

Battery Module SMILE5-BAT

User Manual

EN – V 02



Alpha·ESS
your smart energy

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1. Safety Precautions



Warning - Electrical hazards

Please read through this manual carefully before operation

- ★ In unlikely event of smoke or fire, turn off main switch immediately and contact your installer for further instructions.
- ★ Battery should be installed indoor or outdoor and kept away from water, high temperature, mechanical force and flames.
- ★ Do not disassemble, move or modify any parts of the system without authorization and instruction from AlphaESS.
- ★ Battery that is not going to be used longer than 1 month should be stored indoor in a dry and clean environment within 0 °C ~35 °C range. Please avoid contact with corrosive substances and keep its distance from fire and heat source. The battery SOC is 30% before shipment from the factory. For batteries that will not be used for a long time, they should be fully charged and discharged at least one time every 6 months.
- ★ Do not install the battery in any environment of temperature below -10° Cor over 50°C, and humidity over 85%.
- ★ Do not touch the system with wet hands.
- ★ Do not put any heavy objects on the top of the battery.

2. Introduction

2.1 Features

The SMILE5-BAT battery pack has the following features:

Photovoltaic system: This battery pack is designed for household photovoltaic systems.

Battery management system (BMS): The battery packs built-in BMS monitors its operation and prevents the battery from operating outside design limitations.

Expandability: This battery pack can be easily expanded by adding expansion battery packs.

2.2 Specifications



Specifications

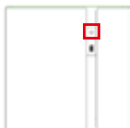
1: Switch Button

2: LED Display

3. Switch On/Off and Display

3.1 Switch On/Off

System shall be turned on in the correct sequence to avoid any damage.



Switch

Switch on Pressing the power button for about 2-4 seconds. The BMS will start up. The LCD display and power button will light up as well.

Switch off Pressing the power button for >5 seconds, Turns off battery modules.



LED Display

LED ring

State

3.2 LED Display

In normal condition, LED display indicates the SOC as the figure below:

LED Ring	SOC	Description
Standby: Green light flickering 1 s Work: Green light flickering 10s		SOC<5%
		5%=<SOC<25%
		25%=<SOC<50%
		50%=<SOC<75%
		75%=<SOC<95%
		SOC>95%

4. Error and Protection Code

Protection Code

LED Ring	Protection Code	LED Display	Description
Green light flickering every 3 seconds.	1		Temperature difference
	3		High temperature
	4		Low-temperature discharge
	5		Over-current charge
	6		Over-current discharge
	8		Cell overvoltage
	9		Cell under voltage
	11		Low-temperature charge

Error Code

LED Ring	Error Code	LED Display	Description	Troubleshooting
Red light flickering every 3 seconds.	Error 01		Hardware Error	Wait for automated recovery. In case problem is not resolved, call in for repair.
	Error 03		Hardware Error	
	Error 05		Hardware Error	
	Error 06		Circuit Breaker Open	Close circuit breaker after Shutting down the battery system.
	Error 07		DIP Difference	Keep consistence of DIP switches, restart the system.
	Error 08		LMU Disconnect(Slave)	Reconnect the communication cable
	Error 09		SN Missing	Enter the serial number, restart the system or call in for repair.
	Error 10		LMU Disconnect(Master)	Reconnect the communication cable.
	Error 11		Software version inconsistent	Call installation for repair.
	Error 12		Multi master	Restart all batteries
Error 13		MOS over temperature	Power off the battery and turn on the battery after 30-40 minutes	

Note:

★ In the case of parallel mode or work mode, if Protection 09 appears and the power button is pressed 5 times within 10 seconds, the BMS will be forced to turn on MOS of discharge so that the battery voltage can be detected by the inverter and the battery can be charged.

5. Emergency Situations

AlphaESS cannot guarantee SMILE5-BAT absolute safety

Fire

In case of fires, make sure that the following equipment is available near the system.

- ★ SCBA (self-contained breathing apparatus) and protective gear in compliance with the Directive on Personal Protective Equipment 89/686/EEC.
- ★ Novec 1230, FM-200, or dioxide extinguisher.

Note:

ABC extinguishers are not effective when the battery pack is on fire.

Batteries may explode when heated above 150°C. If possible, move the battery pack to a safe area before it catches fire.

Leaking Batteries

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. If one is exposed to the leaked substance, immediately perform the actions described below.

- ★ **Inhalation:** Evacuate the contaminated area, and seek medical attention.
- ★ **Contact with eyes:** Rinse eyes with running water for 5 minutes, and seek medical attention.
- ★ **Contact with skin:** Wash the affected area thoroughly with soap and water, and seek medical attention.
- ★ **Ingestion:** Induce vomiting, and seek medical attention.

Wet Batteries

If the battery pack is wet or submerged in water, do not let people access it, and then contact AlphaESS or an authorized dealer for technical support.

Damaged Battery

Damaged batteries are dangerous and must be handled with the utmost care.

They are not fit for use and may pose a danger to people or property.

If the battery pack seems to be damaged, pack it in its original container, and then return it to AlphaESS or an authorized dealer.

Note: Damaged batteries may leak electrolyte or produce flammable gas. If such a damage occurs, immediately contact AlphaESS.

6. Warranty

6.1 Warranty

Products that are operated strictly in accordance with the user manual and the AlphaESS Installation Manual are covered by the warranty. Any violation of this manual may void the warranty.

6.2 Limitation of Liability

Any product damage or property loss caused by the following conditions AlphaESS does not assume any direct or indirect liability.

- Product modified, design changed or parts replaced without AlphaESS authorization;
- Changes, or attempted repairs and erasing of series number or seals by non AlphaESS technician;
- System design and installation are not in compliance with standards and regulations;
- The Product has been improperly stored in dealer's or end user's premises;
- Transport damage (including painting scratch caused by movement inside packaging during shipping). A claim should be made directly to shipping or insurance company as soon as the container/packaging is unloaded and such damage is identified;
- Failure to follow any/all of the user manual, the installation guide and the maintenance regulations;
- Improper use or misuse of the device;
- Insufficient ventilation of the device;
- The maintenance procedures relating to the product have not been followed to an acceptable standard;
- Force majeure (violent or stormy weather, lightning, overvoltage, fire etc.).
- Damages caused by any external factors.



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