SECTION I

GENERAL INFORMATION

1-1. INTRODUCTION

1-2. The -hp- Model 428B Clip-On DC Milliammeter measures the magnetic field which exists around a wire carrying dc current. Operating the instrument is simple. After zero setting, the two jaws of the probe are clamped around the wire (arrow on probe head indicates direction of conventional current flow) and the meter will indicate the current.

1-3. There are nine current ranges from 1 mA to 10 amp full-scale deflection. The sensitivity can be increased even further by looping the wire several times through the opening in the probe. The current indication is virtually insensitive to superimposed ac signals and the series loading of the circuit is less than 0.5μH. A large amount of feedback provides great stability.

1-4. OTHER PROBE HEADS

1-5. Other probe heads are available to extend the usefulness of your Clip-On DC Milliammeter. Write to the nearest Sales and Service Office (listed in Appendix C) for further information. At the time of publication of this manual, the following accessory probe heads were available:

a. -hp- Model 3529A Magnetometer Probe (1 gauss = 1 amp).

b. -hp- Model 3529A Option C11 Magnetometer Probe (1 gauss = 1 mA).

1-6. Write to the nearest Sales and Service Office (listed in Appendix C) stating your complete requirements for information concerning special applications.

1-7. INSTRUMENT AND MANUAL IDENTIFICATION

1-8. Hewlett-Packard uses a two-section serial number. If the first section (serial prefix) of the serial number on your instrument does not agree with those on the title page of this manual, change sheets supplied with the manual will define the differences between your instrument and the Model 428B described in this manual. Some serial numbers may have a letter separating the two sections of the number. This letter indicates the country in which the instrument was manufactured.

1-9. An additional Operating and Service Manual may be ordered as Option 910.

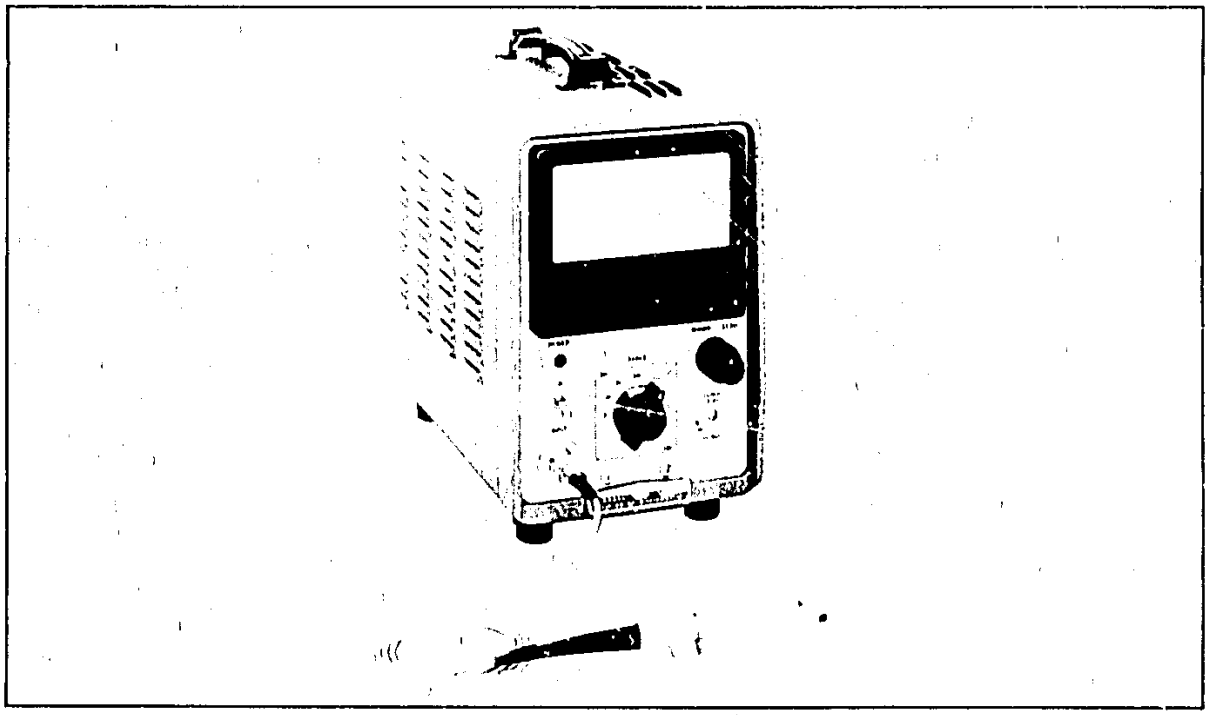


Figure 1-1. Model 428B Clip-On DC Milliammeter

428B SPECIFICATIONS
Table 1-1.

Current Range:
1 mA to 10 A full scale, nine ranges

Accuracy:
± 3% of full scale ± 0.15 mA, from 0°C to 55°C. (When instrument is calibrated to probe).

Probe Inductance:
Less than 0.5 μH.

Probe Induced Voltage:
Less than 15 mV peak (worst case at 20 kHz and harmonics).

Output:
Variable linear output level with switch position for calibrated 1V into open circuit (corresponds to full scale deflection).
1.5 V Max. into open circuit in uncalibrated position.
0.73 ± .01V into 1KΩ in calibrated position.

Noise:
1 mA Range, < 15 mV rms across 1 kΩ.
3 mA Range, < 5 mV rms across 1 kΩ.
10 mA thru 10 A Ranges, < 2 mV rms across 1 kΩ.

Frequency Range:
DC to 400 Hz (3 dB point).

AC Rejection:
Signals above 5 Hz with peak value less than full scale affect meter accuracy less than 2%. (Except at 40 kHz carrier frequency and its harmonics). On the 10 A range, ac peak value is limited to 4 A.

Probe Insulation:
300 V Max.

AC Power:
115 or 230 V ± 10%, 48 to 440 Hz, 71 W.

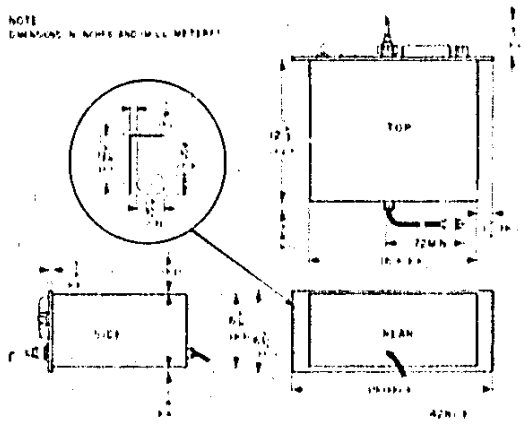
Operating Temperature:
-20°C to +55°C.

Weight:
Rack Mount
Instrument weight: 18 3/4 lbs. (8.5 kg)
Shipping weight: 30 lbs. 13.6 kg)
Cabinet Mount
Instrument weight: 16 5/8 lbs. (7.5 kg)
Shipping weight: 19 lbs. (8.6 kg)

Accessories Available:

hp Model 3529A	Magnetometer/Probe
hp Model 11035A	Output Cable
hp Model 10110A	Output Adapter

Dimensions:
Rack Mount
Note
Dimensions in inches and (millimeters)



Cabinet Mount:
7½" wide, 11½" high, 14½" deep (190.5 x 292.1 x 368.3 mm).

Probe Tip