Commercial Solutions

High Voltage Range - Outdoor Battery Storage

5 Years
Guarantee on Product Material & Workmanship

12 Years
Energy Output Warranty

The Solar MD Outdoor Battery Storage Solution is one of the most flexible solutions available on the market. It features four side mounting plates, allowing for the installation of equipment tailored to individual requirements.

This cabinet is **compatible with any hybrid inverter** designed to work with Solar MD batteries, offering users the freedom to customize their setup. Additionally, a range of add-on solutions is available, including pre-configured PCS, MPPT, STS, and other products, providing enhanced versatility and functionality.

Features

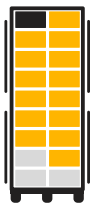
- **'Ready-to-Go' Deployment & Commissioning**
- **Unmatched Lightweight Design**
- **Designed for Maximum Adaptability**
- **Expand with Add-on Products**
- **Engineered & Tested For All Weather Conditions**
- **Designed for Outdoor Use**
- **Integrated Advanced EMS**
- **Integrated Cooling System**
- **Built-In Fire Protection Features**
- **Compatible Across All Major Brands**

Technical Data

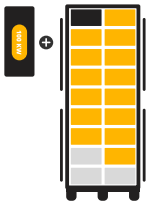
HV - Outdoor Battery Storage Solution

Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CATL
Capacity Range	80 - 272 kWh
Operational Voltage (min/max)	236 - 945.2 V
Number of battery modules	5 - 17 pcs (SS6160 Modules)
Battery Rack	CB52x_HV-H9-R2
Cell Certification & Standards	IEC 62619 / UN38.3 / UN3480/ UL1642/ CE
Cycle Life @25°C	≥7000
Recommended depth of discharge (DoD)	90%
Cabinet Round Trip Efficiency	> 93% (Battery Only)
Cabinet Ambient Temperature	-10°C to 50°C (-30°C on request)
Cabinet Thermal Insulation	SPX33 - Polyethylene foam
Protection Class	IP65
Cabinet Safety Standard	IEC 62933-5-2:2020
Battery Safety Standard	CE / EN 55016 / IEC 61000
Fire Protection	Fire Pro (Eco Friendly - K2 CO3)
Climatization	Air Conditioner
Energy Management System	mypower24 Plant Controller

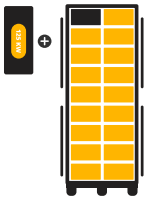
Add on PCS Bundles



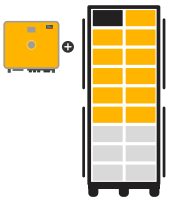
Standalone
80 - 272 kWh



Bundle
100kW / 208 kWh



Bundle
125kW / 272kWh



powered by SMA
50kW / 112kWh

DC Parameters				
Battery voltage operating range	236 - 945.2 V	613.6V - 722.8V	802.4 - 945.2 V	330.4 - 389.2V
Number of battery modules	5 - 17 pcs	13 pcs	17 pcs	7 pcs
PCS voltage operating range	-	580-1000V	580-1000V	200 - 980 V
PCS Maximum charge - / discharge current	157 A	157 A	157 A	150 A
AC Parameters				
Rated charge/discharge power	-	100kW	125 kW	50 kW
Maximum charge/discharge power	-	110kW	150 kW	50 kW
Rated grid voltage	-	400V	400V	400V
Rated grid frequency	-	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
Topology	-	Three-phase / Transformerless	Three-phase / Transformerless	Three-phase / Transformerless
Connection Lines	-	3W+N+PE	3W+N+PE	3W+N+PE
Efficiency				
Maximum efficiency	-	98.9%	98.9%	98.0 %
Protection				
Surge protection	-	AC: Type II	AC: Type II	DC: Type II / AC: Type III
PCS Parameters				
Weight	-	58kg	58kg	104 kg
Ambient	-	-40°C - 60°C	-40°C - 60°C	-25°C - 60°C
Communication type	-	Ethernet, RS485, CAN	Ethernet, RS485, CAN	Ethernet, CAN, Speedwire, RS485
PCS Warranty Period	-	10 Years	10 Years	5 + 5 Years
Cabinet Parameters				
Dimensions	1248mm x 1112mm x 2623mm	1248mm x 1112mm x 2623mm	1248mm x 1112mm x 2623mm	1248mm x 1112mm x 2623mm
Weight	2178.8 kg fully loaded (149kg empty)	2178.8 kg fully loaded (149kg empty)	2178.8 kg fully loaded (149kg empty)	2178.8 kg fully loaded (149kg empty)
Battery rack	CB52x_HV-H9-R2	CB52x_HV-H9-R2	CB52x_HV-H9-R2	CB52x_HV-H9-R2
Ambient Temperature	-10°C to 50°C (-30°C on request)	-10°C to 50°C (-30°C on request)	-10°C to 50°C (-30°C on request)	-10°C to 50°C (-30°C on request)
EMS	mypower24 Plant Controller	mypower24 Plant Controller	mypower24 Plant Controller	mypower24 Plant Controller
Protection class	IP65	IP65	IP65	IP65
Cooling	Air Conditioner	Air Conditioner	Air Conditioner	Air Conditioner
Fire Safety	Fire Pro (Eco Friendly - K2 CO3)	Fire Pro (Eco Friendly - K2 CO3)	Fire Pro (Eco Friendly - K2 CO3)	Fire Pro (Eco Friendly - K2 CO3)

Variations

The Solar MD Outdoor Battery Storage Solution is available in a **standalone version**, accommodating between **5x and 17x SS6160 modules**, offering energy storage capacities ranging from **80 kWh to 272 kWh**. This configuration is compatible with any suitable hybrid inverter, making it a versatile choice for various energy applications.

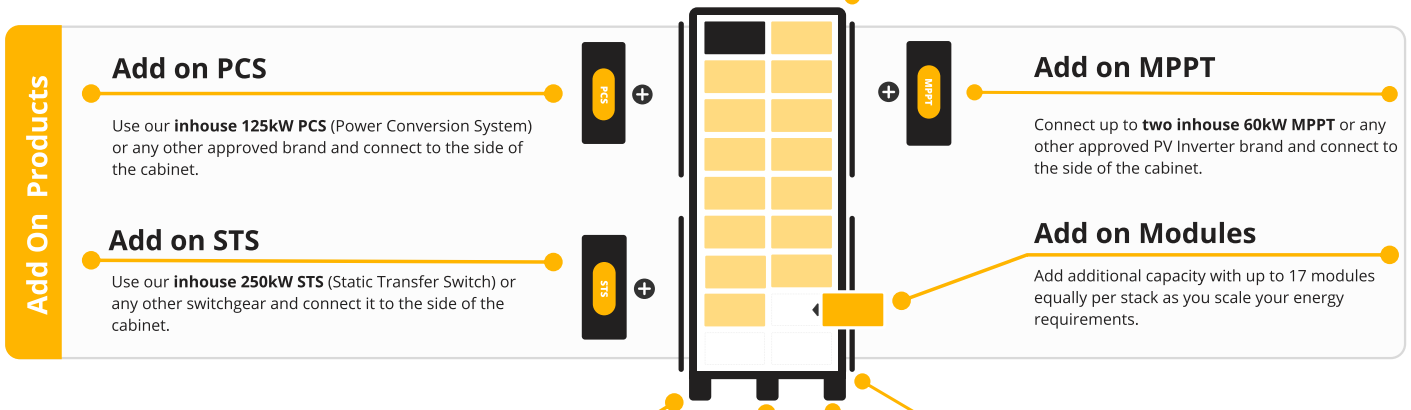
In addition to the standalone solution, Solar MD offers exclusive **bundled add-on products** that further enhance system capabilities. These bundles include **pre-configured solutions such as PCS (Power Conversion Systems), MPPT (Maximum Power Point Trackers), STS (Static Transfer Switches)**, and other innovative products, all designed to integrate seamlessly with the Solar MD Outdoor Cabinet for a comprehensive energy solution.

BMU

The BMU is responsible for collecting information of the entire battery system, SOC calculations and information exchange among the various battery modules in its respective cluster, and guarantees the safe and reliable operation of the entire energy storage system. The BMU is also responsible for communication with external devices (eg. PCS/HPS/Charger etc).

SS70xx Inside

The High Voltage battery system is integrated into the outdoor cabinet and ranges from 80 kWh (SS7008-05) to 272 kWh (SS7027-05), each battery system is fully modular with the addition of SS6160 modules in series.



Add on PCS

Use our **inhouse 125kW PCS** (Power Conversion System) or any other approved brand and connect to the side of the cabinet.

Add on MPPT

Connect up to **two inhouse 60kW MPPT** or any other approved PV Inverter brand and connect to the side of the cabinet.

Add on STS

Use our **inhouse 250kW STS** (Static Transfer Switch) or any other switchgear and connect it to the side of the cabinet.

Add on Modules

Add additional capacity with up to 17 modules equally per stack as you scale your energy requirements.

Fire Safety

Fire detection system according to IEC standards utilising environmentally friendly aerosol technology.

System Cooling

Integrated air conditioner with 1.5 kW of cooling capacity to keep the system operating at optimal temperatures

Mounting Side Plates

Installed with Four side mounting plates for installation of equipment tailored to individual requirements.

Battery Frame CB5x_HV-H9-R2

The battery frame CB52x_HV-H9-R2 accommodates 18 racking slots where one is used for the BMU in each battery system. The frame is constructed from heavy-duty stainless steel for durability and comes integrated into the outdoor cabinet.

Applications

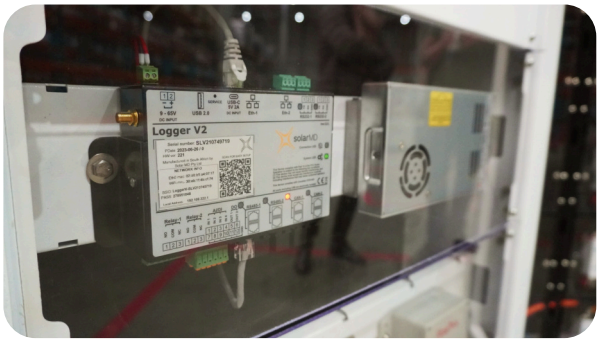
- **Back-Up Power**
- **Commercial & Residential UPS Systems**
- **Charger Systems**
- **Off-Grid Electricity Supply**
- **Peak Shaving**
- **High Voltage Battery Inverter**

Monitoring & Control

The High-Performance Logger V2 and mypower24 management platform are seamlessly integrated into our cabinet solution for efficient energy management. The Logger V2 enables fast communication via multiple interfaces (CAN Bus, RS232, RS485, Ethernet, Wi-Fi) and supports programmable relays, digital/analogue inputs/outputs, and device compatibility with inverters, energy meters, and weather stations. mypower24 compliments it with real-time data insights, secure remote management, and centralised control of energy infrastructure.


solarMD

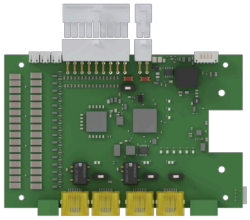

solarMD


Logger V2

Each battery module features a sophisticated **Battery Management System (BMS)**. This system seamlessly communicates with the **Battery Management Unit (BMU)** to ensure optimal performance and safety in high-voltage energy storage systems.

- **Data collection & storage for monitoring**
- **Efficient charging & discharging control**
- **Precise cell voltage measurement**
- **Built in temperature sensors**
- **High voltage management to prevent damage**
- **Cell balancing for extended lifespan**
- **SOC Calculation & Control**
- **CANBUS & RS485 Communication**

Battery Management System



Each Solar MD battery, whether low or high voltage, has its own Battery Management System (BMS) designed and built in-house. The BMS handles the internal functions of each battery.

In setups with multiple batteries, the BMS independently manages each one, ensuring a stable energy flow throughout the battery system. In a high-voltage system, the BMS communicates with the Battery Management Unit (BMU), which consolidates all the information and relays it to the mypower24 portal.

BMS-EX

Input Voltage	12 - 65 VDC
Status Indication LED	Status/Warning/Error
Main Dip Switch	on/off
Communication Ports	CANBUS 1 CANBUS 2 / RS458 Ethernet
Relays Isolated (200V- 0.2A)	2
Dimensions W x H x D	130mm x 170mm x 40mm
Weight	0.1 kg
Certification	CE / IEC61000

Battery Management Unit

The BMU is used in combination with the SS6143 & SS6160 modules and forms part of our high-voltage energy system. It is responsible for gathering data from the entire battery system, performing state of charge (SOC) calculations, and facilitating information exchange among the various battery modules in its cluster.

It ensures the safe and reliable operation of the entire energy storage system. Additionally, the BMU handles communication with external devices, such as PCS, HPS, and chargers.

BMU-H17-01

Operational Voltage	250 - 1000V DC
Max current	200A
HV output connector	50mm² (70mm² Containerized solution)
Module input connectors	50mm²
Positive and negative fuse	1500VDC, 200A
Mechanical isolator	1500V, 250A
Power Consumption	2W (Standby) 7.6W (Max)
Communication Ports	CANBUS 1 CANBUS 2 CANBUS 3 / RS458 Ethernet
Dimensions	416.6mm x 361.7mm x 225.8mm
Weight	18.8kg

Contact Us

021 555 2181

081 555 2181

Info@solarmd.co.za

solarmd.co.za