

Fluke Digital Multimeters Solutions for every need



How to choose the best DMM for your job

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)

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.

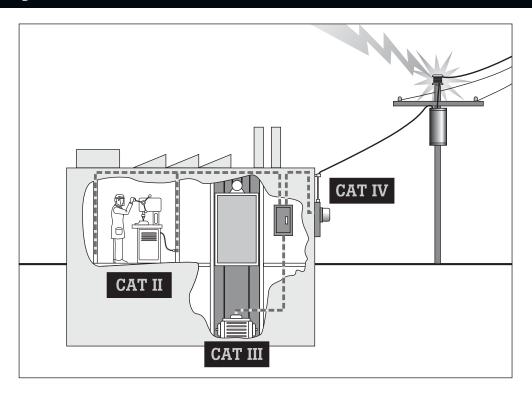
Fluke Connect™ Mobile App

Add the power of the Fluke Connect™

Mobile App to your Fluke 289, 287, 189 or 187 True-rms
Logging Multimeters with the

Wirelessly capture or record readings from the "main display" of your test tool. Then transfer that data to your smart phone, email to your team, or show them what you see with ShareLive™ video call.

ir3000 FC wireless connector.



Measurement categories at a glance

Measurement		_		
category	In brief	Examples		
CAT IV	Three-phase at utility connection, any outdoor	• Refers to the "origin of installation," i.e., where low-voltage connection is made to utility power		
	mains conductors	• Electricity meters, primary overcurrent protection equipment		
		Outside and service entrance, service drop from pole to building, run between meter and panel		
		Overhead line to detached building, underground line to well pump		
CAT III	Three-phase distribution, including	Equipment in fixed installations, such as switchgear and polyphase motors		
	single-phase commercial lighting	Bus and feeder in industrial plants		
		Feeders and short branch circuits, distribution panel devices		
		Lighting systems in larger buildings		
		Appliance outlets with short connections to service entrance		
CAT II	Single-phase receptacle connected loads	Appliance, portable tools, and other household and similar loads		
		Outlet and long branch circuits Outlets at more than 10 meters (30 feet) from CAT III source Outlets at more that 20 meters (60 feet) from CAT IV source		

Measurement categories. IEC 1010 applies to low-voltage (< 1000 V) test equipment.



Meters designed for the way you work

December 20000 50000 50000 600000 600000 600000 600000 600000 600000 600000 600000 6000000 60000000 6000		Advanced meters		Wireless meters		General	General purpose	
December 20000 50000 50000 600000 600000 600000 600000 600000 600000 600000 600000 6000000 60000000 6000	Models	87 V	289	287	233	3000 FC	179	77 IV
Time-trans readings	Basic features							
Season of contrary 0.09% 0.025% 0.025% 0.028%	Counts	20000	50000	50000	6000	6000	6000	6000
Wide handwidth 20 kHz 100 MHz	True-rms readings	ac	ac+dc	ac+dc	ac	ac	ac	
Authorizonta tranging	Basic dc accuracy	0.05%	0.025%	0.025%	0.25%	0.09%	0.09%	0.3%
Pages	Wide bandwidth							
### ATTEXT AS DE SEA SECTION AND ADDRESS OF TWO	Auto/manual ranging	•/•	•/•	•/•	•/•	•/•	•/•	•/•
	Digits	4-1/2	4-1/2	4-1/2	3-1/2	3-1/2	3-1/2	3-1/2
Measurements	ATEX II 2G Eex ia IICT4 safety rating							
1000 1000	Zone 1 and Zone 2							
Dames and/dec	Measurements							
SO MAIN SO M	Voltage ac/dc						-	-
Pregnency 200 alts 1 Matte 1 Matte 200 alts 100 alts 10000 µF 1000	Current ac/dc							
Capacitaises	Resistance							
Comparation	Frequency							
### SO ##	Capacitance					10,000 μF	· · · · · ·	10,000 μF
So as So a	Temperature	(+) 1090 °C			(+) 400 °C		(+) 400 °C	
Deep contains/fullow width	dB							
Continuity Adode test	Conductance							
More Driver (ASD) Measurements	Duty cycle/pulse width							
VollAir Voll	Continuity/diode test			•	•	•	•	•
Interest	Motor Drive (ASD) Measurements	•	•					
NOTESTAME	VoltAlert™, non-contact voltage							
LoC								
Microsupy								
Microamps								
Niceless capabilities								
		•	•	•				
Dot matrix display					Domestal 1 111	Pomets : 1		
Det matrix display	wheress capabilities					readings. Connect		
Analog bargraph Analog bargraph Analog bargraph Two level Two	Dot matrix display		•	•				
Searchight Two level Two level Two level Two level Two level Searchight Searchig	Dual display		•	•		•		
Graphical trend display	Analog bargraph	•	•	•			•	•
Diagnostics and data Min Max recording/with time stamp	Backlight	Two level	Two level		•	•	•	•
Min Max recording/with time stamp	Graphical trend display		•	•				
Fast Min Max	Diagnostics and data							
Display Hold/Auto (Touch) Hold	Min Max recording/with time stamp				•/-	•/-	•/-	•/-
Stand alone logging	Fast Min Max	'	'					
Stand alone logging	Display Hold/Auto (Touch) Hold	•/•	•/•	•/•	•/•	•/•	•/•	•/•
Trend Capture	Relative reference	•		•				
Readings memories 10,000 10,000	Stand alone logging							
Separate battery/fuse access -/-	Trend Capture							
Automatic selection, ac/dc volts Real time clock Overmolded case, integrated holster Removable holster Closed case calibration Separate battery/fuse access Ocmpletely sealed/ watertight Automatic power off Low battery indication Overmolded case, integrated holster **Operating temperature range -20 °C, +55 °C -20 °C, +55 °C -20 °C, +55 °C -10 °C, +50 °C -10 °C, +5	Readings memories							
Automatic selection, ac/dc volts Real time clock Overmolded case, integrated holster Removable holster Closed case calibration Separate battery/fuse access -/- Completely sealed/ watertight Automatic power off Low battery indication -0 -20 °C, +55 °C -20 °C,	USB interface		•	•				
Real time clock Overmolded case, integrated holster Removable holster Closed case calibration Separate battery/fuse access -/////////	Other features							
Commonded case, integrated holster	Automatic selection, ac/dc volts							
Removable holster Closed case calibration • • • • • • • • • • • • • • • • • • •	Real time clock							
Closed case calibration	Overmolded case, integrated holster		•	•	•	•	•	•
Separate battery/fuse access	Removable holster							
Completely sealed/ watertight Automatic power off • • • • • • • • • • • • • • • • • •	Closed case calibration							
Automatic power off Low battery indication -20 °C, +55 °C -20 °C, +55 °C -20 °C, +55 °C -10 °C, +50 °C -	Separate battery/fuse access	•/-	•/•	•/•	•	•	•	•
Comparating temperature range	Completely sealed/ watertight							
Coperating temperature range	Automatic power off		•			•	•	•
Warranty and electrical safety Warranty (years) Lifetime Lifetime 3 3 Lifetime Lifetime Input alert •	Low battery indication		•			•	•	•
Warranty (years) Lifetime Lifetime 3 3 Lifetime Lifetime Input alert •	Operating temperature range	-20 °C, +55 °C	-20 °C, +55 °C	-20 °C, +55 °C	-10 °C, +50 °C	-10 °C, +50 °C	-10 °C, +50 °C	-10 °C, +50 °C
Input alert	Warranty and electrical safety							
Dangerous voltage indication • • • • • • • • •	Warranty (years)				3	3	Lifetime	Lifetime
Pating P30 P42 P42 P54 P54 P61010-1 CAT P 1000 V	Input alert							
EN61010-1 CAT III 1000 V 1000 V 1000 V 1000 V 1000 V 1000 V	Dangerous voltage indication				•		•	•
	IP Rating	IP30	IP42	IP42		IP54		
ENG1010-1 CAT IV 600 V 600 V 600 V 600 V 600 V 600 V	EN61010-1 CAT III	1000 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

	Compact meters			Specialty meters				
80-4-1-	117	116	115	114	113		1	28IIEX
Models	117	110	IIĐ	114	113	28 II	27 II	ZOIIEX
Basic features	0000	0000	0000	0000	0000	20000	0000	20000
Counts	6000	6000	6000	6000	6000	20000	6000	20000
True-rms readings	ac 0.5%	ac	ac O E 0/-	ac O F 0/4	ac	ac	0.10/-	ac 0.05%
Basic dc accuracy Wide bandwidth	0.5%	0.5%	0.5%	0.5%	0.5%	0.05 % 20 kHz	0.1 % 30 kHz	0.05 % 20kHz
	•/•	•/•	•/•	•/•	•/•	≥0 kHz •/•	●/●	≥UKHZ •/•
Auto/manual ranging	3-1/2	3-1/2	3-1/2	3-1/2	3-1/2	3-1/2	3-1/2	4-1/2
Digits ATEX II 2G Eex ia IICT4 safety rating Zone 1 and Zone 2	3-1/2	3-1/2	3-1/2	3-1/2	3-1/2	3-1/2	3-1/2	4-1/Z •
Measurements								
Voltage ac/dc	600 V	600 V	600 V	600 V	600 V	1000 V	1000 V	1000V
Current ac/dc	10 A	600 µA	10 A	000 V	000 V	10 A	10 A	10 A
Resistance	40 MΩ	40 ΜΩ	40 MΩ	40 MΩ	60 kΩ	50 MΩ	50 MΩ	50 MΩ
Frequency	100 kHz	100 kHz	100 kHz	TO 10122	00 122	200 kHz	200 kHz	200 kHz
Capacitance	10,000 µF	10,000 μF	10,000 μF		10,000 μF	10,000 μF	10,000 µF	10,000 μF
Temperature	10,000 μι	10,000 µг (+) 400 °С	10,000 μι		10,000 μι	(+) 1090 °C	10,000 μι	(+) 1090 °C
dB		(1,400 0				(1) 1000 0		(1) 1000 0
Conductance						60 nS	60 nS	60 nS
Duty cycle/pulse width						•/ <u>-</u>	•/-	•/-
Continuity/diode test	•	•	•	•	•	•	•	•
Motor Drive (ASD) Measurements						•		•
VoltAlert™, non-contact voltage detection	•					-		
VCHEK TM					•			
LoZ: low input impedance	•	•		•	•			
Lo Ohms								
Microamps		•				•	•	•
Display								
Wireless capabilities								
Dot matrix display								
Dual display								
Analog bargraph	•	•	•	•	•	•	•	•
Backlight	•	•	•	•	•	Two level	Two level	Two level
Graphical trend display								
Diagnostics and data								
Min Max recording/with time stamp	•/-	•/-	•/-	•/-	•/-	•/-	•/-	•/-
Fast Min Max						250 µs		250 µs
Display Hold/Auto (Touch) Hold	•/-	•/-	•/-	•/-	•/-	•/•	•/•	•/•
Relative reference						•	•	•
Stand alone logging								
Trend Capture								
Readings memories								
USB interface								
Other features								
Automatic selection, ac/dcvolts	•	•		•	•			
Real time clock								
Overmolded case, integrated holster								
Removable holster	•	•	•	•	•	•	•	•
Closed case calibration	•	•	•	•	•	•	•	•
Separate battery/fuse access	•	•	•	•	•	•/•		•/-
Completely sealed/ watertight			•		•	•	•	•
Automatic power off	•	•	•	•	•	•	•	•
Low battery indication	•	•	•	•	•	•	•	•
Operating temperature range	-10 °C, +50 °C	-10 °C, +50 °C	-10 °C, +50 °C	-10 °C, +50 °C	-10 °C, +50 °C	-40 °C, +55 °C	-40 °C, +55 °C	-15 °C, +50 °C
Warranty and electrical safety	-10 6, +50 6	-10 6, +50 6	-10 6, +50 6	-10 6, +50 6	-10 6, +50 6	-40 C, +55 C	-40 C, +55 C	-13 6, +30 6
Warranty (years)	3	3	3	3	3	Lifetime	Lifetime	3
Input alert	3	3	3		3	• metime	• Effettine	•
Dangerous voltage indication	•	•	•	•	•	•	•	•
IP Rating	IP42	IP42	IP42	IP42	IP42	IP67	IP67	IP67
EN61010-1 CAT III	600 V	600 V	600 V	600 V	1742	1000 V	1000 V	1000 V
EN61010-1 CAT III EN61010-1 CAT IV	300 V	300 V	000 V	000 V	600 V	600 V	600 V	600 V
ENOTOTO-1 GALIV					800 V	800 V	000 V	300 V

Digital Multimeter selection chart

	Best for	at for Applications		
	Advanced industrial	Logging: For unattended monitoring of signals over time, to detect intermittent problems.	289	
	troubleshooting, including data logging	Graphing: View logged values graphically in the field right on the meter, without a PC.		
	and graphing intermittent problems	Working on VSDs: 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.	5.25E	
(0	Advanced electronic	Logging: For unattended monitoring of signals over time, characterize device performance.	287	
ers	applications, including	Graphing: View logged values graphically in the field right on the meter, without a PC.	4 0.05 VDC	
meters	data logging and graphing intermittent problems	Monitoring two parameters at the same time: Dual display allows for monitoring of two selectable parameters.	007	
Advanced		Performance testing: Testing the frequency response of amplifiers and audio transmission line.		
van	Sharing results, data storage from	Accessory compatible with Fluke 287, 289: The ir3000 FC wireless connector adds the power of the Fluke Connect™ Mobile App to your measurements.	ir3000 FC	
Ad	Fluke 287, 289	Collaboration with team members: ShareLive ^{nu} Video Calls transmits data from your meter's main screen to team members in different places.	9.8	
		Record data without manual transcription: The Fluke Connect app stores your data securely in the cloud, eliminating transcription errors.		
Wireless meters	Industrial troubleshooting	Working on VSDs: Take accurate voltage, current and frequency measurements on the output side of the drive at either the drive itself or at the motor terminals.	87V	
		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.	5000	
		Checking power quality: Capture glitches and spikes as short as 250 µs. Identify irregular signals.		
	Remote Display Digital Multimeter	Take measurements in hard to reach places: With its removable display, you have the flexibility to take measurements in hard to reach places or in areas with restricted access. You can be in two places at once and reduce the risk of arc flash by separating yourself from hazardous measurement situations.	233	
		Work more productively: Now one person can complete a test that would have required two people using ordinary test tools.		
	Fluke FC wireless test tools work together to help you troubleshoot faster	Work faster, safer and easier with FC Wireless Test Tools: The 3000 FC Multimeter displays the meter measurement, plus readings from up to three wireless modules, connect to your smart phone to see reading directly on your phone.	3000 FC 460 3	
	laster	Build the system as your needs grow: Start with the multimeter and future proof your investment.	Nev	
General purpose meters	Every day use requiring true-rms, accurate, rugged meter	Industrial troubleshooting: Applications requiring exceptional ease-of-use, ruggedness and reliability.	179	
		Electrical maintenance and troubleshooting: Variety of commercial electrical troubleshooting, installation and maintenance.	1000 =	
		Temperature measurements: Built-in thermometer conveniently allows you to take temperature readings without having to carry a separate instrument.	9 THE PARTY OF THE	
	Every day use requiring average responding, accurate, rugged	Industrial troubleshooting: Applications requiring exceptional ease-of-use, ruggedness and reliability.	77 IV	
Gener	meter	Electrical maintenance and troubleshooting: Variety of commercial electrical troubleshooting, installation and maintenance.	₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	



	Best for	Applications	Recommended DMM	
	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.	117	
10	HVAC troubleshooting	Residential HVAC maintenance: Lower voltage HVAC residential maintenance, installation and troubleshooting.	116	
Compact meters		Temperature and microamp measurements: Troubleshooting problems with HVAC equipment and flame sensors.	The or V	
	Electronic and field service applications	Electronic troubleshooting: Troubleshoot a wide variety of measurement parameters, including frequency and capacitance.	115	
	Utility applications involving basic electrical tests	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.	113	
		Simultaneous voltage and continuity checks: Check LoZ low impedance function allows users to check voltage and continuity simultaneously.		
	Harsh environments requiring dustproof and waterproof test equipment	Industrial troubleshooting in indoor and outdoor harsh environments: Dustproof, waterproof, shockproof multimeter designed to withstand the toughest environments.	28 II/ 27 II	
Specialty meters		Working on VSDs: 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)		
	Industrial troubleshooting in explosive environments	Safety and compliance: The Fluke 28 II Ex is an intrinsically safe digital multimeter designed for use in dangerous or explosive atmospheres. Agency Approvals: IECEx Ex ia IIC T4 Gb, Ex ia IIIC T130 °C Db, I M1 Ex ia I Ma	28 II ER	
Ś		Industrial troubleshooting: Completely sealed, IP67 rated case; Withstands drops up to 10 feet or 3 meters (with holster); Dustproof per IEC60529 IP6x; Waterproof per IEC60529 IPx7; Meets IEC Overvoltage Electrical Safety Standard No. 61010-1:2001		

Fluke. Keeping your world up and running.®

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