Hybrid Solar Inverter

TESSON ENERGY TE-HB series hybrid inverters are designed to integrate solar, battery, and grid power seamlessly for residential and commercial applications. They support both on-grid and off-grid functionality with advanced energy management and smart protection features.

TESSON ENERGY

Hybrid Solar Inverter Technical Specifications

Model	TE-HB1KW	TE-HB2KW	TE-HB3KW	TE-HB5KW	TE-HB8KW	TE-HB10KW
Hybrid Inverter Output (AC)						
Rated Output Power	1 kW	2 kW	3 kW	5 kW	8 kW	10 kW
Output AC Voltage	230V (1-Φ) / 400V (3-Φ)					
Output Waveform	Pure Sine Wave					
Output Frequency	50Hz ± 0.1Hz					
Powe Factor	0.9					
Efficiency	>92%	>93%	>93%	>95%	>96%	>96%
PV Input						
Max PV Input Power	1.3 kW	2.6 kW	3.9 kW	6.5 kW	10.4 kW	13 kW
MPPT Voltage Range	30Vdc - 450Vdc					
No. of MPPTs	1	1	1	1	2	2
Battery Input						
Battery Voltage	12Vdc/ 24Vdc/ 48Vdc					
Battery Type	Lithium/ Custom Battery					
Max Charging Current (Solar)	30A-120A (Programmable)					
Max Charging Current	20A-80A (Programmable)					
AC Grid Input						
Grid Voltage Range	170V – 270V (1Φ) / 320V – 480V (3Φ)					
Input Frequency	45–65Hz					
Bypass Mode	Auto / Manual					
Hybrid Inverter Features						
Protection Features	Overvoltage Protection/ Undervoltage Protection/ Overload Protection/ Overcurrent Protection/ Short Circuit Protection/ Temperature Protection					
Transfer Time	10ms (Typical value)					
Communication	RS485/ Mobile App (Optional)					
Display	LCD + LED					
Cooling	Cooling Fan in Intelligent control					
Environmental Parameters						
Enclosure Rating	IP20					
Operating Temperature	-10°C to 55°C					
Storage Temperature	15°C to 55°C					
Relative Humidity	0–95%					
Altitude	≤2000m					
Certifications	CE/ IEC/ RoHS/ BIS					
Warranty	3 or 5 Years* As Per Industry Norms					

*Specifications are subject to change without prior notice.
*Voltage & powe requirements can be customized according to the actual situation of users.

Hybrid Solar Inverter – Optimal Load Guide

Hybrid Inverter Size	What You Can Power	Optimal Load for Longer Life	Typical Use
1 kW	Up to 10 LED lights, 1-2 ceiling fans, Wi-Fi router, LED TV, laptop - ideal for basic lighting, cooling, and entertainment in a single room.	≤ 800 W	Small room, home office, small shop counter
2 kW	Home lighting, ceiling fans, refrigerator, LED TV, desktop/laptop, and small kitchen appliances (toaster, blender, microwave - one at a time).	≤ 1700 W	Small apartment, office, retail counter
3 kW	Full home lighting, fans, refrigerator, TV, computer, small water pump, and 1 small air-conditioner (used one at a time with other heavy loads).	≤ 2550 W	Small house, small office
5 kW	Complete lighting & fans for the house, refrigerator, 1-2 air-conditioners (staggered use), kitchen appliances, and a water	≤ 4250 W	Medium-size house, small business
10 kW	Multiple air-conditioners, large water pump, complete household load including kitchen and entertainment devices, or small workshop equipment.	≤ 8500 W	Large home, office building, commercial use

Hybrid Solar Inverter – Features

Smart Load Sharing
Distributes power intelligently between solar, battery, and grid to optimize efficiency.

Transfer Time
Instant switching for uninterrupted supply to sensitive devices like servers and medical equipment.

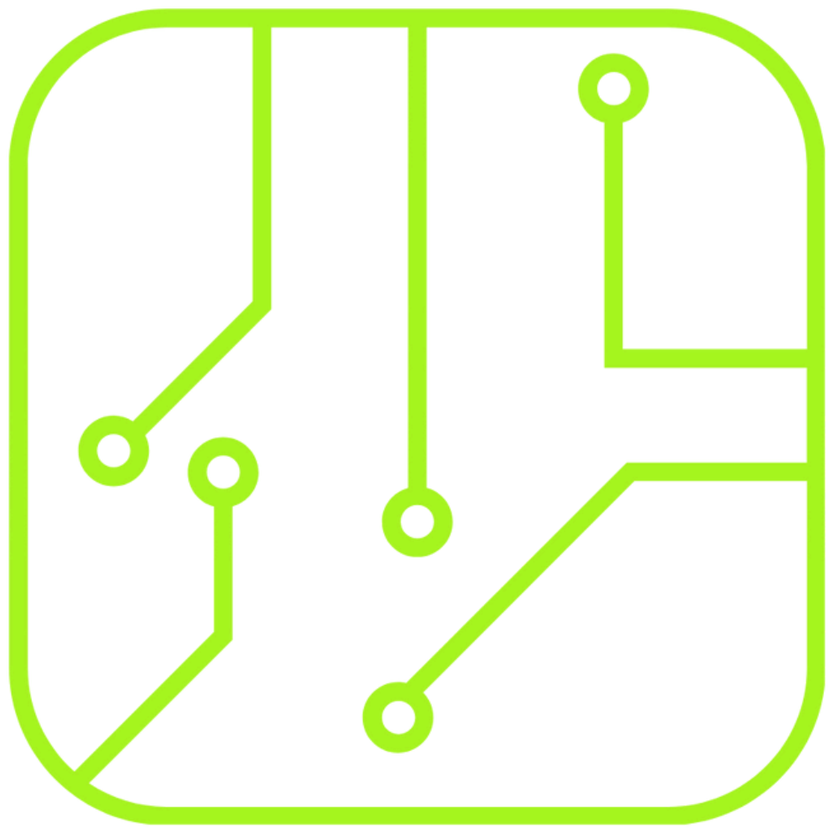
Remote Monitoring & Control
Wi-Fi / App support for real-time performance tracking and settings adjustment.

MPPT (Maximum Power Point Tracking) Technology
Extracts up to 30% more solar energy compared to standard PWM inverters.

Adaptive Charging Algorithm
Adjusts charging current based on battery type, temperature, and state of charge for longer battery life.

Hybrid Design
Seamlessly integrates solar, battery, and grid power with intelligent priority control.

Future-Ready Expandability
Scalable design to add more solar panels or batteries as energy needs grow.



Thank You

Thank you for considering our advanced energy solutions. Together, we can power a sustainable future.

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www.tessonenergy.com