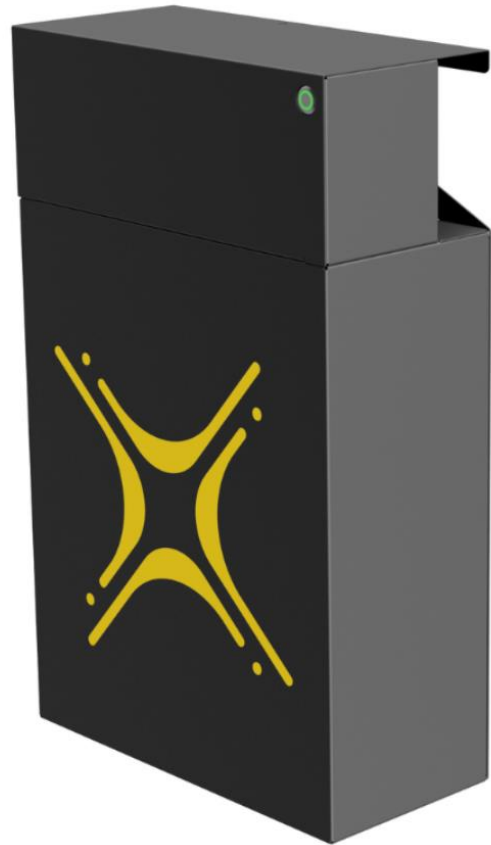


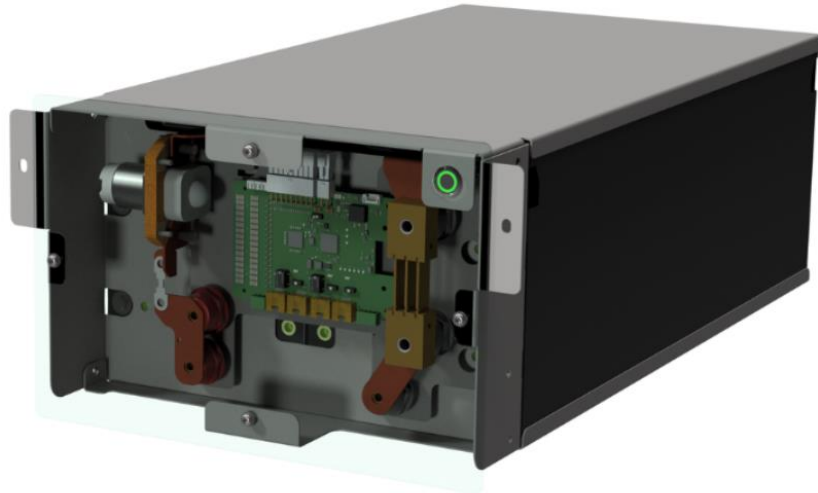


**SS4143**

Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CATL
Rated Capacity	14.3 kWh
Nominal Power	10.0 kW
Usable Battery Energy @0.3C	13.0 kWh
Nominal Voltage	51.2 V
Number of Battery Modules	1
Weight	118 kg
Operational Voltage	44.8 - 55.6 Vdc
Communication	CANBUS / RS485
Dimensions (W x D x H)	675 x 185 x 605 mm
Cycle Life @25°C	≥6000
Charging Efficiency	99%
Operational Temperature	0°C to +50°C
Transport	UN3480 & UN38.3
Storage Duration	6 months @25°C
Safety Standard Compliance	IEC 62619 / UN38.3 / UL1642
Cell Certificate	TUV / CE / RCM / UL1642



<b>SS4083</b>	
Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CALB
Rated Capacity	8.3 kWh
Nominal Power	7.5 kW
Usable Battery Energy @0.3C	7.51 kWh
Nominal Voltage	51.2 V
Number of Battery Modules	1
Weight	70 kg
Operational Voltage	44.8 - 55.6 Vdc
Communication	CANBUS / RS485
Dimensions (W x D x H)	389 x 183 x 635 mm
Cycle Life @25°C	≥4000
Charging Efficiency	99%
Operational Temperature	0°C to +50°C
Transport	UN3480 & UN38.3
Storage Duration	6 months @25°C
Safety Standard Compliance	IEC 62619 / UN38.3 / UL1642
Cell Certificate	TUV / CE / UL1642

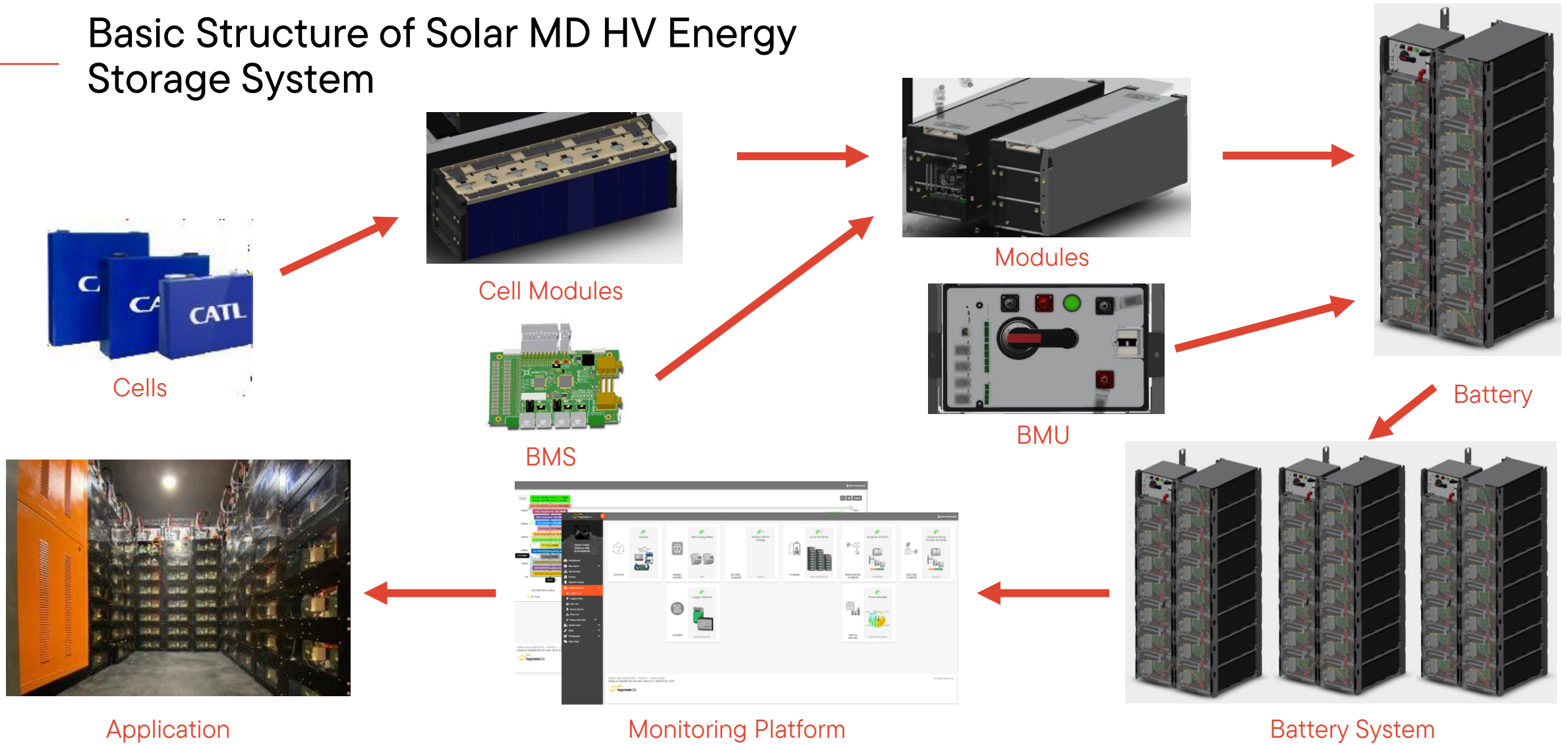


<b>SS214</b>	
Cell chemistry	Lithium Iron Phosphate (LiFePO4)
Cell manufacturer	CATL
Rated capacity	14.3kWh
Nominal Power	10.0kW
Usable Battery Energy @0.3C	13.0kWh
Nominal Voltage	51.2V
Number of battery modules	1
Weight per module	115kg
Operational Voltage	44.8 - 55.6Vdc
Communication	CANBUS / RS485
Dimensions W x D x H	364mm x 700mm x 234mm
Cycle life @25°C	≥6000
Charging Efficiency	99%
Operational temperature	0°C to +50°C
Transport	UN3480 & UN38.3
Storage duration	6 months @25°C
Safety standard compliance	IEC 62619 / UN38.3 / UL1642
Cell certificate	TUV / CE / UL1642

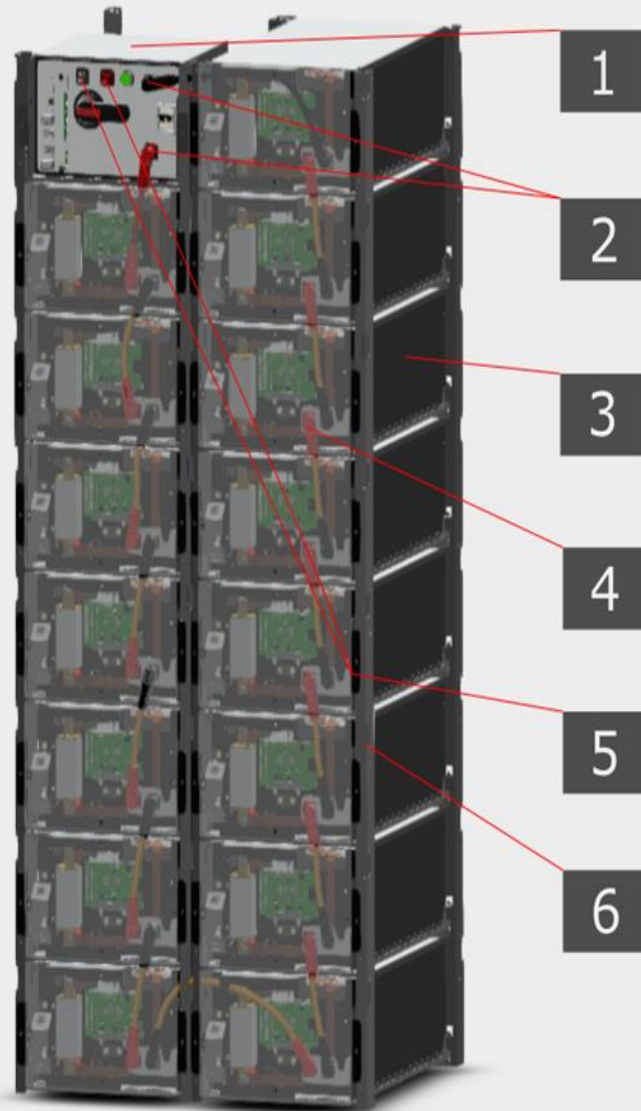


## Solar MD HV – Energy storage solutions

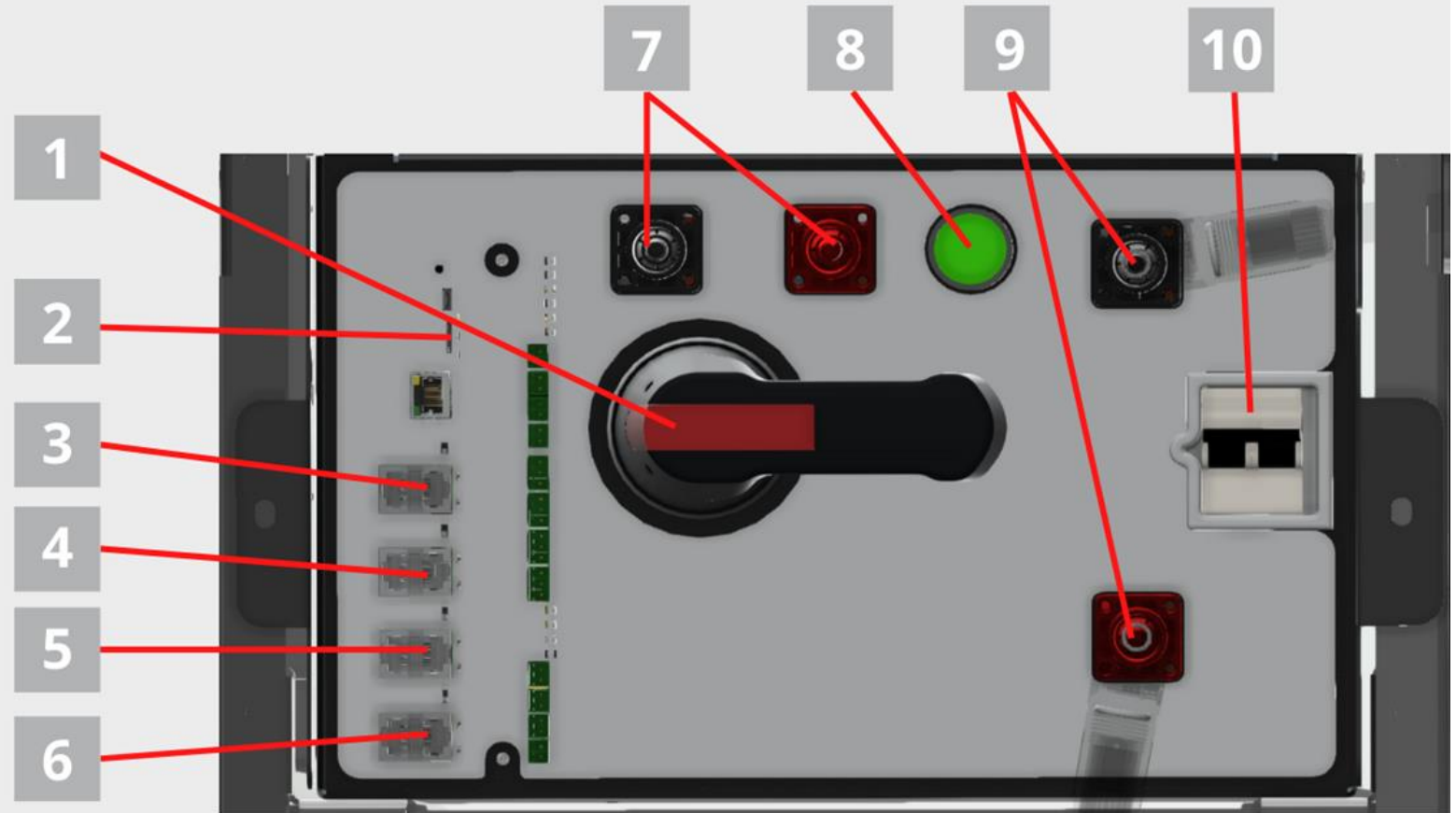
# Basic Structure of Solar MD HV Energy Storage System



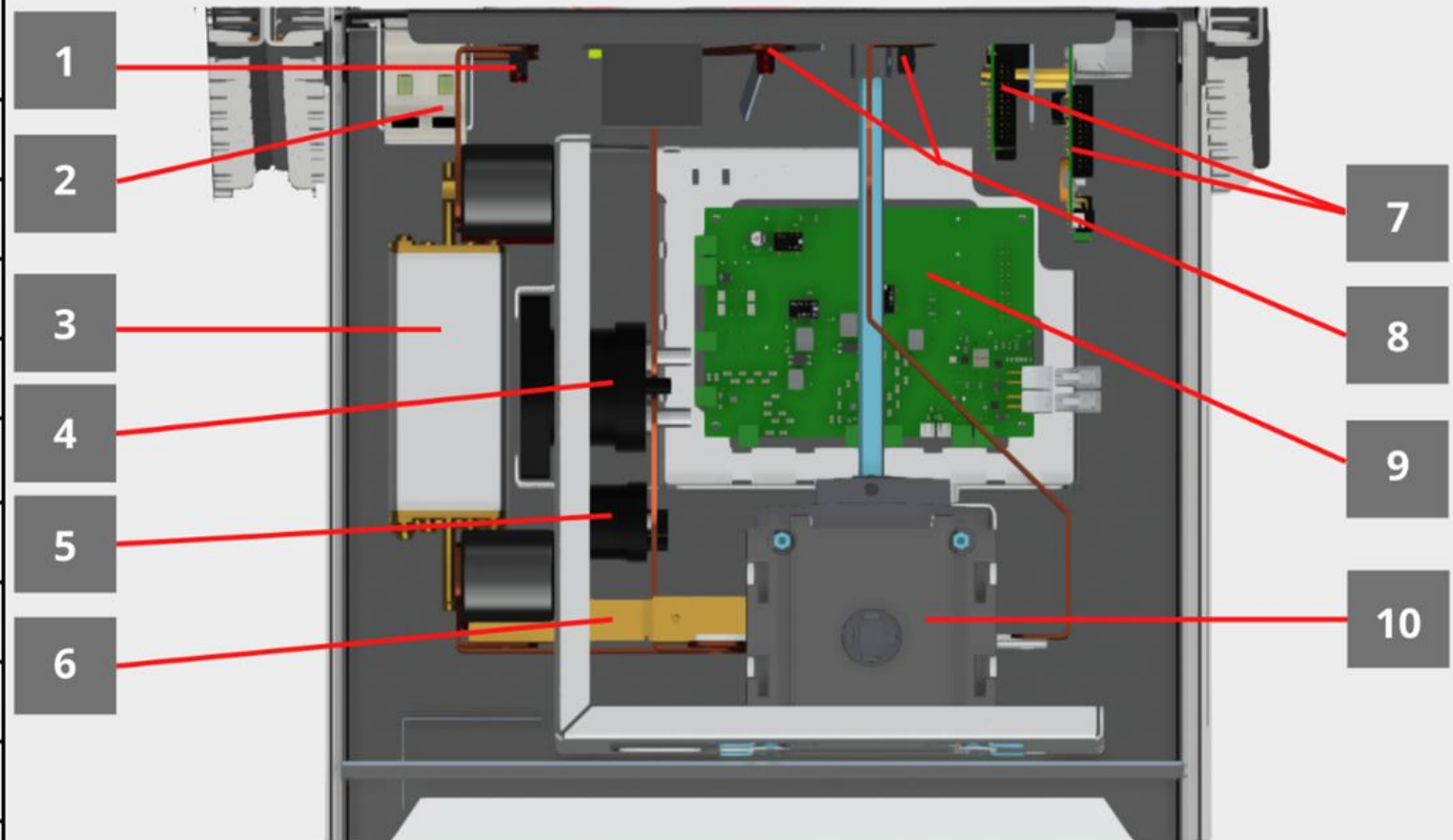
No	Description
1	Battery Management Unit
2	Battery HV positive and negative connectors
3	Battery Module
4	HV Battery Module cables
5	HV Output Connectors
6	Battery Frame



No	Description
1	Mechanical Isolator
2	Service Ports
3	RS485 (External communication)
4	CAN BUS 3 (External communication)
5	CAN BUS 2 (Internal communication)
6	CAN BUS 1 (Internal communication)
7	HV Output Connectors
8	Multifunction Push Button
9	Battery HV positive and negative connectors
10	DC Power Supply Fuses

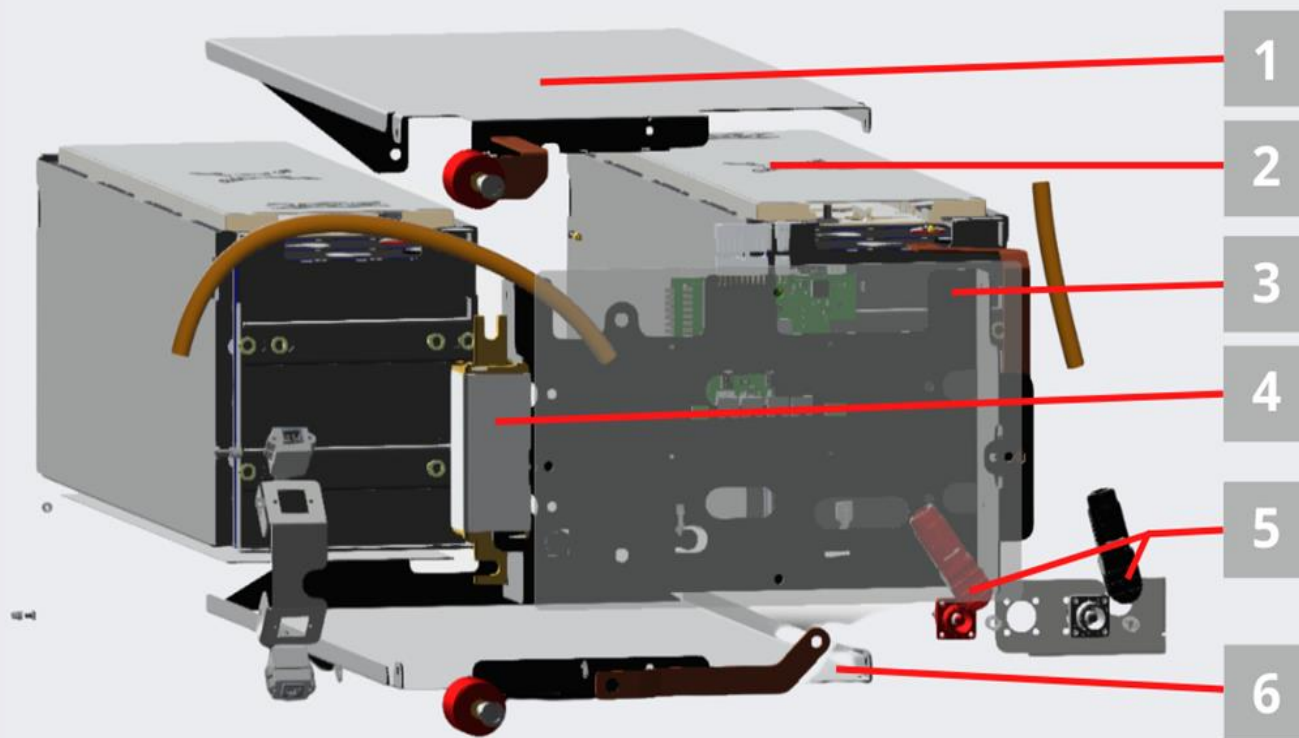


No	Description
1	Battery HV positive and negative connectors
2	DC Power supply fuses
3	200A fuses
4	Main relay
5	Pre-charge Circuit Relay
6	Shunt
7	Communications PCB's
8	HV Output connectors
9	Main Power PCB
10	Mechanical isolator

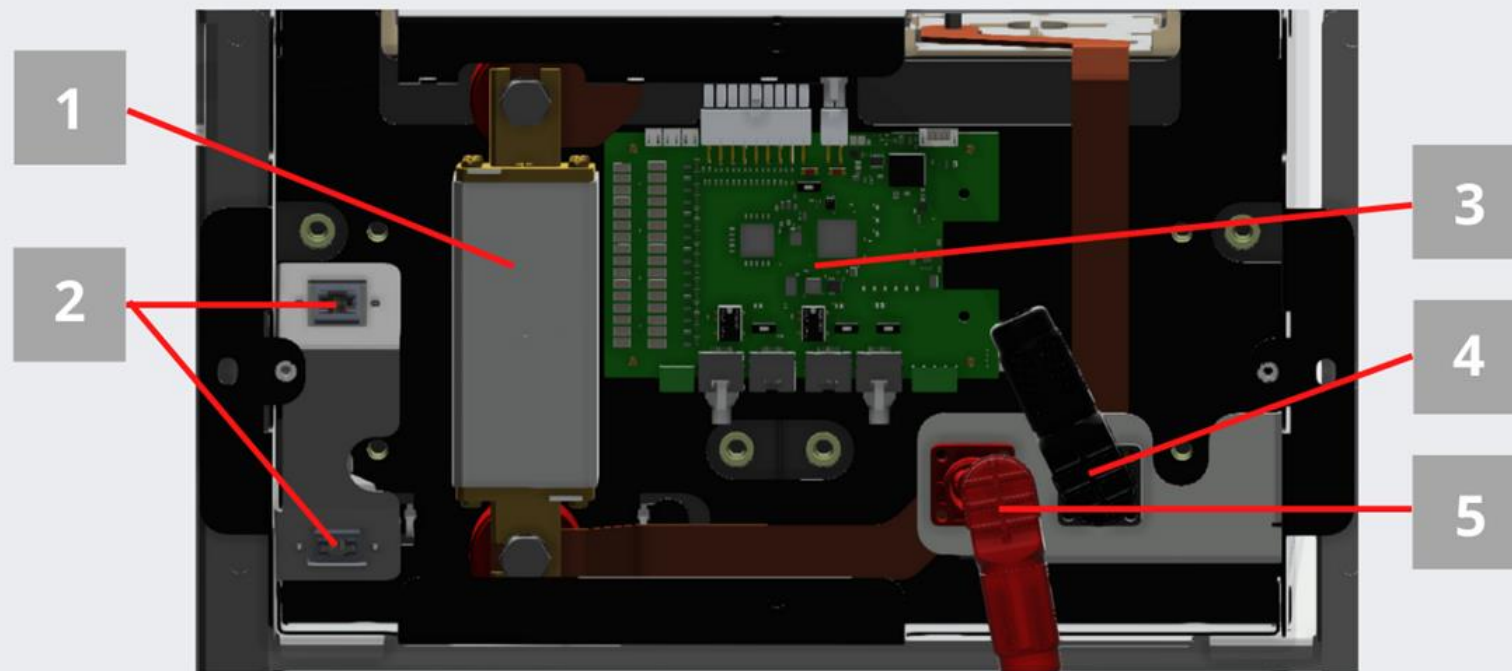




No	Description
1	Module Top Cover
2	Cell Cover
3	Perspex Face Plate
4	250A Fuse
5	HV Battery Module Connectors
6	Module Bottom Cover



No	Description
1	250A Fuse
2	CAN BUS Module Connectors
3	BMS
4	HV Negative Module Connector
5	HV Positive Module Connector



## Solar MD SS70XX spec range

The Solar MD HV range of batteries range from the SS7011 to the SS7024, each battery is fully modular with the addition of SS6143 modules.

SS7011	
Cell chemistry	Lithium Iron Phosphate (LiFePO4)
Cell manufacturer	CATL
Rated capacity	114.4kWh
Nominal Power	80.0kW
Usable Battery Energy @0.3C	104.0kWh
Nominal Voltage	409.6V
Number of battery modules	8
Weight per module	115kg
Total weight	985kg
Operational Voltage	358.4 - 444.8Vdc
Communication	CANBUS / RS485 / Ethernet
Dimensions W x D x H	848mm x 704mm x 1245mm
Cycle life @25°C	≥6000
Charging Efficiency	99%
Operational temperature	0°C to +50°C
Transport	UN3480 & UN38.3
Storage duration	6 months @25°C
Safety standard compliance	IEC 62619 / UN38.3 / UL1642
Cell certificate	TUV / CE / UL1642



SS7024	
Cell chemistry	Lithium Iron Phosphate (LiFePO4)
Cell manufacturer	CATL
Rated capacity	243.1kWh
Nominal Power	170.0kW
Usable Battery Energy @0.3C	221.0kWh
Nominal Voltage	870.4V
Number of battery modules	17
Weight per module	115kg
Total weight	2055kg
Operational Voltage	761.6 - 945.2Vdc
Communication	CANBUS / RS485 / Ethernet
Dimensions W x D x H	848mm x 704mm x 2221mm
Cycle life @25°C	≥6000
Charging Efficiency	99%
Operational temperature	0°C to +50°C
Transport	UN3480 & UN38.3
Storage duration	6 months @25°C
Safety standard compliance	IEC 62619 / UN38.3 / UL1642
Cell certificate	TUV / CE / UL1642

## Solar MD SS6143 module spec

The Solar MD HV range of batteries are fully modular and allow for seamless application with the addition of SS6143 modules to an existing HV battery setup. Connecting multiple modules in series allows for system expansion provided the inverter supports higher battery voltages.

Cell chemistry	Lithium Iron Phosphate (LiFePO <sub>4</sub> )
Cell manufacturer	CATL
Rated capacity	14.3kWh
Nominal Power	10.0kW
Usable Battery Energy @0.3C	13.0kWh
Nominal Voltage	51.2V
Number of battery modules	1
Weight per module	115kg
Operational Voltage	44.8 - 55.6Vdc
Communication	CANBUS / RS485
Dimensions W x D x H	364mm x 700mm x 234mm
Cycle life @25°C	≥6000
Charging Efficiency	99%
Operational temperature	0°C to +50°C
Transport	UN3480 & UN38.3
Storage duration	6 months @25°C
Safety standard compliance	IEC 62619 / UN38.3 / UL1642
Cell certificate	TUV / CE / UL1642

## Introduction to BMS functions

Each battery module has a BMS which is used for communication with the BMU, as well as perform internal functions in the module. Its functions include cell voltage measurement, cell equalization management, HV management, collection and storage, charging and discharging management, thermal management and communication.

### Functions

- ✓ Measuring the individual cell voltages and module temperature in real time.
- ✓ To measure and calculate individual battery module voltages.
- ✓ Passively balances individual cells within the module under the conditional settings determined by the BMU.
- ✓ Responsible for relaying critical cell voltage levels to the BMU for charge/discharge protection.
- ✓ Handles inter-modular CANBUS communication to the BMU.

## Collection and storage function of the BMS-EX

The BMS-EX is used to collect and record all relevant cell and module data to the BMU, which is relayed through the Logger V2 for diagnosis and monitoring:

- ✓ ChargeCapacity: accumulated charging capacity.
- ✓ DischargeCapacity: accumulated discharging capacity.
- ✓ TempMax: Maximum temperature of cells.
- ✓ TempMin: Minimum temperature of cells.
- ✓ Module Temp: Temperature of the module.
- ✓ Vmax: Maximum voltage of cell.
- ✓ Vmin: Minimum voltage of cell.

# BMU Introduction

## Introduction to the 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. Inverters/Chargers/Logger V2 etc).

## Main Functions:

- ✓ Communication with the BMS of each battery module via CANBUS 1.
- ✓ Communication with other BMUs in the battery cluster via CANBUS 2.
- ✓ Communication with external devices (eg. Inverters/Chargers/Logger V2) via CANBUS 3, RS485 or Ethernet.
- ✓ Information management and reporting to the Logger V2 via Ethernet.
- ✓ Controlling the main output relay of each battery.
- ✓ Monitoring and control of battery voltage, current and temperature limits.
- ✓ Disconnecting the battery from the DC bus under abnormal circumstances.
- ✓ Housing of positive/negative fuses, mechanical isolator, protection relay, pre-charge relay, current sensors, temperature sensors, low voltage power supply board and communication boards.

## BMU Functions

### Charge and Discharge Management function

- ✓ To determine the maximum allowable charging/discharging current during the normal system operation according to the voltage, current, temperature, SOC and SOH levels of the batteries, and then send the information to the externally connected devices (eg. Inverters/Chargers/Logger V2) in real time through the CANBUS, RS485 or Ethernet communication protocols to closely combine the external devices control strategy with the state of battery packs.
- ✓ Send limiting charge/discharge conditions to the externally connected devices when the system needs to operate at limited conditions due to over charge and under discharge or under and over temperature conditions. A request to disconnect the battery from the DC bus and stop the charging/discharging state in a serious case can also be sent under the following conditions, but not limited to:
  - a. Abnormally high or low cell voltage.
  - b. Abnormally high or low cell temperature.
  - c. Communication failure between battery modules and the BMU.



# myPower24 Monitoring Platform

The screenshot displays the myPower24 Monitoring Platform interface. At the top left, the mypower24 logo and a navigation arrow are visible. The top right corner shows the user name 'Kyle Swanepoel'. A dark sidebar on the left contains a menu with the following items: Dashboard, My charts, My Devices (highlighted in orange), Events, System Events, Advanced User, Admin User, Beta, Production, and Start chat. The main dashboard area features a grid of monitoring cards for various devices:

- Outputs:** Shows 4 outputs with a 'Relay' icon and a photo of a relay device. Category: OUTPUTS.
- Storage:** Shows 2 Li-Ion H8 Series batteries with a photo of battery units. Category: STORAGE. Provider: Solar MD (Pty) Ltd.
- Grid-Support Inverter:** Shows 2 Sinexcel PWG inverters with a photo of an inverter unit. Category: GRID-SUPPORT INVERTER. Provider: Sinexcel.
- Loggers:** Shows 1 Logger myPower with a photo of a logger device. Category: LOGGERS. Provider: SolarMD (pty) ltd.
- Virtual Devices:** Shows 1 Power Manager with a circular gauge chart. Category: VIRTUAL DEVICES. Provider: Solar MD dev team.
- Battery Inverter On-Grid:** Shows 2 AEG Battery Converter SC Flex inverters with a photo of an inverter unit. Category: BATTERY INVERTER ON-GRID. Provider: AEG Power Solutions GmbH.
- Hybrid Inverters:** Shows 1 Ateess HPS inverter with a photo of an inverter unit. Category: HIBRYD INVERTERS. Provider: Ateess.
- Grid-Support Inverter:** Shows 1 Sungrow SC630TL inverter with a photo of an inverter unit. Category: GRID-SUPPORT INVERTER. Provider: SUNGROW.
- Battery Inverter On-Grid:** Shows 1 Kehua BCS inverter with a photo of an inverter unit. Category: BATTERY INVERTER ON-GRID. Provider: Kehua.
- Battery Inverter On-Grid:** Shows 1 Ateess PCS inverter with a photo of an inverter unit. Category: BATTERY INVERTER ON-GRID. Provider: Ateess.

At the bottom left, there is a footer with the text: 'TERMS AND CONDITIONS | PRIVACY | WHAT'S NEW d3sign by SolarMD (Pty) Ltd. team. Build: 8.0.1 2023-06-23 05:42' and the mypower24 logo. At the bottom right, there is a footer with the text: 'All Rights Reserved' and logos for IBC SOLAR, Competence Center, and solarMD.

# myPower24 Monitoring Platform

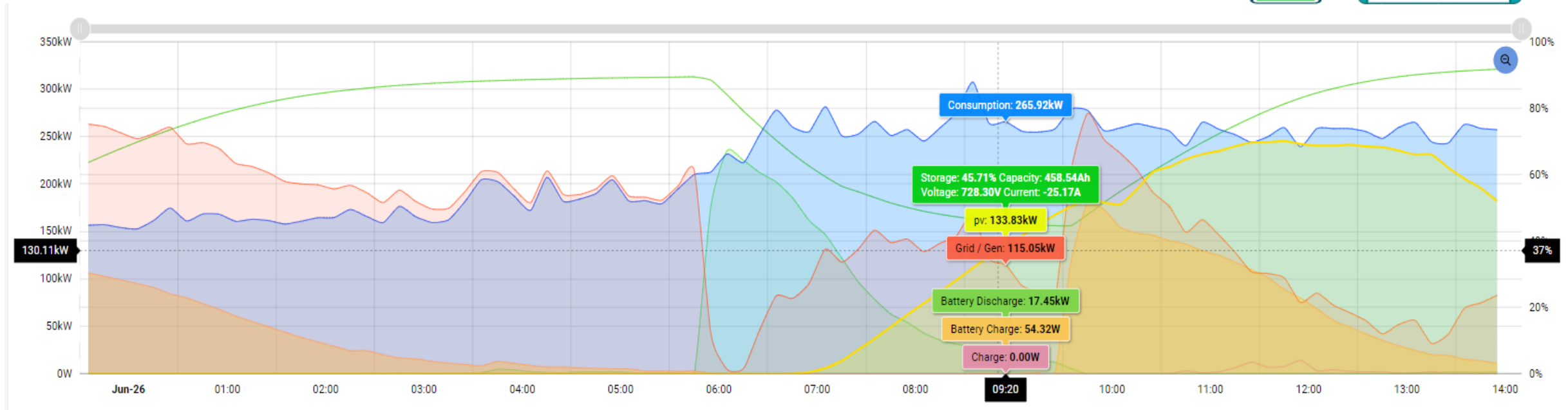
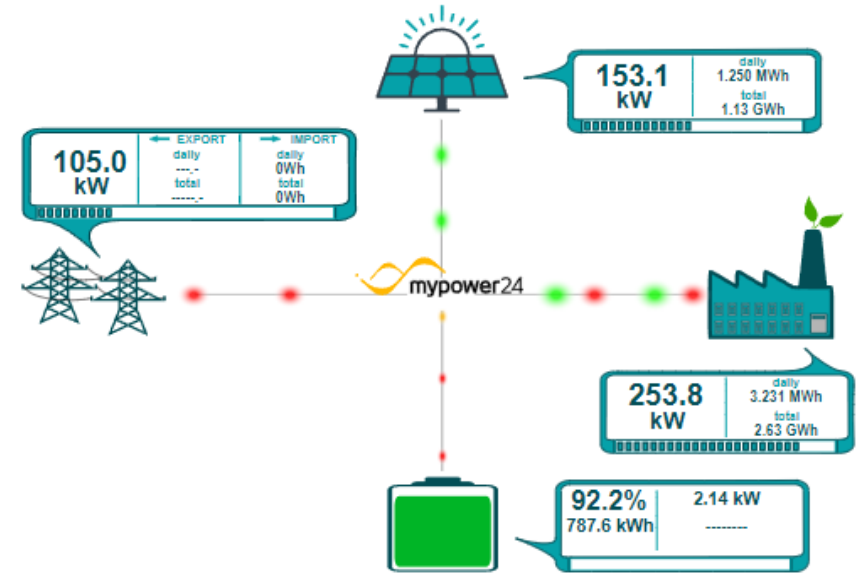
The screenshot displays the myPower24 Monitoring Platform interface. On the left is a dark sidebar menu with the following items: Dashboard, My charts, My Devices, Events, System Events, Advanced User (highlighted), Logger List, Loggers Map, User List, Device Search, Plant List, History Data Edit, Admin User, Beta, Production, and Start chat. The main dashboard area features a grid of device categories, each with an icon, a connection count, a title, an image of the device, and the manufacturer name:

- OUTPUTS**: 2 connections. Includes a circuit diagram icon and a "Relay" device image.
- ENERGY METERS**: 1 connection. Includes a meter icon and SMA Energy Meter device images.
- BATTERY CHARGER**: 10 connections. Includes a battery icon and a Winline UXR EV Charger device image.
- STORAGE**: 11 connections and 1 connection (orange). Includes a battery icon and Li-Ion H8 Series device images.
- GRID-SUPPORT INVERTER**: 1 connection. Includes an inverter icon and a Sungrow SC630TL device image.
- GRID-TIED INVERTER**: 3 connections. Includes an inverter icon and a Sungrow String Inverter SG Series device image.
- LOGGERS**: 1 connection. Includes a logger icon and a Logger myPower device image.
- VIRTUAL DEVICES**: 1 connection. Includes a power manager icon and a Power Manager device image.

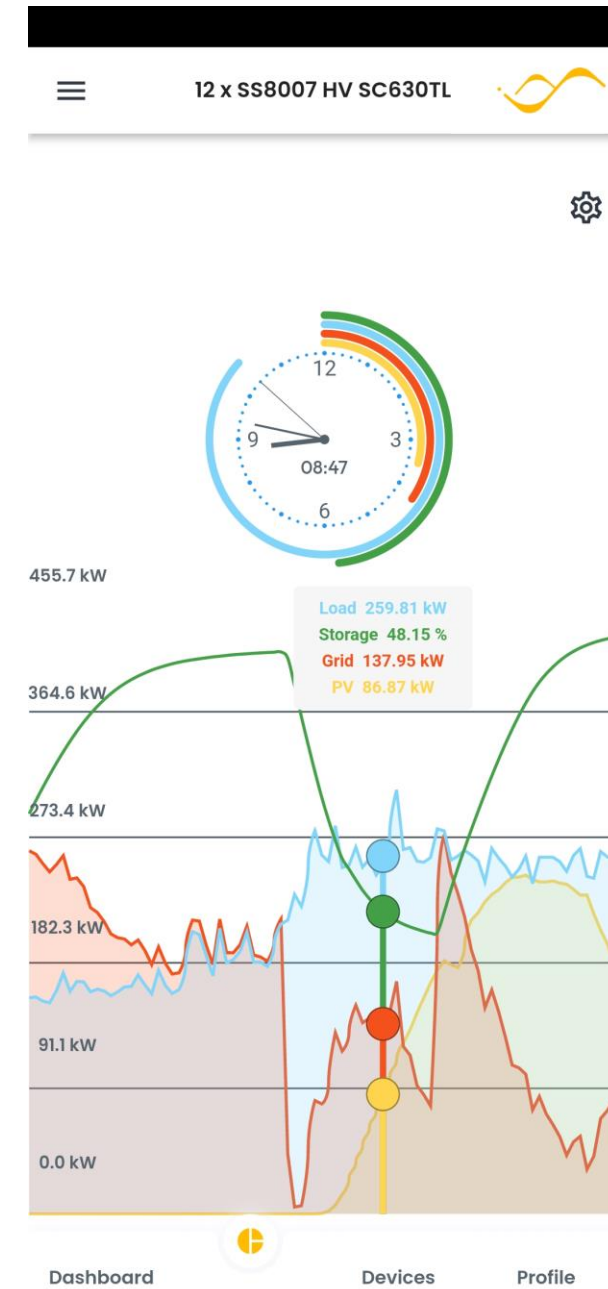
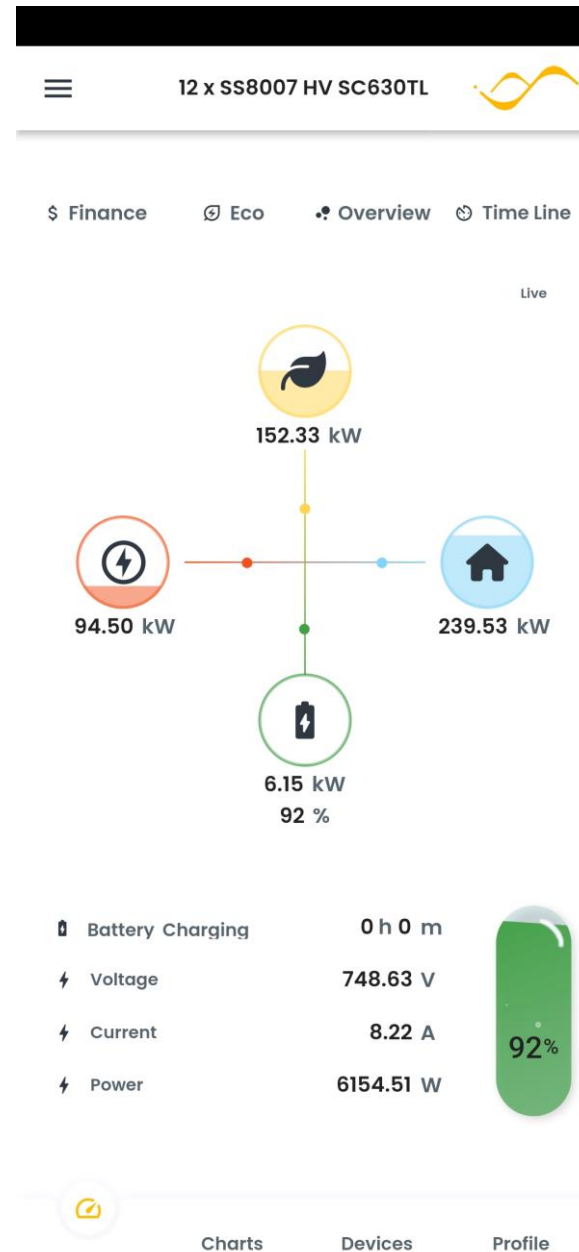
At the bottom left of the dashboard, there are links for [TERMS AND CONDITIONS](#), [PRIVACY](#), and [WHAT'S NEW](#), along with the text "d3sign by SolarMD (Pty) Ltd. team. Build: 8.0.1 2023-06-23 05:42". The mypower24 logo is also present.

At the bottom right, there is a footer with the text "All Rights Reserve" and logos for **IBC SOLAR**, **Competence Center**, and **solarMD**.

# myPower24 Monitoring Platform



# myPower24 Monitoring Platform



# myPower24 Monitoring Platform

1 1/1
General Info   Actual Data   Cluster Data   Settings   Network   Production   Developer

BAT 2

BAT 1

BAT 3

BAT 4

**ACTUAL VALUES**

BATTERY STATE	RELAY CLOSED - NORMAL
PACK VOLTAGE	477.11 V
CURRENT	9.058 A
POWER	4.32 kW
CAPACITY	32.29 %
	90.42 AH
ENERGY	41.59 KWH
REMAINING CHARGE TIME	--d 21h:01m

**PACK INFO**

CHARGE CONTROL:	100 %
DISCHARGE CONTROL:	100 %
MODULE COUNT:	9
CELL COUNT:	144
MIN CELL:	3.309mV @ Module:3A Cell:1
MAX CELL:	3.317mV @ Module:1A Cell:8
CELL VOLTAGE DIFFERENCE:	8 mV
UPTIME:	--d 17h:49m
MIN CELL TEMPERATURE:	17 °C
MAX CELL TEMPERATURE:	20 °C

**PROTECTION UNIT**

ISOLATOR STATE	CLOSED
MAIN RELAY STATE	RELAY CLOSED - NORMAL
<b>BALANCING INFORMATION</b>	
BALANCING STATUS	VB COMPLETE
BALANCING TOTAL CELLS	0
<b>TEMPERATURE</b>	
PRE-CHARGE TEMPERATURE	19
BMU INTERNAL TEMP	18

Module 1
Module 2
Module 3
Module 4
Module 5
Module 6
Module 7
Module 8
Module 9

**MODULE 1A**

MIN CELL VOLTAGE VALUE:	3.311V @ cell9
MAX CELL VOLTAGE VALUE:	3.316V @ cell8
CELL VOLTAGE DIFFERENCE:	Δ 5 mV
PACK VOLTAGE:	53.023 V
MODULE TEMPERATURE:	20 °C

**BALANCING INFORMATION**

BALANCING STATUS	MB COMPLETE
------------------	-------------

**CELLINFO**

	V	ΔV Mod	ΔV Pack	Bal
1	3.314 V	+3 mV	+5 mV	OFF
2	3.314 V	+3 mV	+5 mV	OFF
3	3.314 V	+3 mV	+5 mV	OFF
4	3.314 V	+3 mV	+5 mV	OFF
5	3.314 V	+3 mV	+5 mV	OFF
6	3.314 V	+3 mV	+5 mV	OFF
7	3.314 V	+3 mV	+5 mV	OFF
8	3.316 V	+5 mV	+7 mV	OFF
9	3.311 V	+0 mV	+2 mV	OFF
10	3.314 V	+3 mV	+5 mV	OFF

**MODULE 1B**

MIN CELL VOLTAGE VALUE:	3.312V @ cell9
MAX CELL VOLTAGE VALUE:	3.317V @ cell8
CELL VOLTAGE DIFFERENCE:	Δ 5 mV
PACK VOLTAGE:	53.032 V
MODULE TEMPERATURE:	19 °C

**BALANCING INFORMATION**

BALANCING STATUS	MB COMPLETE
------------------	-------------

**CELLINFO**

	V	ΔV Mod	ΔV Pack	Bal
1	3.315 V	+3 mV	+6 mV	OFF
2	3.315 V	+3 mV	+6 mV	OFF
3	3.315 V	+3 mV	+6 mV	OFF
4	3.315 V	+3 mV	+6 mV	OFF
5	3.315 V	+3 mV	+6 mV	OFF
6	3.315 V	+3 mV	+6 mV	OFF
7	3.315 V	+3 mV	+6 mV	OFF
8	3.317 V	+5 mV	+8 mV	OFF
9	3.312 V	+0 mV	+3 mV	OFF
10	3.315 V	+3 mV	+6 mV	OFF

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# myPower24 Monitoring Platform

1/1
General Info Actual Data Cluster Data Settings Network Production Developer

BAT 2

BAT 1

BAT 3

BAT 4

CLUSTER STATUS	
CLUSTER STATE:	Enabled
CANBUS2 PORT STATE:	Connected
COM STATE:	Online
MASTER BATTERY SERIAL:	Self
ROLE IN CLUSTER:	Master
TOTAL BATTERIES:	4
ONLINE BATTERIES:	4
DC BUS CONNECTED BATTERIES:	4
OFFLINE BATTERIES:	0
NODE IDX:	1154

CLUSTER DATA	
TOTAL CURRENT:	115.9 A
TOTAL POWER:	55.02 kW
AVERAGE VOLTAGE:	474.7 V
AVERAGE CAPACITY:	31 %
RATED CHARGE CURRENT:	800 A
RATED DISCHARGE CURRENT:	800 A
<b>LIMITS</b>	
CHARGE CONTROL CURRENT:	100% / 800.0A
DISCHARGE CONTROL CURRENT:	100% / 800.0A
CHARGE CONTROL VOLTAGE:	100% / 495.0V
DISCHARGE CONTROL VOLTAGE:	100% / 378.0V

CLUSTER DETAIL DATA	
MIN CELL VOLTAGE:	3261 mV
MAX CELL VOLTAGE:	3306 mV
CELL DIFFERENCE:	45 mV
MIN CELL TEMPERATURE:	17 °C
MAX CELL TEMPERATURE:	20 °C
<b>CAPACITY</b>	
ACTUAL CAPACITY:	354.8 AH
TOTAL RATED CAPACITY:	1120 AH
ONLINE RATED CAPACITY:	1120 AH
OFFLINE RATED CAPACITY:	0 AH

RS485 DATA	
RS485 LINE STATE:	0
MODBUS SUCCESS FRAMES COUNTER:	0 FRAMES
MODBUS TIMEOUT FRAMES COUNTER:	0 FRAMES
MODBUS ERROR FRAMES COUNTER:	0 FRAMES
<b>CANBUS3 DATA</b>	
CAN STATE:	Enabled
LINE STATE:	Connected
BIT RATE:	250kbps
RX FRAMES COUNTER:	5004847 FRAMES
TX FRAMES COUNTER:	36474927 FRAMES

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ES SE EE EE

# IBC Solar Shop – Solar MD HV
















**IBC SOLAR**

Search Term

My PV Designs My Documents Favorites Shopping cart 0.00 ZAR

PV modules → Inverters → **Storage →** Mounting systems → Accessories → E-Mobility → On Sale! → Promo → Services →

PV modules  
Inverters  
**Storage**  
Solar MD  
BYD  
Solar heating  
Mounting systems  
Accessories  
E-Mobility  
On Sale!  
Promo  
Services

	<b>Solar MD SS7011 - HV 114.4 kWh</b> 8 x 14.3 kWh Item: 5202200005 Availability <input type="checkbox"/>	type of battery LITHIUM		1 <input type="button" value="+"/> <input type="button" value="-"/>	<input type="button" value="Shopping cart"/> 
	<b>Solar MD SS7023 - HV 228.8 kWh</b> 16 x 14.3kWh Item: 5202200011 Availability <input type="checkbox"/>	type of battery LITHIUM		1 <input type="button" value="+"/> <input type="button" value="-"/>	<input type="button" value="Shopping cart"/> 
	<b>Solar MD SS7013 - HV 128.4 kWh</b> 9 x 14.3 kWh Item: 5202200006 Availability <input type="checkbox"/>	type of battery LITHIUM		1 <input type="button" value="+"/> <input type="button" value="-"/>	<input type="button" value="Shopping cart"/> 
	<b>Solar MD SS7014 - HV 143.0 kWh</b> 10 x 14.3 kWh Item: 5202200007 Availability <input type="checkbox"/>	type of battery LITHIUM		1 <input type="button" value="+"/> <input type="button" value="-"/>	<input type="button" value="Shopping cart"/> 
	<b>Solar MD SS7021 - HV 214.5 kWh</b> 15 x 14.3 kWh Item: 5202200010 Availability <input type="checkbox"/>	type of battery LITHIUM		1 <input type="button" value="+"/> <input type="button" value="-"/>	<input type="button" value="Shopping cart"/> 

# IBC Solar Shop – Solar MD HV

PV modules

Inverters

Storage

Solar MD

BYD

Solar heating

Mounting systems

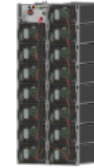
Accessories

E-Mobility

On Sale!

Promo

Services



## Solar MD SS7011 - HV 114.4 kWh

8 x 14,3 kWh

Item No: 5202200005

type of battery

LITHIUM

Availability

Downloads

Accessories

### Availability

week26	26.06.-02.07.2023	availability as per graph
week27	03.07.-09.07.2023	availability as per graph
week28	10.07.-16.07.2023	availability as per graph
week29	17.07.-23.07.2023	availability as per graph
week30	24.07.-30.07.2023	availability as per graph
week31	31.07.-06.08.2023	availability as per graph
week32	07.08.-13.08.2023	availability as per graph
week33	14.08.-20.08.2023	availability as per graph



### Downloads

File	Language	Type	Size
Datasheet			



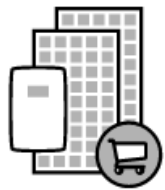
# IBC Solar Shop – Solar MD HV

Productshop | Logout



Menu

Zane Dippenaar  
Alexander Joist



Online Shop



PV Manager



Sales Support



Downloads



Competence Center



Price list information



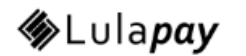
Tech. Services



My IBC



Industry Guidelines and  
Information



Lulapay

# IBC Solar Shop – Solar MD HV

Industry Guidelines and  
Information

Lulapay

News

#### We offer all services in different categories

1. Residential sites up to 25kW
2. Small commercial sites up to 200kW
3. Medium commercial sites 200 – 1.000kW
4. Large commercial/ Utility scale > 1.000kW (please inquire for any of the listed services)

#### All on site services will have additional costs to be considered (Values in ZAR ex VAT)

- Call out fee (30km included) R680
- Travel fees R5.4/km
- Accommodation fees Upon agreement

#### All telephone related services do have the following fees

- Startup fee (including 30min) R 300

Site assessment and load recording

+

Project management and installation support

+

Single line diagram

+

Design with our PVManager software

+

Commissioning support and fault finding

+

# Have sun!

**IBC SOLAR South Africa (Pty) Ltd.**

Suite 603, The Point Centre  
76 Regent Street, Sea Point  
Cape Town, South Africa, 8005

+27(0)87 470 0765  
info@ibc-solar.co.za  
www.ibc-solar.co.za