PSL-SC-1270 12.8V 7.2 AH
Rechargeable Lithium Battery
PSL SC – Serial Connection Capable Series

BATTERY FEATURES
• Super safe lithium iron phosphate (LiFePO4) chemistry reducing the risk of explosion or combustion due to high impact, over-charging or short circuit situation
• Battery Management System (BMS) controls the parameters of the battery to provide optimum safety by protecting against over-charging and over-discharging
• BMS enhanced design balances the battery cells, optimizing battery performance
• Higher capacity or voltage capability through parallel or serial connections
• Delivers twice the power of lead acid batteries, even at high discharge rates, while maintaining constant power
• Faster charging and lower self-discharge
• Up to 10 times more cycles than lead acid batteries
• Compact and only 40% of the weight of comparable lead acid batteries
• Rugged impact resistant ABS case

APPROVALS
• UL 1642 cell certificate
• IEC 62133 cell certificate
• UN 38.3 certified
• ISO9001:2015 - Quality management systems

INTELLIGENT BATTERY MANAGEMENT SYSTEM
The PSL-SC Series comes with an intelligent battery management system which monitors current and voltages during charge and discharge. This protects the battery from over-charge and over-discharge.

The BMS embeds smart balancing algorithms that control all cell voltages in the battery, making sure they are constantly at the same voltage level, optimizing battery capacity.

SERIAL CONNECTION CAPABLE
The SC series allows for up to 6 batteries connected in series or 4 in parallel, but not concurrently. The batteries must all be matched at voltage levels, capacity, state of charge, date of manufacturing, and chemistry.

APPLICATIONS
• Medical
• Solar
• Wind
• Mobility
• Data Center
• Transport
• Sports & Recreation
• Utility

PERFORMANCE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Voltage</td>
<td>12.8 V</td>
</tr>
<tr>
<td>Rated Capacity</td>
<td>7.2 AH at a Constant Current of 0.2C to 10V</td>
</tr>
<tr>
<td>Stored Energy</td>
<td>92 Wh</td>
</tr>
<tr>
<td>Cycle Life (@DOD100%)</td>
<td>2000 Cycles</td>
</tr>
<tr>
<td>Approximate Weight</td>
<td>2.0 lbs (0.9 kg)</td>
</tr>
<tr>
<td>Internal Resistance</td>
<td>≤90.0 mΩ</td>
</tr>
<tr>
<td>Max Charge Current</td>
<td>7.2 A</td>
</tr>
<tr>
<td>Max Discharge Current</td>
<td>15 A</td>
</tr>
<tr>
<td>Charge Cut-off Voltage</td>
<td>14.6 V</td>
</tr>
<tr>
<td>Recommended Discharge Cut-Off Voltage</td>
<td>11 V</td>
</tr>
<tr>
<td>Series &amp; Parallel Connection</td>
<td>6 in series or 4 in parallel</td>
</tr>
<tr>
<td>Operating Temperature Range Charge</td>
<td>32°F (0°C) to 113°F (45°C)</td>
</tr>
<tr>
<td>Discharge Recommended</td>
<td>59°F (15°C) to 95°F (35°C)</td>
</tr>
<tr>
<td>Self-Discharge Rate</td>
<td>≤3%/month</td>
</tr>
<tr>
<td>Long Term Storage</td>
<td>Charge every 6 months or as soon as OCV is 12.8V</td>
</tr>
<tr>
<td>Power Sonic Chargers</td>
<td>Contact us for information on a suitable charger.</td>
</tr>
<tr>
<td>Life Expectancy (years)</td>
<td>5 years at one cycle per day</td>
</tr>
<tr>
<td>Short Circuit Protection</td>
<td>Automatically recover after removal of short</td>
</tr>
<tr>
<td>Dimensional Tolerances</td>
<td>+/- 0.04 in. (+/- 1mm) for length and width</td>
</tr>
<tr>
<td>Terminal Type</td>
<td>F2</td>
</tr>
</tbody>
</table>

POWER-SONIC EMEA (EMEA – EUROPE, MIDDLE EAST AND AFRICA)
Smitspol 4, 3861 RS Nijkerk, The Netherlands
T NL: +31 33 7410 700
T UK: +44 1268 560 686
T FR: +33 344 32 18 17
E: salesEMEA@power-sonic.com

GLOBAL HEADQUARTERS (USA AND INTERNATIONAL EXCLUDING EMEA)
Power-Sonic Corporation
365 Cabela Dr Suite 300,
Reno, Nevada 89523
USA
T: +1 619 661 2020
E: customer-service@power-sonic.com

www.power-sonic.com

To ensure safe and efficient operation always refer to the latest edition of our Technical Manual, as published on our website. © 2019 Power-Sonic Corporation. All rights reserved. All trademarks are the property of their respective owners. All data subject to change without notice. E&OE.
### CAPACITY OF LiFePO4 vs. LEAD ACID AT VARIOUS CURRENTS OF DISCHARGE

![Graph showing capacity comparison](image)

### DISCHARGE VOLTAGE PROFILES AT VARIOUS RATES 25°C AMBIENT TEMPERATURE

![Graph showing discharge voltage profiles](image)

### DISCHARGE VOLTAGE PROFILES AT 0.5C DISCHARGE RATE VARIOUS AMBIENT TEMPERATURES

![Graph showing discharge voltage profiles](image)

### CYCLE LIFE vs. VARIOUS TEMPERATURE 0.2C CHARGE/0.5C DISCHARGE @ 100% DOD

![Graph showing cycle life](image)

### CHARGING CHARACTERISTICS (0.2C AMP @ 25°C)

![Graph showing charging characteristics](image)

### BMS TECHNICAL SPECIFICATIONS

- **Over Charge**
  - Over-charge protection for each cell: 3.90 V
  - Over-charge release for each cell: 3.60 V
  - Over-charge release method: Protection releases when all cell voltages drop below the over-charge release voltage

- **Over Discharge**
  - Over-discharge protection for each cell: 2.00 V
  - Over-discharge release for each cell: 2.50 V
  - Over-discharge release method: Protection releases when all cell voltages rise above the over-discharge release voltage

- **Over current**
  - Discharge over-current protection: 40-50 A
  - Protection delay time: 31 ms
  - Over-current release method: Remove load for the over-current protection to release

- **Battery Temperature**
  - Over-temperature protection: 65°C
  - Release temperature: 55°C

- **Short circuit protection**
  - Function condition: External short circuit
  - Short circuit delay time: 250-500 ms
  - Release condition: Remove load for the short circuit protection to release

### BENEFITS OF LITHIUM

Lithium offers several performance benefits versus its sealed lead acid (SLA) equivalent. A lithium battery’s capacity is independent from the discharge rate and provides constant power throughout its discharge. The degradation of a lithium battery at a high temperature is significantly reduced in comparison to SLA.

Lithium has ten times the cycle life as SLA at room temperature. Even at an elevated temperature, lithium still has increased cycle life over SLA at room temperature.

Lastly, Lithium charging follows a similar charging profile as SLA, Constant Current Constant Voltage (CC/CV). However, lithium can be charged faster, without the need for a maintenance float charge.

### FURTHER INFORMATION

Please refer to our website [www.power-sonic.com](http://www.power-sonic.com) or email us at technical-support@power-sonic.com for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc.