

TSB-31000 Battery — Operator's Notice

Manufacturer: Terra Supreme Battery LLC
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Product: TSB-31000 Battery with BLE Module

Description: 12 V / 105 Ah bipolar composite lead-acid battery with embedded BLE telemetry module

FCC ID: *[to be inserted upon grant]*

1. Product Description

The TSB-31000 is a sealed 12 V / 105 Ah bipolar composite lead-acid battery containing an embedded Bluetooth Low Energy (BLE) telemetry module ("eBM-Chip-v2") that broadcasts battery state-of-charge, voltage, current, and temperature data to authorized companion applications (e.g., TSB Sync eBM App). Unlike conventional flat-plate AGM or flooded lead-acid batteries, the TSB-31000 uses a bipolar architecture with a composite grid, delivering millions of partial-state-of-charge (PSOC) cycles while reducing lead content by approximately 10 %. The BLE module is powered from the battery's own cells; there is no external power input to the radio.

Parameter	Value
Nominal Voltage	12 V DC
Nominal Capacity	105 Ah (C20)
Dimensions (L × W × H)	13.27" × 7.13" × 10" (337 × 181 × 254 mm)
Weight	68 lbs (30.9 kg)
Terminals	Dual: SAE + 3/8"-16 (positive), 5/16"-16 (negative); torque 6–8 ft·lb
Charge Voltage	14.5–14.8 V (cyclic) / 13.4 V (float) @ 25 °C
Operating / Storage Temperature	–40 °C to +60 °C
Radio	Bluetooth 5.0 Low Energy, 2402–2480 MHz, +8 dBm max
Antenna	Integrated PCB antenna (internal, non-removable)

2. Installation & Safe Use

1. Install with positive (POS) and negative (NEG) terminals oriented per the case marking. Terminal torque: 6–8 ft·lb.
2. Use only chargers rated for 12 V lead-acid batteries with cyclic charge voltage in the range above.
3. Recommended charge algorithm: constant-current (CI) followed by constant-voltage (CV), tapering to $I \leq 1$ A. Minimum recommended in-rush current 25 A; maximum unlimited.
4. Temperature compensation: apply ± 0.030 V/°C from the 27 °C reference when charging at non-ambient temperatures.
5. Storage: keep open-circuit voltage above 12.5 V. If OCV drops below 12.5 V during storage, recharge before continued storage.

6. Ventilate the installation space; lead-acid batteries can emit hydrogen during charging.
7. Do not disassemble, incinerate, or short-circuit the battery.
8. Refer to the safety pictograms and warnings printed on the battery case for complete hazard information.

3. FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(47 CFR §15.19(a)(3))

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

(47 CFR §15.21)

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

(47 CFR §15.105(b))

4. RF Exposure Statement

The device has been evaluated to meet general RF exposure requirement, the device can be used in portable exposure condition without restriction.

5. Contact

For technical support, warranty service, or compliance questions:

Terra Supreme Battery LLC
art.givens@terrasupremebattery.com
+1-260-636-6618

6. Further Reference

For detailed performance specifications — including cycle life, cranking power (CCA/MCA/PHCA), reserve capacity, internal impedance, and short-circuit current ratings — refer to the **TSB-G31 Datasheet** at <https://terrasupremebattery.com/downloads/>.

For Bluetooth telemetry and data-viewing instructions, refer to the **TSB Sync eBM App User Guide** (also available at the link above).

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This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.