



Integrated DESS Specification

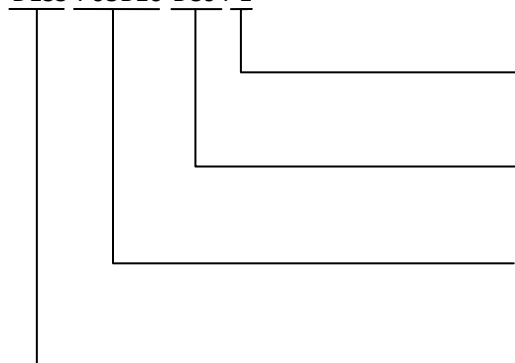
BYD Distributed Energy Storage System (DESS)

— — Integrated Type (European Version)

Integrated DESS is a distributed energy storage system that integrates energy conversion system (PCS), energy batteries and BMS, photovoltaic charger with little-volume and compact-structure. Integrated DESS is single-phase AC output; applicable for the occasions that electrical load is relatively small.

1、 System Naming Rule

DESS-P03B10-BC04-E



U: the United States; **C:** China; **E:** Europe; when there is no code, the default is European version

C: photovoltaic charger; **04:** 4KW;

B: having load equilibrium function

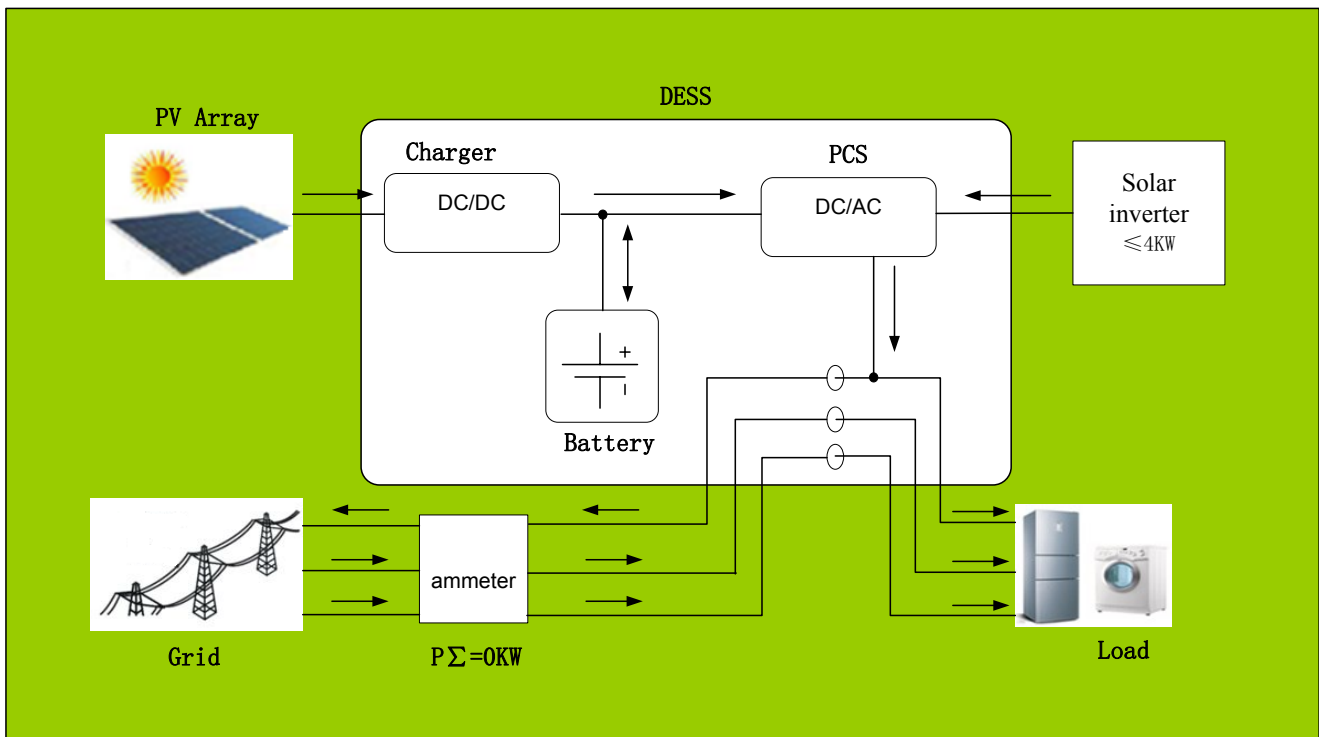
P03: the power of PCS is 3KW, and the power of energy storage capacity is 10KWh

DESS: the English abbreviation form of Distributed Energy Storage System



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2、System Principle Diagram



System Principle Diagram

3、Performance Characteristics

- Converters with Isolation design having safety and reliability;
- Fe-battery application with high capacity and high safety;
- Operate in on-grid mode or off-grid mode;
- Forming small-scale micro-grid system with photovoltaic generation and other AC generating equipment;
- Having three-phase electricity meter equilibrium function

4、Function Description

DESS shall convert the electricity generated by photovoltaic batteries and then storage it to energy storage batteries and also shall converter it to AC to feed the grid or provide to users. During this process, in addition to clean and green electricity got, users shall sell the excess electricity to the grid; when the grid is black out, DESS shall independently provide stable electricity to users; when the grid does not allow the electricity feedback, DESS shall realize the balance of use and generation of electricity in the



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system, that is to guarantee the less use of grid electricity, and also guarantee the system operates in according to the grid demands.

The system reserves the access ports of photovoltaic generating equipment and other AC power supplies (except diesel generator), meanwhile the system has the capacity of photovoltaic generation, external connection of AC power supply, electricity load and grid input that matching the system itself. When there is not enough battery storage, the energy storage batteries shall be charged by grid or photovoltaic and other generating equipment that merged by the AC side for the emergency or black-out.

Three-phase electricity meter equilibrium function is for the three-phase grid connected to the user, and its electricity measurement is done by three-phase electricity meter. While the electricity generated by single-phase DESS shall be only input into some phase or absorbed the electricity of certain phase; this function through calculating the load of three loads, makes the sum of power of three phases shall cover the output power of single-phase DESS to offset the meter readings.

5、Specification (European Version)

Type		Remarks	P03B10-C00	P03B10-C04	P03B10-BC00	P03B10-BC04
Basic Function and Configuration	Converter Module		3KW	3KW	3KW	3KW
	Battery Energy Storage		10KWh	10KWh	10KWh	10KWh
	Photovoltaic Charger Module		—	4KW	—	4KW
	Three-phase Equilibrium Function		—	—	Yes	Yes
	On-grid Operation		Yes	Yes	Yes	Yes
	Off-grid Operation		Yes	Yes	Yes	Yes
	BMS with Equalization		Yes	Yes	Yes	Yes
	HMI Display		Yes	Yes	Yes	Yes
	AC Power Supply Connected	Photovoltaic generation and other AC power	$\leq 4KW$	$\leq 4KW$	$\leq 4KW$	$\leq 4KW$



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		supply onnected(except diesel generator)					
Converter Parameter	Nominal Power		3KW				
	Nominal Voltage		230VAC				
	Frequency		50HZ				
	Max. Output Current		13.1A				
	On-off Grid Switch Time		<20ms				
	Max. Inverter Efficiency		93.70%				
	Output Waveform		Sine Wave				
	THD	Current (On-grid Mode)		<4%			
		Voltage (Off-grid Mode)		<2%			
	Reference Standard for Certification		VDE4105/AS4777/CEI0-21				
Energy Storage Battery Parameter	Nominal Voltage		51.2V				
	Working Voltage Range		44.8V~57.6V				
	Battery Type		LiFePO4				
	Energy Storage Capacity		10KWh				
Photovoltaic Charger Parameter	Nominal Power		—	4KW	—	4KW	
	Input Voltage Range		—	65V~145V	—	65V~145V	
	MPPT Voltage Range		—	70~120V	—	70~120V	
	Output Voltage		—	32V~60V	—	32V~60V	
	Max. Output Current		—	70A	—	70A	
	Max. Efficiency		—	97.30%	—	97.30%	
System Parameter	Communication Interface		Ethernet				
	IP Grade		20				
	Working Ambient Temperature		0~45°C				



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	Working Relative Humidity		10%~90% (No Condensation)			
	Altitude		<2000m			
	Overall Dimension (mm)	L×W×H	650×610×1540			
	Net Weight (KG)		251	261	255	265

6、Appearance Effect

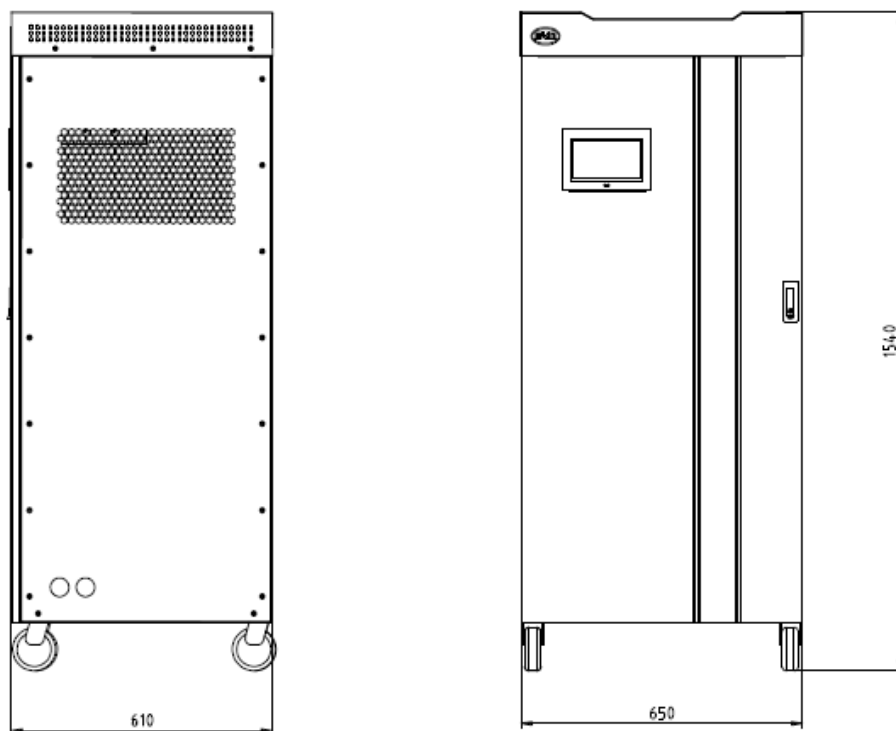


Appearance Effect of Integrated DESS



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7、Dimension Figure



Dimension Figure of Integrated DESS