

current±talk

Special, RF80-K Functions

The Christie RF80-K is the most versatile battery-servicing tool in the world. Few technicians understand its capabilities well enough to make full use of the equipment. Proper use of the equipment can save time and effort for the technician and can save the aircraft operator money and enhance his safety. The following is intended to be a brief summary of the RF80-K functions, read manual TD-650 for complete operating information.

Reflex Charging

Allows vented nickel cadmium batteries to be charged in 1 hour or less. Reflex charging consists of alternating charge and discharge pulses. It is important that the number of cells (11,19,20,22) be identical to the switch setting because the rate and duration of the negative pulses is based upon a full charge voltage of 1.60 times the number of cells for which the switch is set. If the switches are set incorrectly the battery will be either overcharged or undercharged. The rate and duration of the negative pulses is indicated by the "digiFLEX" display and controlled by the A/B switch. When using Reflex it is possible to charge at the 2C rate for "A" batteries and at the C rate for "B" batteries. The pulsing rate should be about 1 second duration for "A" batteries and about 1.5 seconds for "B" batteries. Green bars will appear when the battery has attained about 90% capacity; at full charge the green bars may extend completely to the right side of the display. Reflex allows safe and rapid charging with minimal heating or electrolyte loss.

Constant Current Charging

Allows complete charging and top charging of nickel cadmium batteries. It should be used for single cells or groups of up to 24 cells. In this mode the RF80-K will charge at a settable rate for a settable time.

2-Step Constant Current Charging

When operated in the 2-step mode the charger will provide a settable main charge for a pre-set time and then automatically reduce to the C/5 rate for the same pre-set time. Thus the battery is automatically charged and top charged.

Discharging

The discharge functions provide constant current discharge to a pre-set cut-off voltage and/or for a settable period of time.

Discharge Cycle

This switch controls the cut-off voltage during discharge.

Long Cycle

Allows discharging until the average battery voltage reaches 0.95 volts per cell.

Short Cycle

Allows discharging until the pre-programmed discharge time is reached.

Deep Cycle

Allows discharging to 0.0 volts.

Discharge – Wait – Recharge

This function will constant current discharge the battery to the set cut-off voltage followed by a pause equal to the pre-set charge time, It will then charge for the pre-set charge time at the pre-set charge rate.

Analyze

This function provides for an automatic-charge-discharge-recharge cycle. Evaluation of battery capacity is indicated by go/no-go (red/green) lights. The go/no-go point is settable to any percentage of battery capacity. The analyze function requires 3-4 hours.

Analyze w/ Wait

This function is the same as the analyze function except that it introduces a “wait” period after the discharge time to allow the battery to cool. The wait time is equal to the pre-selected charge time.

Cell Test

This function allows for the performance of the gas barrier test. When the cell test function is being used the negative slope function is disabled and therefore the battery cells must be manually monitored.

Negative Slope

This function stops the charging process and displays an amber light if the battery voltage should show a rise and then show a steady drop. This condition could indicate overheating or a breakdown of the cell gas barrier. This is a safety function and can also indicate to the technician that gas barrier breakdown should be investigated.

It is suggested that the technician learn to master the full capabilities of the RF80-K by progressing in logical steps. Always follow the battery maintenance manual. A recommended learning procedure is as follows:

- 1) Constant Current Main Charge and Top Charge, Constant Current Discharge
- 2) 2-Step Constant Current Charge, Constant Current Discharge
- 3) Reflex Main Charge, Constant Current Top Charge, Constant Current Discharge
- 4) Reflex Charge, Constant Current Top Charge, Discharge-Wait-Recharge
- 5) Analyze and/or Analyze w/ Wait

By progressing along this learning path you will gradually come into contact with all of the features of the RF80-K.