DESCRIPTION AND USE ELECTRO-METRICS MODEL PCL-30 CURRENT PROBE

1.0 Introduction

The PCL-30 Current Probe enables a conventional voltmeter, oscilloscope, calibrated receiver (e.g., an interference analyzer), or other electronic instrumentation to rapidly measure current accurately from 9 kHz to 110 MHz. The measurement of conducted current is performed without a direct connection to the circuit under test, with the probe clamped around the conductor, current carrying wire, or structural member being tested.

The PCL-30 Current Probe consists of two hinged semicircles capable of placement around conductors with diameters up to and including 25.4 mm (one-inch). The output of the probe is connected to the input of the detection system through a 50-ohm cable (CAC-30). The response of the probe is proportional both to signal frequency and conducted signal current. The graph expressing this relationship is shown in Figure 3.

9 kHz-110 MHz

 50Ω , nominal.

TNC, female.

2.0 Specifications

2.1 Electrical

Frequency Range:	9 kHz-110
(Probe Factor Chart furnished with each probe.)	
Impedance:	50Ω , nomi

2.2	Mechanical
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Output Connector:

Outside Diameter:	73 mm (2.875").
Thickness:	32 mm (1.25").
Weight:	454 g (1 lb).

3.0 Theory Of Operation

3.1 Introduction

The PCL-30 Current Probe is an instrument type transformer that utilizes the conductor under test as a single turn primary winding with the probe, clamped around the conductor, as the secondary.

In order to minimize the effects of stray fields, the outside case of the probe is specially constructed to form an electrostatic shield.