

Residential ESS Solution



TBEA Xi'an Electric Technology Co., Ltd.

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TBEA Xi'an Electric Technology Co., Ltd.

About Us

Founded in 2010, TBEA Xi'an Electric Technology Co., Ltd. is a trusted provider of high-performance energy solutions, with expertise in solar power generation, battery energy storage systems (BESS), power conversion systems (PCS), advanced power distribution, flexible HVDC transmission, and intelligent operation & maintenance (O&M) platforms. The Company emphasizes reliability, safety, and long-term value in global energy infrastructure. Its comprehensive portfolio includes grid-connected solar inverters, PCS, high-voltage STATCOM, energy routers for microgrids, flexible HVDC converter valves, and more.

In the solar sector, TBEA Xi'an Electric Technology offers a complete lineup of grid-connected inverters ranging from 8 kW to 9,000 kW, with a cumulative global installation capacity exceeding 100 GW. For energy storage, TBEA Xi'an Electric Technology has delivered BESS solutions with a total installed capacity of 5 GWh, and over 55 GVar of static var generators (SVG). As one of the pioneers in China, the Company provides integrated solutions spanning BESS, microgrids, HVDC systems, SCADA platforms, and the TB-eCloud intelligent O&M system.

TBEA Xi'an Electric Technology maintains a strong international footprint, with operations in more than 20 countries across Asia, Europe, Latin America, and the Middle East. Guided by its mission of "Green Energy for a Better Life", TBEA Xi'an Electric Technology is dedicated to driving the sustainable development of global society through intelligent, efficient, and eco-friendly energy solutions.

38⁺GW

Total designed capacity of
PV and wind power

20⁺

Countries and
regions

20⁺GW

Total access of
TB-eCloud

5⁺GWh

Cumulative global shipments
of energy storage system

55⁺Gvar

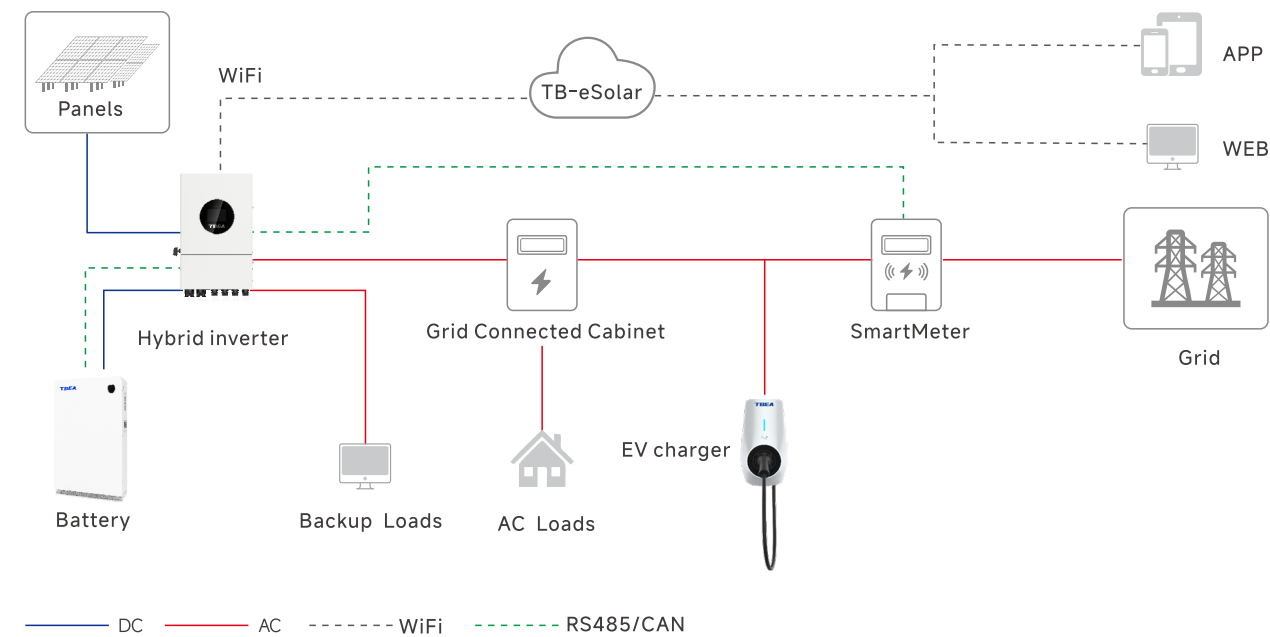
Cumulative global
shipments of TSVG

100GW

Cumulative global
shipments of PV inverters

Residential Solution

System Topology



Solution Features



Best Benefits

- Wide range working voltage
- Multi-channel MPPT design
multi-orientation adaptation
higher generation revenue
- 24h power supply



Always Reliable

- Ip66, rodust environment adaptability



Intelligent Friendly

- Intelligent energy management platform
- improving O&M efficiency

Application Scenarios

Hybrid inverter + ESS



Increase renewable energy access capacity



24-hour intelligent energy management



Promotion renewable energy consumption

Hybrid inverter + ESS



Increase renewable energy access capacity



24-hour intelligent energy management



Promotion renewable energy consumption

TH4/5/6/8K-SLA01

Single Phase Hybrid Inverter

Operation With Low-voltage Battery



⚡ High Power Generation

- 60V start-up voltage
- Wide range of MPPT voltage

🛡️ Safe and Reliable

- <10ms UPS-level switching
- Easy setting of smart working modes

⚙️ Intelligent O&M

- Remote diagnosis & update
- 24-hour intelligent energy management

Technical Datasheet

Model	TH4K-SLA01	TH5K-SLA01	TH6K-SLA01	TH8K-SLA01
Input DC				
Max.input power	8kW	10kW	12kW	16kW
Max.input voltage	550V			
Rated voltage	360V			
Start-up voltage	60V			
MPPT voltage range	90-450V			
Max.input current	16A/16A			32A/32A
Max.short circuit current	20A/20A			40A/40A
MPPT number	2			2
Max. input strings number	2			4
Input Battery				
Battery type	Li-ion/Lead-acid			
Battery Voltage Range	40-60V			
Number of battery input channels	1			
Max. charge / discharge current	190A			
Communication	CAN/RS485			
Charging Strategy for Li-Ion Battery	Self-adaption to BMS			
Output AC (Grid side)				
Rated output power	4kW	5kW	6kW	8kW
Max. apparent output power	4.4kVA	5.5kVA	6.6kVA	8.8kVA
Max. rated current	17.4A	21.7A	26.1A	34.8A
Max. output current	19.1A	23.9A	28.7A	38.3A
Grid voltage range	160-300V			
Rated grid voltage	1/N/PE.220V/230V			
Rated grid frequency	50Hz/60Hz			
Power Factor	>0.99 (0.8 leading ... 0.8 lagging)			
THDi	<3%			
Input AC (Grid side)				
Rated input power	4kW	5kW	6kW	8kW
Max. input power	6.9kW	6.9kW	9.2kW	11.5kW
Max. apparent output power	6.9kVA	6.9kVA	9.2kVA	11.5kVA
Max. input current	30A	30A	40A	50A
Rated input voltage	1/N/PE.220V/230V			
Rated input frequency	50Hz/60Hz			
Output AC (Back-up)				
Rated output power	4kW	5kW	6kW	8kW
Max. output current	19.1A	23.9A	28.7A	38.3A
Max.output power	2 times of rated power, 10s			
Back-up switch time	≤4ms			
Rated output voltage	220V/230V			
Rated frequency	50Hz/60Hz			
THDv	<3%			
Efficiency				
Max.efficiency	97.70%			
EU efficiency	96.70%			
MPPT Efficiency	99.80%			
Protection				
Integrated DC switch	Yes			
DC rever-polarity protection	Yes			
Anti-islanding protection	Yes			
Short circuit protection	Yes			
Output over current protection	Yes			
DC Surge protection	Type II			
AC Surge protection	Type II			
Insulation impedance detection	Yes			
Ground Fault Monitoring	Yes			
Residual leakage current detection	Yes			
Temperature protection	Yes			
AC Over voltage Protection	Yes			
DC Over current Protection	Yes			
24-hour load monitoring	Yes			
Antibackflow	Yes			
Parallel	Yes			
General Data				
Dimensions (W*H*D)	350*560*237mm			
Weight	25kg			
Self consumption(night) (Rated voltage)	≤20W			
Operating temperature range	-40 to +60°C			
Cooling concept	Smart forced air Cooling			
Max. operation altitude	4000m			
Relative humidity	0-100%			
Ingress protection	IP66			
Topology Structure	Transformerless			
Grid connection stadard	IEC 61727/IEC 62116,IEC 61683			
Safety/EMC standard	IEC/EN 61000-6-1/3, IEC/EN 62109-1, IEC/EN 62109-2			
Type of DC terminal	MC4 (Max. 6mm ²)			
Battery connection type	Terminal			
Type of AC terminal (Back-up)	Terminal			
Type of AC terminal (Grid side)	Terminal			
Display&Communication				
Display	LCD+Bluetooth+APP			
Communication Interface	RS485 / CAN , Wi-Fi +Bluetooth			

TBC5/10/16-L1

Low-Voltage Battery



⚡ High Power Generation

- High Efficiency ≥98%
- Wide adaptability

🛡️ Safe and Reliable

- Multiple protection types more secure

⚙️ Intelligent O&M

- Remote OTA upgrades Zero-cost

Technical Datasheet

Model	TBC5-L1	TBC10-L1	TBC16-L1
Nominal Parameters			
Battery cell specifications	Lithium iron phosphate 100Ah/3.2V	Lithium iron phosphate 205Ah/3.2V	Lithium iron phosphate 314Ah/3.2V
Cell grouping method	1P16S		
Energy Storage Capacity	5.12kWh	10.24kWh	16.07kWh
Number of cells	16	16	16
Electrical Parameter			
Rated voltage	51.2V		
Operating Voltage	43.2V-58.4V		
Charge Current	100A	100A	157A
Discharge Current	100A	200A	200A
General Data			
Core Material	LiFePO4		
Dimension W*H*D mm	420*660*160	420*660*245	420*895*250
Machine Weight	52.5kg	88kg	120kg
Parallel Quantities	15		
Life Cycles	6000 Times		
Working Temperature	Charge: 0°C-50°C; Discharge: -20°C-50°C		
Storage Temperature	-20~45°C ≤ 1 month; -20~35°C ≤ 6 month		
Relative Humidity	5%~95%(Non-condensing)		
Cooling	Natural Convection		
IP Grade	IP20		
Protection Strategy	Overvoltage and overcurrent protection, short circuit protection, and over temperature protection		
Installation	Wall mounted, floor standing		Floor standing
Using an Altitude	2000m		
Warranty	5 Years		
Display&Communication			
Display	SOC status, faults, and operational status		
Communication Interface	RS485/CAN		

TH5/6/8/10/12K-TLA01

Three Phase Hybrid inverter Operation With Low-voltage Battery



High Power Generation

- 160V start-up voltage
- Wide range of MPPT voltage

Safe and Reliable

- <4ms UPS- level switching
- Easy setting of smart working modes

Intelligent O&M

- Remote diagnosis & up date
- 24-hour intelligent energy management

Technical Datasheet

Model	TH5K-TLA01	TH6K-TLA01	TH8K-TLA01	TH10K-TLA01	TH12K-TLA01
Input DC					
Max,input power	7.5kW	9kW	12kW	15kW	18kW
Max,input voltage	1000V				
Rated voltage	600V				
Start-up voltage	160V				
MPPT voltage range	170-900V				
Max,input current	16A/16A		26A/26A		
Max,short circuit current	20A/20A		32A/32A		
MPPT number	2		2		
Max. input strings number	2		4		
Input Battery					
Battery type	Li-ion/Lead-acid				
Battery Voltage Range	40-60V				
Number of battery input channels	1				
Max. charge / discharge current	120A/120A	145A/145A	190A/190A	210A/210A	250A/250A
Communication	CAN/RS485				
Charging Strategy for Li-Ion Battery	Self-adaption to BMS				
Output AC (Grid side)					
Rated output power	5kW	6kW	8kW	10kW	12kW
Max. apparent output power	5kVA	6kVA	8kVA	10kVA	12kVA
Max. rated current	7.6A	9.1A	12.1A	15.2A	18.2A
Max. output current	7.6A	9.1A	12.1A	15.2A	18.2A
Grid voltage range	165-288V(Phase voltage),286-498V(Line voltage)				
Rated grid voltage	220V/380V,230V/400V,3/N/PE				
Rated grid frequency	50Hz/60Hz				
Power Factor	>0.99 (0.8 leading ... 0.8 lagging)				
THDi	<3%				
Input AC (Grid side)					
Rated input power	5kW	6kW	8kW	10kW	12kW
Max. input power	10kW	12kW	16kW	20kW	24kW
Max. apparent output power	10kVA	12kVA	16kVA	20kVA	24kVA
Max. input current	15.2A	18.2A	24.2A	30.3A	36.4A
Rated input voltage	220V/380V,230V/400V,3/N/PE				
Rated input frequency	50Hz/60Hz				
Output AC (Back-up)					
Rated output power	5kW	6kW	8kW	10kW	12kW
Max,output current	7.6A	9.1A	12.1A	15.2A	18.2A
Max,output power	2 times of rated power,10s				
Back-up switch time	≤4ms				
Rated output voltage	220V/380V,230V/400V,3/N/PE				
Rated frequency	50Hz/60Hz				
THDv	<3%				
Efficiency					
Max,efficiency	97.34%				
EU efficiency	96.45%				
MPPT Efficiency	99.80%				
Protection					
Integrated DC switch	Yes				
DC rever-polarity protection	Yes				
Anti-islanding protection	Yes				
Short circuit protection	Yes				
Output over current protection	Yes				
DC Surge protection	Type II				
AC Surge protection	Type II				
Insulation impedance detection	Yes				
Ground Fault Monitoring	Yes				
Residual leakage current detection	Yes				
Temperature protection	Yes				
LVRT	Yes				
AC Over voltage Protection	Yes				
DC Over current Protection	Yes				
24-hour load monitoring	Yes				
Antibackflow	Yes				
Parallel	Yes				
General Data					
Dimensions (W*H*D)	370*650*262mm				
Weight	35kg				
Self consumption(night) (Rated voltage)	≤20W				
Operating temperature range	-40 to +60°C				
Cooling concept	Smart forced air Cooling				
Max. operation altitude	4000m				
Relative humidity	0-100%				
Ingress protection	IP66				
Topology Structure	Transformerless				
Grid connection stadard	IEC 61727/IEC 62116/IEC 61683				
Safety/EMC standard	IEC/EN 62109-1/2 IEC/EN 61000-6-1/3				
Type of DC terminal	MC4 (Max. 6mm²)				
Battery connection type	Terminal				
Type of AC terminal (Back-up)	Terminal				
Type of AC terminal (Grid side)	Terminal				
Display&Communication					
Display	LCD+Bluetooth+APP				
Communication Interface	RS485/CAN,Wi-Fi+Bluetooth				

TH5/6/8/10/12/15/20-THA01

Three Phase Hybrid Inverter

Operation with High-Voltage Battery



⚡ High Power Generation

- String current up to 16A
- Wide range of MPPT voltage

🛡️ Safe and Reliable

- <10ms UPS-level switching
- Max. Ip66 protection

⚙️ Intelligent O&M

- 24-hour intelligent energy management
- Remote diagnosis & update

Technical Datasheet

Model	TH5-THA01	TH6-THA01	TH8-THA01	TH10-THA01	TH12-THA01	TH15-THA01	TH20-THA01
Input DC							
Max.input power	75kW	9kW	12kW	15kW	18kW	22.5kW	30kW
Max.input voltage	1000V						
Rated voltage	600V						
Start-up voltage	160V						
MPPT voltage range	170~900V						
Max.input current	16A/16A			26A/26A		36A/36A	
Max.short circuit current	20A/20A			32A/32A		45A/45A	
MPPT number	2						
Max. input strings number	2				4		
Battery							
Battery type	Li-ion						
Battery Voltage Range	180~800V						
Number of battery input channels	1					2	
Max. charge / discharge current	30A/30A					2*30A/2*30A	
Communication	CAN/RS485						
Charging Strategy for Li-Ion Battery	Self-adaption to BMS						
Output AC (Grid side)							
Rated output power	5kW	6kW	8kW	10kW	12kW	15kW	20kW
Max. apparent output power	5kVA	6kVA	8kVA	10kVA	12kVA	15kVA	20kVA
Max. output current	11.4A	13.6A	18.2A	22.7A	27.3A	34.1A	45.5A
Grid voltage range	165~288V(Phase voltage),286~498V(Line voltage)						
Rated grid voltage	220V/380V/230V/400V,3/N/PE						
Rated grid frequency	50Hz/60Hz						
Power Factor	>0.99 (0.8 leading ... 0.8 lagging)						
THDi	<3%						
Input AC (Grid side)							
Rated input power	5kW	6kW	8kW	10kW	12kW	15kW	20kW
Max. input power	10kW	12kW	16kW	20kW	24kW	30kW	30kW
Max. apparent input power	10kVA	12kVA	16kVA	20kVA	24kVA	30kVA	30kVA
Max. input current	15.2A	18.2A	24.2A	30.3A	36.4A	45.5A	45.5A
Rated input voltage	220V/380V/230V/400V,3/N/PE						
Rated input frequency	50 Hz / 60 Hz						
Output AC (Back-up)							
Rated output power	5kW	6kW	8kW	10kW	12kW	15kW	20kW
Max. output current	7.6A	9.1A	12.1A	15.2A	18.2A	22.7A	30.3A
Back-up switch time	<10ms						
Rated output voltage	220V/380V/230V/400V,3/N/PE						
Rated frequency	50 Hz / 60 Hz						
THDv	<2%						
Efficiency							
Max.e.ciency	97.34%						
EU e.ciency	96.45%						
MPPT e.ciency	99.80%						
Protection							
Integrated DC switch	Yes						
DC reverse-polarity protection	Yes						
Anti-islanding protection	Yes						
Short circuit protection	Yes						
Output over current protection	Yes						
DC Surge protection	Type II						
AC Surge protection	Type II						
Insulation impedance detection	Yes						
Ground Fault Monitoring	Yes						
Residual leakage current detection	Yes						
Temperature protection	Yes						
Battery reverse protection	Yes					No	
AC Over voltage protection	Yes						
DC Over current protection	Yes						
24-hour load monitoring	Yes						
Anti-backflow	Yes						
Parallel	Yes						
LVRT	Yes						
General Data							
Dimensions (W*H*D)	561*520*232mm						
Weight	33.2kg					37.8kg	
Self consumption(night) (Rated voltage)	20W						
Operating temperature range	-30...+60°C						
Cooling concept	Natural Convection					Smart forced air cooling	
Max. operation altitude	4000m						
Relative humidity	0~100%						
Ingress protection	IP66						
Topology Structure	Transformerless						
Grid connection standard	IEC 61727/IEC 62116/IEC 61683						
Safety/EMC standard	IEC/EN 62109-1/2 IEC/EN 61000-6-1/3						
Type of DC terminal	MC4 (Max. 6mm²)						
Battery connection type	MC4 (Max. 6mm²)						
Type of AC terminal (Back-up)	Quick connection plug						
Type of AC terminal (Grid side)	Quick connection plug						
Display&Communication							
Display	LCD+Bluetooth+APP						
Communication interface	RS485/CAN,Wi-Fi+Bluetooth						

H1-EU07/11/22-C EV Charger



Powerful & durable EV Charger, intelligent and flexible for various applications: public, fleets, retail & destination, workplace, and home.

- Built-in Energy Meter
- Multiple Network Connection
- Charger Management Platform
- Ip65 Protection
- Type A + DC 6mA
- Shutter Socket Available

Technical Parameters

Model	H1-EU07-C	H1-EU11-C	H1-EU22-C
Power Specification			
AC Power input rating	230VAC(1-Phase)	400VAC(3-Phase)	
Rated frequency	50/60Hz	50/60Hz	50/60Hz
Output current	32A	16A	32A
Output power	7kW	11kW	22kW
Connector type	Type2 socket / 5m cable		
Metering			
Metering	Build-in energy meter		
Measuring Accuracy	Class 1.0/B		
User Interface & Control			
Charging control	Plug and Charge, RFID Card or Mobile APP		
Internet connection	WiFi		
External communication	RS485		
OCPP protocol	OCPP 1.6J		
Environmental			
Storage temperature	-30~85°C		
Operating temperature	-30~50°C		
operating humidity	5% RH ~95% RH(no condensation)		
Altitude	≤2000m		
Cooling method	Natural Cooling		
Material	PC+ASA		
Protection			
IP Rating	IP65 (Cable version)		
Leakage protection	Type A+DC 6mA		
Electrical protection	Over/Under Voltage Protection, Over Load Protection, Short Circuit Protection, Earth Leakage Protection, Ground Protection, Over-temp Protection, Surge Protection		

TB·eSolar Cloud Platform



Leveraging IoT technology and a robust big data center, the TB·eSolar Intelligent Energy Management Platform ensures system security while integrating seamlessly with mainstream PV system devices. It offers real-time power monitoring, detailed diagnostics, proactive fault alarms, and efficient O&M management. With its visual management interface, TB·eSolar elevates intelligent operation and maintenance for distributed power stations, setting a new standard in energy management.



Comprehensive Integration with C&I PV Station Equipment

TB·eSolar seamlessly connects with all distributed PV components, including inverters, smart meters, environmental monitoring devices.



Real-Time Fault Alerts with Immediate Solutions

Armed with an embedded fault knowledge base, TB·eSolar delivers real-time alerts for device issues alongside corresponding solutions, optimizing O&M activities.



Unified Online and Offline O&M through Regional Control Hubs

The creation of regional control hubs enhances TB·eSolar's fault early warning capabilities, significantly improving the intelligent management of PV stations.



Secure Cloud Deployment with Multilingual Capabilities

Deployed on both Alibaba Cloud and Amazon Web Services (AWS) for scalability, security, and high performance, TB·eSolar supports multiple languages, including Chinese, English, Spanish, Portuguese, and more.



In-Depth Multi-Level Analysis

TB·eSolar offers detailed daily, weekly, and annual reports, delivering insights into station performance, equipment efficiency, power generation losses, and actionable recommendations.

Unified Data Center

- Establish a centralized data center by aggregating information from all PV stations, providing essential data support for business applications.

Integrated O&M Control Center

- Centrally manage patrols, maintenance, defect elimination, and inspections, enabling remote control and streamlined O&M.

Operation Monitoring Center

- Display real-time status across all PV stations, ensuring safety and stability in operations.

Operation Analysis Center

- Perform multi-dimensional statistical analysis of O&M conditions to support daily decision-making.

Application Case



Sunlight Room



Villa



Flat Roof



Slope Roof



Baotou Residential Project



Henan Residential Project



Jiangxi Residential Project



Shandong Residential Project