

OPERATING INSTRUCTIONS

APU28v/25A & APU14v/25A Auxiliary Power Unit & Battery Charger

INTRODUCTION:

Designed for aircraft. Plugs into APU receptacle to provide additional power to battery when master switch is activated for checking aircraft systems. Does not supply bus power.

INITIAL INSTALLATION:

Before making AC connections, refer to the AC requirements labeled on the charger ID tag. If your charger is not equipped with an AC plug, *for example, a 220 volt charger*, have a qualified electrician install one.

⚠ CAUTION: To reduce the risk of fire, use this charger only on circuits provided with a maximum of 20 ampere branch circuit protection (circuit breaker or fuse), in accordance with the National Electric Code, ANSI/NFPA 70, and all local codes and ordinances.

GROUNDING INSTRUCTIONS:

This battery charger must be grounded to reduce the risk of electric shock. If the charger is equipped with a grounding type plug, it must be plugged into a nominal 115 volt, 60 Hertz circuit. If the charger is supplied with no plug, have a qualified service person install one.

⚠ WARNING: Improper connection of the equipment grounding conductor can result in a risk of an electric shock. **DO NOT USE THIS CHARGER ON A TWO POLE UNGROUNDED OUTLET OR ATTEMPT TO BREAK OFF THE GROUND PRONG FOR USE ON A RECEPTACLE OR EXTENSION CORD NOT HAVING A GROUND.**

The use of an extension cord with this charger should be avoided. The use of an improper extension cord could result in a risk of a fire or electric shock. If an extension cord must be used, make sure it is in good condition. Use a three conductor cord no smaller than 14 AWG. And keep it as short as possible. Locate all cords so that they will not be stepped on, tripped over, or otherwise subjected to damage or stress.

Do not operate this charger if it shows any signs of physical damage.

PROPER CARE AND USE OF BATTERIES:

⚠ CAUTION: Always wear protective eye shields and clothing when working with batteries. Batteries contain acids which can cause bodily harm. Do not put wrenches or other metal objects across the battery terminal or battery top. Arcing or explosion of the battery can result. Do not wear jewelry when working around batteries. Arcing can cause severe burns.

New batteries will not deliver their full performance until after several cycles.

The tops of the batteries and battery hold downs must be kept clean and dry at all times to prevent excessive self discharge and flow of current between the battery post and frame.

Maintain the proper electrolyte level by adding water when necessary. Never allow the electrolyte level to fall below the top of the battery plates. Electrolyte levels fall during discharge and rise during charging. Therefore, to prevent the overflow of electrolyte when charging, add water ONLY AFTER the batteries have been fully charged DO NOT OVERFILL. Old batteries require more frequent additions of water than do new batteries.

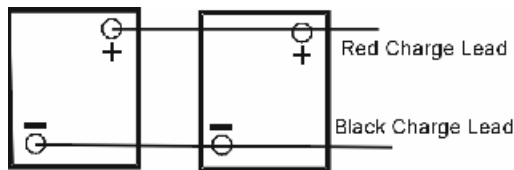
Do not over discharge the batteries. Excessive discharge can cause polarity reversal of individual cells resulting in complete battery failure.

Provide adequate ventilation for the batteries and charger. Do not obstruct the flow of cooling air around the charger. Provide at least 1" of space around charger. Do not allow clothing, blankets or other material to cover the charger. Mount the charger firmly in place.

⚠ WARNING: Chargers can ignite flammable materials and vapors. Do not use near fuels, grain, dust, solvents, or other flammables.

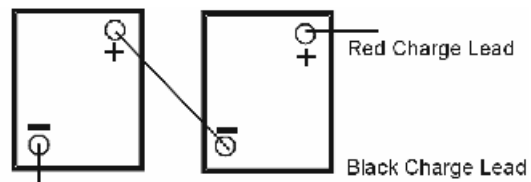
⚠ CAUTION: Before connecting the charger to the batteries, make sure the battery pack is of the same voltage rating of the charger. If you are unsure, count the number of cells on the battery pack and multiply by two. This figure should be the same as the DC voltage rating of the charger. (*see ratings label on charger*).

Below is an illustration of Parallel and Series battery packs.



Parallel

When batteries are connected in parallel, the battery amp hour rating is additive, and the voltage remains the same. Example: Two 180 amp hour, 12 volt batteries would equal 12 volts, and 360 amp hours capacity.



Series

When batteries are connected in series, the voltage is additive, and the amp hour rating remains the same. Example: Two 180 amp hour, 12 volt batteries would equal 24 volts, and 180 amp hours of capacity.

⚠ WARNING: Make sure the DC output leads, terminals or connector are all in good working condition.

DO NOT USE THIS CHARGER IF:

The DC output connector, (*if equipped*) is loose or does not make good contact; Is cracked or broken; The leads are cut or have exposed wires; The DC output leads or connector feel hot when used.

Using this charger with any of the above symptoms could result in a fire, property damage, or personal injury. Have a qualified service person make the necessary repairs. Repairs should not be made by people who are not qualified.

NORMAL OPERATION:

- 1.) Make sure power switch is off. Be sure the unit matches the system voltage of aircraft. Plug connector into APU receptacle.
- 2.) Plug the charger into AC power having the same ratings as that of the charger.
- 3.) Turn on aircraft master switch.
- 4.) Flip power switch ON. The charge LED will blink RED for a few seconds, and then turn steady RED indicating charge current is flowing. The ammeter will indicate the amount of current. The voltmeter displays battery voltage.
- 5.) If no loads are placed on the battery, the charge current will decrease as the voltage builds. When the battery is approximately 80% charged the LED will turn YELLOW. When the battery is 100% charged the LED will turn GREEN and begin to flicker indicating maximum voltage and regulation. The voltage is limited to 28.0 on 24 volt systems, and 14.0 on 12 volt systems. Voltage may vary slightly depending on ambient temperature. Warmer temperatures will cause a slightly lower voltage while cooler temps will cause a slightly higher voltage. The ammeter should read zero or within 1 amp of zero, if much higher, battery may have a dead cell. Do not leave charger connected if current fails to reach near zero.
- 6.) If loads are placed on the battery the charger will supply the necessary power as indicated on the ammeter. The current is limited to 25 amps. When loads are removed the charger will resume charging the battery.

To discontinue charging, flip the power switch OFF. Unplug the AC power cord. Disconnect plug from APU receptacle.



WARNING: Do not disconnect the DC plug when the charger is on. The resulting arcing could cause burning of the plug and receptacle contacts.



WARNING: Failure to unplug AC and DC power before moving or driving equipment will result in damage to cords, plugs and receptacles.

TROUBLE SHOOTING:



DANGER: To reduce the risk of electric shock, always disconnect both the AC power supply cord and the output leads or connector before attempting any maintenance cleaning.

- 1.) **LED DOES NOT COME ON WHEN POWER IS APPLIED**
Check connections. Make sure you are plugged into a live AC circuit. Check fuse. If blown, replace with one having the same ratings.
- 3.) **AC LINE FUSE OR CIRCUIT BREAKER BLOWS:**
The charger is shorted internally.
- 4.) **NO POWER IS PRESENT ACROSS THE DC LEADS WHEN A VOLT METER IS CONNECTED:**
Good. The charger will not turn on until plugged into the battery. The battery must have at least 5 volts to turn the charger on.
- 5.) **BATTERIES DON'T RECEIVE FULL CHARGE, OR LED FAILS TO TURN GREEN:**
Battery may be defective.
- 6.) **CHARGER FLASHES ALTERNATING RED AND GREEN WHEN AC POWER IS APPLIED:**
DC leads not connected, reverse connected, or poor connection.

QUICK CHARGE APU Battery Chargers
“LIMITED WARRANTY”

Quick Charge Corporation warrants the APU line of chargers for three (3) years from the date of purchase. After the warranty period, chargers returned to the factory for repair will be charged a minimum rate of \$25.00. Charger will be returned, freight and repair charges, C.O.D. unless other arrangements have been made. This warranty covers all defects in manufacture and performance, provided the unit is operated in compliance with manufacture's operating instructions. For repairs to be made at the Quick Charge factory, a charger and/or component(s) should be sent, freight prepaid to Quick Charge at::

Quick Charge Corp.
1032 S.W. 22nd St.
Oklahoma City, OK. 73109

Quick Charge, will at it's option, repair or replace the charger or component in question. The repaired item will then be returned, freight prepaid by Quick Charge. This warranty is void if the charger or component have been altered, changed, or repaired by anyone not authorized by Quick Charge, or if the charger or component, have been subjected to misuse, negligence, or harsh environmental conditions. (Except those chargers designed for such conditions) If returning the charger to the factory is not practical, replacement parts may be shipped to the customer for field repair at no charge. On parts such as circuit boards, the customer will be required to return the board suspected to be defective to Quick Charge, freight prepaid. If such defective parts are not returned, the customer will be invoiced for the repair parts. Field repairs are made at the user's own risk. "Authorization" by Quick Charge to repair refers to maintaining the warranty only. Quick Charge assumes no responsibility or liability for field servicing, and shall not be responsible for incurred travel or labor charges. Quick Charge corporation shall not in any event be liable for the cost of any special, indirect or consequential damages to anyone, product or thing. This warranty is in lieu of all other warranties expressed or implied. Quick Charge neither assumes nor authorizes any representative or other person to assume for us any liability in connection with the sale of this product.