Comparison - SupersederXG vs. RF80K

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The following are similarities, advantages, and disadvantages of the SupersederXG Battery Charger Analyzer versus the RF80K Reflex® Battery Charger Analyzer.

Both

- Operate on a range of 187 to 265 volts AC, single phase input power.
- *(With very low line voltages the Superseder will charge properly one battery but it may not be able to charge two batteries at full current).*
- Provide constant current or constant voltage (constant potential) charging.
- Use digital panel displays for meters and timers.
- Provide constant current discharge with either, time and/or voltage termination, and a fail light indicator.
- Have standard Elcon type quick disconnects on battery cables.
- Utilize current limiters for over-current protection.
- Use a configuration of power transistors for discharging.
- Have programmable timers.
- Employ dual breakers on power input.
- Both chargers have been used in the field for many years and have an established track record.

Superseder Advantages

- The SupersederXG is a microprocessor controlled instrument with all functions accessed through a keypad and with an LCD readout for visual interfacing with the operator (no knobs, no switches, no mechanical selectors).
- Designed to interface with the BTAS16 Battery Test System for control and monitoring of the Charger-Analyzer operation.
- It is capable of being remotely programmed from the BTAS16 screen.
- Has user selectable, current and/or voltage defined battery testing modes with test profiles that can be stored and easily retrieved (no need to enter test parameters every time).
- Has user controlled two step charging rate for Main/Topping currents with automatic transfer based on time or peak voltage.
- Can operate on 115V input (limited to 20 A on charge).
- Can charge two 20 (or 22) cell batteries or four 11 cell batteries simultaneously.
- Can be programmed for any number of cells from 1 to 99 (within 85 volt max.) for all charge modes; CC, CP, and discharge. The RF80K is limited to cells numbering 11, 19, 20 and 22 on CC charge/discharge and 2, 6, 12 and 14 on CP charge.
- Can charge any number of individual cells and comes with a Single Cell Adapter. The RF80K only charges 1 to 24 cells and has no single cell adaptor included.
- Has charge termination through a battery temperature monitoring plate in case of battery overheating.
- Has Fault Annunciation for capacity failure, malfunctions (voltage, current, temperature or open limiter fault), and end-of-cycle.
- Has an internal rechargeable battery for protection of the Timer and Control Registers in case of a power (mains) failure. Will resume operation automatically when power is restored. (The RF80K must be reset and re-started). Note that the SupersederXG remains in communication with the BTAS16 computer in spite of the power failure (reporting its status).
- Easier access (Superseder top panel flips open, the RF80K top panel has 16 screws).
- Easier to calibrate and maintain; Has fewer circuit boards and all are easily replaceable.
- Does not require specialized or heavy duty equipment for verification of performance or calibration.
- Designed and built as a precision instrument.
- Fast turn-around for replacement parts and for repairs and upgrades.
- Lower purchase price.

Superseder (apparent) Disadvantages

- Will not Reflex® charge: Note that battery manufacturers call for constant current charging in their manuals (Is Reflex® really good for the battery anyhow?).
- No automatic multi-cycle feature (charge-discharge-charge): not a reliable process anyway.
- No negative slope sensing feature. (Negative slope could be due to temperature and/or due to overcharge – by itself not a reliable indicator).

RF80K Disadvantages

- Single battery charging only (The Superseder can charge two).
- Abusive treatment of older batteries in the Reflex® mode (The constant current in the Superseder is gentler on any battery, new or old).
- The Reflex® mode will often mask internal battery problems that can only be perceived while charging in the Constant Current mode.
- The Reflex® mode will often heat batteries, particularly older ones (higher internal resistance).
- Turning the power ON without a battery connected can result in a catastrophic damage of the output capacitor (per SIL#3-121630-0709). Note that this problem exists in the Christie Chargers since the earliest models. Superseder has no such limitation for it can be turned on with or without a battery. The Superseder can sense if the charge cycle is initiated without a battery connected; If so, it simply shuts off the charge and indicates a fault.
- No audible indicators.
- No battery temperature feedback.
- No power-fail protection. Must re-start the test in case of a power failure. The Superseder is fully protected against power (mains) failures.
- Complex to calibrate and maintain.
- Lengthy wait for factory service (older units are no longer supported).

Comparison Summary

- The SupersederXG is a state of the art, intelligent device that can remain in the top of its class by simple upgrades of internal control software.
- The SupersederXG is a faster device. It will charge two batteries in 6 hours versus one battery in 5 hours for the Christie (assuming that the obligatory 4 hours of Topping Charge is not omitted).
  Note also that if the Reflex® B mode is chosen for higher impedance cells, the time for charge is extended (more than one hour), thus nullifying the so called rapid charge advantage of the Reflex® mode.
- The SupersederXG is fully protected against external and internal faults (safer for the operator, the battery and the charger).
- The Superseder is more universal and more intuitive to operate.
- The Superseder allows batteries to be tested exactly as specified by the battery manufacturers.
- The Superseder is gentler on all types of batteries.
- It must be noted that both chargers employ different methods to determine when separator breakdown in a cell is present. The SupersederXG measures the heat normally associated with this failure while the RF80K measures an overall battery voltage drop while on charge.
- It must be emphasized that the purpose of the equipment is not simply to charge the battery but to test it. Therefore, the charger must do so in such a manner that the individual cells can show if they are in good condition. The SupersederXG does it by design, the Christie does not in the Reflex® mode and it becomes very inefficient (one battery only) if used exclusively in the Constant Current mode.