# Solar MD
Leaders in Energy Storage Solutions

Product Introduction

About Us

Solar MD specializes in Lithium-Ion Battery Energy Storage Systems for residential, commercial and utility scale applications.

"Our goal is to deliver affordable, clean energy solutions around the world, empowering communities and enhancing quality of life by stabilizing energy access. "
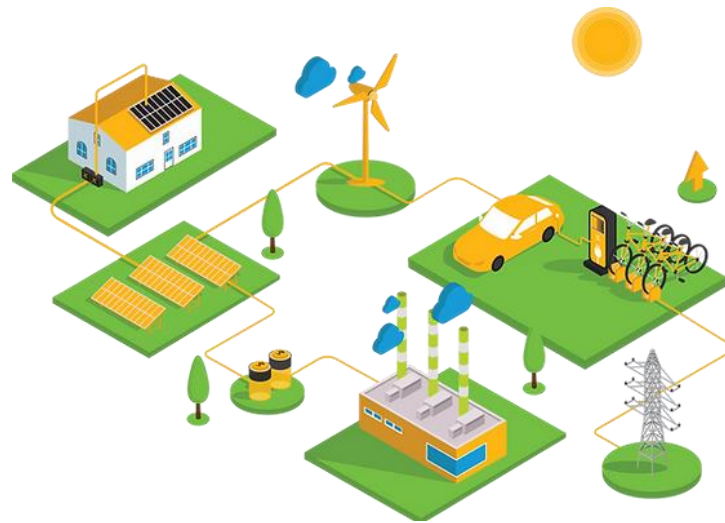
History

Founded in 2014 by Kaloyan Dimov, Kostadin Petkov & James Eedes as a renewable energy installation company with the focus of own product development.

Mass production and distribution of the Solar MD 3.7 & 7.4kWh residential battery.

Launch of the mypower24 portal.

2014

2015

2017

2019

First battery system with integrated inverter.

New product range with higher energy density 8.3 & 14.3kWh

History

Introduction of High Voltage commercial batteries 71.5 – 243.1kWh and containerized solutions from 1MWh.

Start of the distribution in Europe and opening the assembly plant in Bulgaria.

2020

2022

2023

2024

1 GWh of batteries shipped

Opening of a new factory with a production capacity of 3GWh.

Awarded TOP 50 fastest growing companies in Africa

Global Presence

> 1500 MWh shipped

50+ Countries

15 000 sqm Factory

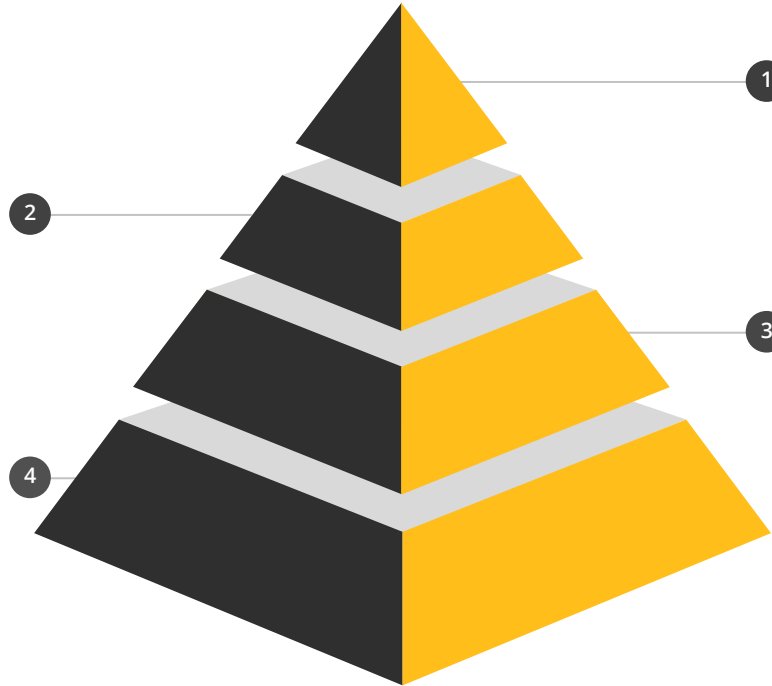50% R&D Employees

2 Factories

4 Sales & Service Offices

Solar MD Europe

Solar MD MENA

Solar MD APAC

Solar MD HQ

Technology Partner

Software Development
- Inhouse EMS
- Mypower 24 portal
- Energy Management
- Battery/Cell Level Monitoring

Mechanical Engineering
- Containerized Solutions
- Inhouse construction
- Battery housing
- Design, Plan & Build

Electrical Engineering
- Inhouse BMS design
- BMU manufacture
- Logger V2 design
- PCB design

Production & Support
- Low Voltage 8.3-14.3kWh
- High Voltage 71.5 – 243.1kWh
- PCB manufacturing
- Metal rack flat packed
- Technical Support Team

https://www.youtube.com/watch?v=0mZm77lhvx4

01

BATTERY

Accurate BMS, compact residential storage solutions for reliable power backup.

02

BESS

Scalable BESS (1-4MWh) for commercial and industrial sectors, enhancing grid stability.

03

MINI-GRID SALUTION

Customizable mini-grid solutions for efficient electricity distribution in off-grid areas.

04

MONITORING & CONTROL

Customizable EMS for comprehensive energy system monitoring and advanced control.

Product Overview

Product Overview

01 – LV Batteries

Low Voltage Battery Range

Low Voltage Battery Range

LOW VOLTAGE RANGE

Residential – SS4xxx

Commercial - SS214

Wall mounted

Cabinet mount

SS4083

SS4143

CB35 (1 - 4 Modules)

CB36 (1 - 5 Modules)

CB39 (1 - 8 Modules)

8.3 kWh

14.3 kWh

57.2 kWh

71.5 kWh

114.4 kWh
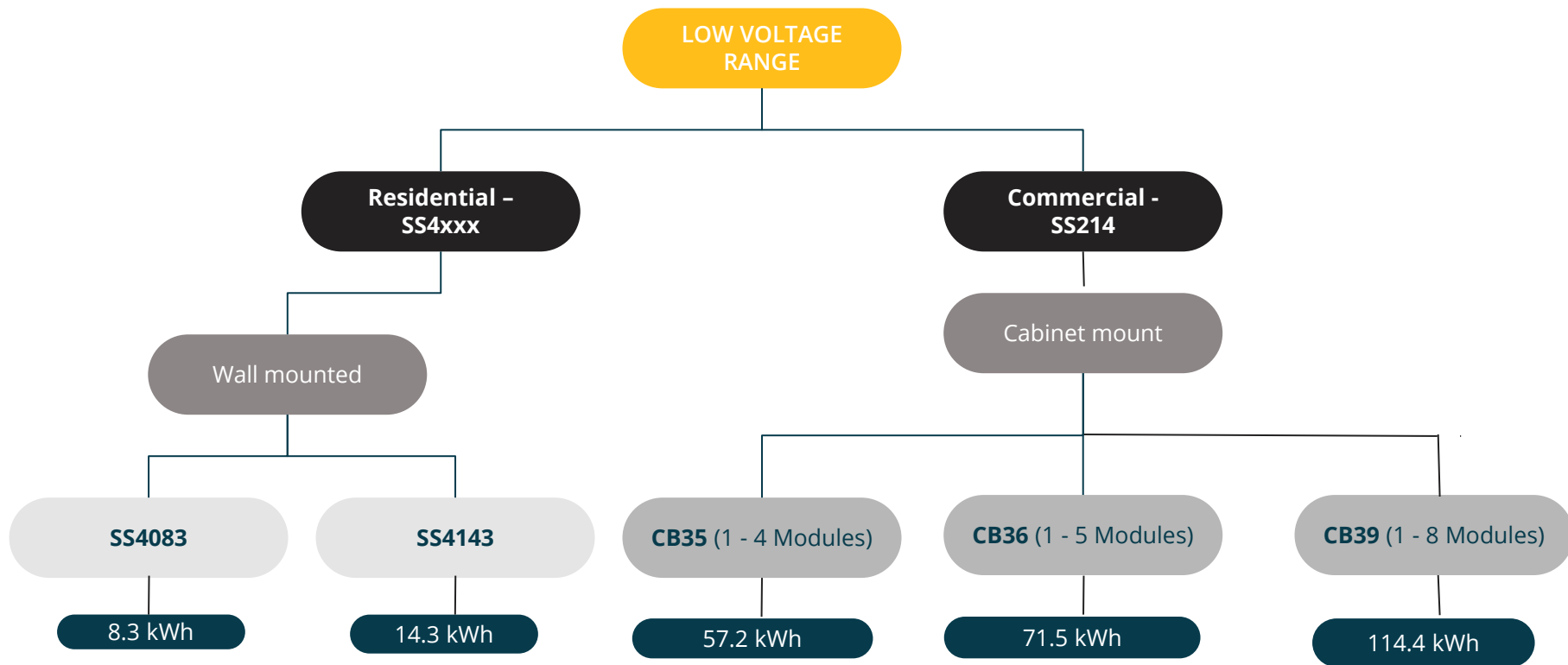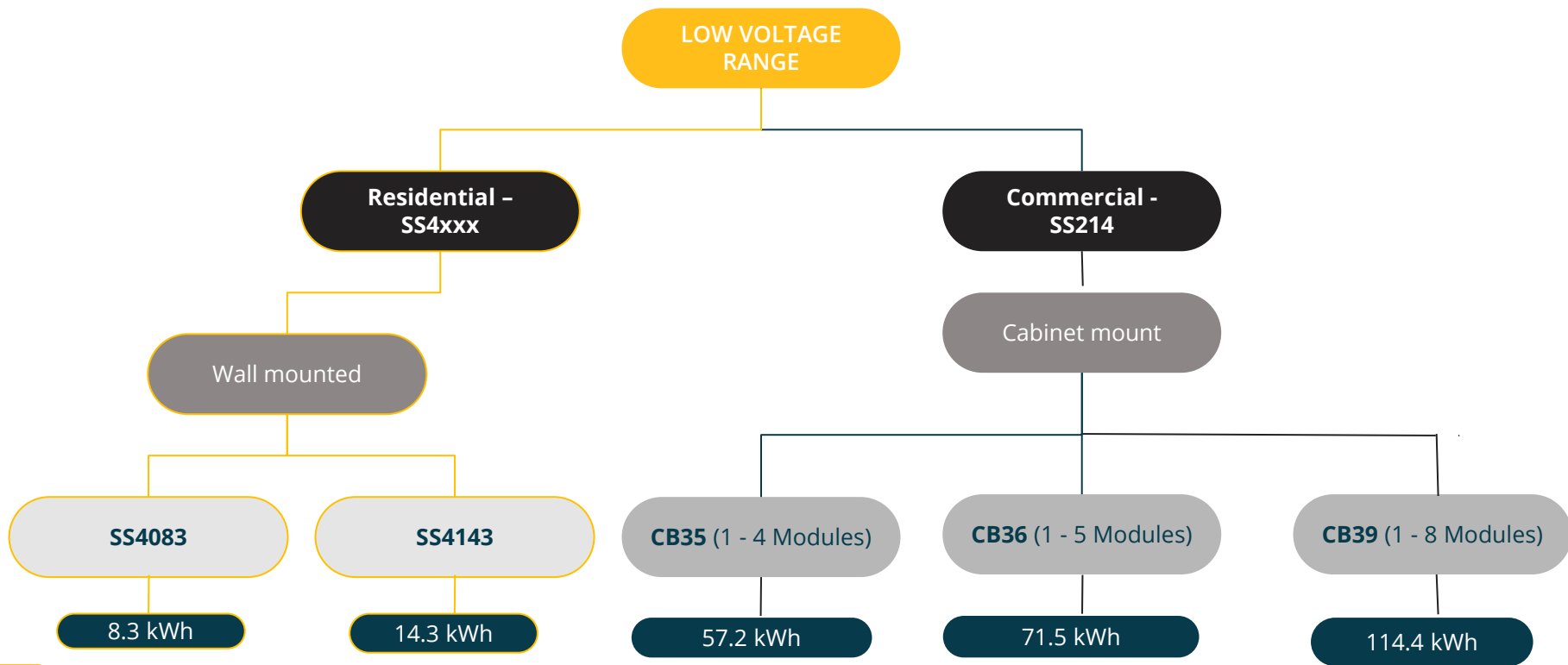
Low Voltage Battery Range | SS4083

- 48V Solution

- 8.3kWh

- Smallest in our range

- Wall Mounted or Floor Standing

5 Years Guarantee on Product Material & Workmanship

12 Years Energy Output Warranty

Low Voltage Battery Range | SS4083

- ✅ Off-Grid
- ✅ Hybrid Inverter
- ✅ Grid Tied
- ✅ Charger Systems
- ✅ Residential UPS Systems
- ✅ Commercial UPS Systems

Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CALB
Rated Capacity	8.3kWh
Nominal Power @0.7C	7.5kWh
Nominal Voltage	51.2V
Number of battery modules	1
Weight per module	70kg
Operational Voltage	44.8 - 55.6Vdc
Communication	CANBUS / RS485
Dimensions W x D x H	389mm x 183mm x 635mm
Cycle Life @25°C	≥4000
Charging Efficiency	99%
Operational Temperature	0°C to +50°C
Storage Duration	6 months @25°C
Safety Standard Compliance	CE / EN 55016 / IEC 61000
Cell Certificate	IEC 62619 / UN38.3 /UN3480 / UL 1642 / UL 1973

Low Voltage Battery Range | SS4143

- 48V Solution

- 14.3 kWh

- TOP- Seller

- Wall Mounted or Floor Standing

5 Years — Guarantee on Product Material & Workmanship

12 Years — Energy Output Warranty

Low Voltage Battery Range | SS4143

- Off-Grid
- Hybrid Inverter
- Grid Tied
- Charger Systems
- Residential UPS Systems
- Commercial UPS Systems

Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CATL
Rated Capacity	14.3kWh
Nominal Power @0.7C	10.0kW
Nominal Voltage	51.2V
Number of battery modules	1
Weight per module	118kg
Operational Voltage	44.8 - 55.6Vdc
Communication	CANBUS / RS485
Dimensions W x D x H	675mm x 185mm x 605mm
Cycle Life @25°C	≥6000
Charging Efficiency	99%
Operational Temperature	0°C to +50°C
Storage Duration	6 months @25°C
Safety Standard Compliance	CE / EN 55016 / IEC 61000
Cell Certificate	IEC 62619 / UN38.3 / UN3480 / UL 1642 / UL 1973

Low Voltage Battery Range | SS4143

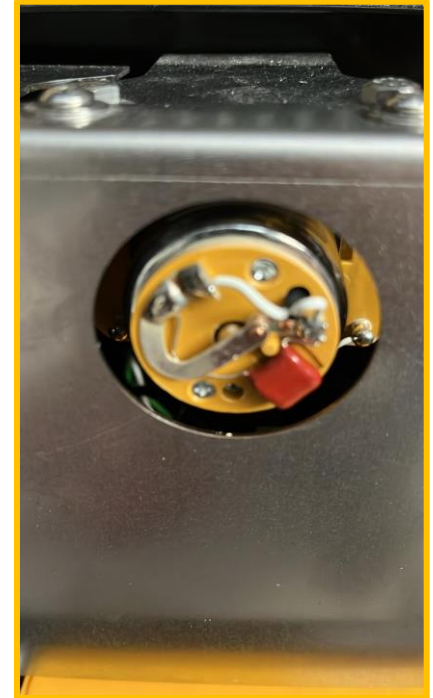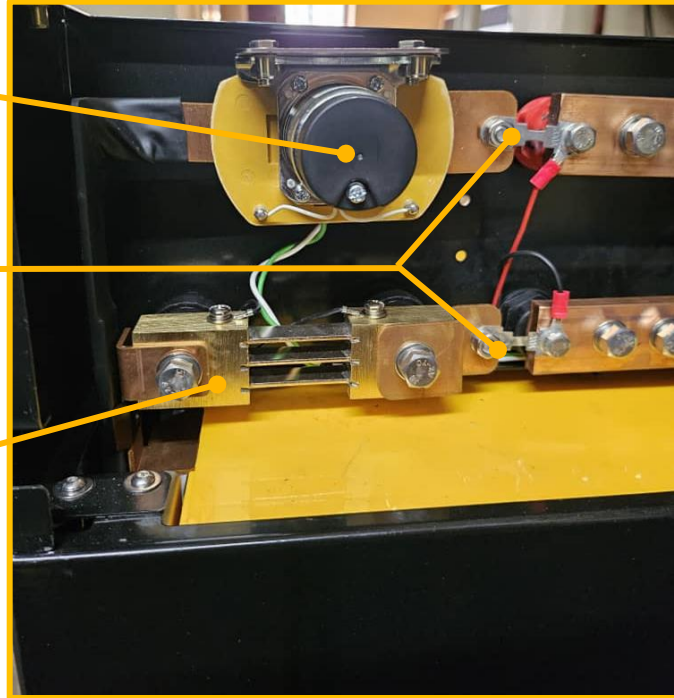**Positive & Negative Busbar**

Battery Management System

Battery Pack
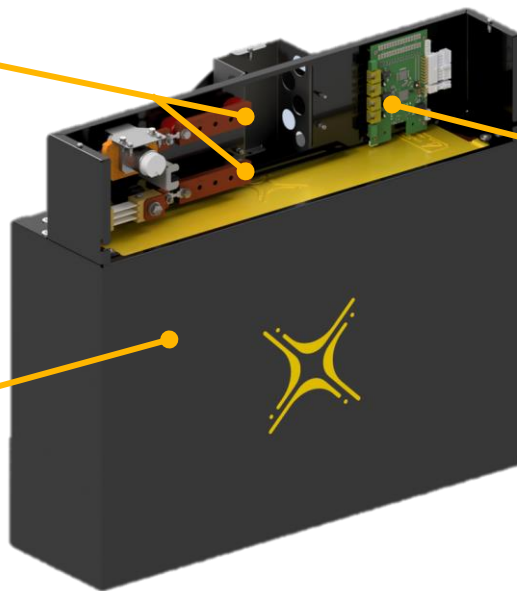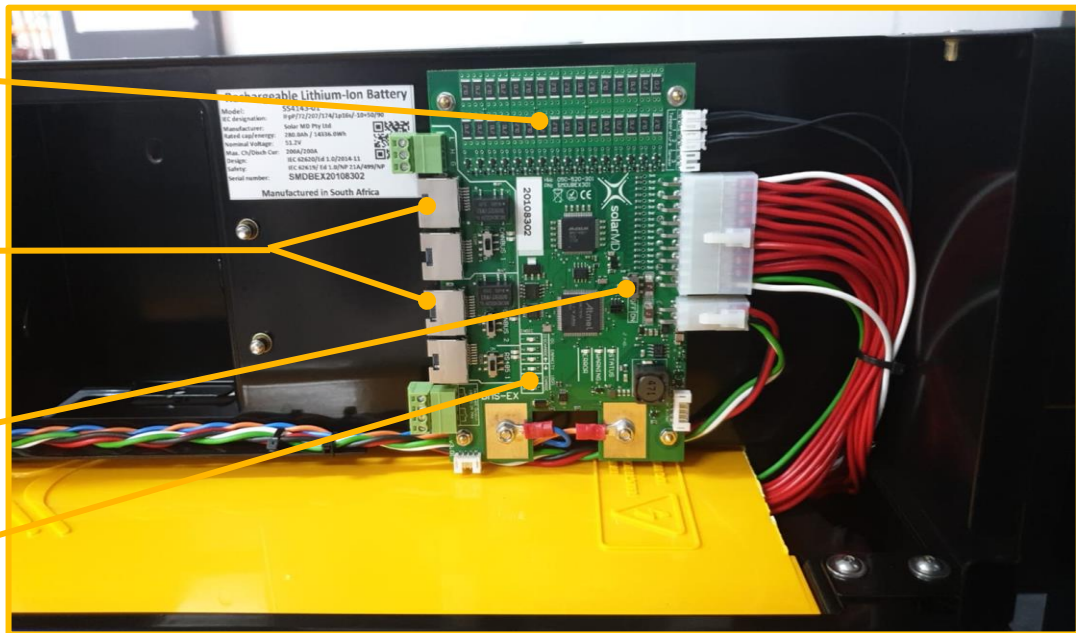
Low Voltage Battery Range | SS4143

200A Relay

200A +/- Fuse

Shunt
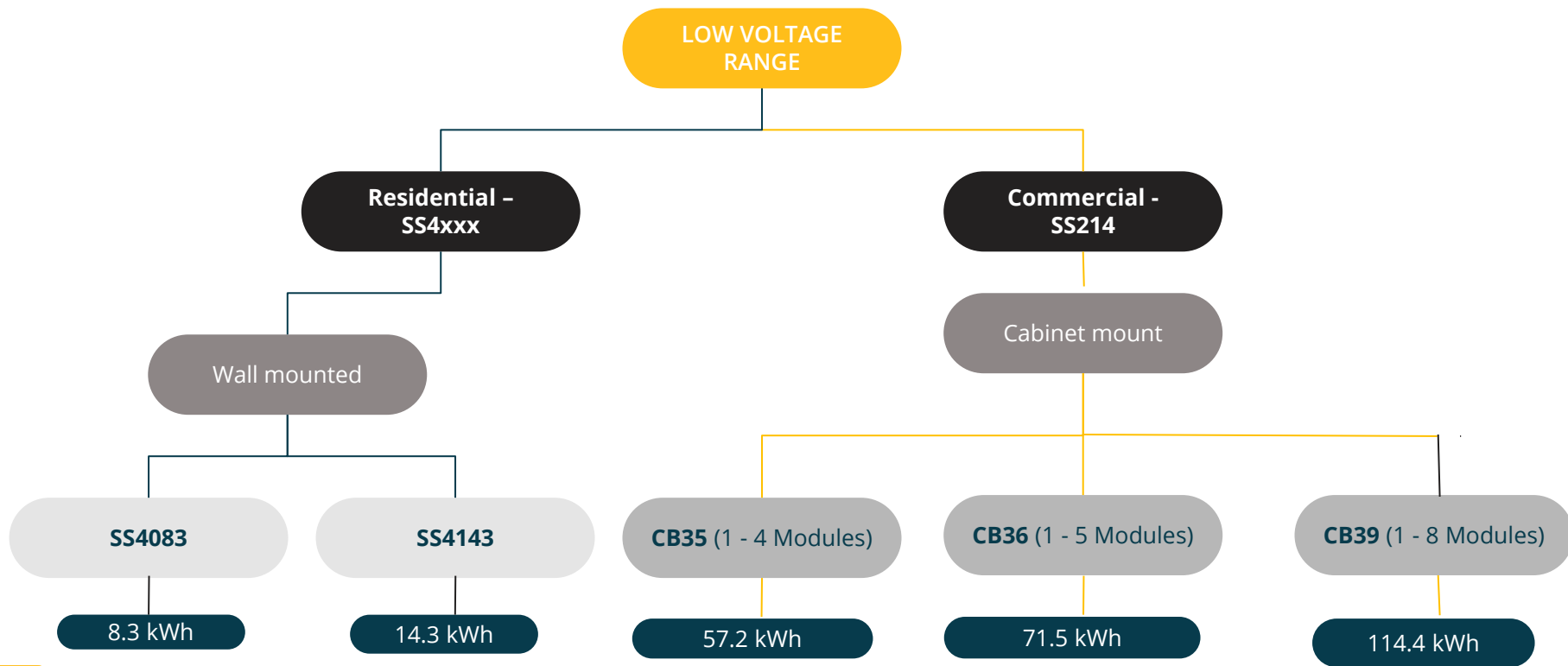
Low Voltage Battery Range | SS4143

BMS

CAN BUS / RS485

On/Off Switch

Status LEDs

Low Voltage Battery Range

LOW VOLTAGE RANGE

Residential – SS4xxx

Commercial - SS214

Wall mounted

Cabinet mount

SS4083

SS4143

CB35 (1 - 4 Modules)

CB36 (1 - 5 Modules)

CB39 (1 - 8 Modules)

8.3 kWh

14.3 kWh

57.2 kWh

71.5 kWh

114.4 kWh

Low Voltage Battery Range | SS214

- 48V Solution

- 14.3 kWh

- Space Optimized

- Rack Mounted

- International Best-Seller
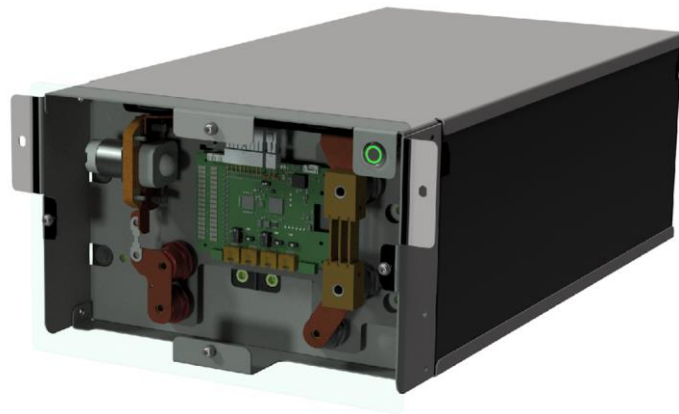
5 Years — Guarantee on Product Material & Workmanship

12 Years — Energy Output Warranty

Low Voltage Battery Range | SS214

- ✅ Off-Grid
- ✅ Hybrid Inverter
- ✅ Grid Tied
- ✅ Charger Systems
- ✅ Residential UPS Systems
- ✅ Commercial UPS Systems
- ✅ Low Voltage Battery Inverter

Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CATL
Rated Capacity	14.3kWh
Nominal Power @0.7C	10.0kW
Nominal Voltage	51.2V
Number of battery modules	1
Weight per module	118kg
Operational Voltage	44.8 - 55.6Vdc
Communication	CANBUS / RS485
Dimensions W x D x H	675mm x 185mm x 605mm

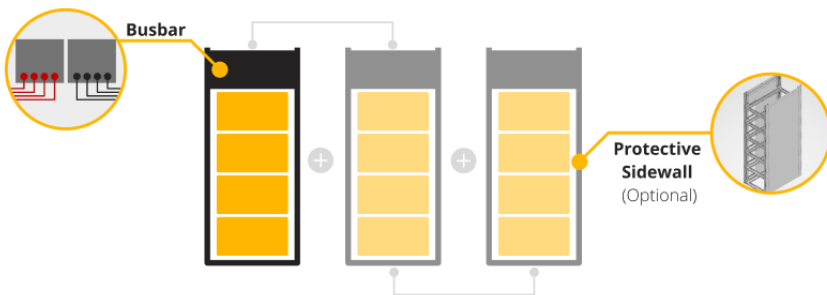# Low Voltage Battery Range | SS214

CB35

1 - 4x SS214 modules.

CB36

1 - 5x SS214 modules.

CB39

1 - 8x SS214 modules.

Busbar

Protective
Sidewall
(Optional)
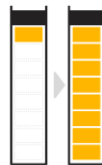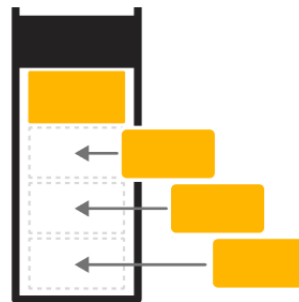
*Capacity can be increased through a
parallel connection of the batteries.*

*Increase capacity by adding on
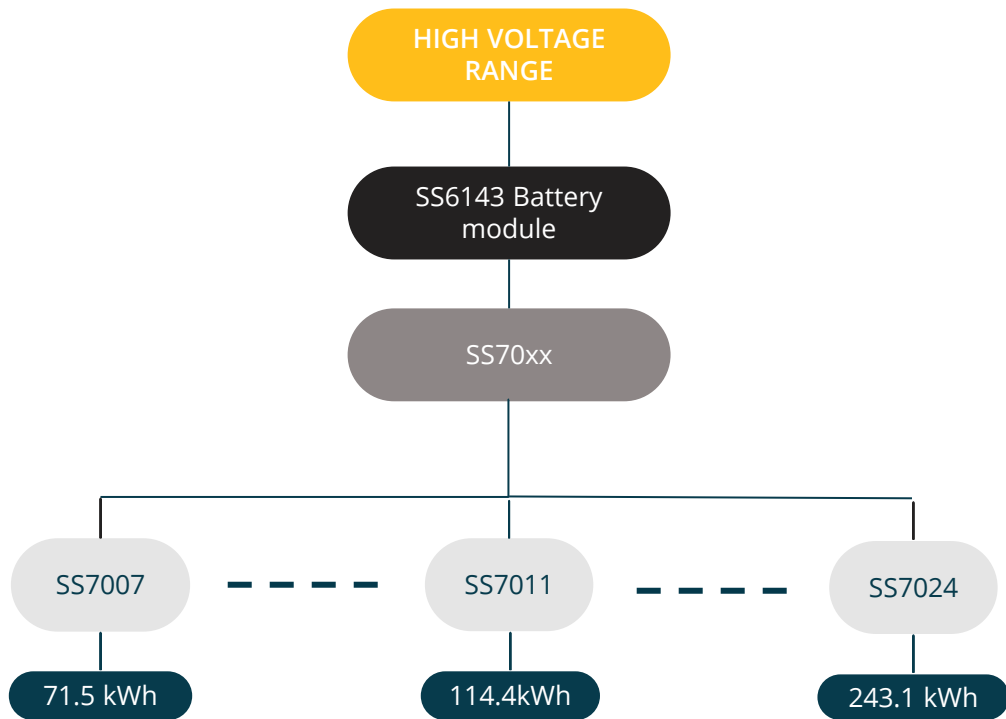more modules when you need*

Low Voltage Battery Range | SS214

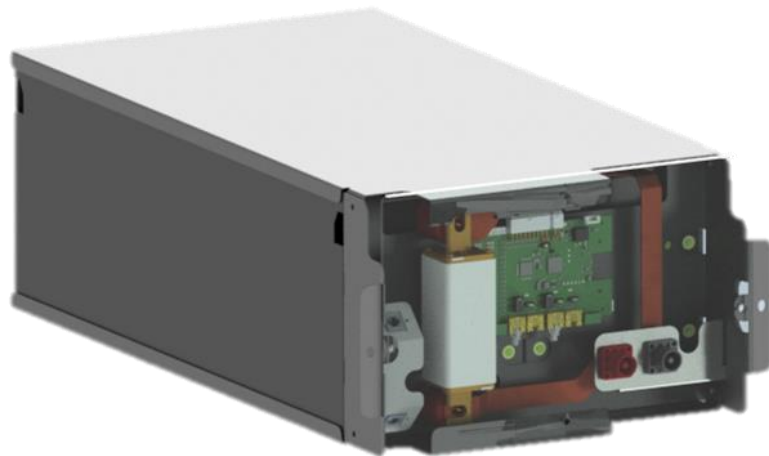|	CB35	CB36	CB39
Cell chemistry	Lithium Iron Phosphate (LiFePO4)	Lithium Iron Phosphate (LiFePO4)	Lithium Iron Phosphate (LiFePO4)
Cell manufacturer	CATL	CATL	CATL
Rated capacity	57.2kWh	71.5kWh	114.4kWh
Nominal Power (@0.7C)	40.0kW	50.0kW	80.0kW
Nominal Voltage	51.2V	51.2V	51.2V
Number of battery modules	1 - 4x SS214 Modules	1 - 5x SS214 Modules	1 - 8x SS214 Modules
Weight per cabinet	470kg	580kg	950kg
Operational Voltage	44.8 - 55.6Vdc	44.8 - 55.6Vdc	44.8 - 55.6Vdc
Communication	CANBUS / RS485	CANBUS / RS485	CANBUS / RS485
Dimensions W x D x H	436mm x 707mm x 1300mm	436mm x 707mm x 1565mm	436mm x 707mm x 2260mm
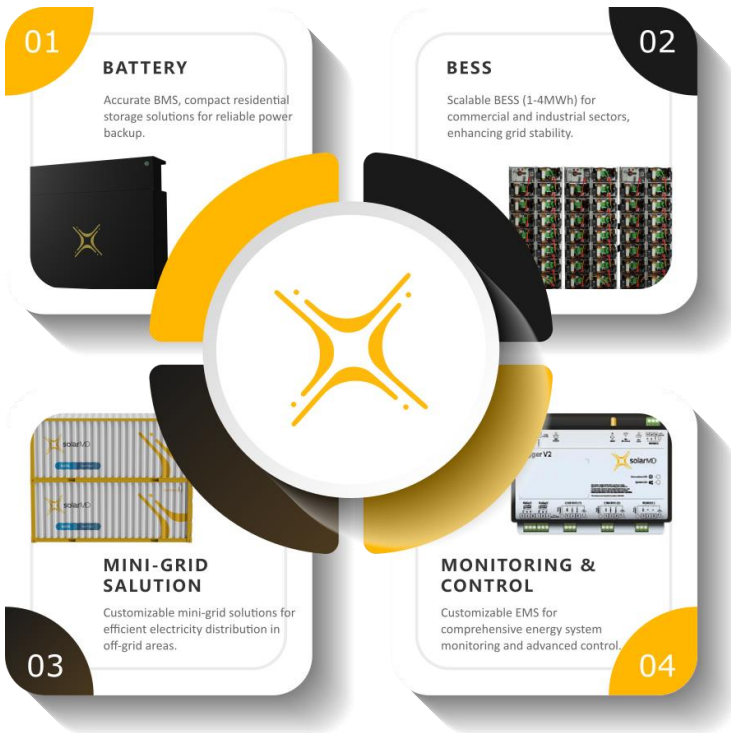
Product Overview

02 – HV Batteries

High Voltage Battery Range | SS70xx

HIGH VOLTAGE RANGE

SS6143 Battery module

SS70xx

SS7007 — — — — SS7011 — — — — SS7024

71.5 kWh   114.4kWh   243.1 kWh

High Voltage Battery Range | SS70xx

- 51.2V – 870.4V

- SS6143 / 14.3kWh

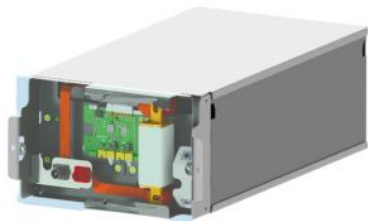- Infinite Scalable

- High Energy Use

- Distributor Friendly

5 Years Guarantee on Product Material & Workmanship

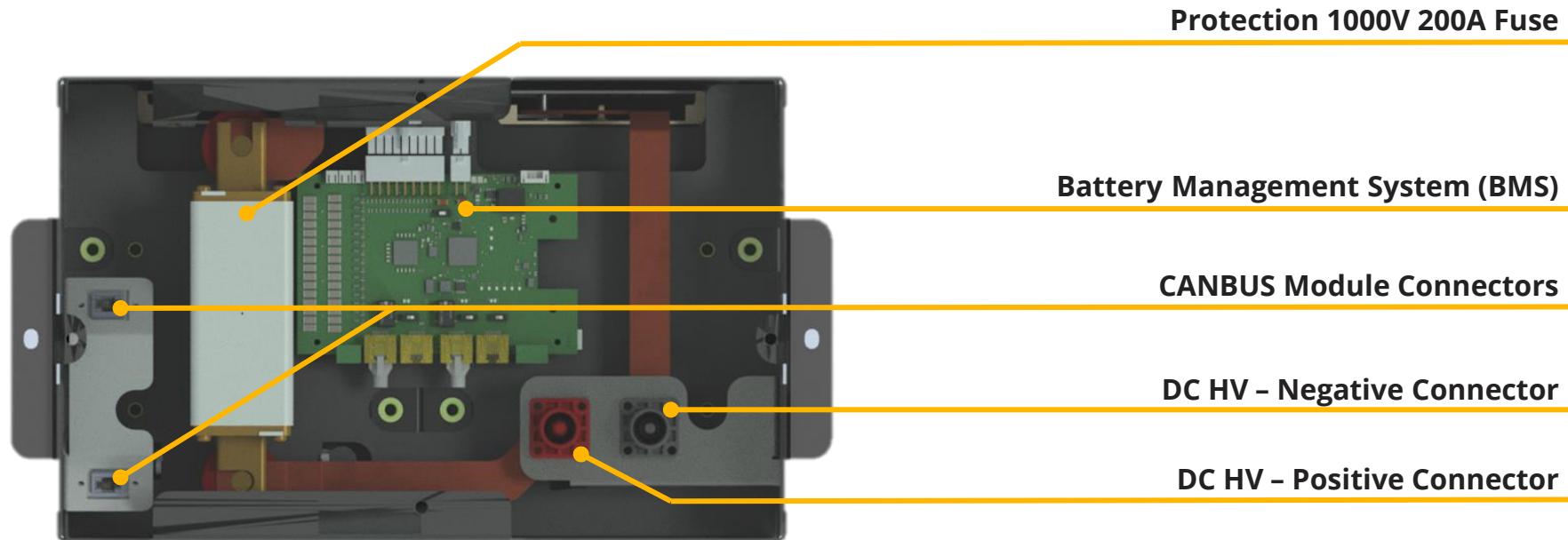**12 Years** Energy Output Warranty

High Voltage Battery Range | SS70xx

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

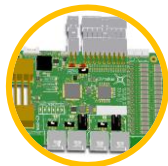|	
Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CATL
Rated Capacity	14.3kWh
Nominal Power @0.7C	10.0kW
Nominal Voltage	51.2V
Number of battery modules	1
Weight per module	118kg
Operational Voltage	44.8 - 55.6Vdc
Dimensions W x D x H	675mm x 185mm x 605mm

High Voltage Battery Range | SS70xx

Protection 1000V 200A Fuse

Battery Management System (BMS)

CANBUS Module Connectors

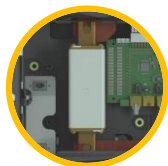DC HV – Negative Connector

DC HV – Positive Connector
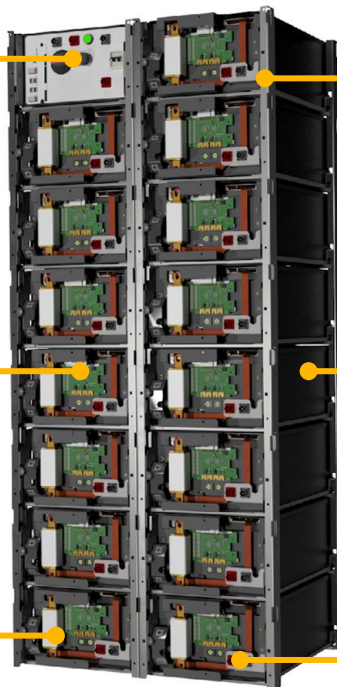
High Voltage Battery Range | SS70xx
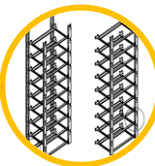

Battery Management Unit (BMU)

Battery Management System (BMS)

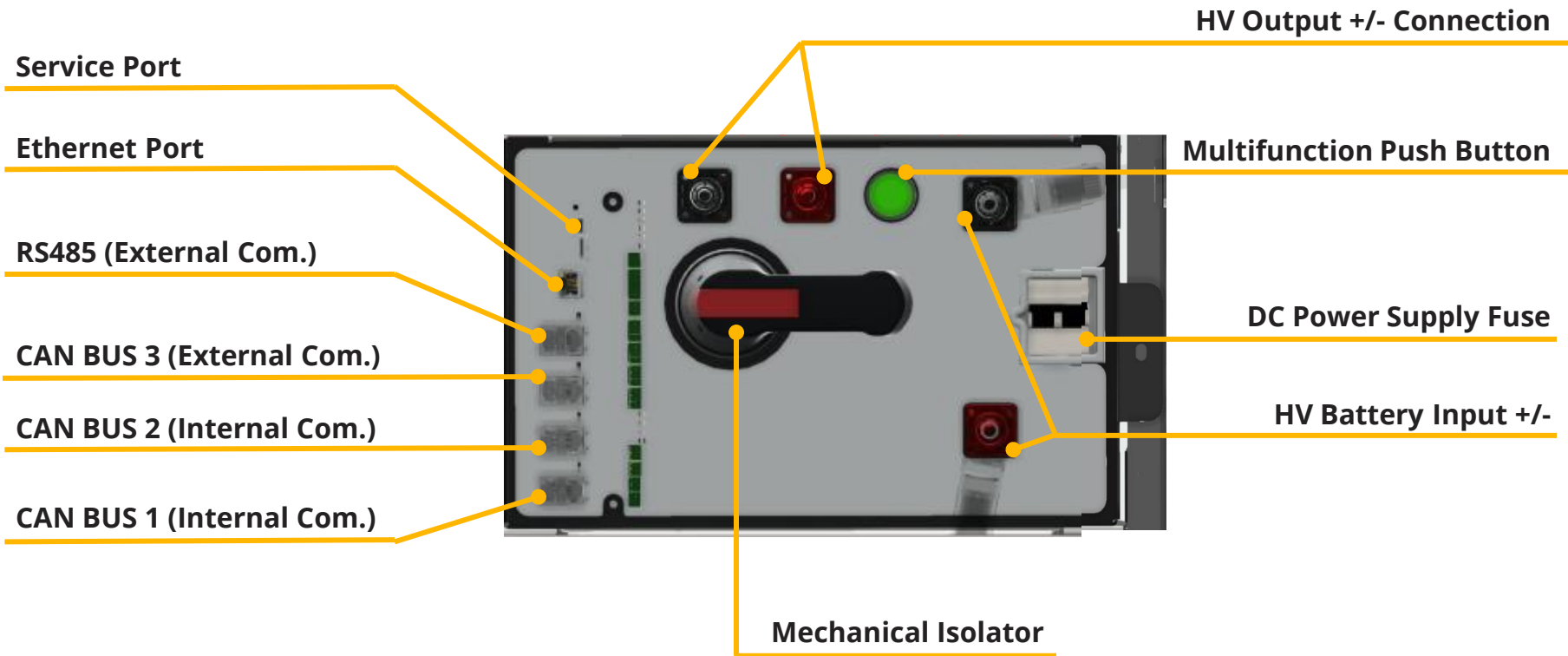**Protection 1000V 200A Fuse**

Battery Module SS6143

Battery Frame 8, 12 or 18 Rack System

Connection ports DC & Coms

High Voltage Battery Range | SS70xx

Service Port

Ethernet Port

RS485 (External Com.)

CAN BUS 3 (External Com.)

CAN BUS 2 (Internal Com.)

CAN BUS 1 (Internal Com.)

HV Output +/- Connection

Multifunction Push Button

DC Power Supply Fuse

HV Battery Input +/-

Mechanical Isolator
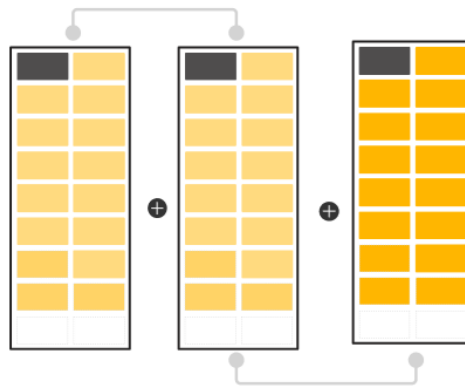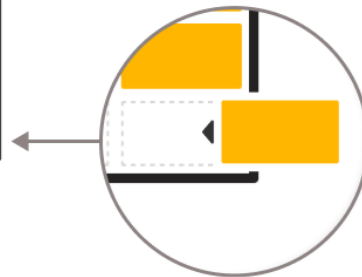
High Voltage Battery Range | SS70xx

Extend your existing system anytime when more capacity is needed.

Parallel battery stack to an infinite number.

Add additional modules as you scale your energy requirements.

High Voltage Battery Range | SS70xx (EU Only)

	SS7007 [1]	SS7008 [1]	SS7010 [1]
Rated capacity	71.5 kWh	85.8 kWh	100.1 kWh
Nominal Power (@0.7C)	50.0 kW	60.0 kW	70.0 kW
Nominal Voltage	260V	312V	364V
Number of battery modules	5	6	7
Weight per module	115 kg	115 kg	115 kg
Total weight	575 kg	690 kg	805 kg
Operational Voltage	255 - 278	306 - 333.6	357 - 389.2
Communication	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet
Dimensions W x D x H	424mm x 704mm x 1974mm	424mm x 704mm x 1974mm	424mm x 704mm x 1974mm

High Voltage Battery Range | SS70xx

	SS7011	SS7013	SS7014	SS7016
Rated capacity	114.4 kWh	128.7 kWh	143 kWh	157.3 kWh
Nominal Power (@0.7C)	80.0 kW	90.0 kW	100.0 kW	110.0 kW
Nominal Voltage	416V	468V	520V	572V
Number of battery modules	8	9	10	11
Weight per module	115 kg	115 kg	115 kg	115 kg
Total weight	920 kg	1035 kg	1150 kg	1265 kg
Operational Voltage	408 - 444.8	459 - 500.4	510 - 556	561 - 611.6
Communication	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet
Dimensions W x D x H	848mm x 704mm x 1490mm	848mm x 704mm x 1490mm	848mm x 704mm x 1490mm	848mm x 704mm x 1490mm

High Voltage Battery Range | SS70xx

	SS7017	SS7019	SS7020
Rated capacity	171.6 kWh	185.9 kWh	200.2 kWh
Nominal Power (@0.7C)	120.0 kW	130.0 kW	140.0 kW
Nominal Voltage	624V	676V	728V
Number of battery modules	12	13	14
Weight per module	115 kg	115 kg	115 kg
Total weight	1380 kg	1495 kg	1610 kg
Operational Voltage	612 - 667.2	663 - 722.8	714 - 778.4
Communication	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet
Dimensions W x D x H	848mm x 704mm x 2221mm	848mm x 704mm x 2221mm	848mm x 704mm x 2221mm

High Voltage Battery Range | SS70xx

	SS7021	SS7023	SS7024
Rated capacity	214.5 kWh	228.8 kWh	243.1 kWh
Nominal Power (@0.7C)	150.0 kW	160.0 kW	170.0 kW
Nominal Voltage	780V	832V	884V
Number of battery modules	15	16	17
Weight per module	115 kg	115 kg	115 kg
Total weight	1725 kg	1840 kg	1955 kg
Operational Voltage	765 - 834	816 - 889.6	867 - 945.2
Communication	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet	CANBUS / RS485 / Ethernet
Dimensions W x D x H	848mm x 704mm x 2221mm	848mm x 704mm x 2221mm	848mm x 704mm x 2221mm

High Voltage Battery Range | SS70xx

Flat Packed

Stackable

All DC & Coms Cables incl.

Packing List

Blank Plates

High Voltage Battery Range | SS70xx

Product Overview

03 – Utility Scale BESS

Utility Scale Solutions | SS70XX Containerized

- Pre-Commissioned

- Plug & Play

- PCS or Hybrid Included

- Highly Customized

- Containerized

**5 Years** Guarantee on Product Material & Workmanship

12 Years Energy Output Warranty

Utility Scale Solutions | SS70XX Containerized

The Containerized **Battery Energy Storage Solution (BESS)** is an advanced Lithium-Ion storage unit built into a customized 20ft or 40ft container.

The unit is designed to be fully scalable to meet your storage requirements. Storage size for a containerized solution can **range from 750 kWh up to 5.834,4 MWh per container**. This solution can be a pure storage solution or integrated with various Power Conversion Systems (PCS) from 500kW+ output power.
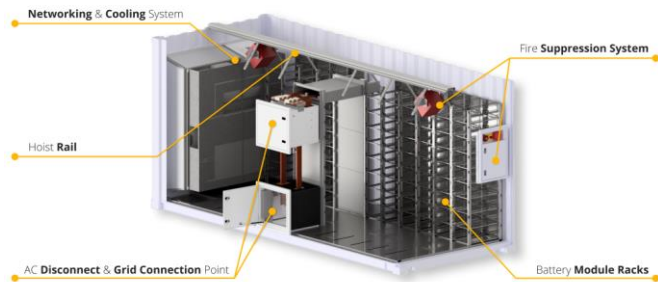
Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CATL
Cell Certification & Standards	IEC 62619 / UN38.3 / UN3480/ UL1642/ CE
Cycle Life @25°C	≥6000
Recommended depth of discharge (DoD)	90%
Container Round Trip Efficiency	> 93% (Battery Only)
Container Ambient Temperature	-10°C to 50°C (-30°C on request)
Container Thermal Insulation	Rockwool
Protection Class	IP65
Container Safety Standard	IEC 62933-5-2:2020
Fire Protection	Fire Pro (Eco Friendly - K2 CO3)
Climatization	2x 36000 BTU Air Conditioners 20°C Standard room temperature
Energy Management System	mypower24 Plant Controller

Utility Scale Solutions | SS70XX Containerized

Technical Information	20ft Battery Only	40ft Battery Only
Max. capacity:	2.431 MWh (Max)	5.8344 MWh (Max)
Inverter Power (PCS):	-	-
Nominal Power @ 0.7C:	1.70 MW	4.084 MW
Usable Battery Energy (90% DOD):	2.188 MWh	5.250 MWh
Number of Batteries:	761.6 - 945.2Vdc	761.6 - 945.2Vdc
Operational Voltage:	3000A	3000A (6000A on request)
DC Max. Current:	170 pcs (SS6143 - 14.3kWh)	408 pcs (SS6143 - 14.3kWh)
Dimensions:	6058 × 2440 × 2890 mm	12200 × 2440 × 2890 mm
Weight:	Max. 24 637 kg	Max. 58 250 kg

20ft Battery Only

Our 20ft battery only has a maximum capacity of 2.431MWh utilising 170x SS6143 High Voltage battery modules connected in parallel.

40ft Battery Only

Our 40ft battery only has a maximum capacity of 5.834,4 MWh utilising 408x SS6143 High Voltage battery modules connected in parallel.
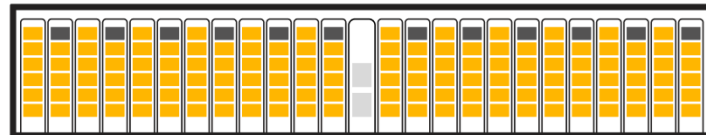
Utility Scale Solutions | SS70XX Containerized

Technical Information	20ft Battery & Inverter	40ft Battery & Inverter
Max. capacity:	0.75 - 1.45 MWh	1.45 - 3.4 MWh
Inverter Power (PCS):	0.5 - 1 MW	1 - 2.75 MW
Nominal Power @ 0.7C:	0.525 - 1.015 MW	1.015 - 2.38 MW
Usable Battery Energy (90% DOD):	0.675 - 1.305 MWh	1.305 - 3.06 MWh
Number of Batteries:	676 - 945.2Vdc	676 - 945.2Vdc
Operational Voltage:	800 - 1200A	1200 - 2800A
DC Max. Current:	52 - 102 pcs (SS6143 - 14.3kWh)	102 - 238 pcs (SS6143 - 14.3kWh)
Dimensions:	6058 × 2440 × 2890 mm	12200 × 2440 × 2890 mm
Weight:	Max. 17 862 kg	Max. 35 812 kg

20ft Battery & Inverter

Our 20ft battery & inverter variation has a maximum capacity range of 0.75 - 1.45 MWh utilising 52 - 102x SS6143 High Voltage battery modules connected in parallel.

A single high voltage inverter is installed with a power range between 0.5 - 1 MW.
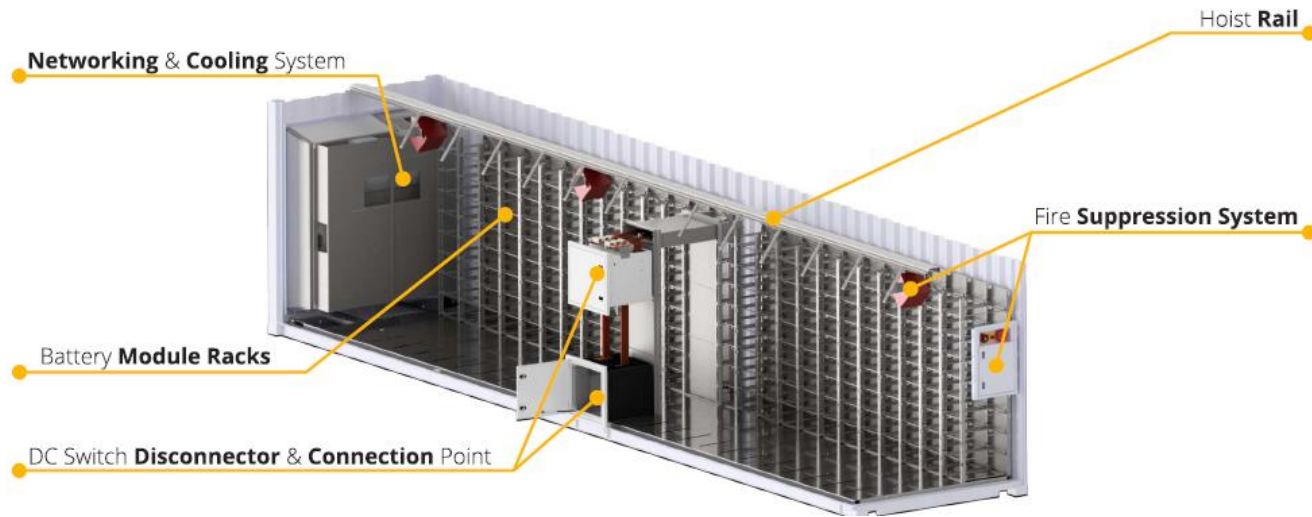

40ft Battery & Inverter

Our 40ft battery & inverter variation has a maximum capacity range of 1.45 - 3.4 MWh utilising 102 - 238x SS6143 High Voltage battery modules connected in parallel.
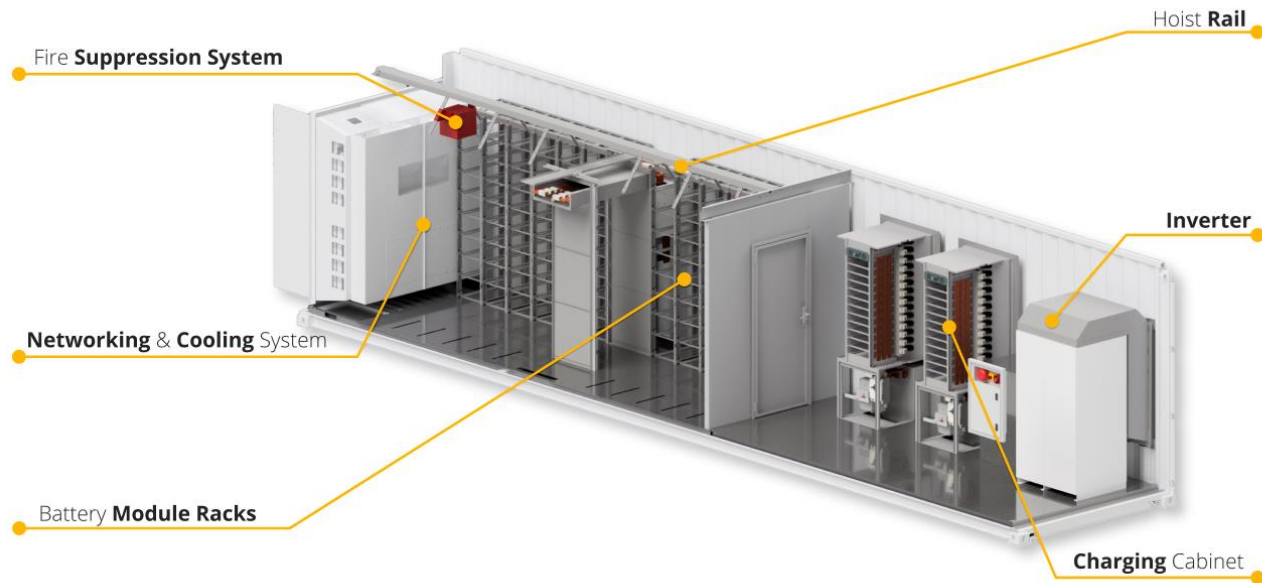
Dual high voltage inverters are installed with a power range between 1 - 2.75MW.
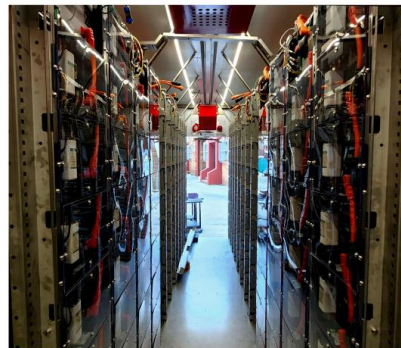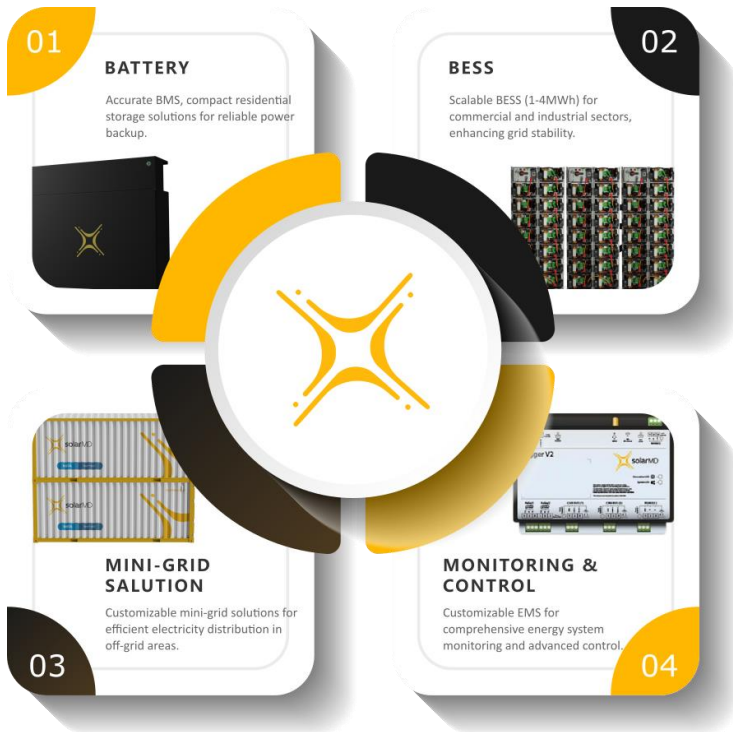
Utility Scale Solutions | SS70XX Containerized

Networking & Cooling System

Hoist Rail

Fire Suppression System

Battery Module Racks

DC Switch Disconnector & Connection Point

Utility Scale Solutions | SS70XX Containerized

Fire **Suppression System**

Hoist **Rail**

Inverter

Networking & **Cooling** System

Battery **Module Racks**

Charging Cabinet

Utility Scale Solutions | SS70XX Containerized

500 kW & 1.2 MWh

1 MW & 3.4 MWh

2.4 MW & 5.3 MWh

01 BATTERY

Accurate BMS, compact residential storage solutions for reliable power backup.

02 BESS

Scalable BESS (1-4MWh) for commercial and industrial sectors, enhancing grid stability.

03 MINI-GRID SALUTION

Customizable mini-grid solutions for efficient electricity distribution in off-grid areas.

04 MONITORING & CONTROL

Customizable EMS for comprehensive energy system monitoring and advanced control.

Product Overview

Work Modes

Work Modes| Grid Parallel

- Increased Self-Consumption
- Energy Arbitrage
- Peak Shaving
- Zero Feed In

Container
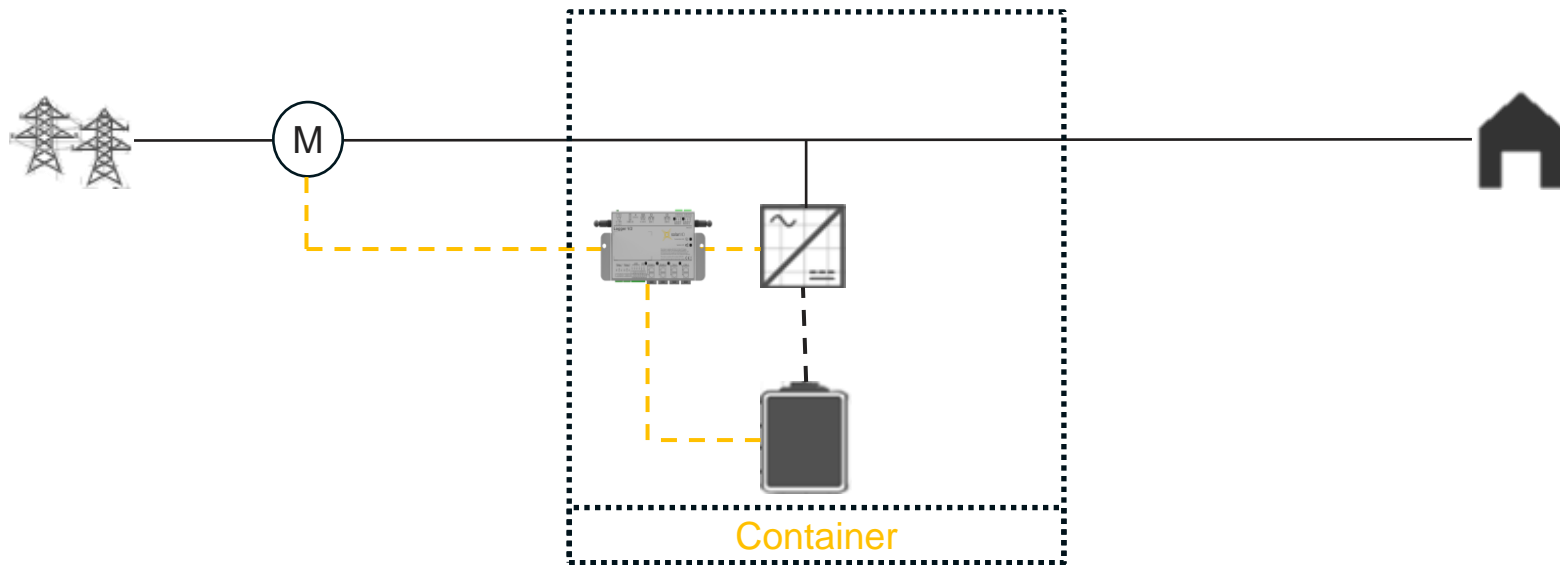
Work Modes| Grid Parallel

- Increased Self-Consumption
- Energy Arbitrage
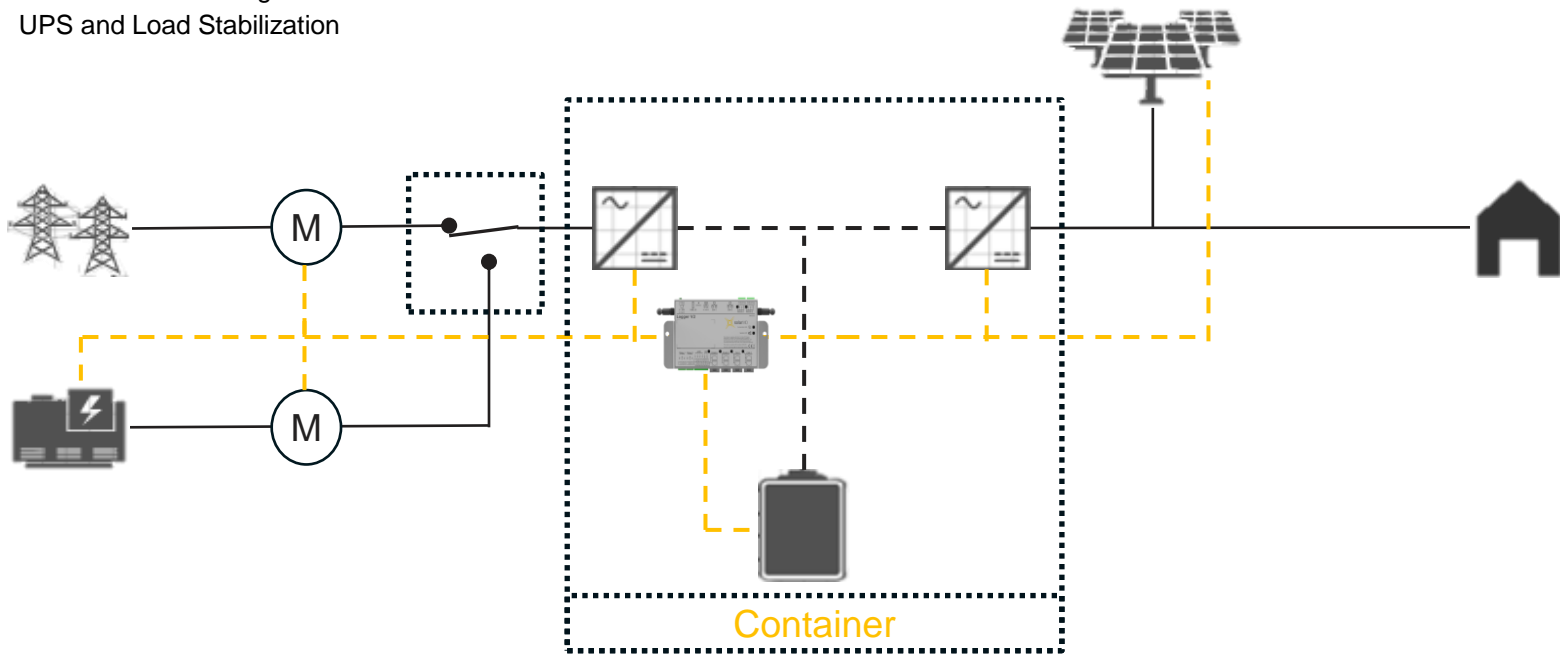- Peak Shaving
- Zero Feed In
- PV Integration
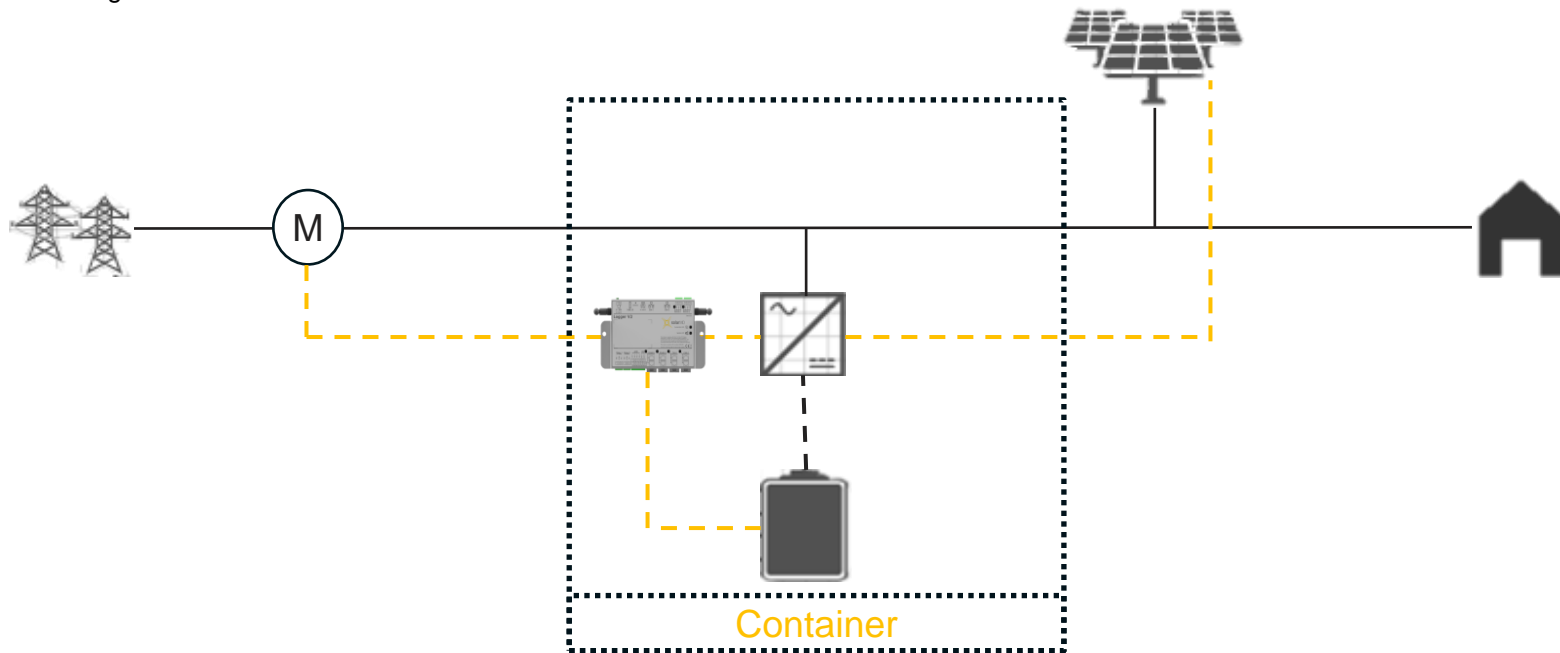
M

Container

Work Modes| Grid Parallel

- Increased Self-Consumption
- Energy Arbitrage
- Peak Shaving
- Zero Feed In
- Generator & PV Integration
- 20ms switchover time
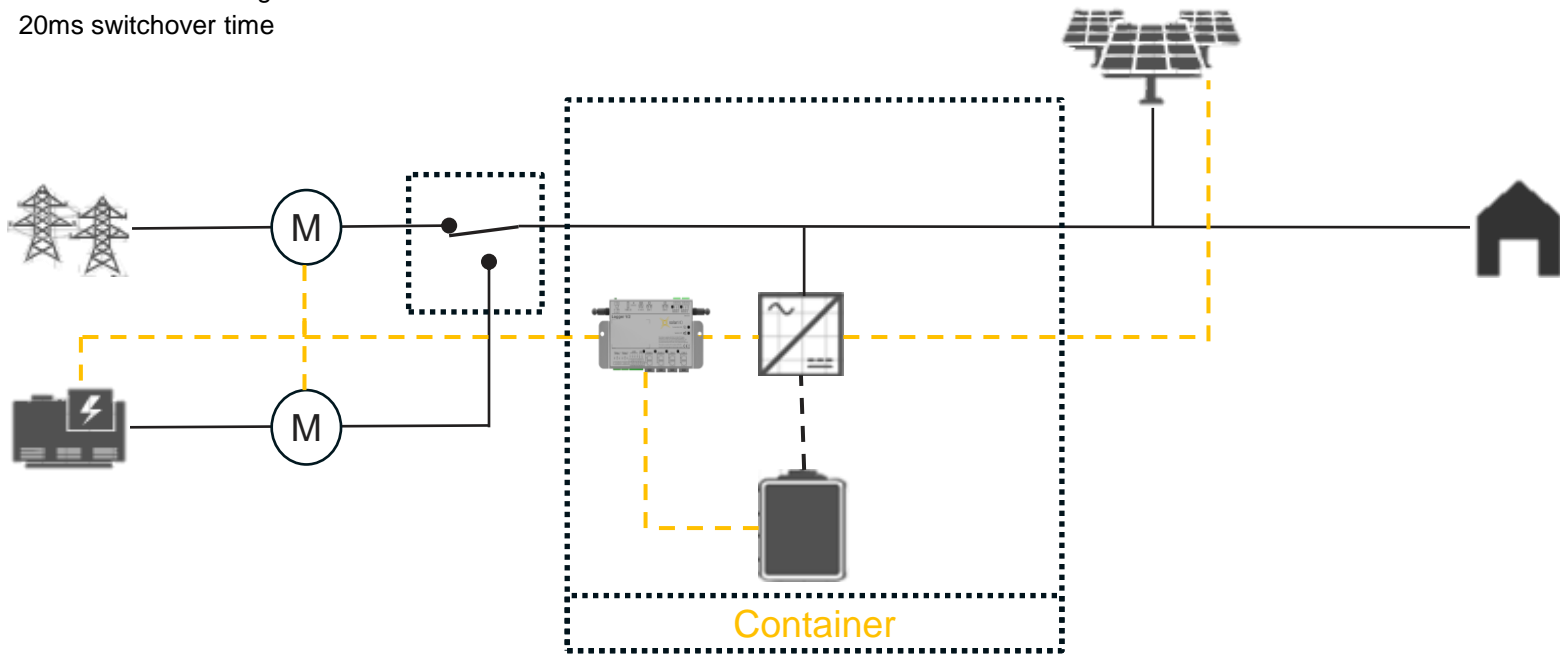
Container

Work Modes| Grid Parallel

- Increased Self-Consumption
- Energy Arbitrage
- Peak Shaving
- Zero Feed In
- Generator & PV Integration
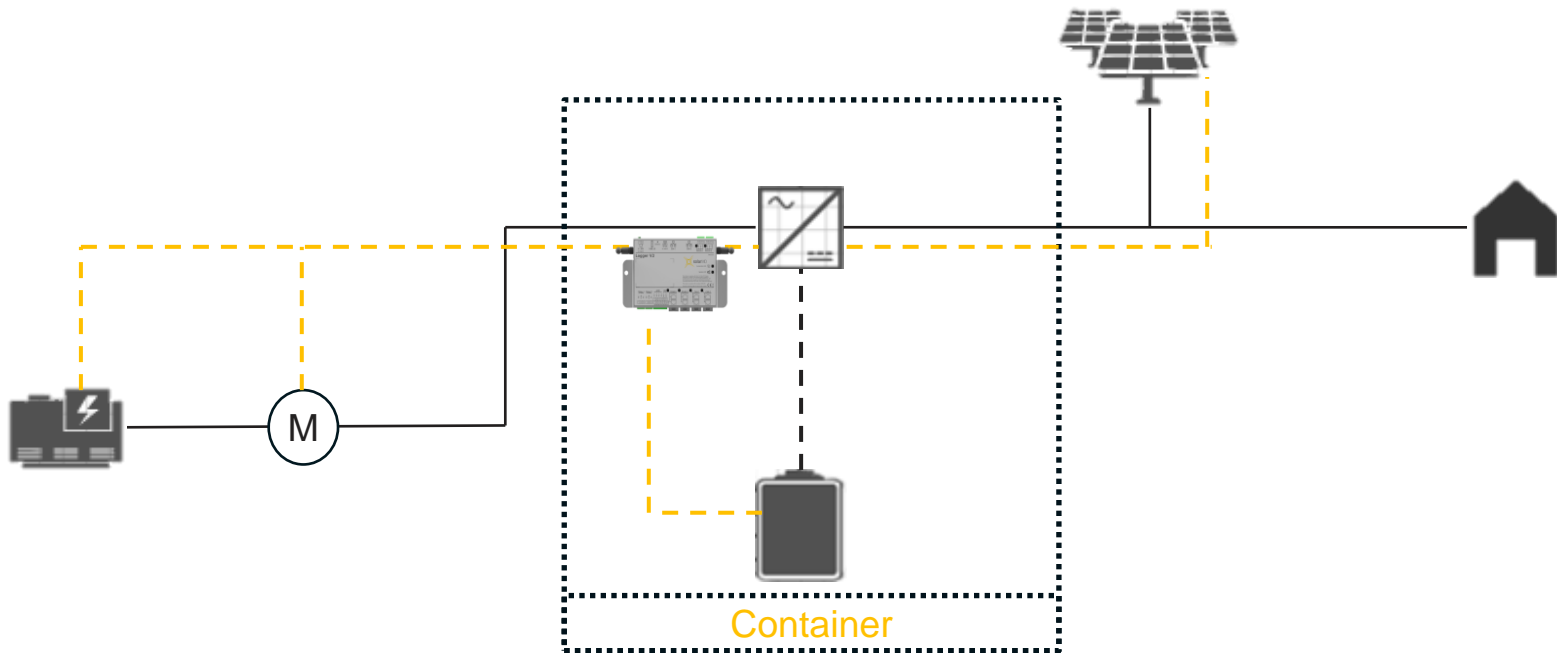- UPS and Load Stabilization

Container

Work Modes| Grid Parallel

- Increased Self-Consumption
- Energy Arbitrage
- Peak Shaving
- Zero Feed In
- Generator & PV Integration
- UPS and Load Stabilization
- Increased Capacity

Container
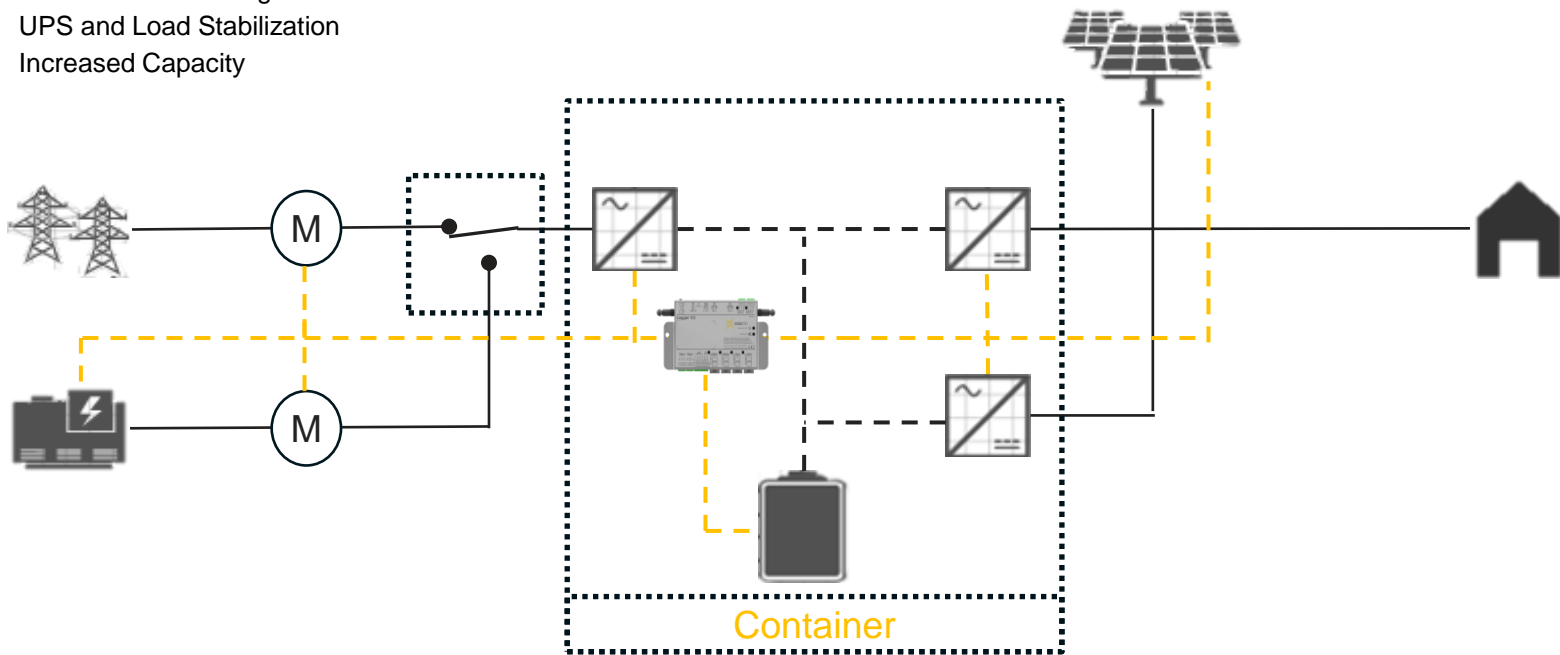
Work Modes| Off-Grid

- Mini Grid Management
- Generator & PV Integration

Container

Product Overview

04 – Monitoring & Control

Monitoring & Control | EMS – Logger V2

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** for load control.
- **Communicates with supported inverters**, energy meters, weather stations, and other energy devices.
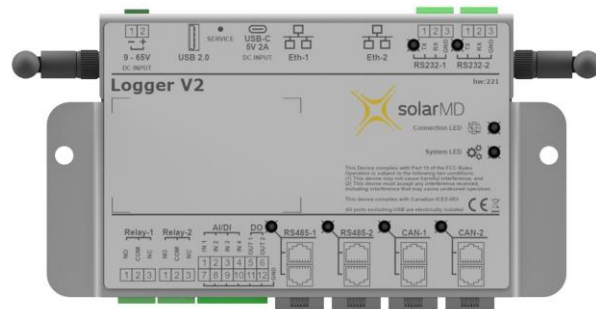
Monitoring & Control | EMS – Logger V2

Compatibility

Solar MD batteries are compatible with specific inverters/chargers and MPPTs such as off-grid, hybrid and UPS inverters and more. We provide guidelines for other power electronic brands as well. We recommend integration with digital communication or voltage-based integration by both Solar and power electronics manufacturers.

We have tested and can recommend the below-mentioned popular inverter brands compatible with Solar MD batteries and Solar MD Logger-V2 monitoring systems.

Monitoring & Control | mypower24

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

- **Real-Time Data & Insights**: Gain valuable insights into your energy usage with real-time data visualisation and historical records.
- **Unmatched Security:** mypower24 prioritises your data security with certified authentication and encrypted data transfer.
- **Convenient Remote Management:** We remotely manage your system & devices for maximum efficiency.

Monitoring & Control | mypower24

Mobile User App

The mypower24 mobile app is the user interface for the end client. It's a friendly and easy to use overview of the most important information of the energy system.

- **Dashboard Overview** of all devices and their energy information.
- **Energy Flow Diagram** to view and isolate information about your battery, consumption, solar production and other devices in the network.
- **Device Status** shows the connectivity and product information of all devices connected.

Monitoring & Control | mypower24

Installer Interface

The mypower24 Web Version is the user interface for the installer. This is the place where the magic happens.

- **Dashboard Overview** of all devices and their energy information.
- **Energy Flow Diagram** to view and isolate information about your battery, consumption, solar production and other devices in the network.
- **Insights** to battery information, easy programming logics and plant setup.
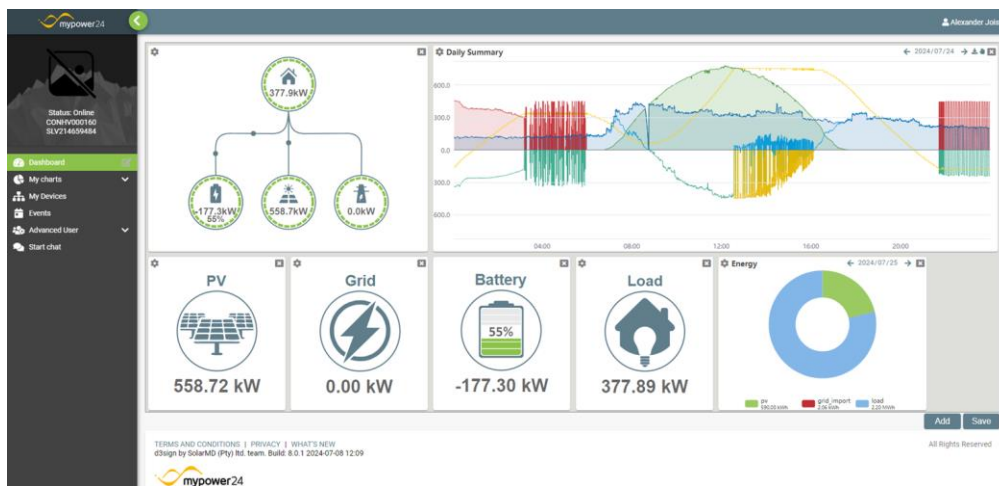
Monitoring & Control | mypower24   (Expert Level Access)

Plant Controller

The Plant Controller is a tool inside the mypower24 platform. This is where all devices connect and logics are applied

- **Draw** the electrical connections of your system in a single line diagram
- **Load all connected devices** onto the screen
- **Setup Logics** of what these devices are supposed to do or control
  - Energy Arbitrage
  - Energy Management
  - Peak Shaving
  - Zero Feed In
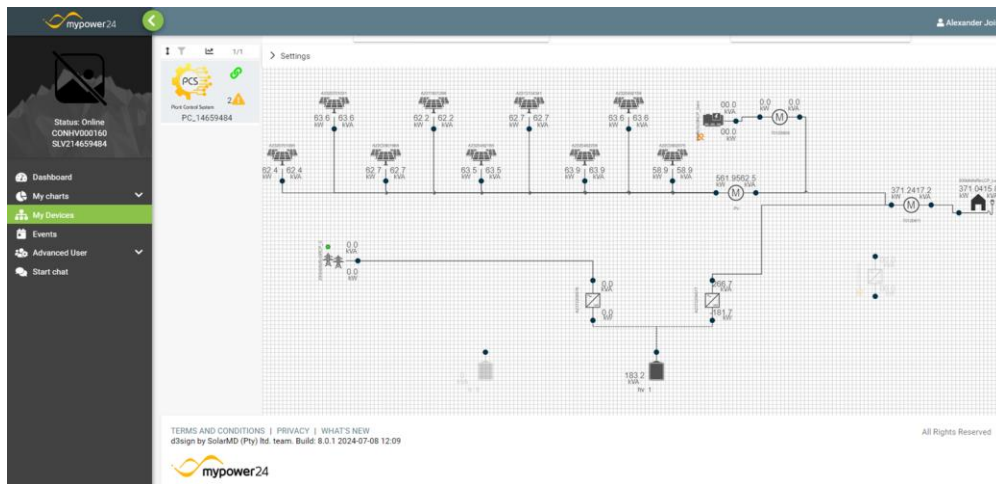
After Sales | Support Hotline

- Strong technical support department
- Troubleshoot any issues related to both low and high voltage batteries
- Assists remotely with firmware updates
- BMS & Relay replacements
- Installation
- Available Monday to Saturday via WhatsApp chat & Telephone

Need Support?

Contact our dedicated support team on the channels below:

📞 021 555 2181

🟢 076 280 4053

✉ support@solarmd.co.za

Thank you!