



**MN379T AC
Current Probe**



AEMC INSTRUMENTS MN379T AC Current Probe User Manual

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AEMC INSTRUMENTS MN379T AC Current Probe



Specifications

- **Model:** MN379T
- **Measurement Range:** Up to 120 ARMS
- **Output Resolution:** 10 mV per amp of measured current
- **Voltmeter Accuracy:** 0.5% or better
- **Input Impedance:** 1 M

Product Usage Instructions

Safety Precautions

Before using the AC Current Probe Model MN379T, ensure you read and understand all safety warnings provided in the user manual. Some key safety precautions include:

- Do not use the probe if damaged.
- Always connect the current probe to the measuring device before it is connected around the conductor.
- Avoid using on non-insulated conductors with a potential to ground greater than 600 V CAT III pollution 2.
- Exercise extreme caution when clamping around bare conductors or bus bars.
- Inspect the probe for any signs of damage before each use.
- Avoid using the probe in wet environments or locations with hazardous gases.

International Electrical Symbols

The instrument is protected by double or reinforced insulation. Always refer to the user manual when the caution symbol is present.

Measurement Categories

Understanding the measurement categories is crucial for safe operation. The MN379T falls under CAT III and is suitable for measurements in building installations at the distribution level.

Receiving Your Shipment

Upon receiving your shipment, ensure that the contents match the packing list. Notify your distributor of any missing items and file a claim immediately if the equipment appears to be damaged.

FAQ

- **Q: What are the nominal and measurement ranges of the AC Current Probe MN379T?**
 - **A:** The nominal range is 5 A and 100 A, with measurement ranges of (0.005 to 6) A for 5 A and (0.1 to 120) A for 100 A.
- **Q: What are the transformation ratio and output signal of the probe?**
 - **A:** The transformation ratio is Voltage Output, with output signals of 200 mV/A for 5 A and 10 mV/A for 100 A.

DESCRIPTION

The MN379T (Cat. #2153.02) is the latest in compact AC current probes. Designed to meet the most stringent demands in industry and electrical contracting, it also meets the latest safety and performance standards. The probe has a measurement range up to 120 ARMS, a range and resolution capable of displaying 10 mV of output per amp of measured current, a voltmeter accuracy of 0.5 % or better to take full advantage of the accuracy of the probe and an input impedance of $\geq 1 \text{ M}\Omega$.

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.

- Safety warnings are provided to ensure the safety of personnel and proper operation of the instrument. Read the instructions completely.
- Use caution on any circuit: potentially high voltages and currents may be present and may pose a shock hazard.
- Do not use the probe if damaged. Always connect the current probe to the measuring device before it is connected around the conductor.
- Do not use on non-insulated conductors with a potential to ground greater than 600 V CAT III pollution 2. Use extreme caution when clamping around bare conductors or bus bars.
- Before each use, inspect the probe; look for cracks in housing or output cable insulation.
- Do not use clamp in wet environments or in locations where hazardous gases exist.
- Do not use the probe anywhere beyond the tactile barrier

INTERNATIONAL ELECTRICAL SYMBOLS



- Signifies that the instrument is protected by double or reinforced insulation.



- CAUTION – Risk of Danger! Indicates a WARNING. Whenever this symbol is present, the operator must refer to the user manual before operation.



- Application or withdrawal authorized on conductors carrying dangerous voltages. Type A current sensor as per IEC 61010-2-032.

DEFINITION OF MEASUREMENT CATEGORIES

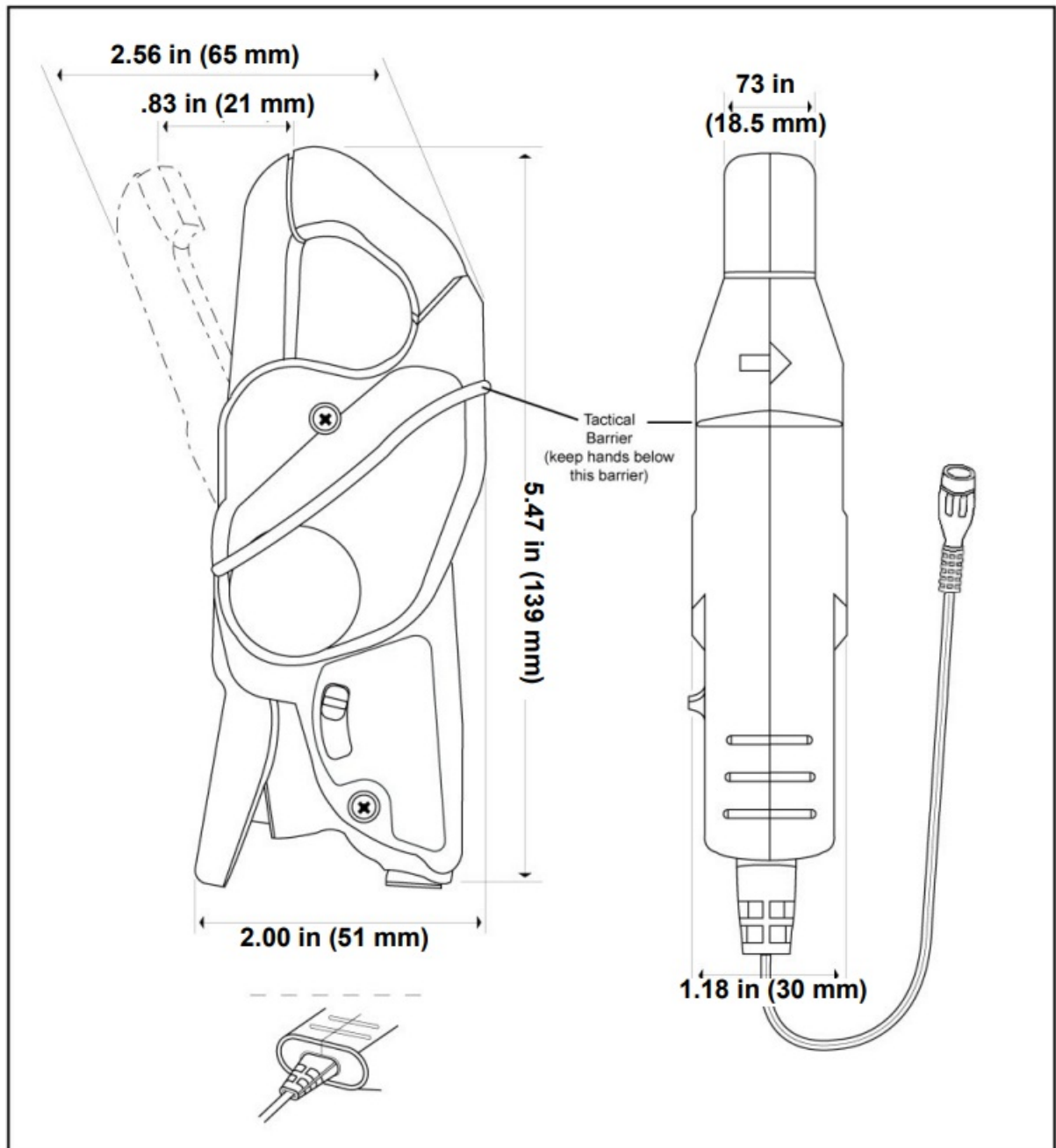
- CAT IV: Corresponds to measurements performed at the primary electrical supply (< 1000 V).
Example: primary overcurrent protection devices, ripple control units, and meters.
- CAT III: Corresponds to measurements performed in the building installation at the distribution level.
Example: hardwired equipment in fixed installation and circuit breakers.
- CAT II: Corresponds to measurements performed on circuits directly connected to the electrical distribution system.
Example: measurements on household appliances and portable tools.

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.

Dimension

AC CURRENT PROBE – MN379T



SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

- Nominal Range: 5 A, 100 A
- Measurement Range: 5 A: (0.005 to 6) A
- 100 A: (0.1 to 120) A
- Transformation Ratio: Voltage Output
- Output Signal: 5 A: 200 mV/A
- 100 A: 10 mV/A
- Accuracy and Phase Shift*:

5 A Range – Accuracy:

I _p	0.005 A	0.05 A	0.5 A	5 A
V _s %	1.5 % +0.02 mV	1.5 %	1 %	1 %
Phase	6.5 °	5 °	4.5 °	4 °

100 A Range – Accuracy:

I _p	0.1 A	1 A	10 A	100 A
V _s %	1 % +0.02 mV	1 %	1 %	1 %
Phase	3.2 °	2.2 °	2.2 °	2.2 °

*Reference conditions: (18 to 28) °C, (20 to 75) % RH, external magnetic field < 40 A/m, (48 to 65) Hz sine wave, distortion factor less than 1 %, no DC component, no external current carrying conductor, test sample centered. Load impedance > 1 MΩ

- Frequency Range: (40 to 10) kHz
- Limit Operating Conditions:
 - 200 A MAX to 1 kHz; Derating above 1 kHz:
 - 200 A x (1 *F), F in kHz
- Working Voltage: 600 VRMS
- Common Mode Voltage: 600 VRMS
- Influence of Adjacent Conductor: < 15 mA/A at 50 Hz
- Influence of DC on AC signal:
 - 5 A Range: DC Current < 1 A, < 3 %
 - 100 A Range: DC Current < 10 A, < 10 %
- Influence of Conductor Position in Jaw: 0.5 % of mV output @ 50/60 Hz
- Influence of Frequency:
 - 5 A Range:
 - 40 Hz to 1 kHz: < 0.7 % of mV output
 - 1 kHz to 3 kHz: < 2 % of mV output
 - 150 A Range:
 - 40 Hz to 1 kHz: <0.7 % of mV output
 - 1 kHz to 3 kHz: <0.7 % of mV output
- Influence of Temperature:
 - ≤ 200 ppm/°K, or 0.2 % of mV output per 10 °K
- Influence of Humidity (10 to 90) % RH:
 - ≤ 0.2 % of mV output per 10 °K @ (18 to 28) °C

MECHANICAL SPECIFICATIONS

- Operating Temperature:
 - (14 to 131) °F (-10 to +55) °C
- Storage Temperature:
 - (-40 to 158) °F (-40 to +70) °C
- Operating Relative Humidity:
 - (10 to 35) °C 85 % RH
 - (without roll-off above 35 °C)
- Maximum Cable Diameter:
 - One Ø 0.78 in (20 mm), bus bar (20 x 5) mm
- Case Protection:
 - IP 40 (IEC 529)
 - Drop Test: 1 m (IEC 68-2-32)
- Test per IEC 68-2-32:
 - 1.0 m drop on 38 mm of Oak on concrete
 - Test per IEC 68-2-27
- Vibration:
 - Test per IEC 68-2-6
- Dimensions:
 - (5.47 x 2.00 x 1.18) in (139 x 51 x 30) mm
- Weight:
 - 180 g (6.5 oz)
- Polycarbonate Material:
 - Jaws: Polycarbonate with 10 % fiberglass charge, Red UL 94 V0
 - Case: Polycarbonate 920 A Gray
 - Opening Operations – Life: > 50,000
- Output:
 - 10 ft (3 m) insulated lead with BNC connector.

SAFETY SPECIFICATIONS



- Electrical: Double insulation or reinforced insulation between the primary or secondary and the outer case of the handle conforms to
- IEC 1010-2-32.
- **Common Mode Voltage:**
 - 600 V CAT III, Pollution Degree 2

Electromagnetic Compatibility:

- Emissivity EN61326-1 Class B

- Electrostatic discharge IEC 1000-4-2
- Radiated field IEC 1000-4-3
- Fast transients IEC 1000-4-4
- Magnetic field at 50/60Hz IEC 1000-4-8

ORDERING INFORMATION

- AC Current Probe MN379T.....Cat #2153.02

OPERATION

Please make sure that you have already read and fully understand the WARNING section

Making Measurements with the AC Current Probe Model MN379T

- Connect the BNC connector to your voltage-measuring instrument. The AC current probe has an output of 200 mV/A and 10 mV/A. This means that with the probe in the 10 mV/A position, for 100 AAC in a conductor around which the probe is clamped, 1 VAC will come out of the probe leads to your instrument. Select the range that corresponds to the measured current. If the current magnitude is unknown, start with the probe in the 10 mV/A position and if the current is < 5 amps the probe can be switched to the 200 mV/A position for the higher resolution. Clamp the probe around the conductor. With the probe in the 10 mV/A position take the reading on the meter and multiply it by 100 to obtain the measured current (e.g, 160 mV reading = $160 \times 100 = 16,000$ mA or 16 A).
- The 5 A range is designed to measure on 5 A current transformer. The output is 1 VRMS for 5 A measured. Enter a scale factor in the meter if possible for direct reading.
- 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 errors in readings. To clean the probe jaws, use very fine sandpaper (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. Ship To: Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments 15 Faraday Drive • Dover, NH 03820 USA

- Phone: [800-945-2362](tel:800-945-2362) (Ext. 360) • [603-749-6434](tel:603-749-6434) (Ext. 360)
- Fax: [603-742-2346](tel:603-742-2346)
- E-mail: repair@aemc.com (Or contact your authorized distributor)

NOTE: You must obtain a CSA# before returning any instrument.

TECHNICAL ASSISTANCE

If you are experiencing any technical problems, or require any assistance with the proper operation or application of your instrument, please call, e-mail, or fax our technical support team:

Contact: Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments

- Phone: [800-945-2362](tel:800-945-2362) (Ext. 351) or [603-749-6434](tel:603-749-6434) (Ext. 351)
- Fax: [603-742-2346](tel:603-742-2346)
- E-mail: techsupport@aemc.com

LIMITED WARRANTY

The current probe is warrantied 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, or 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

Please print the online Warranty Coverage Information for your records

Documents / Resources

AC Current Probe
Model MN379T
User Manual

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2. Safety

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MN379T AC Current Probe, MN379T, AC Current Probe, Current Probe, Probe

References

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

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