

Utility PV Plant Solution



TBEA Xi'an Electric Technology Co., Ltd.

📍 No. 70, Shanglinyuan 4th Road, High-tech Development Zone, Xi'an, Shaanxi, China

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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

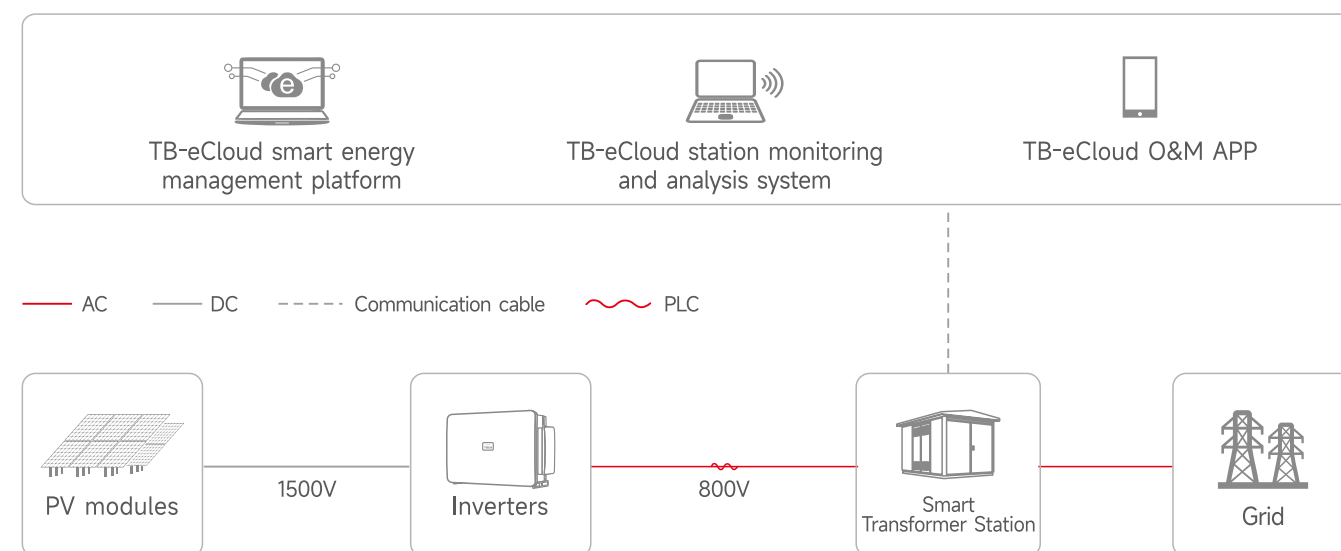
100GW

Cumulative global
shipments of PV inverters

TBEA 特变电工

Smart PV Solutions

Solution of String Inverter



Recommended Application Scenarios



Mountains



Water

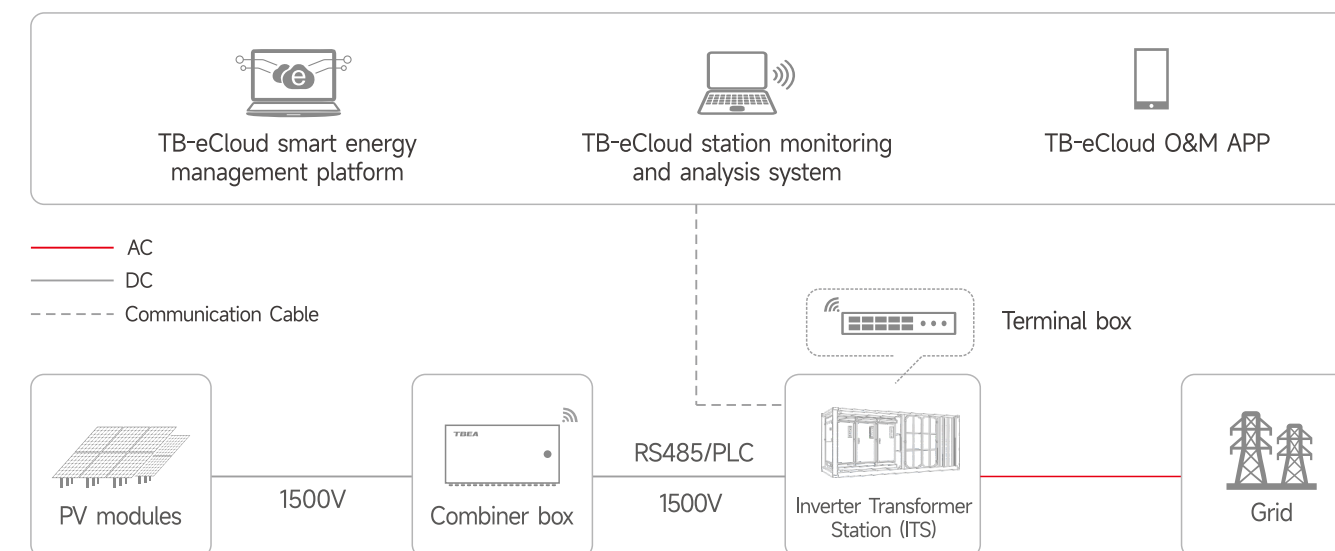


Desert



Farmland

Solution of Central Inverter



1500V



High DC/AC ratio



Large PV array



Large PV modules



Friendly grid-connection



Intelligent O&M



TS360KTL-HV-C1

1500V String Inverter



Grid friendly

- Weak Grid Adaptability with SCR ~ 0.97
- Various simulation models enable grid verification
- Harmonic Suppression Tech for Grid-connection
- Night SVG

Efficient Power Generation

- Higher output power capability improves PV yield
- Long-term stable operation with 1.1 times of overload
- Maximum efficiency 99.02%, European efficiency 98.8%
- Optimized MPPT algorithm, ensuring maximum power generation efficiency

Safety and Reliability

- IP66 & C5, robust environment adaptability
- Intelligent Terminal Temperature Detection
- Intelligent DC Disconnecting System
- Active Fire Extinguishing

Intelligent O&M

- Intelligent IV Diagnosis Technology
- Lightweight Design and Easy Installation
- Intelligent Dust Removal
- Anti-PID function protects PV modules from degradation

Technical Parameters

Model	TS360KTL-HV-C1
Efficiency	
Max. efficiency	99.02%
Max. European efficiency	98.8%
Input (DC)	
Max. input voltage	1500V
Max. input current per MPPT	75A
Max. short-circuit current per MPPT	125A
MPPT voltage range	500V ~ 1500V
Number of inputs	24 / 30
Number of MPPT	6
Output (AC)	
Output power	363kW @30°C / 330kW @40°C / 300kW @51°C
Max. output apparent power	363kVA
Max. output active power (cosΦ=1)	363kW
Nominal output voltage	800V / 3W+PE
Nominal output frequency	50Hz / 60Hz
Max. output current	262A
Adjustable power factor range	0.8 (leading) ~ 0.8 (lagging)
Max. total harmonic distortion	<3% (at nominal power)
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
Insulation monitoring	Support
Residual current monitoring unit	Support
Display and Communication	
Display	LED, WIFI+APP
Communication	RS485 PLC
General Data	
Dimensions (W×H×D)	1120mm×820mm×365mm
Weight	110kg
Operating temperature range	-40°C ~ 60°C
Cooling method	Smart forced air cooling
Max. operating altitude	5000m (> 4000m derating)
Relative humidity range	0% ~ 100%
DC connector	Support 4&6mm ² Cable
AC connector	Support OT / DT Terminal (Max. 400mm ²)
Degree of protection	IP66
Topology	Transformerless
Standard Compliance	
Compliance	CE, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, CEA2019, NTS2.1, P.O.12.3, EN 50549-1/-2, ONS

The technical parameters are for reference only, and the actual products shall prevail

TC4400KF / TC4400KF-B1 1500V Central Inverter



Supportive to Grid

- Specific harmonic control technology, effectively reducing THDi
- Impedance adaptive technology, supporting weak grid network SCR ~ 1.0
- Night SVG (optional), Supporting better grid
- Fast active & reactive power response, supporting power dispatch



Efficient and Economical

- Maximum efficiency 99%, European efficiency 98.7%
- Optimized MPPT algorithm, ensuring maximum power generation efficiency
- 18 / 21 / 24 inputs optional, match large bifacial modules perfectly
- Anti-PID+repair function protects the health of PV modules



Stable and Reliable

- IP55 / IP65 & C4 (C5 optional), robust environment adaptability
- Dual air duct heat dissipation
- Intelligent fan speed control and fault detection for system reliability
- Infineon IGBT
- Higher short circuit breaking ability (65kA)



Integrated and Convenient

- Modular design, flexible configuration of PV array, easy for O&M
- Integrated zone monitoring function to realize online fault analysis and diagnosis
- Optional PLC Communication, IV curve scan and diagnosis, Arc fault circuit interrupter

Technical Parameters

Model	TC4400KF		TC4400KF-B1
	Efficiency		
Max. efficiency	> 99.0%		
Max. European efficiency	> 98.7%		
	Input (DC)		
Max. input voltage	1500V		
Min. input voltage / start-up voltage	900V / 905V	938V / 950V	
MPPT voltage range at nominal power	900V ~ 1300V	938V ~ 1300V	
Number of MPPT	3		
Number of inputs	21 (18/24optional)		
Max. input current	3×1913A	3×1915A	
	Output (AC)		
Nominal output power	4400kW @45°C	4400kW @52°C	
Max. output apparent power	5060kVA @25°C	5280kVA @25°C	
Max. output active power (cosΦ=1)	5060kW	5280kW	
Nominal output voltage	630V / 3W+PE	660V / 3W+PE	
Nominal output frequency	50Hz / 60Hz		
Nominal output current	3×1344A	3×1283A	
Max. output current	3×1546A	3×1540A	
Adjustable power factor range	0.8 (leading) ~ 0.8 (lagging)		
Max. total harmonic distortion	<3% (at nominal power)		
DC current injection	<0.5%In		
	Protection		
DC input protection	Disconnecting switch + Fuse		
AC output protection	Circuit breaker		
DC / AC surge protection	Type II (Type I+II, optional)		
DC short circuit protection	Support		
Output overcurrent protection	Support		
Grid monitoring	Support		
Ground fault monitoring	Support		
Anti-islanding protection	Support		
Insulation monitoring	Support		
Overheat protection	Support		
	Other Functions		
Anti-PID function	Optional		
SVG function	Optional		
	General Data		
Dimensions (W×H×D)	2714×2262×1955mm		
Weight	3600kg		
Degree of protection	IP65 / IP55(optional)		
Operating temperature range	-35°C~ 60°C (>45°C derating)	-35°C~ 60°C (>51°C derating)	
Cooling method	Smart forced air cooling		
Max. operating altitude	>3000m derating		
Relative humidity range	0% ~ 100%		
Display	WLAN+WebHMI / APP		
Communication	RS485 / Ethernet		
Night standby loss	<200W		
Topology	Transformerless		
	Standard Compliance		
Compliance	CE, IEC 62109-1/-2, IEC 61727, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, NTS 631, CEA2019		

The technical parameters are for reference only, and the actual products shall prevail

TC3600KF 1500V Central Inverter



Supportive to Grid

- Specific harmonic control technology, effectively reducing THDi
- Impedance adaptive technology, supporting weak grid network SCR~1.0
- Night SVG (optional), Supporting better grid
- Fast active & reactive power response, supporting power dispatch



Stable and Reliable

- IP65 & C5, robust environment adaptability
- Dual air duct heat dissipation & built-in heat exchanger
- Infineon IGBT
- Higher short cuircuit breaking ability (65kA)



Efficient and Economical

- Maximum efficiency 99%, European efficiency 98.7%
- Optimized MPPT algorithm, ensuring maximum power generation efficiency
- 16-20 inputs optional, match large bifacial modules perfectly



Integrated and Convenient

- Modular design of power modules, easy for maintenance
- Integrated zone monitoring function to realize online fault analysis and diagnosis

Technical Parameters

Model	TC3600KF
Efficiency	
Max. efficiency	> 99.0%
Max. European efficiency	> 98.7%
Input (DC)	
Max. input voltage	1500V
Min. input voltage / startup voltage	900V
MPPT voltage range at nominal power	900V ~ 1300V
Number of MPPT	2
Number of inputs	16 / 18 / 20
Max. input current	4075A
Output (AC)	
Nominal output power	3125kVA
Max. output apparent power	3594kVA
Max. output active power (cosΦ=1)	3594kW
Nominal output voltage	630V / 3W + PE
Nominal output frequency	50Hz / 60Hz
Nominal output current	2864A
Max. output current	3294A
Adjustable power factor range	0.8 (leading) ~ 0.8 (lagging)
Max. harmonic content	<3%In (at nominal power)
DC current injection	≤0.5%In
Protection	
DC input protection	Disconnecting switch + fuse
AC output protection	Circuit breaker
DC / AC surge protection	Type II or Type I+II
DC short circuit protection	Support
Output overcurrent protection	Support
Grid monitoring	Support
Ground fault monitoring	Support
Anti-island protection	Support
Insulation monitoring	Support
Overheat protection	Support
Other Functions	
Anti-PID function	Optional
SVG function	Optional
General Parameters	
Dimensions (W× H×D)	2263mm×2325mm×1188mm
Weight	2700kg
Protection degree	IP65
Operating temperature range	-35°C~ 60°C (>50°C derating)
Cooling method	Smart forced air cooling
Max. operating altitude	3000m, customizable
Relative humidity range	0% ~ 100%
Communication	RS485 / Ethernet
Night standby loss	<200W
Topology	Transformerless
Standard Compliance	
Compliance	IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, CEA2019

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TC4400KT-EL

Inverter Transformer Station



Product Introduction

The product integrates central inverters (4400kW), transformer, RMU, and other auxiliaries into a 20-foot container. It converts LV DC power produced by photovoltaic modules to MV AC power for injection into the grid system, offering an all-in-one integrated solution for PV power plants.

Advantages

Efficient and Economical

- Match large bifacial modules perfectly, 18/21/24 DC input, support 1.8 DC/AC ratio
- Max. efficiency >99%, European efficiency >98.7%
- High capacity, reduce quantity of MV equipment, reduce CAPEX

Integrated and Convenient

- Prefabricated and tested, easy transportation and installation
- Modular inverter design, easy for O&M replacement and maintenance

Stable and Reliable

- IP55/IP65 protection, C4/C5 anti-corrosion, adaptable to harsh environments
- Scientific thermal design, and effective cooling to improve performance

Supportive to Grid

- Comply with standards IEC61727, IEC62109-1/2, IEC62116, IEC62271-200/202, IEC60076, IEC61439
- SCR~1.0, Low/high voltage ride through (L/HVRT)
- Active & reactive power and power factor control

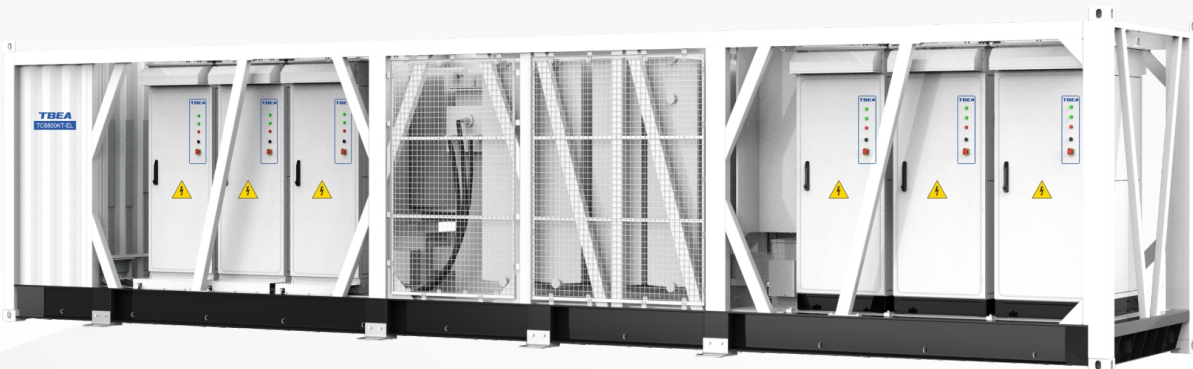
Technical Parameters

Model	TC4400KT-EL	TC4400KT-EL-50
Inverter DC input		
Max. input voltage	1500V	
Min. input voltage	900V	938V
MPP voltage range	900V ~ 1500V	938V ~ 1500V
Number of MPPT	3	
Number of DC input	18 / 21 / 24	
Max. input current	3×1913A	3×1915A
Inverter AC output		
Nominal output power	4400kW @45°C	4400kW @52°C
Max. output apparent power	5060kVA @25°C	5280kVA @25°C
Nominal output voltage	630V	660V
Nominal output frequency	50Hz / 60Hz	
Max. total harmonic distortion	< 3%In	
DC current injection	< 0.5%In	
Power factor at rated power	>0.99	
Power factor range	0.8 (leading) ~ 0.8 (lagging)	
Inverter protection	IP65 / IP55 (optional)	
Efficiency		
Max. efficiency	> 99.0%	
Max. European efficiency	> 98.7%	
Transformer		
Type	Oil-immersed, fully sealed, Dy11	
Nominal voltage	10kV ~ 35kV / 0.63kV	10kV ~ 35kV / 0.66kV
Efficiency	>99% (standard); tier 1/ tier 2 (optional)	
Short circuit impedance	8% (deviation ±10%)	
General		
Dimension (W×H×D)	6058mm×2896mm×2438mm, standard 20-foot container	
Protection	IP54	
Temperature range	-35°C ~ 60°C (> 45°C derating)	-35°C ~ 60°C (> 51°C derating)
Relative humidity range	0% ~ 100% (no condensing)	
Max. operating altitude	1500m / > 1500m (optional)	
Communication interface	RS485 / Ethernet	
Communication protocol	Modbus-RTU / Modbus-TCP / IEC104	
Auxiliary transformer	Dry, 3 phase, Dyn11, level H	
	7kVA / 0.63kV / 0.4kV	7kVA / 0.66kV / 0.4kV
UPS	1kVA, 30min	
Standard Compliance		
Compliance	IEC61727, IEC62109-1/2, IEC62116, IEC62271-200/202, IEC60076, IEC61439	

The technical parameters are for reference only, and the actual products shall prevail

TC8800KT-EL

Inverter Transformer Station



Product Introduction

The product integrates central inverters (2*4400kW), transformer, RMU, and other auxiliaries into a 40-foot container. It converts LV DC power produced by photovoltaic modules to MV AC power for injection into the grid system, offering an all-in-one integrated solution for PV power plants.

Advantages

Efficient and Economical

- Match large bifacial modules perfectly, 36/42/48 DC inputs, support 1.8 DC/AC ratio
- Max. efficiency >99%, European efficiency >98.7%
- High capacity, reduce quantity of MV equipment, reduce CAPEX

Integrated and Convenient

- Prefabricated and tested, easy transportation and installation
- Modular inverter design, easy for O&M replacement and maintenance

Stable and Reliable

- IP55/IP65 protection, C4/C5 anti-corrosion, adaptable to harsh environments
- Scientific thermal design, and effective cooling to improve performance

Supportive to Grid

- Comply with standards IEC61727, IEC62109-1/2, IEC62116, IEC62271-200/202, IEC60076, IEC61439
- SCR ~ 1.0, Low/high voltage ride through (L/HVRT)
- Active & reactive power and power factor control

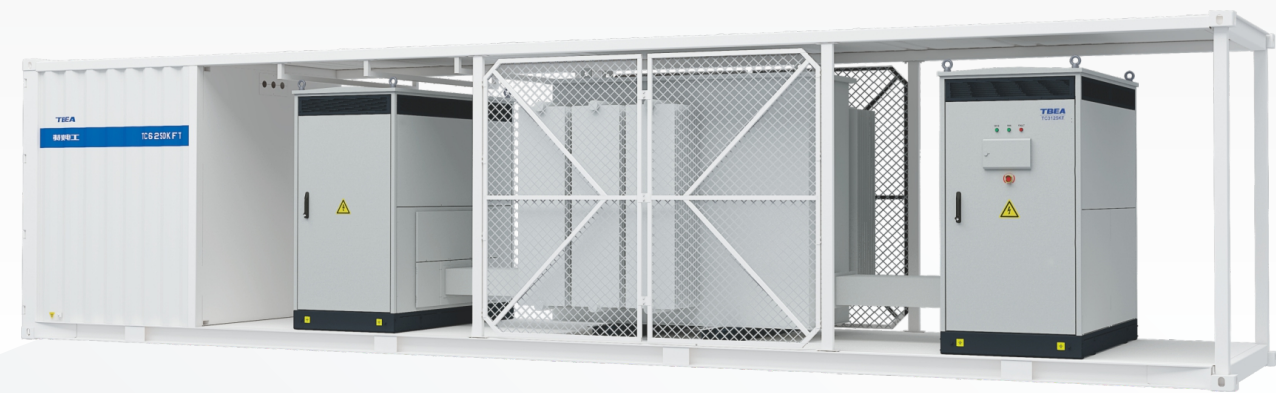
Technical Parameters

Model	TC8800KT-EL	TC8800KT-EL-50
Inverter DC input		
Max. Input voltage	1500V	
Min. input voltage	900V	938V
MPP voltage range	900V ~ 1500V	938V ~ 1500V
Number of MPPT	6	
Number of DC input	36 / 42 / 48	
Max. input current	6×1913A	6×1915A
Inverter AC output		
Nominal output power	8800kW @45°C	8800kW @52°C
Max. output apparent power	10120kVA @25°C	10560kVA @25°C
Nominal output voltage	630V	660V
Nominal output frequency	50Hz / 60Hz	
Max. total harmonic distortion	< 3%In	
DC current injection	< 0.5%In	
Power factor at rated power	>0.99	
Power factor range	0.8 (leading) ~ 0.8 (lagging)	
Inverter protection	IP65 / IP55 (optional)	
Efficiency		
Max. efficiency	>99.0%	
Max. European efficiency	>98.7%	
Transformer		
Type	Oil-immersed, fully sealed, Dy11y11	
Nominal voltage	20kV ~ 35kV / 0.63 - 0.63kV	20kV ~ 35kV / 0.66 - 0.66kV
Efficiency	>99% (standard); tier 1/ tier 2 (optional)	
Short circuit impedance	9.5% (deviation ±10%)	
General		
Dimension (W×H×D)	12192mm×2896mm×2438mm, standard 40-foot container	
Protection	IP54	
Temperature range	-35°C ~ 60°C (> 45°C derating)	-35°C ~ 60°C (> 51°C derating)
Relative humidity range	0% ~ 100% (no condensing)	
Max. operating altitude	1500m / > 1500m (optional)	
Communication interface	RS485 / Ethernet	
Communication protocol	Modbus-RTU / Modbus-TCP / IEC104	
Auxiliary transformer	Dry, 3 phase, Dyn11, level H	
	10kVA / 0.63kV / 0.4kV	10kVA / 0.66kV / 0.4kV
UPS	1kVA, 30min	
Standard Compliance		
Compliance	IEC61727, IEC62109-1/2, IEC62116, IEC62271-200/202, IEC60076, IEC61439	

The technical parameters are for reference only, and the actual products shall prevail

TC3125KFT / TC6250KFT

Inverter Transformer Station



Product Introduction

The product integrates central inverters (2*3125kW), transformer, RMU, and other auxiliaries into a 40-foot container. It converts LV DC power from photovoltaic modules to MV AC power for injection into the grid system, offering an all-in-one integrated solution for PV power plants.

Advantages

Efficient and Economical

- Match large bifacial modules perfectly, DC 32/36/40 inputs, support 1.8 DC/AC ratio
- Max. efficiency >99%, European efficiency >98.7%
- High capacity, reduce quantity of MV equipment reduce CAPEX

Integrated and Convenient

- Prefabricated and tested, easy transportation and installation
- Modular inverter design, easy for O&M replacement and maintenance

Stable and Reliable

- IP65 protection, C4/C5 anti-corrosion, adaptable to harsh environments
- Scientific thermal design, and effective cooling to improve performance

Supportive to Grid

- Comply with standards IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, CEA2019
- SCR ~ 1.0, Low/high voltage ride through (L/HVRT)
- Active & reactive power and power factor control

Technical Parameters

Model	TC3125KFT	TC6250KFT
Inverter DC input		
Max. input voltage	1500V	
Min. input voltage	900V	
Mpp voltage range	900V ~ 1300V	
Number of MPPT	2	4
Number of DC input	16 / 18 / 20	32 / 36 / 40
Max. input current	1×4075A	2×4075A
Inverter AC output		
Nominal output power	3125kVA	6250kVA
Max. output apparent power	3594kVA	7188kVA
Nominal output voltage	630V	
Nominal output frequency	50Hz / 60Hz	
Max. total harmonic distortion	<3%In	
DC current injection	<0.5%In	
Power factor at rated power	>0.99	
Power factor range	0.8(leading) ~ 0.8(lagging)	
Inverter protection	IP65	
Efficiency		
Max. efficiency	> 99.0%	
Max. european efficiency	> 98.7%	
Transformer		
Type	Oil-immersed, fully sealed, Dy11	Oil-immersed, fully sealed, Dy11y11
Nominal voltage	10KV~35KV / 0.63KV	20KV~35KV / 0.63KV-0.63KV
Efficiency	> 99% (standard) ; tier1 / tier2 (optional)	
Short circuit impedance	8% (deviation±10%)	
General		
Dimension (W×H×D)	2438mm×2896mm×6058mm	2438mm×2896mm×12192mm
Protection	IP54	
Temperature range	-35°C ~ 60°C (>50°C derating)	
Relative humidity range	0% ~ 100%	
Max.operating altitude	1500m, Customizable	
Communication interface	RS485 / Ethernet	
Communication protocol	Modbus-RTU / Modbus-TCP / IEC104	
Auxiliary transformer	Dry, 3 phase, Dyn11, level H	
	7kVA / 0.63kV / 0.4kV	10kVA / 0.63kV / 0.4kV
UPS	1kVA, 30min	
Standard Compliance		
Compliance	IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683, CEA2019	

The technical parameters are for reference only, and the actual products shall prevail

TS3000 / 6000 / 9000KT-EL

Smart Transformer Station



Product Introduction

The product integrates LV panel, transformer, RMU, and other auxiliaries into a 20-foot container. It converts LV DC power to MV AC power for injection into the grid system, offering an all-in-one integrated solution for PV power plants.

Advantages

Integrated and Economic

- Prefabricated and pre-tested, simple installation onsite without internal cabling
- Standard container design for easy transportation
- High capacity, reduce quantity of MV equipment save investment of the whole plant

Efficient and Smart

- Low power consumption, Tier 1/2 PEI efficiency
- LV panel, transformer and RMU real-time monitored, LV panel and RMU remote controlled

Stable and Reliable

- IP54 protection for LV and MV room, IP68 for transformer body
- C4/C5 anti-corrosion, adaptable to harsh environments

Grid Support

- Comply with standards IEC60076, IEC62271-200/202, IEC61439, EN50588-1
- MV voltage up to 35kV

Technical Parameters

Model	TS3000KT-EL	TS6000KT-EL	TS9000KT-EL
Input			
Available inverters	TS300KTL-HV-C1, TS330KTL-HV-C1, TS360KTL-HV-C1		
Max. LV inputs	10	20	28
AC power	3630kVA@30°C, 3300kVA@40°C 3000kVA@50°C	7260kVA@30°C, 6600kVA@40°C 6000kVA@50°C	10164kVA@30°C, 9240kVA@40°C 8400kVA@50°C
Rated input voltage	800V		
LV switches	MCCB (400A / 800Vac / 3P, 10pcs)	MCCB (400A / 800Vac / 3P, 20pcs)	MCCB (400A / 800Vac / 3P, 28pcs)
	ACB (3200A / 800Vac / 3P, 1pcs)	ACB (3200A / 800Vac / 3P, 2pcs)	ACB (4000A / 800Vac / 3P, 2pcs)
Output			
Rated output voltage	10kV ~ 35kV		20kV ~ 35kV
Rated frequency	50Hz / 60Hz		
Transformer type	Oil-immersed, fully sealed, Dy11	Oil-immersed, fully sealed, Dy11y11	
Transformer tapplings	±2×2.5%		
Transformer oil type	Mineral oil (PCB free)		
Transformer cooling type	ONAN		
Transformer efficiency	> 99% (standard) ; tier1 / tier2 (optional)		
RMU type	SF6 gas insulated		
Auxiliary transformer	Dry type, 5kVA, 800V / 400V, Dyn11, level H		
UPS	1kVA, 30min		
Protection			
Transformer monitoring and protection	Oil level, temperature and pressure		
Rated short-circuit breaking current	20kA / 3s		
MV relay protection	50 / 51, 50N / 51N		
LV surge protection	Type I+II		
Protection degree	IP54 for LV / MV room		
	IP68 for transformer body		
Anti-corrosion degree	C4 / C5 (optional)		
General			
Dimension	6058mm×2896mm×2438mm, standard 20-foot container		
Weight	<18T	<24T	<28T
Temperature range	-25°C ~ 60°C		
Relative humidity	0% ~ 95%		
Max. operating altitude	1000m (standard) / > 1000m (optional)		
Measuring and control device	CEM9000 or similar		
Communication interface	RS485		
Communication protocol	Modbus-RTU / Modbus-TCP / IEC104		
Color	RAL7035		
Standard Compliance			
Compliance	IEC60076, IEC 62271-200/202, IEC61439, EN50588-1		

The technical parameters are for reference only, and the actual products shall prevail

PV Combiner Box



Intelligent and Efficient

- 1500V-Specific PV Fuse, both positive and negative terminal
- String current and voltage monitoring
- L4 IV curve scan and diagnosis
- 1500V-Specific PV SPD with fault alarms
- MCCB state monitoring
- Fast PLC communication



Safe and Reliable

- Arc fault circuit interrupter≤40ms
- Optional IP66 ingress protection



Flexibility and Convenience

- PA66 Gland / MC4 terminal connector
- Output cable cross section area 50–500mm²

Technical Parameters

Model	TH-SC-22 / 24	TH-SC-14-20	TH-SC-8-12
Electrical Parameters			
Max. PV string voltage	1500V		
Max. PV string inputs	24 / 22	20 / 18 / 16 / 14	12 / 10 / 8
Max. input current per strings	10~21A		
Max. output current	250/315/350/400/500/630A		
SPD	1500 Vdc Type II (optional: Type I+II)		
DC output switch	MCCB / Disconnect switch (optional)		
Environmental Parameters			
Protection	IP65 / IP66 (optional)		
Anti corrosion degree	C4/ (C5 optional)		
Environment temperature	-40 to 60 °C		
Environment humidity	0 – 95%		
Max. operating altitude	4000m (>3000m customized)		
Mechanical Parameters			
Dimensions (W*H*D)	950mm ×600mm ×200mm	850mm ×600mm ×200mm	800mm ×600mm ×200mm
Weight	45Kg		
Installation method	Bracket, holding pole		
Material	Steel		
Input terminal type	PA66 Gland / PV connector (optional)		
Output cable	50–500mm²		
Communication and Protection Parameters			
RS485 communication	Standard		
PLC communication	Optional (only) match with TBEA Central Inverter		
String current and bus voltage monitoring	Standard		
Monitoring for MCCB state	Standard		
PV SPD failure monitoring	Standard		
Parallel arc fault circuit interrupter	Optional (only) match with TBEA Central Inverter		
IV curve scan and diagnosis	Optional (only) match with TBEA Central Inverter		
Standard Compliance			
Compliance	IEC 63027:2023, IEC 61439-1, IEC 61439-2, IEC 62109-1		

The technical parameters are for reference only, and the actual products shall prevail

Smart Communication Box



Intelligent and Efficient

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

Safe and Reliable

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

Flexibility and Convenience

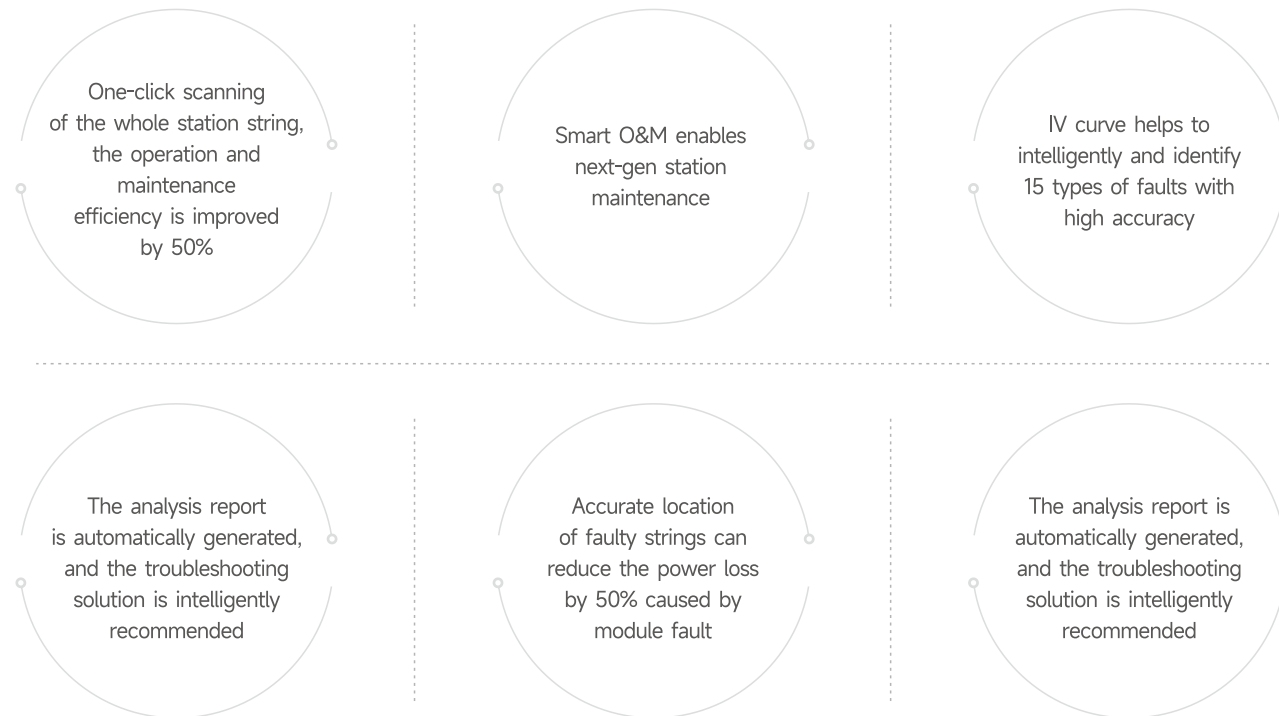
- Abundant interfaces, accessible to multiple devices
- Multiple configuration solution, suitable for different application scenarios

Technical Parameters

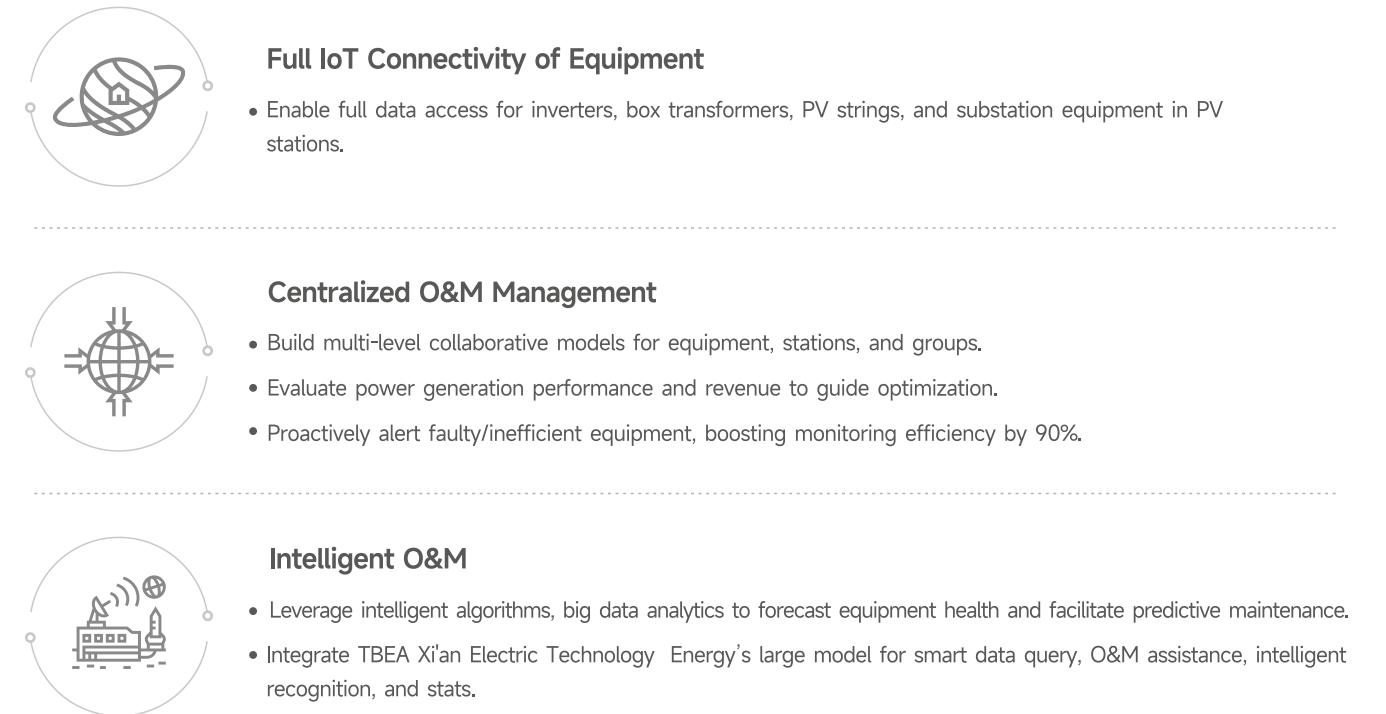
Electrical Parameters	
Operating input Voltage (single phase)	90~264Vac
Frequency	47Hz~63Hz
PLC input Voltage (three phase)	680~920Vac
Environmental Parameters	
Operating temperature	-25°C~60°C
Operating humidity	0~95%
Operating altitude	≤4000m
Basic Configuration	
Ring switch	Optional
Optical fiber interface	2
RS485 interface	5
PLC module	1 For standard (2 for optional)
PID module	1 For standard (2 for optional)
Mechanical Parameters	
Cable connection method	TCMO bottom side
Dimensions (W×H×D)	773.5×840×279.5mm
Weight	≤65kg
Protection degree	Ip65
Installation method	wall-mounted installation

The technical parameters are for reference only, and the actual products shall prevail

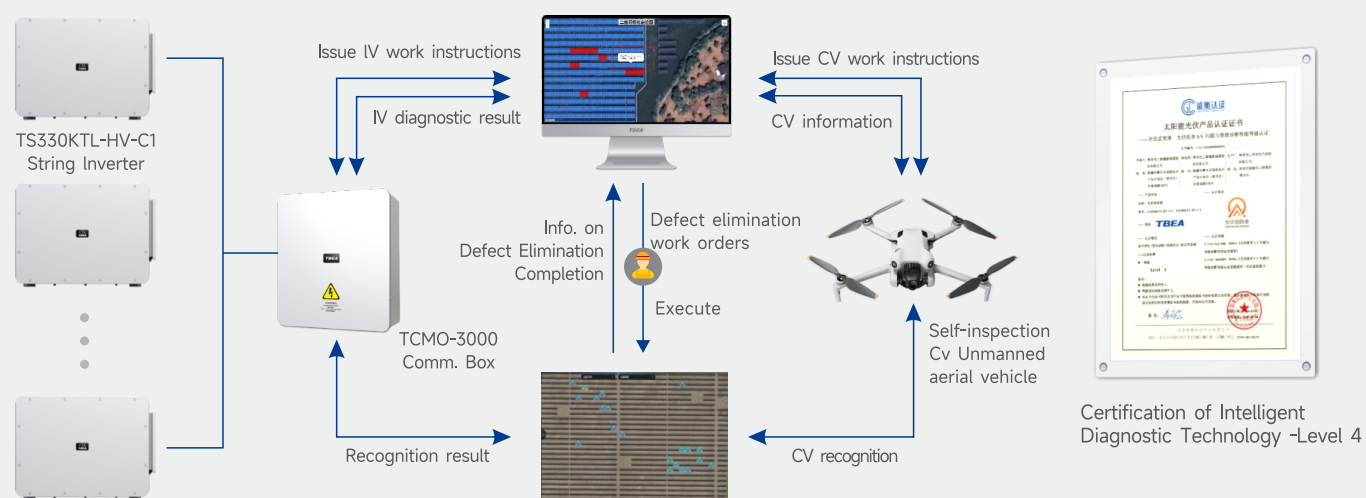
TBEA I-V Curve Diagnosis



TB-eCloud Smart O&M Platform

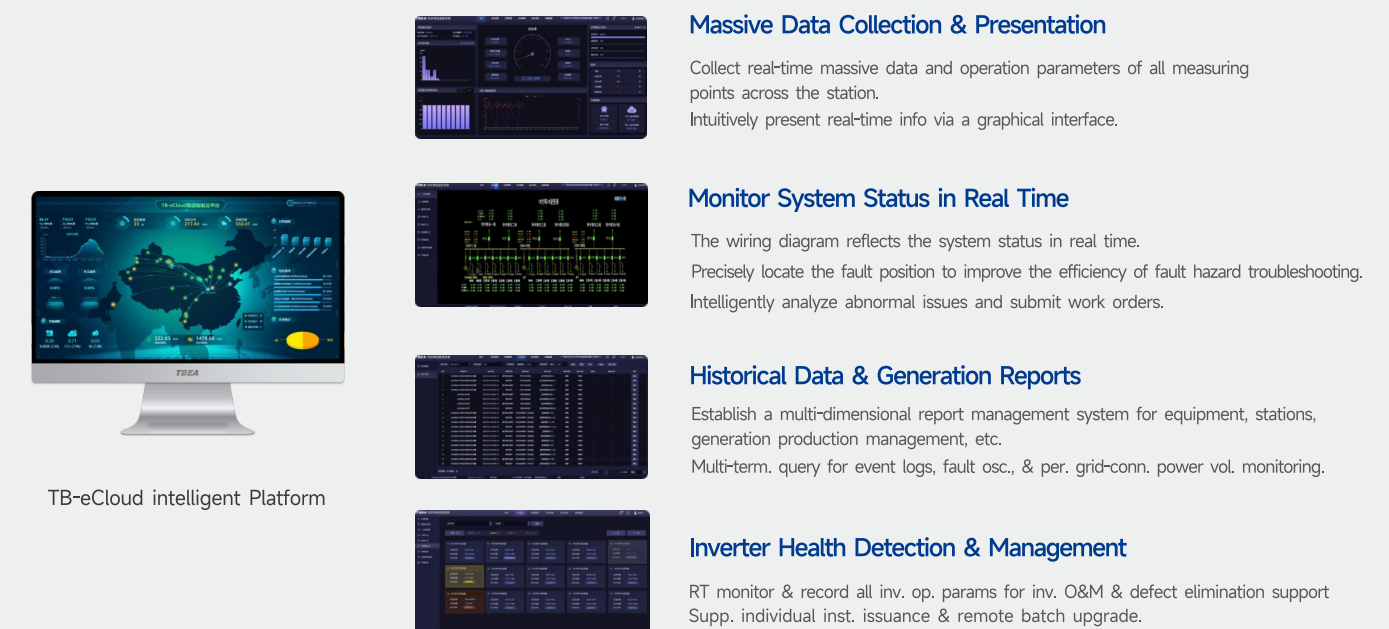


IV&CV intelligent diagnostic technology



O&M Management Solution

Monitoring System of PV Power Station



Application Case



Yalong River Lianghekou 1GW Hybrid Hydropower-Photovoltaic Complementary Power Station Project

The Yalong River Lianghekou Hybrid Hydropower-Photovoltaic Power Station is located on the eastern Qinghai-Tibet Plateau, around 4000-4600m elevation. With 1GW capacity and 1.7billion kWh annual output, it powers 850,000 households. It is China's first gigawatt-scale hydropower-photovoltaic hybrid.

Using TBEA Xi'an Electric Technology string inverter solutions, the project overcomes high-altitude terrain, extreme weather, humidity, and sand. With all-climate adaptability, smart O&M, and active safety, it pioneers a seasonal coordination model- hydropower in wet seasons, PV in dry seasons - and builds the world's first integrated gigawatt-scale "hydropower-photovoltaic" base.



India Adani Project 1GW

The Adani 1GW project in India is located in the Thar Desert of Rajasthan. This area not only faces the challenge of a weak power grid environment but also endures the dual tests of high-intensity sandstorms and extreme high temperatures all year round, placing extremely high demands on the stability and adaptability of power station equipment.

However, TBEA Xi'an Electric Technology string inverters, with their excellent high-temperature adaptability and comprehensive environmental protection capabilities, can operate stably under such harsh natural and power grid conditions. They fully meet the requirements of the power station in terms of equipment performance, reliability, and grid compatibility, providing a solid guarantee for the efficient progress of the project.



Application Case



**China Inner Mongolia Tengger
1000MW Wind-Solar-Energy Storage
Integrated Project**

TBEA Xi'an Electric Technology provided central inverter solution for the project, using self-designed TC4400KT-CL Inverter Transformer Station, it has been operating stably in the desert with Extreme sand and dust climate. Our solutions help customers to achieve the goal of "PV + Diversification". By integration PV array construction with desertification control, the project drives coordinated regional ecological and industrial economic benefits, establishing a protective system for the Tengger Desert ecosystem, transmitting "green power" to the grid. Effectively taking on the responsibility of ecological protection and renewable energy supply.

China Inner Mongolia Tengger 1000MW Project is a key project of national billion kilowatts renewable energy base.



1000 MW
Capacity
TC4400KT-CL
December 2024



**Brazil Ceará
482MW Project**

TBEA Xi'an Electric Technology provided central inverter solution for the project, adopting self-designed TC3125KFT and TC6250KFT Inverter Transformer Station, which can effectively withstand the high salt corrosion environment, meet the technical requirements of the local grid for active and reactive power and voltage control, and integrate the off-grid auxiliary power supply function, thus creating a demonstrative renewable energy project. The project is continuously delivering green power to the power grid, which is of positive significance for promoting local energy saving.

Brazil Ceará 482MW Project is a million-kilowatt-scale PV demonstration project in Brazil.



482 MW
Capacity
TC3125KFT TC6250KFT
June 2025



**India Gujarat
1000MW Project**

TBEA Xi'an Electric Technology provided a central inverter solution for the project, adopting self-designed TC4400KF-B1 central inverter. The equipment meets the design requirement of High DC/AC ratio, realizes in-depth compatibility and matching with the customer's transformer, and operates continuously and stably at full power in a high temperature environment of 51°C, and at the same time, provides strong support for the weak grid with low SCR Value, guaranteeing stable and reliable operation for customer's project.

India Gujarat 1000MW Project is a million-kilowatt-scale PV demonstration project in Indian.



1000 MW
Capacity
TC4400KF-B1
Sep. 2025

Application Case



India Renew Project
1.53GW



Spain Ohla Project
230MW



Bulgaria C Solar Project
109MW



China Bayannaoer Project
800MW



Poland Photovoltaic Project
82MW



Brazil Ufv Pananti Project
292MW



Brazil Ufv Marangatu Project
446MW



Romania Photovoltaic Project
54MW



China Yunnan Qiaojia Project
240MW