NanoVIP® DS™

Dispositivo di misurazione elettrica remoto per impianti fotovoltaici in reti MRH™.

Remote electrical measuring device for photovoltaic systems within MRH™ networks.

NanoVIP® DS™ è un potente analizzatore di qualità dell'energia remoto per la misura di singoli pannelli o stringhe fotovoltaici.
Rileva tutte le grandezze necessarie alla misura e verifica di un impianto fotovoltaico (Temperature pannello e ambiente, irraggiamento, velocità del vento e parametri elettrici), inviandoli in temo reale a un dispositivo master NANOVIP® QUADRA™.

EN NanoVIP® DS™ is a powerful remote power quality analyzer for measuring individual panels or photovoltaic strings. It detects all the necessary parameters for the measurement and verification of a photovoltaic system (panel and environment temperatures, irradiation, wind speed and electrical parameters), sending them in real time to a NANOVIP® QUADRA™ master device.

MISURE SOLARI DISTRIBUITE E IN TEMPO REALE

- Autoconnessione alla rete MRH™
- Modalità client di rete
- Massima distanza di collegamento punto-punto **indoor**: 60m
- Massima distanza di collegamento punto-punto **outdoor**: 600m
- Temperatura pannelli (sonda in dotazione)
- Temperatura ambiente (sonda in dotazione)
- Irraggiamento solare (solarimetro in dotazione)
- Velocità del vento (anemometro opzionale)
- Misure DC per singoli pannelli e/o stringhe di pannelli
- E' possibile effettuare test differenziati per singola calata in impianti solari complessi
- Tutti dati locali sono disponibili in tempo reale sul dispositivo QUADRA master
- Test 82.25 per singolo ramo
- Realizzazione di campagne di misura a lungo termine (oltre 24 in modo indipendente, senza limiti, se collegato alla rete)
- Multilingua

REALTIME SOLAR 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
- Panel temperature (PT sensor supplied)
- Ambient temperature (PT sensor supplied)
- Solar radiation via solar meter (included in package)
- Wind speed (anemometer is optional)
- DC data for each panel or string of panel
- Possible to differentiate test result per each group of panels
- Realtime data available set by set on QUADRA master device
- Realization of long-term measurement campaigns (over 24 independently, unlimited if connected to the network)
- Multilanguage

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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 ±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	✓ (anemometer not included in package)
FUNCTIONS:	
Traditional electrical analisys	V, I, P, peaks, minimums, maximums, averages, max. demands, etc.
Neutral current	-
Three phase counters	kWh, kVArh, kVAh, both absorbed that generated
Counters for each single phase	kWh, kVArh, kVAh, both absorbed that generated
Cogeneration	✓
Waveforms	-
Harmonics	-
Sags	-
Transients	-
Unbalance	-
Test EN 50160	-
Inrush current	-
DC measures	-
K factor	-
Alarms	-
Alarms log	-

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Tariff bands	-
Energy costs	-
IEC 61724 network parameters	✓
Test EN 82.25	✓
OSU™ (One Shot UPS)	-
Measurament 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	DC single phase PV output line
Type of grid which can be connected	Low and medium voltage (LV and MV)
VOLTAGE (TRMS)	
Channels	1 independent DC 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	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
ACCURACY	
RMS voltages:	
Scale 1	±0.25% + 0.1%FS (2) @ RMS V < 350VAC (1)
Scale 2	±0.25% + 0.05%FS (2) @ RMS V > 350VAC (1)
RMS currents:	
Scale 1	±0.25% + 0.1%FS (2) @ RMS I < 5% IN clamp (1)
Scale 2	±0.25% + 0.05%FS (2) @ 5% < RMS I < 20% IN clamp (1)
Scale 3	±0.25% + 0.05%FS (2) @ 20% < RMS I < 50% IN clamp (1)
Scale 4	±0.25% + 0.05%FS (2) @ > 50% IN clamp (1)
Power	±0.5% + 0.05%FS (2)
Power Factor (PF)	±0.5°
Frequency	±0.01 Hz (40-70Hz)
Active power count (kW)	Class 0.5

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Reactive power count (kVar)	Class 1
HARMONIC ANALISYS	Up to 50th order Up to 7th 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

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