PSL-BTP-123000 12.8V 300.0 AH

Rechargeable Lithium Battery
PSL BTC – Bluetooth® Enabled 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

• Bluetooth® communication capability for battery status through Power Sonic app

• 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

• Delivers twice the power of lead acid batteries, even at high discharge rates, while maintaining high energy capacity

• 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 and cover flame retardant to UL94:V0

APPROVALS

• UL 1642 cell certificate

• UN 38.3 Certified

• ISO9001:2015 – Quality management systems

DIMENSIONS: inch (mm)

L: 20.47 (520)
L2: 19.40 (493)
W: 10.55 (268)
H: 8.72 (221.6)

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INTELLIGENT BATTERY MANAGEMENT SYSTEM

The PSL-BTP Series come 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.

BLUETOOTH® ENABLED

Monitor the State of Charge (SoC), State of Health (SoH), current, capacity, temperature, number of cycles, and voltage levels of the battery and individual cells from our Power Sonic app.

APPLICATIONS

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

PERFORMANCE SPECIFICATIONS

Nominal Voltage 12.8 V
Rated Capacity 300 AH at a Constant Current of 0.33C to 9.2V
Stored Energy (Wh) 3840 Wh
Cycle Life (at 100% DOD) 2000 Cycles
Approximate Weight 82.94 lbs (37.7 kg)
Internal Resistance ≤30.0 mΩ
Max Charge Current 200 A
Max Discharge Current 200 A
Charge Cut-off Voltage 15.2 V
Recommended Discharge Cut-Off Voltage 10 V
Series & Parallel Connection Up to 4 batteries can be connected in parallel, CANNOT be connected in series

Operating Temperature Range

Charge 32°F (0°C) to 113°F (45°C)
Discharge Recommended 14°F (-10°C) to 140°F (60°C)
Self-Discharge Rate ≤3%/month

Long Term Storage Charge every 6 months or as soon as OCV is 12.8V (approximately 20% SOC)

Power Sonic Chargers Contact us for information on a suitable charger

Life Expectancy (years) 5 years at one cycle per day

Short Circuit Protection Automatically recover after removal of short

Dimensional Tolerances +/- 0.04 in. (+/- 1mm) for length and width

/+ 0.08 in. (+/- 2mm) for height dimensions.

Terminal Type M8

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.

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All data subject to change without notice. E&O.E
## DISCHARGE VOLTAGE PROFILES AT VARIOUS RATES

### 25°C AMBIENT TEMPERATURE

<table>
<thead>
<tr>
<th>Rate</th>
<th>Voltage (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1C</td>
<td>12.8</td>
</tr>
<tr>
<td>0.2C</td>
<td>12.6</td>
</tr>
<tr>
<td>0.3C</td>
<td>12.4</td>
</tr>
<tr>
<td>0.4C</td>
<td>12.2</td>
</tr>
<tr>
<td>0.5C</td>
<td>12.0</td>
</tr>
<tr>
<td>0.6C</td>
<td>11.8</td>
</tr>
<tr>
<td>0.7C</td>
<td>11.6</td>
</tr>
<tr>
<td>0.8C</td>
<td>11.4</td>
</tr>
</tbody>
</table>

### DISCHARGE VOLTAGE PROFILES AT 0.5C DISCHARGE RATE

### VARIOUS AMBIENT TEMPERATURES

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Voltage (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>55°C</td>
<td>12.4</td>
</tr>
<tr>
<td>45°C</td>
<td>12.2</td>
</tr>
<tr>
<td>35°C</td>
<td>12.0</td>
</tr>
<tr>
<td>25°C</td>
<td>11.8</td>
</tr>
</tbody>
</table>

## CYCLE LIFE vs. VARIOUS TEMPERATURE

### 0.2C CHARGE/0.5C DISCHARGE @ 100% DOD

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Capacity Remaining (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>55°C</td>
<td>70%</td>
</tr>
<tr>
<td>45°C</td>
<td>75%</td>
</tr>
<tr>
<td>35°C</td>
<td>80%</td>
</tr>
<tr>
<td>25°C</td>
<td>85%</td>
</tr>
</tbody>
</table>

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

### BMS TECHNICAL SPECIFICATIONS

**Over-charge**
- Protection voltage for each cell: 3.8 V
- Release voltage for each cell: 3.6 V
- Release method: Protection releases when all cell voltages drop below the over-charge release voltage

**Over-discharge**
- Protection voltage for each cell: 2.4 V
- Release voltage for each cell: 2.8 V
- Release method: Protection releases upon charging

**Over-current**
- Protection voltage for each cell: 210-250 A
- Delay time: 7-9 s
- Release condition: Protection releases upon removing load and charging

**Battery temperature**
- Protection voltage: 65±5°C
- Release voltage: 50±5°C

**Short circuit protection**
- Protection voltage: External short circuit
- Delay time: 200 ms
- Release condition: Protection releases upon removing short circuit and charging

## 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 compared 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.