ICLAMP
1000 A AC Current Probe

DESCRIPTION
The ICLAMP current probe is designed for measurements of AC currents up to 1000 A with a 1000:1 step-down ratio.

The probe offers excellent accuracy (0.3% error at full range) and small phase shift (0.7° at full range) so it can be used for metering of power, energy and power quality applications.

Such high performance is achieved because the magnetic cores are made from high-permeability Ni-Fe alloy.

The rated terminating resistance (burden) of 1 Ω must be provided by the instrument connecting to ICLAMP.

The output terminals of ICLAMP are protected with a voltage limiting circuit ensuring a safe-to-touch voltage under all rated conditions.

ICLAMP is rated to CAT IV 600 V, according to the international standard IEC 61010.

APPLICATIONS
The ICLAMP is a non contact current sensing clamp which is simple to use and has application with the following instruments:

- Power quality analysers
- Oscilloscopes
- Motor testers
- Clamp enabled earth testers
- Attached Rod Technique (ART)
- Stakeless testing
- Data loggers
- Digital multimeters

 Clamp Usage
The ICLAMP is intended to clamp around a single phase of the asset to be tested and not phase + neutral because this would yield an incorrect result as a consequence of current flowing in opposite directions. Try to keep clamps separate wherever possible to improve quality of multiphase current measurements.

An ammeter measuring up to 1 A can be connected directly to the ICLAMP. A current of 1000 A will result in the ammeter reading 1 A (1000:1 step down ratio).

The ICLAMP generates 1 mV output signal across 1 Ω burden resistance for every 1 A of primary current, so if using a multimeter, one with a mV AC range is required. Dedicated earth tester instruments like Megger’s DET3TC, DET4TC and DET4TCR will need to ensure the input resistance and measurement circuitry are appropriate for the 1 mV – 1 V input range and a primary current limit of 20 A.

If using a TRMS multimeter the voltage reading will be TRMS because of the accuracy and crest factor performance of the ICLAMP.
**ELECTRICAL SPECIFICATIONS**

- **Step-down current ratio**: 1000:1
- **Sensitivity**: 1 mA/A

<table>
<thead>
<tr>
<th>Amplitude and phase accuracy of the output signal</th>
<th>accuracy of output signal</th>
<th>phase shift of output signal</th>
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<tbody>
<tr>
<td>Primary current *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 mA – 100 mA</td>
<td>≤1% + 5 μA</td>
<td>not specified</td>
</tr>
<tr>
<td>0.1 A – 1 A</td>
<td>≤0.5%</td>
<td>≤0.7°</td>
</tr>
<tr>
<td>10 A – 100 A</td>
<td>≤0.3%</td>
<td></td>
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<tr>
<td>100 A – 1000 A</td>
<td></td>
<td></td>
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</tbody>
</table>

* Unless otherwise specified, reference conditions are: 22 ±3°C, 50% humidity, sinusoidal current at 50/60 Hz, no DC offset, centred conductor, external magnetic field <40 A/m, load impedance (burden) ≤1 Ω.

- **Maximum continuous current**
  - 1000 A at ±500 Hz
  - 100 A at >500 Hz

- **Frequency bandwidth**: 15 Hz – 10 kHz

- **Crest factor**: ≥6 for current up to 2000 A peak (300 A rms)

- **Influence of crest factor**: ≤1% for CF=6

- **Nominal load impedance**: ≤1 Ω (burden resistance)

- **Maximum output voltage**: ≤28 V peak (electronic limiter)

- **Influence of frequency**: 30 Hz – 5 kHz ≤0.25%

- **Influence of conductor position in the jaws**: ≤0.3% of amplitude

- **Load influence up to 5Ω**: amplitude within specification up to 900 A
  - ≤0.25% of amplitude above 900 A
  - ≤0.1° on phase

- **Influence of DC offset**: ≤2% up to 20 A DC

- **Working voltage**: ≤600 V rms

**ENVIRONMENTAL**

- **Operating temperature**
  - -20 °C to +50 °C, <85% RH
  - (-4 F to +122 F, <85% RH (excluding ice or dirt in the jaws)

- **Storage temperature**
  - -40 °C to +70 °C, <85% RH
  - (-40 F to +158 F, <85% RH

- **Influence of temperature**: ≤0.1% on amplitude, phase within specification

- **Influence of humidity**: amplitude and phase within specification (excludes ice or dirt on the jaws)

- **Max. conductor diameter**: 52 mm

**GENERAL SPECIFICATIONS**

- **Casing protection**: IP40 with jaws closed

- **Operating altitude**: 2000 m

- **Output terminals**: 4 mm shrouded sockets


- **EMC**: IEC61326-1

- **Safety**: CAT IV 600 V Pollution degree 2

- **Weight**: 700g

- **Dimensions**: 45 mm x 110 mm x 218 mm

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1001-012</td>
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<tr>
<td>VCLAMP</td>
<td></td>
<td>1001-013</td>
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