

AlphaESS **SMILE G3**

A solution where **efficiency, flexibility and reliability** all meet.





SMILE G3

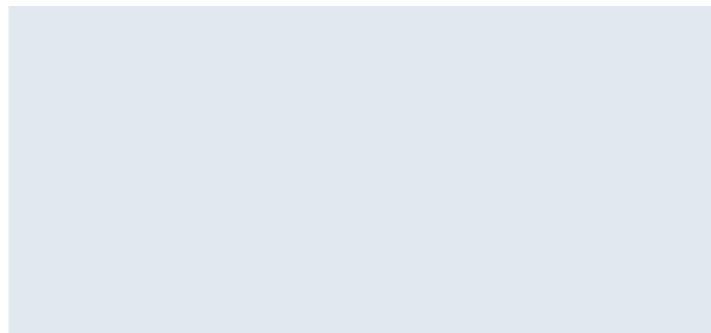
Residential Energy Storage System

Your perfect energy solution

	Output Power	Capacity	Warranty
Single phase	5 kW, 8 kW	4.8 - 57.6 kWh	10 Years
Three Phase	10 kW, 20 kW	9.6 - 115.2 kWh	

SMILE G3 is a versatile hybrid home energy storage system — available in 5 & 8 kW single-phase and 10 & 20 kW three-phase models. Engineered to lower your energy costs, shield you from power outages and ever-rising tariffs, and unlock the full potential of your solar investment, it empowers you with true energy independence from AlphaESS.

Why SMILE G3 is built difference?



200% PV over-sizing

Maximum 200% PV over-sizing connection, harness more solar energy from the sun.



Outstanding OverLoad Capability

110% overload support for 60s : 150% overload support for 30s : 200% overload support for 1s.



AlphaLinX Battery

Smart battery technology combining series and parallel advantages for optimal performance.



Sleek All-in-one Solution

Modern Home Appliance Design with hybrid inverter, AlphaLinX battery, BMS and EMS all in All.



Multi-Layer Safety Protection

Advanced safety system with cell-level monitoring and built-in fire prevention technology.

Power Starts with the Battery Storage Starts with AlphaESS

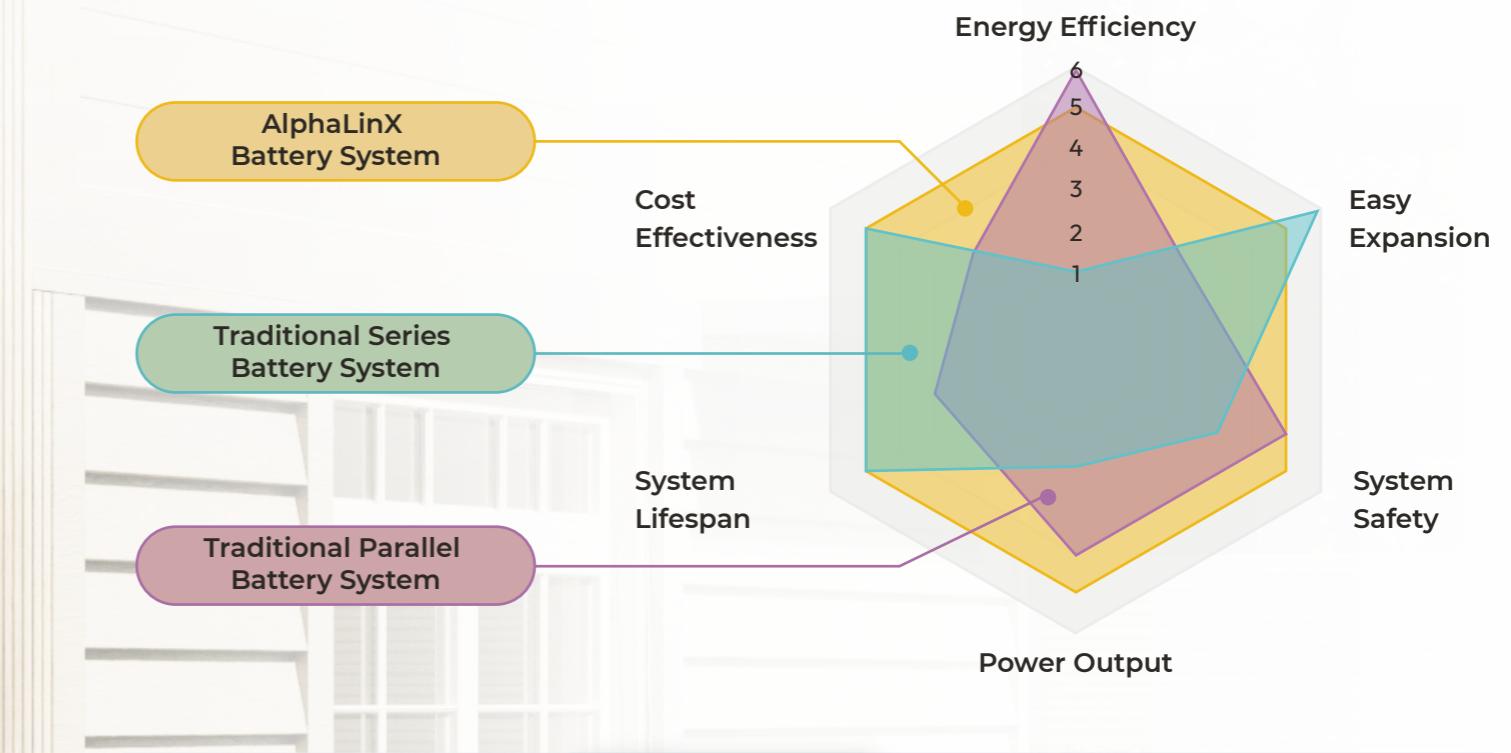
Great home energy storage begins with a great battery. That's why the SMILE G3 features unique AlphaLinX Battery, delivering superior efficiency, safety, and longevity. Smarter storage means greater savings and true energy independence.



AlphaLinX™ The Ultimate Battery That Does It All

When you can have both, why choose?

Traditional battery systems make you choose between high efficiency (series) and balanced capacity (parallel). AlphaESS AlphaLinX Technology changes the game by delivering both advantages together.



Feature	AlphaLinX Battery System	Traditional Series Battery System	Traditional Parallel Battery System
Increases system voltage, reduces losses	✓	✓	✗
Intelligently balances capacity between batteries	✓	✗	✓
Simplifies current management, reduces current load pressure, lowers overheating risk	✓	✓	✗
Small failure impact scope, strong redundancy	✓	✗	✓
Allows selection of higher inverter power	✓	✓	✗
High expansion flexibility	✓	✗	✓



More Solar Energy for Your Home

Get every possible watt from your solar panels, our system delivers up to 15% more usable energy to your appliances compared to standard systems.

AlphaLinX

Always at the best performance.



Every Cell Works at Its Full Potential

Smart balancing gives you 12% more usable capacity and extends battery life by 20% by preventing energy loss in weak cells.



No Interruption When Batteries Fail

Automatically isolates faulty modules without disrupting system operation. Ensures long-term reliability through hardware redundancy.



Grow Your System Anytime

Start with what you need now and expand later, even mixing older and newer batteries. Scale up to 111.6 kWh for whole-home backup.



All-in-one Home Energy Storage Solutions

Hybrid Inverter

Hybrid Inverter

 Built-in Smart EMS

 200% PV Input

 MPPT Shadow Scanning



AlphaLinX Battery

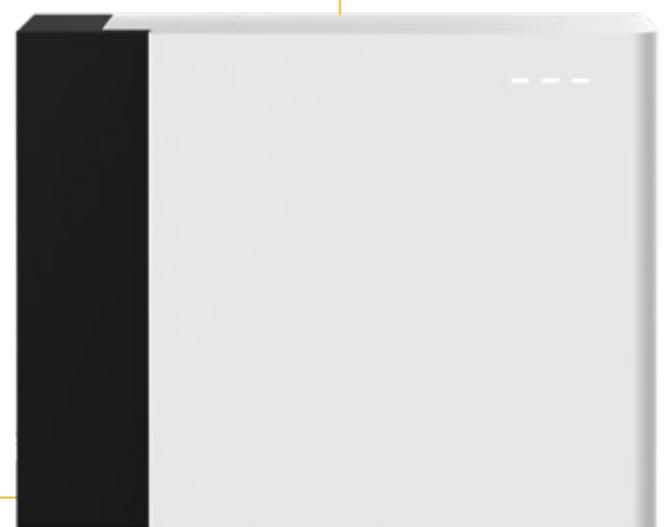
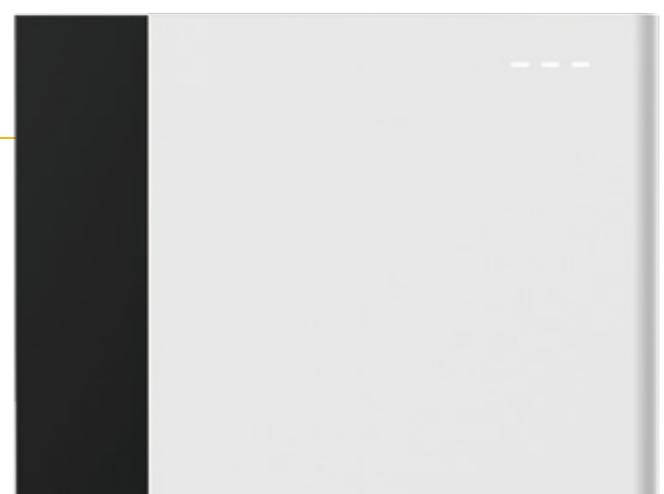
 Built-in Smart BMS

 Aerosol Fireproof

 High 1C Charge/Discharge

 LiFePO4 Battery Chemistry

 10,000 Life Cycles



The SMILE G3 Hybrid Inverter delivers 98% efficiency to maximize solar investment, provides 10 ms backup for seamless power during outages, and supports single or three-phase homes from 5 to 20 kW, ensuring reliable energy for everything from small apartments to large houses.

5 - 20 kW

Backup Power

1 & 3-Phase

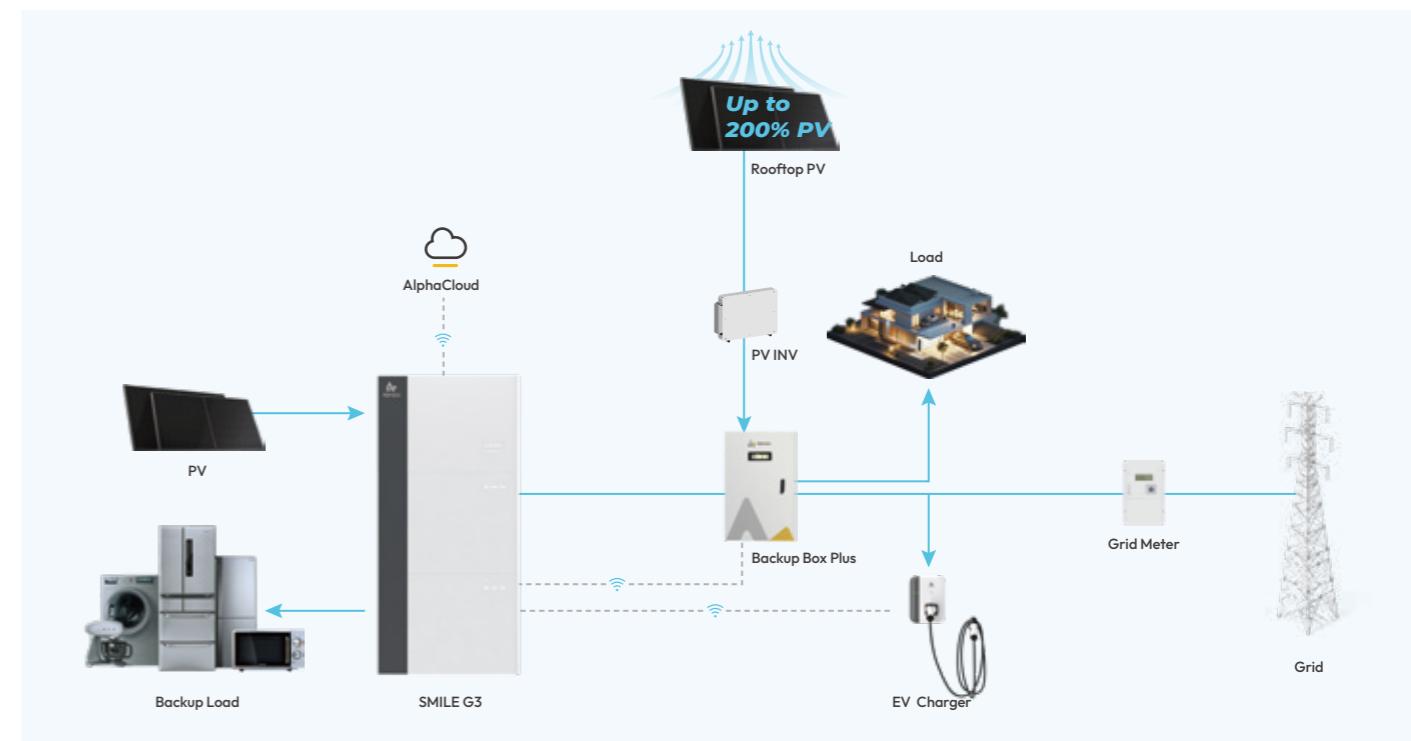
Support

98% Max.

Conversion Efficiency

<10ms

UPS Switch



Maximize Your Solar ROI

- 3xMPPT Inputs - Optimizes uneven shading
- 200% PV Over-Sizing - Doubles solar utilization
- Auto Shadow Scan - Maintains peak production



Built-In Battery Protection at Every Level

Cell-Level Guardians

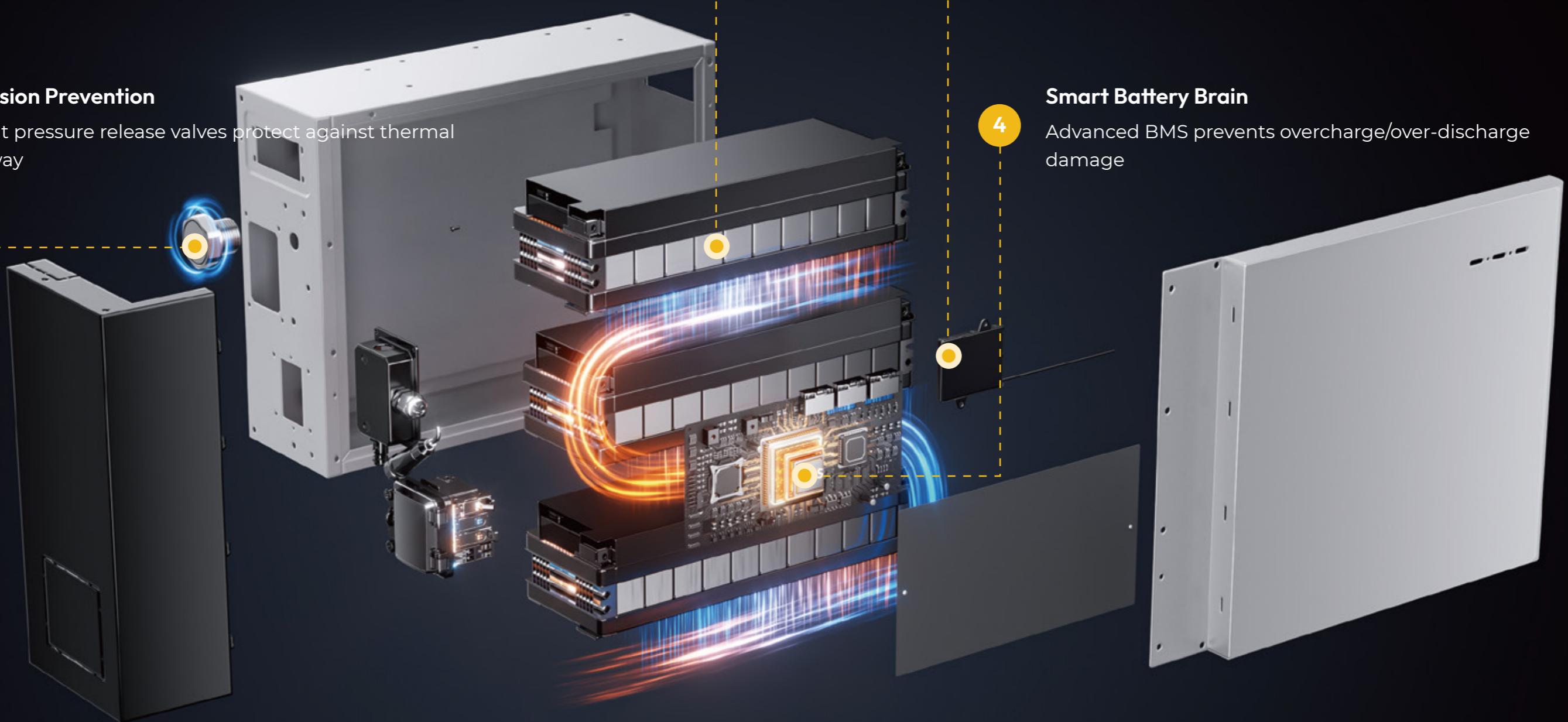
1

24/7 temperature and voltage monitoring for every battery cell

2

Explosion Prevention

Instant pressure release valves protect against thermal runaway



Streamlined Safety

5

No bulky external high-voltage box required

Fire Defense System

3

Aerosol suppression automatically contains any fire risk

Smart Battery Brain

4

Advanced BMS prevents overcharge/over-discharge damage

Lightning Armor

6

Integrated secondary protection eliminates external hardware

Load Shedding? Your Lights Stay On.

When the grid fails during storms, SMILE G3 instantly becomes your home's power hub. With 20kW backup power and seamless switching, your fridge stays cold, lights stay on, and wifi keeps working — no flickers, no restart delays. Even heavy appliances like well pumps keep running with smart overload protection.



Up to **20** kW
Instant Backup

10 ms
Auto-Switch

200%
OverLoad Boost

Unlock maximum savings with AlphaESS solution

Shield Against Rising Tariffs Electricity prices keep climbing. With AlphaESS, you can fix your cost per kWh for up to 10 years — turning future price hikes into long-term savings.

Payback, Accelerated Store surplus solar energy and use it when grid power is most expensive. Cut bills, shorten payback, and enjoy a lower lifetime energy cost.

The AlphaLinX Advantage Our high-voltage, series-connected AlphaLinX battery packs deliver about 5% higher efficiency than common 48V systems.



Every 1% counts

Over 10 years, even small gains mean big savings.



More usable energy

Less lost in conversion, more powering your home.



Higher ROI

Efficiency directly boosts your payback.



Your Energy, At Your Fingertips

Control your SMILE G3 energy storage system anytime, anywhere. Monitor solar production, track energy usage patterns, and optimize savings with intuitive dashboards.



Commissioning Smarter, Service Faster

Speed up commissioning with one-tap system registration and remote diagnostics. Access real-time troubleshooting tools and client history to deliver faster, smarter support—all from your mobile device.

-  One-click commissioning wizard
-  Remote fault diagnosis tools
-  Complete technical documentation library
-  Client management portal

Alpha Cloud: Smart Monitoring for All

Alpha Cloud enables real-time monitoring and control for both users and installers through a unified web portal.



AlphaESS SMILE G3 Series

SMILE-G3-S5/S8

SMILE-G3-T10

SMILE-G3-T20

Technical Specifications



SMILE-G3-S5 / S8

5 / 8 kW | Single-phase



Model	SMILE-G3-S5	SMILE-G3-S8
System Specifications		
Nominal Output Power	5 kW	8 kW
Usable Capacity Range	4.8 - 38.4 kWh	
Battery Chemistry	LFP (LiFePO4)	
Warranty	10 Years Product Warranty, 10 Years Battery Performance Warranty	
Inverter Technical Specifications		
Model	SMILE-G3-S5-INV	
Coupling	Hybrid	
Max.PV Input Power	10 kW	
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	18.5 A / 18.5 A	22.5 A / 22.5 A
Max.Charging/Discharging Current	60 A	
Max.Charging/Discharging Power	5 kW	
Nominal Frequency	50 / 60 Hz	
Nominal Voltage	220 V / 230 V	
Phase	Single Phase / 3-Phase Compensation	
Nominal Output Current (Grid Port)	21.7 A	
Nominal Output Current (Backup Port)	21.7 A	
Nominal Input Power(on-grid)	10 kW	
Backup	UPS	
Communication	Ethernet / WiFi / Modbus / API	
Relative Humidity	0 ~ 90% (No Condensation)	
Dimensions (W x D x H)	610 x 212 x 366 mm	
Weight	19.5 kg	
Ingress Protection	IP65	
Safety	IEC 62109-1/-2, IEC 62040	
EMC	IEC 61000-6-1/-2/-3/-4	
Grid Regulation	VDE 4105, VDE 0126-1-1, EN 50549-1, CEI O-21, RD1699, G98/G99, AS 4777.2, NRS 097	
Overvoltage Category	DC Type II according to EN / IEC 61643	
Cooling	Natural Convection	
Noise	≤ 35 dB	
Maximum/European Efficiency	97 % / 96.2 %	
Battery Technical Specifications		
Model	SMILE-G3-BAT-4.8S	SMILE-G3-BAT-9.6S
Nominal Capacity	4.8 kWh	9.6 kWh
Usable Capacity	4.8 kWh	9.6 kWh
Depth of Discharge (DoD)	100% *	100% *
Nominal Voltage	96 V	96 V
Max. Charging/Discharging Current	50 A**	52.5 A **
Operating Temperature Range	-20 °C ~ 50 °C ***	-20 °C ~ 50 °C ***
Cycle Life	10,000 ****	10,000 ****
Modular Connection	1 ~ 4	1 ~ 4
IP Protection	IP65	IP65
Dimensions (W x D x H)	610 x 212.5 x 435 mm	610 x 210 x 634 mm
Weight	53 kg	81 kg
Noise	≤ 35 dB	≤ 35 dB
Fire-Fighting	Aerosol	Aerosol

* Test condition: Max. 0.5C charge/discharge at 25±2°C.

** In off-grid mode, discharge up to 50 A is possible for up to 30 minutes.

*** Performance reduction may occur depending on the state of charge and temperature. Optimal operating temperature 15°C ~ 30°C.

**** Under specific test conditions.



SMILE-G3-T10

10 kW | Three-phase

Model	SMILE-G3-T10	
System Specifications		
Nominal Output Power	10 kW	
Usable Capacity Range	4.8 - 27.36 kWh / 9.6 - 111.6 kWh	
Battery Chemistry	LFP (LiFePO4)	
Warranty	10 Years Product Warranty, 10 Years Battery Performance Warranty	
Inverter Technical Specifications		
Model	SMILE-G3-T10-INV	
Coupling	Hybrid	
Max.PV Input Power	20 kW	
Max.PV Input Current	16 A / 16 A / 16 A	
Max.PV Input Voltage	1,000 V	
MPPT Number / Strings per MPPT	3 / 1	
MPPT Voltage Range	140 ~ 950 V	
Max.PV Short-Circuit Current	24 A / 24 A / 24 A	
Max.Charging/Discharging Current	40 A	
Max.Charging/Discharging Power	10 kW	
Nominal Frequency	50 / 60 Hz	
Nominal Voltage	220 V / 380 V, 230 V / 400 V	
Phase	Three Phase	
Nominal Output Power (Grid Port)	10 kW	
Nominal Output Power (Backup Port)	10 kW	
Nominal Input Power (on-grid)	20 kW	
Backup	UPS	
Communication	Ethernet / WiFi / Modbus / API	
Relative Humidity	0 ~ 90% (No Condensation)	
Dimensions (WxTxH)	610 x 212.5 x 416 mm	
Weight	26.7 kg	
Ingress Protection	IP65	
Safety	IEC 62109-1/-2	
EMC	IEC 61000-6-1/-2/-3/-4, IEC 61000-3-11, EN 61000-3-12	
Grid Regulation	VDE 4105, EN 50549-1, VDE 0126-1-1, NC RFC, Tor Erzeuger, CEI 0-21	
Overvoltage Category	DC Type II according to EN / IEC 61643	
Cooling	Controlled Ventilator	
Noise	≤ 39 dB	
Maximum/European Efficiency	97.6 % / 96.8 %	
Battery Technical Specifications		
Model	SMILE-G3-BAT-4.8S	SMILE-G3-BAT-9.6S
Nominal Capacity	4.8 kWh	9.6 kWh
Usable Capacity	4.8 kWh	9.6 kWh
Depth of Discharge (DoD)	100% *	100% *
Nominal Voltage	96 V	96 V
Max. Charging/Discharging Current	50 A**	52.5 A **
Operating Temperature Range	-20 °C ~ 50 °C ***	-20 °C ~ 50 °C ***
Cycle Life	10,000 ****	10,000 ****
Modular Connection	1 ~ 4	1 ~ 4
IP Protection	IP65	IP65
Dimensions (W x D x H)	610 x 212.5 x 435 mm	610 x 210 x 634 mm
Weight	53 kg	81 kg
Noise	≤ 35 dB	≤ 35 dB
Fire-Fighting	Aerosol	Aerosol

* Test condition: Max. 0.5C charge/discharge at 25±2°C.

** In off-grid mode, discharge up to 50 A is possible for up to 30 minutes.

*** Performance reduction may occur depending on the state of charge and temperature. Optimal operating temperature 15°C ~ 30°C.

**** Under specific test conditions.

***** Maximum 6 Batteries for each cluster in series, up to 2 clusters in parallel.



SMILE-G3-T20

20 kW | Three-phase

Model	SMILE-G3-T20	
System Specifications		
Nominal Output Power	20 kW	
Usable Capacity Range	7.3 - 43.8 kWh / 7.6 - 111.6 kWh	
Battery Chemistry	LFP (LiFePO4)	
Warranty	10 Years Product Warranty, 10 Years Battery Performance Warranty	
Inverter Technical Specifications		
Model	SMILE-G3-T20-INV	
Coupling	Hybrid	
Max.PV Input Power	40 kW	
Max.PV Input Current	18 A / 18 A / 18 A	
Max.PV Input Voltage	1,000 V	
MPPT Number / Strings per MPPT	3 / 1	
MPPT Voltage Range	200 ~ 850 V	
Max.PV Short-Circuit Current	22.5 A / 22.5 A / 22.5 A	
Max.Charging/Discharging Current	60 A	
Max.Charging/Discharging Power	20 kW	
Nominal Frequency	50 / 60 Hz	
Nominal Voltage	220 V / 380 V, 230 V / 400 V	
Phase	Three Phase	
Nominal Output Power(Grid Port)	20 kW	
Nominal Output Power(Backup Port)	20 kW	
Nominal Input Power(on-grid)	25 kW	
Backup	UPS	
Communication	Ethernet / WiFi / Modbus / API	
Relative Humidity	0 ~ 90% (No Condensation)	
Dimensions (WxTxH)	610 x 250 x 610 mm	
Weight	44 kg	
Ingress Protection	IP65	
Safety	IEC 62109-1/-2	
EMC	IEC 61000-6-1/-2/-3/-4	
Grid Regulation	VDE 4105, EN 50549-1, Tor Erzeuger, NRS 097	
Overvoltage Category	DC Type II according to EN / IEC 61643	
Cooling	Controlled Ventilator	
Noise	≤ 50 dB	
Maximum/European Efficiency	98 % / 97.5 %	
Battery Technical Specifications		
Model	SMILE-G3-BAT-4.8S	SMILE-G3-BAT-9.6S
Nominal Capacity	4.8 kWh	9.6 kWh
Usable Capacity	4.8 kWh	9.6 kWh
Depth of Discharge (DoD)	100% *	100% *
Nominal Voltage	96 V	96 V
Max. Charging/Discharging Current	50 A**	52.5 A **
Operating Temperature Range	-20 °C ~ 50 °C ***	-20 °C ~ 50 °C ***
Cycle Life	10,000 ****	10,000 ****
Modular Connection	1 ~ 4	1 ~ 4
IP Protection	IP65	IP65
Dimensions (W x D x H)	610 x 212.5 x 435 mm	610 x 210 x 634 mm
Weight	53 kg	81 kg
Noise	≤ 35 dB	≤ 35 dB
Fire-Fighting	Aerosol	Aerosol

* Test condition: Max. 0.5C charge/discharge at 25±2°C.

** In off-grid mode, discharge up to 50 A is possible for up to 30 minutes.

*** Performance reduction may occur depending on the state of charge and temperature. Optimal operating temperature 15°C ~ 30°C.

**** Under specific test conditions.

***** Maximum 6 Batteries for each cluster in series, up to 2 clusters in parallel.



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. 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



AlphaESS Cares for Your Energy Freedom



Reliable Local Support

- Local Engineer teams
- Quick on-site response
- Local spare parts for faster repairs

24/7 Protection

- Remote monitoring prevents issues
- Emergency support in your language
- Regular check-ups for long-term performance



Easy & Transparent

- Real-time service tracking
- Clear process from start to finish
- Feedback after every service