

FLUKE

45

The Fluke 45 is a highly versatile, feature-rich 5-digit benchtop dual-display digital multimeter capable of 100,000 counts. Designed for manufacturing test, depot, field service, and R&D applications, it features a multifunction vacuum fluorescent display that allows users to simultaneously view two different parameters of the same signal from a single connection. The instrument supports 16 measurement capabilities, true RMS AC and AC+DC readings, and includes RS-232 as standard with optional IEEE-488.2 connectivity.

SPECIFICATIONS

General

Interfaces	RS-232 (standard), IEEE-488.2 (optional)
Display	Multifunction vacuum fluorescent dual display, 5-digit, 100,000 counts

Physical

Power Supply	90 to 264 VAC, 50/60 Hz; optional internal rechargeable battery
Operating Temperature	0 to 50 °C
Dimensions (W×H×D)	216 × 93 × 286 mm
Weight	2.4 kg

General Specifications

Display Type	Vacuum Fluorescent Display (VFD), Dual Display
Display Resolution (Digits)	5 digits (100,000 counts)
Measurement Speed/Reading Rate	2.5, 5, or 20 readings/s
True RMS Measurement Type	AC, AC+DC
Calibration Interval	1 Year

DC Voltage Specifications

DCV Ranges	300 mV, 3 V, 30 V, 300 V, 1000 V
DCV Maximum Resolution	1 µV
DCV Basic Accuracy (1 Year)	±(0.025% of reading + 2 digits) (Slow rate)
DCV Input Impedance	10 MΩ
DCV Maximum Input Voltage	1000 V DC
Common Mode Rejection Ratio (CMRR)	> 120 dB at DC
Normal Mode Rejection Ratio (NMRR)	> 60 dB at 50/60 Hz

AC Voltage Specifications

ACV Ranges	300 mV, 3 V, 30 V, 300 V, 750 V
ACV Maximum Resolution	1 μ V
ACV Bandwidth / Frequency Range	20 Hz to 100 kHz
ACV Basic Accuracy (1 Year)	$\pm(0.2\%$ of reading + 10 digits) (45 Hz to 20 kHz, Slow rate)
ACV Input Impedance	1 M Ω in parallel with < 100 pF
ACV Maximum Input Voltage	750 V rms, 1000 V peak
ACV Common Mode Rejection Ratio (CMRR)	> 90 dB at DC to 60 Hz

DC Current Specifications

DCI Ranges	30 mA, 100 mA, 10 A
DCI Maximum Resolution	0.1 μ A
DCI Basic Accuracy (1 Year)	$\pm(0.05\%$ of reading + 2 digits) (30 mA to 100 mA ranges)
DCI Maximum Input Current	10 A

AC Current Specifications

ACI Maximum Resolution	0.1 μ A
ACI Bandwidth / Frequency Range	20 Hz to 20 kHz
ACI Maximum Input Current	10 A

Resistance Specifications

Resistance Ranges	300 Ω , 3 k Ω , 30 k Ω , 300 k Ω , 3 M Ω , 30 M Ω , 100 M Ω
Resistance Maximum Resolution	1 m Ω
Resistance Basic Accuracy (1 Year)	$\pm(0.05\%$ of reading + 2 digits) (300 Ω to 300 k Ω ranges)
Measurement Method (2-Wire / 4-Wire)	2-Wire

Frequency and Period Specifications

Frequency Range	5 Hz to 1 MHz
Frequency Resolution	0.01 Hz
Frequency Accuracy	$\pm(0.05\%$ of reading + 1 digit)

Diode and Continuity Testing

Audible Alarm Indicator	Yes
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Math and Advanced Functions

Statistical Functions (MIN/MAX/AVG)	MIN/MAX mode
Null / Relative Mode	Yes (RELATIVE)
Limit Testing / Compare	Compare (Hi/Low/Pass)
dB / dBm Function	Yes
dBm Reference Impedances	2 Ω to 8000 Ω (21 selectable reference impedances)

Connectivity and Control Interfaces

Standard Data Interfaces	RS-232
Baud Rate Settings	300 to 9600 baud

Environmental and Safety Specifications

Storage Temperature Range	-40 °C to +70 °C
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Power Requirements

AC Line Voltage	90 V to 264 V AC
Maximum Power Consumption	15 VA
Battery Operation Option	Optional internal rechargeable lead-acid battery
Battery Life (Typical)	8 hours

Physical Characteristics

Rack Mount Compatibility	Optional rack-mount kit available
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Inputs & Protection

Maximum Common Mode Voltage	1000V dc or peak ac (COM to Earth ground)
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AC Performance

AC Crest Factor	3.0 at full scale
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Diode Test

Diode Test Range	3.2 V
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Environmental

Temperature Coefficient	0.1 × (specified accuracy) / °C (< 18 °C or > 28 °C)
Operating Relative Humidity	Up to 90% (0 °C to 28 °C); Up to 80% (28 °C to 40 °C); Up to 70% (40 °C to 50 °C)

Compliance & Certifications

Safety Compliance	UL 1244, IEC 348, CSA C22.2 No. 231
Electromagnetic Interference (EMI)	FCC Part 15 Class B, VDE 0871 Class B

Performance

Warm-Up Time	30 minutes to rated accuracy
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Measurement Features

Touch Hold	Yes (captures and holds stable readings)
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Power

Optional Battery Type	8V Sealed Lead-Acid
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TECHNOLOGY

Digital Multimeter (DMM)	
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APPLICATIONS

Benchtop test, manufacturing test, depot and field service, R&D

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