

NanoVIP® TWO PLUS™



Analizzatore della Qualità dell'Energia per sistemi monofase e trifase bilanciati, dotato di 4 ingressi indipendenti per trasduttori.

Power Quality analyzer for mono and three phases balanced systems, that includes four independent input channels for transducers.



NanoVIP® TWO PLUS™ è un analizzatore della Qualità dell'energia portatile, compatto e potente per uso professionale; può essere utilizzato su reti **monofase, bifase, trifase bilanciate**, in bassa e media tensione.

In aggiunta ai canali elettrici, dispone di **4 canali indipendenti** per leggere qualsiasi tipo di trasduttore: **4..20mA, 0..1V o PT**.

EN **NanoVIP® TWO PLUS™** is a portable Power Quality Analyzer, compact and powerful for professional use; it can work on single-phase, bi-phase and three-phase balanced, low and medium voltage networks.

In addition to the electrical channels, it has **4 independent channels** for reading any type of transducer: **4..20mA, 0..1V or PT**

POTENZA DI ANALISI E MASSIMA VERSATILITÀ

- ✓ Leggero, maneggevole, multilingua, con performance al top della sua categoria
- ✓ 1 canale di misura della tensione (1 fase + neutro) fino a 600V CAT III, con la possibilità di misurare anche tensioni continue
- ✓ 1 canale per le correnti con la possibilità di misurare anche correnti continue
- ✓ Precisione in corrente e tensione 0,25% + errore FS
- ✓ 4 canali indipendenti per trasduttori (4..20mA, 0..1V, PT)
- ✓ 4 modalità precaricate per analisi di sistemi/impianti: chiller, pump, supply and sensors
- ✓ Batteria ad alta capacità per garantire la totale copertura lavorativa sotto batteria
- ✓ 20 allarmi (5 generici, 5 swells, 5 dips and 5 interruptions)
- ✓ Calcolo della spesa elettrica con fino a 4 tariffe

PRECISE IN MEASURE, VERSATILE, POWERFUL

- ✓ Lightweight, handy, multilingual, with top performance in its category
- ✓ 1 voltage measuring channel (1 phase + neutral) up to 600V CAT III, with the possibility to measure even continuous voltages
- ✓ 1 current channel with the possibility of measuring even continuous currents
- ✓ Currents and voltages accuracy 0.25% + FS error
- ✓ 4 independent channels for transducers (4..20mA, 0..1V, PT)
- ✓ 4 preloaded mode for system / plant analysis: chiller, pump, supply and sensors
- ✓ High-capacity battery to provide total under battery cover
- ✓ 20 alarms (5 generics, 5 swells, 5 dips and 5 interruptions)
- ✓ Calculation of electric charge with up to 4 rates

NanoVIP® TWO PLUS™



CASE:

Dimensions	203x116x53mm
Material	ABS with self-extinguishing V0 grade
Protection class	IP30
Weight	580 g

DISPLAY:

Dimensions	68x68mm
Type	128x128 FSTN Negative dot matrix graphic LCD
Backlight	White LED
Languages	English - Spanish - Italian - German - French

KEYPAD:

Type	Membrane keypad with 10 double-function keys
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POWER SUPPLY:

External power supply	wall-plug switching; input 100-240VAC $\pm 10\%$ 47-63Hz with interchangeable plug; output 7.5VDC - 12W
Battery pack	4 x AA NiMH 2100mAh
Duration of the battery charge	>24h (wireless off)

CONNECTABLE SYSTEMS:

Systems frequencies	50Hz – 60Hz – 400Hz
Single phase	✓
Two phase	✓
Three-phase, 3-wires, balanced	✓
Three-phase, 3-wires, unbalanced	-
4-phase, 4-wires, balanced	✓
4-phase, 4-wires, unbalanced	-

CONNECTIONS:

Voltages	Flexible cables L = 1.5m; 2.5mm ² - 36A; 1000V CAT III - 600V CAT IV with a 4mm, 90° protected blade plug connector, crocodile clips with a 45mm opening (for sections up to 32mm) and magnetic captors
Currents	Elcontrol Energy Net interchangeable amperometric sensors
Solar radiation	-
PT100	-
Anemometer	-
Transducers	Up to 4 independent (4..20mA, 0..1V, PT)

FUNCTIONS:

Traditional electrical analysis	V, I, P, Q, S, F, PF, THD(V)%, THD(I)%, $\cos\phi$, ϕ , peaks, minimums, maximums, averages, max. demands, etc.
Neutral current	Measured
Three phase counters	kWh, kVAh, kVAh, both absorbed that generated
Counters for each single phase	kWh, kVAh, kVAh, both absorbed that generated
Cogeneration	✓
Waveforms	V & I
Harmonics	Values and histograms up to the 50 th order; up to 7 th at 400Hz
Sags	Dips, swells & interruptions
Transients	Overvoltages & overcurrents
Unbalance	-
Test EN 50160	✓
Inrush current	✓
DC measures	✓
K factor	Up to the 25 th order
Alarms	Displayed
Alarms log	5 at display

Tariff bands	4
Energy costs	✓
IEC 61724 network parameters	✓
Test EN 82.25	-
OSU™ (One Shot UPS)	-
Measurement campaigns	unlimited, up to fill the memory card

MEASUREMENTS:

Sampling frequency	128 samples per cycle (adaptive in 40Hz-70Hz range) 16 samples per cycle at 400Hz
Data record rate	1 sec.
Data storage rate	User selectable: 1", 5", 3", 1', 5', 15'
Type of connections available	Three-phase (3 or 4 leads balanced), two-phase (2 leads), and single phase grid
Type of grid which can be connected	Low and medium voltage (LV and MV)

VOLTAGE (TRMS)

Channels	2 channels with common neutral
Input impedance	4 Mohm
Scales	2
Direct measurement	Phase-phase: 7-1000VAC 40-70Hz Phase-neutral: 5-600VAC 40-70Hz Aux: 5-1000VAC 40-70Hz, 10-1400VDC
Measurement with VT	Ratio: 1-60000 Maximum value which can be displayed: 20MV
Permanent overload	Phase-phase: 1200VAC Phase-neutral: 700VAC Aux: 1200VAC, 1700VDC
Sensitivity	5VAC Phase-neutral, 7VAC Phase-phase, 10VDC

CURRENT (TRMS)

Channels	1 channel
Input impedance	10KOhm
Scales	4
Measurement with current clamps	Ratio: 1-60000 Maximum value which can be displayed: 500KA
Sensitivity	0,2% of F.S.

POWERS

Single phase power	Values < 999 GW, Gvar, GVA
Total power	Values < 999 GW, Gvar, GVA

POWER COUNTERS

Maximum value before reset	99999999 kWh, kvarh, kVAh
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ACCURACY

RMS voltages:

Scale 1	$\pm 0.25\% + 0.1\%FS^{(2)}$ @ RMS V < 350VAC ⁽¹⁾
Scale 2	$\pm 0.25\% + 0.05\%FS^{(2)}$ @ RMS V > 350VAC ⁽¹⁾

RMS currents:

Scale 1	$\pm 0.25\% + 0.1\%FS^{(2)}$ @ RMS I < 5% IN clamp ⁽¹⁾
Scale 2	$\pm 0.25\% + 0.05\%FS^{(2)}$ @ 5% < RMS I < 20% IN clamp ⁽¹⁾
Scale 3	$\pm 0.25\% + 0.05\%FS^{(2)}$ @ 20% < RMS I < 50% IN clamp ⁽¹⁾
Scale 4	$\pm 0.25\% + 0.05\%FS^{(2)}$ @ > 50% IN clamp ⁽¹⁾

Power $\pm 0.5\% + 0.05\%FS^{(2)}$

Power Factor (PF) $\pm 0.5^\circ$

Frequency ± 0.01 Hz (40-70Hz)

Active power count (kW) Class 0.5

Reactive power count (kVar)	Class 1
HARMONIC ANALISYS	Up to 50 th order Up to 7 th at 400Hz
ANALYSIS of EN50160 parameters	
Interruptions	>500mS
Dips	>500mS
Swells	>500mS
Transient ANALYSIS	
Swells and overcurrents	>150uS
Inrush current analysis	RMS continuous sampling every 2 periods – Duration 1, 2, 5, 10 sec.
COMMUNICATION:	
MRH™	✓
Server mode	-
Connectable MRH™ clients	-
Client mode	✓
Zigbee®	✓
Maximum distance outdoor	600m (point to point)
Maximum distance indoor	60m (point to point)
Mesh network	✓
Wireless to PC	-
USB	to PC
DATA STORAGE:	
Internal memory	64kB
External memory	Micro SD (2GB included)
OPERATING CONDITIONS:	
Operating temperature	-10 to +55 °C
Storage temperature	-20 to +85 °C
Relative humidity	Max 95%
Maximum altitude a.s.l. (600V CAT III)	2000 m
EC COMPLIANCE:	
Directives	93/68/EEC (Low Voltage Electrical Equipment); 89/336/EEC and 2004/108/EC (EMC - Electromagnetic Compatibility); 2006/95/EC - 72/23/EEC (LVD - Low Voltage Directive); 2002/95/EC (RoHS - Restriction of Hazardous Substances); 2002/96/EC and 2003/108/EC (WEEE - Waste Electrical and Electronic Equipment); IEC 61724
REFERENCE STANDARDS:	
Safety	EN 61010-1
Electromagnetic Compatibility (EMC)	EN 61326 EN 61326/A1 EN 61326/A2 EN 61326/A3
Temperature	IEC 60068-2-1 (Operating temperature) IEC 60068-2-2 (Storing temperature)
Vibrations	IEC 60068-2-6
Humidity	IEC 60068-2-30 (Humidity)
Overload	IEC 60947-1