

Residential & Commercial Solar Inverters

Toyomax TY Series Off-Grid / Hybrid Solar Inverters (6.2kW – 12kW)



Product Title: Toyomax TY Series Off-Grid & Hybrid Solar Inverter

Subtitle: High-Capacity Pure Sine Wave Solar Inverter with Parallel Stacking & Segmented Energy Management

Overview

The Toyomax TY Series (6.2kW – 12kW) is a heavy-duty 48V hybrid inverter engineered to deliver reliable, uninterrupted power for residential homes, commercial hubs, and off-grid facilities. Featuring pure sine wave output, advanced segmented charging/discharging controls, and a high-surge motor starting capability (up to 7HP), the TY Series operates as a flexible power hub capable of blending solar, utility grid, and generator power seamlessly.

With built-in anti-backflow controls, energy-saving idle modes, and support for up to 6 units in parallel, it offers scale for growing enterprise power needs.

Key Features & Highlights

- **High Surge Motor Driving Capacity:** Engineered to handle heavy inductive loads, starting up to 4HP (TY-6.2K) or 7HP (TY-12K) motor loads effortlessly.
- **Segmented Charge/Discharge Management:** Programmable time-slot controls for grid charging and battery discharge to optimize utility time-of-use rates.

- **Flexible Dual Output Modes:** Supports dual operational modes—mains bypass and inverter output—for uninterrupted power supply (UPS) performance (<10ms transition).
- **Anti-Backflow Grid Connection:** Integrated anti-backflow function prevents unwanted power export to the utility grid while enabling PV power-sharing.
- **Energy-Saving Low Idle Mode:** Reduces no-load losses with built-in power-saving modes (self-consumption as low as $\leq 25\text{W}$ for 6.2kW model).
- **Parallel System Expansion:** Supports up to 6 units connected in parallel to scale overall system power up to 72kW.
- **Smart Remote Telemetry:** Integrated USB, RS485, and dry contact ports with optional Wi-Fi/GPRS modules for mobile app and computer monitoring.

Technical Specifications

Specification Parameter	TY-6.2K-48V-EU	TY-12K-48V-EU
Rated Output Power	6200VA / 6200W	12000VA / 12000W
Peak Power Capacity	13000VA	22000VA
Output Waveform	Pure Sine Wave	Pure Sine Wave
Nominal Output Voltage	230Vac $\pm 5\%$	230Vac $\pm 5\%$
Battery Nominal Voltage	48Vdc (Min. starting 44V)	48Vdc (Min. starting 44V)
Battery Type Compatibility	Lithium-Ion & Lead-Acid	Lithium-Ion & Lead-Acid
Loaded Motor Capability	Up to 4 HP	Up to 7 HP
Number of MPPT Trackers	1 Tracker	2 Trackers
Max. PV Input Power	6200W	12000W (6000W + 6000W)
MPPT Voltage Range	120Vdc – 450Vdc	90Vdc – 450Vdc
Max. PV Open-Circuit Voltage	500Vdc	500Vdc
Max. Combined Charging Current (AC+PV)	0 – 100A	0 – 150A

Specification Parameter	TY-6.2K-48V-EU	TY-12K-48V-EU
Transfer Time (Bypass to Inverter)	10ms (Typical)	10ms (Typical)
Parallel Units Supported	1 to 6 Units	1 to 6 Units
Operating Temperature	-15°C to 55°C	-15°C to 55°C
Communication Ports	USB / RS485 / Wi-Fi / GPRS / Dry Contact	USB / RS485 / Wi-Fi / GPRS / Dry Contact
Product Dimensions (LWD)	456 x 300 x 125 mm	670 x 440 x 145 mm
Net Weight	10.0 kg	19.5 kg
Safety & EMC Certifications	CE (IEC62109-1.2), UL1741, EN61000, FCC Class B	CE (IEC62109-1.2), UL1741, EN61000, FCC Class B

Key Applications

Residential solar-plus-storage systems, small business backup, agricultural water pumping, cold storage setups, and light commercial microgrids.