



CE SUPERB PERFORMANCE IN A COMPACT PACKAGE

For single-phase and balanced three-phase systems

The NANOVIP PLUS is a hand-held portable instrument capable of measuring over 100 fundamental parameters for display via a large high-contrast LCD. The product of many years R & D by the ELCONTROL ENERGY laboratories, it makes serious power quality analysis more affordable than ever before.

INSTANTANEOUS MEASUREMENTS

Volt, Amps, Watts, VAR, VA,W, Hz pos/neg kWh (import/export), pos/neg kvarh (inductive/capacitive)

All measurements are true RMS. Accuracy is 1% or better including clamp error between 7 W and 150 kW (200A clamp) or 35 W to 750 kW (1000A clamp). DC measurement capability (requires Hall effect clamp for current). Automatic recognition of clamp type in use (200A or 1000A) - removes the need for additional set-up by the user.

- PEAK feature captures max current/power values or min voltage value (user selectable).
- MEM function provides data hold and allows realtime comparison of new readings against stored values.

HARMONICS MEASUREMENTS

- Measurement of harmonic values of V & I (1 st to 24th) expressed as absolute and percentage values, plus their DC component and displacement values
- Total Harmonic Distortion (THD) of V & I with reference to the fundamental or total RMS value
- Crest factor for V & I expressed as absolute and percentage values
- DC ripple component for V & I as RMS percentage values
- V & I ripple as RMS value

SET-UP

- Auto set-up for standard current clamps
- Manual override facility for non-standard ratios - fully programmable for any CT
- Standard or co-generation energy metering
- 50/60Hz fundamental selection for harmonics analysis
- DC selection
- RS232 parameter set-up for serial communication to PC

RESET

- Reset of energy meters

NANOLINK

NANOLINK is a DOS utility for realtime transmission of the values measured by the NANOVIP PLUS and NANOVIP PLUS MEM to PC via a standard RS232 port.

Basic features include:

- Display all measurements and instrument status
- Control survey start/stop times
- Survey sampling rate
- Set-Up of on-board clock
- Data storage to standard text file
- Display of harmonic wave forms of V, I and harmonic spectrum

Runs in Windows™ in background or foreground.



NANOVIP PLUS MEM



All the performance of the Nanovip Plus and

- Automatic data storage to 1MB internal memory (4032 records)
- Internal clock/calendar
- Backlit LCD with auto/manual control
- KW (active power for each harmonic frequency)
- Fast data download to PC via 38.4K baud serial port.
- "One touch" set-up for default values CT set-up, VT set-up, fundamental frequency, comms set-up etc)
- Realtime link to PC in addition to memory download
- Nanolink 2.0 software included.
- New Windows 95/98 & NT4.X software coming soon!



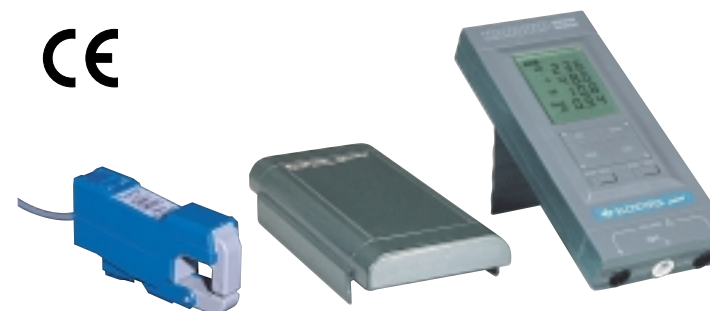
* Optional battery eliminator, part no 4AAQ1

NANOVIP Power analyzer



7 MEASUREMENT FUNCTIONS IN THE PALM OF YOUR HAND

- **Volt (rms), Amp (rms), P.F. Cosf, W, var, VA, Hz**
- **PEAK** function for storing the measurements in correspondence to the V, A, W peaks (selectable)
- **MEM** functions for measurements of deviations of V, A, W, Cosf with respect to the recorded values
- Measurements from 7W to 150kW (750kW with 1000A clamp meter)
- Measurements as true RMS value
- Automatic voltage and current scale change
- AC and DC measurements (with DC clamp meters)
- High accuracy
- Very user-friendly

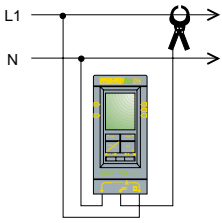




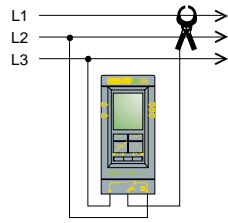
NANOVIP Power analyzer

CONNECTION DIAGRAMS

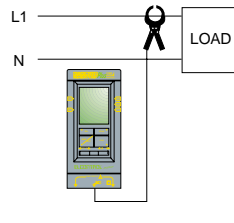
On a single-phase system



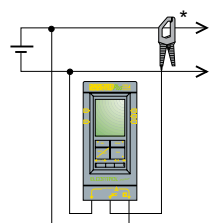
On a three-phase system



Used as a clamp meter



For DC measurements



* N.B. The clamp meter is not included. The Elcontrol Hall Effect clamp meter must be used. (Cod.4AABW)

GENERAL TECHNICAL DATA

Inputs:

Voltmeter: (L1-N) max 600 Vrms up to 600 Hz.
Ammeter: 1 Volt up to 600 Hz.

Number of scales:

3 voltage scales; 3 current scales.

Automatic scale change:

Scale change response time: 1 sec. max
Passage to the scale above takes place at 105% of the scale in use.
Passage to the scale below takes place at 20% of the scale in use.

Instrument dimensions: 80x175x32,5 mm (without cover).

Instrument weight: 500 g.

Kit weight: 1,1Kg. (without instrument).

SERVICE AND TESTING CONDITIONS

Ambient operating conditions:

Ambient temperature range: from -10°C to +50°C.
Relative humidity range (R.H.): from 20% to 80%.

Storage temperature:

from -20°C to +60°C.

Condensation:

not permitted.

Reference standards:

IEC 348, VDE 411 class 2, for operating voltages - 600 VAC rms, IEC 1010 600 V CAT III, EMC: EN50081-1, EN 50082-2, EN55022

POWER SUPPLY

4 15V batteries (size AA).

MEASUREMENT OF THE PRIMARY PARAMETERS

Measuring method:

with fixed sampling and analogic/digital conversion

Sampling frequency:

1,25kHz.

Number of samples per phase:

250 (200msec)

Measuring frequency:

1 sec., 0,4 sec. Peak.

Zero self-correction:

every minute.

MEASURING ACCURACY FOR PRIMARY PARAMETERS

Measuring error in ambient from 18°C to 25°C (after 10' warm-up):

(see table)

Measuring error outside this temperature range:

$\pm 0,02\%$ F.S. for every °C outside the range.

Voltage measurement accuracy and sensitivity

Direct input with max voltage = 600 Vrms at Full Scale.
Input voltage crest factor ≥ 3 , 1,6

Input impedance $\geq 4M\Omega$.

The accuracy does not consider the clamp meter error.

Voltage and current measurement accuracy in relation to frequency:

for signal frequencies in the range 30-90 Hz no error apart from those indicated in the previous tables.

Measuring precision of secondary parameters:

Measurements of active power, Cos ϕ , active energy: IEC 1036 class 1.

Measurements of the other secondary parameters:

the error is expressed by the formula which defines the parameter, in relation to V and I.

AC voltage sensitivity, Full Scale and accuracy

Nominal range	Sensitivity	Full Scale	ϵ from 20% F.S. to 100%F.S.
			NANOVIP
37 Vrms	24 mV	37,0 V	0,5%F.S. + 0,5% Rdg
174 Vrms	111 mV	174 V	0,3%F.S. + 0,3% Rdg
750 Vrms	480 mV	750 V	0,3%F.S. + 0,3% Rdg

Sensitivity and precision in current measurements:

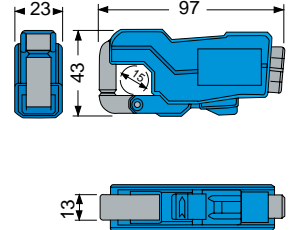
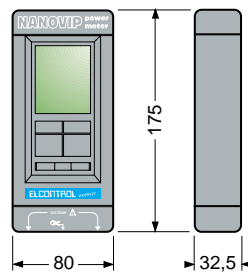
Direct input with max. voltage -1 Vrms at Full Scale
Crests Factor of input current ≥ 3

Alternating current sensitivity, Full Scale and accuracy

Nominal Range	Sensitivity	Full Scale (*)	ϵ from 20% F.S. a 100%F.S.
			NANOVIP
50 mV	32 μ V	50 mV	0,5%F.S. + 0,5% Rdg
232 mV	140 μ V	232 mV	0,3%F.S. + 0,3% Rdg
1 V	640 μ V	1 V	0,3%F.S. + 0,3% Rdg

(*) **Corresponding Full Scales** at 10-46,4 -200 Amps., with standard 200A/1V 50 - 232 - 1000 Amp., with optional 1000A/1V clamp meter
(Error= Sum of the errors of the Nanovip and the clamp meter)

DIMENSIONS (in mm)



NANOVIP KIT

Complete with:
1 NANOVIP kit case
1 NANOVIP PLUS/NANOVIP
1 Set voltmeter cables
1 Clamp meter 200A/1 Vrms AC with wires
1 Instruction booklet
1 Guarantee certificate
1 NANOLINK Software (only for NANOVIP PLUS and NANOVIP PLUS MEM)
1 Calibration certificate



SPARE PARTS

- PINZA-200A/1V-AC** Clamp meter 200A/1VAC
- NANOVIP-CAVO-VOLT** 1 Set voltage cables for NANOVIP
- NANOVIP-VALIGIA** 1 NANOVIP KIT case

WARNING - ELCONTROL ENERGY declines all liability for any damage to people or property caused by unsuitable or incorrect use of its products. (Subject to change without prior notice).



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