Commercial Solutions

High Voltage Range

5 Years
Guarantee on Product Material & Workmanship

12 Years
Energy Output Warranty

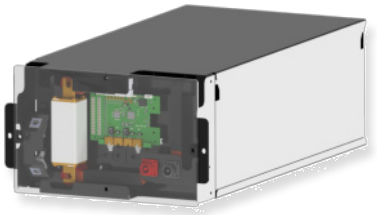
Solar MD's High Voltage battery range is built in-house with high quality materials and innovative technology. These batteries are designed to be versatile, offering a variety of solutions for homes, businesses, and industrial facilities applications.

Features

- **High energy density**
- **Unmatched Reliability & Low Maintenance**
- **Field Replaceable Modular Components**
- **Stable discharge platform**
- **Long life cycle**
- **Green technology**
- **Quick Installation**
- **Scalable Design**
- **Engineered & Tested For Harsh Environments**
- **Advanced Battery Management**
- **Excellent Safety & Fire Protection Features**
- **High charge & discharge rate**

Applications

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



SS6160

Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CATL
Rated Capacity	16 kWh
Nominal Power @0.5C	8 kW
Nominal Voltage	51.2V
Operational Voltage	47.2 - 55.6Vdc
Max Charge & Discharge Current	157A
Weight per module	114kg
Dimensions W x D x H	410mm x 712mm x 242mm

Product Diagram

The Battery Module SS6160 combines to a flexible battery system with the SS70xx racking system.

Battery Management Unit (BMU)

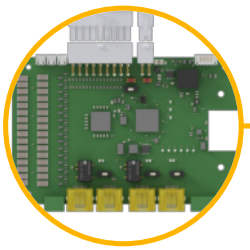
The BMU is responsible for collecting information of the entire battery system, SOC calculations and information exchange among the various battery modules in its respective cluster, and guarantees the safe and reliable operation of the entire energy storage system. The BMU is also responsible for communication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

Battery Module SS6160

The High Voltage battery system 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.

The SS70xx battery system can then be connected in parallel to meet your storage requirements.

Each module is field changeable and can be exchanged for a new unit when needed.

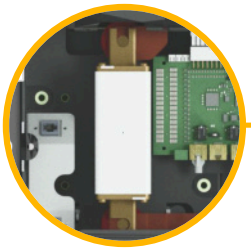


Battery Management System (BMS)

Each battery module has its own BMS which is used for communication with the BMU, as well as perform internal functions down to cell level in each module.

Battery Frame (CB5x_HV-Hx)

The battery frame (CB5x_HV-Hx) is available in several sizes to accommodate 8, 12, or 18 racking slots where one is used for the BMU in each battery system. The powder coated frame is constructed from heavy-duty stainless steel for durability and comes flat packed incl. accessories.



Fuse

Each module includes a 200A/1500V gBAT fuse that protects the system from potential damage.

Connection Cables

The battery system comes with pre cut/crimp HV-Connection & communication cables.

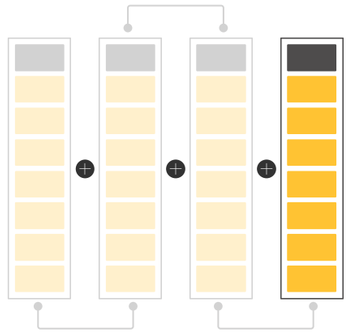
Variations

The SS70xx range combines the SS6160 battery module into a high voltage battery solution of 5 to 17 modules, which is widely used in energy storage applications worldwide.

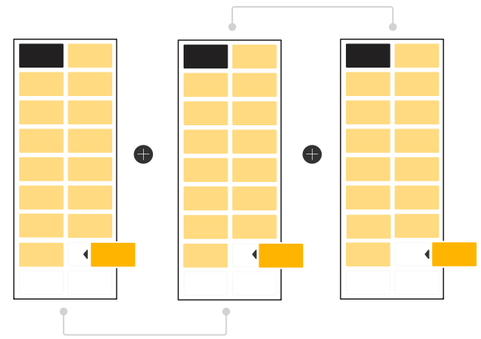
The battery capacity starts at 80 kWh up to a maximum of 272 kWh per battery as per below table. The SS70xx solution can then be connected in parallel in a nearly infinite number to meet your storage requirements.

Each high voltage energy storage system comes with the Solar MD advanced BMU on top of each stack and BMS in each SS6160 battery module. Together with our Logger V2 this technology Integrates with major inverter brands.

Extend your existing system anytime when more capacity is needed



Parallel battery stack to an infinite number.



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

Operational Temperature
0°C to 50°C

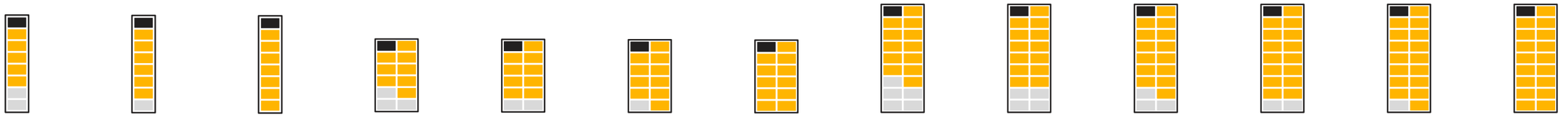
Storage Duration
6 months @25°C

Cycle Life
≥7000

Charging Efficiency
99%

Safety Standard Compliance
CE / EN 55016 / IEC 61000

Cell Certificate
IEC 62619 / UN38.3 / UN3480 / UL 1642 / UL 1973



	SS7008-05	SS7010-05	SS7011-05	SS7013-05	SS7014-05	SS7016-05	SS7018-05	SS7019-05	SS7021-05	SS7022-05	SS7024-05	SS7026-05	SS7027-05
Rated capacity	80 kWh	96 kWh	112 kWh	128 kWh	144 kWh	160 kWh	176 kWh	192 kWh	208 kWh	224 kWh	240 kWh	256 kWh	272 kWh
Nominal Power (@0.5C)	40 kW	48 kW	56 kW	64 kW	72 kW	80 kW	88 kW	96 kW	104 kW	112 kW	120 kW	128 kW	136 kW
Nominal Voltage	256V	307.2V	358.4V	409.6V	460.8V	512V	563.2V	614.4V	665.6V	716.8V	768V	819.2V	870.4V
Operational Voltage (Min/Max)	236V - 278V	283.2V - 333.6V	330.4V - 389.2V	377.6V - 444.8V	424.8V - 500.4V	472V - 556V	519.2V - 611.6V	566.4V - 667.2V	613.6V - 722.8V	660.8V - 778.4V	708V - 834V	755.2V - 889.6V	802.4V - 945.2V
Communication	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet
Number of battery modules	5	6	7	8	9	10	11	12	13	14	15	16	17
Battery Rack	CB51x_HV-H8-R1	CB51x_HV-H8-R1	CB51x_HV-H8-R1	CB52x_HV-H6-R2	CB52x_HV-H6-R2	CB52x_HV-H6-R2	CB52x_HV-H6-R2	CB52x_HV-H9-R2	CB52x_HV-H9-R2	CB52x_HV-H9-R2	CB52x_HV-H9-R2	CB52x_HV-H9-R2	CB52x_HV-H9-R2
Total weight[1]	629.2 kg	743 kg	856.8 kg	986.4 kg	1100.2 kg	1214 kg	1327.8 kg	1470.8 kg	1584.6 kg	1698.4 kg	1812.2 kg	1926 kg	2039.8 kg
Dimensions W x D x H	424mm x 712mm x 1976mm	424mm x 712mm x 1976mm	424mm x 712mm x 1976mm	848mm x 712mm x 1482mm	848mm x 712mm x 1482mm	848mm x 712mm x 1482mm	848mm x 712mm x 1482mm	848mm x 712mm x 2223mm	848mm x 712mm x 2223mm	848mm x 712mm x 2223mm	848mm x 712mm x 2223mm	848mm x 712mm x 2223mm	848mm x 712mm x 2223mm

Note: All CB51x_HV-Hx-Rx come flat packed and include DC series connector cables connected between battery modules and to the BMU; HV output connector; communication cable; blank plates; rack fastener; and feet.

[1] Total system weight on site. Shipping weight and packaging sizes will change according to transport (sea/road) weight limitations.

Energy Management System

System Level Management

The Energy Management System (EMS) is a comprehensive solution designed to monitor, control, and optimize the energy consumption and production of all connected systems.

The EMS integrates seamlessly with various brands and devices, including energy meters, generators, and inverters. This capability enables real-time adjustments to energy consumption and production, empowering you to make informed decisions for optimal system management. Regular reports provide insights into energy consumption, cost savings, and environmental impact.

Features:

- Remote Control
- Solar Inverter Integration
- Generator and Alternative Sources
- Energy Arbitrage (Integration with local energy exchange)
- Energy Management
- Peak Shaving
- Mini-Grid Management

  Free access - No monthly fee

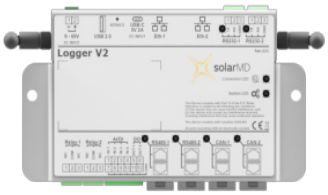
Battery Level Management

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.

Key functionalities include:

- Precise cell voltage measurement
- Cell balancing for extended lifespan
- High voltage management to prevent damage
- Data collection and storage for monitoring
- Efficient charging and discharging control
- Built in temperature sensors for optimal thermal management

Monitoring & Control



Logger V2 (The Device)

The High-Performance Logger V2 offers easy and fast communication with automatic device discovery and connection.

- **Interfaces** include CAN Bus, RS232, RS485, Ethernet, and Wi-Fi (client and station).
- Integrated **programmable relays,** digital inputs, digital outputs, analogue input, analogue output for load control.
- **Communicates with** supported inverters, energy meters, weather stations, and other energy devices.

mypower24 (The Platform)

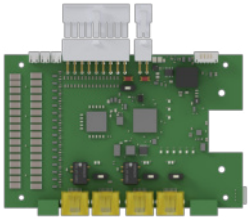
mypower24 is a comprehensive management platform designed to simplify and centralise the control of your energy devices. Seamlessly integrating with your Logger V2, mypower24 offers a robust suite of features that effectively manage and optimise your energy infrastructure:

- **Real-Time Data & Insights:** Gain valuable insights into your energy usage with real-time data visualisation and historical records.
- **Safe & Secure:** High-security standards via certified authentication and encrypted data transfer.
- **Convenient Remote Management:** Remotely manage your system & devices for maximum efficiency.

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