

LiFe and Eco Series Battery Settings for Selectronic SP PRO

Settings listed are only applicable to battery charge and discharge. All other settings are the responsibility of the integrator. It is the responsibility of the integrator to have a full understanding of the Selectronic product prior to programming, and it is preferred that they have attended the manufacturers training or integration course should they be available.

If using the drop down wizard in SP Link to load default battery settings, be advised that this does not negate the need to make or review other possible settings that effect to the operation system.

DC Coupling:

If a DC Solar Charge Controller is used with a SP PRO, there can be some conflicting of charging due to cable impedances and in some instances the displayed SoC on the SP PRO may not reach 100%.

If the DC Solar Charge Controller is the main charging source, then you may need to set the DC Solar Charge Controller 0.3V higher than the SP PRO or wire a Float input signal from the charge controller into the SP PRO.

Example:

SP PRO = 57.3V

DC Solar Charge controller = 57.6V

Lose of DC supply to SP PRO

If the SP PRO loses DC supply (DC isolator cycled or battery BMS low voltage protection), the SP PRO when turned back on will forget its SoC and default back to 85%. It is important that either the SoC is reset via the Service setting to the actual SoC or the system is allowed to charge to Float prior to discharging the batteries.

DC Shutdown Voltage

When Selecting the DC Shut Down 0% load Voltage you need to consider what your Generator Start SoC is set to. These settings should not be the same and should be at least 5% SoC apart.

Example:

DC Shutdown 0% Load = 50.2V (20% SoC)

SoC Start = 30% SoC

Battery Sense (Pre-charge)

The SP PRO has the ability to monitor the battery voltage at the battery terminal and also performs a controlled startup of the SP PRO by current limiting the inverters inrush current during initial turn on.

Pre-Charge (Battery Sense) should be used be installed for accurate charging and reduced inrush.

SoC Drift

State of Charge drift happens when the product that is calculating SoC builds up an accumulative error. This error is generally due to tolerance of components that measure voltage & current and algorithms used to calculate the SoC. Most products will reset its accumulative error when the system gets to 100% SoC or Float.

It is important that a well designed battery storage system reaches Float stage as regularly as possible, preferably every 2 to 3 days to rest SoC drift, however can be extended if required.

SoC drift can be addressed in many ways.

Examples:

1. Sufficient solar sized to charge batteries to float on the winter equinox
2. Backup source installed (grid or generator) to allow charging of batteries during extended bad weather or high load events.
3. Programmed hybrid priority (on grid applications) programmed to charge batteries from grid off peak to 100% weekly.
4. Generator only (diesel recharge system) or systems of low solar input can utilise the "For 100% SoC" function (AC Source>Generator Auto Start>For100% Stop SoC) to recharge the battery to 100% periodically. This should be "Enabled" and set for minimum every 7 days (more frequently if possible).

How many batteries do I need

The table below outlines required quantity of batteries to achieve the full performance of the SP PRO and is a minimum to reduce possible battery trips due to over current.

Always consult and read the manufactures documentation before designing, installing and programming their devices.

Recommended Minimum Battery Modules for Full Performance of the SP PRO

	LiFe2433P	LiFe2433PS	LiFe4833P	LiFe4833PS	Eco4840P	Eco4840PS	LiFe12033P	LiFe12033PS
SPMC240	5							
SPMC241	7							
SPMC480			3		3			
SPMC481			4		4			
SPMC482			6		6			
SPMC1201							6	
SPLC1200							10	
SPLC1202							12	

Note:

Installers should ensure an adequate system design is carried out at all times. PPE accepts no responsibility for underperforming system designs.

Selectronic SP PRO Settings for SP Link

	TAB	LiFe2433P	LiFe2433PS	LiFe4833P	LiFe4833PS	Eco4840P	Eco4840PS	LiFe12033P	LiFe12033PS
Battery Type	Quick Start	Lithium LiFePO4							
Battery Capacity	Quick Start	Total Ah capacity of PPE battery bank installed							
Voltage DC Shut Down 0% Load	Inverter	24V 0% SoC 24.75V 10% SoC 25.10 20% SoC	24V 0% SoC 24.75V 10% SoC 25.10 20% SoC	48V 0% SoC 48.50V 10% SoC 50.20V 20% SoC	48V 0% SoC 48.50V 10% SoC 50.20V 20% SoC	48V 0% SoC 48.50V 10% SoC 50.20V 20% SoC	48V 0% SoC 48.50V 10% SoC 50.20V 20% SoC	120V 0% SoC 123.75 10% SoC 125.50 20% SoC	120V 0% SoC 123.75 10% SoC 125.50 20% SoC
Voltage DC Shut Down 100% Load	Inverter	23V	23V	46V	46V	46V	46V	115V	115V
Recovery Voltage	Inverter	26V	26V	52V	52V	52V	52V	130V	130V
Shut Down SoC % (when manual or no generator installed off grid) (Recommended)	Inverter	Recommended only - 20%							
Shut Down SoC % (when Automatic Start Generator installed) (Recommended)	Inverter	Recommended only 15%							
Shut Down SoC % (when grid connected and Daily Stop SoC set to 20%) (Recommended)	Inverter	Recommended only 15%							
Max Charge Voltage	Battery	28.9V	28.9V	57.8V	57.8V	57.8V	57.8V	142.5V	142.5V
High Battery Alert Voltage	Battery	30V	30V	60V	60V	60V	60V	150V	150V
High Battery Alert Clear Voltage	Battery.	29V	29V	58V	58V	58V	58V	144.2V	144.2V
Periodic Equalise	Battery	N/A Disabled							
Periodic Recharge	Battery	7 to 14 days							
Peukert's Exponent	Battery	1.02							
Limit Charge Above °C	Battery	N/A							
Limit Rate %	Battery	N/A							
Max Charge Current % or Amps	Charger	50% or C2 of Total Battery Capacity							
Initial Return Voltage	Charger	26.5V	26.5V	52.9V	52.9V	52.9V	52.9V	132.2V	132.2V
Initial Return SoC	Charger	Leave as Default							
Initial Stage Voltage	Charger	28.8V	28.4V	57.6V	56.8V	57.6V	56.8V	142V	142V

	TAB	LiFe2433P	LiFe2433PS	LiFe4833P	LiFe4833PS	Eco4840P	Eco4840PS	LiFe12033P	LiFe12033PS
Initial Stage Current	Charger	100%							
Initial Stage Time	Charger	1 min							
Bulk Stage Voltage	Charger	28.8V	28.4V	57.6V	56.8V	57.6V	56.8V	142V	142V
Bulk Stage Current	Charger	100%							
Bulk Stage Time	Charger	1 min							
Absorb Stage Voltage	Charger	28.8V	28.4V	57.6V	56.8V	57.6V	56.8V	142	142V
Absorb Stage Current	Charger	100%							
Absorb - Float Transition Net Charge	Charger	1%							
Absorb - Float Transition Change Time	Charger	90 min							
Float Stage Current	Charger	Leave as Default							
Absorb - Float Max Time	Charger	180 min							
Float Stage Voltage	Charger	28.8V	28.3V	57.6V	56.6V	57.6V	56.6V	142V	142V
Long Term Float Voltage	Charger	27.2V to 28V	27.2V to 28V	54.4V to 56V	54.4V to 56V	54.4V to 56V	54.4V to 56V	140V	140V
Equalise Stage Voltage	Charger	28.8V	28.4V	57.6V	56.8V	57.6V	56.8V	142	142V
Min Temp Compensation °C	Charger	N/A							
Max Temp Compensation °C	Charger	N/A							
Ref A Temp Compensation mV/cell/°C	Charger	N/A							
Ref B Temp Compensation mV/cell/°C	Charger	N/A							

As part of our continued improvement process, settings are subject to change without notice and are correct at time of publishing.