

MB56 DOCAN ENERGY 51.2V 628Ah Stackable DIY Battery Kit (JK BMS Edition)

Professional Grade DIY Enclosure Kit for Home & Industrial Energy Storage

IMPORTANT NOTE FOR CUSTOMERS: This is a **DIY Kit Only**. Battery cells are **NOT included** in this kit. All other mechanical and electronic components required for assembly are fully provided.

1. Product Overview

This stackable, heavy-duty DIY enclosure kit is specifically designed for high-capacity LiFePO4 solar energy storage systems. Featuring a pre-wired cabinet, a professional **JK BMS with 2A Active Balancer**, and built-in safety controls, it provides a straightforward assembly process for custom-built 51.2V 628Ah battery packs.

What is Included in the Kit:

- **Heavy-Duty Cabinet:** Painted iron enclosure (1.5mm thickness) with stackable recessed corners.
 - **Mobility System:** 4 heavy-duty caster wheels (equipped with reliable **manual brakes**).
 - **BMS Board:** Pre-installed JK-PB2A16S20P 200A smart BMS.
 - **User Interface:** 4.3-inch interactive LCD touch screen.
 - **Safety Disconnect:** Integrated 300A DC circuit breaker.
 - **Wiring & Accessories:** Pre-terminated power cables, flexible busbars, balanced sampling lines, NTC temperature probes, dry contact terminals, and mounting hardware.
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2. Cell Compatibility & Configuration

The enclosure's internal volume is optimized to accommodate standard prismatic aluminum-shell LiFePO4 cells in two distinct configurations to reach a total capacity of **51.2V 628Ah (approx. 32.15 kWh)**:

1. **32-Cell Layout (16S2P Configuration):** Designed for **32 pcs of 314Ah** cells.
 2. **16-Cell Layout (16S1P Configuration):** Designed for **16 pcs of 628Ah** cells.
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3. Technical Specifications

Parameter	Specifications
Model	Stackable 51.2V 628 DIY Kit
BMS Model	JK-PB2A16S20P (200A Continuous Rated)
Active Balancing Current	2A Active Equalization (Fully customizable transfer rate)
Cabinet Material	Painted Iron (Thickness: 1.5mm)
IP Protection Level	IP20
Dimensions (L × W × H)	742 mm × 490 mm × 583 mm
Distance from Bottom to Ground	20 mm (Equipped with 4 Braked Wheels)
Net Weight (Empty Cabinet Kit)	55.7 kg
Communication Protocols	CAN, RS485 (dual ports), RS232, and Bluetooth
Display Panel	4.3-inch Color Touch Screen
Ambient Operating Temperature	-30°C to 55°C

4. BMS Protection & Control Parameters

The integrated JK BMS features highly customizable parameters via App or PC software. Below are the default factory safety configurations:

Voltage Protection

- **Single-Cell Overcharge Protection:** 3600 mV (*Configurable*)
- **Single-Cell Overcharge Recovery:** 3550 mV (*Configurable*)

- **Single-Cell Under-Voltage Protection:** 2600 mV (*Configurable*)
- **Single-Cell Under-Voltage Recovery:** 2650 mV (*Configurable*)
- **Single-Cell Automatic Shutdown Voltage:** 2500 mV (*Configurable*)

Current Protection & Limits

- **Maximum Continuous Charging Current:** 25 A (*Configurable*)
- **Charging Overcurrent Limit Current:** 10 A
- **Maximum Continuous Discharge Current:** 150 A (*Configurable up to 200A based on system requirements*)
- **Discharge Overcurrent Delay:** 300 s (*Configurable*)
- **Short Circuit Protection Current:** 300 A
- **Short Circuit Protection Delay / Release:** 20 us / 60 s

Active Equalization (Balancing)

- **Balancing Start-up Voltage:** 3000 mV (*Configurable*)
- **Balancing Trigger Differential Voltage:** 10 mV (*Configurable*)
- **Max Balancing Current:** Up to 2 A

Temperature Control & Safety Heating

- **Over-Temperature Protection (Charge/Discharge):** 70°C (*Recovery at 60°C*)
- **Low-Temperature Charge Protection:** -20°C (*Recovery at -10°C*)
- **MOSFET Over-Temperature Protection:** 100°C (*Recovery at 80°C*)
- **Integrated Smart Heating Function:** Configured to automatically engage low-temperature cell heating during charge if temperatures fall below -20°C, stopping once cells reach 10°C.

5. Interface & Control Panel

The front panel provides complete control and real-time monitoring of your battery bank:

1. **Positive (+) & Negative (-) Terminals:** Heavy-duty quick-connect battery terminals.
2. **Display Screen:** 4.3-inch LCD touch screen for real-time cell voltages, state-of-charge (SOC), temperature, and alarm logs.

3. **DC Breaker:** 300A ON/OFF switch for quick system isolation.
 4. **DIP Switch:** 4-bit dial for parallel address assignment (Supports Address 0 to 15).
 5. **LED Status Lights:** Dedicated indicators for RUN (Operation), ALM (Alarm), and 6-level Capacity (L1 to L6).
 6. **Communication Ports:** Dedicated interfaces for CAN, RS485-1, RS485-2, and RS232, enabling seamless integration with mainstream solar inverters.
 7. **Dry Contacts:** Integrated dual-channel programmable dry contacts for external alarms or auxiliary control.
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6. Multi-Pack Parallel Guidelines & Safety Instructions

When scaling your system up to 16 packs in parallel, please adhere strictly to the following engineering limitations:

Critical Overcurrent Warning:

The chassis terminal posts of this kit are rated for a maximum continuous current of **200A**.

- **If your system's combined load current exceeds 200A**, you **MUST NOT** route all current through a single cabinet's terminals in a daisy-chain.
- Instead, you must connect multiple cabinets in parallel to an external common DC busbar (parallel output), ensuring the current through any single cabinet's terminal posts remains strictly under 200A. Prolonged overcurrent will lead to terminal overheating and irreversible damage.

Series Connection Restriction:

- **DO NOT connect these battery packs in series.** Series connection is strictly prohibited and will cause immediate, irreversible damage to the internal BMS and cell chemistry.