SUNGROW
Clean power for all

LFP Li-ion Battery System New

Over 1 hour

EFFICIENT & HIGH YIELD

- 20-year service life, 8000+ times system-level cycle life
- Support 1500V system, reduce AC side loss by 60%
- Deep charge & discharge design, initial investment saves more than 5%

INTELLIGENT & FRIENDLY

- 40-foot container can hold 4.4MWh, compatible downwards
- Oneline estimation of SOC & SOH based on scenes and big data
- Support cloud platform, remote real-time monitoring and fault identification

SAFE & RELIABLE

- Two-level short-circuit protection, graded fast current limiting
- Fool-proof, anti-reverse connection design, safer installation and maintenance
- Patented air duct and intelligent air cooling design, temperature difference < 3℃
- Meet global high standard authoritative certification requirements

Item	Specification
Model	M2L-M143
Charge&discharge rate	≤ 1C
Cell type	LFP 280Ah
Configuration	1P16S
Capacity	280 Ah
Nominal energy	14.3 kWh
Charging&discharging power	≤ 14.3 kW
Nominal voltage	51.2 V
Operating voltage range	43.2 V–58.4 V
Dimensions (W*H*D)	455*230*760mm
Weight	105 kg

Item	Specification
Model	M2L-R372
Charge&discharge rate	≤ 1C
Cell type	LFP 280Ah
Configuration	1P416S
Key component	PACK*26+SG*1
Capacity	280 Ah
Nominal energy	372,7 kWh
Charging&discharging power	≤ 372.7 kW
Nominal voltage	1331.2 V
Operating voltage range	1123.2V–1497.6 V
Dimensions (W*H*D)	1500*2285*760 mm

ADVERTISED
PLAN

SMA ENERGY STORAGE STATION

ESS-AC-Energy / ESS-AC-Medium / ESS-AC-Power / ESS-DC-Energy / ESS-DC-Medium

Similar to figure

All in one

- Integration of all components
- Support from design to Site Acceptance Test

Ease of use

- Fully tested and harmonized components
- Simple plug-and-play design
- Modular design for easy extension

Flexibility

- AC-coupled and DC-coupled options available
- Suitable for Micro Grid and Grid connected applications
- Wide range of batteries for power and energy applications

Safety & Reliability

- Designed for harsh environments
- Advanced fire detection system
- Highly efficient thermal management
- Comprehensive monitoring from system to cell level

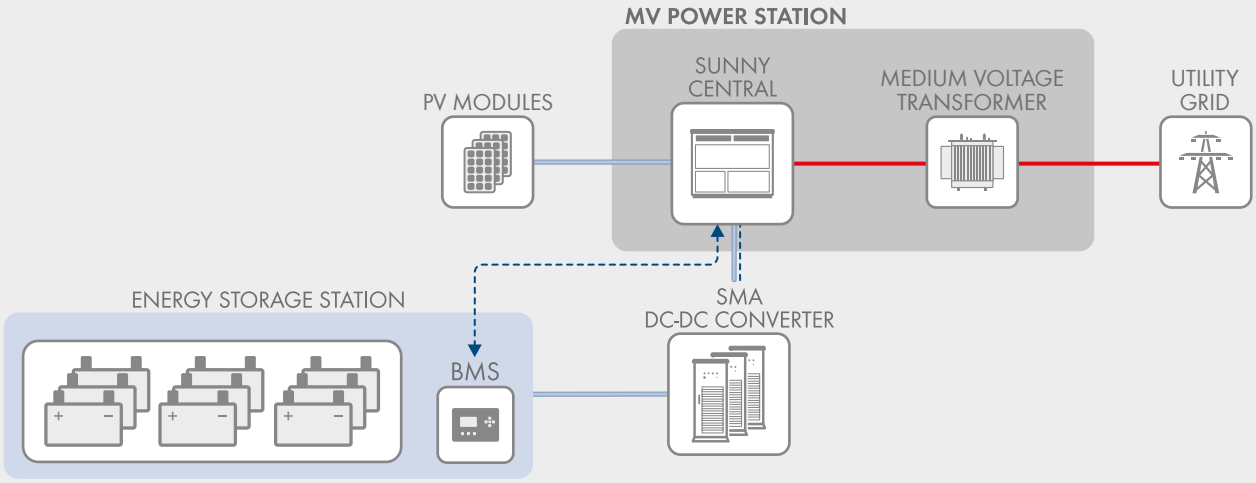
SMA ENERGY STORAGE STATION "SMA ESS"

Plug-and-play storage solution enabling 100% renewable electricity supply

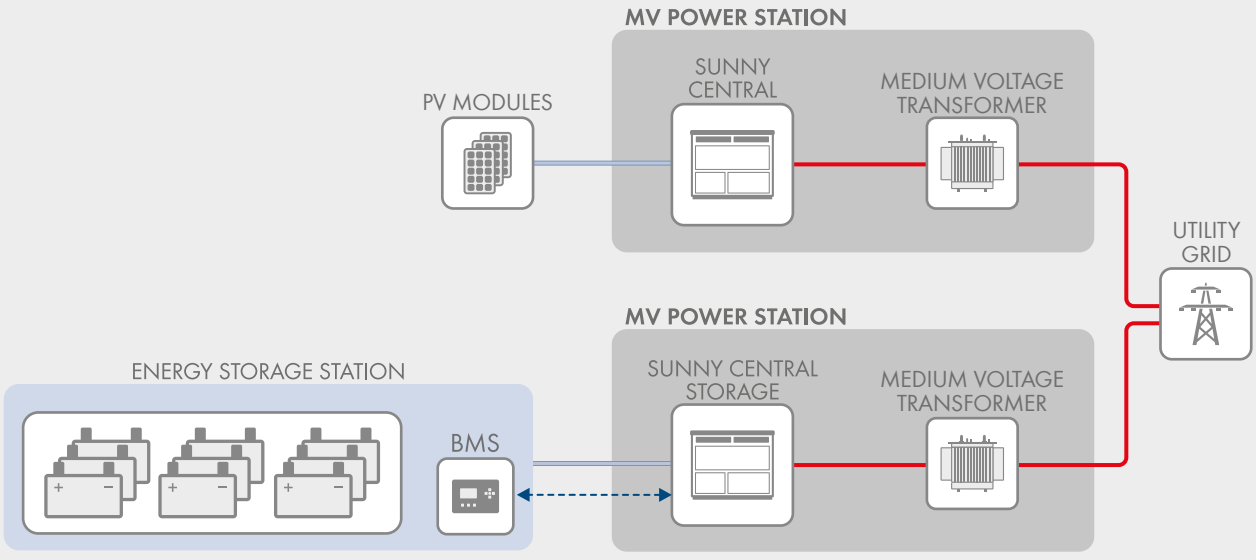
The SMA Energy Storage Station is a standardized container solution to integrate battery storage into photovoltaics systems. It is developed for the majority of use cases associated with renewable sources, especially photovoltaics systems.
It can be connected to the PV generator on the DC-side – using SMA DC-DC Converter – to shift the peak generation to the evening hours of high load demand or connected on the AC-side to perform grid management functions such as frequency and voltage control.
Furthermore, black start capability and grid forming use cases can be supported by the SMA ESS.

SMA ENERGY STORAGE STATION – Typical Use Cases

Photovoltaics & Storage - DC Coupled System



Photovoltaics & Storage - AC Coupled System



DC AC Modbus TCP

Technical data	ENERGY	MEDIUM	POWER
Typical Use-Cases	**Energy Shifting, DC-coupled**	**Grid Services, AC-coupled**	**Frequency control, AC-coupled**
Battery parameters			
Nominal Energy DC[1]	4.5 MWh	3.9 MWh	3 MWh
Usable Energy DC		Depending on application	
Maximum Power DC	2.25 MW	3.9 MW (4.7 MW peak[2])	6.0 MW
Maximum C-Rate	0.5CP	1.0CP (1.2CP peak[2])	2.0CP
Round Trip Efficiency DC[3]	94.5 %	92.5 %	92.5 %
Battery type		Lithium-ion NMC Technology	
Protective Devices			
Disconnection point inside the station		DC load break switch	
DC fuses on battery system level 1 pole / 2 pole		● / ○	
DC overvoltage protection in the station surge arrestor type 2		●	
AC overvoltage protection in the station surge arrestor type 1		●	
Lightning protection on station level		○	
Insulation monitoring / Residual current monitoring		○ / ○	
Degree of protection		IP54	
Fire detection smoke detectors / aspirating smoke detection		● / ○	
Fire alarming		optical & acustical on each front side	
Fire suppression IG-55 incl. pressure relief flap		○	
Humidity control acc. battery requirements		●	
Temperature control acc. battery requirements		●	
Monitoring and control			
Monitoring of battery performance data		monitoring and logging of relevant battery and ambient data	
BMS control interface to the inverter		harmonized with SMA Sunny Central / Sunny Central Storage Series	
Monitoring of ambient condtions in the station		humidity & temperature	
Local data logging / remote data storage (cloud based)		○ / ○[4]	
Reporting on system level		○	
Alarming on component level		supervision HVAC, F&G, BMS, Aux supply, door contacts, surge arrestors	
System compatibility			
Compatible Inverters & DC-DC Converters		SUNNY CENTRAL UP/ SUNNY CENTRAL STORAGE / SMA DC-DC Converter	
Number of DC-DC converters per station (DC-coupled)	2 to 6	6	n/a
Number of battery inverters per station (AC-coupled)	0.5 to 1	1 to 2	2
General data			
Station design concept		central gangway with 2 escape doors	
Outer dimensions (L / H / W)		12192 / 2896 / 2438 mm	
max. weight: during transport / installed (populated with battery modules)		12 tons / 50 tons[5]	
Power consumption (max./ av.)[6]	35 kVA / 7 kVA	50 kVA / 10 kVA	50 kVA / 10 kVA
Ambient operating temperature range		−10 °C to 48 °C (50 °C)	
Max. sound pressure level[7]	58 dB(A)	54 dB(A)	54 dB(A)
Interior relative humidity		< 80%	
Not weather protected outdoor environment[8]		●	
Aggressive environmental conditions[9] (sand storm area, highly dusty, salty seaside air etc.)		○	
Maximum operating altitude meters above sea level		1000 m	
Standards and directives[10]			
Station level		IEC 62485-5	
Cell / module level		IEC 62619, UL 9540A[11]	
● Standard features ○ Optional – not available			
Type designation AC coupling	ESS-AC-Energy	ESS-AC-Medium	ESS-AC-Power
Type designation DC coupling	ESS-DC-Energy	ESS-DC-Medium	–

1) with maximum loaded container, reduced nominal energy is possible with partial loading
2) peak operation 5 min, only discharge
3) average based on target C-rate, depends on the current rating during respective operation, more details upon request
4) at least one feature is mandatory for warranty granted
5) dependent on application
6) For 25 °C ambient temperature. Average values are estimates: HVAC and module fans Medium / Power running at 20% load during daytime. Can vary depending on final configuration and site conditions.
7) max. sound pressure level at10 m distance
8) rain shield for external HVAC units in heavy rain areas recommended
9) to be determined acc. specific site conditions
10) for details see separate overview
11) Listing of battery modules pending