



KS-SB200B



**KS Energy 200AH 12V Seat Base Lithium-iron phosphate battery with High Current BMS.
Featuring Integral Bluetooth Monitor and Low Temperature Charge Protection**



Guidance

The battery must only be used within the stated specifications. Terminals are M6 threads and 10mm heads. Torque to 60lb/ft-6Nm. It is vital to eliminate terminal connection resistance by using correctly sized and crimped ring terminations. Poor terminations can create heating which can lead to damage or fire risk. Use appropriately rated, crimped, and secured M6 ring terminations. Positive should be correctly fused. The battery is designed to be secured to the chassis by four removable M6 brackets, although other appropriate securing methods may be used. Where in doubt, always seek qualified assistance.

Continuous current rating

Pay attention to the maximum current rating of the battery and parallel additional batteries accordingly for high demands such large mains inverters. (150A max continuous discharge per battery).

Parallel arrangement

Where batteries are installed in parallel multiples, ensure each battery is fully charged before attempting to make the parallel electrical connection. Even small differences in state of charge can lead to large transfers of current that could be damaging or dangerous. There are no limitations to the number of identical batteries that can be paralleled.

Overload

In case of overload or accidental short circuit, the battery may enter a self-protect mode. Ensure all loads are removed before resetting the battery. A reset is accomplished by applying a normal charge voltage to the terminals and the battery terminal voltage is restored. Note, some self-sensing chargers may be unsuitable since they rely on sensing the terminal voltage before the charging voltage is applied.

Low Temperature Protection

To prevent fatal internal cell damage during use, this battery features an integral temperature monitor that detects if the cells fall below freezing (0°C). Safe temperature charging parameters inherent to all lithium batteries are above 0°C. When this event is triggered, the battery will not accept a charge. Normal charging is only resumed when the battery cell temperature rises over zero. This feature is purely automatic and will not affect the normal battery discharge operation which continues to operate safely (to -20°C).

Under Voltage Protection

Should the battery be allowed to become completely discharge to an extent where the terminal voltage falls to around 10V, the battery will enter low voltage protection and shut down. The terminals will automatically disconnect and fall to zero and the Bluetooth enter a hibernate mode. To reset the

battery, a normal charge voltage must be applied to the terminals. A recharge should be performed as soon as practical, certainly within a few weeks to maintain cell integrity, avoiding possible longer-term discharge and irreversible battery damage.

Bluetooth Integral Monitor

(For more information see: <https://www.ksenergy.co.uk/bluetooth-2.0>)

Overview: The feature is available using any Android® or Apple® device with Bluetooth® 4.0. Download the free KS Energy UK app to a compatible device from the Android® or Apple® store. Search for the app “KS ENERGY 2.0” The monitor is a state of charge (SOC) fuel gauge (coulomb counting). The SOC gauge self-calibrates during normal cyclic use. To conserve power, when the battery is not used for a long period of time, it will enter a hibernate mode, sending the Bluetooth and BMS to a sleep mode to conserve power and will self-wake when a discharge/charge load is applied.

Connecting Bluetooth: Turn on Bluetooth on your device. Open the app and accept the privacy requests. Each battery has a unique serial number (as labelled on the battery case). Ensure you are within a few meters of proximity to the battery. To connect, touch the top right-hand Bluetooth symbol, select connect and the batteries serial number. Note only a single battery can be connected to a single device at a time. When the Bluetooth signal is unpaired it goes into hibernation (drawing near zero power). Be aware that Bluetooth is a very low power signal and can be highly directional and susceptible to interference, which can lead to data dropout or sporadic data display. Sealed metal areas, metal foils, other devices and electrical interference can impair such signals.



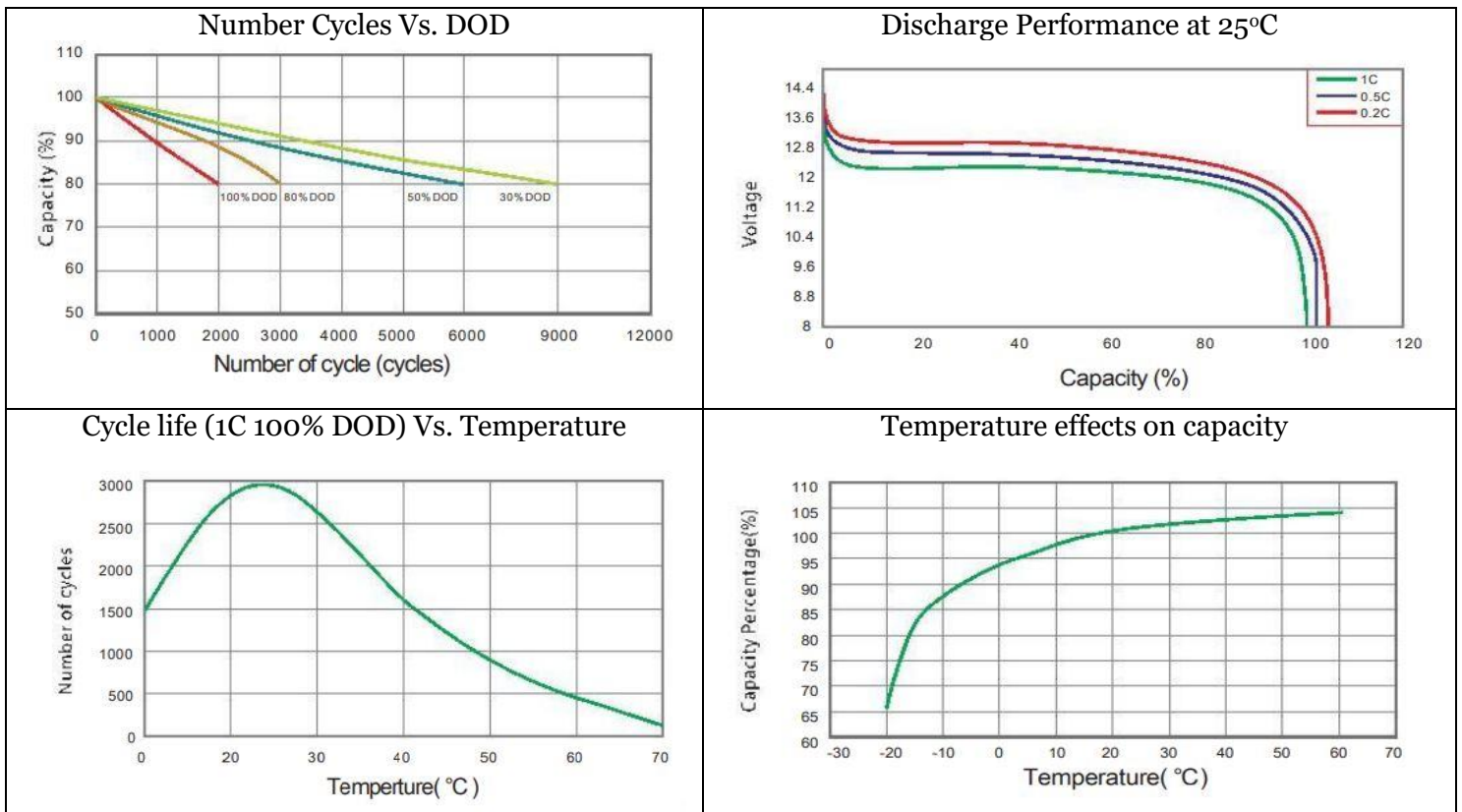
The battery information within the application is essentially self-explanatory and an overview follows: Page 1 displays State of Charge (SOC) as a percentage, the battery Voltage, present estimated remaining capacity, and the present Status (Charging, Overcharge, Standby or Discharging), and battery health. Swipe left for Page 2 which displays Voltage and Current and displays via an analogue dial display, battery status, cell temperature and total number of charge cycles. Swipe left for Page 3 which displays the cell bank voltages. There are four

banks in each 12V battery, (eight in a 24V etc) therefore only active banks are displayed. Use this page to also disconnect the Bluetooth from the battery. A note on cell bank voltage display: Generally, cells drift more towards the end of charging and then balancing is performed overtime at rest. The goal of cell balancing is to ensure that cell banks contain identical “states of charge”, therefore on its own, voltage is not a reliable indication of cell balance, particularly at higher states of charge.

In the case of batteries that are paralleled together, a single SOC reading can suffice for the entire bank, particularly where current draw between batteries has been well balanced and the batteries share similar impedance loads, as they then charge and discharge at identical rates. Please be aware that the current indication will always indicate a factor division according to the number paralleled. For example, two 200AH batteries connected to make a 400AH bank under a load of 20A would produce a live reading of half (10A), however the SOC and voltage reflects entire bank.

Constant Current Discharge Table (Amperes @ 25°C)

	1hr	2hr	3hr	5hr	10hr
Cut of voltage 10.8V	200A	100A	66.7A	40A	20A



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Product code: 5060716640216

Type: Lithium-Iron Phosphate (LiFePo⁴)

Battery voltage nominal: 12.8V, charged at rested: 13.2V

Nominal capacity: 200AH, 2.560KWh @ 25°C

Cells: 2670 cylindrical 3.2V 4000mAh Arrangement: 4S*50P

Maximum continuous discharge current: 150A

Peak surge discharge current: 250A for 15 seconds

Size: (mm ±2) L*W*H 330*270*180 (inch 13*10.6*7.1)

Size excludes removable fixing brackets: length 18mm each (inch 0.7)

Weight: 23.8Kg (52.5lbs)

Max continuous charge current: 150A

Max charge voltage: 14.6V

Recommended charge current <100A

Recommended discharge current: <125A

Recommended Charge voltage 14.4V, Charge type: CC/CV

Recommended low voltage disconnect 11V

Float voltage (when applicable) 13.2V - 13.3V

Operating temperature range: -20°C to +50°C

Storage temperature: -20°C to +30°C

Battery Management/Protection:

Internal BMS actively balanced

Battery Low temperature Charge Protection (charge current disconnects at zero <0°C)

Battery Over Charge Disconnect Protection (cell bank disconnect >3.80V charge resumes <3.43V)

Battery Over Discharge Protection (Discharge disconnects <9.8V, release 11.8V)

Ultra-low power auto hibernates (<7 Days or low voltage protection)

Short Circuit electronic trip: (>320A <250µS)

Over voltage: detect 15.2V <2S, release 14.4V

Over temperature shut down: 65°C, release <55°C

Depth Discharge: 100% Efficiency: 99%

Internal resistance (±3%) : 25mΩ @ 50% SOC 25°C

Self-discharge: 2.5% per month

Maximum recommended dry storage duration: (@55% capacity): 12 months

Terminals: (M6), Terminal torque 50ft/lb – 5Nm

Case material: Steel, Ingress Rating: IP52

Parallel configuration: unlimited

Life Span: >5000 cycles @80%-30% DOD @0.5C, >2500 cycles DOD 95% @1C

Wireless protocol: Low energy - Bluetooth® 4.0

Compliance: CE Certification for the entire battery (product)

ROHS Certification for the entire battery (product)

UN38.3 Certification for the entire battery (product)

Shipping designation Class 9

Designed in Great Britain

Assembled in China by KS Energy Holdings (UK) Limited