

Fluke 113 Utility Multimeter

Technical Data



True RMS Utility Multimeter designed for basic electrical tests

The new 113 Utility Multimeter has the features needed to repair most electrical problems. This meter is simple to use and has significant improvements over Fluke's original 7-600, and other utility multimeters. With features such as Fluke's VCHEK™, added measurement functions, backlight, conformance to the latest safety standards, and a much larger display that's easier to view, this new meter is a must have for the utility users toolbox.

Features include:

- **VCHEK™ LoZ** low impedance measurement function to simultaneously test for voltage and continuity
- True-rms for accurate ac measurements on non-linear loads
- A large backlit display allows for easy visibility in low-lit areas
- Record signal fluctuations using the Min/Max function
- Diode test for testing general-purpose germanium, silicon, and power diodes
- Integral holster with probe holders for easy storage
- Auto and Manual ranging for added user functionality
- Meets Measurement Category CAT III 600 V and Category IV 300 V standards for a higher level of safety
- The optional TPAK magnetic hanger allows the user hands-free flexibility



Specifications

Accuracy is specified for 1 year after calibration, at operating temperatures of 18 °C to 28 °C, with relative humidity at 0 % to 95 %. Accuracy specifications are given as follows:

Note:

Specifications are subject to change without notice.

± ([% of reading] + [number of least significant digits])

| Function | Range | Resolution | Accuracy | |
|----------------------|-------------------------------|----------------------------|--|-----------------|
| | | | DC, 45 to 500 Hz | 500 Hz to 1 kHz |
| ✓Chek ^{1,2} | 6.000 V 60.00 V 600.0 V | 0.001 V 0.01 V 0.1 V | 2.0 % + 3 | 4.0 % + 3 |
| Function | Range | Resolution | Accuracy | |
| → ³ | 2.000 V | 0.001 V | 2.0 % + 3 | |
|))) ³ | | | Beeper on < 20 Ω, off > 250 Ω; detects opens or shorts of 500 μs or longer | |
| Ω ³ | 600.0 Ω | 0.1 Ω | 0.9 % + 2 | |
| | 6.000 kΩ | 0.001 kΩ | 0.9 % + 1 | |
| | 60.00 kΩ | 0.01 kΩ | 0.9 % + 1 | |
| ← ³ | 1000 nF | 1 nF | 1.9 % + 2 | |
| | 10.00 μF | 0.01 μF | 1.9 % + 2 | |
| | 100.0 μF | 0.1 μF | 1.9 % + 2 | |
| | 9999 μF | 1 μF | 100 μF - 1000 μF: 1.9 % + 2 | |
| | | | > 1000 μF: 5 % + 20 | |

Notes:

¹ All ✓Chek voltage ranges are specified from 60 counts to 100 % of range. Because inputs below 60 counts are not specified, it is possible and normal for this and other true-rms meters to display non-zero readings when the test leads are disconnected from a circuit or are shorted together.

² Crest factor of ≤ 3 at 4000 counts, decreasing linearly to 1.5 at full scale.

³ After measuring voltage, a wait time of 1 minute is required to maintain accuracy of ohms, capacitance, diode test, and continuity.

| | |
|---|--|
| Maximum voltage between any terminal and earth ground | 600 V |
| Display | 3 3/4-digits, 6000 counts, updates 4/sec |
| Operating temperature | -10 °C to 50 °C (14 °F to 122 °F) |
| Storage temperature | -40 °C to 60 °C (-22 °F to 140 °F) |
| Temperature coefficient | 0.1 x (specified accuracy)/°C (< 18 °C or > 28 °C) |
| Operating altitude | 2,000 m |
| Storage altitude | 10,000 m |
| Relative humidity | 95 % to 30 °C |
| | 75 % to 40 °C |
| | 45 % to 50 °C |
| Battery type | 9 Volt Alkaline, ANSI 1604A / IEC 6F22 |
| Battery life | Alkaline: 300 hours typical, without backlight |
| Shock | 1 Meter drop per IEC 61010-1-2001 |
| Vibration | Per MIL-PRF-28800 for Class 2 instrument |
| Size (HxWxL) | 167.1 mm X 85.1 mm X 46.0 mm (6.58 in X 3.35 in X 1.81 in) |
| Weight | 13.0 oz (404 g) |
| Safety | Complies with ANSI/ISA 82.02.01 (61010-1) 2004, CAN/CSA-C22.2 No 61010-1-04, UL 61010-1 (2004) and IEC/EN 61010-1 2nd Edition for measurement Category III, 600 V, Pollution Degree 2, EMC EN61326-1 |
| EMI regulations | Complies with FCC Part 15, Class B |

| Function | Input Impedance (Nominal) | |
|---|----------------------------|--------------------|
| ✓Chek | ~3 kΩ < 300 pF | |
| Common Mode Rejection Ratio (1 kΩ Unbalanced) | | |
| ✓ | > 60 dB at dc, 50 or 60 Hz | |
| | Open Circuit Test Voltage | Full Scale Voltage |
| Ω | < 2.7 V dc | < 0.7 V dc |
| → | < 2.7 V dc | 2.000 V dc |
| Short Circuit Current | | |
| Ω | < 350 μA | |
| → | < 1.0 mA | |

Ordering information

Fluke 113 Utility Meter

Included

Fluke 113 Utility Multimeter
TL75 Test Leads
One 9V Battery
Printed Users Manual

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