



Applied Physics
Systems

Model 428P

Portable Clip-on Milliammeter

Features

- Battery operated
- Measures currents from 20 μ A to 2 A without circuit interruption
- AC and DC modes
- Rugged, water-resistant case
- Optional magnetometer probes

Applications

- Measurement of current in general-purpose electronic applications
- Measurement of current in sensitive applications where wires cannot be cut
- Measurement of power supply current and ripple magnetic fields from 1 μ G to 2 G (with optional magnetometer probe)



The Model 428P Portable Clip-on Milliammeter System is an accurate, sensitive ammeter designed to measure small currents without breaking or interrupting the current flow in a circuit. The current probe can be clipped onto wires up to 0.160" diameter; system accuracy is not affected by wire size.

Three full scale AC and DC ranges are available: 20mA, 200mA and 2 Amp. These ranges may be selected manually or by an autorange mode. On the most sensitive range, currents down to 20 μ A can be measured. The inclusion of an autozero option eliminates the need to manually zero the meter.

The Model 581S Control/Display Console contains the system power supplies. It also contains two displays; a 4½ digit digital display and a fast 20 element LED bargraph display.

The Model 428P measures current flow in a wire by sensing the magnetic field surrounding the wire. The measured current is displayed on a 3½-digit liquid crystal display (LCD). For nighttime viewing, a backlight for the LCD display can be turned on. Battery operation capability, water resistant design and rugged construction make the Model 428P ideal for field applications.

Magnetometer Probe

An axial magnetometer probe is available as a system option, enabling measurement of magnetic fields from 1 μ G to 2G. When using this probe, the three full scale ranges correspond to 20mG, 200mG and 2G. The system noise level with the magnetometer probe is 10-6 G rms/root Hz.

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PHYSICAL	
Width/Thickness	4.5" (114.3 mm) x 1.375" (34.925 mm)
Height	8.5" (215.9 mm)
Weight	1.35 pounds, including probe and batteries
Probe Cable Length	Current Probe: 4" (101.6 mm) Magnetometer Probe: 5" (127 mm)
Packaging	Plastic casing, Water-resistant meter

ELECTRICAL	
DC Frequency Response	Low pass — DC to 600 Hz @ -3dB
AC Frequency Response	Bandpass — 20 Hz @ -3db to 600 Hz @ -3db
Calibration Current	Calibration current of 10mA DC $\pm 3\%$ is provided in the Current Calibrator Loop located on the top of the case and activated by pushbutton.
Battery Life	Approximately 12 hours continuous use

ENVIRONMENTAL	
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-25°C to 55°C (-13°F to 131°F)
Full Scale Ranges Current Probe	DC: 2A, 200mA, 20mA full scale manually selectable or autorange AC: 2A, 200mA, 20mA RMS full scale manually selectable or autorange
Full Scale Ranges Magnetometer Probe	DC: 2G, 200mG and 20mG full scale pushbutton selectable or autorange AC: 2G, 200mG, 20mG RMS full scale manually selectable or autorange
DC Accuracy	$\pm 1\%$ of reading ± 4 counts
AC Accuracy	$\pm 1\%$ of reading @ 60 Hz for all ranges

Specifications within this document are subject to change without notice.

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