
FOX
ESS
Power Up
With Fox ESS

Content

01

Safety by Innovation

About Fox ESS

A Global Leader in Renewable Energy Solutions

R&D, production, sales & service

Founded in 2019 and headquartered in Wenzhou, China, Fox ESS is a national high-tech enterprise specializing in the R&D, production, sales, and service of renewable energy power equipment, with a strong focus on advanced power electronics.

In 70+ countries & regions

Fox ESS is expanding globally, with plans to establish a presence in over 70 countries and regions.

High-efficiency renewable energy solutions

Guided by a customer-first philosophy, we deliver high-efficiency renewable energy solutions worldwide through innovation and exceptional value.

Fox ESS and Tsingshan Group

Fox ESS Fully Integrated Supply Chain

UPSTREAM
Raw Materials

BATTERY POSITIVE MATERIAL

IINDONESIA
Nickel ore resources

ARGENTINA
Lithium ore resources

BATTERY NEGATIVE MATERIAL

Coal tar, Needle coke, Artificial graphite

MIDSTREAM
Battery

REPT 瑞浦兰钧
BATTERO

Highly innovative energy storage / battery solution provider

100 GWh

DOWNSTREAM
Application

FOX ESS

System-wide approach: Specializing in providing residential photovoltaic inverters and energy storage solutions

12 GW

Production Capacity,
50 GWh new factory under development

About Fox ESS | A Global Leader in Renewable Energy Solutions

Manufacturing & Delivering

- Residential Inverter: Grid-Connected & Hybrid
- Commercial Inverter: Grid-Connected & Hybrid
- Battery Energy Storage System
- EV Charger
- Heat Pump

High-Volume Production Capacity

Current	Planned
11 GW	50 GW

Awards

- FORBES 2023 — Global Unicorns List
- BNEF Energy Storage — Tier 1 List 4Q 2024
- Hurun China 2024 — Renewable Energy Companies with Potential

Corporate Milestone

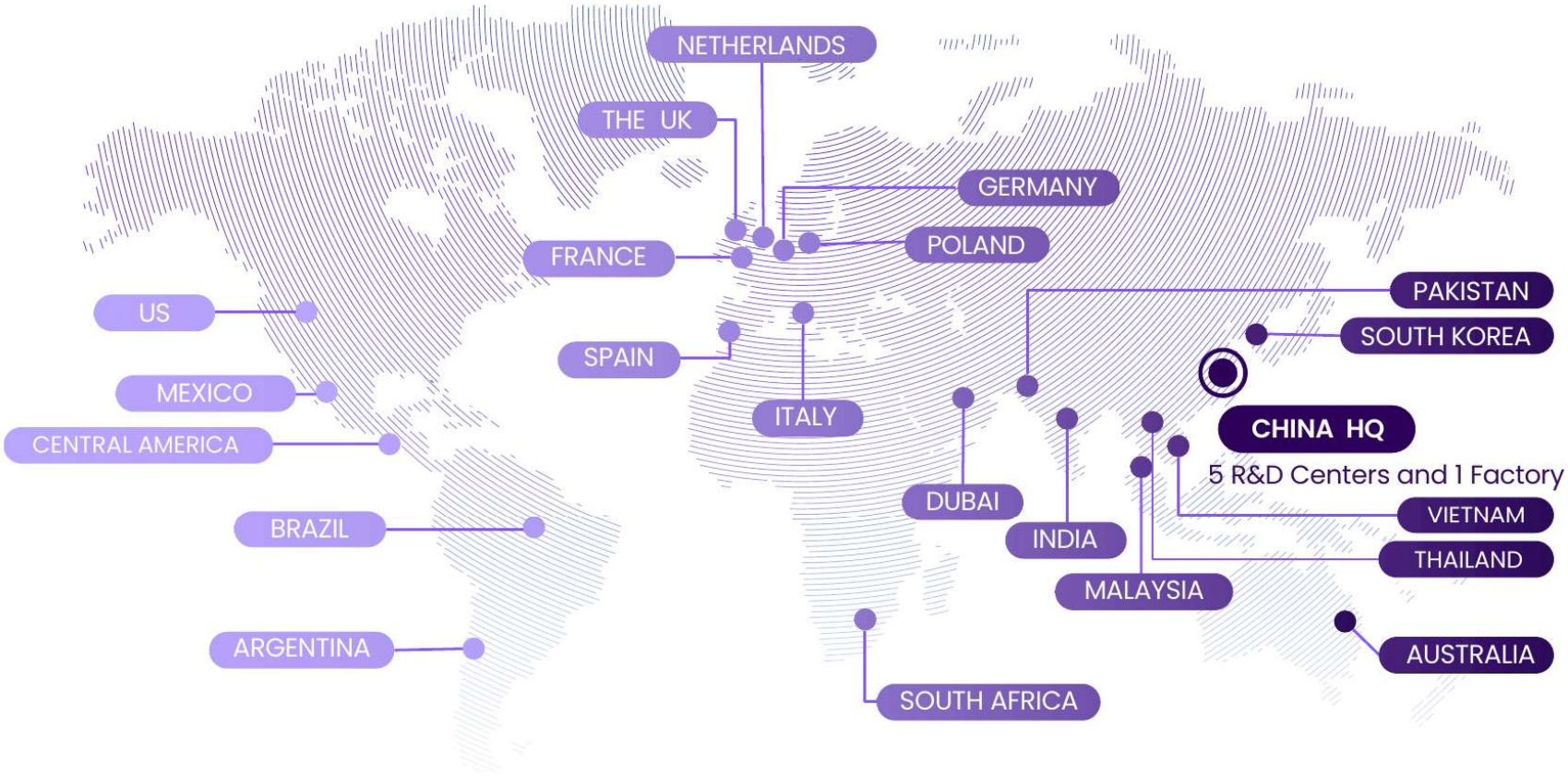
Global Presence

Operations in

70+

countries and regions

Across Asia, Europe, the Americas, Africa & Oceania



Cutting-Edge R&D & High-Precision Manufacturing

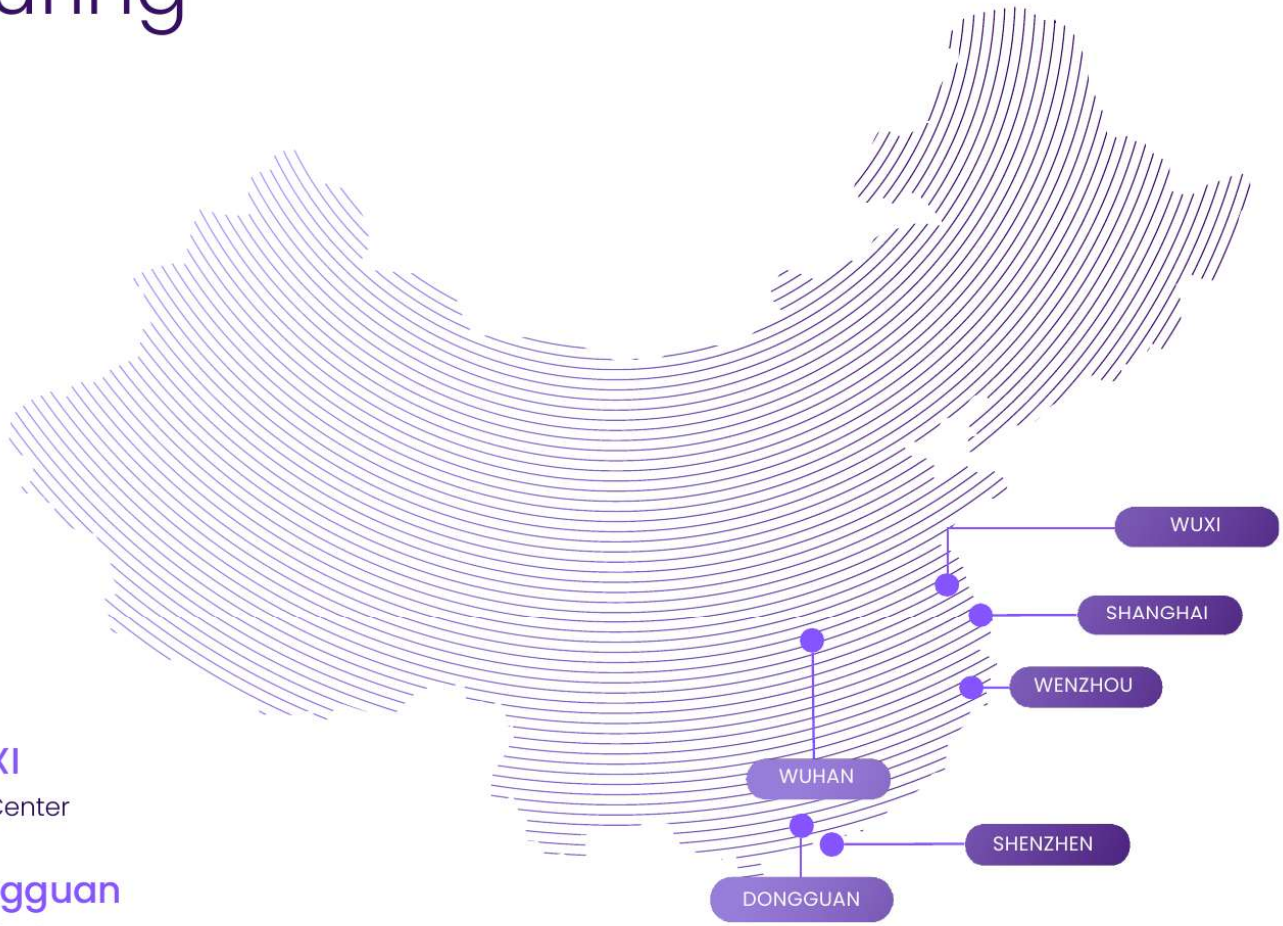
5+

R&D Centers +

1

Manufacturing Hub
in China

Driving innovation in solar inverters & energy storage



WENZHOU
Manufacturing Center

WUHAN
R&D Center

WUXI
R&D Center

SHANGHAI
R&D Center

SHENZHEN
R&D Center

Dongguan
R&D Center

Meet Our Team

FOX ESS

4,800+

Employees Worldwide

（updated to February 2026）

3,100+

Production

500+

R&D

400+

Sales & Marketing

700+

Other Roles

R&D Team

Our R&D team consists of graduates from top universities, most with 10+ years' experience in the solar and energy storage industry.

Many have worked in leading renewable energy companies, bringing expertise in inverters, power electronics, and product development.

浙江大学 ZHEJIANG UNIVERSITY
四川大學 SICHUAN UNIVERSITY
西安交通大學 XI'AN JIAOTONG UNIVERSITY
中山大學 SUN YAT-SEN UNIVERSITY
南京大学
華中科技大學
江苏大學 Jiangsu University
同济大学 TONGJI UNIVERSITY
哈爾濱工業大學 HARBIN INSTITUTE OF TECHNOLOGY
Technical University of Munich

10+ Years' Experience

Worked In LEADING Renewable Energy Companies

Consists Of TOP Universities

EMC Lab, Wuxi, photographed in December 2025

Key Experts Team

Dr. Zheng

- 14+ years in high-frequency, high-efficiency power electronics
- Specialized in micro-inverters and micro-energy storage system design

Dr. Ren

- 10 years in battery cell design and R&D management
- Expertise in technical communication and core material development

Dr. Deng

- 10+ years in power electronics R&D
- 30+ patents (incl. 3 U.S.)
- Led major tech innovation projects and provincial R&D initiatives

Dr. Yu

- 10 years in inverter control
- algorithm engineer
- Led multiple energy storage and grid-connected inverter projects

Dr. Wu

- 15 years in the industry
- Head of Technology & Quality, overseeing roadmap and quality control
- Led first-gen design of PV inverters, HV battery, and FoxCloud 2.0

Dr. Lin

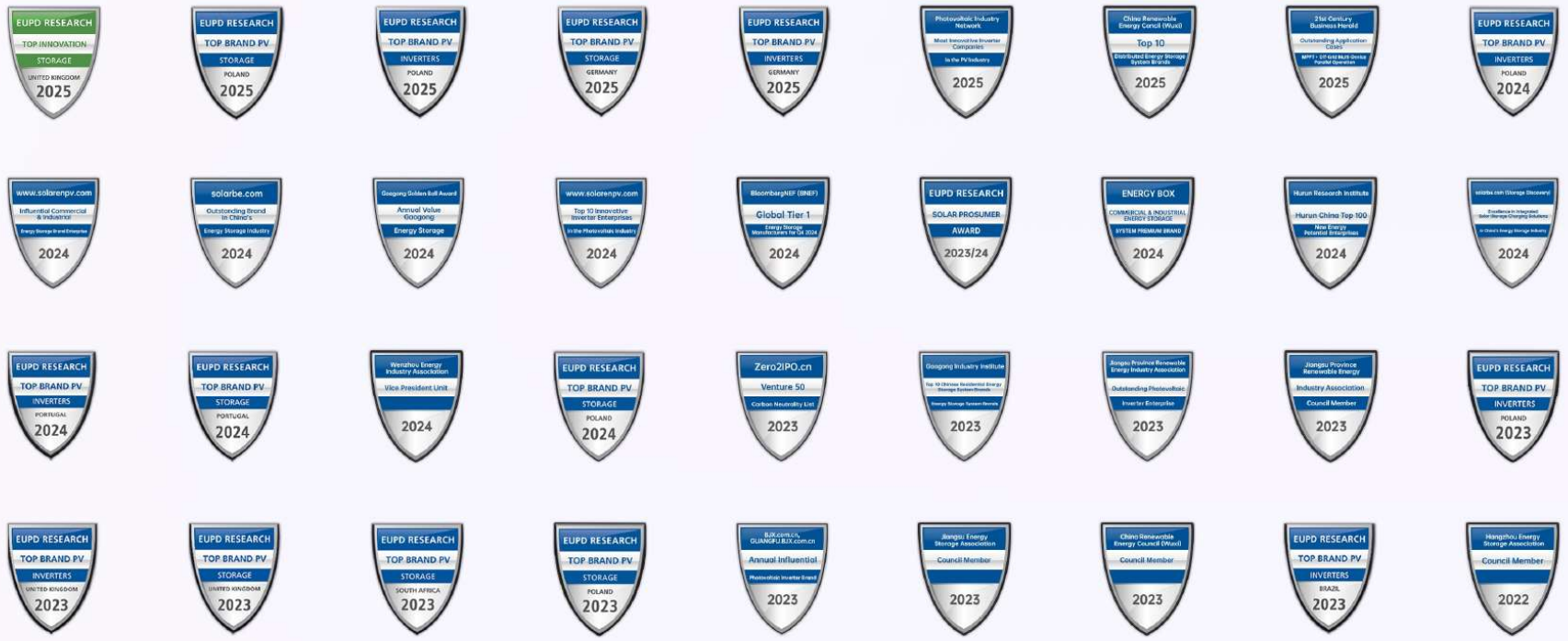
- 19 years in BMS development and battery R&D
- 30+ domestic patents and 5 overseas patents

Dr. Wang

- 20+ years in the industry
- 10+ patents
- Led C&I product R&D

Brand Reputation

Recognized by Leading Global and Regional Institutions for Excellence in Innovation, Quality, and Market Influence



02

Stable Supply Chain

FOX ESS

World-Class Manufacturing Factories

Expand Production Capacity to Meet Global Demand

New Factory

50 GW Capacity

Coming Soon

Production Strength

15

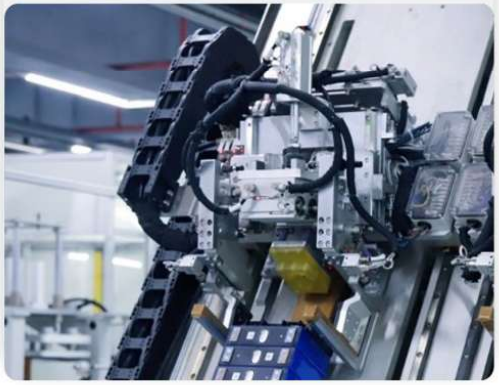
Inverter Production Lines

9

Battery Module Lines

18

Packing Lines



9

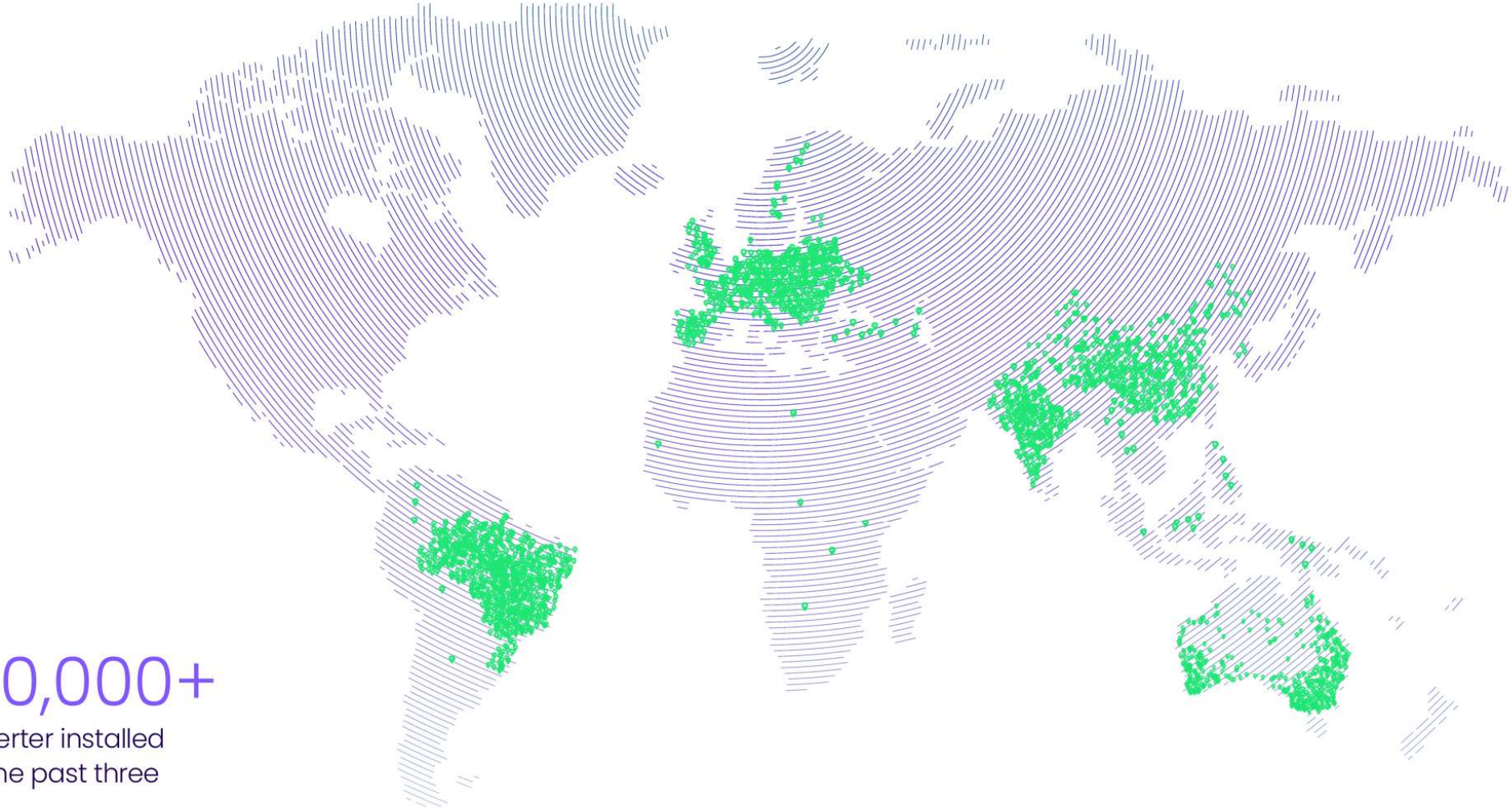
Surface-Mount Technology Production Lines

Location: Wenzhou, Zhejiang

03

Sustainable Growth

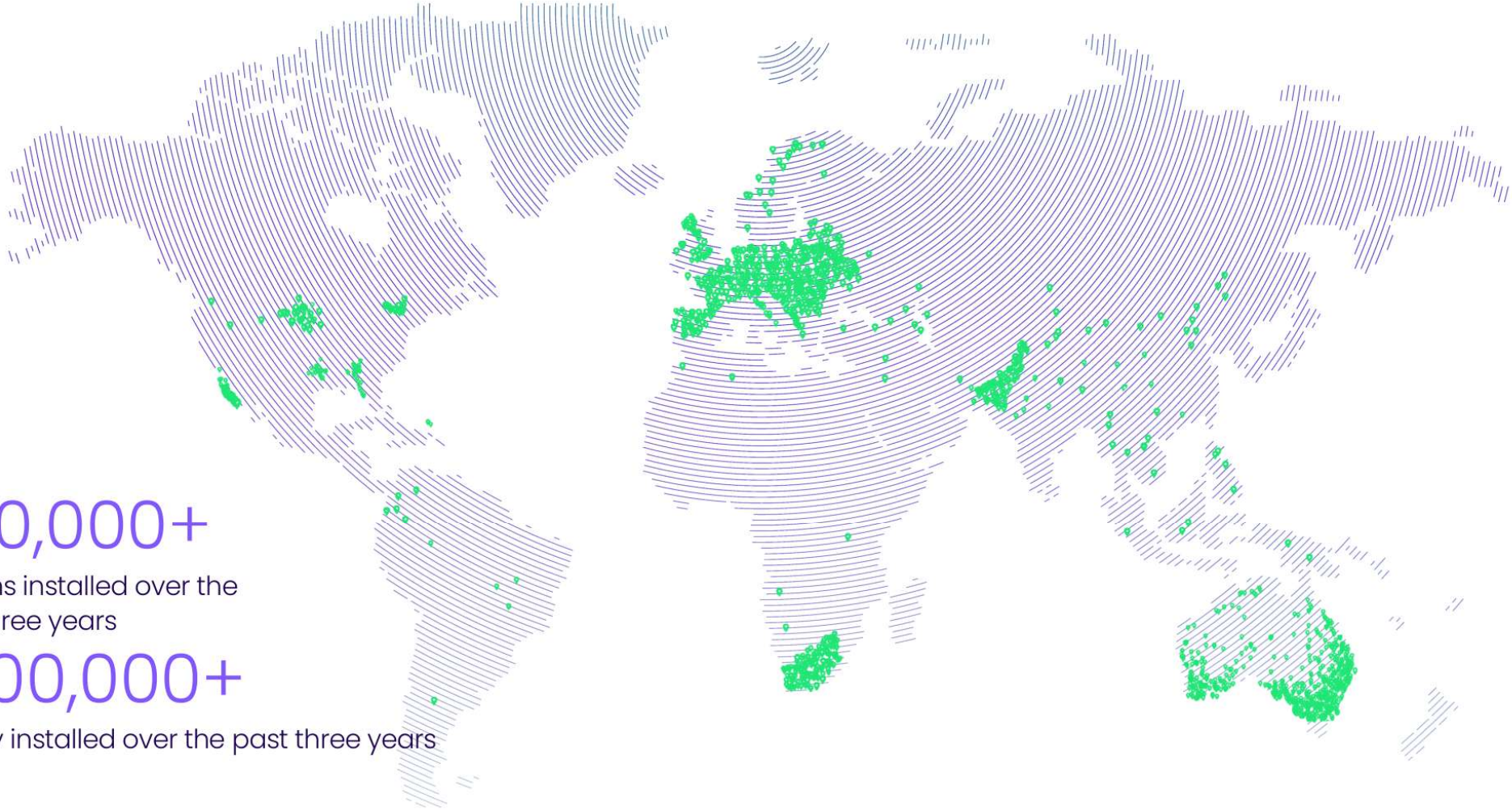
Global PV Inverter Installation



890,000+

pv inverter installed over the past three years.

Global Energy Storage System Installation



200,000+

systems installed over the past three years

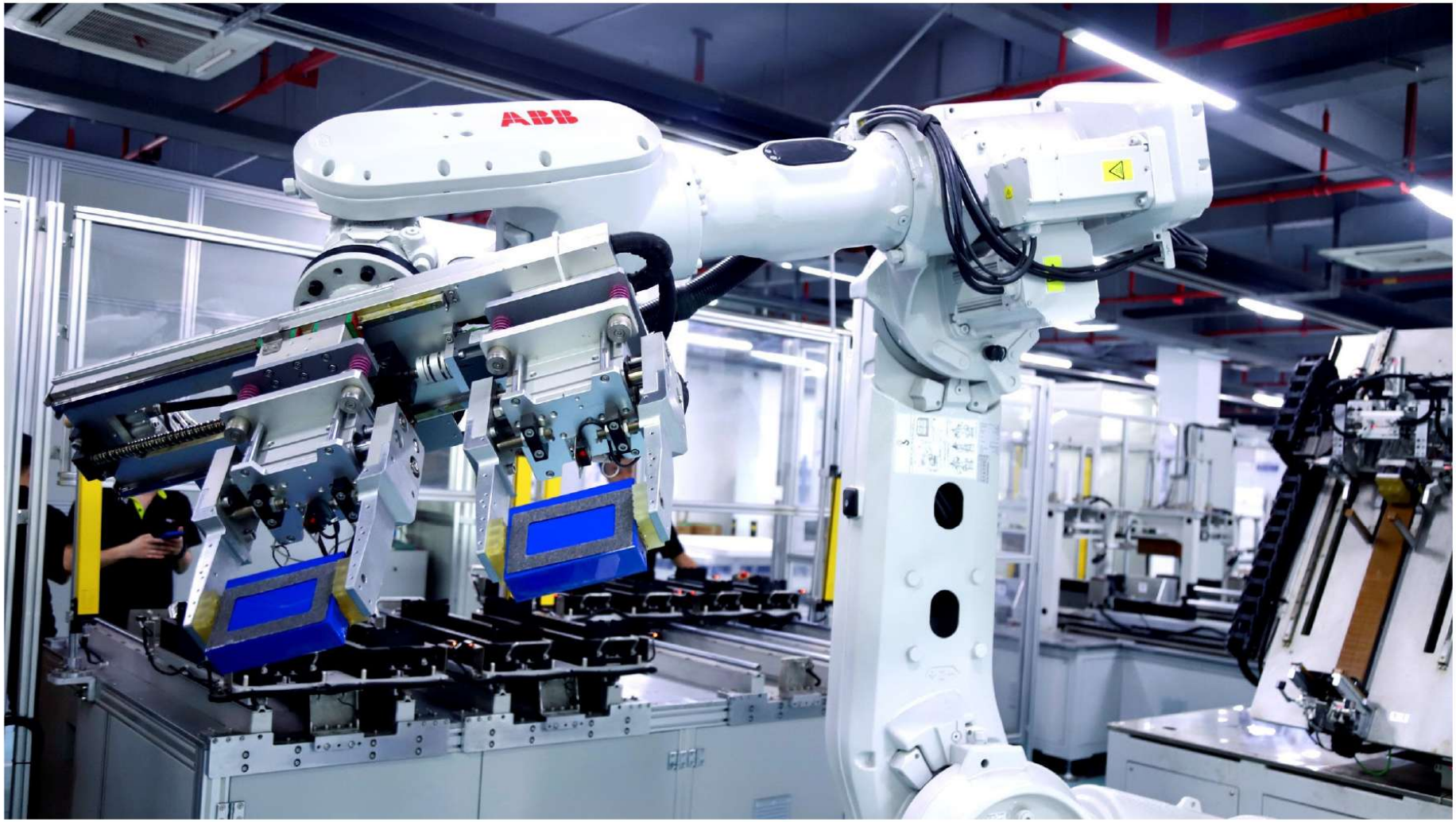
1,000,000+

battery installed over the past three years

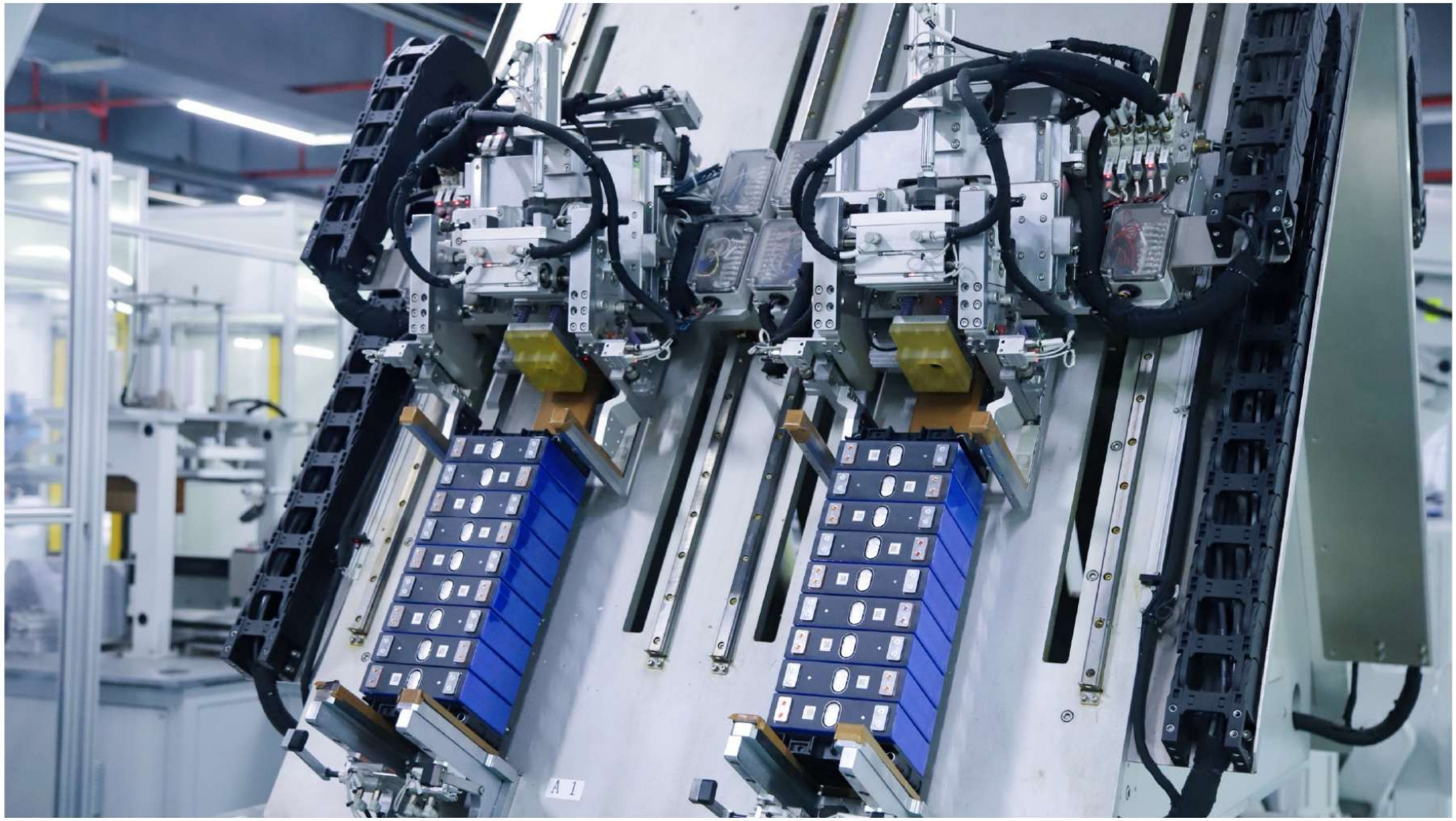
Photo Reference

Fox ESS Factory

Fox ESS Factory



Fox ESS Factory



Fox ESS Factory

Fox ESS Reference

Fox ESS Reference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Fox ESS
C&I Hybrid ESS Solution
T-MAX Plus

T-MAX Plus Introduction

AIO Liquid-Cooling & Hybrid ESS

01 AIO Integrated System:

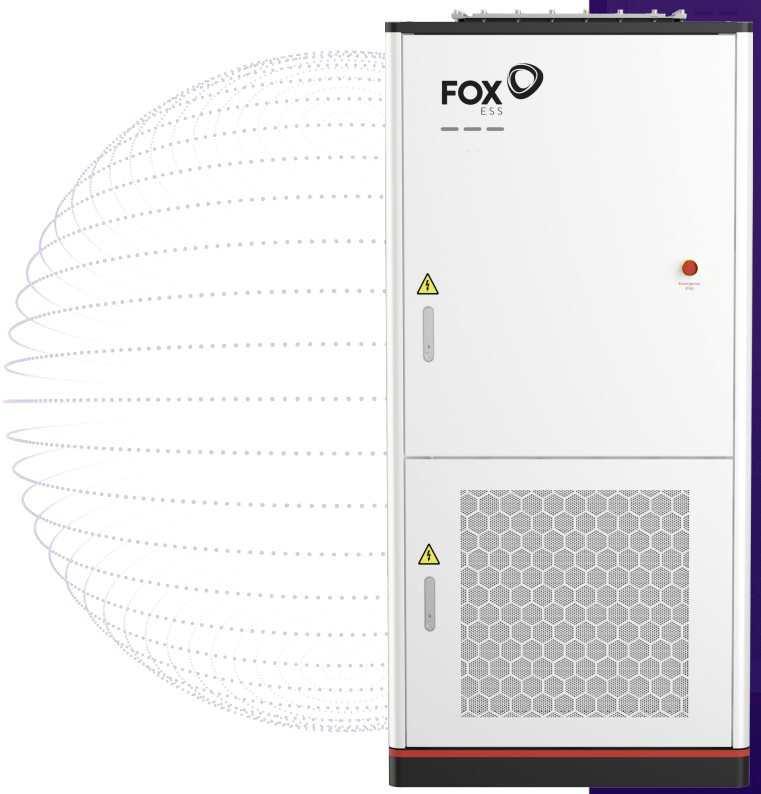
- 125kW Three-Phase hybrid PCS (PV/Grid/Generator/backup/DC EVC connection)
- 241kWh Battery @314Ah
- Battery Management System (BMS)
- Energy Management System (EMS)
- Thermal Management @smart liquid cooling
- Fire Protection

02 Cabin Separation Design

- Enhances safety and thermal management efficiency.

03 Enhanced performance:

- 10ms on/off-grid switch (seamless experience)
- EPS simulating grid
- Three-Phase Unbalance Output



T-MAX Plus Highlights

AIO Liquid-Cooling & Hybrid ESS

AIO Design
Quick installation

seamless
@10ms on/off-grid switch

100% DOD

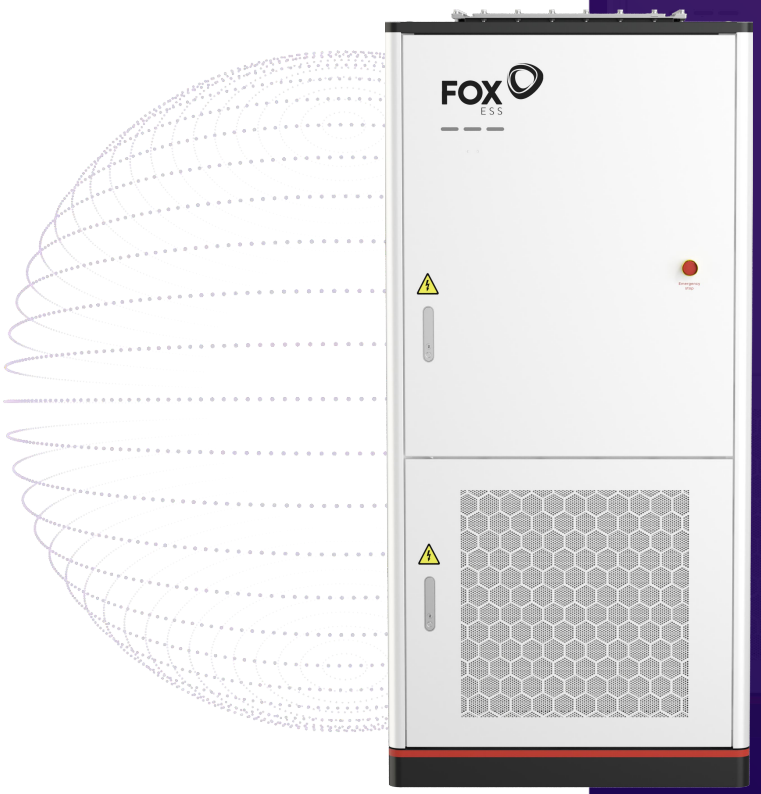
>8000 Cycle
@70%EOL

Longger
battery life @ Liquid cooling ▲<2 ℃

Reduce
Billing cost
@ unbalanced output

4 Levels
fire protections
from cell to cabinet

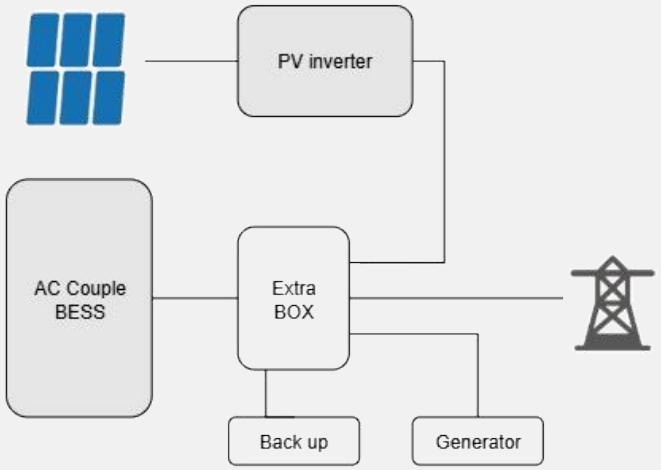
C5 class
anti-corrosion



T-MAX Plus, One for All

Integrated everything you need

A general AC Couple ESS solution

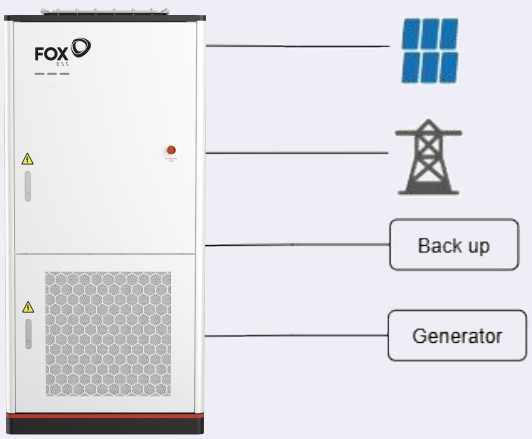


Requires

- Extra PV inverters
- Complex wiring
- Extra STS switch
- Extra backup box

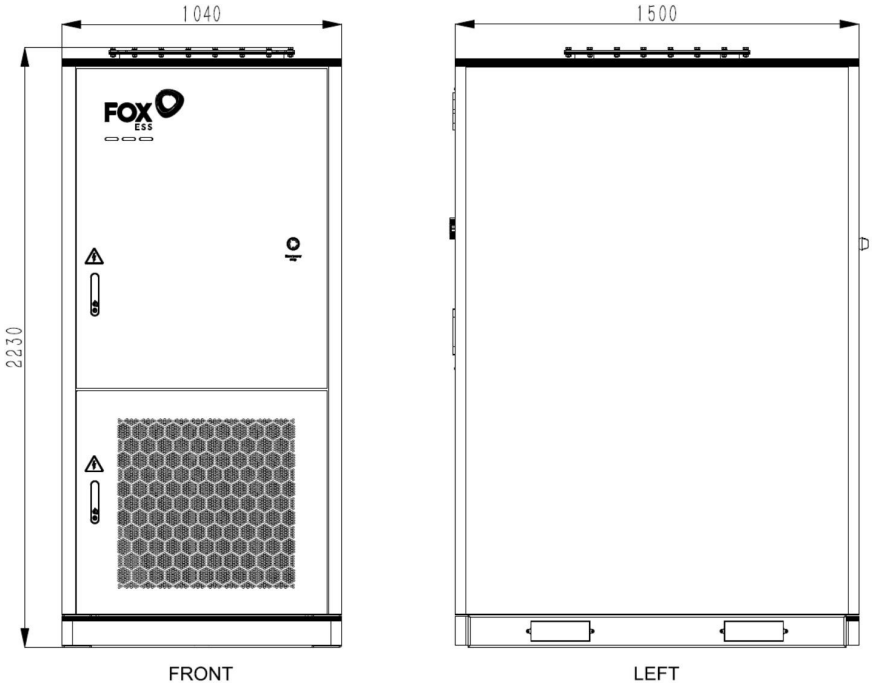
VS

One For ALL



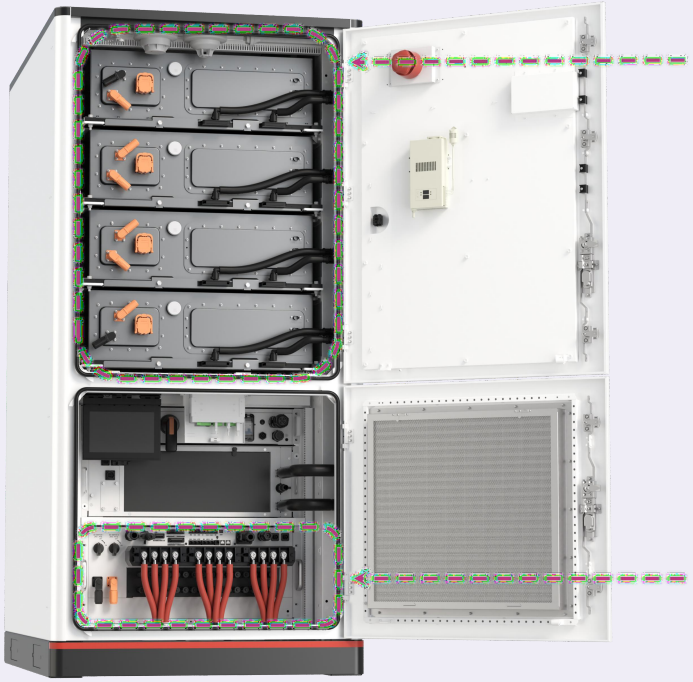
T-MAX Plus, AIO Design

Easy Transportation & Installation



Higher Energy Density Design

20% ↓ Transportation cost



Pre-Wiring

Focus on

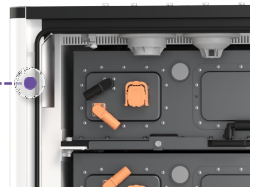
- AC connection
- PV connection
- Meter/parallel connection

Designed with minimal complexity for all installers

T-MAX Plus, Overview

AIO Liquid-Cooling & Hybrid ESS

Aerosol Fire Extinguishing System



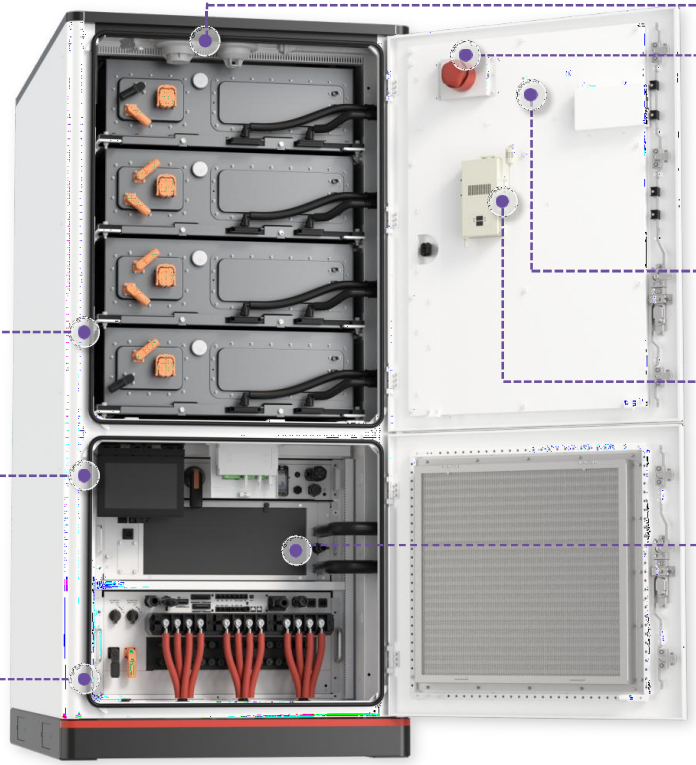
Battery

- 241kWh@314Ah
- Expandable to MWh

HV Box

Hybrid Inverter

- 125kW 8MPPTs, 40A Max. PV input
- 10ms on-grid/off-grid switching
- 3W+N+PE or 3W+PE
- genset direct connection
- Backup direct connection



Temp. Sensor
Smoke Detector

Fire Alarm

Combustible Gas Detector

Dehumidifier

Smart Liquid Cooling

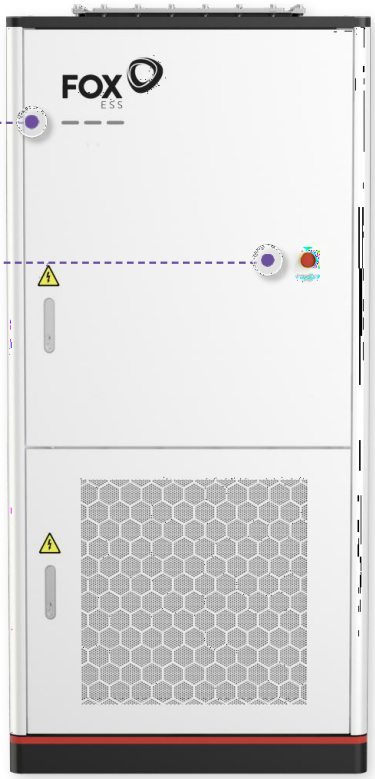
- <2℃ cell temperature difference

T-MAX Plus, Overview

AIO Liquid-Cooling & Hybrid ESS

Status Indicator

Emergency Stop

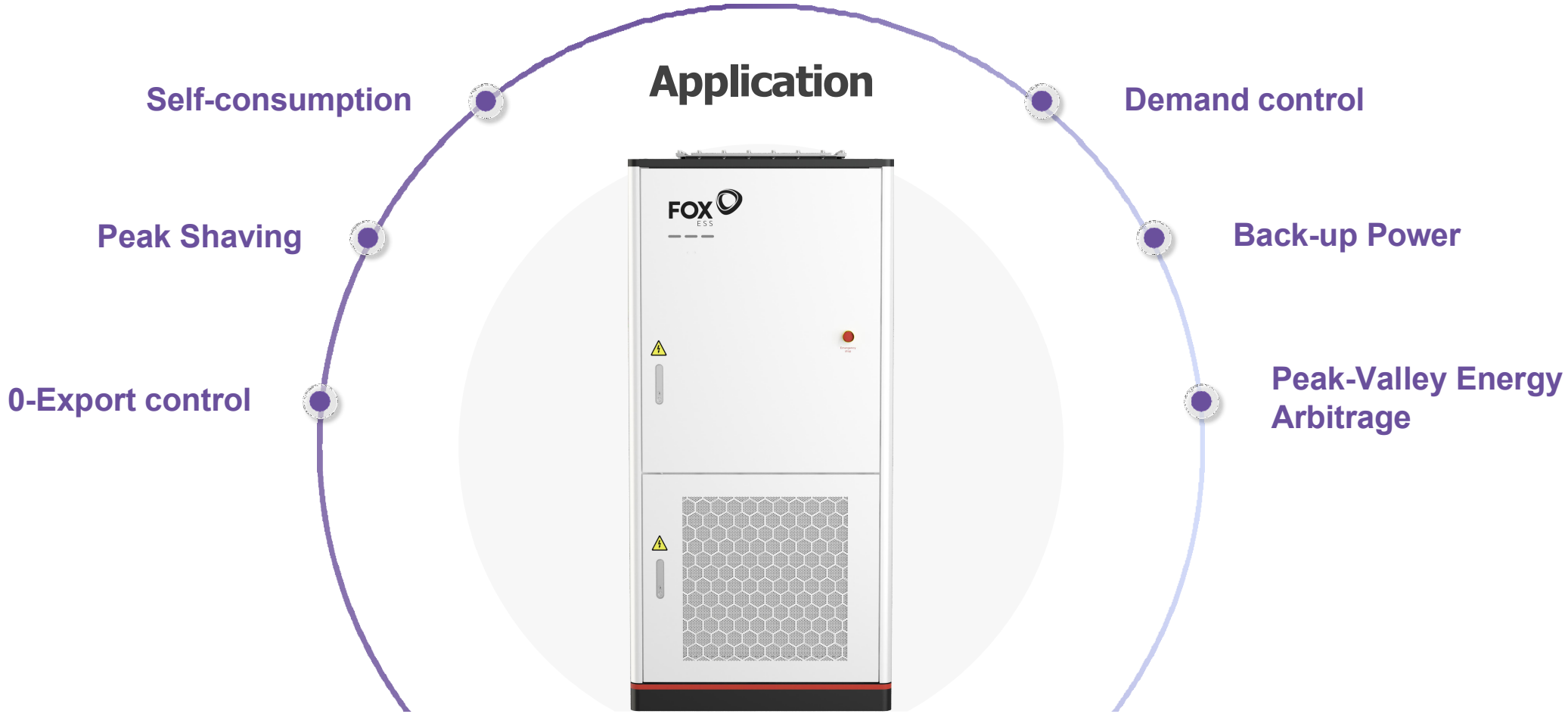


Top Explosion Vent

Pressure Balancing Valve

High Resistace Cabinet
C5 Class optional

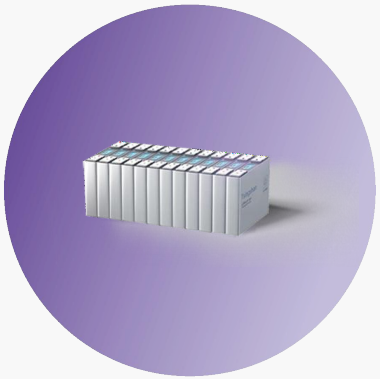
T-MAX Plus, Applications



T-MAX Plus, Protection

4-Level Protection, From Cell to Cabinet

No cell diffusion



- Cell level real-time monitoring
- Detection of 10+ types of faults and cloud-base risk warning

No pack fire

- With multi-level electrical safety protection (short-circuit and overcurrent protection) and multi-level fire protection (aerosol suppression systems, and pressure relief valves)

No system explosion

- Multiple level system electrical protection;
- System level fire extinguishing.

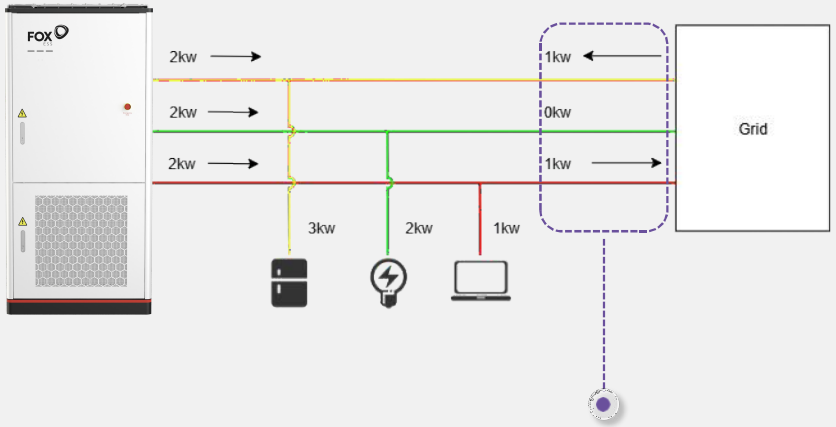
No personal injury

- The cabinet incorporates rapid shutdown and explosion prevention design (pressure relief valves) to ensure the safety of personnel in the surrounding area

T-MAX Plus, Features

Reduce your electricity fee @three phase unbalanced output

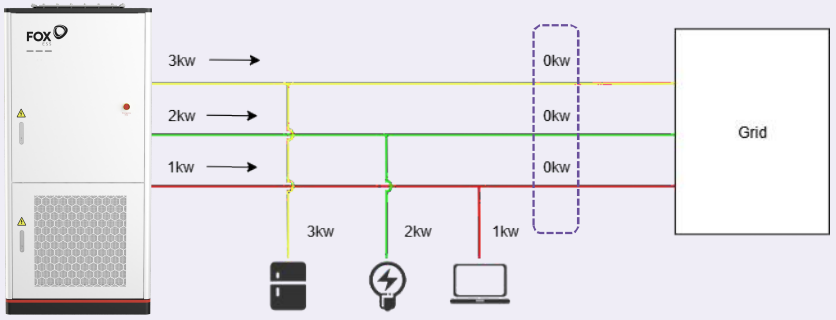
Without unbalanced output



Extra cost from Utility

May violated 0-export policy

With unbalanced output



100% unbalanced output per phase up to 41.66 kw/phase

67% ↓ **Max.electricity fee reduction**

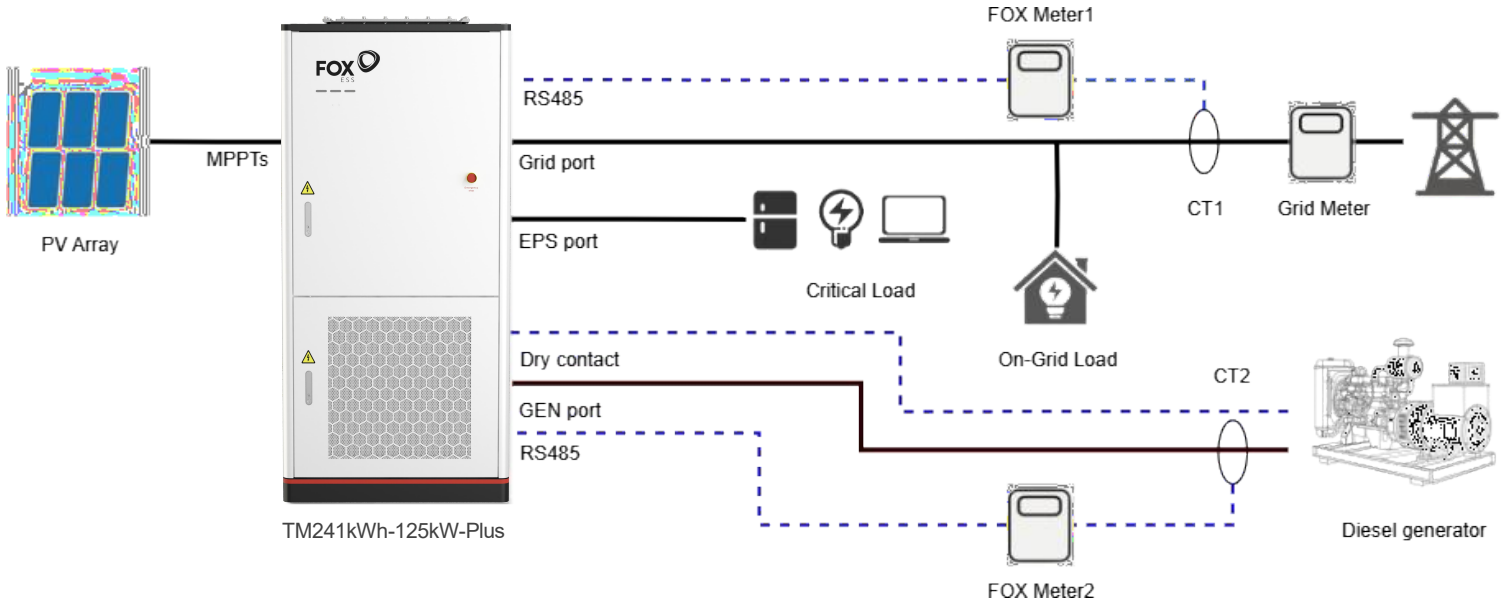
T-MAX Plus, Features

seamless experience @10ms on/off grid switch

Switch Time On/Off grid	Light	TV	Air Con	Computer
 10ms	Always On. A seamless switch experience			
BESS with ATS Box 1S (1000ms)	off then on	off then reboot	off turn on manually	off data lost

T-MAX Plus, Application

On/off-grid application with PV and generator @10ms switch time



1. Direct connection between inverter and genset. NO additional ATS required.

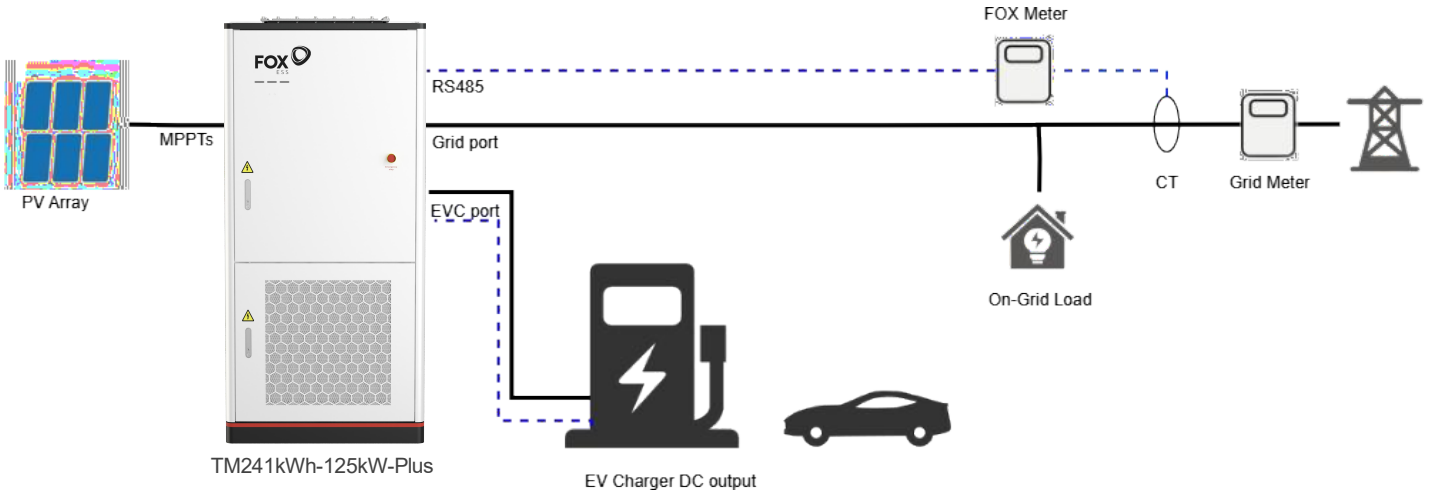
2. Smart control via Dry Contact to save fuel cost.

- control genset power to run in the highest efficiency.
- wake up/shut down genset accoding to SOC settings.

Together GRID+PV+GENERATOR+BATTERY to ensure a stable power supply

T-MAX Plus, Application

Ready for DC EV charge Station



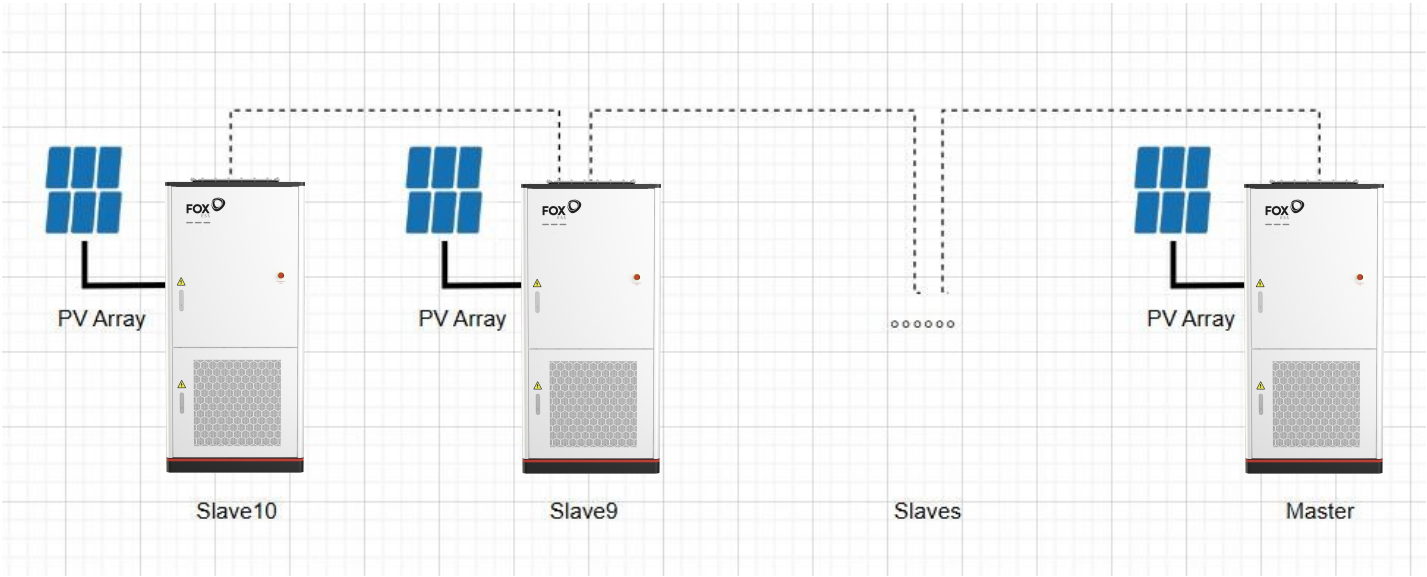
1. An independent output port for DC EV charger connection.

2. No need for transformer capacity expansion, avoiding complex approval procedures.

T-MAX Plus is a one-for-all product, providing PV + Storage + Charging Integrated Solution

T-MAX Plus, Application

Up to 10 pcs in parallel



1. Max. 25 pcs On-Grid Parallel
2. Max. 10 pcs Off-Grid Parallel
   (6–10 pcs require additional Parallel Switching Cabinet)
3. Support on/off-grid applications
4. Support genset connection

You can also utilize features such as three-phase imbalance support, seamless switching, generator control, and EPS grid simulation in parallel configurations

Competitive Comparison

Paramaters_Brand X

Power & Capacity	125kW@261kWh	125kW@241kWh	Benefits
PV input	No	8MPPTs @40A input	Cost saving & Simple wiring
Cooling system	Liquid	Liquid	/
On/Off grid Switch	External (ATS/STS box)	Internal @10ms	Cost saving from external switch box & seamless experience
Size	1350×2355×1350 mm	1040×2230×1500 mm	Lower shipping cost, save space
Weight	2810 kg	2600 kg	Lower shipping cost

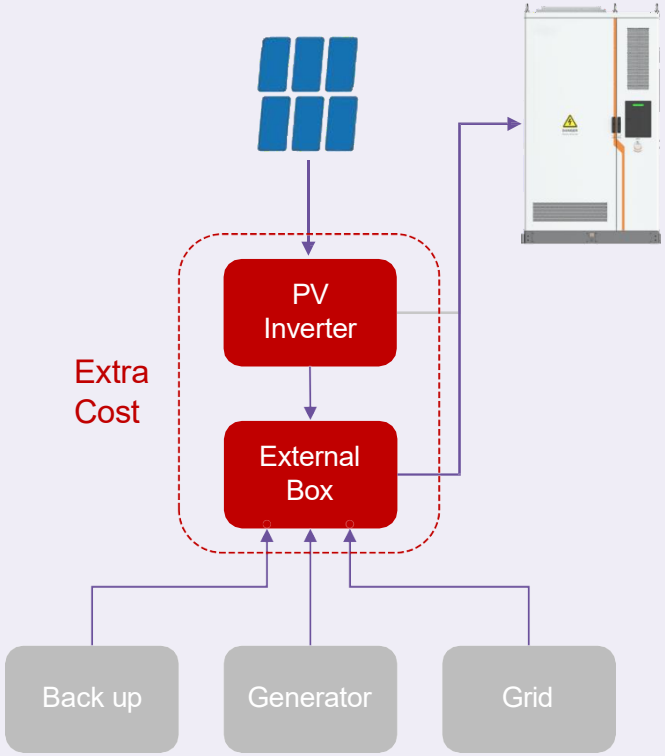
Competitive Comparison

Paramaters_Brand X

Power & Capacity	125kW@261kWh	125kW@241kWh
Rated AC power	125kW	125kW
Max. output continuous current	189.4 A@220 V	198.5A @220V
Round Trip Efficiency	NA	90%
Unbalanced load output	100%	100%
Battery Cell	314Ah	314Ah
Charge / Discharge current	157A	176A
DOD	90%	100%
Anti-corrosion degree	C4(C5 optional)	C4(C5 optional)
Ingress protection	IP55	IP55

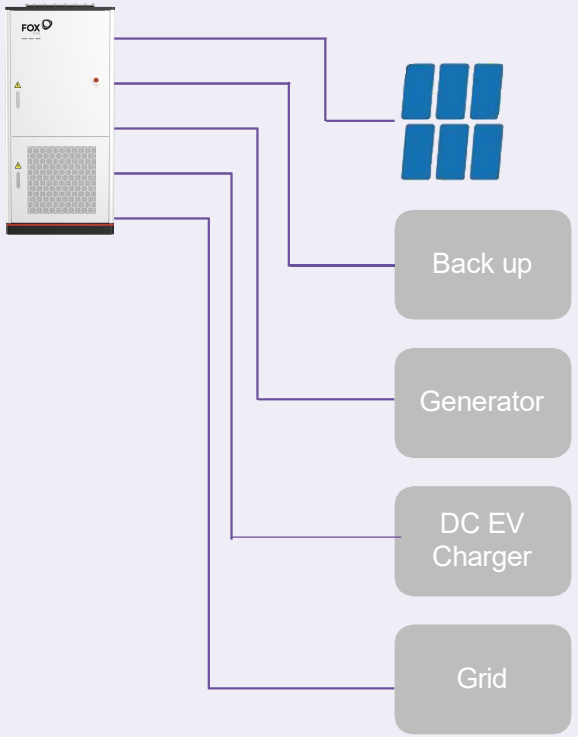
Competitive Comparison

Solutions_Brand X



Solutions		
✗	DC Couple	✓
✓	AC Couple	✓
⚠	On/Off grid Switch	✓
⚠	Generator	✓
✗	DC EV charger	✓

✗ No ⚠ Extra Devices ✓ Yes



T-MAX-PLUS Real case

- Ukraine
  1*T-MAX-PLUS

- Self Consumption with PV system
- Backup

T-MAX-PLUS Real case

- Ukraine
  4*T-MAX-PLUS

- Self Consumption with PV system
- Backup

T-MAX-PLUS Real case

- Netherlands
  2*T-MAX-PLUS

- Self Consumption with PV system
- Peak Shaving
- Backup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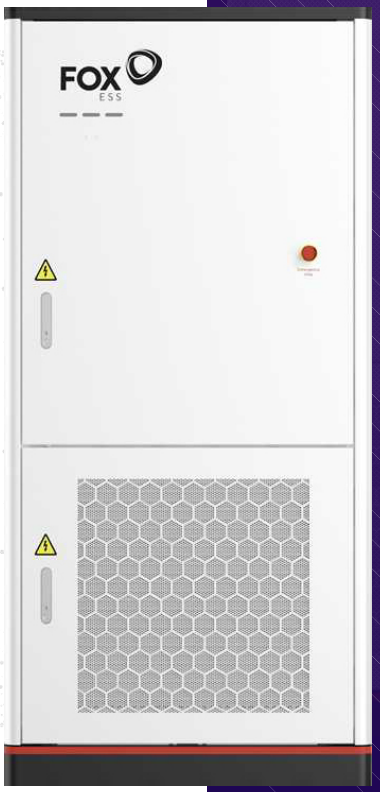
C&I ESS Solution
TM215kWh-100kW

T-MAX Introduction

AIO Liquid-Cooling ESS

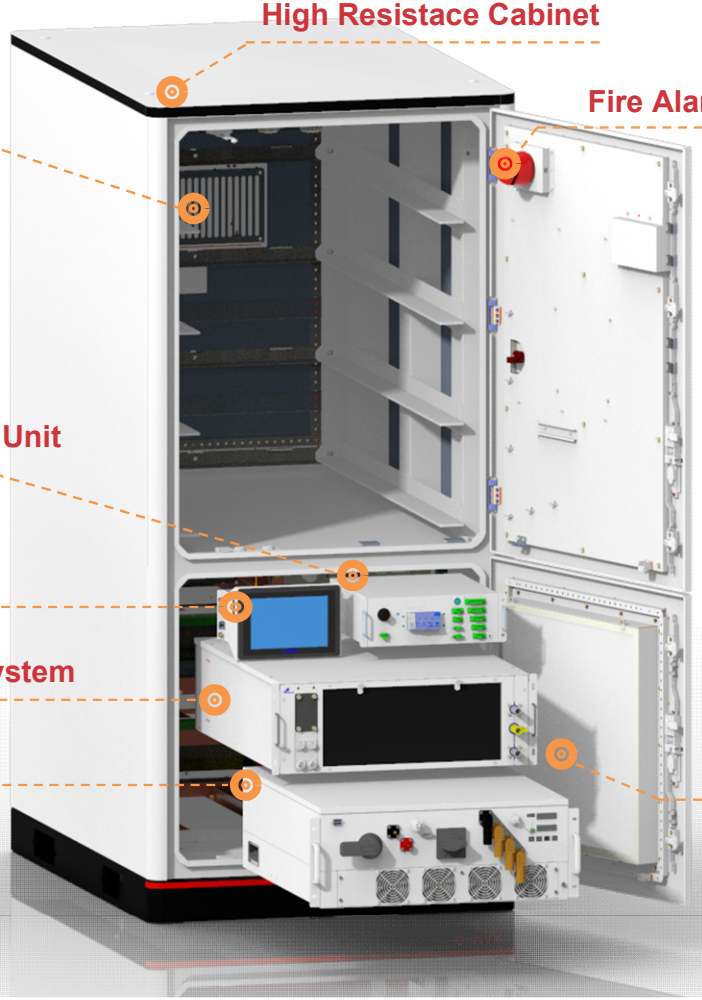
- 100 kW continuous output power
- 768 V battery voltage with 215 kWh capacity
- Separated and isolated battery cabinet, with liquid cooling
- Compact 1.0 x 1.5 x 2.2 m cabinet, UN 38.3 certified for transport including batteries
- IP55 and -25 to 55°C temperature range, for outdoor installation
- Up to 25 systems in parallel / 5 in Offgrid-Mode
- Island / Off Grid mode
  Blackstart

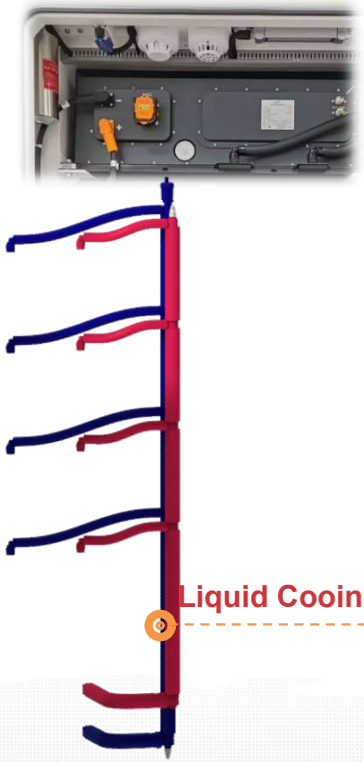


T-MAX Component View

Battery Pack

Battery packs pre-installed in the factory
Easy Installation on site
Lower BoP cost





T-MAX System Design

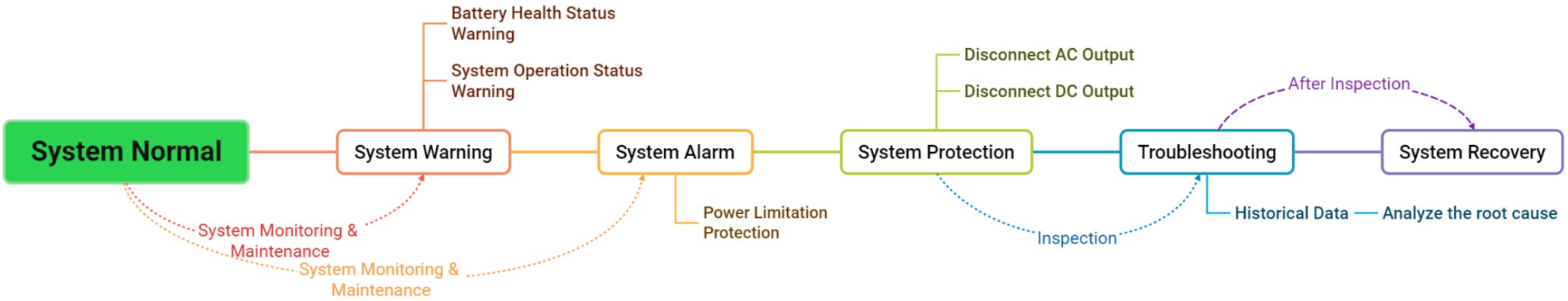
- Battery Pack IP67
- Battery cabinet IP66
- System IP55
- System C4/C5(optional) corrosion

- 25 units parallel
- Modular design, suitable for different locations

Explosion preventing valve: protection against instance pressurization due to temperature change

- Cabinet heat isolation
- Direct sunlight OK
- PACK level fire protection
- Cabinet level alarm

T-MAX BMS Introduction



Multiple warning protection:

System warning, online insulation condition monitoring, module abnormality monitoring, real-time battery internal resistance monitoring, battery SOX algorithm, early warning;

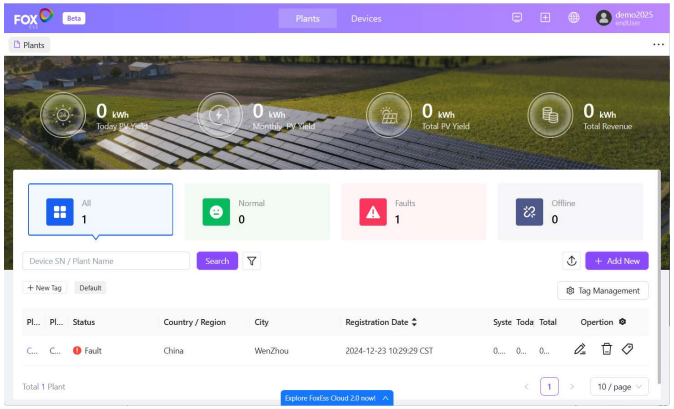
Multi-level system alarm protection function, real-time monitoring of battery voltage overvoltage, under-voltage, voltage difference, over-temperature, under-temperature, temperature rise alarms, disconnection, abnormal balance and other faults, linear system power limiation, to prevent the expansion of faults;

Multiple protection, PCS short circuit protection, PACK built-in FUS protection, temperature control system fault protection, maximum protection of battery safety;

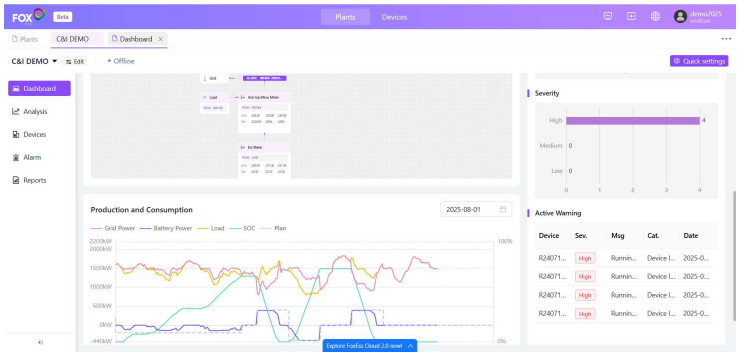
Support historical data, fault logging, and help quickly locate fault points.

T-MAX Fox Cloud Monitoring

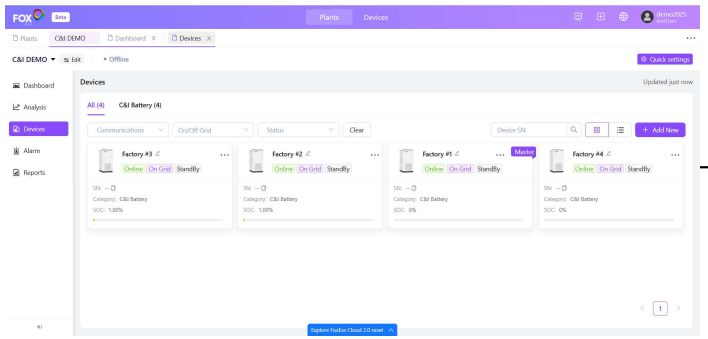
Full System Monitoring



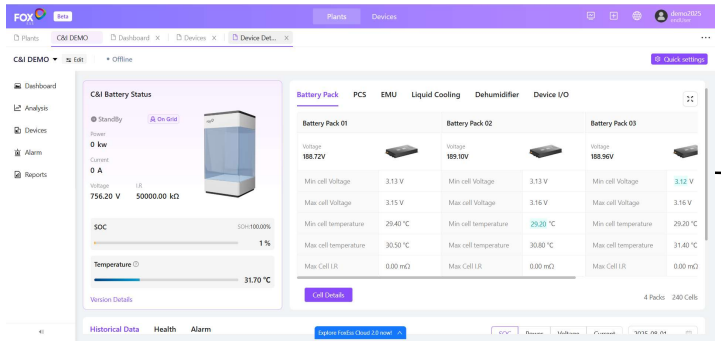
Main Interface



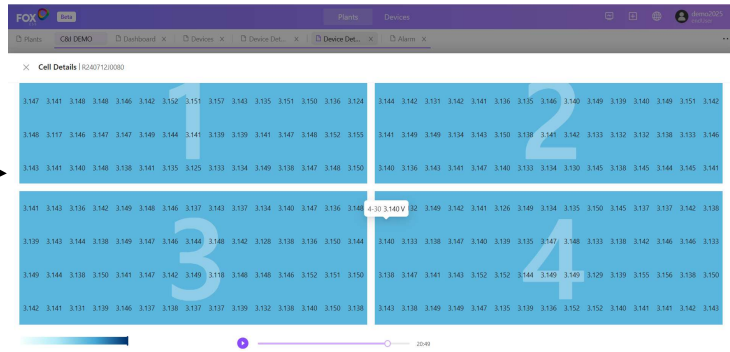
Dashboard



Parallel Info



Rack Data



Battery Cell Data

T-MAX Real case

- Netherland
  10*T-MAX

- Energy Trading with
  the 3rd part EMS

- Czech
  10*T-MAX

- Self Consumption
- Peakshaving

T-MAX Real case

- Bulgaria
  10*T-MAX

- Self Consumption with PV system
- Peak Shaving

T-MAX Real case

- Austria
  1*T-MAX

- Self Consumption with PV system and EV charger
- Peak Shaving

- Hungary
  2*T-MAX

- Dynamic Capacity Expansion (Load Balancing)

FOX ESS

Fox ESS TitanCore Utility Scale ESS

Fox ESS

Cell & Module Technology

Advanced LFP Chemistry & Liquid-Cooled Modules

FOX ESS

Advanced Cell Technology

Wending® Structure & Double-High Electrode — by REPT Battero

Wending® Structure

- Highest space utilization rate
- No tab redundancy → eliminates dead zones
- Internal utilization rate up by 3%
- DCIR reduced by 16% → less heat

DCIR	Space Utilization
↓ 16%	↑ 3%

Double-High Electrode

- Ion migration speed up by 30%
- Enhanced energy density
- Advanced chemistry system
- Thermal runaway threshold >350°C

Ion Migration	Thermal Runaway
↑ 30%	> 350°C

Battery Module Y104

314Ah Wending® Cell — Liquid Cooled, IP67

Parameter	Y104 Module
Integration	1P104S
Module Voltage	332.8 V (range 270.4–374.4 V)
Energy	104.5 kWh
Dimensions (mm)	2150.5 × 779 × 250 (D×W×H)
Weight	~690 kg
Cooling	Liquid Cooling
IP Rating	IP67
Continuous Power	0.5P
Pulse Power	1P (60 s)

104.5 kWh

per module

IP67

fully sealed

Liquid Cooled

parallel flow channels

0.5P / 1P Pulse

continuous / burst

Thermal Management

Parallel Flow Channels — Optimized for Long Modules

Series Flow Channel

- Higher flow resistance
- Greater temperature difference
- Uneven cell aging across module

Parallel Flow Channel

- Flow resistance reduced by 6.9×
- Temperature diff reduced by 2.17°C
- Uniform cooling across all cells

Thermal Test Results (0.5P charge & discharge)

36.2°C	2.8°C	20.1°C	22.1°C
Max Temperature	Max Temp Difference	Coolant Inlet Avg	Coolant Outlet Avg

Module Safety & Testing

Multi-Layer Protection Design with Extensive Validation

Thermal Protection Design

Heat Isolation Pads — polymer nanomaterials prevent thermal runaway propagation between cells

Thermal isolation design — prevents heat from damaging end plates, reduces expansion force

Hazardous emissions isolation & targeted release — controlled venting under failure conditions

BMS protection — sampling cable short-circuit protection, multi-layer electrical safety

Mechanical Validation

- 670h salt spray test
- IP67 level verified
- Random vibration (UN38.3, MIL-STD-810H)
- 2m face-to-ground drop test
- Squeeze test (X & Y direction)
- Expansion force test
- High humidity & electrolyte immersion
- Helium leak test
- Ball impact test
- Tilt test (45°–90°)

Cell-to-module design ensures no thermal runaway propagation — validated per UL 9540A

Fox ESS

DC Block

Containerized Energy Storage — 3.3 to 5.0 MWh

FOX ESS

DC Block — 5 MWh

314Ah Wending® Cells — 20ft HQ ISO Container

Parameter	5.0 MWh DC Block
Cell Type	314Ah Wending® Cell
Integration	12 strings, 1P416S
Rated DC Voltage	1,331.2 V (range 1,040–1,500 V)
Rated Capacity	5.015 MWh
Dimensions	6058 × 2438 × 2896 mm (20HQ ISO)
Weight	44.5 t
Charge / Discharge	0.5P continuous
Cooling	Liquid cooling

Available Configurations

3.34 MWh
4.18 MWh
5.016 MWh

Certifications

UL 9540 · UL 9540A · UL 1973
IEC 62619 · IEC 63056 · IEC 61000
UN 38.3 · NFPA 68 · NFPA 69
IEC 62933 · NFPA 855

37.0°C
Max Temp (0.5P)

4.0°C
Max Temp Diff

DC Block — Safety Systems

Fire Suppression, Gas Detection & NFPA 69 Compliance

Fire Suppression

- Aerosol fire extinguishers (×4)
- Fire control panel
- Ventilation system
- Vent panels with pressure relief
- Water fire-fighting piping

Detection & Monitoring

- Heat detectors (×2)
- Smoke detectors (×2)
- CO detector
- H□ detector
- Video monitoring
- Water immersion sensor

NFPA 69 Compliance

- Ventilation OFF → gas conc. 1.6% (40% LFL)
- Ventilation ON → gas conc. <0.3% (7.5% LFL)
- Combustible gas controlled below 25% LFL
- No risk of ignition or explosion
- CFD-simulated gas flow verification

Fox ESS

PCS Solutions

String, Rack-Mounted & Central — Flexible Grid Integration

FOX ESS

String PCS — 186 to 290 kW

Air-Cooled, IP66, Grid-Forming Ready

Max Efficiency 99%

Three-level topology, DC/AC primary conversion

IP66, C4/C5 optional

Designed for harsh outdoor environments

Up to 24 units parallel

Scalable from 186 kW to 6.96 MW

Grid-Forming Function

PQ, VF, VSG modes — low SCR stability

Smart Air-Cooling

Variable-speed fans, <75 dB noise

	186kW	215kW	250kW	290kW
DC Range	1160–1500V			
Max DC Current	180A	208A	242A	281A
Max Output	205kW	237kW	275kW	319kW
AC Voltage	800V			
THDi	<3%			
Switchover	<20ms			
Dimensions	795×915×294 mm			
Weight	≤100 kg			

EN 50549-1/-2 (incl. Poland, France, NL, SE, DK, and more) · IEC 62477-1 · G99

Rack-Mounted String PCS

Scalable 860 kW to 3,000 kW — Rack-Level Battery Management

Modular — no single point of failure

Rack-level management no circulating current

4 to 14 PCS per rack flexible sizing

IP65 system IP66 per PCS

	860 kW 4 DC	1,250 kW 6 DC	1,720 kW 8 DC	2,150 kW 10 DC	2,500 kW 12 DC	3,000 kW 14 DC
DC Range	1000–1500 V					
Max. Output	946	1,375	1,892	2,365	2,750	3,300
AC Voltage	690 Vac					
Racks	1		2			
Weight	1,200	1,400	2,400	2,600	2,800	3,000

Single PCS module: 250 kW rated · Three-level topology · PQ + VSG modes · Grid-forming capable

Compliance: GB/T 34120 · IEC 62477 · IEC 61000 · EN 50549 · IEC 62920 · G99

Central PCS — 1.25 to 2.75 MW

Liquid-Cooled, Standalone — Without Transformer

51°C
No derating
Liquid cooling keeps full power output in extreme heat

IP66
C5 Anti-corrosion
Designed for coastal, industrial, and harsh environments

1.5 m²
Footprint
Only 1000×1500 mm — minimal land use per MW

<13 kg
Power module
Easy field replacement, fast maintenance

	1,250 kW	1,750 kW	2,500 kW	2,750 kW
DC Range	1000–1500 V			
DC Inputs	1 or 2 channels			
Max Output	1,376 kW	1,925 kW	2,750 kW	2,750 kW
AC Voltage	690 V			
Modes	PQ · VF · VSG — Grid-Forming			
Dimensions	1000 × 2428 × 1500 mm			
Weight	1,800 kg			

Switchover time: 70 ms · THDi <3% · Non-isolated · IT grounding

PCS Turnkey Station

All-in-One Containerized Solution — PCS + Transformer + RMU

2.5 MW — String PCS Based	
PCS Configuration	12× 250 kW String PCS
Rated Output	2,500 kW
Overload	110% / 10 min · 120% / 1 min
Transformer	2,520 kVA oil-immersed (Dy11y11)
MV Voltage	0.69 / 10 kV (6–35 kV custom)
RMU	SF6 switchgear, 12 kV, 630A
Container	20ft HQ ISO (6058×2896×2438)

5 MW — Central PCS Based	
PCS Configuration	2× 2.5 MW Central PCS
Rated Output	5,000 kW / 5,500 kVA
Liquid Cooling	1.1× power at 45°C, no derating to 51°C
Transformer	5,250 kVA oil-immersed
MV Voltage	0.69 / (6–35) kV customizable
Modes	PQ + VSG · Grid-Forming · Low SCR
Container	20ft HQ ISO (6058×2896×2438)

Scalable configurations: 4 MW · 5 MW · 7 MW · 10 MW and above — achieved by combining multiple turnkey stations with ring main units (RMU) on MV bus

Thanks for your attention!

Let's get connected: