

JKP-100LN-BA
Product Specifications

Manufacturer:
Zhejiang Jinko Energy Storage Co., Ltd.

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1. Product Introduction

This product is a modular converter with a rated power of 100 kW, specifically designed for compact energy storage systems. Serving as the core power conversion unit in energy storage devices, it adopts a three-level topological structure that enables bidirectional energy flow and supports a wide range of battery voltages.

This PCS is suitable exclusively for grid-connected operation mode.

2. Requirements that the Product Meets

This Power Conversion System meets the following requirements:

IEC 62477-1: 2012 +A1	Safety requirements for power electronic conversion systems and equipment
IEC 61000-6-2/-4	Electromagnetic Compatibility (EMC)
IEC 62109-1:2010	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements
IEC 62109-2:2011	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters
AS/NZS 4777.2:2020 +A1:2021	Grid connection of energy systems via inverters, Part 2: Inverter requirements

3. Basic Functions

1. The PCS converter performs AC/DC conversion between the power grid and the battery, enabling bidirectional energy flow.
2. Utilizes a three-phase four-leg topology to control single-phase, three-phase active, and reactive power.
3. Enables active and reactive power regulation.
4. Operates exclusively in grid-connected mode (Mode of operation: On-grid)

4. Advanced Functions

In combination with the EMS controller, the PCS offers the following advanced application features:

Peak Load Shaving:

- The EMS controller calculates the expected power value based on historical or real-time load curves.
- The PCS adjusts its output to achieve "peak load shaving."

Charging and Discharging Control:

- The EMS controller determines the PCS module's charging/discharging state and current based on control strategies and battery data from the BMS.

- The PCS executes charging/discharging instructions from the BM /EMS controller.

Reactive Power Regulation:

- The PCS adjusts reactive power output per EMS controller commands, staying within its apparent power range.

Frequency Response:

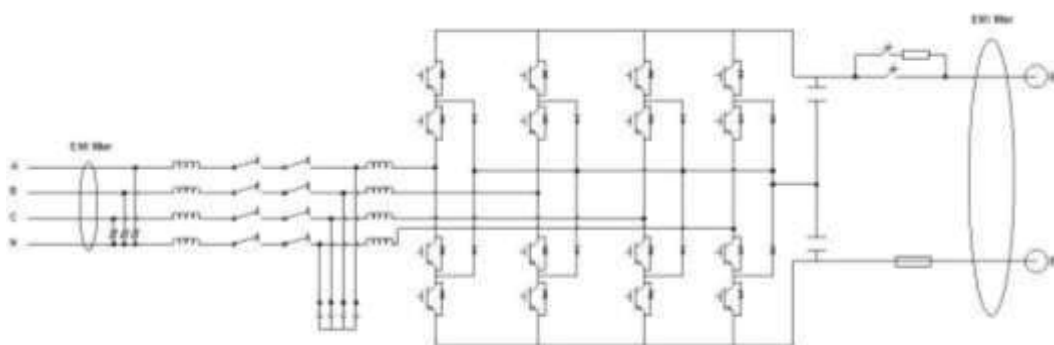
- The inverter maintains operational stability during system frequency abnormalities.

Main Protection Functions:

- Provides real-time fault protection for grid-side voltage and frequency anomalies, including:
 - Overvoltage and undervoltage protection for the power grid.
 - High and low-frequency protection of the power grid.
 - DC overvoltage/under voltage protection
 - DC overcurrent protection
 - DC polarity reverse protection
 - AC overcurrent protection
 - Overtemperature protection
 - Phase loss protection
 - Anti-islanding protection
 - AC incoming phase sequence error protection
 - Communication fault protection
 - Cooling system protection
 - Emergency stop protection function
 - Feedback the battery fault information protection based on BMS

5. PCS Parameters

5.1. Topology for modules



5.2. Environmental conditions

- Operating ambient temperature: -25°C+60°C (derating required for temperatures higher than 45°C)
- Relative humidity: 5%-95%, no condensation
- Sea level of installation: <4,000 m (>2,000 m needs to be derated)
- Corrosion-proof grade: C1

- Electrical safety grade: Class I
- Shell protection grade: IP20

6. Technical Parameters

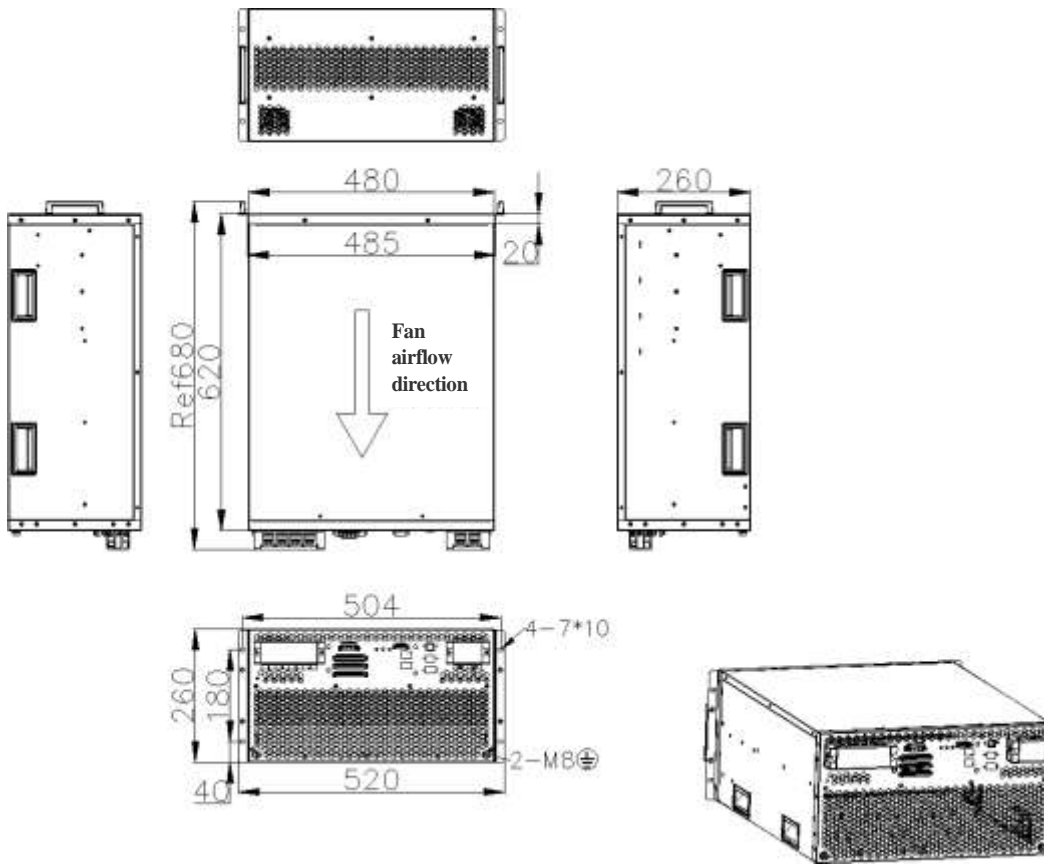
DC Side Parameters		
Circuits	1	
Battery Chemistry	Lithium Iron Phosphate (LFP)	
DC voltage range	DC 630 V-900 V	Full load
Input current range(Battery port)	122~174.6A	
DC maximum current	175A	
Rated DC power	100 kW	
Input Start-up Voltage	600Vdc	
Stabilized voltage precision	$\leq\pm 2\%$	
Stabilized current precision	$\leq\pm 5\%$	
Voltage limiting characteristics	Yes	
Current limiting characteristics	Yes	
AC Grid-connected Parameters		
Rated power	100 kW	
Rated apparent power	100kVA	
Max charging power	110kW	
Overload capacity	173 A	
Rated voltage	AC 400 V	
Rated and Max. AC current	145A/160A	
AC access method	Three-phase four-wire	
Isolation mode	Non-isolated	
Grid voltage range	340-460 V	
Grid frequency range	50 Hz/60 Hz	
Total harmonic distortion rate of current	$\leq 3\%$ (full load)	
Power factor	-0.99-0.99	
Current DC component	$\leq 0.5\%$	
Charge and discharge conversion time	<100 ms	
Other Parameters		

Maximum conversion efficiency	>98%	
Allowable ambient temperature	-25°C-60°C	> 45°C derating
Allowable relative humidity	≤95%	
Noise	≤75 dB	
Protection grade	IP20	
Protective class	I	
Pollution degree	2	
Over-voltage Category	II (DC) /III (AC)	
Max. operating altitude	4000 m	>2000 m (derating)
Enclosure Dimensions	W 480 × H 260 × D 720 mm	Cabinet size
Structure and cooling of PCS module	Details of the structure and heat dissipation direction are shown in the appearance and dimensional drawing;	
Weight	70 kg	
Cooling method	Forced air cooling	
Multi-module networking mode	AC side in parallel	
Emergency stop function	Module IO receives emergency stop switch commands	
Man-machine interaction	The module does not have an LCD screen and requires an external 7-inch configuration screen	
BMS communication interface	CAN	
EMS communication interface	Network interface or 485	
Communication with the screen	Network interface	
Active anti-islanding method	Frequency Shift	
DRM	0	
Topology	Non-isolated type	

7. External appearance and dimensions



External appearance of the JKP-100LN-BA



Dimensional drawing of the JKP-100LN-BA module

Product is **Made In China**

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