

NanoVIP® DE™

Dispositivo di misurazione elettrica remoto per reti MRH™.

Remote electrical measuring device for MRH™ networks.

MRH™



NanoVIP® DE™ è un potente analizzatore di qualità dell'energia remoto da collegare a un dispositivo master NANOVIP® QUADRA™.

NANOVIP® DE™ può eseguire un ampio spettro di misure elettriche e inviarle al dispositivo master in tempo reale per combinarle con altre misure da ulteriori punti di misura remoti.

EN NANOVIP® DE™ is a powerful remote power quality analyzer to be connected to a NANOVIP® QUADRA™ master device.

NANOVIP® DE™ can perform a wide spectrum of electrical measures and send them to master device to be realtime combined with other measures retrieved by additional remote measure points.

MISURE OVUNQUE IN TOTALE SICUREZZA

- ✓ Autoconnessione alla rete MRH™
- ✓ Modalità client di rete
- ✓ Massima distanza di collegamento punto-punto **indoor**: 60m
- ✓ Massima distanza di collegamento punto-punto **outdoor**: 600m
- ✓ Può operare su reti: monofase, bifase, trifase equilibrata con o senza neutro, trifase sbilanciato con o senza neutro
- ✓ Analisi Power Quality energetica tradizionale completa.
- ✓ Permette l'analisi in tempo reale dei parametri generali di qualità dell'alimentazione di reti complesse e distribuite
- ✓ Spettro armonico per ogni fase e per il neutro fino al 50°
- ✓ Interruzioni di rete, sovratensioni, sottotensioni
- ✓ Misura reale del neutro corrente
- ✓ Visualizzazione delle forme d'onda delle correnti e tensioni
- ✓ Realizzazione di campagne di misura a lungo termine (oltre 24 in modo indipendente, senza limiti, se collegato alla rete)
- ✓ Multilingua

MEASUREMENT EVERYWHERE, SAFELY

- ✓ Self setting wireless network connection
- ✓ Max indoor point to point distance: 60m
- ✓ Max outdoor point to point distance: 600m
- ✓ MRH network client mode
- ✓ Can work on networks: single-phase, two-phase, three-phase balanced with or without neutral, three-phase unbalanced with or without neutral
- ✓ Full traditional power quality analysis.
- ✓ Can measure heterogeneous energies and power: solar, electrical loads, generators, storage systems, multiple grid connections, eolic, UPS, inverters etc
- ✓ The current and voltage harmonics for each phase and for the neutral up to 50°
- ✓ Imbalance of power phases
- ✓ Real measurement of the neutral current
- ✓ Display of the waveforms of currents and voltages
- ✓ Display of the time course of selectable parameters (trend)
- ✓ Automatic check of the correct connection of the implant tool
- ✓ Realization of long-term measurement campaigns (over 24 independently, unlimited if connected to the network)
- ✓ Multilanguage

NanoVIP® DE™

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
------	--

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) > 18h (wireless on)

CONNECTING SYSTEMS:

Systems frequencies	50Hz – 60Hz
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	-

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
Sags	Dips, swells & interruptions
Transients	Overvoltages & overcurrents
Unbalance	✓
Test EN 50160	-
Inrush current	✓
DC measures	✓
K factor	Up to the 25 th order
Alarms	-

NanoVIP® DE™

Alarms log	-
Tariff bands	-
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)
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 + 1 independent, auxiliary channel
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	5 independent channels
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
----------------------------	---------------------------

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)

NanoVIP® DE™

Active power count (kW)	Class 0.5
Reactive power count (kVar)	Class 1
HARMONIC ANALYSIS	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	600 m
Maximum distance indoor	60 m
Mesh network	✓
Wireless to PC	-
USB	✓
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); 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