

Digital Multimeter Products

CATALOG



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Truevolt Series 6½- and 7½-Digit Bench Digital Multimeters

Measure with unquestioned Truevolt confidence

What truevolt technology means to you

Measure with unquestioned Truevolt confidence

Truevolt technology starts with an analog-to-digital converter that enables a patented metrology-grade architecture. Using this architecture, Keysight delivers a good balance of measurement resolution, linearity, accuracy, and speed at a value price, all derived and guaranteed per ISO / IEC 17025 industry standards.

Worry about the quality of your design, not the quality of your measurements

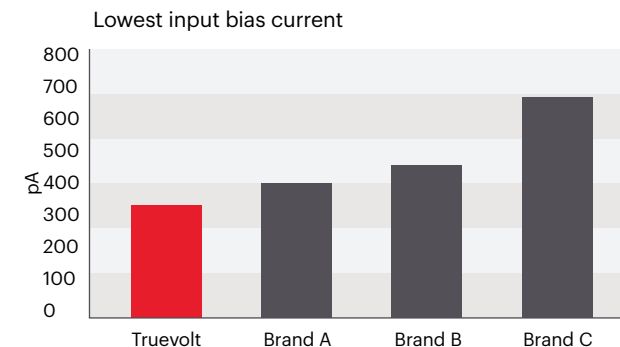
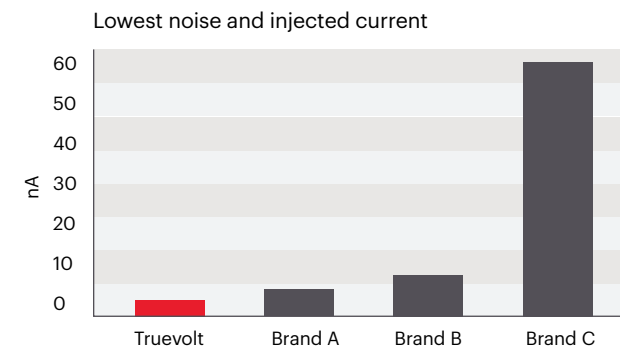
Noise and injected current: Keysight Truevolt digital multimeters (DMMs) contribute less than 30% of the injected current as alternatives. Compared with some lower-cost alternatives, Truevolt DMMs offer almost 100% less noise.

Input bias current

Ideally, no current flows into the measurement terminals of your DMM. In real measurement situations, input currents create additional measurement errors. Truevolt DMMs take care of input bias current. Some alternative DMMs offer 20% or more, poorer performance (some are too noisy to measure).

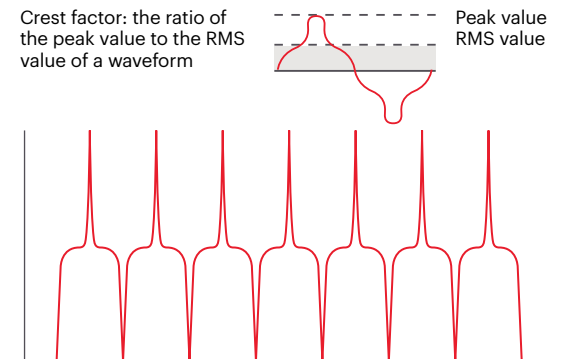
Digital AC root-mean-square (RMS) measurements

For meters in this class, only Keysight uses digital direct sampling to make AC RMS measurements. The result is a true RMS calculation technique that avoids the slower response of analog RMS converters used in all other vendors' 6½-digit DMMs. This technique allows for crest factors up to 10 without additional error terms. This is a unique, patented technique — used only by Keysight.



Digital AC rms measurements

Crest factor: the ratio of the peak value to the RMS value of a waveform



AC measurement accuracy is degraded when signals have energy contained in higher frequencies than a typical sine wave

Overview of Truevolt Dmms

Keysight's Truevolt DMMs offer a full range of measurement capabilities and price points with higher levels of accuracy, speed, and resolution.

Table 1. Truevolt DMMs

Technical overview	34460A	34461A	34465A	34470A
Resolution	6½ digits	6½ digits	6½ digits	7½ digits
Best DCV accuracy	75 ppm	35 ppm	30 ppm	16 ppm
Max reading speed	300 readings / s	1,000 readings / s	50,000 readings / s	50,000 readings / s
Memory	1,000 readings	10,000 readings	50,000 readings std 2 million readings opt	50,000 readings std 2 million readings opt
Measurements	DCV, ACV (RMS), DCI, ACI, 2- and 4-wire resistance, diode, capacitance, temperature, frequency, and period	DCV, ACV (RMS), DCI, ACI, 2- and 4-wire resistance, diode, capacitance, temperature, frequency, and period	DCV, ACV (RMS), DCI, ACI, 2- and 4-wire resistance, diode, capacitance, temperature, frequency, and period	DCV, ACV (RMS), DCI, ACI, 2- and 4-wire resistance, diode, capacitance, temperature, frequency, and period
Display	Color, graphical, histogram, and bar chart	Color, graphical, histogram, bar chart, and trend chart	Color, graphical, histogram, bar chart, and trend chart	Color, graphical, histogram, bar chart, and trend chart
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Control, automate, and simplify with PathWave BenchVue software

Keysight PathWave BenchVue software for the PC eliminates many issues surrounding bench testing. By making it simple to connect, control instruments, and automate test sequences, you can move past the test development phase and access results faster than ever before. The DMM app in BenchVue enables control of DMMs to visualize measurements, perform data logging, and annotate captured data. Easily control your DMM to quickly build automated tests, log measurements, and save precious time.



BV9001B BenchVue Complete Control Collection

PXI Digital Multimeters

Get fast throughput and trustworthy measurements

Keysight's PXI DMM provides the most popular measurement functions, including DCV, ACV, DCI, ACI, and two- and four-wire resistance, at an affordable price. The M9182A and M9183A 6½-digit high-performance PXI DMMs offer fast throughput, flexible measurements, and reliable results. The M9182A provides 10 built-in measurement types with all the accuracy and stability you would expect from a 6½-digit DMM. The M9183A provides the same capabilities as the M9182A, with a market-leading measurement speed of up to 15,000 readings per second, additional ranges, and a DC source. The M1412A 7½-digit PXIe DMM comes with a built-in digitizer that can capture high-speed signals and transients up to 2 million samples per second.

Table 2. PXI digital measurements

Technical overview	M1412A	M9181A	M9182A	M9183A
Resolution	7½ digits	6½ digits	6½ digits	6½ digits
Accuracy	21 ppm	90 ppm	40 ppm	40 ppm
Max reading speed at 4½ digits	60,000 readings / s	150 readings / s	4,500 readings / s	15,000 readings / s
DCV, ACV ranges	100 mV to 300 V	200 mV to 200 V	200 mV to 300 V	200 mV to 300 V
DCI, ACI ranges	1 µA to 3 A	2 mA to 2 A	2 mA to 2 A	200 nA to 2 A; 2 mA to 2 A
2- & 4-wire resistance ranges	10 Ω to 1 GΩ	200 Ω to 20 MΩ	200 Ω to 20 MΩ	20 Ω to 200 MΩ
Other measurements	Frequency, period, digitizer	None	Temperature, capacitance, frequency, and period	Temperature, capacitance, frequency, period, offset compensated Ω, pulse width, duty cycle, and totalizer / event counter
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PXI Digital Multimeters



Specialty Digital Multimeters

Gain your edge with these specialty DMMs



3458A 8 1/2-Digit Digital Multimeter

3458A 8½-digit DMM

Shatters performance barriers of speed and accuracy

The **Keysight 3458A** has a 30-year industrial benchmark legacy for its remarkable DC accuracy and stability. It also has standard lab 8½-digit precision with leading-edge DCV linearity accuracy and lowest internal noise. This product is known for its self-adjusting and self-verifying auto-calibration capability, which ensures that every measurement is accurate.

34420A 7½-digit DMM

Nanovolt performance at a microvolt price

The **Keysight 34420A nanovolt / micro-ohm meter** is a high-sensitivity multimeter optimized for performing low-level measurements. It combines low-noise voltage measurements with resistance and temperature functions, setting a new standard in low-level flexibility and performance.

U3606B 5½-digit DMM and DC Power Supply

One-box source-and-measure device

The **Keysight U3606B multimeter and DC power supply** is a full-featured 5½-digit DMM that comes with a built-in 30-W power supply, offering a compact footprint that enables you to get work done faster and easier. Capable of powering up the device under test while measuring voltage and current simultaneously, it lets users perform two test functions in the same unit.

U2741A 5½-digit DMM

Put a bench in your bag

The **Keysight U2741A USB modular DMM** is the size of a typical novel. It operates flexibly as a standalone unit or as a modular unit in the U2781A USB modular product chassis.

EDU34450A 5½ DIGIT DUAL-DISPLAY DMM

The **Keysight EDU34450A 5½-digit dual-display DMM** measures a broad range of input signals. The measurement engine leverages Keysight's industry-grade benchtop DMM. It features 5½-digits of resolution, 0.015% basic DCV accuracy, and up to 100 readings/s measuring rate for speed-critical tests.

Overview of Specialty DMMs

Table 3. Specialty DMMs

Technical overview	3458A	34420A	U3606B	EDU34450A
Resolution	8½ digits	7½ digits	5½ digits	5½ digits
Accuracy	8 ppm	30 ppm	250 ppm	150 ppm
Max reading speed at 4½ digits	100,000 readings / s	2500 readings / s	26 readings / s	110 readings / s
DCV, ACV ranges	DCV: 100 mV to 1,000 V ACV: 10 mV to 1,000 V	DCV: 1 mV to 100 V	DCV: 20 mV to 1,000 V ACV: 100 mV to 750 V	DCV: 100 mV to 1 kV ACV: 100 mV to 750 V
DCI, ACI ranges	DCI: 100 nA to 1 A ACI: 100 µA to 1 A	N/A	DCI: 10 mA to 3 A ACI: 10 mA to 3 A	DCI: 10 mA to 3 A ACI: 10 mA to 3 A
2- & 4-wire resistance ranges	10 Ω to 1 GΩ	1 Ω to 1 MΩ	100 Ω to 100 MΩ	100 Ω to 100 MΩ
Other measurements	Frequency and temperature	Temperature	Frequency, capacitance, diode test, and continuity test	Frequency, continuity, diode test, temperature, and capacitance
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Handheld DMMs

Go further with Keysight handheld digital multimeters

From electronics troubleshooting to installation and maintenance of machinery, Keysight handheld DMMs withstand harsh working conditions and improve safety. Each DMM is compatible with the Keysight U1177A / U1117A infrared (IR)-to-Bluetooth® adapter, which offers wireless remote connectivity solutions. Our range of handheld DMMs includes smart features to help you quickly detect problems and obtain accurate measurements.

U1280 Series 4½-digit handheld multimeters

Gain the confidence to achieve trustworthy measurements thanks to the precision, accuracy, and repeatability of the Keysight U1280 Series handheld DMMs. Plus, with up to 800 hours of battery life, you can count on your DMM to perform when you need it.

U1250 Series 4½-digit handheld multimeters

The process of isolating faults is always unpredictable. It's good to have a versatile DMM that simplifies analysis, accelerates glitch detection, and makes it easier to probe hard-to-reach points. The U1250 Series optimizes electronics troubleshooting with the accuracy, capabilities, and accessories you need to start in no time.

U1240 Series 4-digit handheld multimeters

For technicians or industrial test engineers, the ultimate goal is to keep the production line running seamlessly to prevent an unplanned shutdown. The strong and solid **U1240C Series** handheld DMMs provide the tools you need to work efficiently. Certified to IP67 and tested to withstand a drop of up to 3 meters (10 feet) to suit harsh working environments, these durable DMMs work longer for you with up to 400 hours of battery life.



Handheld Digital Multimeters

Overview of Handheld DMMs U1177A / U1117A IR-RO-Bluetooth® Adapter

Attaching the U1177A / U1117A adapter to the IR port of a Keysight handheld meter provides instant wireless *Bluetooth*® connection setup. You can log and monitor data on more display devices, such as iOS and Android-based smart devices or Windows-based PCs.

Table 4. Handheld DMMs

Technical overview	U1281A	U1282A	U1252B	U1253B	U1241C	U1242C
Resolution	4½ digits	4½ digits	4½ digits	4½ digits	4 digits	4 digits
Accuracy	250 ppm	250 ppm	250 ppm	250 ppm	900 ppm	900 ppm
Max reading speed	40 readings / s	40 readings / s	7 readings / s	7 readings / s	40 readings / s	40 readings / s
DCV, ACV ranges	DCV: 60 mV to 1,000 V ACV: 60 mV to 1,000 V	DCV: 60 mV to 1,000 V ACV: 60 mV to 1,000 V	DCV: 50 mV to 1,000 V ACV: 50 mV to 1,000 V	DCV: 50 mV to 1,000 V ACV: 50 mV to 1,000 V	DCV: 100 mV to 1,000 V ACV: 100 mV to 1,000 V	DCV: 100 mV to 1,000 V ACV: 100 mV to 1,000 V
DCI, ACI ranges	DCI: 600 µA to 10 A ACI: 600 µA to 10 A	DCI: 600 µA to 10 A ACI: 600 µA to 10 A	DCI: 500 µA to 10 A ACI: 500 µA to 10 A	DCI: 500 µA to 10 A ACI: 500 µA to 10 A	DCI: 1000 µA to 10 A ACI: 1000 µA to 10 A	DCI: 1000 µA to 10 A ACI: 1000 µA to 10 A
2-wire resistance ranges	600 Ω to 60 MΩ	600 Ω to 60 MΩ	500 Ω to 500 MΩ	500 Ω to 500 MΩ	500 Ω to 500 MΩ	1000 Ω to 100 MΩ
Other measurements	Frequency, capacitance, diode test, continuity test with visual and audio alerts, and temperature	Frequency, capacitance, diode test, continuity test with visual and audio alerts, and temperature	Frequency, capacitance, diode test, continuity test with visual and audio alerts, and temperature	Frequency, capacitance, diode test, continuity test, and temperature	Frequency, capacitance, diode test, continuity test, and temperature	Frequency, capacitance, diode test, continuity test with visual and audio alerts, and temperature
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