

# Digital Multimeters

Safety, quality and performance: three words that sum up the benefits of our extensive range of digital multimeters. Designed to help you do your job faster, more efficiently and with greater accuracy, there is a model for every budget and application. Choose from handheld troubleshooters to ultra smart instruments packed with features, including the ability to log and graph data, as well as high-precision bench units.



# DMM Selection guide

	Highest accuracy	Remote display	High-end Industrial	Industrial maintenance and field service	Electrical	HVAC/R	Field Service	Basic Electrical	Heavy duty (IF67)	General Purpose	Auto-motive	Loop calibration	Insulation test	Fluke Connect™ Multimeter
<b>Basic features</b>	289	233	87V	179	147	116	115	114	113	77V	88V	789	1587	3000 FC
Counts	50000	6000	20000	6000	6000	6000	6000	6000	6000	20000	20000	4000	6000	6000
True RMS readings	AC+DC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC
Basic DC accuracy	0.03%	0.25%	0.10%	0.09%	0.50%	0.50%	0.50%	0.50%	2.00%	0.10%	0.10%	0.10%	0.09%	0.09%
Wide bandwidth	100 kHz	100 kHz	20 kHz	5 kHz						20 kHz	50 kHz			
Auto/manual ranging	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
<b>Measurements</b>														
Voltage AC/DC	1000 V	1000 V	1000 V	1000 V	600 V	600 V	600 V	600 V	600 V	1000 V	1000 V	1000 V	1000 V	1000 V
Current AC/DC	10 A	10 A	10 A	10 A	10 A	200 μA	10 A	10 A	10 A	10 A	10 A	1 A	400 mA	400 mA
Resistance	500 MΩ	40 MΩ	50 MΩ	50 MΩ	40 MΩ	40 MΩ	40 MΩ	40 MΩ	50 MΩ	50 MΩ	40 MΩ	40 MΩ	50 MΩ	50 MΩ
Frequency	1 MHz	200 kHz	200 kHz	100 kHz	50 kHz	50 kHz	50 kHz	200 kHz	200 kHz	200 kHz	20 kHz	20 kHz	100 kHz	100 kHz
Capacitance	100 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF	10 mF
Temperature	+1350°C	+400°C	+1090°C	+400°C		+400°C				+1090°C	+1090°C		+500°C	
dB	60 dB	60 dB	60 ns											
Conductance	50 nS	50 nS	60 nS							60 nS				
Duty cycle/pulse width	●●	●●	●/-							●●	●●			
Continuity with beeper/Diode test	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
4-20mA loop current as % readout														
Motor drive measurement														
RPM/Dwell														
VoltageAlert™, Non-contact voltage detection														
LoZ: low input impedance														
V-CHEK™ LoZ														
Microamps														
Insulation test														
Number of insulation test ranges													5	2
<b>Display</b>														
Dual display	●	●												
Analog bargraph	●													
Backlight	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Remote display		●												
<b>Data storage and exchange</b>														
Fluke Connect™ enabled	●	●	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-
Min-Max recording/ with time stamp	●●	●●	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-
Fast Min-Max	250 μs	250 μs	250 μs							250 μs	250 μs			
Display Hold/Auto (Touch) Hold	●●	●●	●●	●●	●●	●/-	●/-	●/-	●/-	●●	●/-	●/-	●●	●/-
Relative	●		●							●	●	●	●	●
Stand alone logging/Trend/Capture	●●	●●												
USB interface/RS232 interface	●●	●●												
Readings memories	10000													
<b>Other features</b>														
Source 4-20mA loop current/24V loop supply											●●	●/-		
Automatic selection, AC/DC volts														
Real time clock	●													
Smoothering				●										
Integrated holster		●		●										
Removable holster		●	●	●	●	●	●	●	●	●	●	●	●	●
Closed case calibration		●	●	●	●	●	●	●	●	●	●	●	●	●
Separate battery/fuse access	●●	●●	●/-	●●	●●	●/-	●/-	●/-	●/-	●●	●/-	●●	●●	●●
Completely sealed/watertight														
Automatic power off	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low battery indication	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Warranty and safety</b>														
Lifetime warranty/warranty (years)	●	3	●	●	3	3	3	3	3	●	3	3	3	3
Input alert	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Dangerous voltage indication	●	●	●	●	●	●	●	●	●	●	●	●	●	●
EN61010-1 CAT III	1000 V	1000 V	1000 V	1000 V	600 V	600 V	600 V	600 V	600 V	1000 V	1000 V	1000 V	1000 V	1000 V
EN61010-1 CAT IV	600 V	600 V	600 V	600 V	600 V	600 V	600 V	600 V	600 V	600 V	600 V	600 V	600 V	600 V

# 3000 FC Wireless Digital Multimeter

FLUKE®



Built with  
**FLUKE  
CONNECT™**



Fluke 3000 FC

## See it. Save it. Share it.

The Fluke 3000 FC True-RMS Wireless Multimeter and Fluke Connect wireless test tools put tools, not your body, near live electrical panels. It's simple. Just de-energize the cabinet, open the panel while wearing PPE and connect the remote modules, whether they are voltage modules, current clamps, flexible current loops or thermometers. Then read the results on the 3000 FC Wireless Multimeter from a safe distance. You can display the meter measurement, plus readings from up to 3 wireless modules, while reducing the risk of arc flash by separating yourself from hazardous measurement situations. Better still, the Fluke 3000 FC Series Wireless Multimeter can send measurement data to your smartphone, so you can save and share measurements from the field with your team anytime, from anywhere.

### Other capabilities of Fluke Connect and the FC 3000 Multimeter.

- Connect to your PC with USB dongle (optional) for analysis and diagnosis in detail.
- Perform for analysis with your smartphone and the FC App and share the results using Fluke Cloud™ storage and ShareLive™ video call. View data or graphs to get input from team members.

### The Fluke 3000 FC Series Wireless Multimeter with the Fluke Connect™ app has all the essentials for convenient test and measurement troubleshooting.

- AC and DC voltage measurements to 1000V
- AC and DC current with 0.01 mA resolution
- Continuity, resistance, diode test, capacitance and frequency measurements
- MIN/MAX Recording
- CAT III 1000 V, Cat IV 600 V; IP54



## Specifications

Functions	Range and resolution	Basic accuracy
AC voltage	600.0 mV, 6.000 V, 60.00 V, 600.0 V, 1000V	1.0 % + 3
DC voltage	600.0 mV, 6.000 V, 60.00 V, 600.0 V, 1000V	0.09 % + 2
Continuity		Meter beeps at < 25 Ω, beeper detects opens or shorts of 250 μs or longer
Resistance	600 Ω, 600.0 Ω, 6.000 kΩ, 60.00 kΩ, 60.00 kΩ, 600.0 kΩ, 50.00 MΩ	0.5 % + 1
Diode test	2.000 V	1 % + 2
Capacitance	1000 nF, 10.00 μF, 100.0 μF, 9999 μF <sup>1</sup>	1.2 % + 2
mA AC (45 Hz to 1 kHz)	60.00 mA, 400.0 mA <sup>3</sup>	1.5 % + 3
mA DC <sup>2</sup>	60.00 mA, 400.0 mA <sup>3</sup>	0.5 % + 3
Frequency	0.01 Hz, 0.1 Hz, 0.001 kHz, 0.01 kHz	0.1 % + 1

<sup>1</sup> In the 9999 μF range for measurements to 1000 μF, the measurement accuracy is 1.2 % + 2.

<sup>2</sup> Input burden voltage (typical): 400 mA input 2 mV/mA.

<sup>3</sup> 400.0 mA accuracy specified up to 600 mA overload.

For all specifications: accuracy is specified for one 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 ) + [ Number of least significant digits ] .



True RMS

For more information on Fluke Connect, see pages 13-18.

### Included Accessories

TL175 Test Leads, AC175 Alligator Clips, manual information pack.

### Ordering Information

Fluke 3000FC FC Wireless Digital Multimeter

### Recommended Accessories



TPAK  
See page 155



TL238  
See page 145



C35  
See page 152



TL175  
See page 147



PC adapter  
See page 155

# v3000 FC Wireless AC Voltage Module / v3001 FC Wireless DC Voltage Module

**FLUKE**®



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**FLUKE  
CONNECT™**



Fluke v3000 FC

Fluke v3001 FC

## See it. Save it. Share it.

All the facts, right in the field. The Fluke v3000 FC Wireless AC Voltage Module and Fluke v3001 FC Wireless DC Voltage Module are members of a family of wireless test tools that let you share test data using the Fluke Connect™ app with ShareLive™ video call.

### Fluke v3000 FC Wireless True-RMS AC Voltage Module

A fully functional True RMS voltage meter that wirelessly relays AC voltage measurements to other Fluke Connect™ enabled master units.

### Fluke v3001 FC Wireless DC Voltage Module

A fully functional DC voltage meter that wirelessly relays DC voltage measurements to other Fluke Connect™ enabled master units.

### v3000 FC main features include:

- True-RMS AC voltage module
- Measure up to 1000 V
- Use as a standalone meter or as part of the system
- Logging function for recording and saving up to 65,000 readings

### v3001 FC main features include:

- Measure up to 1000 V DC
- Use as a standalone meter or as part of the system
- Logging function for recording and saving up to 65,000 readings

## AC voltage

Range <sup>1</sup>	Resolution	Accuracy <sup>2,3,4</sup>	
		45 Hz to 500 Hz	500 Hz to 1 kHz
6.000 V	0.001 V	1.0 % + 3	2.0 % + 3
60.000 V	0.01 V		
600.0 V	0.1 V		
1000 V	1 V		

## DC voltage

Function	Range	Resolution	Accuracy
mV dc	600.0 mV	0.1 mV	0.09 % + 3
V dc	6.000 V	0.001 V	0.09 % + 3
	60.00 V	0.01 V	
	600.0 V	0.1 V	
	1000 V	1 V	0.15 % + 2

<sup>1</sup> All ac voltage ranges are specified from 1 % of range to 100 % of range.

<sup>2</sup> Crest factor of ≤ 3 at full scale up to 500 V, decreasing linearly to crest factor ≤ 1.5 at 1000 V.

<sup>3</sup> For non-sinusoidal waveforms, add -(2 % of reading + 2 % full scale) typical, for crest factor up to 3.

<sup>4</sup> Do not exceed 106 V-Hz.

## Specifications

Model / specification	v3000 / v3001
LCD w/backlight	3½ digits, 6000 counts, updates 4/sec
Battery type	2 AA, NEDA 15 A, IEC LR6
Log rate/Interval	Adjustable by PC from 1 sec to 1 hr, default 1 min
Battery life	400 hours
Memory	Record up to 65000 readings
RF communications	2.4 GHz ISM Band
RF communication range	Open air, unobstructed: Up to 20 m Obstructed, sheetrock wall: Up to 6.5 m Obstructed, concrete wall or steel electrical enclosure: Up to 3.5 m
Operating temperature	-10 °C to +50 °C
Storage temperature	-40 °C to +60 °C
Temperature coefficient	0.1 X (specified accuracy)/°C (< 18 °C or > 28 °C)
Operating humidity	90 % at 35 °C, 45 % at 40 °C, 45 % at 50 °C
Altitude	Operating: 2,000 m Storage: 12,000 m
EMC	EN 61326-1:2006
Safety compliance	ANSI/ISA 61010-1 / (82.02.01): 3rd edition CAN/CSA-C22.2 No 61010-1-12: 3rd edition UL 61010-1: 3rd edition IEC/EN 61010-1:2010
Safety rating	CAT IV 600 V, CAT III 1000 V
Certifications	CSA, CE, FCC: T68-FBLE IC: 6627A-FBLE
Ingress Protection (IP) rating	IP42
Pollution Degree	2
Size (h x w x d)	16.5 cm x 6.35 cm x 1.4 cm
Weight	0.22 kg



Fluke V3000FC Wireless AC Voltage Module with test leads and alligator clips



True RMS

For more information on Fluke Connect, see pages 13-18

### Included Accessories

TL224 Test leads, AC285 Alligator Clips, Magnetic hanging strap

### Ordering Information

Fluke v3000FC FC Wireless AC Voltage Module  
Fluke v3001FC FC Wireless DC Voltage Module

### Recommended Accessories



AC87  
See page 147



AC220  
See page 147



PC adapter  
See page 155

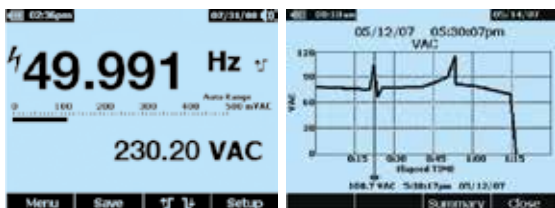
# 280 Series Digital Multimeters



Fluke 289

Fluke 287

Now compatible with the Fluke Connect™ mobile app



Precise performance

View logged data graphically on screen



True RMS

For more information on Fluke Connect, see pages 13-18

### Included Accessories

TL175 test leads, AC175 alligator clips, probe holder, 6 AA batteries (installed), user manual, Calibration Certificate Sheet.

### Ordering Information

- Fluke 287 True-RMS Electronic logging multimeter with TrendCapture
- Fluke 289 True-RMS Industrial logging multimeter with TrendCapture
- Fluke 289/FVF Industrial logging multimeter and Software Combo Kit (see page 6)
- Fluke 287/FVF FlukeView Forms Combo Kit (see page 6)
- FVF-SC2 FlukeView Forms software including IR/USB cable
- ir3000FC FC Connector

## Advanced diagnostic and logging functionality for maximizing productivity

Replacing the popular 180 Series, the Fluke 289 and Fluke 287 represent the next generation of high-performance industrial logging multimeters, including higher accuracy and greater troubleshooting convenience than ever before. With the ability to log data and review it graphically on the large display, you can solve problems faster and help minimize downtime, while working at several locations.

- Large 50,000 count 320 x 240 (1/4 VGA) dot matrix display

- Logging function with TrendCapture for easy review of logged data
- Multiple readings per display provide more information at a glance
- "I"-info button for convenient on-board help
- PC interface for easy data transfer

In addition, the Fluke 289 provides:

- Lo Pass filter for motor drive measurements
- LoZ – Low impedance function prevents false “ghost voltage” readings
- 50 Ω range for motor winding and low ohm measurements

### Features

	287	289
True-RMS measurements	AC, AC+DC	AC, AC+DC
Bandwidth (voltage/current)	100 kHz / 100 kHz	100 kHz / 100 kHz
Digital display counts (default/selectable)	50,000 / 50,000	50,000 / 50,000
Logging function with TrendCapture	●	●
Records events and trends	●	●
Internal memory	Up to 180 h	Up to 180 h
Saves measurements	●	●
Optical USB PC communications interface	●	●
Low input impedance function (LoZ)	●	●
Motor winding and low ohm measurement range		50 Ω
Low pass filter		●
Field upgradeable/expandable meter	●	●
Navigation keys	●	●
F1-F4 soft keys/user function menus	●	●
I-info button/on board help screens	●	●
Multilingual interface	●	●
Saves preferred measurement setups	●	●
Current measurement: 20 A (30 seconds momentary; 10 A continuous)	●	●
Peak capture (records transients as fast as 250 μs)	●	●
Continuity measurement	●	●
Min/Max/Average with Time Stamp (records signal fluctuations)	●	●
IP Rating 54	●	●

### Specifications

(Check the Fluke web for detailed specifications)

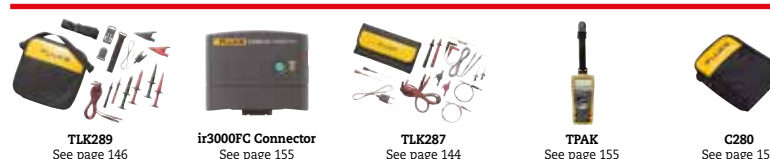
Functions	Maximum	Max. resolution	287 and 289**
Voltage DC	1000 V	1 μV	±(0.025% + 5)
Voltage AC	1000 V	1 μV	±(0.4% + 40)
Current DC	10 A	0.01 μA	±(0.15% + 2)
Current AC	10 A	0.01 μA	±(0.7% + 5)
Temperature	-200 °C to 1350 °C	0.1 °C	±(1.0% + 1 °C)
Resistance	500 MΩ	0.01 Ω	±(0.05% + 2)
Conductance	50 nS	0.01 nS	±(1.0% + 10)
Capacitance	100 mF	0.001 nF	±(1.0% + 5)
Frequency	1 MHz	0.01 Hz	±(0.005% + 1)

Accuracies are best accuracies for each function.  
\*\* 287 and 289 accuracy and resolution are stated for 50,000 counts

**Battery life:** 50 hours minimum, 180 hours in logging mode  
**Size (HxWxD):** 222 mm x 102 mm x 60 mm

**Weight:** 0,871 kg  
**Lifetime warranty**

### Recommended Accessories



TLK289 See page 146

ir3000FC Connector See page 155

TLK287 See page 144

TPAK See page 155

C280 See page 152

# 233 Remote Display Multimeter



Fluke 233



On all inputs



## Ultimate flexibility with removable display

The Fluke 233 remote display digital multimeter allows you to be in two places at once. The removable display solves the problems of holding both the meter and the test leads to make a measurement, making measurements in hard-to-reach places, and making measurements in machines or panels that are physically separated from a limit

switch or an isolator switch. Wireless technology allows the display to be carried up to 10 meters away from the point of measurement. The Fluke 233 is also designed to work in areas where the operator can't be close to the active measurement point, like clean rooms or hazardous areas.

## Features

	233
Removable magnetic display	•
True-RMS measurement	•
Digital display counts	6000
Display backlight	•
Built in thermometer	•
Resistance, continuity and diode test	•
Min/Max and average recording	•
Auto power off maximizes battery life	•
Radio transmitter automatically turns off when the display is connected to the meter	•
Use as conventional multimeter when the display is connected	•
Safety rating	CAT IV 600 V / CAT III 1000 V
Auto and manual ranging	•
Display Hold and AutoHOLD®	•
Unsafe voltage alert warns for voltages above 30V	•
2 Low batteries indication	•
Ergonomic case with integrated holster	•
Selectable sleep mode preserves battery life	•

## Specifications

Functions	Fluke 233		
	Maximum	Max. Resolution	Accuracy
Voltage DC	1000 V	0.1 mV	±(0.25% + 2)
Voltage AC	1000 V	0.1 mV	±(1.0% + 3)
Current DC	10 A	1 mA	±(1.0% + 3)
Current AC	10 A	1 mA	±(1.5% + 3)
Resistance	40 MΩ	0.1 Ω	±(0.9% + 1)
Capacitance	9999 μF	1 nF	±(1.9% + 2)
Frequency	50.00 kHz	0.01 Hz	±(0.1% + 2)
Temperature	-40 °C to +400 °C	0.1 °C	±(1% + 10)
Wireless frequency: 2.4 GHz ISM Band 10 meter range			

Accuracies are best accuracies for each function

### Included Accessories

Test leads with 4mm lantern tips, AC 175 alligator clips, 80BK-A temperature probe, CD-ROM, AA batteries and user manual.

### Ordering Information

Fluke 233 Remote Display Multimeter

**Battery Life:** AA alkaline (3 for main body, 2 for display), 400 hrs typical  
**Size (HxWxD):** 193 x 93 x 53 mm

**Weight:** 0.6 kg  
**Three year warranty**

## Recommended Accessories



80AK-A  
See page 150



80PK-9  
See page 150



i410  
See page 149



Tpak  
See page 155



C35  
See page 152

# 80 Series V Digital Multimeters

FLUKE®



Fluke 87V



Fluke 83V



83V/87V



On all inputs

## Performance and accuracy for maximum industrial productivity

The Fluke 80 Series V have improved measurement functions, troubleshooting features, resolution and accuracy to solve more problems on motor drives, in plant automation, power distribution, and electro-mechanical equipment.

The Fluke 87V has a unique function for accurate voltage and frequency measurements on adjustable speed motor drives and other electrically noisy equipment. A built-in thermometer conveniently allows you to take temperature readings without having to carry a separate instrument.

## Features

	83V	87V
True-RMS voltage and current for accurate measurements on non linear signals Bandwidth (voltage/current)	5 kHz	20 kHz
Digital display counts (default/selectable)	6000	20000 / 6000
Selectable filter for accurate voltage and frequency measurements on motor drives		●
Large display with analog bargraph and 2 level bright white backlight	●	●
Auto and manual ranging for maximum flexibility	●	●
Built-in thermometer lets you carry one less tool		●
Peak capture to record transients as fast as 250 μs		●
Relative mode to remove test lead resistance from low ohms measurements	●	●
Min-Max-Average recording with Min/Max Alert to capture variations automatically	●	●
AutoHOLD® to capture stable readings avoiding noisy signals	●	●
Audible continuity, diode test and duty cycle	●	●
Input Alert	●	●
“Classic” design with new removable holster with built in test lead and probe storage	●	●
Improved selectable sleep mode for long battery life	●	●
Easy battery exchange without opening the complete case	●	●

## Specifications

(Check the Fluke web for detailed specifications)

Functions	Maximum Range	83V		87V*	
		Max. resolution	Accuracy	Max. resolution	Accuracy
Voltage DC	1000 V	0.1 mV	±(0.1%+1)	10 μV	±(0.05%+1)
Voltage AC	1000 V	0.1 mV	±(0.5%+2)	10 μV	±(0.7%+2)
Current DC	10 A **	0.1 μA	±(0.4%+2)	0.01 μA	±(0.2%+2)
Current AC	10 A **	0.1 μA	±(1.2%+2)	0.01 μA	±(1.0%+2)
Resistance	50 MΩ	0.1 Ω	±(0.4%+1)	0.01 Ω	±(0.2%+1)
Conductance	60 nS	0.01 nS	±(1.0%+10)	0.001 nS	±(1.0%+10)
Capacitance	9999 μF	0.01 nF	±(1.0%+2)	0.01 nF	±(1.0%+2)
Frequency	> 200 kHz	0.01 Hz	±(0.005%+1)	0.01 Hz	±(0.005%+1)
Temperature	-200 to 1090 °C	-	-	0.1 °C	1.0%
80BK temperature probe	-40 to 260 °C	-	-	-	2.2 °C or 2%

Accuracies are best accuracies for each function.  
\* 87V accuracy is stated for 6000 counts and resolution for 20000 counts  
\*\* 20 A up to 30 seconds

**Battery Life:** Over 400 hours typical (alkaline).  
**Size (HxWxD):** 200 mm x 95 mm x 48 mm

**Weight:** 0.6 kg  
**83V/87V:** Lifetime Warranty

## Included Accessories

TL175 test leads, AC175 alligator clips, yellow holster (H80M excl. TPAK), 80BK temperature probe (87V only), 9 V battery (installed), CD-ROM (user's manual and technical notes) and operator's guide.

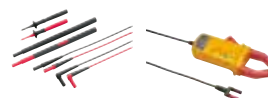
## Ordering Information

Fluke 83V Multimeter  
Fluke 87V True RMS Multimeter  
Fluke 87V/E2 Industrial Electrician Combo Kit  
See page 5

## Recommended Accessories



C25  
See page 152



TL238  
See page 145



i410/i1010  
See page 149



TPAK  
See page 155



L215  
See page 146

# 170 Series Digital Multimeters

## Versatile meters for field service or bench repair

These meters have the features needed to find most electrical, electro-mechanical and heating and ventilation problems. They are simple to use and have significant improvements over Fluke's

original 70 Series like True-RMS, more measurement functions, conformance to the latest safety standards, and a much larger display that's easier to view.



Fluke 179



Fluke 177



Fluke 175



On all inputs



True RMS

### Included Accessories

Test leads with 4 mm lantern tips, installed 9V battery and users manual. The 179 also includes the 80BK temperature probe.

### Ordering Information

Fluke 175 True RMS Multimeter  
 Fluke 177 True RMS Multimeter  
 Fluke 179 True RMS Multimeter  
 Fluke 179/EDA2 Kit Electronics Combo Kit  
 Fluke 179/MAG2 Kit Industrial Combo Kit  
 See page 5

## Features

	175	177	179
True-RMS measurements	AC	AC	AC
Digital display counts, updates 4 times per second	6000	6000	6000
Display backlight		●	●
Analog bargraph / 33 segments, updates 40 times per second	●	●	●
Auto and Manual ranging	●	●	●
Display Hold and AutoHOLD®	●	●	●
Min-Max-Average recording mode with Min/Max Alert	●	●	●
Temperature readings (bead thermocouple probe included)			●
Smoothing mode allows filtering of rapidly changing inputs	●	●	●
Audible continuity and diode test	●	●	●
Test lead alert	●	●	●
Unsafe voltage alert warns for voltages above 30V	●	●	●
Low battery indication	●	●	●
Ergonomic case with integrated holster	●	●	●
Easy battery and fuse exchange without opening the complete case	●	●	●
Selectable sleep mode preserves battery life	●	●	●

## Specifications

(Check the Fluke web for detailed specifications)

Functions	Maximum	Max. resolution	175	177	179
Voltage DC	1000 V	0.1 mV	±(0.15%+2)	±(0.09%+2)	±(0.09%+2)
Voltage AC	1000 V	0.1 mV	±(1.0%+3)	±(1.0%+3)	±(1.0%+3)
Current DC	10 A	0.01 mA	±(1.0%+3)	±(1.0%+3)	±(1.0%+3)
Current AC	10 A	0.01 mA	±(1.5%+3)	±(1.5%+3)	±(1.5%+3)
Resistance	50 MΩ	0.1 Ω	±(0.9%+1)	±(0.9%+1)	±(0.9%+1)
Capacitance	10000 μF	1 nF	±(1.2%+2)	±(1.2%+2)	±(1.2%+2)
Frequency	100 kHz	0.01 Hz	±(0.1%+1)	±(0.1%+1)	±(0.1%+1)
Temperature	-40 °C/+400 °C	0.1 °C			±(1.0%+10)

Accuracies are best accuracies for each function

**Battery Life:** Alkaline, 200 hrs typical  
**Size (HxWxD):** 190 mm x 85 mm x 45 mm

**Weight:** 0.42 kg  
**Lifetime Warranty**

## Recommended Accessories



i400  
See page 148



C90  
See page 152



TLK-220  
See page 145



SV225  
See page 156



i410-i1010  
See page 149



# 110 Series Digital Multimeters



Fluke 117



Fluke 115



Fluke 114



Fluke 116



Fluke 113



On all inputs



True RMS

## Compact design for ergonomic one-handed operation

The Fluke 110 Series has five true-rms DMMs, each for specific users. The compact instruments offer convenient one-handed operation and a backlit display with large, easy-to-read digits.

### Fluke 117 Electrician's Multimeter with Non-Contact Voltage

The 117 is for electricians working in commercial and non-commercial premises (like hospitals and schools). It includes extras like non-contact voltage detection for faster and safer operation.

### Fluke 116 Multimeter with Temperature and Microamps

The 116 is for heating, ventilation and air conditioning (HVAC) engineers. It includes temperature measurement and microamp current ranges to quickly troubleshoot HVAC problems.

### Fluke 115 Field Service Testing Multimeter

An everyday multimeter for technicians, the 115 is for electrical and electronic testing in field service, industrial, and applications where more than the basic functions simplify work.

### Fluke 114 Electrical Multimeter

The 114 is for electrical troubleshooting and straightforward 'go/no-go' in residential/commercial testing. It has all the basic functions plus a special feature to prevent false readings caused by ghost voltage.

### Fluke 113 Multimeter

The 113 is for basic electrical tests and repairing most electrical problems. Features include Fluke's VCHECK™, added measurement functions, backlight and conformance to the latest safety standards.

## Features

	113	114	115	116	117
True RMS readings	AC	AC	AC	AC	AC
Counts	6000	6000	6000	6000	6000
Backlight	●	●	●	●	●
Analog bargraph	●	●	●	●	●
AutoVolt: Automatic AC/DC voltage selection		●		●	●
VoltAlert™, Non-contact voltage detection					●
Built-in thermometer for HVAC applications				●	
LoZ: low input impedance to prevent ghost voltage		●		●	●
VCHEK™ LoZ low impedance measurement function to simultaneously test for voltage or continuity	●				
Min/Max/Average to record signal fluctuations	●	●	●	●	●
Resistance, continuity	●	●	●	●	●
Frequency, Capacitance, Diode test	- / ● / ●		●	●	●
Microamps to test flame sensors				●	
Display hold	●	●	●	●	●
Auto/manual ranging	●	●	●	●	●
Low battery indication	●	●	●	●	●
Compact case with removable holster	●	●	●	●	●

## Specifications

(Check the Fluke web for detailed specifications)

Functions	Maximum	Max. resolution	113	114	115	116	117
Voltage DC	600V	1mV	±(0.5%+2)	±(0.5%+2)	±(0.5%+2)	±(0.5%+2)	±(0.5%+2)
Voltage AC	600V	1mV		±(1.0%+3)	±(1.0%+3)	±(1.0%+3)	±(1.0%+3)
Current DC	10.00A	1mA			±(1.0%+3)		±(1.0%+3)
Current AC	10.00A	0.01A			±(1.5%+3)		±(1.5%+3)
Resistance	40MΩ (113: 60KΩ)	0.1Ω	±(0.9%+2)	±(0.9%+1)	±(0.9%+1)	±(0.9%+1)	±(0.9%+1)
Capacitance	10000µF	1nF	±(1.9%+2)		±(1.9%+2)	±(1.9%+2)	±(1.9%+2)
Frequency	50kHz	0.01Hz			±(0.1%+2)	±(0.1%+2)	±(0.1%+2)
Temperature	-40°C/+400°C	0.1°C					±(1.0%+10)
VCHEK™	600.0V AC/DC	0.1V	±(2.0%+3)				

Accuracies are best accuracies for each function

**Battery type:** 9 volt Alkaline, 400 hours typical **Weight:** 0.55 kg (including batteries)  
**Size (HxWxD):** 167 mm x 84mm x 46 mm **Three Year Warranty**

### Included Accessories

Test leads with 4 mm lantern tips, holster, installed 9V battery and users manual

### Ordering Information

Fluke 113 True RMS Multimeter  
 Fluke 114 True RMS Multimeter  
 Fluke 115 True RMS Multimeter  
 Fluke 116 True RMS Multimeter  
 Fluke 117 True RMS Multimeter

Fluke 117/323 Kit Electricians Combo Kit  
 Fluke 116/62 MAX+ Kit Combo Kit  
 Fluke 116/323 Kit Combo Kit  
 (see page 5)

## Recommended Accessories



C50  
See page 152



TL223-1  
See page 145



MC6  
See page 156



TPAK  
See page 155

# 27II / 28II Rugged IP67 Industrial Multimeters

FLUKE®



Fluke 27 II

Fluke 28 II



Fluke 28II Ex



On all inputs



## Designed to survive water, dust and rough handling and yet troubleshoot most electrical problems

The Fluke 27 II and 28 II digital multimeters define a new standard for operating in harsh conditions with the features and accuracy to troubleshoot most electrical problems. Both meters have IP 67 (waterproof and dustproof) rating, MSHA approvals, extended operating temperature range of -15° C to + 55° C and 95% humidity, and a 3-meter drop. They withstand hazardous 8.000 volt spikes caused by load switching and faults on industrial circuits and complies

with second edition IEC and ANSI electrical safety standards. Furthermore, the 28 II has a unique function for accurate voltage and frequency measurements on adjustable speed motor drives and other electrically noisy equipment. The new Fluke 20 series multimeters are built to work in the toughest environments. For 28II Ex see also page 135 and 136.

### Features

	27 II	28 II / 28 II Ex
IP 67 waterproof & dustproof protection	●	●
Withstands 3 meter drop (with holster)	●	●
True-RMS measurements		●
Digital display counts	6000	20000/6000
Bright, two-level backlight	●	●
Backlit keypad buttons	●	●
Reversible, rubber holster	●	●
Built-in thermometer		●
Resistance, continuity and diode test	●	●
Min/Max and average recording	●	●
Improved sleep mode for long battery life	●	●
Relative mode to remove test lead resistance from low ohms measurements	●	●
Auto and manual ranging	●	●
Safety rating	CAT III 1000 V CAT IV 600 V	CAT III 1000 V CAT IV 600 V 28 II Ex
ATEX safety rating II 2 G Ex ia IIC T4 Gb II 2 D Ex ia IIIC T130°C Db I M1 Ex ia I Ma		

### Specifications

Functions	Maximum	Max. Resolution	27 II	28 II / 28 II Ex
Voltage DC	1000 V	0.1 mV	±(0.1% + 1)	±(0.05% + 1)
Voltage AC	1000 V	0.1 mV	±(0.5% + 3)	±(0.7% + 4)
Current DC	10 A	0.1 µA	±(0.2% + 4)	±(0.2% + 4)
Current AC	10A	0.1 µA	±(1.5% + 2)	±(1.0% + 2)
Temperature	-200°C to +1090°C	0.1°C		±(1% + 10)
Resistance	50MΩ	0.1Ω	±(0.2% + 1)	
Low pass filter (Measurement on VSD's)				yes
Capacitance	9999µF	0.01nF	±(1% + 2)	
Frequency	200 kHz	0.01 Hz	0.005% + 1	
Peak transient capture				250 µs

Accuracies are best accuracies for each function

### Included Accessories

TL175 Test leads, AC175 alligator clips, 80BK-A temperature probe (28 II), holster, manual, CD-ROM, three AA batteries (installed)

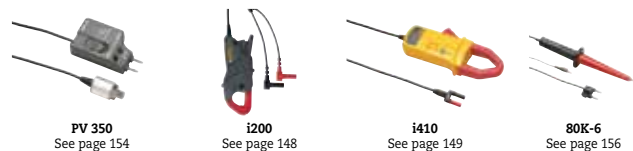
### Ordering Information

Fluke 27 II IP 67 Industrial Multimeter  
 Fluke 28 II IP 67 True-RMS Industrial Multimeter  
 Fluke 28 II Ex Intrinsically safe True-RMS Industrial Multimeter

**Battery Life:** 3x AA alkaline, 800 hrs typical  
**Size (HxWxD):** 198 x 100 x 63.5 mm

**Weight:** 0.75 kg  
**Lifetime Warranty**

### Recommended Accessories



PV 350  
See page 154

i200  
See page 148

i410  
See page 149

80K-6  
See page 156

# 77IV Digital Multimeter

## Versatile multimeter for field service or bench repair

The 77-IV digital multimeter has the features needed to repair most electrical and electronic problems. This meter is simple to use and has significant improvements over Fluke's original 70 Series with more measurement functions, conformance to the latest safety standards, and a much larger display that's easier to view.



Fluke 77 IV

### Features

	77 IV
Digital display counts	6000
Large display with backlight	●
Min-Max-Average recording mode with Min/Max Alert	●
High contrast digital display with large digits	●
Analog bargraph/segments	31
Auto and Manual ranging	●
Automatic Touch Hold®	●
Audible continuity / diode test	●
Ergonomic case with integrated holster	●
Sleep Mode preserves battery life	●
EN 61010-1 safety rating	CAT IV 600 V / CAT III 1000 V

### Specifications

Function	Maximum	Max. resolution	Accuracy
Voltage DC	1000 V	1 mV	±(0.3%+1)
Voltage AC	1000 V	1 mV	±(2.0%+2)
Current DC	10 A	0.01 mA	±(1.5%+2)
Current AC	10 A	0.01 mA	±(2.5%+2)
Resistance	50 MΩ	0.1 Ω	±(0.5%+1)
Capacitance	9999 μF	1 nF	±(1.2%+2)
Frequency	99.99 kHz	0.01 Hz	±(0.1%+1)

Accuracies are best accuracies for each function.

**Battery Life:** 400 hours typical **Weight:** 0.42 kg  
**Size (HxWxD):** 185 mm x 90 mm x 43 mm **Lifetime Warranty**



On all inputs



### Included Accessories

Test leads with 4mm lantern tips, operator's manual, 9V battery (installed)

### Ordering Information

Fluke 77IV Multimeter

### Recommended Accessories



i400  
See page 148



C35  
See page 152



Tpak  
See page 155



TL225  
See page 156



TLK-225  
See page 146

# 88V Automotive Meter



Fluke 88V/A



On all inputs



## Included Accessories

H80M Holster with TPAK Meter Hanging Solution, TL224 SureGrip Silicone Test Lead Set, TP74 Test Probe Set, AC285 SureGrip Large Jaw Alligator Clip Set, 80BK Integrated Temperature Probe, RPM80 Inductive Pick-up Probe, C800 Hard Case, User's Manual + Quick Reference Guide

## Ordering Information

Fluke 88V/A Automotive Meter Combo Kit

## The right meter for auto-electric diagnosis

Perhaps the most important tool you'll use in troubleshooting auto electrical systems is the multimeter. Basic multimeters measure voltage, current and resistance, while automotive

multimeters like the Fluke 88V have features that can check frequency, duty cycle, make diode tests, and measure temperature, pressure and vacuum.

## Features

	88V/A
Continuity for detecting open and shorts	●
Frequency for "pulsed-DC" and AC tests	●
Duty cycle to verify operation of feedback carburetors	●
Diode test for alternator testing	●
Built-in thermometer; thermocouple probe included	●
Min/Max/Average recording with Min/Max Alert	●
Peak capture to record transients as fast as 250 μs	●
Relative mode to remove test lead resistance from low ohms measurements	●
Millisecond pulse width measurements for fuel injectors	●
AutoHOLD® to capture stable readings	●
Large display with bright, two-level backlight	●
Magnet hanger to attach meter to the vehicle	●
RPM80 Inductive Pickup for both conventional and distributorless (DIS) ignitions	●
Hard Meter Case	●
Safety rating	CAT III 1000 V, CAT IV 600 V

## Specifications

	Fluke 88V		
	Range	Resolution	Accuracy
Voltage DC	1000V	0.1mV	0.1%
Voltage AC	1000V (5 kHz)	0.1mV	0.5%
Current DC	10A	0.1μA	0.4%
Current AC	10A	0.1μA	1.2%
Resistance	50MΩ	0.1Ω	0.4%
Capacitance	10mF	0.01nF	1%
Frequency	200kHz	0.01Hz	0.01%
Temperature	1090°C	0.1°C	1%

**Battery Life:** 88V – Over 400 hours typical (alkaline)

**Weight:** 88V – 0.36 kg  
**Lifetime Warranty**

**Size (HxWxD):** 88V – 186 mm x 86 mm x 32 mm

## Recommended Accessories



TL82  
See page 154



TLK-282-1  
See page 154



90i-610s  
See page 154



80PK-27 (requires 80AK)  
See page 150



PV350  
See page 154

# 8845A/8846A 6.5 Digit Precision Multimeters

FLUKE®



Fluke 8845A



Fluke 8846A

## Precision and versatility for bench or systems applications

The Fluke 8845A and 8846A, 6.5 digit precision multimeters have the precision and versatility to handle your most demanding measurements on the bench or in a system.

**Dual Display offers versatile graphical capabilities:** The 8845A and 8846A features a unique graphical display that can reveal signal quality issues like drift, intermittent and stability by viewing the measurement data as a real time TrendPlot™, Histogram or Statistics using the unique analyze mode.

**Wide Measurement Ranges:** Resistance or current has been extended to cover the widest range possible.

**Perform 4-wire measurements easily with two leads:** Patented split terminal jacks for 2x4 Ohms function allows you to perform precise 4-wire measurements with only two leads instead of four.

Optional Kelvin leads accessories are available to enable you to establish a 4-wire connection even in tight spaces.

**Systems Capabilities:** Both instruments include an RS-232, IEEE-488 and Ethernet interface as standard, with popular DMM emulation modes makes systems integration a simple task.

**Software:** Transfer data points from your meter to your PC with the free copy of FlukeView Forms Basic. To customize your forms upgrade with FVF-UG.



Use the built-in TrendPlot paperless chart recorder to graphically identify the extent of drift and intermittent events in analog circuits



View results in Histogram mode to reveal stability or noise problems in analog circuits



Handle even the most demanding measurements with high accuracy and 6.5 digit resolution



### Included Accessories

LCI Line Power Cord, Test Lead Set, Spare Line Power fuse, Programmers Manual/ User Manual on CD-ROM, 884X-USB USB to RS232 Cable Adapter, FVF-BASIC FlukeView Forms Software Basic Version.

### Ordering Information

Fluke 8845A 6.5 Digit Precision Multimeter  
 Fluke 8845A/SU 6.5 Digit Precision Multimeter (software + cable)  
 Fluke 8846A 6.5 Digit Precision Multimeter  
 Fluke 8846A/SU 6.5 Digit Precision Multimeter (software + cable)  
 Calibration & Service agreements

## Features

	8845A	8846A
Display	Dual VFD Dot Matrix	
Resolution	6.5 Digits	
Measurement Rate (Rdgs/s)	1000	
Continuity / Diode Test	Yes	
Analytical Functions	Statistics, Histogram, TrendPlot™, Limit Compare	
Math Functions	NULL, Min/Max, dB/dBm	
USB Device Port	-	USB Memory Drive port
Real Time Clock	-	Yes
Interfaces	RS232, IEEE-488.2, Ethernet	
Programming Languages/Emulation Modes	SCPI (IEEE-488.2), Agilent 34401A, Fluke 45	
Safety	Designed to comply with IEC 61010-1:2000-1, ANSI / ISA-S82.01-1994, CAN / CSA-C22.2 No.1010.1-92 1000V CATI / 600V CATII	

## Specifications

(Check the Fluke web for detailed specifications)

Function*	8845A			8846A		
	Range	Resolution	Accuracy* (%)	Range	Resolution	Accuracy* (%)
Voltage DC	1000 V	100 nV	0.0035	1000 V	100 nV	0.0024
Voltage AC (Freq 300 Hz)	750 V	100 nV	0.06	1000 V	100 nV	0.06
Resistance (2x4 Wire)	100 MΩ	100 μΩ	0.01	1 GΩ	10 μΩ	0.01
Current DC	10 A	100 pA	0.05	10 A	100 pA	0.05
Current AC (Freq. 3Hz-10kHz)	10 A	10 μA	0.10	10 A	100 pA	0.10
Freq/Period	300 kHz	1 μHz	0.01	1 MHz	1 μHz	0.01
Capacitance	-	-	-	1 nF to 100 mF	1 pF	1
Temperature RTD	-	-	-	-200 to +600°	0.001°	0.06

\* Accuracy = +/- (% of reading)

**Size (HxWxD):** 88 mm x 215 mm x 293 mm

**Weight:** 3.6 kg

**Three Year Warranty**

## Recommended Accessories



884X-case  
Hard case



TL2X4W-TWZ  
2x4 Wire Ohms Tweezer  
Test Leads



TL2X4W-PT II  
2x4 Wire Ohms Test  
lead 2mm Probe Tip



884X-512M  
USB Memory 512M



FVF-UG  
FlukeView Forms  
Software Upgrade

# 8808A 5.5 Digit Multimeter



Fluke 8808A



The Fluke 8808A includes two low impedance low current ranges for measuring sensitive leakage currents



Use setup keys (S1-S6) for fast access to repetitive measurements. Setups can include limit compare mode with pass/fail indicators



Dual Display



## Versatile multimeter for manufacturing, development and service applications

Manufacturing test, R&D, development and service applications demand performance and flexibility from a bench meter. The Fluke 8808A delivers a wide variety of measurement functions, including volts, ohms, and amps, plus frequency - all at superior accuracy and resolution with a basic V DC accuracy of 0.015 %.

**Measure sensitive leakage current:** The Fluke 8808A includes two low impedance low current ranges for measuring sensitive leakage currents (i-Leakage).

**Perform routine manufacturing functional tests with consistency:** Use setup keys (S1 - S6) for fast access to repetitive measurements. Operators no longer need to press multiple buttons to make routine measurements.

**Eliminate production mistakes:** The 8808A has a limit compare mode with built in display enunciators that clearly show whether a test is within or out of limits.

**Perform 4-wire measurements with only two leads:** Patented split terminal jacks for 2x4 Ohms function allow you to perform precise 4-wire low ohms measurements with only two leads instead of four. Optional test lead accessories are available to enable you to establish a 4-wire connection even in tight spaces or on surface mount devices.

## Features

	8808A
Display	VFD multi segment
Resolution	5.5 digits
Measurements	V ac, V dc, I dc, I ac, Ω, Cont, Diode
Advanced Measurements	2X4 Wire Ohms, Freq, i-Leakage
Continuity / Diode Test	Yes
Analytical Functions	Limit Compare
Math Functions	dBm, dB, Min, Max
Interfaces	RS-232, USB via optional adapter
Programming Languages/Modes	Simplified ASCII, Fluke 45
Safety Rating	CAT I 1000 V, CAT II 600 V

## Specifications

(Check the Fluke web for detailed specifications)

Functions	Range	Resolution	Accuracy*
Voltage DC	200 mV to 1000 V	1 μV	0.015
Voltage AC (Freq. 10 Hz to 100 kHz)	200 mV to 750 V	1 μV	0.2
Resistance (2x4 Wire)	200 Ω to 100 MΩ	1 mΩ	0.02
Current DC	200 μA to 10 A	1 nA	0.02
Current AC (Freq. 20 Hz to 2 kHz)	20 mA to 10A	0.1 μA	0.3
Freq. Period	20 Hz to 1 MHz (Freq. only)	0.1 mHz	0.01

\* Accuracy = +/- (% of reading)

**Size (HxWxD):** 88 mm x 217 mm x 297 mm

**Weight:** 2.1 kg

**Three year Warranty**

### Included Accessories

LCI Line Power Cord, Test Lead Set, Spare Line Power fuse, 884X-USB USB to RS232 Cable Adapter, FlukeView Forms Software Basic Version, Programmers Manual/User Manual on CD-ROM.

### Ordering Information

Fluke 8808A 5.5 digit multimeter  
 Fluke 8808A/SU 5.5 digit multimeter, (software & cable)  
 Fluke 8808A/TL 5.5 digit multimeter, 2X4W Test Lead Kit

Thurlby Thandar Instrument Distribution  
 Glebe Road, Huntingdon, PE29 7DR, UK  
 +44 (0)1480 412 451  
 sales@ttid.co.uk  
 www.ttid.co.uk



### Recommended Accessories



TL2X4W-TWZ  
2x4 Wire Ohms Tweezer Test Leads



884X-case  
Hard case



TL2X4W-PT II  
2x4 Wire Ohms Test lead 2mm Probe Tip



884X-short  
4-Wire Short



FVF-UG/SC4/SC5  
FlukeView Forms Software