



## **INSTRUMENT S MN106 AC Current Probe**



# **AEMC INSTRUMENTS MN106 AC Current Probe User Manual**

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## **AEMC INSTRUMENTS MN106 AC Current Probe**



## Product Information

### Specifications

- **Current Range:** 2 to 150 AAC
- **Transformation Ratio:** 1000:1
- **Output Signal:** 1 mA AC/AAC (150 mA @ 150 A)

### Product Usage Instructions

#### Operation

To make measurements with the AC Current Probe Model MN106, refer to the following table:

Meter Reading	Measured Value
5 mA	5000 mA = 5A
20 mA	20000 mA = 20 A
100 mA	100000 mA = 100 A

#### Tips for Making Precise Measurements:

Ensure proper contact and alignment of the probe jaws with the conductor for accurate readings.

**Warning:** Keep the probe jaw mating surfaces clean at all times to avoid errors in readings. Use fine sandpaper (600) followed by a soft oiled cloth for cleaning.

#### Repair and Calibration

Contact the Service Center for a Customer Service Authorization number (CSA#) for repair and calibration. Write the CSA# on the shipping container before sending the instrument.

#### Technical and Sales Assistance

If you need technical assistance or guidance on using the instrument, contact the technical hotline. Warranty coverage and product registration information are available on the website.

### FAQ

• **Q: What is the current range of the AC Current Probe Model MN106?**

A: The current range of the probe is from 2 to 150 AAC.

• **Q: How should I clean the probe jaws?**

A: Clean the probe jaws using fine sandpaper (600) and a soft oiled cloth to maintain optimum performance.

• **Q: What should I do if I experience technical issues with the instrument?**

A: Contact the technical hotline for assistance with technical problems or proper usage of the instrument.

### DESCRIPTION




The Model MN106 (Catalog #1031.17) is a high-accuracy current output current probes for tight areas such as crowded wiring. It extends DMM AC measurements to 150 AAC. The Model MN106 offers a 5 ft lead with safety 4 mm 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 600V. Use extreme caution when clamping around bare conductors or bus bars.

## 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 A current sensor. This symbol signifies that application around and removal from HAZARDOUS LIVE conductors is permitted.

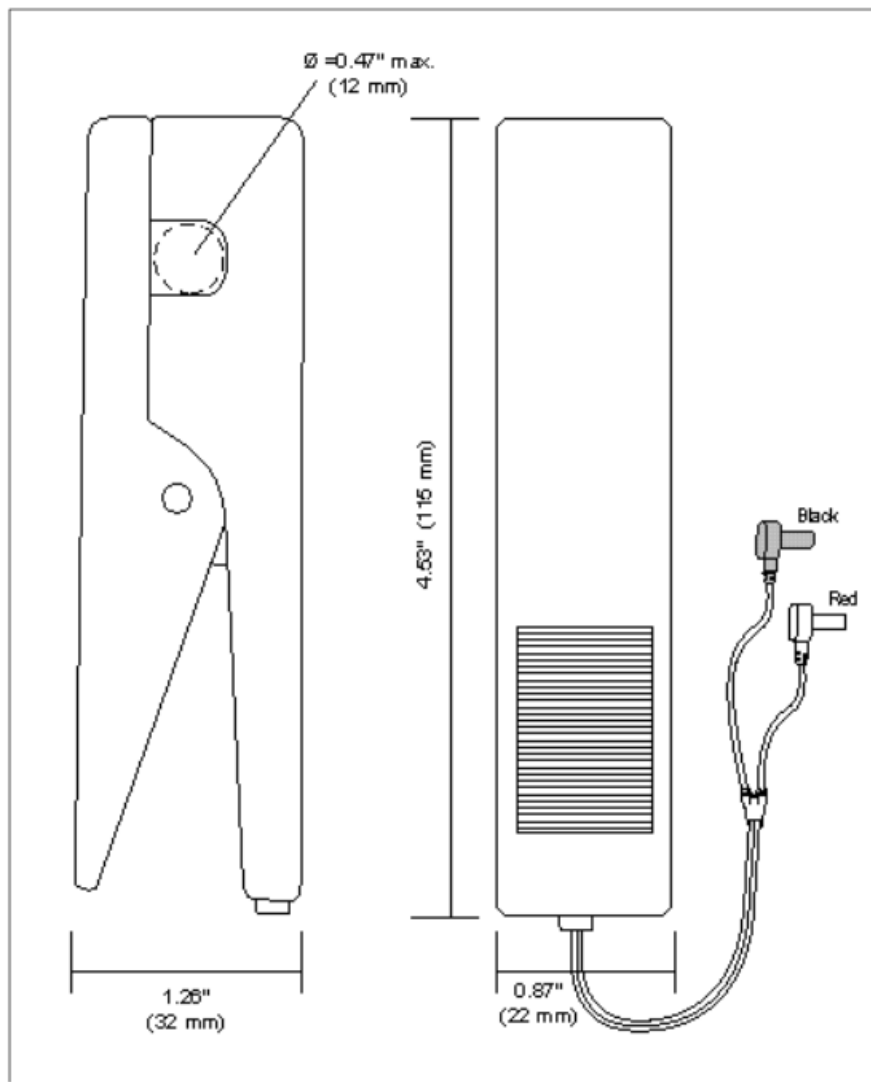
## RECEIVING YOUR SHIPMENT

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.

## INSTRUMENT COMPATIBILITY

The probe is compatible with any ammeter, multimeter, or other current measuring instruments with an input impedance of  $\leq 5 \Omega$ . To achieve the stated accuracy, use the probes with an ammeter having an accuracy of 1 % or better.

## DIMENSION



## SPECIFICATIONS

### ELECTRICAL SPECIFICATIONS

- **Current Range:**  
(2 to 150) AAC
- **Transformation Ratio:**  
1000:1
- **Output Signal:**  
1 mA AC/AAC (150 mA @ 150 A)
- **Accuracy and Phase Shift\*:**  
\*Reference conditions: 23 °C  $\pm$ 3 °K, 20 to 85 % RH, (48 to 65) Hz, external magnetic field <40 A/m, no DC component, no external current carrying conductor, test sample centered. Load impedance 1  $\Omega$ .
- **Accuracy:**
  - (48 to 65) Hz  $\pm$  2.5 % Reading  $\pm$  0.15 A
  - (65 to 1000) Hz  $\pm$  4.5 % Reading  $\pm$  0.15 A
- **Phase shift:**  
 $\leq 10^\circ$  from (2 to 120) A, (50 to 60) Hz
- **Overload:**  
170 A continuous

- **Frequency Range:**  
(45 to 1000) Hz
- **Load Impedance:**  
5Ω max non-inductive
- **Working Voltage:**  
250 VAC
- **Common Mode Voltage:**  
30 VAC

## MECHANICAL SPECIFICATIONS

- **Operating Temperature:**  
(14 to 122) °F (-10 to 50) °C
- **Storage Temperature:**  
(-40 to 176) °F (-40 to 80) °C
- **Temperature Influence:**  
< 0.2 % per 10 °K
- **Maximum Conductor Size:**  
0.47 in Ø max. (12 mm)
- **Polycarbonate Material:**  
Handles: 10 % fiberglass charged UL94 V0
- **Dimensions:**  
1.26 x 4.5 x 0.87 in (32 x 115 x 22) mm
- **Weight:**  
5.6 oz (160 g)
- **Colors:**  
Gray handles with red cover
- **Output:**  
5 ft (1.5 m) lead with safety 4 mm banana plug

## SAFETY SPECIFICATIONS

- **Electrical:**
  - 30 V max common mode between output and ground
  - 3 kV 50/60 Hz dielectric for 1 mn

## ORDERING INFORMATION

- **Model MN106.....Cat. #1031.17**  
(Discontinued – Replacement is AC Current Probe Model MN01 Cat. #2129.17)
- **Accessories:**  
Banana plug adapter (to non-recessed plug).....Cat. #1017.45

## OPERATION

## Making Measurements with the AC Current Probe Model MN106:

- Connect the black lead of the current probe to common and the red lead to the AC current range on your DMM or other current measuring instrument. The MN106 has a ratio of 1000:1. This means that for 100 AAC in a conductor around which the probe is clamped, 100 mAAC will come out of the probe leads to your DMM or instrument. The output is 1 mAAC/AAC. Select the range on your DMM or instrument which best corresponds to the measured current. If the magnitude is unknown, start with the highest range first and work down until the appropriate range and resolution is reached.
- Clamp the probe around the conductor. Take the reading on the meter and multiply it by 1000 to obtain the measured current. (e.g, 59 mA reading:  $59 \times 1000 = 59,000 \text{ mA}$  or 59 A).

<b>Meter Reading</b>	5 mA	20 mA	100 mA
<b>Measured Value</b>	5000 mA = 5A	20000 mA = 20 A	100000 mA = 100 A

- 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.

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments  
15 Faraday Drive • Dover, NH 03820 USA [800-945-2362](tel:800-945-2362) (Ext. 360) • [603-749-6434](tel:603-749-6434) (Ext. 360) •  
[repair@aemc.com](mailto:repair@aemc.com)

(Or contact your authorized distributor)

**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 contact our technical hotline: [800-343-1391](tel:800-343-1391) • [508-698-2115](tel:508-698-2115) • [techsupport@aemc.com](mailto:techsupport@aemc.com)


## LIMITED WARRANTY

The current probe is warranted to the owner for a period of two years from the date of original purchase against defects in manufacture. This limited warranty is given by AEMC® Instruments, not by the distributor from whom it was purchased. This warranty is void if the unit has been tampered with, abused or if the defect is related to service not performed by AEMC® Instruments.

Full warranty coverage and product registration is available on our website at: [www.aemc.com/warranty.html](http://www.aemc.com/warranty.html).

Please print the online Warranty Coverage Information for your records.

## Documents / Resources

	<a href="#">AEMC INSTRUMENTS MN106 AC Current Probe</a> [pdf] User Manual MN106, MN106 AC Current Probe, AC Current Probe, Current Probe, Probe
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## References

- [🔗 AEMC Warranty Registration](#)
- [User Manual](#)

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