PEAVEY™
ARCHITECTURAL ACOUSTICS™

Dynamic System Controller™

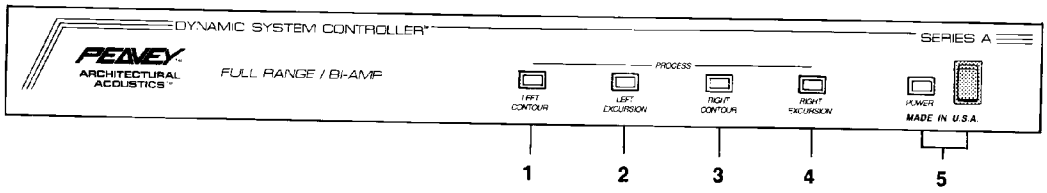
Series A OPERATING GUIDE

FEATURES:

- Full-range/Biamp operation
- Two channel stereo operation
- 40 Hz/ 60 Hz tuning
- Electronically balanced inputs
- Automatic loudness compensation
- Process indication LED's

DESCRIPTION

Dynamic system controllers are a critical link in the signal processing chain. Their use in permanent installation systems is indicated when a wide variety of program material and large dynamic range requirements are specified. The Peavey™ Architectural Acoustics™ Dynamic System Controller™ Series A is a two-channel processor that functions as either a full-range or biampable processor, with full low frequency, automatic loudness compensation and movable subsonic control. In full-range mode, the system may be used with any public address/sound reinforcement loudspeaker system that has a vented low frequency section tuned to either 60 or 40 Hz. In biamp mode, the third order Butterworth crossover is set to 1200 Hz and requires a loudspeaker with components that are compatible with that crossover frequency. The basic processor function is to control low frequency response as a function of power amplifier output levels. At low power levels, the processor extends system bandwidth and provides loudness compensation. As amplifier levels increase, the Dynamic System Controller Series A reduces loudness compensation equalization and begins to limit system bandwidth. The effect is to provide extended bandwidth and fidelity at low levels and to reduce power-induced distortion and subharmonic control at elevated levels.



Front Panel Functions:

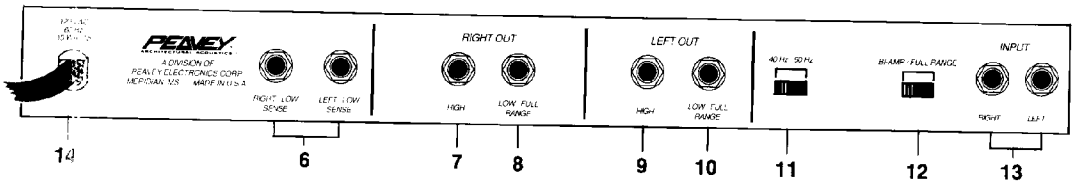
1. Left Contour LED:
Illuminates when processing is occurring on left program material. Note: Low contour process occurs when low frequency boost is being reduced for system protection and approaches a flatter system response.

2. Left Excursion LED:
Illuminates when processing is occurring on left program material. Note: Excursion process indicates a shift upward of the high pass filter in the amount necessary to provide loudspeaker protection and reduced distortion associated with excessive cone motion.

3. Right Contour LED:
Illuminates when processing is occurring on right program material. Note: Low contour process occurs when low frequency boost is being reduced for system protection and approaches a flatter system response.

4. Right Excursion LED:
Illuminates when processing is occurring on right program material. Note: Excursion process indicates a shift upward of the high pass filter in the amount necessary to provide loudspeaker protection and reduced distortion associated with excessive cone motion.

5. Power Switch and Power LED:
Depress the switch to the "ON" position. The red pilot light (LED) will illuminate indicating power is being supplied to the unit.



Rear Panel Functions:

6. Right and Left Low Sense Inputs:
Each has one 1/4" stereo jack and is electronically balanced to allow use of bridged amplifiers for any band pass. Each should be used with standard phone plugs unless bridged amplifiers are used in the system. Note: In "full-range" operation, sense inputs receive a signal from the speaker output of the power amplifier driving the system. In the biamped mode of operation, the sense inputs receive a signal from the power amplifiers driving the system low end. (See diagrams 1 & 2.)

7. Right Output High:
A 1/4" phone jack output for the right program high pass.

8. Right Output Low/Full Range:
A 1/4" phone jack output for the right program low pass. This output is also used for the right output of "stereo" processed systems that are operated in the full-range mode. (See biamp/full-range switch.)

9. Left Output High:
A 1/4" phone jack output for the left program high pass.

10. Left Output Low/Full Range:
A 1/4" phone jack output for the left program low pass. This output is also used for the left output of "stereo" processed systems that are operated in the full-range mode.

11. Low Frequency Select Switch:
A two-position switch to select 40 Hz or 60 Hz for low frequency processing. The position of this switch should match low frequency tuning specification of low frequency speaker enclosures.

12. Biamp/Full-Range Switch:
Selects biamp or full-range mode of system operation.

13. Inputs:
1/4" phone jacks are provided for "Left " and "Right" inputs. Monaural systems should patch into right or left input only.

14. Line Cord:
For your safety, we have incorporated a 3-wire line (mains) cable with proper grounding facilities. It is not advisable to remove the ground pin under any circumstances. If it is necessary to use the equipment without proper grounding facilities, suitable grounding adaptors should be used. Less noise and greatly reduced shock hazard exists when the unit is operated with the proper grounded receptacles.

Set-Up And Operation:

The Dynamic System Controller should be located near the system power amplifiers, in the same equipment rack whenever possible. This keeps the interconnecting cables to a minimum length.

Full-Range Stereo Mode:

Connection to the Dynamic System Controller should be made at left and right 1/4" input jacks (see diagram 1). The low/full-range outputs for left and right should then be patched to amplifier/speaker systems for left and right program material. The speaker output signal from the amplifier driving the left speaker system should be patched back into the "left" low sense input. The speaker output signal from the right power amplifier patches back into the "right" low sense input. Speaker cable may be used for this patch terminated with 1/4" plugs at the controller end.

Biamp Stereo Mode:

The input patch is identical to the full-range stereo mode. The outputs from the controller contain two different band passes for the left and two for the right. The left "high" out, for instance, should patch to the power amplifier/speaker system for the left high frequency system, and the left "low" out should patch to the power amplifier/speaker system for the left low frequency system. This same procedure is performed for the right system connection (see diagram 2). The sense connections are from the left and right speaker outputs of the power amplifiers driving the lows only. For instance, the output of the left low frequency power amp patches into the "left" low sense input and the output of the right power amp patches into the "right" low sense input.

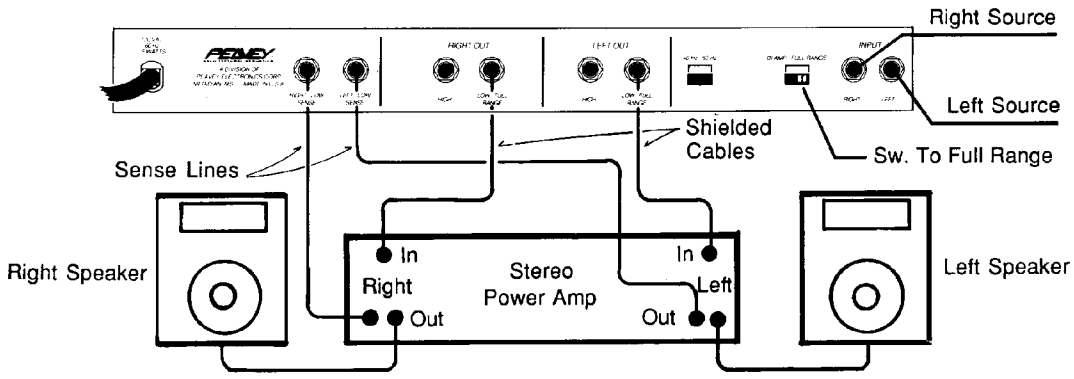
Mono Operation:

Mono operation requires the same patch sequence from the input to the power amp/speaker system and back into the sense input. However, it is not necessary to patch signals from left and right outputs. (The left and right signals would be identical in mono.) (See diagram 3.) Note: A mono system can be biamped. In this case, follow the patch procedure for the biamped stereo system but only connect the "left" portion.

Multiple Amp Systems:

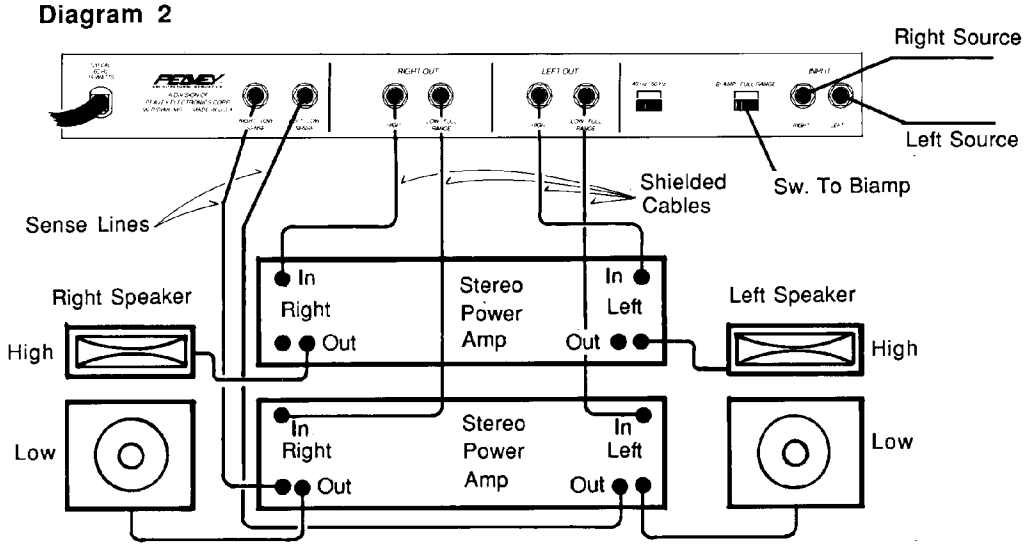
Each band pass output can drive at least six amplifiers (10K input impedance). Only one sense line from an amplifier driving a particular band pass is necessary. For instance, if four power amps are required to drive the low frequency speakers, only the output of one needs to patch back into the "low" sense input. However, all amplifiers in a particular band must be of the same type and power rating.

Diagram 1



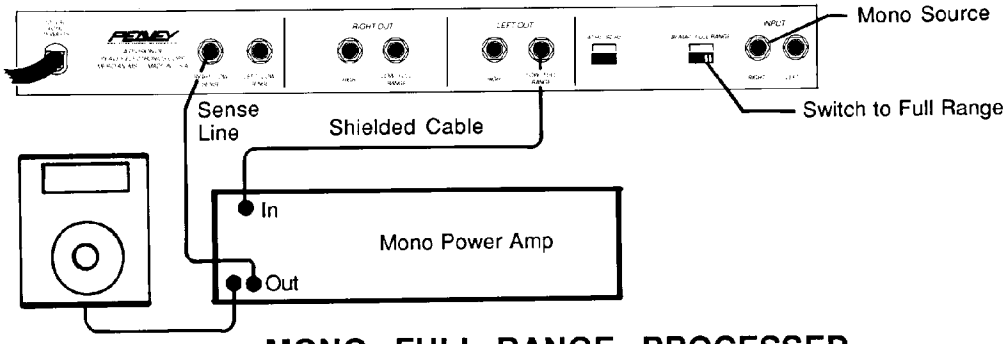
Full Range, Stereo Processed

Diagram 2



Biamped, Stereo, Processed

DIAGRAM 3



MONO, FULL RANGE, PROCESSED

NOTE: For biamped mono system see Diagram 2. Patch for only left or right portion. Mono input source to left or right but not both.

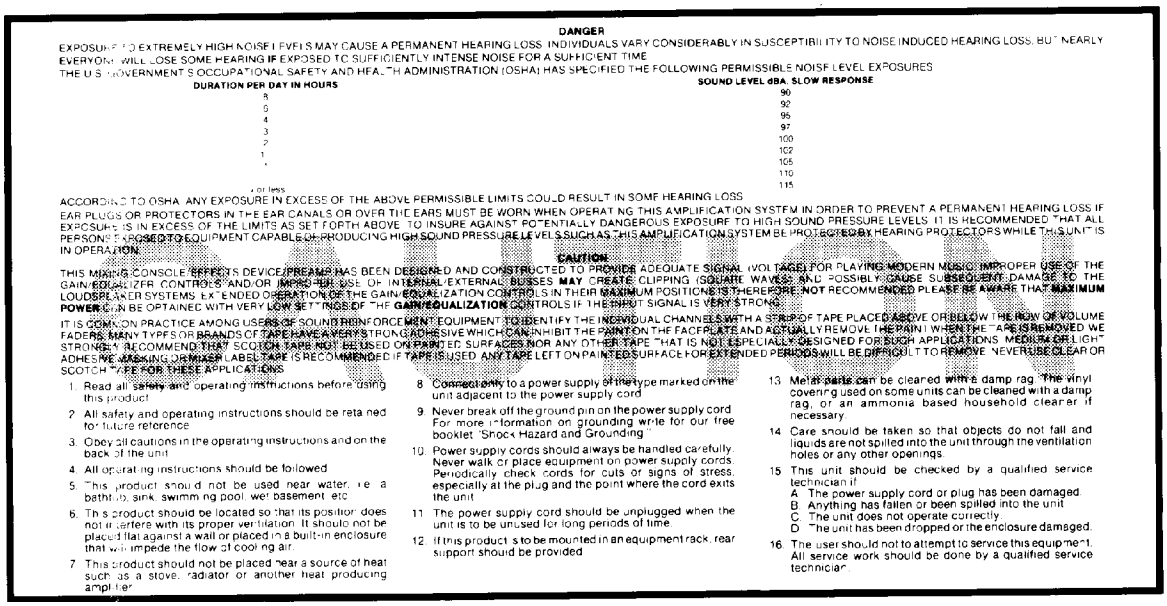
WARRANTY

Peavey Electronics Corporation warrants to the original purchaser of this new Architectural Acoustics™ product that it is free from defects in material and workmanship. If within one (1) year from date of purchase a properly installed product proves to be defective and Peavey is notified, Peavey will repair or replace it at no charge. (Note: Batteries and patch cords not covered.) "Original purchaser" means the customer for whom the product is originally installed.

Damage resulting from improper installation, interconnection of a unit or system of another manufacturer, accident or unreasonable use, neglect or any other cause not arising from defects in material and workmanship is not covered by this warranty. The warranty is valid only as to products purchased and installed in the United States.

THIS LIMITED WARRANTY IS IN LIEU OF ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. UNDER NO CIRCUMSTANCES WILL PEAVEY BE LIABLE FOR ANY LOST PROFITS, LOST SAVINGS, INCIDENTAL DAMAGES OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, EVEN IF PEAVEY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. THIS LIMITED WARRANTY IS THE ONLY EXPRESS WARRANTY ON THIS PRODUCT, AND NO OTHER STATEMENT, REPRESENTATION, WARRANTY OR AGREEMENT BY ANY PERSON SHALL BE VALID OR BINDING UPON PEAVEY.

Peavey's liability to the original purchaser for damages for any cause whatsoever and regardless of the form of action, is limited to the actual damages up to the greater of Five Hundred Dollars ($500) or an amount equal to the purchase price of the product that caused the damage or that is the subject of or is directly related to the cause of action. This limitation of liability will not apply to claims for personal injury or damage to real property or tangible personal property allegedly caused by Peavey's negligence. For information on service under this warranty, call a Peavey customer service representative at (601) 483-5376.



DANGER

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME.
THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES

DURATION PER DAY IN HOURS	SOUND LEVEL dBA, SLOW RESPONSE
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

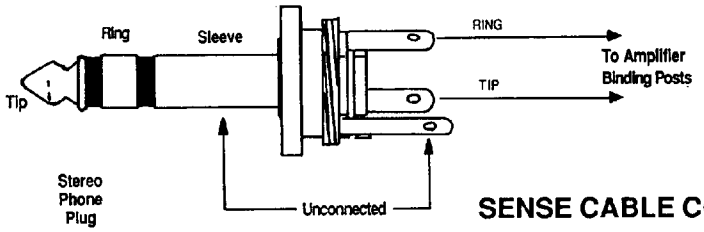
ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE LIMITS COULD RESULT IN SOME HEARING LOSS.
EAR PLUGS OR PROTECTORS IN THE EAR CANALS OR OVER THE EARS MUST BE WORN WHEN OPERATING THIS AMPLIFICATION SYSTEM IN ORDER TO PREVENT A PERMANENT HEARING LOSS IF EXPOSURE IS IN EXCESS OF THE LIMITS AS SET FORTH ABOVE. TO INSURE AGAINST POTENTIALLY DANGEROUS EXPOSURE TO HIGH SOUND PRESSURE LEVELS, IT IS RECOMMENDED THAT ALL PERSONS EXPOSED TO EQUIPMENT CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS SUCH AS THIS AMPLIFICATION SYSTEM BE PROTECTED BY HEARING PROTECTORS WHILE THIS UNIT IS IN OPERATION.

CAUTION

THIS MIXING CONSOLE, EFFECTS DEVICE/PREAMP HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE SIGNAL (VOLTAGE) FOR PLAYING MODERN MUSIC. IMPROPER USE OF THE GAIN/EQUALIZER CONTROLS AND/OR IMPROPER USE OF INTERNAL/EXTERNAL BUSSES **MAY** CREATE CLIPPING (SQUARE WAVES) AND POSSIBLY CAUSE SUBSEQUENT DAMAGE TO THE LOUDSPEAKER SYSTEMS. EXTENDED OPERATION OF THE GAIN/EQUALIZATION CONTROLS IN THEIR **MAXIMUM** POSITIONS IS THEREFORE **NOT** RECOMMENDED. PLEASE BE AWARE THAT **MAXIMUM POWER** CAN BE OBTAINED WITH VERY LOW SETTINGS OF THE **GAIN/EQUALIZATION** CONTROLS IF THE INPUT SIGNAL IS VERY STRONG.

IT IS COMMON PRACTICE AMONG USERS OF SOUND REINFORCEMENT EQUIPMENT TO IDENTIFY THE INDIVIDUAL CHANNELS WITH A STRIP OF TAPE PLACED ABOVE OR BELOW THE ROW OF VOLUME FADERS. MANY TYPES OR BRANDS OF TAPE HAVE A VERY STRONG ADHESIVE WHICH CAN INHIBIT THE PAINT ON THE FACEPLATE AND ACTUALLY REMOVE THE PAINT WHEN THE TAPE IS REMOVED. WE STRONGLY RECOMMEND THAT SCOTCH TAPE NOT BE USED ON PAINTED SURFACES NOR ANY OTHER TAPE THAT IS NOT ESPECIALLY DESIGNED FOR SUCH APPLICATIONS. MEDIUM OR LIGHT ADHESIVE MASKING OR MASK LABEL TAPE IS RECOMMENDED. IF TAPE IS USED, ANY TAPE LEFT ON PAINTED SURFACE FOR EXTENDED PERIODS WILL BE DIFFICULT TO REMOVE. NEVER USE CLEAR OR SCOTCH TYPE FOR THESE APPLICATIONS.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e. a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, radiator or another heat producing amplifier.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding write for our free booklet "Shock Hazard and Grounding."
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.
13. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag, or an ammonia based household cleaner if necessary.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
15. This unit should be checked by a qualified service technician if:
    A. The power supply cord or plug has been damaged.
    B. Anything has fallen or been spilled into the unit.
    C. The unit does not operate correctly.
    D. The unit has been dropped or the enclosure damaged.
16. The user should not to attempt to service this equipment. All service work should be done by a qualified service technician.



SENSE CABLE CONNECTOR DETAIL

SPECIFICATIONS:

Frequency Response (Sense Inactive):
38 Hz-20 kHz

Frequency Response (Maximum Sense):
58 Hz-20 kHz

Subsonic Filter (Sense Inactive):
30 dB/octave f_3=38 Hz

Subsonic Filter Slope (Maximum Sense):
30 dB/octave f_3=58 Hz

Input Impedance (each channel):
47 K ohms

Sense Input Impedance (each channel):
True differential - 47 K ohms

Maximum Input Level:
@ 40 Hz: 3 Vpp
@ 2 kHz: 21 Vpp
*Note: Maximum input levels are a function of sense input levels. At low sense levels, values are as indicated. As sense levels increase, 40 Hz values rise to their ultimate value of 21 Vpp.

Maximum Output Level:
@ 40 Hz: 20 Vpp
@ 2 kHz: 25 Vpp

Total Harmonic Distortion:
Less than .01%, 38 Hz to 20 kHz (sense inactivated)

Hum and Noise:
Less than -86 dBV (sense inactivated, 600 ohms input termination)

Crossover Frequency (Biamp Mode):
1200 Hz
Crossover Type:
3rd order (18 dB/octave) Butterworth

Indicators:
Low frequency contour each channel
Excursion process - each channel (subsonic control)

Power Requirements:
120 VAC, 60 Hz, 15 watts

Physical Dimensions:
19" W x 1 3/4" H x 9 7/8" D
(48.2 cm x 4.44 cm x 25.1 cm)

Weight:
9 lbs (4.1 kg)

ARCHITECTURAL SPECIFICATIONS

The Dynamic System Controller™ Series A or processor shall be a two-channel, single space, 19" rack-mount chassis. The system shall function in either full-range or biamp mode. The crossover frequency in biamp mode shall be 1200 Hz. The filter type shall be a third order (18 dB per octave) Butterworth. Each channel shall have electronically balanced inputs and low impedance non-balanced outputs. The system shall provide bandwidth extension for vented loudspeaker systems with an enclosure resonant frequency of 40 Hz or 60 Hz. Each channel shall be equipped with an electronic sense input capable of monitoring amplifier output levels. The Dynamic System Controller shall automatically adjust its low frequency equalization and F3 point based on amplifier output level sensing. The processor shall be a Peavey Architectural Acoustics™ Dynamic System Controller™ Series A or functional equivalent.

PEAVEY ARCHITECTURAL ACOUSTICS PRODUCTS ARE ENGINEERED AND MANUFACTURED IN OUR FACILITIES IN THE U.S.A.

Features and specifications are subject to change without notice.

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