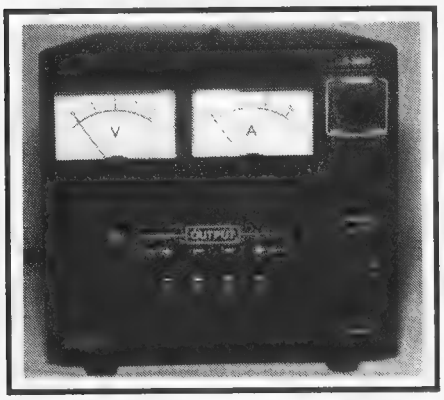
■ Equipment Review

Dick Smith D-3800 Power Supply

*Reviewed by Ron Fisher VK3OM**



Dick Smith D-3800 power supply.

Up until now it's been an expensive job to obtain a 13.8 volt high current power supply to operate a 100 watt HF transceiver. Matching transceiver supplies these days are nudging the $700 mark and, in some cases, are not available at any price. I am sure that Dick Smith Electronics have been embarrassed many times by not being able to supply any sort of power supply to go with a new Yaesu transceiver. I guess they probably recommended the customer should purchase a VK Power Mate kit and build one up at a total cost of around $300 plus several hours work to put the whole thing together.

Well, things have now changed. As often happens these days, the Chinese have come to the rescue. At $299, how could you go past it?

Specifications -

Input : 230-240V AC 50Hz.
Rated DC output : Adjustable from 3v to 15v nominal.
DC current rating : Refer to chart below.
Cooling system : Convection and thermally-switched fan cooling.
Overload protection : - Dissipation limiting circuitry for pass transistors
- 30 amp instantaneous current limit circuitry.
- AC mains circuit breaker (3 amp)
- Transformer thermal fuse.
- Fused transformer auxiliary secondary winding.

Metering : DC volts - 0 to 15V nominal
DC amps - 0 to 30A nominal

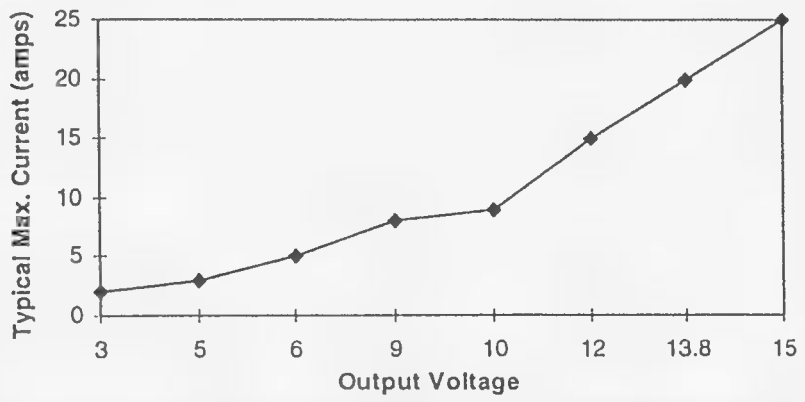


Figure 1 – Plot of output voltage against typical maximum current (reproduced from the supplied documentation).

D-3800 Power Supply Features and Facilities

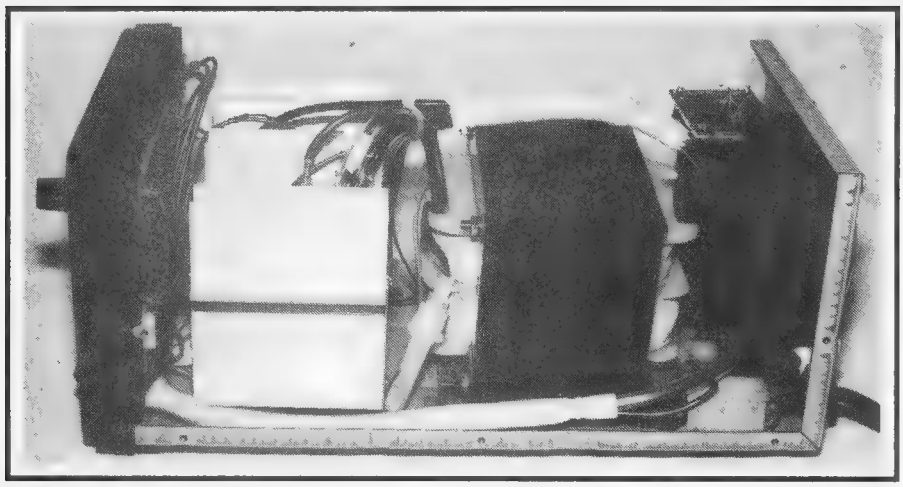
This supply gives you an output voltage variable from three to 15 volts with a maximum output of 25 amps. Actually, this needs to be qualified to some extent, because the 25 amps is only available at 15 volts. As the voltage goes down, so does the available current, so that by the time you get to three volts the maximum current available is down to about two amps (see Fig 1). At the usual 13.8 volts, the maximum continuous current is about 20 amps, but it will still handle peaks up to 25 amps that might be required by a 100 watts plus PEP output transceiver.

The supply is a solid transformer type with full electronic regulation. It is not a switched mode supply. It measures 320 mm deep, 150 mm high and 145 mm wide and weighs in at a hefty 8.6 kg. There are two separate meters to monitor both voltage (0 to 15 V nominal) and current (0 to 30 A nominal), and three sets of DC output terminals, one pair rated at the full output current and two rated at a maximum of three amps each. A thermally switched cooling fan, mounted on the rear panel, sucks air through the entire cabinet. Overload protection includes 30 amp instantaneous current limit circuitry, a three amp AC mains circuit breaker, a transformer thermal fuse and a fused transformer auxiliary secondary winding. The metal cabinet is finished in matt black and presents a very neat appearance.

D-3800 In Use

The operation of the power supply is, in general, quite straightforward. However, there are a few strange things that you need to know about. Unfortunately, the instruction sheet (a double sided A4 sheet only) appears to be a bit misleading.

Overload protection does not work the way the instructions say it should. It states, *"The front panel overload LED*



The D-3800 power supply with the cover removed. Note the hefty transformer, and the cooling fan on the rear panel.

will light if excessive current is drawn. When excessive current is drawn the output voltage of the power supply will automatically be reduced but will return to its pre-set voltage when the excessive load is removed". Well, not on our review power supply.

I found that if I drew current in excess of that rated for the voltage output, the voltage remained at that setting but the current limited down to about one amp. To restore full current it was necessary to remove the load completely (zero current) and then start again. At no time did the overload LED indicator come on.

However, in spite of this anomaly, the power supply worked well in practice. The output was very clean with extremely low ripple, even at a full 25 amps output; also the supply ran cool at all times.

Conclusion

There is no doubt that this power supply represents excellent value for money. I noted an advertisement in the USA magazine *QST* for what appears to be the same unit for $US249. This converts to about $AUS315, which makes the list price of $299 excellent value by any standards.

Perhaps Dick Smith Electronics could take a look at the supplied documentation and make some improvements. For instance, no circuit diagram is included.

Our review power supply was supplied to us by Dick Smith Electronics.

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