

# Operating Instructions

**DCM500**  
**500 Watt Power Amplifier**




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# DCM500, 500 Watt Power Amplifier

## Product Description

The DCM500 is a 500 watt power amplifier in a two rack unit (2RU) chassis suitable for table or direct 19" rack mounting. The DCM500 has outputs for 70 & 100 volts and 4 ohms. It has a balanced input of 10K ohms. The DCM500 will operate from 240 VAC @ 50 Hz or 110 VAC @ 60 Hz (not user selectable, internal, factory adjustment only, specify at the time of ordering) or 24 VDC and will meet it's full performance specification on either voltage supply. The DCM500 also features a DC battery trickle charge facility, slow start on powering up (to reduce inrush current problems), auto-sensing fan cooling, plus overload, short circuit and over temperature protection. The maximum recommended load for the DCM500 is 20 ohms.

## Initial Set Up

There is an unlabelled, screwdriver adjustable output level control located centrally on the front panel of the DCM500. Turning this control in the clockwise direction will increase the power output, turning this control in a counter-clockwise direction will reduce the power output. The factory default setting for this control is such that a 1 volt input will give a 100 volt output.

## Front Panel Controls

**Output Level:** The output level control is unlabelled, recessed (screwdriver adjustable) and is located in the centre of the front panel, just to the right of the DCM Series logo. Turning the control clockwise will increase the output of the DCM500 towards it's maximum output level while turning the control counter-clockwise will decrease the output level. Adjust this control for the desired output level depending on the level of the input signal (from a mixer or other signal source). The factory default setting for this control is such that a 1 volt input will give a 100 volt output.

**Power Switch:** The rocker switch located in the front centre of the panel turns AC power on to the DCM500. Rocking the power switch to the right to turns the AC power 'on'. When the AC power is 'on', a green LED will glow in the amplifier status display window. Please note that this switch does not switch DC voltage. If a DC voltage supply is connected to the DCM500, the amplifier will operate as soon as the connection is made, regardless of the position of the AC power switch. If both an AC and DC voltage supply are connected and you rock the AC power switch to the 'off' position, the DCM500 will automatically continue to operate normally from the DC supply (and the 'mains failure' LED in the amplifier status display window will also glow under these conditions; see the amplifier status display window section under Front Panel Controls later in this manual).

**Cooling Fans (Air Intake):** The cooling fans (two installed in the case of the DCM500) are temperature sensitive and only switch on when the temperature of the DCM500 had reached a pre-determined range. The fans will stay on and only switch off again once the temperature of the DCM500 has fallen below a pre-determined level. So, the fact that the fans are not operating at any time (and most noticeably to the operator at turn-on) does not mean that the amplifier is faulty in any way, just that it is operating within a temperature range that does not need fan cooling for adequate heat dissipation. If the DCM500 is operating continually at conservative levels and proper load conditions, it is possible that the cooling fans will not switch on at any time during normal operation. When operating, the fans cause air flow from the front to the rear of the DCM500.

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**Amplifier Status Display Window:** The status display window highlights the operating conditions of the DCM500. Please refer to Figure #1 on the back page of this instruction sheet with numerical reference as follows:

- 1 **High Temperature:** This red LED glows if the fan has failed and the amplifier has been shut down by its' temperature control circuitry. If this LED is glowing and the fans have not failed, it means that the amplifier is operating in an ambient environment that it naturally too hot for fan cooling to make any difference to the temperature of the amplifier.
- 2 **Power:** This LED glows green if AC power is switched on to the DCM500. Note that this LED does not indicate the presence of a DC supply voltage
- 3 **Mains Failure:** The LED glows red if there is a failure in the AC mains power supply. However, this LED will only glow if there is a DC supply voltage present. If no DC supply voltage is present then this LED will not glow.
- 4 **Output Level VU Meter:** A 10 segment LED VU meter is provided to give an indication of the output signal level of the DCM500 from -25 to +3 dB. For normal operation the LED's should oscillate in and out of the red zone. If the LED's in the red zone are lit continually, then the output level control (or the level of the input signal to the DCM500) should be adjusted to reduce the output level. Too much output level can cause distortion and possible damage to the connected speaker system.

## Rear Panel Connections

Please refer to Figure #2 on the back page of these instructions with numerical references as follows:

- 1 **3 pin IEC, AC mains power inlet.** The operating voltage is 240 VAC @ 50 Hz or 110 VAC @ 60 Hz. The AC power voltage level is **not** externally user selectable but is factory pre-set (via transformer selection). The inlet is equipped with an inbuilt AC fuse holder fitted with a 10 Amp slow blow fuse plus one spare fuse. Power consumption is 800 VA. **Please ensure that the mains power cord is disconnected before attempting to check or replace this fuse.**
- 2 **Output terminal strip .** Reading from left to right these connections are as follows:  
  
Common for low impedance  
4 Ohms  
Common for constant voltage systems  
70 volts  
100 volts
- 3 **24 VDC power connection.** The left side red post is the + (positive) terminal while the right side black post is the - (negative) terminal. The DC current drain is 30 Amps, maximum at full power. This socket also provides trickle charge to a DC battery supply (if connected) when the DCM500 is operated from AC mains power. The level of trickle charge is 300 mA, maximum.
- 4 **Twin DC low voltage, fuse receptacles.** Access the DC fuses is by turning the cap half a turn counter-clockwise with a screwdriver. The value of the fuses is 35 Amps. **Please ensure that the AC power switch is in the 'off' position and that the mains power cord is disconnected before attempting to check or replace this fuse**
- 5 **Input (& parallel output) XLR signal connection.** The input to the DCM500 is transformer balanced @ 10K ohms. The pin configuration of both sockets is as follows: pin #1-earth; pin #2-active (high, +); pin #3-active (low, -). The output socket is to allow the original input signal to be fed on to another amplifier. As these two sockets are wired in passive parallel, the failure of any one amplifier will not affect the signal flowing through that amplifier to another amplifier.

