

AlphaESS

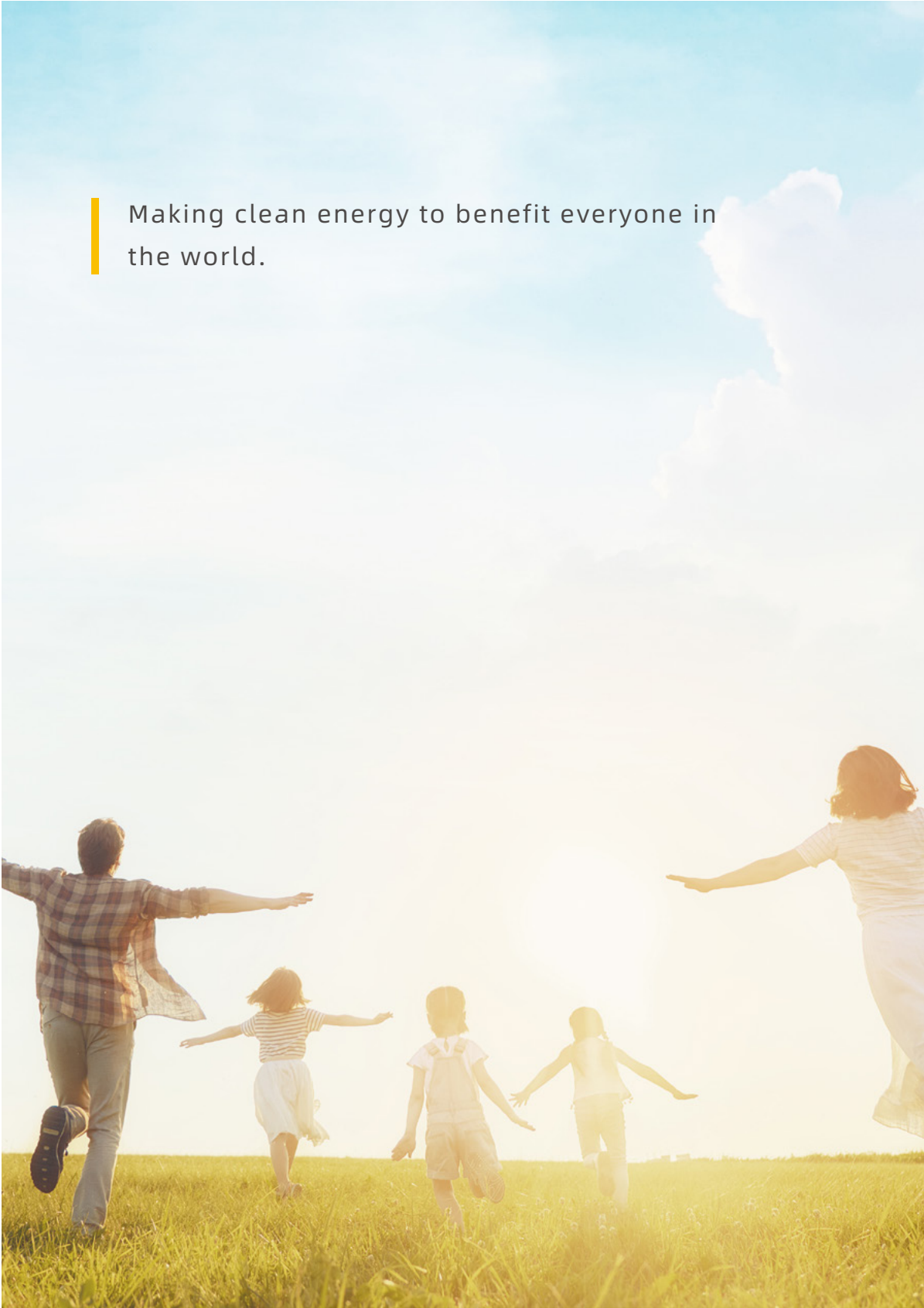
AN ENERGY STORAGE SYSTEM INTEGRATOR
OFFERING FULL POWER RANGE



YOUR SMART ENERGY



AlphaESS



Making clean energy to benefit everyone in the world.



AlphaESS is a leading global energy storage solution and service provider. The company specializes in residential and commercial applications delivering pre-eminent products and fit-for-purpose solutions. With 10+ subsidiaries in Australia, Germany, the UK, the US, Italy, and Singapore etc., AlphaESS provides local services and 75000+ systems actively running in over 75 countries, enabling millions of people to live with reliable, accessible and clean energy.



10

Years Since 2012



40%

Employees in R&D



10

Subsidiaries



3

Factories



75+

Countries



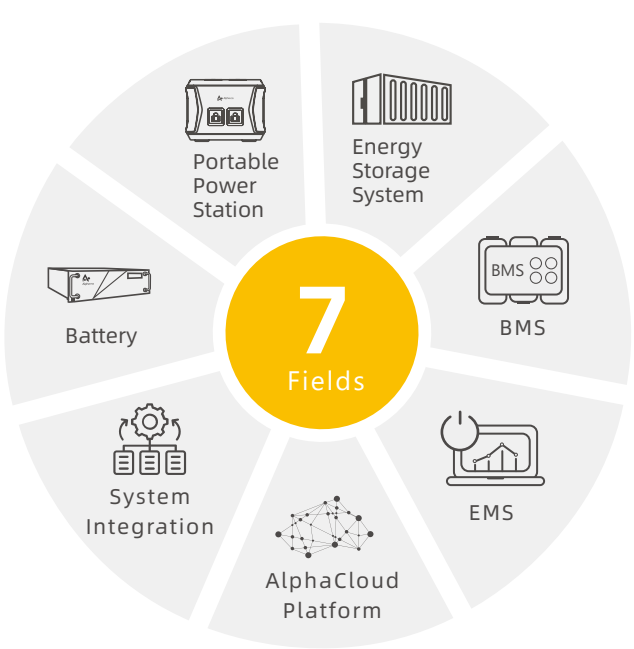
75,000+

Running Systems

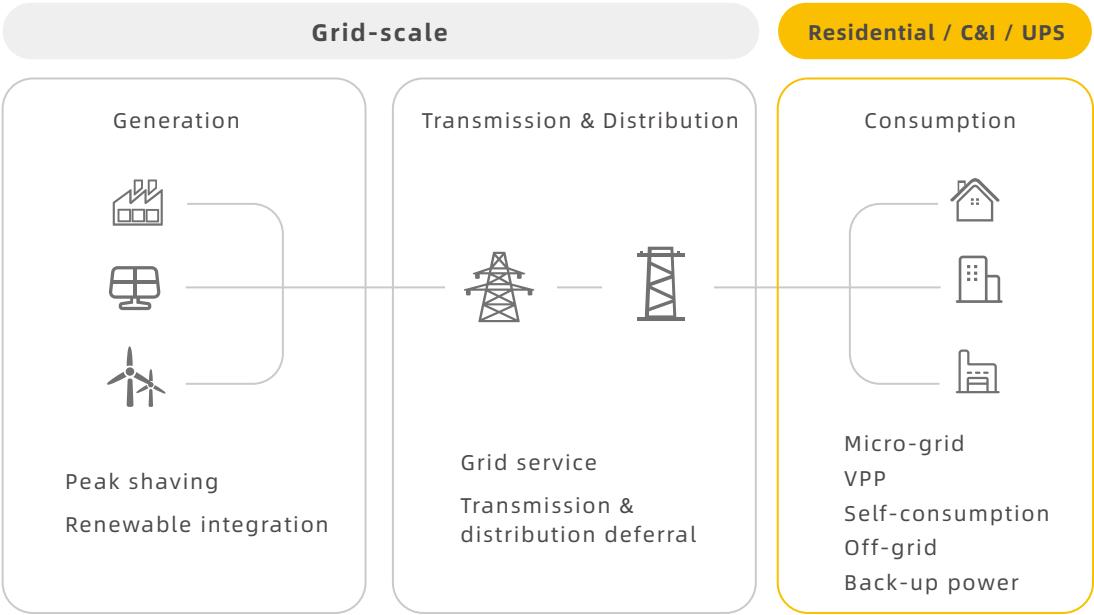
GLOBAL PRESENCE AND AWARDS



OUR EXPERTISE



MAJOR APPLICATIONS



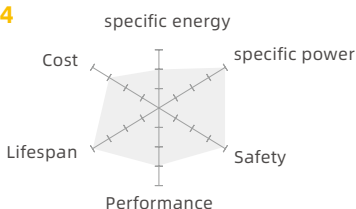
WHY ALPHAESS

1. Safety First

ONLY

The safest chemistry LiFePO4

We use only LiFePO4 batteries to ensure our customers benefit from premium electrical characteristics while maintaining the highest safety standards.



The most robust cell types

To ensure long mechanical lifespans and safety, AlphaESS never uses unreliable casing materials.



Global TIER 1 cell manufacturer

2. Core

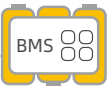
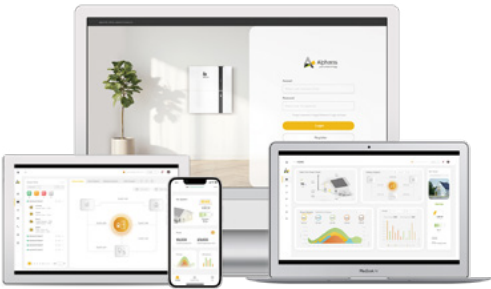
Application	 Energy Transformation	 Energy Conservation	Secondary Development from Our Partners
	 Smart Home	 Capitalization	
Platform	 Prediction	 Scheduling	AlphaESS Core Building a "Windows or Android System" within the Energy Sector ESS covering full power range / Power facilities
Communication Control	 AI Algorithm	 Big Data	
	 5G/4G Power Carrier	 Cloud Communication	
Hardware	 BMS	 EMS	
	 Power Generation/Transmission/ Distribution	 Grid	

3. Smart Energy

AlphaCloud Platform

Connects all the AlphaESS systems and enables monitoring, smart control, trading and energy service.

-  Make maximum use of your PV system
-  Smartly control your system to reach the highest self-consumption
-  Set parameters control and build VPP
-  Monitor your system 24/7 and upgrade it remotely
-  Enjoy a smart home with IoT compatible



Battery Management System

Alpha BMS research institute

20+ BMS R&D veteran researchers with 10+ year ESS BMS experience

High SOC accuracy

Our SOC algorithm is 97% accurate

Comprehensive protection

3-level software protection,
Redundant hardware level protection

Functional safety

ASIL (Automotive Safety Integrity Level) hardware (Level D), software and system architecture IEC61508 testing, the highest level (D).

Comprehensive and optimized protection including multiple monitoring items, POST, hardwired alarm system, multiple protection during operation



Energy Management System

Multifunctional and powerful

Local absorption, reducing wind and PV power abandonment
Peak and frequency regulation
PV and wind power self-consumption
Load shifting
Backup power supply, UPS / EPS
Peak shaving
Micro/Off-grid control
Demand charge management

Highly compatible

Enabling external control through SCADA, MODBUS, ETHERNET etc.,

Safety

Safety control designs



Residential

3kW - 10 kW

SMILE-B3

SMILE-B3-PLUS

SMILE-S5

SMILE-G3

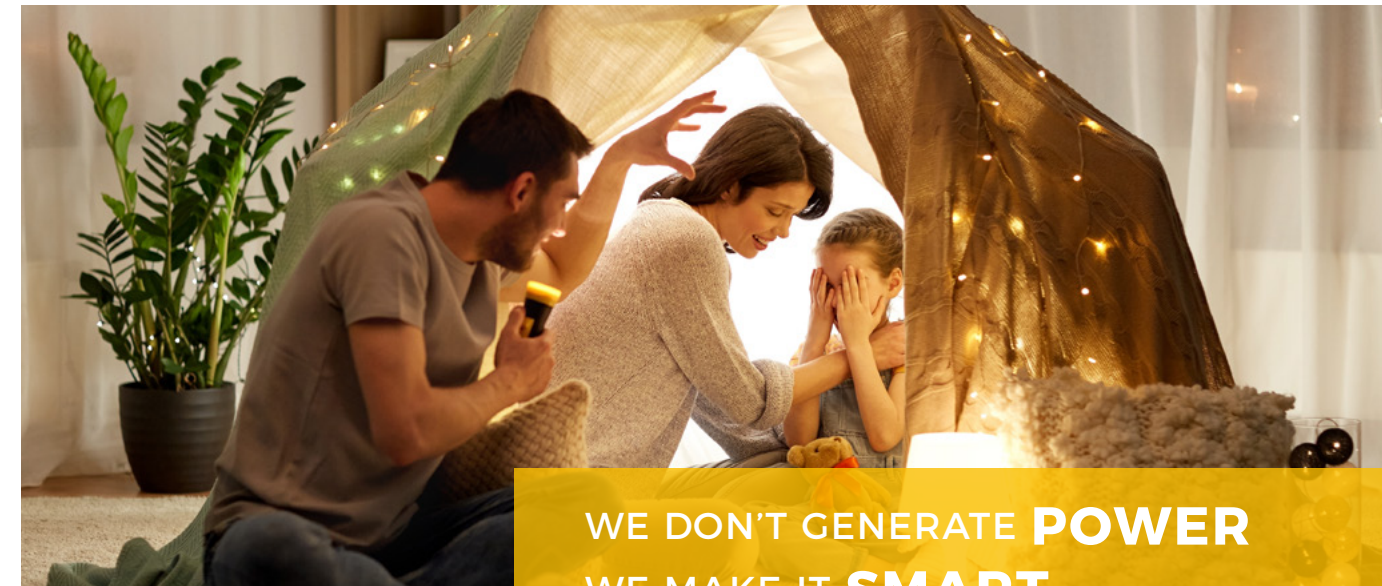
SMILE5

SMILE-S6-HV

SMILE-T10-HV

SMILE-EVCT11

- S**elf sufficient
- M**odular battery
- I**ntelligent control
- L**ong lifespan
- E**legant design



WE DON'T GENERATE **POWER**
WE MAKE IT **SMART**



UPS Ability



24/7 Online Monitor



Safe and Reliable(LFP ONLY)



Modular Design



High Compatibility



Easy Installation and Expansion



SMILE-B3: 3kW / 2.9kWh Expandable to 17.2kWh

All-in-one Module

Battery inverter 3kW

2.9kWh storage integrated (1C, 96% DoD, 51.2 V)

610 x 219 x 650mm (W x D x H) / 50 kg

IP65 (Outdoor) / IP21 (Indoor)

Free online monitoring

Wifi communication (optional)

Open API, modbus control portal



Expandable Battery Module: M4856-P

2.9kWh battery (1C, 96% DoD, 51.2 V)

610 x 236 x 302 mm (W x D x H) / 39 kg

IP65 (Outdoor) / IP21 (Indoor)

Max. 5 units to the main unit (parallel)



SMILE-B3-PLUS Expandable to 30.24kWh

All-in-one Module

AC-Coupling

Nominal output 3 kW AC.

60 kg

630 x 236 x 685 mm
(W x D x H)

IP65 (Outdoor)

Built-in 5.04kWh battery



Expandable Battery Module

1 C, 95% DoD, 48V

40 kg

650 x 219 x 315 mm
(W x D x H)



SMILE-BAT-5P

NEW!

SMILE-S5: 5kW Expandable to 30.24kWh

SMILE-S5

Hybrid inverter

Max. PV input 8kW DC.

Nominal output 5kW AC.

640 x 250 x 350mm (W x D x H) / 20 kg

IP65 (Outdoor)

UPS 20A continuous for critical loads

Open API, modbus control portal



VPP Ready



Slim but Powerful



Built-in Battery



Easy Installation

Expandable Battery Module

IP65 (Outdoor) 6 Max. modules in parallel

1C, 95% DoD, 48 V

40 kg

650 x 219 x 315 mm

(W x D x H)

5.04 - 30.24 kWh



SMILE-BAT-5P

NEW!

SMILE-G3: 3.6kW/5kW Expandable to 60.5kWh

① SMILE-G3-INV

Hybrid / AC inverter

Max. PV Input Power 7.2 / 10 kW DC.

610 x 366 x 212 (W x D x H) / 19.5 kg

IP65 (Outdoor)

Open API, modbus control portal



200% PV Input



Grid-Forming Function



Off-Grid Parallel Operation



Faster Response for VPP Control

② Expandable Battery Module

IP65 (Outdoor) 6 Max. modules in parallel

0.5C, 95% DoD, 96V

92 kg

610 x 212 x 790 mm (W x D x H)

10.1 - 60.5 kWh

5 kWh
Up to 6



SMILE-G3-BAT-10.1P

SMILE5: 5kW Expandable to 80kWh

① SMILE5-INV

Hybrid inverter

Max. PV input 6.66 kW DC.

Nominal output 5 kW AC.

100Amp integrated charger

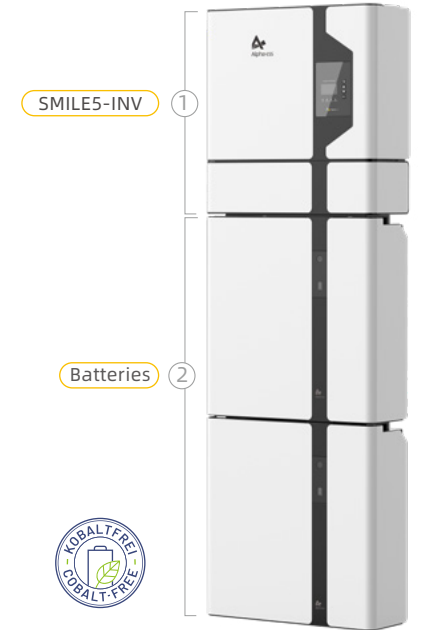
610 x 210 x 627 mm (W x D x H) / 35 kg

IP65 (Outdoor) / IP21 (Indoor)

UPS 4kW continuous for critical loads

Open API, modbus control portal

An integrated cable box with PV and battery isolator,
AC circuit breaker



② Battery Module Options

IP65 (Outdoor) / IP21 (Indoor) 6 Max. modules in parallel

2.9 kWh
Up to 6



M4856-P

1C, 96%DoD, 51.2 V

39 kg

610 x 236 x 302 mm
(W x D x H)

2.9 - 17.2 kWh

5.7 kWh
Up to 6



SMILE5-BAT

0.5C, 96%DoD, 51.2 V

73 kg

610 x 207 x 629 mm
(W x D x H)

5.7 - 34.4 kWh

10.1 kWh
Up to 6



SMILE-BAT-10.1P

0.5C, 96%DoD, 48 V

95 kg

610 x 236 x 693 mm
(W x D x H)

10.1 - 60.6 kWh

13.3 kWh
Up to 6



SMILE-BAT-13.3P

0.35C, 100%DoD, 48 V

121 kg

610 x 236 x 816 mm
(W x D x H)

13.3 - 80 kWh

SMILE-S6-HV: 6kW Expandable to 49.2kWh

① SMILE-S6-HV-INV

Max. PV input 9kW DC.

Nominal output 6kW AC.

100Amp integrated charger

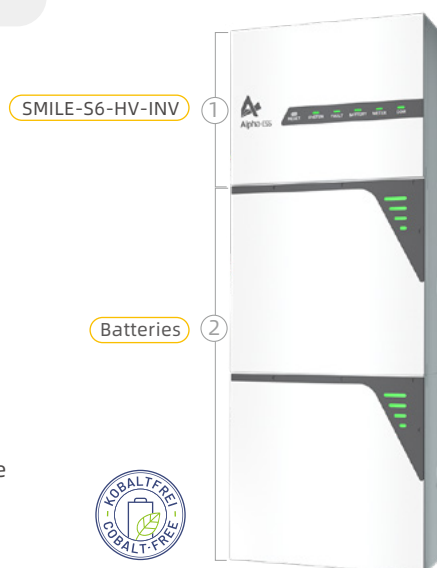
580 x 230 x 440 mm (W x D x H) / 25 kg

IP65 (Outdoor)

UPS 6 kW continuous for critical loads

Open API, modbus control portal

With PV and battery isolator, AC circuit breaker on the side



SMILE-T10-HV:10kW Expandable to 49.2kWh

① SMILE-T10-HV-INV

Max. PV input 16 kWp (2 MPPT)

Max. output power 10 kW

580 x 230 x 606 mm (W x D x H) / 30 kg

380 V / 400 V rated voltage

IP65 (Outdoor)

An integrated high voltage cable box with PV and battery isolator, AC circuit breaker

BMS & EMS integrated



Full Off-grid Compatible



Full 6kVA Backup



Best Choice for VPP



Three Phase Output



Low-weight Inverter



Compatible with More PV

② Battery Module Options

IP65 (Outdoor) 6 Max. modules in parallel

5 kWh module

1 C, 95%DoD, 153.6 V

50 kg

580 x 226 x 530 mm

(W x D x H)

5 -29.5 kWh

5 kWh
Up to 6



SMILE-BAT-5PH

8.2 kWh module

1C, 95%DoD, 256 V

88 kg

580 x 230 x 820 mm

(W x D x H)

8.2 - 49.2 kWh

8.2 kWh
Up to 6



SMILE-BAT-8.2PH

② Expandable Battery Module

IP65 (Outdoor) 6 Max. modules in parallel

8.2 kWh module

1C, 95%DoD, 256 V

88 kg

580 x 230 x 820 mm (W x D x H)

8.2 - 49.2 kWh

8.2 kWh
Up to 6



SMILE-BAT-8.2PH

EV CHARGER



SMILE-EVCT11

Dimension (H x W x D): 325 x 181 x 87 mm

Weight: 3.2 kg

Operating Temperature: -30 ~ 50 °C

Related Humidity: 15 ~ 90%

Operating Altitude: < 2000 m

AC Rated Voltage: 400 V, 3P+N+PE

Rated Current: 16 A

Frequency: 50/60 Hz

AC Output Voltage: 400 V

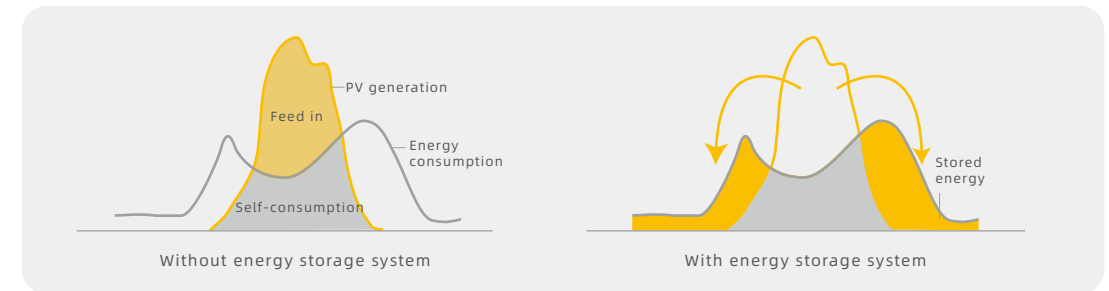
Max. Current: 16 A

Rated Power: 11000 W

- 👍 Easy installation
- 👍 Light and durable
- 👍 Key card identifiable
- 👍 Vertical & wall-mounted
- 👍 Preset charging available

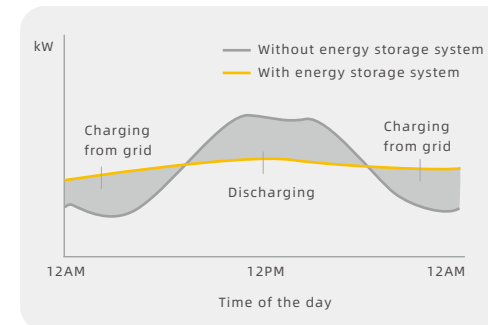
HOW TO SAVE MONEY

1. Self-Consumption Optimization



Minimize grid energy consumption by storing surplus PV generation in the battery and discharging the energy as needed to match your electricity usage.

2. Load Shifting



User-end: Load shifting

Save money by avoiding peak electricity rates by storing electricity during off-peak times and discharging stored energy during peak times.

Transmission & distribution: Peak shaving

Avoid substation and power line upgrades by providing a fast and responsive emission free solution to variable load peaks.

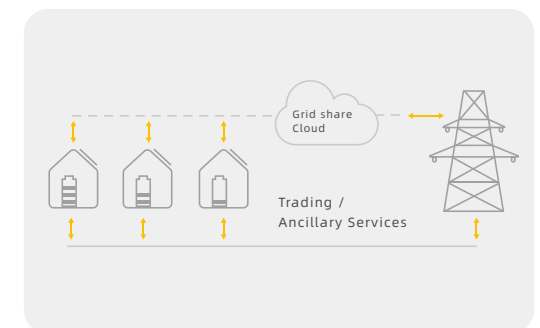
Ancillary services

The combination of several flexible production and consumption units, controlled by a central intelligent system, is the core behind a VPP, which can stabilize the grid by balancing energy supply and demand.

Electricity arbitrage

Optimize trading strategies to maximize returns. VPP can utilize the aggregated power to react to changes in electricity pricing on the exchanges by adapting to the existing supply of power on the grid and thus optimize trades.

3. VPP Revenue



Li-ion Battery

PORTABLE POWER STATION

MAY THE POWER BE WITH YOU



EMERGENCY
To survive a blackout



TRAVEL
Portable power for adventures



RENEWABLES
Fast solar recharging with MPPT



Exclusive for Japan
MINI SMILE



MS500

MS1000

Output Power	500 W	1000 W
Nominal Capacity	500 Wh	1000 Wh
Dimension (L x W x H)	300 x 190 x 227.5 mm	333 x 229 x 263 mm
Weight	6.18 kg	10.55 kg
Output Port	8	9



High-class



Multiple charging methods



Emergency power supply for outdoor & home outage

BlackBee 1000



Output Power	1000 W	Type-C Output	2
Nominal Capacity	1036 Wh	USB Output	2
AC Output	3	Wireless Charging Output	2
DC Output	3	Weight	11 kg



Capable of charging 12 devices simultaneously



State of the art & practical design



Wireless charging pad for mobiles & devices



Fast solar recharging with MPPT



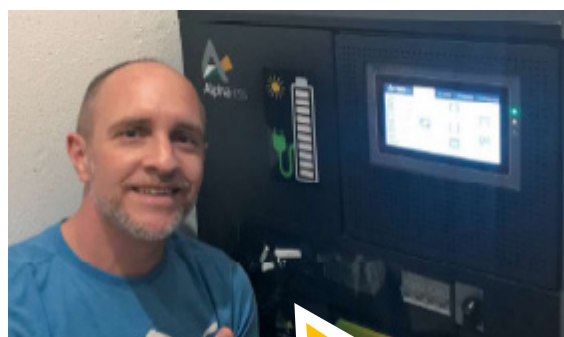
94V0 flame-resistant case



SOS function



Running in
75+ countries
around the world



" AlphaESS storage system - good product, good concept , good advice , good implementation . I am still satisfied with my photovoltaic system and integrated power storage and can only recommend the system to everyone. "



Commercial & Industrial

30 kW - 10 MW+



Back-up power



Off-grid



Micro-grid



Fuel saving solution



Self-consumption



Demand charge management

A **WIDE RANGE** of hybrid and battery PCS solutions for all your C&I projects with various requirements

H30 30 kW hybrid PCS

NEW!

A small commercial and industrial solution for on/off grid with singular hybrid inverter

- 45 kW Max. PV input
- On/off-grid switching
- Built-in isolation transformer
- Battery DC voltage range: 150-850 V
- Battery Module: M38210-S, M7790-S



T30 30 kW battery PCS

Flexible power modular design
24/7 Monitoring with local interface

- 30 kW nominal output power
- AC-coupled solution
- Optional STS module
- Transformer integrated
- Battery DC voltage range: 200-750 V
- Battery Module: M48112-S



T50 / 100 50 / 100 kW hybrid PCS

A double inverter capacity PV input for off-grid
Flexible power modular design

- 100 / 200 kW Max. PV input
- 1 MPPT
- Optional STS integrated transformer module
- Battery DC voltage range: 250-520 V
- Battery Module: M48112-S



TB50 / 100 / 150 50 / 100 / 150 kW battery PCS

Multiple MPPTs for flexibility / Grid-forming with solar inverters
Keep operating off-grid

- AC-coupled solution
- 1 / 2 / 3 x 60 kW PV string inverters
- 4 / 8 / 12 MPPT
- STS / Transformer integrated
- Battery DC voltage range: 500-850 V
- Battery Module: M48112-S, M38210-S, M48240-S



TB250 / 500 250 / 500 kW battery PCS

Heavy-duty industrial application

- AC-coupled solution
- With max. 10 x 50 kW PV string inverter
- 250 kW transformer integrated
- 500 kW transformerless
- Separate STS / cabinet required
- Battery Module: M48112-S, M38210-S, M48240-S



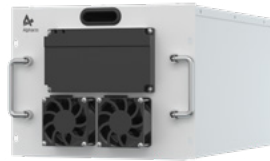
A **FLEXIBLE** battery pack solution to meet all your C&I energy storage capacity needs

M7790-S
The 1C battery solution

High Energy Density with High C-rating Battery Solution

Energy Capacity: 6.93 kWh
Nominal Voltage: 76.8 V
Max. charge and discharge: 90.5A (1hour)
Weight: 64 kg

NEW!



M48112-S
The 1C battery solution

Small capacity modular and flexible High C-rating battery solution

Energy capacity: 5.7 kWh
Depth of discharge: 90%
Nominal voltage: 51.2 V
Operating voltage range: 48-46.3 V
Max. charge and discharge: 112 A (1hour)
weight: 65 kg



M38210-S
The 0.5C battery solution

High energy density solution
Cost effective solution

Energy capacity: 8.1 kWh
Depth of discharge: 90%
Nominal voltage: 38.4 V
Operating voltage range: 36-42.2 V
Max. charging and discharging current: 105A (2hours)
Weight: 62 kg



M48240-S
The 0.5C battery solution

High energy density solution
Cost effective solution

Energy capacity: 11.5kWh
Depth of discharge: 90%
Nominal voltage: 48 V
Operating voltage range: 45-52.8 V
Max. charging and discharging current: 120A (2hours)
Weight: 112 kg



A **LARGE VARIETY** of battery storage racks or container solutions to be different scenarios in C&I installations

Battery Racks
Max 161.3 kWh each rack

Perfect for installation in rooms

28.6 - 51.6 kWh (M48112-S)
48.4 - 161.3 kWh (M38210-S)
Easy to parallel to MWh



Outdoor Battery Cabinet
Max. 96.8 kWh each cabinet

Perfect outdoor solutions for remote areas

34.4 - 51.6 kWh (M48112-S)
56.4 - 96.8 kWh (M38210-S)
Easy to parallel to MWh



10/20/40 ESS Container
Max. 3225.6 kWh in one container

A truly turn key ESS solution

10feet: Max.361.3kWh (1C) / Max.645.1 kWh (0.5C)
20feet: Max.929kWh (1C) / Max.1474.6 kWh (0.5C)
40feet: Max.1909.6 kWh (1C) / Max.3225.6 kWh (0.5C)



GLOBAL PROJECTS



Project:
100 kW / 400 kWh

Application:
Solar + Diesel + Storage
for oil pumps sites

Location:
Moomba, SA, Australia

Project:
2.5 MW / 10 MWh

Application:
Storage + Peak Shaving

Location:
Nanjing, China



Project:
100 kW / 412 kWh

Application:
Solar + Storage + Diesel
for Rural Electrification

Location:
Pet Pye village, Myanmar



Project:
500 kW / 1.26 MWh

Application:
UPS+ Load Management
for Pharmaceutical factory

Location: Cambodia



Project:
50/100/150 kW (23sites)

Application:
Solar + Storage + Diesel
for Rural Electrification

Location: Myanmar



Project:
500kW / 1.1MWh

Application:
UPS + Load shifting + Self-
consumption, Renewable
Demonstration Park

Location: Yangzhong, China





Project:
500 kW / 1 MWh

Application:
Energy Independence for hospital

Location:
Accra, Ghana

Project:
60 kW / 68 kWh

Application:
Storage + Peak Shaving for EV charging

Location:
China



Project:
2 MW / 8 MWh

Application:
Storage + UPS + Peak Shaving

Location:
Changshu, China



Project:
1 MW / 2 MWh

Application:
Energy Self-sufficient Shopping Mall

Location:
Accra, Ghana



Project:
100 kW / 670 kWh
50 x SMILE5 5 kW

Application:
Energy Self-sufficient Community

Location: Australia



Project:
50 kW / 103 kWh

Application:
Solar + Storage + Off Grid

Location:
NSW, Australia





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