ICLAMP
1000 A AC Current Probe

- **CAT IV 600 V current measurement to 1000 A AC**
- **1 mA/1 A sensitivity with rated burden of 1 Ω**
- **Large jaws for cables up to 52 mm**
- **Overvoltage protection of the output terminals**
- **Suitable for leakage currents**

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 CATIV 600 V, according 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

Amplitude and phase accuracy of the output signal

Primary current *	Accuracy of output signal	Phase shift of output signal
1 mA – 100 mA	≤1% + 5 µA	not specified
0.1 A – 1 A		≤0.7°
1 A – 10 A		
10 A – 100 A	≤0.5%	
100 A – 1000 A	≤0.3%	

* 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≤4

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

Electrical safety IEC 61010-1:2010 + IEC 61010-2-030:2010 + IEC61010-2-032:2002

EMC IEC61326-1

Safety CAT IV 600 V Pollution degree 2

Weight 700g

Dimensions 45 mm x 110 mm x 218 mm

ORDERING INFORMATION

Item (Qty)	Cat. No.
ICLAMP	1001-012
VCLAMP	1001-013