



Battery ESS ATEN-100

AGreatE's ATEN 100 Battery Energy Storage System is an all in one (LFP) battery energy storage system (BESS). Designed around a 100kW power platform, the 128kWh, 192kWh, 256kWh, 320kWh and 384kWh battery storage options, allows for easy and reliable light commercial applications. Solar, Wind, Grid, and DG compatible.



ATEN
BATTERY ESS



Advanced & Guaranteed System

- Strong R&D team supports innovative products and continuous improvement thereafter;
- Self-developed BESS controller and EMS, ensuring best reliability of the system;
- High-standard testing process guaranteeing quality delivery;

Reliable & Competitive Quality

- UL9540A compliant up to battery string level, 1 out of 7 manufacturers in China;
- Containerized with protection level at IP54 for the whole system and IP65 for the battery compartment;

Money-saved & Versatile Application

- 6,000 cycles battery cell against market prevailing 3,000 cycles battery cell;
- DC coupling system ensuring higher DC/AC ratio, higher round trip efficiency;
- Accessible to different sources of powers PV, ESS, Grid or DG, supports both on-grid and off-grid modes;

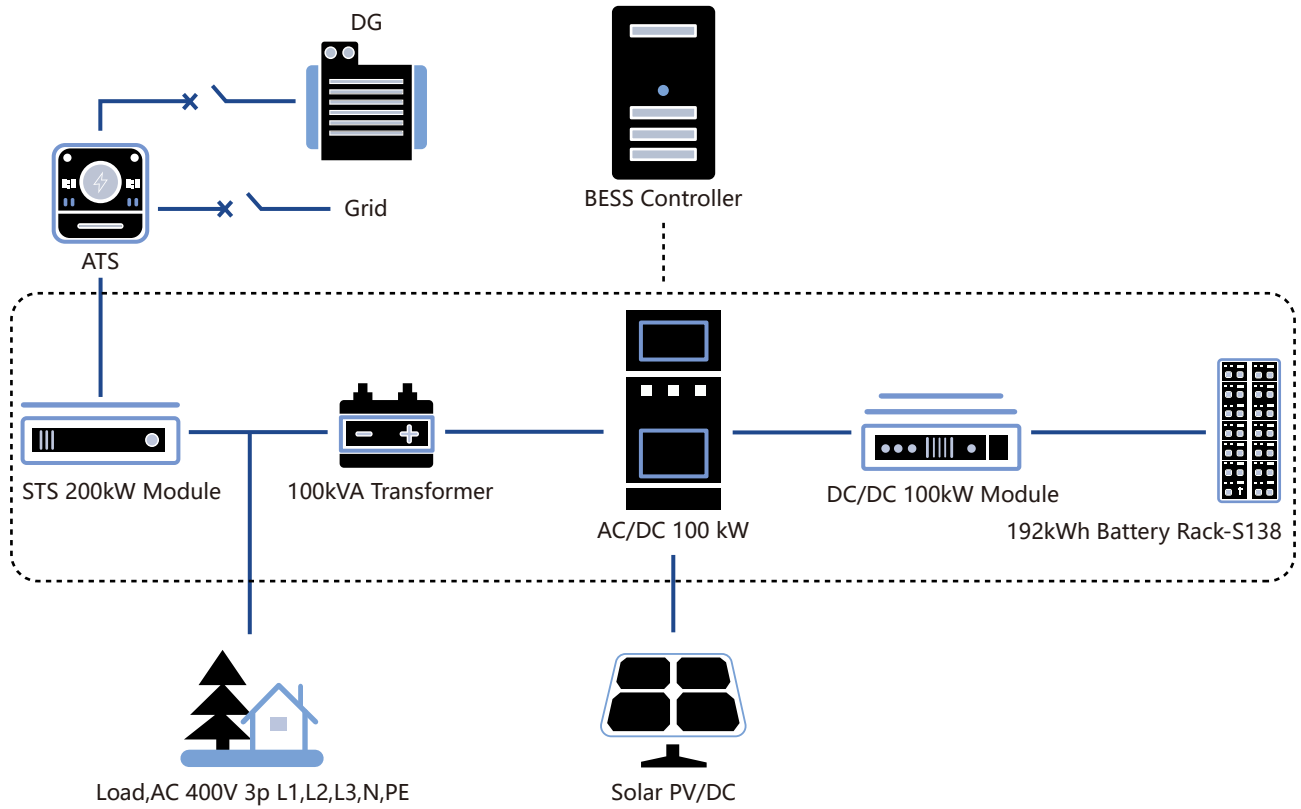
Smart & Easy Operation

- Fully integrated and plug-and-play microgrid system; 7*24 cloud-based monitoring and operation
- platform supports the visit of Mysql database and multiple mobile/PC devices.

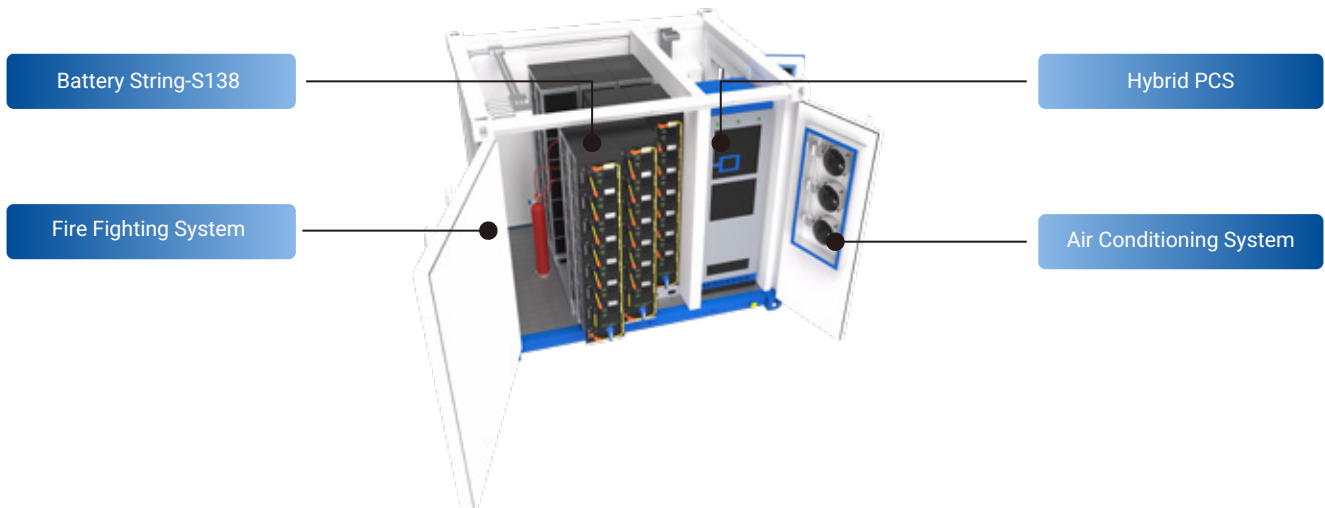
Product features (M50/M100)

- The 50kW/100kW PCS cabinet contains a Hybrid PCS with 250V~520V DC voltage;
- The n*138kWh(n=2~6) battery string is converted to 400V/480V AC through the 50kW/100kW Hybrid PCS, AC power is transferred to the isolated transformer supporting the load;
- The battery string is charged from corresponding PV string and DC/DC Module during day time operation;
- When BAT and PV supplies are insufficient, ATS switches the power supply to DG or grid. STS performs on-grid and off-grid seamless switching to ensure continuous power supply of load;
- The EMS control system runs automatically without manual operation.

System Topology (PV + 100kW PCS + 128/192/256/320/384kWh BESS)



System Configuration



Product Model	S138 Strings		BESS Controller		Power Conversion System
	S138-P9	BESS Controller 4	BESS Controller 8	PWG2-50K-NA	
M100-128	2	1	-	1	
M100-192	3	1	-	1	
M100-256	4	1	-	1	
M100-320	5	-	1	1	
M100-384	6	-	1	1	

□ Key Components



Battery Rack-I

- 1C Charge/Discharge;
- Power supply can be single battery string or parallel battery strings;
- Easy configuration and maintenance

Item	Data
Battery module	S138-7P9
Pack qty	7
Nominal capacity	64kWh
Discharge cutoff- Rated- Charge cutoff voltage	314V~358V~398V
Pack	3.2V/90Ah@2P16S
String measuring voltage range	100~1,000V
String voltage detection accuracy	±0.5%
String voltage sampling period	100ms
String measuring current range	±300A
String current detection accuracy	1%
SOC calculation accuracy	≤7%
Input insulation resistance	≥10MΩ, 1,000V DC
Communication	ModbusTCP ,CAN, ModbusRTU
System cycle life	≥ 5,000 cycles@1C, 25 °C
Dimension (W*D*H)	400*750*2,050mm
Weight	690kg
Certifications	UL1973, UL9540A, IEC62619, CE , UN38.3



BESS Controller

- Data acquisition;
- Multiple protection, overload protection & reverse power protection Intelligent interaction HMI;

Item	Data
Dimension (L*W*H)	480*230*770mm
Weight	35.5kg
Power interface	AC 220V , 50/60Hz
PCS communication	Modbus RTU- Modbus TCP
HVU communication	Modbus TCP
HVAC communication	Modbus RTU
Grid control application	Time shifting, peak shaving, renewables moving average
Offgrid control application	Backup power, PV/DG/EV/ESS integrated micro-grid control
Battery management system	DC busbar incoming control



Power Conversion System

- Single-stage three-level modularization;
- Multi-branch input to reduce battery series and parallels connection;

Item	M50/M100-EX	M50/M100-NA
DC voltage range	250V~520V	
PV voltage range	520V~900V	
Maximum DC current	150A/300A	
Maximum PV current	192A/384A	
Rated output power	100kW	
Rated grid voltage	400V	480V
Grid voltage range	±15%	±10%
Rated grid voltage	50/60±2.5Hz	59.5~60.5Hz
The frequency range of the power grid	72A/144A	60A/120A
Adjustable PF	1(leading)~1(lagging)	
Off-grid voltage	400V	480V
Off-grid voltage range	±10%	
Off-grid frequency	50/60Hz	60Hz
Weight	520kg/750kg	

System Technical Specifications

Item	128kWh	192kWh	256kWh	320kWh	384kWh
DC Data					
Battery Chemisty	Lithium Iron Phosphate (LFP)				
Cell life cycle	80% Retention with 5,000 Cycles @ 1C 25°C				
Cell spec	3.2V/90Ah				
String configuration	2P112S				
Number of strings	2	3	4	5	6
Rack rated energy capacity	128kWh	192kWh	256kWh	320kWh	384kWh
DC rated energy capacity	129.0kWh	193.5kWh	258.0kWh	322.5kWh	387kWh
Rated voltage	358.4V				
Voltage range	313.6V~397.6V				
BMS communication interface	RS485, Ethernet				
BMS communication protocol	Modbus RTU, Modbus TCP				
AC Data					
Rated AC power	100kW				
Maximum AC power	110kW				
Rated grid voltage	400V/480V				
Grid voltage range	±15%/±10%				
AC rate of current	144A/120A				
Output THDi	≤3%				
Grid connected power factor	1(leading)~1(lagging)				
Grid frequency range	50Hz/60Hz±2.5%				
Isolation method	3 Phase 4 Line Transformer				
General Data					
Dimension w/o clearances (L*W*H)	2,991*2,438*2,591mm				
Weight of whole system	<4.2t	<4.3t	<5.8t	<6.6t	<7.5t
Degree of protection	IP54				
Operating temperature range	-20~40 °C				
Relative humidity	0~95 % (non-condensing)				
Max working altitude	3,000m/9,842ft				
Cooling concept of DC hatch	HVAC				
Communication interfaces	RS485, Ethernet, GPRS				
Certificates	UL1973, UL9540A, IEC62619, CE , UN38.3				

□ Notes



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