

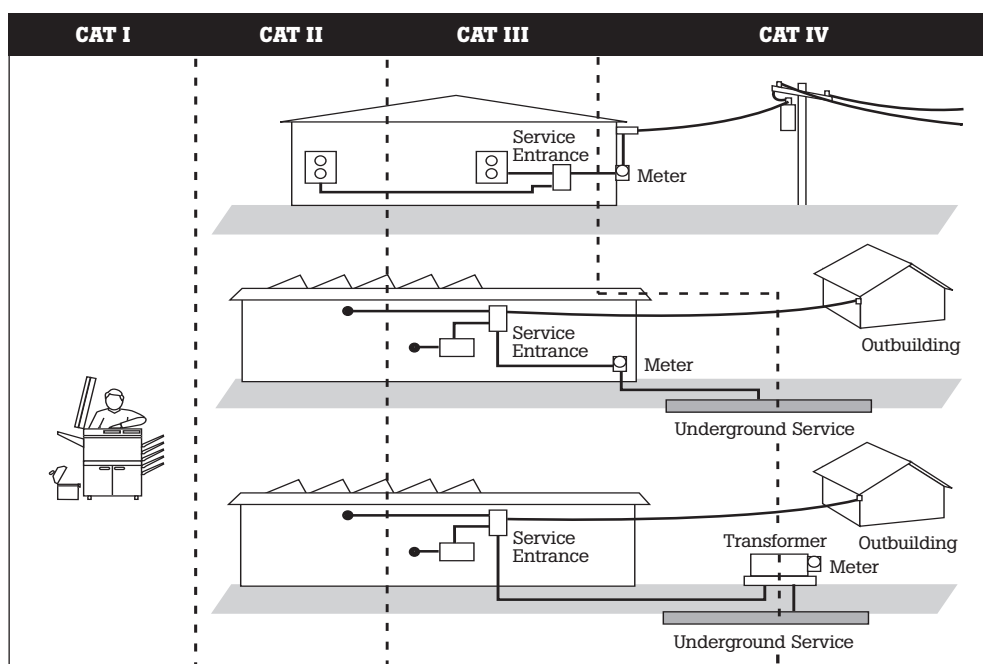


**FLUKE®**

**Fluke Digital Multimeters**  
**SOLUTIONS**  
**FOR EVERY**  
**NEED**

# Digital Multimeter Comparison Chart

Choosing the right digital multimeter (DMM) requires thinking about what you'll be using it for. Evaluate your basic measurement needs and job requirements and then take a look at special features/functions built into many multimeters. Think about whether you need to do basic measurements, or if you need the more advanced troubleshooting options offered by special features.



## Factors to consider:

- Your work environment (voltage level, types of equipment, types of measurements, applications)
- Specialty features/functions (capacitance, frequency, temperature, non-contact voltage, low impedance mode, min-max record, data logging, trending)
- Resolution and accuracy (6,000, 20,000, or 50,000 count resolution)



Measurement category	In brief	Examples
CAT I	Electronic	<ul style="list-style-type: none"> <li>• Protected electronic equipment</li> <li>• Equipment connected to (source) circuits in which measures are taken to limit transient overvoltages to an appropriately low level</li> <li>• Any high-voltage, low-energy source derived from a high-winding resistance transformer, such as the high-voltage section of a copier</li> </ul>
CAT II	Appliances, PCs, and TVs	<ul style="list-style-type: none"> <li>• Appliance, portable tools, and other household and similar loads</li> <li>• Outlet and long branch circuits</li> <li>• Outlets at more than 10 meters (30 feet) from CAT III source</li> <li>• Outlets at more than 20 meters (60 feet) from CAT IV source</li> </ul>
CAT III	MC panels, etc.	<ul style="list-style-type: none"> <li>• Equipment in fixed installations, such as switchgear and polyphase motors</li> <li>• Bus and feeders in industrial plants</li> <li>• Feeders and short branch circuits, distribution panel devices</li> <li>• Lighting systems in larger buildings</li> <li>• Heavy appliance outlets with short connections to a service entrance</li> </ul>
CAT IV	Three-phase at utility connection, any outdoor conductors	<ul style="list-style-type: none"> <li>• Refers to the “origin of installation,” i.e., where low-voltage connection is made to utility power</li> <li>• Electricity meters, primary overcurrent protection equipment</li> <li>• Outside and service entrance, service drop from pole to building, run between meter and panel</li> <li>• Overhead line to detached building, underground line to well pump</li> </ul>

## Safety

The increased occurrence and levels of transient overvoltages in today's power systems have given rise to more stringent safety standards for electrical measurement equipment. Transients that ride on top of power sources (mains, feeder or branch circuits) can trigger a sequence of events that may lead to serious injury. Test equipment must be designed to protect people working in this high-voltage, high-current environment.

# Digital Multimeter Comparison Chart



Fluke CNX 3000



Fluke 289



Fluke 287



Fluke 87V

## Wireless

### Best for

Applications where live measurements from multiple modules simultaneously and remotely are necessary.

### Applications

- Detecting power interruption measurement procedures
- Single-phase measurement procedures
- Determining current imbalances
- Measuring incoming current

### Remote monitoring

The CNX wireless enabled modules measure ac voltage, ac current and temperature, which display on the CNX 3000 Wireless Multimeter.

## Advanced

### Best for

Advanced industrial troubleshooting, including datalogging and graphing intermittent problems.

### Logging

For unattended monitoring of signals over time, to detect intermittent problems.

### Graphing

View logged values graphically in the field right on the meter, without a PC.

### Working on variable speed drives

Take accurate voltage, current and frequency measurements on the output side of the drive at either the drive itself or the motor terminals.

### Testing motor windings or contact resistance

Allows testing of resistance up to 50 ohms with one milliohm (0.001 ohm) resolution.

**Intermittent problems**  
on the meter without a PC.

### Best for

Advanced electronic applications, including datalogging and graphing intermittent problems.

### Logging

For unattended monitoring of signals over time, and characterize device performance.

### Graphing

View logged values graphically in the field right on the meter, without a PC.

### Monitoring two parameters at the same time

Dual display allows for monitoring of two selectable parameters.

### Performance testing

Testing the frequency response of amplifiers and audio transmission line.

### Best for

Industrial troubleshooting.

### Working on variable speed drives

Take accurate voltage, current and frequency measurements on the output side of the drive at either the drive itself or at the motor terminals.

### Industrial troubleshooting

All of the resolution and accuracy you need to solve more problems on motor drives, in-plant automation, power distribution, and electromechanical equipment.

### Checking power quality

Capture glitches and spikes as short as 250  $\mu$ s. Identify irregular signals.





Fluke 88V



Fluke 28II / 27II



Fluke 233

## Specialty

### Best for

Automotive troubleshooting.

### Troubleshoot variety of problems on conventional and hybrid vehicles

Millisecond pulse width measurements for fuel injectors, RPM readings for both DIS and conventional ignitions with optional inductive pickup.

### Automotive testing

Alternator diodes, duty cycle, solenoids, breaker points, wiring, switches, and more.

### Best for

Harsh environments requiring dustproof and waterproof test equipment.

### Industrial troubleshooting for indoor and outdoor harsh environments

Dustproof, waterproof, shockproof multimeter designed to withstand the toughest environments.

### Working on variable speed drives

Take accurate voltage, current and frequency measurements on the output side of the drive at either the drive itself or at the motor terminals. (28 II only)

### Best for

Applications where display positioning is problematic.

### Remote monitoring

View meter display up to 9 meters (30 feet) away from the measurement point. Observe meter real-time readings remotely.

### Inconvenient measurements

Remote magnetic display solves three handed problem.

### Electrical maintenance

All the features and functions of a conventional multimeter.

# Digital Multimeter Comparison Chart



Fluke 175



Fluke 177



Fluke 179



Fluke 77 IV

## General Purpose

**Best for**

Every day use requiring true-rms, accurate, rugged meter.

**Industrial troubleshooting**

Applications requiring exceptional ease-of-use, ruggedness and reliability.

**Electrical maintenance and troubleshooting**

Variety of commercial electrical troubleshooting, installation and maintenance.

**Best for**

Every day use requiring true-rms, accurate, rugged meter.

**Industrial troubleshooting**

Applications requiring exceptional ease-of-use, ruggedness and reliability.

**Electrical maintenance and troubleshooting**

Variety of commercial electrical troubleshooting, installation and maintenance.

**Best for**

Every day use requiring true-rms, accurate, rugged meter.

**Industrial troubleshooting**

Applications requiring exceptional ease-of-use, ruggedness and reliability.

**Electrical maintenance and troubleshooting**

Variety of commercial electrical troubleshooting, installation and maintenance.

**Temperature measurements**

Built-in thermometer conveniently allows you to take temperature readings without having to carry a separate instrument.

## Compact

**Best for**

Every day use requiring average responding, accurate, rugged meter.

**Industrial troubleshooting:**

Applications requiring exceptional ease-of-use, ruggedness and reliability.

**Electrical maintenance and troubleshooting**

Variety of commercial electrical troubleshooting, installation and maintenance.





Fluke 117



Fluke 116



Fluke 115



Fluke 114



Fluke 113

**Best for**  
Wide variety of  
electrical work.

**Electrical  
maintenance  
troubleshooting**  
When you need to  
eliminate false or  
“ghost” voltages or  
perform continuity,  
connection or basic  
wiring checks.

**Non-contact voltage  
detection**  
Integrated non-  
contact voltage  
detection simplifies  
many tasks.

**Best for**  
HVAC trouble-  
shooting.

**Residential HVAC  
maintenance**  
Lower voltage  
HVAC residential  
maintenance,  
installation and  
trouble-shooting.

**Temperature  
and microamp  
measurements**  
Troubleshooting  
problems with HVAC  
equipment and  
flame sensors.

**Best for**  
Electronic and field  
service applications.

**Electronic  
troubleshooting**  
Troubleshoot a  
wide variety of  
measurement  
parameters, including  
frequency and  
capacitance.

**Best for**  
Electrical  
troubleshooting.

**Electrical  
troubleshooting**  
designed for  
easy, one-hand  
operation, the  
perfect tool  
for “go/no go  
testing.

**Best for**  
Revenue meter tests  
Involving meter sets  
and reconnects,  
capacitor checks,  
detection of absence  
or presence of voltage,  
and for continuity,  
connections or  
basic wiring checks.

**Simultaneous  
voltage and  
continuity checks**  
VCHECK™ LoZ low  
impedance  
function allows users  
to check voltage  
and continuity  
simultaneously.

# Fluke CNX™ 3000 Wireless Multimeter

With the CNX 3000 Wireless Multimeter, you see live measurements from multiple modules simultaneously and remotely on a single screen. The CNX 3000 Wireless Multimeter displays the meter measurement, plus readings from up to three wireless modules, as far as 20 meters away. By seeing multiple readings at the same time, troubleshooters can see cause and effect, interactions between inputs/outputs or other measurement points, simultaneously and remotely.

If more than three readings are required from more modules, add an optional PC adapter to your laptop for real time viewing of even more modules.



**CAT III**

**CAT IV**







# **Fluke 289** **True-rms Industrial** **Logging Multimeter** **with TrendCapture**

Find little problems before they become big ones.

Diagnostic functionality for maximizing productivity in the plant. The Fluke 289 is a high-performance industrial logging multimeter designed to solve complex problems in electronics, plant automation, power distribution, and electro-mechanical equipment. With the ability to log data and review it graphically on-screen, you can solve problems faster and help minimize downtime.



**The industrial meter for demanding users!**



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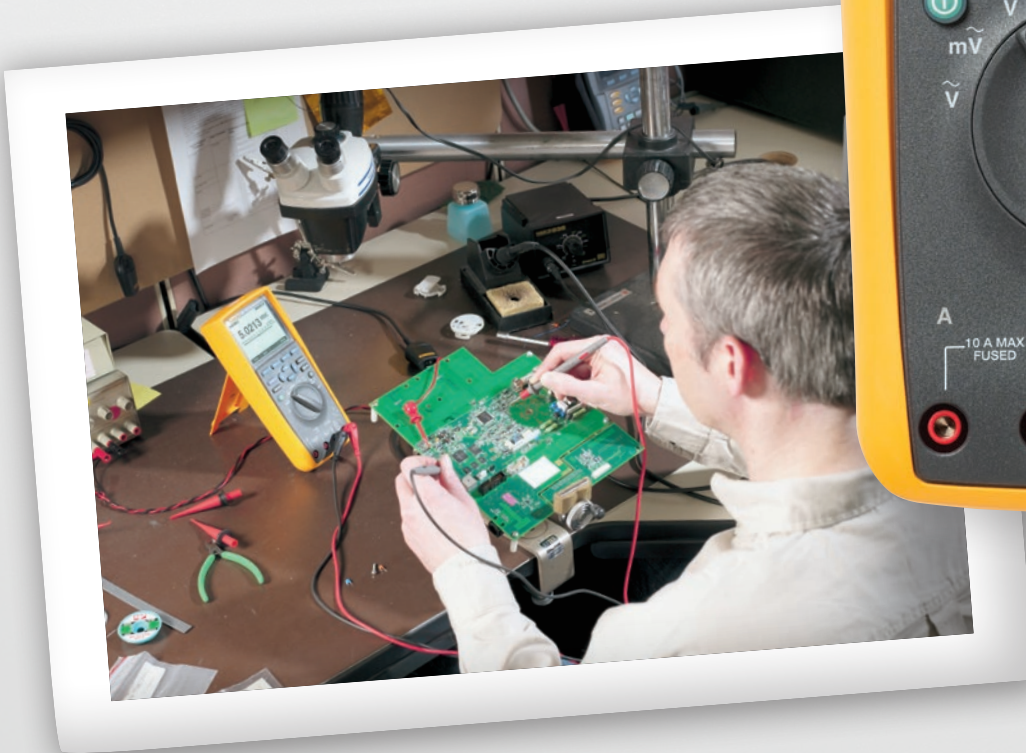




# Fluke 287

## True-rms Industrial Logging Multimeter with TrendCapture

The Fluke 287 True-rms Electronics Logging Multimeter with TrendCapture quickly documents design performance and graphically displays what happened. Its unique logging and graphing capabilities mean you no longer need to download logged readings to a PC to detect a trend. The Fluke 287 packs more accuracy and convenience into a handheld multimeter than ever before, putting more problem solving power in your hands. It is the ultimate handheld tool for demanding applications that require high-precision.



**The Fluke 287 will save you valuable time.**







## Fluke 83V Industrial Multimeter

From the control room to the plant floor, the Fluke 83V Digital Multimeter has earned its reputation as the digital multimeter industrial technicians trust. When productivity is on the line, the Fluke 83V delivers the accuracy and advanced troubleshooting capabilities you need to solve problems fast.

Work with confidence. The Input Alert function gives you an audible warning against wrong use of input jacks. Fluke 83V multimeter is independently tested for use in CAT IV 600 V/ CAT III 1000 V environments. It can withstand impulses in excess of 8,000 V and reduce risks related to surges and spikes.



**The most trusted industrial multimeter  
in the business.**





# Fluke 87V

## Industrial Multimeter

From the control room to the plant floor, the Fluke 87V has earned its reputation as the digital multimeter industrial technicians trust. When productivity is on the line, the Fluke 87V delivers the accuracy and advanced troubleshooting capabilities you need to solve problems fast. Use its low pass filter function to measure voltage and frequency accurately on electrically noisy equipment like adjustable speed motor drives. Use the peak capture function to detect intermittent problems and transients as fast as 250 micro seconds ( $\mu$ s).



### The industrial standard







## Fluke 88V Automotive Meter

Perhaps the most important tool you will 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.



## The right meter for auto-electric diagnosis





# Fluke 27 II and Fluke 28 II Industrial Multimeters

The Fluke 27 II and 28 II digital multimeters have defined 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 cases, completely sealed for use in harsh environments, and are designed to withstand a three (3) meter drop to a concrete floor (with holster). The Fluke 27 II and 28 II provide an extended operating temperature range of  $-15^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$  ( $-40^{\circ}\text{C}$  for up to 20 minutes) and 95 % humidity. The Fluke 28 II offers a hi-resolution 20,000 count display mode, plus true-rms ac voltage and current for accurate measurements on non linear signals.



## Made for harsh environments



Durable/waterproof



Dirt and dust



Temperature range



Backlight



Water and humidity



Shock and vibration



Military spec



Tested-tough buttons



CAT III 1000V  
CAT II 600V



# Fluke 233

## Remote Display Multimeter

The Fluke 233 allows maximum flexibility in demanding measurement environments. Place the removable display where you can see it and then place the multimeter at your convenience: no more juggling the leads and the meter while stretching into tight spaces. You can now take measurements in hard-to-reach places, where machines or electric panels are physically separated from the limit switch or isolation, or in areas where access is restricted to users such as clean rooms or hazardous areas.



**What if you could be in two places at once?**







## Fluke 179 True-rms Multimeter with 80BK Temperature Probe

The Fluke 179 Digital Multimeter gives you true-rms voltage and current measurements, 6000-count resolution, manual and automatic ranging and provides frequency, capacitance, resistance, continuity and diode measurements. In addition, the Fluke 179 provides higher 0.09 % basic accuracy, a digital display with analog bar graph and backlight. The Fluke 179 also delivers temperature measurements.



## Setting the multimeter standard







## Fluke 177 True-rms Multimeter

The Fluke 177 Digital Multimeter gives you true-rms voltage and current measurements, 6000-count resolution, manual and automatic ranging and provides frequency, capacitance, resistance, continuity and diode measurements. In addition, the Fluke 177 provides higher 0.09 % basic accuracy, a digital display with analog bar graph and backlight.



### Setting the multimeter standard







## Fluke 175 True-rms Multimeter

The Fluke 175 Digital Multimeter gives you true-rms voltage and current measurements, 6000-count resolution, manual and automatic ranging and provides frequency, capacitance, resistance, continuity and diode measurements.

**Versatile meter for field service or bench repair**





# Fluke 77 IV Digital Multimeter

The Fluke 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.



**Versatile meter for field service or bench repair**







## Fluke 113 True-rms Digital Multimeter

The Fluke 113 Digital Multimeter gives you the means to quickly and easily do basic meter set and reconnect testing. This meter is simple to use and has the features needed to repair most electrical problems. Using the Fluke VCHEK™ LoZ low impedance measurement function, you can simultaneously test for voltage or continuity. The Min/Max function lets you record signal fluctuations. The Fluke 113 can perform diode tests, and also provides both auto and manual ranging capabilities. With features such as conformance to the latest safety standards, backlight, and a large display for easy viewing, this meter is a must have for every toolbox.



**For basic electrical tests**





# Fluke 114

## True-rms Digital Multimeter

Designed for easy one-hand operation, the Fluke 114 True-rms Digital Multimeter is the perfect troubleshooting tool for go/no go testing. Its AutoVolt capability automatically switches to measure ac or dc voltage, whichever is present. The LoZ function helps identify so-called ghost voltage and prevent false readings.

The Fluke 114 displays true-rms voltage and current readings with 6000 count resolution, and tests frequency, continuity and resistance. A large white LED backlight aids work in poorly lit areas. Its easy-open battery access door makes battery changes easy.



**Designed by electricians. Engineered by Fluke.**





# Fluke 115

## True-rms Digital Multimeter

For general purpose electrical and electronic test requirements, the Fluke 115 True-rms Digital Multimeter provides the perfect answer. Its simple operation, compact design and ease of use make it perfect for quick verifications and field service use.

The Fluke 115 displays true-rms voltage and current readings with 6000 count resolution, tests diodes, frequency, continuity and capacitance and provides Min/Max/Average readings to record signal fluctuations. A large white LED backlight aids work in poorly lit areas. Its easy-open battery access door makes battery changes a snap. Fluke 115 multimeters are independently tested for safe use in CAT III 600 V environments.



**Designed by electricians. Engineered by Fluke.**





# Fluke 116

## True-rms HVAC Digital Multimeter

The Fluke 116 Digital Multimeter delivers the capabilities professionals demand to troubleshoot and repair HVAC (heating, ventilation and air conditioning) systems. It has everything you need in an HVAC meter, including temperature and microamp measurements to help you quickly troubleshoot problems with HVAC equipment and flame sensors.

The Fluke 116 comes with the Fluke 80BK-A integrated DMM temperature probe. The microamp function allows flame sensor measurement down to 0.1 microamps. The AutoV/LoZ function prevents false readings caused by ghost voltage. The Fluke 116 also has a large white LED backlight for work in poorly lit areas. It measures resistance, continuity, frequency, and capacitance and provides Min/Max/Average readings with elapsed time to record signal fluctuations. Fluke 116 multimeters are independently tested for safe use in CAT III 600 V environments.



**Designed by electricians. Engineered by Fluke.**







## Fluke 117

### Electrician's multimeter with non-contact voltage

The compact Fluke 117 True-rms Digital Multimeter is optimized to help you keep commercial buildings, hospitals and schools running right. The advanced features of the Fluke 117 help you get the job done, quickly and safely. Integrated non-contact voltage detection helps you identify energized circuits. The AutoV/LoZ function prevents false readings caused by ghost voltage. The Fluke 117 delivers true-rms ac voltage and current readings with 6000-count resolution. It provides Min/Max/Average readings and measures frequency and capacitance. The battery door is easy to access, so you and your Fluke 117 can stay on the job.





# Fluke 1587/1577

## Insulation Multimeters

### two powerful tools in one

The Fluke 1587 and 1577 Insulation Multimeters combine a digital insulation tester with a full-featured, true RMS digital multimeter in a single, compact, handheld unit, which provides maximum versatility for both troubleshooting and preventative maintenance.

Whether you work on motors, generators, cables, or switch gear, the Fluke 1587/1577 Insulation Multimeters are ideally suited to help you with your tasks and at a cost that is far less than buying the two products.







## Fluke 787 ProcessMeter™— double your power

A maintenance and calibration tool that will be at home in every instrumentation technician's tool box, the Fluke 787 ProcessMeter™ combines a DMM and a Loop Calibrator in one rugged, handheld tool, for about what you would expect to pay for a loop calibrator alone. Based on the trusted Fluke 87 Digital Multimeter, the 787 adds the ability to measure, source, and simulate dc loop current with 0.05 % accuracy and 1 microamp resolution.







## Fluke 789

### The ultimate loop calibration multimeter

The Fluke 787 was the first tool to combine a DMM and a loop calibrator to give process technicians double the power in one tool. Soon after, we introduced the Fluke 789—the ultimate loop calibration multimeter. The Fluke 789 has a 24 V loop supply reducing the need for taking a separate power supply when doing offline transmitter testing. And with its built-in, selectable 250-ohm Hart® resistor, it also eliminates the need to carry a separate resistor with you. Now process technicians can do a lot more while carrying a lot less.







**Fluke.** *The Most Trusted Tools  
in the World.*

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