

Product Datasheet

Off Grid Inverter Single Phase 6kW

Description

The VOLTARIX Low Voltage Series Storage Inverter is designed to empower homeowners with greater energy independence and smarter power management.

With a rated power of 6 kW, it is fully compatible with low-voltage (40 – 60 V) batteries, ensuring safe, efficient, and stable energy storage performance.

Its intelligent energy management system operates based on time-of-use and demand charge rate structures, effectively minimizing energy purchases from the public grid and reducing electricity costs.

The VOLTARIX Smart Energy Management Platform features Dynamic Electricity Pricing & Automation, continuously monitoring real-time electricity prices and automatically adjusting system operation. Operating 24/7 autonomously, it helps users optimize energy consumption, reduce power bills, and maximize the return on solar investment — all without the need for manual intervention.



Key Features

- **Powerful Off-Grid Performance:** Rated at **6 kW** with support for both **grid and generator charging**, ideal for residential and small commercial systems.
- **Wide PV Compatibility:** Works efficiently with PV voltage range **80 – 500 V** and **dual MPPT trackers** for optimized solar energy harvesting.
- **Low-Voltage Battery Design:** Compatible with **Li-ion and Lead-acid batteries (40–60 V)** ensuring flexibility and safety in storage system design.
- **High Efficiency:**
 - **Max Efficiency:** 97.6 %
 - **CEC Efficiency:** 97.0 %
 - **PV-to-Battery Efficiency:** 98.1 %
 - **Battery-to-AC Efficiency:** 96.8 %
- **Smart Backup & UPS Function:** **Seamless transition (< 10 ms)** ensures continuous power to critical loads during grid outages.
- **Pure Sine Wave Output:** Provides clean, stable AC power suitable for sensitive electronic devices.
- **High Overload Capability:** Supports **1.5× rated power for up to 10 seconds**, ideal for motor or pump start-up surges.
- **Advanced Protection Suite:** Built-in safeguards including PV reverse polarity, over/under-voltage, overcurrent, short-circuit, ground-fault, insulation and arc-fault detection.
- **Rugged & Reliable:** **IP66** protection and **Class I** design enable outdoor or harsh-environment installation.
- **Flexible Communication:** Equipped with **LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G** and **SUNSPEC protocol** for easy remote monitoring and integration.
- **Compact & Lightweight:** Only **370 × 535 × 192 mm**, **20.5 kg**, with **wall-mount** installation for space-efficient setups.
- **Quiet & Efficient Cooling:** **Transformer less topology** with **intelligent fan** ensures optimal thermal management and long lifespan.
- **Certified Safety & Compliance:** Meets international standards for performance, safety, and electromagnetic compatibility.

Specification

Parameter	VOX-6K
PV Input	
Max. Input Power (kW)	12
Max. PV Voltage (V)	550
MPPT Range (V)	80 - 500
Full MPPT Range (V)	170 - 500
Normal Voltage (V)	360
Startup Voltage (V)	100
Max. Input Current (A)	18.5 × 2
Max. Short Current (A)	26 × 2
No. of MPP Tracker / No. of PV String	2 / 2
Battery Port	
Max. Charge/Discharge Power (kW)	6
Max. Charge/Discharge Current (A)	120
Battery Normal Voltage (V)	51.2
Battery Voltage Range (V)	40 - 60
Battery Type	Li-ion / Lead-acid etc.
AC Charge (Grid and Generator)	
Max. Continuous Current (A)	28
Max. Continuous Power (kVA)	6
Nominal Grid Current (A)	26.1
Nominal Grid Voltage (V)	L/N/PE, 220Vac, 230Vac
Nominal Grid Frequency (Hz)	50 / 60
Power Factor	1
AC Output	
Nominal Current (A)	26.1
Max. Continuous Current (A)	28
Max. Continuous Power (kVA)	6
Max. Continuous Apparent Power (kVA)	6
Nominal AC Voltage (V)	L/N/PE, 220Vac, 230Vac

Parameter	VOX-6K
Nominal AC Frequency (Hz)	50 / 60
Power Factor	1
Output Voltage Waveform	Pure Sine Wave
Overload Capacity	1.5 times / 10s
THDV	3%
Max Parallel Nr.	6
Efficiency	
CEC Efficiency (%)	97.0
Max. Efficiency (%)	97.6
PV to Bat. Efficiency (%)	98.1
Bat. between AC Efficiency (%)	96.8
Protection	
PV Reverse Polarity Protection	Yes
Over Current/Voltage Protection	Yes
AC Short Circuit Protection	Yes
Residual Current Detection	Yes
Ground Fault Monitoring	Yes
Insulation Resister Detection	Yes
PV Arc Detection	Yes
Ingress protection (IP)	IP66
Protective Class	Class I
Inverter Isolation	Non-isolated (PV - AC - BAT)
Overvoltage Category	OVC III (AC Main), OVC II (DC)
Surge protection	Surge III
General Data	
Dimensions (W x H x D, mm)	370 × 535 × 192
Weight (kg)	20.5
Topology	Transformerless
Cooling	Intelligent Fan
Relative Humidity	0 - 100 %
Operating Temperature Range (°C)	-25 to 60 (Derating 45)
Operating Altitude (m)	< 4000
Standby Consumption (W)	< 10
Mounting	Wall Bracket
Communication with RSD	SUNSPEC
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec