LiFePO4 Battery Important information & Axpert Inverter Settings

- The Sun Pays LiFePO4 battery (rack mount and wall mount models) and the Deichmann LiFePO4 battery have a built-in battery management system (BMS) which monitors and protects the battery during use. It is important to note that the BMS is set to switch off the battery if the voltage drops below 41 V. Please arrange with the technicians at The Sun Pays if the battery have switched off due to low voltage protection.
- The charging current is limited by the BMS between 20 A to 40A to ensure optimal battery life.
- The battery life expectancy is strongly dependant on the depth of discharge (DoD) of the battery. A DoD of 80% is recommended for the battery to obtain at least 3500 Cylcles. The 80% DoD voltage is as follows:
  - o Battery Discharge rate 100 A [~ 4.8 kW Load] : 47.4 V
  - o Battery Discharge rate 50 A   [~ 2.4 kW Load]   : 47.9 V
  - o Battery Discharge rate 20 A   [~ 0.96 kW Load] : 48.1 V
- Batteries should be connected in parallel if more than one LiFePO4 battery is to be used. Care should be given for cable sizes and copper busbars should be used if large currents is drawn.

The following settings can be used on the Axpert inverters for TSP and Deichmann LiFePO4 batteries:

Setting Description	Value	TSP 4kW /5kW – Menu Item No.	Sacolar / Growatt– Menu Item No.
Discharge Priority	SBU	01	01
Total Charge Current	20A per battery	02	02
Battery Type	USE	05	05
Utility Charge Current	20A per battery	11	11
Back to Utility	**47.7 V** (if generator is used, set to 51V)	12	12
Back to Battery	**51.0 V** (if generator is used, set to 52V)	13	13
Charge Priority	SnU	16	14
Charge Voltage	**51.6 V**	26	19
Floating Voltage	**51.5 V**	27	20
Battery Cut-off	**46.4 V** (Alarm will sound from 47.4 V)	29	21

The following settings can be used on the TSP 5.5 kVa / 5.5 kW high voltage inverter.

Setting Description	Value	TSP 5.5 kVa / 5.5 kW – Menu Item No.
Discharge and Charge priority	PUL or PAL	01
Battery Type	USE	04
Bulk Charge Voltage	51.6 V	05
Floating Charge Voltage	51.5 V	06
Low Voltage Alarm	47.7 V (33% SoC)	07
Low Voltage Cut-off	46.4 V	08
AC Charge Current	20A per battery	10
Total Charge Current	20A per battery	13
Battery Full Voltage	51.0 V	14
Custom battery cable from battery RS485 to inverter RS485 with the above settings		

LiFePO4 Battery communication setup with Sacolar inverters

The following is for direct inverter battery communication.

- Set the ADS/Dip switches according to the battery manual.
- Only on the Touch Screen TSP Lithium battery set the inverter type as Sacolar/Growatt (not applicable to Deichmann batteries)
- Use a standard 8 pin to 8 pin LAN cable between the RS485 on the battery (Left of the CAN port) and the BMS port on the inverter.
- Set the battery type on the inverter to "Li" on setting number 5.
- Set the protocol to "L01" on setting number 36. Once setting 5 is set setting number 36 will show automatically.
- Press ESC on the inverter and confirm that the system is communicating. The inverter will show "Li" on the right hand side of the battery icon on the inverter screen. Inverter will show warning code 04 and 20 intermittently if communication was not established.

The following is for Lithium battery user defined (voltage based) settings.

Setting Description	Value	Sacolar / Growatt– Menu Item No.
Total Charge Current	20A per battery	02
Battery Type	US2	05
Utility Charge Current	20A per battery	11
Bulk Charge Voltage	52V	19
Floating Charge Voltage	52V	20
Low Voltage Cut-off	46V	21

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