/ MVPS 4000-S2-US / MVPS 4200-S2-US / MVPS 4400-S2-US / MVPS 4600-S2-US



Medium Voltage Power Station

4000-S2-US / 4200-S2-US / 4400-S2-US / 4600-S2-US

Turnkey solution for PV, storage and PV plus storage power plants

SMA OptiCool

Robust
- Complete station is UL 1741-listed* for higher safety and lower risk
- Station and all individual components type-tested for maximum reliability
- Optimally suited to extreme ambient conditions with galvanized base frame

Simple Integration
- Plug and play concept
- Completely pre-assembled for easy set-up and commissioning

Cost-Effective
- Fully integrated transformer and switchgear simplifies logistics
- Minimum O&M requirements create lowest cost of ownership

Flexible
- One product for all markets and applications
- Ideally suited for PV applications, PV plus storage (DC coupled) and storage applications (AC coupled)

With the power of the SMA's robust central inverters, the Sunny Central UP or Sunny Central Storage UP, and with perfectly integrated medium-voltage components, the Medium Voltage Power Station (MVPS) offers high power density in a turnkey solution available worldwide.

The solution is the ideal choice for next-generation PV power plants and battery-storage power plants operating at 1500 VDC. Delivered pre-configured on a 20-foot container-integrated skid, the solution is easy to transport and quick to commission. The UL 1741-listed* MVPS combines rigorous plant safety with maximum energy yield and minimized operating risk.

*All individual components are UL or IEEE listed. When specified with Siemens switchgear, the complete platform is UL listed.

MEDIUM VOLTAGE POWER STATION 4000-S2-US / 4200-S2-US

Technical Data	MVPS 4000-S2-US	MVPS 4200-S2-US
Input (DC)		
Available inverters	1 x SC 4000 UP-US or 1 x SCS 3450 UP-US or 1 x SCS 3450 UP-XT-US	1 x SC 4200 UP-US or 1 x SCS 3600 UP-US or 1 x SCS 3600 UP-XT-US
Max. input voltage	1500 V	1500 V
Number of DC inputs	dependent on the selected inverter	
Integrated zone monitoring	○	
Output (AC) on the medium-voltage side		
Rated power with SC-UP-US (at -25 °C to +35 °C / 40 °C optional 50 °C)[1]	4000 kVA / 3600 kVA	4200 kVA / 3780 kVA
Rated power with SCS-UP-US (at -25 °C to +25 °C / 40 °C optional 50 °C)[1]	3450 kVA / 2930 kVA	3620 kVA / 3075 kVA
Charging power with SCS-UP-XT-US (at -25 °C to + 25 °C / 40 °C optional 50 °C)[1]	3590 kVA/3000 kVA	3770 kVA / 3150 kVA
Discharging power with SCS-UP-XT-US (at -25 °C to + 25 °C / 40 °C optional 50 °C)[1]	4000 kVA / 3400 kVA	4200 kVA / 3570 kVA
Typical nominal AC voltages	12 kV to 34.5 kV	12 kV to 34.5 kV
AC power frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11 / YNy0	● / ○ / ○	● / ○ / ○
Transformer cooling methods	KNAN[2]	KNAN[2]
Transformer efficiency: Standard / Eco Design 1 / Eco Design 2	● / ○ / ○	● / ○ / ○
Max. total harmonic distortion	< 3%	
Reactive power feed-in (up to 60% of nominal power)	○	
Inverter efficiency		
Max. efficiency[3] / European efficiency[3] / CEC weighted efficiency[4]	98.7% / 98.6% / 98.5%	
Protective devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	Medium-voltage vacuum circuit breaker	
DC overvoltage protection	Surge arrester type I	
Galvanic isolation	●	
Internal arc classification medium-voltage control room (according to IEC 62271-202)	IAC A 25 kA 1 s	
General data		
Dimensions equal to 20-foot HC shipping container (W / H / D)	6058 mm / 2896 mm / 2438 mm	
Weight	< 18 t	
Self-consumption (max. / partial load / average)[1]	< 8.1 kW / < 1.8 kW / < 2.0 kW	
Self-consumption (stand-by)[1]	< 370 W	
Environment: standard / harsh / harsh+	● / ○ / ○	
Maximum permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month per year) / 0% to 95%	
Max. operating altitude above mean sea level 1000 m / 2000 m	● / ○	
Fresh air consumption of inverter	6500 m³/h	
Features		
DC terminal	Terminal lug	
AC connection	Outer-cone angle plug	
Station enclosure color	RAL 7004	
Transformer for external loads: without / 10 / 20 / 30 / 40 / 50 / 60 kVA	● / ○ / ○ / ○ / ○ / ○ / ○	
Fuses for external transformers: without / 120 kVA / 180 kVA	● / ○ / ○	
Medium-voltage switchgear: without / 1 panel / 3 panels / 600 A / 800 A 2 cable feeders with load-break switch, 1 transformer feeder with circuit breaker, internal arc classification IAC A FL 25 kA 1 s, partly with UL or ETL Listing	● / ○ / ○ / ○ / ○	
Short circuit rating medium voltage switchgear (20 kA 1 s / 20 kA 3 s / 25 kA 1 s)	● / ○ / ○	
Integrated oil containment: without / with	● / ○	
Industry standards (for other standards see the inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1 IEEE 1547-2018[5], IEEE C37.100.1, IEEE C57.12, C37.20.9, UL 1741 listed[6], CSC Certificate, UL 347	
● Standard features ○ Optional features – Not available		
Type designation	MVPS-4000-S2-US	MVPS-4200-S2-US

1) Data based on inverter. Further details can be found in the data sheet of the inverter. Cold weather -37° is an option.
2) KNAN = Natural ester fluid with natural air cooling
3) For SCS UP-S, for other efficiency values check specific inverter datasheet
4) Efficiency measured at inverter with internal power supply
5) Harmonics are within IEEE 1547-2018 limits with at least two inverters in operation.
6) UL listing of the MVPS skid requires UL listed medium voltage switchgear
* Preliminary

PROJECT FOR

DARTMOUTH BESS

BRISTOL COUNTY, MA

MARK	DATE	DESCRIPTION
A	08/19/2026	PRELIMINARY BESS SITE PLAN

PROJECT NUMBER	
ORIGINAL ISSUE	
PROJECT MANAGER	RICHARD WANG
PROJECT DESIGNER	HDR
PROJECT ARCHITECT	
LANDSCAPE ARCHITECT	
CIVIL ENGINEER	
STRUCTURAL ENGINEER	
ELECTRICAL LEAD	CHUCK LADD
ELECTRICAL ENGINEER	CHRISTIAN SHEPHERD
INTERIOR DESIGNER	
EQUIPMENT PLANNER	
WAYFINDING	
DRAWN BY	HDR

SHEET NAME

EQUIPMENT DATASHEET - PCS

SCALE NONE

SHEET NUMBER

BES-E1000B

FILE NAME BES-E1000B.dwg

CONCEPTUAL