

MA-5002VZ

Architectural and Engineering Specifications

Macro-Tech 5002VZ (120 V, 60 Hz models)

The power amplifier shall be a solid-state two-channel model employing multi-mode® (AB+B) grounded bridge™ output circuitry with a VZ® (Variable Impedance) power supply for each channel.

The outputs shall be switchable as stereo, bridged-mono or parallel-mono modes of operation. The bridged-mono mode shall bridge the outputs to provide increased output voltage. The parallel-mono mode shall parallel the outputs to provide increased output current.

The output impedance of each channel shall be less than 10 milliohms in series with less than 2 microhenries in stereo mode.

When configured to do so, the variable impedance power supplies shall reduce unnecessary voltage across the output devices by automatically switching to a parallel mode when less voltage is required by the output circuitry and to a series mode when more voltage is required.

The amplifier shall contain protection circuitry which limits the drive level placed on the output devices before their SOA (Safe Operating Area) is exceeded. This protection circuitry shall calculate the instantaneous voltage across and current through the output devices while factoring in their simulated junction temperatures to predict how close they are to their operating limits. This protection will be called "ODEP."

The amplifier shall contain controlled slew-rate voltage circuitry to protect it against radio frequency interference burnouts. It shall also be protected from current overload at its output stage. The slew rate of the amplifier shall be greater than 30 volts per microsecond in stereo mode.

The amplifier shall temporarily go into a standby mode if its power transformer becomes excessively hot and shall automatically resume normal operation once it has cooled to a safe operating temperature.

The amplifier shall contain loudspeaker protection circuitry which protects against DC, off-center woofer cone movement and unwanted subsonic and ultrasonic frequencies.

Front-panel controls shall include an enable on/off switch and a detented input level control for each channel.

Rear-mounted controls shall include a switch which selects between stereo, bridged-mono and parallel-mono modes of operation, a compressor switch for each channel which selects between off, fast or slow compressor speeds, a loudspeaker offset integration switch for each

channel to turn the loudspeaker protection circuitry on or off, a sensitivity switch for each channel to select between 0.775 V, 1.4 V or a fixed voltage gain of 26 dB for full rated output and a ground lift switch to isolate the signal ground from the chassis ground.

Internal controls shall include a VZ mode switch for each channel to control the operation of the variable impedance power supplies. The VZ mode switches shall determine whether the variable impedance power supplies are locked into the parallel mode, whether they are allowed to automatically switch between parallel and series modes or whether the output device protection circuitry can automatically override automatic operation and force the use of the parallel mode.

The amplifier shall be fully compatible with and shall provide appropriate input cables and connectors for Crown® PIP2™ input modules. The amplifier shall be fully compatible with the Harman Pro HiQnet™ System or Crown IQ System®.

A defeatable compressor shall be provided for each input. Each compressor shall provide a fast mode with an attack time of 4 milliseconds and release time of 300 milliseconds and a slow mode with an attack time of 12 milliseconds and release time of 600 milliseconds.

Front panel indicators shall include an amber power enable indicator, an amber protection system indicator for each channel which shall normally be illuminated to confirm the availability of reserve thermodynamic energy and which shall dim in proportion to limiting when the power demands of the output stages have been exceeded, a green dual-function signal presence/input-output comparator indicator for each channel which shall normally flash at moderate intensity to show the presence of an audio signal and which shall flash brightly if distortion of any kind equals or exceeds 0.05%, and a two color current load/current limit indicator for each channel which shall glow green when load current is flowing out of the amplifier and turn red when the maximum current is being delivered to the load.

The power amplifier shall meet or exceed the following performance criteria. Input sensitivity for rated output: 26 dB voltage gain (unbalanced). Rated FTC output in stereo mode with less than 0.1% THD: 1030 watts per channel (20 Hz to 20 kHz) into 8 ohms. Rated FTC output in bridged-mono mode with less than 0.1% THD: 2035 watts (20 Hz to 20 kHz) into 16 ohms. Hum and noise: at least 105 dB (A weighted) below full rated output power. Phase response: ±20 degrees from 10 Hz to 20 kHz

at 1 watt. Frequency response: 20 Hz to 20 kHz, ±0.1 dB at 1 watt into 8 ohms per channel in stereo mode. Damping factor: greater than 1000 from 10 to 400 Hz into 8 ohms. Intermodulation distortion (SMPTE): less than 0.05% from 411 milliwatts to rated power into 8 ohms in stereo mode. Harmonic distortion at rated power into 8 ohms per channel (stereo mode): less than 0.05% from 20 Hz to 1 kHz and increasing linearly to less than 0.1% at 20 kHz.

The amplifier shall be safe when driving any kind of load including highly reactive ones.

The power requirements shall be 120 VAC at 60 Hz. At idle, the amplifier shall draw 90 watts or less.

The amplifier chassis shall be constructed of steel with a durable black finish and shall be designed for flow-through fan-assisted ventilation from the front to the rear panels. The amplifier shall have an aluminum front panel with Lexan overlay and air filter media.

The dimensions of the amplifier shall allow for 19 inch (48.3 cm) EIA standard (RS-310-B) rack mounting. The amplifier shall be 5.25 inches (13.3 cm) tall, 15.875 inches (40.3 cm) deep behind the rack-mounting surface, and 2.875 inches (7.3 cm) in front of the rack-mounting surface.

The amplifier shall weigh 77 pounds, 9 ounces (35.2 kg).

The amplifier shall be designated the Crown Macro-Tech 5002VZ.



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