TBEA Xi'an Electric Technology Co., Ltd.

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Residential and C&I Intelligent PV Solutions

TBEA Xi'an Electric Technology Co., Ltd.

About Us

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 filed of PV power generation, its full range of 8kW~9000kW grid-connected solar inverters have a total installed capacity of more than 64GW globally. For power quality management, the company has a statcom solution installation of more than 35Gvar. TBEA is also one of the first companies in China that provide complete solutions of BESS, Micro-grid, HVDC, SCADA and TB-eCloud 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.

2500+
Employees

33+GW
Total designed capacity PV and wind power

29.5+GW
Total builded capacity of new energy

20+
Countries and regions

12+GW
Total access of TB-eCloud

5000+
Number of photovoltaic and wind power stations

2+GWh
Cumulative global shipments of energy storage system

35+Gvar
Cumulative global shipments of TSVG

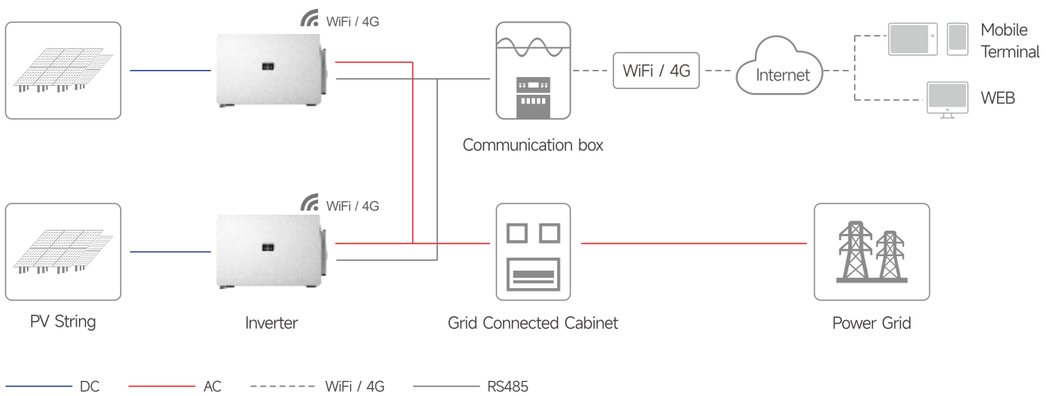
64+GW
Cumulative global shipments of PV inverters

Xi'an Factory

Indian Factory

C&I Solution

System Topology



Solution Features

Tech Advanced

- Maximum efficiency 98.8%, AI control strategy, increase revenue from power generation
- Intelligent string breaking technology & AFCI, reduced fault coverage

Excellent Experience

- Compatible with all PV modules, lower equipment management costs
- Intelligent remote monitoring and diagnosis, improving O&M efficiency

Best Benefits

- 1.5 times capacity ratio, reduced LCOE
- Fast reactive power response, save reactive power equipment cost

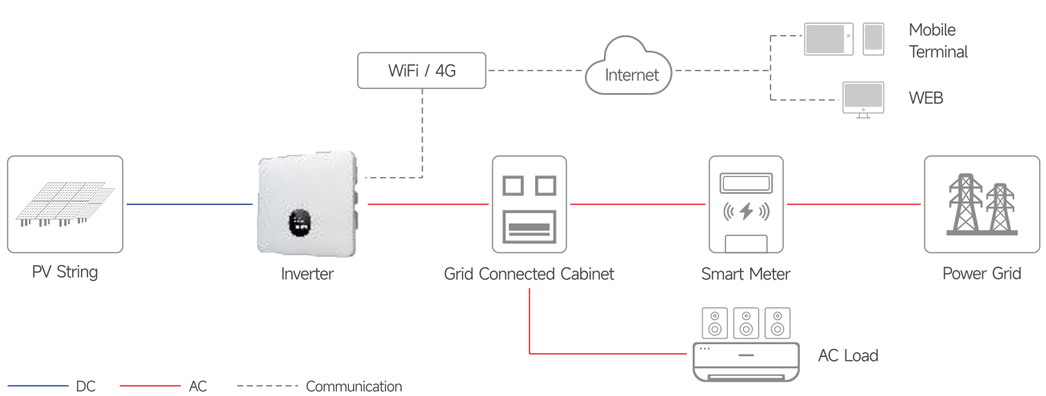
Always Reliable

- IP66 & C5, robust environment adaptability
- Intelligent Zone Cooling, prolonging device life, enhance device availability

Applicable Product: TS25-40KTL-A20 TS45-60KTL-A20 TS75-110KTL-A10

Residential Solution

System Topology



Solution Features

Best Benefits

- Wide range working voltage, longer grid connection time
- Multi-channel MPPT design, multi-orientation adaptation, higher generation revenue

Always Reliable

- IP66 & C5, robust environment adaptability
- AFCI Function, reduced fault coverage

Intelligent Friendly

- Intelligent energy management platform, improving O&M efficiency
- String level current detection, improve fault warning timely rate

Applicable Product: TS3-20KTL-A20

TS3/4/5/6/8/10KTL-A20

Three Phase On-grid Inverter

High Power Generation

- Capability of support 150% oversizing
- 1.1 times output overload for higher yield

Safe and Reliable

- IP66 protection & C5 anti-corrosion
- Type II DC&AC Surge protection
- Optional AFCI

Intelligent O&M

- Remote one-click firmware upgrade
- Intelligent remote monitoring and diagnosis, improving O&M efficiency

Technical Datasheet

Model	TS3KTL-A20	TS4KTL-A20	TS5KTL-A20	TS6KTL-A20	TS8KTL-A20	TS10KTL-A20
Input (PV)						
Max. input voltage	1100V					
Rated input voltage	630V					
MPP voltage range	150V ~ 1000V					
Start-up voltage	125V					
Max. input current for each MPPT	16A / 16A				20A / 16A	
Max. short circuit current for each MPPT	25A / 25A				30A / 25A	
No. of MPP trackers	2					
Max. input No. of per MPPT	1					
Output (AC)						
Rated output power	3kW	4kW	5kW	6kW	8kW	10kW
Max. apparent power	3.3kVA	4.4kVA	5.5kVA	6.6kVA	8.8kVA	11kVA
Rated AC voltage	220V / 380V 230V / 400V 240V / 415V					
Voltage range	160V ~ 300V / 320V ~ 520V					
Rated AC grid frequency	50Hz / 60Hz					
Grid frequency range	45Hz ~ 55Hz / 55Hz ~ 65Hz					
Max. output current	4.8A	6.4A	8.0A	9.6A	12.8A	16.0A
Adjustable power factor	0.8 leading ~ 0.8 lagging					
THD @Rated output	<3%					
Efficiency						
Max. efficiency	98.3%				98.6%	
European efficiency	97.9%				98.2%	
Protection						
DC switch	Yes					
Insulation resistance detection	Yes					
DC reverse polarity protection	Yes					
AC over-current protection	Yes					
Surge protection	DC&AC Type II					
Anti-islanding protection	Yes					
Residual-current monitoring	Yes					
AFCI function	Optional					
General Data						
Dimensions (W / H / D)	503*435*183mm					
Weight	16kg					
Operating ambient temperature range	-25°C ~ +60°C					
Relative operating humidity (non-condensing)	0% RH ~ 100% RH					
Degree of protection	IP66					
Cooling method	Natural Convection					
Max. operating altitude	3000m					
Night power consumption	<1W					
Topology	Transfomerless					
Display	LED Indicators					
Communication interface	RS485 or WiFi or 4G or LAN (Optional)					
DC connection type	MC4					
AC connection type	Waterproof Connector (OT/DT Terminal)					
AC cable specification	Outside diameter 10mm ~ 16mm					
Grid-connection standard	EN 50549-1, IEC 61727, IEC 61683, IEC 60068, VDE V 0124-100, VDE-4105, UNE 217001, UNE 217002, TED 749, RD 647, CEI 0-21, Compliance with (Greece, Poland, Netherlands)					
Safety standard	IEC/EN 62109-1/-2, IEC 62116					
EMC standard	IEC/EN 61000-6-1/-2/-3/-4, EN 62920, IEC 61000-3-11/12					

TS12/13/15/17/20KTL-A20

Three Phase On-grid Inverter

High Power Generation

- Capability of support 150% oversizing
- 1.1 times output overload for higher yield

Safe and Reliable

- IP66 protection & C5 anti-corrosion
- Type II DC&AC Surge protection
- Optional AFCI

Intelligent O&M

- Remote one-click firmware upgrade
- Intelligent remote monitoring and diagnosis, improving O&M efficiency

Technical Datasheet

Model	TS12KTL-A20	TS13KTL-A20	TS15KTL-A20	TS17KTL-A20	TS20KTL-A20
Input (PV)					
Max. input voltage	1100V				
Rated input voltage	630V				
MPP voltage range	150V ~ 1000V				
Start-up voltage	125V				
Max. input current for each MPPT	32A / 20A			32A / 32A	
Max. short circuit current for each MPPT	48A / 30A			48A / 48A	
No. of MPP trackers	2			2	
Max. input No. of per MPPT	2 / 1			2	
Output (AC)					
Rated output power	12kW	13kW	15kW	17kW	20kW
Max. apparent power	13.2kVA	14.3kVA	16.5kVA	18.7kVA	22kVA
Rated AC voltage	220V / 380V 230V / 400V 240V / 415V				
Voltage range	160V ~ 300V / 320V ~ 520V				
Rated AC grid frequency	50Hz / 60Hz				
Grid frequency range	45Hz ~ 55Hz / 55Hz ~ 65Hz				
Max. output current	19.1A	20.7A	24.0A	27.1A	31.9A
Adjustable power factor	0.8 leading ~ 0.8 lagging				
THD @Rated output	<3%				
Efficiency					
Max. efficiency	98.6%				
European efficiency	98.2%				
Protection					
DC switch	Yes				
Insulation resistance detection	Yes				
DC reverse polarity protection	Yes				
AC over-current protection	Yes				
Surge protection	DC&AC Type II				
Anti-islanding protection	Yes				
Residual-current monitoring	Yes				
AFCI function	Optional				
General Data					
Dimensions (W / H / D)	503*435*183mm				
Weight	17.3kg			18.6kg	
Operating ambient temperature range	-25°C ~ +60°C				
Relative operating humidity (non-condensing)	0% RH ~ 100% RH				
Degree of protection	IP66				
Cooling method	Smart forced air cooling				
Max. operating altitude	3000m				
Night power consumption	<1W				
Topology	Transfomerless				
Display	LED Indicators				
Communication interface	RS485 or WiFi or 4G or LAN (Optional)				
DC connection type	MC4				
AC connection type	Waterproof Connector (OT/DT Terminal)				
AC cable specification	Outside diameter 10mm ~ 16mm				
Grid-connection standard	EN 50549-1, IEC 61727, IEC 61683, IEC 60068, VDE V 0124-100, VDE-4105, UNE 217001, UNE 217002, TED 749, RD 647, CEI 0-21, Compliance with (Greece, Poland, Netherlands)				
Safety standard	IEC/EN 62109-1/-2, IEC 62116				
EMC standard	IEC/EN 61000-6-1/-2/-3/-4, EN 62920, IEC 61000-3-11/12				

TS25/27/30/33/36/40KTL-A20

Three Phase On-grid Inverter

High Power Generation

- MPPT current 32A and 40A, compatible with all PV modules
- Capability of support 150% oversizing & 1.1 times output overload for higher yield

Safe and Reliable

- IP66 protection & C5 anti-corrosion
- Type II DC&AC Surge protection
- Optional AFCI

Intelligent O&M

- Intelligent strings monitoring
- Remote one-click firmware upgrade
- Intelligent remote monitoring and diagnosis, improving O&M efficiency

Technical Datasheet

Model	TS25KTL-A20	TS27KTL-A20	TS30KTL-A20	TS33KTL-A20	TS36KTL-A20	TS40KTL-A20
Input (PV)						
Max. input voltage	1100V					
Rated input voltage	630V					
MPP voltage range	180V ~ 1000V					
Start-up voltage	200V					
Max. input current for each MPPT	32A / 32A / 32A			32A / 32A / 40A		
Max. short circuit current for each MPPT	48A / 48A / 48A			48A / 48A / 60A		
No. of MPP trackers	3					
Max. input No. of per MPPT	2					
Output (AC)						
Rated output power	25kW	27kW	30kW	33kW	36kW	40kW
Max. apparent power	27.5kVA	29.7kVA	33kVA	36.3kVA	39.6kVA	44kVA
Rated AC voltage	220V / 380V 230V / 400V 240V / 415V					
Voltage range	180V ~ 305V / 312V ~ 528V					
Rated AC grid frequency	50Hz / 60Hz					
Grid frequency range	45Hz ~ 55Hz / 55Hz ~ 65Hz					
Max. output current	39.9A	43.0A	47.8A	52.6A	57.4A	63.8A
Adjustable power factor	0.8 leading ~ 0.8 lagging					
THD @Rated output	<3%					
Efficiency						
Max. efficiency	98.4%					
European efficiency	98.2%					
Protection						
DC switch	Yes					
Insulation resistance detection	Yes					
Ground fault monitoring / grid monitoring	Yes					
DC reverse polarity protection	Yes					
AC short-circuit protection	Yes					
Surge protection	DC&AC Type II					
Anti-islanding protection	Yes					
Residual-current monitoring	Yes					
AFCI function	Optional					
General Data						
Dimensions (W / H / D)	560*533.5*247mm					
Weight	31kg			32kg		
Operating ambient temperature range	-25°C ~ +60°C					
Relative operating humidity (non-condensing)	0% RH ~ 100% RH					
Degree of protection	IP66					
Cooling method	Smart forced air cooling					
Max. operating altitude	3000m					
Night power consumption	<1W					
Topology	Transfomerless					
Display	LED Indicators					
Communication interface	RS485 or WiFi or 4G or LAN (Optional)					
DC connection type	MC4 (Max. 6mm^2)					
AC connection type	Waterproof Connector (OT/DT Terminal)					
AC cable specification	Outside diameter 20mm ~ 36mm					
Grid-connection standard	EN 50549-1, IEC 61727, IEC 61683, IEC 60068, VDE V 0124-100, VDE-4105/4110, UNE 217001, UNE 217002, TED 749, RD 647, CEI 0-21, Compliance with (Greece, Poland, Netherlands)					
Safety standard	IEC/EN 62109-1/-2, IEC 62116					
EMC standard	IEC/EN 61000-6-1/-2/-3/-4, EN 62920, IEC 61000-3-11/12					

TS45/50/60KTL-A20

Three Phase On-grid Inverter

High Power Generation

- MPPT current 32A and 40A, compatible with all PV modules
- Capability of support 150% oversizing & 1.1 times output overload for higher yield

Safe and Reliable

- IP66 protection & C5 anti-corrosion
- Type II DC&AC Surge protection
- Optional AFCI

Intelligent O&M

- Intelligent strings monitoring
- Remote one-click firmware upgrade
- Intelligent remote monitoring and diagnosis, improving O&M efficiency

Technical Datasheet

Model	TS45KTL-A20	TS50KTL-A20	TS60KTL-A20
Input (PV)			
Max. input voltage	1100V		
Rated input voltage	630V		
MPP voltage range	200V ~ 1000V		
Start-up voltage	200V		
Max. input current for each MPPT	40A / 32A / 32A / 40A	40A / 32A / 32A / 40A / 32A	
Max. short circuit current for each MPPT	60A / 48A / 48A / 60A	60A / 48A / 48A / 60A / 48A	
No. of MPP trackers	4	5	
Max. input No. of per MPPT	2		
Output (AC)			
Rated output power	45kW	50kW	60kW
Max. apparent power	49.5kVA	55kVA	66kVA
Rated AC voltage	220V / 380V 230V / 400V 240V / 415V		
Voltage range	180V ~ 305V / 312V ~ 528V		
Rated AC grid frequency	50Hz / 60Hz		
Grid frequency range	45Hz ~ 55Hz / 55Hz ~ 65Hz		
Max. output current	75.2A	83.6A	95.3A
Adjustable power factor	0.8 leading ~ 0.8 lagging		
THD @Rated output	<3%		
Efficiency			
Max. efficiency	98.6%		
European efficiency	98.3%		
Protection			
DC switch	Yes		
Ground fault monitoring / grid monitoring	Yes		
DC reverse polarity protection	Yes		
AC short-circuit protection	Yes		
Surge protection	DC&AC Type II		
Anti-islanding protection	Yes		
Residual-current monitoring	Yes		
AFCI function	Optional		
General Data			
Dimensions (W / H / D)	670*640*270mm		
Weight	40kg	43kg	
Operating ambient temperature range	-25°C ~ +60°C		
Relative operating humidity (non-condensing)	0% RH ~ 100% RH		
Degree of protection	IP66		
Cooling method	Smart forced air cooling		
Max. operating altitude	4000m		
Night power consumption	<1W		
Topology	Transfomerless		
Display	LED Indicators		
Communication interface	RS485 or WiFi or 4G or LAN (Optional)		
DC connection type	MC4 (Max. 6mm^2)		
AC connection type	Waterproof Connector (OT/DT Terminal)		
AC cable specification	Outside diameter 28mm ~ 42mm		
Grid-connection standard	EN 50549-1/2, IEC 61727, IEC 61683, IEC 60068, VDE V 0124-100, VDE-4105/4110, UNE 217001, UNE 217002, TED 749, RD 647, CEI 0-16/21, Compliance with (Greece, Poland, Netherlands)		
Safety standard	IEC/EN 62109-1/-2, IEC 62116		
EMC standard	IEC/EN 61000-6-1/-2/-3/-4, EN 62920, IEC 61000-3-11/12		

TS75/80/100/110KTL-A10

Three Phase On-grid Inverter

High Power Generation

- MPPT current 32A, compatible with all PV modules
- 1.1 times output overload for higher yield

Safe and Reliable

- IP66 protection & C5 anti-corrosion
- Type II of DC&AC Surge protection
- Optional AFCI

Intelligent O&M

- Intelligent strings monitoring
- Remote one-click firmware upgrade
- Intelligent remote monitoring and diagnosis, improving O&M efficiency

Technical Datasheet

Model	TS75KTL-A10	TS80KTL-A10	TS100KTL-A10	TS110KTL-A10
Input (PV)				
Max. input voltage	1100V			
Rated input voltage	630V			
MPP voltage range	200V ~ 1000V			
Start-up voltage	200V			
Max. input current for each MPPT	32A			
Max. short circuit current for each MPPT	48A			
No. of MPP trackers	8		10	
Max. input No. of per MPPT	2			
Output (AC)				
Rated output power	75kW	80kW	100kW	110kW
Max. apparent power	75kVA	88kVA	110kVA	121kVA
Rated AC voltage	220V / 380V 230V / 400V 240V / 415V			
Voltage range	180V ~ 305V / 312V ~ 528V			
Rated AC grid frequency	50Hz / 60Hz			
Grid frequency range	45Hz~55Hz / 55Hz~65Hz			
Max. output current	114.0A	127.0A	158.8A	174.7A
Adjustable power factor	0.8 leading ~ 0.8 lagging			
THD @Rated output	<3%			
Efficiency				
Max. efficiency	98.6%			
European efficiency	98.4%			
Protection				
DC switch	Yes			
Insulation resistance detection	Yes			
DC reverse polarity protection	Yes			
AC over-current protection	Yes			
Surge protection	DC&AC Type II			
Anti-islanding protection	Yes			
Residual-current monitoring	Yes			
AFCI function	Optional			
General Data				
Dimensions (W / H / D)	984*640*330mm			
Weight	86kg			
Operating ambient temperature range	-25°C ~ +60°C			
Relative operating humidity (non-condensing)	0% RH ~ 100% RH			
Degree of protection	IP66			
Cooling method	Smart forced air cooling			
Max. operating altitude	4000m			
Night power consumption	<3W			
Topology	Transfomerless			
Display	LED Indicators			
Communication interface	RS485 or Wifi or 4G or LAN (Optional)			
DC connection type	MC4 (Max. 6mm^2)			
AC connection type	Waterproof Connector + OT/DT Terminal (Max. 240mm^2)			
AC cable specification	Outside diameter 26~65mm			
Grid-connection standard	EN 50549-1/2, IEC 61727, IEC 61683, IEC 60068, VDE V 0124-100, VDE-4105/4110, UNE 217001, UNE 217002, TED 749, RD 647, CEI 0-16/21, Compliance with (Greece, Poland, Netherlands)			
Safety standard	IEC/EN 62109-1/-2, IEC 62116			
EMC standard	IEC/EN 61000-6-1/-2/-3/-4, EN 62920, IEC 61000-3-11/12			

T-Link-WiFi-U-100

The T-Link WiFi Stick enables TBEA inverters to connect to TB-eSolar Cloud and App. The inverter and meter data are collected and transmitted to TB-eSolar Cloud platform via the internet for simplified, centralized monitoring of PV plants.

Smart

- Intelligent Zero-Export control design

Simple

- Easy to install on site

Reliable

- Compatible to diverse application scenarios

Technical Datasheet

Model	T-Link-WiFi-U-100
	Device Management
Max. No. of Manageable Devices	10
	Communication Interface
North Communication	LAN: LAN 10 / 100 Mbps
South Communication	WLAN: 2.4GHz 802.11 b/g/n
	Interaction
LED	RS 485 (USB Type A)
APP	LED Indicator x 2
	Environment
Operating Temperature Range	TB-eSolar APP
Storage Temperature	-40°C ~ 60°C (-40°F ~ 140°F)
Relative Humidity	-40°C ~ 70°C (-40°F ~ 158°F)
(Non-condensing)	5% ~ 95%
Max. Operating Altitude	4,000 m (13,123 ft.)
	Electrical
DC Power Supply	5 ~ 12V
Power Consumption	Typical 2 W, Max. 5 W
	Electrical
Dimensions (W x H x D)	50mm x 34mm x 170mm
Weight	100g
Protection Degree	IP66
Certificate	CE

TLogger 100-S

Tlogger enables TBEA inverters to connect to the TB-eSolar. The inverter and meter data are collected and transmitted to the TB-eSolar Cloud via the internet for simplified, centralized monitoring of PV plants.

Smart

- Intelligent Zero-Export control design

Simple

- Easy to install on site

Reliable

- Compatible to diverse application scenarios

Technical Datasheet

Model		TLogger 100-S
		Device Management
Max. No. of Manageable Devices		80
		Communication Interface
North Communication	LAN	LAN x 1, 10 / 100 / 1000 Mbps
South Communication	RS485	COM x 3, 1000 m
Others		Digital / Analog Input / Output
		Interaction
LED		LED Indicator x 4 - COM 1 ~ 3, North communication
WEB		Embedded Web
USB		USB 2.0 × 1
RST		1
		Environment
Operating Temperature Range		-40°C ~ 60°C (-40°F ~ 140°F)
Storage Temperature		-40°C ~ 70°C (-40°F ~ 158°F)
Relative Humidity (Non-condensing)		5% ~ 95%
Max. Operating Altitude		4,000 m (13,123 ft.)
		Electrical
DC Power Supply		12 V ~ 24 V / 2 A
Power Consumption		Typical 8 W, Max. 15 W
		Electrical
Dimensions (W x H x D)		240 mm x 126 mm x 42 mm
Weight		453g
Protection Degree		IP20
Installation Options		Wall Mounting, DIN Rail Mounting, Tabletop Mounting

Cloud Platform - TB-eSolar

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.

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.

Comprehensive Integration with C&I PV Station Equipment

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

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.

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.

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.

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.

C&I References

Industrial Park

Commercial Park

Logistics Park

Track Traffic

Farm

Other Scenarios

Xi'an 0.6MW Industrial Park Project

Shandong 1MW Scientific Research Demonstration Project

Shenzhen 1.68MW Technology Improvement Project

Chongzuo Distributed PV Project of the Whole County Advance

Residential References

Sunlight Room

Villa

Flat Roof

Slope Roof

Baotou Residential Project

Hubei Slope roof Residential Project

Anhui Residential Project

Shaanxi Flat roof Residential Project