

AC Current Probe Model SR752

User Manual

DESCRIPTION

The **Model SR752** (Cat. #2116.32) is designed for use in industrial environments. The ergonomic design allows it to easily attach to cables or small bus bars. The **circular** jaws guarantee a very good accuracy and low phase shift. The probe has a measurement range up 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 $\geq 1 \text{ M}\Omega$.

WARNING

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

	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.

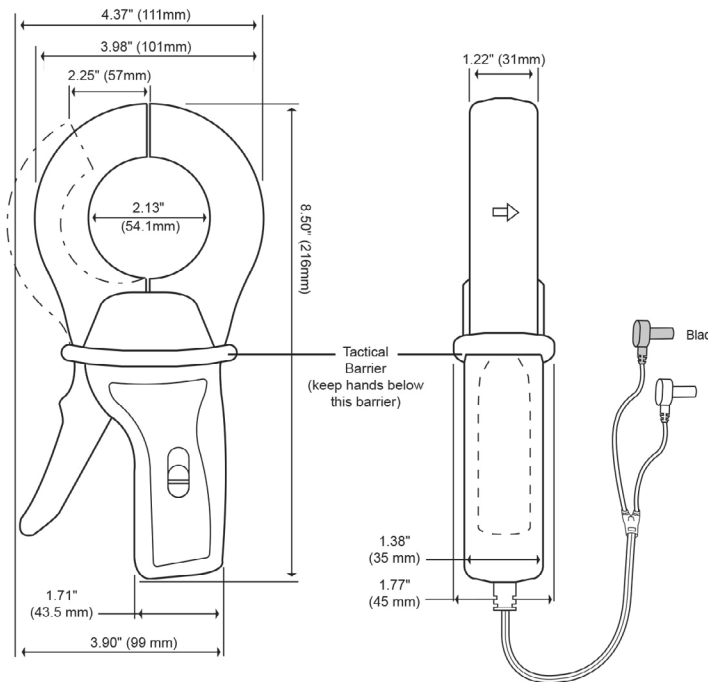
DEFINITION OF MEASUREMENT CATEGORIES (CAT)

- CAT IV:** For measurements performed at the primary electrical supply (< 1000 V), such as primary overcurrent protection devices, ripple control units, or meters.
- CAT III:** For measurements performed in the building installation at the distribution level, such as hardwired equipment in fixed installation or circuit breakers.
- CAT II:** For measurements performed on circuits directly connected to the electrical distribution system, such as measurements on household appliances or 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 providing a detailed description of any damage.

CURRENT PROBE - SR752 DRAWING



ELECTRICAL SPECIFICATIONS

Current Range:
(0.1 to 1000) A_{AC}, continuous cycle @ ≤1 kHz

Output Signal: 1 mV_{AC}/A_{AC} (1 V_{AC} at 1000 A)

Accuracy and Phase Shift*:

Accuracy

0.1 to 1 A:	± 2 % Reading ± 3 μV
1 to 10 A:	± 1 % Reading
10 to 100 A:	± 0.5 % Reading
100 to 1200 A:	± 0.3 % Reading

Phase Shift:

0.1 to 1 A:	Not Specified
1 to 10 A:	≤ 2 °
10 to 100 A:	≤ 1 °
100 to 1200 A:	≤ 0.7 °

*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.

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

Accuracy: Per IEC 185

Frequency Range:
30 Hz to 5 kHz; current derating above 1 kHz using the formula $1000 A \times \frac{1}{F}$ (in kHz)

Load Impedance: 100 kΩ min.

Working Voltage: 600 V CAT III

Influence of Adjacent Conductor:
< 0.5 mA/A_{AC}

Influence of Conductor in Jaw Opening:
0.1 % of Reading

Influence of Frequency:
From (30 to 48) Hz: <0.5 % of R
From (65 to 1000) Hz: <1 % of R
From (1 to 5) kHz: <2 % of R

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) %: 0.1 %

Jaw Opening: 2.25 in (57 mm) max

Maximum Conductor Size: 2.05" (52 mm)

Envelope Protection: IP 40 (IEC 529)

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

Mechanical Shock: 100 g (IEC 68-2-27)

Vibration:

(5 to 15) Hz, 0.15 mm (IEC 68-2-6)

(15 to 25) Hz, 1 mm

(25 to 55) Hz, 0.25 mm

Polycarbonate Material:

Handles: ABS Grey and Lexan 500R,

Red: UL 94 V0

Jaws: Lexan 500R, Red: UL 94 V0

Dimensions:

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

Weight: 1.21 lbs (550 g)

Output:

SR751: Two standard safety (4 mm) banana jacks

SR752: 5 ft (1.5 m) lead with safety (4 mm) banana plug

SAFETY SPECIFICATIONS**Electrical:**

Double insulation or reinforced insulation between the primary or secondary and the outer case of the handle conforms to IEC 1010-2-032.

Common Mode Voltage: 600 V_{AC} CAT III, Pollution Degree 2

Dielectric Strength: 5550 V, 50/60 Hz between primary, secondary and the outer case of the handle

Electromagnetic Compatibility:

EN 50081-1 Class B

EN 50082-2 Electrostatic discharge IEC 1000-4-2

Radiated field IEC 1000-4-3

Fast transients IEC 1000-4-4

Magnetic field at 50/60 Hz IEC 1000-4-8

ORDERING INFORMATION

AC Current Probe SR752.....Cat. #2116.32

Includes probe and a user manual.

Accessories:

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

OPERATION

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

Making Measurements with the AC Current Probe Model SR752

- Connect the black lead of the current probe to **Common** and the red lead to the AC voltage input on your DMM or other voltage-measuring instrument. The AC current probe has a ratio of 1000:1. This means that for 1000 A_{AC} in a conductor around which the probe is clamped, 1 V_{AC} will come out of the probe leads to your DMM or instrument. The output is 1 mV AC/A_{AC}. Select the range which corresponds to the measured current. If the current magnitude is unknown, start with the highest range and work down until the appropriate range and resolution are 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., 260 mV reading = 260 x 1000 = 260,000 mA or 260 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 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, and 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)

Contact us for the costs for repair, standard calibration, and calibration traceable to N.I.S.T.



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) 343-1391 (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.