



The Next-level Hybrid Energy Storage System

AlphaESS **SMILE G3**

More Energy. Longer Lifespan. Ultimate Safety.

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SMILE G3

Residential Energy Storage System

Your perfect energy solution



3.6-20 kW
Output Power

3.6-111.6 kWh
Usable Capacity

Dynamic Tariffs
VPP Ready

SMILE-G3 series offers single-phase solutions ranging from 3.6 to 8 kW and three-phase solutions from 4 to 20 kW for home energy storage, catering to both AC and DC coupled scenarios. It covers a comprehensive range of needs including self-consumption for residential homes, peak-valley arbitrage, dual power supply with diesel generators, VPP (Virtual Power Plant) scheduling, solar storage charging, and solar storage heating.

Why SMILE G3 is built different?



All-in-one solution

Hybrid inverter, LFP battery, EMS & BMS — fully integrated for seamless performance.



Stackable and expandable

Flexible from 3.6 to 111.6 kWh, adapting to any household's energy needs.



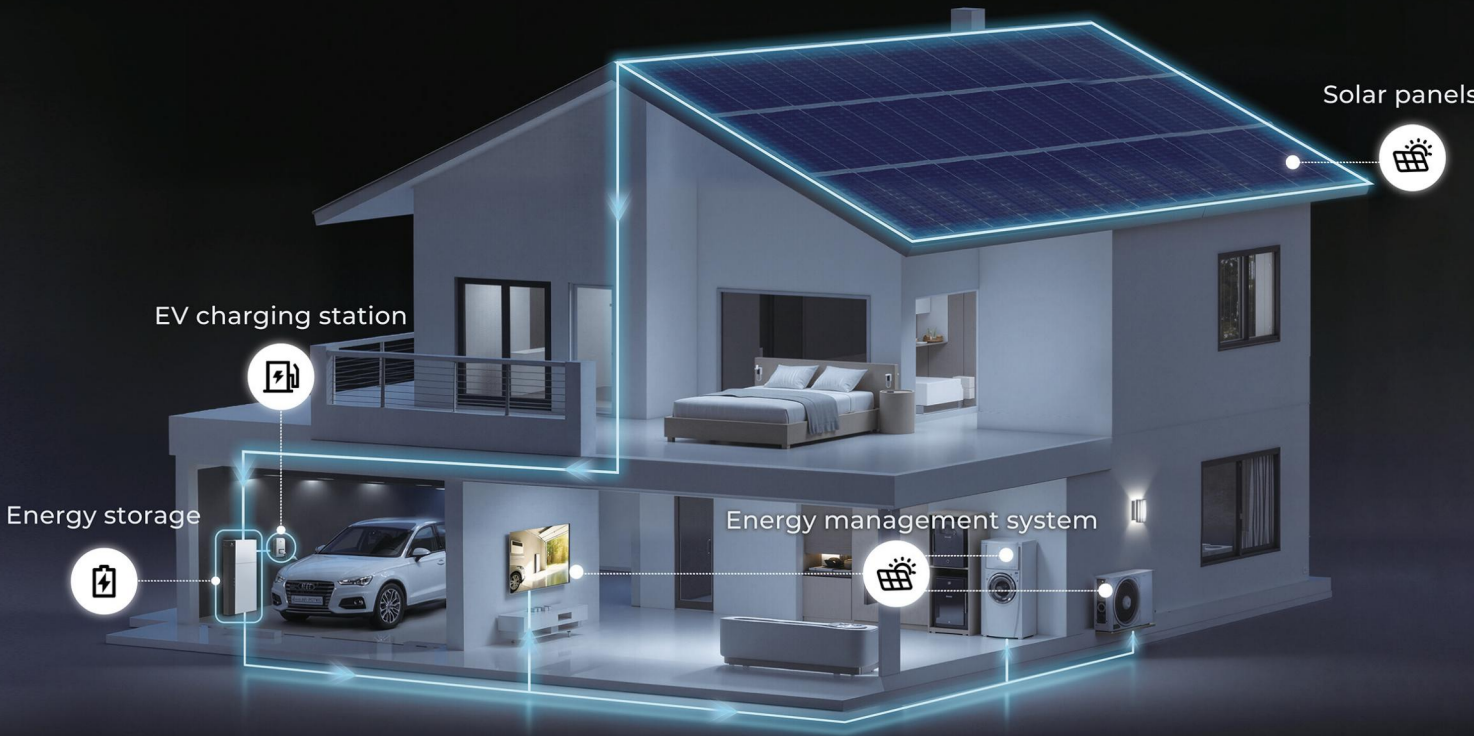
Powerful backup

Delivers *up to 20 kW* output for three-phase systems to power your entire home.



10-year warranty

Full-system *10-year warranty* backed by Munich RE — for total peace of mind.



Hybrid Inverter

The SMILE G3 hybrid inverter delivers up to 20 kW output with ultra-high efficiency, supporting both single-phase and three-phase systems. It ensures a seamless power supply during grid outages with <10ms switchover time for critical loads (UPS function) and additional backup for general loads.

3.6 - 20 kW
Output Power

Single & Three-Phase
Support

98% Max.
Conversion Efficiency

<10ms
UPS

Hybrid Battery

The SMILE-G3 hybrid storage system features a modular battery pack design with flexible expansion from 3.65 kWh to up to 111.6 kWh.

Through dynamic balancing and integrated bypass technology, the hybrid battery combines the advantages of series and parallel batteries. This not only ensures optimal use of the entire battery capacity, but also to maximize the safety of system and a particularly long service life.



3.6 - 111.6 kWh
Usable Capacity




10-Year
Warranty

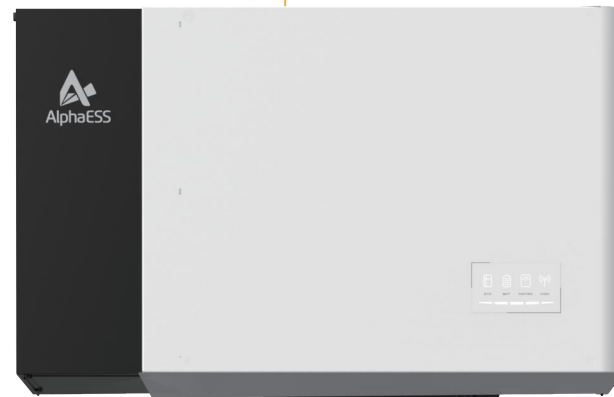
-20°C ~ 50°C
Battery Heating (BAT-4.8s/9.6s)

LiFePO4
Battery Chemistry






All-in-one Energy Storage System

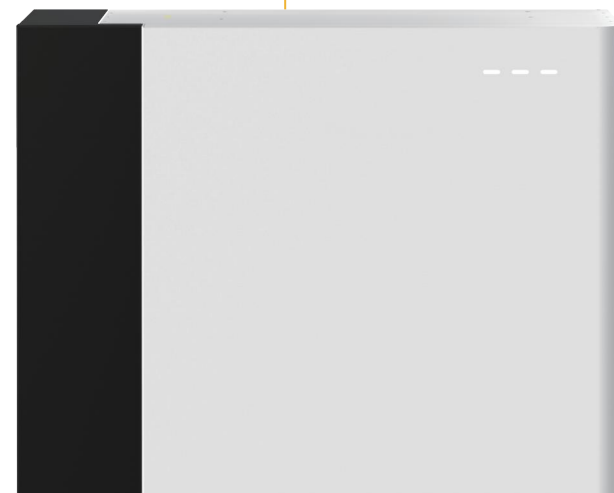
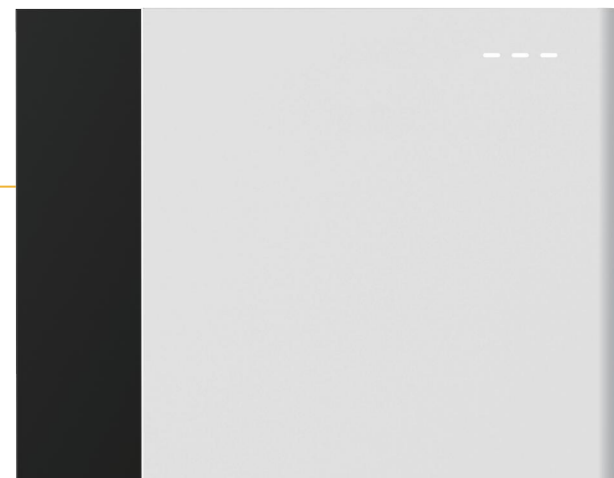
Hybrid Inverter

-  Built-In Smart EMS
-  200% PV Input
-  Up to 3 MPPTs for flexible roof layout

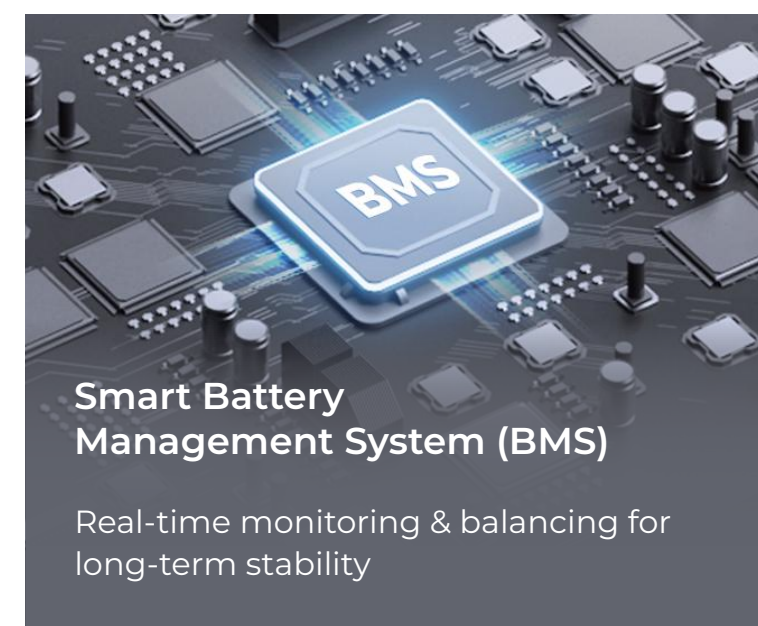
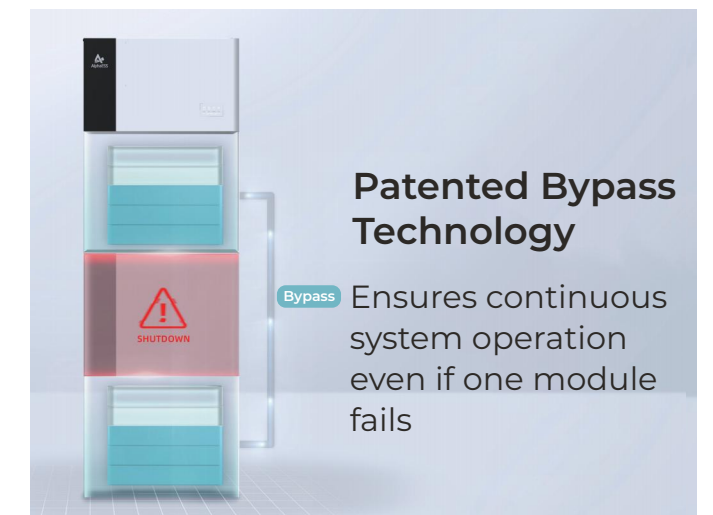
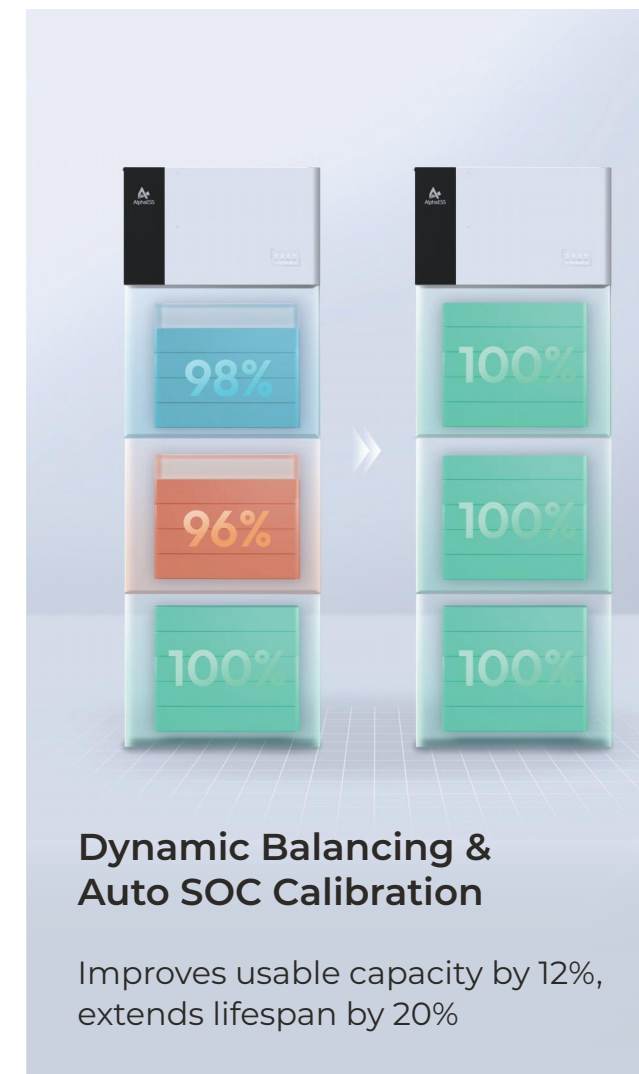


Hybrid Battery

-  Plug & Play Modules
-  Built-In Smart BMS
-  Dynamic Balance SOC
-  Bypass for Faulty Battery
-  High Voltage Battery with Higher RTE (Round-Trip-Efficiency)



Built-In Safety, Enhanced Performance





Earn More from Your Energy

With integrated partners, SMILE G3 supports dynamic tariffs and imbalance trading – turning your battery into a profit engine.

Dynamic tariff optimization for lower costs

VPP-ready system with automatic trading participation

Dynamic balancing + SOC calibration = Better trading performance



Control Your Energy Anywhere

AlphaCloud lets you monitor, control, and optimize your energy system anytime, anywhere – completely free for life via app or web platform.

- FREE** Permanently Free lifetime platform (App & Web)
- Real-time monitoring of power flow & usage
- Remote troubleshooting and firmware updates
- Smart home integration with IoT support

frank
energie

HEGG

Jabba

Next
Energy

octopusenergy

ostrom

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AlphaESS SMILE G3 Series

SMILE-G3-S8
SMILE-G3-S3.6/S5/B5
SMILE-G3-T10/T20

Technical Specifications



SMILE-G3-S8

8 kW | Brand new single-phase product exclusive to the UK



Model	SMILE-G3-S8		
System Specification			
Battery Chemistry	LFP (LiFePO4)		
Nominal Output Power	8000 W		
Capacity Range	4.0 ~ 37.2 kWh		
Warranty	10 Years		
PV Input Technical Specification			
Max PV Input Power	10000 W		
Max PV Input Current	15 A / 15 A		
Max. PV Input Voltage	580 V		
MPPT Number / Strings per MPPT	2 / 1		
MPPT Voltage Range	100 ~ 550 V		
Max. PV Short-Circuit Current	22.5 A / 22.5 A		
MPPT Efficiency	>99%		
Inverter Technical Specification			
AC Input & Output Data (Grid Side)			
Rated AC Output Power	8000 W		
Max. AC Input Power	11500 W		
Rated Frequency	50 / 60 Hz		
Rated Voltage	230 V		
Grid Voltage Range	150 ~ 287 V		
Backup Output Data			
Rated Output Power (Off-grid)	8000 W		
Rated Output Voltage (Off-grid)	230 V ± 10%		
On/Off Grid Switch Time	≤20ms		
Peak Power (Off-grid)	8800 W 60s; 16000 W 30s		
Max. Continuous AC Passthrough	50 A		
Rated Output Current (off-grid)	34.8 A		
General Specification			
Dimension (W x D x H)	610 x 212 x 366 mm		
Weight	19.5 kg		
Communication	Ethernet / WiFi		
Relative Humidity	0 ~ 90% (Non-Condensing)		
Operation Temperature	-25 ~ 60°C		
Noise	<35 dB		
Over Voltage Category	DC Type III / AC Type II		
Ingress Protection(IP) Rating	IP 65		
Operation Altitude	3000 m		
Safety	IEC62109-1/-2, IEC62477, IEC62040-1		
EMC	IEC61000-6-1/-2/-3/-4		
Grid Regulation	AS 4777.2, NRS 097, VDE 4105, EN 50549, G99		
Battery Technical Specifications			
Module Model	SMILE-G3-BAT-4.0S	SMILE-G3-BAT-4.8S	SMILE-G3-BAT-9.6S
Rated Capacity	4.0 kWh	4.8 kWh	9.6 kWh
Usable Capacity	3.8 kWh	4.56 kWh	9.3 kWh
Depth of Discharge (DoD)	95 % *	95 % *	95 % *
Nominal Voltage	96 V	96 V	96 V
Max. Charging/Discharging Current	42 A	50 A	52.5 A
Operating Temperature Range	-10°C ~ 60 °C ***	-20°C ~ 50°C ***	-20°C ~ 50°C ***
Battery Modules Quantity	1 ~ 4	1 ~ 4	1 ~ 4
IP Protection	IP 65	IP 65	IP 65
Dimensions (W x D x H)	610 x 212.5 x 435 mm	610 x 212.5 x 435 mm	610 x 210 x 634 mm
Weight	42.5 kg	53 kg	81 kg
Fire-Fighting	N/A	Aerosol + Anti-explosion Valve	Aerosol + Anti-explosion Valve

* Test Condition: Max 0.5 C charge&discharge at 25±2 C
** Support 32 A long-term work, support 40 A work for 30min
*** Max. charge/discharge current derating will occur related to temperature and SOC..



SMILE-G3-S3.6 / S5 / B5

3.6/5 kW | Single-phase



Model	SMILE-G3-S3.6	SMILE-G3-S5	SMILE-G3-B5
System Specifications			
Nominal Output Power	3.68 kW	5 kW	5 kW
Capacity Range	4.0 ~ 38.4 kWh (95% DoD)		
Battery Chemistry	LFP (LiFePO4)		
Warranty	10 Years		
Inverter Technical Specifications			
Model	SMILE-G3-S3.6-INV	SMILE-G3-S5-INV	SMILE-G3-B5-INV
Coupling	Hybrid	Hybrid	AC
Max. PV Input Power	7.36 kW	10 kW	N/A
Max. PV Input Current	15 A / 15 A		N/A
Max. PV Input Voltage	580 V		N/A
MPPT Number / Strings per MPPT	2 / 1		N/A
MPPT Voltage Range	100 ~ 550 V		N/A
Max. PV Short-Circuit Current	18.75 A / 18.75 A	24 A / 24 A	N/A
Max. Charging/Discharging Current	60 A		
Max. Charging/Discharging Power	3.68 kW	5 kW	5 kW
Rated Frequency	50 / 60 Hz		
Rated Voltage	220 V / 230 V		
Phase	Single Phase		
Rated Output Current (Grid Port)	16 A	21.7 A	21.7 A
Rated Output Current (Backup Port)	16 A	21.7 A	21.7 A
Max. AC Input Power (On-Grid)*	7.36 kW	10 kW	10 kW
Backup	UPS		
Communication	Ethernet / WiFi / Modbus / API		
Relative Humidity	0 ~ 90% (No Condensation)		
Dimensions (W x D x H)	610 x 212x 366 mm		
Weight	19.5 kg		
IP Protection	IP 65		
Safety	IEC 62109, IEC62040		
EMC	IEC 61000-6-1/-2/-3/-4		
Overvoltage Category	DC II		
Noise	≤35 dB		
Grid Regulation	VDE 4105, VDE 0126-01-01, EN 50549-1, CEI 0-21, RD 1699, G98/G99, AS 4777.2, NRS 097		
Maximum / European Efficiency	95.94 % / 94.71 %		
Battery Technical Specifications			
Module Model	SMILE-G3-BAT-4.0S	SMILE-G3-BAT-4.8S	SMILE-G3-BAT-9.6S
Rated Capacity	4.0 kWh	4.8 kWh	9.6 kWh
Usable Capacity	3.8 kWh	4.56 kWh	9.3 kWh
Depth of Discharge (DoD)	95 % *	95 % *	95 % *
Nominal Voltage	96 V	96 V	96 V
Max. Charging/Discharging Current	42 A	50 A	52.5 A
Operating Temperature Range	-10°C ~ 60 °C **	-20°C ~ 50°C **	-20°C ~ 50°C **
Battery Modules Quantity	1 ~ 4	1 ~ 4	1 ~ 4
IP Protection	IP 65	IP 65	IP 65
Dimensions (W x D x H)	610 x 212.5 x 435 mm	610 x 212.5 x 435 mm	610 x 210 x 634 mm
Weight	42.5 kg	53 kg	81 kg
Fire-Fighting	N/A	Aerosol + Anti-explosion Valve	Aerosol + Anti-explosion Valve

* Test condition: Max. 0.5C charge/discharge at 25±2°C.
** Max. charge/discharge current derating may occur with changes in temperature and SoC.



SMILE-T10/T20

10/20 kW | Three-phase



Model	SMILE-G3-T10	SMILE-G3-T20	
System Specifications			
Nominal Output Power	10 kW	20 kW	
Capacity Range	4.0 ~ 57.6 kWh	8.0 ~ 57.6 kWh	
Battery Chemistry	LFP (LiFePO4)		
Warranty	10 Years		
Inverter Technical Specifications			
Model	SMILE-G3-T10-INV	SMILE-G3-S5-INV	
Coupling	Hybrid	Hybrid	
Max. PV Input Power	20 kW	10 kW	
Max. PV Input Current	16 A / 16 A / 16 A	18A / 18 A / 18 A	
Max. PV Input Voltage	1000 V	1 kV	
MPPT Number / Strings per MPPT	3 / 1		
MPPT Voltage Range	140 ~ 950 V	200 ~ 850 V	
Max. PV Short-Circuit Current	24 A / 24 A / 24 A	22.5 A / 22.5 A / 22.5 A	
Max. Charging/Discharging Current	40 A	60 A	
Max. Charging/Discharging Power	10 kW	20 kW	
Rated Frequency	50 / 60 Hz	50 / 60 Hz	
Rated Voltage	220 V / 380 V, 230 V / 400 V	220 V / 380 V, 230 V / 400 V	
Phase	Three Phase		
Rated Output Power (Grid Port)	10 kW	20 kW	
Rated Output Current (Grid Port)	14.5 A	29 A	
Rated Output Power (Backup Port)	10 kW	20 kW	
Rated Input Power (on-grid)	20 kW	25 kW	
Backup	UPS		
Communication	Ethernet / WiFi / Modbus / API		
Relative Humidity	0 ~ 90% (No Condensation)		
Dimensions (W x D x H)	610 x 212.5 x 416 mm	610 x 250x 610 mm	
Weight	26.7 kg	44 kg	
IP Protection	IP 65		
Safety	IEC 62109-1/-2		
EMC	IEC 61000-6-1/-3		
Overvoltage Category	DC II		
Noise	≤ 30 dB	≤ 50 dB	
Grid Regulation	VDE 4105, EN 50549-1, VDE0126-01-01, NC RFG, G99	VDE 4105, EN 50549-1, G99	
Maximum / European Efficiency	97.6 % / 96.8 %	98 % / 97.5 %	
Battery Technical Specifications			
Module Model	SMILE-G3-BAT-4.0S	SMILE-G3-BAT-4.8S	SMILE-G3-BAT-9.6S
Rated Capacity	4.0 kWh	4.8 kWh	9.6 kWh
Usable Capacity	3.8 kWh	4.56 kWh	9.3 kWh
Depth of Discharge (DoD)	95 % *	95 % *	95 % *
Nominal Voltage	96 V	96 V	96 V
Max. Charging/Discharging Current	42 A	50 A	52.5 A
Operating Temperature Range	-10°C ~ 60 °C ***	-20°C ~ 50°C ***	-20°C ~ 50°C ***
Battery Modules Quantity	1 ~ 6	1 ~ 6	1 ~ 6
IP Protection	IP 65	IP 65	IP 65
Dimensions (W x D x H)	610 x 212.5 x 435 mm	610 x 212.5 x 435 mm	610 x 210 x 634 mm
Weight	42.5 kg	53 kg	81 kg
Fire-Fighting	N/A	Aerosol + Anti-explosion Valve	Aerosol + Anti-explosion Valve

* Test condition: Max. 0.5C charge/discharge at 25±2°C.
** 50A discharging current sustainable for 30 minutes in off-grid operation.
*** Max. charge/discharge current derating may occur with changes in temperature and SoC.



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**We Do More Than Store Power,
We Make It Smart**

About AlphaESS

AlphaESS is a leading global provider of green energy storage solutions and services. With expertise in BMS, EMS, system integration, and cloud monitoring, we deliver tailored solutions for residential, commercial & industrial, and utility-scale applications. Today, AlphaESS operates through 40+ subsidiaries worldwide, with 200,000+ systems actively running across 130+ countries. Our solutions empower millions to access reliable, clean energy while mitigating rising utility costs and reducing global carbon emissions.

 **130 +**
Countries & Regions

 **200,000 +**
Systems Installed Globally

 **300 +**
Global Service Network

 **13 +**
Years of Industry Experience

Munich RE



Why AlphaESS

Three core strategies that make AlphaESS special

Smart Energy

We focus on smart energy and have developed a digital intelligent management architecture. We have different types of devices that can quickly respond to energy consumption commands from the upper layer.

Safe and Reliable

Our safety standards cover material safety, system safety, and operational safety, including the safety of our production lines and testing procedures. These measures ensure the safety and quality of our products.

Service Leading

We provide personalized and comprehensive one-stop service to ensure customers have an excellent experience throughout the purchase, use, and maintenance of our energy storage systems.

