I&C ENERGY SOLUTION

GUANGDONG LVTOPSUN NEW ENERGY CO.,LTD

LVTOPSUN

COMPANY PROFILE

Established in 2008, Guangdong LVTOPSUN new energy Co., Ltd. is a well-knownenterprise, dedicated to providing one-stop solution for new energy storage batteries

As a professional manufacturer,LVTOPSUN is specializing in R&D, production, salesand services of energy storage batteries with over 10 years'experience. We boast aseries of world-class production eguipment lines with intelligent robotic arms, highprecise detection instruments and monitor screen toaether to ensure the superiorquality of batteries.

Our energy storage lithium batteries are renowned for their high quality, long lifetime.and excellent safety. We have already developed business in more than 50 countriescovering the districts of Southeast Asia, the Middle East and Africa. In the future, wewill continue to expand international markets in Europe and North America based ontop-notch materials, advanced production technology, and world-class qualitycombined.

I&C ENERGY SOLUTION

I&C ENERGY SOLUTION-MARKET

On-site Services: Myanmar, Thailand, Vietnam, Philippines, Indonesia, South Africa, Nigeria, Kenya, Iraq, and other countries.
We have branches in these countries to facilitate pre - and post-sale services for our customers.

I&C ENERGY SOLUTION-MARKET

Full Support:

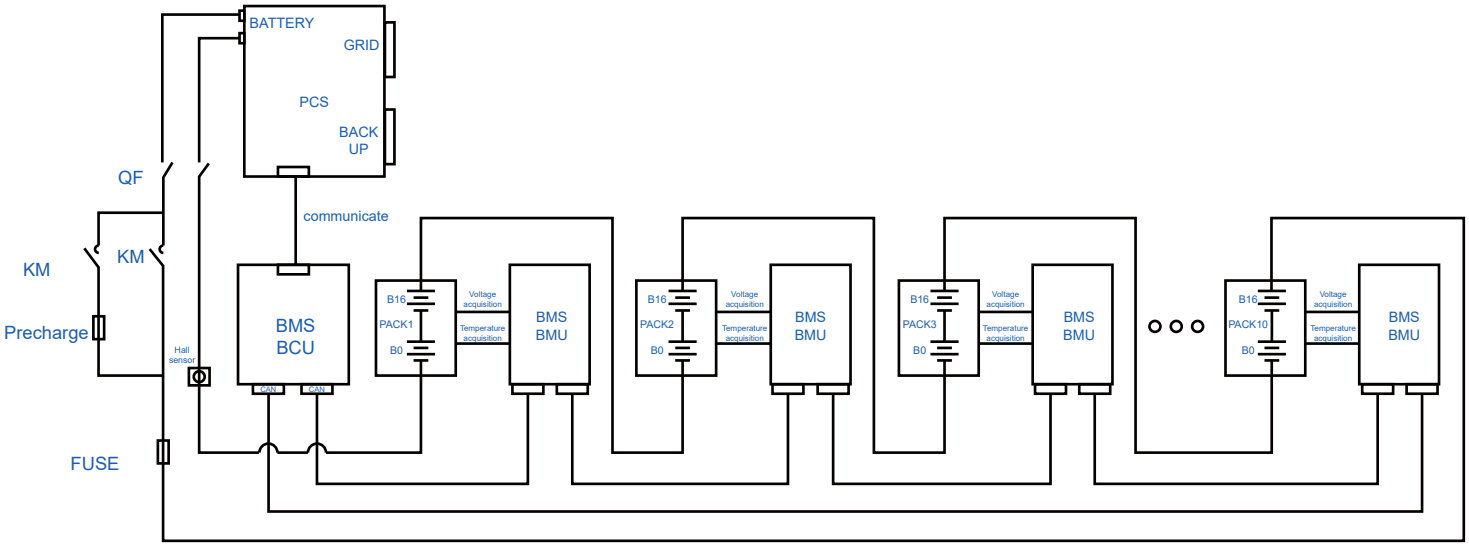
1. Site survey and testing
2. Customized design solutions
3. High-quality manufacturing and production
4. Transport, installation, commissioning, and operation support
5. Operation training and guidance
6. Ongoing maintenance and technical support

One-Stop Service:
Providing comprehensive solutions from photovoltaic systems, energy storage systems, to AC distribution systems.

I&C ENERGY SOLUTION-PRODUCT 50KW/100KWH

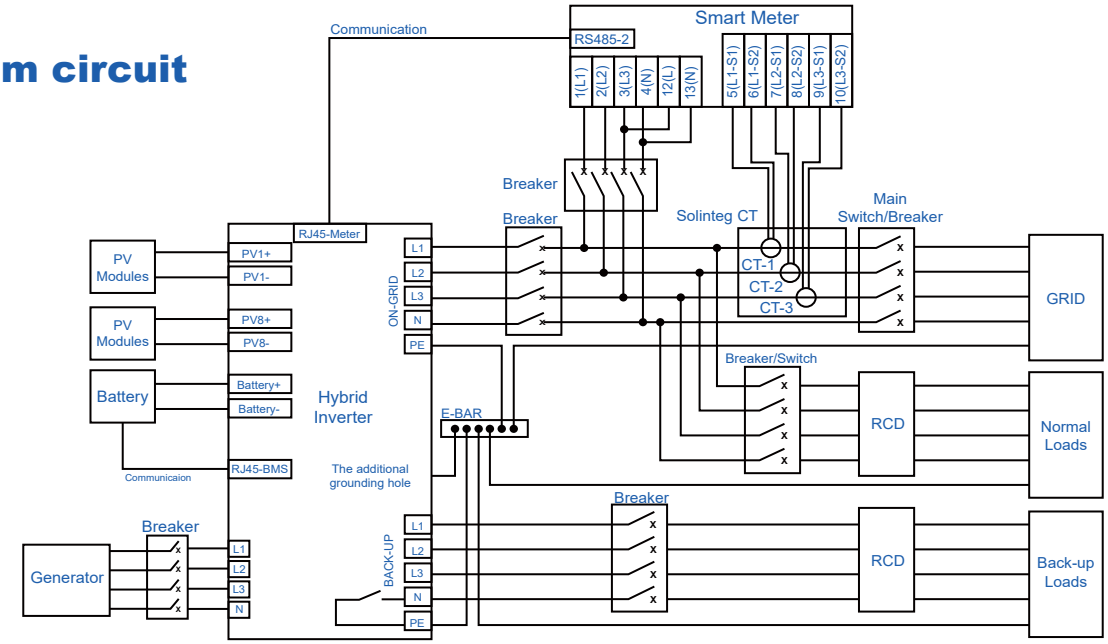
Features:
1. Highly integrated;
2. High security;
3. Intelligent;
4. Convenience;
5.WIFI remote monitoring

Diagram



10PCS BATTERY PACKS

System circuit



Parameters

Model		TSG-50K (PV75K) (100kWh)
PV	Max.input power (KW)	75.0
	MPPT operating voltage range (V)	200-850*
	Max. input current (A)	30×4
DC side	Battery type	LiFePO4
	Battery capacity	200Ah
	Battery series&parallel	1P*16S*10S
	Battery energy	102.4kwh
	Rated voltage (V)	512V
	Battery Voltage Range (V)	400~584V
	Max.charge/discharge current (A)	100/100
AC Side	Rated output power (KW)	50.0
	Max.battery charging power (KW)	50.0
	Rated voltage (V)	3L/N/PE; 220/380V;230/400V;240/415V
	Grid Frequency (HZ)	50/60
	Max.output current (A)	83.0
	Power factor	0.8 Lead... 0.8 lag
	UPS switching time	<20ms
Generator Charging	Max.input apparent Power (KVA)	60.0
	Maximum battery charging power (KW)	50.0
	Rated output voltage (V)	3L/N/PE; 220/380V;230/400V;240/415V
	Rated AC frequency (HZ)	50/60
BESS System	Size	1100*1520*1940mm
	Weight	1310kg
	Class of protection	IP54
	Operating temperature (℃)	-20~60
	Relative humidity (%)	0~100
	Working altitude (m)	2000
	Cooling method	Industrial grade intelligent air conditioning
	Noise（dB）	<50
	Display	OLED & LED
	Communication	WiFi

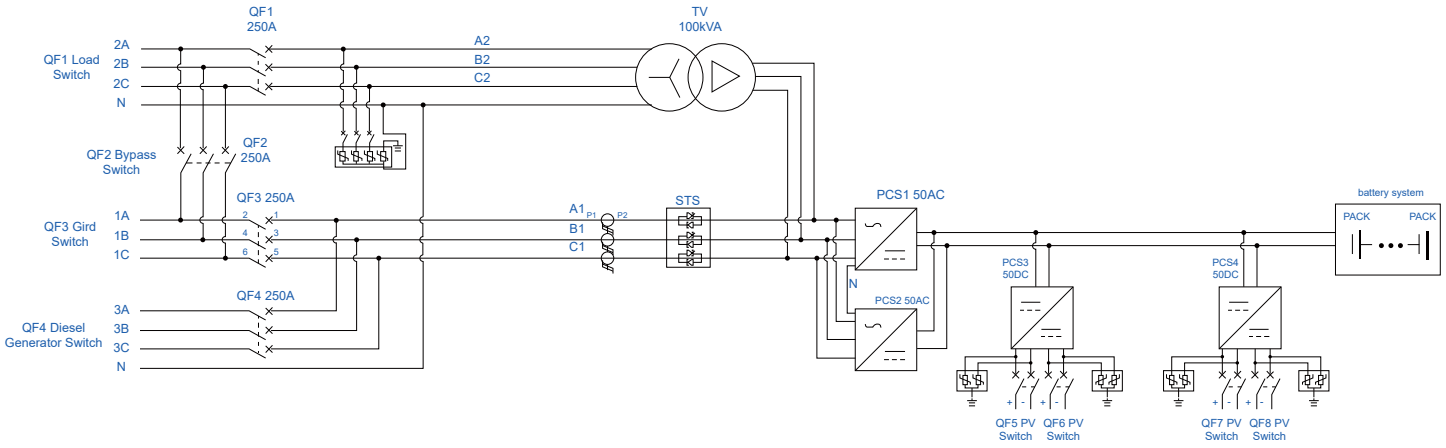
I&C ENERGY SOLUTION 100KW/215KWH

Features:

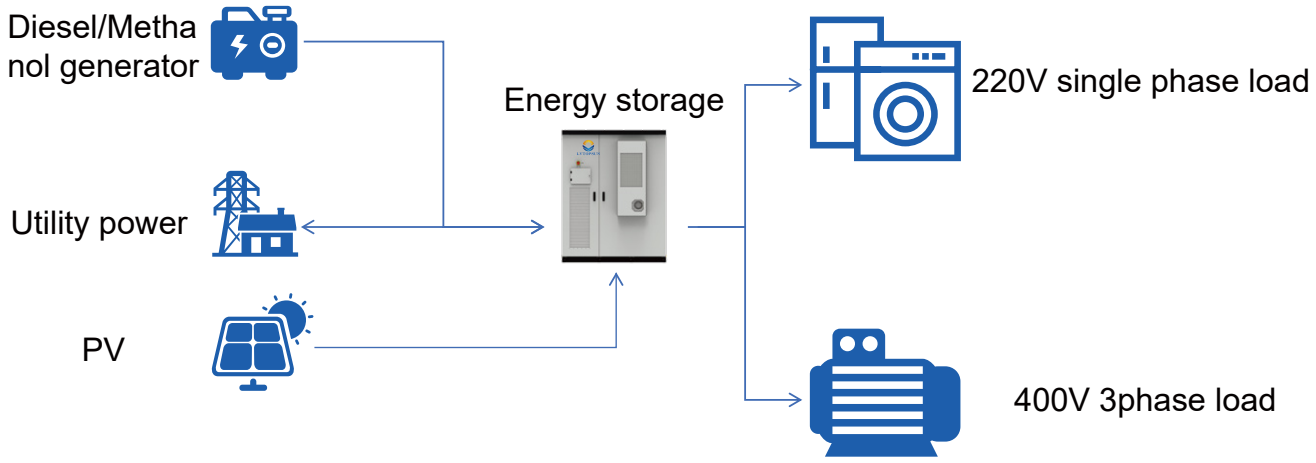
1. Highly Integrated: Compact design, space-saving, modular for easy maintenance and expansion.
2. High Security: Over-voltage, over-current, and short-circuit protection, suitable for most environments, ensuring reliable long-term performance.
3. Intelligent Control: Real-time monitoring, automatic charging and discharging optimization, supports fault self-diagnosis and alerts.
4. Convenient Operation: One-touch start/stop, easy adjustment via touchscreen or mobile app, simple installation and configuration.

5. Supports Multiple Charging Options: Supports solar, diesel, and utility power charging with automatic switching to ensure stable operation.
6. Supports Hybrid Discharge: Supports hybrid output from solar, battery, and grid power, prioritizing clean energy to meet load demands.
7. Supports Parallel Expansion: Supports up to 4 BESS units in parallel, allowing for flexible capacity expansion.
8. Supports Fast Off-Grid Switching: Supports off-grid switching within 10ms, ensuring uninterrupted power supply during grid failure.
9. Supports Remote Monitoring: Supports cloud-based remote monitoring, real-time data viewing, and remote troubleshooting and system adjustments.

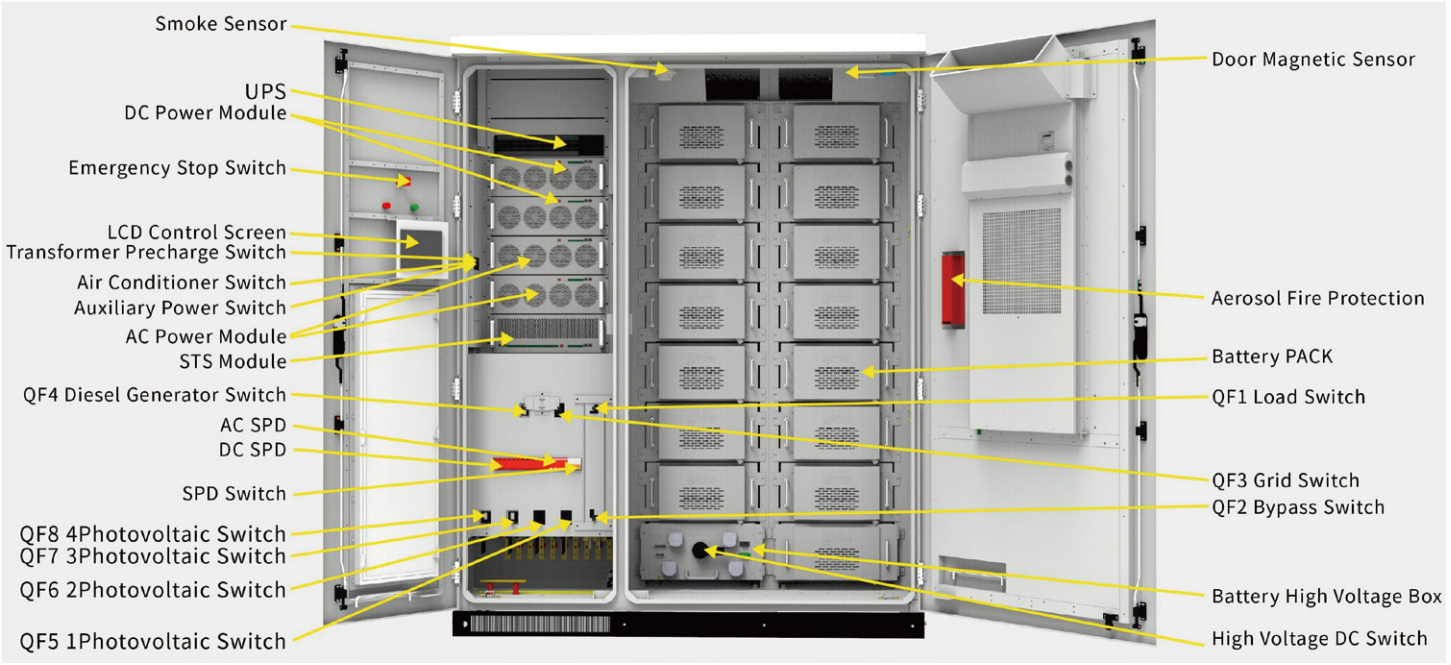
System circuit



Charge&Discharge



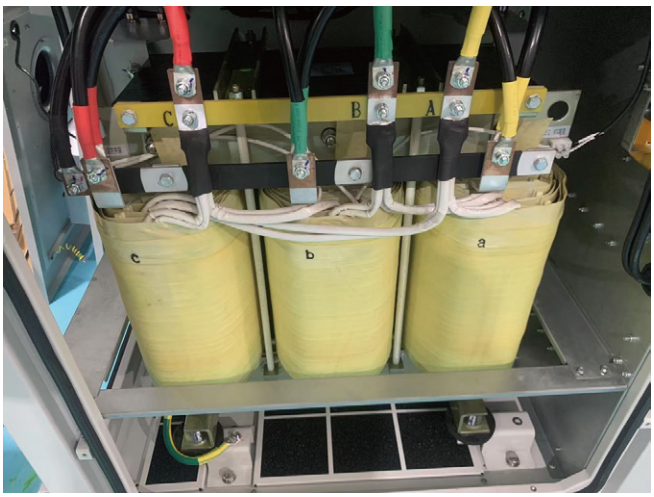
General introduction

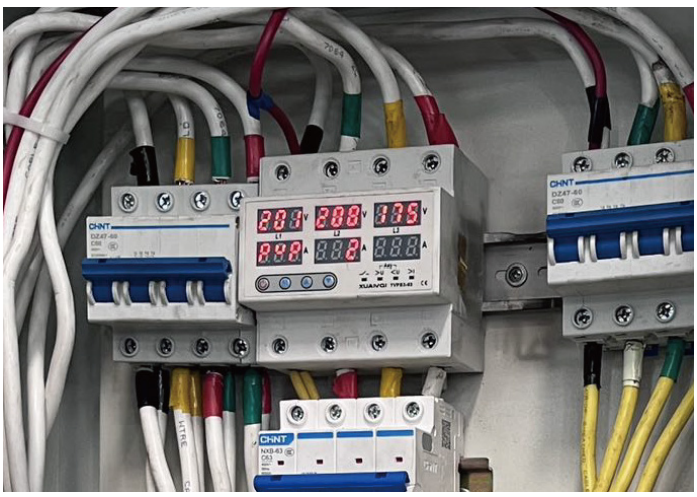


Parameters

Model		TSG-100K TS (PV100K) (215kWh)
PV	Rated DC power	100kW
	Maximum DC power	110kW
	Solar voltage range	312V~622V
	Max. current	80A*4
	Input channels	4
	Max. conversion efficiency	98.80%
DC side	Energy	215kWh
	Rated voltage	768V
	Roltage range	672V~864V
	Battery Type	LiFePO4
	Series&Parallel	1P*16S*15S
	Max. charge/discharge current	140A
AC side	Rated AC power	100kW
	Rated AC current	144A
	Rated AC voltage	400V,3W+N+PE/3W+PE
	Rated AC frequency	50/60Hz
	STS switching time	≤10mS
	Current total harmonic distortion rate THDI	<5%(rated power)
	power factor	-1 lead~+1 lag
	Voltage total harmonic distortion THDU	<3%(linear load)
Generator Charging	Max.input apparent Power (KVA)	100.0
	Max.battery charging power (KW)	100.0
	Rated output voltage (V)	3L/N/PE; 220/380V;230/400V;240/415V
	Rated AC frequency (HZ)	50/60
BESS System	Degree of protection	IP54
	Protection level	I
	Isolation method	Transformer isolation
	Consumption	<100W
	Show	Local LCD&Remote monitoring
	Relative humidity	0~95%(no condensation)
	Noise	Less than 78dB
	Ambient temperature	-25℃~60℃
	Cooling method	Air conditioner
	Altitude	＜2000m
	Dimensions (W*D*H)	1800*1200*2300mm
	Weight (approx.)	3000kg

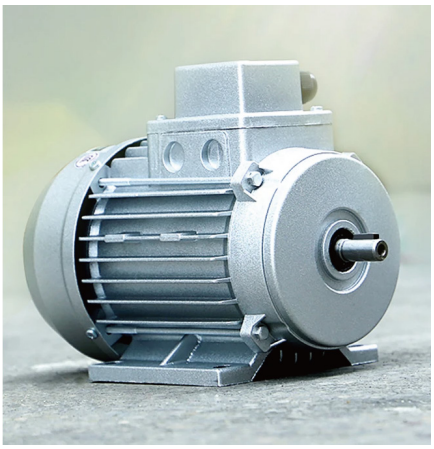
Isolation transformer



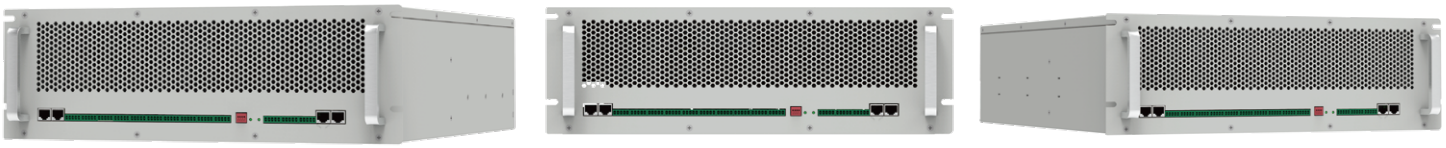


Benefits and Functions of Isolation Transformers:

1. Reduce Harmonics: Effectively reduce the impact of harmonics on the power system, improving power quality.
2. Improve System Anti-Interference Ability: Enhance the system's stability and reliability in high-interference environments.
3. Electrical Isolation: Provide electrical isolation, protecting equipment from abnormal power grid conditions.
4. Protect the Battery Pack: Ensure safe and stable operation of the battery pack by isolating and stabilizing the voltage.
5. Voltage Matching and Stabilization: Ensure voltage stability and prevent fluctuations that could affect system equipment.
6. Enhance Safety:
   - Electrical Isolation Protection: Prevent direct electrical contact between devices.
   - Prevent Ground Faults: Isolate ground faults to avoid system disruption.
   - Overvoltage Protection: Prevent equipment damage caused by overvoltage.
   - Ensure Operator Safety: Provide electrical isolation to ensure the safety of operators.
7. Applicable Fields: Suitable for fields with inductive loads such as motors, elevators, air conditioners, fans, transformers, pumps, compressors, etc. These loads typically have current lag and generate harmonics, so using an isolation transformer can improve power quality, enhance system stability, and protect equipment.
8. Solving Three-Phase Imbalance Issues: Effectively address three-phase load imbalances and utility grid three-phase imbalances, optimize load distribution, reduce system overload risks, and ensure smooth operation.



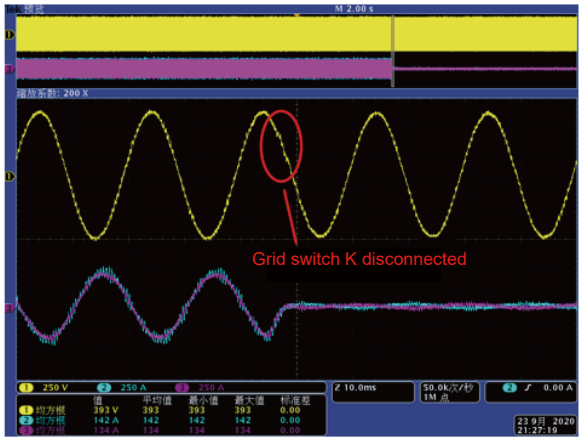
STS



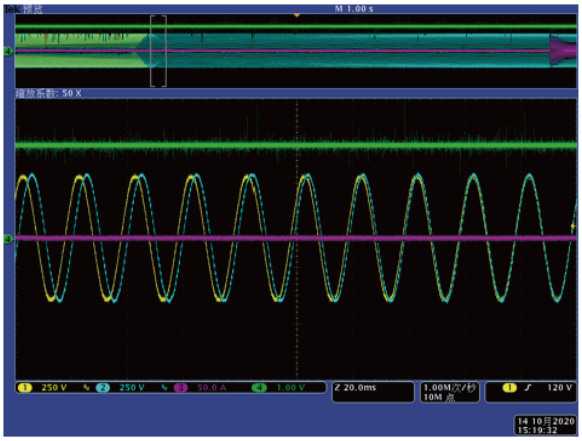
STS (150KW) Highlights and Advantages in the 215KWH Industrial Energy Storage System:

1. Ultra-Fast Switching： Switching time <10ms, ensuring rapid transition to backup power during grid failures.
2. High Power Capacity： Supports 150KW power switching, suitable for high-load applications, ensuring stable power supply.
3. Grid Isolation： Isolates utility power and energy storage system, automatically switching to off-grid mode to protect equipment.
4. Cost Savings： Intelligent switching minimizes downtime, improving efficiency and avoiding power interruption losses.
5. Smart Management： Integrates with EMS, monitoring and automatically selecting the optimal power mode for efficient energy use.
6. High Safety： Equipped with over-voltage, over-current, and short-circuit protection for secure operation.
7. Easy Maintenance： Simple design with self-diagnostics, enabling quick issue identification and reducing repair time.

8. Strong Compatibility： Seamlessly integrates with the 215KWH system, supporting various industrial applications.



Off grid switching



Grid switching

Safety components

Lightning arrester
circuit breaker
leakage switch

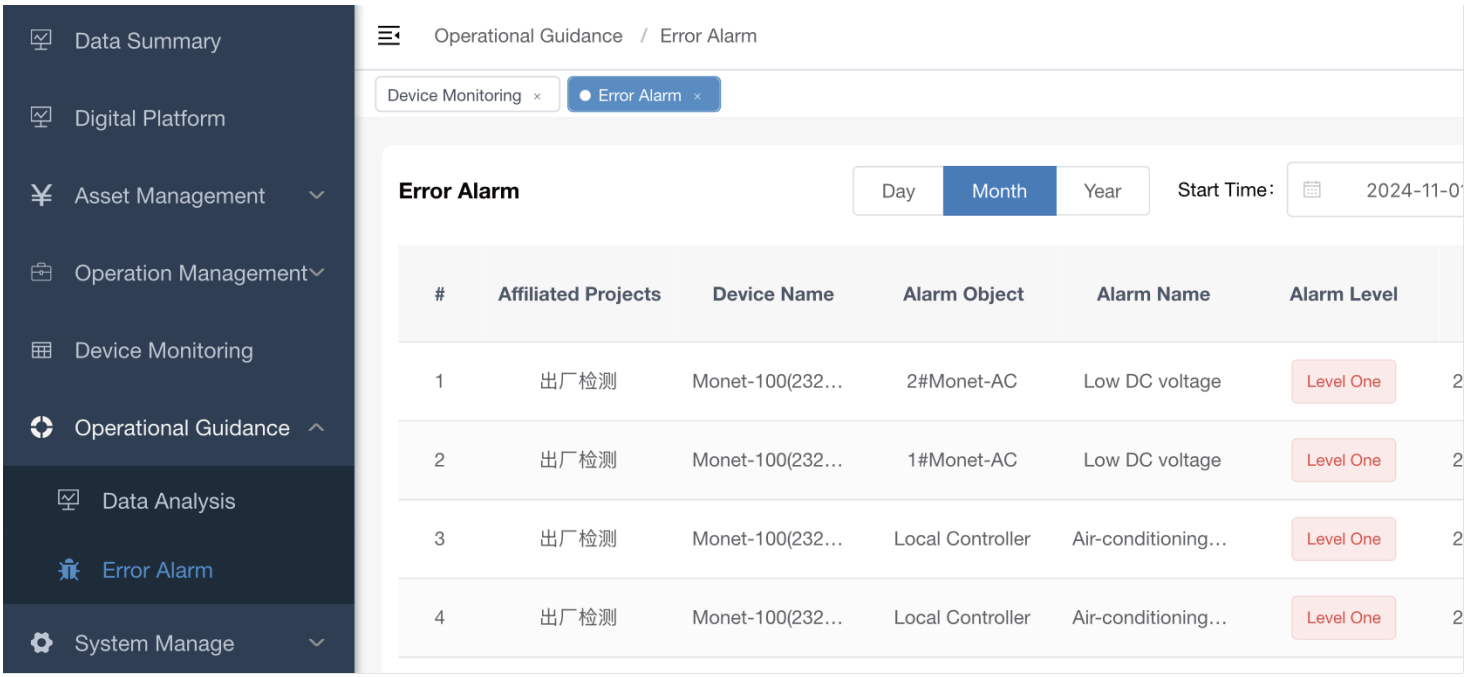
temperature
sensing

smoke sensing

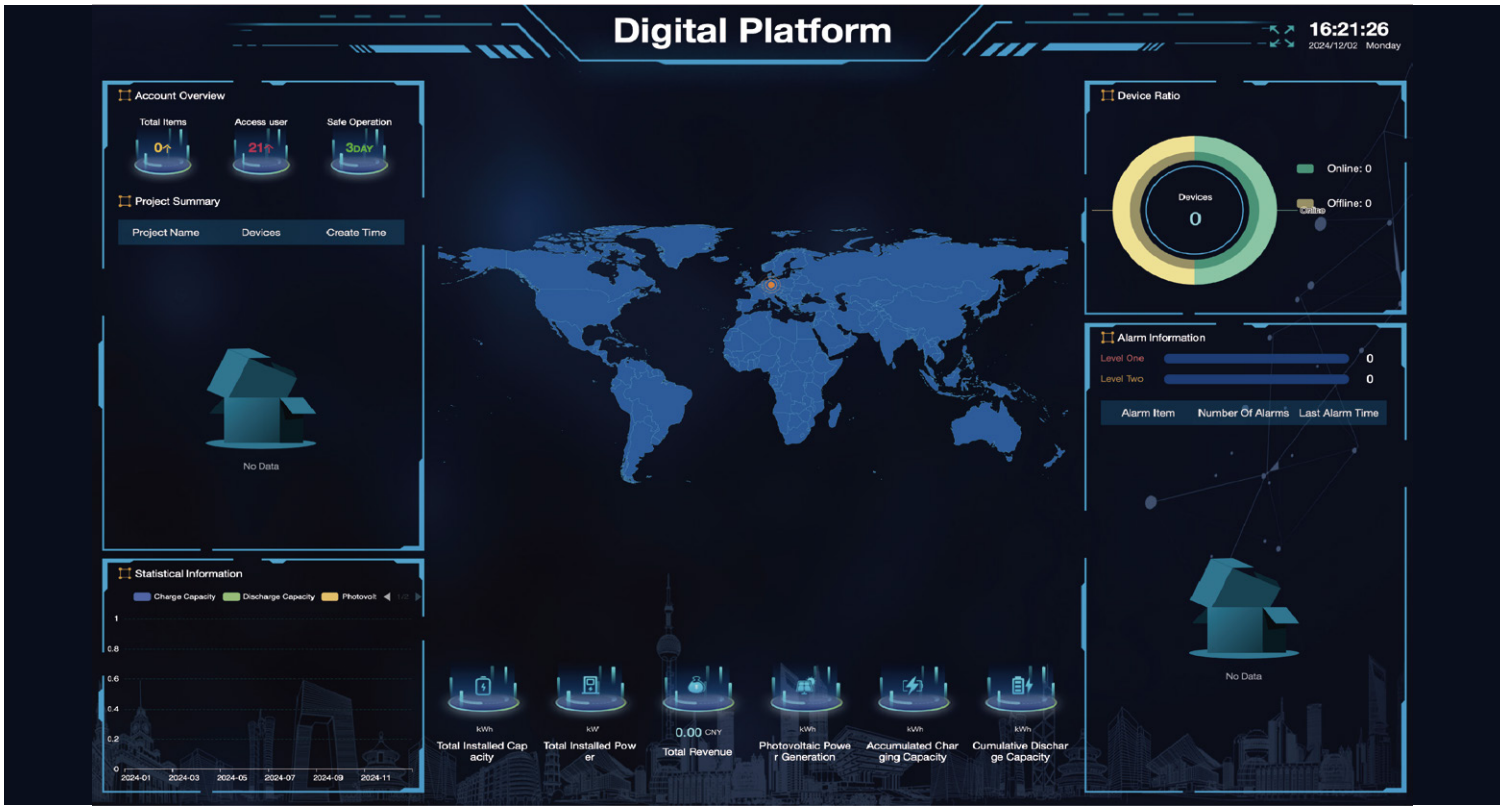
fire extinguisher

FUSE, relay,
precharge
predischarge resistor

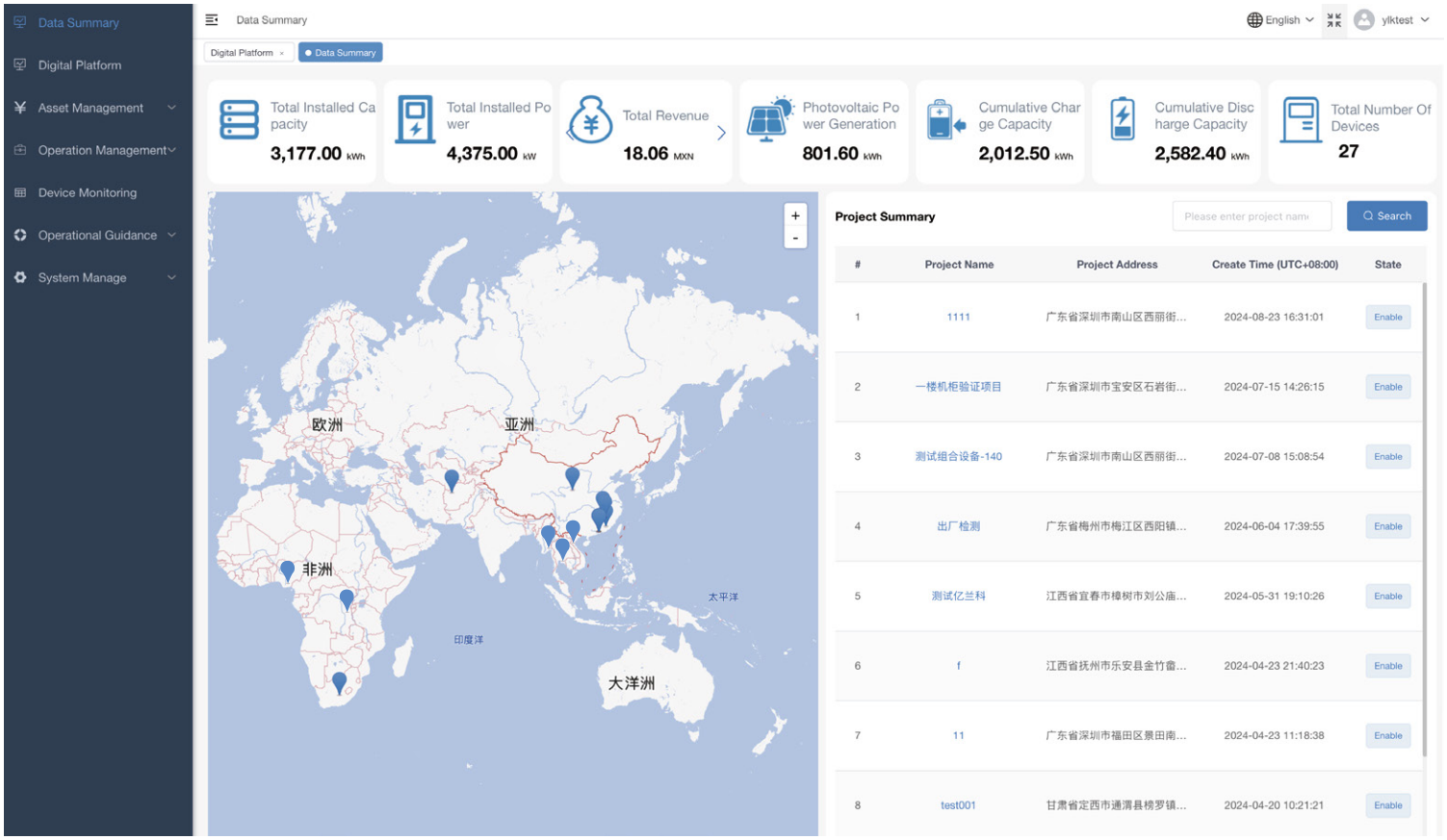
Cloud monitoring alarm



Management system



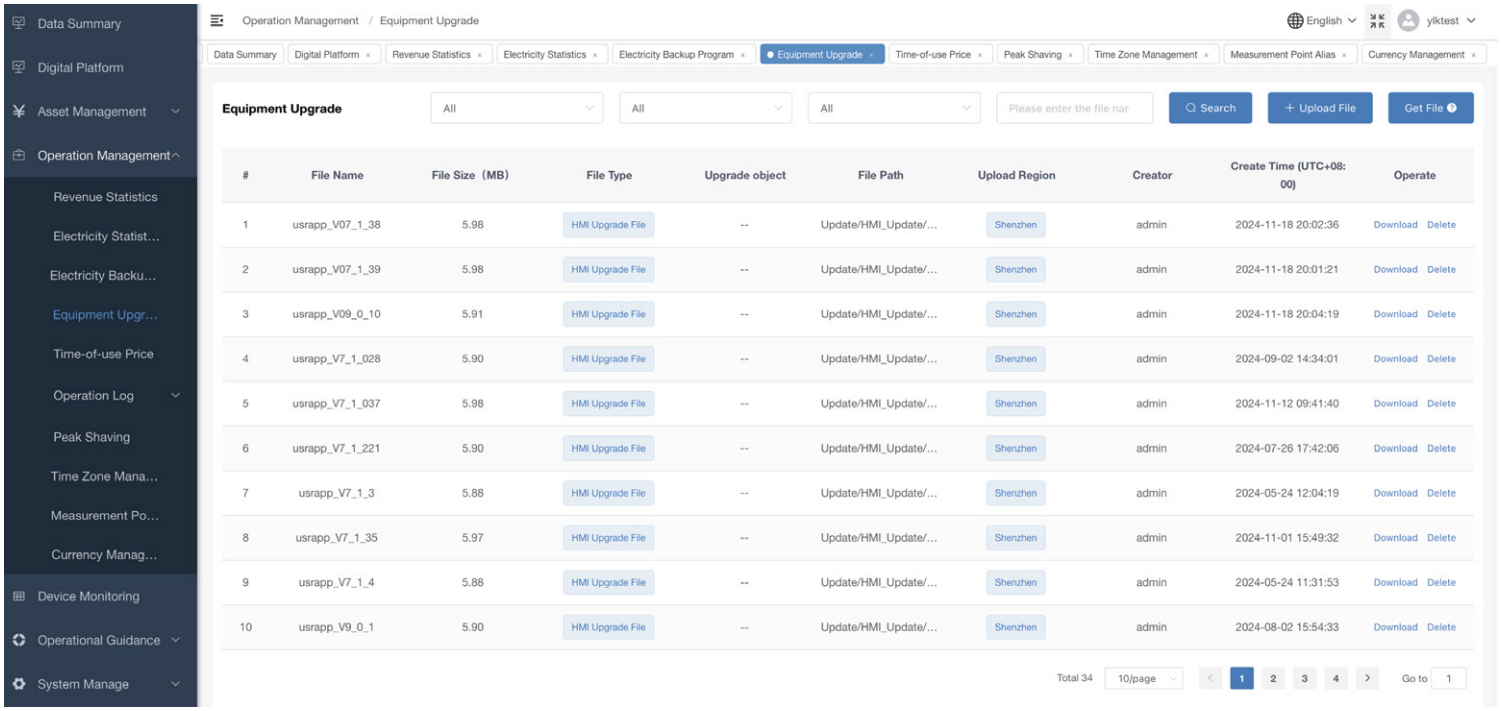
Data Summary



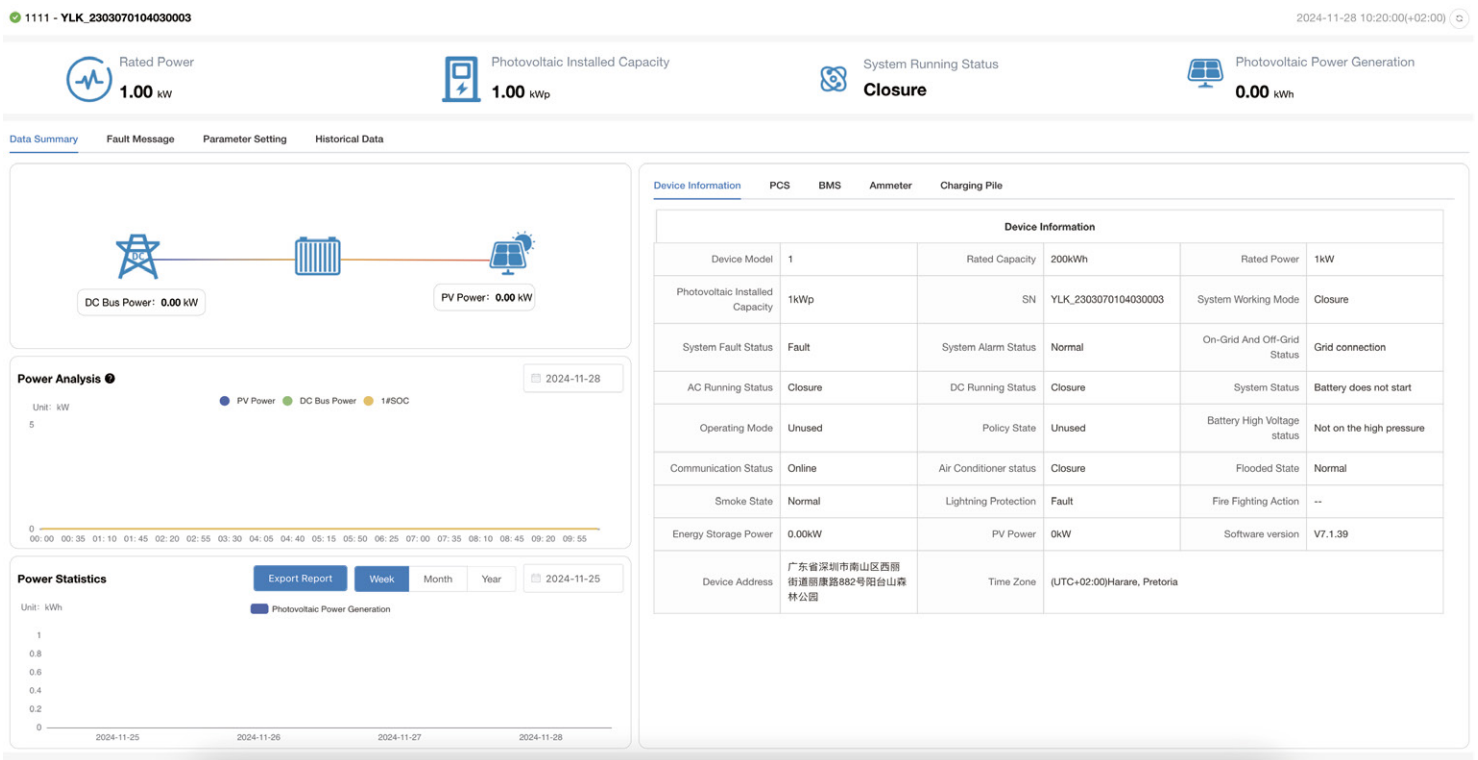
Total Installed Capacity Total Installed Power Total Revenue Photovoltaic Power Generation

Cumulative Charge Capacity Cumulative Discharge Capacity Total Number Of Devices

Device Monitoring



1.Revenue Statistics
2.Electricity Statistics
3.Electricity Backup Program
4.Equipment Upgrade
5.Time-of-use Price
6.Operation Log
7.Peak Shaving
8.Time Zone Management
9.Measurement Point Alias
10.Currency Management



1.Rated Power
2.Photovoltaic Installed Capacity
3.System Running Status
4.Photovoltaic Power Generation
5. Read device information
6. Monitor PCS & BMS
7. Read device running data and export historical data

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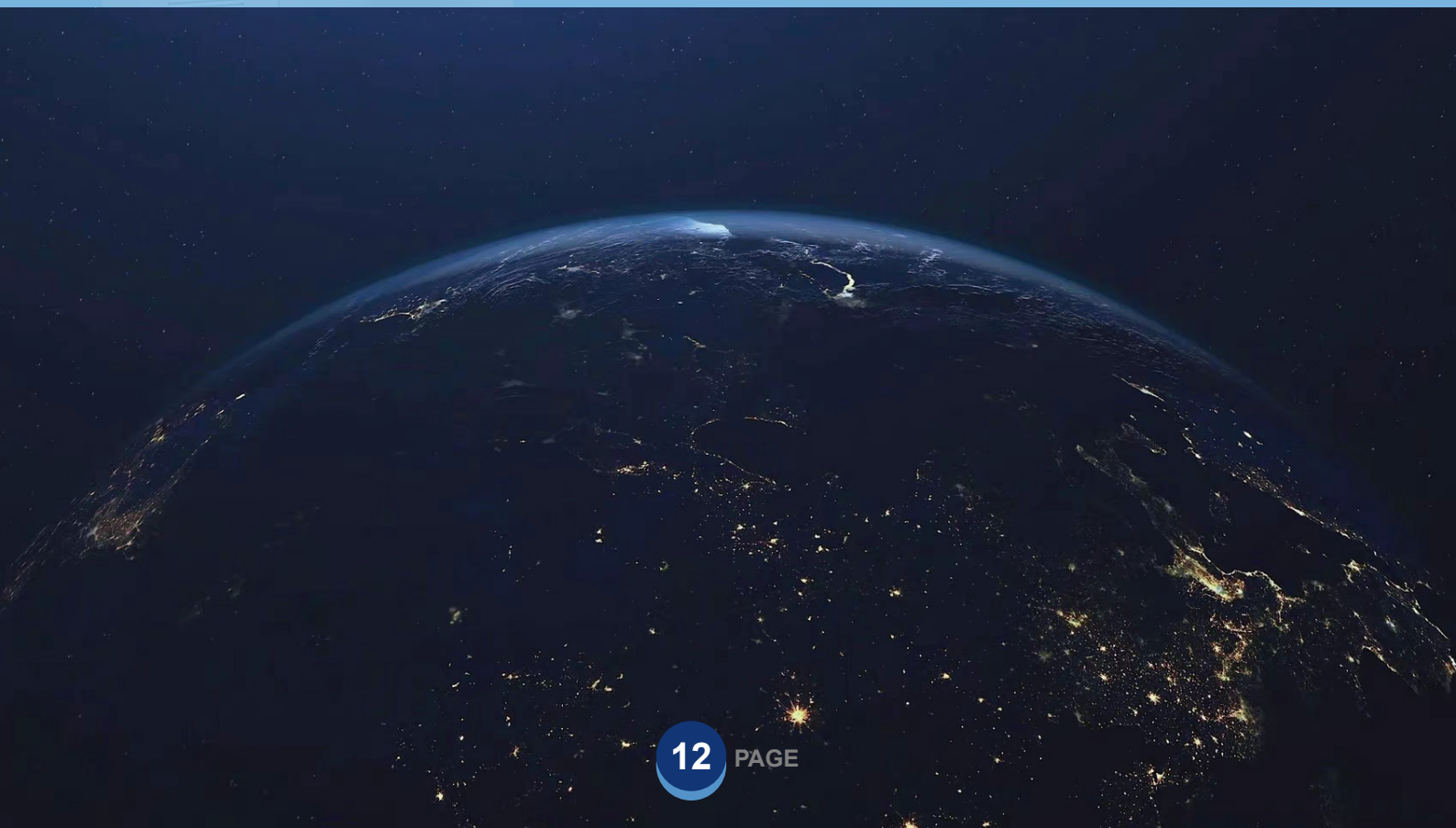
Application scenario



I&C ENERGY SOLUTION
Application scenario

Company Culture

www.lvtopsun.com

Our Prospects

To be a respected energy storage battery manufacturer in the world

Our Mission

To extend the benefits of green energy to all humankind and empower those who strive to realize their dreams

Our Vision

Serving Customers-Dedicated to the satisfaction and success of every customer

Core Value

Take the customer as the center, base on striver,takeinnovation as the soul.keep continuousimprovement