

Residential Energy Storage Batteries

Toyomax TB Series



LiFePO4 Lithium Battery System (10.24kWh – 20.48kWh)

Product Title: Toyomax TB Series Residential Lithium Energy Storage Battery

Subtitle: High-Capacity 51.2V LiFePO4 Battery System with Parallel Scalability & Multi-Inverter Protocol Support

Overview

The Toyomax TB Series (10.24kWh – 20.48kWh) is a high-performance 51.2V Lithium Iron Phosphate (LiFePO4) energy storage battery designed for home energy management, grid-outage backup, and light commercial applications. Built with premium cell chemistry and a heavy-duty metal enclosure, the TB Series offers long cycle life (≥ 6000 cycles), high round-trip discharge efficiency ($\geq 98\%$), and deep depth-of-discharge capabilities. Featuring multi-protocol compatibility, integrated BMS protection, and support for up to 16 units in parallel, it provides scalable power independence for residential solar systems.

Key Features & Highlights

- **High-Safety LiFePO4 Chemistry:** Built with stable Lithium Iron Phosphate cells that eliminate combustion and thermal runaway risks under high impact, overcharge, or short-circuit conditions.
- **Long Cycle Life:** Delivers over 6,000 cycles at 80% Depth of Discharge (DOD), providing long calendar life and lower lifetime cost of ownership compared to traditional lead-acid batteries.

- **High Parallel Scalability:** Supports up to 16 units connected in parallel to scale overall energy capacity up to 327.68kWh for large residential or commercial microgrids.
- **Multi-Inverter Protocol Support:** Seamlessly integrates and communicates via CAN/RS485 protocols with major hybrid and off-grid inverter brands.
- **Lighter & Compact Build:** Weighs approximately 40% of an equivalent lead-acid battery array, offering easier floor-standing installation with integrated caster wheels.
- **High Discharge Power:** Delivers twice the discharge power of traditional batteries while maintaining steady voltage stability under heavy load surges.
- **Smart System Diagnostics:** Features built-in LCD status displays with optional Wi-Fi and Bluetooth communication modules for real-time monitoring.

Technical Specifications

Specification Parameter	TB-48200	TB-48300	TB-48400
Rated Voltage	51.2 V	51.2 V	51.2 V
Rated Capacity	200 AH	300 AH	400 AH
Total Rated Energy	10240 Wh (10.24 kWh)	15360 Wh (15.36 kWh)	20480 Wh (20.48 kWh)
Cell Combination Method	16S1P	16S1P	16S1P
Cycle Life	≥ 6000 Cycles @ 80% DOD	≥ 6000 Cycles @ 80% DOD	≥ 6000 Cycles @ 80% DOD
Charge / Discharge Efficiency	Charge ≥97% / Discharge ≥98%	Charge ≥97% / Discharge ≥98%	Charge ≥97% / Discharge ≥98%
Max. Charge Current	100 A (Recomm. 40A)	100 A (Recomm. 60A)	200 A (Recomm. 80A)

Specification Parameter	TB-48200	TB-48300	TB-48400
Max. Discharge Current	150 A	200 A	200 A
Pulse Discharge Current	220 A (3s)	220 A (3s)	220 A (3s)
Charge Voltage	57.6 V	57.6 V	57.6 V
Discharge Cut-Off Voltage	43.2 V	43.2 V	43.2 V
Operating Temperature (Charge)	0°C to 60°C	0°C to 60°C	0°C to 60°C
Operating Temperature (Discharge)	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C
Parallel Expansion Units	Up to 16 Units	Up to 16 Units	Up to 16 Units
IP Enclosure Rating	IP32	IP32	IP30
Case Material	Metal	Metal	Metal
Dimensions (L*W*H)	740 x 450 x 260 mm	880 x 448 x 260 mm	900 x 450 x 260 mm
Net Weight	90 kg	119 kg	140 kg
Communication / Displays	CAN / LCD Display (Optional	CAN / LCD Display (Optional	Wi-Fi / Bluetooth

Specification Parameter	TB-48200	TB-48300	TB-48400
	Wi-Fi / Bluetooth)	Wi-Fi / Bluetooth)	(Optional CAN / LCD)