

Product Datasheet

Three Phase Hybrid Storage Inverter 7-12 kW (LV Battery Supported)

Description

The VOLTARIX Low Voltage Series Storage Inverters are engineered to enhance energy independence and reliability for modern homeowners.

With a power range from 7 kW to 12 kW, these inverters are fully compatible with low-voltage (40–60 V) batteries, offering safe, efficient, and flexible energy storage solutions.

The system's intelligent energy management operates based on time-of-use and demand charge rate structures, which effectively minimize electricity purchases from the public grid and optimize self-consumption. Thanks to the UPS function (switching time < 10 ms), critical household loads remain continuously powered during grid outages. Additionally, under backup mode, the inverter provides up to 150% peak output overloading, ensuring stable operation even in demanding conditions.

The VOLTARIX Smart Energy Management Platform features Dynamic Electricity Pricing & Automation, a next-generation energy optimization tool based on real-time electricity price monitoring. It continuously tracks price fluctuations and automatically adjusts inverter operation for maximum efficiency. Operating 24/7 fully autonomously, the system helps users reduce power costs, maximize energy utilization, and achieve true energy independence — without the need for manual intervention..



Key Features

- **Wide Power Range:** Available from **7 kW to 12 kW**, perfectly suited for residential and small commercial applications.
- **High PV Voltage Compatibility:** Supports up to **950 V PV input** and wide **MPPT range (80–900 V)** for maximum solar energy harvesting.
- **Dual MPPT Design:** Two independent trackers ensure flexible array configuration and optimal performance under varying sunlight conditions.
- **High Charge/Discharge Capacity:** Handles up to **370 A** battery current with **51.2 V nominal voltage**, compatible with **Li-ion and lead-acid** batteries.
- **Smart Energy Management:** Optimizes energy flow based on **time-of-use** and **demand charge** strategies to minimize grid dependence.
- **Seamless UPS Function:** **<10 ms switching time** guarantees uninterrupted power for critical loads during grid outages.
- **Pure Sine Wave Output:** Provides stable, clean AC power — safe for sensitive home or industrial electronics.
- **Peak Power Capability:** Delivers up to **150% overload** for short durations (1.5× rated power for 10s).
- **High Efficiency:**
 - **Max Efficiency:** 98.1%
 - **CEC Efficiency:** 96.8%
 - Ensures optimal energy conversion and reduced power loss.
- **Comprehensive Protection:** Includes PV and battery reverse polarity, over/under-voltage, overcurrent, short circuit, ground fault, residual current, insulation and arc-fault protection.
- **Durable Design:** **IP66 enclosure** and **Type II surge protection** make it suitable for outdoor or harsh environments.
- **Advanced Communication:** Equipped with **LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G**, and **SUNSPEC protocol** for smart monitoring and control.
- **Compact and Reliable:** Dimensions **600 × 400 × 250 mm**, weight **30 kg**, transformer less topology with **intelligent fan cooling**.
- **Certified and Safe:** Designed to meet global performance and safety standards, ensuring long-term reliability and user confidence.

Specification

Parameter	V3X-7K-TL	V3X-8K-TL	V3X-9K-TL	V3X-10K-TL	V3X-11K-TL	V3X-12K-TL
PV Input						
Max. Input Power (kW)	10.5	12	13.5	15	16.5	18
Max. PV Voltage (V)	950	950	950	950	950	950
MPPT Range (V)	80 - 900	80 - 900	80 - 900	80 - 900	80 - 900	80 - 900
Full MPPT Range (V)	180 - 850	200 - 850	225 - 850	250 - 850	275 - 850	300 - 850
Normal Voltage (V)	650	650	650	650	650	650
Startup Voltage (V)	100	100	100	100	100	100
Max. Input Current (A)	26 + 18.5	26 + 18.5	26 + 18.5	26 + 18.5	26 + 18.5	26 + 18.5
Max. Short Current (A)	32 + 25	32 + 25	32 + 25	32 + 25	32 + 25	32 + 25
No. of MPP Tracker / No. of PV String	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Battery Port						
Max. Charge/Discharge Power (kW)	10.5	12	13.5	15	16.5	18
Max. Charge/Discharge Current (A)	220	250	280	310	340	370
Normal Charge/Discharge Current (A)	180	200	230	250	275	300
Battery Normal Voltage (V)	51.2	51.2	51.2	51.2	51.2	51.2
Battery Voltage Range (V)	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60
Battery Type	Li-ion / Lead-acid etc.					
AC Grid						
Max Continuous Current (A)	11	12	14	15	17	18
Max Continuous Power (kVA)	7	8	9	10	11	12
Nominal Grid Current (A)	11 / 10.5	12 / 11.5	14 / 13	15 / 14.5	17 / 16	18 / 17.5
Nominal Grid Voltage (V)	380 / 400	380 / 400	380 / 400	380 / 400	380 / 400	380 / 400
Nominal Grid Frequency (Hz)	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60
Power Factor	1 (adjustable 0.8 leading to 0.8 lagging)					
Current THD (%)	< 3	< 3	< 3	< 3	< 3	< 3
AC Load Output						
Max Continuous Current (A)	11	12	14	15	17	18
Max Continuous Power (kVA)	7	8	9	10	11	12
Max Peak Current (A) (60s)	22 / 21	24 / 23	28 / 26	30 / 29	34 / 32	36 / 35

Parameter	V3X-7K-TL	V3X-8K-TL	V3X-9K-TL	V3X-10K-TL	V3X-11K-TL	V3X-12K-TL
Max Peak Power (kVA) (60s)	10.5	12	13.5	15	16.5	18
Nominal AC Voltage L-N (V)	380 / 400	380 / 400	380 / 400	380 / 400	380 / 400	380 / 400
Nominal AC Frequency (Hz)	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60
Switching Time (ms)	Seamless					
Voltage THD (%)	< 3	< 3	< 3	< 3	< 3	< 3
Efficiency						
CEC Efficiency (%)	96.8	96.8	96.8	96.8	96.8	96.8
Max. Efficiency (%)	98.1	98.1	98.1	98.1	98.1	98.1
Protection						
PV Reverse Polarity Protection	Yes					
Bat. Reverse Polarity Protection	Yes					
Over Current/Voltage Protection	Yes					
Anti-Islanding Protection	Yes					
AC Short Circuit Protection	Yes					
Residual Current Detection	Yes					
Ground Fault Monitoring	Yes					
PV Arc Detection	Yes					
Enclosure Protect Level	IP66					
AC/DC Surge Protection	Type II					
General Data						
Dimensions (W x H x D, mm)	600 × 400 × 250					
Weight (kg)	30					
Topology	Transformer less					
Cooling	Intelligent Fan					
Relative Humidity	0 - 100%					
Operating Temperature Range (°C)	-25 to 60					
Operating Altitude (m)	< 3000					
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec					