

NanoVIP® BOX™



Analizzatore portatile della Qualità dell'Energia per sistemi monofase, bifase, trifase (bilanciati e non), in bassa e media tensione, autoalimentato dalla linea di misura dotato di comunicazione 4G,

Portable Power Quality analyzer for mono, bi, three phases (balanced and unbalanced), medium and low voltages systems, self powered through measuring line and with 4G communication.



NanoVIP® BOX™ non necessita di una fonte di alimentazione esterna poiché **autoalimentato dalla stessa linea di misura** e dotato di una batteria che gli consente di mantenersi attivo anche in assenza di linea per oltre 24h. La **comunicazione 4G** gli permette di essere totalmente controllato dall'utente tramite **comandi SMS** diretti, inviare i dati al **Cloud Elcontrol** o essere **pilotato in remoto**.

Può essere utilizzato su reti monofase, trifase (3 o 4 fili equilibrate e non) in bassa e media tensione con tensioni all'ingresso strumento fase-fase fino a 400V+10%.

EN **NanoVIP® BOX™** does not require an external power source as it is **self-powered by the same measurement line** and equipped with a **battery that allows it to remain active** even in the absence of line for over 24h. **4G communication** allows it to be fully controlled through **direct SMS commands**, send data to the **Elcontrol Cloud** or be **fully remotely driven**.

It can be used on single-phase, bi-phase, three-phase (3 or 4 wires balanced and unbalanced) networks in low and medium voltage with voltages at the phase-phase instrument input up to 400V+10%.

Autoalimentato con comunicazione 4G

- ✓ Non richiede alimentatore esterno perché alimentato dalla stessa linea di misura delle tensioni.
- ✓ Batteria ricaricabile tampone per garantire operatività per oltre 24h in caso di assenza/buchi di tensione.
- ✓ Comunicazione 4G per: controllo tramite SMS, connessione al Cloud Elcontrol e controllo remoto diretto da PC/App
- ✓ Completa copertura delle misure e verifiche EN50160
- ✓ Utilizzabile su impianti: monofase, bifase, trifase equilibrato con o senza neutro, trifase squilibrato con o senza neutro
- ✓ Armoniche di corrente e tensione per ogni fase e per il neutro fino alla 50° (7° a 400Hz)
- ✓ Realizzazione di campagne di misura di lunga durata (oltre 24 in autonomia, illimitato se collegato alla rete)
- ✓ Utilizzo gratuito di Elcontrol Cloud incluso

Self-powered with 4G communication

- ✓ It does not require an external power supply because it is powered by the same voltage measurement line.
- ✓ Rechargeable battery to guarantee operation for over 24 hours in the event of a voltage absence/dip.
- ✓ 4G communication for: control via SMS, connection to the Elcontrol Cloud and direct remote control from PC/App
- ✓ Full coverage of EN50160 measurements and tests
- ✓ Can be used on systems: single-phase, two-phase, balanced three-phase with or without neutral, unbalanced three-phase with or without neutral
- ✓ Current and voltage harmonics for each phase and for the neutral up to the 50th (7th at 400Hz)
- ✓ Implementation of long-term measurement campaigns (over 24 autonomously, unlimited if connected to the network)
- ✓ Free access to Elcontrol Cloud included

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CASE:

Dimensions	260x240x170mm
Material	ABS with self-extinguishing V0 grade
Protection class	IP30 (optional IP67)
Weight	350 g (435g including batteries)

DISPLAY:

Dimensions	42x50mm
Type	128x128 STN Negative dot matrix graphic LCD
Backlight	White LED
Languages	English - Spanish - Italian - German - French

KEYPAD:

Type	Membrane keypad with 7 double-function keys
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POWER SUPPLY:

External power supply	Self powered by tension measured line L1/N; input 100-400VAC ±10% 47-63Hz
Battery	4 x AA commercial 1.5V Alkaline or rechargeable NiMH
Duration of the battery charge	Up to 24h

CONNECTABLE SYSTEMS:

Systems frequencies	50Hz – 60Hz
Single phase	✓
Two phase	✓
Three-phase, 3-wires, balanced	✓
Three-phase, 3-wires, unbalanced	✓
Three-phase, 4-wires, balanced	✓
Three-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
Currents	Elcontrol Energy Net interchangeable amperometric sensors
Solar radiation	-
PT100	-
Anemometer	-
Transducers	-

FUNCTIONS:

Traditional electrical analysis	V, I, P, Q, S, F, PF, THD(V)%, THD(I)%, cosφ, φ, peaks, minimums, maximums, averages, max.
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
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

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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 (4Gb)
MEASUREMENTS:	
Sampling frequency	128 samples per cycle (adaptive in 40Hz-70Hz range)
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), 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	3 channels with common neutral
Input impedance	4 Mohm
Scales	2
Direct measurement	Phase-phase: 7-400VAC 40-70Hz
Measurement with VT	Ratio: 1-60000
Permanent overload	Phase-phase: 1200VAC
Sensitivity	5VAC Phase-neutral, 7VAC Phase-phase, 10VDC
CURRENT (TRMS)	
Channels	4 independent channels
Input impedance	10KOhm
Scales	4
Measurement with current clamps	Ratio: 1-60000
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
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 ANALYSIS	Up to 50 th order

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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	-
Maximum distance indoor	-
Mesh network	-
WiFi	-
3G/4G	✓ 4G
SMS	✓ (commands through SMS available)
Wireless to PC	-
Elcontrol Cloud connectivity	✓
Remote control	✓
Wireless to PC	-
USB	to PC

DATA STORAGE:

Internal memory	64kB
External memory	Micro SD (4GB 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);
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REFERENCE STANDARDS:

Safety	EN 61010-1
Electromagnetic Compatibility (EMC)	EN 61326
Temperature	IEC 60068-2-1 (Operating temperature)
Vibrations	IEC 60068-2-6
Humidity	IEC 60068-2-30 (Humidity)
Overload	IEC 60947-1