

Glossary of Current Measurement Probe Terms

Accuracy — measurement accuracy of a probe expressed as a percent of reading and a constant.

Example: AC probe accuracy is $1\% \pm 0.1A$; if the meter reading is 100A, the correct measurement is $100A \pm 1.1 A$, or 98.9 A to 101.1A. Note: The accuracy of your meter should be added to the probe accuracy for overall accuracy.

Bandwidth — range of frequencies within which performance, with respect to some characteristic, falls within specific limits.

Common mode voltage — voltage that, at a given location, appears equally and in phase from each signal conductor to ground.

Crest factor — ratio of crest (Peak, maximum) value to root-mean-square (rms) value.

Current range — range of measurable currents. Measurements below the minimum are often possible, but with increased error.

Dielectric test (withstand voltage) — dielectric test voltage between magnetic core and output for one minute. This is not the working voltage — probe may not be used in circuits at this rating!

Duty cycle — the ratio for a given time interval, of the on-load duration to the total time.

Fall time — the time interval between the instants at which the magnitude of the pulse at the output terminals reaches specified upper and lower limits respectively when a semiconductor device is being switched from its conducting to its non-conducting state. Note. — The upper and lower limits are usually 90% and 10% respectively of the initial amplitude of the output pulse.

Frequency range — range of frequency of measurable currents.

Hall effect — the production in a conductor or in a semiconductor of an electric field strength proportional to the vector product of the current density and the magnetic flux density.

Hall effect probe — a Hall effect specifically designed for the measurement of magnetic flux density.

Harmonic — a sinusoidal component of a periodic wave or quantity having a frequency that is an integral multiple of the fundamental frequency.

Input impedance — the impedance of the input circuit looking into the device, measured between the input terminals of the device under operating conditions.

Load impedance — input impedance of meter connected to the current probe. Refer to your meter specifications.

Noise — unwanted electrical signals that produce undesirable effects in the circuits of the control systems in which they occur.

Open secondary voltage — voltage at output when a probe is clamped on a conductor and the meter (load) is not connected to the probe.

DANGER – Note: Do not clamp a current probe without a load connected to it. High voltage may be present!

Output signal — current probe output signal proportional to measured current.

Overload — loading in excess of normal rating of the current probe.

Phase shift — phase angle shift between current measured and the probe output.

Rise time — time required for the output of a system (other than first-order) to make the change from a small specified percentage (often 5 or 10) of the steady-state increment to a large specified percentage (often 90 or 95), either before overshoot or in the absence of overshoot.

Transformation ratio — ratio between the current measured and the current output of the probe (refer to page 2 for details). Typical ratios are 1000:1, 2000:2, 3000:5, etc. This means that for a ratio of 1000:1 and a current of 500A measured, the probe output will be $500A \times 1/1000$, or 500mA.

Working voltage — maximum voltage rating of the conductor being measured.

Contact Us

United States & Canada:

Chauvin Arnoux®, Inc.
d.b.a. AEMC® Instruments
200 Foxborough Blvd.
Foxborough, MA 02035 USA
(508) 698-2115 • Fax (508) 698-2118
www.aemc.com

Customer Support – for placing an order, obtaining price & delivery:
customerservice@aemc.com

Sales Department – for general sales information:
sales@aemc.com

Repair and Calibration Service – for information on repair & calibration, obtaining a user manual:
repair@aemc.com

Technical and Product Application Support – for technical and application support:
techinfo@aemc.com

Webmaster – for information regarding www.aemc.com:
webmaster@aemc.com

South America, Australia & New Zealand:

Chauvin Arnoux®, Inc.
d.b.a. AEMC® Instruments
15 Faraday Drive
Dover, NH 03820 USA
(978) 526-7667 • Fax (978) 526-7605
export@aemc.com

All other countries:

Chauvin Arnoux
190, rue Championnet
75876 Paris Cedex 18, France
33 1 44 85 45 28 • Fax 33 1 46 27 73 89
info@chauvin-arnoux.com