



Solution for A Zero-Carbon World

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The final interpretation belongs to TBEA XINJIANG SUNOASIS CO., LTD.



TBEA 特变电工

Company Profile

TBEA Xi'an Electric Technology Co.,Ltd. founded in 2010, is a wholly owned subsidiary of TBEA Group (Shanghai Stock: 600089), which focuses on solar power generation, battery energy storage system, power quality management, new power system distribution, flexible HVDC transmission solutions and smart O&M platform services, with main products of the integrated solutions including grid-connected solar inverters, PCS, HV STATCOM, energy routers for micro-grid, flexible HVDC transmission converter valves, etc.

In the field of PV power generation, its full range of 50kW-6250kW grid-connected solar inverters have a total installed capacity of more than 36GW globally. For power quality management, the company has a statcom solution installation of more than 13Gvar. TBEA is also one of the first companies in China that provide complete solutions of BESS, Micro-grid, HVDC, SCADA and TB-Cloud smart O&M platform services.

With the mission of “Green Energy for Better Life”, the company is dedicated to driving the sustainable development of human society by smart, efficient and green energy.

Company Awards and Honors



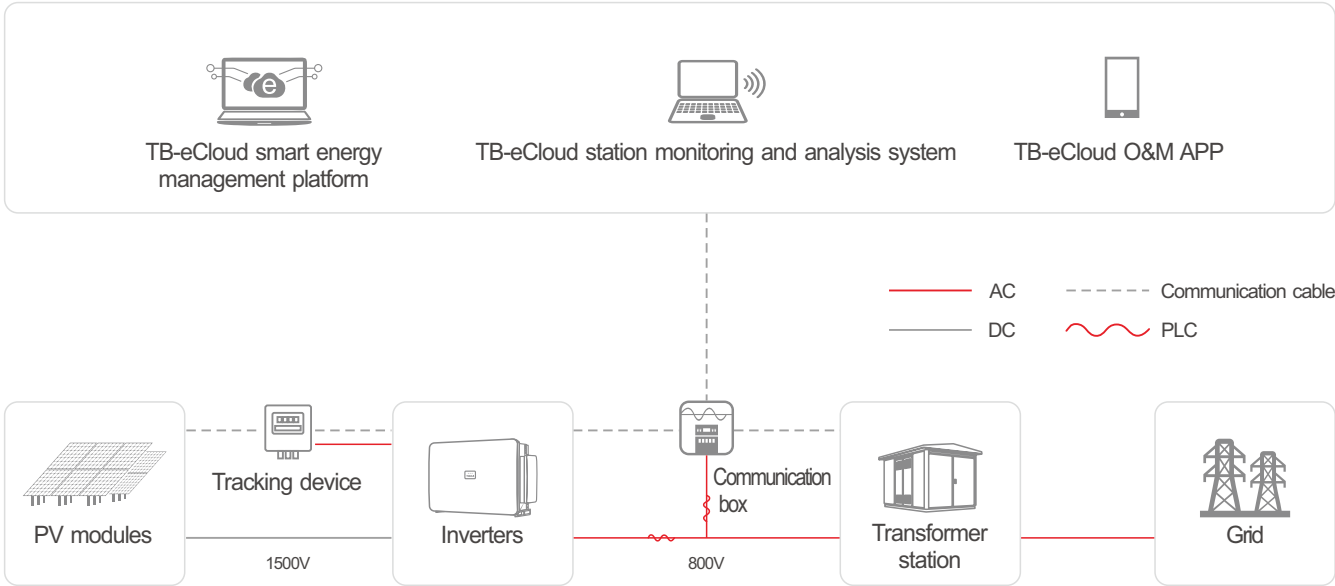
Indian Factory



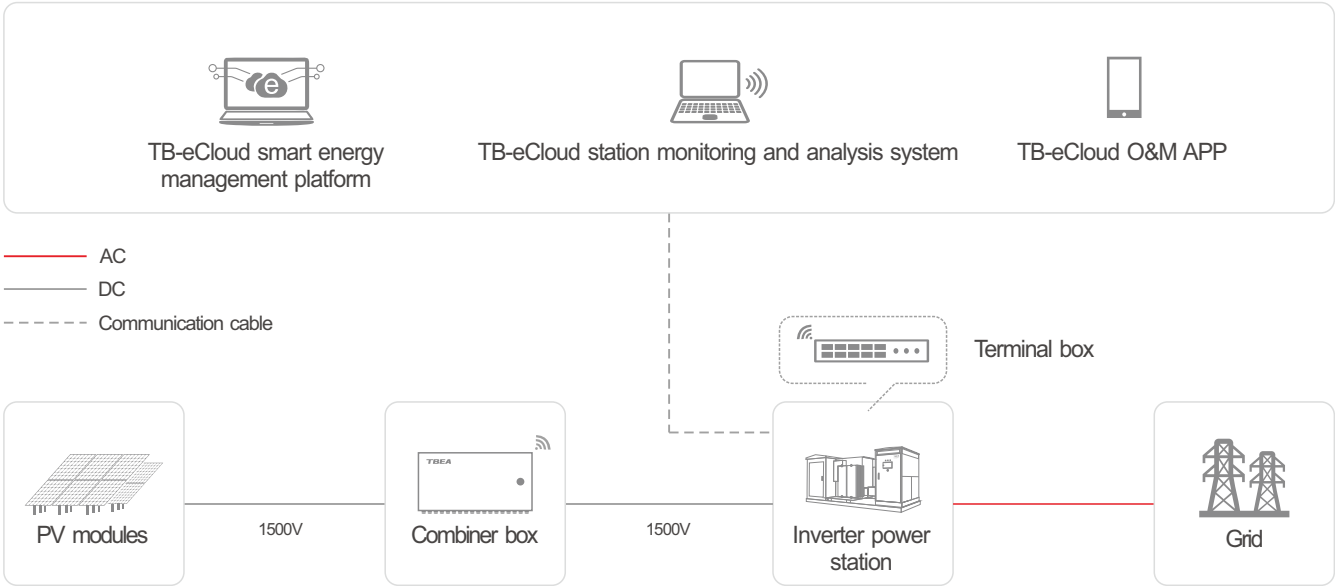
Xi'an Factory

Smart PV Solutions

Solution of String Inverter



Solution of Central Inverter



- 1500V
- High DC/AC ratio
- Large PV array
- Large PV modules 182/210
- Grid friendly
- Intelligent O&M

Recommended Applications



Mountains



Water



Desert



Farmland

TS360KTL-HV

1500V String Inverter



Grid Support

- Specific harmonic control technology, effectively reducing THDi
- Impedance adaptive technology, supporting weak grid network SCR~1.2
- Night SVG
- Fast active & reactive power response, supporting power dispatch

Efficient Power Generation

- Maximum efficiency 99.02%, European efficiency 98.7%
- Optimized MPPT algorithm, ensuring maximum input power in all situations
- Perfectly match 182/210 bifacial modules
- DC/AC ratio up to 1.8, catering to optimal DC overload ratio to reduce LCOE

Safety and Reliability

- IP66 & C5, robust environment adaptability
- Intelligent heat exchange and dissipation design
- AFCI support, high safety

Intelligent Maintenance

- Intelligent and high precision IV curve diagnosis
- Anti-PID and PID repair function, protecting the high efficiency of PV panels
- Intelligent mounting system control technology, improving the power generation

Technical Parameters

Model	TS360KTL-HV
Efficiency	
Max. Efficiency	99.02%
European Efficiency	98.7%
Input(DC)	
Max. Input Voltage	1500V
Max. Input Current per MPPT	48A
Max. Short Circuit Current per MPPT	60A
MPPT Voltage Range	500V~1500V
Number of Inputs	24(28 32 available)
Number of MPP Trackers	12
Output(AC)	
Output Power	360kW@30℃/320kW@40℃/300kW@50℃
Max. Output Apparent Power	360kVA
Max. Output Active Power (cosΦ=1)	360kW
Nominal Output Voltage	800V/3W+PE
Nominal Output Frequency	50Hz/60Hz
Nominal Output Current	260A
Max. Output Current	260A
Adjustable Power Factor Range	0.8(leading)~0.8(lagging)
Max. Harmonic Content	<3%In
Protection	
Input DC Switch	Support
Anti-islanding Protection	Support
AC Overcurrent Protection	Support
DC Reverse-Polarity Protection	Support
String Fault Detection	Support
DC Surge Protection	Type II
AC Surge Protection	Type II
DC Insulation Impedance Detection	Support
Residual Current Detection Display	Support
Display and Communication	
Display	LED WIFI+APP
RS485 PLC	Support
Wi-Fi	Support
General Parameters	
Dimensions (W x H x D)	1120mm*820mm*365mm
Weight	120kg
Operating Temperature Range	-25℃~60℃
Cooling Method	Smart Forced Air Cooling
Max. Operating Altitude	5000m
Relative Humidity Range	0%~100%
DC Connector	MC4 Evo2
AC Connector	OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Standard Compliance	
Compliance	IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, CEA2019

TS228KTL-HV

1500V String Inverter



 Grid Friendly

- Specific harmonic control technology, effectively reducing THDi
- Impedance adaptive technology, supporting weak grid network SCR~1.2
- Night SVG
- Fast active & reactive power response, supporting power dispatch

 Efficient Power Generation

- Maximum efficiency 99%, European efficiency 98.7%
- 2 strings connected into 1 MPPT, improving efficiency
- MPPT current 30A/40A, perfectly match 182/210 bifacial modules

 Safety and Reliability

- Ip66 & C5, robust environment
- Intelligent heat exchange and dissipation design

 Intelligent Maintenance

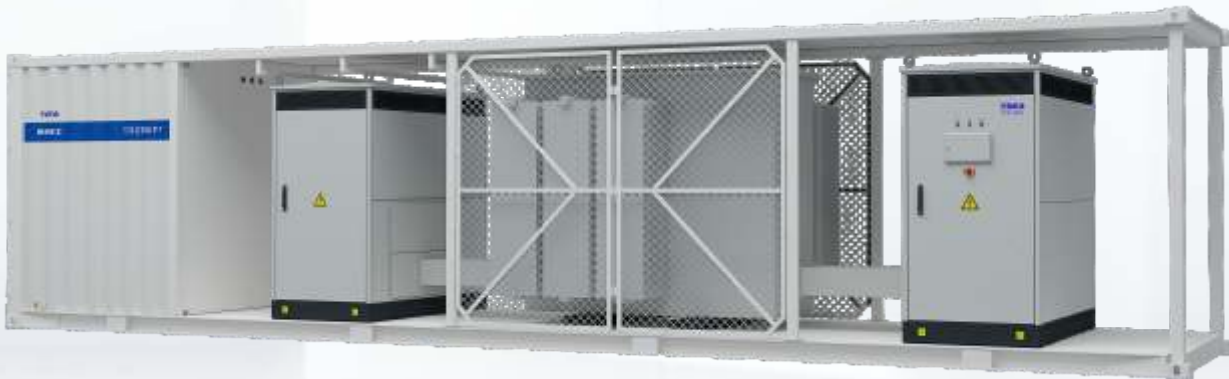
- Intelligent and high precision IV curve diagnosis
- Anti-PID and PID repair function, protecting the high efficiency of PV panels
- Intelligent mounting system control technology, improving the power generation

Technical Parameters

Model	TS228KTL-HV
Efficiency	
Max. Efficiency	99%
European Efficiency	98.7%
Input(DC)	
Max. Input Voltage	1500V
Max. Input Current per MPPT	30A/40A
Max. Short Circuit Current per MPPT	50A
MPPT Voltage Range	500V~1500V
Number of Inputs	24/18
Number of MPP Trackers	12/9
Output(AC)	
Output Power	250kW@30℃/228kW@40℃/208kW@50℃
Max. Output Apparent Power	250kVA
Max. Output Active Power (cosΦ=1)	250kW
Nominal Output Voltage	800V/3W+PE
Nominal Output Frequency	50Hz/60Hz
Nominal Output Current	165A
Max. Output Current	180A
Adjustable Power Factor Range	0.8(leading)~0.8(lagging)
Max. Harmonic Content	<3%In
Protection	
Input DC Switch	Support
Anti-islanding Protection	Support
AC Overcurrent Protection	Support
DC Reverse-Polarity Protection	Support
String Fault Detection	Support
DC Surge Protection	Type II
AC Surge Protection	Type II
DC Insulation Impedance Detection	Support
Residual Current Detection Display	Support
Display and Communication	
Display	LED WIFI+APP
RS485 PLC	Support
Wi-Fi	Support
General Parameters	
Dimensions (W x H x D)	1100mm*700mm*360mm
Weight	110kg
Operating Temperature Range	-25℃~60℃
Cooling Method	Smart Forced Air Cooling
Max. Operating Altitude	5000m
Relative Humidity Range	0%~100%
DC Connector	MC4 EVO2
AC Connector	OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Standard Compliance	
Compliance	IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, CEA2019

TC6250KFT / TC6800KFT

1500V Central Inverter



 Efficient Power Generation

- Inverter maximum efficiency >99%, European efficiency >98.7%
- Max.1.2 nominal power output , 50°C long-term full-load operation without derating

 High Power Level

- Max.40 Inputs, 4 MPPTs, DC/AC ratio up to 1.8
- Supporting the design of super large PV array, reducing LCOE

 Saving Investment

- Standard shipping size, saving transportation and maintenance cost
- “Inverter” “boost” “power distribution” and “communication” functions highly integrated

Technical Parameters

Model	TC6250KFT		TC6800KFT	
Input(DC)				
Max. Input Voltage	1500V			
Min. Input Voltage	900V			
MPPT Voltage Range at Nominal Power	900V-1300V			
Number of MPP Trackers	4			
Number of Inputs	32/40			
Max. Input Current	8503A			
Output(AC)				
Nominal AC Output Power	6250kVA		6800kVA	
Max. Output Apparent Power	7500kVA			
Nominal Grid Voltage	10kV~35kV, Customizable			
Nominal Grid Frequency	50(45~55)Hz/60(55~65)Hz			
Max. Harmonic Content	<3%In			
DC Current Injection	≤0.5%In			
Adjustable Power Factor Range	0.8(leading)–0.8(lagging)			
Efficiency				
Max. Efficiency	>99%			
European Efficiency	>98.7%			
Protection				
Output Overcurrent Protection	Support			
DC Overvoltage Protection	Support			
DC Short Circuit Protection	Support			
Insulation Monitoring	Support			
Grid Monitoring	Support			
Groud Fault Monitoring	Support			
Overheat Protection	Support			
Other Functions				
Anti-PID Protection	Optional			
SVG Function	Optional			
General Data				
Dimension (W*H*D)	2438mm*2896mm*12192mm			
Weight	27000kg			
Protection Degree	IP65			
Cooling Method(Inverter)	Smart Forced Air Cooling			
Operating Temperature Range	-30℃~60℃ (>50℃ derating)			
Relative Humidity Range	0%-100%			
Max. Operating Altitude	3000m, Customizable			
Communication	RS485/Ethernet			
Compliance	IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, CEA2019			

Smart Communication Box



Intelligence and Efficiency

- Support automatic access of inverter communication, Built-in webserver for convenient monitoring and management
- PLC communication delay<30ms

Safety and Reliability

- IP65 protection degree, equipped with overcurrent protection and lightning protection
- Integrated with PID protection, improving efficiency of PV modules

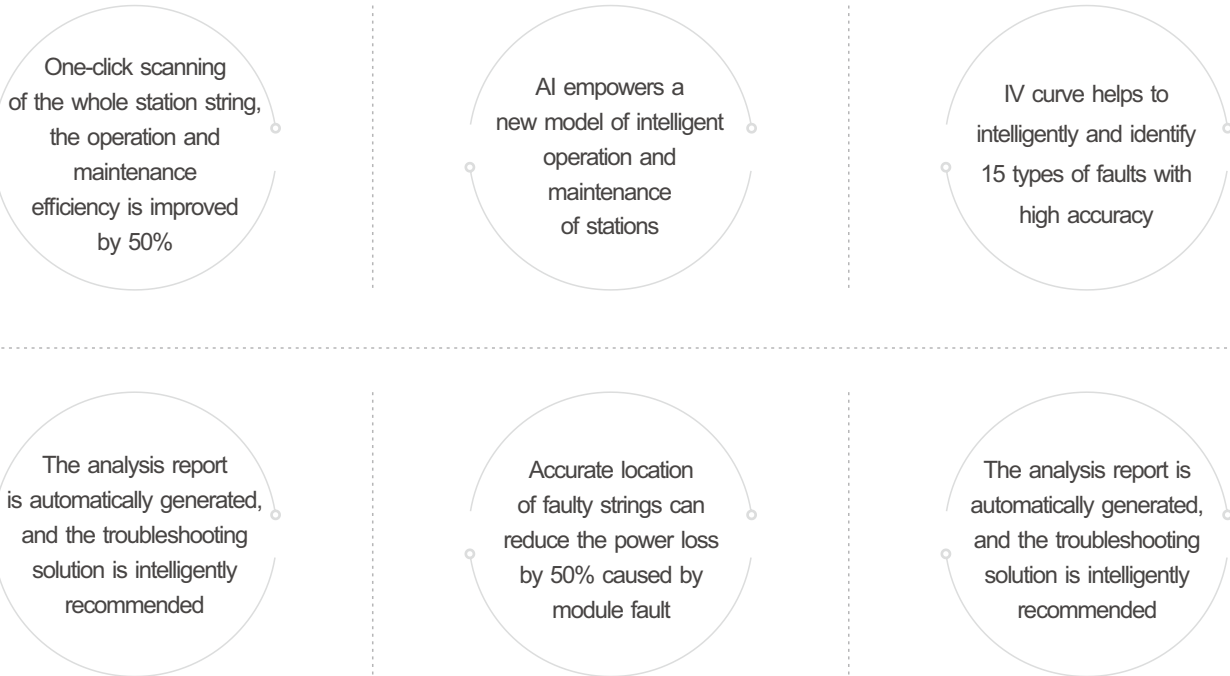
Flexibility and Convenience

- Abundant interfaces, accessible to multiple devices
- Multiple configuration solution, suitable for different application scenarios

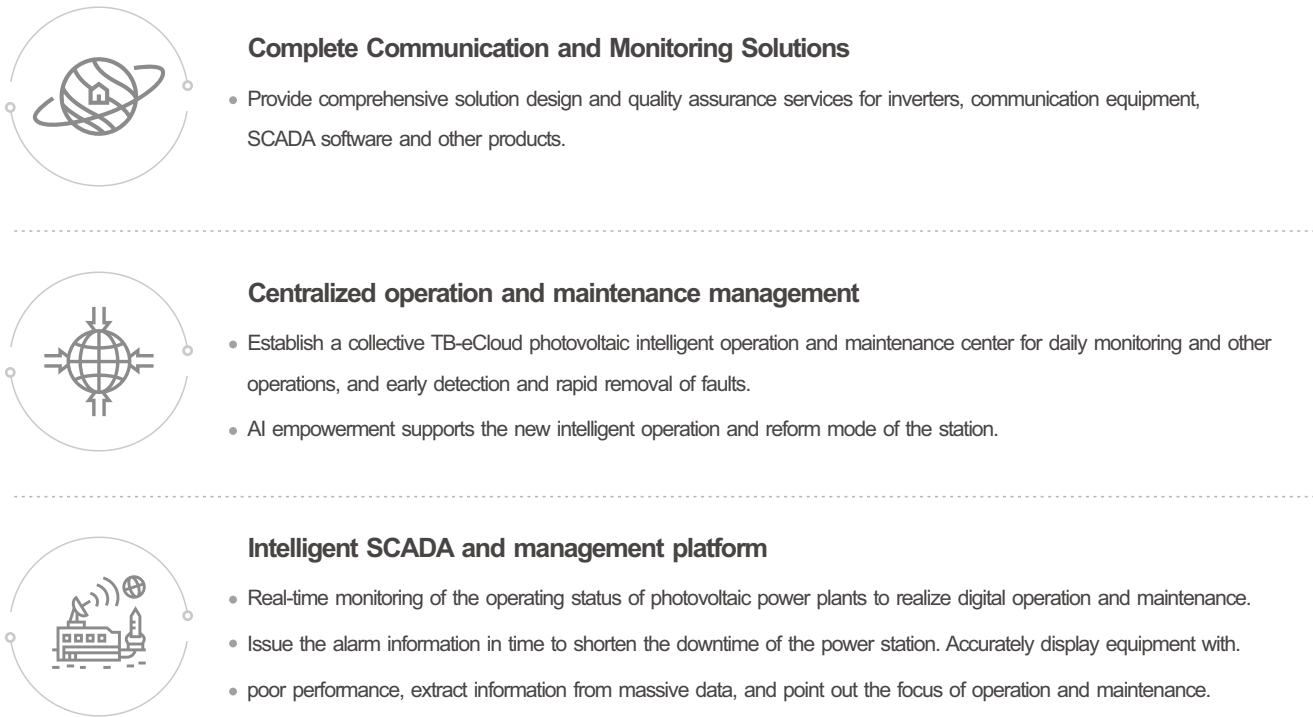
Technical Parameters

Electrical Parameters	
Operating Input Voltage	85Vac~260Vac
Frequency	50/60Hz
PLC Input Voltage	380Vac~800Vac
PID Input Voltage	380Vac~800Vac
Output Voltage	24Vdc
Environmental Parameters	
Operating Temperature	-40℃~65℃
Operating Humidity	5%~95%
Operating Altitude	4000m
Basic Configuration	
Ethernet Interface	4*100Mbps
Optical Fiber Interface	2*100/1000Mbps
RS485 Interface	6
PLC Module	1 For Standard(2 For Optional)
PID Module	1 For Standard(2 For Optional)
Installation Space of Third-party Device	Yes
Mechanical Parameters	
Cable Connection Method	TCMO Bottom Side
Dimension	700mm*600mm*250mm
Weight	30kg
Protection Degree	IP65
Installation Method	Bracket, Holding Pole, Hanging Wall

TBEA I-V Curve Diagnosis



TB-eCloud smart O&M platform



CASE

Yunnan Qiaojia 240MW Photovoltaic Power Plant



Hebei Chengde 100MW Photovoltaic Power Plant



Guizhou Guanling 100MW Photovoltaic Power Plant



Guangxi Tianlin 60MW Photovoltaic Power Plant



Hubei Qichun 99MW Photovoltaic Power Plant



Guizhou Yingshan 120MW Photovoltaic Power Plant



India Adani 50MW Photovoltaic Power Plant



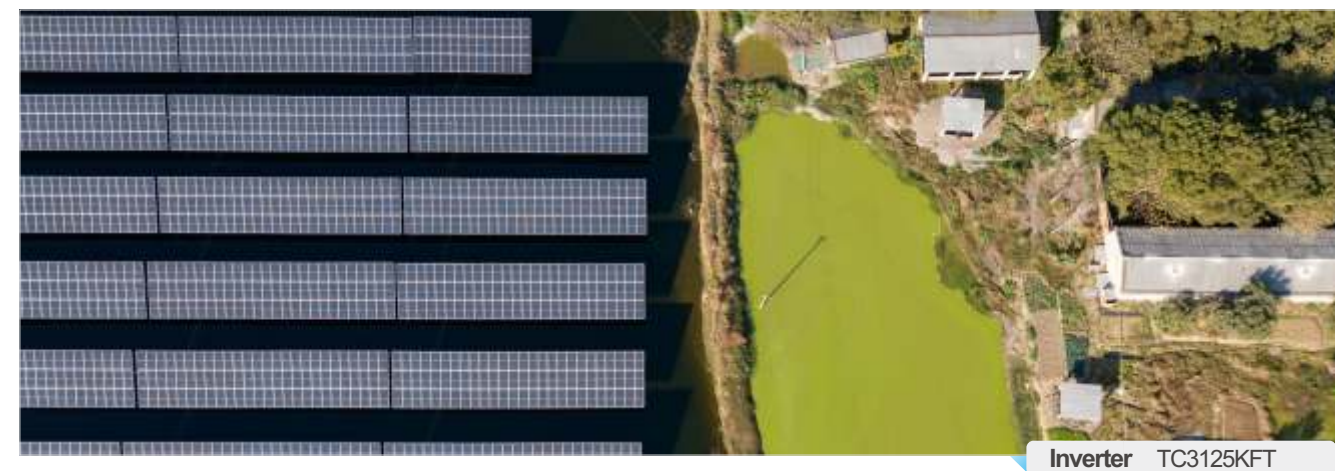
Gansu Yumen Oilfield 200MW Photovoltaic Power Plant



India RENEW 150MW Photovoltaic Power Plant



Hubei Yingcheng 80MW Photovoltaic Power Plant



Hubei Qianjiang 100MW Photovoltaic Power Plant



Phase I R&D and Construction Project of Tianjin Comprehensive Smart Energy Information Management and Centralized Control Platform

