HYPERION
LONG LIFE 20 Outdoor

Lithium Ion Energy Storage
Installation Instructions

Art. No. 630678

Read carefully before the installation.
Keep for future reference.
Hand to next owner.

Addresses, identification, and notes

Imprint

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Product-identification

Hyperion LONG LIFE 20 Outdoor BMZ item no. 630678
Helios VE LONG LIFE Battery module item no. 628899
Model: Hyperion LONG LIFE Lithium Ion Energy Storage
Country of Origin: Germany
Symbol: CE

Customer Service

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Document-identification

Original-installation guide Hyperion LONG LIFE 20 Outdoor Lithium Ion Energy Storage
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Contens

1 Safety

Read these instructions carefully before installing the battery system.

Please follow the safety and warning instructions carefully to avoid injury to persons, damage to property, and harm to the environment.

⚠ CAUTION

Risk of burns if safety instructions are not followed.

During operation, heat may be generated by live parts, overload, electric arcs, or short circuits. Touching hot surfaces may result in minor burns.

- ▶ Read the operating instructions carefully before using the battery module.

1.1 Important information about these instructions

1.1.1 Purpose

This document describes the installation of a BMZ Hyperion LONG LIFE 20 outdoor battery system in combination with one of the following inverters:

- BMZ POWER2GRID
- SMA Sunny Boy Storage 3.7/5.0/6.0
- SMA Sunny Tripower 5.0/6.0/8.0/10.0 Smart Energy
- Kostal PLENTICORE plus/BI G2
- GoodWe ET PLUS+ series (12.5 A type)
- SOFARSOLAR HYD 5/6/8/10/15/20KTL-3PH
- Solis S6-EH3P (3-10) K-H-EU, S6-EH3P (12-20)K-H

1.1.2 Target

The installation instructions are intended exclusively for qualified electricians.

1.1.3 Storage

These instructions are part of the battery. For safe installation, the instructions must be accessible to the installers.

- ▷ Keep these instructions near the battery.
- ▷ Pass these instructions on to the next owner of the battery.

1.2 Explanations of symbols

1.2.1 Explanations of safety instructions and warnings

Safety instructions

Safety instructions are generally applicable and can be found in a safety chapter or at the beginning of a chapter.

Warning notices

Warning notices appear directly before an instruction. They help you to avoid hazards during an upcoming action. They consist of the following elements:

Table1 : Structure of warning notices.

Warning triangle	Together with a signal word, this indicates all hazards that could result in death or injury.
Signal word	⚠ DANGER
	indicates a hazard with a high degree of risk. Failure to avoid it will result in death or serious injury.
	⚠ WARNING
	indicates a hazard with a medium degree of risk. Failure to avoid the hazard may result in death or serious injury.
	⚠ CAUTION
	indicates a hazard with a low degree of risk. Failure to avoid this hazard may result in minor injury.
	NOTICE
	indicates a hazard to objects. Failure to avoid this hazard may result in property damage.
Type and source of the hazard	specifies the type of hazard and what causes it.
Consequence	describes what can happen if you ignore the warning notice,
Call to action	describes what you must do to protect yourself from the hazard
Additional symbols, pictograms	may supplement the warning triangle. Warning signs (yellow) indicate the hazard. Prohibition signs (red) and mandatory signs (blue) indicate remedial measures.

1.2.2 Explanation of pictograms and symbols

Table2 : Explanation of the signs used

Sign	Explanation
	General warning sign. Observe additional information.
	Warning of electrical voltage
	Warning of hazards posed by batteries that are being charged.
	Warning of flammable substances
	Warning of hot surfaces
	Warning of hand injuries
	No access for persons with pacemakers or implanted defibrillators
	Manual lifting prohibited.
	General mandatory sign Observe additional information.
	Follow instructions.
	Use foot protection.
	Use hand protection.
	Do not dispose of batteries in household waste.

1.3 Battery application range

1.3.1 Intended use

Battery system

The Hyperion LONG LIFE 20 Outdoor Lithium Ion Energy Storageis a battery system. It serves as an energy storage device within an electricity storage system for private households and small businesses. It enables self-generated electricity, e.g. from photovoltaic or CHP systems, to be stored temporarily. The electricity can then be used later as required.

In this battery system, 4 or 6 Helios LONG LIFE battery modules can be connected in series.

BMZ GmbH is not liable for personal injury and/or material damage resulting from improper use of the energy storage system.

Limitations

The battery system is a self-contained unit that is only functional after proper installation with an approved inverter.

A maximum of 6 battery modules can be connected in series in the Hyperion LONG LIFE 20 outdoor battery system.

To avoid hazards such as water pipe bursts, battery modules must be installed at least 10 cm above the floor. Proper installation of the BMZ Hyperion LONG LIFE 20 Outdoor ensures that the active electrical components are at least 10 cm above the floor.

The Hyperion LONG LIFE battery system may only be used with Helios LONG LIFE battery modules.

- only be used with Helios LONG LIFE battery modules.
- only be used with compatible inverters.
- only be used in undamaged condition in accordance with the operating instructions.

Any other use is not in accordance with the intended use.

1.3.2 Dangerous misuse

- Do not use the battery system with other battery modules.
- Do not use the battery system beyond its performance limits.
- Do not install the battery system in rooms at risk of flooding.
- Do not connect the battery system to devices that are not approved for this purpose.
- Do not open the battery modules. The battery module may only be opened by trained service personnel from BMZ GmbH.

1.4 Main hazards

Under normal conditions, the battery does not pose any danger. The battery complies with the current state of science and technology. However, dangers can never be completely ruled out in the event of misuse or technical failure. In the case of lithium-ion batteries, these generally include fire, explosion, chemical burns, and electric shock.

The product-specific hazards are exacerbated by

- Water (e.g., flooding)
- Exposure to heat (> 70° C)
- Failure or malfunction of the control system due to electromagnetic radiation

Electric shock

Touching live components can result in electric shock in battery modules connected in series. Electric shock can have thermal or muscle-paralyzing effects. The latter can lead to ventricular fibrillation, cardiac arrest, or respiratory paralysis with fatal consequences.

Fire

Overload, short circuit, or arcing can cause a lithium-ion fire with thermal runaway. People may be hit by electrolytes or molten material. In case of fire, there is a risk of suffocation due to lack of oxygen and a risk of poisoning due to toxic fumes.

1.5 User qualification

Work on the battery system may only be carried out by electricians qualified by BMZ or by BMZ itself.

Children

Children must not be allowed to access the battery system without supervision.

Implant wearers

High currents can affect medical implants.

- ▶ Implant wearers must not be in the immediate vicinity of the battery during operation.

1.6 Personal protective equipment (PPE)

When installing, use suitable foot protection (min. class 3) and suitable hand protection (min. class 2 (7kA)).

1.7 Information for emergencies

1.7.1 Measures in case of fire

- Do not breathe smoke or fumes.
- Report a lithium-ion fire to the fire department.
- If possible: close doors.
- If possible: Cool the battery module with water. Avoid contact with extinguishing water at all costs!

1.7.2 Measures to be taken after gas or liquids have escaped

Inhalation

Escaping gases may cause respiratory problems.

- Ventilate immediately or go to fresh air; in severe cases, call a doctor immediately.

Skin

Skin irritation may occur upon contact with the skin.

- Wash skin thoroughly with soap and water.

Eye contact

Eye contact may cause eye irritation.

- Rinse eyes thoroughly with water for 15 minutes, then seek medical attention.

1.7.3 Measures after electric shock

Ensure that the equipment is not live.

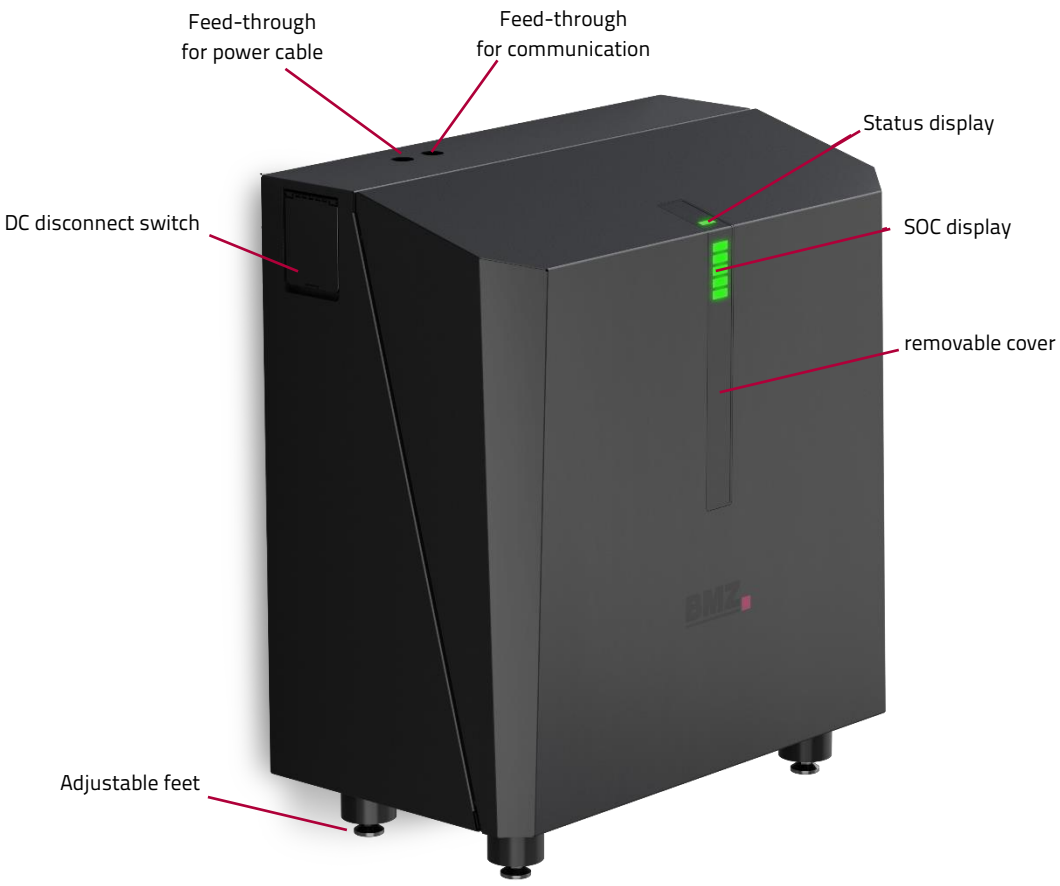
- For unconscious patients: Ensure breathing and cardiovascular function. If necessary, immediately begin cardiopulmonary resuscitation.
- For responsive patients: Cool burn injuries and cover with a wound dressing.

2 Product description

2.1 Important information about the product

2.1.1 Overall view

1 :
Overall view of battery system



2.1.2 Compliance

The following standards, laws, and guidelines were taken into account during the development of the modular battery:

- EU directive with CE marking requirement
  - Low Voltage Directive 2014/35/EU
  - EMC Directive 2014/30/EU
- Legal requirements
  - UN transport test (lithium systems)
- Standards and user guidelines
  - DIN EN 60730
  - DIN EN 62619
  - VDE AR-E 2510-50

2.2 Scope

- Hyperion LONG LIFE 20 Outdoor system housing
- Installation kit (in the system housing) includes:
  - 7 RJ45 patch cables A
  - 12 M5x10 screws B
  - 3 blind power sockets C
  - 2 PG screw connections D
  - 1 three-hole cable gland E
  - 1 single-hole cable gland F
  - 4 Cover plugs G
  - 1 hinged ferrite H
  - ESS GATEWAY RMG/941C I
  - Double-sided adhesive tape J
- Installation instructions
- 4 or 6 Helios LONG LIFE battery modules

2 : Installation kit:

A B C D E F G H I J

2.3 Technical

2.3.1 Performance

3 : Technical

Modules in series	4	6
Energy content (nominal/usable)	13.5 kWh / 8.4 kWh	20.1 kWh / 12.6 kWh
Nominal voltage	204 V	307 V
Charge cut-off voltage	224 V	336 V
Discharge cut-off voltage	187 V	280 V
Capacity (usable)	48.5 Ah	48.5 Ah
Charging current (max.)	29	29
Peak discharge current	40	40
Peak discharge power	8.2 kW	12.3 kW
Discharge capacity (max.)	6.1 kW	9.2 kW
Weight	132 kg	176 kg
Dimensions (W x H x D)	751 mm x 857 mm x 423 mm	
Protection	IP54	
Operating temperature unloaded	-15 to 55 °C	
Operating temperature when loaded	0 to 45 °C	
Storage temperature	-20 to 60 °C	
Battery chemistry	Li-ion NCA/NMC	
Depth of discharge	63% DOD [based on nominal capacity]	
Full cycles	7,000 (at 60% residual capacity)	

2.3.2 Dimensions and weight of single module

- Dimensions (W x H x D): 546.1 mm x 216.8 mm x 155.25 mm
- Weight 22 kg

2.3.3 Compatible inverters

- BMZ POWER2GRID (CAN)
- SMA Sunny Boy Storage 3.7/5.0/6.0 (CAN)
- SMA Sunny Tripower 5.0/6.0/8.0/10.0 Smart Energy (CAN)
- Kostal PLENTICORE plus/ BI (RS-485)
- GoodWe ET PLUS+ GW5K/GW6.5K/GW8K/GW10K - 12:5 A TYPES (CAN)
- SOFARSOLAR HYD 5/6/8/10/15/20KTL-3PH (CAN)
- Solis S6-EH3P (3-10) K-H-EU, S6-EH3P (12-20) K-H (CAN)

2.3.4 Supply, interfaces, connections

Battery system

The Hyperion LONG LIFE 20 Outdoor is supplied with the following connections:

- Power cable + red
- Power cable - black
- M8 threaded bolt on rear of housing for grounding
- Communication cable that is installed,
  either CAN or RS-485

The 3-hole grommet must be used when installing the gateway.

The communication cable is approx. 5.4 m long. If necessary, the cables must be shortened to the required length.

NOTICE: Extensions to the power cables must not exceed the following total lengths:

- 6 mm² cable cross-section: 5 m
- 10 mm² cable cross-section: 8 m

Battery module

The battery module has a socket containing (+) and (-) power contacts and two RJ45 sockets containing CAN bus and status or signal lines:

- 1 socket with power contacts (+) and (-)
- 1 RJ45 socket with CAN bus connection for monitoring and controlling the battery module via the higher-level control system (IN)
- 1 RJ45 socket for connecting an additional battery module (OUT)
- 2 M5 threads for connecting the ground

2.3.5 Ambient conditions

Operation

Operate only under cover, do not expose to direct sunlight (do not install):

- Temperature 0 ... 45 °C
- Relative humidity: 5 ... 85
- Altitude 0 ... 2000 m above sea level

Storage

- Storage temperature: -20 ... 60 °C

2.4 Status and SOC display

During operation, 6 LED fields indicate the status and SOC of the battery system.

4 : Overview of LED status codes

Status LED	10 seconds	Explanation
Green - lit		Discharge mode
Green - flashing (0.5 s on and 1 s off)		Ready (battery relay energized – waiting for charging or discharging)
Green - flashes slowly (1 s on, 5 s off)		Standby (battery system relay open)
Blue - lit		Charging
Blue - flashing (0.5 s on and 1 s off)		Diagnosis or shutdown of the battery system
Blue - flashes slowly (1 s on, 5 s off)		System start, relay test or software update
Red - flashes quickly (0.2 seconds on, 0.2 seconds off)		System error – system has disconnected the battery from the inverter
Red – flashing (0.5 s on and 1 s off)		Error during battery system startup – battery remains disconnected

3 Commissioning

3.1 Safety

Guidelines

Installation must only be carried out by qualified electricians in accordance with IEC 60204-1.

Handling, transport

The housing with electronics weighs approx. 132 kg for 4 modules and approx. 176 kg for 6 modules. A battery module weighs 22 kg. Heavy lifting can cause injury to the musculoskeletal system.

- Lift the Hyperion LONG LIFE 20 outdoor cover (12 kg) and housing (30 kg) separately.
- If necessary, do not lift the Hyperion LONG LIFE 20 outdoor base alone or use transport aids.

Risk of crushing and abrasions when lifting and inserting the battery modules.

- Wear suitable footwear and hand protection.

3.2 List

3.2.1 Transport

Installation location difficult to access

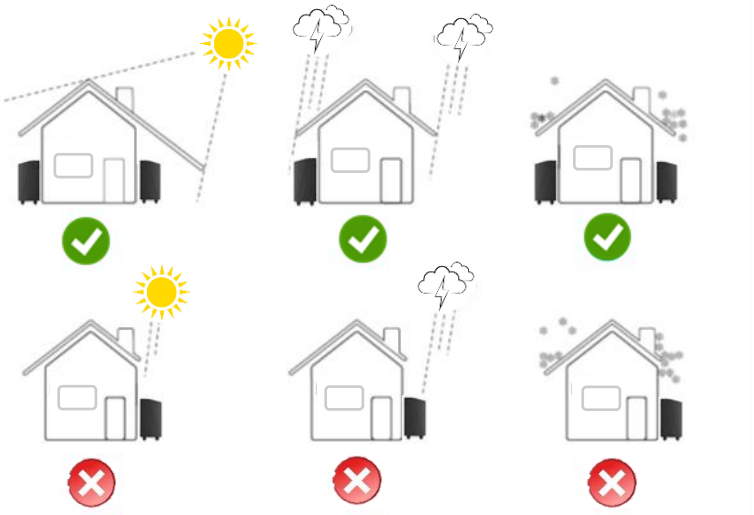
If the installation site is difficult to access, we recommend carrying the base and cover of the system housing to the installation site separately:

1. Open the packaging of the Hyperion LONG LIFE 20 outdoor system housing.
2. Unscrew 1 screw (TORX, TX25) from the bottom front of the system housing (2 additional screws are included in the accessory pack).
3. Remove the cover from the base of the system housing.
4. Carry the cover and base separately to the installation site.

Battery modules

The battery modules should be transported to the installation location in their original packaging.

3.2.2 Choosing the installation location



Before mounting the battery system on the wall or floor, it must be grounded to the threaded bolt on the rear wall of the housing.

The battery system can be mounted standing on the floor or hanging on the wall. It must not be installed in areas at risk of fire or explosion (DIN VDE0100-420 or, if applicable, standards of the DIN EN60079 series). Place the battery system on a non-combustible surface.

Recommendation

Set up the battery system on the floor against a wall. This allows the inverter to be mounted centrally above the battery system. Depending on the inverter used, the distance between the battery system and the inverter should be at least 20 cm. The cables already attached to the Hyperion can be used at a distance of up to approx. 1.5 m from the connection terminals or plugs. Leave at least 30 cm free to the left and right of the battery system to allow access to the DC disconnect switch and ensure adequate air circulation. Make sure that the PE cable is connected to the system housing before the system housing is mounted on the wall.

Secure against tipping

To prevent the battery system from tipping over, it can be secured to the mounting wall using two screws (not included). Two mounting points are provided in the system housing for this purpose.

Wall mounting

Four mounting points are provided in the system housing for wall mounting. As the battery system can weigh up to 173 kg, check in advance whether the wall and mounting material are permanently suitable for the load.

NOTICE: To access the two upper mounting points, we recommend removing the BMS master before installing the screws.

3.2.3 Error message devices

The battery and the connected inverters signal battery faults visually by means of a red light.
In addition, a contact on the inverter (depending on the type) is used to connect visual and/or acoustic signal devices. These are activated in the event of battery faults, such as overtemperature.

NOTICE: If external visual and/or audible signal devices are required, it must be clarified in advance whether the inverter has a signal contact or can be retrofitted with one.

3.2.4 Mounting

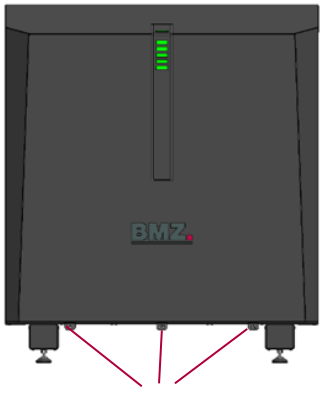
Prerequisite

The installation location for the battery system and inverter has been determined.

Instructions

Recommended installation:

5. Attach the wall bracket for the inverter.
6. Hook the inverter into its bracket.
7. If necessary, unscrew the cover of the inverter connection area.
8. If not already done, remove the cover from the battery system housing:
   - ⇨ Unscrew the 3 screws (Torx, TX25) on the front underside.
   - ⇨ Remove the cover from the base.
9. Attach the PE cable to the system housing.
10. Position the base of the battery housing at the intended installation location (and screw it in place if necessary).



M5x8 screws (TX25)

3.3 Installation

3.3.1 Install Helios battery modules

Safety

⚠ CAUTION

Risk of crushing due to improper installation.

The module falling down or being inserted incorrectly can cause minor crushing and abrasions to hands and feet.

- ▶ Wear protective clothing.

⚠ CAUTION

Ergonomic hazards due to heavy lifting.

Lifting the battery module can cause damage to the musculoskeletal system.

- ▶ If necessary, do not lift the module alone.
- ▶ Use a lifting aid if necessary.

NOTICE

Faulty installation due to damaged or contaminated battery modules.

Only modules in perfect condition may be installed. The housing must be undamaged. The contact points must be undamaged and clean.

- ▶ Perform a visual inspection.
- ▶ Clean the contact points with a dry cloth if necessary.

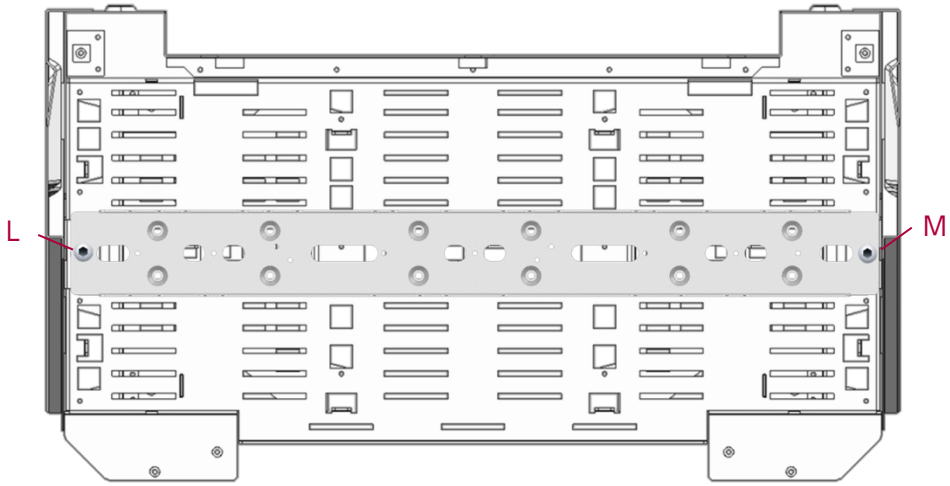
The battery module may only be used in the BMZ Hyperion LONG LIFE 20 Outdoor battery system for which it is intended.

Prerequisite

- ✓ The energy storage system is set up safely.
- ✓ The main switch of the electricity storage system is turned off.
- ✓ The battery modules should have a voltage difference of± 0.25V.
- ✓ The inverter is not yet connected or is switched off.

Instructions

1. Make sure that the DC disconnect switch of the Hyperion LONG LIFE is set to "off."
2. Loosen the two screws L and M with which the hold-down device is attached on the left and right and fold up the hold-down device.



3. Unpack the battery modules and insert them.

NOTICE: For best cooling results, we recommend installing the battery modules as shown inFigure3 .

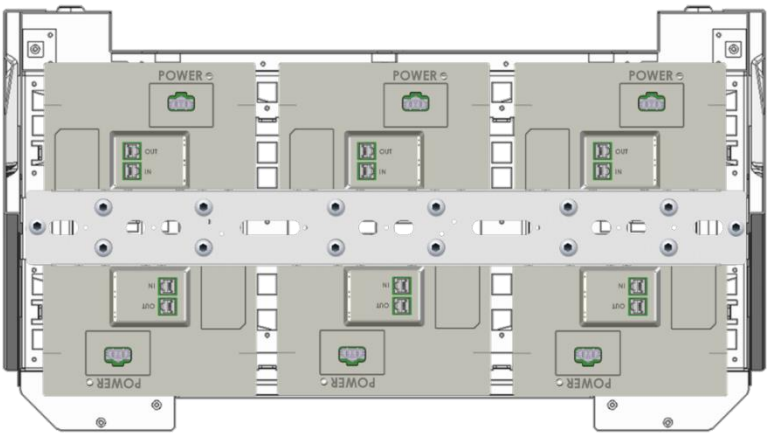
Figure3 : Insert 4 or 6 Helios battery modules

With 4 Helios battery modules

With 6 Helios battery modules

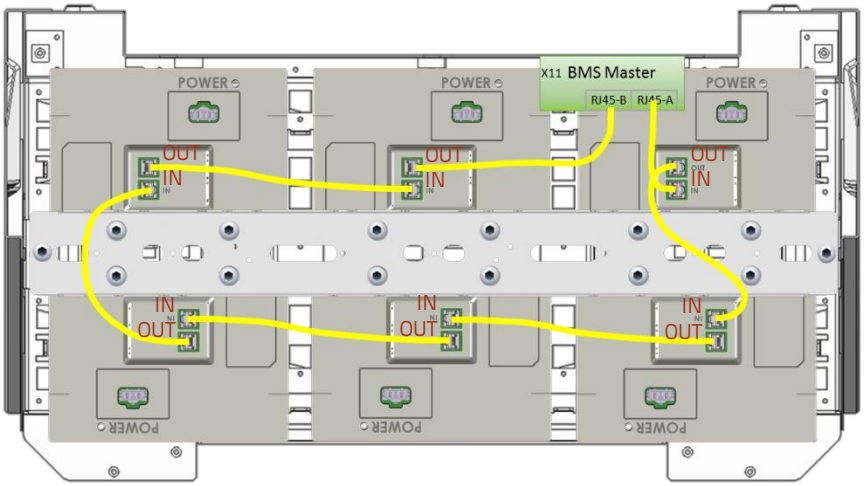
4. Screw the hold-down bracket to the right and left of the base of the system housing.
5. Screw each battery module to the hold-down bracket/grounding bracket using two screws (M5). SeeFigure4 .

Figure4 : Battery modules fixed to the grounding bracket



6. Use the patch cables to connect the BMS master (right of the two RJ45 sockets = RJ45-A) to the installed battery modules.
   See example Figure5 .

Figure5 : Connecting the battery modules and master with patch cables



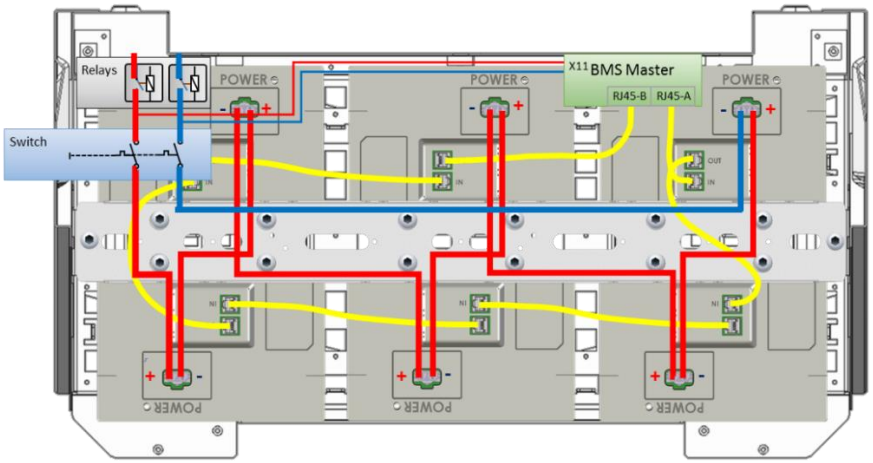
7. Connect the last battery module to the left RJ45 socket (RJ45-B) in the BMS master.

3.3.2 Connect Helios battery modules in series

	⚠ WARNING
	Electric shock from live parts. Touching live components can result in electric shock, which can cause thermal or muscle paralysis. The latter can lead to ventricular fibrillation, cardiac arrest, or respiratory paralysis with fatal consequences. ▶ Never touch the contacts.

1. Remove the safety cover from the "Power" sockets.
2. Plug the power connector into the corresponding battery module until it clicks into place. For an example, seeFigure6 .

Figure6 : Power path with switching devices and BMS



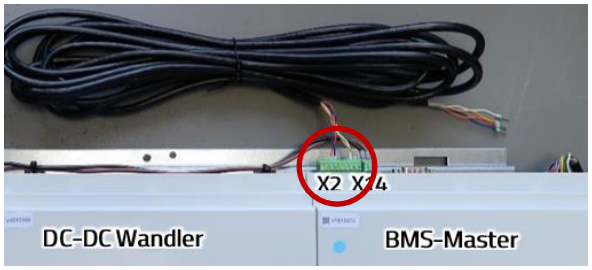
3. Check that the connectors are securely engaged by pulling on them.

4. For fewer than 6 battery modules: Fit the unused power connectors with the blind sockets C supplied.
5. Feed the power cables (red and black) through the left hole in the base housing.

NOTICE: Pass the cable through the union nut of the PG screw connection and then through the outer housing.

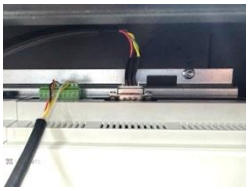
6. Above the left PG screw connection, route the red (+) and black (-) cables through the supplied hinged ferrite I.

7. Feed the communication cable X2 that is installed through the right hole and secure it with the PG screw connection supplied.



8. Check that the power cables are securely attached to the relay. If not, tighten the M4x10 screw to 1.8 Nm.

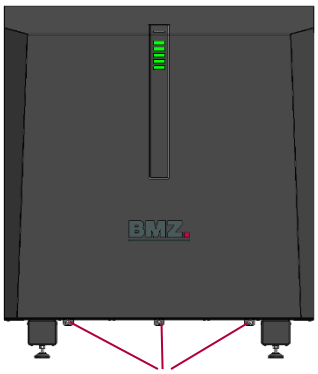
9. Plug the cable set Sub-D into the master and screw the cable end sleeves onto CAN2 Ethernet. Attach the supplied double-sided adhesive tape strip to the gateway and fix it to the master.



10. Route the patch cable from the ESS gateway to the router together with the power cables through the free hole in the 3-hole grommet and secure with the supplied PG screw connection.

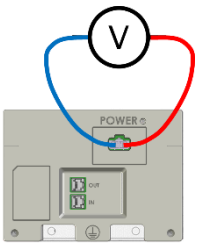
3.3.3 Close the battery system housing

1. Position the housing cover (with display) in front of the housing base and plug the cable for the display into the circuit board in the cover.
2. Insert the cover into the guide at the top and secure it at the bottom with the three M5x8 screws (TX 25) that were removed in 3.2.4.



Screws M5x8 (TX 25)

3.3.4 Retrofitting additional battery modules



1. Check the voltage of the modules. It should be between 47 V and 56 V.
2. Adjust the voltage of the battery system to± 0.25 V to the new modules (see also Appendix 8.3: Setting the system voltage with SMA SB Storage). An exactly adjusted module voltage prevents system adjustment and allows immediate access to the entire capacity.
3. Disconnect the inverter from the power supply and switch off Hyperion LONG LIFE.
4. Install new modules. See chapter 3.3Installation .
5. Start up the system. See chapter3.4 .

3.3.5 Disposal measures

Dispose of transport packaging in accordance with legal regulations.

It is recommended that you store any parts that are not required (patch cables, dummy plugs, screws) together with the installation instructions near the battery system.

Before removing defective battery modules, disconnect the power plug and tape the power socket with insulating tape.

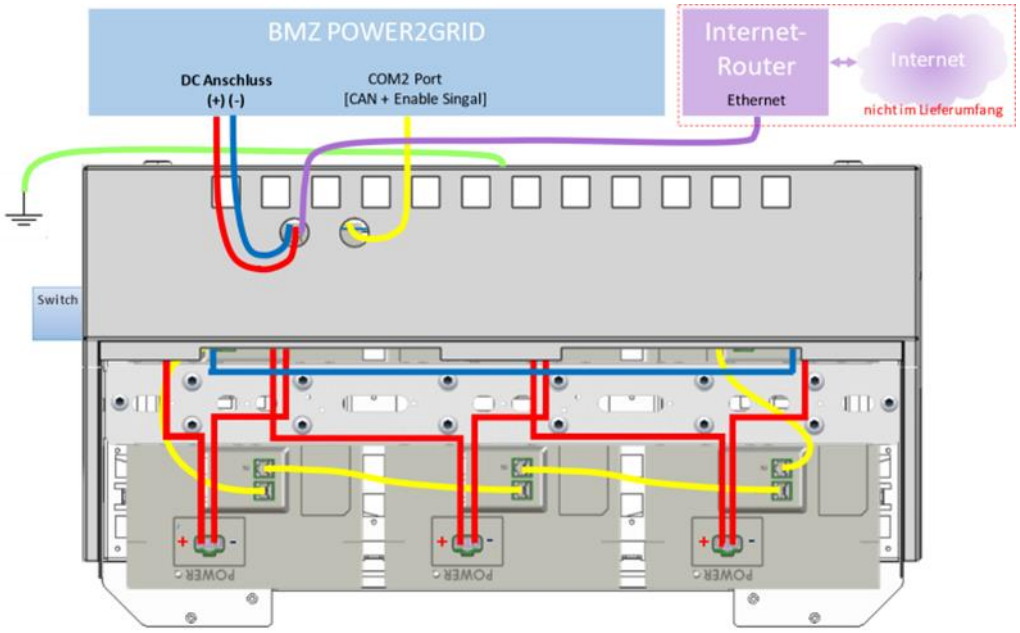
3.4 Connecting the inverter

3.4.1 BMZ POWER2GRID

Instructions

Figure 7: Connection to the SMA SB Storage

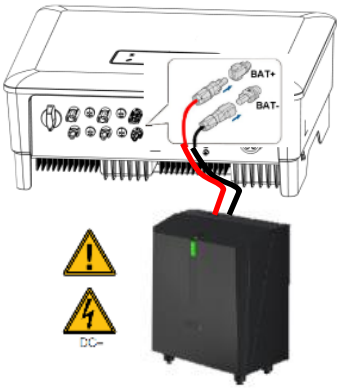
6. Preparation Hyperion LONG LIFE Ground the housing.



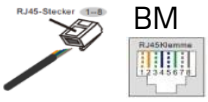
7. Establish DC connection

   ⇨ Connect the BAT plug accordingly and insert it:

   - DC(+) BAT+
   - DC(-) BAT-

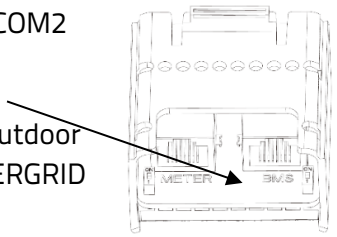


8. Crimp the CAN connection of the Hyperion communication cable to the RJ45 plug as follows:



   - Yellow Pin 4 CAN H (blue)
   - White Pin 5 CAN L (blue-white)

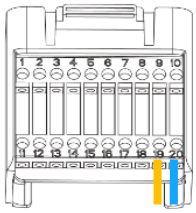
9. Plug into the socket marked BMS in the COM2 POWERGRID communication connector.



10. Connect the Hyperion LONG LIFE 20 outdoor communication cable to the COM2 POWERGRID communication connector as follows:

   - Orange Pin 19 BAT Enable
   - Blue Pin 20 BAT Enable GND COM

11. After completing all connection work, reassemble the COM2 terminal and attach it to the bottom of the inverter.



12. Check all electrical connections. Pay particular attention to ensure that (+) and (-) are not reversed on the inverter and battery!

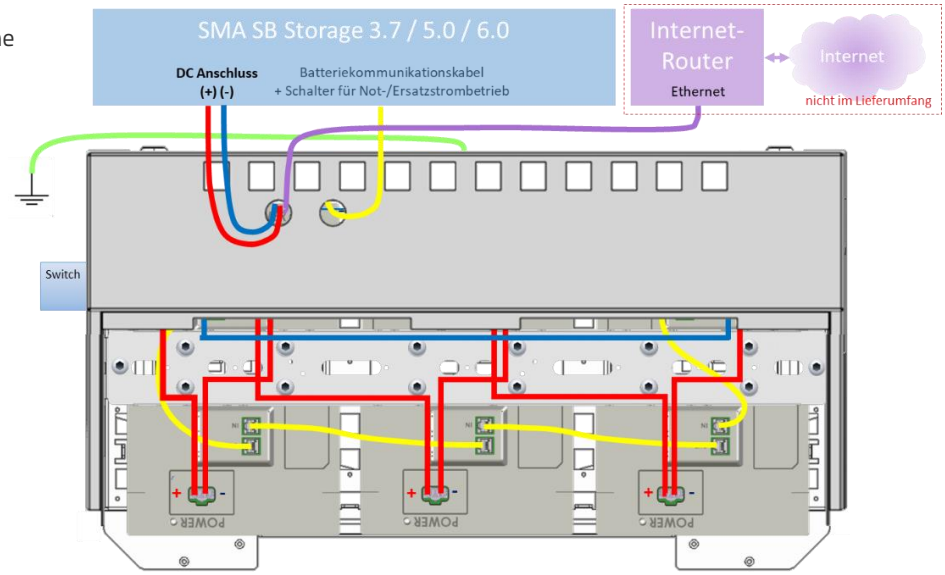
NOTICE: During commissioning, select the battery model "BMZ" in the setup (confirm).

3.4.2 SMA Sunny Boy Storage 3.7 / 5.0 / 6.0

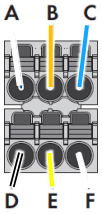
Instructions

1. Route the DC power cable and the communication cable(s) through the respective PG screw connections into the connection compartment of the inverter.

7 : Connection of the SMA SB Storage to the BMZ Hyperion LONG LIFE



2. Connect the cables in the inverter according to the Sunny Boy Storage 3.7 / 5.0 / 6.0 operating manual.



⇨ Section 6.5: Connecting the battery communication cable:

- yellow: CAN H (E)
- white: CAN L (D)
- orange: Enable (B)
- blue: GND (C)

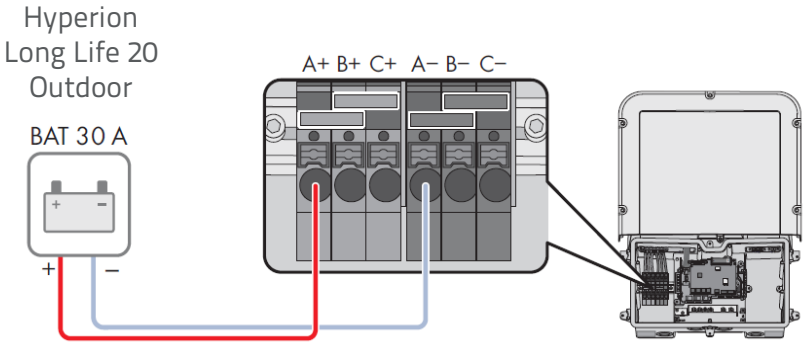
⇨ Section 6.1.2: Interior view and 6.8.3: Connecting the power cable

- Yellow-green Grounding point for grounding the battery (L)

⇨ Section 6.8 DC connection

- Red (+) (A+)
- Black (-) (A-)

It is recommended to use all bridges (30 A)



3. Check all electrical connections.
4. Close the inverter housing.

NOTICE: For operation with SMA Sunny Boy Storage 3.7 / 5.0 / 6.0:
For full functionality, firmware 3.11.16 or newer must be installed on the inverter.

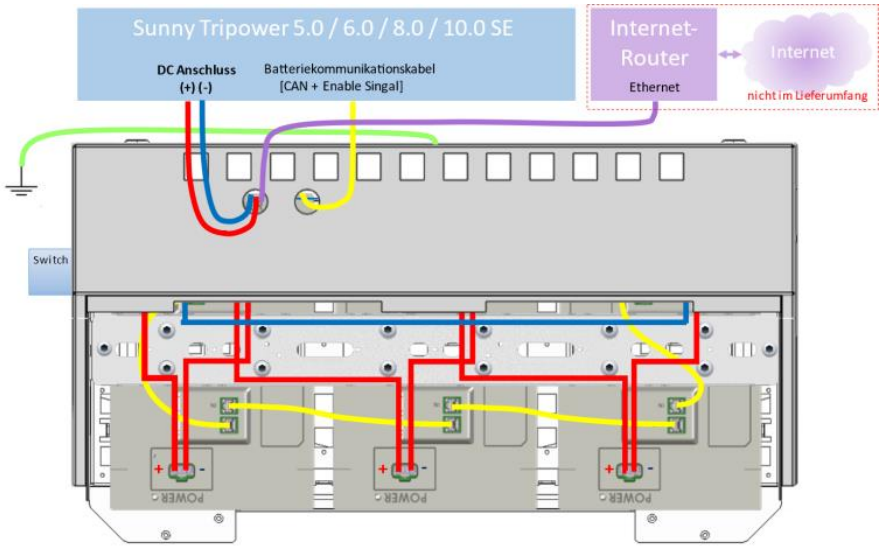
3.4.3 SMA Sunny Tripower 5.0/6.0/8.0/10.0 Smart Energy

Instructions

1. Preparation: Ground the Hyperion housing.

   ⇨ PE

   - Connect yellow-green in accordance with standard specifications.

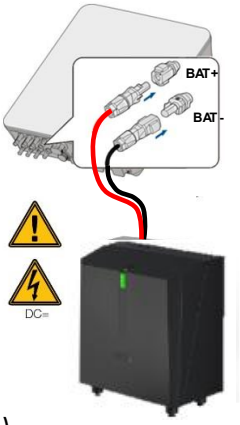


8 : Connection of the SMA STP SE to the BMZ Hyperion LONG LIFE 20 Outdoor

2. Establish DC connection:

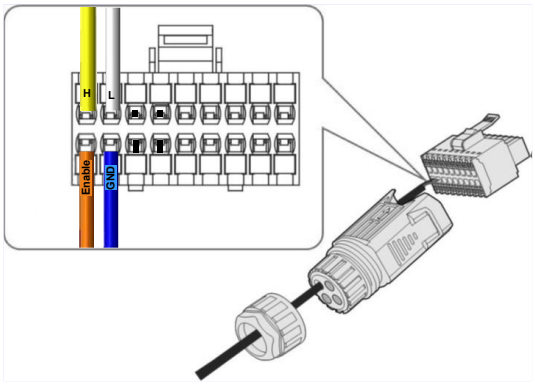
   ⇨ Attach the multi-contact MC4 plug accordingly and plug in:

   - DC(+) BAT+
   - DC(-) BAT-



3. Battery communication cable
   Connect to the COM connector:

   - yellow: CAN H (H)
   - white: CAN L (L)
   - orange: Enable (enable signal)
   - blue: GND (Enable Ground)

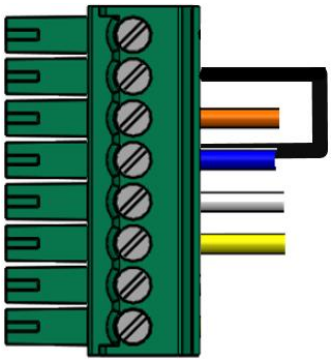


4. Assemble the COM connectors and plug them into the bottom of the inverter.
5. Check all electrical connections.

3.4.4 Kostal PLENTICORE plus / BI

Instructions

1. In order to operate the Hyperion LONG LIFE 20 Outdoor storage system in communication with the Kostal PLENTICORE plus, the communication must be switched to RS485.



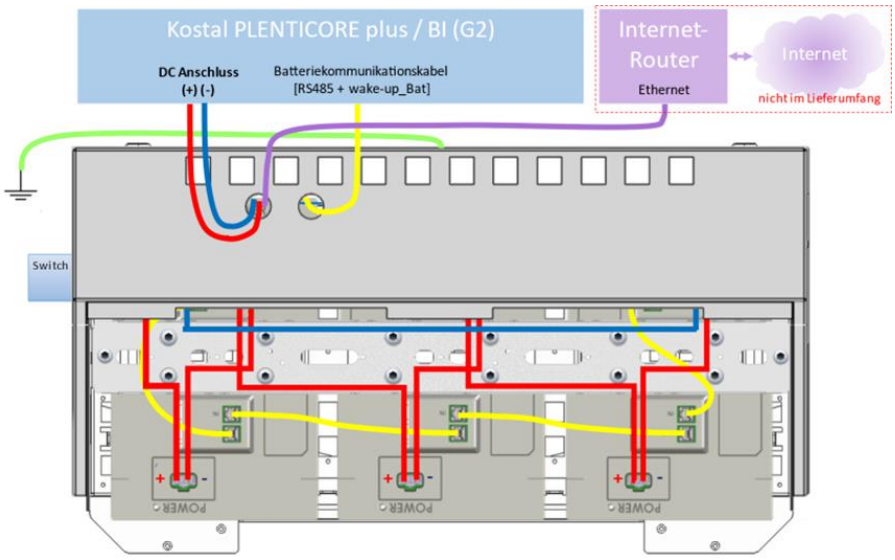
   ⇨ Disconnect the X2 connector from the BMS master (green 8-pin connector at the top left).
   ⇨ Rewire the yellow wire from PIN1 to PIN3 (RS485+).
   ⇨ Repin the white wire from PIN2 to PIN4 (RS485-).
   ⇨ Bridge PIN5 and PIN7 to activate RS485 communication.
   ⇨ Plug X2 back into the BMS master.

2. Preparation: Ground the Hyperion housing:

   ⇨ PE

   - Yellow-green Place on the grounding rail

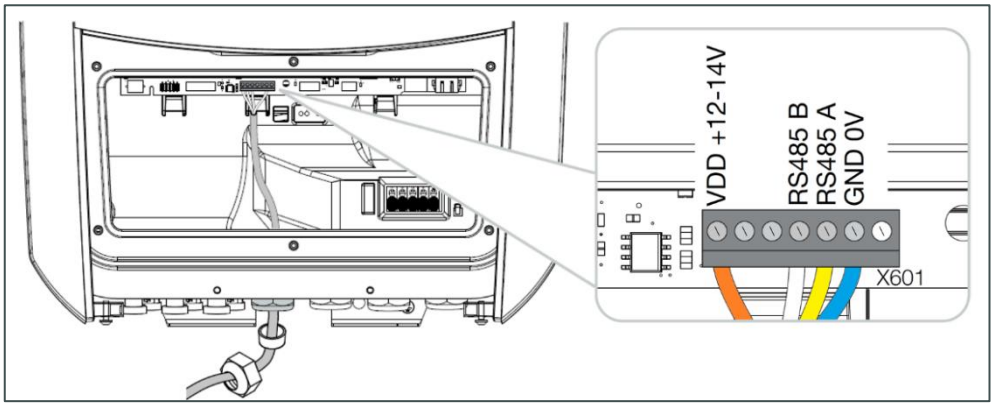
9 : Connecting the PLENTICORE plus/BI to the BMZ-Hyperion LONG LIFE 20 Outdoor



3. Feed the communication cable through the respective PG screw connections into the connection compartment of the inverter.
4. Connect the cables in/on the inverter according to the PLENTICORE plus operating manual.

⇨ Connect the battery communication cable:

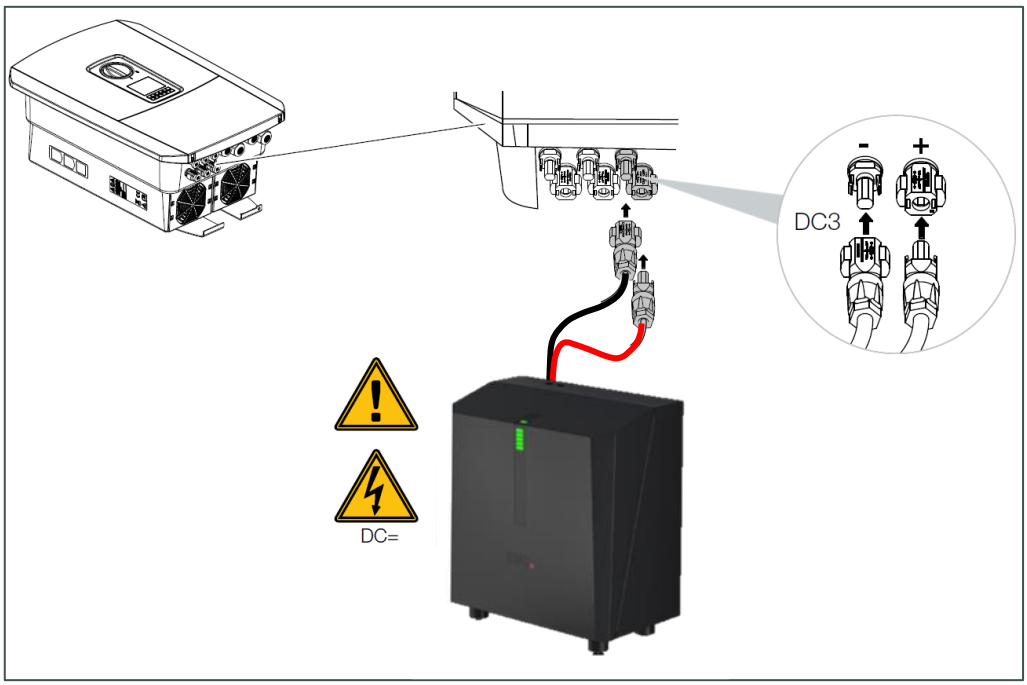
- White: RS485B
- yellow: RS485A
- Blue: GND 0V
- orange: VDD +12-14V



5. Close inverter
6. Establish DC connection:

⇨ Connect Sunclix plug accordingly

- DC(+) (DC3 +)
- DC(-) (DC3 -)



7. Check all electrical connections. Pay particular attention to ensure that (+) and (-) are not reversed on the inverter and battery!

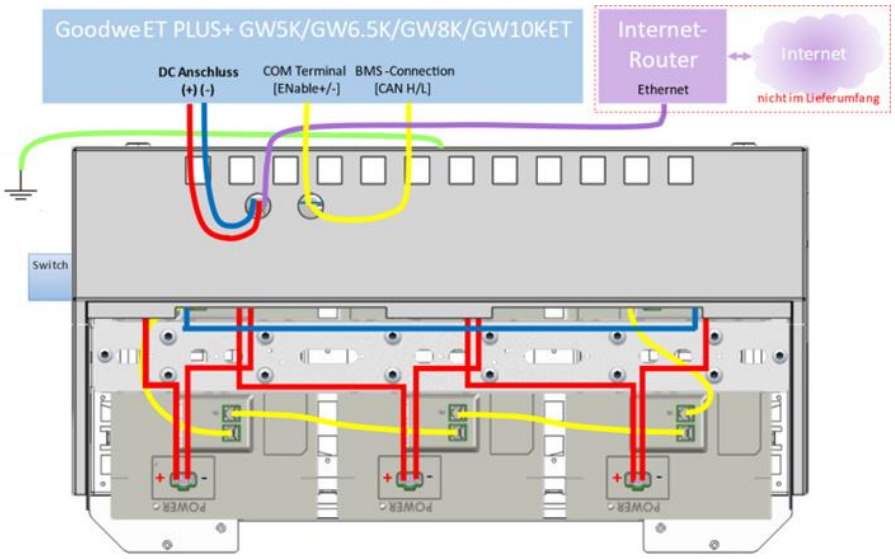
3.4.5 GoodWe ET PLUS+ GW5K/GW6.5K/GW8K/GW10K (12.5 A TYPES)

Instructions

1. Preparation: Ground the Hyperion LONG LIFE 20 outdoor housing.

   ⇨ PE

   - Yellow-green: Connect in accordance with standard specifications.

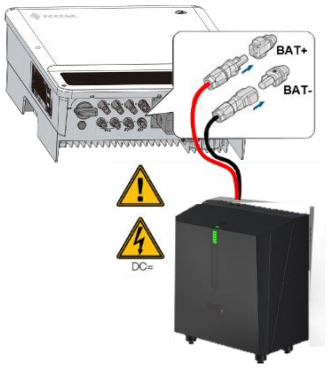


10 illustration: Connecting the GoodWe ET PLUS+ to the BMZ-Hyperion LONG LIFE 20 Outdoor

2. Establish DC connection

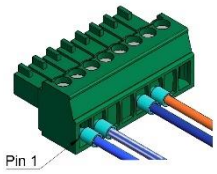
   ⇨ Attach the BAT plug accordingly and plug it in:

   - Red (+) BAT+
   - Black (-) BAT-



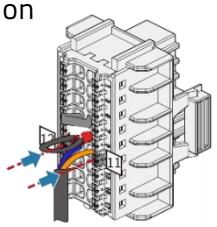
3. Insert the ET PLUS+ BMS battery communication cable into the Hyperion LONG LIFE 20 outdoor housing and connect it to the plug of the BMS master socket X2:

   - Blue Pin 1 CAN H
   - Blue-white Pin 2 CAN L



4. Insert the Hyperion LONG LIFE 20 outdoor communication cable into the ET PLUS+ COM terminal and apply enable signals:

   - Orange Pin 11 Enable (LG_EN+)
   - Blue Pin 12 GND (LG_EN-)



5. After completing all connection work, reassemble the COM terminal and plug it into the bottom of the inverter.

6. Check all electrical connections.

NOTICE: During commissioning, select the "Default" battery model in the PV Master app setup.

3.4.6 SOFASOLAR HYD 5/6/8/10/15/20 KTL -3PH

Instructions

1. Preparation Ground the Hyperion LONG LIFE 20 outdoor housing.

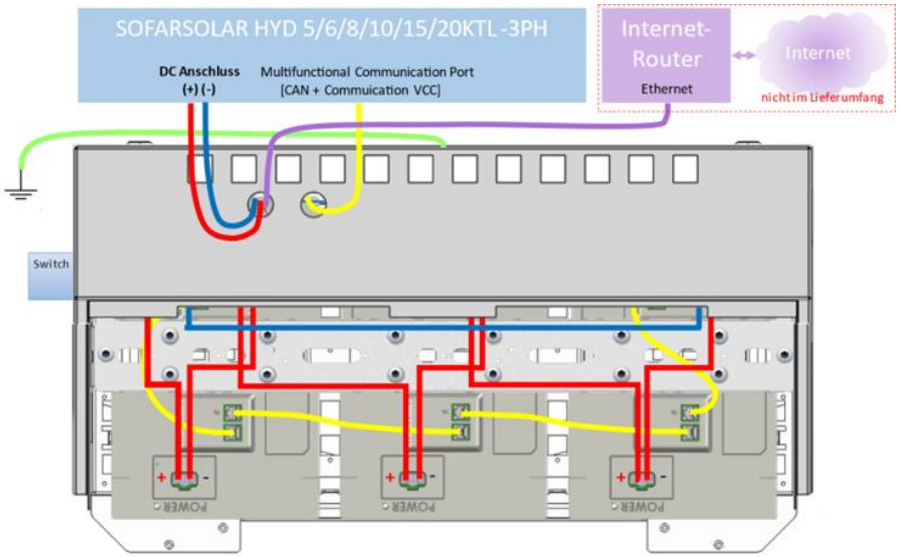
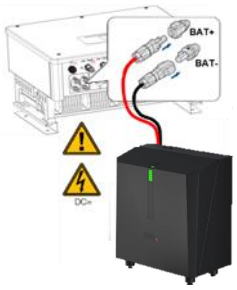


Figure 11: Connecting the SOFASOLAR HYD 5...20KTL to Hyperion LONG LIFE 20 Outdoor

2. Establish DC connection

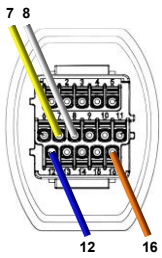
   ⇨ Attach the BAT plug accordingly and insert it.

   - DC(+) BAT +
   - DC(-) BAT –



3. Connect the battery communication cable to the multifunctional communication connector:

   - Yellow: CAN H (7)
   - White CAN L (8)
   - Orange: Enable (16)
   - Blue: GND (12)



4. After completing all connection work, assemble the multifunctional communication connection and plug it into the bottom of the inverter.
5. Check all electrical connections. Pay particular attention to ensure that (+) and (-) are not reversed on the inverter and battery!

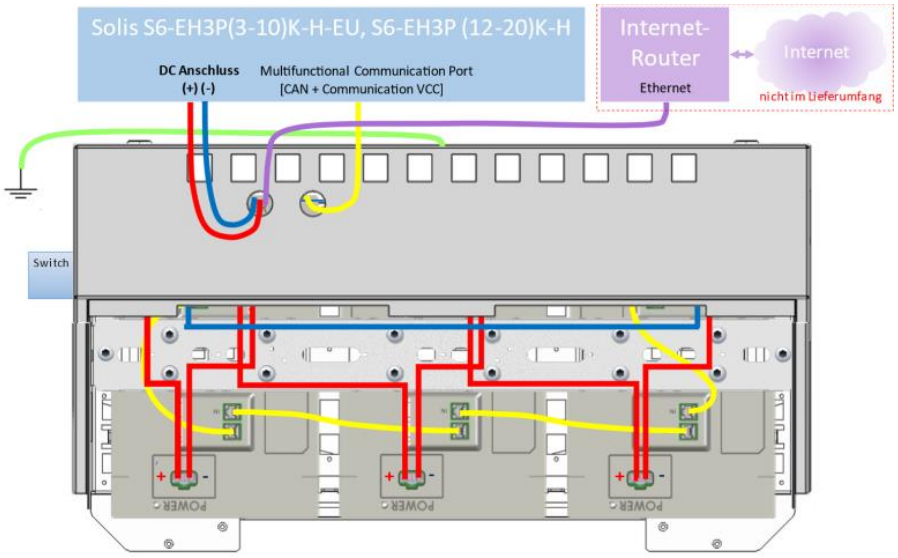
NOTICE: When commissioning, select "GENERAL" under battery type.

Inverters with two battery inputs allow two Hyperion units to be operated. To do this, the CAN address of one of the two Hyperion units must be set from default 0 to 1 before commissioning the combination. BMZ offers trained installers the ESS-HV Flashtool from version 1.0.16 for this purpose.

3.4.7 SOLIS S6-EH3P 3-10K-H-EU

Instructions

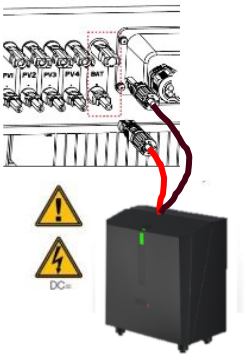
1. Preparation: Ground the Hyperion LONG LIFE 20 outdoor housing.



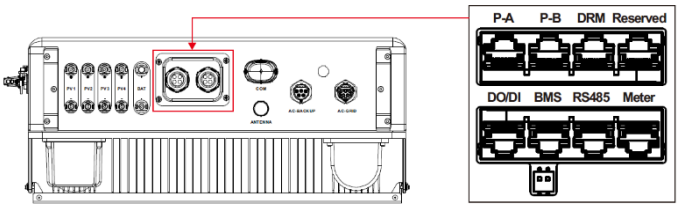
2. Establish DC connection.

   ⇨ Connect the BAT plug accordingly and plug it in.

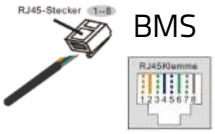
   - DC(+) BAT +
   - DC(-) BAT



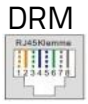
3. Following steps 1 to 4 in section 4.7.1 of the Solis S6 user manual, the CAN connection of the Hyperion communication cable is crimped to the RJ45 plug for the BMS as follows:



- Yellow Pin4 CAN H (blue)
- White Pin CAN L (blue-white)



4. Crimp the strands for the enable signal from the Hyperion communication cable to an RJ45 plug for DRM socket.



- Orange Pin7 Enable (brown-white)
- Blue Pin8 GND (brown)

5. After completing all communication connection work in accordance with steps 6 and 7 in section 4.7.1 of the Solis S6 user manual, install the protective cover.
6. Check all electrical connections. Pay particular attention to ensure that (+) and (-) are not reversed on the inverter and battery!

NOTICE: During commissioning with the Soliscloud APP, select the BMZ battery model in accordance with chapter 5 of the S6 user manual.

3.5 Commission the Hyperion LONG LIFE 20 outdoor storage system n

Instructions

1. Commissioning the inverter.
2. Set up inverter communication so that the battery system can be set up.
3. Switch the DC disconnect switch on the left side of the Hyperion LONG LIFE 20 Outdoor to "On" at " ".
4. Commission the storage system in accordance with the operating instructions for the connected inverter.

4 Repair

The battery module may only be opened and repaired by the manufacturer. Defective modules must be sent to the manufacturer's service department.

Apart from the modules, the battery system can be repaired by trained specialists using original replacement parts.

5 Decommissioning, storage

5.1 Safety regulations

⚠ WARNING

Health hazard due to deep discharge.

After more than six months of storage, the battery cells may become deeply discharged. This can lead to chemical reactions within the cells, resulting in heat and gas development and possible health hazards.

▶ Recharge the module every six months.

- Disconnect the inverter connected to the Hyperion LONG LIFE 20 Outdoor from the power supply.
- Switch off the DC switch on the left side of the Hyperion LONG LIFE 20 Outdoor battery system.
  Open the Hyperion LONG LIFE 20 Outdoor and unlock and disconnect both the patch cables and the power cables from the Helios battery modules.
- Cover the power socket with insulating tape.
- All applicable fire safety regulations must be observed. If in doubt, contact your local fire department and your insurance company.
- Store the battery module in a dry place protected from sunlight.
- If the battery module has been in water or any other liquid, it must not be put back into operation.

5.2 Storage conditions

5.2.1 Storage

Do not store the module for longer than six months from the date of manufacture (see type plate). The module must be recharged after prolonged storage.

5.2.2 Physical conditions

Store the module in a dry place protected from sunlight, max. 2000 m above sea level.

The following conditions should prevail on average:

- Temperature: 15 ... 25 °C
  Hard limits:
  Storage: -10 ... 50 °C
  Transport: -20 ... 60° C
- Relative humidity: 0 ... 50

No more than 4 battery modules may be stacked on top of each other.

Store battery modules at least 10 cm above the floor to reduce the risk of water damage.

5.2.3 Cleaning

Before storage, remove dust and other deposits from the battery system. Either by vacuuming and/or with a dry cloth.

6 Packaging and transport

The battery module must only be transported in suitable packaging that is labeled in accordance with legal requirements and accompanied by the relevant documents.

If still available and intact, the delivery packaging can be used. Otherwise, the manufacturer's service department will assist you.

7 Disposal

Legal regulations — Batteries do not belong in household waste. As a consumer, you are legally obliged to return used batteries. This service is free of charge.

Safety — If lithium batteries are not disposed of properly, they can cause damage to health and the environment through fire or the leakage of hazardous substances.

Return — Please contact the manufacturer when the battery module has reached the end of its service life.

Environment

The manufacturer recycles used batteries according to their electrochemical system. Valuable raw materials are recycled and hazardous substances are disposed of properly. By returning the batteries, you are making an important contribution to protecting our environment.

8 Attachments

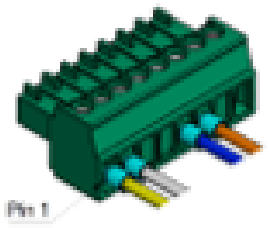
8.1 BMS master, DC-DC converter, and relay in the Hyperion LONG LIFE 20 Outdoor

11 illustration: Arrangement of BMS master and DC-DC converter

8.2 Assignment BMS master inverter interface (X2)

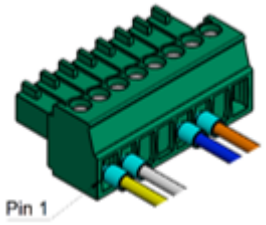
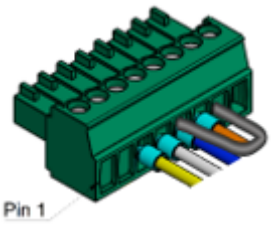
5 table: Pin assignment of BMZ POWERGRID X2 for SMA SB Storage, Sungrow SH RT and GoodWe ET PLUS+

Hyperion LONG LIFE 20 Outdoor		BMZ POWERGRID		SMA Sunny Boy Storage 3.7/5.0/6.0		SMA Sunny Tripower 5.0/6.0/8.0/10.0 SE		GoodWe ET PLUS+ GW5K/GW6.5K/GW8K/ GW10K	
Pin	Assignment	Pin	Color	Pin	Color (BATx)	Pin	Color (COM)	Pin	Color (Port)
1	CAN H	4	RJ45 BMS	E	yellow	1	yellow	4	[BMS] blue
2	CAN L	5	RJ45 BMS	D	white	3	white	5	[BMS] blue & white
3	RS485A	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.
4	RS485B	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.
5	GND	19	COM	C	blue	4	blue	12	[COM-T.] LG_EN-
6	Enable (12 V, 1 mA)	20	COM	B	orange	2	orange	11	[COM-T.] LG_EN+
7	Jumper RS485	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.
8	./.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.



Delivery status

6 table: Pin assignment of X2 for Kostal PLENTICORE plus/BI

Hyperion LONG LIFE 20 Outdoor		SOFARSOLAR HYD 5/6/8/10/15/20 KTL 3PH		Solis S6-EH3P 3/4/5/8/10K-H-EU 12/15/20K-H		Kostal PLENTICORE plus / PLENTICORE BI (G2)	
Pin	Assignment	Pin	Color	Pin	Color	Pin	Color (X601)
1	CAN H	7	yellow	4	yellow	n.c.	n/a
2	CAN L	8	white	5	white	n.c.	n/a
3	RS485A	n/a	n.c.	n.c.	n.c.	5	yellow
4	RS485B	n.c.	n.c.	n.c.	n.c.	4	white
5	GND	12	blue	8	blue	6	blue
6	Enable (12 V, 1 mA)	16	orange	7	orange	1	orange
7	Jumper RS485	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.
8	./.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.
		 Delivery state				 Bridge between pins 5 and 7 defines RS485 and protocol for operation with Kostal PLENTICORE	

8.3 Setting the system voltage with SMA SB Storage

To supplement Helios LONG LIFE battery modules, the system voltage must be adjusted to the module voltage. To do this, set the Sunny Boy Storage to a specific SOC:

1. Open the user interface of the Sunny Boy Storage.
2. Log in as an installer.
3. Select Device Parameters and click Edit Parameters.
4. Enter the desired SOC under Battery – External specification and confirm with Save all at the top of the web UI.
   Example:
   - ⇨ New battery module has 50.4 V – corresponds to approx. 30% SOC
   - ⇨ Hyperion Long Life is at 60% SOC – so set the lower battery discharge limit to 30% and confirm with Save all.
5. The battery system automatically runs to the parameterized SOC and remains at this charge state.
6. Install the new battery module. See chapter "3.3.4 " from point 3 onwards.

Table 7: OCV at SOC Helios battery module and Hyperion system

Voltage		System voltage with number of serial battery modules	
Battery module	SOC	4	6
48.16 V	0	192.6 V	289 V
49.29 V	10	197.2 V	295.7 V
49.83 V	20	199.3 V	299 V
50.4 V	30	201.6 V	302.4 V
51.09 V	40	204.4 V	306.6 V
51.75 V	50	207 V	310.5 V
52.5 V	60	210 V	315 V
53.25 V	70	213 V	319.5 V
53.91 V	80	215.6 V	323.4 V
54.64 V	90	218.6 V	327.8 V
55.95 V	100	223.8 V	335.7 V

NOTICE: All voltage specifications refer to the open-circuit voltage (OCV).

9 Further directories

9.1 Glossary

Term	Definition
AWG	American Wire Gauge - American standard for wire cross-section
User	Individual who uses products
BMS	Battery Management System
Specialist	An individual who, due to their relevant professional education, training, and/or experience, is capable of recognizing risks and avoiding hazards that arise during the use of the product.
Hazard	Potential source of damage
CHP	Combined heat and power
OCV	Open Current Voltage: Voltage without current load on the battery
PSA	Personal protective equipment
Damage	Physical injury or damage to human health or damage to property/possessions or the environment
Thermal runaway	Chemical process triggered by heat that generates additional heat.

9.2 Table of contents

9.3 List of figures

Do you have any questions?

Please contact us, we will be happy to advise you.

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