



SUNNY TRIPOWER SMART ENERGY

Approved Batteries and Information on Battery Communication Connection

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1 Approved Batteries

In the tables, you will find the batteries which are approved for operation with the following hybrid inverters of SMA Solar Technology AG (status: 2023/05):

- STP5.0-3SE-40
- STP6.0-3SE-40
- STP8.0-3SE-40
- STP10.0-3SE-40

i Firmware version of the battery

The firmware version of the BYD batteries can be accessed via the user interface of the battery (see manufacturer's manual). When using batteries from BMZ, IBC and AXITEC, the firmware version can be determined via the user interface of the inverter after successful commissioning.

i Inverter firmware version

The firmware version of the inverter can be accessed via the user interface of the inverter.

Type (Manufacturer)	Firmware version of battery:	Firmware version of inverter:
Battery-Box Premium HVM (11.0-22.1) (BYD Company Limited)	BMU ≥ 3.16 BMS ≥ 3.24	≥ 1.00.00.R
Battery-Box Premium HVS (5.1-12.8) (BYD Company Limited)	BMU ≥ 3.16 BMS ≥ 3.24	≥ 1.00.00.R
Hyperion 10.0, 12.5 and 15.0 (Art. no.: 616038) with Helios VE module (Art. no.: 612033) (BMZ GmbH)	≥ 4.17.R	≥ 3.02.20.R
era:powerbase 10.0, 12.5 and 15.0 (Art. no.: 609811) with Helios VE module (Art. no.: 612033) (IBC SOLAR AG)		
AXIstorage Li SH 10.0, 12.5 and 15.0 (Art. no.: 616039) with Helios VE module (Art. no.: 612033) (AXITEC)		

2 Usable power

2.1 General information on usable power

Synchronizing the battery and hybrid inverter

All batteries mentioned supply a defined nominal current. Please pay attention to the battery manufacturer's recommendation regarding the suitable dimensioning of the battery in order to achieve the nominal and overload currents of the systems stated in the datasheet with a Sunny Tripower Smart Energy. Only if the dimensioning of the battery size is synchronized (battery capacity, battery currents, number of battery modules if necessary), the full functionality and power incl. overload can be guaranteed for the PV storage system with the respective hybrid inverter in use.

2.2 Usable power when using the STP10.0-3SE-40 together with Battery-Box Premium HVS

	HVS 5.1	HVS 7.7	HVS 10.2	HVS 12.8
Voltage range of battery	160 V to 230 V	240 V to 345 V	320 V to 460 V	400 V to 576 V
Maximum current	12 A to 25 A	25 A	25 A	25 A
Maximum power	2.4 kW to 5.75 kW	6 kW to 8.6 kW	8 kW to 10.6 kW	10 kW to 10.6 kW

2.3 Usable power when using the STP10.0-3SE-40 together with Battery-Box Premium HVM

	HVM 8.3	HVM 11.0	HVM 13.8	HVM 16.6	HVM 19.3	HVM 22.1
Voltage range of battery	Not compatible	160 V to 240 V	200 V to 300 V	240 V to 360 V	280 V to 420 V	320 V to 480 V
Maximum current	Not compatible	12 A to 30 A	25 A to 30 A	30 A	30 A	30 A
Maximum power	Not compatible	2.4 kW to 7.2 kW	6 kW to 9 kW	7.2 kW to 10 kW	8.4 kW to 10 kW	9.6 kW to 10.6 kW

2.4 Usable power when using the STP10.0-3SE-40 together with BMZ Hyperion / IBC era:powerbase / AXITEC AXIstorage LI SH with Helios VE modules

	3 modules	4 modules	5 modules	6 modules
	7.5 kWh	10.0 kWh	12.5 kWh	15.0 kWh
Voltage range of battery	Not compatible	179 V to 227 V	224 V to 284 V	268 V to 340 V
Maximum current	Not compatible	17 A to 29 A	29 A	29 A
Maximum power	Not compatible	3.0 kW to 6.6 kW	6.5 kW to 8.2 kW	7.8 kW to 9.9 kW

3 Battery Communication Connection

3.1 Cable Requirements

- Twisted pair conductors
- Cable category: minimum CAT5e
- Cable with shielding: Yes
- Conductor cross-section: 0.2 mm² to 1.5 mm²
- External diameter: 5.3 mm to 7 mm
- Maximum cable length: 10 m
- UV-resistant for outdoor use.
- Recommendation: Use a network installation cable with 1-core rigid wire
- Comply with the requirements of the battery manufacturer.

3.2 Cabling plans with BYD Battery-Box Premium HVM/HVS

The CAN communication cable can be connected either to the RJ45 socket for CAN communication or to the terminal block of the battery.

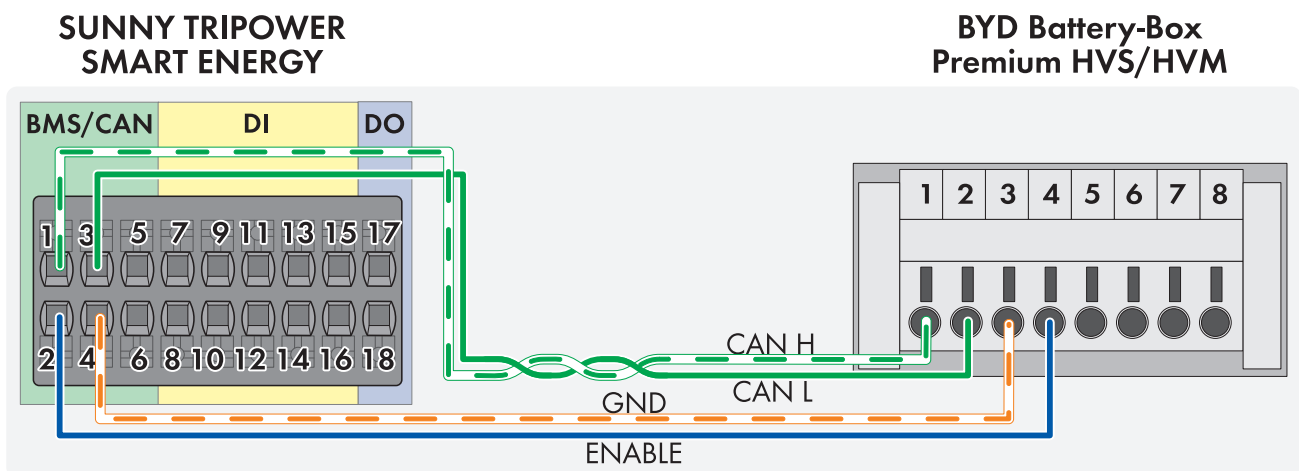


Figure 1: Sunny Tripower Smart Energy with BYD Battery-Box Premium HVM/HVS when using an installation cable.

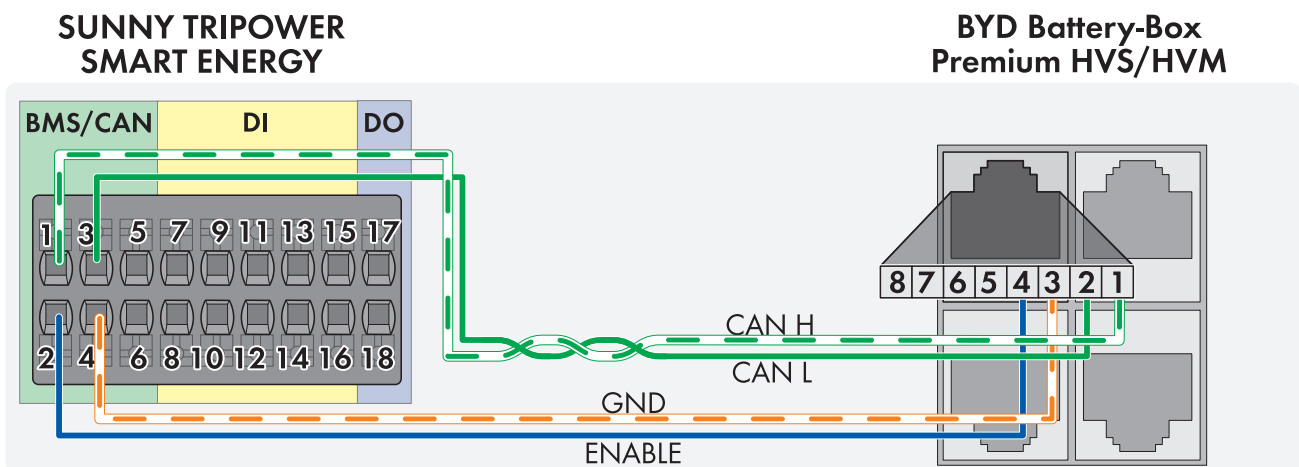


Figure 2: Cabling plan according to the TIA-568A standard: Sunny Tripower Smart Energy with BYD Battery-Box Premium HVM/HVS. The individual cable ends must be provided with a 12 mm long wire end sleeve.

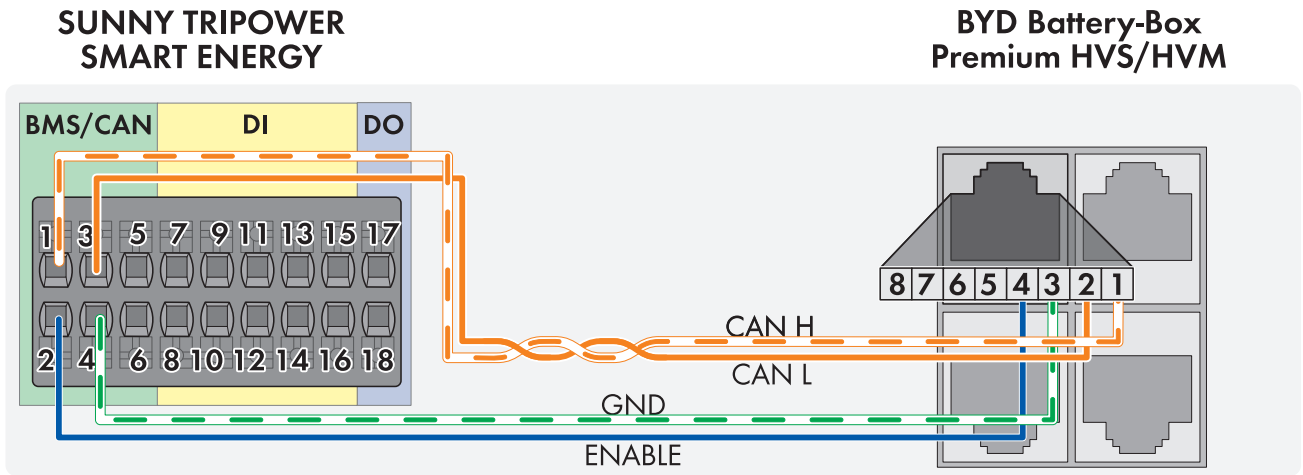


Figure 3: Cabling plan according to the TIA-568B standard (a standard Ethernet cable with one open end): Sunny Tripower Smart Energy with BYD Battery-Box Premium HVM/HVS. The individual cable ends must be provided with a 12 mm long wire end sleeve.

Terminal point at inverter	Function	Terminal point at battery
1	CAN H (twisted pair conductors, at least CAT5e)	1
2	Enable	4
3	CAN L (twisted pair conductors, at least CAT5e)	2
4	GND	3
5	Not used	-
6	Shielding	-

3.3 Cabling plan with BMZ Hyperion, IBC era:powerbase or Axitec AXIstorage LI SH

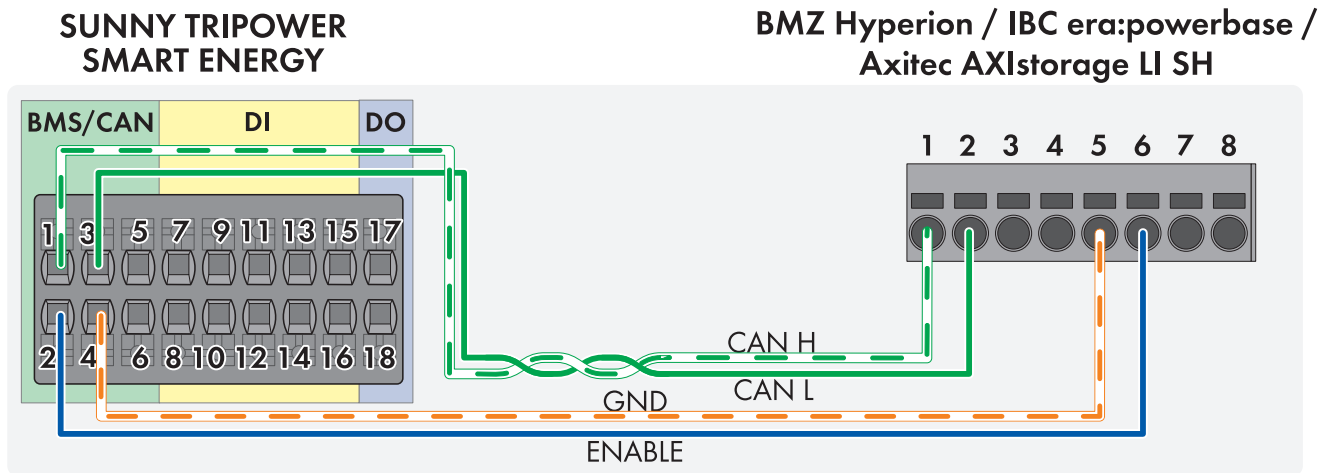


Figure 4: Sunny Tripower Smart Energy with BMZ Hyperion, AXITEC AXIstorage, IBC era:powerbase when using an installation cable.

Terminal point at inverter	Function	Terminal point at battery
1	CAN H (twisted pair conductors, at least CAT5e)	1
2	Enable	6
3	CAN L (twisted pair conductors, at least CAT5e)	2
4	GND	5
5	Not used	-
6	Shielding	-

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