

Heath IP-2760 Battery Eliminator

Heath Company Dept. 011-442 Benton Harbor MI 49022 Price class: \$180

Number 13 on your Feedback card

by Perry Donham KW1O

One accessory that you'll find in every ham's shack is a power supply. Some are fancy with cases to match a particular transceiver, others are general-purpose units in military-looking boxes, and there's always the home-brewed job with the 40-pound surplus transformer.

I needed a reliable 12-volt supply that could handle 10-15 Amps, and decided to try Heath's IP-2760 Battery Eliminator. The IP-2760 will run at 12 Amps forever and can deliver up to 20 Amps on peaks—perfect for my HF station.

The Circuit

As power supplies go, the IP-2760 is pretty simple. A full-wave bridge rectifier is followed by 20,000 microfarads of capacitance; voltage is then passed to an LM-317 monolithic regulator. Four hefty pass transistors provide the current-handling capability. The LM-317 is an adjustable regulator and is set up in this circuit to deliver 8-15 volts with less than a 2% drop in voltage when a load is applied. Output ripple is held to under 1%.

Two front-panel meters are provided to monitor output voltage and current. In addition to the on/off switch, a standby/operate toggle is included—handy if you want to use the supply for testing. Two color-coded banana jacks connect the unit to the rest of the world. The case is Heathkit blue with a white face, and two handles on the top make this a "portable" power supply (it weighs about 20 pounds).

Construction

It took about five hours to put the IP-2760 together. Most of the time was spent stripping wire and building the .09-Ohm, 20-Watt resistors for the pass transistors (four sets of four .33-Ohm, 5-Watt ceramic resistors wired together on two long terminal strips). As usual, there was plenty of material supplied in the kit, with quite a bit of wire left over.

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The remainder of the five hours was spent trying to get the little plastic strain relief for the power cord to fit into an even littler hole on the back panel. Now, I've seen these things go right in with no sweat, but it was always somebody else doing the work. I have never been able to get the buggers in without completely destroying them. And the manual just mocks me: "Place the line cord in the slot. Squeeze the two segments together. Insert the rear half into the hole." *As if it were that simple!*

Everything else went smoothly, although be very careful when you handle the finned heat sinks which attach to the sides of the chassis. They are very sharp. All of the transistors are socketed, and a generous amount of thermal

compound is included. I was a bit concerned about the plastic covers used on the transistors, but they seem not to be harmed when the supply is running full out.

During construction, I kept wondering whether or not I could go faster if I just ignored the step-by-step instructions. Especially with a project this simple, all of the "Connect one end of the 12" black wire to Q6 lug C" instructions tend to get tedious. I stuck with it, though, and ended up glad for the minute detail when it came time to really start hooking things up. Wires that had been cut to a specific length were (of course) just the right size to reach to tab C, and everything fit perfectly.

I did, however, end up ignoring the instructions regarding bending wires. In many cases a wire is to be bent to a particular shape to make it from one connection to the next; I found that I couldn't manage to pre-bend the wire and have it fit. It was no big deal, I just bent one end and then measured the distance by holding it up to the circuit.

I also was a bit put off by instructions that had you solder a wire into place on one end and then remove an additional amount of insulation from the other end. This places unnecessary stress on the solder joint, so I simply stripped the wire before it was soldered.

Summary

I've built several Heath kits in my years as a ham, starting with an HW-16. They always work. The IP-2760 started right up, and the measured voltage matched the published specifications. It costs a bit more than most power supplies in its category, but I think that the pleasure of putting it together and the ability to repair it yourself are well worth the additional cost. I think that you'll find the IP-2760 a useful addition to the shack, whether you use it as a dedicated power supply or a test-bench voltage source. ■

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