



PSL-BTC-1290 12.8V 9.0 AH

Rechargeable Lithium Battery
PSL BTC – Bluetooth® Enabled Series

BATTERY FEATURES

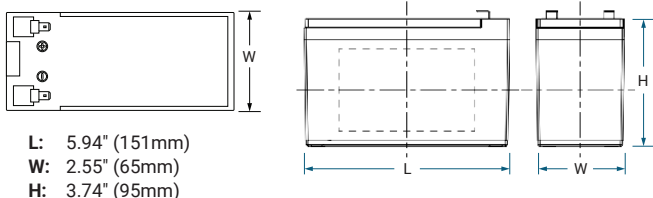
- Super safe lithium iron phosphate (LiFePO4) chemistry reducing the risk of explosion or combustion due to high impact, over-charging or short circuit situation
- Bluetooth® communication capability for battery status through Power Sonic app
- Battery Management System (BMS) controls the parameters 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)



GLOBAL HEADQUARTERS (USA AND INTERNATIONAL EXCLUDING EMEA)

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INTELLIGENT BATTERY MANAGEMENT SYSTEM

The PSL-BTC 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

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|---------------------------------------|--|
| Nominal Voltage | 12.8 V |
| Rated Capacity | 9.0 AH at a Constant Current of 0.33C to 9.2V |
| Stored Energy (Wh) | 115 Wh |
| Cycle Life (at 100% DOD) | 2000 Cycles |
| Approximate Weight | 2.64 lbs. (1.2 kg) |
| Internal Resistance | ≤80.0 mΩ |
| Max Charge Current | 10 A |
| Max Discharge Current | 10 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: 14°F (-10°C) to 140°F (60°C) Recommended: 59°F (15°C) to 95°F (35°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 | F2 |

CAPACITY OF LiFePO4 vs. LEAD ACID AT VARIOUS CURRENTS OF DISCHARGE



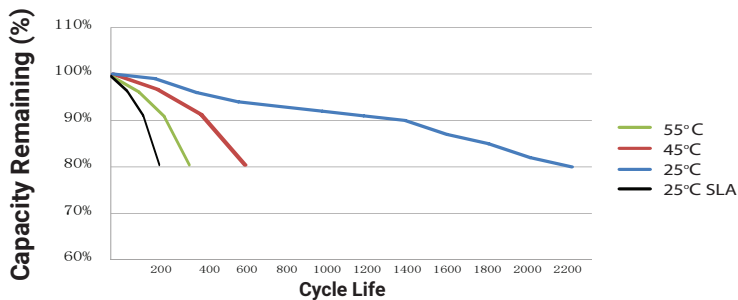
DISCHARGE VOLTAGE PROFILES AT VARIOUS RATES 25°C AMBIENT TEMPERATURE



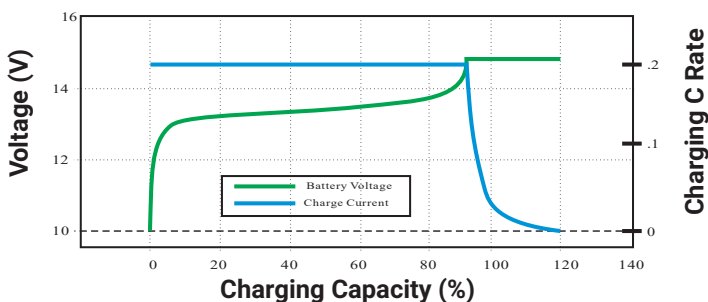
DISCHARGE VOLTAGE PROFILES AT 0.5C DISCHARGE RATE VARIOUS AMBIENT TEMPERATURES



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



CHARGING CHARACTERISTICS (0.2C AMP @ 25°C)



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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.

BMS TECHNICAL SPECIFICATIONS

Over-charge protection

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

Over-discharge protection

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|---|-----------------------------------|
| Over-discharge protection voltage for each cell | 2.0 V |
| Over-discharge release voltage for each cell | 2.5 V |
| Over-discharge release method | Protection releases upon charging |

Over-current protection

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|-----------------------------------|---|
| Discharge over current protection | 40-60 A |
| Over-current delay time | 5-20 ms |
| Over current release method | Protection releases upon removing load and charging |

Battery temperature protection

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|-----------------------------|---|
| Over-temperature protection | 65±5°C |
| Release temperature | 50±5°C |
| Release method | Protection releases upon temperature dropping below release |

Short circuit protection

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|--------------------------|--|
| Function condition | External short circuit |
| Short circuit delay time | 200 ms |
| Release method | Protection releases upon removing short circuit and charging |

FURTHER INFORMATION

Please refer to our website 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.