

# AC Current Probe Model MN124

## User Manual

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### DESCRIPTION

The MN124 (Catalog #2129.13) is a high accuracy current probe for tight areas such as crowded wiring. Extends DMM AC measurements to 100AAC. The Model MN124 offers a 5 ft lead with safety 4mm banana plug.

### WARNING

These safety warnings are provided to ensure the safety of personnel and proper operation of the instrument.

- Read the instruction manual completely and follow all the safety information before attempting to use or service this instrument.
- Use caution on any circuit: Potentially high voltages and currents may be present and may pose a shock hazard.
- Read the Safety Specifications section prior to using the current probe. Never exceed the maximum voltage ratings given.
- Safety is the responsibility of the operator.
- ALWAYS connect the current probe to the display device before clamping the probe onto the sample being tested.
- ALWAYS inspect the instrument, probe, probe cable, and output terminals prior to use. Replace any defective parts immediately.
- NEVER use the current probe on electrical conductors rated above 300V in overvoltage category III (CAT III). Use only on insulated conductors.

### INTERNATIONAL ELECTRICAL SYMBOLS



This symbol signifies that the current probe is protected by double or reinforced insulation. Use only factory specified replacement parts when servicing the instrument.



This symbol signifies CAUTION! and requests that the user refer to the user manual before using the instrument.



This is a type B current sensor. Do not apply around or remove from HAZARDOUS LIVE conductors without additional protective means (de-energizing the circuit or wearing protective clothing suitable for high voltage work).



In conformity with WEEE 2002/96/EC

### RECEIVING YOUR SHIPMENT

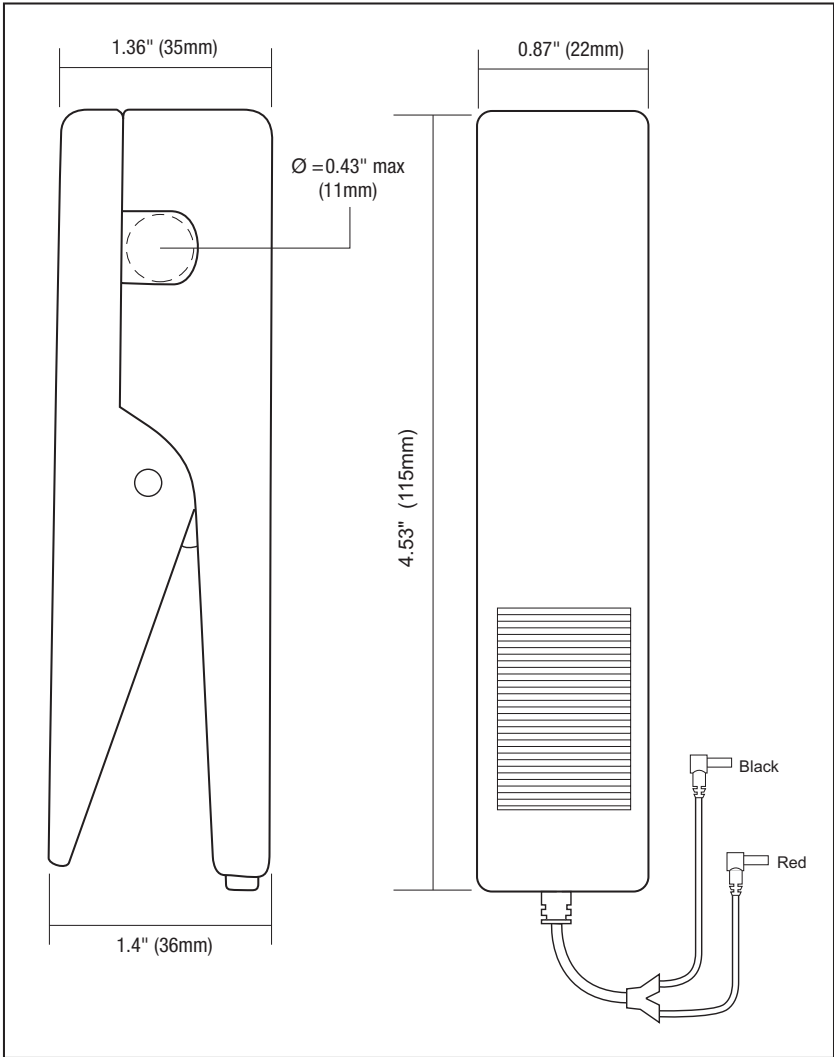
Upon receiving your shipment, make sure that the contents are consistent with the packing list. Notify your distributor of any missing items. If the equipment appears to be damaged, file a claim immediately with the carrier and notify your distributor at once, giving a detailed description of any damage.

### PACKAGING

The AC Current Probe MN124 is shipped with this instruction manual and a product warranty and registration card.

### INSTRUMENT COMPATIBILITY

The Model MN124 is compatible with any voltmeter, multimeter, or other current measuring instruments with an input impedance of less than  $>1M\Omega$ . To achieve the stated accuracy, use the MN124 with a voltmeter having an accuracy of 0.75% or better. The accuracy of the meter must be added to the probe accuracy.



## **ELECTRICAL SPECIFICATIONS**

**Current Range:** 1A to 100AAC, continuous

**Output Signal:** 1mVAC/AAC (100mV @ 100A)

**Accuracy \*:**

1 to 100A: 2% ± 0.5mV  
(with non inductive load)

**Phase Shift:** N/A

(\*Reference conditions: 23°C ± 3°K, 20 to 70% RH, external magnetic field < 40 A/m, 50 to 60Hz sine wave, no DC component, no external current carrying conductor, test sample centered.) Load impedance 1MΩ.

**Overload:**

150A continuously


**Frequency Range:**

45 to 65Hz

**Load Impedance:**

1MΩ

**Working Voltage:**

300V on insulated conductor 

**Common Mode Voltage:**

100VAC Cat. III

## **MECHANICAL SPECIFICATIONS**

**Operating Temperature:**

-13° to 122°F (-25° to 50°C)

**Storage Temperature:**

-40° to 176°F (-40° to 80°C)

**Maximum Cable Diameter:**

0.43" Ø max. (11mm)

**Dimensions:**

1.4 x 4.53 x 0.87"  
(36 x 115 x 22mm)

**Weight:**

160 g (6 oz)

**Colors:**

Dark gray handles with red cover

**Polycarbonate Material:**

Handle: 10% Fiberglass charged polycarbonate  
UL 94 V0

**Output:**

Double/reinforced insulated 5 ft (1.5 m) lead with  
safety 4mm banana plug

## **SAFETY SPECIFICATIONS**



**Electrical:**

300V working voltage on insulated conductor  
100V max common mode between output and  
ground, Cat. III  
3kV 50/60Hz dielectric for 1mn

## **ORDERING INFORMATION**

**AC Current Probe MN124..... Cat #2129.13**

**Accessories:**

Banana plug adapter  
(to non-recessed plug) ..... **Cat #1017.45**

## OPERATION

### Making Measurements with the AC Current Probe Model MN124

- Connect the black (S2) and red (S1) terminals to the 200mV range of your DMM or instrument. The MN124 has a ratio of 1:1. This means that for 100AAC in the conductor around which the probe is clamped, 100mVAC will come out of the probe leads to your DMM or instrument. The output is 1mVAC per Amp. Clamp the probe around the conductor. (e.g., 59mV = 59A)
- For best accuracy, avoid if possible, the proximity of other conductors which may create noise.

### Tips for Making Precise Measurements

- When using a current probe with a meter, it is important to select the range that provides the best resolution. Failure to do this may result in measurement errors.
- Make sure that probe jaw mating surfaces are free of dust and contamination. Contaminants cause air gaps between the jaws, increasing the phase shift between primary and secondary. It is very critical for power measurement.

## MAINTENANCE:

### Warning

- For maintenance use only original factory replacement parts.
- To avoid electrical shock, do not attempt to perform any servicing unless you are qualified to do so.
- To avoid electrical shock and/or damage to the instrument, do not get water or other foreign agents into the probe.

### Cleaning

To ensure optimum performance, it is important to keep the probe jaw mating surfaces clean at all times. Failure to do so may result in error in readings. To clean the probe jaws, use very fine sand paper (fine 600) to avoid scratching the jaw, then gently clean with a soft oiled cloth.

## REPAIR AND CALIBRATION

You must contact our Service Center for a Customer Service Authorization number (CSA#). This will ensure that when your instrument arrives, it will be tracked and processed promptly. Please write the CSA# on the outside of the shipping container. If the instrument is returned for calibration, we need to know if you want a standard calibration, or a calibration traceable to N.I.S.T. (includes calibration certificate plus recorded calibration data).

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(603) 749-6434 (Ext. 360)  
Fax: (603) 742-2346 or (603) 749-6309  
repair@aemc.com

(Or contact your authorized distributor)

Costs for repair, standard calibration, and calibration traceable to N.I.S.T. are available.

**NOTE: All customers must obtain a CSA# before returning any instrument.**

## TECHNICAL AND SALES ASSISTANCE

If you are experiencing any technical problems, or require any assistance with the proper use or application of this instrument, please call our technical hotline:

(800) 343-1391 • (508) 698-2115 • Fax (508) 698-2118  
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