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Solar MD Product Presentation

By Kyle Swanepoel

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	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

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	SS214
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

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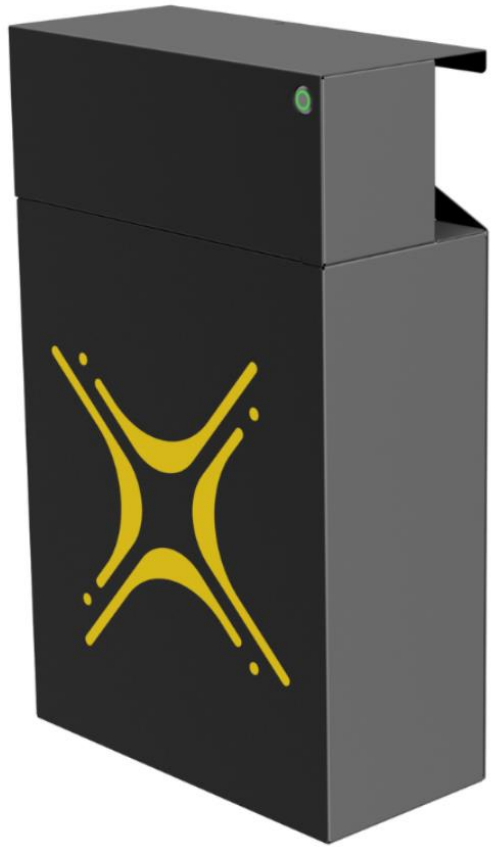

	SS4083
Cell Chemistry	Lithium Iron Phosphate (LiFePO4)
Cell Manufacturer	CALB
Rated Capacity	8.3 kWh
Nominal Power	7.5 kW
Usable Battery Energy @0.3C	7.51 kWh
Nominal Voltage	51.2 V
Number of Battery Modules	1
Weight	70 kg
Operational Voltage	44.8 - 55.6 Vdc
Communication	CANBUS / RS485
Dimensions (W 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

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Solar MD HV – Energy storage solutions

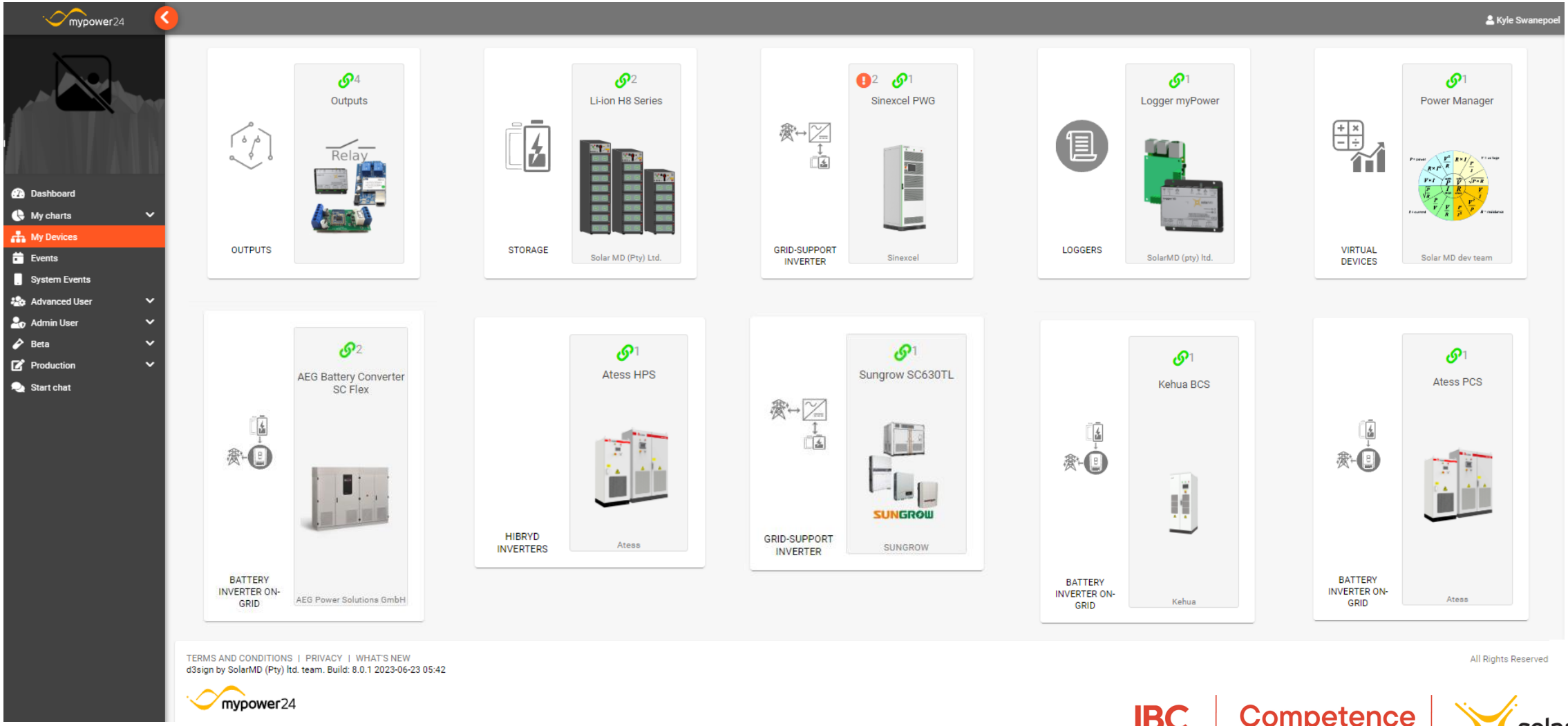
Solar MD SS70XX spec range

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

myPower24 Monitoring Platform



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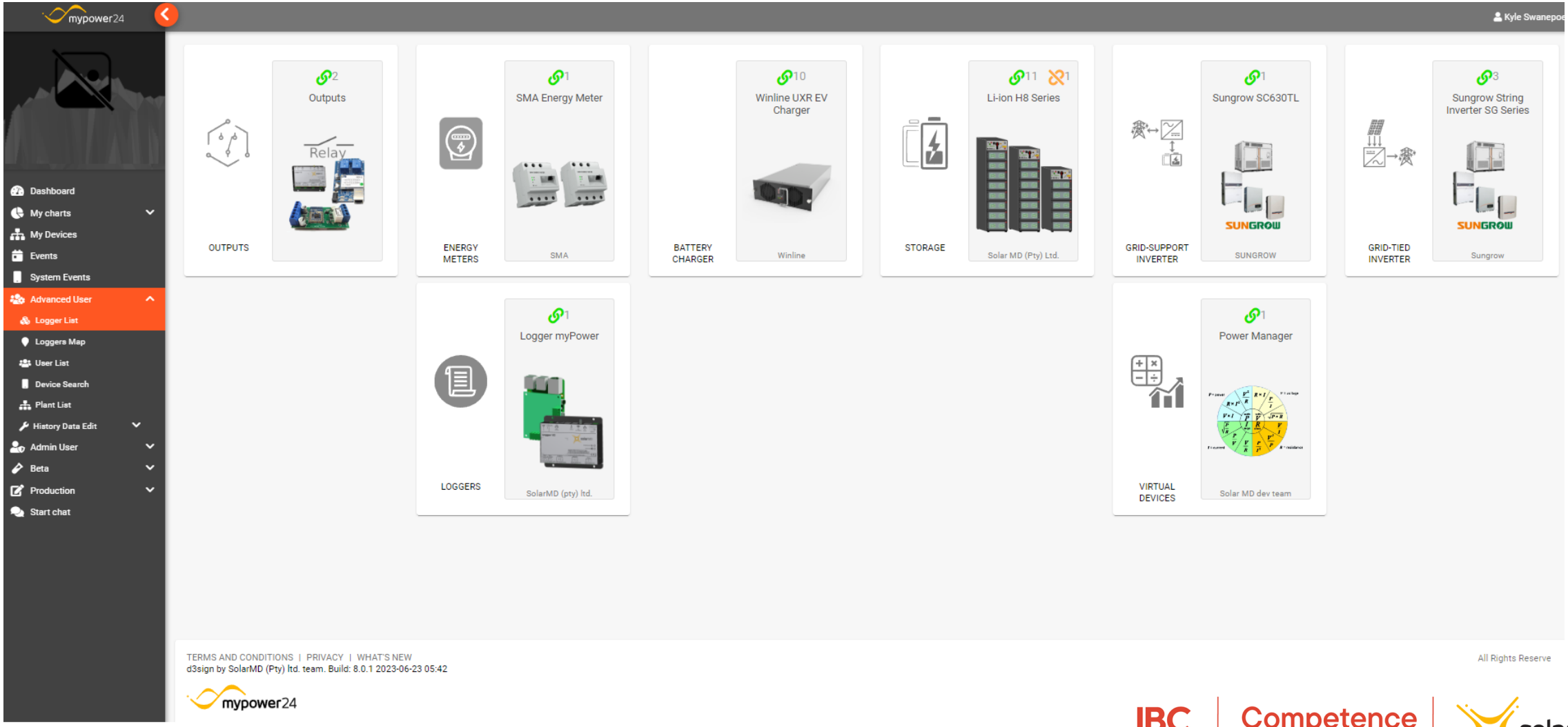

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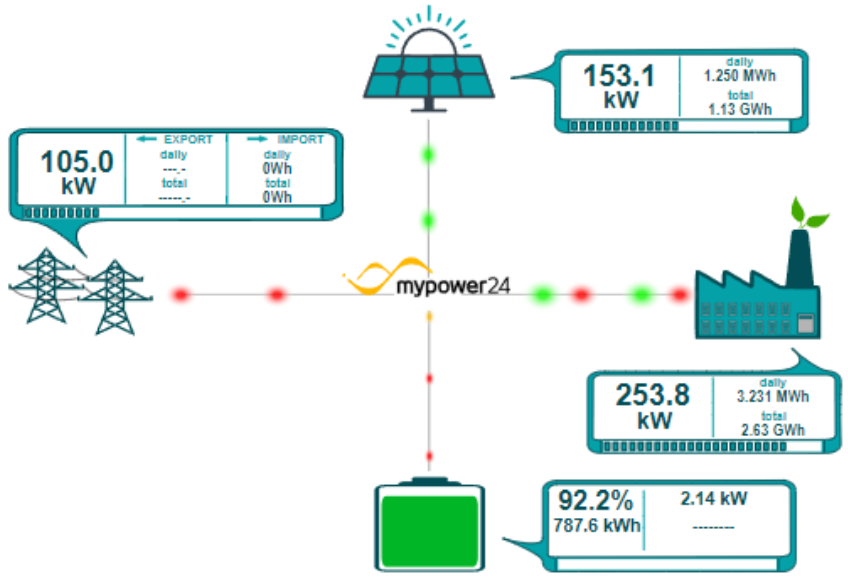

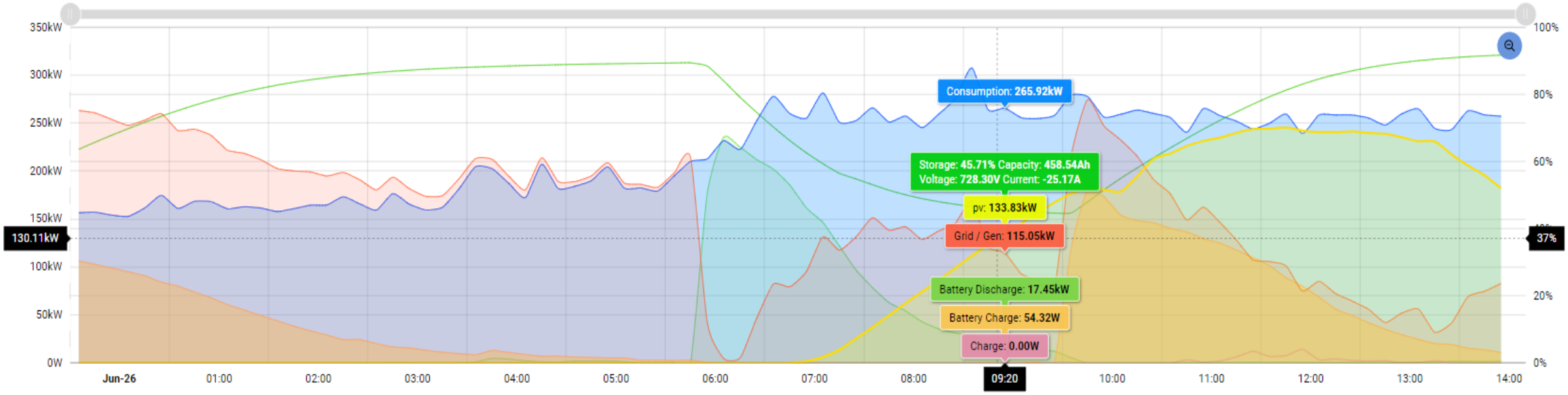

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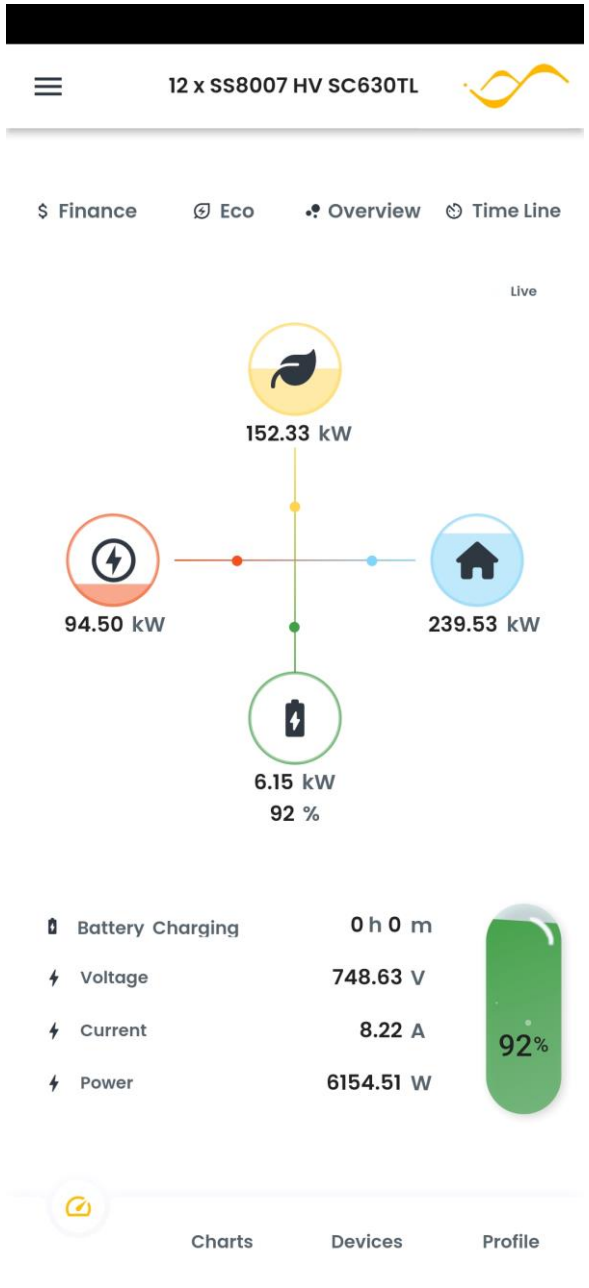

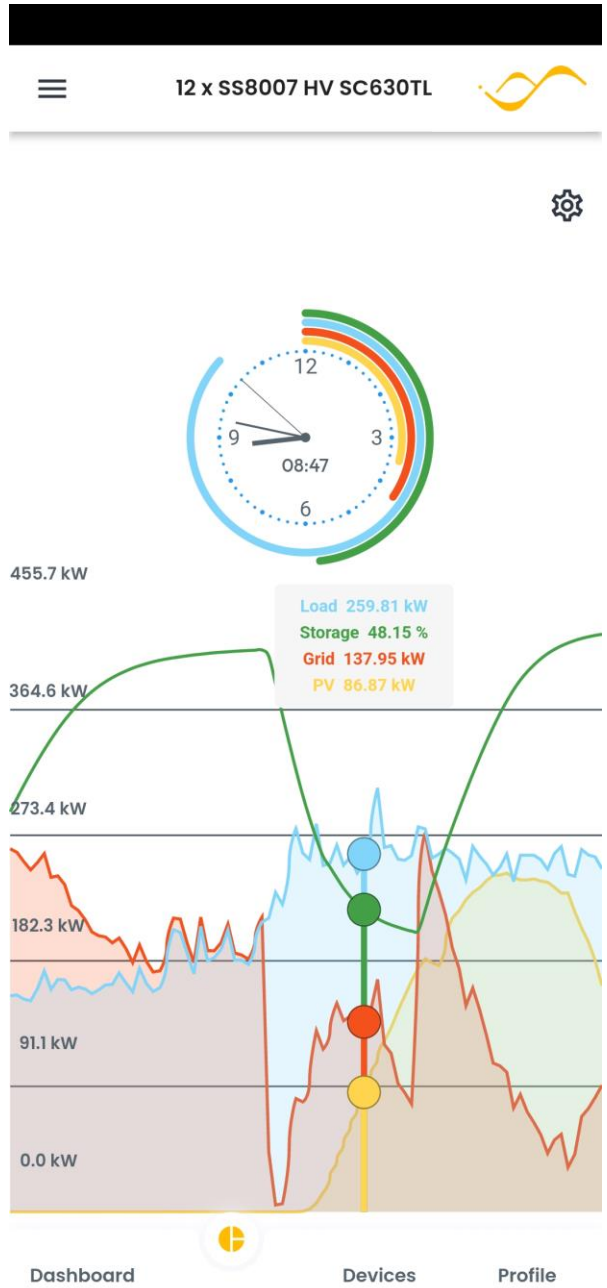

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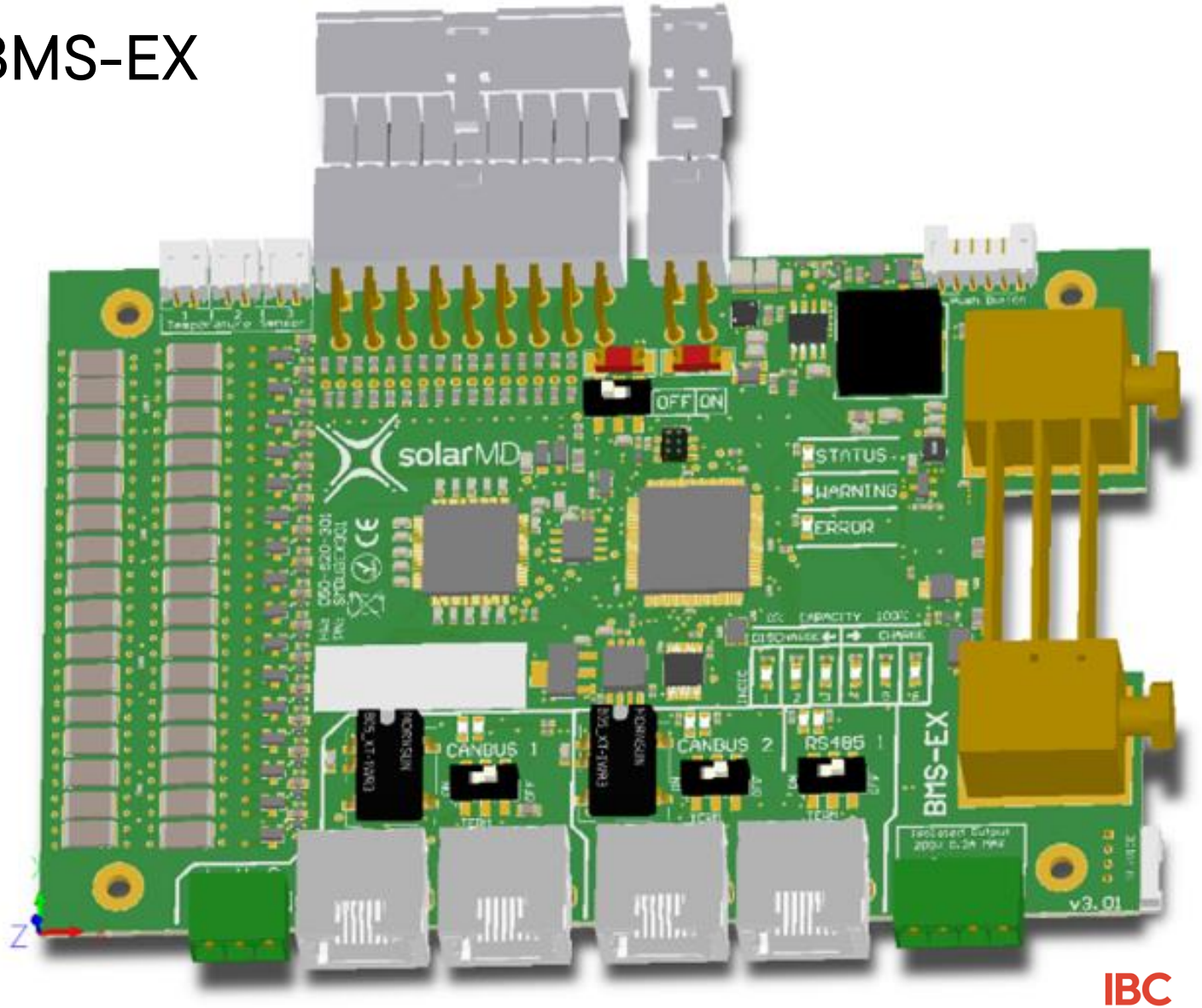
Solar MD BMS-EX



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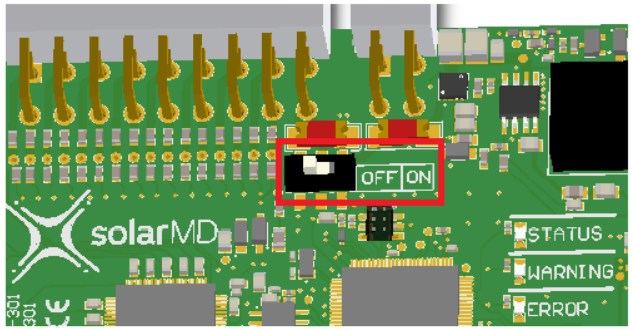
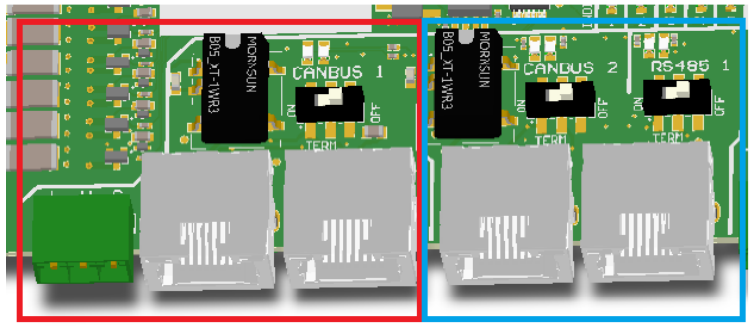
Solar MD BMS-EX – sectional view

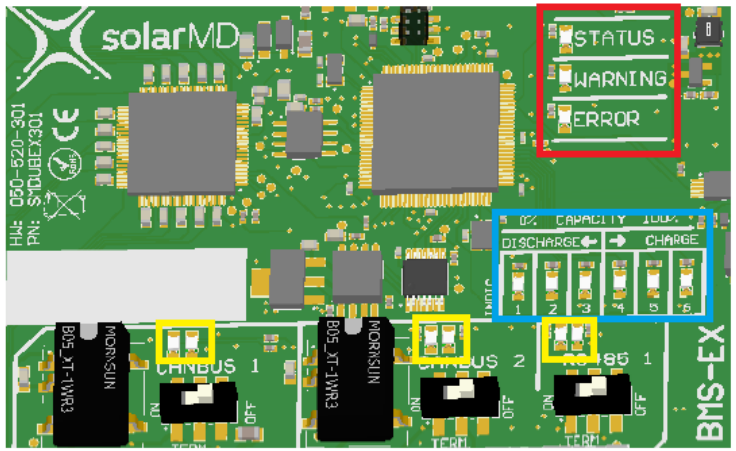


ON/OFF Switch



CAN BUS 1

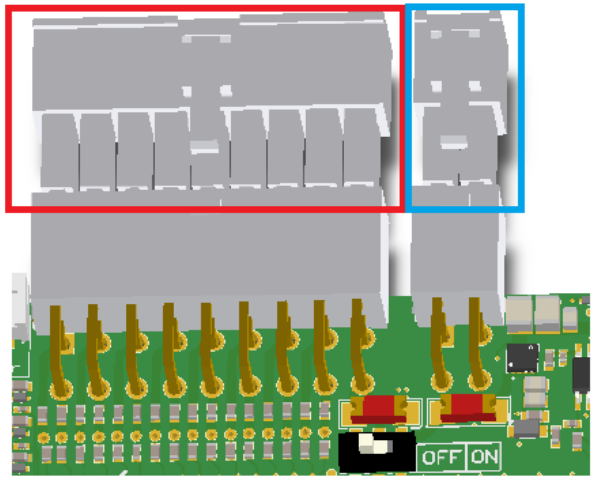
CAN BUS 2 / RS485



BMS status

Indication LEDs

Communication LEDs



Cell voltage taps molex connector

Relay contactor power connector

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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.
- DishargeCapacity: 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.

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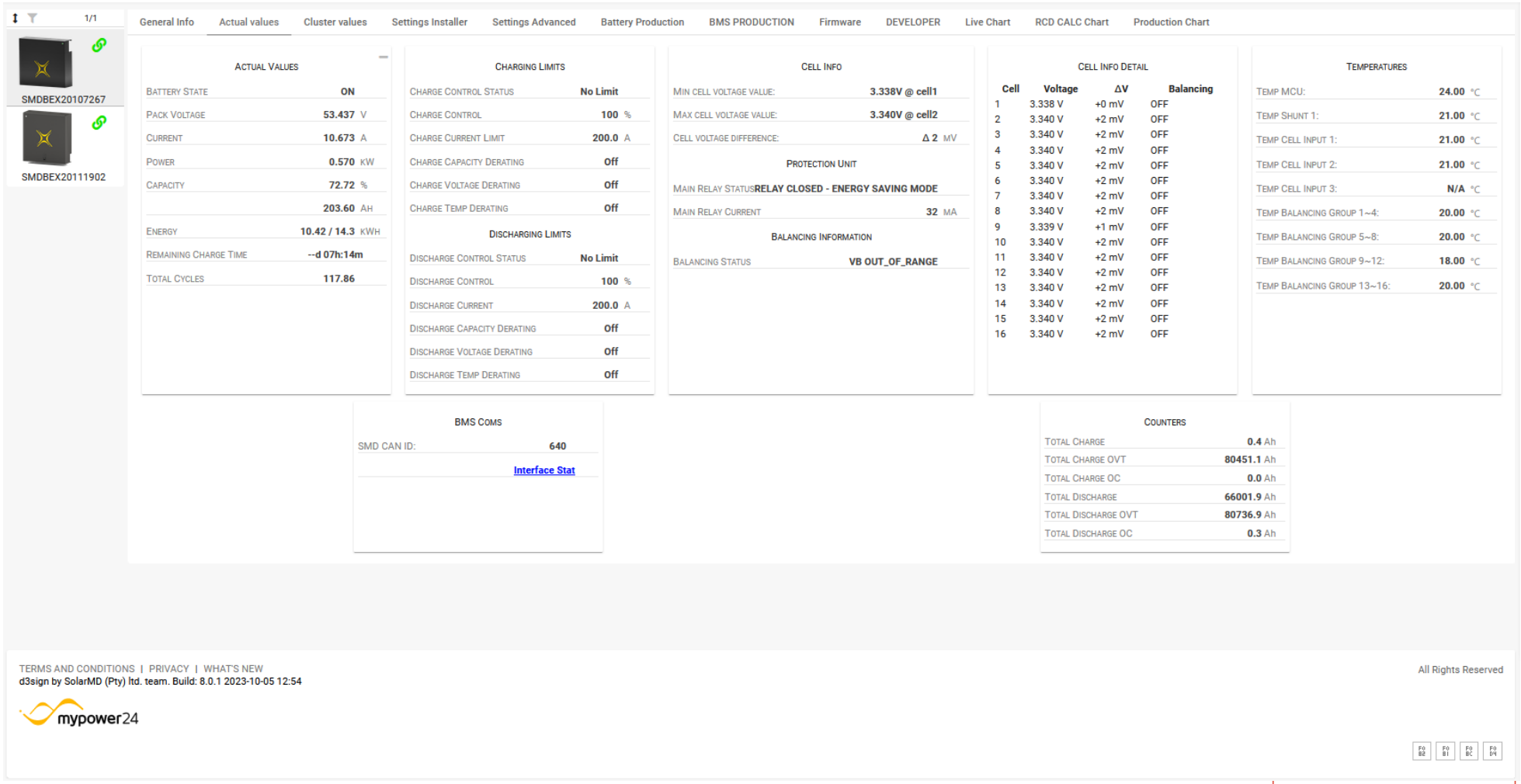

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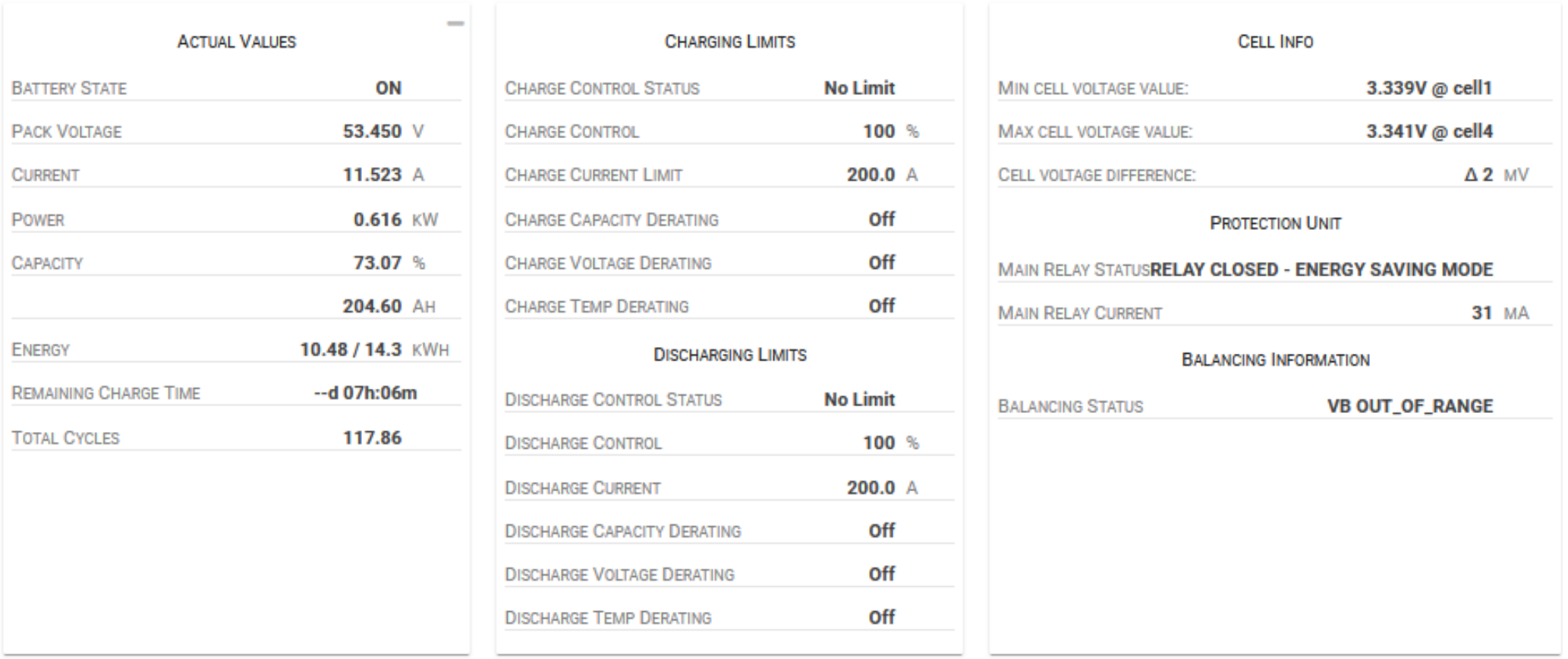

Actual Values

Battery State	ON
Pack Voltage	53.450 V
Current	11.523 A
Power	0.616 kW
Capacity	73.07 %
	204.60 Ah
Energy	10.48 / 14.3 kWh
Remaining Charge Time	--d 07h:06m
Total Cycles	117.86

Charging Limits

Charge Control Status	No Limit
Charge Control	100 %
Charge Current Limit	200.0 A
Charge Capacity Derating	Off
Charge Voltage Derating	Off
Charge Temp Derating	Off

Discharging Limits

Discharge Control Status	No Limit
Discharge Control	100 %
Discharge Current	200.0 A
Discharge Capacity Derating	Off
Discharge Voltage Derating	Off
Discharge Temp Derating	Off

Cell Info

Min cell voltage value:	3.339V @ cell1
Max cell voltage value:	3.341V @ cell4
Cell voltage difference:	Δ 2 mV

Protection Unit

Main Relay Status	RELAY CLOSED - ENERGY SAVING MODE
Main Relay Current	31 mA

Balancing Information

Balancing Status	VB OUT_OF_RANGE

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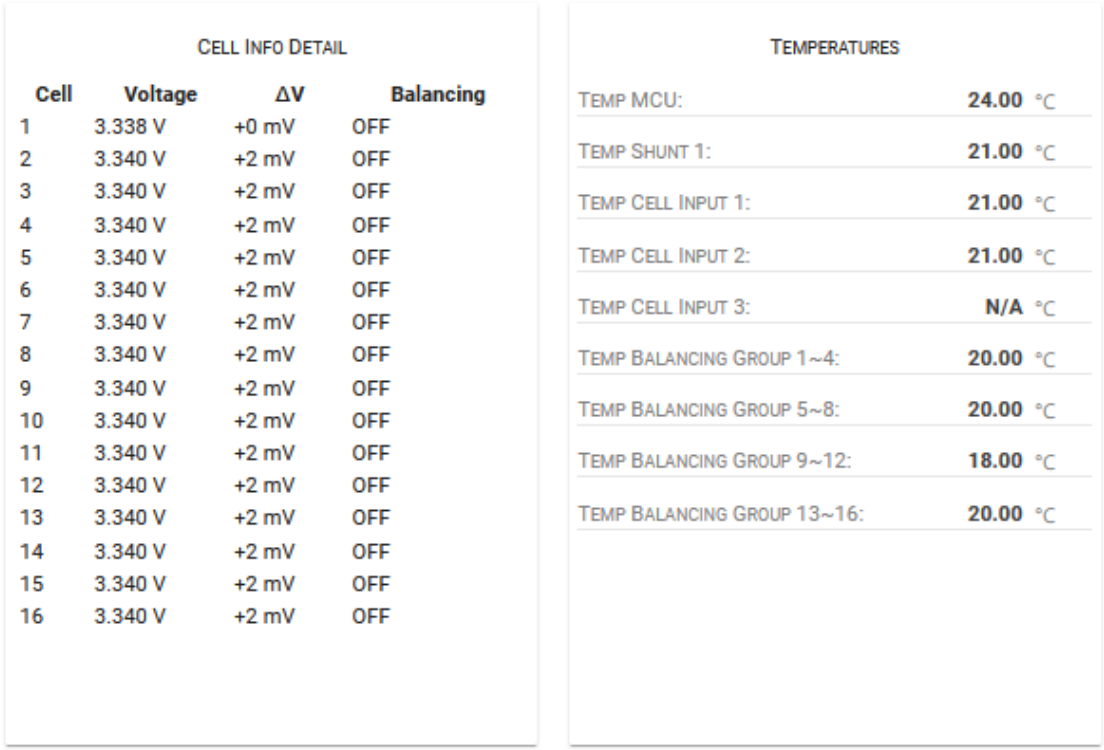

Cell Info Detail

Cell	Voltage	ΔV	Balancing
1	3.338 V	+0 mV	OFF
2	3.340 V	+2 mV	OFF
3	3.340 V	+2 mV	OFF
4	3.340 V	+2 mV	OFF
5	3.340 V	+2 mV	OFF
6	3.340 V	+2 mV	OFF
7	3.340 V	+2 mV	OFF
8	3.340 V	+2 mV	OFF
9	3.340 V	+2 mV	OFF
10	3.340 V	+2 mV	OFF
11	3.340 V	+2 mV	OFF
12	3.340 V	+2 mV	OFF
13	3.340 V	+2 mV	OFF
14	3.340 V	+2 mV	OFF
15	3.340 V	+2 mV	OFF
16	3.340 V	+2 mV	OFF

Temperatures

Temp MCU:	**24.00** °C
Temp Shunt 1:	**21.00** °C
Temp Cell Input 1:	**21.00** °C
Temp Cell Input 2:	**21.00** °C
Temp Cell Input 3:	**N/A** °C
Temp Balancing Group 1~4:	**20.00** °C
Temp Balancing Group 5~8:	**20.00** °C
Temp Balancing Group 9~12:	**18.00** °C
Temp Balancing Group 13~16:	**20.00** °C

Counters

Total Charge	**0.4** Ah
Total Charge OVT	**80451.1** Ah
Total Charge OC	**0.0** Ah
Total Discharge	**66001.9** Ah
Total Discharge OVT	**80736.9** Ah
Total Discharge OC	**0.3** Ah

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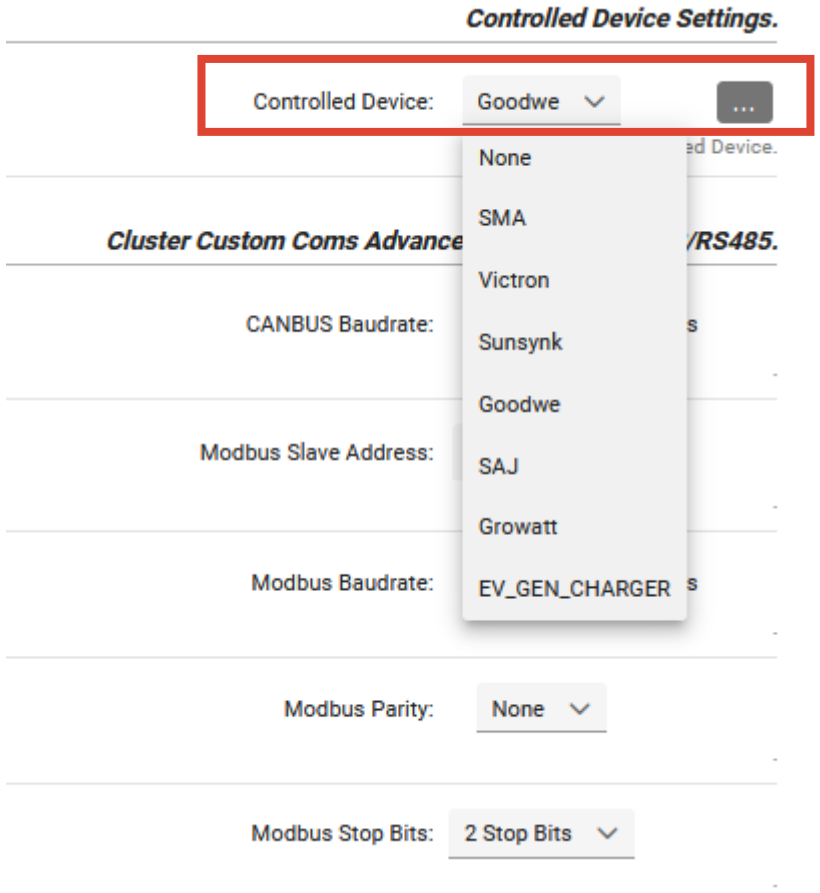

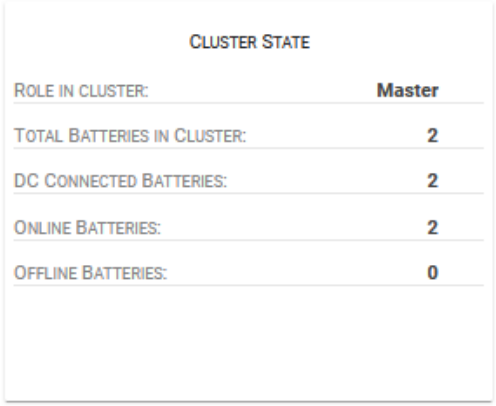

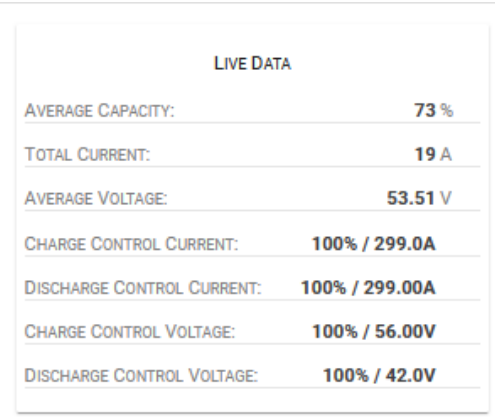

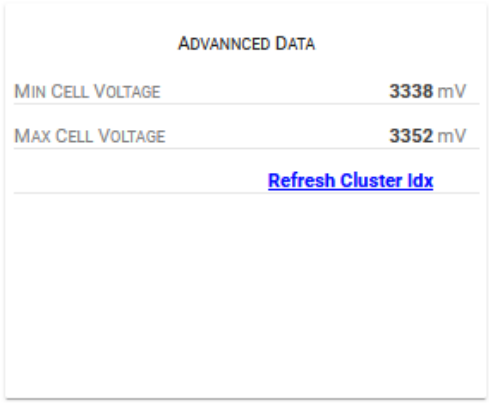

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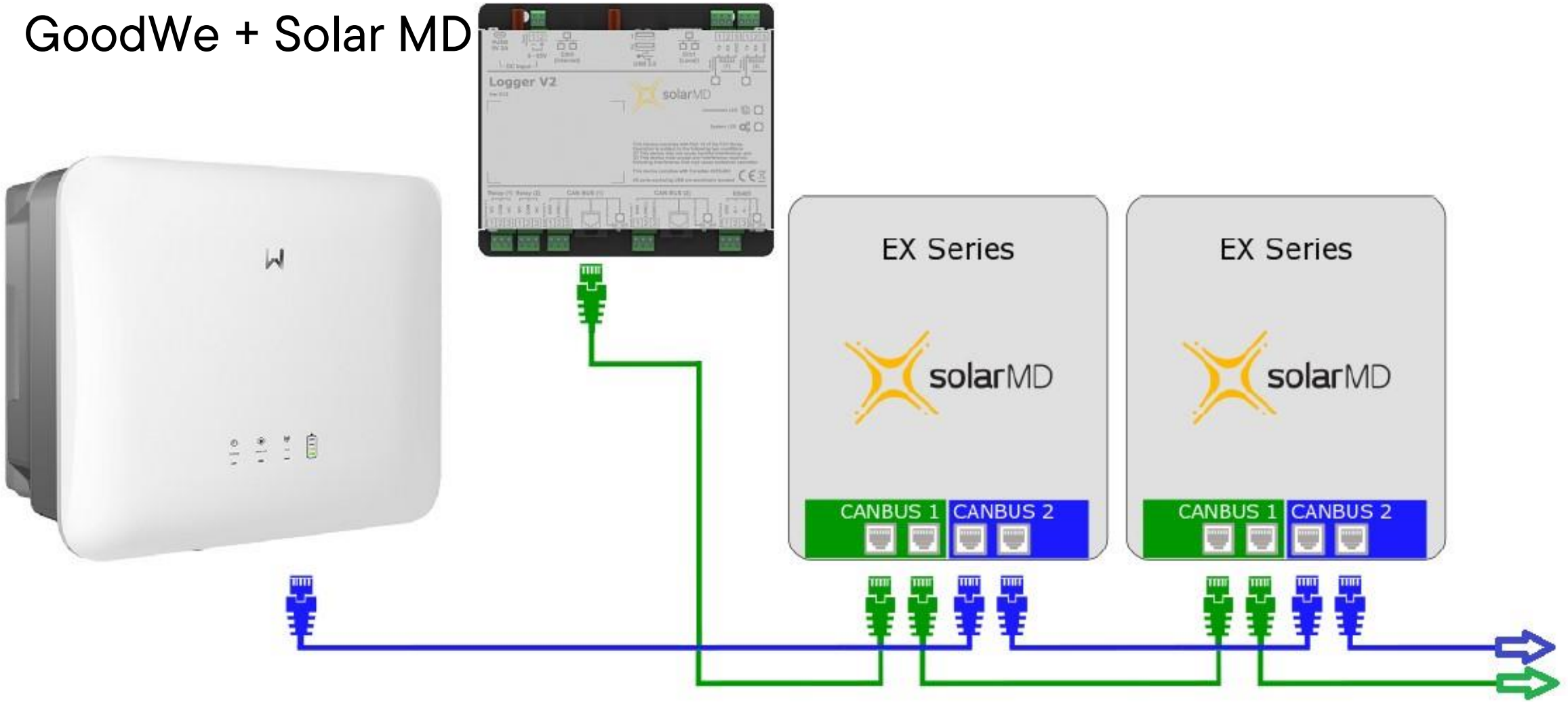

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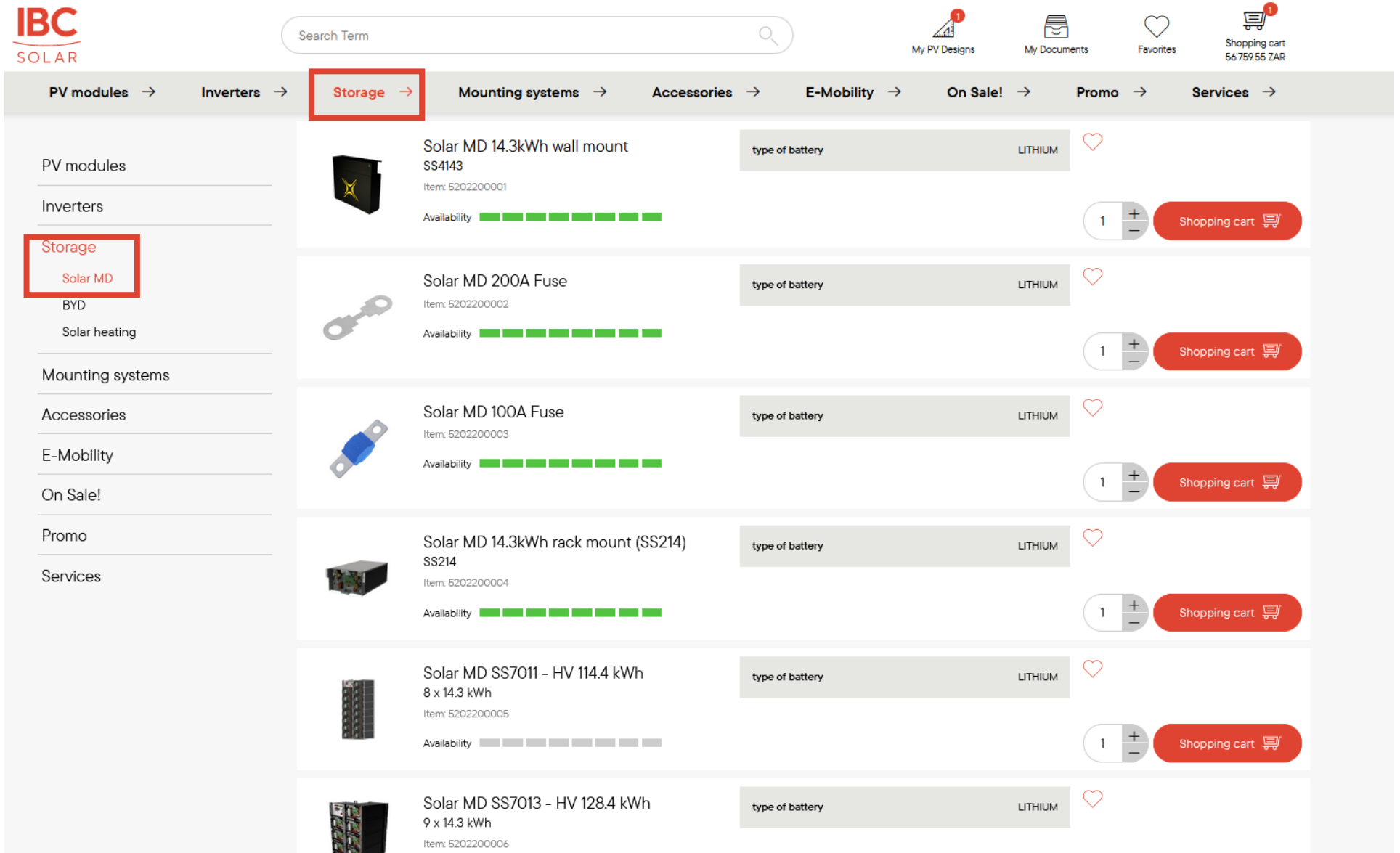
IBC Solar Online Shop – Solar MD



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