SYS10K

MODULAR AMPLIFIER RACK SYSTEM

OPERATING AND MAINTENANCE MANUAL

SYS10K Modular Amplifier Rack System

SYSTEM DESCRIPTION

The SYS10K Modular Amplifier System is a flexible and efficient, high performance audio distribution system. The SYS10K 10000 combines up to ten amplifier modules with two power modules in a 5-1/4" high by 19" wide Eurocard specification enclosure 14-1/2" deep. All modules plug in from the front, are secured with captive hardware and present an attractive and safe closed front panel. Aluminum extrusion construction makes a strong and rugged enclosure and allows free convection for vertical airflow. The basic frame provides power bussing for all positions. Individual modules are supplied with mating connector assemblies, which mount on the rear of the card frame and plug into the power bus. Connector assemblies provide barrier block connections with fanout strips for studio wiring. Alternate insulation displacement, mass termination connector systems allow simple push-on audio connections.

A wide variety of available interchangeable plug-in modules allow an optimum system to be initially assembled at reasonable cost and expanded and upgraded as future requirements necessitate. A partial listing of available SYS10K modules follows. Consult factory for latest information.

DA100 - A basic one input, six outputs Distribution Amplifier. A single power stage is split into six active balanced outputs at +22dBm each. Split and by-passed build-out resistors give protection against shorts and RF. Balanced bridging input. Single panel level control sets all outputs. Headphone monitor jack.

MDA100 - Metered One-by-Six Distribution Amplifier. Adds a LED Bargraph VU Meter to the basic amplifier described above. Measures -21 to +6 VU with 0 VU adjustable for outputs from 0 to +18dBm. Signal Alarm indicator and output warns of dead channel.

CDA100 - Compressing One-by-Six Distribution Amplifier. Adds a Gated Compressor to the MDA100. Controls on inputs above -30d8m. Compression Slope adjustable up to 20:1. Input level sensor gates compressor gain recovery to prevent background noise build-up during program pauses. Meter is switchable to Output or Gain Reduction levels. Switchable linear amplifier mode.

IDA100 - Independent Six-Output Distribution Amplifier. Individual trimmers provided for each output along with a Master Level control. Headphone output plus six transformers coupled (IDA100-1) or active balanced (IDAI00-2) outputs.

MIDA100 - Metered Independent Output Distribution Amplifier. Six Transformer (-I) or Active Balanced (2) outputs with independent level trim controls. A LED Bargraph meter is switchable to all outputs and the input. Master level control and headphone output.

MIDA100-1RC - Remote controllable Distribution Amplifier. Four transformer outputs each with an independent level trim control. Switchable Remote or Local DC operated VCA Master Level Control. A LED bargraph meter is switchable to all four outputs or the input signal. Headphone output.

PS100 - Power Module. A bi-polar unregulated 18 VDC supply drives the system power buss through fused isolation diodes. Operates singly or as a redundant pair in the right hand positions of each rack frame. Front panel LEDs indicates low voltage on either buss or blown fuses. Power Failure Alarm relay contacts close for any power loss and can activate an external alarm. Alarm outputs from both PS100 positions are paralleled and brought to a barrier block (pos. 4 & 5) mounted on the left hand rear of the card cage. Dual power transformers in each module run cooler and generate minimal hum field. DC lines are fully bypassed. AC line filtering, non-concentric wound power transformers and varistor clippers prevent power line transient and RF feed thru**.**

INSTALLATION

MOUNTING A fully loaded RM100 frame is heavy! To protect yourself and the equipment, mount the empty RM100 enclosure securely before plugging in the power and amplifier modules. The RM100 is designed for free vertical air convection cooling. We recommend at least one rack unit (1-3/4 inches) spacing between stacked units or forced air cooling of more densely stacked frames. If using forced air, seal frames and joints between frames with duct tape and use blank panels to seal any empty slots to avoid losing air pressure.

WIRING The RM100 is supplied with mating connectors for the PS100 power supplies mounted on the right side of the enclosure and with all power busing in place, ready to plug on to the mating amplifier connector assemblies. Install amplifier modules starting at the most left hand position (opposite from power supplies) and stack side-by-side for optimum shielding of each module.

The connector assemblies supplied with each amplifier module mount on the rear of the rack frame using supplied metric hardware - (4) M 2.5 x 6 mm screws. System audio inputs and outputs connect to a 15-position barrier block using a supplied mating fanning strip for easy pre-wiring. The 15-position fanning strip may be cut into smaller sections if desired, e.g. inputs only, outputs only. The fanning strip is KULKA P/N 649A15 and replacements are available from ATI stock. Wire the audio inputs and outputs using the connector assembly markings as a guide. See Fig. 3. NOTE: Barrier block screws are tightly machine inserted by the manufacturer. Protect your knuckles by loosening them a few turns before mounting them in a rack where they are hard to reach. Doing so will make it much easier to install your pre-wired fanning strips at 3 AM. Fanning strips fit onto barrier blocks from the left.

On special order, connector assemblies with .025 posts instead of the barrier block are available. These posts mate with AMP MTA100 Series plug-on connectors. The MTA connectors are solderless insulation displacement types. Special tools for wire insertion into the MTA connectors include a simple and inexpensive maintenance type tool AMP

59803-1, and a precision ratchet type self-indexing hand tool AMP59801-1. Consult: factory for more information.

The SYS10K uses only three wire grounded power plugs. The third wire ground can cause a ground loop with your station ground. If you are sure your station ground will provide adequate protection to personnel in case of an AC line short to chassis, a 3 to 2 AC adaptor can be used to isolate the power line ground. We recommend that the adaptor be removed and the power line ground reconnected prior to any service work requiring removal of the station ground from the chassis.

To allow maximum flexibility in grounding in high RF environments, the circuit grounds are isolated from case ground. An individual circuit ground is available next to the HI input terminal of each module. These grounds are already interconnected through the common DC power supplies. It is not recommended that the individual circuit grounds be tied together since a ground loop would result. A common DC ground is available on the **ALARM** terminal block pin 3. This ground may be interconnected, tied to chassis or connected to a studio ground system.

ALARMS Alarm lines from the two power supplies are paralleled and brought to a barrier block mounted on the left hand rear sidewall. The power alarm is connected to pins 1 and 2. The power alarm outputs are reed relay contacts which close if either or both DC output voltages drop below 11 volts due to excessive loading, blown fuses or loss of AC power. The reed relay contacts should not be used to switch high current lamp loads or AC line voltages. A recommended Alarm interface circuit capable of operating audible and visual alarms is shown in figure 1. Several racks of distribution amplifiers may be paralleled into a single alarm interface.

MODIFICATIONS

230 VAC OPERATION PS100 incorporate dual transformer primaries, which can be strapped for 115 or 230 VAC operations. To use on 230 VAC power, remove jumpers J1 and J3 from the solder side of the PSI00 PC Board and insert a jumper in the J2 position.

DUAL AC POWER Each PS100 of a redundant powered system may be operated from a separately fused AC system for even greater reliability. An additional AC line cord is required and replaces the AC jumpers between the power blocks of the two PS100 modules.

ACCESSORIES

A full complement of operational accessories is available for use with your SYS10K. A partial list follows. Consult the factory or a current price list for an up-to-date listing.

BP100-1	Blank Front Panel, 1.2 inches wide to replace missing amplifier module.
BP100-2	Blank Front Panel, 2.0 inches wide, replaces missing power supply module.
EXI00-1	Extender Assembly for amplifier modules. A four-foot long extension cable allows easy module service.

The following four items are normally supplied with the RM100 Rack Frame or with the plug-in amplifier modules. Order extras as spares or to build bench test and service fixtures.

20181-501	Mating connector assembly for PS1 00 power supply module.
20179-501	Mating connector assembly for amplifier module.
20184-501	DC interconnect cable assembly. Interconnects 20181-501 with 20179-501.
20185-501	AC Line Cord Assembly.