



The Next-level Hybrid Energy Storage System

AlphaESS **SMILE G3**

More Energy. Longer Lifespan. Ultimate Safety.

Alpha ESS Europe GmbH

Website:

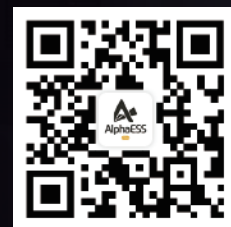
www.alphaess.de
www.alphaess.nl
www.alphaess.com



DE



NL



UN

Contact:

+49 61967863485
europe@alpha-ess.de
Alfred-Herrhausen-Allee 3-5, 65760 Eschborn, Germany



SMILE G3

Residential Energy Storage System

Your perfect energy solution



3.6-20 kW
Output Power

3.6-43.8 kWh
Usable Capacity

Dynamic Tariffs
VPP Ready

SMILE-G3 series offers single-phase solutions ranging from 3.6 to 5 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 43.8 kWh, adapting to any household's energy needs.



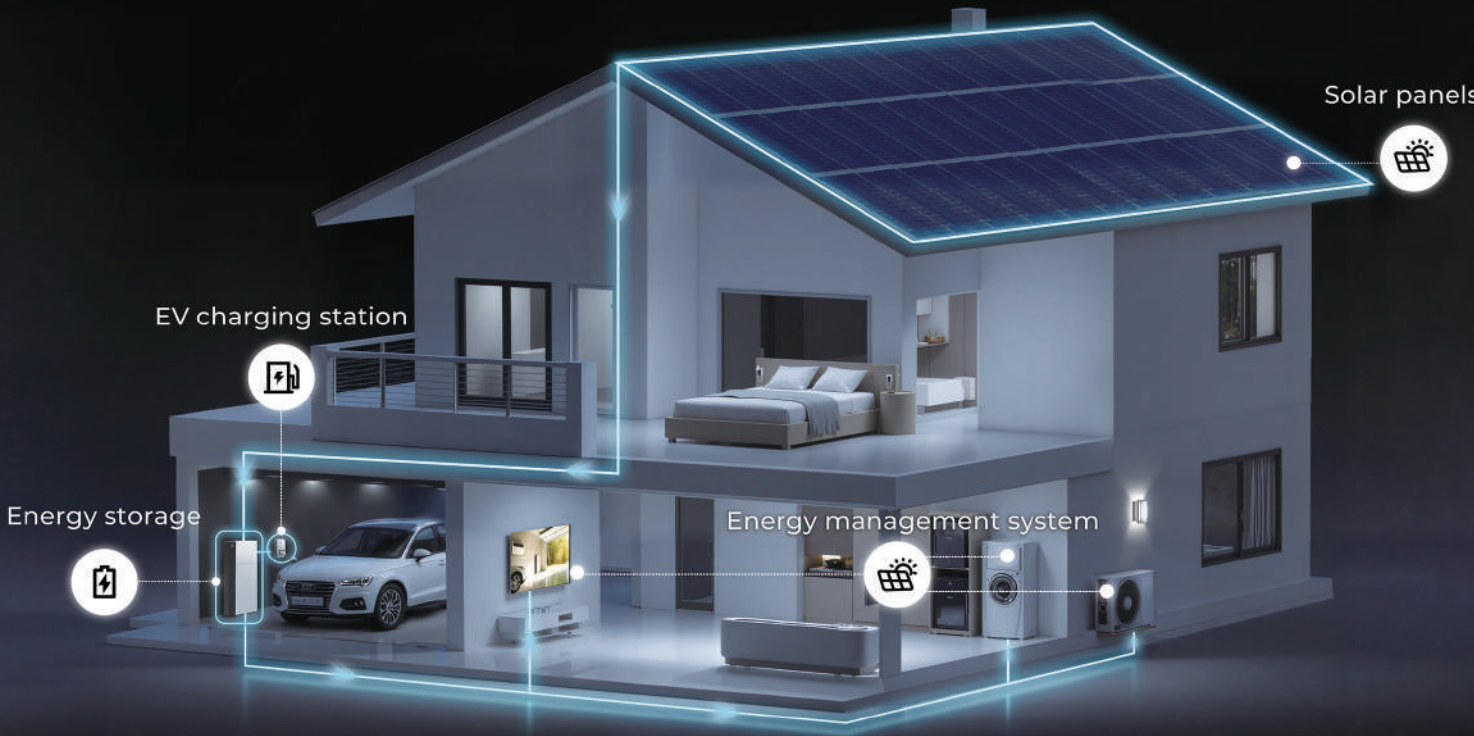
Powerful backup

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 battery system features a modular 3.6 kWh per pack design with flexible expansion up to 43.8 kWh. With series connection and built-in bypass technology, it ensures high safety, longer lifespan, and optimized hybrid functionality.



3.6-43.8 kWh
Usable Capacity




10-Year
Warranty

10,000
Life Cycles

LiFePO4
Battery Chemistry





All-in-one Energy Storage System

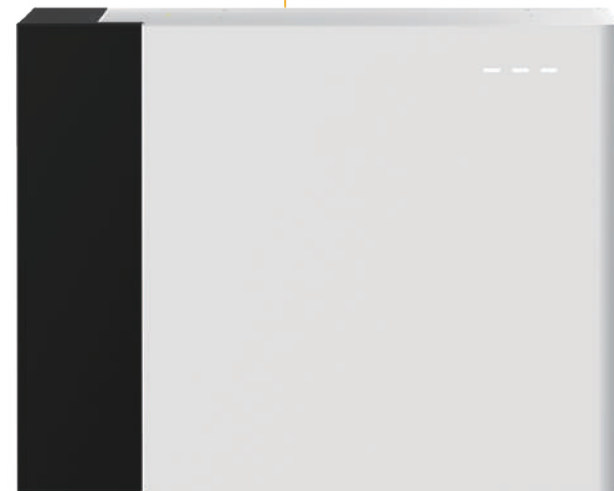
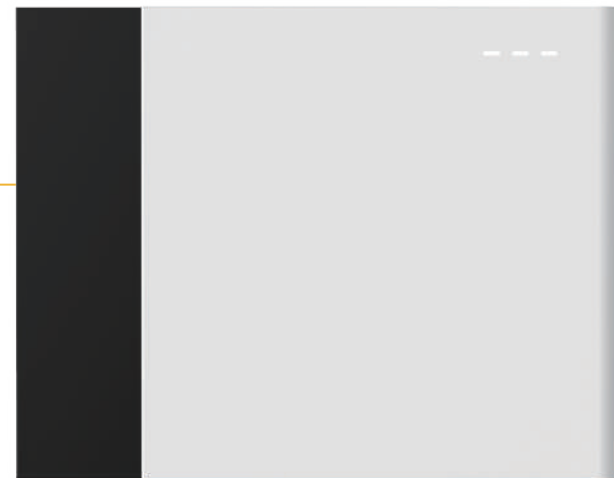
Hybrid Inverter

-  Built-In Smart EMS
-  200% PV Input
-  MPPT Shadow Scanning




Hybrid Battery

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

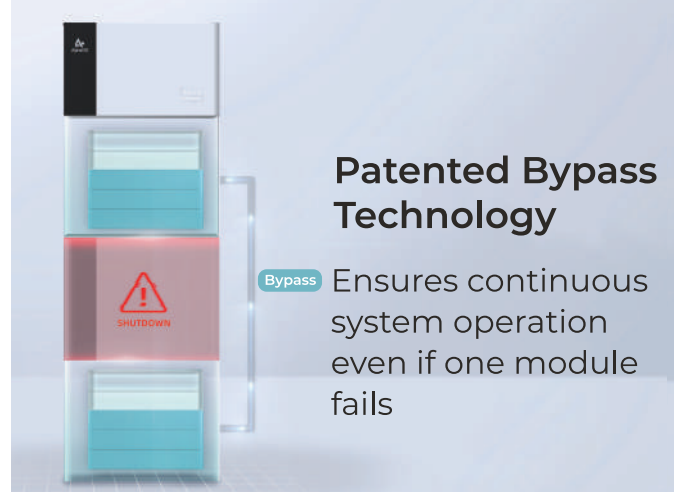


Built-In Safety, Enhanced Performance

A diagram showing two stacks of battery modules. The left stack has modules with 98%, 96%, and 100% SOC. The right stack has modules with 100%, 100%, and 100% SOC. An arrow points from the left to the right, indicating the process of balancing and calibration.

Dynamic Balancing & Auto SOC Calibration

Improves usable capacity by 12%, extends lifespan by 20%

A diagram showing a battery stack with one module highlighted in red with a 'SHUTDOWN' warning. A 'Bypass' line is shown connecting to the rest of the stack, ensuring continuous operation.

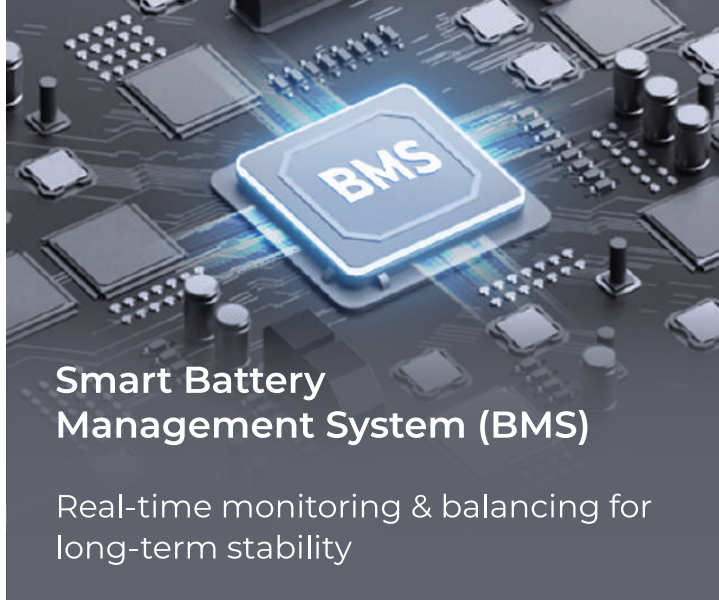
Patented Bypass Technology

Ensures continuous system operation even if one module fails

A diagram showing a battery unit with a fire suppression system. A small fire is shown being suppressed by a multi-level system.

Aerosol Fire Protection System

Multi-level suppression system tested for thermal safety

A diagram showing a BMS chip on a circuit board, with various electronic components and connections.

Smart Battery Management System (BMS)

Real-time monitoring & balancing for long-term stability

A diagram showing a battery unit with a shield icon and a '200%' label, indicating its ability to handle high overload.

High Overload Tolerance

Supports 150% overload (30s), 200% (1s) for power surges



Earn More from Your Energy

With integrated partners, SMILE G3 supports dynamic tariffs and virtual power plant programs – 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 enable you monitor, manage, and optimize your energy system via app or web – for free, for life.

- FREE** 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

...

AlphaESS SMILE G3 Series

SMILE-G3-S3.6/S5/B5

SMILE-G3-T4/T5/T6/T8/T10

SMILE-G3-T12/T15/T20

Technical Specifications



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
Usabe Capacity Range	3.65 - 15.2 kWh		
Battery Chemistry	LFP (LiFePO4)		
Warranty	10 Years Product Warranty, 10 Years Battery Performance Warranty		
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 / Max. Input Strings Number 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	IP65		
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	97% / 96.2%		
Battery Technical Specifications			
Module Model	SMILE-G3-BAT-3.8S		SMILE-G3-BAT-4.0S
Module Capacity	3.8 kWh		4.0 kWh
Usable Capacity	3.65 kWh		3.8 kWh
Depth of Discharge (DoD)	95 % *		95 % *
Nominal Voltage	96 V		96 V
Max. Charging/Discharging Current	40 A **		42 A
Operating Temperature Range	-10°C ~ 50 °C ***		-10°C ~ 60 °C ***
Cycle Life	10000 ****		10000 ****
Battery Modules Quantity	1 ~ 4		1 ~ 6
IP Protection	IP21		IP65
Dimensions (W x D x H)	610 x 212.5 x 435 mm		610 x 212.5 x 435 mm
Weight	39.2 kg		42.5 kg
Noise	≤ 35 dB		≤ 25 dB
Fire-Fighting	Aerosol		N/A

* 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.
**** Under specific test conditions.



SMILE-G3-T4/T5/T6/T8/T10

4/5/6/8/10 kW | Three-phase



Model	SMILE-G3-T4	SMILE-G3-T5	SMILE-G3-T6	SMILE-G3-T8	SMILE-G3-T10
System Specifications					
Nominal Output Power	4 kW	5 kW	6 kW	8 kW	10 kW
Usabe Capacity Range	3.65 - 43.8 kWh				
Battery Chemistry	LFP (LiFePO4)				
Warranty	10 Years Product Warranty, 10 Years Battery Performance Warranty				
Inverter Technical Specifications					
Model	SMILE-G3-T4-INV	SMILE-G3-T5-INV	SMILE-G3-T6-INV	SMILE-G3-T8-INV	SMILE-G3-T10-INV
Coupling	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid
Max. PV Input Power	8 kW	10 kW	12 kW	16 kW	20 kW
Max. PV Input Current	16 A / 16 A / 16 A				
Max. PV Input Voltage	1000 V				
MPPT Number / Max. Input Strings	3 / 1				
Number per MPPT					
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	4 kW	5 kW	6 kW	8 kW	10 kW
Rated Frequency	50 / 60 Hz				
Rated Voltage	220 V / 380 V, 230 V / 400 V				
Phase	Three Phase				
Rated Output Power (Grid Port)	4 kW	5 kW	6 kW	8 kW	10 kW
Rated Output Current (Grid Port)	5.8 A	7.3 A	8.7 A	11.6 A	14.5 A
Rated Output Power (Backup Port)	4 kW	5 kW	6 kW	8 kW	10 kW
Rated Input Power (on-grid)	8 kW	10 kW	12 kW	16 kW	20 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				
Weight	26.7 kg				
IP Protection	IP65				
Safety	IEC 62109-1/-2				
EMC	IEC 61000-6-1/-3				
Overvoltage Category	DC II				
Noise	≤ 39 dB				
Grid Regulation	VDE 4105, EN 50549-1, VDE0126-01-01, NC RFG				
Maximum / European Efficiency	97.6 % / 96.8 %				
Battery Technical Specifications					
Module Model	SMILE-G3-BAT-3.8S		SMILE-G3-BAT-4.0S		
Module Capacity	3.8 kWh		4.0 kWh		
Usable Capacity	3.65 kWh		3.8 kWh		
Depth of Discharge (DoD)	95 % *		95 % *		
Nominal Voltage	96 V		96 V		
Max. Charging/Discharging Current	40 A **		42 A		
Operating Temperature Range	-10°C ~ 50 °C ***		-10°C ~ 60 °C ***		
Cycle Life	10000 ****		10000 ****		
Battery Modules Quantity	1 ~ 12 *****		1 ~ 6		
IP Protection	IP21		IP65		
Dimensions (W x D x H)	610 x 212.5 x 435 mm		610 x 212.5 x 435 mm		
Weight	39.2 kg		42.5 kg		
Noise	≤ 35 dB		≤ 25 dB		
Fire-Fighting	Aerosol		N/A		

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



SMILE-G3-T12/T15/T20

12/15/20 kW | Three-phase



Model	SMILE-G3-T12	SMILE-G3-T15	SMILE-G3-T20
System Specifications			
Nominal Output Power	12 kW	15 kW	20 kW
Usabe Capacity Range	7.3 - 43.8 kWh		
Battery Chemistry	LFP (LiFePO4)		
Warranty	10 Years Product Warranty, 10 Years Battery Performance Warranty		
Inverter Technical Specifications			
Model	SMILE-G3-T12-INV	SMILE-G3-T15-INV	SMILE-G3-T20-INV
Coupling	Hybrid	Hybrid	Hybrid
Max. PV Input Power	24 kW	30 kW	40 kW
Max. PV Input Current	18A / 18 A / 18 A		
Max. PV Input Voltage	1000V		
MPPT Number / Max. Input Strings	3 / 1		
Number per MPPT			
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	12 kW	15 kW	20 kW
Rated Frequency	50 / 60 Hz		
Rated Voltage	220 V / 380 V, 230 V / 400 V		
Phase	Three Phase		
Rated Output Power (Grid Port)	12 kW	15 kW	20 kW
Rated Output Current (Grid Port)	17.4 A	21.7 A	29 A
Rated Output Power (Backup Port)	12 kW	15 kW	20 kW
Rated Input Power (on-grid)	17 kW	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 250x 610 mm		
Weight	44 kg		
IP Protection	IP65		
Safety	IEC 62109-1/-2		
EMC	IEC 61000-6-1/-3		
Overvoltage Category	DC II		
Noise	≤ 50 dB		
Grid Regulation	VDE 4105, EN 50549-1		
Maximum / European Efficiency	98 % / 97.5 %		
Battery Technical Specifications			
Module Model	SMILE-G3-BAT-3.8S		SMILE-G3-BAT-4.0S
Module Capacity	3.8 kWh		4.0 kWh
Usable Capacity	3.65 kWh		3.8 kWh
Depth of Discharge (DoD)	95 % *		95 % *
Nominal Voltage	96 V		96 V
Max. Charging/Discharging Current	40 A **		42 A
Operating Temperature Range	-10°C ~ 50 °C ***		-10°C ~ 60 °C ***
Cycle Life	10000 ****		10000 ****
Battery Modules Quantity	2 ~ 12 *****		2 ~ 6
IP Protection	IP21		IP65
Dimensions (W x D x H)	610 x 212.5 x 435 mm		610 x 212.5 x 435 mm
Weight	39.2 kg		42.5 kg
Noise	≤ 35 dB		≤ 25 dB
Fire-Fighting	Aerosol		N/A

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



V09.15012025 | Text and images correspond to the current state of technology at the time of printing. Subject to modifications. All information is without guarantee in spite of careful editing - liability excluded.

V09.15012025 | Text and images correspond to the current state of technology at the time of printing. Subject to modifications. All information is without guarantee in spite of careful editing - liability excluded.



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.

