Film-Tech

The information contained in this Adobe Acrobat pdf file is provided at your own risk and good judgment.

These manuals are designed to facilitate the exchange of information related to cinema projection and film handling, with no warranties nor obligations from the authors, for qualified field service engineers.

If you are not a qualified technician, please make no adjustments to anything you may read about in these Adobe manual downloads.

www.film-tech.com

Component Engineering

3601 Gilman Ave. West
Seattle, WA 98199

Phone:
(206) 284-9171

FAX:
(206) 286-4462

Model MS-100

Instructions

GENERAL

The MS-100 monitor amplifier follows the same pattern of connection and operation as have all Component Engineering monitors. That is, you can sample the signals coming from the output of the processor or you can sample the signals coming from the output of the power amplifiers. This model can monitor Bi-Amped systems as well as single units, and has a total of nine identical input channels. In addition, a line level mixed Mono output is provided which is particularly useful for feeding hard-of-hearing systems, and test outputs are available on both the front and rear panels.

The internal amplifier incorporates an upward compressor (which can be defeated) to help overcome the high noise level usually found in projection booths. The monitoring power amplifier itself provides 20 Watts of power which is enough to drive a stage speaker in an emergency. The internal loudspeaker is by JBL and rated at 40 Watts.

The monitor is housed in a steel chassis and occupies 5 1/4" of rack space. Convenient cable tie slots are provided along the rear, and the terminal strip assembly is unpluggable for ease in servicing the unit. This device is approved by the City of Los Angeles Electrical Testing Laboratory.

LOW LEVEL INPUTS

The low level ("Processor Output") input connections are on the left side of the input terminal assembly (when viewed from the rear). Only one ground connection is needed between these inputs and the processor outputs. These lines are paralleled with the ones going from the processor to the power amplifier inputs. When installing this wiring, it is sometimes tempting to "daisy-chain" the lines from the processor to the monitor and then on to the power amplifiers, but please avoid this temptation. It is far better to run each set of lines directly from the processor outputs. It means two sets of wires attached to the terminals on the processor, but it usually will result in a reduction of hum problems.

In most installations there will be only one Surround feed, so it is suggested that you strap both inputs together so that the operator will find signal in either knob position.

HIGH LEVEL INPUTS

The high level inputs are on the right side of the terminal strip assembly. All nine of the inputs are set up identically. The upper set is labeled "High Frequency (High Gain) Inputs" and the lower set is labeled "Low Frequency (Low Gain) Inputs". What this means is that if you are feeding from a Bi-Amped system, you would use the upper set for the feeds from the High Frequency amplifiers, and the lower set for the feeds from the Low Frequency amplifiers. If you are not coming from a Bi-Amped system, then you may use either set (or a mixture) depending upon how much gain you wish to have. There is a difference in gain for each set in the attempt to try to match the listening level when switching back and forth between the "Power Amp" and the "Processor" sides of the blue toggle switch. The only difference between the upper and lower inputs is the amount of attenuation applied to the incoming signal.

Note that there are no ground terminals among these inputs. They are omitted in order to prevent ground loops and other nasty problems. You don't need them anyway, because enough voltage is developed between the power amplifier output and its input ground. The monitor's impedance for these inputs is quite high, and the power amplifier will never know that anything is connected to it other than the loudspeaker. This high impedance also provides a lot of isolation between the "High Frequency" and "Low Frequency" inputs for any given channel.

When installing a Bi-Amped system, you will probably use both inputs for only the stage channels. When it comes to the Surrounds, connect to the lower set of inputs, but if this isn't found to be loud enough in the booth, move the inputs to the upper set. This is also where you will probably want to use both the left and right surround inputs. If it is a small theatre and there is only one Surround amplifier, then strap the inputs together as you did for the low level inputs. If it is a big enough house that you are using two power amplifiers, use the two inputs to sample both amplifiers. Some people split them left and right, some people split them front and rear, and some people have genuine stereo surrounds, but in any case, you are covered.

OUTPUT CONNECTIONS

In the lower left quadrant of the terminal assembly will be found the "Utility Connections". (The "Aux" input, left over from above, is also in there.) The "Mono Out" is a mix of the first 5 channels, i.e., "Left" through "Right" inclusive. It is a buffered line level signal intended to feed a hard-of-hearing system, remote amplified speaker or what have you. This output is not affected by the monitor's input switch or volume control. The "Test" output is an extension of the front panel test jacks except that it is driven by a buffer amplifier. This output (and the front panel jacks) follow the selector switch, but not the volume control.

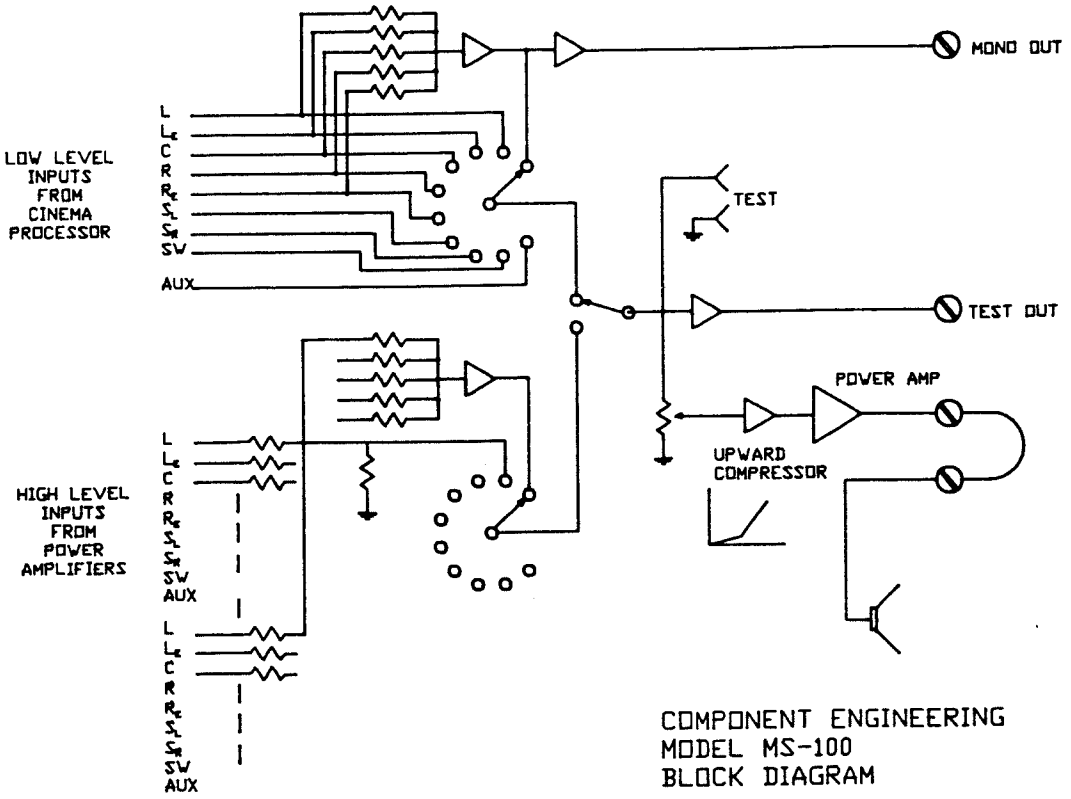
There are three terminals associated with the internal power amplifier and speaker. First is "Ground" which, it should be noted, is a separate ground carried right back to the power supply so that it is isolated from the low level grounds. The "Spkr Out" is the internal amplifier output and comes strapped to the "Int Spkr" for normal operation. These are made available so that you can connect any external speaker or switching you might wish. An external speaker should be in the 8 Ohm range, and may be operated in parallel with the internal one.

OPERATION

Operation really is pretty well self-explanatory, but a point or two might be made. The "Mix" position is a mix of the first five inputs as was described above for the "Mono Out". The Surround channels have been omitted deliberately because in most cases they are a delayed signal and when mixed in with the front a very messy sound results.

Because of the high noise in most projection booths, this unit incorporates an upward compressor which raises the volume of low level passages from the film sound track relative to the high level passages. When the volume control gets above about half way, the compressor is no longer effective. The monitors are shipped with this circuit enabled, but it can be defeated if desired. To do so you must open the unit up by removing the top cover. Note the main circuit board which is mounted to the bottom of the chassis. A little southwest of the center of the board you will see a screw head sticking out of a black nylon post. This is a switch. All you have to do is to run the screw down until it is snug--not too tight--and the compressor will be defeated.

No speaker fuse is provided because the output is protected by something called a "PTC Fuse". This is a device in series with the output which normally has a very low resistance. Should something cause too much current to be drawn from the amplifier this device will go to a high resistance and protect the amplifier chip. Therefore, should you find that your listening level goes away or drops way down, turn the unit off for a few minutes and let the PTC cool. If the cycle repeats, then look for whatever is wrong.



COMPONENT ENGINEERING
MODEL MS-100
BLOCK DIAGRAM

TYPICAL INSTALLATION PLANS