

## 24V 10A Power supply / 12V 18A Power supply

- Short circuit protected (2 methods)
- Input spike resistance (MOV)
- Mains input and DC output can unplug
- Mains power indicator Neon
- DC Correct indicator LED (Green)
- Low DC indicator LED (Red)
- Power factor corrected (low input surge)
- Ball Bearing Fan (Sunon KD1206PTB1)
- Main power supply IC is ML4800CP

The power supply is intended to be a good physical replacement for the existing 24V 10A power supply used by Fairfax. We require an Aluminium baseplate to suit the Power supply and board, with the front of the baseplate being bent up to form a guard covering the 240V circuitry to stop finger contact.

The Mains input is 240VAC, with Earth, Active and Neutral clearly labelled. The Mains should be run through a local circuit breaker before being connected to the circuit board. The power supply does not draw more than 1.5A average, and should be on a circuit breaker with a rating of 5-10A. One major cause of power supply failure is mains spikes, and this unit is resistant to these through the use of a Metal Oxide Varistor (MOV1). Under extreme conditions this device may degrade and cause the circuit breaker to open, however this will normally protect the rest of the power supply.

The Mains input earth is connected to Chassis by the screw closest to the mains wiring block.

A mains indicator Neon will indicate AC input voltage, even if the rest of the power supply is not functioning correctly. If the Mains indicator Neon is lit and the DC OK or Low DC lamps are not lit, the power supply is defective and should be swapped out. If the mains indicator Neon is not lit, then there is almost certainly no 240VAC applied to the board - the circuit breaker is probably open.

The DC output is 24VDC, and is available on a 6 way unpluggable wiring block. (A 13.8V version of this power supply is also available) Three terminals are the V+, and three terminals are the return (V-, or 0V), all are clearly labelled. Some of these power supplies are used to run 24V motors and control electronics. The motors can be shared between two of the 24VDC outputs, and the control electronics put on the remaining 24V output. If a short appears in one set of motors, the control electronics will not be affected - the three outputs are individually short circuit protected.

The DC output is adjustable over a range of about +/-10% by control "+V ADJ". If the DC output is low by a significant amount (perhaps due to a fault) the red "Low DC" indicator will light. If one of the outputs is short circuited, the "Low DC" indicator will light. The DC output is not earthed.

Neon lit + <b>Green LED lit</b> +Red LED off	=	All outputs at <b>full voltage</b>
Neon lit +Green LED off + <b>Red LED lit</b>	=	DC low or <b>one short circuit</b>
Neon lit +Green LED off + <b>Red LED OFF</b>	=	PSU Fault or <b>outputs short circuit</b>
<b>Neon off</b>	=	<b>No 240V</b>