

THE GREEN ENERGY SYSTEM PROVIDER

BMZ Energy Storage Products

ESS PRODUCTS

-  ESS-Z
-  HYPERION
-  POWER RAXX
-  POWER BLOXX
-  BATTERY MODULES

BMZ ESS-Z

ESS PRODUCTS

Technical features	ESS Z
Energy (nom./usable)	8,69 kWh / 7,1 kWh
Nominal voltage	54,75 V
Operating voltage range	45 – 63 V
Capacity (nom./usable)	156,6 Ah / 129,6 Ah
Max. constant charge / discharge-current**	< 81 A / < 195 A
Max. discharge current	300 A (3 Sek.)
Max. discharge power*	18 kW
Weight	98 kg
Dimensions (W * H * D)	638 x 421 x 487 mm
Communication	CAN – SMA ready
Battery Management System	Monitoring cell voltage, cell temperature, current, derating and passive balancing
Energy density (weight)	90 Wh / kg
IP protection class	IP 21

*depending on the respective inverter

**also depending on SoC and temperature limits



- Ideal with Victron or SMA (Sunny Island) inverters
- Up to 12 batteries can be connected in parallel
- High overload capacity, well-suited for off-grid systems

BMZ HYPERION LONG LIFE 20

ESS PRODUCTS

HighVoltage DC Energy Storage System

Robust and safe

- 20-year lifespan & 10-year warranty
- Metal housing for system and battery modules
- 2-channel safety architecture
- Independently verified safety

High flexibility

- Single installation can be used with 8.4 or 12.6 kWh
- Expandable
- Floor stand, ready for wall mounting
- Black start capable for emergency power/island operation

Easy installation

- Individual parts weigh less than 28 kg
- Can be operated by one person
- Battery system can be installed in less than 30 minutes

Low noise

- Passive cooling



BMZ HYPERION LONG LIFE 20

HighVoltage DC Energy Storage System

Technical features	Modules	
	4	6
Battery pack voltage	204 V	307 V
Battery capacity (usable)	41.5 Ah	
Energy (nom./usable)	13.5 kWh / 8.4 kWh	20.1 kWh / 12.6 kWh
Final charging voltage	224 V	336 V
Final discharge voltage	187 V	280 V
Charging current (max.)	29 A	
Discharge current peak (3 sec.)	40 A	
Discharge current (nom.)	30 A	
Discharge power peak	8.2 kW	12.3 kW
Discharge power (max.)	6.1 kW	9.2 kW
Weight	129 kg	173 kg
Dimensions (W x H x D)	751 x 870 x 423 mm	
Weight of single module	22 kg	
Dimensions (W x H x D)	546 x 217 x 155 mm	
Operating temperature during discharge	-15 °C to 55 °C	
Operating temperature during charging	0 °C to 45 °C	
Storage temperature	-20 °C to 60 °C	
Housing protection class	IP21	
Interfaces/compatibility	CAN: SMA ¹ , Goodwe ² , SOFARSOLAR ³ , Solis ⁴ / RS-485: Kostal ⁵ optional Ethernet for Internet connection ⁶	
Battery technology	Li-Ion NCA	

*	Wechselrichter / Anbieter	Typ	Min. Firmware / Hinweis	HYPERION Min. Module
1	SMA	Sunny Boy Storage 3.7/5.0/6.0 Tripower Smart Energy	3.11.17.R 3.02.20.R	3 4
2	Goodwe	ET PLUS+ series (5-10 kW)	ARM Firmware V20	4
3	SOFARSOLAR	HYD 5K_20KTL 3PH and ME 5K_20KTL 3PH	V110022 oder neuer V110022 oder neuer	4 4
4	Solis	S6-EHBP3-10/16-H-EU	V08-13 oder neuer	3
5	Kostal	PLENICOORE plus/BI	erfordert einen Aktivierungscode von Kostal	3

4 OR 6 MODULES

USABLE CAPACITY:
8.4 TO 12.6 kWh

MODULAR &
EXPANDABLE



EMERGENCY POWER CAPABLE

ROBUST & SAFE

BMZ HYPERION LONG LIFE 20 OUTDOOR

HighVoltage DC Energy Storage System

Technical features	Modules	
	4	6
Battery pack voltage	204 V	307 V
Battery capacity (usable)	41.5 Ah	
Energy (nom./usable)	13.5 kWh / 8.4 kWh	20.1 kWh / 12.6 kWh
Final charging voltage	224 V	336 V
Final discharge voltage	187 V	280 V
Charging current (max.)	29 A	
Discharge current peak (3 sec.)	40 A	
Discharge current (nom.)	30 A	
Discharge power peak	8.2 kW	12.3 kW
Discharge power (max.)	6.1 kW	9.2 kW
Weight	129 kg	173 kg
Dimensions (W x H x D)	751 x 870 x 423 mm	
Weight of single module	22 kg	
Dimensions (W x H x D)	546 x 217 x 155 mm	
Operating temperature during discharge	-15 °C to 55 °C	
Operating temperature during charging	0 °C to 45 °C	
Storage temperature	-20 °C to 60 °C	
Housing protection class	IP54	
Interfaces/compatibility	CAN: SMA ¹ , Goodwe ² , SOFARSOLAR ³ , Solis ⁴ / RS-485: Kostal ⁵ optional Ethernet for Internet connection ⁶	
Battery technology	Li-Ion NCA	

*	Wechselrichter / Anbieter	Typ	Min. Firmware / Firmware	HYPERION Min. Module
1	SMA	Sunny Boy Storage 3.7/5.0/6.0 Tripower Smart Energy	3.11.17.R 3.02.20.R	3 4
2	Goodwe	ET PLUS+ series (5-10 kW)	ARM Firmware V20	4
3	SOFARSOLAR	HYD 5K_20KTL-3PH and ME 5K_20KTL-3PH	V1.0022 oder neuer V1.0022 oder neuer	4 4
4	Solis	S5-DHBP3-10/14-H-EU	V04-13 oder neuer	3
5	Kostal	PLENICOORE plus/BI	erfordert einen Aktivierungscode von Kostal	3

4 OR 6 MODULES

USABLE CAPACITY:
8.4 TO 12.6 kWh

MODULAR &
EXPANDABLE



EMERGENCY POWER CAPABLE

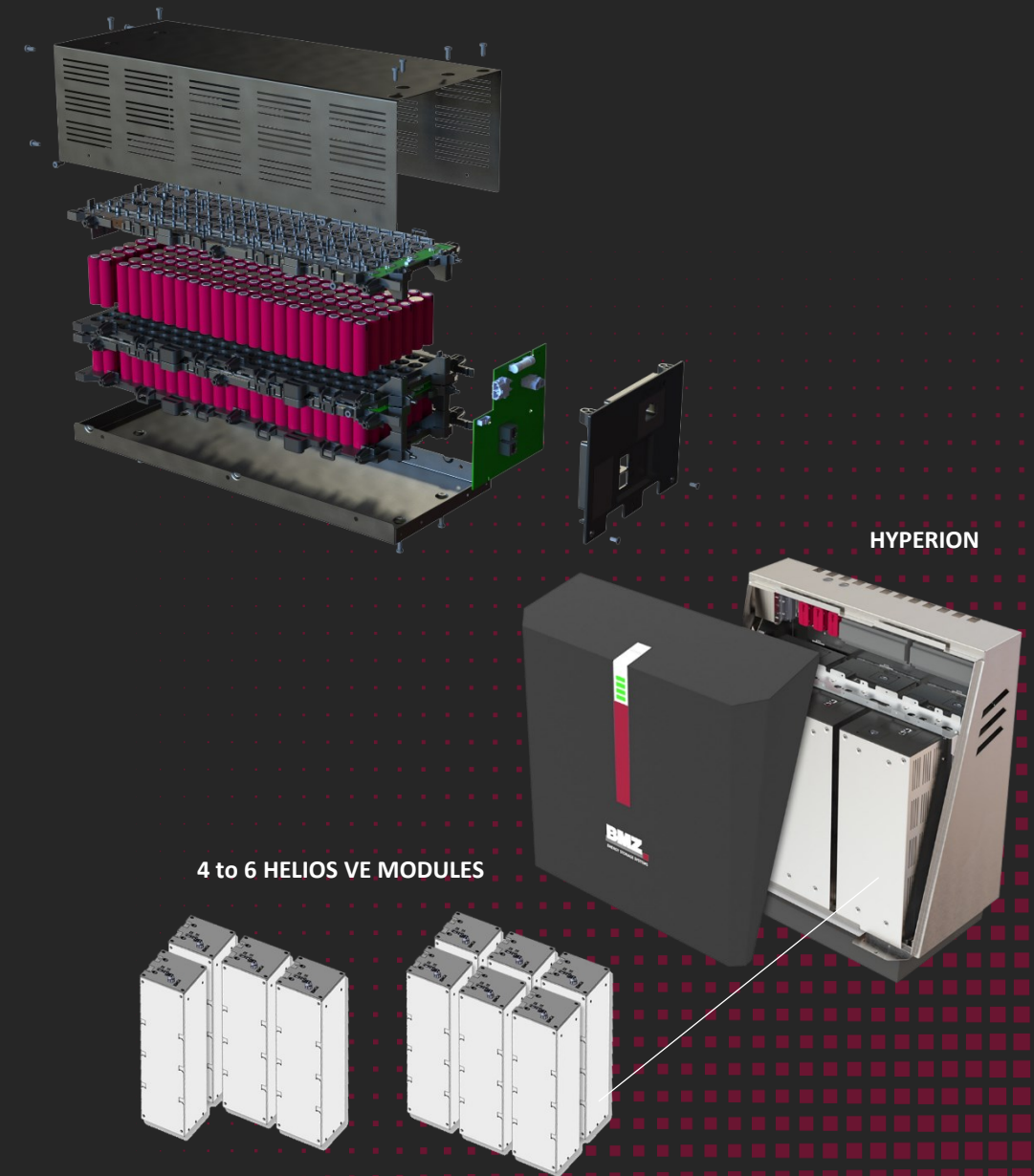
ROBUST & SAFE

BMZ Module – HELIOS VE LONG LIFE

HYPERION LONG LIVE 20 / OUTDOOR

- High-voltage 2.1 kWh standard module
- Lightweight
- Compact design
- 2-channel safety architecture

Technical Properties	HELIOS VE LONG LIFE MODULE
Commonly used cells	TerraE INR 18650 30E
Nominal voltage	51.4 V
Nominal capacity	66 Ah
Battery weight	22 kg
Dimensions (W x H x D)	546.1 x 216.8 x 155.3 mm
Operating temperature discharge	-15 up to +55 °C
Operating temperature charge	0 up to +45 °C
Cycle life At 60% EOL	> 7,000
Max. continuous current	30 A
Max. peak current	40 A



BMZ HYPERION

ESS PRODUCTS

Compatible with major hybrid/battery inverters:

- **SMA:** Sunny Boy Storage 3.7/ 5.0 / 6.0, Tripower Smart Energy



- **Kostal:** Plenticore plus/BI (G2)



- **Goodwe:** ET PLUS+ series (5-10 kW, 12.5A)



- **Solis:** S6-EH3P (3-10)K-H-EU, S6-EH3P (12-20)K-H

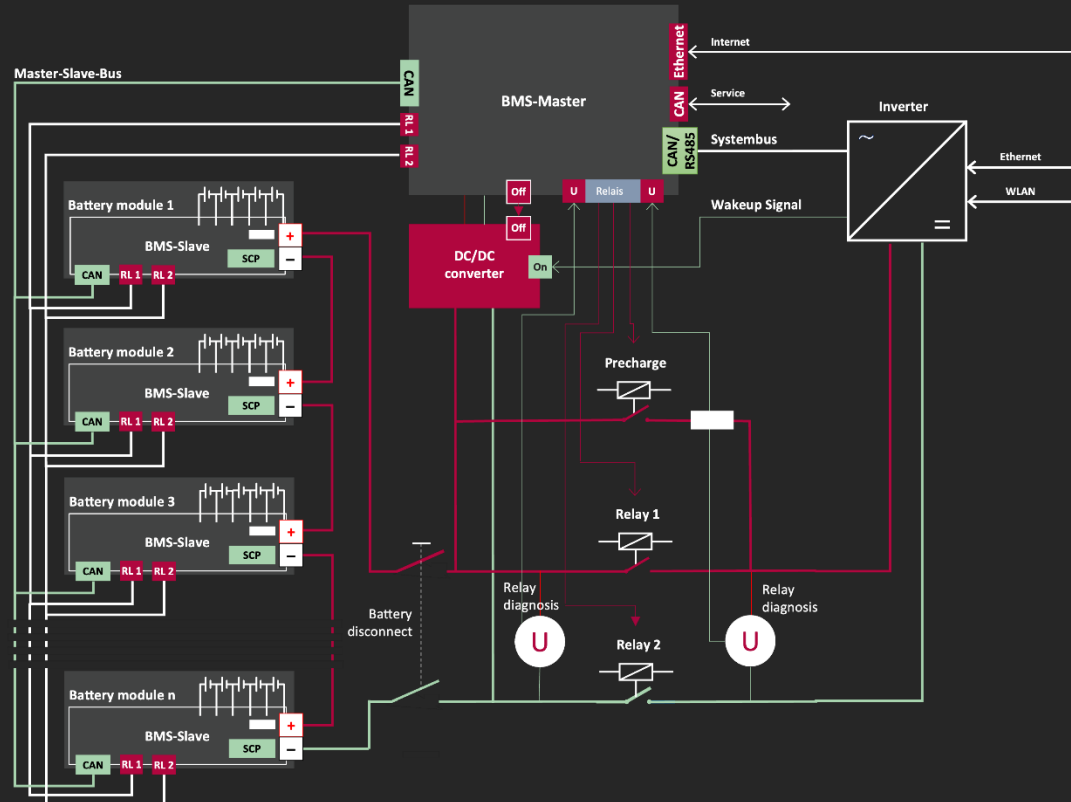


- **SofarSolar:** HYD 5K..20KTL-3PH, ME 5K...20KTL-3PH



BMZ ESS-HV System Architecture

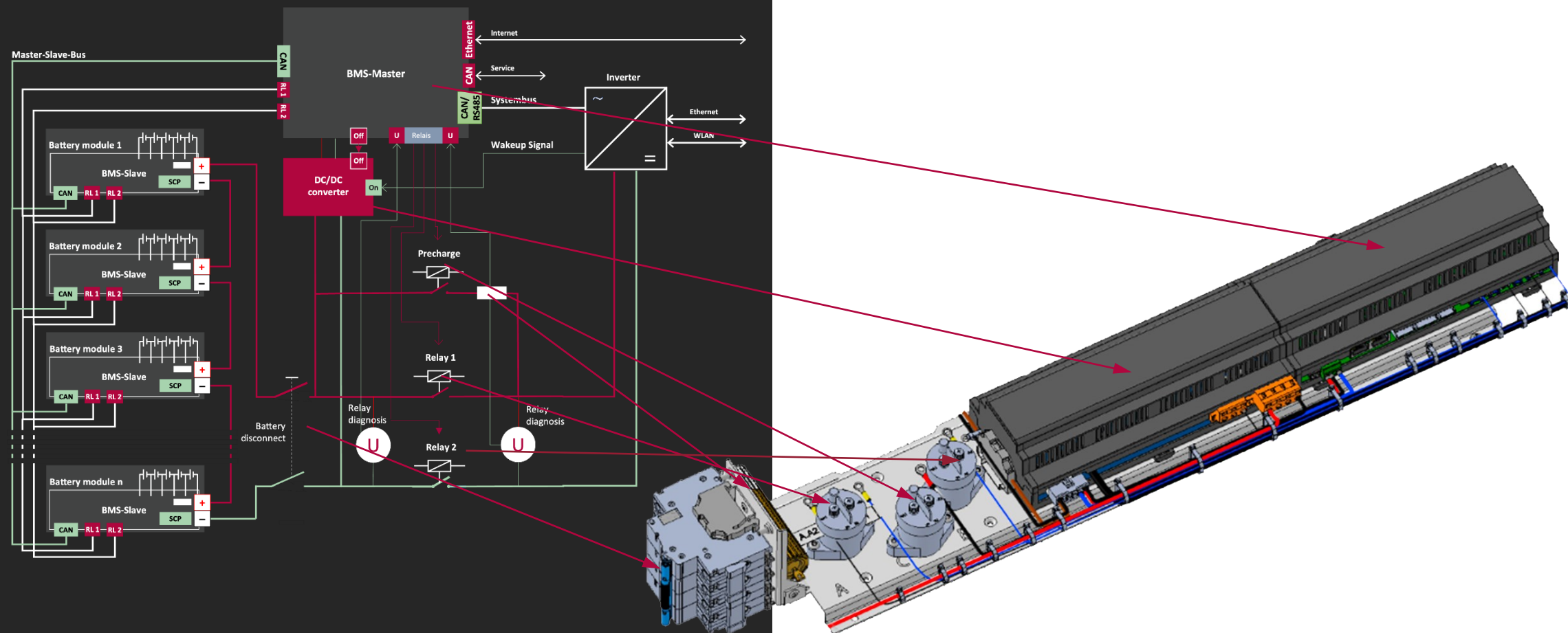
HYPERION, POWER BLOXX, POWER RAXX



- 2-channel security architecture
- Black start capability
- CAN or RS-485 inverter interface
- CAN service-interface
- Ethernet-interface:
 - **HYPERION**
(optional U-rail CAN2Ethernet interface)
 - **HYPERION LONG LIFE 20**
(incl. U-rail CAN2Ethernet interface)
 - **HYPERION LONG LIFE 20 OUTDOOR**
(incl. U-rail CAN2Ethernet interface; in the future integrated in the BMS-Master)

BMZ ESS-HV System Architecture – E-assembly HYPERION

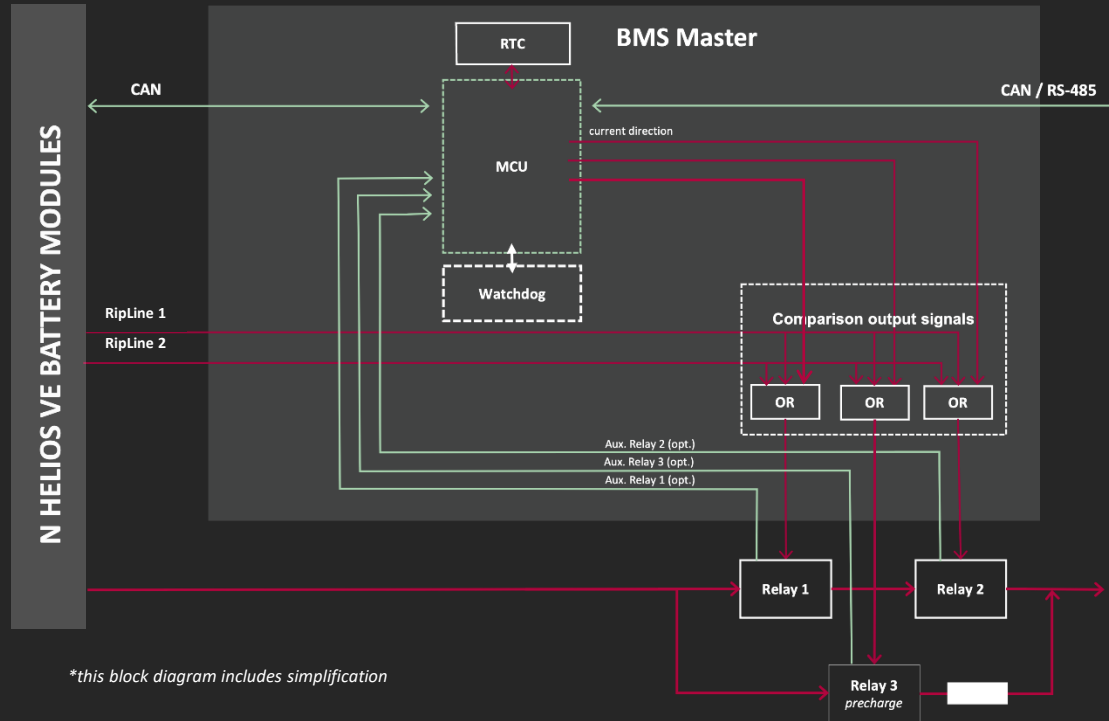
HYPERION, POWER BLOXX, POWER RAXX



BMZ ESS-HV

BMS-Master block diagram

HYPERION, POWER BLOXX, POWER RAXX

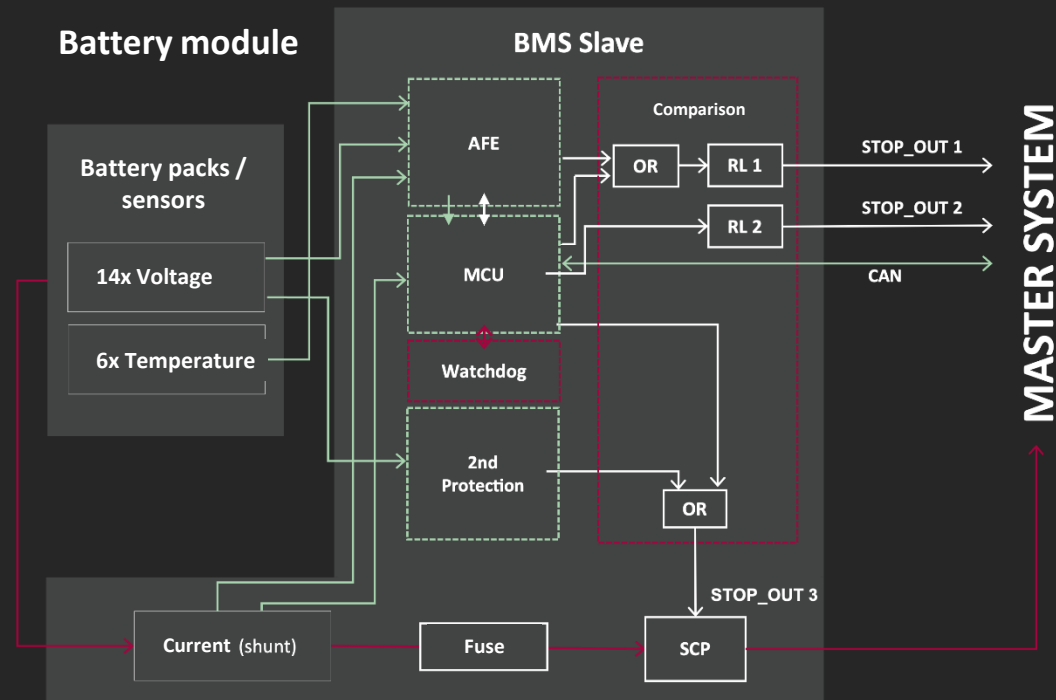


- 2-channel safety architecture
- U_{System} max. 1000 V
- CAN battery module interface
- CAN or RS-485 inverter interface
- CAN service interface

BMZ ESS-HV

BMS-Slave block diagram

HYPERION, POWER BLOXX, POWER RAXX



**this block diagram includes simplification*

- 2-channel safety architecture
- U_{System} max. 550 V
- CAN battery module interface
- Complies with the EU-BattV II

BMZ POWER2RAXX 80

C&I AC Storage System

- **Applications**
 - Optimization of self-consumption
 - Peak load reduction
 - Zero feed-in
 - Emergency power systems
- **Highly flexible**
 - Energy from 34 up to 408 kWh usable
 - Power from 30 to 400 kW
 - AC-Battery or PV-Hybrid possible
 - Available as Outdoor- as well as Indoor version
- **Pre-tested**
 - Standard BMZ C&I architecture
 - Commissioning by one person possible



INDOOR

OUTDOOR

BMZ POWER2RAXX 80

ESS PRODUCTS

C&I AC Storage System

Technical Properties	POWER2RAXX 80 Indoor	POWER2RAXX 80 Outdoor	POWER2RAXX 80 Outdoor A/C
Energy (nom./usable)	80,9 kWh / 51 kWh	80,9 kWh / 51 kWh	80,9 kWh / 51 kWh
Nominal voltage	409 V	409 V	409 V
End-of-charge-voltage	448 V	448 V	448 V
Final discharge voltage	370 V	370 V	370 V
Capacity (nom. /usable)	198 Ah / 125 Ah	198 Ah / 125 Ah	198 Ah / 125 Ah
Charging current (max.)	90 A	90 A	90 A
Discharge current peak (3s)	100 A	100 A	100 A
Discharge current (nom., 90s)	90 A	90 A	90 A
Discharge power (max.)	40 kW	40 kW	30 kW
Discharge power peak	50 kW	50 kW	36 kW
Discharge depth	63 % DOD (in relation to nom. capacity)		
Full cycles	7,000 (for residual capacity of 60 %)		
Optional PV (max.)	60 kWp	60 kWp	36...72 kWp
Optional PV input current (max.)	4 MPPTs each 30 A	4 MPPTs each 30 A	2...4 MPPTs each 24 A
Optional PV MPPT voltage range	200-850 V	200-850 V	300-1200 V
Rated AC voltage	3L/N/PE 220/380V; 230/400V; 240/415V		
Max. AC output current	60 A	60 A	42 A
UPS switching time	< 20 ms		
Operating altitude (max.)	2.000 m above sea level		
Ambient operating temperatur	0 to 45 °C	-10 to 45 °C	-20 to 50 °C
Enclosure Protection Rating	IP21	IP55	IP55
Max. Weight	Single rack: 798 kg Single Inverter: 89 kg	Single rack: 812 kg Single Inverter: 89 kg	Single rack: 840 kg Inverter: integrated
Dimensions (W x H x D)	Single rack: 816 x 2139 x 839 Single inverter: 909 x 735 x 305	Single rack: 894 x 2145 x 860 Single inverter: 909 x 735 x 305	Single Rack: 894 x 2145 x 1050 Inverter: Integrated
Communication interfaces	CAN / RS-485 / Ethernet		
Certifications	CE / UN38.3 / EN61439		
Applications	On Grid / On Grid + Backup / Off Grid		
Warranty ⁽²⁾	10 Years, extendable up to 15 Years		

POWER2RAXX configurations					
Modules each String	U _{min} [V]	U _{max} [V]	Energy usable		
8	369.6	448.0	17.0 kWh	34.0 kWh	51.0 kWh
7	323.4	392.0	14.9 kWh	29.8 kWh	44.6 kWh
6	277.2	336.0	12.8 kWh	25.5 kWh	38.3 kWh
5	231.0	280.0	10.6 kWh	21.3 kWh	31.9 kWh

Number of battery strings	1	2	3
Current	30 A	60 A	90 A



Up to 10 POWER2RAXX can be combined

BMZ POWER BLOXX

C&I AC Storage System

- **Applications**
 - Optimization of self-consumption
 - Peak load reduction
 - Zero feed-in
 - Emergency power systems
- **Highly flexible**
 - Energy from 153 up to 510 kWh usable
 - Power from 50 to 200 kW
 - AC-Battery or PV-Hybrid possible
 - Battery backup integrated (50 kVA)
- **Easy to install**
 - “Plug and Play” container solution
 - Commissioning by one person possible



Robust container with air condition

Technical Data

Technical Properties	Container System	
	10 ft	20 ft
Max. Energy (nom./usable)	324 kWh / 204 kWh	850kWh / 535.5 kWh
Nominal voltage	409 V	460 V
End-of-charge voltage	448 V	504 V
Final discharge voltage	370 V	416
Capacity (usable)	374...499 Ah	664...1164 Ah
Charging current (max.)	261...300 A	300...600 A
Discharge current peak (3s)	360...450 A	360...750 A
Discharge current (nom.)	270...300 A	300...600 A
Discharge power (max.)	50...100 kW	100...200 kW
Discharge power peak	61...123 kW	138...276 kW
Discharge depth	63% DOD (in relation to nom. capacity)	
Full Cycles	7,000 (for residual capacity of 60 %)	
Optional PV (max.)	75...150 kWp	225...300 kWp
Optional PV input current (max.)	4...8 MPPT's each 40A	12...16 MPPT's each 40A
Optional PV MPPT voltage range	200-850 V	200-850 V
Rated AC voltage	3L/N/PE; 220/380V; 230/400V; 240/415V	
Max. AC output current	79...152 A	152...303 A
UPS switching time	< 20 ms	< 20 ms
Operating altitude (max.)	2000 m above sea level	
Ambiente operating temperature (air conditioning)	-20 to 50°C	
Corrosion protection (paint)	C4	
Enclosure Protection Rating	IP55	
Max. Weight	5.000 kg	12.000 kg
Dimensions (W x H x D)	3.06 m x 2.90 m x 2.44 m	6.06 m x 2.90 m x 2.44 m
Communication interfaces	CAN / RS-485 / Ethernet	
Certifications	CE / UN38.3 / EN61439 / EN62109 / VDE-AR-N4105 / VDE-AR-N4110	
Applications	On Grid / On Grid + Backup / Off Grid	
Warranty ^[2]	10 Years, extendable up to 15 Years	

System Configuration					
Energy brutto [kWh]	Energy usable [kWh]	Container Size			
<u>850</u>	<u>535.5</u>			<u>20 ft</u>	<u>20 ft</u>
<u>728</u>	<u>459.0</u>			<u>20 ft</u>	<u>20 ft</u>
<u>607</u>	<u>382.5</u>			<u>20 ft</u>	<u>20 ft</u>
<u>486</u>	<u>306.0</u>		<u>20 ft</u>	<u>20 ft</u>	<u>20 ft</u>
<u>324</u>	<u>204.0</u>	<u>10 ft</u>	<u>10 ft</u>		
<u>243</u>	<u>153.0</u>	<u>10 ft</u>	<u>10 ft</u>		
AC output		<u>50 kW</u>	<u>100 kW</u>	<u>150 kW</u>	<u>200 kW</u>
Number of Inverter		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Max. Pv input power		<u>75 kWp</u>	<u>150 kWp</u>	<u>225 kWp</u>	<u>300 kWp</u>

recommended

upon request

Successfully tested by an independent body according to:

- IEC 62133
- UL1642
- UN 38.3
- IEC 62619 (cell- and module tests)

BMZ C&I solutions

The key to success

- „Plug&Play“ ESS (AC) outside buildings
➔ **POWER BLOXX Container**
- Pre-tested ESS (AC) for installation inside buildings
➔ **POWER2RAXX 19“ Racks**
in combination with Hybrid-inverter(s)
- For connection to both low-voltage and medium-voltage grids
- Integration into existing renewable energy systems (common plant controllers)
- Integration into common SCADA systems



BMZ MODULE – HELIOS 1.*

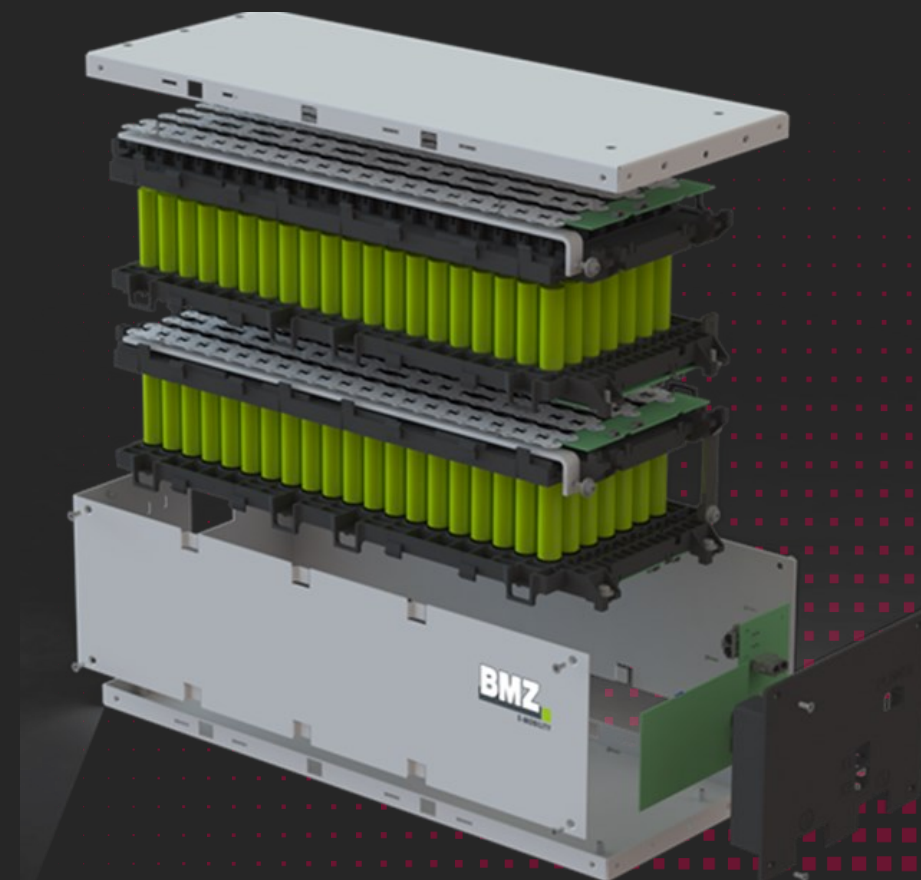
MULTI PUROPOSE

- Standard module – 2,9/2.5 kWh or 2,9/2,1 kWh available
- For LV- and HV-Systems available
- Lightweight and compact design
- Module internal 2-channel safety architecture
- CAN-Interface
- Suitable within the BMZ HV BESS-architecture

Technische Eigenschaften	Helios 1.*: 14520P
Häufig verwendete Zellen	BMZ 18650 29ES / 29EL
Nennspannung	51.1 V / 51.4 V
Nennkapazität	57.2 Ah / 57.0Ah
Ladestrom (max.)	30 A
Entladestrom (Spitze, 3s)	40 A
Entladestrom (nom.)	30 A
Gewicht	22 kg
Abmessungen (B x H x T)	545 mm x 214 mm x 156 mm
Betriebstemperatur beim Laden	0 bis 45 °C
Batteriechemie	Li-Ion NCA / NMC
Entladetiefe	85 % or 73 % DOD (in relation to nom. capacity)
Zykluslebensdauer bei 70 % SOH	> 3,000 or > 4,400

01

ESS PRODUCTS



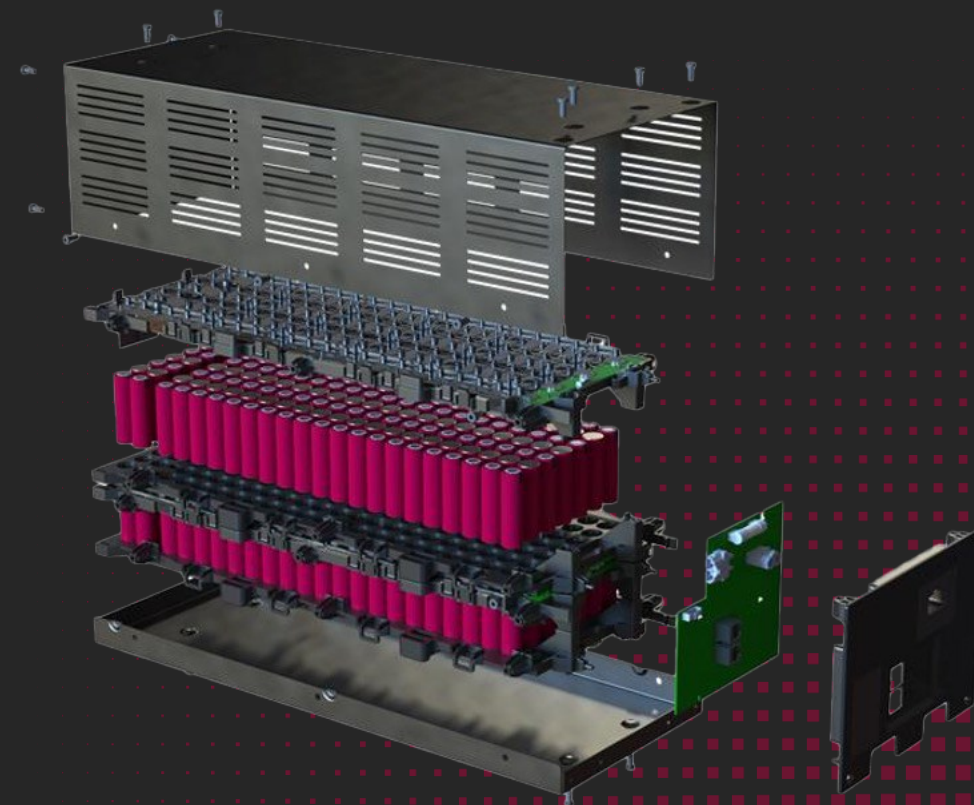
BMZ MODULE – HELIOS V(E) HYPERION (SE)

02

ESS PRODUCTS

- HV-capable 3.3/2.5 kWh standard module
- Lightweight and compact design
- Module internal 2-channel safety architecture
- CAN-Interface
- Suitable within the BMZ HV BESS-architecture

Technische Eigenschaften	HELIOS VE MODULE: 14522P
Häufig verwendete Zellen	NMC 18650
Nennspannung	51,4 V
Nennkapazität	63,8 Ah
Batteriegewicht	22 kg
Abmessungen (B x H x T)	546,1 x 216,8 x 155,3 mm
Betriebstemperatur Entladung	-15 °C bis +55 °C
Betriebstemperatur Laden	0 °C bis +45 °C
Zyklenanzahl bei 70 % SOH	> 4.000
Max. Dauerstrom	30 A
Max. Spitzenstrom	40 A



BMZ MODULE – HELIOS VE LONG LIFE

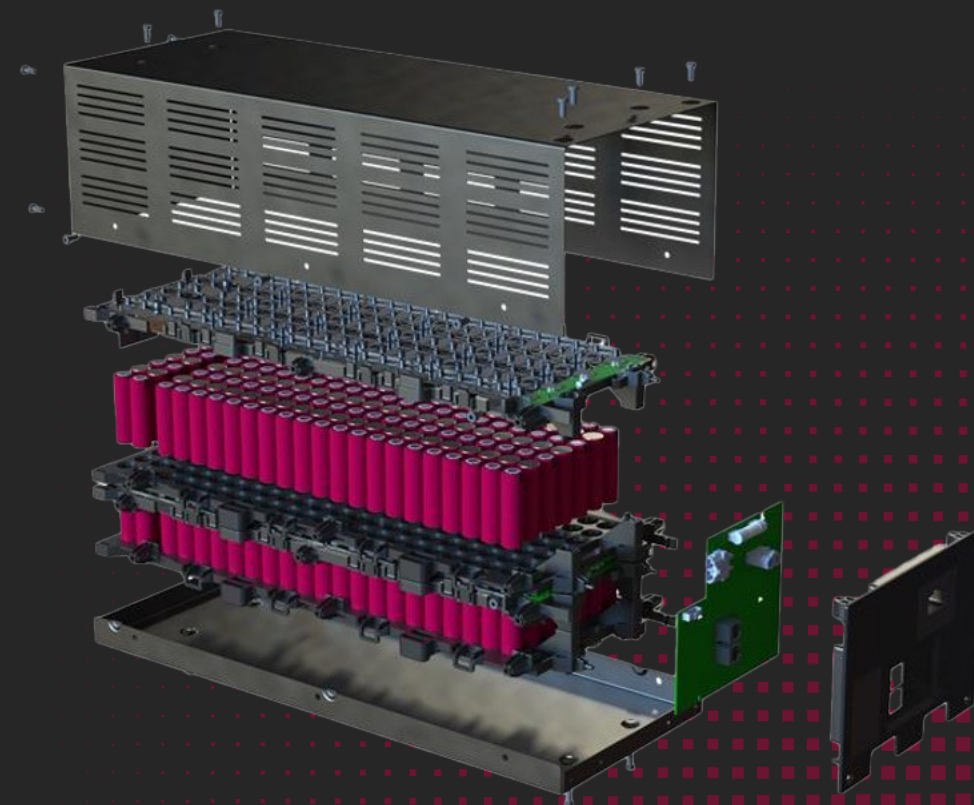
HYPERION LONG LIFE

- HV-capable 3.3/2.1 kWh standard module
- Lightweight and compact design
- Module internal 2-channel safety architecture
- CAN-Interface
- Suitable within the BMZ HV BESS-architecture

Technische Eigenschaften	HELIOS VE MODULE: 14522P
Häufig verwendete Zellen	TerraE 18650 30E
Nennspannung	51,4 V
Nennkapazität	66,0 Ah
Batteriegewicht	22 kg
Abmessungen (B x H x T)	546,1 x 216,8 x 155,3 mm
Betriebstemperatur Entladung	-15 °C bis +55 °C
Betriebstemperatur Laden	0 °C bis +45 °C
Zyklenanzahl bei 60 % EOL	> 7.000
Max. Dauerstrom	30 A
Max. Spitzenstrom	40 A

03

ESS PRODUCTS



BMZ MODULE – FeMOD

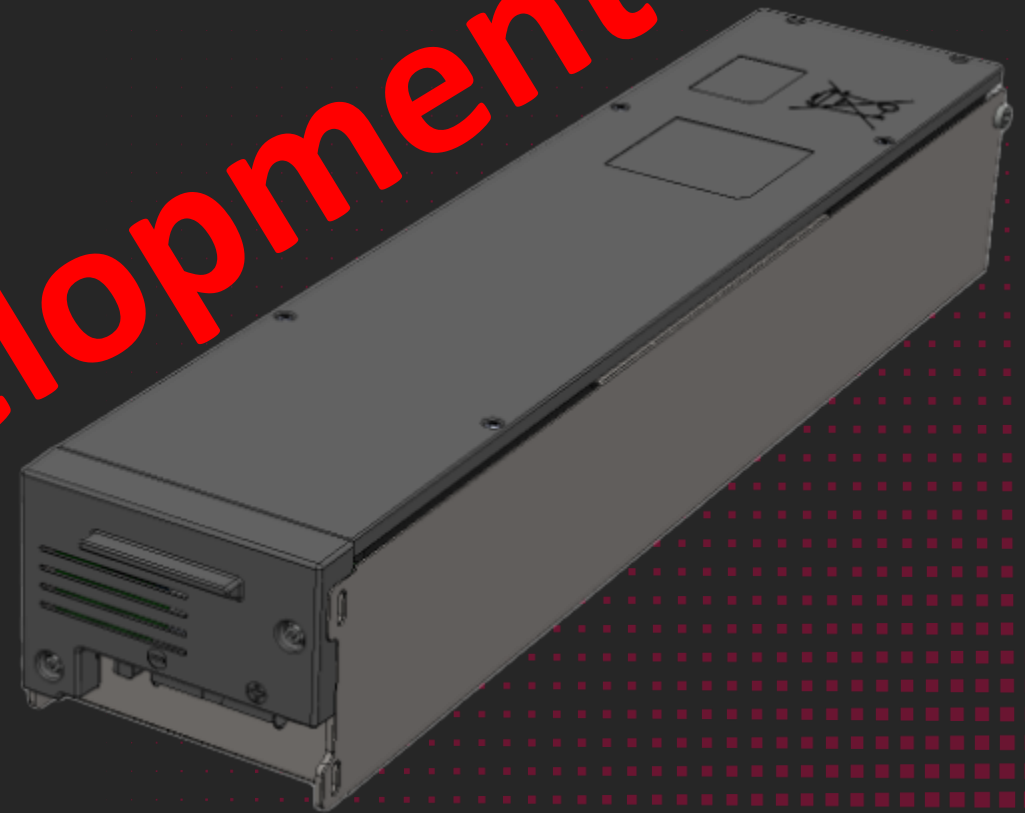
POWER4HOME

- HV-capable 3-7/3.3 kWh standard module
- Lightweight and compact design
- Module internal 2-channel safety architecture
- CAN-Interface
- Suitable within the BMZ HV BESS-architecture

Technische Eigenschaften	FeMOD: 16S1P
Häufig verwendete Zellen	148 x 39 x 10 72 Ah
Nennspannung	51,2 V
Nennkapazität	72 Ah
Ladestrom (max.)	30 A
Entladestrom (Spitze, 3s)	45 A
Entladestrom (nom.)	30 A
Gewicht	< 30 kg
Abmessungen (B x H x T)	714 mm x 120 mm x 163 mm
Betriebstemperatur beim Laden	0 bis 50 °C
Batteriechemie	Ni-ion LFP
Entladetiefe	90 % DoD (bezogen auf die Nennkapazität)
Zyklenanzahl	10.500 oder 5.600 (mit Restkapazität von 60 % oder 80 %)

04

ESS PRODUCTS



ADSTEC STORAXE– SRB5 MODULE

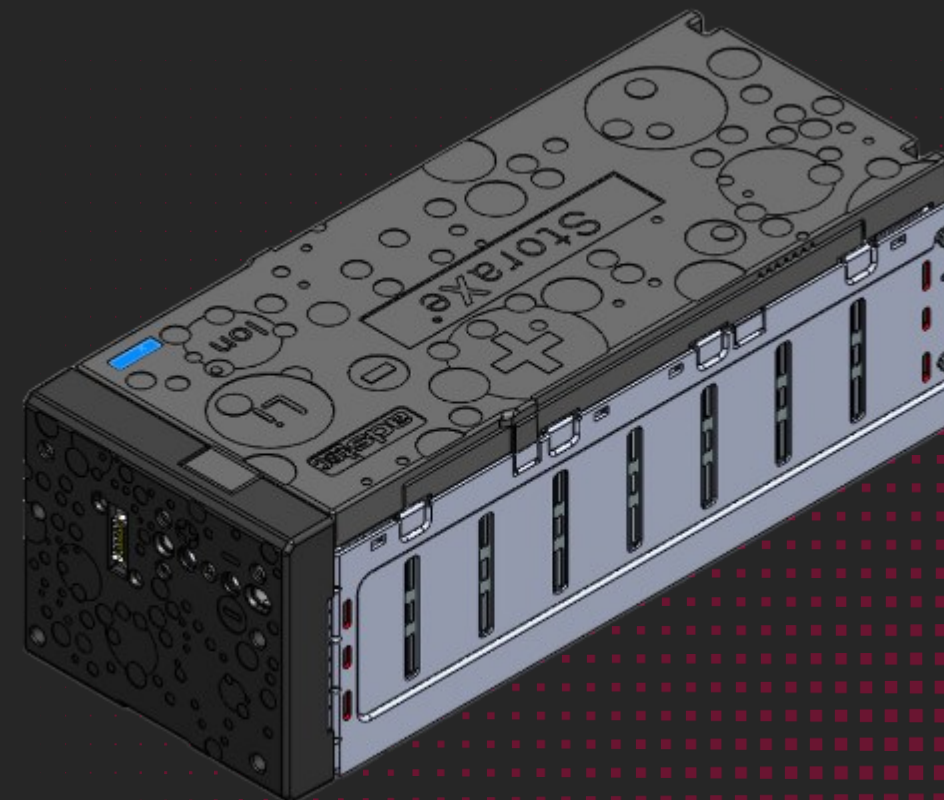
OEM for adstec HV charging stations

- HV-capable 4.9/3.5 kWh standard module
- Light weight
- Compact design

Technische Eigenschaften	SRB5: 8S34P
Häufig verwendete Zellen	BMZ 21700 M50L
Nennspannung	29,2 V
Nennkapazität	167,6 Ah
Ladestrom (max.)	114 A
Entladestrom (Spitze, 3s)	> 200 A
Entladestrom (nom.)	200 A
Gewicht	22,5 kg
Abmessungen (B x H x T)	464 mm x 161 mm x 154 mm
Betriebstemperatur beim Laden	10 bis 50 °C
Batteriechemie	Li-Ion NMC
Entladetiefe	70 % DoD (bezogen auf die Nennkapazität)
Zyklusanzahl	> 10.000

05

ESS PRODUCTS



BMZ – ELIOS MODULE

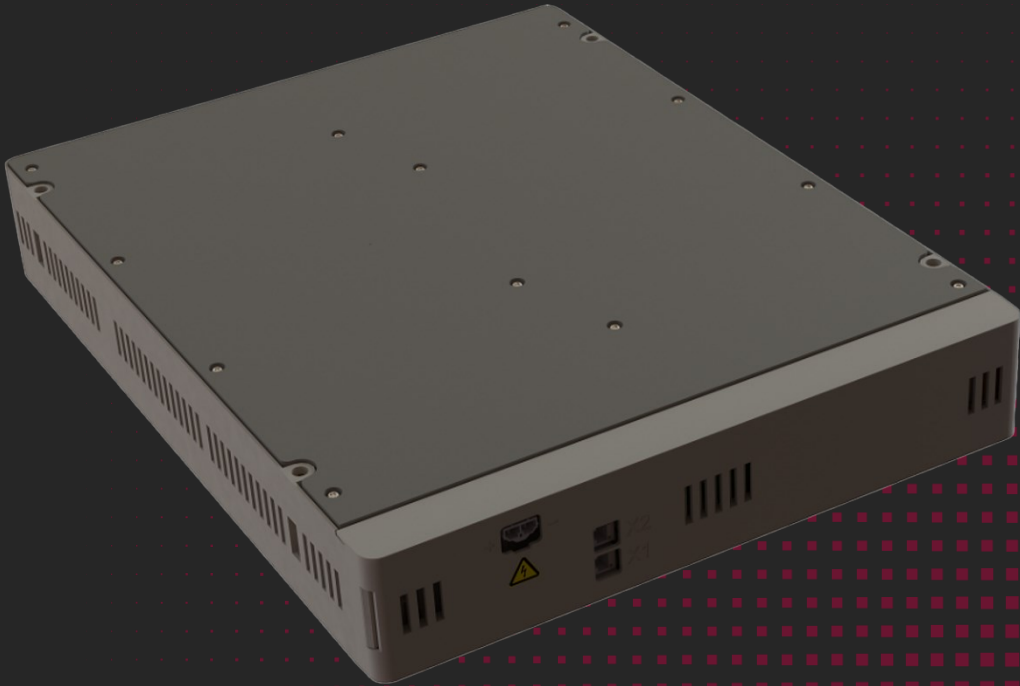
OEM for EKD

- HV-capable 2.9/2.5 kWh standard LFP module
- Lightweight and compact design
- Module internal 2-channel safety architecture
- CAN-Interface
- Suitable within the BMZ HV BESS-architecture

Technische Eigenschaften	Elios: 16S16P
Häufig verwendete Zellen	TerraE 26650 36E
Nennspannung	51,2 V
Nennkapazität	57,6 Ah
Ladestrom (max.)	28,8 A
Entladestrom (Spitze, 3s)	45 A
Entladestrom (nom.)	30 A
Gewicht	28 kg
Abmessungen (B x H x T)	440 mm x 88 mm x 560 mm
Betriebstemperatur beim Laden	0 bis 50 °C
Batteriechemie	Li-Ion LFP
Entladetiefe	85 % DoD (bezogen auf die Nennkapazität)
Zyklenanzahl	7.500 oder 4.000 (mit Restkapazität von 60 % oder 80 %)

06

ESS PRODUCTS



BMZ – LFP4 MODULE

OEM for Sonnen

- HV-capable 2.8/2.5 kWh standard LFP module
- Lightweight and compact design
- Module internal 2-channel safety architecture
- CAN-Interface

Technische Eigenschaften	LFP4 32S8P
Häufig verwendete Zellen	Terra2 26650 34E
Nennspannung	102,4 V
Nennkapazität	27,2 Ah
Ladestrom (max.)	19 A
Entladestrom (Spitze, 60s)	25 A
Entladestrom (nom.)	19 A
Gewicht	28 kg
Abmessungen (B x H x T)	440 mm x 88 mm x 560 mm
Betriebstemperatur beim Laden	0 bis 50 °C
Batteriechemie	Li-Ion LFP
Entladetiefe	90 % DoD (bezogen auf die Nennkapazität)
Zyklenanzahl	6.500 oder 3.500 (mit Restkapazität von 60 % oder 80 %)

07

ESS PRODUCTS



BMZ – LFP5 MODULE

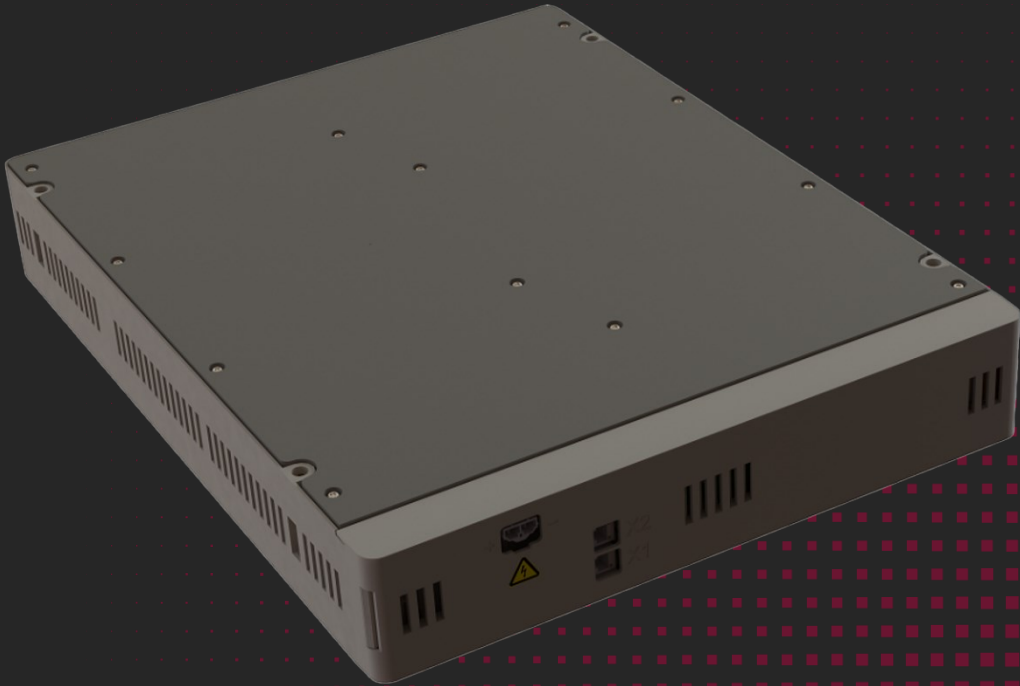
OEM for Kumkeo/Enercon

- HV 2.9/2.5 kWh LFP module
- Lightweight and compact design

Technische Eigenschaften	LFP5: 64S4P
Häufig verwendete Zellen	TerraE 26650 36E
Nennspannung	204,8 V
Nennkapazität	14,4 Ah
Ladestrom (max.)	8 A
Entladestrom (Spitze, 60s)	43 A
Entladestrom (nom.)	20 A
Gewicht	28 kg
Abmessungen (B x H x T)	440 mm x 88 mm x 560 mm
Betriebstemperatur beim Laden	0 bis 50 °C
Batteriechemie	Li-Ion LFP
Entladetiefe	85 % DoD (bezogen auf die Nennkapazität)
Zyklenanzahl	7.500 oder 4.000 (mit Restkapazität von 60 % oder 80 %)

08

ESS PRODUCTS



GLOBAL PLAYER IN LITHIUM-ION BATTERIE SYSTEMEN

- ⚡ Over 25 years of experience in lithium-ion battery solutions with expertise in development, certification, production, storage, customer service, and recycling.
- ⚡ Covers the entire value chain
- ⚡ Global network

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