



## Features

- Measures currents from 20  $\mu$ A to 10 A without circuit interruption
- AC and DC modes
- Precision offset capability
- Optional magnetometer probes

## Applications

- Measurement of current in high-voltage applications
- Measurement of small AC or DC current changes superimposed on a steady current up to 10 A
- Measurement of power supply current and ripple
- Measurement of magnetic fields from 1  $\mu$ G to 10 G (with optional magnetometer probe)



The Model 428D Clip-on AC/DC Milliammeter measures current without the need for breaking the circuit. The probe can be clipped onto wires up to 0.160" diameter; system accuracy is not affected by wire size. Four full-scale pushbutton selectable ranges are available:

- 10 mA
- 100 mA
- 1 Amp
- 10 Amp

On the most sensitive range, currents down to 20  $\mu$ A can be measured. A precision full-scale DC offset capability is included, enabling the measurement of small AC or DC current changes in the presence of a DC current up to 10A.

System output is monitored at a front panel BNC connector, which enables measurement of signals over a wide bandwidth of 0 to 600 HZ in the DC mode and 20 to 600 Hz in the AC mode.

The Model 428D console features a bright 4½-digit LED display and is compatible with Hewlett Packard 428A and 428B clip-on current probes and magnetometer probes.

## Magnetometer Probes

Three magnetic field measuring probes are available as system options:

- One probe enables transverse field measurement
- Two probes enable axial field measurements

When using these probes, the four fullscale ranges correspond to 10 mG, 100 mG, 1 G and 10 G. The system noise level with the magnetometer probes is 10-6 G rms/Hz  $\frac{1}{2}$ .

# Model 428D

Clip-on AC/DC Milliammeter



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Systems

PHYSICAL	
Width	8.5" (215.9 mm)
Length	14.5" (368.3 mm)
Height	3.75" (95.25 mm)
Weight	8.5 lbs
Display	4 ½ digit LED, single indicator LEDs for function selected

ELECTRICAL	
Power	110-120V, 60Hz, 1 Amp or 208-220V, 50-60Hz, 1 Amp
Output	Front panel BNC connector $\pm 10$ V for full-scale reading; BNC output impedance = 2K ohm
Frequency Response Range	10 Amp: DC to 500 Hz @ -3dB 1 Amp: DC to 500 Hz @ -3dB 100 mAmp: DC to 500 Hz @ -3dB 10 mAmp: DC to 200 Hz @ -3dB

ENVIRONMENTAL	
Offset	Coarse: $\pm 10$ Amp Fine: $\pm 1$ Amp Zero: $\pm 100$ mA
Full Scale Ranges Current Probe	DC: 10A, 1A, 100mA, and 10mA, all full-scale pushbutton selectable AC: 7.07A, 0.707A, 70.7mA, and 7.07mA, all RMS full-scale selectable
Full Scale Ranges Magnetometer Probe	DC: 10G, 1G, 100mG, and 10mG, all full-scale pushbutton selectable AC: 7.07G, 0.707G, 70.7mG, and 7.07mG, all full-scale pushbutton selectable
DC Accuracy	$\pm 1\%$ of reading $\pm 4$ counts
AC Accuracy	$\pm 1\%$ of reading @ 60 Hz for all ranges except 10 mA $\pm 5\%$ of reading @ 60 Hz for 10 mA range

Specifications within this document are subject to change without notice.

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