

BK-INV Series

Model: BK-VM-3KVA

【Product Name: Household Photovoltaic Inverter】

Product Specifications

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Product Overview

The BK-VM-3KVA is a wall-mounted 230 V off-grid inverter-controller combo unit that integrates an MPPT solar controller, pure sine wave inverter, 24 V intelligent battery management, and UPS-level switching. With dimensions of just 95 × 270 × 348 mm and weighing only 5 kg, it can be installed on a wall in under 30 minutes, providing 24/7 stable green power for residential, RV, and small commercial applications.

Application

★ **Urban balconies/roofs**

3 kW panels + battery capacity up to 5 kWh, achieving 60–80% self-generation and self-consumption.

★ **RVs/campers**

Lightweight 24 V system, 400–600 W panels on the roof, providing uninterrupted power for 1–2 days in the wilderness.

★ **Off-grid/low-power rural areas**

Power water pumps, TVs, lighting, and internet, enjoying modern life even without grid connection.

★ **Small businesses**

Convenience stores, clinics, charging stations, automatic power supply during outages, eliminating the need for diesel generators.

★ **Emergency backup power**

Parallel operation with small gasoline/diesel generators, peak shaving, saving 30% fuel and reducing noise by 50%.

Product Features

★ **Ultra-wide MPPT**

90–430 V input, 3 kW PV power, full-load generation even in low-light conditions.

★ **10 ms UPS True Switching**

Seamless integration between grid power, PV, and battery, ensuring zero power interruptions for computers.

★ **Surge 2×Rated**

5-second 150% overload output, easily starting inductive loads such as refrigerators and water pumps.

★ **Battery Full Compatibility**

24 V lead-acid & lithium-ion three-stage charging, with a maximum charging current of 60 A, and expandable plug-and-play functionality.

★ **Cloud Monitoring (Optional)**

Built-in Wi-Fi, real-time monitoring of power generation, consumption, and SOC via

mobile app.

★ **Harsh Environments**

Full-power operation from -10°C to 50°C, removable dust filter, suitable for deserts, islands, and high-altitude regions.

★ **Lightweight and Portable**

5 kg, easily carried with one hand, ideal for RV camping and moving.

Specifications

Model		BK-VM-3KVA
Product Type		Residential photovoltaic inverter
Power Capacity		3000VA
AC Input	Voltage	230VAC
	Voltage Range	170-280Vac (for personal computers)
		90-280Vac (for household appliances)
Frequency	50 Hz/60 Hz	
PV Input	Rated Power	3000W
	Maximum Open-circuit Voltage Of Photovoltaic array	450VDC
	MPPT range @ Operating Voltage	90VDC-430VDC
	Rated Voltage	240V
Output Parameters (PV/Battery mode)	Number of MPPT	1
	Voltage	230V±5%
	Frequency	50 Hz
	Efficiency	≥91%
	Maximum Output Power	3000W
	Switching Time	10 ms (UPS), 20 ms (household appliances)
	Harmonic	3%
Overload Capacity	5s@≥150%load; 10s@110%-150%load	
Mains Mode	Voltage	230Vac±5%
	Frequency	50 Hz
	Efficiency	95%
Battery	Voltage	24V

	Charging Method	Three-stage charging
	Maximum Charging Current (MPPT)	60A
	Maximum Charging Current (AC)	60A
	Cold Start Voltage	23V
	Battery Type	Lead-acid, lithium-ion
	Protective Function	Output short circuit, overload, and over-temperature protection functions, etc.
	Communication	RS232
Environment	Operating Temperature	-10°C-50°C
	Storage Temperature	-15°C-60°C
	Humidity	5%-95%
Physical	dimensions (D×W×H)	95x270x348mm
	Weight	5kg