



## **SUNNY ISLAND (MOW + US)**

**Approved Batteries and Information on Batteries in Sunny Island Systems**

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# 1 General Information

Die Sunny Island product family (SI3.0M, SI4.4M, SI6.0H and SI8.0H) is equipped with an integrated battery management for lead-acid batteries of type FLA and VRLA.

It is also possible to connect an external battery management that uses different battery technologies.

SMA Service cannot provide support for systems that are not on the release list.

## WARNING

### **Danger to life due to fire or explosion when batteries are deeply discharged**

A fire may occur due to incorrect charging of deeply discharged batteries. This can result in death or serious injury.

- Before commissioning the system, verify that the battery is not deeply discharged.
- Do not commission the system if the battery is deeply discharged.
- If the battery is fully discharged, contact the battery manufacturer for further proceedings.
- Only charge fully discharged batteries as instructed by the battery manufacturer.

### Legal Provisions

This document does not replace any regional, state, provincial, federal or national laws, regulations or standards that apply to the installation, electrical safety and use of the product. SMA Solar Technology AG assumes no responsibility for the compliance or non-compliance with such laws or codes in connection with the installation of the Sunny Island.

### Retrofitting

The batteries listed in this document can also be retrofitted to systems already in operation using Sunny Island-11/-12/-13. The prerequisite for this is a firmware update of the inverter. The update file is, for example, available for download on the product page of the inverter at [www.SMA-Solar.com](http://www.SMA-Solar.com).

### Using lead-acid batteries

The battery management integrated in the Sunny Island ensures that the lead-acid battery is charged carefully, deep discharge is avoided and the state of charge of the battery is determined. Prerequisite for optimum operation of the system and, in particular, for gentle treatment of the lead-acid battery is the adjustment of the parameters of the lead-acid battery to the values of each respective application recommended by the battery manufacturer (see operation and installation manual).

## **i** Using lithium-ion and hybrid (sodium)-ion batteries

All lithium-ion and hybrid (sodium)-ion batteries supply a defined nominal current. The full functionality for the PV storage system can only be guaranteed if the battery capacity (battery capacity and battery currents) is matched to the Sunny Island system constellation used. In particular, three-phase systems usually require more than one battery.

- Pay attention to the battery manufacturers' recommendations at the end of this document or to the minimum configuration lists regarding the suitable dimensioning of the battery (battery type, circuitry and number of battery modules). Only this ensures that the nominal and overload currents specified in the datasheet for the various system constellations and applications can be achieved.
- The battery manufacturer must comply with the SMA interface specification and observe the limit values defined therein. In the event of non-compliance, proper operation cannot be guaranteed.

## 2 Approved Batteries

### 2.1 Sunny Island 3.0M / 4.4M / 6.0H / 8.0H

The lithium-ion batteries of the following manufacturers are approved for the SMA Energy System Home and the Sunny Island 3.0M / 4.4M / 6.0H / 8.0H:

#### Manufacturer ADS-TEC

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
StoraXe® Home & Small Business SRS0009	✓	✓	✓	✓	-	-

#### Manufacturer Ampace

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Ampace SP-5000L As of firmware BMS: R03_V1.6.6	✓	✓	✓	✓	✓	✓

#### Manufacturer Akasol

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
neoQube	✓	-	-	-	-	-
neoRack	✓	✓	✓	✓	✓	✓
			Only for Sunny Island 3.0M and 4.4M		Only for Sunny Island 3.0M and 4.4M	

**Manufacturer Axitec**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
AXIstorage Li7S As of firmware 2.04	✓	✓	✓	✓	✓	✓
					Emergency power generator necessary	
AXIstorage Li8S As of firmware version 3.04	✓	✓	✓	✓	✓	✓
AXIstorage Li9S As of firmware 2.06	✓	✓	✓	✓	✓	✓
					Emergency power generator necessary	
AXIstorage Li10S As of firmware 2.06	✓	✓	✓	✓	✓	✓
					Emergency power generator necessary	

**Manufacturer Birubatt**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
BB-48100-1502PR A-G7 As of firmware BMS: R1.3	✓	✓	✓	✓	✓	✓

**Manufacturer BMZ**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
BMZ ESS 3.0 As of firmware 2.04	✓	✓	✓	✓	✓	✓

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
BMZ ESS 7.0 As of firmware 2.04	✓	✓	✓	✓	✓	✓
					Emergency power generator necessary	
BMZ ESS 9.0 As of firmware 2.06	✓	✓	✓	✓	✓	✓
					Emergency power generator necessary	
BMZ ESS X As of firmware 2.06	✓	✓	✓	✓	✓	✓
					Emergency power generator necessary	
BMZ ESS Z As of firmware version 3.04	✓	✓	✓	✓	✓	✓

### Manufacturer BYD

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
B-BOX As of firmware 2.7	✓	✓	✓	✓	✓	✓
Battery-Box LV As of firmware 1.0	✓	✓	✓	✓	-	-
					3~ only for Sunny Island 4.4M	
Battery-Box Premium LVL 15.4 As of firmware BMU: 1.8 As of firmware BMS: B-1.3	✓	✓	✓	✓	✓	✓

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Battery-Box Premium LVS 4.0-24.0 As of firmware BMU: 1.18 As of firmware BMS: 1.8	✓	✓	✓	✓	✓	✓
LV Flex As of firmware BMU: ≥V1.22 As of firmware BMS: ≥V1.13	✓	✓	✓	✓	✓	✓
LV Flex Lite As of firmware BMU: ≥V1.22 As of firmware BMS: ≥V1.13	✓	✓	✓	✓	✓	✓

### Manufacturer Cegasa

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
eBick PRO 280 As of firmware 3.2.0	✓	✓	✓	✓	✓	✓
eBick Ultra 175 As of firmware 14032023	✓	✓	✓	✓	✓	✓
Cegasa E/Bick LV As of firmware BMS: 1.2	✓	✓	✓	✓	✓	✓



**Manufacturer Dyness**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Dyness B4850 As of firmware BMS: 1.0	✓	✓	✓	✓	✓	✓
Dyness B3 As of firmware BMS: 220627DPBM	✓	✓	✓	✓	✓	✓

**Manufacturer Exide / GNB**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Sonnenschein Lithium Module Pro As of firmware 1.11	✓	-	✓	-	✓	-
Sonnenschein lithium As of firmware 2.06	✓	✓	✓	✓	✓	✓

Emergency power generator necessary

**Manufacturer GS-HUB**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
HomeHub (MU8G1 + BU25G1) As of firmware MU > 8.5 As of firmware BU > 3.13	✓	✓ 3~ only for Sunny Island 4.4M <sup>1)</sup>	✓	-	✓	-

<sup>1)</sup> During three-phase continuous operation with the nominal power of the inverter, derating of the battery may occur depending on the temperature and state of charge of the battery. Derating the battery temporarily reduces the power of the entire system.

**Manufacturer Hoppecke**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
sun   powerpack premium	✓	✓	✓	✓	✓	✓
As of firmware 1.1.0 r11767						

**Manufacturer IBC**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
SolStore X.X Li	✓	✓	✓	✓	✓	✓
As of firmware 2.06						Emergency power generator necessary

**Manufacturer Leclanché**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Apollion Cube	✓	✓	✓	✓	✓	✓
As of firmware 2.06						Emergency power generator necessary

**Manufacturer LG Energy Solution**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
RESU 3.3	✓	-	-	-	-	-
		Only for Sunny Island 3.0M and 4.4M				
RESU 5.0	✓	-	-	-	-	-

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
RESU 6.4	✓	-	✓	-	-	-
	Recommended for Sunny Island 3.0M and 4.4M		Only for Sunny Island 3.0M and 4.4M			
RESU 6.5	✓	-	✓	-	-	-
			Only for Sunny Island 3.0M			
RESU 10	✓	-	✓	-	-	-
			Only for Sunny Island 3.0M and 4.4M			
RESU 12 <sup>2)</sup> As of firmware 2.0.0.0	✓	-	✓	-	-	-
			Only for Sunny Island 4.4M and 6.0H			
RESU 13 <sup>2)</sup> As of firmware 1.7.0.3	✓	-	✓	-	-	-
			Only for Sunny Island 4.4M and 6.0H			
RESU Plus Extension Kit (an accessory for the parallel connection of 2 RESU batteries) <sup>3)</sup>	✓	-	✓	-	-	-
			Only for Sunny Island 3.0M and 4.4M			

<sup>2)</sup> RESU 12 and RESU 13 are designed to be discharged under power of 5 kW in all operating modes (self-consumption systems and battery-backup systems). The overload capability of the battery is limited to a duration of 3 seconds for all conditions exceeding nominal power. Ensure that the system is operated according to its intended use.

<sup>3)</sup> If two RESU batteries are used with the RESU Plus Extension Kit, the total battery capacity is equal to the sum of the two individual battery capacities. However, the maximum peak power of both batteries is limited to 5 kW with the RESU Plus Extension Kit. Therefore, only Sunny Islands 3.0-4.4M can be used in the battery-backup system with the RESU Plus Extension Kit.

**Manufacturer Mercedes-Benz Energy GmbH**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Mercedes-Benz Energy Storage Home As of firmware 29.30 - 5.X	✓	-	✓	-	-	-
	Recommended for Sunny Island 3.0M and 4.4M		Recommended for Sunny Island 3.0M and 4.4M			
Mercedes-Benz Energy Storage Home (2.0) As of firmware 10.xx	✓	-	-	-	-	-

**Manufacturer Murata**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Murata PLC-BMU solution with IJ1101M	-	-	-	-	✓	✓

**Manufacturer Opal Energy Pte. Ltd.**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Opal L051100-A1 As of firmware LM-M01S-YZ109S-21.Z9.04-230525	✓	✓	✓	✓	✓	✓

**Manufacturer Polarium**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Polarium SLB48-050-124-1 As of firmware SII: 1.3.3 As of firmware BMS: R10701	✓	✓	✓	✓	✓	✓

**Manufacturer Pylontech**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
US2000 As of firmware 2.9 US2000C* As of firmware 2.1	✓	✓	✓	✓	✓ <sup>4)</sup>	✓ <sup>4)</sup>
US3000 As of firmware 2.9 US3000C* As of firmware 2.1	✓	✓	✓	✓	✓ <sup>4)</sup>	✓ <sup>4)</sup>
US5000* As of firmware 1.0	✓	✓	✓	✓	✓ <sup>4)</sup>	✓ <sup>4)</sup>
US5000B As of firmware 1.0	✓	✓	✓	✓	✓ <sup>4)</sup>	✓ <sup>4)</sup>
UP5000* As of firmware 2.1	✓	✓	✓	✓	✓ <sup>4)</sup>	✓ <sup>4)</sup>
Pelio* As of firmware 1.0	✓	✓	✓	✓	✓	✓

\*The pin assignment must be checked in Multicluster operation.

<sup>4)</sup> When used in an off-grid system, the battery protection mode level 3 must not be set below 4% on the inverter.

**Manufacturer Sony**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Controller IJ1004C Module fORTELION IJ1001M	✓	✓	✓	✓	✓	✓

**Manufacturer SSL Energie GmbH**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
eSafe© As of firmware 1.0.35	✓	✓	✓	✓	✓	✓

**Manufacturer Sunwoda**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Atrix series As of firmware BMS: V1.6.0	✓	✓	✓	✓	✓	✓
SunESS series As of firmware BMS: V1.6.0	✓	✓	✓	✓	✓	✓
				Three-phase with SI 8.0H not possible		Three-phase with SI 8.0H not possible

**Manufacturer Tesvolt**

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Tesvolt Lithium-Ion battery-storage system Li10 As of firmware 3.17	✓	✓	✓	✓	✓	✓

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Tesvolt Li-Ion battery-storage system from Li 20 As of firmware 1.11	✓	✓	✓	✓	✓	✓
TS-series As of firmware 1.06	✓	✓	✓	✓	✓	✓

### Manufacturer UZ Energy

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Power Lite L051100-A1/B/D As of firmware LM-M01S- YZ109S-21.Z9.04-2 30525 <sup>5)</sup>	✓	✓	✓	✓	✓	✓

### Manufacturer ZYC

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
ZYC Simpo 5000 As of firmware BMS: V2.9.3	✓	✓	✓	✓	✓	✓

**The hybrid (sodium)-ion batteries of the following manufacturers are approved for the SMA Energy System Home and the Sunny Island 3.0M / 4.4M / 6.0H / 8.0H:**

### Manufacturer Aquion Energy<sup>6)</sup>

	Self-consumption systems		Battery backup systems		Off-grid systems	
	1~	3~	1~	3~	1~	3~
Aspen 48S / 48M	✓	✓	✓	✓	✓	✓

<sup>5)</sup> Due internal overcharging protection, the battery is fully charged at a charge level of 96%.

<sup>6)</sup> Contact Aquion Energy in the event of servicing.

## 2.2 Sunny Island 4548-US / 6048-US

The batteries that are compatible with the SI8.0H in off-grid applications are also compatible with the SI4548-US and SI6048-US, since all inverters have the same communication protocol.

If the double-split phase is used for the SI4548-US and SI6048-US devices, the battery manufacturer must be consulted to determine the minimum number of battery modules. The manufacturer must also be asked about UL certification.

### The lithium-ion batteries of the following manufacturers are approved for the Sunny Island 4548-US / 6048-US:

#### Manufacturer Axitec (Always check UL compatibility with manufacturer)

	Battery backup systems				Off-grid systems				
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase	
AXIstorage Li7S As of firmware 2.04	✓	✓	✓	✓	✓	✓	✓	✓	Emergency power generator required
AXIstorage Li8S As of firmware version 3.04	✓	✓	✓	✓	✓	✓	✓	✓	Emergency power generator required
AXIstorage Li9S As of firmware 2.06	✓	✓	✓	✓	✓	✓	✓	✓	Emergency power generator required
AXIstorage Li10S As of firmware 2.06	✓	✓	✓	✓	✓	✓	✓	✓	Emergency power generator required

#### Manufacturer BMZ (Always check UL compatibility with manufacturer)

	Battery backup systems				Off-grid systems				
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase	
BMZ ESS 3.0 As of firmware 2.04	✓	✓	✓	✓	✓	✓	✓	✓	
BMZ ESS 7.0 As of firmware 2.04	✓	✓	✓	✓	✓	✓	✓	✓	Emergency power generator required



	Battery backup systems				Off-grid systems			
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase
BMZ ESS 9.0	✓	✓	✓	✓	✓	✓	✓	✓
As of firmware 2.06	Emergency power generator required							
BMZ ESS X	✓	✓	✓	✓	✓	✓	✓	✓
As of firmware 2.06	Emergency power generator required							
BMZ ESS Z	✓	✓	✓	✓	✓	✓	✓	✓
As of firmware version 3.04	Emergency power generator required							

**Manufacturer BYD**

	Battery backup systems				Off-grid systems			
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase
B-BOX	✓	✓	✓	✓	✓	✓	✓	✓
As of firmware 2.7								
LV Flex	✓	✓	✓	✓	✓	✓	✓	✓
As of firmware BMU: ≥V1.22								
As of firmware BMS: ≥V1.13								
LV Flex Lite	✓	✓	✓	✓	✓	✓	✓	✓
As of firmware BMU: ≥V1.22								
As of firmware BMS: ≥V1.13								

**Manufacturer Leclanché**

	Battery backup systems				Off-grid systems			
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase
Apollion Cube As of firmware 2.06	✓	✓	✓	✓	✓	✓	✓	✓
					Emergency power generator required			

**Manufacturer Pylontech**

	Battery backup systems				Off-grid systems			
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase
US3000 As of firmware 2.9	✓	✓	✓	✓	✓	✓	✓	✓
US3000C As of firmware 2.1	✓	✓	✓	✓	✓	✓	✓	✓
US5000 As of firmware 1.0	✓	✓	✓	✓	✓	✓	✓	✓
Pelio As of firmware 1.0	✓	✓	✓	✓	✓	✓	✓	✓

**Manufacturer Tesvolt**

	Battery backup systems				Off-grid systems			
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase
Tesvolt lithium-ion battery-storage system (Always check UL compatibility with manufacturer) As of firmware 3.17	✓	✓	✓	✓	✓	✓	✓	✓
TS-series As of firmware 1.06	✓	✓	✓	✓	✓	✓	✓	✓

**The hybrid (sodium)-ion batteries of the following manufacturers are approved for the Sunny Island 4548-US / 6048-US:**

**Manufacturer Aquion Energy<sup>7)</sup>**

	Battery backup systems			Off-grid systems				
	1~	Split phase	3~	Double-split phase	1~	Split phase	3~	Double-split phase
Aspen 48S / 48M	✓	✓	✓	✓	✓	✓	✓	✓

<sup>7)</sup> Contact Aquion Energy in the event of servicing.

### 3 Recommended minimum configuration for use in different systems

The following minimum configurations are recommended for the following batteries in order to be able to use the rated power and overload capability of the Sunny Island devices. Deviation from these recommendations is possible, but may result in the system not being able to deliver the power specified in the datasheet of our devices. Especially for battery-backup or off-grid operations where no other AC sources are available, the specified configurations should be considered.

Some electrical loads (e.g., motors) may have high starting currents for a short time. These electrical loads may require a larger design with more battery modules or systems than specified by minimum configuration.

#### Ampace SP-5000L

Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 2
		SI 8.0H	≥ 3
	Three-phase	SI 4.4M	≥ 3
		SI 6.0H	≥ 4
		SI 8.0H	≥ 5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 2
		SI 8.0H	≥ 3
	Three-phase	SI 4.4M	≥ 4
		SI 6.0H	≥ 6
		SI 8.0H	≥ 8

**AXITEC AXIStorage Li 8S**

Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 1
		SI 8.0H	≥ 1
	Three-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 3
		SI 8.0H	≥ 3
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 1
		SI 8.0H	≥ 2
	Three-phase	SI 4.4M	≥ 3
		SI 6.0H	≥ 3
		SI 8.0H	≥ 4

**AXITEC AXIStorage Li 8S with SI 6048US**

Application		Inverter	Systems (towers)
Battery backup / off-grid operation	Single-phase	SI 6048US	≥ 2
	Split phase	SI 6048US	≥ 3
	Three-phase	SI 6048US	≥ 4
	Double-split phase	SI 6048US	≥ 6

**Birubatt BB-48100-1502PRA-G7**

Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 2
		SI 8.0H	≥ 3
	Three-phase	SI 4.4M	≥ 3
		SI 6.0H	≥ 4
		SI 8.0H	≥ 5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 2
		SI 8.0H	≥ 3
	Three-phase	SI 4.4M	≥ 4
		SI 6.0H	≥ 6
		SI 8.0H	≥ 8

**BMZ ESS Z**

Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 1
		SI 8.0H	≥ 1
	Three-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 3
		SI 8.0H	≥ 3
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 1
		SI 8.0H	≥ 2
	Three-phase	SI 4.4M	≥ 3
		SI 6.0H	≥ 3
		SI 8.0H	≥ 4

**BMZ ESS Z**

Application		Inverter	Systems (towers)
Battery backup / off-grid operation	Single-phase	SI 6048US	≥ 2
	Split phase	SI 6048US	≥ 3
	Three-phase	SI 6048US	≥ 4
	Double-split phase	SI 6048US	≥ 6

**BYD Battery-Box Premium LVS**

Application		Inverter	Battery modules	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 2	≥ 1
		SI 8.0H	≥ 3	≥ 1
	Three-phase	SI 4.4M	≥ 4	≥ 1
		SI 6.0H	≥ 6	≥ 1
		SI 8.0H	≥ 8	≥ 2
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	≥ 1
		SI 6.0H	≥ 4	≥ 1
		SI 8.0H	≥ 4	≥ 1
	Three-phase	SI 4.4M	≥ 8	≥ 2
		SI 6.0H	≥ 12	≥ 2
		SI 8.0H	≥ 12	≥ 2

**BYD Battery-Box Premium LVL 15.4**

Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 1
		SI 8.0H	≥ 1
	Three-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 2 LVL 15.4 <sup>8)</sup>
		SI 8.0H	≥ 2 LVL 15.4 <sup>8)</sup>
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 1
		SI 8.0H	≥ 1
	Three-phase	SI 4.4M	≥ 2 LVL 15.4 <sup>8)</sup>
		SI 6.0H	≥ 3 LVL 15.4 <sup>8)</sup>
		SI 8.0H	≥ 3 LVL 15.4 <sup>8)</sup>

**BYD LV Flex & LV Flex Lite**

Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 2
		SI 8.0H	≥ 2
	Three-phase	SI 4.4M	≥ 4
		SI 6.0H	≥ 5
		SI 8.0H	≥ 6
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 3
		SI 8.0H	≥ 4
	Three-phase	SI 4.4M	≥ 6
		SI 6.0H	≥ 9
		SI 8.0H	≥ 12

<sup>8)</sup> During three-phase continuous operation with the nominal power of the inverter, derating of the battery may occur depending on the temperature and state of charge of the battery. Derating the battery temporarily reduces the power of the entire system.

**BYD LV Flex**

Application		Inverter	Systems (towers)
Battery backup / off-grid operation	Single-phase	SI 6048US	≥ 3
	Split phase	SI 6048US	≥ 5
	Three-phase	SI 6048US	≥ 7
	Double-split phase	SI 6048US	≥ 10

**Cegasa eBick PRO 280**

Application		Inverter	Battery modules	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 1	≥ 1
		SI 8.0H	≥ 1	≥ 1
	Three-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 2	≥ 1
		SI 8.0H	≥ 2	≥ 1
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 1	≥ 1
		SI 8.0H	≥ 1	≥ 1
	Three-phase	SI 4.4M	≥ 2	≥ 1
		SI 6.0H	≥ 2	≥ 1
		SI 8.0H	≥ 3	≥ 1



**Cegasa eBick 175 Ultra**

Application		Inverter	Battery modules	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 1	≥ 1
		SI 8.0H	≥ 1	≥ 1
	Three-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 2	≥ 1
		SI 8.0H	≥ 3	≥ 1
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 1	≥ 1
		SI 8.0H	≥ 1	≥ 1
	Three-phase	SI 4.4M	≥ 2	≥ 1
		SI 6.0H	≥ 3	≥ 1
		SI 8.0H	≥ 4	≥ 1

**Cegasa E/Bick LV**

Application		Inverter	Battery modules	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 1	≥ 1
		SI 8.0H	≥ 1	≥ 1
	Three-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 2	≥ 1
		SI 8.0H	≥ 2	≥ 1
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 1	≥ 1
		SI 6.0H	≥ 1	≥ 1
		SI 8.0H	≥ 1	≥ 1
	Three-phase	SI 4.4M	≥ 2	≥ 1
		SI 6.0H	≥ 2	≥ 1
		SI 8.0H	≥ 3	≥ 1

**Dyness B4850**

Application		Inverter	Systems (towers)	Comments
Self-consumption	Single-phase	SI 4.4M	≥ 3	The recommended charging current for every module is 25A
		SI 6.0H	≥ 5	
		SI 8.0H	≥ 6	
	Three-phase	SI 4.4M	≥ 9	
		SI 6.0H	≥ 14	
		SI 8.0H	≥ 17	
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 5	The recommended charging current for every module is 25A
		SI 6.0H	≥ 7	
		SI 8.0H	≥ 10	
	Three-phase	SI 4.4M	≥ 15	
		SI 6.0H	≥ 21	
		SI 8.0H	≥ 28	

**Dyness B3**

Application		Inverter	Systems (towers)	Comments
Self-consumption	Single-phase	SI 4.4M	≥ 2	The recommended discharging current for every module is 50A. The maximum discharge current for a battery module is 100 A.
		SI 6.0H	≥ 3	
		SI 8.0H	≥ 3	
	Three-phase	SI 4.4M	≥ 5	
		SI 6.0H	≥ 7	
		SI 8.0H	≥ 9	
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	The recommended discharging current for every module is 50A. The maximum discharge current for a battery module is 100 A.
		SI 6.0H	≥ 4	
		SI 8.0H	≥ 4	
	Three-phase	SI 4.4M	≥ 5	
		SI 6.0H	≥ 10	
		SI 8.0H	≥ 10	

**Exide Sonnenschein Lithium Module Pro**

Application		Inverter	Battery modules	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 3	≥ 1
		SI 6.0H	≥ 4	≥ 1
		SI 8.0H	≥ 5	≥ 2 <sup>9)</sup>
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 4	≥ 1
		SI 6.0H	≥ 6	≥ 2 <sup>9)</sup>
		SI 8.0H	≥ 7	≥ 2 <sup>9)</sup>

**GS HUB HomeHub**

Application		Inverter	Battery modules	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 2	≥ 1
		SI 6.0H	≥ 3	≥ 1
		SI 8.0H	≥ 3	≥ 1
	Three-phase	SI 4.4M	≥ 4 <sup>8)</sup>	≥ 1
		SI 6.0H	-	-
		SI 8.0H	-	-
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 3	≥ 1
		SI 6.0H	≥ 4	≥ 1
		SI 8.0H	≥ 4	≥ 1
	Three-phase	SI 4.4M	-	-
		SI 6.0H	-	-
		SI 8.0H	-	-

**Polarium SLB48-050-124-1**

Application		Inverter	Battery modules
Self-consumption	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 3
		SI 8.0H	≥ 4
	Three-phase	SI 4.4M	≥ 5
		SI 6.0H	≥ 8
		SI 8.0H	≥ 10

<sup>9)</sup> Towers can be partially filled.

Application		Inverter	Battery modules
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 4
		SI 8.0H	≥ 4
	Three-phase	SI 4.4M	≥ 5
		SI 6.0H	≥ 9
		SI 8.0H	≥ 10

### Pylontech Pelio

Application		Inverter	Battery modules	Battery-cable sets
Self-consumption	Single-phase	SI 4.4M	≥ 1	1
		SI 6.0H	≥ 2	2
		SI 8.0H	≥ 2	2
	Three-phase	SI 4.4M	≥ 3	3
		SI 6.0H	≥ 5	4
		SI 8.0H	≥ 6	5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	2
		SI 6.0H	≥ 2	3
		SI 8.0H	≥ 3	3
	Three-phase	SI 4.4M	≥ 4	4
		SI 6.0H	≥ 6	6
		SI 8.0H	≥ 8	8

### Pylontech Pelio / US5000

Application		Inverter	Systems (towers)	Battery-cable sets
Battery backup / off-grid operation	Single-phase	SI 6048US	≥ 2	2
	Split phase	SI 6048US	≥ 4	4
	Three-phase	SI 6048US	≥ 6	6
	Double-split phase	SI 6048US	≥ 8	8

**Pylontech US2000 / 2000C**

Application	Inverter	Battery modules	Battery-cable sets <sup>10)</sup>	
Self-consumption	Single-phase	SI 4.4M	≥ 3	1
		SI 6.0H	≥ 4	2
		SI 8.0H	≥ 5	2
	Three-phase	SI 4.4M	≥ 9	3
		SI 6.0H	≥ 12	4
		SI 8.0H	≥ 15	5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 3	2
		SI 6.0H	≥ 4	3
		SI 8.0H	≥ 5	3
	Three-phase	SI 4.4M	≥ 9	4
		SI 6.0H	≥ 12	6
		SI 8.0H	≥ 15	8

**Pylontech US3000 / US3000C**

Application	Inverter	Battery modules	Battery-cable sets <sup>10)</sup>	
Self-consumption	Single-phase	SI 4.4M	≥ 2	1
		SI 6.0H	≥ 3	2
		SI 8.0H	≥ 4	2
	Three-phase	SI 4.4M	≥ 6	3
		SI 6.0H	≥ 9	4
		SI 8.0H	≥ 11	5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	2
		SI 6.0H	≥ 3	3
		SI 8.0H	≥ 4	3
	Three-phase	SI 4.4M	≥ 6	4
		SI 6.0H	≥ 9	6
		SI 8.0H	≥ 11	8

<sup>10)</sup> The battery cable sets are needed for the connection to an inverter, a DC busbar or DC Combiner.

**Pylontech UP5000**

Application	Inverter	Battery modules	Battery-cable sets <sup>10)</sup>	
Self-consumption	Single-phase	SI 4.4M	≥ 2	1
		SI 6.0H	≥ 3	2
		SI 8.0H	≥ 3	2
	Three-phase	SI 4.4M	≥ 5	3
		SI 6.0H	≥ 7	4
		SI 8.0H	≥ 9	5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	2
		SI 6.0H	≥ 3	3
		SI 8.0H	≥ 4	3
	Three-phase	SI 4.4M	≥ 5	4
		SI 6.0H	≥ 8	6
		SI 8.0H	≥ 10	8

**Pylontech US5000 / US5000B**

Application	Inverter	Battery modules	Battery-cable sets <sup>10)</sup>	
Self-consumption	Single-phase	SI 4.4M	≥ 1	1
		SI 6.0H	≥ 2	2
		SI 8.0H	≥ 2	2
	Three-phase	SI 4.4M	≥ 3	3
		SI 6.0H	≥ 5	4
		SI 8.0H	≥ 6	5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	2
		SI 6.0H	≥ 2	3
		SI 8.0H	≥ 3	3
	Three-phase	SI 4.4M	≥ 4	4
		SI 6.0H	≥ 6	6
		SI 8.0H	≥ 8	8

**Pylontech US3000 / US3000C**

Application		Inverter	Systems (towers)	Battery-cable sets
Battery backup / off-grid operation	Single-phase	SI 6048US	≥ 4	2
	Split phase	SI 6048US	≥ 7	4
	Three-phase	SI 6048US	≥ 11	6
	Double-split phase	SI 6048US	≥ 14	8

**Sunwoda Atrix series**

Application		Inverter	Battery modules	Systems (towers)	Comments
Self-consumption	Single-phase	SI 4.4M	≥ 2	≥ 1	
		SI 6.0H	≥ 3	≥ 1	
		SI 8.0H	≥ 3	≥ 1	
	Three-phase	SI 4.4M	≥ 4	≥ 2	Every system (tower) is equipped with 2 battery modules. A connection box is necessary.
		SI 6.0H	≥ 4	≥ 2	
		SI 8.0H	≥ 6	≥ 3	

Application		Inverter	Battery modules	Systems (towers)	Comments
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	≥ 1	Every system (tower) is equipped with 2 battery modules. A connection box is necessary.
		SI 6.0H	≥ 3	≥ 1	
		SI 8.0H	≥ 4	≥ 2	
	Three-phase	SI 4.4M	≥ 6	≥ 3	
		SI 6.0H	≥ 9	≥ 3	
		SI 8.0H	≥ 12	≥ 4	

### Sunwoda SunESS series

Application		Inverter	Battery modules	Systems (towers)	Comments
Self-consumption	Single-phase	SI 4.4M	≥ 2	≥ 1	Every system (tower) is equipped with 2 battery modules. A connection box is necessary.
		SI 6.0H	≥ 3	≥ 1	
		SI 8.0H	≥ 3	≥ 1	
	Three-phase	SI 4.4M	≥ 4	≥ 2	
		SI 6.0H	≥ 4	≥ 2	
		SI 8.0H	≥ 6	≥ 3	



Application		Inverter	Battery modules	Systems (towers)	Comments
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2	≥ 1	
		SI 6.0H	≥ 3	≥ 1	
		SI 8.0H	≥ 4	≥ 2	Every system (tower) is equipped with 2 battery modules. A connection box is necessary.
	Three-phase	SI 4.4M	≥ 6	≥ 3	Every system (tower) is equipped with 2 battery modules. A connection box is necessary.
		SI 6.0H	≥ 9	≥ 3	Every system (tower) is equipped with 3 battery modules. A connection box is necessary.
		SI 8.0H	Not supported	Not supported	SunESS is not supported

**UZ Energy Power Lite L051100-A1/B/D**

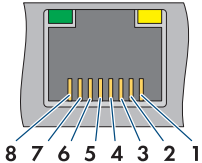
Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 3
		SI 8.0H	≥ 3
	Three-phase	SI 4.4M	≥ 5
		SI 6.0H	≥ 7
		SI 8.0H	≥ 9
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 3
		SI 8.0H	≥ 4
	Three-phase	SI 4.4M	≥ 6
		SI 6.0H	≥ 9
		SI 8.0H	≥ 12

**ZYC Simpo 5000**

Application		Inverter	Systems (towers)
Self-consumption	Single-phase	SI 4.4M	≥ 1
		SI 6.0H	≥ 2
		SI 8.0H	≥ 2
	Three-phase	SI 4.4M	≥ 3
		SI 6.0H	≥ 4
		SI 8.0H	≥ 5
Battery backup / off-grid operation	Single-phase	SI 4.4M	≥ 2
		SI 6.0H	≥ 2
		SI 8.0H	≥ 3
	Three-phase	SI 4.4M	≥ 4
		SI 6.0H	≥ 6
		SI 8.0H	≥ 8

## 4 CAN bus assignment

The Sunny Island product family (SI3.0M, SI4.4.M, SI6.0H and SI8.0H) can exchange information with batteries or Battery Management System (BMS) via the CAN bus system. For this, the following configurations must be made.

RJ45 plug	Pin	Signal	Comments
	1	Sync1 - reserved	not assigned
	2	GROUND	for battery and cluster communication
	3	SYNC_H	for cluster communication
	4	CAN_H	for battery communication
	5	CAN_L	for battery communication
	6	SYNC_L	for cluster communication
	7	Sync7 - reserved	not assigned
	8	Sync8 - reserved	not assigned

### Procedure:

1. Do not assign pins Sync1, Sync7 and Sync8. Communication errors between Sunny Island devices and the Battery Management System can occur.
2. CAN Bus and SYNC bus must be terminated. To do this, use a RJ45 connector for both cable ends (ComSyncIn/ComSyncOut).
3. By default, the Sunny Island has a RJ45 connector in the ComSyncOut socket. This RJ45 connector has an integrated 100 Ohm terminator between CAN-H and Can-L as well as between Sync-H and Sync-L. RJ45 connectors with a 120 Ohm resistor can be used for both bus systems (CAN and SYNC) in accordance with the CAN specifications.



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