



VB1K0S110N

110kW CHARGING MODULE

PRODUCT INTRODUCTION

The **VB1K0S110N** 110kW PCS module is a non-isolated power converter with bi-directional AC/DC function. The module is featured with modular IGBT and fully digital control technology. It has off-grid, grid-connected and rectification modes, and it can intelligently switch among these modes according to dispatching or EMS instructions. In the meantime, it has reactive power compensation and harmonic compensation functions for the power grid. The module can be applied in the scenarios of distributed power storage, flexible power supply source and micro-grid with shared DC bus.

KEY FEATURES

Intelligence and High-efficiency

- New three-level technology, vector control, high conversion efficiency up to 98.8%
- Intelligent fan speed management, less power consumption and noises
- Wide constant working temperature range, $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$ (derates from 50°C)
- Support fault trace and OTA updates
- Long-term 110% overload operation

Grid Friendly

- Supports constant power, constant current or constant voltage, and features with functions of primary frequency modulation, LVRT/HVRT, and strong adaptability to grid
- Supports power factor control and reactive power compensation, which makes the power quality better
- Supports VSG and black-start function

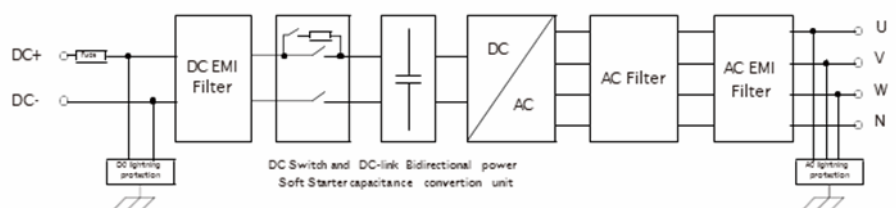
Flexible Configuration

- Supports connection in parallel to expand capacity, suitable for on-grid and off-grid application
- Modular design for more flexible and easier installation, wall-mount and rack-mount
- 3W+N or 3W+PE wiring, compatible with multiple power distribution system

Safe & Reliable

- Adopts independent air-duct cooling, high protection in IP66 level
- Key components lifespan prediction (electrolytic capacitor, X capacitor, fan)
- Long life design of system and components, neutral-point balancing control technology based on fuzzy logic, and advanced cavity temperature management to improve product life cycle

Circuit Diagram



VB1K0S110N SPECIFICATIONS

Specification	Model	VH1K0S110N
DC end	DC voltage range	680Vdc- 1000Vdc
	Max. DC current	196A
	Max. power	132W
AC end (grid-connected)	Rated AC power	110kW
	Max. AC power	121kW (long time) 132kW (short time 1 min)
	Max. AC current	190A
	Rated grid voltage	400VAC
	Grid voltage range	340VAC~440VAC
	Grid frequency range	50Hz/60Hz (settable) 45-55Hz/55-65Hz
	Wiring	3W+N/3W+PE
	THDi	≤3% (@full load)
	Power Factor	≥±0.99
	Charge-discharge switching time	≤ 15ms
AC end (off-grid)	Rated AC power	110kW
	Max. AC power	121kW (long time) 132kW (short time 1 min)
	Rated output voltage	400VAC
	Rated grid frequency	50Hz/60Hz (settable)
	THDv	≤3%
General Info.	Peak efficiency	≥98.8%
	Dimension(W*D*H)	700mm*870mm*260mm
	Weight	≤75kg
	Cooling	Intelligent force-air cooling
	Noise	≤75dB
	Ambient temperature	-40°C~+60°C
	IP Grade	IP66
	Relative humidity	≤ 95% RH, no condensation
	Altitude	≤ 4000m(derating from 3000m)
	Communication	RS485, CAN, Ethernet, WIFI(optional)
	Protocol	MODBUS-RTU, CAN2.0
	Interface	LED, APP
		Power grid functions
Standards Compliance		GB/T 34120-2023, GB/T 34133-2023
Protection	Overcurrent	Support
	Short-circuit	Support
	AC-DC Overvoltage	Support
	Grid Monitoring	Support
	Insulation Monitoring	Support
	Reverse DC Connection	Support
	Anti-island Protection	Support
	Surge Protection	Support
	Communication Protection	Support
	Unmatched Battery voltage	Support
	Over-temperature	Support
Fan Fault	Support	

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Disclaimer: The specifications of this catalog is for reference only, the performance of the products may vary from different application scenarios and environment. Product specification is subject to change without prior notice.