POWERPSSONIC
TRUSTED BATTERY SOLUTIONS

PSL-BTC SERIES

Medical · Solar · Wind · Mobility · Data Center · Transport · Sport & Recreation · Utility



PSL-BTP-12500 12.8V 50.0 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

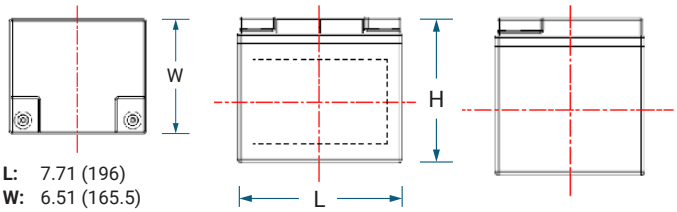
APPROVALS

UN38.3 PASSED Transport Safety Certified

bsi. ISO 9001 Quality Management

- UL 1642 cell certificate
- UN 38.3 Certified
- ISO9001:2015 – Quality management systems

DIMENSIONS: inch (mm)



L: 7.71 (196)
W: 6.51 (165.5)
H: 6.85 (174)

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	50.0 AH at a Constant Current of 0.33C to 9.2V
Stored Energy (Wh)	640 Wh
Cycle Life (at 100% DOD)	2000 Cycles
Approximate Weight	14.3 lbs (6.5 kg)
Internal Resistance	≤20.0 mΩ
Max Charge Current	50 A
Max Discharge Current	50 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 Discharge Recommended	 32°F (0°C) to 113°F (45°C) 14°F (-10°C) to 140°F (60°C) 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	M8

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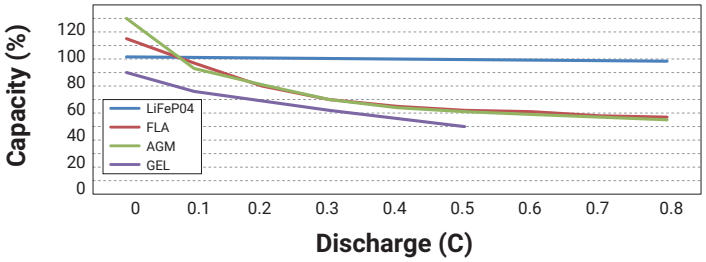
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To ensure safe and efficient operation always refer to the latest edition of our Technical Manual, as published on our website.
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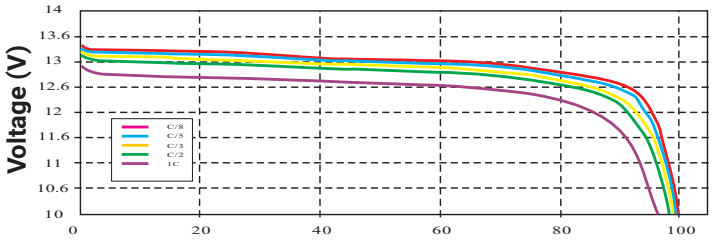
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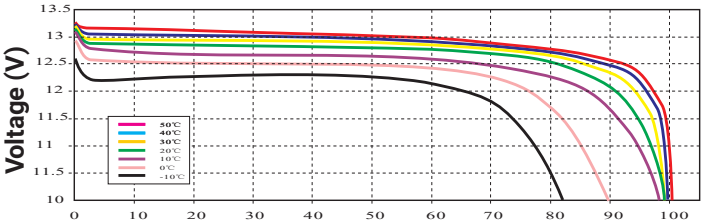
CAPACITY OF LiFePO4 vs. LEAD ACID AT VARIOUS CURRENTS OF DISCHARGE



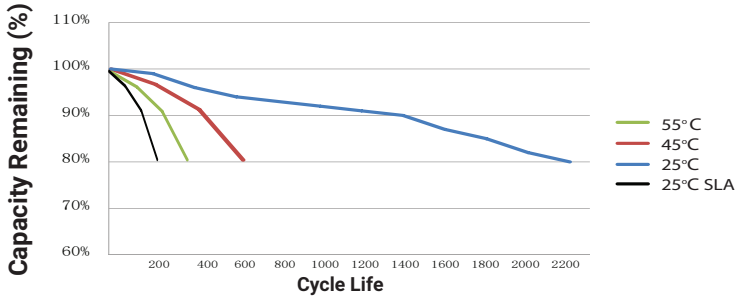
DISCHARGE VOLTAGE PROFILES AT VARIOUS RATES 25°C AMBIENT TEMPERATURE



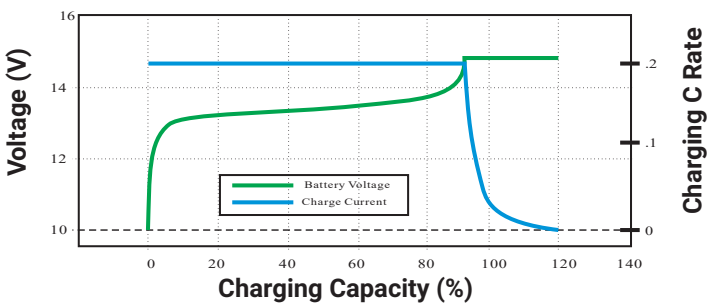
DISCHARGE VOLTAGE PROFILES AT 0.5C DISCHARGE RATE VARIOUS AMBIENT TEMPERATURES



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



CHARGING CHARACTERISTICS (0.2C AMP @ 25°C)



PSL-BTP-12500 12.8V 50.0 AH

Rechargeable Lithium Battery
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BENEFITS OF LITHIUM

Lithium offers several perormance benefits versus it's sealed lead acid (SLA) equivelant. A lithium battery's capacity is independent from the discharge rate and provides constant power throughout it's discharge. The degredation 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	
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	
Over-discharge protection voltage for each cell	2.4 V
Over-discharge release voltage for each cell	2.8 V
Over-discharge release method	Protection releases upon charging
Over current	
Discharge over current protection	150-200 A
Over-current delay time	50-200 mS
Over current release condition	Protection releases upon removing load and charging
Battery temperature	
Over-temperature protection	65±5°C
Release temperature	50±5°C
Short circuit protection	
Function condition	External short circuit
Short circuit delay time	200 ms
Release condition	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.

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