

## SP PRO CHARGE & DISCHARGE SETTINGS

The SP Pro inverter charger can be used with MPS batteries

Care should be taken to adjust settings accordingly when having multiple charging sources.

It is recommended to attach the Selectronic SP Pro battery temperature sensor to the case of the battery that will be the hottest. The use of the temperature sensor will increase the life expectancy of the battery.


The SP Pro pre charge circuit must be used to avoid damage to the batteries.

These settings are correct at the time of creation and are subject to change.

DC coupled charging may be used and is recommended by MPS. Adding DC coupled charging can help in black start situations and can smooth out charging at the end of the charge cycle. When using DC coupled charging, it is recommended to set the voltage of the DC coupled device at the below voltages then lower the SP pro voltages by 1 volt. This allows the SP pro to do the bulk charging then allow the DC coupled to finish off the charge cycle. Failure to do this will make the charge sources fight each other.

Model number	SPMC1201	SPLC1200	SPLC1202
Maximum AC Load Power from batteries: 30 secs	18kW	33kW	38kW
1 minute	13.0kW	26.0kW	35.0kW
30 minutes	11.25kW	23.0kW	30.0kW
60 minutes	8.0kW	18.0kW	24.0kW
Continuous 24/7	7.5kW	15kW	20kW
Minimum number of MPS-120-6.4 batteries	6	10	12

- Select “Custom Battery Configuration”
- Select “Lithium LiFePO4”
- Set the “Battery Capacity” to the battery bank capacity (qty x 100ah)
- Set the “Max Charge Current” to 33.3% or less
- Set “State Of Charge” set points as desired.

 Easy Start Guide

## Site Configuration Wizard

### Select Battery Configuration

Battery Configuration

☐ **Standard Battery Configurations and myGrid kits**

Model No

☒ **Custom Battery Configuration**

Is the battery a sealed or flooded type? If unsure, select Sealed.

☐ Sealed Lead Acid

☐ Flooded Lead Acid

☒ **Lithium LiFePO4**

☐ With Midpoint Monitoring  
(All three precharge / battery sense wires must be installed)

Battery Capacity:  Ah

Max Charge Current:  %

### State Of Charge

SoC Support Limit (Generator Start SoC for Off Grid)

%  Support Battery Capacity

Inverter Shutdown SoC

%  Extra Backup Battery Capacity

## Inverter Tab

- DC Shutdown
  - Battery 0% Load – 120.0 volts
  - Battery 100% Load – 115.0 volts
  - Recovery Voltage – 125.0 volts
- SoC Shutdown
  - Enabled
  - 10%

Inverter*	Battery*	Charger*	AC Source*	Solar Hybrid Control*	System*	Inputs / Outputs*	Shunts	Expansion Card Wiring Diagram
<div> <div> <b>Econo Power Save Mode</b>  <b>Econo Mode</b>            Disabled         </div> <div> <b>Econo Transition Level</b>            [5 - 50 W]            10         </div> <div> <b>Econo Pulse Period</b>            [0.2 - 1 s]            0.5         </div> </div> <div> <b>Inverter Output</b>  <b>Nominal AC Voltage*</b>            [210 - 240 V]            240         </div> <div> <b>Nominal AC Frequency</b>            50 Hz         </div>								

**DC Shutdown**  

**Battery 0% Load\***  
 [99.0 - 132.0 V]  
 120.0

**Battery 100% Load\***  
 [99.0 - 132.0 V]  
 115.0

**Recovery Voltage\***  
 [114.0 - 138.0 V]  
 125.0

**SoC Shutdown\***  
 Enabled
 
**Shutdown SoC\***  
 [0 - 100 %]  
 10

## Battery Tab

- Limits
  - Max Charge Voltage – 144.5.0 volts
  - Hi Battery Alert – 145 volts
  - Hi Battery Alert Clear – 144 volts
- AC Coupled Trip
  - AC Coupled Trip – 145 volts
  - Over Target Charge Voltage Trip – 0.5%
  - Over Target Charge Current Trip – 2.0%
  - Trip Delay – 0.5 second
- Battery
  - Periodic Equalise – Disabled
  - Periodic Recharge – Disabled
- SoC Setting
  - Peukert's Exponent – 1.02
- Over Temp. Protection
  - Limit Charge above – 40 degrees Celsius
  - Limit rate 10%

Inverter*	Battery*	Charger*	AC Source*	Solar Hybrid Control*	System*	Inputs / Outputs*	Shunts	Expansion Card	Wiring Diagram
Limits									
<b>Max Charge Voltage*</b> [120.0 - 171.0 V] <input type="text" value="144.5"/>									
<b>Hi Battery Alert*</b> [135.0 - 171.0 V] <input type="text" value="145.0"/>									
<b>Hi Battery Alert Clear*</b> [135.0 - 171.0 V] <input type="text" value="144.0"/>									
AC Coupled Trip			BMS Charger Adjustment			Battery			
<b>AC Coupled Trip*</b> [120.0 - 180.0 V] <input type="text" value="145.0"/>			<b>Float Voltage Adjust*</b> [-20.0 - 0.0 %] <input type="text" value="0.0"/>			<b>Periodic Equalise*</b> Disabled			
<b>Over Target Charge Voltage Trip*</b> [0.0 - 25.0 %] <input type="text" value="0.5"/>			<b>Current Target Scale*</b> [90.0 - 100.0 %] <input type="text" value="100.0"/>			<b>Equalise Period*</b> [2 - 100 d] <input type="text" value="28"/>			
<b>Over Target Charge Current Trip*</b> [0.0 - 25.0 %] <input type="text" value="2.0"/>						<b>Periodic Recharge*</b> Disabled			
<b>Trip Delay*</b> [0.2 - 20.0 s] <input type="text" value="0.5"/>						<b>Recharge Period*</b> [2 - 100 d] <input type="text" value="28"/>			
						Soft Battery Disabled			
						Mid Point Monitoring*			
						Disabled			
						<b>Mid Point Range*</b> [2 - 10 %] <input type="text" value="5"/>			
						<b>Equalise Request*</b> Disabled			
						SoC Setting			
						<b>Peukert's Exponent*</b> [1.00 - 1.50] <input type="text" value="1.02"/>			
						Over Temp. Protection			
						<b>Limit Charge above*</b> [35 - 70 °C] <input type="text" value="40"/>			
						<b>Limit Rate*</b> [0 - 20 %] <input type="text" value="10"/>			

## Charger Menu

- Charge Settings
  - Max. Charge Current – 33.3%
  - Initial Return Voltage – 132.0 volts
- Initial Stage
  - Voltage – 138.0 volts
  - Current – 50%
  - Time – 1 minute
- Bulk Stage
  - Voltage – 139.0 volts
  - Current – 100%
  - Time – 5 minutes
- Absorption Stage
  - Voltage – 140.0 volts
  - Current – 20 %
- Absorb-Float Transition
  - Net Change – 1%
  - Change Time – 15 minutes
  - Max Time - 60 minutes
- Float Stage
  - Voltage – 141.0 volts
  - Current – 1 %
  - Long Term Voltage – 139.0 volts
- Equalise Stage
  - Voltage – 140.0 volts
  - Current – 10%
  - Time – 2 hours

Inverter	Battery	Charger*	AC Source	Solar Hybrid Control	System	Inputs / Outputs	Shunts	Expansion Card	Wiring Diagram
<div>Charge Settings</div> <div>Max. Charge Current* (as % of Battery Capacity) [1.0 - 200.0 %] 33.0 99.0 A</div> <div>Initial Return Voltage* [114.0 V - Float V] 132.0</div> <div>Initial Return Soc* [0 - 99 %] 95</div>									
<div>Initial Stage</div> <div>Voltage* [120.0 - 156.0 V] 138.0</div> <div>Current* (as % of Max Chrg Current) [1 - 100 %] 50 49.5 A</div> <div>Time* [1 - 240 min] 1</div>									
<div>Bulk Stage</div> <div>Voltage* [120.0 - 156.0 V] 139.0</div> <div>Current* (as % of Max Chrg Current) [1 - 100 %] 100 99.0 A</div> <div>Time* [1 - 240 min] 5</div>									
<div>Absorption Stage</div> <div>Voltage* [120.0 - 156.0 V] 140.0</div> <div>Current* (as % of Max Chrg Current) [1 - 100 %] 20 19.8 A</div>									
<div>Absorb-Float Transition</div> <div>Net Change* (as % of Battery Capacity) [0.1 - 5.0 %] 1.0</div> <div>Change Time* [1 - 240 min] 15</div> <div>Max Time* [1 - 240 min] 60</div>									
<div>Float Stage</div> <div>Voltage* [120.0 - 156.0 V] 141.0</div> <div>Current* (as % of Max Chrg Current) [1 - 100 %] 1 1.0 A</div> <div>Long Term Voltage* [120.0 - 156.0 V] 139.0</div>									
<div>Equalise Stage</div> <div>Voltage* [120.0 - 162.0 V] 140.0</div> <div>Current* (as % of Max Chrg Current) [1 - 100 %] 10 9.9 A</div> <div>Time* [0.1 - 24.0 hours] 2.0</div>									
<div>Battery Temperature Compensation</div> <div>Reference Temp. A [10 - &lt;Ref B&gt; °C] 25</div> <div>Ref. A Temp. Co. [10.0 - 0.0 mV/Cell/°C] 0.0 0 V/°C</div> <div>Reference Temp. B [&lt;Ref A&gt; - 70 °C] 25</div> <div>Ref. B Temp. Co. [10.0 - 0.0 mV/Cell/°C] 0.0 0 V/°C</div> <div>Min. Comp. Temp. [10 - &lt;REF A&gt; °C] 0</div> <div>Max. Comp. Temp. [&lt;REF B&gt; - 70 °C] 45</div>									