

Integrated Back-up Battery System AC plug-in charger

**Models:
IBBS-12v-CHARGER-II-LiFe
IBBS-24v-CHARGER-II-LiFe**



The IBBS-Charger-II-LiFe is a line voltage supplied charger intended to be used with the IBBS back-up battery systems.

The IBBS-12(24)v-CHARGER-II-LiFe provides a simple means to keep an IBBS system fully charged during long term product storage. Additionally, the charger can provide full power to the IBBS system for fast charging after doing continued airworthiness inspections or anytime the IBBS system needs to be recharged.

The IBBS-CHARGER-II is comprised of two components, a DC power supply and a charge monitor adapter. The IBBS-CHARGER-II is connected to standard AC line voltage power from 100-240 VAC, 50/60 Hz. The DC power supply is connected to the Charge Monitor Adapter via a standard DC barrel jack. The Charge Monitor Adapter has a power cable with the mating Dsub connector for attachment to the IBBS unit.

The Charger Monitor Adapter displays the internal battery voltage and input charge current when attached to the associated IBBS unit. Additionally, the DC power supply has an LED on its case that indicates when the power supply is operational.

The IBBS-CHARGER is intended only to be used for charging a TCW Technologies, LLC. IBBS systems, no other uses are permitted. Ensure the proper charger DC power supply is being used for the application. Do not use the 24 volt charger on a 12 volt IBBS systems or the 12 volt charger on a 24 volt IBBS systems. The charger is an indoor type product and not intended to be exposed to rain, snow, damp environments or high humidity environments or utilized outdoors. NOTE: charging may not be available at temperatures below 32 F°

Operation and Use:

- 1) Connect the IBBS-CHARGER to the Charger Monitor Adapter via the DC barrel jack, connect the IEC type line cord into the DC power supply adapter.
- 2) Disconnect the IBBS unit from the aircraft wiring harness by unscrewing the jack screws that attach the dsub to the IBBS.
- 3) Connect the Charger Monitor Adapter to the IBBS via the dsub cable.
- 4) Plug the line cord into a suitable source of power (100-240 Vac).

The Charge Monitor Adapter has two digital displays: Volts and Amps. The voltage display is the present value of the internal IBBS battery, the current display is the charging current value for IBBS system. When the charger is connected to an IBBS system a charging cycle will begin when the charger is energized. The IBBS system will determine if the internal battery is in a state to accept a charging cycling. As such, the current may start at a low value and ramp up to a value close to the maximum listed current. Near the end of a charge cycle the voltage value will peak near the maximum listed voltage and the current will ramp down to near zero. The current may remain at a very low value at the end of charge cycle, during this period the IBBS system is performing internal cell balancing. At the conclusion of the charging cycle the current will fall to 0.00 - 0.01 amps and the battery voltage will decay back by approximately 1 volt less than the maximum displayed voltage observed at peak charging current.

If the displayed battery voltage is observed to be below 7.5 volts for a 12 volt systems or 15.0 volts for a 24 volt system or oscillates up and down over the course of a few seconds it is likely that internal battery is damaged and will not accept a charge. During charging, the battery voltage should smoothly increase over the course of the charge cycle, with a slight decay in voltage at the conclusion of the charge cycle.

The following table shows expected charging voltage and current for various IBBS systems:

IBBS Model	Voltage Range	Maximum Charge Current
IBBS-12v-3ah	9.0 - 14.9	1.9 amps
IBBS-12v-6ah	9.0 - 14.9	3.5 amps
IBBS-24v-3ah	18.0- 29.5	2.3 amps
IBBS-12v-3ah-CRT-V	9.0 - 14.9	1.9 amps
IBBS-12v-6ah-CRT-V	9.0 - 14.9	3.5 amps
IBBS-24v-3ah-CRT-V	18.0- 29.5	2.3 amps

The IBBS-CHARGER provides full charge capability of an IBBS unit. If an IBBS unit is to be stored for a long period of time (9 months or greater), it is recommended that it be connected to the IBBS-CHARGER and recharged until the charge current value falls below 0.01 amps. The system may be left plugged in for extended periods of time; however, after full charge is obtained, disconnecting the charger is recommended.

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TCW Technologies, LLC.

During the first 12 months from the date of purchase and subject to the conditions hereinafter set forth, TCW Technologies, LLC. (TCW) will repair or replace to the original user or consumer any portion of your new TCW product which proves defective due to defective materials or workmanship of TCW. Contact TCW Technologies for warranty service. TCW shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts or components. Damage due to equipment, environment or conditions beyond the control of TCW Technologies are NOT COVERED BY THIS WARRANTY.

LABOR, COSTS: TCW shall IN NO EVENT be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/or reaffixing any TCW product, part or component thereof.

THIS WARRANTY WILL NOT APPLY: (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (b) to failures resulting from abuse, accident, or negligence; (c) to normal maintenance services and the parts used in connection with such service; (d) to units which are not installed in accordance good trade practices; or (e) to unit used for purposes other than for what it was designed and manufactured.

RETURN OR REPLACED COMPONENTS: any item to be replaced under this Warranty must be returned to TCW Technologies in Emmaus, PA, or such place as TCW may designate, freight prepaid.

PRODUCT IMPROVEMENTS: TCW reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for units sold and /or shipped prior to such change or improvement.

WARRANTY EXCLUSIONS: as to any specific TCW product, after the expiration of the time period of the warranty applicable thereto as set forth above. THERE WILL BE NO WARRANTIES, INCLUDING ANY IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. No warranties or representations at any time made by any representative of TCW shall vary or expand the provisions hereof.

LIABILITY LIMITATION: IN NO EVENT SHALL TCW OR ITS AFFILIATES BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY TCW PRODUCT OR PARTS THEREOF. THE SUITABILITY OF USE OF THE TCW TECHNOLOGIES, LLC. PRODUCT IS TO BE DETERMINED BY THE AIRCRAFT BUILDER.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state. In the absence of other suitable proof of this installation date, the effective date of this Warranty will be based upon the date of manufacture plus one year. Direct All Notices To: Warranty and Product Service Department, TCW Technologies, 2955 Main Road East. Emmaus, PA 18049

