

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION

The Model 100W1000M1 is a self-contained, air-cooled, broadband, completely solid state amplifier designed for applications where instantaneous bandwidth and high gain are required. Push-pull circuitry is utilized in all high power stages in the interest of lowering distortion and improving stability. The Model 100W1000M1, when used with an RF sweep generator, will provide a minimum of 100 watts of swept power.

Special features incorporated into the Model 100W1000M1 include;

- A front panel power meter for monitoring forward and reflected power.
- Automatic Level Control (ALC) which can be controlled by internal circuits or an external input with front panel control of the ALC threshold.
- Pulse input capability.
- RF output level protection.
- Internal RF detector which provides an output for use in self testing or operational modes.
- A front panel gain control for adjusting amplifier gain when operating the amplifier in the manual mode.
- Provisions are made for remote control of the basic operating functions of the amplifier.

Protection is provided by DC voltage sensing and the individual fusing of all output modules.

Housed in a stylish, contemporary equipment rack, the Model 100W1000M1 provides readily available RF power for typical applications such as RF susceptibility testing, antenna and component testing, wattmeter calibration, and as a driver for higher power amplifiers.

1.2 SPECIFICATIONS

Refer to the AR Data Sheet at the end of this section for detailed specifications.

1.3 POWER SUPPLIES

This unit has two (2) regulated power supplies with a total power consumption of approximately 1,000 watts. One of the supplies is a self-contained, regulated switching unit with an output voltage of 20 volts and current rating of 47 amps. The other power supply is a 1.5 amp, 30 volt transformer whose output is rectified and then regulated by several regulators to supply the following voltages; +28 VDC, +15 VDC, -15 VDC and +5 VDC. Primary circuit fusing is provided.

1.4 PROTECTION CIRCUITS

Features incorporated into this unit include RF output level protection circuits, thermal protection circuits, internal DC level sensing and indicator circuits along with separate fusing of the driver and final RF amplifiers. Activation of the reflected power trip/set adjustment, (which is adjusted to approximately 100 watts reflected and 150 watts forward), will initiate limiting in the low level driver of the amplifier string. In the event that the limiting circuits cannot keep the amplifier's levels below the trip/set points, the protection circuits will initiate a shutdown of the low level driver in the amplifier string. A three (3) inch power meter is

provided on the front panel, which is calibrated from 0 to 200 watts. A front panel "Reset" button is also provided to permit re-powering in the case of transient DC or RF activation of the protection circuitry.

1.5 INSTALLATION

Before proceeding, thoroughly inspect the amplifier for signs of physical damage which may have been incurred during shipment and completely read the following installation and operating instructions, paying special attention to all **CAUTION** notes.

1.5.1 Location

Select an operating location which will permit free air circulation around the amplifier cabinet. The Model 100W1000M1 utilizes air cooling and should be located where the normal flow of air into or exiting from the unit will not be restricted, diverted, or re-circulated through the unit itself. For example; do not position the unit next to a wall or other equipment which would cause a restriction of air flow into or out of the unit.

CAUTION:



Under normal operating conditions the exhaust air temperature from the Model 100W1000M1 may exceed 32°C. Do not block inlet or outlet air flow.

1.5.2 Power

The Model 100W1000M1 is designed for a primary power of 100-120 or 200-240 VAC, 50/60Hz single phase.

CAUTION:



Dangerous voltages are present in the unit whenever the unit is plugged into the outlet. This unit should be disconnected from the main power line when servicing the unit.

CAUTION:



Do not connect unit to 240 VAC measured line to line. to do so would result in one side of the line not being fused, creating a hazardous situation. The 240 VAC feature is designed primarily for use in countries having 240 VAC measured line to neutral.

CAUTION:



The voltage select plug is located behind the cover plate on the rear panel. To set plug for proper wiring, refer to voltage select chart in Section 3.3 (Power Supply) of manual text. The wiring of PS1 must also be changed when changing the input voltage range from 100-120 to 200-240 VAC. Refer to Voltage Select Chart for proper wiring of PS1.