

Portable Emergency AC/DC Power Supply

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Parts

- (4) Power Sonic PS-1270, 7 ah gel cell batteries, wired in parallel
- (1) Power Sonic PSC-12800a 12 Volt, 800 ma automatic charger
- (8) Push on connectors
- (1) 40 Amp 8 Outlet Rigrunner
- (4) Anderson Power Poles
- (1) Radio Shack 15 V DC meter
- (1) Tripp Lite PV150 watt continuous, 12 V DC - AC sine-wave portable inverter
- (1) Carry case with wheels
- (1) Wooden mount
- (5) Extra 25 amp, ATC fuses

Discussion

The four batteries will provide 28 amp hours (7 x 4) providing 28 amps at 12 volts dc for 1 hour. A 50 watt, 2 meter transceiver with a 12 volt DC supply voltage, will draw approximately 8.5 amps transmit and 0.5 amps receive. In the transmit mode, the batteries will provide 3.3 hours of use. In the receive mode, the batteries will provide 116 hours of use. The formula is:

Supply current (ah) / Draw current = Number of hours (where battery voltage = supply voltage)

The inverter has an output of 150 watts. Full continuous load = 14A at 12V DC, No load = 0.4A at 12V DC. At full load, the inverter will provide 2 hours of use. Assuming linearity, at half load (75 watts) the inverter will provide 4 hours of use. Laptops usually draw a maximum of 88 watts. There is an 11% loss of power through the inverter.

Photos

