AC Current Probe
Model SR759

User Manual

DESCRIPTION

The **Model SR759 AC Current Probe** (Catalog #2116.33) is designed for use in industrial environments. The ergonomic design allows itm to easily attach to cables or small bus bars. The **circular** jaws guarantee a very good accuracy and low phase shift. The probe has four measurement ranges with the highest range measuring to 1000 ARMS continuous and is compatible with any AC Voltmeter, multimeter, or other voltage measurement instrument that has the following features: Range and resolution capable of displaying 1 mV of output per amp of measured current; Voltmeter accuracy of 0.75 % or better to take full advantage of the accuracy of the probe; Input impedance of ≥10 MΩ.

WARNING

The safety warnings are provided to ensure the safety of personnel and proper operation of the instrument. Read the instruction 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 conductor 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 environment or in locations that hazardous gases exist.
- Do not use the probe anywhere beyond the tactile barrier.

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 symbol signifies that this is a type A current sensor and that application near and removal from **HAZARDOUS LIVE** conductors is permitted.

DEFINITION OF MEASUREMENT CATEGORIES (CAT)

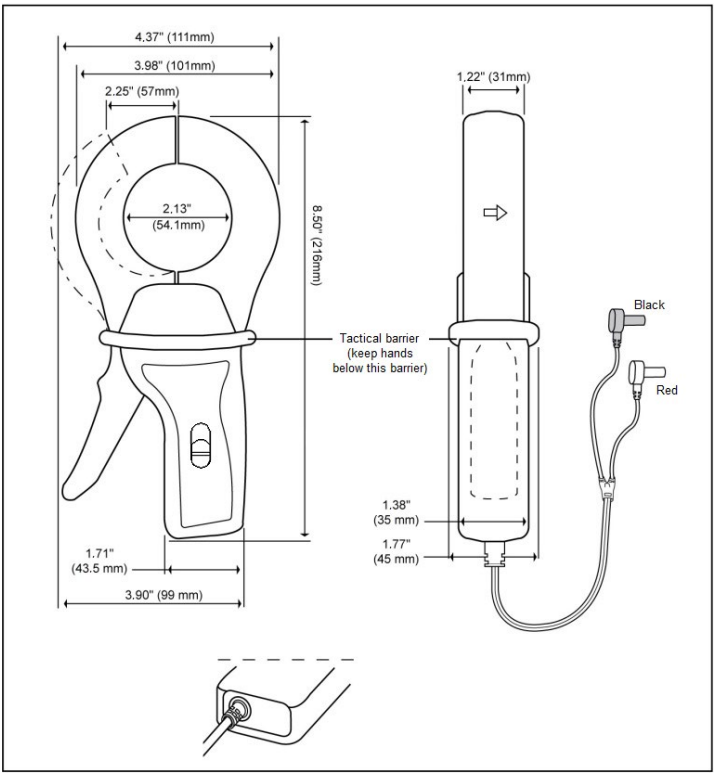
CAT IV: Corresponds to measurements performed at primary electrical supply (< 1000 V).
Example: primary overcurrent protection devices, ripple control units, and meters.

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.



ELECTRICAL SPECIFICATIONS

Current Range:
1 mA to 1.2 A, 0.01 to 12 A, (0.1 to 120) A, (1 to 1200) A

Output Signal: 1000 mV/AAC (1 V @ 1 A), 100 mV/AAC (1 V @ 10 A), 10 mV/AAC (1 V @ 100 A), 1 mV/AAC (1 V @ 1000 A)

Accuracy and Phase Shift*:

1 A Range

Primary Current	Accuracy %	Phase Shift
(0.001 to 0.01) A	3 % + 1 mV	Not Specified
(0.01 to 0.1) A	≤3 % + 1 mV	Not Specified
(0.1 to 1) A	≤0.7 % + 1 mV	≤10 °
(1 to 1.2) A	≤0.7 % + 1 mV	≤10 °

10 A Range

Primary Current	Accuracy %	Phase Shift
(0.01 to 0.1) A	1 % + 0.2 mV	Not Specified
(0.1 to 1) A	≤0.5 % + 0.2mV	≤5 °
(1 to 10) A	≤0.5 %	≤2 °
(10 to 12) A	≤0.5 %	≤2 °

100 A Range

Primary Current	Accuracy %	Phase Shift
(0.1 to 1) A	1 % + 0.2 mV	Not Specified
(1 to 10) A	≤0.5 % + 0.2 mV	≤2 °
(10 to 100) A	≤0.3 %	≤1 °
(100 to 120) A	≤0.2 %	≤1 °

1000 A Range

Primary Current	Accuracy %	Phase Shift
(1 to 10) A	1 % + 0.2 mV	Not Specified
(10 to 100) A	≤0.5 % + 0.2 mV	≤2 °
(100 to 1000) A	≤0.2 %	≤1 °
(1000 to 1200) A	≤0.2 %	≤1 °

*Reference conditions: 23 °C ± 3 °K, (20 to 75) % RH, (48 to 65) Hz, external magnetic field <40 A/m, no DC component, no external current carrying conductor, test sample centered. Load impedance 10 MΩ

Overload: 1200 A for 15 min ON, 30 min OFF

Accuracy: Per IEC 185

Frequency Range: 30 Hz to 3 kHz; current derating above 500 Hz using the formula:

$$1000\ A \times \frac{1}{F\ (kHz)}$$

Load Impedence: 100 kΩ min

Working Voltage: 600 V CAT III

Common Mode Voltage: 600 V CAT III

Influence of Adjacent Conductor:
<1 mA/AAC

Influence of Conductor in Jaw Opening:
0.3 % of Reading

Influence of Frequency:
1 mV/A Range: <1 % R from 10 Hz to 1 kHz
10 mV/A Range: <1.5 % R from 10 Hz to 3 kHz
100 mV/A Range: <2 % R from 10 Hz to 3 kHz
1000 mV/A Range: <2 % R from 30 Hz to 1 kHz

Open Voltage: 8 V peak max.

MECHANICAL SPECIFICATIONS

Operating Temperature:
(14 to 122) °F (-10 to 50) °C)

Storage Temperature:
(-4 to 158) °F (-20 to 70) °C

Influence of Temperature:
< 0.15 % per 10 °K

Influence of Humidity:
From (10 to 90) % RH: 0.1 %

Jaw Opening:
2.25 in (57 mm) max

Maximum Conductor Size:
2.05 in (52 mm)

Envelope Protection: IP 40 (IEC 529)

Drop Test: 1 m (IEC 68-2-32)

Vibration:
(25 to 55) Hz, 0.25 mm
(15 to 25) Hz, 1 mm
(5 to 15) Hz, 0.15 mm (IEC 68-2-6)

Material:
Handles and jaws: Polycarbonate UL94V0

Dimensions:
(4.37 x 8.50 x 1.77) in (111 x 216 x 45) mm

Weight:
1.21 lbs (550 g)

Output:
Two-core cord with reinforced or double insulation, 1.5 m (5 ft) terminated with two safety plugs (4 mm)

SAFETY SPECIFICATIONS

LISTED
E192383

Electrical Conformity to International Standards:
This instrument is compliant with
IEC 61010-2-032, 300 V CAT IV and
600 V CAT III

Double or reinforced insulation

Type of current sensor per IEC 61010-2-032:
type A

ORDERING INFORMATION

AC Current Probe SR759 .....Cat #2116.33

Accessories:

Adapter - Banana (Female) - (BNC) (Male)
(XM-BB) (600 V CAT III)..... **Cat #2118.46**

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

OPERATION

Make sure that you have already read and fully understand the **WARNING** section on page 1.

Making Measurements with the AC Current Probe Models SR759

- Connect the black and red terminals to the 2 VAC range of your DMM or voltage measuring instrument. Select the appropriate current range (1000/1 V). Clamp the probe around the conductor to be tested with the arrow pointed toward the load. Read the value display on the DMM and multiply it by the probe ratio selected. (e.g. If reading = 185 mV, the current flowing through the probe is 185 x 1000 = 185,000 mA = 185 A when 1 mV/A range is selected.)
- 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 replacement parts.
- To avoid electrical shock, do not attempt to perform any service on the device unless you are qualified to do so.
- To avoid electrical shock and/or damage to the instrument, do not allow water or other foreign agents to come into contact with 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.

Ship To: Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
15 Faraday Drive • Dover, NH 03820 USA
Phone: (800) 945-2362 (Ext. 360) • (603) 749-6434 (Ext. 360)
Fax: (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 (Ext. 351) or (603) 749-6434 (Ext. 351)
Fax: (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, 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.