



## SMALL SCALE C&I STORAGE SOLUTIONS

### AlphaESS Europe GmbH

✉ [Info@alpha-ess.de](mailto:Info@alpha-ess.de)

🌐 [www.alphaess.de](http://www.alphaess.de)

📍 Horizon Tower 17.OG, Alfred-Herrhausen-Allee 3-5,  
65760 Eschborn, Germany

### AlphaESS UK Ltd.

✉ [info@alpha-ess.co.uk](mailto:info@alpha-ess.co.uk)

🌐 [www.alpha-ess.co.uk](http://www.alpha-ess.co.uk)

📍 Drake house, Long street, Dursley,  
GL11 4HH United Kindom

☎ +44 330 043 2610

### AlphaESS Italy S.r.l.

✉ [info@alphaess.it](mailto:info@alphaess.it)

🌐 <https://www.alphaess.it>

📍 Via Del Molinuzzo 83, 59100  
Prato (PO), Italy

### AlphaESS Benelux B.V.

✉ [contact@alphaess.nl](mailto:contact@alphaess.nl)

🌐 [www.alphaess.nl](http://www.alphaess.nl)

📍 Room 113 F1, High Tech Campus 41,  
5656 AE Eindhoven, the Netherlands



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## STORING TOMORROW'S ENERGY TODAY FOR A SAFER FLEXABLE FUTURE





“MAKE CLEAN **ENERGY**

ACCESSIBLE TO 100 MILLION

PEOPLE IN 10 YEARS

## CONTENTS

### 01 ABOUT ALPHAESS P01

- GLOBAL SERVICE NETWORK
- INTELLIGENT MANUFACTURING

### 02 PRODUCT SOLUTION P07

- STAX-M30/M50
- STORION-H30/H50-G3
- STORION-LC-TB125

### 03 ALPHA CLOUD & EMS P25

### 04 AFTER-SALES SERVICE P27

### 05 GLOBAL CASES P29



# 1

## ABOUT ALPHAESS

Founded in 2012, AlphaESS is now one of the world-leading energy storage solution and service providers. The company specializes in delivering pre-eminent fit-for-purpose product solutions covering the full power range from small portable power stations all the way up to large utility-scale solutions. With 40+ subsidiaries in the globe, AlphaESS provides local services and supports 200,000+ systems actively running in over 130+ countries.

 **13+**  
Years since Establishment

 **250+**  
Patents in the ESS Field

 **200,000+**  
Systems Installed Globally

 **130+**  
Countries & Regions

### TOP 1

2022-2023 TOP 1  
Australia Market Share  
from SunWiz

### TOP 5

2023 H1 TOP 5  
Residential ESS Provider in Germany  
from EUPD Research

### TOP 6

2021 TOP 6 Supplier of  
Global Residential Storage Systems  
from IHS Markit



The Most Recommended  
Brand in Germany



ESG Transparency  
Award



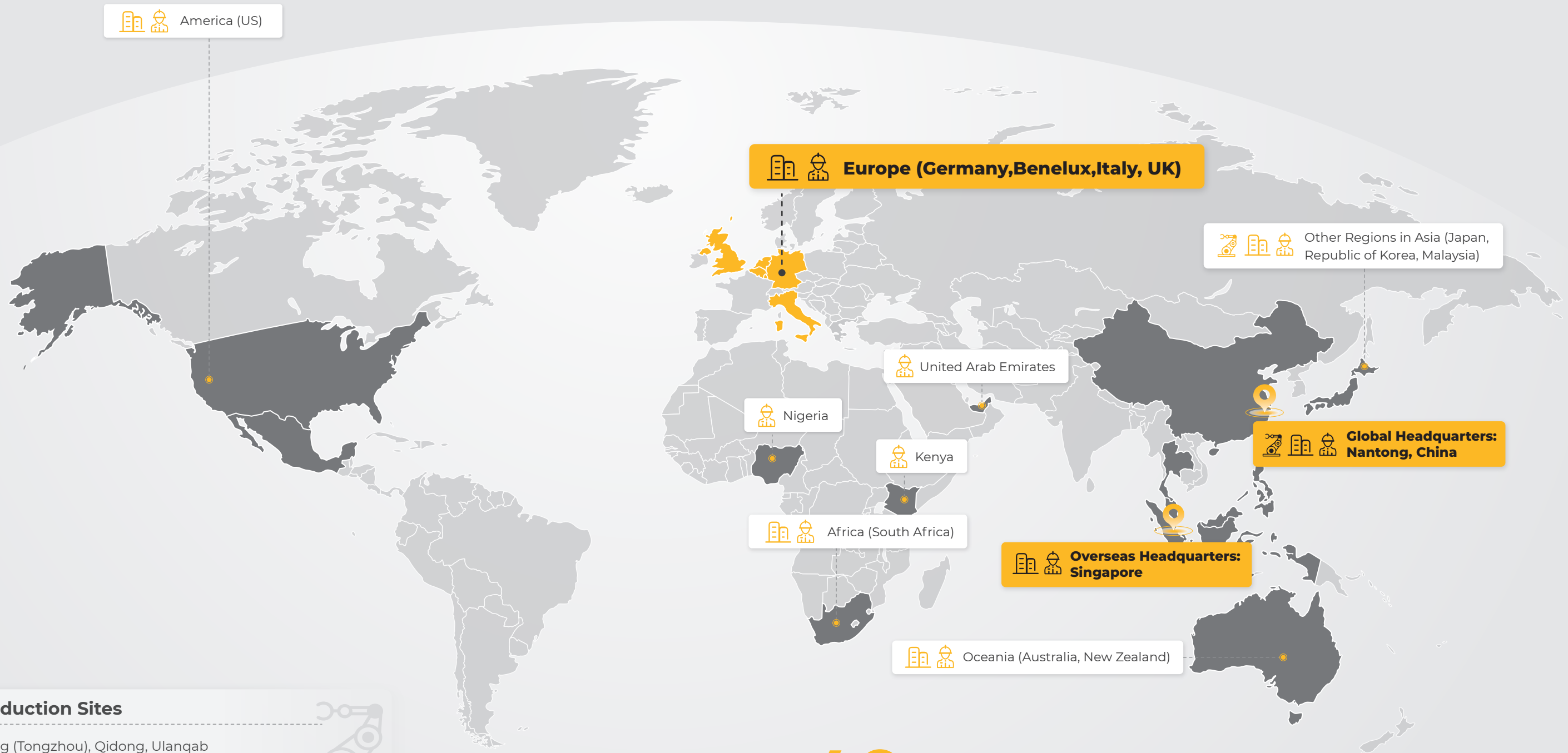
iF & Reddot & G-mark  
Design Award



TOP BRAND PV  
(STORAGE & INVERTERS)



# GLOBAL SERVICE NETWORK



4

## Production Sites

**China:** Nantong (Tongzhou), Qidong, Ulanqab

**Malaysia:** Penang



4

## R&D Centers

Nantong (Tongzhou), Suzhou, Nanjing, Tianjin



40

## Subsidiaries

**China:** Suzhou, Beijing, Tianjin, Shenzhen, Chengdu, and Nanjing.

**Global:** European countries, including Germany, Benelux, Italy, and the UK; Oceanian countries like Australia and New Zealand; the United States; Asian countries like Japan, Republic of Korea and Malaysia.



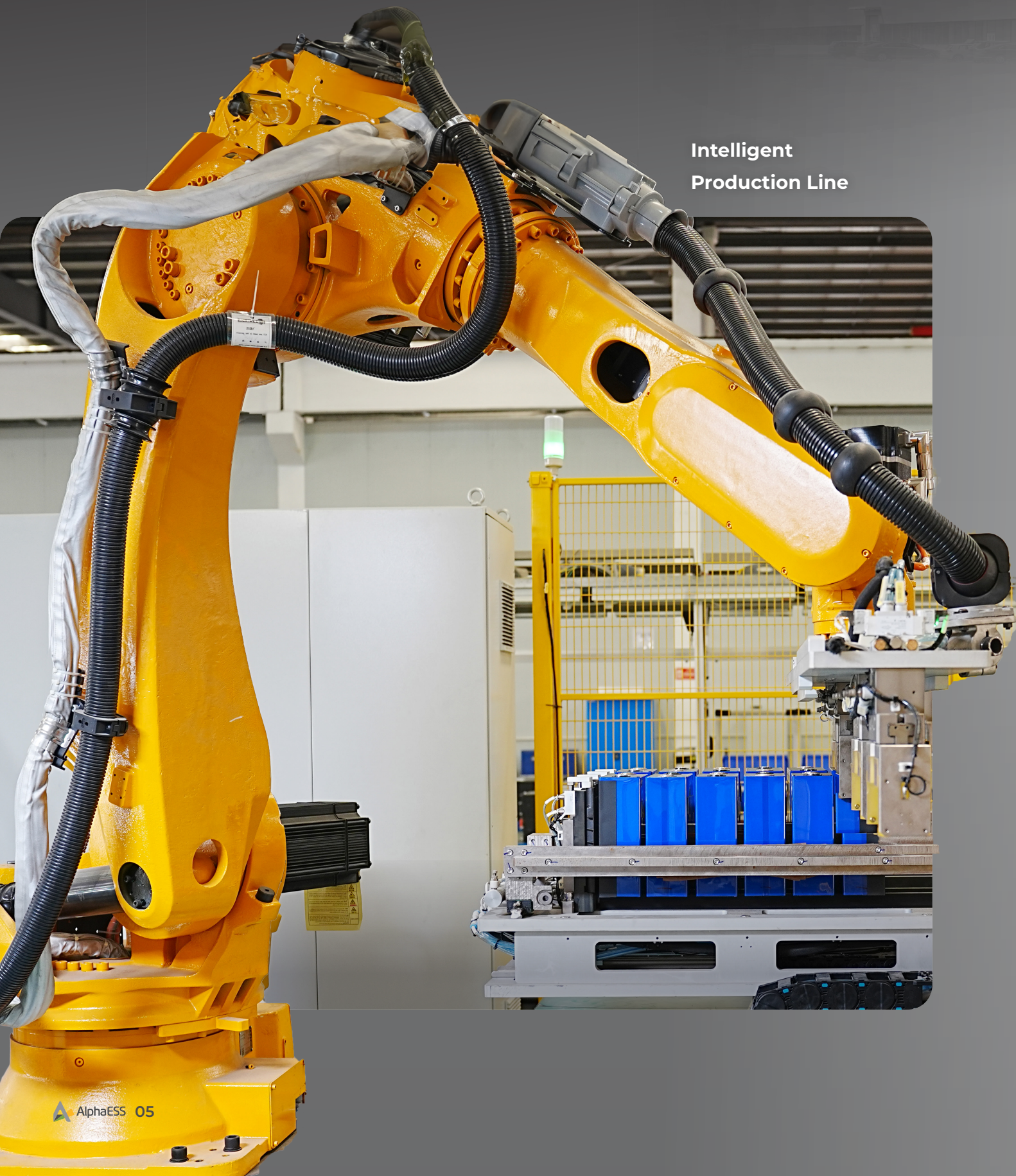
Note: The data shows the company's global presence as of the end of 2024.



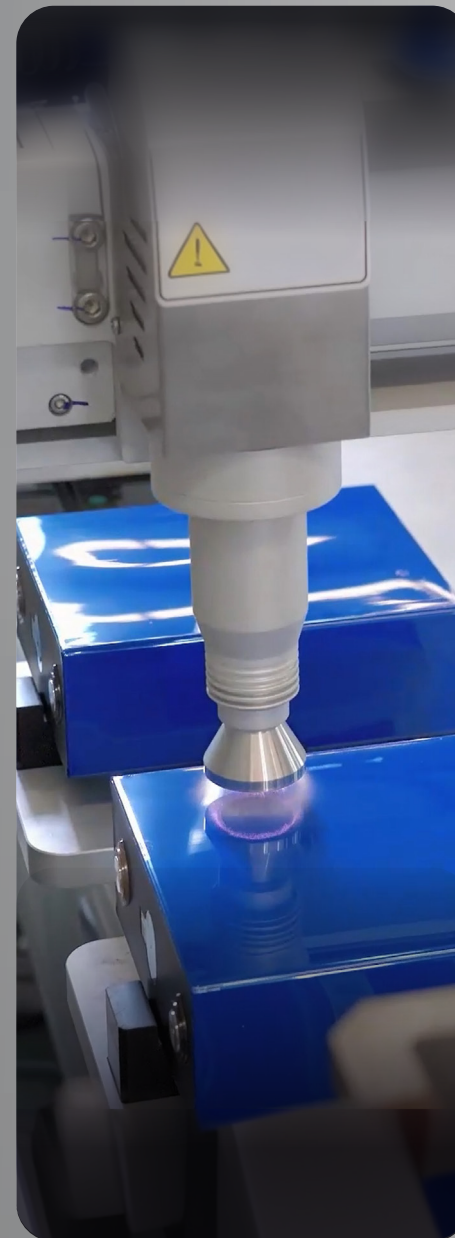
# INTELLIGENT MANUFACTURING

With technological innovation as the engine, we provide efficient, precise and reliable products and services.

Intelligent  
Production Line



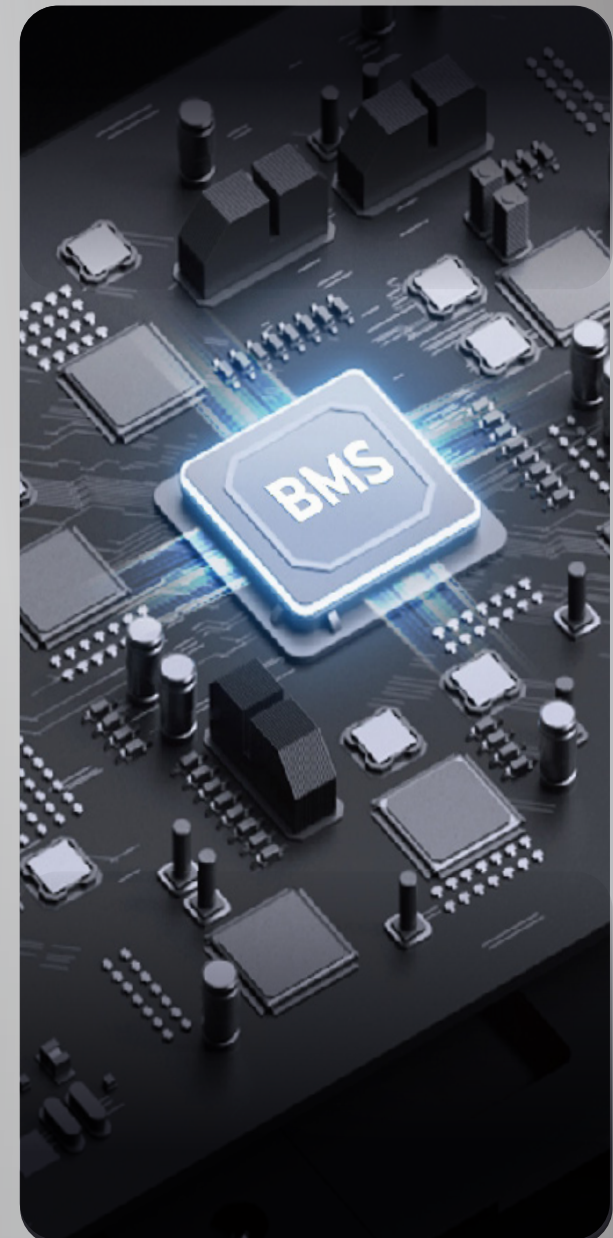
Lean  
Production



Intelligent  
Warehousing



Digital  
Integration





# 2

## PRODUCT SOLUTION

Maximize ROI – Payback in as Fast as 3 Years

### Optimize Investment

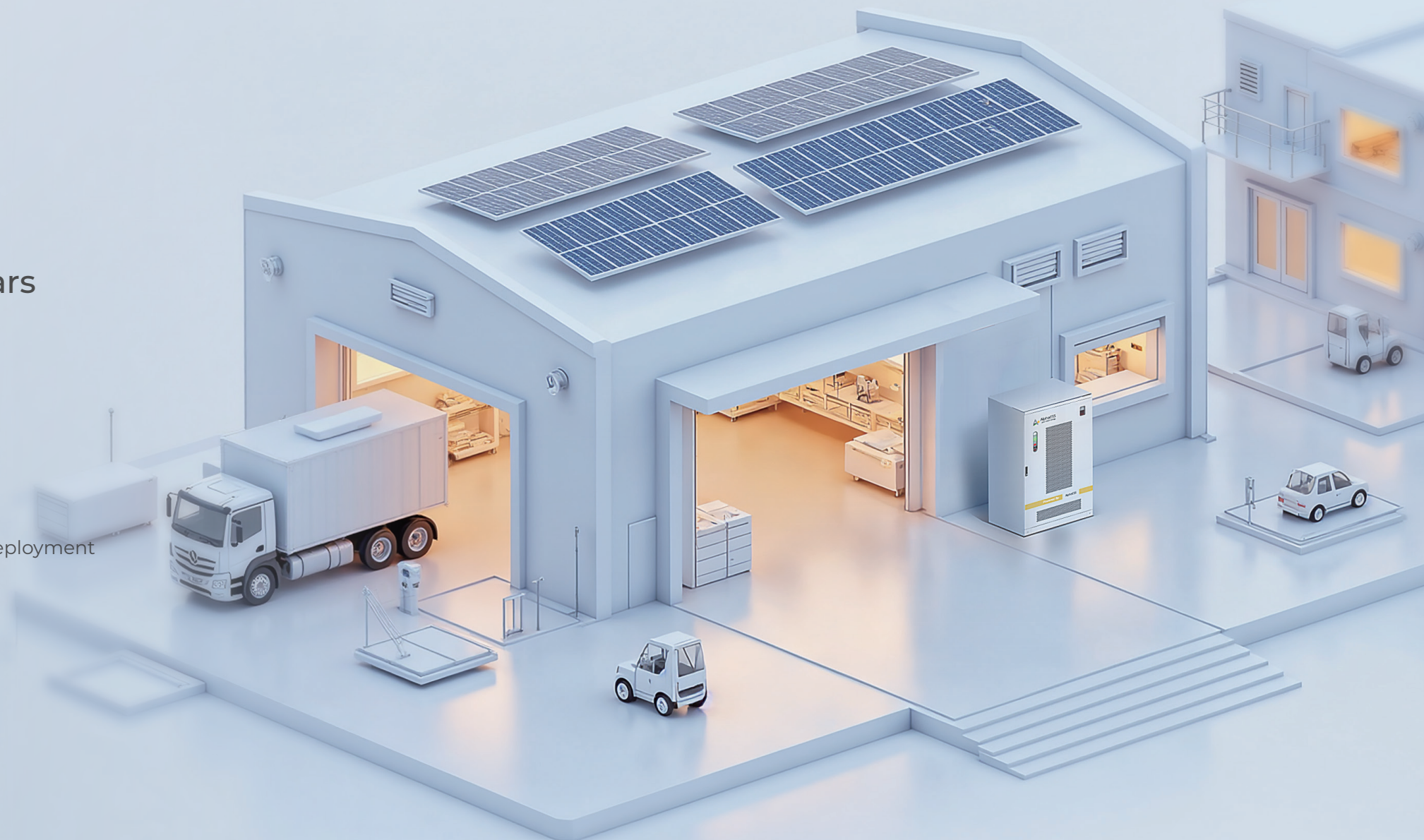
- All-in-One design: smaller footprint, higher capacity
- Hybrid coupling for optimal solar integration
- Simplified installation: pre-installed, energized transport or stackable deployment

### Reduce O&M Costs

- Cell-level active balancing: increase available capacity
- Smart thermal management: improve stability and lifespan
- Intelligent EMS: reliable system reduces labor cost

### Boost Energy Profits

- High system efficiency for maximum energy utilization
- Multiple revenue streams: dynamic tariffs, energy trading, VPP-ready



## FLEXIBLE EXPANSION

Indoor & Outdoor

| Cell:  | Power:          | Capacity:         |
|--------|-----------------|-------------------|
| 314 Ah | 30 kW ~ 6.25 MW | 60 kWh ~ 6.12 MWh |



StaX-M30/M50



STORION-H30/H50-G3



STORION-LC-TB125



MULTI-LEVEL SAFETY

Protection from Cell to System



\*UL9540A certified to meet global leading safety standards  
\*No spreading and deformation at over 800°C



Three-Level Fire Protection Design

- Cell Level**  
Real-time cell temperature monitoring via BMS, automatic power cutoff in case of short circuits, and aerogel insulation for thermal protection
- Module Level**  
Integrated aerosol fire suppression system  
MSD: Emergency physical isolation to provide maintenance security
- System Level**  
Temperature and smoke detectors, coordinated water/aerosol suppression, and explosion relief vents compliant with NFPA 68





## ON-GRID SCENARIO

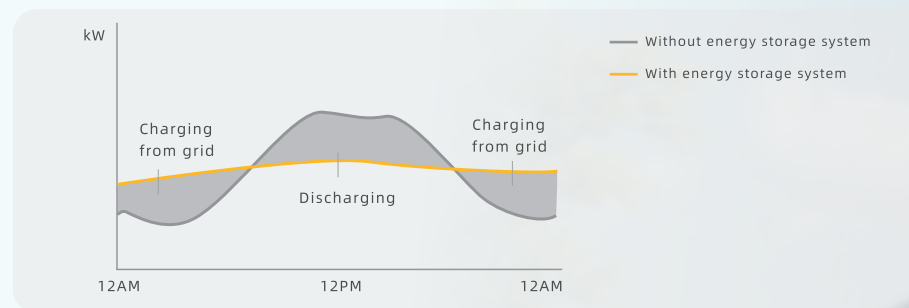
In the scenario of stable grid, AlphaESS Storion system maximizes the self-consumption of solar energy and the user's revenue.

### ► Self-Consumption

Maximize the use of solar energy to meet load demands, with the surplus stored in batteries.

### ► Peak Shaving

The system provides supplementary power when the load exceeds the grid planning limits or its peak, and the power gap is addressed through the Storion System.



### ► Dynamic Tariff

Based on EPEX dynamic electricity prices, it provides an intelligent scheduling strategy: charging when prices are low and discharging when prices are high, ensuring you always have access to low-cost electricity.

### ► Imbalance Trading

The Storion System supports participation in Imbalance Trading via Eniris (Modbus TCP) and the API platform, making full use of battery capacity to generate revenue, which will further optimize the system's ROI.



# OFF-GRID SCENARIO

In micro grid or off-grid scenarios, the Storion system delivers continuous, reliable power —enabling straightforward energy independence.

- **Reliable Backup**  
guaranteeing uninterrupted backup power for Essential Loads:



20ms Switching



High Compatibility

400V (±20%) 50/60Hz(±5Hz)

- **Dual Power**  
Both the diesel generator and the STORION system work together, The EMS controls the generator's operation, ensuring continuous power supply, guaranteeing a reliable power supply for customers residing in off-grid areas.





# STAX- M30/M50

The M30/M50 is AlphaESS's first stackable C&I energy storage system. With modular design, plug-and-play setup, and robust outdoor protection, it ensures fast deployment, reliable backup, and scalable performance — up to 216.9 kWh.

- **Fast Installation • Modular Design**

  - 30-minute plug & play setup — no battery rack or complex wiring needed
  - Modular stackable design for flexible deployment
  - Supports transportation by truck, train, ship, or even helicopter — ideal for rapid site deployment
- **Reliable Operation • 24/7 Energy Security**

  - Built-in AlphaESS BypassTech: automatically isolates faulty modules without system shutdown
  - Supports off-grid functionality for critical load continuity
  - Low-noise performance suitable for nighttime or noise-sensitive environment
- **Scalable & ProfitableFlexible Configuration**

  - Effortless plug-and-play expansion up to 216.9 kWh
  - 200% PV input design boosts green energy utilization and ROI
  - IP66 protection rating for harsh outdoor conditions
  - Integrated diesel generator port for backup resilience
- **AI-Driven Battery Life Optimization**

  - Equipped with AI-powered SOC calibration
  - Maintains cell consistency, prolongs battery life, and reduces maintenance costs



## STAX-M30/M50

| Model                                | StaX-M30                                                                                  | StaX-M50 |
|--------------------------------------|-------------------------------------------------------------------------------------------|----------|
| System Specifications                |                                                                                           |          |
| Nominal Output Power                 | 30 kW                                                                                     | 50 kW    |
| System Capacity                      | 60.25 ~ 216.9 kWh                                                                         |          |
| Ingress Protection                   | IP66                                                                                      |          |
| Battery Chemistry                    | LFP (LiFePO4)                                                                             |          |
| Warranty                             | 5 Years Product Warranty (10 years warranty optional), 10 Years Battery Warranty          |          |
| PV Side                              |                                                                                           |          |
| Max. Input Power                     | 60 kW                                                                                     | 100 kW   |
| Start-up Voltage                     | 180 V                                                                                     |          |
| MPPT Voltage Range                   | 150 ~ 850 V                                                                               |          |
| Number of MPPTs                      | 3                                                                                         | 4        |
| Number of Strings per MPPT           | 6                                                                                         | 8        |
| Max. Input Current                   | 40 A * 3                                                                                  | 40 A * 4 |
| Max. Short-circuit Current           | 60 A * 3                                                                                  | 60 A * 4 |
| AC Data (Grid)                       |                                                                                           |          |
| Nominal Output Power                 | 30 kW                                                                                     | 50 KW    |
| Max. Output Apparent Power           | 30 kVA                                                                                    | 50 kVA   |
| Nominal Grid Voltage                 | 3/N/PE, 220 V / 380 V; 3/N/PE, 230 V / 400 V                                              |          |
| Nominal Grid Frequency               | 50 Hz / 60 Hz                                                                             |          |
| Max. Output Current                  | 45.6 A                                                                                    | 76 A     |
| Power Factor                         | < 0.99 (0.8 leading - 0.8 lagging)                                                        |          |
| Max. THD of Current                  | < 3%                                                                                      |          |
| AC Data (Backup)                     |                                                                                           |          |
| Nominal Output Power                 | 30 kW                                                                                     | 50 KW    |
| Max. Output Power                    | 105% continuously ; 160% for 2s                                                           |          |
| Back-up Switch Time                  | < 10ms                                                                                    |          |
| Nominal Output Frequency             | 3/N/PE, 220 V / 380 V; 3/N/PE, 230 V / 400 V                                              |          |
| Max. Output Current                  | 45.6 A                                                                                    | 76 A     |
| Max. THD of Voltage                  | < 2%                                                                                      |          |
| AC Data (Generator)                  |                                                                                           |          |
| Max. Input Power                     | 30 kW                                                                                     | 50 KW    |
| Nominal Input Voltage                | 3/N/PE, 220 V / 380 V; 3/N/PE, 230 V / 400 V                                              |          |
| Nominal Input Frequency              | 50 Hz / 60 Hz                                                                             |          |
| Nominal Input Current                | 45.6 A                                                                                    | 76 A     |
| Efficiency                           |                                                                                           |          |
| Max. Efficiency                      | 97.8%                                                                                     |          |
| European Efficiency                  | 97.4%                                                                                     |          |
| Charging/Discharging Max. Efficiency | 98.5%                                                                                     |          |
| General Parameters                   |                                                                                           |          |
| Dimensions (W x D x H)               | 530 x 880 x 290 mm                                                                        |          |
| Weight                               | 73 kg                                                                                     |          |
| Operating Temperature Range          | -25 ~ 60 °C                                                                               |          |
| Operating Humidity Range             | 0 ~ 95%                                                                                   |          |
| Noise Emission                       | 62 dB                                                                                     |          |
| Corrosion Protection Class           | C5                                                                                        |          |
| Compliance                           | IEC 62109, IEC61000, VDE 4105, VDE 4110, TOR-R25, G99 G100, EN50549-1&-10, C10/11, NC RFG |          |
| Battery Technical Specifications     |                                                                                           |          |
| Module Model                         | M38314-S                                                                                  |          |
| Module Capacity                      | 12.05 kWh                                                                                 |          |
| Depth of Discharge (DoD)             | 95% on grid ; 90% off grid                                                                |          |
| Nominal Voltage                      | 38.4 V                                                                                    |          |
| Max. Charging/Discharging Current    | 157A*                                                                                     |          |
| Operating Temperature Range          | 0 ~ 50 °C (Charging) ; -20 °C ~ 50 °C (Discharging)                                       |          |
| Cycle Life                           | 8000 @ EOL 70% **                                                                         |          |
| Number of Battery Module             | 5 ~ 18***                                                                                 |          |
| Dimensions (W x D x H)               | 550 x 615 x 250 mm                                                                        |          |
| Weight                               | 90 kg                                                                                     |          |
| Compliance                           | IEC 62619, IEC 62040, IEC 61000-6-1/-2/-3/-4, UL9540A                                     |          |

\* Max. charge/discharge current derating may occur with changes in temperature and SoC.  
\*\* Under specific test conditions.  
\*\*\* Max. 12 battery modules per column, up to 2 columns.



# STORION-H30/H50-G3

Exclusive For Small Business All-in-One Solution

► **All-In-One Design**

The Cabinet contains PCS,batteries,DC/DC,STS and EMS,but only occupies a small area  
Lower installation cost: Factory pre-installed ; energized transport with no on-site battery installation required.

► **Small Footprint,Great Energy**

Single cabinet: 120.5 kWh in 1.5m<sup>2</sup>  
With an expansion cabinet: up to 241 kWh  
2-hour/4-hour applications

► **Flexible Configuration**

Support DC Couple,AC Couple,Hybrid Couple  
PV input: 4\*MPPT with 8 inputs  
150% PV power overcapacity

► **On-Grid Application**

Max 10 systems in on-grid parallel: up to 500kW,2.41MWh  
Supports Modbus TCP,Cloud API, for flexible third-party EMS.  
Various Modes: Self-consumption, Peak shaving, Power Rationing Support,Dynamic Tariff  
Scheduling,Imbalance Trading ( Vpp Ready )

► **Off-Grid Application**

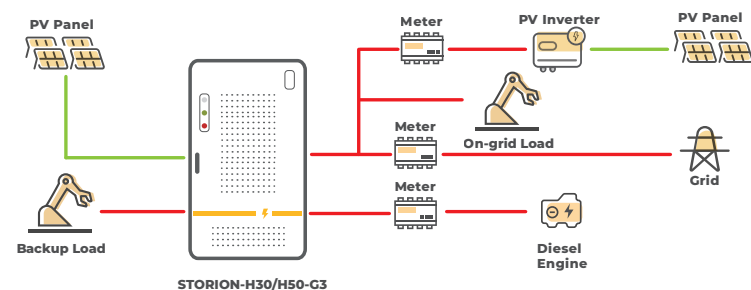
Max 4 systems in off-grid parallel: up to 200kW,964kWh  
On-/Off-grid switching times≤20ms  
High compatibility: 400V ±20% 50/60Hz(±5Hz)





# STORION-H30/H50-G3

## System Diagram



| Model                                 | STORION-H30-G3                                                                                           |  | STORION-H50-G3 |  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------|--|----------------|--|
| System Technical Specification        |                                                                                                          |  |                |  |
| System Capacity                       | 72.3 kWh                                                                                                 |  | 120.5 kWh      |  |
| Standard Battery Rack                 | 1*                                                                                                       |  |                |  |
| Warranty                              | 5 Years Product Warranty (10 years warranty optional), 10 Years Battery Warranty                         |  |                |  |
| PV Side (DC)                          |                                                                                                          |  |                |  |
| Max. input power                      | 60 kW                                                                                                    |  | 75 kW          |  |
| Start-up voltage                      | 210 V                                                                                                    |  |                |  |
| MPPT Voltage Range                    | 200 ~ 850 V                                                                                              |  | 330 ~ 850 V    |  |
| Number of MPPT                        | 4                                                                                                        |  |                |  |
| Number of Strings per MPPT            | 2                                                                                                        |  |                |  |
| Max. Input Current                    | 40 A / 40 A / 40 A / 40 A                                                                                |  |                |  |
| Max. Short-circuit Current            | 50 A / 50 A / 50 A / 50 A                                                                                |  |                |  |
| AC side (on-grid)                     |                                                                                                          |  |                |  |
| Nominal Output Power                  | 30 kW                                                                                                    |  | 50 kW          |  |
| Max. Input Apparent Power             | 60 kVA                                                                                                   |  | 80 kVA         |  |
| Nominal Grid Voltage                  | 3L / N / PE , 220 V / 380 V; 230 V / 400 V; 240 V / 415 V                                                |  |                |  |
| Nominal Grid Frequency                | 50 / 60 Hz (± 5 HZ)                                                                                      |  |                |  |
| Max. Output Current                   | 45.5 A                                                                                                   |  | 75.8 A         |  |
| Max.THD of current                    | < 3%                                                                                                     |  |                |  |
| AC Power Factor                       | 0.8 leading ... 0.8 lagging                                                                              |  |                |  |
| AC side (off-grid)                    |                                                                                                          |  |                |  |
| Nominal Output Power                  | 30 kW                                                                                                    |  | 50 kW          |  |
| Max. Output Apparent Power            | 30 kVA                                                                                                   |  | 50 kVA         |  |
| Nominal Ouput Voltage                 | 3L / N / PE , 220 V / 380 V; 230 V / 400 V; 240 V / 415 V                                                |  |                |  |
| Nominal Grid Frequency                | 50 / 60 Hz (± 5 HZ)                                                                                      |  |                |  |
| Max. Output Current                   | 45.5 A                                                                                                   |  | 75.8 A         |  |
| Max.THD of voltage                    | < 3%                                                                                                     |  |                |  |
| Overload                              | 150%, 10 s                                                                                               |  |                |  |
| Efficiency                            |                                                                                                          |  |                |  |
| Max. Efficiency & European Efficiency | 97.8% & 97.2%                                                                                            |  |                |  |
| Round-Trip Efficiency (RTE) DC→AC     | 92%                                                                                                      |  |                |  |
| General Parameter                     |                                                                                                          |  |                |  |
| Dimensions (W x D x H)                | 1,120 x 1,300 x 2,050 mm                                                                                 |  |                |  |
| Battery Module Connection             | 3 in series                                                                                              |  | 5 in series    |  |
| Weight                                | 1,700 kg (with 5*M77314-S)                                                                               |  |                |  |
| Corrosion Protection Class            | C4                                                                                                       |  |                |  |
| Ingress Protection                    | IP55                                                                                                     |  |                |  |
| Noise Emission                        | ≤ 65 dB @ 1m                                                                                             |  |                |  |
| Operating Temperature Range           | -30 °C ~ 50 °C(PCS > 45°C derating)                                                                      |  |                |  |
| Operating Humidity Range              | 0% ~ 90% (No Condensation)                                                                               |  |                |  |
| Max. operating Altitude               | 3,000 m / 9,842 ft (> 3,000 m derating)                                                                  |  |                |  |
| Fire-fighting System                  | Aerosol + Smoke / Temperature Detection                                                                  |  |                |  |
| Cooling Method                        | HVAC                                                                                                     |  |                |  |
| Communication                         | RS485, CAN, Ethernet, Modbus TCP                                                                         |  |                |  |
| Dispatching Protocol                  | Modbus TCP, API                                                                                          |  |                |  |
| Compliance                            | IEC 61000-1/-2/-3/-4, IEC 62109, IEC 62477,EN 50549, VDE 4105,VDE 4110, AS4777, NRS 097, NC RFG,G99/G100 |  |                |  |

\* Max support 2 battery racks, extra battery cabinet is needed.

# COMPONENTS

| Model                                                                                 |                                                                                     |                                        |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------|
| Battery Module                                                                        |                                                                                     |                                        |
| Parameter                                                                             |  |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
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|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
|                                                                                       |                                                                                     |                                        |
| Model                                                                                 | M77314-S 0.5C                                                                       |                                        |
| Battery Chemistry                                                                     | LiFePO4                                                                             |                                        |
| Pack Configuration                                                                    | 3.2 V / 314 Ah @ 1P24S                                                              |                                        |
| Internal Resistance                                                                   | ≤ 10 mΩ                                                                             |                                        |
| Nominal Capacity                                                                      | 24.1 kWh                                                                            |                                        |
| Nominal Voltage                                                                       | 76.8 V                                                                              |                                        |
| Operating Voltage Range                                                               | 69.6 V ~ 84 V                                                                       |                                        |
| Max. Charging/Discharging Current                                                     | 157 A                                                                               |                                        |
| Cycle Life                                                                            | 8,000@EOL 70% **                                                                    |                                        |
| Operating Ambient Temperature Range                                                   | -20 °C ~ 50 °C***                                                                   |                                        |
| Ingress Protection                                                                    | IP 20                                                                               |                                        |
| Communication                                                                         | CAN                                                                                 |                                        |
| Dimensions (W x D x H)                                                                | 526 x 814 x 250 mm                                                                  |                                        |
| Weight                                                                                | 168 kg                                                                              |                                        |
| Compliance                                                                            | IEC 61000-1/-2/-3/-4,IEC 62619, IEC 62109, IEC 61000, UL9540A                       |                                        |
| Meter (optional)                                                                      |                                                                                     |                                        |
|   | Model                                                                               | DTSU666                                |
|                                                                                       | Rated Voltage                                                                       | 230 V AC / 400 V AC                    |
|                                                                                       | Accuracy Class                                                                      | ± 1%                                   |
|                                                                                       | Communication                                                                       | RS485, Modbus RTU                      |
|                                                                                       | Dimensions (W x D x H)                                                              | 72 × 80 × 101 mm                       |
|                                                                                       | CT Model                                                                            | AKH-0.66                               |
|                                                                                       | CT Current Ratio                                                                    | 400 / 5 A                              |
|                                                                                       | CT Perforation Size                                                                 | Φ 36 mm                                |
| Extension Battery Cabinet (optional)                                                  |                                                                                     |                                        |
|  | Model                                                                               | Extension Battery Cabinet              |
|                                                                                       | Battery                                                                             | M77314 - S                             |
|                                                                                       | Rack Capacity                                                                       | 72.3 kWh / 120.5 kWh                   |
|                                                                                       | Max. Charging / Discharging Current                                                 | 157 A                                  |
|                                                                                       | Battery Rack Voltage Range                                                          | 208.8 ~ 252 V / 348 ~ 420 V            |
|                                                                                       | Number of Battery Module                                                            | 3 / 5 in series                        |
|                                                                                       | Fire-fighting System                                                                | Aerosol + Smoke / Temperatur Detection |
|                                                                                       | Dimensions (W x D x H)                                                              | 1,120 x 1,300 x 2,050 mm               |
| Weight                                                                                | 1,600 kg (with 5 * M77314 - S)                                                      |                                        |
| Parallel Backup Box(Optional)                                                         |                                                                                     |                                        |
|  | Model                                                                               | Parallel Backup Box                    |
|                                                                                       | Max. Connection systems                                                             | 4                                      |
|                                                                                       | Nominal Power                                                                       | 200 kW                                 |
|                                                                                       | Nominal Current                                                                     | 400 A                                  |
|                                                                                       | Nominal Frequency                                                                   | 50/60 Hz                               |
|                                                                                       | Switching Time                                                                      | ≤ 20 ms                                |
|                                                                                       | Ingress Protection                                                                  | IP54                                   |
|                                                                                       | Operating Ambient Temperature Range                                                 | -25 °C ~ 50 °C                         |
| Dimensions (W x D x H)                                                                | 600 × 255 × 800 mm                                                                  |                                        |
| Weight                                                                                | 40 kg                                                                               |                                        |

\*\* Under specific test conditions.

\*\*\* Max. charge / discharge current derating may occur with changes in temperature and SoC.





# STORION-LC-TB125

Pre-assembled Liquid-Cooling BESS

The STORION-LC-TB125 is AlphaESS's first liquid-cooling All-in-One storage cabinet for commercial and industrial use. It combines battery modules, PCS, BMS, EMS, and more into a compact 1.5 m2 footprint.

Each unit delivers 125 kW power and 261 kWh capacity, scalable up to 50 units. Featuring Active Balance and powered by the EMS 5.0 platform, the system supports API and MODBUS TCP for smart, flexible control across diverse applications like peak shaving, microgrids, and self-consumption.

► **Plug & Play, Quick Deployment**

- Factory-assembled with PCS, EMS, BMS, battery modules, liquid cooling, and fire suppression
- 125 kW inverter, 261.2 kWh per cabinet, up to 522.4 kWh per system. Supports up to 50 units in parallel

► **High Efficiency, Smarter Returns**

- Liquid-Cooling System and precision thermal control - powering stability, safety, and efficiency
- 290% System Efficiency maximizes energy utilization and conversion
- BMS: Active balance technology improves cell consistency extends battery life by 10%+, and delivers 23x efficiency than passive balancing
- Accelerated ROI: High performance meets smart economics-achieves ROI in as fast as 3 years with multiple revenue streams

► **Thermal Management, Intelligent O&M & Business Continuity**

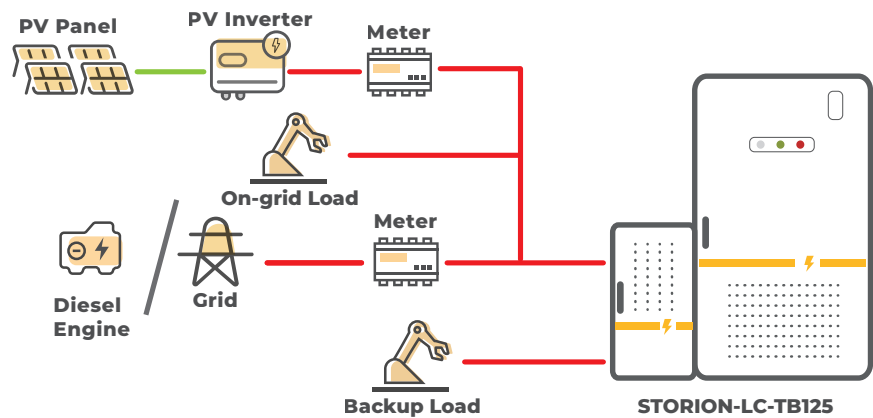
- Smart Thermal Control System: Monitors cell temperature and adjusts cooling dynamically
- Latest EMS 5.0 Platform: Compact with API and MODBUS TCP for smart and flexible control
- Integrated Fault Diagnosis: Accurate issue detection via builtin EMS tools
- Multi-platform O&M: Support intelligent customer management and improve efficiency
- Seamless Backup (<20ms): STS enables instant grid/off-grid switching, ensuring uninterrupted power for critical loads.(optional)





# STORION-LC-TB125

System Diagram



| STORION-LC-TB125                    |                                                                                                              |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------|
| System Parameter                    |                                                                                                              |
| Battery Chemistry                   | LiFePO <sub>4</sub>                                                                                          |
| Energy Capacity                     | 261.2 kWh per Cabinet                                                                                        |
| Warranty                            | 5 Years Product Warranty (10 years warranty optional), 10 Years Battery Warranty                             |
| AC side (on-grid)                   |                                                                                                              |
| Nominal Output Power                | 125 kW                                                                                                       |
| Max. Output Apparent Power          | 137.5 kVA                                                                                                    |
| Nominal Grid Voltage                | 400 V(±15%), 3L/N/PE                                                                                         |
| Nominal Grid Frequency              | 50 / 60 Hz (± 5 Hz)                                                                                          |
| Max.THD of current                  | < 3 % (Nominal Power)                                                                                        |
| AC Power Factor                     | 1.0 leading ~ -1.0 lagging                                                                                   |
| AC side (off-grid)                  |                                                                                                              |
| Nominal Output Power                | 125 kW                                                                                                       |
| Nominal Voltage                     | 400 V 3L / N / PE                                                                                            |
| Frequency                           | 50 / 60 Hz                                                                                                   |
| Overload                            | 110% Continuous; 120% 1 min                                                                                  |
| Backup Switch Time (with extra STS) | ≤ 20ms                                                                                                       |
| Max.THD of voltage                  | < 3 % (Linear Power)                                                                                         |
| Efficiency                          |                                                                                                              |
| Max. Efficiency                     | 97%                                                                                                          |
| System Efficiency (RTE)             | 90.6%                                                                                                        |
| General Parameter                   |                                                                                                              |
| Dimension(W x D x H)                | 1003 x 1500 x 2482 mm *                                                                                      |
| Battery Modules Connection          | 5 Modules in Series                                                                                          |
| Weight                              | 2.9 t *                                                                                                      |
| Corrosion Protection Class          | C4                                                                                                           |
| Ingress Protection                  | IP 55                                                                                                        |
| Noise Emission                      | < 70 dB@1m **                                                                                                |
| Operating Ambient Temperature Range | -20 °C ~ 50 °C (> 45 °C Derating)                                                                            |
| Operating Humidity Range            | 0 ~ 95 % RH                                                                                                  |
| Max Operating Altitude              | 3000 m(> 2000 m Derating)                                                                                    |
| Fire-fighting System                | Aerosol (Pack & Rack)+ Sprinkler + Smoke / Temperature Detection                                             |
| Communication                       | CAN, RS485, USB, LAN, WIFI                                                                                   |
| Dispatching Protocol                | Modbus TCP, API                                                                                              |
| Compliance                          | IEC 62477, IEC 61000, IEC 62109, IEC 61727, IEC 62116, EN 50549-1&2&10, VDE 4105/4110/4120, G99, TOR, C10/11 |

\* The dimension and weight do not include STS cabinet.  
\*\* < 75dB @ 1m when STS cabinet is installed.



# COMPONENTS

| Model                                |                                  | STORION-LC-TB125                                                 |  |
|--------------------------------------|----------------------------------|------------------------------------------------------------------|--|
| Battery Cluster System               |                                  |                                                                  |  |
| Item                                 | Data                             |                                                                  |  |
|                                      |                                  |                                                                  |  |
| Battery Module                       |                                  | M166314-S                                                        |  |
| Battery Chemistry                    |                                  | LiFePO <sub>4</sub>                                              |  |
| Pack Configuration                   |                                  | 3.2 V / 314 Ah @ 1P52S                                           |  |
| Internal Resistance                  |                                  | ≤ 10 mΩ                                                          |  |
| Nominal Capacity                     |                                  | 52.124 kWh                                                       |  |
| Rated Voltage                        |                                  | 166.4 V                                                          |  |
| Operating Voltage Range              |                                  | 140.4 ~ 187.2 V                                                  |  |
| Rated Charging/Discharging Power     |                                  | 26.062 kW (0.5 P)                                                |  |
| Cycle Life                           |                                  | 8000 @ EOL 70% *                                                 |  |
| Operating Ambient Temperature Range  |                                  | -30 °C ~ 55 °C **                                                |  |
| Ingress Protection                   |                                  | IP 67                                                            |  |
| Communication                        |                                  | CAN                                                              |  |
| Dimensions (W x D x H)               |                                  | 810 x 1125.5 x 237.5 mm                                          |  |
| Weight                               |                                  | 333 kg                                                           |  |
| Compliance                           |                                  | IEC 62619, IEC 62477, IEC 61000, UL9540A                         |  |
| Meter (Optional)                     |                                  |                                                                  |  |
|                                      | Model                            | DTSU666                                                          |  |
|                                      | Rated Voltage                    | 230 V AC / 400 V AC                                              |  |
|                                      | Accuracy Class                   | ±1%                                                              |  |
|                                      | Communication                    | RS485, Modbus RTU                                                |  |
|                                      | Dimensions (W×D×H)               | 72 x 80 x 101 mm                                                 |  |
|                                      | CT Model                         | AKH-0.66, K-30×20                                                |  |
|                                      | CT Current Ratio                 | 400 / 5 A                                                        |  |
|                                      | CT Perforation Size              | 32 x 22 mm                                                       |  |
| Expansion Battery Cabinet (Optional) |                                  |                                                                  |  |
|                                      | Model                            | STORION-LC261                                                    |  |
|                                      | Battery                          | M166314-S                                                        |  |
|                                      | Cluster Capacity                 | 261.2 kWh per Cabinet                                            |  |
|                                      | Rated Charging/Discharging Power | 130.6 kW(0.5P)                                                   |  |
|                                      | Battery Cluster Voltage Range    | 702 ~ 936 V                                                      |  |
|                                      | Battery Rack                     | 5 Modules in series                                              |  |
|                                      | Fire-Fighting System             | Aerosol (Pack & Rack)+ Sprinkler + Smoke / Temperature Detection |  |
|                                      | Dimensions (W×D×H)               | 1003 x 1500 x 2482 mm                                            |  |
|                                      | Weight                           | 2.7 t                                                            |  |
| STS (Optional)                       |                                  |                                                                  |  |
|                                      | Model                            | ALPSTS-300-O                                                     |  |
|                                      | Nominal Power                    | 300 kW                                                           |  |
|                                      | Nominal Frequency                | 50 / 60 Hz                                                       |  |
|                                      | On- / Off- grid switching time   | ≤ 20 ms                                                          |  |
|                                      | Weight                           | ~ 120 kg                                                         |  |
|                                      | Dimension (W x D x H)            | 473 x 752 x 1080 mm                                              |  |
|                                      | Max. Operating Altitude          | 3000 m (> 2000 m derating)                                       |  |
|                                      | Ingress Protection               | IP 55                                                            |  |
|                                      | Corrosion Protection Class       | C4                                                               |  |

\*Under specific test conditions.  
\*\*Max. charge/discharge current derating may occur with changes in temperature and SoC.





# 3 ALPHA CLOUD & EMS



## ► Monitoring

- 10-second real-time system data updates, real-time selfcheck & fault warning system, predict anomalies in advance, reduce labor costs
- Enhanced monitoring of multi-level real-time core-level information
- Grouping management system, batch setup system, improve the efficiency of operation and maintenance

## ► Security

- Built-in communication encryption localized European data center for cybersecurity
- End-to-end data security for peace of mind.

## ► Visualization

- Provide BI dashboard and rich statistical charts for business insights

## ► Adaptiveness

- Customized strategies to support Self-Consumption, Time-Sharing Control, Peak Shaving, Power Rationing Support, SOC Balancing, Power backup, and Dual Power
- Support Modbus TCP and API connection

## ► Intelligence

- Cloud platform with remote diagnostics, EMS upgrades, and multi-platform integration
- AI dynamic tariff scheduling strategy with PV forecasting
- VPP Ready



# A

## AFTER-SALES SERVICE

# 10<sup>th</sup>

Sinds 2015 IN EUROPA



### Reliable Local Support

- Local engineer teams across Europe
- Quick on-site response through regional dispatch
- Local spare parts warehousing ensures faster repairs



### 24/7 Protection & Professional Support

- Prevents issues and ensures uptime
- Emergency support available in English, German, Dutch, Italian, etc.
- Regular system check-ups and performance evaluations



### Easy & Transparent Service Process

- Intelligent dispatch platform with automatic job assignment
- Real-time tracking of service progress
- Clear procedures from start to finish, with archived service records and customer feedback tracking



### Training & Empowerment for Installers

- Local training centers + online training support
- Complete installer toolkits: manuals, commissioning guides, FAQs
- Project initiation support and on-site installation assistance



### Standardized Service for Consistent Experience

- Fully standardized service protocols across regions
- Committed service response time guarantees
- Unified technical acceptance criteria for quality assurance

## A DECADE OF LOCAL COMMITMENT

For over a decade, AlphaESS has built a reliable and responsive ecosystem across Europe — not just selling products, but delivering service with accountability and local insight.

- Established Technical Service Centers in Europe
- Local Engineering Teams familiar with regional regulations and customer expectations
- Continuous Optimization of service models to align with European market feedback
- 10 Years of Proven Performance, empowering local partners and users with dependable solutions
- Long-Term Investments in local warehousing, training hubs, and tech support resources

## 10 YEARS IN EUROPE

Served over **90,000**  
households and C&I users

Installed Power over  
**800 MW**

Installed Capacity over  
**1.2 GWh**





# 5 GLOBAL CASES

Unlocking the Potential of C&I Energy Systems



**50kW / 136kWh**

PV + STORAGE | SOMERSET, UNITED KINGDOM



**2MW / 4MWh**

PV + STORAGE | LITHUANIA



**50 kW / 51 kWh**

PV + STORAGE | WOLFSBERG, AUSTRIA



**140MW / 280MWh + 80MW / 160MWh**

PEAK SHAVING AND FREQUENCY REGULATION | CHINA



**50kW/100kW & 100kWh-300kWh**

SOLAR-BATTERY-DIESEL MICROGRID SYSTEM | ASIA



**500 kW / 1 MWh**

PV + STORAGE + GENSET | AFRICA

