

HEWLETT  PACKARD

CURRENT PROBE

MODEL 1110A

OPERATING NOTE/NOVEMBER 1974

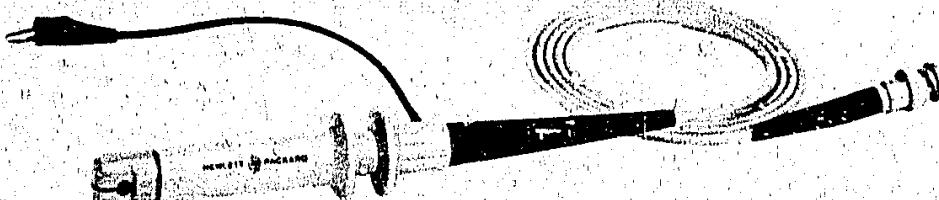


Figure 1. Model 1110A Current Probe

SECTION I GENERAL INFORMATION

1. INTRODUCTION.

2. The Hewlett-Packard Model 1110A Current Probe is a clip-on probe which produces a voltage output proportional to the current flowing through the probe jaws. It is designed to be used with an oscilloscope or AC voltmeter over the 1700 cps to 50 megacycle range. It may be used to measure fast current pulses or high frequency alternating current in any application where the probe can be clipped over a current-carrying conductor. Typical applications include: measuring base or collector current waveforms in a switching transistor, leakage currents in ground leads, or plate current in a class C RF amplifier.

3. INSTRUMENTS.

4. Table 2 lists the hp instruments with which the Model 1110A may be used. The frequency range shown in the table is limited by the instrument bandwidth. The probe bandwidth is shown in Table 1. To use the Model 10100B Termination, connect the probe to the termination and then the termination to the instrument. If the instrument has a binding post input, use a BNC-to-binding post adapter such as the hp Model 1011A.

5. AMPLIFIER.

6. The hp Model 1111A Current Amplifier is designed specifically for use with the Model 1110A. The amplifier extends the probe's usefulness to 50 cps and provides calibrated control of sensitivity.

7. OPTION C06.

8. Model 1110A, Option C06 is a standard Model 1110A in which the 5-foot probe cable has been replaced

Table 1. Specifications

SENSITIVITY:

Without 100-ohm termination: 1 mv/ma
With 100-ohm termination: 0.5 mv/ma

ACCURACY: $\pm 3\%$

BANDWIDTH:

Lower -3 db point
Without 100-ohm termination: 1700 cps
With 100-ohm termination: 850 cps

Upper -3 db point

With 4 pf capacitive load: greater than 45 Mc
With 30 pf capacitive load: 35 Mc

RISE TIME:

With 4 pf capacitive load: 7 nsec
With 30 pf capacitive load: 9 nsec

INSERTION IMPEDANCE:

Approximately 0.01 ohm shunted by 1 μ H;
capacitance to ground less than 3 pf.

MAXIMUM DC CURRENT:

0.5 ampere

MAXIMUM AC CURRENT:

15 amperes p-p above 4 kc; decreasing below
4 kc at 3.8 amps/kc rate.

30 amperes p-p with 100-ohm termination

DIMENSIONS:

Probe aperture 5/32 in. diameter, 5 ft cable

01110-90903

For more information, call the local HP Sales Office or East (201) 265-5000, Midwest (312) 677-0420, South (404) 439-6131 West (213) 877-1282, Or, write: Hewlett-Packard, 1501 Page Mill Road, Palo Alto, California 94304. In Europe, Cable "HEWPACKSA" Tel (0227) 47.54.30 or write Hewlett-Packard, 1217 Meyrin-Geneva, Switzerland.