



INSTRUCTION MANUAL

LOOP ANTENNA

MODEL ALP-51L

30 Hz – 1 MHz

INSTRUCTION MANUAL

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30 Hz – 1 MHz

ELECTRO-METRICS

MODEL ALP-51L

SERIAL NO: N/A

ELECTRO-METRICS CORPORATION

231 Enterprise Road, Johnstown, New York 12095
Phone: (518) 762-2600 Fax: (518) 762-2812

EMAIL: info@emihq.com

WEB: <http://www.electro-metrics.com>

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WARRANTY

This Model ALP-51L Loop Antenna is warranted for a period of 12 months (USA only) from date of shipment against defective materials and workmanship. This warranty is limited to the repair of or replacement of defective parts and is void if unauthorized repair or modification is attempted. Repairs for damage due to misuse or abnormal operating conditions will be performed at the factory and will be billed at our commercial hourly rates. Our estimate will be provided before the work is started.

DESCRIPTION AND USE ELECTRO-METRICS ALP-51L LOOP ANTENNA

1.0 Description

The ALP-51L Loop Antenna is designed to obtain magnetic field measurements from 30 Hz to 1.0 MHz. The antenna is suited for use in compliance testing to REO1 of MIL-STD-461B, REO4 of MIL-STD-461A, CISPR recommendations, satisfy the requirements of NACSIM 5100A for magnetic field measurements, plus other government and federal standards.

Though designed for use with the NTR-51C and several other Electro-Metrics instruments, this antenna can be used with any 50Ω instrument since it is designed and calibrated for use in a 50Ω system. The antenna has a balanced faraday shield that reduces its response to electric fields to a vanishingly small amount so that it can produce practically pure magnetic field measurements.

The antenna is designed to work into a 50Ω system and the calibration chart is based on this use. The calibration chart gives values of antenna factor for finding magnetic field strength H.

NOTE: The calibration chart for the ALP-51L starts at 30 Hz. However, the antenna can be used below this frequency since the curve is monotonic at 6 dB/Octave below 30 Hz.

To find the field strength H in dB(μ A/m), add the factor in dB(S/m) to the measured two-terminal input voltage on the 50Ω instrument in dB(μ V).

To find the flux density B in dB(pT), add 2 dB to the field strength H reading.

The ALP-51L Loop Antenna is, electrically, a magnetic dipole and thus having a dipole pattern must be oriented for best sensitivity.

The bottom of the base has a 5/8-11 threaded receptacle for mounting to the Model TRI-136 Tripod. This allows the loop antenna to be mounted either vertically or horizontally with respect to a horizontal plane.

2.0 Specifications

2.1 Electrical

Frequency Range (calibrated): 30 Hz-1 MHz

(Refer to Figure 1 for Antenna Factor Chart)

Shielded from electric fields

Impedance: Calibrated for use into 50Ω.

Output Connector: BNC.

2.2 Mechanical

Outside Diameter: 533 mm (21").

Height: 610 mm (24").

Weight: 0.7 kg (1.5 lbs).

FIGURE 1
ALP-51L ANTENNA FACTOR CHART
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