SECTION 2
OPERATING INSTRUCTIONS

General

The P6022 Current Probe, when used with a P6022 Termination and an oscilloscope, provides a means of measuring alternating current waveforms. To effectively use the P6022, the operation and capabilities of the probe should be known. This section gives first-time and general operating information and some basic applications for the probe.

Installation

When the P6022 Current Probe is used with the Termination, an oscilloscope having a vertical amplifier input impedance of one megohm is required. The probe and termination contain adjustments to optimize performance, matching the input characteristics of the vertical amplifier. To use the probe, first connect the P6022 Termination to the vertical input of the oscilloscope. Then connect the P6022 Current Probe to the termination (see Fig. 2-1).

Sensitivity Control

The P6022 Termination has a slide switch which changes the sensitivity of the probe and termination by a factor of ten. With the switch in the 1 mA/mV position, a current change of one milliampere in the conductor under test is seen as a change of one millivolt at the vertical input. In the 10 mA/mV position, a change of ten milliamperes produces one millivolt at the vertical input. The oscilloscope deflection factor may be set to any position, depending upon the amplitude of the signal. The overall deflection factor including the probe and termination may be found quickly by multiplying the slide switch position by the oscilloscope deflection factor. The following is an example:

Termination switch setting	10 mA/mV
Volts/div switch setting	20 mV/div

$$\frac{10\ \text{mA}}{\text{mV}} \times \frac{20\ \text{mV}}{\text{div}} = \frac{200\ \text{mA}}{\text{div}}$$

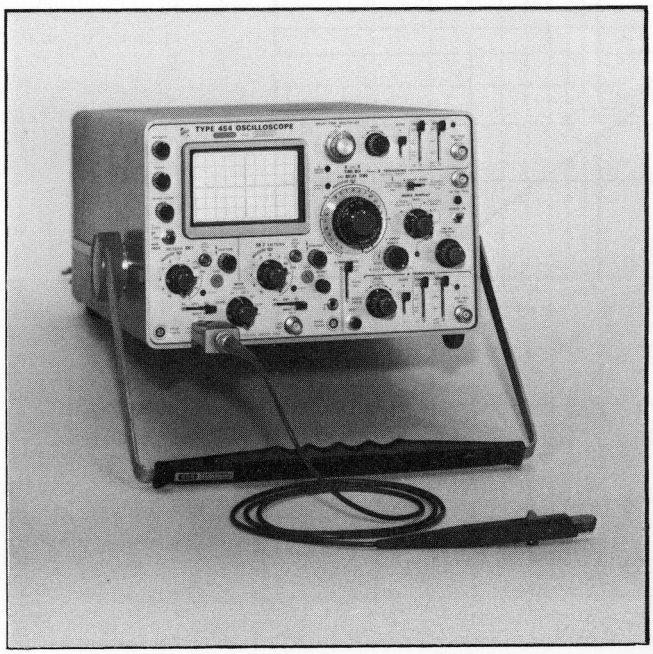

Fig. 2-1. The P6022 Current Probe and Termination connected to the oscilloscope.

Probe Slider

The thumb-controlled probe slider opens the transformer core located in the end of the probe and closes it around the conductor under test. The conductor under test becomes the primary of the transformer when the core is closed. When measurements are being made, the slider should always be pushed all the way forward, as this applies pressure to the movable portion of the transformer core, assuring complete contact to the stationary portion of the transformer core.

GENERAL OPERATING INFORMATION

Ground Clip Leads

Ground clip leads are furnished with the probe to ground the shield around the probe transformer at the probe end of the cable when desired. When observing high frequency waveforms, use the short ground clip lead to avoid ringing.

Direction of Current Flow

Direction of conventional current flow, as opposed to electron flow, is plus to minus. Conventional current flowing in the direction of the arrow on the probe produces a positive deflection of the waveform on the CRT (see Fig. 2-2).

Loading Effect

To minimize loading effect of critical circuits, wherever possible clamp the probe at the low or ground end of a

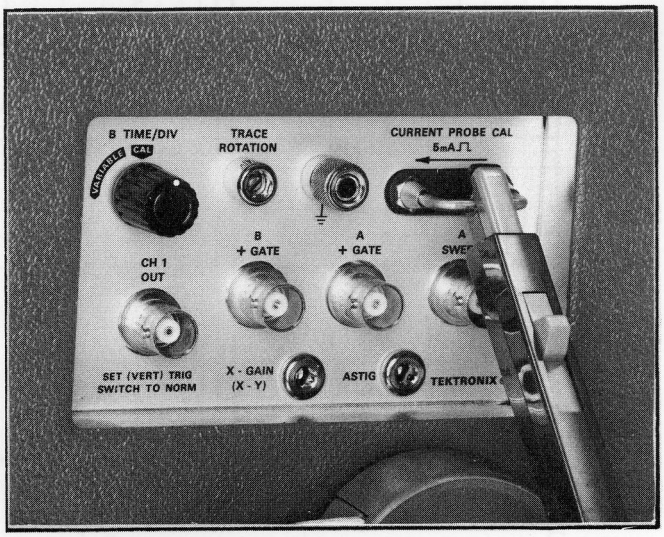

Fig. 2-2 Current flow in a conductor.