wires need cutting. Cables need pulling. Knockouts need twisting. Sometimes things just need holding. Fluke insulated pliers and cutters give you a range of options when the job requires jaws with bite.



Heavy duty, high leverage diagonal cutter

- Cuts hard materials including steel and piano wire.
- Power joint and precision cutting edges.
- German CMV steel.



Long nose pliers with side cutter and gripping zones

- Unique milled wave pattern gripping zones.
- 4 gripping points for pulling round objects with superior grip that won't slip.
- Straight, half-round, long and slim knurled jaws, specially profiled.
- Side cutting edge for wire cutting.
- German CMV steel.



Heavy duty combination pliers

- Secure hold by aggressive serrated jaws and 4-point gripping hole.
- Slim shape for better access to wires in tight spaces.
- Powerful gripping jaw, yet 20 % lighter weight than other designs.
- German CMV steel.



Fast adjust pump pliers

- More gripping strength and comfort compared to conventional pump pliers of the same length.
- 27 jaw adjustment steps for more accurate gripping of work piece with less slippage than other designs.
- Improved access to the workpiece in tight spaces due to slim size in the head and joint area.
- Self-locking on pipes and nuts: no slipping on the workpiece with low hand force required.
- Gripping surfaces with teeth hardened to HRC61 for low wear and reliable gripping.
- Box-joint design; high stability because of double guide.
- Pinch guard prevents operators' fingers being pinched.
- German CMV steel, forged, multi stage oil-hardened.





Screwdrivers

Fluke insulated screwdrivers

The job isn't finished until everything is tightened down. Precision insulated tools fit and grip the fastener properly to apply maximum torque without damage to the head. Hardened chromium-molybdenum-vanadium (CMV) steel blades minimize wear. The last thing you want is to have your driver slip out of the screw head and possibly contact a nearby live conductor.

Fluke offers three styles and multiple sizes—seven drivers in all. All certified to 1,000 V ac and 1,500 V dc. Every screwdriver individually tested to 10,000 V.

- Ergonomic handle that adapts to user's hand, causes less strain and work fatigue and provides maximum torque.
- Full length, impact proof handle core is coated with soft-grip outer material, hanging hole for extra security, and anti-roll handle design.
- Slim insulated shaft allows access in hard to reach areas.
- Manufactured from CMV steel for superior durability.

⊖ Slot-head drivers

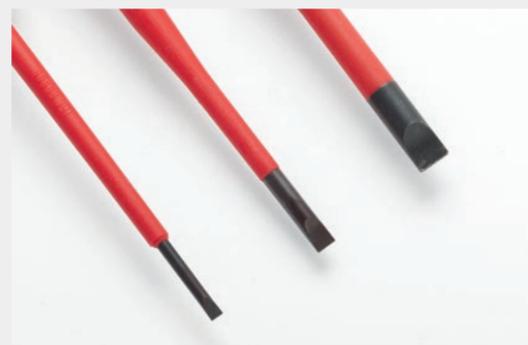
Fluke model	Description
ISLS3	Insulated Slotted Screwdriver 3/32x3 in, 2.5 mm x 75 mm, 1,000 V
ISLS5	Insulated Slotted Screwdriver 5/32x4 in, 4 mm x 100 mm, 1,000 V
ISLS8	Insulated Slotted Screwdriver 1/4x5 in, 6 mm x 125 mm, 1,000 V

⊕ Phillips-head drivers

Fluke model	Description
IPHS1	Insulated Phillips Screwdriver #1, 3 in, 75 mm, 1,000 V
IPHS2	Insulated Phillips Screwdriver #2, 4 in, 100 mm, 1,000 V

□ Square-head drivers

Fluke model	Description
ISQS1	Insulated Squared Screwdriver #1, 4 in, 100 mm, 1,000 V
ISQS2	Insulated Squared Screwdriver #2, 5 in, 125 mm, 1,000 V



Kits and bundles

It takes more than one tool to finish a job. That's why you have a pack to carry it all. And why Fluke offers you a range of tool bundles to pick from.

IKSC7

Insulated 7 Piece Screwdriver Kit

- 3 slotted tips
- 2 Phillips tips
- 2 square drive tips



IKPL3

Insulated 3 Piece Pliers Kit

- Long nose pliers
- Heavy duty diagonal cutter
- Heavy duty combination pliers
- Roll-up tool pouch



IKST7

Insulated Hand Tools Starter Kit

- 3 slotted tips
- 2 Phillips tips
- Long nose pliers
- Heavy duty diagonal cutter
- Heavy duty combination pliers
- Roll-up tool pouch



IKPK7

Fluke Pack30 Professional Tool Backpack + Insulated Hand Tools Starter Kit

- Fluke Pack30 Professional Tool Backpack
- 3 slotted tips
- 2 Phillips tips
- Long nose pliers
- Heavy duty diagonal cutter
- Heavy duty combination pliers
- Roll-up tool pouch



IBT6K

Fluke T6 Electrical Tester + Insulated Hand Tools Starter Kit

- Fluke T6 Electrical Tester
- 3 slotted tips
- 2 Phillips tips
- Long nose pliers
- Heavy duty diagonal cutter
- Heavy duty combination pliers
- Roll-up tool pouch



IB875K

Fluke 87V Industrial Multimeter + Insulated Hand Tools Starter Kit

- Fluke 87V Industrial Multimeter
- 3 slotted tips
- 2 Phillips tips
- Long nose pliers
- Heavy duty diagonal cutter
- Heavy duty combination pliers
- Roll-up tool pouch



IB117K

Fluke 117 Electrician's Multimeter + Insulated Hand Tools Starter Kit

- Fluke 117 Electrician's Multimeter
- 3 slotted tips
- 2 Phillips tips
- Long nose pliers
- Heavy duty combination pliers
- Heavy duty diagonal cutter
- Roll-up tool pouch

