

FLUKE®

Fluke 116 HVAC Multimeter

with Temperature and Microamps

Technical Data



Compact true-rms meter for HVAC troubleshooting

The Fluke 116 was specifically designed for the HVAC professional. It has everything needed in an HVAC meter including temperature and microamp measurements to quickly troubleshoot problems with HVAC equipment and flame sensors.

Features include:

- Built in thermometer for HVAC applications
- Microamps to test flame sensors
- LoZ: helps prevent false readings due to ghost voltage
- Large white LED backlight to work in poorly lit areas
- Resistance, continuity, frequency and capacitance
- Min/Max/Average with elapsed time to record signal fluctuations
- Compact ergonomic design for one-handed operation
- Compatible with optional magnetic hanger (ToolPak™)
- CAT III 600 V safety rated

General 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 %.

The accuracy specifications take the form of:
 $\pm [\% \text{ of reading }] + [\text{ counts }]$

Maximum voltage between any terminal and earth ground	600 V
Surge protection	6 kV peak per IEC 61010-1 600 V CAT III, Pollution Degree 2
Display	Digital: 6,000 counts, updates 4/sec
Bar graph	33 segments, updates 32/sec
Operating temperature	-10 °C to + 50 °C
Storage temperature	-40 °C to + 60 °C
Battery	9 volt Alkaline, NEDA 1604A/IEC 6LR61
Battery life	400 hours typical, without backlight

Actual size



Accuracy specifications

Measurement	Range	Resolution	Accuracy ± ([% of reading] + [counts])
DC millivolts	600.0 mV	0.1 mV	2.0 % + 3
DC volts	6.000 V	0.001 V	
	60.00 V	0.01 V	
	600.0 V	0.1 V	
Auto volts	600.0 V	0.1 V	2.0 % + 3 (dc, 45 Hz to 500 Hz) 4.0 % + 3 (500 Hz to 1 kHz)
AC millivolts ¹ true-rms	600.0 mV	0.1 mV	1.0 % + 3 (dc, 45 Hz to 500 Hz) 2.0 % + 3 (500 Hz to 1 kHz)
AC volts ¹ true-rms	6.000 V	0.001 V	1.0 % + 3 (45 Hz to 500 Hz) 2.0 % + 3 (500 Hz to 1 kHz)
	60.00 V	0.01 V	
	600.0 V	0.1 V	
Continuity	600 Ω	1 Ω	Beeper on < 20 Ω off > 250 Ω; detects opens or shorts of 500 μs or longer.
Ohms	600.0 Ω	0.1 Ω	0.9 % + 2
	6.000 kΩ	0.001 kΩ	0.9 % + 1
	60.00 kΩ	0.01 kΩ	
	600.0 kΩ	0.1 kΩ	
	6.000 MΩ	0.001 MΩ	
40.00 MΩ	0.01 MΩ	1.5 % + 2	
Diode test	2.000 V	0.001 V	0.9 % + 2
Capacitance	1000 nF	1 nF	1.9 % + 2
	10.00 μF	0.01 μF	
	100.0 μF	0.1 μF	
	9999 μF	1 μF	
	100 μF to 1000 μF		1.9 % + 2
> 1000 μF		5 % + 20	
Lo-Z capacitance	1 nF to 500 μF		10 % + 2 typical
Temperature (Type-K thermocouple)	-40 °C to 400 °C	0.1 °C	1 % + 10 ₂
	-40 °F to 752 °F	0.2 °F	1 % + 18 ₂
AC μamps true-rms (45 Hz to 500 Hz)	600.0 μA	0.1 μA	1.5 % + 3 (2.5 % + 3 > 500 Hz)
DC μamps	600.0 μA	0.1 μA	1.0 % + 2
Hz (V or A input) ²	99.99 Hz	0.01 Hz	0.1 % + 2
	999.9 Hz	0.1 Hz	
	9.999 kHz	0.001 kHz	
	50.00 kHz	0.01 kHz	

Notes:

¹ All ac voltage ranges are specified from 1 % to 100 % of range. Because inputs below 1 % of range are not specified, it is 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. For volts, crest factor of ≤ 3 at 4000 counts, decreasing linearly to 1.5 at full scale. AC volts is ac-coupled. Auto-V LoZ, and ac mV are dc-coupled.

² Temperature uncertainty (accuracy) does not include the error of the thermocouple probe.

³ Frequency is ac coupled, 5 Hz to 50 kHz for ac voltage. Frequency is dc coupled, 45 Hz to 5 kHz for ac current.

Ordering information

Fluke-116 HVAC Multimeter with Temperature and Microamps

Included

TL75 Test Leads, 80BK Integrated Temperature Probe, holster, User's manual and 9V battery (installed).



Fluke. Keeping your world up and running.

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General specifications

	62 Max	62 Max+
Temperature range	-30 °C to 500 °C (-22 °F to 932 °F)	-30 °C to 650 °C (-22 °F to 1202 °F)
Accuracy	± 1.5 °C or ± 1.5 % of reading ± 2.0 at -10 °C to 0 °C ± 3.0 at -30 °C to -10 °C	± 1. °C or ± 1.0 % of reading ± 2.0 at -10 °C to 0 °C ± 3.0 at -30 °C to -10 °C
Response time (95 %)	<500 ms (95 % of reading) Spectral Response: 8 to 14 microns Emissivity: 0.10 to 1.00	<300 ms (95 % of reading) Spectral Response: 8 to 14 microns Emissivity: 0.10 to 1.00
Optical resolution	10:1 (calculated at 90 % energy)	12:1 (calculated at 90 % energy)
Display resolution	0.1 °C (0.2 °F)	0.1 °C (0.2 °F)
Repeatability of readings	± 0.8 % of reading or <± 1.0 °C (2 °F), whichever is greater	± 0.5 % of reading or <± 0.5 °C (1 °F), whichever is greater
Power	AA battery	AA battery

➔ Learn more: www.fluke.co.uk/62max

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FLUKE®

TAKES THE HEAT.

AND THE DUST, WATER AND 3-METER DROP.

Introducing the new 62 Max IR Thermometers from Fluke.





Introducing the Fluke 62 MAX and 62 MAX+ IR Thermometers: Small in size. Big on toughness.

Why IR Thermometers?

Temperature is often the first indication of potential problems in electrical and mechanical applications. But how can you easily determine if an electrical panel has a hot spot, a motor is overheating or an HVAC system is inefficient? The answer is with an infrared (IR) thermometer. With handheld, non-contact IR thermometers, you can instantly measure equipment temperatures in hard-to-reach or hazardous areas. And with early detection of abnormal temperatures comes early correction of problems.

Why Fluke 62 MAX and Fluke 62 MAX+?

Designed with your on-the-job needs in mind, the new Fluke 62 MAX and 62 MAX+ infrared thermometers are everything you'd expect from the experts in measurement tools: small in size, extremely accurate and very easy to use. IP54 rated for dust and water resistance. Precise yet rugged enough to take a 3-meter drop. In fact, the 62 MAX and 62 MAX+ are so tough, they're the only IR thermometers around you can handle without care.

Dust and water-resistant: IP54 rated for dust and water resistance.

Rugged: 3-meter (9.8-foot) drop tested.

Ergonomically designed: Completely redesigned for a more comfortable hand fit

Small in size: Small and lightweight; clips to your tool belt or belt loop or easily fits into your tool box.

Distance to spot: Precise laser technology makes for more accurate and repeatable measurements.

Dual lasers: The 62 MAX+ has dual rotating lasers to help you identify area to be measured. The measurement area is the spot between the dots.

Large, backlit display: Large screen makes data easier to read, even in dark areas.

Min/Max/Avg/Dif: Displays the minimum, maximum or average temperature, or the difference between two measurements.

Alarm: Hi and Lo alarms for rapid display of measurements outside the limits.

Power: Both the 62 MAX and 62 MAX+ are powered by a single, standard AA battery.



Learn more: www.fluke.co.uk/62max