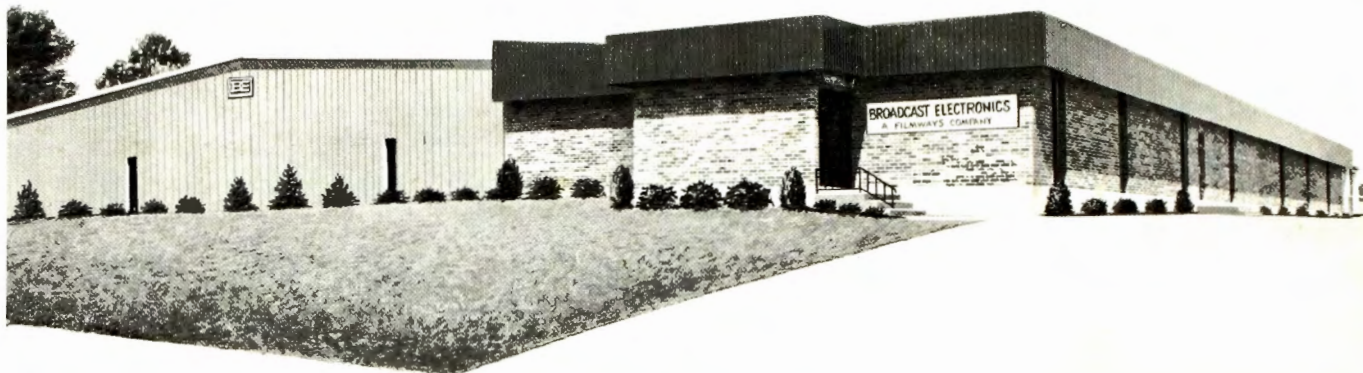




ELECTRONICS, INC.

**4100 NORTH 24th STREET
QUINCY, ILLINOIS 62301
TELEPHONE (217) 224-9600**

New Modern Office and Manufacturing Plant



Dear Customer:

Broadcast Electronics, Inc., producers of Spotmaster[®] tape cartridge equipment, audio consoles and studio systems, is now located in a new fully air-conditioned 31,000 square foot (300m²) plant in Quincy, Illinois. This modern facility, situated on 10 acres of land, provides us with the space necessary to support our growth plans.

In nearly 20 years of service to the broadcasting industry, this is the largest and most comprehensive catalog we have published and reflects the expanded product line developed in recent years.

Since 1958 when Broadcast Electronics introduced the first tape cartridge machine, almost 20,000 Spotmaster units have been delivered to broadcast stations and other users in over 100 countries. Today, we continue to offer the world's most comprehensive line of single and multiple deck tape cartridge equipment. Our audio console line now includes 15 different models and we offer a broad selection of audio processing amplifiers and studio accessories.

Broadcast Electronics is one of the Filmways Companies. With headquarters in Los Angeles, California, Filmways Inc. is a diversified company engaged in television and motion picture production and distribution, publishing, operation of recording studios and manufacturing. Included in the Filmways corporate family are such well known companies as Grosset & Dunlap, Inc., Wally Heider Recording, Heatter-Quigley Inc., and Filmways Radio.

You will find everybody in the Broadcast Electronics organization fully experienced in radio and TV broadcasting and audio systems. The top management personnel are career broadcast people and have over 100 years of combined experience in broadcast operation or broadcast equipment manufacture.

I hope that you will find this new catalog useful and, whether it is a total studio package, a cart machine or an audio console, that you will bring your equipment needs to B.E. Each and every member of the B.E. organization will do his best to justify the confidence placed in us.

Sincerely,

Lawrence J. Cervon

Lawrence J. Cervon
President

TABLE OF CONTENTS

Tape Cartridge Equipment

3000 Series, Single Deck	2
4000 Series, Single Deck	5
5300A Three Deck	6
5500 Five Deck	8
Ten 70 Mechanical Release	9
2000 Series, Economy	10
500 Series, Compact	12
400 Series, Compact	14
303/305 Mini Series, Multi Deck	15
605/610CR, Multi Deck	16
Special Systems	17
TELECO Telephone Answering Equipment	18
Audio Switchers	19
Remote Control Units	19
Tape Cartridge Winder, Tape Timer	20
Splice Detector	21
Tape Cartridge Accessories	20, 21
Cartridge Storage Racks	22

Audio Consoles

5 BEM-100, 8BEM-100	
5 & 8 Mixer, Dual-Channel, Mono	23
5BES-100, 8 BES-100	
5 & 8 Mixer, Stereo	26
5BEM-200, 8BEM-200	
Deluxe 5 & 8 Mixer, Dual Channel, Mono	29
5BES-200, 8BES-200	
Deluxe, 5 & 8 Mixer, Dual Channel, Stereo	32
4BEM-50, Four Mixer, Mono	35
4 BES-50, Four Mixer, Stereo	37
4BEV-50, Four Mixer, Rack Mount, Versa Console	39
ML-4000 Mono, 12-Mixer, Vertical Fader, Dual Channel	41
SL-4000 Stereo 12 Mixer, Vertical Fader, Dual Channel	41
SL-3010 Mono 10-Mixer, Vertical Fader, Dual Channel	45
SL-3110 Stereo 10-Mixer, Vertical Fader, Dual Channel	45

Processing Amplifiers

AM-400, AM Compressor/Limiter	49
FM-601, FM AGC/Limiter	50
AM-500, AM Compressor/Limiter/Expander	52
AD-1B, Audio Distribution Amplifier	53

Studio Equipment

Turntable Preamplifier, BETMS-100/200	54
Turntables	55
Tone Arms	55
Control Room Furniture	56
Clocks, Warning Lights	57
Microphones	58
Microphone Accessories	59
Baffles & Speakers	60
Headphones	60
Audio Power Amplifiers	61
Digital Timers	61
Recorders, Reel-to-Reel — Scully, Revox	62
Proof of Performance Equipment	63
Audio Test System, AT-51	63
Audio Oscillator, 210	63
Distortion Meter, 410	63
Audio Step Generator, 1760	63
EBS Generator	63
Turntables, Technics	64
Recorder, Reel-to-Reel, Technics	64
Speakers, Technics	64
Jack Panels	65
Patch Cords	65
Microphone Plugs, Cable	65

Spotmaster®


- A PROFESSIONAL QUALITY CART MACHINE WITH A FULL RANGE OF FEATURES AND OPTIONS
- DIRECT DRIVE MOTOR, AIR DAMPED SOLENOID
- PHASE LOK III HEAD BRACKET
- LOW VOLTAGE SOLENOID SWITCHING

Model 3200 RPS Stereo Record/Playback

GENERAL DESCRIPTION

Series 3000 machines have all the standard features: a direct-drive hysteresis synchronous motor, an air damped solenoid with excellent reserve capability, and a 1/2-inch thick machined aluminum deck. In addition, these machines are loaded with Spotmaster exclusives: the Phase Lok III head bracket; low voltage solenoid switching; advanced integrated circuit/solid-state design with exceptionally wide dynamic operating ranges; high quality Nortronic heads; and an outstanding set of performance specifications.

PHASE LOK III HEAD BRACKET — Phase Lok III is Spotmaster's answer to stereo phasing problems. This unique head bracket has an azimuth adjustment which is totally independent of height and zenith and offers the most precise head positioning possible. All stereo playback models are also equipped with a dummy head to insure correct stereo tracking.

SOLENOID CONTROL CIRCUIT — A key feature of the Spotmaster design is the solenoid control circuit. This is a low-voltage, current regulated source which is applied through a solid-state switch. With this circuit, solenoid operation is not affected by ac line variations, heat dissipation is reduced; and the combination of low voltage and solid-state switching significantly enhances reliability. A further benefit is the elimination of a potential source of noise that is present with high level ac switching.

The overall reliability inherent in this design has been demonstrated in life cycle testing programs which

have, on a number of occasions, cycled this machine through two million operations without failure.

CARTRIDGE GUIDANCE SYSTEM — The cartridge guidance system provides very precise positioning. The cartridge is directed down into the head by a tapered side guide and locked in place by a beryllium clamp which insures positive locking regardless of variations in cartridge thickness. The tensile strength of this clamp is exceptional and it will retain this strength throughout many years of use.

RECORD CIRCUITRY — The record circuitry has balanced transformer inputs followed by high performance IC operational amplifiers. These input circuits have extremely wide dynamic operating ranges which allow them to cleanly handle a greater range of signals than any competitive machine. This high level of signal handling ability, which is inherent throughout the design, contributes significantly to the high quality of reproduction which is characteristic of the 3000 Series.

PLAYBACK CIRCUIT — The playback amplifier consists of wideband IC operational amplifiers, FET muting circuits, and output amplifiers with wide dynamic range. The amplifiers have an exceptionally wide adjustment range for compensating for head wear; a feature which prolongs useful head life. The solid-state output amplifiers will deliver output levels of up to +20 dBm before clipping, thereby minimizing the potential for distortion with high level signals.



Model 3100



Model 3200



Model 3300

AVAILABLE MODELS

Series 3000 is a family of tape cartridge machines with the industry's widest choice of models and options. This series offers the Broadcaster an exceptional degree of flexibility in customizing a record/playback system for a particular studio.

Model 3100 Slim Line is a space saving design for playback of A size cartridges. It is available in mono and stereo. 3100's are only 5-7/8" wide and three units can mount side-by-side in 19" of rack space.

Model 3200 is a full feature machine available with complete record/playback capability for A and B cartridges, yet it is only 8-3/4" wide. Two machines can fit into 19-inches of rack space. It is available in mono and stereo, record/playback and playback only.

Model 3300 is available to handle A, B and C-size cartridges. It is available in record/playback and playback only for both mono and stereo.

AVAILABLE OPTIONS

Secondary and Tertiary Cue Tones — Option includes front panel indicator switches, oscillators (record models) and detectors for 150 Hz and 8 kHz tones; contact closures are provided for external control.

Manual Fast Forward — Spring loaded front panel switch, when pressed advances the tape at 3x normal speed to next cue tone.

Automatic/Manual Fast Forward (includes secondary and tertiary cue tones) — In automatic operation machine detects end-of-message (150 Hz) cue tone and automatically advances at 3x normal speed to next cue tone (audio is muted during advance). Manual Operation, as described above, is included in this option.

Remote Control Unit — Four models available: offers duplication of essential front panel functions.

Other Options — Microphone input; 220V 50 Hz power; IEC, CCIR equalization, rack mounting; 3-3/4 ips tape speed.

SPECIFICATIONS

Tape Speed:

7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):

0.1%.

Fast-Forward Tape Speed (optional):

22.5 ips (57 cm/s).

Tape Start/Stop Time:

0.1 second maximum.

Wow and Flutter:

0.15% peak weighted

0.2% RMS unweighted.

Noise (Reproducer):

Monophonic: 62 dB or better below reference of 400 Hz at 3% THD, 54 dB below 160 n Wb/m at 1 kHz.

Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD, 52 dB below 160 n Wb/m at 1 kHz.

Distortion:

2% or less record to playback at 160 n Wb/m at 1 kHz.

Equalization:

NAB, IEC, CCIR as specified.

Frequency Response:

±2 dB from 50 Hz to 15 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):

Cue channel to program channel, monophonic

150 Hz: -50 dB or better

1000 Hz: -55 dB or better

8000 Hz: -50 dB or better

Stereo, crosstalk between program channels; better than 50 dB, 50 Hz to 15 kHz.

Input Impedance (Recorder):

Microphone (optional): 150 ohms (transformer) balanced floating.

Line: 50 k ohms (transformer) balanced floating.

Input Levels:

Microphone (optional): -70 to -24 dBm

Line: -24 to +20 dBm (50 mV to 7.7 V).

Audio Output:

Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:

+20 dBm before clipping.

Cue Signals:

Relay contact closure for external control (150 Hz, 8 kHz) External cue/input/output, available at remote control for other control functions

Ambient Operating Temperature:

0° to 55° C (32° to 132° F).

Power Requirements:

105 to 125V/210 to 230V; 50 or 60 Hz. 45 to 50 W maximum.

Mounting:

Desk top standard. Adaptors for rack mounting optional.

External Connectors:

Mating plugs furnished.

Dimensions:

3100: 5 1/4" H, 5-7/8" W, 15 1/2" D (13.3 x 14.9 x 39.4 cm)

3200: 5 1/4" H, 8 3/4" W, 15 1/2" D (13.3 x 22 x 39.4 cm)

3300: 5 1/4" H, 11 1/4" W, 15 1/2" D (13.3 x 29.8 x 39.4 cm)

(Add 3/8" to height for rubber feet.)

Weight (packed):

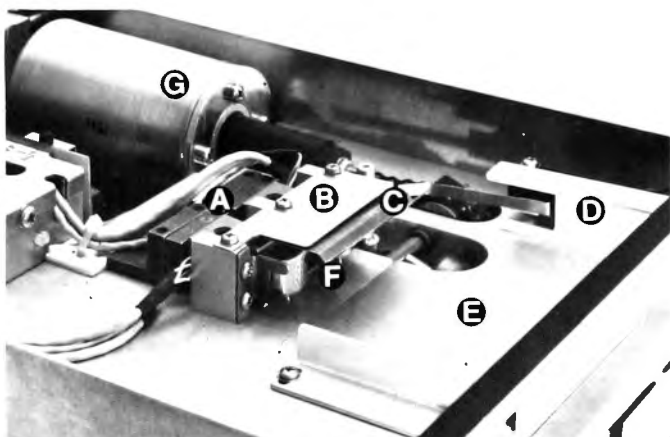
3100: 28 lbs. (12.7 kg)

3200: 33 lbs. (15.0 kg)

3300: 37 lbs. (16.8 kg).

ORDERING INFORMATION:

See price list for listing of model and part number.



The Tape Transport

DESIGN AND CONSTRUCTION FEATURES COMMON TO BOTH SERIES 3000 AND SERIES 4000

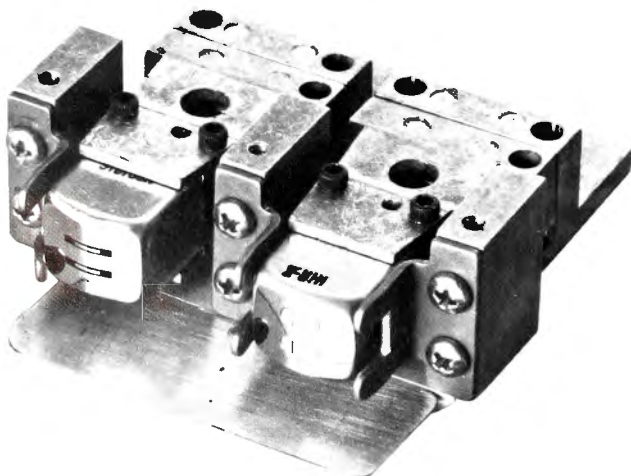
HIGHLIGHTS OF THE SERIES 3000 AND 4000 TAPE TRANSPORTS — include **A** Phase Lok III Head Bracket; **B** mu-metal electromagnetic shield; **C** highly tensile beryllium clamp for locking the cartridge in place; **D** tapered side guide which directs the cartridge down into the head; **E** a precision one-half inch thick aluminum deck; **F** under-the-head electromagnetic shielding provided by a steel plate which is recessed into the deck for optimum cartridge seating; and **G** a large air damped solenoid with exceptionally reliable chain linkage. Not visible in the picture is the steel plate on the underside of the deck which provides additional head shielding.



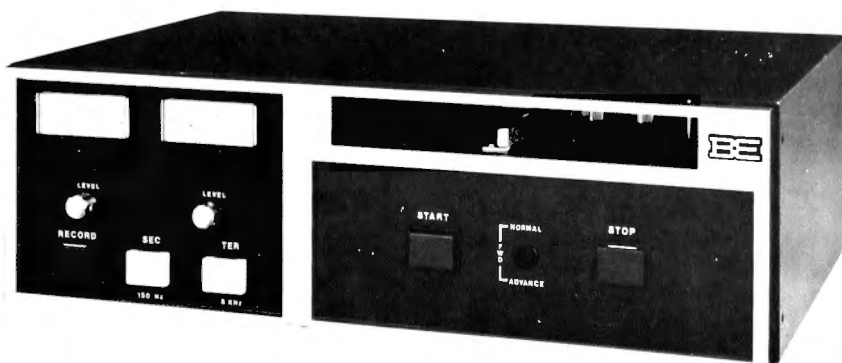
Model 4300 RPS Internal View

MECHANICAL PACKAGING — both the 3000 and 4000 Series are designed for ease-of-service and maximum transient noise suppression. The record and playback circuits, as well as the low-level logic switching circuits, plug into card edge connectors and have gold-plated contacts. These cards are completely surrounded and shielded by a steel case. All necessary adjustments are accessible from the top of the machine through the card cage and are clearly labeled. Cards are clamped into position to prevent shifting during transportation or from operational vibration.

FOR OPTIMUM ADJUSTMENT OF STEREO PHASING — these machines have the Phase Lok III Head Bracket. Phase Lok III is the only head bracket to have an azimuth adjustment which is completely independent of the height and zenith adjustments. Adjustment is achieved through a very unique head mounting configuration which lets the head swivel without any change in height, head penetration, or zenith. It is simply the best available.



The Phase Lok III Head Bracket

*Spotmaster®**Model 4200 P Playback**Model 4300 RPS
Stereo Record/Playback***FEATURES**

- SUPERIOR HEAD ASSEMBLY
- SOLID-STATE SWITCHING
- LOW VOLTAGE SOLENOID
- SUPERB ELECTRONICS
- HIGHER OUTPUT CLIPPING LEVEL
- WIDER RECORD INPUT RANGE

GENERAL DESCRIPTION — the new Series 4000 family of cartridge machines employs up-to-date superior electrical design built into the familiar wide mechanical packaging. Inside the Series 4000 you will find modern innovative electronics, a direct-drive hysteresis synchronous motor, an air damped solenoid and a 1/2" thick machined deck. Unequalled standards of performance and reliability are assured by this advanced Spotmaster Series 4000.

ADVANCED CIRCUIT DESIGN — Series 4000 features an up-to-date integrated circuit/solid-state design. Characteristic of this design is exceptionally wide dynamic operating ranges which contribute to high quality reproduction. The input and output circuits will accept and deliver, without introducing distortion, a greater range of signals than any competitive machine. Balanced transformer output with FET switching permits paralleling of machines.

AVAILABLE MODELS — Series 4000 machines are available in six models and two size configurations: the Model

4200 in mono or stereo playback for A and B cartridges; and the Model 4300 in mono or stereo playback only or record/playback for A, B and C cartridges. The Model 4200 occupies 1/2 rack width and the 4300 is full rack width.

LOW VOLTAGE SOLID STATE SOLENOID SWITCHING — to improve reliability, we have developed a unique solenoid control circuit which utilizes solid-state switching and a low-voltage, regulated current source. With this circuit, solenoid operation is smooth and unaffected by ac line variations, heat dissipation is reduced, and the combination of low voltage and solid-state switching significantly enhances reliability.

AUTOMATIC/MANUAL FAST FORWARD — the available options include manual fast forward, automatic/manual fast-forward, secondary and tertiary cue tones, microphone input, remote control panels and rack mounting.

SPECIFICATIONS

Identical to the Series 3000 with the following exceptions:

Dimensions:

4200 5-1/4" H x 8-1/2" W x 12-1/8" D (13.34x21.49x30.80 cm)

4300 5-1/4" H x 17" W x 12-1/8" D (13.34x43.13x30.80 cm).

(Add 3/8" to height for rubber feet)

Weight (packed):

4200: 30 lbs. (13.6 kg)

4300: 42 lbs. (19.0 kg)

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
4200P	906-4200	Mono, Playback Only, A & B Cartridges
4200PS	906-4202	Stereo, Playback Only, A & B Size Cartridges
4300P	906-4300	Mono, Playback Only, A, B & C Size Cartridges
4300RP	906-4301	Mono, Record/Playback, A, B & C Size Cartridges
4300PS	906-4302	Stereo, Playback Only, A, B & C Size Cartridges
4300RPS	906-4303	Stereo, Record/Playback, A, B & C Size Cartridges

FEATURES

- PLUG-IN DECKS
- SAVE SPACE WITH THREE MACHINES IN ONE
- DIRECT DRIVE MOTOR WITH NEW ULTRA-STABLE CAPSTAN POSITIONING
- PLAYS A AND B SIZE CARTRIDGES
- STEREO OR MONO OPERATION
- COMPANION RECORDING AMPLIFIER

**GENERAL DESCRIPTION**

THE MODEL 5300A is the most advanced multi-deck cartridge machine on the market. It is a top-of-the-line professional machine which features: solid-state/integrated circuit design, a direct-drive hysteresis synchronous motor, air damped solenoid, and a one-half inch thick machined aluminum deck.

Features unique to this multi-deck design are plug-in decks, computer ribbon cabling, rear panel LED service aids, and run lights adjacent to each deck.

NEW MECHANICAL DESIGN — The Model 5300A has a new internal mechanical design which insures stable and accurate deck and capstan positioning. The motor mounting and the top capstan bearing mounting are mechanically supported by a sturdy aluminum bulkhead insuring consistent mechanical alignment independent of front panel reference.

ADVANCED ELECTRONICS — This machine has all the latest Spotmaster features: ultra-reliable, low-voltage solenoid switching, wide dynamic operating ranges, Phase Lok III head bracket, accurate cartridge positioning and modular design. All stereo models are equipped with a dummy head to insure correct stereo tracking.

The solenoid control circuit utilizes solid-state switching and a low-voltage regulated current source. With this circuit, solenoid operation is smooth and unaffected by ac

line variations, heat dissipation is reduced, and the combination of low voltage and solid-state switching significantly enhances reliability.

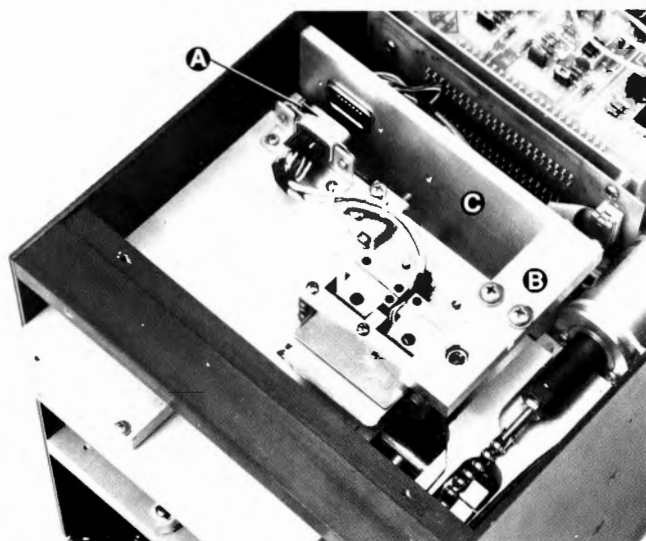
A characteristic of this machine is exceptionally wide dynamic operating ranges which contribute to high quality reproduction. The companion recorder input circuits and the 5300A output circuits will accept and deliver, without introducing distortion, a greater range of signals than any competitive machine. Balanced transformer output with FET switching permits parallelling of machines.

ADDITIONAL FEATURES — The 5300A is available in four basic models as shown under Ordering Information. The secondary and tertiary cue tones are made available by changing a PC card. Thus, a unit originally purchased with only the primary (1 kHz) cue tone can be field modified by simply replacing the PC card.

The recorder amplifier is available in either mono or stereo. Each unit has the standard 1 kHz cue tone. Secondary (8 kHz) and tertiary (150 Hz) tones are available for the recorder as an option.

The standard recorder has two input circuits: a high-level 50K ohm balanced transformer and a low level microphone input. The recorder amplifier has an automatic meter switching capability. During recording the meter indicates the record level and in playback the meter indicates the playback level on deck number 3.

PLUG-IN DECKS



The 5300A front panel is hinged, the decks pull out, and all electrical connections to the deck are made through a single plug-in connector **A**.

This photograph also shows the top bearing support **B** and the aluminum bulkhead **C** which provides the mechanical reference for the motor and the decks.

SPECIFICATIONS

Tape Speed:

7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):

0.1%.

Tape Start/Stop Time:

0.1 second maximum.

Wow and Flutter:

0.15% peak weighted,
0.2% RMS unweighted.

Noise (Reproducer):

Monophonic: 62 dB or better below reference of 400 Hz at 3% THD; 54 dB below 160 n Wb/m at 1 kHz.

Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 n Wb/m at 1 kHz.

Distortion:

2% or less record-to-playback at 160 n Wb/m at 1 kHz.

Equalization:

NAB, IEC, CCIR as specified.

Frequency Response:

±2 dB from 50 Hz to 15 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):
50 dB.

Audio Output:

Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:

+20 dBm before clipping.

Cartridge Size:

A and B.

Cue Signals:

Relay contact closure for external control (150 Hz, 8 kHz). External cue input/output available at remote control for other control functions.

Ambient Operating Temperature:

0° to 55°C (32° to 132°F).

Power Requirements:

105 to 125 V or 210 to 230 V 60 Hz.
105 to 125 V or 210 to 230 V 50 Hz (optional). 120 watts maximum.

Mounting:

Desk top standard. Adaptors for rack mounting optional.

Dimensions:

10-5/8" H x 8-5/8" W x 13-3/8" D
(27 x 22 x 34 cm).

Weight (packed):

43 lbs. (19.5 kg).

RECORD UNIT



Model 5310

RECORDING UNIT — The optional recording amplifier (mono Model 5309 or stereo Model 5310) is available for recording on deck # 3 independent of the other two decks. Thus, the 5300 can operate as three separate machines; a record/playback deck and two playback only decks. Another optional unit is an audio switcher which automatically provides a balanced output from the last started deck while muting the other decks.

RECORDER AMPLIFIER

Input Impedance:

Microphone; 150 ohms, (transformer) balanced floating
Line; 50K ohms (transformer) balanced floating

Input Levels:

Microphone; -70 to -24 dBm
Line; -24 to +20 dBm (50 mV to 7.7 V)

Power Requirements:

105 to 125 V/210 to 230 V; 50 or 60 Hz

Dimensions:

5-1/4" H x 8-5/8" W x 13-1/2" D
(13.3 x 22 x 34 cm)

Weight:

16 lbs. (7.25 kg.)

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
5301A	906-5301A	Mono Playback
5302A	906-5302A	Mono Playback with cue tones
5303A	906-5303A	Stereo Playback
5304A	906-5304A	Stereo Playback with cue tones
5309	906-5309	Recorder, mono for 5300 Series
5310	906-5310	Recorder, stereo for 5300 Series
	906-5508	220V/50 Hz Power Conversion
	906-5311	Secondary and Tertiary Q Trips for Mono or Stereo Recorder

*Spotmaster®***FEATURES**

- FIVE DECKS IN ONE SPACE-**SAVING** PACKAGE
- **DIRECT DRIVE MOTOR**
- **LOW VOLTAGE SOLENOID SWITCHING**
- **INDEPENDENT ELECTRONICS FOR EACH DECK**

GENERAL DESCRIPTION

Model 5500 is a totally new Spotmaster 5-deck machine incorporating the latest Spotmaster design features: solid-state/integrated circuit design, direct-drive hysteresis synchronous motor, solid-state, low-voltage solenoid switching, and the unique Phase Lok III head bracket.

MECHANICAL DESIGN — Mechanical and structural innovations include the use of a hinged front panel which folds down to provide complete access to the decks. The top four decks slide out independently for adjustment and routine cleaning. Each deck is a solid piece of machined aluminum designed to insure consistent alignment between the tape cartridge and the PHASE-LOK III head bracket.

The electronic circuits are constructed on printed circuit cards contained in a completely removable package located behind the decks and accessible from the rear panel of the unit. Front panel controls are connected to this package using modern ribbon cable eliminating bulky multiple wire harnesses.

SPECIFICATIONS**Tape Speed:**

7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):

0.1%

Tape Start/Stop Time:

0.1 second maximum.

Wow and Flutter:

0.15% peak weighted, 0.2% RMS unweighted.

Noise (Reproducer):

Monophonic: 62 dB or better below reference of 400 Hz at 3% THD;
54 dB below 160 n Wb/m at 1 kHz.

Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 n Wb/m at 1 kHz.

Distortion:

2% or less record to playback at 160 n Wb/m at 1 kHz.

Equalization:

NAB, IEC, CCIR as specified.

Frequency Response:

±2 dB from 50 Hz to 15 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):

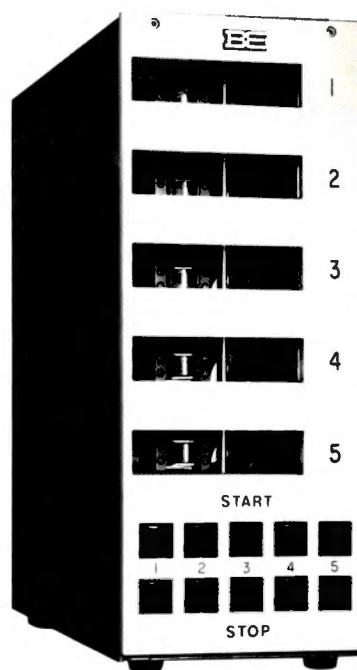
50 dB.

Audio Output:

Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:

+20 dBm before clipping.



OPTIONS — A choice of options allows the broadcaster to customize his unit to his specific needs in mono or stereo, with or without cue tones. The cue tone option package includes the 150 Hz and 8 kHz sensors for sequential switching or other cueing assignments in addition to the 1 kHz stop tone provided on each machine.

ACCESSORIES — Complete remote control duplication of front panel functions and audio switchers are available. A recording amplifier, (mono Model 5309A or stereo Model 5310A) is available for recording on deck #5 independent of the other four decks.

Cartridge Size:

Size A.

Cue Signals:

Relay contact closure for external control (150 Hz, 8 kHz). External cue input/output available at remote control for other control functions.

Ambient Operating Temperature:

0° to 55°C (32° to 132°F).

Power Requirements:

105 to 125 V or 210 to 230 V, 60 Hz; 105 to 125 V or 210 to 230 V, 50 Hz (Optional). 120 watts maximum.

Mounting:

Desk top standard. Adaptors for rack mounting optional.

Dimensions:

14-3/4" H x 5-3/4" W x 17" D (37.5 x 14.6 x 43.2 cm)

Weight (Packed):

52 lbs. (23.6 kg).

ORDERING INFORMATION

Model	Stock No.	Description
5501	906-5501	Mono Playback
5502	906-5502	Mono Playback with cue tones
5503	906-5503	Stereo Playback
5504	906-5504	Stereo Playback with cue tones
	906-5508	50 Hz Power Conversion
	906-5309A	Recorder, Mono for 5500 Series
	906-5310A	Recorder, Stereo for 5500 Series
	906-5311	Secondary & Tertiary Q Trips

Spotmaster®

FEATURES

- PLUG-IN DECK
- LOGIC SWITCHING
- ADJUSTABLE PRECISION HEAD BRACKET
- DIRECT DRIVE SYNCHRONOUS MOTOR
- MECHANICAL RELEASE DECK
- FAST FORWARD IS STANDARD



GENERAL DESCRIPTION

THE SPOTMASTER TEN/70 is available in playback only, record/playback and mono or stereo configurations. These machines feature a removable deck assembly; a permanently lubricated, two-speed, direct-drive hysteresis synchronous motor; and solid-state switching. Construction is modular and a flip-type cover provides access to the head assembly and drive systems.

TAPE TRANSPORT — Features of the tape transport include a removable deck, a direct-drive hysteresis synchronous motor, automatic pressure roller engagement and mechanical cartridge release. Stereo units have the Phase Lok II head bracket with an independent azimuth adjustment for optimum stereo phasing. The micro-adjust precision head bracket is used in mono units.

BUILT-IN DIAGNOSTICS — The front panel VU meter, which is supplied with all record units, provides switch

selectable measurement of cue tone and bias levels as well as record levels.

MIXING CAPABILITY — A unique feature of the mono record units is the capability of mixing the line and the optional microphone inputs. This is facilitated by the front panel gain control provided on each input.

REMOTE CONTROL — The TEN/70 may control or be controlled by external switches. Every front panel push-button may be controlled remotely and all associated indicator light voltages are available for remote indication. With the auxiliary cue-tone outputs, the units can control other equipment.

MAJOR OPTIONS — Available options include secondary (150 Hz) and tertiary (8 kHz) cue tones, automatic fast forward, and microphone input. (Automatic fast forward available in 117V, 60 Hz version *only*.)

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
1070-P	900-1070	Monophonic Playback
1070-RP	900-1084	Monophonic Record/Playback
1070-RP/DL	900-1072	Monophonic Record/Playback/Delay with Remote Delay Mute
1070-PS	900-1074	Stereophonic Playback
1070-RPS	900-1073	Stereophonic Record/Playback
1070-SDL	900-1075	Stereophonic Delay Programmer with Remote Delay Mute

SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):
0.1%.

Fast-Forward Tape Speed:
22.5 ips (57 cm/s).

Tape Start/Stop Time:
0.1 second maximum.

Wow and Flutter:
0.15% peak weighted;
0.2% RMS unweighted.

Noise:
-54 dB or better at 160nWb/m at 1 kHz.

Distortion:
2% or less record to playback at
160 n Wb/m at 1 kHz.

Equalization:
NAB, IEC, CCIR as specified.

Frequency Response:
±2 dB from 50 Hz to 15 kHz,
exclusive of head contour effect.

Crosstalk:
Cue/Program -55 dB or better.

Recorder Input:
Line: -15 dBm to 0 dBm or 0 dBm to
+5 dBm switchable at 10,000 ohms
bridging balanced.
Mike (optional): 0.1 mV at 150 ohms
balanced.

Audio Output:
-10 dBm/0 dBm/+8 dBm switchable.
Adjustable 10 dB. Peak output +18 dBm.

Output Impedance:
600 ohms balanced. Alternate strapping
for 150 ohms.

Cue Tones:
1 kHz standard, 150 Hz optional, 8 kHz op-
tional.

Capacity:
Size A or B NAB standard cartridge.

Power Requirements:
105 to 125VAC, 60 Hz, 50 watts.
115 to 220VAC, 50 Hz, optional.

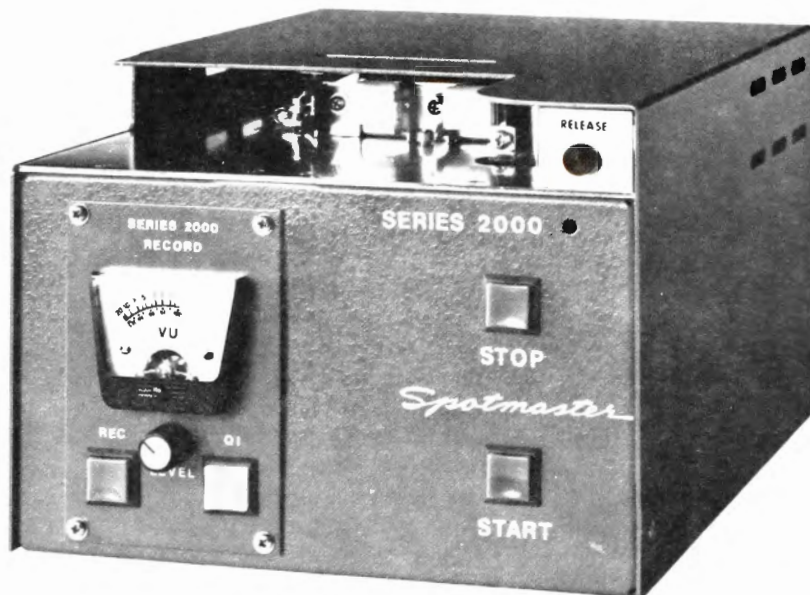
Size:
8-3/8" H x 12" D x 8-1/2" W
(21.2 x 30.5 x 21.6 cm).

Weight (packed):
16 lbs. (7.2 kg).

*Spotmaster®*

FEATURES

- FIVE AVAILABLE MODELS, INCLUDING MONO AND STEREO UNITS
- TWO CUE TONES ARE STANDARD
- PLUG-IN RECORD AND AUDITION MODULES FOR MONO UNITS
- ADVANCED SOLID-STATE INTEGRATED CIRCUIT DESIGN
- ECONOMICAL PRICE
- BROAD APPLICATION



*Model 2000RP
Mono Record/Playback*

GENERAL DESCRIPTION

ECONOMICAL PRICE — Series 2000 machines are economy priced yet they contain many of the features and performance characteristics of the higher priced Spotmaster designs. Among these features are solid-state control switching, integrated circuit amplifiers, active cue tone filters and a wide selection of models.

AVAILABLE MODELS — These machines are available in mono and stereo, playback and record/playback configurations. All units accept A and B size cartridges and when used in a table-top situation they will also accept the wider C size cartridges.

ADVANCED ELECTRONICS — Series 2000 is an up-to-date design featuring the latest in solid-state/integrated circuit techniques. The electrical performance of these machines is better than competitive designs and compares favorably with our top-of-the-line 3000 and 4000 Series. The audio output is a balanced 600 ohm transformer and the output level is continuously adjustable to +8 dBm with clipping occurring at +16 dBm. Noise and distortion characteristics are very good; better than 54 dB down and 2% respectively. The power supply is fully regulated and protected. FET muting is incorporated in all stereo units.

AUDITION MODULE — A well accepted feature of the mono unit is a front panel plug-in audition module which provides a convenient way of listening to tapes prior to their use. This module has a small speaker and a 5 watt

amplifier for driving a large external speaker. A record module can also be used in the same place and a mono unit can be used for both record and audition purposes by simply switching these modules.

RECORD AMPLIFIER — The record amplifier has both high and low-level inputs which are selected by jumper changes on the circuit board. Both inputs have exceptionally wide dynamic operating ranges and can accept a wide range of signals without introducing distortion or clipping.

CUE TONES — The 1 kHz and 150 Hz cue tones are standard in all Series 2000 machines. As an option the 150 Hz tone can be 8 kHz.

MECHANICAL CONSTRUCTION — Series 2000 machines use an indirect drive hysteresis synchronous motor, the micro-adjust head bracket with Nortronic heads, a thick steel deck with additional support brackets, automatic pressure roller engagement and mechanical release. These mechanical features are evolutions of Spotmaster designs which have been proven in thousands of machines in use throughout the world. Their reliability and performance are well established.

BROADCAST ELECTRONICS, INC.
PRODUCERS OF *Spotmaster*™ TAPE CARTRIDGE EQUIPMENT

Short Form Price List (Domestic U.S.)

For complete price lists, catalogs and additional
information contact your SPOTMASTER®
Distributor or Broadcast Electronics, Inc.

Effective

March 1, 1977

(Prices herein are for 117V/60 Hz equipment only.)



A FILMWAYS COMPANY

8810 Brookville Road, Silver Spring, MD 20904
Phone: 301-587-1800 • TWX: 710-825-0432
CABLE "SPOTMASTER"



A FILMWAYS COMPANY

8810 Brookville Road, Silver Spring, MD 20904
Phone: 301-587-1800 • TWX: 710-825-0432

MODEL	DESCRIPTION	PROFESSIONAL NET
SERIES 5000 5-DECK TAPE CARTRIDGE MACHINES		
5501	Mono Playback (A Size)	\$2,275.00
5502	Mono Playback (A Size) with Cue Tones	2,540.00
5503	Stereo Playback (A Size)	2,750.00
5504	Stereo Playback (A Size) with Cue Tones	2,995.00

SERIES 5000 3-DECK TAPE CARTRIDGE MACHINES		
5301	Mono Playback (A & B Size)	\$1,675.00
5302	Mono Playback (A & B Size) with Cue Tones	1,855.00
5303	Stereo Playback (A & B Size)	1,990.00
5304	Stereo Playback (A & B Size) with Cue Tones	2,185.00

ACCESSORIES FOR MULTI-DECK MACHINES

SW5E	Audio Switcher for 3 Decker	\$ 150.00
SW5E	Audio Switcher for 5 Decker	175.00
5309	Recorder, Mono for 3 Decker	595.00
5310	Recorder, Stereo for 3 Decker	695.00
	Secondary (150 Hz) and Tertiary (8 kHz) Q Trips for Mono or Stereo Recorder	90.00

SERIES 4000 TAPE CARTRIDGE MACHINES

4200P	Mono, Playback Only, A & B Cartridges	\$ 750.00
4200PS	Stereo, Playback Only, A & B Size Cartridges	850.00
4300P	Mono, Playback Only, A, B & C Size Cartridges	800.00
4300RP	Mono, Record/Playback, A, B & C Size Cartridges	1,300.00
4300PS	Stereo, Playback Only, A, B & C Size Cartridges	900.00
4300 RPS	Stereo, Record/Playback, A, B & C Size Cartridges	1,550.00

FACTORY INSTALLED OPTIONS

Q Trip I & II (150 Hz and 8 kHz), Playback Only Models	\$ 65.00
Q Trip I & II (150 Hz and 8 kHz), Record/Playback Models	90.00
Microphone Input Option, Mono Record/Playback Models	75.00
Microphone Input Option, Stereo Record/Playback Models	100.00
Manual Fast Forward, All Models	100.00
Automatic and Manual Fast Forward, Playback Only Models*	175.00
Automatic and Manual Fast Forward, Record/Playback Models*	200.00
*Includes Q Trip I & II (150 Hz and 8 kHz)	

MODEL	DESCRIPTION	PROFESSIONAL NET
SERIES 3000 TAPE CARTRIDGE MACHINES		
3100P	Mono, Playback Only, A Size Cartridges	\$ 735.00
3100PS	Stereo, Playback Only, A Size Cartridges	835.00
3200P	Mono, Playback Only, A & B Size Cartridges	740.00
3200RP	Mono, Record/Playback, A & B Size Cartridges	1,300.00
3200PS	Stereo, Playback Only, A & B Size Cartridges	840.00
3200 RPS	Stereo, Record/Playback, A & B Size Cartridges	1,550.00
3200 RP/DL	Mono, Delay Programmer, A & B Size Cartridges	1,450.00
3200 RPS/DL	Stereo, Delay Programmer, A & B Size Cartridges	1,700.00
3300P	Mono, Playback Only, A, B & C Size Cartridges	775.00
3300RP	Mono, Record/Playback, A, B & C Size Cartridges	1,315.00
3300PS	Stereo, Playback Only, A, B & C Size Cartridges	875.00
3300 RPS	Stereo, Record/Playback, A, B & C Size Cartridges	1,550.00

FACTORY INSTALLED OPTIONS

Q Trip I & II (150 Hz and 8 kHz), Playback Only Models	\$ 60.00
Q Trip I & II (150 Hz and 8 kHz), Record/Playback Models	85.00
Adjustment of Equalization to IEC/CCIR Specifications	NC
Microphone Input Option, Mono Record/Playback Models	75.00
Microphone Input Option, Stereo Record/Playback Models	100.00
Manual Fast Forward, All Models	100.00
Automatic and Manual Fast Forward, Playback Only Models*	175.00
Automatic and Manual Fast Forward, Record/Playback Models*	200.00
*Includes Q Trip I & II (150 Hz and 8 kHz)	

SERIES 2000 TAPE CARTRIDGE MACHINES

2000P	Series 2000, Monaural Playback, Compact Unit	\$ 500.00
2000RP	Series 2000, Monaural Record/Playback Compact Unit complete with Factory Installed Record Module and Head	725.00
2000PA	Series 2000, Monaural Playback/Audition Compact Unit complete with Factory Installed Audio Module	625.00
2000PS	Series 2000, Stereo Playback, Compact Unit	650.00
2000 RPS	Series 2000, Stereo Record/Playback Compact Unit complete with Factory Installed Record Module and Head	975.00

mono unit is a front panel plug-in audition module which provides a convenient way of listening to tapes prior to their use. This module has a small speaker and a 5 watt

MODEL	DESCRIPTION	PROFESSIONAL NET
FIELD INSTALLATION KITS		
	2000 Mono Record Module, Complete with Record Head and Cue Trip I (150 Hz) Generator to Convert 2000P to Record/Playback	\$ 265.00
	2000 Mono Audio Module, Complete with Amplifier and Speaker to Convert 2000P to Playback/Audition	155.00

SERIES 400/500 TAPE CARTRIDGE MACHINES

500D	Monaural Record/Playback Unit, Compact	\$ 925.00
500DR	Monaural Record/Playback Unit, Rack	940.00
505D	Monaural Playback Unit, Compact	675.00
505DR	Monaural Playback, Rack Mounting with Slides	700.00
500DS	Stereo Record/Playback Unit, Compact	1,250.00
500DRS	Stereo Record/Playback Unit, Rack Mounting with Slides	1,325.00
505DS	Stereo Playback Unit, Compact	900.00
505DRS	Stereo Playback Unit, Rack Mounting	940.00
500D/DL	Delay, Record/Playback Unit, Compact	995.00
500DR/DL	Delay, Record/Playback Unit, Rack Mounting with Slides	1,060.00
400B	Monaural Record/Playback Unit, Compact	695.00
405B	Monaural Playback Unit, Compact	495.00

FACTORY INSTALLED OPTIONS

Alternate Tape Speed or Line Voltage/Frequency Standards	\$ 60.00
Installed Cue Trip I Sensor (400B Series, 500DS Series) (150 Hz)	90.00
Installed Cue Trip I Sensor (500D Series) (150 Hz)	95.00
Installed Cue Trip I Generator (400B, 500DS, 500DRS, 500DR) (150 Hz)	70.00
Installed Cue Trip I Generator (500D) (150 Hz)	70.00
Installed Cue Trip II Sensor all models (8 kHz)	90.00
Installed Cue Trip II Generator all models (8 kHz)	90.00
Installed Microphone Preamplifier Option (Models 400B, 500DS Series, 500DR Series)	60.00
Installed 600 ohm output transformer (400B, 405B)	50.00

VERSA AUDIO CONSOLE

4BEV 50	4 Mixer Mono Console with Rack Mount Adapters	\$ 550.00
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50 SERIES MONO AND STEREO CONSOLES

4BEM 50	SPOTMASTER 4 Mixer Monophonic Console	\$ 595.00
4BEM 50R	SPOTMASTER Rack Mount 4 Mixer Monophonic Console	625.00
4BES 50	SPOTMASTER 4 Mixer, Stereophonic Console	995.00

MODEL	DESCRIPTION	PROFESSIONAL NET
50 SERIES CONSOLES (Continued)		
4BES-50R	SPOTMASTER Rack Mount 4-Mixer Stereophonic Console	1,025.00

100/200 SERIES MONO AUDIO CONSOLES

5BEM-100	SPOTMASTER 5-Mixer Monophonic Console, sealed Pots Dual	\$ 995.00
5BEM-200	SPOTMASTER 5-Mixer Deluxe Monophonic Console, Step Type Attenuators, Dual	1,495.00
8BEM-100	SPOTMASTER 8-Mixer Monophonic Console, sealed Pots, Dual	1,595.00
8BEM-200	SPOTMASTER 8-Mixer Deluxe Monophonic Console, Step Type Attenuators, Dual	2,595.00
	Step Type Attenuators Installed in 5 BEM-100	265.00 Per Set
	Step Type Attenuators Installed in 8 BEM-100	425.00 Per Set
	RIAA Equalized Phono Preamplifier Module	150.00

100/200 SERIES STEREO AUDIO CONSOLES

5BES-100	SPOTMASTER 5-Mixer Stereophonic Console, sealed Pots	\$1,395.00
5BES-200	SPOTMASTER 5-Mixer Deluxe Stereophonic Console, Step Type Attenuators	2,195.00
8BES-100	SPOTMASTER 8-Mixer Stereophonic Console, sealed Pots	2,295.00
8BES-200	SPOTMASTER 8-Mixer Deluxe Stereophonic Console, Step Type Attenuators	3,395.00
	Step Type Attenuators Installed in 5 BES-100	425.00 Per Set
	Step Type Attenuators Installed in 8 BES-100	675.00 Per Set
	Mono Matrix Card for 5 BES-100 and 8 BES-100	60.00
	Line Amplifier for Stereo Audition Channel 5 BES-100 and 8 BES-100 (2 Required)	60.00
	Second Muting Relay for 8 BES-100 and 5 BES-100	25.00
	RIAA Equalized Phono Preamplifier Module	150.00

4006 SERIES SLIDE MIXER AUDIO CONSOLES

8EML 4006 6	SPOTMASTER modular SLIDEMOD monophonic console with linear slide faders. Equipped with 6 input modules (mixers). Accommodates up to 10 input modules.	\$2,895.00
8EML 4006 10	SPOTMASTER monophonic SLIDEMOD console with 10 input modules (mixers)	3,595.00
BESL 4006 6	SPOTMASTER modular SLIDEMOD stereo phonic console with linear slide faders. Equipped with 6 input modules (mixers). Accommodates up to 10 input modules.	4,195.00

CONSOLES Continued on next page

Spotmaster®

MODEL	DESCRIPTION	PROFESSIONAL NET
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4000 SERIES (Continued)

BESL-4006-10	SPOTMASTER stereophonic SLIDEMOD console with 10 input modules (mixers)	5,695.00
BESL-4101-M	Input Mixing Module, w/muting (mono) (BESL-4006)	350.00
BESL-4101-X	Input Mixing Module less muting (mono)	335.00
BESL-4102	Remote Input module (mono)	170.00
BESL-4101-M	Input Mixing Module, w/muting (stereo) (BESL-4006)	450.00
BESL-4101-X	Input Mixing Module, less muting, (stereo) (BESL-4006)	430.00
BESL-4102	Remote input module (stereo) (BESL-4006)	165.00

3006 SERIES SLIDE MIXER AUDIO CONSOLES

BESL-3006-10	SPOTMASTER Non-Modular 10 Slide Fader Dual Channel Monophonic Console	\$2,695.00
BESL-3006-10	SPOTMASTER Non-Modular 10 Slide Fader Dual Channel Stereophonic Console	3,595.00

AUDIO PROCESSING AND DISTRIBUTION AMPLIFIERS

CLE-500	SPOTMASTER Sound Britener Compressor-Limiter-Expander for AM Broadcasting or Mono Recording	\$ 795.00
FM-600	FM/AGC Limiter for Mono	1,495.00
FM-601	FM AGC/Limiter for Stereo	1,795.00
AM-400	Compressor-Limiter Amplifier, rack mounting, Mono	550.00
AD1B	Audio D.A.; 1 in, 5 out, rack mounting, Emitter Follower Output	395.00
AD1B/T	Audio D.A.; 1 in, 5 out, rack mounting, Transformer Outputs	475.00
AD1BX	5-Channel Extender for use with AD1B, rack mounting, Emitter Follower Output	295.00
AD1BX/T	5-Channel Extender for use with AD1B, rack mounting, Transformer Output	415.00
BEM-10	Monitor Amplifier, 10 watt, rack mounting	145.00

TURNTABLE PRE-AMPLIFIERS

BETMS-100	SPOTMASTER Monaural/Stereo Equalized Pre-amplifier (less transformer output) phase reversal feature	\$ 140.00
BETMS-200	SPOTMASTER Monaural/Stereo Equalized Pre-amplifier w/transformer output, phase reversal feature	165.00

PROFESSIONAL TURNTABLES

SPOTMASTER, Studio Pro-B, 12" direct-drive 2 speed turntable (33-1/3, 45) w/hys. syn. motor	\$ 294.00
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MODEL	DESCRIPTION	PROFESSIONAL NET
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PROFESSIONAL TURNTABLES (Continued)

SPOTMASTER, CueMaster, 12" direct-drive 3 speed turntable (33-1/3, 45, 78) w/hys. syn. motor	253.00
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MICRO-TRAK TONE ARMS

MICRO-TRAK (GRAY) TONE ARMS	
303 12" Micro-Trak Arm	\$ 85.00
306 16" Micro-Trak Arm	89.75
206S 12" Tone Arm, Viscous damped	75.50

CARTRIDGES, TONE ARM

500AA	Stanton Cartridge, .5 mil stylus	\$ 19.25
500AL	Stanton Cartridge, .7 mil (extra heavy duty) stylus	16.50
681A	Stanton Cartridge, calibration standard .7 mil stylus	43.20
681EE	Stanton Cartridge, .2 x .7 mil elliptical stylus	46.80

MICROPHONES — Electro-Voice

635A	Microphone, omnidirectional dynamic	\$ 63.00
D054	Microphone, omnidirectional slim-trim	82.50
664	Microphone, Cardioid, dynamic	79.00
649B	Microphone, Lavalier	90.00
RE10	Super Cardioid (80 Hz to 13 kHz)	114.00
RE15	Super Cardioid, highest quality (80 Hz-15 kHz)	180.00
RE85	Shock Mounted Lavalier	96.00
630	Low cost omnidirectional, w/switch	63.00

LUXO MICROPHONE ARM

LM-1-41-A	Luxo Arm with portable "C" type mounting clamp	\$ 35.00
LM-1-41C	Luxo Arm with table-top, permanent screw down mount	35.00

STUDIO EQUIPMENT CONTROL ROOM FURNITURE CONSOLE FURNITURE, FRENCH BLUE TOP WITH PECAN CABINETS (FORMICA NO. 422 CORTENA)

SPOTMASTER Single Turntable Floor Cabinet (22" x 22" x 29")	\$ 190.00
SPOTMASTER Dual Section Floor Cabinet (42" x 22" x 29")	300.00
SPOTMASTER Console Desk Top (80" x 24" x 1 1/2")	120.00
SPOTMASTER Leg, chrome, tapered (4 req'd. for free-standing console section)	11.00

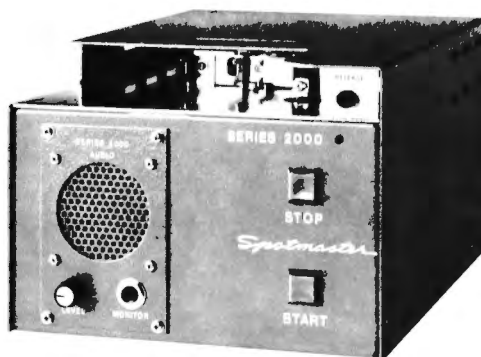
CUE CLOCK

829-1000	SPOTMASTER Digital Timing Clock. Remote control, 4 selectable inputs, visual cue indicator plus digital display. 99 minute, 59 second capacity count down or count to.	\$ 350.00
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mono unit is a front panel plug-in addition module which provides a convenient way of listening to tapes prior to their use. This module has a small speaker and a 5 watt



Model 2000P Mono Playback

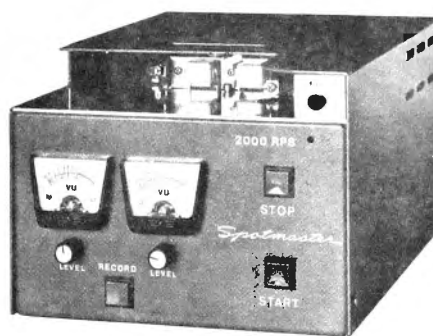


Model 2000PA Mono Playback/Audition

STEREO MODELS



Model 2000PS Stereo Playback



Model 2000RPS Stereo Record/Playback

SPECIFICATIONS

Tape Speed:

7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):

0.2%.

Tape Start/Stop Time:

80 milliseconds maximum.

Wow and Flutter:

0.2% RMS (unweighted), 0.15% peak (unweighted).

Noise (Reproducer):

Monophonic: 62 dB or better below reference of 400 Hz at 3% THD; 54 dB below 160 n Wb/m at 1 kHz.

Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 n Wb/m at 1 kHz.

Distortion:

2% or less at +16 dBm output.

Equalization:

NAB, IEC, CCIR as specified.

Frequency Response: ± 2 dB from 50 to 15 kHz exclusive of head contour effect.**Crosstalk (magnetic head limited):**

50 dB.

Audio Output:

Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:

+16 dBm before clipping.

Drive:

Hysteresis synchronous, indirect.

Recorder Input Levels:

Microphone: -70 to -25 dBm.

Line: -32 to +18 dBm.

Cue Tones:

1 kHz and 150 Hz are standard.

Remote Control:

24-pin connector, Stop, Start, TELCO telephone answering accessory and 150 Hz cue tone logic ground with 40 ma capability.

Power Requirements:

105 to 125V/210 to 230V; 60 Hz.

105 to 125V/210 to 230V 50 Hz (optional).

Power Consumption:

45 Watts.

Dimensions:5-5/8" H, 8-1/2" W, 12" D
(14.3 x 21.6 x 30.5 cm).**Weight (packed):**

20 lbs. (9.0 kg).

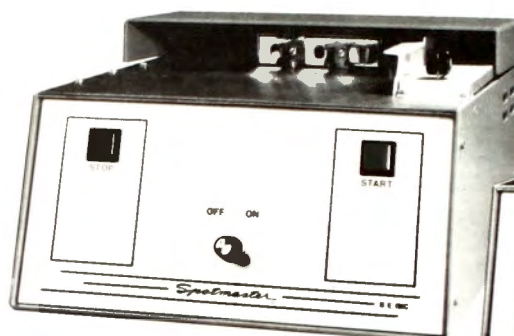
ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
2000P	906-2000	Series 2000, Monaural Playback, Compact Unit
2000RP	906-2001	Series 2000, Monaural Record/Playback Compact Unit complete with Factory Installed Record Module and Head
2000PA	906-2002	Series 2000, Monaural Playback/Audition Compact Unit complete with Factory Installed Audition Amplifier Module
2000PS	906-2020	Series 2000, Stereo Playback, Compact Unit
2000RPS	906-2021	Series 2000, Stereo Record/Playback Compact Unit complete with Factory Installed Record Module and Head

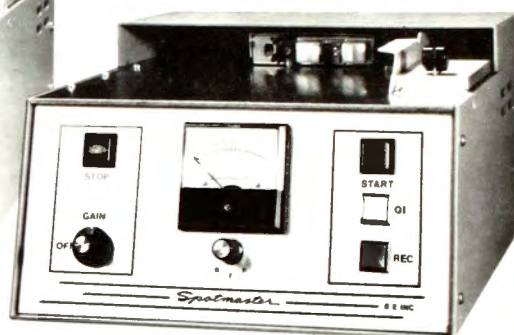
Spotmaster

FEATURES

- TRADITIONAL FAVORITE
- COMPLETE RANGE OF MODELS AT MODERATE PRICES
- 500 D FEATURES AUTOMATIC RECORD CANCEL, BUILT-IN MIKE PRE-AMP AND FULL AUXILIARY CUE TONE OPTIONS



Model 505D



Model 500D

GENERAL DESCRIPTION

The value and the wide acceptance of the 500 Series is evidenced by the continuing high demand for these machines. Many years after their introduction, they still remain the traditional favorite of many broadcasters. Reasons for their continuing popularity include low initial cost, simplicity of operation, proven reliability, and low on-going maintenance costs.

500 Series machines feature the Micro-Adjust precision head bracket, modular construction, and self-cancelling record pre-set.

CHOICE OF MODELS — The 500 Series is available in mono and stereo, playback and record/playback in desk top or rack mounting units. The rack mounting units are self-contained and require no external adapters.

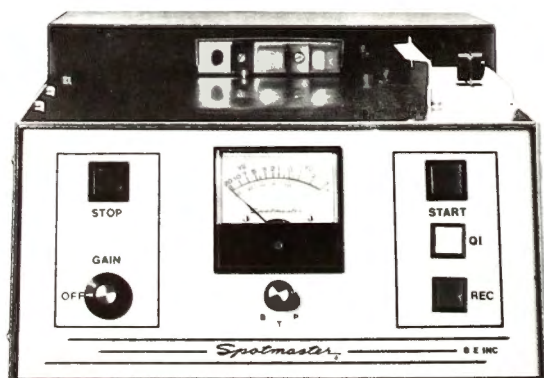
DIAGNOSTIC METERING — All record units have built-in diagnostic metering for monitoring the cue tone and bias levels as well as the record levels.

ALL CARTRIDGE SIZES — These machines accept A, B and C size cartridges. One machine can handle all your cartridge requirements.

RACK MOUNT MODELS — These are self-contained units with their own heavy-duty chassis slides for installation in a standard 19-inch equipment rack.

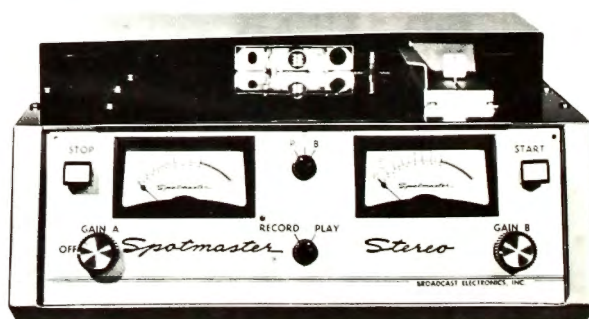
MICROPHONE PREAMPLIFIER — This is standard in mono record/playback desk top units and is available as an option in all other record units.

DELAY MODEL



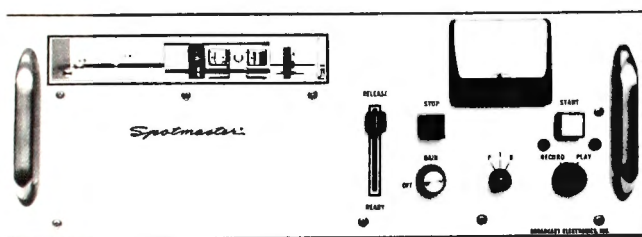
500 D/DL Record/Playback/Delay. Records, stores and plays back any program material for pre-determined length on standard cartridges. Also normal record/playback functions.

STEREO MODEL

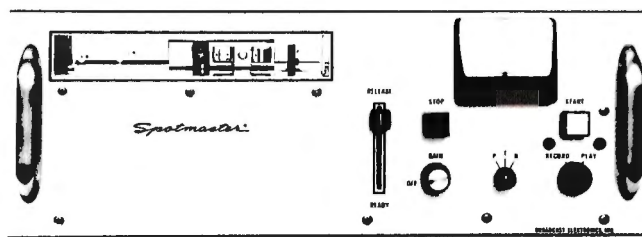


500 DS Stereo Record/Playback. Companion Playback Model 505DS also available. Both are desk mount.

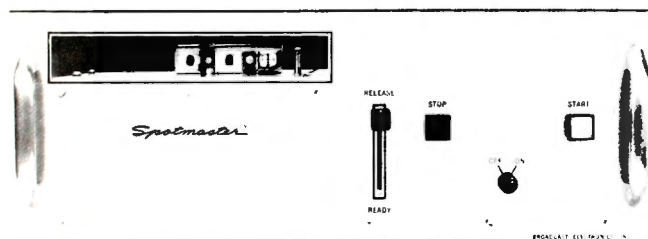
RACK MOUNT MODELS



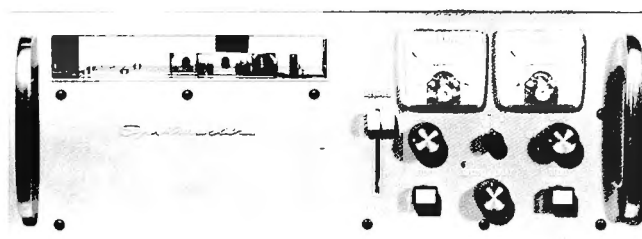
500 DR. Rack Mount 500 D in 7" panel height. Chassis rolls out for access. Optional mike pre-amp.



500 DR/DL Record/Playback Delay. Rack mount version of 500 D/DL. Optional mike pre-amp.



505 DR and 505 DRS. Rack mount mono and stereo playback units. All rack mount units accept A, B or C size cartridges.



500 DRS Stereo Record/Playback. Full stereo record and playback in a 7" rack unit.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
500D	900-0500	Monaural Record/Playback Unit, Compact
500DR	901-0500	Monaural Record/Playback Unit, Rack Mounting with Slides
505D	900-0505	Monaural Playback Unit, Compact
505DR	901-0505	Monaural Playback, Rack Mounting with Slides
500DS	900-0501	Stereo Record/Playback Unit, Compact
500DRS	901-0501	Stereo Record/Playback Unit, Rack Mounting with Slides
505DS	900-0506	Stereo Playback Unit, Compact
505DRS	901-0506	Stereo Playback Unit, Rack Mounting with Slides
500D/DL	900-0502	Delay, Record/Playback Unit, Compact
500DR/DL	901-0502	Delay, Record/Playback Unit, Rack Mounting with Slides

SPECIFICATIONS

Tape Speed:

7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):

0.1%.

Tape Start/Stop Time:

0.1 second maximum.

Wow and Flutter:

0.15% peak weighted.

0.2% rms unweighted.

Noise (Reproducer):

52 dB below 160 n Wb/m @ 1 kHz.

Distortion:

2% or less record to playback at 160 n Wb/m at 1 kHz.

Equalization:

NAB, IEC, CCIR as specified.

Frequency Response:

±2 dB from 50 Hz to 12 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):

50 dB.

Recorder Input (Line):

0.1 Volt minimum.

Recorder Input (Mike):

0.25 Volts (–64 dBm) minimum.

Audio Output:

+4 dBm (600 ohm transformer); peak output +14 dBm.

Cue Tones:

1000 Hz standard;

150 Hz optional;

8 kHz optional.

Power Requirements:

105 to 125 VAC, 60 Hz, 50 watts.

115 to 220 VAC, 50 Hz optional.

Motor Drive:

Hysteresis synchronous, indirect.

Size (500 and 505 desk-top units):

10½" W x 12½" D x 6-5/8" H

(26 x 32.4 x 16.9 cm).

Size (500DS and 505DS desk-top units):

14" W x 6½" H x 12-5/8" D

(35.6 x 15.9 x 32.1 cm).

Size (rack-mount units):

18" W x 16" D x 7" H

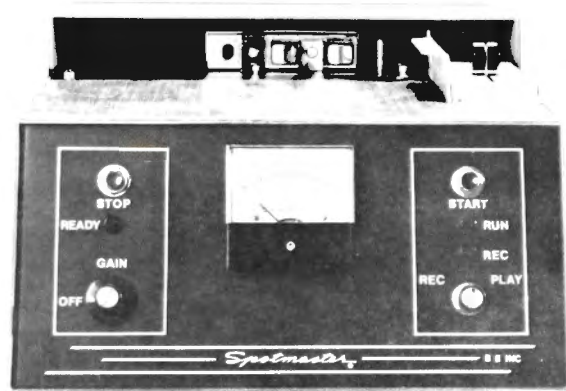
(45.7 x 40.6 x 17.8 cm).

Weight (packed):

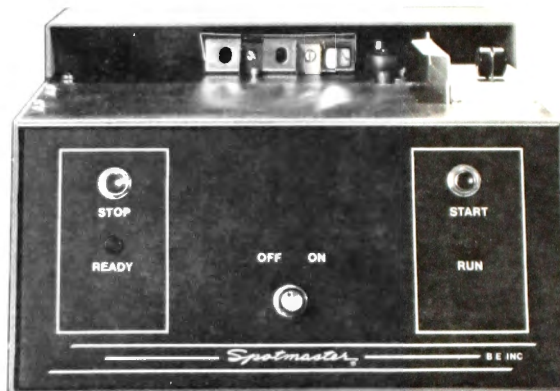
Model 500: 22 lbs. (9.9 kg); Model 500DS:

27 lbs. (12.2 kg); Model 505: 19 lbs. (8.6 kg);

Model 505DS: 24 lbs. (10.8 kg).



Model 400 Record/Playback



Model 405 Playback

FEATURES

- DEPENDABILITY AT LOWEST POSSIBLE COST

- ADJUSTABLE HEAD MOUNTS
- PLAYS A, B AND C SIZE CARTRIDGES

GENERAL DESCRIPTION

Still in use and still in demand, the 400 Series offers traditional Spotmaster performance for the economy-minded station. These machines feature all-silicon solid-state electronics, zener regulated power supply, a heavy duty hysteresis synchronous motor, ease of service and simplicity of design.

The Compact 400 Series is available in a record/playback (400B) and playback only (405B) models. Available options include secondary (150 Hz) cue tone, balanced output transformer and microphone preamplifier.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
400	900-0400	Monaural Record Playback, Desk Top
405	900-0405	Monaural Playback, Desk Top

SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):
0.1%.

Tape Start/Stop Time:
0.1 second maximum.

Wow and Flutter:
0.15% peak weighted;
0.2% rms unweighted.

Noise (Reproducer):
45 dB below 160 n Wb/m at 1 kHz.

Distortion:
2% or less record to playback at 160 n Wb/m at 1 kHz.

Equalization:
NAB, IEC, CCIR as specified.

Frequency Response:
±2 dB from 50 Hz to 12 kHz
(exclusive of head contour effect).

Crosstalk (magnetic head limited):
50 dB.

Recorder Input (Line):
0.1 Volt (bridging).

Recorder Input (Mike/optional):
0.25 Volt (−64 dBm) minimum.

Audio Output:
−10 dBm maximum adjustable level from
160 n Wb/m at 1 kHz, 600 ohms unbalanced
(transformer output is optional).

Cue Tones:
1000 Hz standard;
150 Hz optional;
8 kHz optional.

Power Requirements:
105 to 125 VAC, 60 Hz, 45 watts.
115 to 220 VAC, 50 Hz (optional).

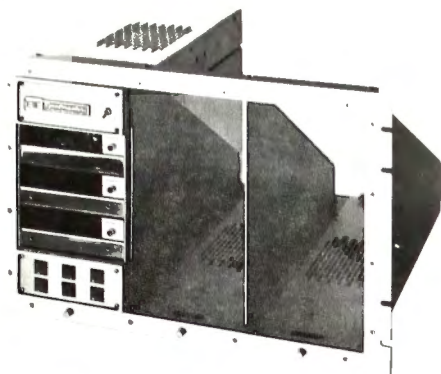
Motor Drive:
Hysteresis synchronous, indirect.

Size:
10¼" W x 12¾" D x 6-5/8" H
(26 x 32.4 x 16.9 cm).

Weight (packed):
Model 400: 22 lbs. (9.9 kg).
Model 405: 19 lbs. (8.6 kg).

**FEATURES**

- 3 AND 5 DECKS FOR A SIZE CARTRIDGES
- MONO AND STEREO MODELS
- SWITCHERS AND AUTOMATIC SEQUENCERS AVAILABLE
- INDIRECT DRIVE MOTOR, MODULAR CONSTRUCTION
- MECHANICAL RELEASE DECK

*RA33 Rack Panel Adaptor**Model 303D**Model 305D***GENERAL DESCRIPTION**

These machines provide 3 or 5 playback decks in a space-saving compact package for manual operation, or for use in programmed automation systems. All machine functions can be remote controlled.

Units are available with separate outputs from each deck, a single-switched output, or a combination of switched and individual outputs. An optional sequencer turns one or more Mini-Series units into a Mini-Mation system. Other options include an audio switcher and auxiliary cue tone sensors. These options can easily be added later in the field; in most cases, little more is required than plugging in a printed circuit board.

The Mini-Series features all solid state, modular electronics. Many of the modules are common to the SPOTMASTER TEN/70 single channel units. Starting and stopping control is solid state logic. Drive is through a single capstan shaft powered by a hysteresis synchronous motor. The deck modules plug in and may be removed without affecting the remaining decks.

Free standing units are supplied with walnut cabinets for desk top mounting. Standard 19-inch rack adapters are also available. Three 303 or 305 systems may be mounted side by side in the standard width rack.

SPECIFICATIONS**Tape Speed:**

7.5 ips (19.05 cm/s).

Timing Accuracy:

0.4% or better.

Tape Start/Stop Time:

0.1 second maximum.

Wow and Flutter:

0.15% peak weighted,
0.2% RMS unweighted.

Noise:

-55 dB or better.

Distortion:

2% or less at 0 VU, Ref. 400 Hz.

Equalization:

NAB, IEC, CCIR as specified.

Frequency Response:

±2 dB from 50 Hz to 15 kHz, exclusive of head contour effect.

Crosstalk:

Cue/Program: -55 dB or better at 1 kHz.

Output Level:

-10/0/+8 dBm switchable, +18 dBm peak.

Output Impedance:

600 ohms balanced transformer, alternate strapping for 150 ohms.

Cartridge Size:

Size A.

Cue Tones:

1 kHz standard, 150 Hz optional, 8 kHz optional.

Power Requirements:

105 to 125V, 60 Hz

210 to 230V, 50 Hz optional

303D: 60 watts

305D: 75 watts.

Remote and Accessory Control Connections:

Remote: Amphenol Blue Ribbon (50) pin connector providing remote control and indication of all front panel pushbutton control functions.

Accessory: Amphenol Blue Ribbon (24) pin connector providing normally open relay contacts from optional 150 Hz and 8000 Hz auxiliary tone sensors.

Size:

305: 14.4" H x 5.5" W x 17.75" D
(36.6 x 14 x 45 cm)

303: 10.5" H x 5.5" W x 17.75" D
(27.7 x 14 x 45 cm).

Weight (uncrated):

305: 42 lbs. (19 kg)

303: 30 lbs. (13.6 kg)

Rack Panel Adapter Size:

RA35 for (3) 305's: 15 3/4" H x 19" W x 18" D
(40 x 48.3 x 45.7 cm)

RA33 for (3) 303's: 12 1/4" H x 19" W x 18" D
(31.1 x 48.3 x 45.7 cm).

ORDERING INFORMATION

SEE PRICE LIST FOR LISTING OF MODEL AND PART NUMBERS CORRESPONDING TO DESIRED OPTIONS.



FEATURES

- COMPACT DESIGN FOR PLAYBACK OF 5 OR 10 A AND B SIZE CARTRIDGES
- COMPLETE RANGE OF ACCESSORIES: SWITCHER, RECORDER, REMOTE CONTROL
- INDEPENDENT DECK ELECTRONICS

GENERAL DESCRIPTION

Model 605D (Five-Spot) and 610CR (Ten-Spot) multiple deck cartridge units are capable of manual operation or may be incorporated into programmed automation systems.

Each deck is capable of independent operation and each deck is independently removable. Pressure roller force and cartridge indexing adjustments may be made from the front without removing the deck.

CUE TONES — Each deck has one or, optionally, two cue tones as required. A third cue tone can be supplied as an external unit.

AUTOMATIC SWITCHER* — Plug-in facilities are provided on the rear panel for use with the Model SW-5B

SPECIFICATIONS

Equalization:

NAB standard.

Frequency Response:

±2 dB, 50 Hz - 12 kHz.

Distortion:

2% or less at normal recording level.

Noise:

-45 dB, ref. 160 n Wb/m.

Wow and Flutter:

.2% or less (RMS).

Tape Speed:

7.5 ips (3.75 ips available).

Output Level:

Adjustable to +4 dBm at 600 ohms, peak output +12 dBm.

Output Load Impedance:

600 ohms (emitter-follower). *600/150 ohms (transformer output).

Cueing Accuracy:

.1 second.

Cueing Tones:

Primary - 1,000 Hz (Stop/Re-Cue). *Cue Trip No. 1: 150 Hz (end of message). *Cue Trip No. 2: 8,000 Hz (auxiliary).

Playing Time:

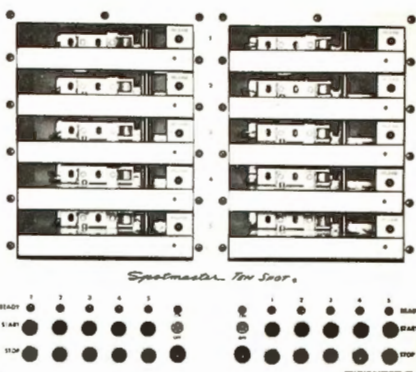
3 sec. to 16 mins. per deck at 7.5 ips using NAB-type A&B cartridges.

Capacity:

605C: 5 type A or B cartridges;
610: 10 type A or B.

Power Supply:

Transistor, filtered, zener regulated.



Audio Switcher. This unit, which has a balanced transformer output, automatically connects one program at a time to the program line and mutes non-active channels.

REMOTE CONTROL* — Remote control circuitry is provided for use when the equipment is installed at a location other than the operating position. The Model BE-106 remote control and sequencer (next event) indicator unit may be used to provide the remote control function.

RECORDING MODULE* — Removing playback deck #5 and inserting the optional MRM-600A recording module provides this system with record capability on deck #4.

Power Requirements:

108 - 125VAC, 60 Hz.; (115V/50 Hz, or 220V/50 Hz optional).

75 watts - 605, 150 watts - 610.

Dimensions:

605: 9-13/16" W x 14" D x 15-3/4" H

610: 19" W x 15" D x 15-3/4" H

Mounting:

605: Walnut Formica Cabinet (Model 605C).

605: In 19" rack panel with cartridge storage cubicle (Model 605CR).

610: 19" rack (Model 610CR).

Weight:

605: 44 lbs.

610: 89 lbs.

*Optional

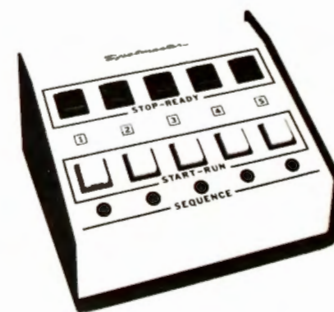
OPTIONAL ACCESSORIES



SW 5B AUDIO SWITCHER — Provides a single balanced output automatically muting non-active channels.



MRM 600A RECORDING MODULE — Remove one playback deck, insert MRM 600 for instant conversion to record capability.



BE 106 REMOTE CONTROL — Illuminated Start/Stop switches plus "electronic bookmark" sequence indicator.



FEATURES

- SIMULATION AND TRAINING SYSTEMS
- SOUND EFFECTS AND DISPLAY AUDIO
- LOW-BUDGET AUTOMATION SYSTEMS
- AUTOMATED TELEPHONE ANSWERING SYSTEMS

DESCRIPTION

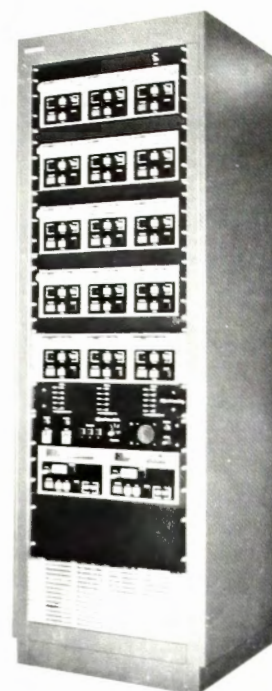
Cartridge machines are an extremely flexible and economical devices for implementing any system in which pre-recorded audio information is made available to a listening audience.

Broadcast Electronics has a unique capability in designing and implementing such systems. The Spotmaster product line is the most comprehensive of its type. With the widest range of accessories including programmable sequencers, switchers, multi-deck machines, and telephone answering equipment, this equipment can be used to implement an endless variety of systems.

SIMULATION AND TRAINING SYSTEMS — Spotmaster type cartridge equipment has, for many years, been used to provide programmable audio commands in sophisticated aircraft simulation systems for pilot training.

SOUND EFFECTS AND DISPLAY AUDIO — Amusement parks, museums, and displays can centralize all audio sources in a single or several multiple cartridge machines. Separate outputs from each deck can be routed to individual areas and controlled separately. Or the deck outputs may be combined into a single output. The auxiliary cue tones are used to sequence separate cartridges into a single unified program. The single cartridges are easily changed to vary the program. The auxiliary cue tones may also be used to control associated slide projectors or other devices.

LOW BUDGET AUTOMATION SYSTEMS — Spotmaster cart machines and accessories, including reel-to-reel recorders, can be used to provide a complete format of com-



Pilot Weather Information System — weather conditions at 15 airports are available to the caller.

mercials, station breaks, music, etc., for many hours of air time with limited or no operator intervention. Thus the small station can achieve many of the benefits of automation without the large investment required for a full scale system.

AUTOMATED TELEPHONE ANSWERING SYSTEMS — Cart machines and automatic telephone answering equipment can be used for information dissemination systems. Weather information, news bulletins, political statements, or any similar data which can be expressed in a pre recorded message can be made available to any caller. The messages can be quickly updated when necessary and provision can also be made for recording incoming messages from the caller.

MODEL 610CX AUTOMATIC AUDIO SYSTEM



SPECIFICATIONS

Frequency Response — ± 1 dB 50 Hz - 12 kHz ± 5 dB 50 Hz - 15 kHz
Output Level — 4 dBm ± 3 dB
Cueing Tones — 1 kHz 150 Hz
Tape Speed — 7.5 ips
Drive — Each 4 channel unit is driven by a common capstan thru a belt and pulley
Power — 108 - 125 VAC 60 Hz 200 watts

The SPOTMASTER 610CX is an example of a basic self contained system which can be used to fulfill many applications. The system consists of six playback and two record playback channels plus a programmable sequencer. This unit can provide up to two hours of programmable audio. The two record playback channels may be utilized for recording purposes while the other playback channels are in use. The 610CX may be operated as one 8 channel system, or as two 4 channel systems. A front panel "Split Combined" function switch is provided for the selection of this mode of operation.

The Automatic Audio System is equipped with an integral sequential switcher that may be programmed to automatically playback any of two to eight cartridges in any desired sequence.

Distortion — 2% or less
Wow and Flutter — 0.2% RMS
Inputs — (2) microphone, 250 ohm low impedance, (2) Line, 0.1 μ sens. 2.5 k ohm impedance
Cartridges — NAB types A, B
Mounting — Standard 19" rack, 11 1/2" high
Weight — 9 pounds

TELCO 80/90 Series

- PROVIDES AUTOMATIC ANSWERING AND MESSAGE RECORDING
- MODELS AVAILABLE FOR ALL SPOTMASTER MACHINES

TELCO 80 - BEI 904-0080 — Record/Play Telephone Answering Interface System for use with Spotmaster Cartridge Machine Series 400/500/605/610

TELCO 90 - BEI 904-0090 — Record/Play Telephone Answering Interface System for use with Spotmaster Cartridge Machines Series 1070/370/303/305

TELCO 91 - BEI 904-0091 — Record/Play Telephone Answering Interface System for use with Spotmaster Cartridge Machines Series 3000/4000

AUTOMATIC PLAY — In this position the play machine will automatically answer the call at the end of the first full ringing cycle and give out the prerecorded message to the caller. The phone line is released when message recues.

MANUAL PLAY — This is used in conjunction with a telephone handset. The phone can be answered by an operator, the caller can tell operator what message he/she wants to hear. The operator inserts cartridge, pushes manual play and the prerecorded message will play. The operator can stay on line or hang up the phone and be ready for the next call. The phone line is held by the TELCO even if the handset is replaced in the cradle, until the message recues.

AUTOMATIC RECORD — In this position the record machine will automatically seize the phone line at the end of the first full ring and record the incoming message. The machine will continue to record until the caller hangs

SPECIFICATIONS

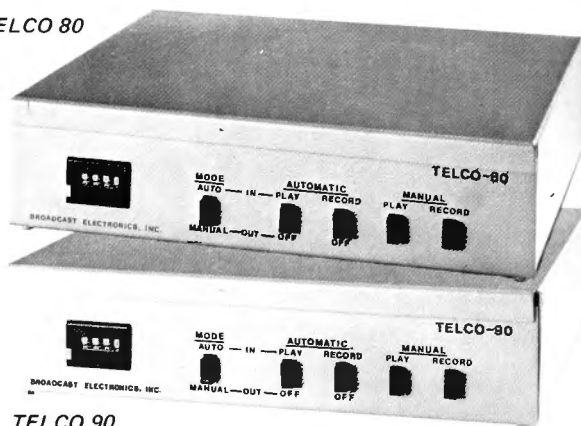
Dimensions:

10-1/8" wide x 2-3/4" high x 8-5/8" deep.

Connecting Cable:

Provided with 15 feet of cabling and mating connector for W. E. RDM/RDL Connector. Also provided with 15 feet of cabling and connectors for two Spotmaster cartridge units.

TELCO 80



TELCO 90

up. RDL recorder connector is equipped with a silence sensor which will release the phone line after 15 seconds of silence.

MANUAL RECORD — This is used in conjunction with the telephone handset. The phone can be answered by an operator. When the caller is ready, the operator can insert cartridge and push manual record and the caller's message will be recorded. The phone line is held by the TELCO, even if the handset is replaced in the cradle, until the message recues.

AUTOMATIC PLAY AND RECORD — In this position the play machine will automatically seize the phone line at the end of the first full ring and give a prerecorded announcement to the caller. At the end of the recorded announcement a 150 Hz (Q1) prerecorded tone will start the recorder and record the caller's reply. The sequence can be ended in several ways: If the calling party hangs up before the end of the sequence, the recorder connector will release the phone line. At this time, the recorder, if running, will be stopped, but the play unit will be allowed to recue.

Power:

Required voltage supplied from associated cartridge machine.

Play Audio Monitor:

Allows normal use of cartridge machine without disconnecting the TELCO 80/90.

TELCO III, IV, V and VI Series

- PROVIDES AUTOMATIC RESPONSE TO INCOMING CALLS
- INTERFACES BETWEEN SPOTMASTER® CARTRIDGE MACHINE AND BELL RECORDER COUPLER

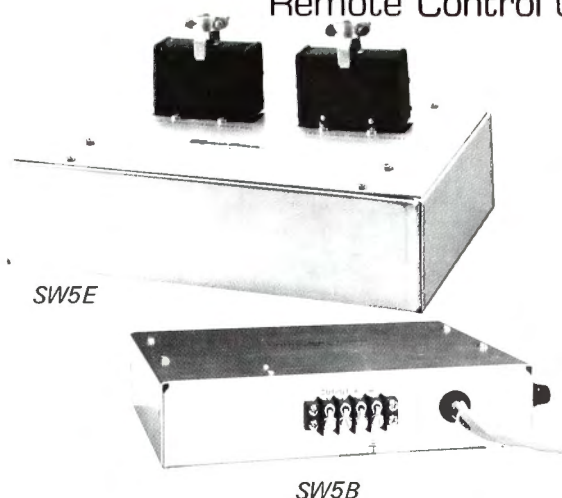
All SPOTMASTER record-playback and playback units can be adapted for Automatic telephone response. Install the Telco between the unit and a standard Bell System RDM Recorder Coupler. Allows pre-recorded messages, advertising, audio reports, etc. to automatically respond to incoming calls. The Telco provides the required signal level and switching interface between the cartridge machine and Bell KS19522-L1 (or L2) recorder coupler. Models are available for automatic or combined manual/automatic operation. Consult Broadcast Electronics price list for additional information on available models.



TC-4 COUNTER — Registers the number of incoming calls to the Spotmaster unit. Counter installs under tape deck lid.

AUDIO SWITCHERS

Audio switchers are used with multiple cart machines or multiple deck machines to provide a single balanced output. The switcher selects the last deck started and mutes the other decks. If a wrong deck is started, pressing another start button will immediately mute the first deck and put the newly started deck on the output. The first deck started will continue to run, and will re-cue itself.



ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
SW5B	904-0005	605/610 Audio Switcher switches any of five audio channels to program line (two required for 610)
SW5C	904-0012	400/500 Series Audio Switcher for up to five units
SW5D	904-0009	2000 Series Audio Switcher for up to five units
SW5E	904-5000	5300A Audio Switcher for three decks. Switchers can be tied together to provide a single balanced output from up to three 5300 A machines.
SW5E	904-5000	5500 Audio Switcher for five decks.

REMOTE CONTROL UNITS

Units are available for remote control of practically all Spotmaster cartridge machines.



BE102 — Start/Stop Function for three Series 400 or 500 machines.



SERIES 3000 REMOTE CONTROL PANEL for record/playback unit with cue tones and fast forward option.



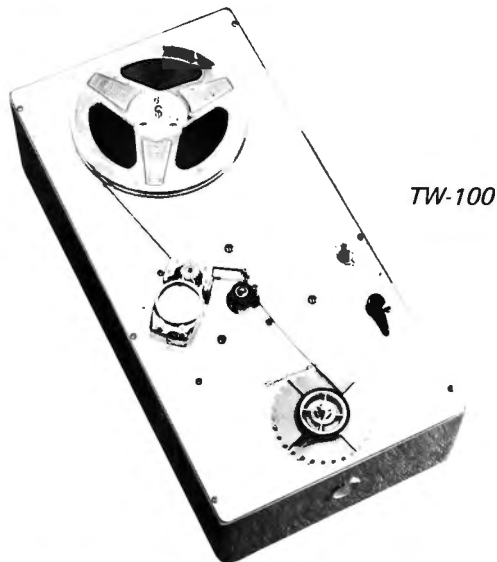
BE106 — 5 start/stop functions and sequence indicator for Model 605.



RC1070 — Remote Control with all functions.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
BE-102	904-0102	400 Series, 500 Series, Remote Control, 3 start/stop functions w/15 ft. cable.
BE-106	904-0106	605 Remote Control, 5 start/stop functions and sequencing indicator, illuminated buttons w/15 ft. cable.
303D	904-0303	303D Remote Control Includes 15' of Cable
305D	904-0305	305D Remote Control Includes 15' of Cable
RC-1070	904-1070	1070 Remote Control, all functions: suitable for adding to console or for rack mounting including 15' cable
3000	906-3016	3000 Remote Control Panel, START for 5 Units
3000	906-3019	3000 Remote Control Panel, Single Record/Playback Model
3000	906-3020	3000 Remote Control Panel, Single Playback (with cue tones)
3000	906-3021	3000 Remote Control Panel, Single Playback (without cue tones)
4000	906-4015	4000 Remote Control Panel, START for 5 Units
4000	906-4016	4000 Remote Control Panel, Single Record/Playback Model



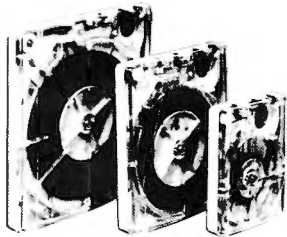
TW-100



Recording Tape



TI-50



Cartridges



R-25015 Demagnetizer



200-3C



300C

TW-100 Tape Cartridge Winder

The SPOTMASTER Tape Cartridge Winder is a rugged, dependable and field tested tape cartridge winder which fills a need in every station using cartridge equipment. It is no longer necessary to limit your cartridge operation by using only stock sizes or to tie up your conventional tape equipment to load tape cartridges. The SPOTMASTER Winder will handle all reel sizes and runs at 22½" per second. Worn tape in old cartridges is easily replaced. New or old cartridges may be wound to any length. Tape Timer installed, optional.

Specifications

Size:	10" W x 20" L x 6¾" H.
Weight:	9½ lbs.
Power Requirements:	117 V ac, 50/60 Hz, 30 watts.
Winding Speed:	22½ IPS.
Drive Motor:	4 pole induction.
Tape Up Reel:	Up to 7¼" dia.
Capacity:	Handles supply reel up to 3600' 1 mil lubricated tape.

TI-50 Tape Timer

Precise tape or speed measuring device with scale calibrated in minutes and seconds at 7.5 and 3.75 ips. Features time reset knob and strobe disc for speed checks. Use with reel-to-reel decks, cart machines and tape winder.

Tape Erasers Model 200-3C and Model 300C

Handy bulk erasers essential for cartridge users to assure clean, noiseless tape. Model 200-3C handheld, easy to use with 6-foot cord and pushbutton thumb switch. Model 300C heavy-duty table top unit for cartridges, and equipped with spindle for reels up to 10.5 inches diameter, 1 inch wide. Both available in 117 or 230 VAC.

Head Demagnetizer R-25015

Indispensable for proper head maintenance to insure maximum frequency response, low tape noise . . . Special finished pole piece will not damage head surface . . . High impact molded epoxy case . . . 117 VAC-50/60 Hz.

Lubricated Tape

World-renowned Scotch Recording Tape type 156 specifically recommended by Spotmaster for tape cartridge use . . . A heavy-duty tape featuring a special lubricated surface for cleaner, longer tape life . . . 1800 feet/7-inch reel or 3600 feet/NAB Hub.

Also available is the Formula-17 tape from Capital Magnetics.

Fidelipac Cartridges

Series 300, 600, 1200 available empty or in assorted pre-loaded sizes . . . Custom winding provided . . . Complete stock of cartridge replacement parts.

SPLICE DETECTOR SF-101-B

The SF-101-B utilizes the latest in opto-electronics to detect a splice in a tape cartridge. An audible tone alerts the operator when the splice is found (tone on/off switch is provided). Upon detection it stops the cartridge reel rotation immediately to position the splice beyond the recording point on the tape. Sensitivity may be adjusted to detect tape kinks, flaws, etc.

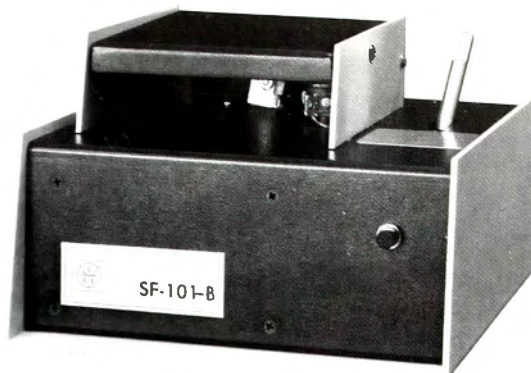
Cartridge Size: A, B and C

Speed of Operation: 25 to 30 ips

Power Requirements: 115V, 60 Hz, 85 watts

Weight (packed): 10 lbs.

Dimensions: 7" W x 5" H x 9-1/2" D



SF-101-B

Model A-2 Audiopak Broadcast Tape Cartridge

Designed to meet all NAB specifications for the type "A" continuous loop tape cartridge, Audiopak Model A-2 offers quality, reliability, and consistently high performance. Available empty or loaded with Formula 17 lubricated tape from 20 seconds to 10.5 minutes playtime.

Tape Tags

Handy self-adhesive labels especially die-cut and color-coded for cartridge cataloging . . . and is easy to remove . . . Room for three typewritten lines . . . Sheets of 8 tags each . . . Eight distinctive colors.

Tape Splicer

Model R26038 is ideal for cartridge splicing . . . Two position cutting assembly cuts tape on 45° bias then shifts for "Gibson Girl" trim . . . Comes complete with tape . . . Extra splicing tape, too, in two convenient sizes.

BE-903 Cleaning Fluid

Our exclusive special blend was developed to meet stringent broadcaster requirements . . . Quickly dissolves accumulated tape oxides . . . Will not harm heads or rubber parts . . . Safe to use . . . 16 and 32 oz. cans

Test Tapes

Model 350STA stereo/mono frequency response and alignment tape and NAB 3 mono frequency response and test tape



A-2



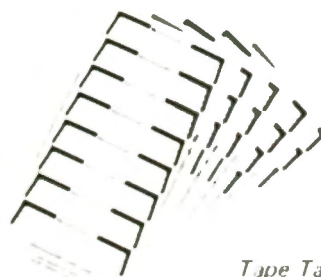
350STA



R 26038



Cleaning Fluid



Tape Tags



WIRE UNITS

LS-200 LAZY SUSAN — Holds 200 cartridges on rotating stand. Ideal for large storage situations requiring mobility. Equipped with 4 heavy-duty casters and constructed of heavy steel rod finished bright zinc. Each individual RS-25 section is removable. 51¼" high, 20½" diameter.

MODULAR UNITS

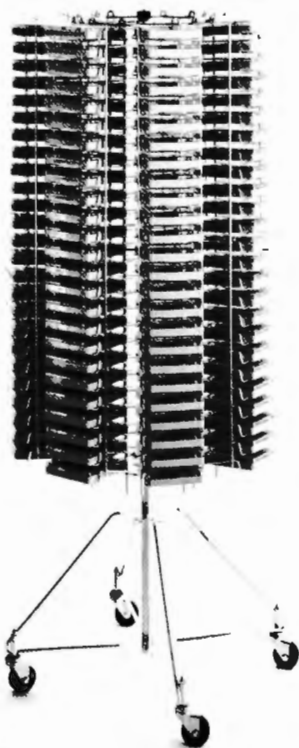
DESK MOUNT MODULES — Rotating racks present four-sided storage in attractive Walnut Formica. DM-72 holds 72 cartridges, measures only 22" x 11" x 11". DM-200 provides 200 storage slots. 29½" x 15¼" x 15¼".

DM-40 WALNUT WOODGRAIN FINISHED CABINET — Lazy Susan designed for tabletop operation; holds 40 "A" cartridges. 9-1/2" W x 8" D x 11-7/8" H. Weight 6-1/2 lbs.

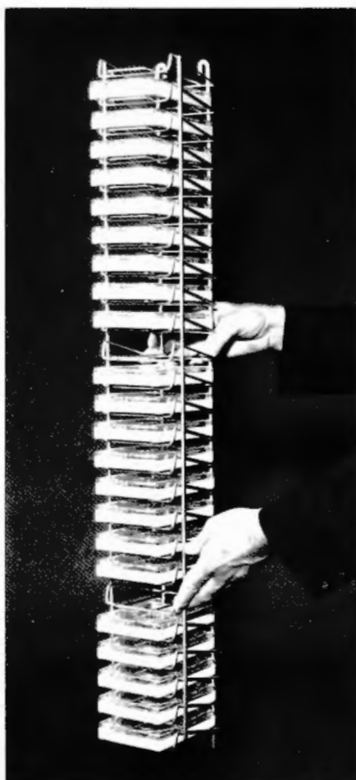
DM-20 WALNUT WOODGRAIN FINISHED CABINET — Holds 20 "A" cartridges. Units may be stacked; 9-1/2" W x 4" D x 10-7/8" H. Weight 3-1/4 lbs.

RM-100 WALL MOUNT RACK — Holds 100 "A" size cartridges in minimum space. Walnut Formica trim. 2' x 2' x 4-3/8".

RM-20 is designed for standard 19" rack installation. Put vacant rack space to good use. Holds 20 "A" size cartridges in only 5¼" vertical space. Made of aluminum.



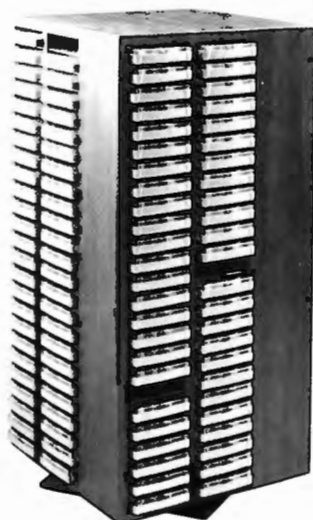
LS-200



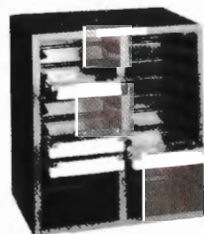
RS-25 Rack Section



DM-72



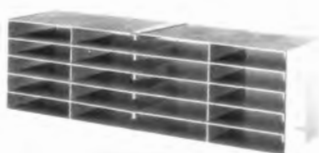
DM-200



DM-40



DM-20



RM-20



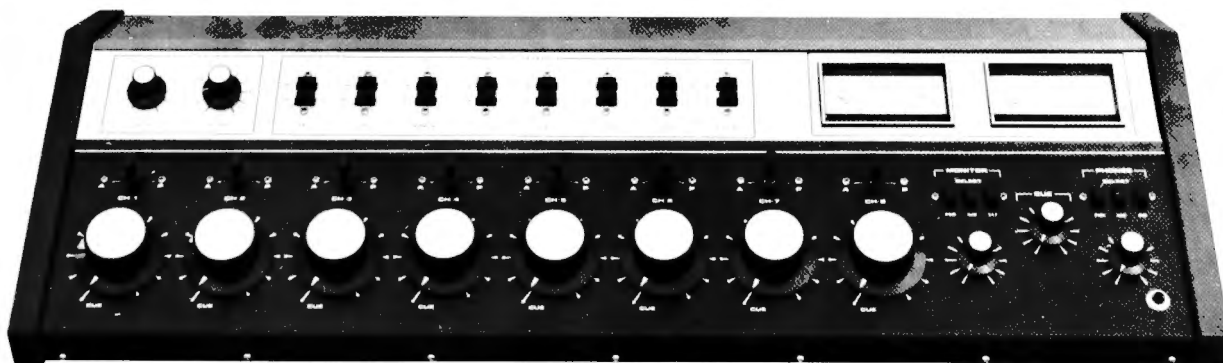
RM-100

FEATURES

- PLUG-IN AMPLIFIERS
- FET BUS SELECTION
- HIGH OR LOW LEVEL INPUT
- 8 WATT MONITOR AMP



5BEM-100



8BEM-100

GENERAL DESCRIPTION

FIVE OR EIGHT MIXER MODELS — The Broadcast Electronics 100-Series dual-channel consoles are available in either five- or eight-input mixer models.

SELECTABLE MICROPHONE/LINE LEVEL INPUTS — Identical plug-in preamplifier modules are used in each mixing channel. These modules can be preset to operate either as low-impedance microphone preamplifiers or to accommodate high-level sources. This feature affords complete flexibility in mixing assignments to meet existing operating requirements or to readily adapt to future changes.

TWO INPUTS PER MIXER — Interlocked, pushbutton selection of two sources per mixer is provided.

FET BUS SELECTION — The preamplifier module circuitry includes modern FET output bus selection, permitting silent channel bus assignment of the mixer preamp output. Dry-contact mechanical switching of low-level audio bus signals is eliminated.

SPEAKER MUTING — The 100 Series consoles are supplied with one speaker muting/warning light relay, with a second as an option. The consoles are prewired for relay

operation in conjunction with Mixers #1 and #2. Muting assignment is easily field-modified for other mixer assignments or extensions.

DUAL OUTPUT CHANNELS AND VU METERING — The output channels are identical in performance. Each plug-in line amplifier module delivers 600 ohm, transformer-isolated, balanced output at a +8 dBm level. Illuminated 3-1/2" VU meters afford continuous visual monitoring of the individual channel outputs. Contact fingers on all plug-in modules are gold-plated.

COMPLETE SYSTEM MONITORING — Monitoring at levels up to 8 watts, rms, affords an aural check of the program or audition channels.

Headphone monitoring of program, audition or cue busses, selectable by pushbutton operation, is standard. A front panel jack and cue gain control permit monitoring up to a 1.0 watt level with 8 ohm headphones.

Each input source may be previewed through a cue amplifier/speaker fed from detented cue switch closures actuated at the extreme CCW mixer knob position.

5 & 8 Mixer, Dual Channel, Mono

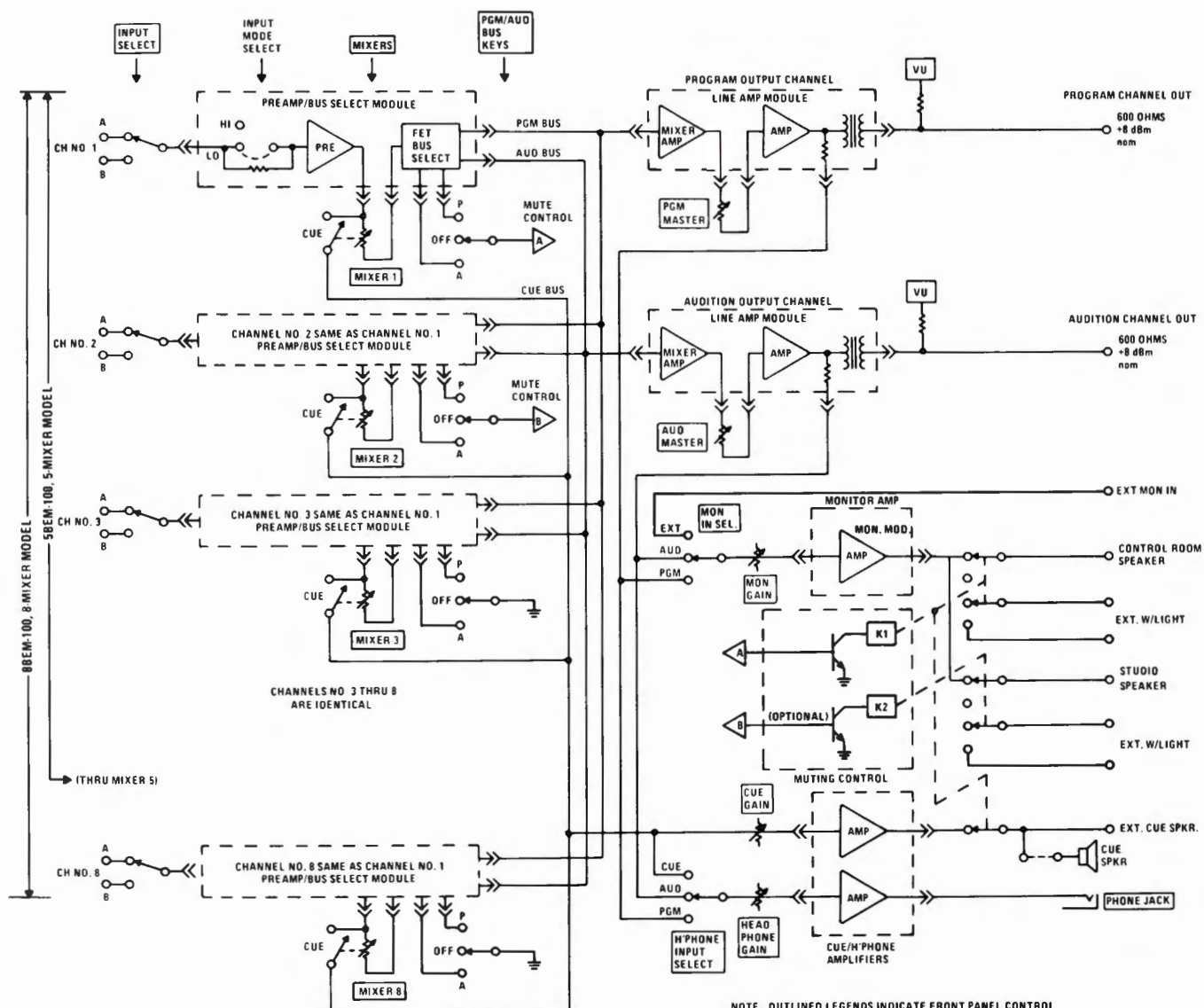
GENERAL DESCRIPTION (Cont.)

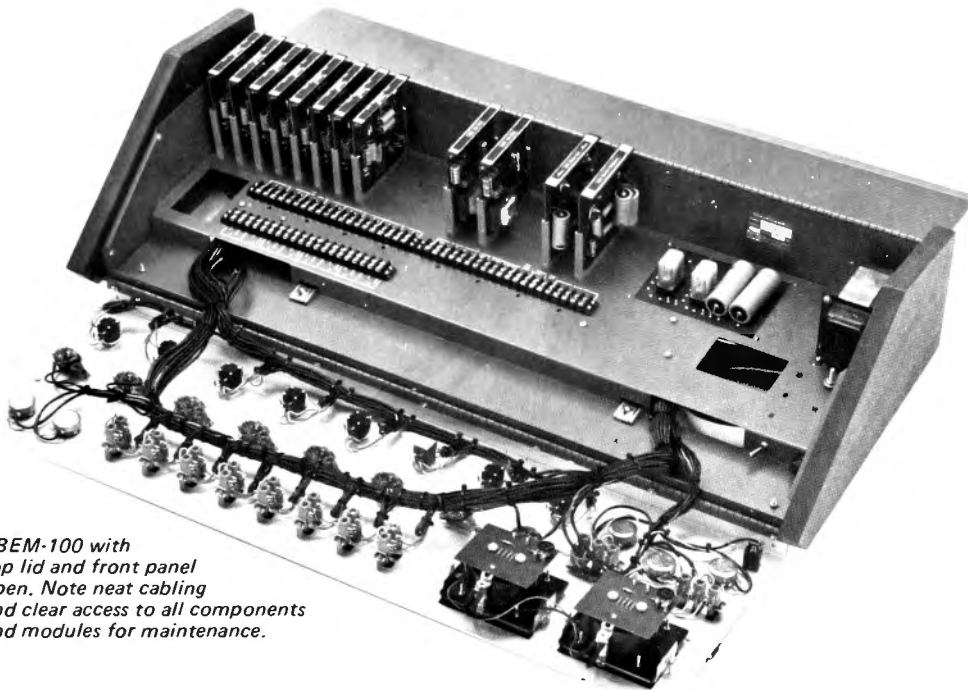
NEAT-APPEARING SIMPLE INSTALLATION — All external wiring is made to clearly labeled screw-type barrier strips. Cable access is through openings in the base of the console housing. These features insure simple, neat-appearing installation.

HIGHLY RELIABLE, FUNCTIONAL OPERATION — Reliable, long-term operation, plus attention to human engineering factors for ease of operation and maintenance; further enhanced by warm, yet functional modern styling, insure the 100 Series console user of a highly-professional, yet economically-practical audio console.



Model 5BEM-100
Internal view. Complete
access to controls, switches,
modules and terminal blocks.





8BEM-100 with top lid and front panel open. Note neat cabling and clear access to all components and modules for maintenance.

ORDERING INFORMATION

Model	Stock No.	Description
5BEM-100	838-0510	5-mixer, dual channel mono console, sealed-pot mixers
8BEM-100	838-0810	8-mixer, dual channel mono console, sealed-pot mixers
	271-0002	Muting Relay
	838-0200	230Vac Power Conversion

SPECIFICATIONS

PROGRAM AND AUDITION CHANNELS

Inputs:

5BEM-100 10 into 5 mixers
8BEM-100 16 into 8 mixers

Input Impedances (Selectable)/Levels:

Low Mode: 150 ohms, -65 dBm nom; -38 dBm max.
High Mode: 36K ohms, bal., bridging; -20 dBm nom;
+10 dBm max.

Frequency Response:

±0.5 dB, 20 Hz to 20 kHz (Reference: 1 kHz.)

Distortion:

0.5% or less, +8 dBm output, 20 Hz to 20 kHz.

Signal-to-Noise Ratio:

65 dB below to +8 dBm output with -50 dBm into any low level input.

Output Impedance/Level:

600 ohms balanced, +8 dBm for zero-VU meter reading;
+18 dBm max.

Overall Gain:

92 dB.

MONITOR CHANNEL

Inputs:

Program/Audition/External Pushbutton selectable.

Frequency Response:

±0.75 dB, 50 Hz to 20 kHz (Reference: 1 kHz)

Distortion:

0.75% or less, 30 Hz to 20 kHz, @ rated rms output and load.

Output Power/Impedance:

8 watts rms into 8 ohm load.

CUE AND HEADPHONE AMPLIFIERS:

1.0 watt rms. Internal cue speaker. Front panel headphone jack and pushbutton program/audition/cue bus selection.

MUTING:

One muting relay standard. Second relay optional. Standard relay mutes monitor and cue speakers when Mixer 1 activated. Includes terminated contact closure (1A, 125Vac) for warning light operation.

POWER REQUIREMENTS:

115Vac, 50/60 Hz (230Vac, 50/60 Hz optional) 50 watt max.

DIMENSIONS:

5BEM-100: 29.5" W, 13" D, 7.5" H (74.9x33x19.1 cm).
8BEM-100: 32.5" W, 13" D, 7.5" H (82.6x33x19.1 cm).

WEIGHT (packed):

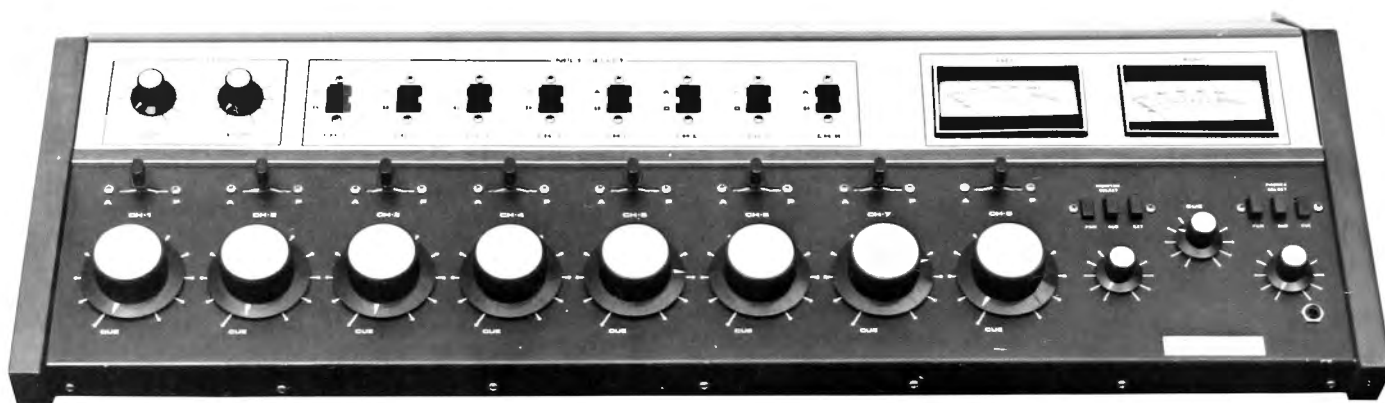
5BEM-100: 38 lbs. (17.2 kg).
8BEM-100: 43 lbs. (19.5 kg).

FEATURES

- ADVANCED FET CHANNEL SWITCHING
- MODULAR, PLUG-IN ELECTRONICS
- PRESET HIGH/LOW INPUT SENSITIVITY
- CUE SWITCHES, ALL MIXERS
- MODERN, FUNCTIONAL STYLING
- MONO MIXDOWN AND DUAL CHANNEL OPTIONS



Model 5BES-100



Model 8BES-100

GENERAL DESCRIPTION

FIVE- AND EIGHT-MIXER MODELS — The Broadcast Electronics 100-Series Stereo Consoles are available in 5-mixer and 8-mixer configurations. Two inputs per mixer, at either microphone or line input levels, are pushbutton selectable.

PROGRAMMABLE MONO/STEREO, HIGH/LOW LEVEL INPUTS — Identical modules are used in each stereo mixer input channel. Modules may be preset for mono/stereo and (or) high/low level to permit the user to gear individual mixing channel operation functions precisely to his programming requirements.

+18 dBm LEFT AND RIGHT CHANNEL OUTPUT CAPABILITY — Left and right channel plug-in line amplifier modules deliver +18 dBm balanced stereo outputs, visually-monitored on dual 3-1/2" illuminated VU meters. Adequate "headroom" is insured by the +18 dBm output capability of the line amplifiers.

CONTACT-FREE FET BUS SELECTION — Electronic bus switching, using gated FET techniques, insures fast and

silent operation. Switching is effected by simple, remote application of dc control voltages to the FET circuitry, eliminating mechanical contact closures from low-level audio bus paths.

STEREO MONITOR/HEADPHONE AND SUMMED L & R CUE AMPLIFIERS — Stereo monitoring of program and audition channels, or an external source is pushbutton selected and fed to stereo monitor amplifiers. Stereo headphone amplifier outputs, with pushbutton input selection of program, audition and cue busses, appear on a front panel jack. Through a summed L&R cue bus signal any input may be previewed through the built-in cue amplifier-speaker system.

LONG-LIFE, LOW-NOISE MIXING CONTROLS — Dual potentiometers of sealed, high-reliability, long-life design are used for mixing controls. Dual cue switches, actuated in a detented CCW control position, produce a summed L&R cue bus signal source.

GENERAL DESCRIPTION (Cont.)

SIMPLE MUTING LOGIC — Muting of monitor and cue speakers is by transistor-switched relay operation, initiated by the Mixer #1 channel-select key switch. The consoles are prewired for a second optional relay. The relays include terminated contact closures for operation of external warning lights.

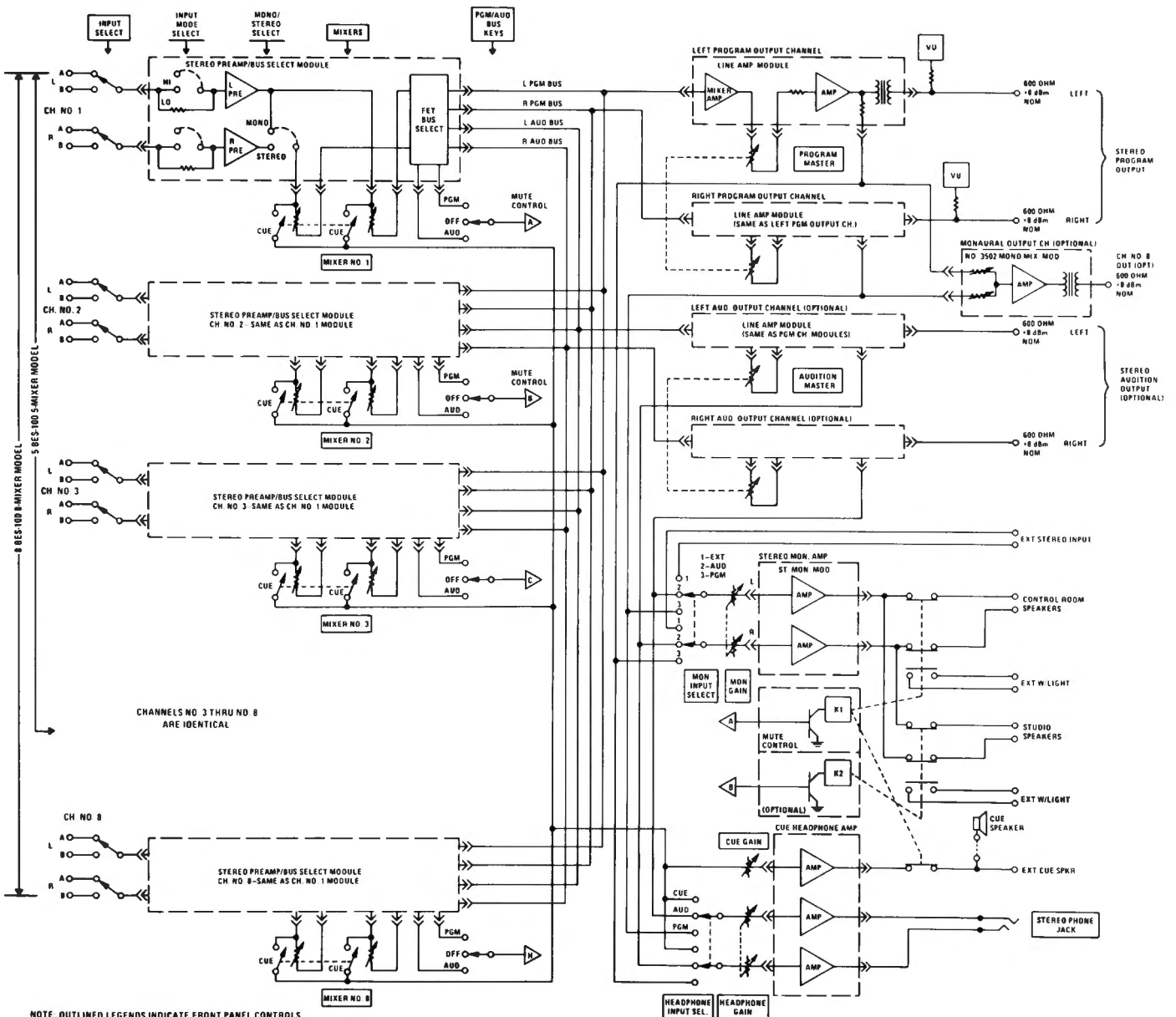
CLEAN, STRAIGHTFORWARD INSTALLATION — External connections are made to labelled screw-type barrier strips located in the cabinet bottom with adjacent cable access openings. This permits an installation completely free from unattractive exposed cables.

MONO MIXDOWN/LINE LEVEL AUDITION OPTIONS —

The consoles are prewired to accept optional plug-in modules for line-level monaural or stereo audition outputs where either of these additional operating functions are required. An optional mono program output is also available for simultaneous mono/stereo broadcasting.

SUPERB STEREO SYSTEM — The 100-Series Stereo Consoles satisfy the demand for reasonably-priced, professional control equipment, tailored to meet the widely varying requirements of today's stereo broadcaster.

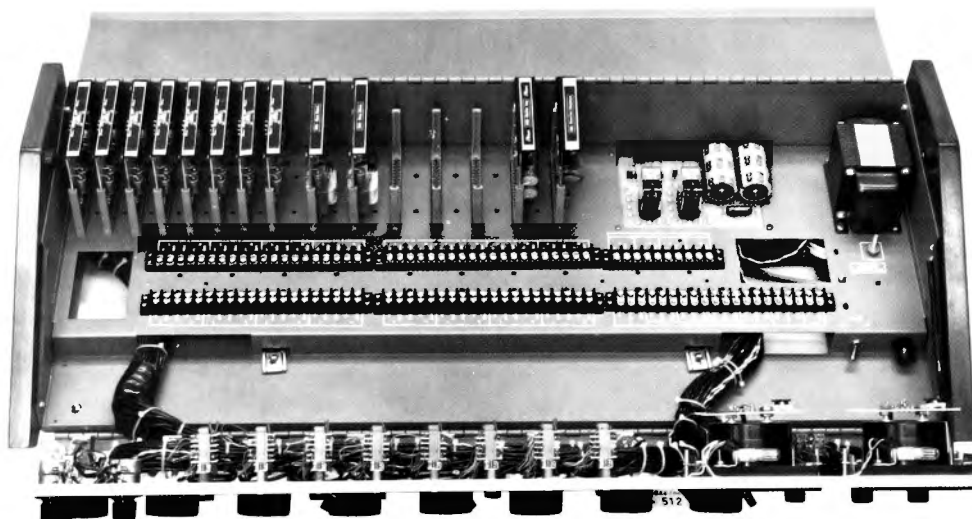
BLOCK DIAGRAM



Model 5BES-100

Model 8BES-100

*Model 8BES-100 Internal View.
As neat inside as outside. Easy to
install and maintain.*



ORDERING INFORMATION

Model	Stock No.	Description
5BES-100	838-0520	5 Mixer Input Stereo Console
8BES-100	838-0820	8 Mixer Input Stereo Console
	918-3504	Audition Channel Line Amplifier Module (2 req'd.)
	918-3502	Mono Mix-Down Amplifier Module
	271-0002	Muting Relay
	838-0200	230 Vac, 50/60 Hz Power Conversion

SPECIFICATIONS

PROGRAM AND AUDITION (OPTIONAL) CHANNELS

Stereo Inputs:

5BES-100 10 into 5 mixers
8BES-100 16 into 8 mixers

Input Impedances/Levels (Selectable):

Low Mode: 150 ohms balanced. -65 dBm, nom., -38 dBm max.

High Mode: 36K ohms balanced, bridging. -20 dBm nom., +10 dBm, max.

Frequency Response:

±0.5 dB, 20 Hz - 20 kHz. Reference: 1 kHz.

Distortion:

0.5% or less @ +8 dBm output, 20 Hz - 20 kHz.

Signal-to-Noise:

Noise (unweighted), 65 dB below +8 dBm output with -50 dBm signal into any low-level input.

Output Impedance/Level:

600 ohms balanced. +8 dBm for zero-VU meter reading. +18 dBm output capability.

Overall Gain:

92 dB.

Monaural Output (Optional):

Same performance specifications as program/audition output channels. Mix ratio adjustable, ±6 dB.

STEREO MONITOR CHANNELS

Stereo Inputs:

Pushbutton selectable, program/audition/external.

Frequency Response:

±0.75 dB, 50 Hz - 20 kHz. (Reference: 1 kHz).

Distortion:

0.75% or less, 30 Hz - 20 kHz @ 1.5 watts rms into 8 ohm loads.

Output Power/Impedance:

1.5 watts rms per channel into 8 ohm loads.

STEREO HEADPHONE AMPLIFIERS:

1.0 watts rms per channel into front panel phone jack. Program, audition and cue pushbutton input select.

CUE AMPLIFIER:

1.0 watts rms into built-in 8 ohm speaker. Input is summed L+R signal.

MUTING:

One muting relay standard. Mutes monitor and cue speakers when Mixer No. 1 activated. Prewired for second optional relay. Relays have terminated contact closures (1A @ 125 Vac) for warning light operation.

POWER REQUIREMENTS:

115 Vac, 50/60 Hz (230 Vac, 50/60 Hz optional) 85 watts max.

DIMENSIONS:

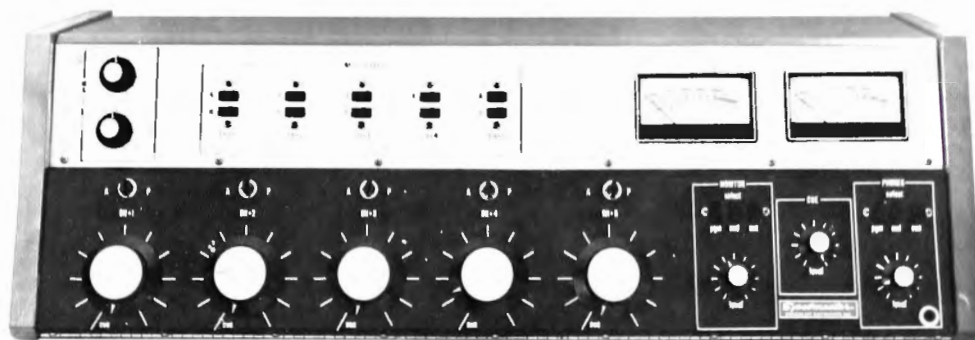
5BES-100 29.5" W, 13" D, 7.5" H (74.9x33x19.1 cm)
8BES-100 32.5" W, 13" D, 7.5" H (82.6x33x19.1 cm)

Weight (packed):

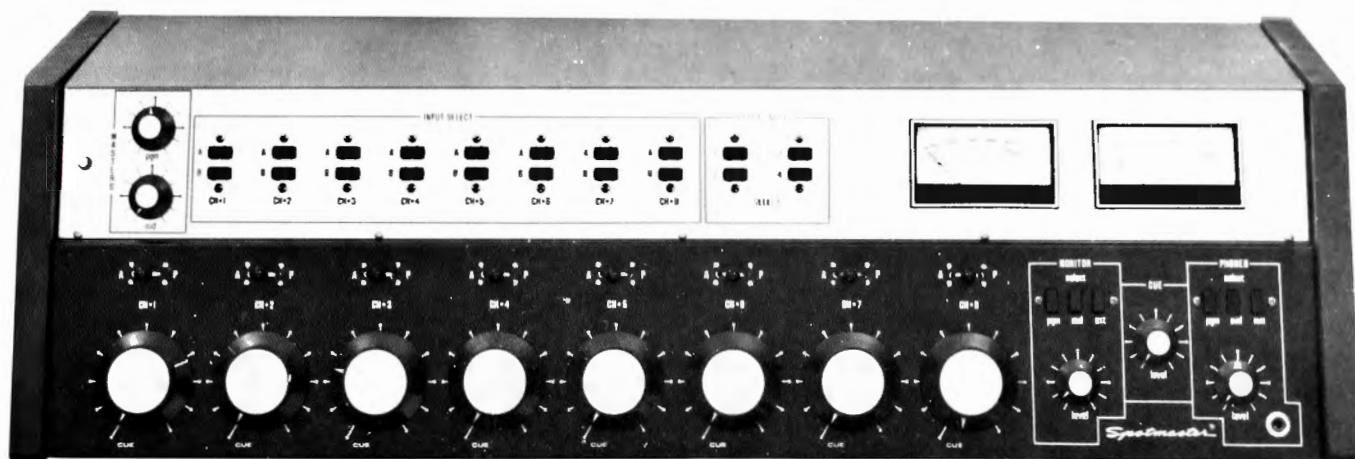
5BES-100 41 lbs (18.6 kg).
8BES-100 48 lbs (21.8 kg).

FEATURES

- STEP TYPE LADDER ATTENUATORS
- TELEPHONE TYPE CHANNEL KEY SWITCHES
- DUAL, +8 dBm OUTPUT CHANNELS
- MODULAR, PLUG-IN ELECTRONICS
- CUE SWITCHES, ALL MIXERS
- HIGH/LOW LEVEL INPUT SELECTION



Model 5BEM-200



Model 8BEM-200

GENERAL DESCRIPTION

FLEXIBILITY — Complete flexibility in mixing channel function is a unique feature of the Broadcast Electronics 200-Series, five- and eight-mixer dual-channel monaural consoles. All plug-in input preamplifier modules are identical. They may be preset to accept either balanced, high-level sources or balanced, low-level microphones. Mixing channel assignments may be geared precisely to individual programming requirements with pushbutton preselection of two inputs per mixer.

LADDER ATTENUATORS AND TELEPHONE TYPE SWITCHES — Mixing step-type, ladder attenuators; quiet, telephone-type bus select key switches, and contact-free, FET bus selection contribute to the console's high-grade performance.

DUAL CHANNEL DESIGN — A 600 ohm balanced audition channel is equal in performance to the program channel.

HUMAN ENGINEERED — The uncluttered control panel arrangement affords convenient, error-free operation. Input pushbutton switches are logically grouped for mixer input preselection; program, audition or external source inputs to the monitor amplifier; and program, audition and cue bus inputs to the headphone amplifier. Masters, plus monitor, headphone and cue gain controls are panel mounted. Illuminated, 3-1/2" VU meters continuously display both program and audition channel output levels.

PLUG-IN ELECTRONICS — All active circuitry, other than the power supply/relay assembly, is on plug-in modules with gold-plated contact fingers to insure long-term socket mating reliability.

Deluxe 5 and 8 Mixer, Dual Channel, Mono

GENERAL DESCRIPTION (Cont.)

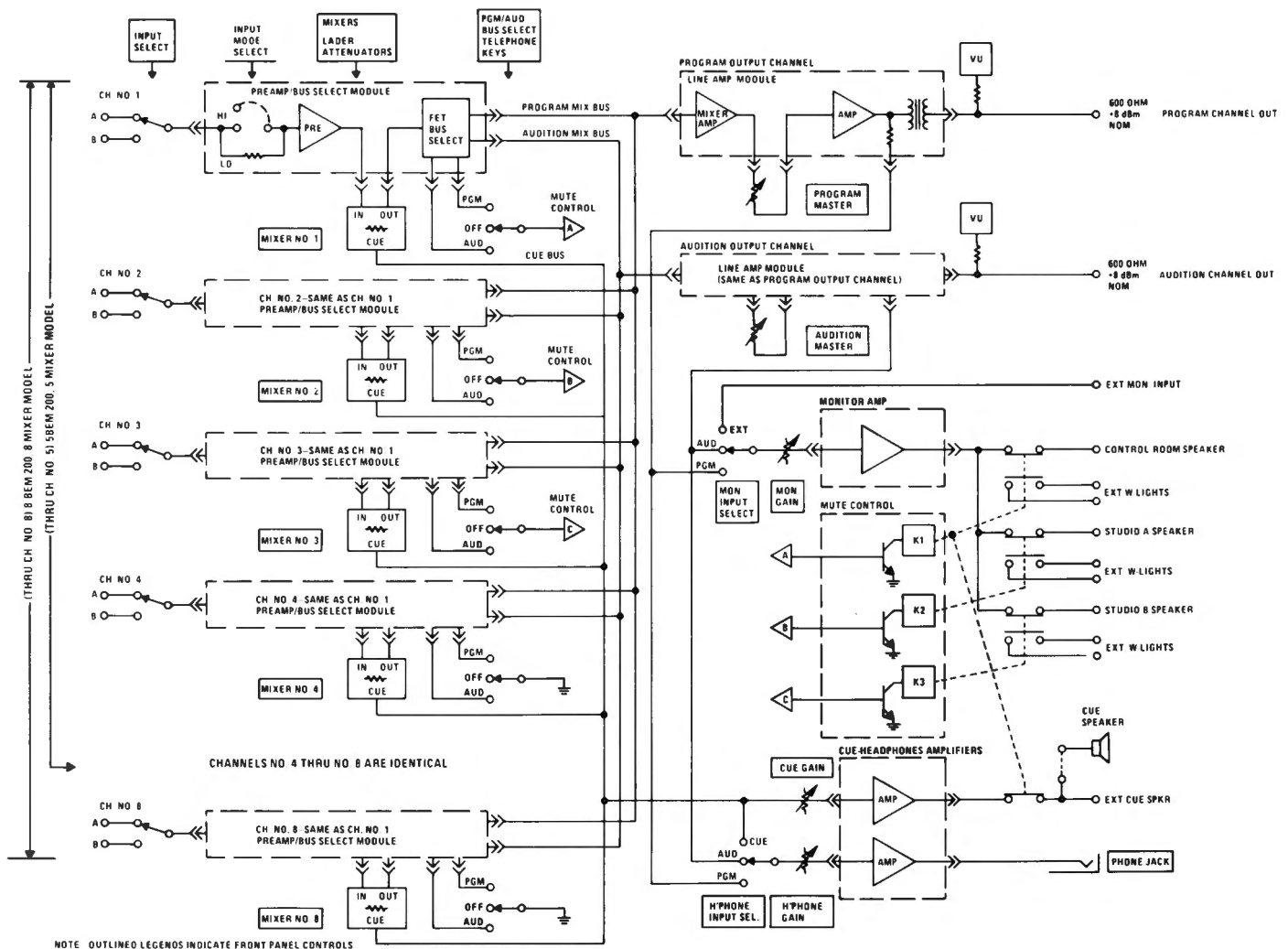
NEAT AND SIMPLE INSTALLATION — Completely free from exposed wiring, incoming cables are connected to internal, labelled, screw-type barrier strips with cable access through the base of the cabinet. An outstandingly neat installation results.

FULL MONITORING — An 8-watt monitor amplifier and individual 1-watt headphone and cue amplifiers afford complete operational and preview monitoring capability. Three muting relays equipped with terminated warning light contacts (1A @ 125 Vac) are controlled by channel activation of the first three mixer channel select keys. Muting logic is straightforward and readily field modified for alternative or expanded muting assignments.

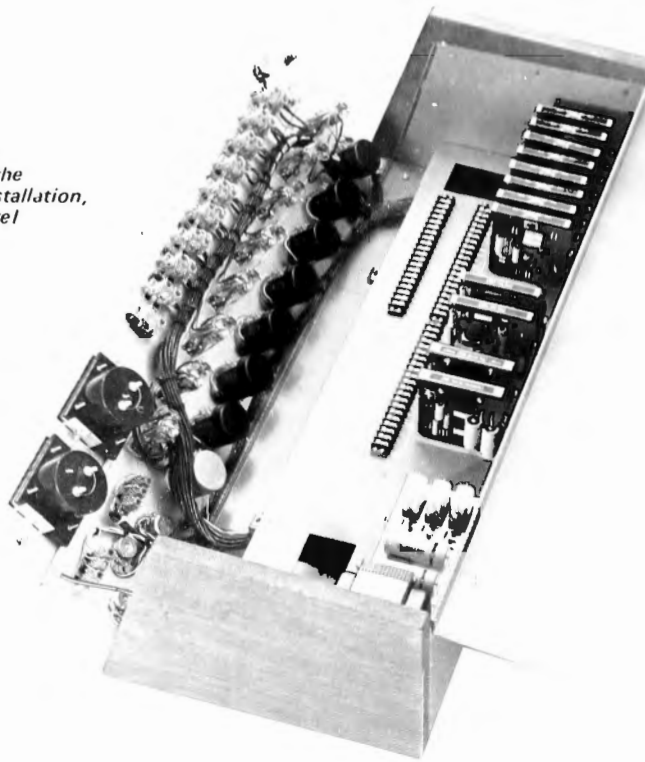
FET BUS SELECTION — Output channel bus selection is controlled electronically by remote FET dc switching, eliminating mechanical contact closures from the low-level audio bus switching system.

SUPERB PERFORMANCE — Guaranteed electrical specifications and logically-positioned operating controls, complemented by attractive modern styling, make the Broadcast Electronics 200-Series Consoles the clear choice to satisfy the most demanding operating requirements.

BLOCK DIAGRAM



Model 8BEM-200 Inside view, shows the same close attention to detail as the "human-engineered" front panel. Installation, service and maintenance are a pleasure!



ORDERING INFORMATION

Model	Stock No.	Description
5BEM-200	838-0511	5-mixer inputs, step attenuators and telephone type channel keys. Dual mono output channels.
8BEM-200	838-0811	8-mixer inputs, step attenuators and telephone type channel keys. Dual mono output channels.
	838-0200	230 Vac, 50/60 Hz power conversion.

SPECIFICATIONS

PROGRAM AND AUDITION CHANNELS

Inputs:

5BEM-200 10 into 5 mixers

8BEM-200 16 into 8 mixers

Input Impedances/Levels (Selectable):

Low Mode: 150 ohms, balanced. -65 dBm nom., -38 dBm max.

High Mode: 36K ohms balanced bridging. -20 dBm nom., +10 dBm, max.

Frequency Response:

±0.5 dB, 20 Hz - 20 kHz. Reference: 1 kHz.

Distortion:

0.5% of less @ +8 dBm output, 20 Hz - 20 kHz.

Signal-to-Noise:

Noise (unweighted), 65 dB below +8 dBm output with -50 dBm signal into any low-level input.

Output Impedance/Level:

600 ohms balanced. +8 dBm for zero-VU meter reading, +18 dBm output capability.

Overall Gain:

92 dB.

MONITOR CHANNEL

Inputs:

Pushbutton Selectable; Program/Audition/External.

Frequency Response:

±0.75 dB, 50 Hz - 20 kHz. Reference: 1 kHz.

Distortion:

0.75% or less, 30 Hz - 20 kHz @ 8 watts, rms into 8 ohm load.

Output Power/Impedance:

8 watts rms into 8 ohms load.

CUE AND HEADPHONE AMPLIFIERS:

1.0 watt rms into 8 ohms loads. Internal cue speaker. Front panel headphone jack and program/audition/cue pushbutton selection.

MUTING:

Three relays provided. Prewired for monitor/ cue muting through Mixer No. 1. Relays No. 2 and No. 3 controlled by Mixers No. 2 and No. 3 respectively. Other combination by simple field strapping. Relays have terminated 1A, 125 Vac warning light contacts.

POWER REQUIREMENTS:

115 Vac, 50/60 Hz (230 Vac, 50/60 Hz optional). 70 watts maximum.

DIMENSIONS:

5BEM-200 29.5" W, 14" D, 9.5" H (74.9 x 35.6 x 24.1 cm)

8BEM-200 32.5" W, 14" D, 9.5" H (82.6 x 35.6 x 24.1 cm)

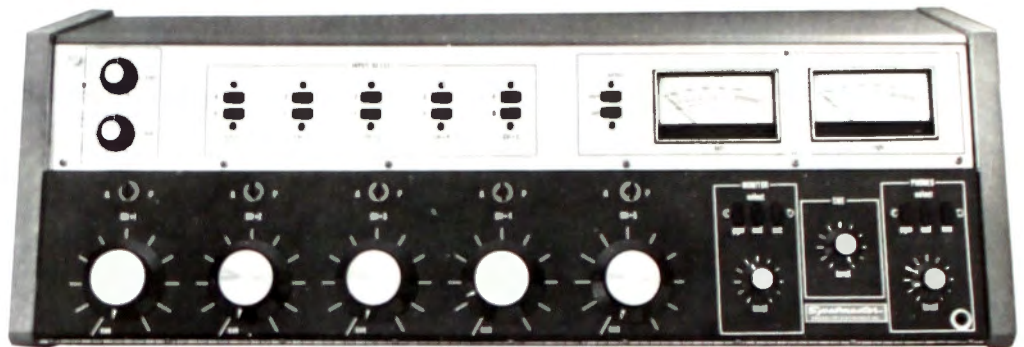
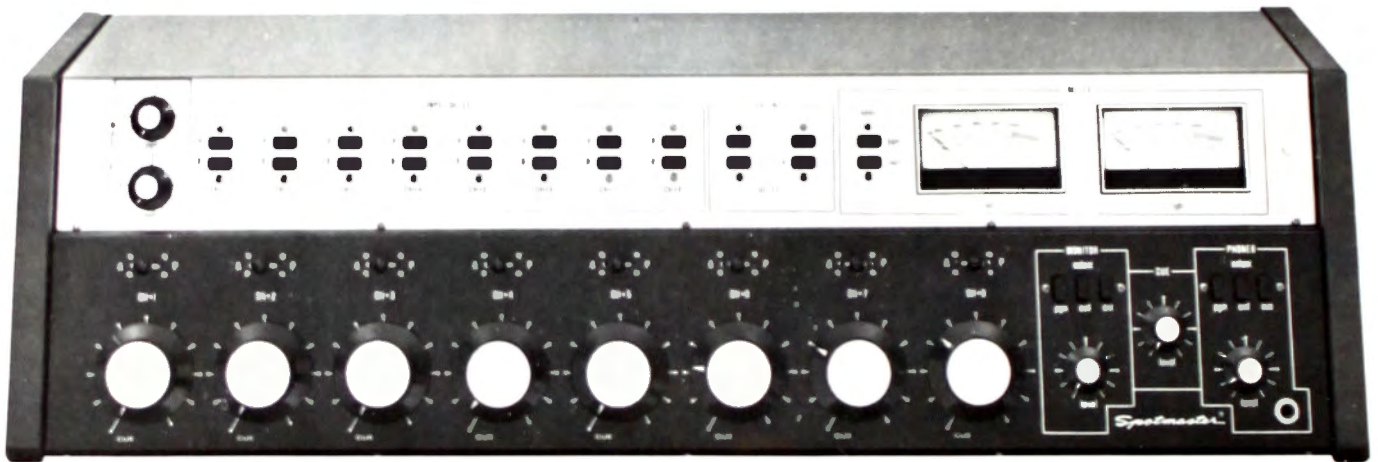
Weight (packed):

5BEM-200: 45 lbs. (20.4 kg).

8BEM-200: 56 lbs. (25.4 kg).

FEATURES

- LADDER STEP ATTENUATORS
- MODULAR PLUG-IN ELECTRONICS
- CONTACT-FREE BUS SELECTION
- TELEPHONE-TYPE CHANNEL KEYS
- FOUR LINE-LEVEL OUTPUTS
- MONO MIX-DOWN OPTION

*Model 5BES-200**Model 8BES-200***GENERAL DESCRIPTION**

THE COMPLETE STEREO CONSOLE — The Broadcast Electronics 200 Series Dual Stereo Consoles, available with either five or eight input mixing channels feature identical line level output stereo program *and* audition channels, with VU meter switching to either stereo channel pair. Mixing controls are maintainable, step type dual ladder attenuators. Quiet operating, telephone type channel select switches are used.

MONO MIX-DOWN OPTION — For applications requiring a summed L+R mono signal in addition to the stereo program outputs, the consoles are prewired to accept an optional plug-in module for this purpose.

INTEGRAL HIGH/LOW LEVEL AND MONO/STEREO MODE SELECTION — Identical stereo preamplifier modules are used in all mixing channels. Modules may be pre-programmed for mono or stereo operation; and for either low impedance microphone, or line-level input service. The user can thus assign mixing channel functions to meet

current operating requirements and can readily change them to satisfy future combinations, without obsolescence.

DUAL CHANNEL DESIGN — A 600 ohm balanced audition channel is equal in performance to the program channel.

STEREO MONITOR AND HEADPHONE AMPLIFIERS — High-quality control room and studio stereo monitoring of program, audition or an external input is afforded by 8-watt per channel monitor amplifier modules. Terminated in a front panel jack, headphone monitoring at up to a 1-watt level, of stereo program and audition channels, plus a summed L+R cue bus signal, insures full aural access to critical portions of the console system.

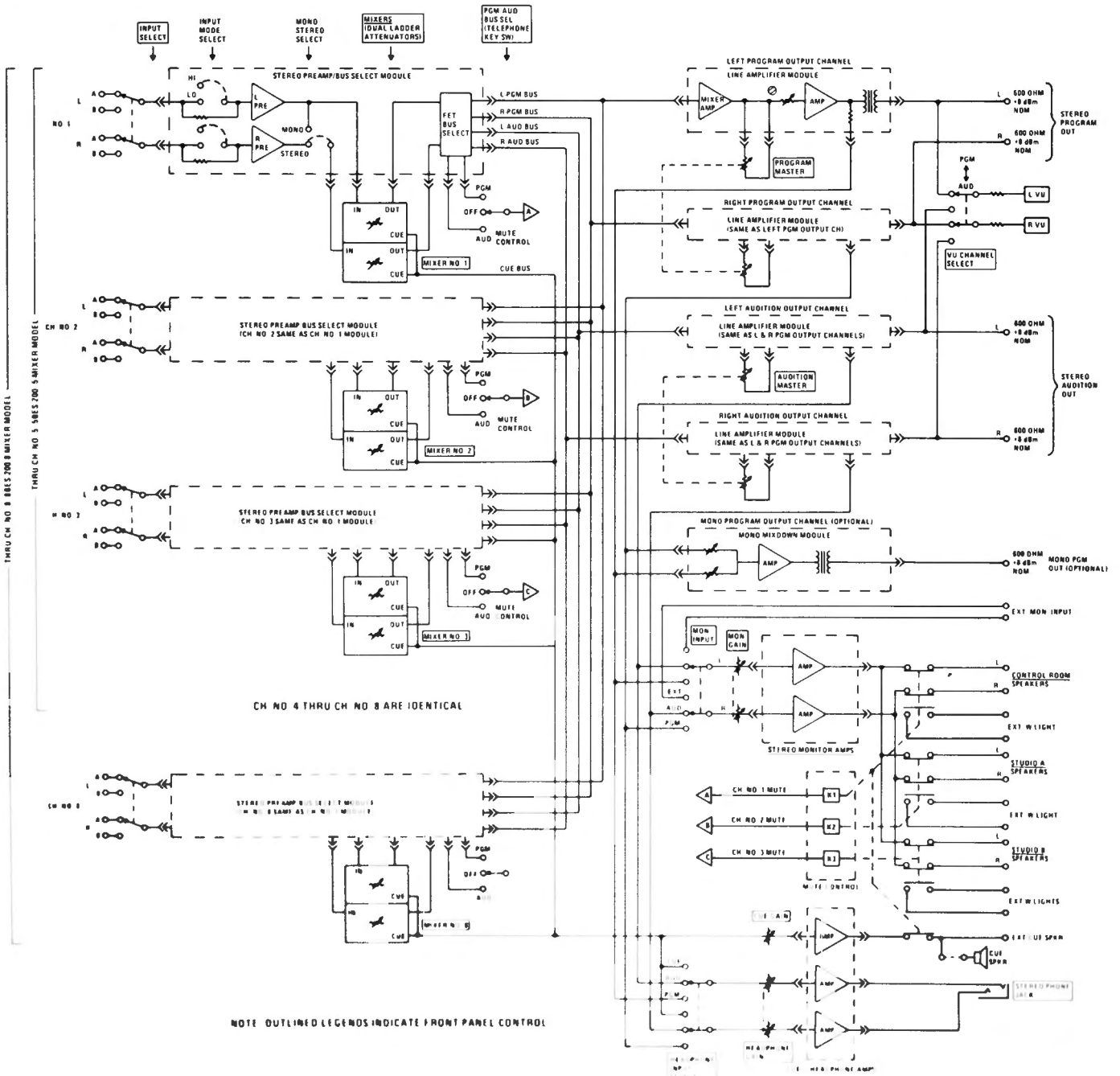
PREFADER PREVIEW, ALL INPUTS — A built-in cue amplifier-speaker system is fed from a summed-stereo bus. Bus signals are applied by dual cue switches on each mixer control, actuated in the detented closed-fader position.

GENERAL DESCRIPTION (Cont.)

NO EXPOSED EXTERNAL CABLING — With labelled, screw-type barrier strips and adjacent cable access openings, the 200-Series Consoles are a pleasure to install. The completed installation is free from exposed incoming wires and cables, with a truly professional appearance.

HUMAN ENGINEERED FOR LONG-TERM SERVICE — Special attention has been focused on control and switch locations to insure minimum error and maximum operating ease. The 200-Series Consoles are the choice of today's discerning stereo broadcaster. They perform . . . they produce the sound that satisfies the most demanding stereo programming.

BLOCK DIAGRAM



ADVANCED, FET, ELECTRONIC BUS SELECTION — Initiated by remote dc voltage fast-acting, low-noise selection of mixing busses is accomplished by gated-FET, contact-free switching, with no mechanical closures in the relatively low-level audio bus paths.

MUTING — Three muting relays are supplied, each with terminated contact closures for external warning light operation. The relay circuit is wired for individual operation in conjunction with the first three mixers, however the muting logic is simple and accessible for other, or expanded relay interlock arrangements.

Model 5BES-200 Model 8BES-200

Internal View, Model 8BES-200
Ready access to terminal boards for
installation, and to attenuators,
switches, modules and all compo-
nents for service and maintenance.



ORDERING INFORMATION

200-Series, Deluxe Dual Channel Stereo Consoles

Model	Stock No.	Description
5BES-200	838-0521	5 Mixer Input Stereo Console
8BES-200	838-0821	8 Mixer Input Stereo Console
	918-3502	Mono Mix-Down Module
	838-0200	230Vac, 50/60 Hz Power Conversion

SPECIFICATIONS

PROGRAM AND AUDITION CHANNELS

Stereo Inputs:

5BES-200 10 into 5 mixers

8BES-200 16 into 8 mixers

Input Impedances/Levels (Selectable):

Low Mode: 150 ohms balanced. -65 dBm nom., -38 dBm max.

High Mode: 36K ohms balanced, bridging. -20 dBm nom., +10 dBm max.

Frequency Response:

±0.5 dB, 20 Hz - 20 kHz. (Reference: 1 kHz)

Distortion:

0.5% or less @ +18 dBm output, 20 Hz - 20 kHz.

Signal-to-Noise:

Noise (unweighted), 65 dB below +8 dBm output with -50 dBm signal to any low-level input.

Output Impedance/Level:

600 ohms balanced. +8 dBm for zero-VU meter reading. +18 dBm output capability.

Overall Gain:

92 dB.

Monaural Output (Optional):

Same performance specifications as program/audition output channels. Mix ratio adjustable, ±6 dB.

STEREO MONITOR CHANNELS

Stereo Inputs:

Pushbutton selectable, program/audition/external.

Frequency Response:

±0.75 dB, 50 Hz - 20 kHz. (Reference: 1 kHz.)

Distortion:

0.75% or less, 30 Hz - 20 kHz @ 8 watts rms into 8 ohm load.

Output Power/Impedance:

8 watts rms per channel into 8 ohm loads.

STEREO HEADPHONE AMPLIFIERS:

1.0 watt rms per channel to front panel jack. Program, audition and cue pushbutton input select.

CUE AMPLIFIER:

1.0 watt rms to built-in 8 ohm speaker. Input is summed L+R signal.

MUTING:

Three muting relays. As wired, one relay mutes monitor and cue speakers when Mixer 1 activated. Other two operate with Mixers 2 and 3. Easily field modified for other, or expanded, muting control. Relays have 1A/125Vac terminated contact closures for external warning lights.

POWER REQUIREMENTS:

115Vac, 50/60 Hz (230Vac, 50/60 Hz optional) 105 watts max.

DIMENSIONS:

5BES-200: 29.5" W, 14" D, 9.5" H (74.9x35.6x24.1 cm)

8BES-200: 32.5" W, 14" D, 9.5" H (82.6x35.6x24.1 cm)

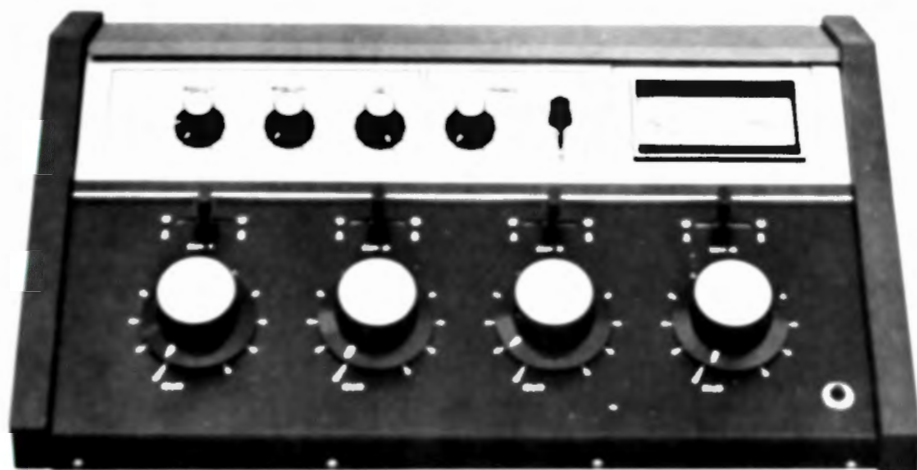
Weights (packed):

5BES-200 47 lbs. (21.3 kg.).

8BES-200 58 lbs. (26.3 kg.).

FEATURES

- SELECTABLE HI/LO SENSITIVITY, ALL CHANNELS
- INDIVIDUAL MONITOR, HEADPHONE AND CUE AMPLIFIERS
- STRAIGHTFORWARD, NEAT INSTALLATION
- EXCELLENT FOR ON-AIR, NEWSROOM, REMOTE AND PRODUCTION USE



GENERAL DESCRIPTION

COMPACT PROFESSIONAL PERFORMANCE

BE's exciting modern solid-state technology in the Model 4BEM-50 Electrically Mixer 4BEM-50, 4-Mixer Mono, gives you the affect of professional performance at moderate cost. The unit gets its effect from the 4BEM-50's built-in two-channel per channel gain amplifier that provides gain levels of 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000.

MICROPHONE OR LINE LEVEL INPUT SELECTION

Flexibility is a feature of the Model 4BEM-50's input selection capability, which allows you to select either microphone or line level input. The unit is designed for high-level input equipment.

COMPLETE MONITORING AND CUE CAPABILITY

Model 4BEM-50 has two monitoring and cueing outputs with front panel input and level controls. The unit is designed for complete monitoring and cueing capability.

RUGGED LOW NOISE MIXER CONTROLS

High reliability is a feature of the Model 4BEM-50's rugged low noise mixer controls. These are of special design, designed to be used in high-level input equipment.

MONITOR/CUE SPEAKER MUTE

Model 4BEM-50 has a built-in monitor/cue speaker mute output and the built-in monitor/cue speaker is 100% mute when the Mute button is used. Muting is designed to allow mixing channels to be affected by muting. Terminated relay contacts (A, B, C, D) for speaker mute operation are included.

EASY TO INSTALL - NO EXPOSED CABLE

Model 4BEM-50 is designed for easy installation. The unit is designed to be used in high-level input equipment.

EFFICIENT PROFESSIONAL OPERATION

Model 4BEM-50 is designed for efficient professional operation. The unit is designed to be used in high-level input equipment.



Model 4BEM-50 is designed for efficient professional operation. The unit is designed to be used in high-level input equipment.

4-Mixer, Mono

ORDERING INFORMATION

Model No.	Stock No.	Description
4BEM-50	838-0450	4-Mixer Monophonic Console
	838-0201	230 Vac 50/60 Hz Power Conversion

SPECIFICATIONS

PROGRAM CHANNEL

Inputs:

Two per mixer, total: 8

Input Impedances/Levels (Strappable):

Low Mode: 150 ohms balanced. -65 dBm nom., -38 dBm max.

High Mode: 20K ohms balanced bridging. -20 dBm nom., 0 dBm max.

Frequency Response/Distortion:

±2.0 dB/0.5%, 30 Hz - 20 kHz (Reference: 1 kHz + 8 dBm)

Signal-to-Noise:

65 dB (unweighted) below +8 dBm output. -50 dBm signal to any low-level input.

Overall Gain:

90 dB minimum.

Output Impedance/Level:

600 ohm balanced. +8 dBm for zero-VU meter reading. +16 dBm max.

MONITOR AMPLIFIER

Frequency Response:

±2.0 dB, 40 Hz - 20 kHz (Reference: 1 kHz)

Distortion:

0.5% or less, 40 Hz - 20 kHz @ rated output and load.

Output Power/Impedance:

1.5 watts rms into 8 ohms load.

HEADPHONE AMPLIFIER:

1.0 watt rms into 8 ohms load. Front panel jack. Program/cue/external input.

CUE AMPLIFIER:

1.0 watt rms into built-in 4 ohm speaker.

MUTING:

Assignable by strapping to any channel input combination.

POWER REQUIREMENTS:

115 Vac, 50/60 Hz (230 Vac, 50/60 Hz optional) 40 watts max.

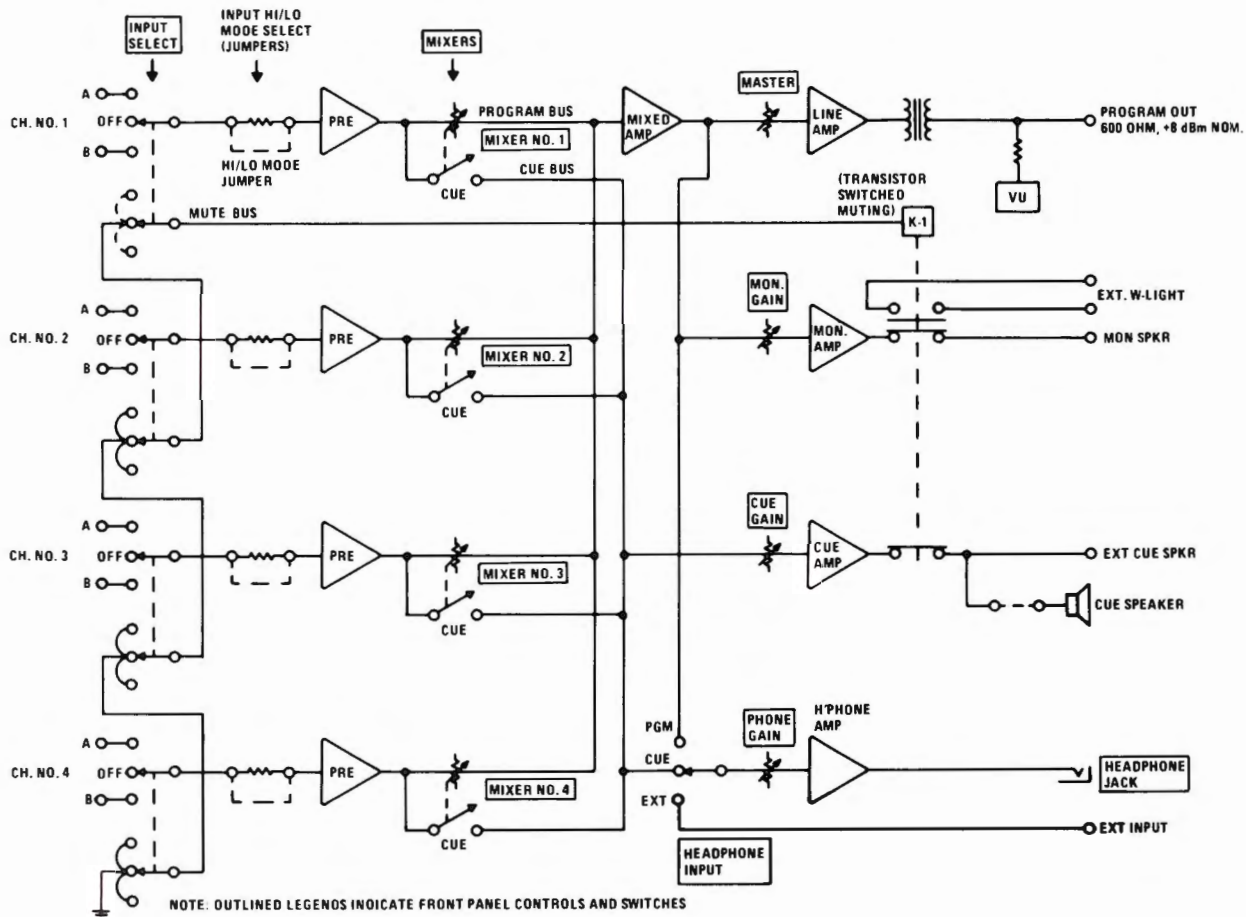
DIMENSIONS:

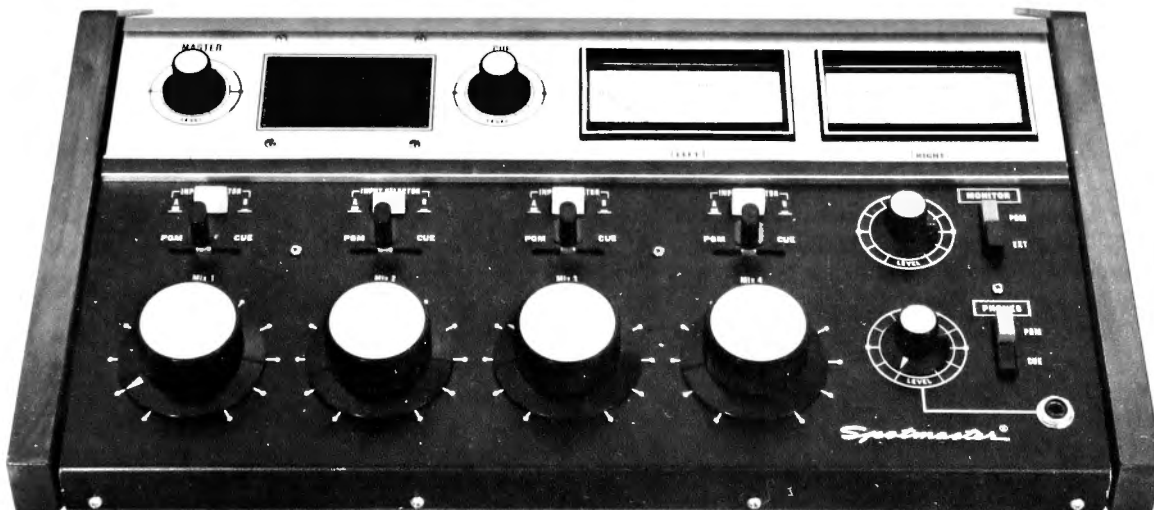
18" W, 13" D, 7.5" H (45.8 x 33 x 19.1 cm)

SHIPPING WEIGHT:

23 lbs. (10.4 kg).

BLOCK DIAGRAM





FEATURES

- HIGH/LOW INPUT SENSITIVITY SELECTION
- CUE SWITCHES, ALL MIXERS
- INDIVIDUAL MONITOR, CUE, HEADPHONE AMPLIFIERS
- EXCELLENT PERFORMANCE — REASONABLE COST
- 8 STEREO INPUTS
- IDEAL FOR STEREO PRODUCTION OR ON AIR

GENERAL DESCRIPTION

ACCOMMODATES 8 STEREO INPUT SOURCES — The Broadcast Electronics 4BES-50 four-mixer stereo console features quality stereo performance at a practical price. This versatile console allows preselection of eight stereo input sources with intermix and level control of four of these simultaneously.

MICROPHONE/LINE LEVEL AND MONO/STEREO MODES PRESETTABLE — Each mixing channel stereo preamplifier is identical. By strapping, they may be preset for low-impedance microphone, or high-level input service; and in-phase stereo outputs can be derived from a mono source.

DUAL VU METERS AND STEREO MONITORING — Visual monitoring of left and right channel outputs is by individual illuminated, 3-1/2" VU meters. Aural monitoring at 1.5 watt rms level, per channel for operating position and studio loudspeakers, plus stereo headphone 1-watt per channel amplifier outputs, terminated in a front panel jack, insure close surveillance of program quality. In addition to stereo program channel information, an

external stereo source and mono cue bus material may be monitored by headphones.

CUE-SWITCHES ON ALL FADERS — The high reliability, low-noise sealed dual potentiometers used for mixer level control are fitted with cue switches so that each source can be previewed through the self-contained cue amplifier-speaker system.

MUTING LOGIC — Monitor and cue speakers are relay-muted through contact closures on the mixer A-B input select key switches. Normally wired for muting in conjunction with Mixer #1 operation, other assignments are readily made in the field by strapping.

IDEAL FOR STEREO PRODUCTION OR ON-AIR USE — The stereo performance characteristics of the 4BES-50 are excellent and make it an ideal tool in the production of stereo taped material, or where a modest, yet flexible control room/studio operation is involved, totally suited for on-air stereo FM broadcast use.

4-Mixer, Stereo

ORDERING INFORMATION

Model No.	Stock No.
4BES-50	838-0452
	838-0201

Description
4-Mixer Stereo Console
230 Vac 50/60 Hz Power Conversion

SPECIFICATIONS

STEREO PROGRAM CHANNELS

Stereo Inputs:

Two per mixing channel. Total: 8.

Input Impedances/Levels:

150 ohms balanced. -65 dBm, nominal, -38 dBm max.

-or- 36K ohms balanced bridging. -20 dBm, nom.,

0 dBm max. In-phase stereo outputs may be derived from a mono source. Above modes preset by internal strapping.

Frequency Response:

±2.0 dB, 30 Hz - 20 kHz. (Reference: 1 kHz.)

Distortion:

0.5% or less, 30 Hz - 20 kHz @ +18 dBm output.

Signal-to-Noise:

65 dB (unweighted) below +8 dBm out with -50 dBm low level input signal.

Output Impedance/Level:

600 ohms balanced. +8 dBm for zero-VU meter readings. +16 dBm max.

STEREO MONITOR AMPLIFIERS

Frequency Response:

±2.0 dB, 40 Hz - 20 kHz. (Reference: 1 kHz).

Distortion:

0.5% or less, 40 Hz - 20 kHz @ rated outputs and loads.

Output Power/Impedance:

1.5 watts rms per channel into 8 ohm loads.

STEREO HEADPHONE AMPLIFIERS:

1.0 watt rms per channel into front panel jack. Program/ext/cue inputs.

MUTING:

As wired, monitor and cue speakers muted by Mixer 1 A-B input select switch. Assignable, by strapping, to any channel input. Muting relay includes 1A, 125 Vac warning light contacts.

POWER REQUIREMENTS:

115 Vac, 50/60 Hz (230 Vac, 50/60 Hz optional) 50 watts maximum.

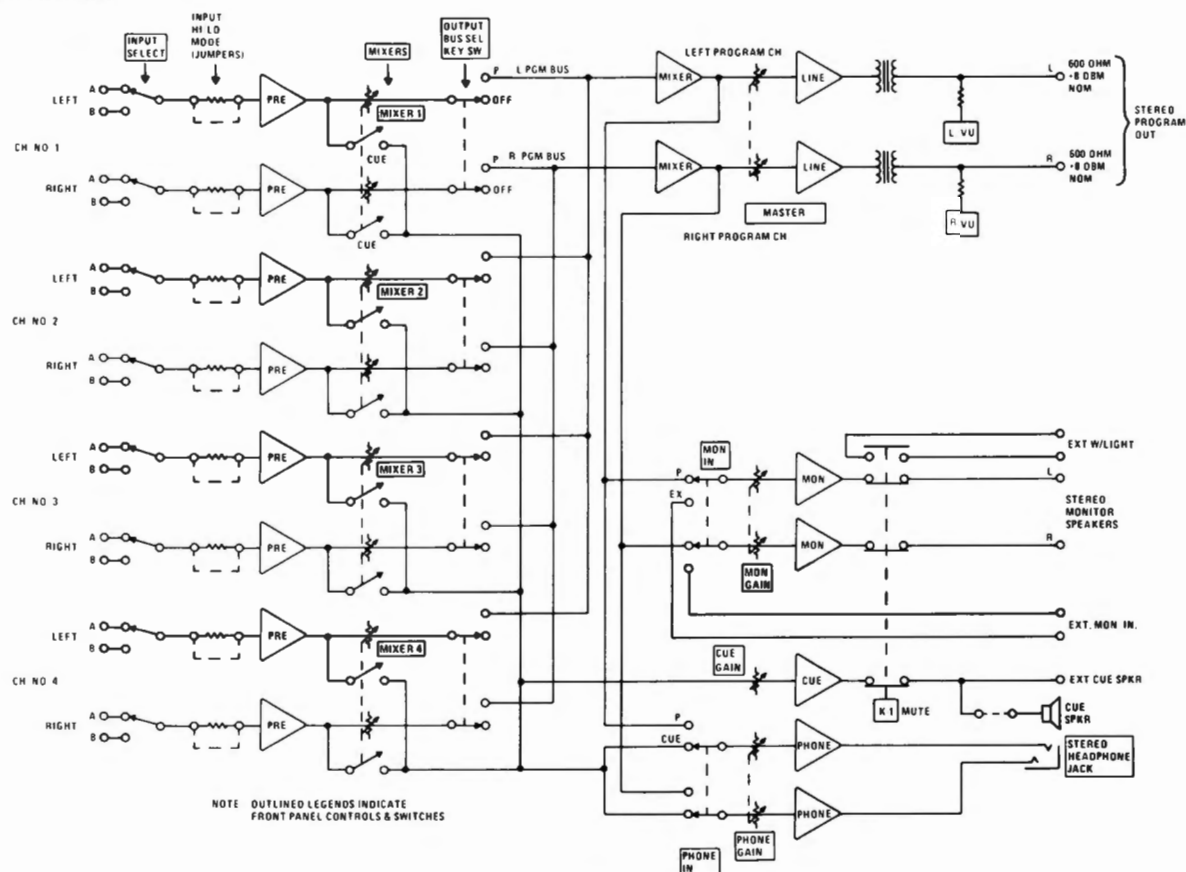
DIMENSIONS:

18" W, 13" D, 7.5" H (45.8x33x19.1 cm).

WEIGHT (PACKED):

24 lbs. (10.8 kg).

BLOCK DIAGRAM





FEATURES

- TRANSFORMER BALANCED INPUTS
- CUE SWITCHES, ALL MIXERS
- FOR BROADCAST, A/V, CCTV AND CATV
- SWITCHABLE MICROPHONE/HIGH LEVEL INPUTS
- INTEGRAL TONE GENERATOR

GENERAL DESCRIPTION

BROADCAST, A/V, CCTV AND CATV APPLICATIONS—

The Broadcast Electronics 4BEV 50 rack mount, four-mixer "Versa Console" brings, in a self contained, compact package operating versatility usually expected only in larger, desk top units. The "Versa-Console" is useful for production and semipermanent broadcast remote originations. Its multi-input flexibility makes it a valuable tool as the aural complement in audio/visual systems for industrial and educational training purposes or for CATV studio origination.

ACCOMMODATES WIDE CHOICE OF INPUT SOURCES

—The first three mixing channels are identical, accepting either low impedance microphone or high level inputs through rear panel preset switching. Two inputs may be selected for each mixer by adjacent switch operation. Mixer 4 has additional high level input capability. It will accept one low level input or three pushbutton selected high level inputs. Thus, a total of ten sources may be selected for up to four simultaneous "mixes."

SEALED MIXER CONTROLS WITH CUE SWITCHING—

Mixers are long life sealed potentiometers, each equipped

with cue switches. This permits preview of input sources through the built-in cue amplifier and speaker. The latter is automatically muted whenever input 1A is activated.

1 kHz TONE GENERATOR — An internal tone generator facilitates quick and accurate output level adjustment.

HEADPHONE MONITORING/EXTERNAL AMPLIFIER

FEED — Either program output or cue bus information may be monitored through the headphone amplifier with front panel jack output. Program material appears on a rear panel high impedance output terminal for feeding external PA or monitoring equipment.

DESIGNED FOR SIMPLE INSTALLATION

— External wiring connections are made to labelled rear panel screw type barrier strips or for program output and ground, to binding posts.

COMPACT, COMPLETE, CONTROL CENTER

— Astoundingly versatile for its size, the "Versa Console" is an outstanding unit where selection and mixing of many inputs of either microphone level or line level nature are involved.

4-Mixer, Rack Mount, Versa Console

ORDERING INFORMATION

Model No.	Stock No.
4BEV-50	838-2000
	838-0201

Description

4-Mixer Mono Console, Rack Mount
230 Vac 50/60 Hz Power Conversion

SPECIFICATIONS

INPUTS:

Mixers No. 1, 2 and 3 — two per mixer; high or low level.
Mixer No. 4 — one, high or low level, plus three pushbutton-selectable high-level inputs. Tone generator — internal level set.

INPUT IMPEDANCES/LEVELS (SWITCHABLE — REAR PANEL)

Low Level Mode: 150 ohms bal. —50 dBm nom., —38 dBm max.

High Level Mode: 20K ohms bal. bridging. —20 dBm nom., +10 dBm max.

OUTPUTS

Program:

600 ohms balanced. +4/+8 dBm switchable for zero-VU meter reading. +18 dBm max.

Cue:

1.0 watt rms to internal speaker. FET muted.

Headphone:

1.0 watt rms to front panel jack. Program/cue input select.

PA:

10K ohms unbalanced. 0.45V @ +8 dBm program out level. Adjustable. Rear panel phono jack.

FREQUENCY RESPONSE (PROGRAM & PA OUTPUTS):

±1.5 dB, 30 Hz - 20 kHz (Reference: 1 kHz)

DISTORTION: (PROGRAM CHANNEL):

0.5% or less, 30 Hz - 20 kHz, +8 dBm output.

SIGNAL-TO-NOISE (unweighted):

60 dB below +8 dBm out with —50 dBm signal to any low-level input.

POWER REQUIREMENTS:

115 Vac, 50/60 Hz, 11 watts max.

DIMENSIONS:

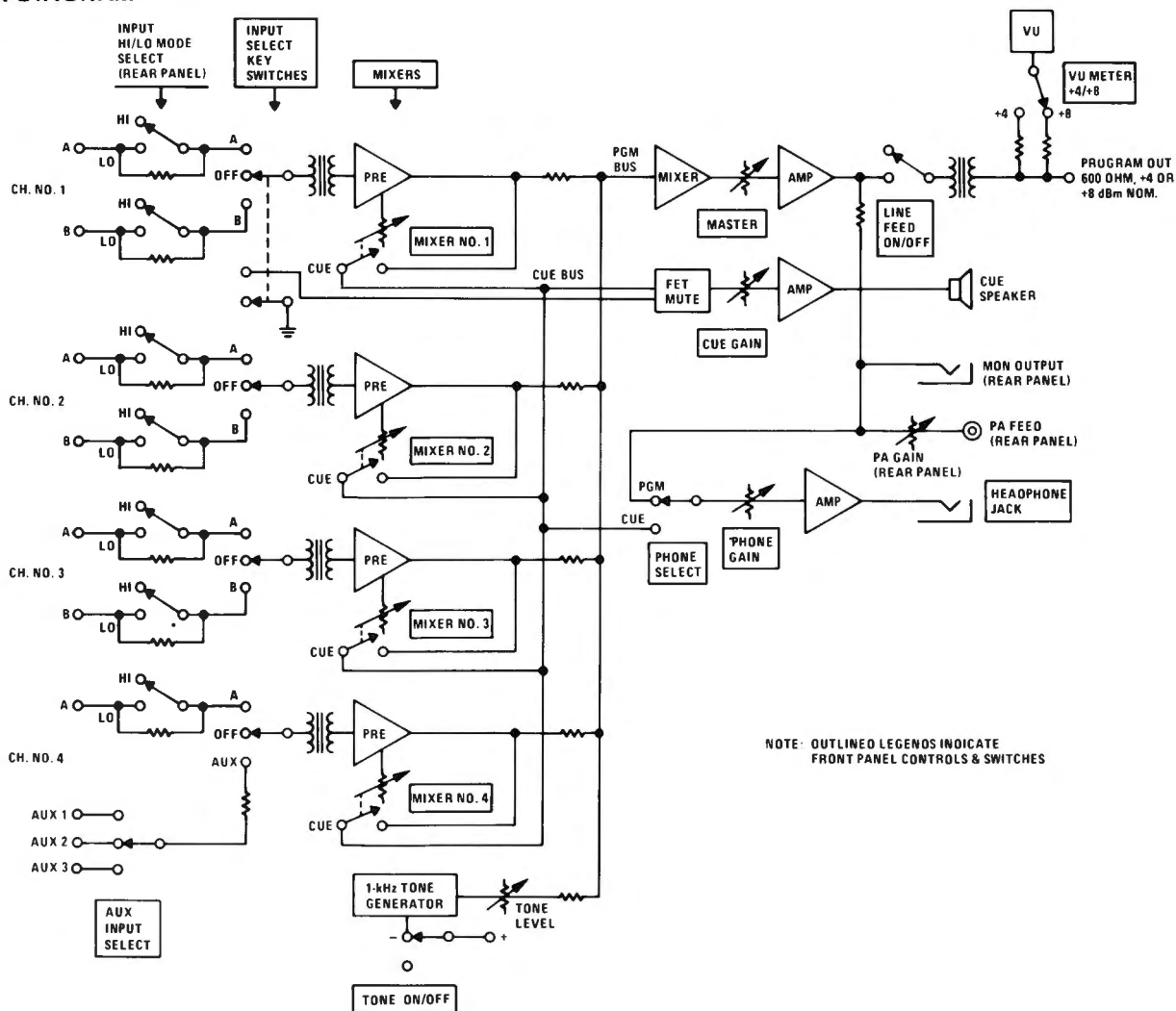
19" W, 10" D, 3.5" H (48.3 x 25.4 x 8.9 cm)

EIA Std 19" rack mtg.

SHIPPING WEIGHT:

14 lbs. (6.4 kg).

BLOCK DIAGRAM





Model SL-4100 shown with eight mic/line mixing channels, two mic/line mixing channels with muting and two remote input channels.

FEATURES

- VERTICAL FADERS
- COMPLETELY-SHIELDED INPUT MODULES
- LOW-NOISE REED RELAY BUS SELECTION
- 12-INPUT CHANNEL CAPABILITY
- DUAL-CHANNEL OUTPUT, MONO OR STEREO
- MODULAR PLUG-IN ELECTRONICS
- TRANSFORMER BALANCED INPUTS

GENERAL DESCRIPTION

VERTICAL-FADER, MULTI-MIX FLEXIBILITY — The Broadcast Electronics 4000-Series modular, dual-channel consoles, available in monaural or stereophonic models, afford the discriminating AM, FM or TV broadcaster a quality vertical-fader console at reasonable cost. These consoles fill the need for operating situations where a large number of input sources must be simultaneously mixed and controlled.

THREE MIXING-CHANNEL MODULE TYPES — The consoles accommodate up to 12 input modules of three different functions. The first type houses the components and electronics with provision for pushbutton selection of two sources and output feed to two mix busses. Preset switching establishes channel use for either low-impedance microphone or line level inputs. The stereo model also includes mono/stereo switching whereby in-phase stereo outputs are produced from a monaural source.

The second type module is essentially identical to the first with the added feature of DIP switch programmable muting-logic control of up to 16 different combinations of input/mix bus alignments.

The third accommodates three selectable 600 Ω balanced remote line or network inputs (two stereo, one mono in the stereo model) with provision for program cue feed or intercom facilities to the remote origination loca-

tion. The remote feed module is used in conjunction with a standard, unmuted input module and this combination occupies two module spaces.

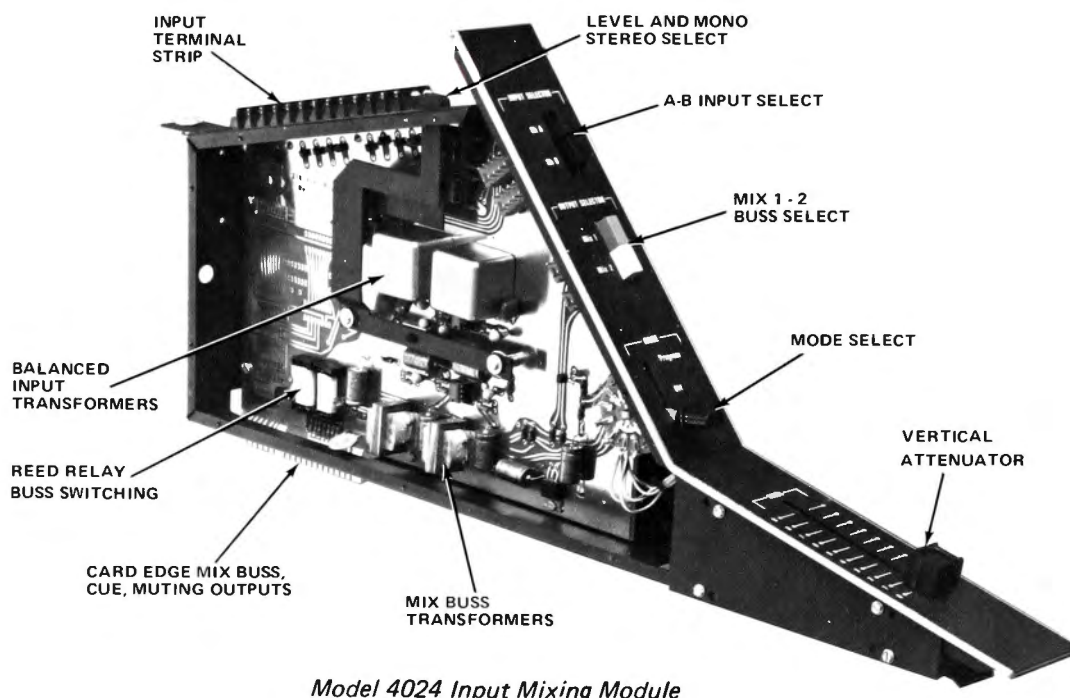
INDEPENDENT CUE SWITCHING — When a large number of mixing channels are involved it is general practice to predetermine individual channel-fader positions. "End-of-travel" cue switch activation defeats this objective. The 4000-Series consoles feature individual prefader preview switching by utilization of a key-type "operation mode select" switch with program/off/cue indexing.

SEPARATE, OR SIMULTANEOUS MIX-BUS SELECTION — All mix busses are balanced and by color-coded push-button selection, the output of each mixing-channel module may be fed to either of two mix busses, or to both.

VU METERING, ALL OUTPUT CHANNELS — Each program output channel operates at a nominal +8 dBm output level with a minimum of 10 dB headroom reserve. Individual 3 1/2" illuminated VU meters assure continuous visual monitoring of all program channels. The monaural model has two meters; the stereo model, four.

The stereo model is prewired to accept two optional mono mixdown modules where a "summed L+R" line-level, monaural output of Mix 1 and/or Mix 2 is desired for simul-cast operation.

12-Mixer, Vertical Fader, Dual Channel



Model 4024 Input Mixing Module

GENERAL DESCRIPTION (Cont.)

FULL-FIDELITY MONITORING — Key-switch input selection of the program channels and an external source to the input of an 8-watt rms monitor amplifier (two provided in stereo model) produces excellent reproduction of the programming, appropriately muted at the operating position and in the various studios.

HEADPHONE MONITORING WITH PROGRAM-CUE OVERRIDE — Terminated in a front panel jack, headphone monitoring of either mono or stereo program outputs and mono cue bus information at up to a 1-watt rms output level is accomplished.

Program-cue "override" capability is a unique feature. In the cue mode, panel level controls permit intermix of program and cue signal to satisfy individual operating preferences.

CUE/INTERCOM SYSTEM — In addition to the normal cueing function, the 1-watt rms cue amplifier-speaker system is utilized for two-way intercommunication between the operating position and two studios. Small PM speakers in each studio with simple two-conductor interconnection to the console complete the intercom function. "Talk-listen" control is at the console position.

COMPLETE MUTING-ASSIGNMENT FLEXIBILITY — The consoles include four muting relays. Relay actuation is controlled by a C-mos quad and/or select gate system, programmed by dual 8-position DIP-type switches located in the input mixing module. The switches are labelled so that any combination of A-B inputs or Mix 1-2 outputs may be programmed to actuate a specific relay. Normally-open contacts on each relay are terminated for slave operation of external warning-light relays.

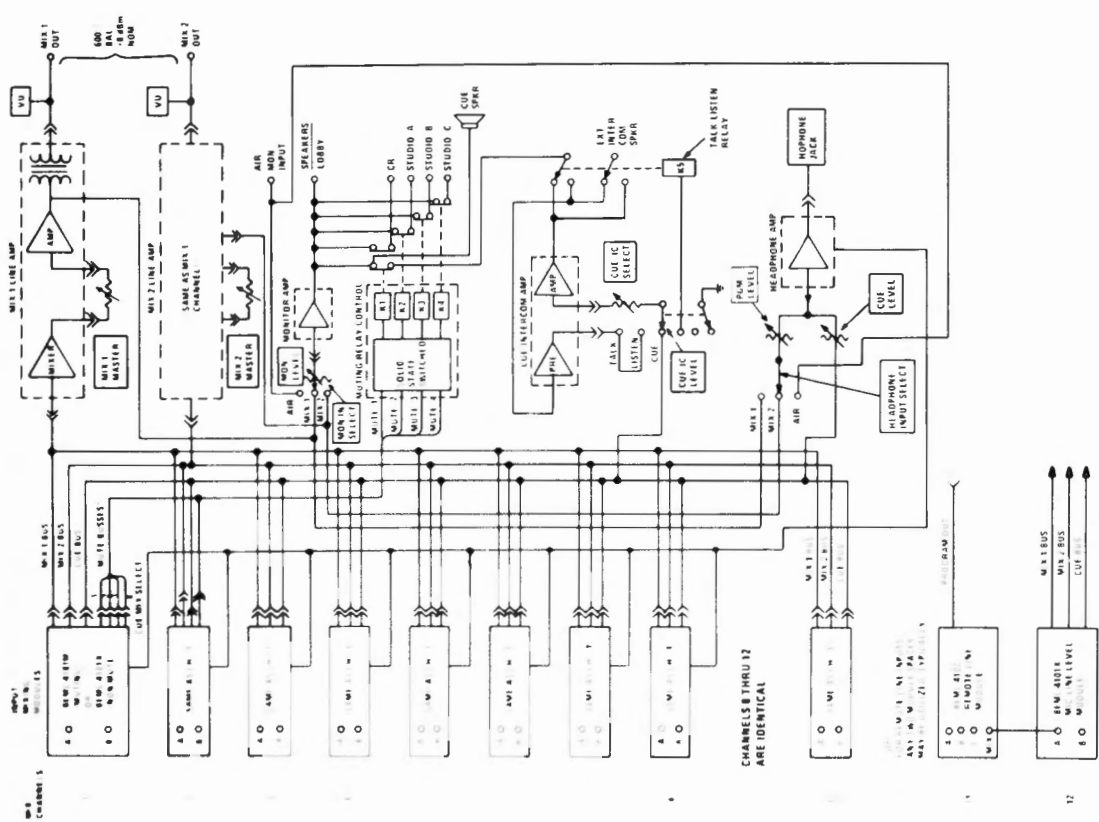
AMAZINGLY-SIMPLE INSTALLATION, FULL ACCESSIBILITY FOR MAINTENANCE — For a console of its system complexity, installation is surprisingly simple. External wiring enters through access openings in the console base. All input connections are made to labelled screw-type barrier strips on each module, easily accessible by raising the hinged top lid. Output connections are to similar-type terminals inside the right hand end of the console.

Individual input mixing modules are easily removed for servicing. Pressure-locked under the front-edge, leather-finish padded arm rest, a simple quarter-turn fastener at the top rear of the module allows its removal from a base-mounted printed circuit board socket. The right hand panel containing the VU meters and secondary operating controls hinges forward. The plug-in modular electronics (line output, monitor, cue and headphone amplifiers) are immediately behind this panel area and may be hinged upward for complete access to all system wiring. The console may be mounted tight to a wall without impairing access to wiring.

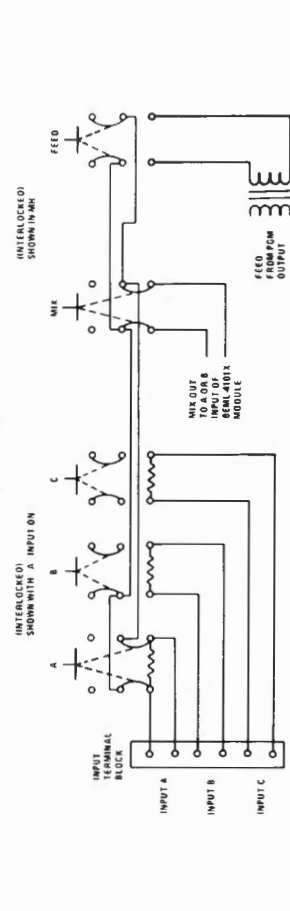
FLEXIBILITY, OPERATING EASE, QUALITY PERFORMANCE — The ever-increasing complexity of today's programming with its demands for simultaneous level control of many inputs is rapidly placing greater emphasis on vertical fader designs with their expanded manual control capability. Most consoles of this type are either of custom design at prohibitively high prices or are intended primarily for the recording or film industries. The 4000-Series Consoles have been designed by experienced, broadcast-oriented people — for the AM, FM and TV broadcaster. They perform the multi-functions you need — at prices competitive with many rotary-mixer consoles, with their basic "two-hand, two-mixer" limitation.

4021 INPUT MIXING MODULE (MONO)—MUTING LOGIC SHOWN BELOW DASHED LINE

4021 INPUT MIXING MODULE (MONO) –MUTING LOGIC SHOWN BELOW DASHED LINE



4025 REMOTE INPUT MODULE (MONO)



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graph LR
    C[INPUT C] --- OR[3-INPUT OR]
    B[INPUT B] --- OR
    OR --- ADD[INPUT OF SERIAL-ADDITION MODULE]
    ADD -- FFE0 --> OR
  
```


12-Mixer, Vertical Fader, Dual Channel

ORDERING INFORMATION

Model No.	Stock No.
ML-4000	838-4000
SL-4100	838-4100
4021	980-4021
4023	980-4023
4025	980-4025
4022	980-4022
4024	980-4024
4026	980-4026
3502	918-3502
	828-0200

Description

Monaural dual-channel console chassis with provision for accepting up to 12 input modules.

Stereo dual-channel console chassis with provision for accepting up to 12 input modules.

Mono Input Mixing Module, with muting logic.

Mono Input Mixing Module, less muting logic.

Mono Remote Input Module (feeds mono Input Mixing Module).

Stereo Input Mixing Module, with muting logic.

Stereo Input Mixing Module, less muting logic.

Stereo Remote Input Module (feeds stereo Input Mixing Module).

Mono mix-down module for stereo (4100) units.

230 VAC Power Option (either model).

Note: Mono mix-down module—When used, two modules required (one for MIX-1, one for MIX-2). Mix-down module is necessary to use feed function of remote modules in SL-4100 Console.

SPECIFICATIONS

PROGRAM CHANNELS

(Mono: two; Stereo: four)

Input Mixing Channels:

12 module spaces provided. Remote input capability requires two spaces: one for remote feed module; one for associated standard input module. Blank face plates are installed on any open module spaces.

Input Impedances/Levels (Preamp Modules):

Low Mode: 150 ohms balanced. -70 dBm nominal; -30 dBm maximum.

High Mode: 36K ohms balanced, bridging. -20 dBm, nom., +20 dBm maximum.

Input Impedances/Levels (Remote Feed Modules):

600 ohms balanced. -20 dBm, nom.; +20 dBm max.

Mono/Stereo Select (BESL-4006):

In-phase stereo outputs from monaural source.

Frequency Response:

±0.5 dB, 20 Hz - 20 kHz (Reference: 1 kHz).

Distortion:

0.5% or less, 20 Hz - 20 kHz @ +8 dBm output.

Signal-to-Noise (unweighted):

70 dB or greater below +8 dBm output, with -50 dBm input signal.

Output Impedance/Level:

600 ohms balanced, +8 dBm nominal; +18 dBm maximum.

MONAURAL OUTPUT CHANNEL

(Optional, SL-4000):

Same performance as program channels.

MONITOR CHANNEL

(Mono: one; Stereo: two)

Inputs:

Mix 1, Mix 2, External; key-switch selectable.

Frequency Response:

±0.75 dB, 50 Hz - 20 kHz (Reference: 1 kHz).

Distortion:

0.75% or less, 30 Hz - 20 kHz @ rated output and load.

Output Power/Load:

8 watts rms per channel, 8 ohm load.

HEADPHONE AMPLIFIER

(Mono: one; Stereo: two)

1 watt rms per channel. Pgm 1/Pgm2/Cue key-switch input selection. Program and cue levels can be intermixed in cue position. Front panel jack.

CUE/INTERCOM AMPLIFIER:

1-watt rms mono output to panel speaker. Inputs mono or summed L+R in stereo model. Front panel Cue/Talk/Listen and studio intercom select by key switching.

MUTING:

Four relays standard. Programmable assignment of any input/output bus combination. Relays include N.O. contacts terminated for external warning light operation.

POWER REQUIREMENTS:

115Vac, 50/60 Hz (230Vac optional).
BESL-4006, 110W; BESL-4006, 130W max.

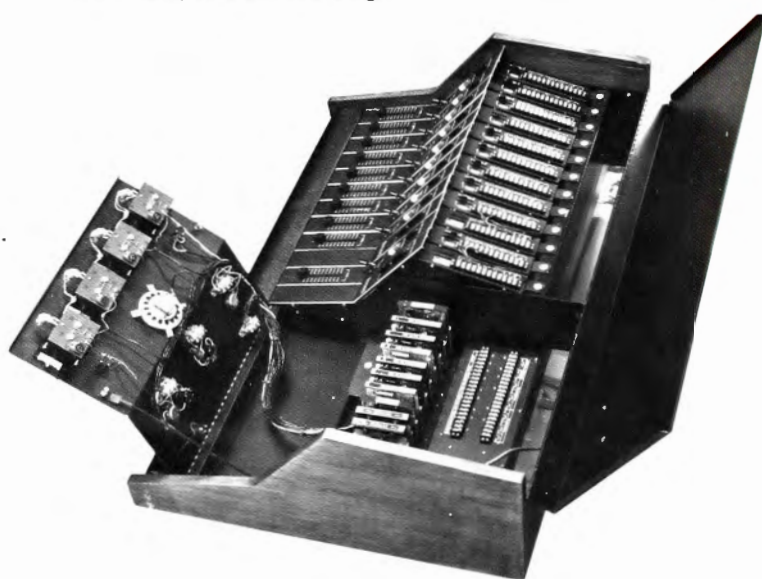
DIMENSIONS:

43.5" W, 11" H, 27.5" D (110.5x27.9x69.9 cm)

WEIGHTS (Packed)

ML-4000, 154 lbs. (70.3 kg.)

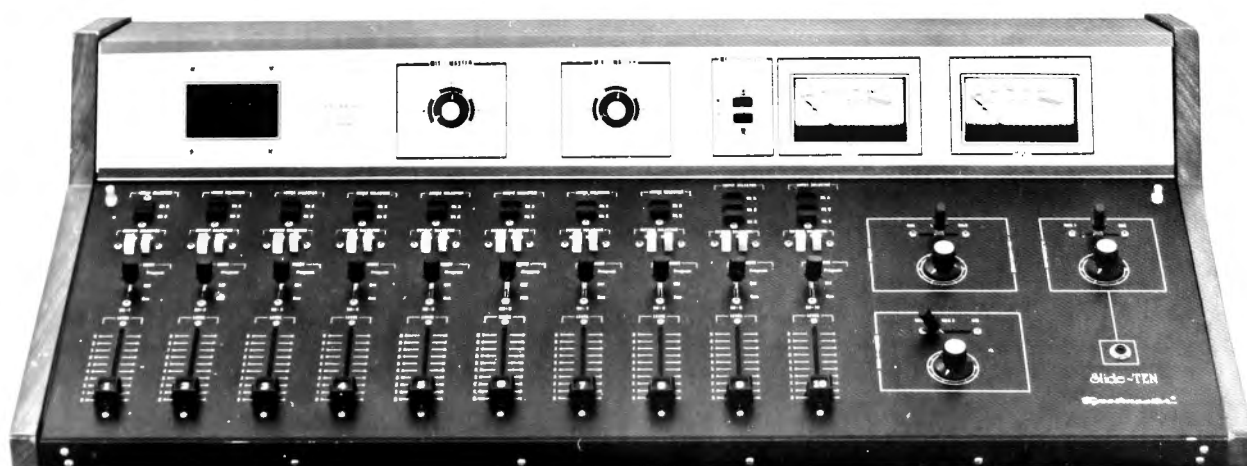
SL-4000, 160 lbs. (72.6 kg.)



Model SL-4100 with top and right-hand front panels open. Input cabling readily terminated on input module top barrier strips. Output barrier strips at lower right. System plug-in electronic modules and secondary front panel controls and switches readily accessible. Installation eliminates all exposed cabling.

FEATURES

- 22 INPUTS TO 10 SLIDE FADERS
- MODULAR PLUG-IN ELECTRONICS
- DUAL CHANNEL OUTPUT
- MONO OR STEREO MODELS
- CONTACT-FREE, FET BUS SELECTION
- ECONOMICAL PRICE



Model SL-3110 Stereo Model

GENERAL DESCRIPTION**REASONABLY-PRICED, SLIDE-FADER CONSOLE —**

To satisfy the increasing demand for multichannel vertical-fader flexibility, Broadcast Electronics offer in standard monaural or stereophonic configurations, at prices competitive with rotary-mixer models, the 10-channel ML-3010 mono and SL-3110 stereo dual-channel output consoles.

COMPLETE INPUT FLEXIBILITY — Using the widely-accepted universal modular input preamplifier technique pioneered in B-E rotary-mixer console models, the new consoles feature integral module switching to permit individual input channel use for either low impedance microphone or line-level input service. The stereo model also features mono/stereo selection. Mixers # through #8 accept two inputs per mixer; and #9 and #10, three each. Input preselection is by interlocked pushbuttons. Mixer outputs, by advanced, contact-free FET switching, may be fed separately or simultaneously to the dual output channels.

PRE-FADER PREVIEW — Multichannel consoles involving many inputs generally require presetting of the input channel fader positions. Cue switches operate independently of fader position. Separate interlocked pushbuttons, in an "operation mode select" function, determine program, cue or off assignments.

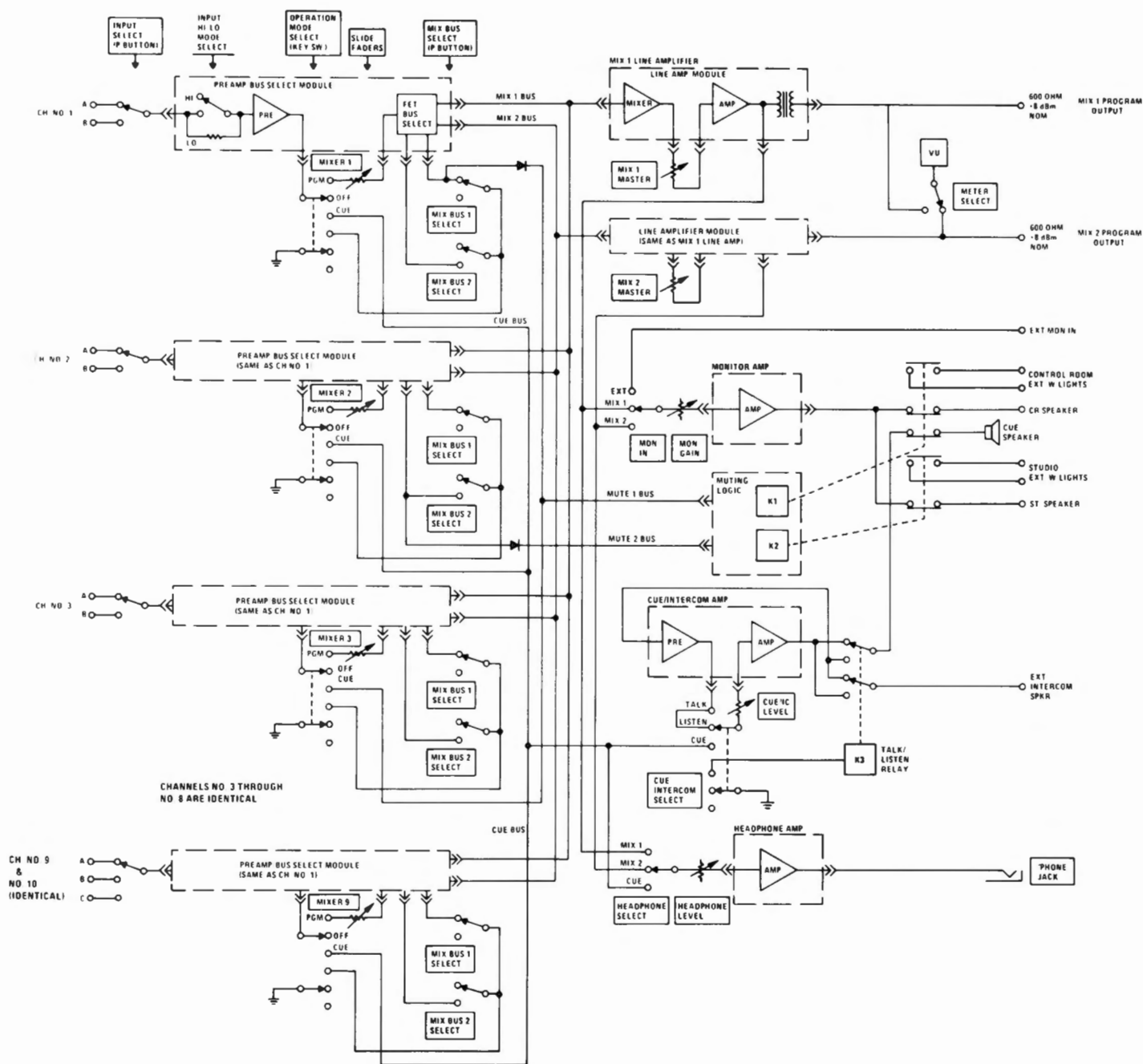
DUAL CHANNEL OUTPUT — The mono and stereo models feature dual line-level output channels; two for mono, four for stereo; with VU meter switching for level monitoring. Standard +8 dBm output levels, with +18 dBm capability to insure adequate "headroom," produce "zero-VU" meter readings. An additional monaural line-level output is a plug-in module option for the SL-3110.

FULL SYSTEM MONITORING — 8-watt full-fidelity loudspeaker monitoring of all output channels, plus the convenience of 1-watt level mono or stereo headphone monitoring of the output channels and mono cue bus information assures maintenance of system quality.

10-Mixer, Vertical Fader, Dual Channel

BLOCK DIAGRAM – MODEL ML-3010 MONO

(SL-3110 Stereo: Basic System Essentially Identical, with Individual Left- and Right-Channel Capability)



GENERAL DESCRIPTION (Cont.)

CUE/INTERCOM SYSTEM — In addition to conventional inbuilt loudspeaker monitoring of cue bus inputs, the integral 1-watt cue amplifier performs a two-way intercom function. With the addition of a small speaker in the studio, control room/studio intercommunication, controlled at the console position, is possible. The loudspeakers act as microphone transducers in the "talk" mode.

MULTICHANNEL MUTING — Speaker muting is normally assigned to Mixers 1 and 2. By diode matrixing this is readily modified or extended to other mixing channels. Contacts for external warning light operation are included on each relay.

IDEAL FOR SOPHISTICATED, MULTIMIX APPLICATIONS — Where simultaneous mixing and level control in excess of the two mixers at a time limitation of rotary fader consoles is a necessity, the multichannel mixing capability afforded by the exciting new B-E 10-input, vertical-attenuator models at their surprisingly low prices, fill the void. Sophisticated styling in an easy-to-operate, human-engineered package make the standard "3000-Series" consoles the obvious choice for complex "on-air," production, or TV studio use.

ORDERING INFORMATION

Model No.	Stock No.
ML-3010	838-3010
SL-3110	838-3110
3502	918-3502
	838-0200

Description

10-mixer, slide-fader, dual-channel monaural console
 10-mixer, slide-fader, dual-channel stereo console
 Mono matrix module, SL-3110
 230Vac Power Conversion

SPECIFICATIONS

PROGRAM CHANNELS

(Mono: 2; Stereo: 4)

Inputs:

Two per mixer, Channels 1-8; Three per mixer, Channels 9 and 10. Total: 22.

Input Impedances/Levels (Switchable):

Low Mode: 150 ohms balanced. -65 dBm nominal, -38 dBm maximum.

High Mode: 36K ohms Balanced Bridging. -20 dBm nominal, +10 dBm maximum.

Mono/Stereo Select (BESL-3006):

In-phase stereo outputs from mono source.

Frequency Response:

±0.5 dB, 20 Hz - 20 kHz (Reference: 1 kHz).

Distortion:

0.5% or less @ +8 dBm output, 20 Hz - 20 kHz.

Signal-to-Noise (unweighted):

70 dB below +8 dBm output. -50 dBm signal to any low-level input.

Output: Impedance/Level:

600 ohms balanced +8 dBm for zero VU meter deflection. +18 dBm capability.

MONAURAL OUTPUT CHANNEL

(Optional, 3110);

Same performance specification as program channels

Inputs:

Pushbutton select Program output channels and an external source

Frequency Response:

±0.75 dB, 50 Hz - 20 kHz (Reference 1 kHz)

Distortion:

0.75% or less, 30 Hz - 20 kHz @ rated output and load.

Output Power/Load:

8 watts rms per channel, 8 ohm load.

HEADPHONE AMPLIFIER

(Mono: one; Stereo: two)

1-watt rms per channel. Pushbutton selection of output channels and cue bus.

CUE/INTERCOM AMPLIFIER

1-watt rms mono output to built-in speaker. Input mono (or summed L+R, 3110). Front panel intercom talk/listen/cue switching.

MUTING:

Two relays standard. As wired, Relay 1 mutes monitor/cue speakers with Mixer 1 operation; Mixer 2 controls Relay 2. Other combinations, field-assignable. Relays include 1A/125Vac contacts for external warning-light operation.

POWER REQUIREMENTS:

115Vac, 50/60 Hz (230Vac operation, optional).
 BEML 3006: 75W; BESL-3006: 110W.

DIMENSIONS:

42" W, 16.5" H, 25" D (106.7x42x63.5 cm).

WEIGHTS (Packed):

3010: 72 lbs. (32.6 kg).

3110: 78 lbs. (35.3 kg).

SPECIFICATION SUMMARY OF AVAILABLE CONSOLES

PROGRAM/AUDITION CHANNELS	MODELS ML-4000 (Mono) SL-4000 (Stereo)	MODELS ML-3010 (Mono) SL-3110 (Stereo)	100 & 200 Series MONO & STEREO	MODELS 4BEM-50 (Mono) 4BES-50 (Stereo)	MODEL 4BEV-50 VERSA CONSOLE
MIXING CHANNELS	Accepts up to 12 vertical fader plug-in mixing modules	10 Vertical	100 Series, sealed potentiometers 200 Series, step-type ladders. 5BEM/BES-100/200: 5 8BEM/BES-100/200: 8	4	4
Inputs per Mixer	2	Channels 1-8, 2 ea. Channels 9 & 10, 3 ea.	2	2	Channels 1 - 3, 2 per mixer; Channel 4, 4
Input Impedance Levels	Lo Mode: 150 ohms bal., -70 to -30 dBm Hi Mode: 36K ohms bal. bridging; -20 to +20 dBm	Microphone Mode: 150 ohms balanced, -65 dBm nom. to -38 dBm max. High Level Mode: 36K ohms balanced bridging; -20 dBm nom., to +10 dBm max.		Lo: 150 ohms, bal., -65 dBm nom., -38 dBm max. Hi: 20K ohms bal. bridging; -20 dBm nom., 0 dBm max.	(Rear panel switched) Mic: 150 ohms bal., -50 to -38 dBm High: 20K ohms bal. bridging; -20 to +10 dBm
Frequency Response	± 0.5 dB, 20 Hz - 20 kHz (1 kHz reference)			± 2 dB, 30 Hz to 20 kHz	± 1.5 dB, 30 Hz to 20 kHz
Distortion	0.5% or less, 20 Hz - 20 kHz @ +8 dBm out (1 kHz reference)			0.5% or less, 30 Hz - 20 kHz, +8 dBm out	
S/N Ratio	70 dB below +8 dBm out, with -50 dBm in	65 dB below +8 dBm output with -50 dBm signal to any low level input		65 dB below +8 dBm	65 dB below +8 dBm out with -50 dBm in
Output Impedance/Levels	600 ohms balanced. +8 dBm for zero VU meter reading. +18 dBm capability			600 ohms balanced. +8 dBm nom., +16 dBm max.	600 ohms balanced. +8 dBm nom., +18 dBm max.
MONITOR AMP Frequency Response	± 0.75 dB, 50 Hz - 20 kHz (1 kHz reference)			± 2 dB, 40 Hz - 20 kHz	Does not have integral monitor amplifier. Has rear panel jack output for adjustable 10K ohm unbalanced feed.
Distortion	0.75% or less, 30 Hz - 20 kHz @ rated rms output and load			0.5%, 40 Hz - 20 kHz	
Output Impedance/Power	8 watts rms per channel / 8 ohm load		Mono: 8W rms, 8 ohms Stereo: 1.5W rms, per channel, 8 ohms	1.5 W rms, 8 ohms	
HEADPHONE AMP	1.0W rms per channel. Front panel jack and input select switching				1.0W rms to front panel jack
CUE AMP:	1.0 watts rms to integral cue speaker. Also functions as intercom amplifier		1.0 watts rms to built-in cue speaker		
MUTING	4 relays standard. Assignable to any input/output bus combination	2 relays standard. Assigned to Mixers 1 & 2. Other combinations readily field modified.	100 Series, 1 relay std. Second optional. 200 Series, 3 relays standard.	1 relay. Assignable to any or all channels	Mixer 1 input controls electronic muting of cue speaker
DIMENSIONS SHIPPING WEIGHTS AND GENERAL INFORMATION	43.5"W, 11"H, 27.5"D 160 lbs. Accepts three basic module types. 4021 mono; 4022 stereo: input mixing module with muting logic. 4023 mono; 4024 stereo: input mixing module less muting logic. 4025 mono; 4026 stereo: remote input module. Each type occupies one module space.	42"W, 16.5"H, 25"D 75 lbs. Modular, plug-in electronics.	5BEM/BES-100: 29.5"W, 13"D, 7.5"H 41 lbs. 8BEM/BES-100: 32.5"W, 13"D, 7.5"H 48 lbs. 5BEM/BES-200: 29.5"W, 14"D, 9.5"H 47 lbs. 8BEM/BES-200: 32.5"W, 14"D, 9.5"H 58 lbs. Modular, plug-in electronics. VU meters switchable on 200 Series stereo models.	18"W, 13"D, 17.5"H 23 lbs.	19"W, 10"D, 3.5"H 14 lbs. Mounts in 19"EIA standard rack
POWER REQUIREMENTS	105-125 V, 50/60 Hz (210-230 V, 50/60 Hz optional)				



FEATURES

- SYMMETRICAL OR ASYMMETRICAL PROCESSING
- ADJUSTABLE COMPRESSION RELEASE TIME
- 1-MICROSECOND ATTACK TIME
- +20 dBm OUTPUT CAPABILITY

GENERAL DESCRIPTION

MAINTAINS HIGH AVERAGE MODULATION. PROTECTS AGAINST OVERMODULATION — Designed for smooth, noise-free control of AM transmitter peak modulation, the new Broadcast Electronics AM-400 Compressor/Limiter amplifier insures the AM broadcaster against overmodulation while automatically maintaining average modulation at optimum levels.

125% POSITIVE, 100% NEGATIVE OR EQUAL 100% POSITIVE/NEGATIVE PROCESSING — The AM-400 may be operated in a symmetrical mode, producing equal positive and negative output peaks, or alternatively in an asymmetrical mode which produces positive peaks at a 25% higher amplitude than the negative peaks.

THREE-MODE OPERATION — The AM-400 may be operated in three basic modes: a) Compression and limiting, b) compression only, or c) as a fixed-gain, conventional line amplifier. This switching, as well as the symmetrical/asymmetrical operation, plus power on/off switching are on the rear chassis apron.

SPECIFICATIONS

Input Impedance:
600 ohms, transformer balanced.

Input Level:
-20 dBm to +20 dBm for +20 dBm output

Frequency Response:
±1 dB, 30 Hz to 15 kHz (1 kHz reference)

Distortion:
0.5% or less, 30 Hz to 15 kHz @ +20 dBm output

Signal-to-Noise (unweighted):
60 dB below +20 dBm output with -20 dBm input

Output Impedance:
600 ohms, balanced

Output Level:
Adjustable, +20 dBm maximum. VU meter switchable for "zero VU" deflection at +4 dBm and +10 dBm nominal output

Compression Ratio:
30 to 1 max

Compression Release Time:
Adjustable, 5 to 40 seconds for 20 dB release

TAMPER-PROOF INSTALLATION — Front panel, screw-driver access control of input and output line levels; compression release time; and selection of +4 or +10 dBm output level and relative gain metering permit presetting of all operating functions and parameters, free from subsequent inadvertent misadjustment or tampering.

QUALITY CONSTRUCTION AND PERFORMANCE — Packaged for rack-mounting in 3-1/2" of space, the compact AM-400 unit contains all of the sophisticated electronic circuitry, with high quality components mounted on a readily-accessible, single printed circuit board. The AM-400 is subtly-styled to blend with other rack-mounted equipment.

Long-term reliability combined with guaranteed, broadcast-grade professional specifications give the AM broadcaster excellent audio signal processing capability at moderate cost.

Limiter Attack Time:
1.0 μsecond.

Controls/Switches:
Front Panel: Input Level, Output Level, Compression Release Time, Meter Switch (+4 dBm, +10 dBm, relative gain reduction).
Rear Panel: Symmetrical/Asymmetrical Modes; Compress/Limit, Compress Only, Test Modes; Power On/Off Switches

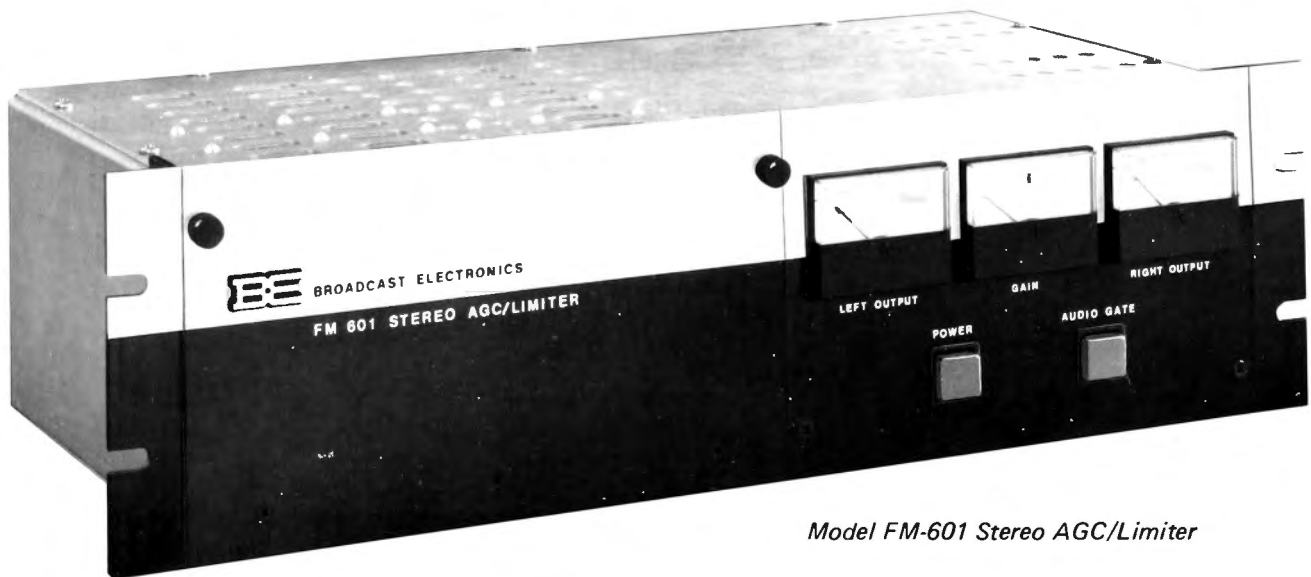
Power Requirements:
105 to 125 Vac, 50/60 Hz, 10 watts
210 to 230 Vac, 50/60 Hz optional

Dimensions:
19" Wide, 3.5" High, 5" Deep (483x89x127 mm)
EIA Std. Rack Mtg

Weight (packed):
9 lbs. (4.0 kg)

ORDERING INFORMATION

Model AM 400, Stk. No. 837 4001, AM Compressor/Limiter



Model FM-601 Stereo AGC/Limiter

FEATURES

- INDEPENDENT COMPRESSION/EXPANSION CONTROL
- ADVANCED AUDIO GATING
- SINGLE 5-1/4" RACK PACKAGE
- MONO AND STEREO MODELS
- MODULAR, FRONT ACCESS PLUG-IN ELECTRONICS
- DOLBY-B COMPATIBLE

GENERAL DESCRIPTION

OVERMODULATION PROTECTION, PLUS FULL PROCESSING CONTROL — The new Broadcast Electronics FM-600 monaural, and FM-601 stereo AGC/Limiter amplifiers allow the FM broadcaster to modulate his transmitter at the highest permissible level and to precisely control the amounts of signal compression and expansion he wishes to maintain a desired station "sound." These amplifiers, unlike many audio processors, do not produce an uncontrollable "sound" of their own. Instead, they permit the broadcaster to smoothly establish the sound he wishes to produce. . . whether it be "the loudest sound in town" to the gentle "tailoring" of classical music with wide dynamic range. And this is accomplished with no "thumps," extraneous noise or distortion.

AUDIO GATING—SMOOTH COMPRESSION AND EXPANSION CONTROL — Innovative audio-gating techniques which sample incoming program material, automatically apply signal processing only when needed.

This gated operation mode allows 50 dB of automatic level control. Individual controls establish compression over a 0 to 30 dB range and expansion, if desired, from 0 to 20 dB. These control adjustments have no effect on maximum peak output levels nor on limiter attack time. In their full-on positions output is at nearly-constant amplitude. Thus a combination of control settings, precisely suited to individual station program material, is easily established.

SIMPLE SET-UP AND OPERATING MODE SELECTION— Set-up controls and operating mode switches are mounted

on plug-in modules accessible behind the hinged front panel. Mode switch functions include selection of a) 75-microsecond pre-emphasis; b) 25-microsecond pre-emphasis (for Dolby-B compatibility); c) flat-frequency response; d) test (unit operates as conventional line amplifier. Convenient for proof-of-performance measurements); e) full gated expansion/compression; and f) limiting only. All mode switching may be controlled remotely by switch closures to ground.

AUTOMATIC STEREO BALANCE — Precise stereo balance is insured by matched, ultra-linear, temperature-compensated voltage-controlled amplifiers.

COMPACT SINGLE, 5-1/4" RACK-MOUNT PACKAGING — The new amplifiers replace, in a single 5-1/4" rack-mount package, separate interconnected AGC and limiting amplifiers. This is done without crowding and with front access to all electronics, which are on six labelled plug-in cards. Output levels plus compression and expansion are fully metered.

EASY SET-UP. AUTOMATIC BY-PASS — Set-up is straightforward, requiring adjustment only of input and output level, compression, expansion and expansion return rate controls. Typical of the consideration given to practical operating situations is built-in, automatic, by-pass switching in the event of power interruption and fully-regulated, self-protected power supplies.

SPECIFICATIONS

Input Impedance:

600 ohm, transformer balanced.

Input Level:

-20 dBm to +26 dBm for +20 dBm output (-20 dBm input yields +20 dBm output with zero compression or expansion.

Frequency Response:

±0.5 dB, 20 Hz - 20 kHz (1 kHz reference).

Distortion:

0.5% or less, 20 Hz - 20 kHz @ +20 dBm output.

Signal-to-Noise:

70 dB or greater below +20 dBm output with -20 dBm input.

Output Impedance:

600 ohm, transformer balanced.

Output Level:

Adjustable, +20 dBm maximum.

Overall Gain:

60 dB with full expansion.

Compression Range:

0 to 30 dB.

Expansion Range:

0 to 20 dB.

Expansion Recovery Rate:

Adjustable, 5 to 40 seconds for 20 dB expansion.

Average/Peak Ratio:

Adjustable, 35 dB minimum, 1 dB maximum.

Limiter Attack Time:

5 microseconds or less for 10 dB of limiting.

Equalization:

Normal Mode: 75 microseconds, 25 microseconds, or flat response (50/25 μ sec or flat optional).

Test or Limit Only Modes: Flat response.

Operating Temperature Range:

0° to 55°C.

Power Requirements:

105 to 125 or 210 to 230 Vac (switchable), 50/60 Hz, 30 watts.

Dimensions:

19" Wide, 5.25" High, 10" Deep (48.3 x 13.3 x 25.4 cm)

EIA Std. Rack Mounting.

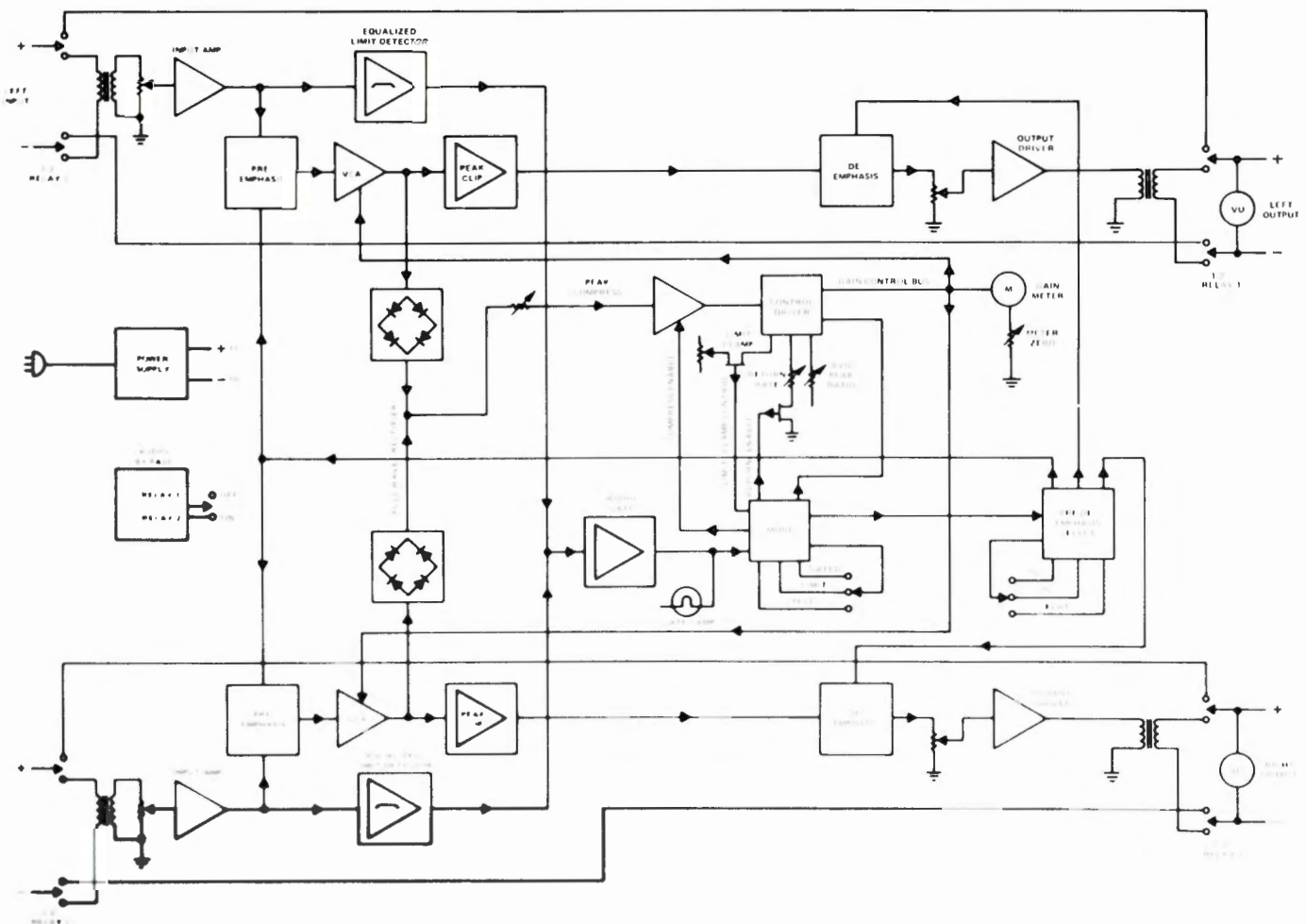
Weight (packed):

16 lbs. (7.2 kg).

ORDERING INFORMATION

Model	Stock No.	Description
FM-600	837-0600	Mono FM AGC/Limiter w/mating 24-pin female conn.
FM-601	837-0601	Stereo FM AGC/Limiter w/mating 24-pin female conn.

BLOCK DIAGRAM – MODEL FM-601 STEREO AGC/LIMITER





FEATURES

- OVERMODULATION PROTECTION
- SYMMETRICAL OR ASYMMETRICAL MODES
- ADVANCED AUDIO PROCESSING TECHNIQUES

GENERAL DESCRIPTION

ADVANCED AUDIO PROCESSING—SYMMETRICAL OR ASYMMETRICAL OUTPUT — The Broadcast Electronics AM 500 utilizes advanced audio processing technology to produce an output of controllable, overall dynamic range that complies precisely with individual AM broadcast station programming objectives. Simultaneously, short-duration program peaks are restricted so as to minimize the possibility of overmodulation. The AM 500 may be operated in either a symmetrical (100% positive, 100% negative) or an asymmetrical (125% positive, 100% negative) output mode.

THREE MODE OPERATION — The AM 500 may be operated in three basic modes: 1) Compression, limiting and expansion, 2) compression only, or 3) as a fixed gain, conventional line amplifier. This switching, as well as the symmetrical/asymmetrical operation, plus power on/off switching, are on the rear chassis apron.

AUDIO GATING FOR OPTIMUM LOW NOISE OPERATION — Since extended periods of relatively low-level program material, or its total absence, would cause the comparator to sense a need for an extremely high degree of expansion, with a resultant increase in hiss, hum or background noise, this condition is avoided by audio gating

circuitry which holds the processor gain constant for a maximum 17-second period, then automatically reverts to the processor's fixed gain point. Whenever higher-level programming resumes, normal operation continues instantly.

OVERMODULATION PROTECTION — Protection against high-amplitude program peaks of short-duration is by means of a peak clipper. Only those peak signals which occur prior to peak level detection, generally a single cycle, will be clipped. Subsequent cycles will not, since the peak level detector rapidly senses these as a "compress command" to the comparator which, in turn, reduces overall gain.

EASY, STRAIGHTFORWARD "SET-UP" — Installation and set-up is simple. Input and output controls are adjusted, consistent with input source level and transmitter audio input requirements to produce the desired degree of either symmetrical or asymmetrical maximum modulation. A convenient test/operate switch is incorporated. In the test position, the AM-500 operates as a conventional line amplifier for conducting proof-of-performance measurements.

SPECIFICATIONS

Input Impedance:
600 ohms, transformer balanced

Input Level:
-20 dBm to +20 dBm for +20 dBm output

Frequency Response:
±1 dB, 30 Hz to 15 kHz (1 kHz reference)

Distortion:
0.5% or less, 30 Hz - 15 kHz @ +20 dBm output

Signal-to-Noise (unweighted):
60 dB below +20 dBm output with -20 dBm input

Output Level:
+20 dBm max. (adjustable)

Output Impedance:
600 ohms balanced

Maximum Overall Gain:
60 dB (full expansion)

Maximum Expansion:
20 dB

Maximum Compression:
30 dB

Compression Ratio:
30 to 1 max.

Compression Release Time:
Adjustable, 5 to 40 seconds for 20 dB release

Limiter Attack Time:
1.0 usec.

Limiting Modes:
Symmetrical (equal positive and negative) or asymmetrical (positive 25% greater than negative) peak limiting.

Controls/Switches:
Front Panel: Input level, output level, compression release time.
Rear Panel: Symmetrical/Asymmetrical modes; compress/limit/expand, compress only, test; power on/off.

Indicators/Meters:
(Front Panel) gain reduction meter indicates nominal gain, and relative compression or expansion; audio presence and power line presence indicators.

Power Requirements:
105 to 125 VAC, 50/60 Hz, 11 watts; 210 to 230 VAC, 50/60 Hz, optional.

Dimensions:
19" W x 3.5" H x 9" D (48.3 x 8.9 x 22.9 cm.)

Weight (packed):
9 lbs. (4.1 kg.).

ORDERING INFORMATION

Model AM-500 (Stock No. 837-0500) AM Compressor/Limiter/Expander

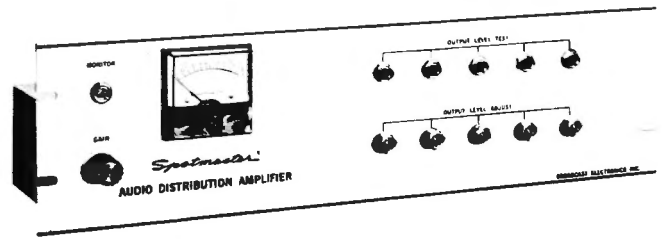


GENERAL DESCRIPTION

The AD1B Audio Distribution Amplifier distributes an audio input to multiple points within a studio system or to telephone lines. Facilities for visual and aural monitoring of the incoming signal are provided on the front panel by means of a VU meter and a headphone monitor jack. The meter and headphone jack also monitor the output from each channel. Locking-type controls are provided for adjusting each output channel.

Five highly isolated output channels are provided on the basic AD1B. Frequency response is essentially flat from 40 to 20,000 Hz. Distortion is well below 1% at rated output and peak overload handling capacity is in excess of 12 dB. Noise is better than 60 dB below rated output with 60 dB isolation between channels.

FIVE CHANNEL EXTENDER — The AD1B-X Extender is designed to expand the number of output channels provided by the basic AD1B unit if more than five output channels are needed. Each AD1B-X Extender provides five additional output channels and up to four Extenders may be added to each basic AD1B unit. Metering and audio monitoring are automatically provided to the



AD1B-X Extenders by strapping between the basic AD1B unit and the AD1B-X Extenders.

INPUT AND OUTPUT IMPEDANCE — Both the AD1B and AD1B-X standard units are shipped with 600 ohm unbalanced emitter follower outputs for operation into 600 ohm or higher load impedances. If ordered with balanced transformer outputs, units are shipped with transformers connected for operation into 600 ohm or higher load impedances. Transformers may be reconnected for operation into 150 ohm load impedances, if desired.

Input transformers are standard on all units. Input circuitry may be operated either bridging or matching, balanced or unbalanced.

SPECIFICATIONS

AD1B (BASIC UNIT)

Input Impedance:
600 ohms matching, 10,000 ohms bridging.
Output Load Impedance:
Emitter Follower—600 ohms or higher
Optional transformer output 600/150 ohms
Maximum Input Level:
+30 dBm
Minimum Input Level:
-26 dBm matching, -10 dBm bridging
Output Level Per Channel:
+4 dBm (+14 dBm max.)
Gain:
30 dB (matching), 14 dB (bridging)
Frequency Response:
±1 dB 30 15 000, ±2 dB 20 20,000 Hz
Distortion:
Less than 1%

Noise:
65 dB or better below rated output.
Channel Separation:
60 dB @ 400 Hz.
Maximum Ambient Temperature:
55°C.
Power:
115V, 50/60 Hz, 50 watts or optional 220V,
50/60 Hz, 50 watts.
Dimensions:
19" W x 5 1/4" H x 7-1/8" D.
Weight:
9 1/2 lbs
Mounting:
19" rack
Controls:
1 Gain, 5 Output Level, 5 Momentary
Meter Switch

AD1B-X (5 CHANNEL EXTENDER):

Input Impedance:
1200 ohms, unbalanced.
Input Level:
+5 dBm.
Gain:
Unity.
Output Level Per Channel:
+4 dBm.
Power:
115V, 50/60 Hz, 40 watts or optional 220V,
50/60 Hz, 40 watts.
Dimensions:
19" W x 5 1/4" H x 7-1/8" D
Weight:
8 lbs
Controls:
5 Output Level, 5 Momentary Meter Switch.

GENERAL DESCRIPTION

The BEM 10 is a conservatively rated wide power band width 10 15 watt rms audio amplifier. It is designed for system sound applications requiring one microphone and one program source. As many as twenty speakers (tapped 1/2 watt) may be driven from the 25 or 70 7 volt balanced output, or a single four ohm speaker system may be driven to a full 15 watts rms from the unbalanced output.

The BEM 10 features a fully electronic page mute system.

BEM-10 Monitor Amplifier



SPECIFICATIONS

Power Output

10 watts rms, 16 ohms unbalanced 25/70 7
volt balanced line, 12.5 watts rms, 8 ohms
unbalanced, 15 watts rms, 4 ohms unbalanced

Frequency Response:
±1 dB, 50-15,000 Hz

Hum & Noise

Mic: -60 dB below 10 watts output
Pgrr: -70 dB below 10 watts output
Program/Line Input:
25K ohm unbalanced, or 600 ohms balanced

Mic Input

150 ohms balanced (internal transformer)
Screw Terminals

Power Requirements:
115VAC, 50/60 Hz, 30 watts

FEATURES

- FIVE OPERATING MODES
- PHASE REVERSAL CAPABILITY
- +8 dBm OUTPUT
- MONAURAL OR STEREO



GENERAL DESCRIPTION

The B.E. Turntable Preamplifier models BETMS-100 and BETMS-200 have been designed for today's professional studios. Employing the latest integrated circuit techniques, these preamplifiers provide accurate reproduction, outstanding reliability, and versatile operation.

OPERATING MODES — Both the BETMS-100 and BETMS-200 are dual channel units for use with monophonic or stereophonic phono cartridges. Either model operates in five modes:

1. As a single stereo preamplifier with stereo in/stereo out.
2. As a dual monophonic unit with two mono in/two mono out.
3. As a single monophonic preamp with one mono in/one mono out.
4. As a stereo to mono converter with stereo in/one composite mono out.
5. As a dual stereo to mono converter with stereo in/two composite mono out.

SPECIFICATIONS

Output Level:
+8 dBm nominal, +16 dBm peak, into 600 ohms. Each output continuously adjustable.

Output Impedance:
BETMS-100: 150 ohms unbalanced.
BETMS-200: 600 ohms balanced, 150 ohms balanced (wiring option).

Input Sensitivity:
5mV for +8 dBm output, at 1 kHz, full output.

Input Impedance:
47,000 ohms resistive (50 pf parallel).

Signal-to-Noise:
65 dB or better for 5mV input, +8 dBm output, 1 kHz.

Equivalent Input Noise:
2.8 microvolts (116 dB below output with 600 ohm load).

Channel Separation:
65 dB or better for +8 dBm output, 1 kHz into 600 ohms, with 5mV input.

Frequency Response:
±1 dB of RIAA equalization curve, 50 - 15,000 Hz.

Distortion:
Less than 0.25% THD at 1 kHz, +8 dBm output into 600 ohms.

Equalization:
Standard NAB/RIAA Disc Reproduction.

Front Panel Controls:
Power on/off, Left Output Level, Right Output Level, Mono/Stereo Mode Switch, Right Channel Phase Reversal Switch.

Rear Panel Connections:
Right input, Left input, Right output, Left output, Ground terminal, 3-wire Power Cord.

AC Power:
100 to 135 VAC, 50/60 Hz, 200 to 270 VAC, 50/60 Hz (optional), 6 watts max.

Dimensions:
9 1/2" W x 6 1/2" D x 3" H (24.1x16.5x7.62 cm).

Weight:
3.5 lbs. (1.6 kg).

ORDERING INFORMATION

Model No.	Stock No.	Description
BETMS-100	827-0100	Monaural/Stereo Equalized Pre-amplifier (less transformer output) phase reversal feature
BETMS-200	827-0200	Monaural/Stereo Equalized Pre-amplifier (w/ transformer output, phase reversal feature
	827-0220	220 VAC/50 Hz Power Conversion Installed

THREE SPEED OR TWO SPEED MODELS

The Cue-Master 3-speed and the Studio-Pro 2-speed are professional quality turntables designed and manufactured to the highest standards of the broadcast industry.

OPERATING FEATURES — These include no slip starting, a smooth responsive speed control lever which allows speed change while the platter is in motion and easier, more positive cueing (when the lever is in neutral, the platter spins freely for hard to cue records). The drive system is a neoprene idler wheel transmitting power direct from the stepped capstan on the motor shaft to the inside platter rim.

QUALITY DESIGN — A heavy duty synchronous motor, a solid cast aluminum chassis, a heavy duty aluminum platter and the use of oilite bronze bearings throughout insure quiet operation and a long maintenance-free life. Each turntable has only three moving parts.

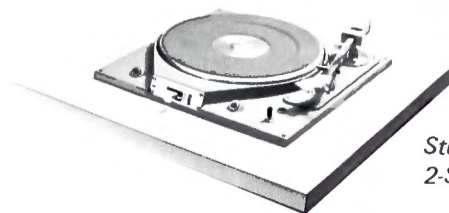
PLATTER OFFSET — Permits more compact turntable arrangement. Permits free movement of tone arms when units are installed side-by-side.

CUE-MASTER SPECIFICATIONS

Weight of entire unit 16 pounds
 Weight of platter 5½ pounds
 Chassis dimensions 15½ by 15½ inches
 Depth requirements below chassis 6½ inches

- The unit is powered by a heavy duty synchronous motor. Operating voltage 115V, 60 Hz. Also available for 220V, 50 Hz.
- Three speeds — 33, 45, 78 RPS's.
- Acceleration is extremely fast, average results are 1/16 revolution of platter at 33 RPM's . . . 1/10 revolution at 45 . . . 1/2 revolution at 78.
- Chassis adaptable to any 12" tone Arm.
- Wow and flutter, less than 3/10 of 1%.
- Rumble (both vertical and lateral) minus 36 dB down from standard NAB level.

*Cue Master
3-Speed*



*Studio Pro
2-Speed*

- Standard color is pearl grey with grass green felt platter cover. Special felt colors to match studio decor available on special order at slight additional cost.

STUDIO PRO SPECIFICATIONS

Weight of entire unit 20 pounds
 Weight of platter 6½ pounds
 Chassis dimensions 15½ by 15½ inches
 Depth requirement below chassis 7½ inches

- Unit is powered by a heavy duty synchronous motor. Operating voltage 115V, 60 Hz. Also available for 220V, 50 Hz.
- 2 Speeds — 45 & 33 RPM's.
- Detachable tone arm mounting plate adaptable to any 12" tone arm.
- Acceleration, extremely fast, average results, 1/16 revolution of platter at 33 RPM's, 1/10 revolution at 45 RPM's.
- Wow and flutter — less than 2/10 of 1%.
- Rumble (both vertical and lateral) minus 38 dB down from standard NAB level assures the finest sound reproduction.
- Standard color is pearl grey with grass green felt platter cover. Special felt colors to match studio decor available on special order at slight additional cost.

GENERAL DESCRIPTION

The Micro Trak 303 and 306 tone arms provide the low mass necessary for high compliance performance and also provide the strength necessary for 24 hour a day, on-line operation.

Features such as the impregnated wood body, laminated for high strength, the plug-in memory balancing head, sapphire jewel bearings for virtually frictionless vertical rotation, the fluid anti-skate mechanism, and the overall rugged simplicity of design make the models 303 and 306 arms the best buy available today.

SPECIFICATIONS

303 PROFESSIONAL TONE ARM, 12"

Dimensions: 12-1/2" overall (317.5 mm)
 8-5/16" spindle to pivot (211.1 mm)
 2-7/8" from pivot to back of arm (73 mm)

Weight: 1 lb. (.454 kg.)

Overhang: 0.682" spindle center to stylus

Resonance: Less than 10 Hz 1/2 Gram at 30×10^{-6} CM/DYNE Compliance

Tracking Error: 3.0 in radius 0° 0'
 3.75 in radius 1° 28'
 4.75 in radius 0° 0'
 5.5 in radius 2° 0'

Minimum Tracking Force: 1/10 Gram

Professional Tone Arms



306 PROFESSIONAL TONE ARM, 16"

Dimensions: 14-5/8" overall (37.15 cm)
 8-5/16" spindle to pivot (21.11 cm)
 3" from pivot to back of arm (7.6 cm)

Weight: 1.25 lbs.

Overhang: 0.5333" spindle center to stylus (13.5 mm)

Resonance: Less than 10 Hz 1/2 Gram at 30×10^{-6}

Tracking Error: 3.0 in radius 0° 0'
 3.75 in radius 0° 53'
 4.75 in radius 0° 0'
 5.5 in radius 1° 15'

Minimum Tracking Force: 1/10 Gram



Single Turntable Cabinet



Dual Turntable Cabinet



Desk Top Section Mounted on Cabinets

FEATURES

- MODULAR DESIGN FOR COMPLETE FLEXIBILITY
- SINGLE AND DUAL TURNTABLE CABINETS
- DESK TOP SECTION MOUNTS ON CABINETS OR METAL LEGS

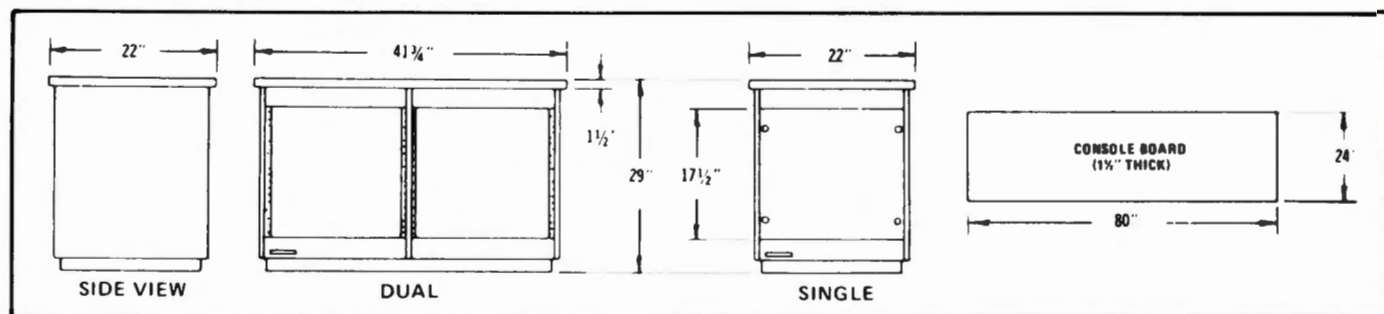
DESCRIPTION

A new look is offered in this modular control room furniture. This modular design provides a unique solution to the problem of providing functional workspace in the

broadcast studio. Turntables, tape cartridge machines, cueing, and switching control panels may all be located within arms reach of the main control board. This "human engineered" system provides almost ultimate flexibility in a group of off the shelf components used to make your custom studio installations.

Durable, color keyed, suede formica covered side panels (in a summer pecan wood grain finish) and tops (in French Blue) create an exciting attractiveness. Formica, with its inherent resistance to damage from coffee stains, cigarette burns, and the like insures that your furniture will maintain its initial beauty for many years. (Special colors available at extra cost.)

OUTLINE DIMENSIONS



SPECIFICATIONS

DUAL TURNTABLE CABINET

Size: 41-3/4" wide x 22" deep x 29" high

Finish: "Summer Pecan" wood grain formica on vertical surfaces, French Blue formica on cabinet top. (Special colors available on order at extra cost.)

Construction: Panels fabricated from high density particle board 3/4" thick (front and rear closure panels 5/8" thick) with formica press bonded using urea type heat activated adhesive.

Panel Space: Two 17-1/2" high panel openings front and rear to accommodate standard 19" E.I.A. style equipment panels on steel mounting rails.

Weight: 117 lbs. Includes complete cabinet with wood grained closure panels for front and rear openings.

SINGLE TURNTABLE CABINET

Size: 22" wide x 22" deep x 29" high

Finish: "Summer Pecan" wood grain formica on vertical surfaces, French Blue formica on cabinet top. (Special colors available on order at extra cost.)

Construction: Panels fabricated from high density particle board 3/4" thick (front and rear closure panels 5/8" thick) with formica press bonded using urea type heat activated adhesive.

Weight: 66 lbs. Includes complete cabinet with wood grained closure panels for front and rear openings.

DESK TOP

Size: 80" wide x 24" deep x 1-1/2" high

Finish: French Blue formica

Mounting: Mounts on top of single or double bay cabinets with brackets provided on or separate bright metal legs

Height Mounted: 29 inches.

ORDERING INFORMATION

STOCK NO.	DESCRIPTION
833-0001	Single Turntable Floor Cabinet (22" x 22" x 29")
833-0002	Dual Section Floor Cabinet (42" x 22" x 29")
833-0003	Console Desk Top (80" x 24" x 1 1/2")
833-0101	Leg, chrome, tapered (4 req'd. for free-standing console section)
833-0103	Spacer block to mount desk top to floor cabinet, includes hardware.

Quartzmatic Studio Clock

FEATURES

- **LARGE 12" DIAMETER FACE (GLASS LENS PROTECTED) WITH 1-1/2" NUMERALS, RED SWEEP SECOND HAND**
- **PRECISION ACCURACY ± 1 MINUTE IN ONE YEAR**
- **1 YEAR FACTORY WARRANTY**
- **POWERED BY 2" BATTERIES FOR 1 YEAR BATTERY LIFE**
- **WHITE OR TAN FACE WITH CHARCOAL NUMERALS IN WOODHUE CASE 2-7/8" DEEP x 14-1/8" DIAMETER**

Combines quartz crystal technology with sophisticated electronic circuitry to create one of the world's most accurate clocks.



ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
BECL-100	835-0100	Quartzmatic, white face
BECL-200	835-0100A	Quartzmatic, tan face

Warning Light

FEATURES

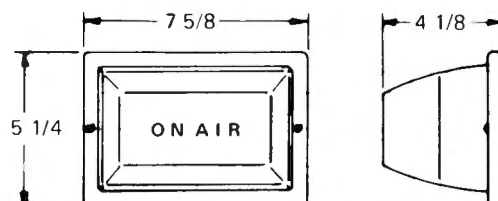
- **OPTIONAL "ON-AIR" OR "AUDITION" SILK-SCREENING**
- **HORIZONTAL OR VERTICAL FORMATS**
- **UNIQUE DESIGN – READILY ADAPTABLE TO ANY OFFICE/STUDIO DECOR**



25 watt red bulb and "Attention-Getter" flasher. Rated at 120V, 100 watts; UL approved.

ORDERING INFORMATION

MODEL	DESCRIPTION
835-0001	ON-AIR Light, Vertical Format
835-0002	ON-AIR Light, Horizontal Format
835-0003	AUDITION Light, Vertical Format
835-0004	AUDITION Light, Horizontal Format



The STUDIO WARNING LIGHT is designed to mount to a flush wall or ceiling surface in a vertical or horizontal plane. The silkscreened globe housing fastens to a steel mounting plate. Ideally suited for control rooms, studios and above restricted entrances to live studios. Supplied complete with

Digital Cue Clock

The Cue Clock is a digital timing unit with a capacity of 99 minutes and 59 seconds count down or count to time. Thumbwheel switches let you select the preset time while a separate selector indicates count up or count down.

Four push-button selectable inputs let you choose the source of the remote signal used to start the clock. Once started, the digital timer displays the count down or to the preset time. When the CUE light illuminates, a signal is sent to the 18 pin connector on the rear panel for use as a triggering signal to any external circuit function.

The Cue Clock's versatility makes it an ideal tool for many time related tasks including record intro's for Disk



Jockeys, time delay or delayed start of program material and as a standard electronic stop watch for timing commercials or announcements.

Simple, rugged construction, integrated circuits, self-contained power supply and no relays make this unit a dependable part of any system.

SPECIFICATIONS

Max. Time:
99 min. 59 sec.

Freq. Std.:
120 VAC/60 Hz Line

Controls:
Count Up/Count Down
Start
Stop
Set

Remote Start Selector
Thumbwheel Sw. Array to Program
Start/Stop Info.

Readouts:
Four Digit Readouts for Time,
GREEN LED for SET Indication
RED LED for CUE Indications

Outputs:
1 Hz Clock Pulse
60 Hz Clock Pulse
Equipment Start Signal
Equipment Stop Signal
+18 VDC
+5 VDC
GRD
Remote "SET" Indicator Signal
Remote "CUE" Indicator Signal

Timer Start Input Levels:
Accepts up to four "START" signals independently. These can be from 5V AC/DC to 120V AC/DC with the proper attenuator (2 Attenuator for 120 VAC supplied).

Power Source:
120 Volts, 60 Hz, 10 Watts.

Circuitry:
Solid State
NO RELAYS

Size:
9 1/2" Deep x 4 1/2" High x 10" Wide
Weight:
6 1/2 lbs.

Ordering Information:
Stock No.: 829-1000
Description: Digital Cue Clock

ELECTRO-VOICE MICROPHONES

RE10: Similar in design and construction to RE15, but for applications with slightly less rigid performance tolerances. Response: 90 - 13 kHz. Impedance: Lo-Z. Output: -56 dB.

635A: Smooth, carefully chaped response yields "flat effect" when used close up. Built-in four-stage pop and breath blast filter. Cable and mounting clamp furnished. Response: 80 to 13,000 Hz. Lo-Z. Output level: -55 dB.

DO54: Excellent professional recording, broadcast, and sound reinforcement — including band, orchestra, piano, vocal music, and speech with outstanding uniformity between microphones of the same model. Frequency response: 50 to 15,000 Hz. Dynamic element: -58 dB output.

664: Designed for quality tape recording, communications, and public address applications. Cardioid at all frequencies. Response: 60 to 15,000 Hz. Output: -58 dB. Stud mount with on/off switch. Cable furnished. Satin chrome.

664A: 664 with non-reflecting gray finish. Shipped connected Lo-Z.

664G: 664 with gold finish.

664P: 664 wired Hi-Z with phone plug at end of cable.

RE85: Quiet Lavalier — extremely free from friction or shock noise. Internal element suspended in compliant rubber. Response in chest-lavalier position: 90 to 10,000 Hz. Output: -61 dB. Omnidirectional. Lo-Z. 30' cable. Finish: Non-reflecting champagne. Length, 2-5/8". Dia., 15/16". Neck cord assembly, tie clasp assembly, belt clip, and zipper pouch furnished.

649B: Smallest dynamic lavalier only 2-1/4" l., 3/4" dia. Response is carefully tailored to compensate for lavalier acoustic conditions so resulting signal perfectly matches signal from other microphones. Response: 70 to 10,000 Hz. Impedance: 150 ohms. Output level: -61 dB. 30' cable. Finish: Non-reflecting gray. With neck cord, belt clip, mounting clamp, and suede pouch.

RE15: Highest quality professional super cardioid. Most uniform polar pattern at all frequencies ever offered in a cardioid microphone. Integral bass compensation switch. Cable and mounting clamp furnished. Response: 80 to 15,000 Hz. Impedance: Lo-Z. Output level: -56 dB. Finish: Fawn beige Micomatte.

630: Famous for quality at low cost. Unaffected by heat or humidity. Dual Lo-Z or Hi-Z. E-V QC -4M cable connector allows easy change of impedance by moving a single pin. Response: 60 to 11,000 Hz. Output: -55 dB. On/Off Switch. Satin chrome finish. Cable furnished.



RE10



635A



DO54



664



RE85



649B



RE15



630

SHURE MICROPHONES

SM7: The SM7 features a wide-range, very smooth frequency response, with graphic response-tailoring switches that allow the user to select four different microphone response curves: (1) extremely flat response; (2) low-frequency roll-off; (3) mid-frequency boost; and (4) a combination of both low-frequency roll-off and mid-frequency boost.

SM61: Combines outstanding noise isolation with a small, lightweight, handsome design especially for hand held applications in which mechanical shock, wind and cable noises must be controlled. A built-in shock mount reduces cable handling and mechanically induced noise to a negligible minimum. Model A57D Swivel Adapter included. Frequency Response: 50 to 14,000 Hz.



SM61



SM7



MS-4

BS-36

MICROPHONE STANDS

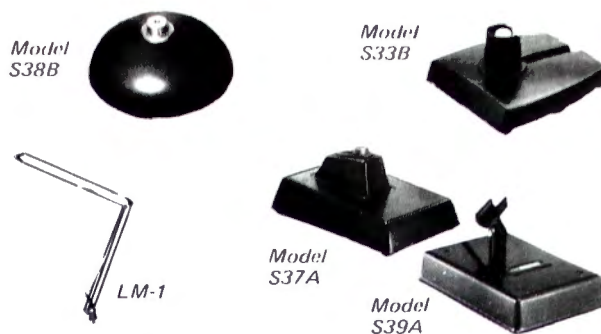
ATLAS MODEL MS-4. Special height stand, adjusts from standard to extra low heights for seated performers or children. Height: 25" - 65".

ATLAS MODEL BS-36. Professional boom stand. Boom length 62". Adjustable vertical height from 48" to 72". With cable hangers for guiding mike cable.

LUXO MIKE ARMS

MODEL LM-1. For mikes weighing up to 1 lb. Two extension arms for 45" length.

MODEL LM-3. For mikes weighing up to 1 lb. Three extension arms for 60" length.



Model S38B

Model S33B

Model S37A

Model S39A

SHURE DESK STANDS

MODEL S33B MODERN DESK STAND. Black finish. For use with Microphone Models 330, 415, 430, 533, 545, 546, 548, 556S, 566, 571, 576, 578, 579, 580, 585 and 588.

MODEL S37A MODERN DESK STAND. Non-reflective, textured gray finish. For use with all microphones with swivel connector assemblies.

MODEL S38B ROUND STAND. Black finish. For use with Models 245, 275, 415, 430, 515, 533, 545, 546, 548, 565, 566, 575, 579, 580, 585, and 588 series.

MODEL S39A VIBRATION-ISOLATION STAND. For all applications where vibration is a problem. Fits all Shure microphones.



M67

M68

SHURE MICROPHONE MIXERS

M67. For recording, studio or remote broadcasting amplification. Provides 4 balanced mike inputs, one line input. Headphone monitor jack, illuminated VU. AC or battery power. Noiseless, automatic switchover to battery if AC fails. Frequency response: 20 - 20,000 Hz ± 2 dB. Noise: -125 dBV. Distortion: less than 1%.

M68 SERIES. Separate volume controls for each input, plus a master control for gain of all inputs. Frequency response: 30 - 20,000 Hz. Noise: -70 dB.

MODEL M68. Male Cannon XLR-3-14 type input connections.

MODEL M68P. Phone jack microphone inputs for high impedance microphones.

MODEL M68FC. Female Cannon XLR-3-13 type input connections.

MODEL M68RM. Provides adjustable reverberation to simulate large concert hall, etc.

SHURE LINE MATCHING TRANSFORMERS

MODEL A95A — Male Cannon XL-3-12 input and Amphenol MC1M plugs installed. Mating connectors supplied.

MODEL A95F — Same as above but female Cannon XL-3-13 input.

MODEL A95P — Male Cannon XL-3-12 input with mating connector supplied. High impedance output terminates in phone plug with locking ring.

MODEL A95FP — Same as above but female Cannon XL-3-13 input.

SHURE MICROPHONE ACCESSORIES

A series of 7 in-line microphone attenuators, equalizers and adapters plug in to give instant modification of response and performance. Size: $\frac{3}{4}$ " dia. x $4\frac{1}{2}$ " long. Color coded nameplates; 3-pin female input, male output Cannon XL connectors.

MODEL A15A MICROPHONE ATTENUATOR — Prevents input overload.

MODEL A15PR PHASE REVERSER — Reverses the phase of a balanced line.

MODEL A15HP HIGH PASS FILTER — Provides a low frequency cut-off.

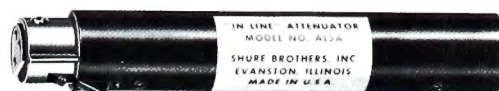
MODEL A15RS RESPONSE SHAPER — Provides sibilance filtering.

MODEL A15LA LINE INPUT ADAPTER — Converts balanced low impedance mike input to line level input.

MODEL A15BT BRIDGING TRANSFORMER — For matching, bridging or isolating balanced or unbalanced devices of different impedances.

MODEL A15TG TONE GENERATOR — Portable, self-powered, microphone level signal source that generates 700 Hz sinusoidal signal; capable of driving low impedance balanced lines.

MODEL A15PA PRESENCE ADAPTER — Adds "presence" to vocals or instrumentals.



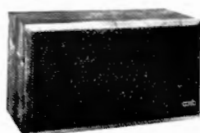
A15A



A95A



Sentry V



EVS-13B



MC8A



MC12A

THINLINE WALL BAFFLES — Attractive, wider, but a third thinner wall baffles with heavy-duty PA-quality speaker installed and wired; screw terminals. Top, sides and bottom covered in heavy, wood-grained vinyl; specify blond or walnut. Cane grille. Front angle 10°. Impedance: 8 ohms.

WITH 8" DUAL-CONE SPEAKER — Rated 10 watts, 4.8 oz. ceramic magnet. Size: 12-1/4" wide x 4-3/8" deep x 9-3/4" high. Argos No. WB-408CS — With speaker. Argos No. WB-408CST — With 70.7 volt transformer.

WITH 12" JENSEN SPEAKER — Rated 15 watts; 10 oz. ceramic magnet. Size: 16-1/4" wide x 6-1/4" deep x 14" high. Argos No. WB-212CS — With speaker. Argos No. WB-212CSV — Same, but with L-pad. Argos No. WB-212CST — With 70.7 volt transformer. Argos No. WB-212CSV — Speaker, L-pad and 70.7 volt transformer included. Argos No. WB-212C — Baffle only; for speaker 4-5/8" d.

Headphones

HD 424 DELUXE — Frequency Range: 15 - 20,000 Hz. Distortion at 1,000 Hz; less than 1% at a sound pressure level of 126 dB. Impedance: 2000 ohms per channel.

HD 414 — Frequency Range: 20 - 20,000 Hz. Distortion at 1000 Hz; less than 1% at a sound pressure level of 126 dB. Impedance: 2000 ohms per channel.

HD 44 — Frequency Range: 50 - 10,000 Hz. Distortion at 1000 Hz; less than 1% at a sound pressure level of 118 dB. Impedance: 600 ohms per channel.



HD424



STANTON DYNAPHASE FORTY HEADPHONES — This is an advanced speaker system designed for the head. Its unique, wide-range dynamic reproduction system is correctly acoustically mounted to precisely channel all audio signals into each ear. Its large and specially designed plug assures reliability even with rough handling. Frequency Response: 60 Hz - 10 kHz ± 3 dB. Maximum Permissible Power Input: 0.5 Watts rms. Distortion: Less than 1% @ 115 dB SPL. Input Impedance: 8 ohms nominal.



HD414



HD44



D-150A



D-60

POWER AMPLIFIERS

MODEL D-150A STEREO POWER AMPLIFIER — Single or dual channel. Extremely low harmonic and intermodulation distortion with very low noise. Capable of a 50 volt balanced line output. Output completely protected against shorted, mismatched or open loads.

MODEL D-60 STEREO POWER AMPLIFIER — Extremely compact; fits into only 1½" of rack space. Amplifier is invulnerable to short or open circuits, mismatch and RF energy. Power Output: 30 Watts RMS per channel at 8 ohms. Frequency Response: ±0.1 dB, 20 - 20,000 Hz up to 30 Watts at 8 ohms. Harmonic Distortion: Below 0.05%, 20 - 20,000 Hz.

ESE DIGITAL TIMERS

ES 142/144 DIGITAL CLOCK/THERMOMETERS — ES 142 (12 hr.) and ES 144 (24 hr.) are MOS, solid state digital clock/thermometers. Display simultaneously: 6 digits of time (hours, minutes, seconds) and 3 digits of temperature (−50°F to +150°F or −45°C to +66°C) in planar, gas discharge displays. 5½" high. Attractive aluminum case with top and sides simulated walnut. Temperature sensor on 25 ft. cable included; attaches to rear-mounted connector. Dimensions: 2½" high x 10" wide x 6" deep. Electrical: 12 W max. 117 VAC, 60 Hz. (220 V, 50 Hz optional.)



ES142/144

ES 302 TIMER — Elapsed time indicator and can count both down and up. The ES 302 user can preset times with lever-wheel type switches. Dimensions: ES 302: 2½" high x 10" wide x 6" deep. Case: Etched anodized aluminum w/simulated walnut sides and top. Electrical: 117 VAC, 60 Hz, 7 W max. (220 V, 50 Hz optional.)



ES302

ES 510 SIXTY MINUTE TIMER — A four digit, sixty minute timer (59 - 59) with start, stop and reset controls (single pole, momentary, push-button). Runs continuously unless stopped or reset. If stopped, display will hold time reading and when restarted will continue with next count from last displayed figure. Reset returns display to all zeros. Can reset while running or stopped. Dimensions: 2-1/2" high x 6" wide x 5-5/8" deep. Case: Etched Aluminum. Electrical: 117 VAC, 60 Hz, 10 W max. (220 V, 50 Hz optional.)



ES510

SCULLY PROFESSIONAL TAPE RECORDERS/REPRODUCERS



280B

280B — Designed for professional mastering service or general recording and reproduction. Available with choice of A.C. hysteresis capstan motor or printed circuit D.C. servo motor. "Selective synchronization" permits precise alignment of sequentially recorded segments on separate tracks.

ORDERING INFORMATION

Model	Description
Series 280B 10.5" Reels for Rack Mounting	
280B-FT	Monophonic, full track
280B-1	Monophonic, half track
280B-2	Stereo 2 track, 2 channel
280B-4	Quad 4 track, 4 channel
280B-2A	Stereo qtr. track, 2 channel
280B-4A	Quad 4 track, 4 channel
Series 280B (SP-14) 14" Reels for Rack Mounting	
280B-1/SP-14	Monophonic, half track
280B-2/SP-14	Stereo 2 track, 2 channel
280B-24/SP-14	Stereo Qtr. track, 2 channel
Above available 3.75 - 7.5 or 7.5 - 15 IPS (Specify when ordering).	



250



255

250 — A compact, moderately priced 10.5" broadcast recorder/reproducer. Features low-noise dependable electronics with synch control for adding a track to alternate channel. Transport has all touch-button control logic and two-speed hysteresis synchronous direct drive capstan motors.

225 — A competitively-priced reproducer designed for continuous operation in automation systems and other applications. Extremely rugged, with TTL control logic and precision-milled cast deck plate. Built with typical Scully craftsmanship.

Model	Description
250-FT	Full Track, Mono
250-1	Half Track, Mono
250-2	Two Track, Stereo
250-24	Quarter Track, Stereo
Two Speeds — Specify: 7.5 - 15 in/s (19.05 - 38.1 cm/s) or 3.75 - 7.5 in/s (9.52 cm/s) when ordering.	
Model	Description
255-FT	Full Track, Mono
255-1	Half Track, Mono
255-2	Two Track, Stereo
255-24	Quarter Track, Stereo
Single Speed — 7.5 in/s (19.05 cm/s) Standard; 3.75 in/s (9.52 cm/s) available upon request.	

REVOX



A77-MARK IV

MODEL A77-MARK IV — Broadcast version of the renowned Revox A77 stereo/mono tape recorder. An electronically regulated (servo) capstan motor. No belts or idler wheels are employed. Speed change effected electronically. Electromagnetic servo braking system. Optical end-of-tape switch. Electromagnetic pressure roller. Professional three-head design for on/off tape monitoring

as well as provision for mixing, multi-track and echo effects. Reel motor defeat switch for manual reel handling during editing. Tape Speed: 3-3/4 and 7-1/2 IPS, max. deviation from nominal $\pm 0.2\%$. Wow and Flutter: Total rms, weighted 0.04% at 7-1/2 IPS and 0.05% at 3-3/4 IPS. Weighted peak to peak flutter as per DIN 0.08% at 7-1/2 IPS and 0.1% at 3-3/4 IPS. Spool Diameter: Up to 10-1/2 inches (minimum hub diameter 2-3/8 inches). Frequency Response: Via Tape at 7-1/2 IPS; 30 Hz to 20 kHz $\pm 2/-3$ dB; 50 Hz to 15 kHz ± 1.5 dB. Distortion: Measured via tape at 1 kHz peak level and at 0 VU respectively, 7-1/2 IPS less than 3% or 1.0% respectively.

ORDERING INFORMATION

Model	Description
1302B	Revox reel-to-reel tape recorder, 10 1/2", stereo



AT-51 AUDIO TEST SYSTEM — Consists of AG 51 Audio Generator and AA-51 Audio Analyzer. Measures harmonic distortion, intermodulation distortion, voltage, dB, signal + noise/noise ratio, wow and flutter, stereo phasing, and differential gain in stereo channels. Features transformerless stereo outputs (balanced or unbalanced), source resistance of 150 or 600 ohms, automatic signal leveling, precision step attenuators, RFI shielding, automatic "set level" and "balance" circuits, scope display of distortion products and output level monitor.

MODEL 210 AUDIO OSCILLATOR — A source for low distortion signals from 10 to 100,000 cycles. Frequency response is ± 1 dB over entire range when connected to 600 ohm load, referenced at 5 KC. Other specifications are: calibration: $\pm 2\%$ over entire range; power output: up to 10 V into 600 ohms; waveform distortion: less than .2% at 5 volts output from 50-20,000 ips.

MODEL 410 DISTORTION METER — Measures audio distortion, noise level, audio gain or loss in dB and ac voltages. Distortion ranges provided are: 1% full scale, 3%, 10%, 30% and 100%. Calibration is in 1 dB steps from 0 dB to -15 dB. Attenuator provides additional ranges from -60 dB to +50 dB in 10 dB steps.



Model 210 Audio Oscillator



Model 410 Distortion Meter



MODEL 1760 AM, 1760 FM AUDIO STEP GENERATOR — Nine precise crystal-controlled frequencies instantly available for use in proof of performance measurements. Frequencies may be stepped manually or automatically, making possible one-man line checks. Features very low

distortion, precision output attenuator and front panel output jack. The Model 1760 AM has a top frequency of 7.5 kHz while the Model 1760 FM provides frequencies extending to 15 kHz for FM checks.



TWO TONE EBS GENERATOR — Provides two tone attenuation signals (853 Hz and 960 Hz) for the Emergency Broadcast System. Tones are generated by digital diversion and filtering of two highly stable crystal oscillators. The 960 Hz tone is divided and gated to give an accurate 22.5 second timing interval. Accuracy is better than 0.5 Hz and

distortion is less than 5%. Features include compact 1-3/4" panel height, positive action reed relay switching, heavy rf shielding for use at transmitter sites, and individual level controls. Available units: a. Two-tone encoder; b. Matching encoder; c. Encoder and decoder, and d. Dual redundant model.

Professional Studio Equipment by Technics

PROFESSIONAL TURNTABLE SERIES

DIRECT DRIVE TURNTABLE WITHOUT TONE ARM



SP-10MKII

- 33-1/3, 45 and 78 RPM Speeds
- Full speed at 33-1/3 in 0.25 second (25° rotation) • Brake to stand-still in 0.3 sec. (30° rotation) at 33-1/3 • Quartz controlled phase-locked servo circuit for ±0.002% speed stability (±0.036 second in 30-minute segment) • Start-up torque = 6 kg/cm • Wow flutter = 0.025% WRMS • Rumble = 50 db (DIN A); 70 db (DIN B) • Brushless DC motor

SH-10B-3

- Base for SP-10MKII

PROFESSIONAL TAPE RECORDER SERIES

REEL TO REEL DECK



RS-1500US

- Single capstan isolated loop transport system open reel deck • Three-motor direct-drive system • Quartz control phase-locked DC motor for capstan
- Stroboscope for tape speed • IC logic control • Tape tension controlled motor for Reel tapes • Editing system • DC operation possible (24V)
- 4 Track 2 channel Playback • 4 super Permalloy Heads • 3 speeds • Time Counter • Optional TP-9690-P Remote Control/Carrying Case RP-9100-P/Dust Cover RP-9110-P/Rack joint RP-9130-P/Black Empty, Reel RP-10A-P Available • Black Metal Cabinet

DIRECT DRIVE TURNTABLE WITH TONE ARM



SL-1500MKII

- Variable quartz crystal controlled manual turntable • Isolated dual suspension system • Pitch control with digital readout • Wow and flutter 0.025% • Gimbal suspension tone arm with variable height adjustment



SL-1400MKII

- Variable quartz crystal controlled semi-automatic turntable • Isolated dual suspension system • Pitch control with digital readout • Wow and flutter 0.025% • Gimbal suspension tone arm with variable height adjustment



SL-1300MKII

- Variable quartz crystal controlled fully automatic turntable • Isolated dual suspension system • Pitch control with digital readout • Wow and flutter 0.025% • Gimbal suspension tone arm with variable height adjustment

PROFESSIONAL HI-FIDELITY SPEAKERS



SB-5000A

- Linear-phase, 2-way, tube-vented speaker system • Phase-compensated crossover network • High efficiency • 10" low-frequency driver • 2-3/8" High-frequency radiator • 75 watts peak power
- 8-ohm impedance • Black finish with 2-piece, removable, black, grill-cloth assembly



SB-6000A

- Linear-phase 2-way, tube-vented speaker system • Phase-compensated crossover network • High efficiency • 12" low-frequency driver • 1 1/2" dome-type high-frequency radiator • High frequency level control • 100 watts peak power • 6-ohm impedance
- Black finish with 2-piece, removable, black, grill-cloth assembly



SB-7000A

- Linear-phase 3-way, tube-vented speaker system • Phase-compensated crossover network • High efficiency • 13 1/2" low-frequency driver • 4 1/2" mid-range radiator • 1 1/2" dome-type high-frequency radiator • 3-position, variable-Q, level controls for high-frequencies and mid-range • 150 watts peak power • 6-ohm impedance • Black finish with 2-piece, removable, black, grill-cloth assembly



ADC JACK PANELS

Molded of solid phenolic, reinforced with steel to provide maximum rigidity and strength. Jacks are spaced to permit use of any standard double plug with 5/8" spacing. Mounting brackets furnished with each panel.

Specifications

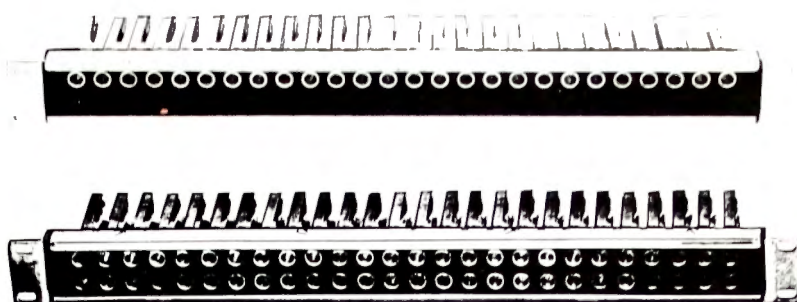
Panel: Molded, thermoset plastic per Mil-M-14F, Type CFG, black.

PJ343 (PJ33 Equipped with PJ318 Jacks)

Single Panel. Holds 20 jacks — requires 1 3/4" panel space. Brackets for flush rack mounting. All jack mounting holes on 5/8" centers. Mounts on 19" rack.

PJ341 (PJ31 Equipped with PJ318 Jacks)

Double Panel. Holds 48 jacks — requires 1 3/4" panel space. All jack mounting holes on 5/8" centers. Mounts on 19" rack.

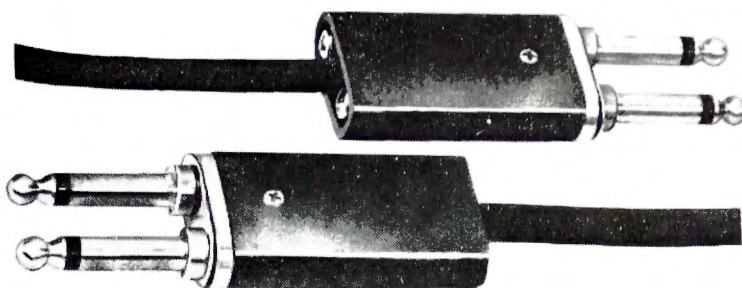


ADC PATCH CORDS

Length	Cord w/ PJ Plugs
1 foot	PJ-1
2 feet	PJ-2
3 feet	PJ-3
4 feet	PJ-4
5 feet	PJ-5
6 feet	PJ-6

TWO CONDUCTOR SHIELDED, CORD ASSEMBLIES

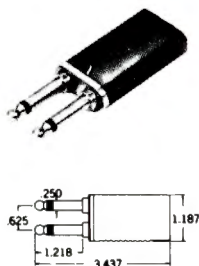
Two tinsel wire conductors plus a braided shield. Overall jacket braided nylon. Black nylon standard. Slate colored jacket also stocked. Green and red available on special order.



ADC PLUGS

TWO CONDUCTOR

PJ-1 — Equivalent WE-241. Heavy duty die cast frame. Black phenolic shell. Has self-aligning plug sleeves on 5/8" centers for use with all standard jack panels. Two tip conductors, plus sleeve connection common to both sleeves.



ADC JACKS

TWO CONDUCTOR

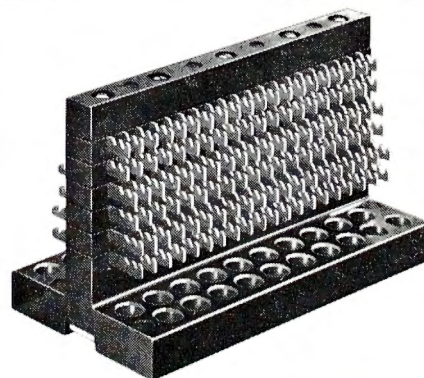
ADC jacks feature a one-piece frame which is strong, dimensionally stable and readily interchangeable both mechanically and electrically with commonly used jacks. Plating withstands 50-hour salt spray tests. Coin silver contacts are welded to nickel silver springs. Lugs are hot tin dipped. Insulation is high grade phenolic.



ADC MOLDED TERMINAL BLOCKS

Catalog No.	No. Rows	No. Terminals	Dim. A
PJ-102	2	40	2,250
PJ-104	4	80	2,937
PJ-106	6	120	3,625
PJ-108	8	160	4,312

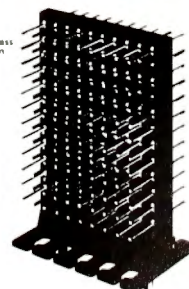
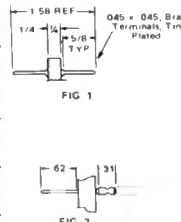
The ADC 20-Pin Terminal Blocks are molded of durable, black, thermoset plastic per Military specifications MIL-F-14F. Terminals are brass with a tin alloy plating for lasting solderability. The PJ-101 series blocks have terminals graduated in length for ease of wiring. All Terminal Blocks are numbered along the top row for easy terminal identification.



"WRAPID" TERMINAL BLOCKS

No. of Terminals	Wrapped Solderless Application Fig. 1 Terminal	Wrapped to Solder or Solderless Application Fig. 2 Terminal	H. Dim
80	PJ-608	PJ-648	2.75
120	PJ-612	PJ-612	3.75

ADC Products' "Wrapid" Terminal Blocks provide for up to 120 connections in a space of 2 1/2" wide by 3 3/4" high (max.). Ten models in two series offer the proper type and number of connectors for either wrapped solderless or wrapped solder terminals on one side of the block to solder or solderless (wrapped) terminals on the other side.



Notes



HOW TO ORDER

ORDERING PROCEDURE:

All sales are made in accordance with Broadcast Electronics, Inc. Terms and Conditions of Sale. No order shall be binding upon Broadcast Electronics, Inc. until accepted by the company in writing at its home office in Quincy, Illinois. Please order by model, stock number and description as they appear in the price schedule. Orders placed by telephone should be confirmed in writing and must be clearly marked "confirming" or we cannot assume liability for duplicate shipments.

PRICES:

Broadcast Electronics, Inc. endeavors to keep published price lists current; however, prices are subject to change without prior notice.

F.O.B.:

Prices are FOB Quincy, Illinois, or point of shipment. No applicable federal, state or local taxes are included. All transportation costs are the obligation of the buyer, unless otherwise stated.

PAYMENT TERMS:

Several methods of payment are available.

- (1) CASH — Full payment with the order.
- (2) COD — This method is recommended for small rush orders and emergency shipments.
- (3) OPEN ACCOUNT — Orders are accepted from customers with whom we have an established credit line or whose D&B rating is acceptable to Broadcast Electronics, Inc. Open account billing requires payment in full within 30 days of shipment.
- (4) FINANCE PLAN — On major purchases, time financing of the balance after a 25% down payment may be available. Lease plans may be available. Contact Broadcast Electronics, Inc. Sales Department for details.

WARRANTY ADJUSTMENT:

Broadcast Electronics, Inc. warranty is included in the Terms and Conditions of Sale. In the event of a warranty claim, replacement or repair parts will be supplied FOB factory. At the discretion of Broadcast Electronics, Inc., the customer may be required to return the defective part or equipment to Broadcast Electronics, Inc. FOB Quincy, Illinois or FOB a designated repair depot. Warranty replacements of defective merchandise will be billed to your account. This billing will be cleared by a credit issued upon return of the defective item.

RETURN, REPAIR OR EXCHANGES:

Do not return any merchandise without our written approval and Return Authorization. We will provide special shipping instructions and a code number that will assure proper handling and prompt issuance of credit. Please furnish complete details as to circumstances and reasons when requesting return of merchandise. Custom built equipment or merchandise specially ordered for you is not returnable. Where return of unused merchandise is at the request of, or for the convenience of the customer, a restocking fee of 15% will be charged. No unused merchandise will be accepted for return later than 30 days after shipment. All returned merchandise must be sent freight prepaid and properly insured by the customer. When writing to Broadcast Electronics, Inc. about your order, it will be helpful if you specify the Broadcast Electronics, Inc. factory order number or invoice number.

SHIPPING METHOD:

Unless specifically stated by the buyer, we will exercise our judgment as to method of shipment. A full range of shipping services is available. All goods are either insured or declared for full value and the cost thereof is included as part of shipping charges. Purchaser assumes all responsibility for and risk of loss of, or damage to equipment upon shipment from Broadcast Electronics, Inc. shipping point(s). Should you receive merchandise damaged in shipment, it is your responsibility to file a damage claim immediately with the delivering carrier.

AFTER SALE SERVICE:

Broadcast Electronics, Inc. has supported its products with factory technical service since 1959. In addition to a technically qualified Customer Service Department at its factory, a coast to coast network of "Spotmaster Parts & Repair Depots" are available to assist you. Technical assistance is available by letter or telephone or telegram. For equipment requiring repair or overhaul, arrangements must be made with the Customer Service Department for Return Authorization prior to shipping.

PRODUCT CHANGES:

Broadcast Electronics, Inc. reserves the right without advance notice to make engineering and production changes including substitution of vendor sources for components which may modify the design or specifications of its products, provided said modifications will not materially affect the performance of the product.

OTHER:

In no event is Broadcast Electronics, Inc. liable for consequential damage resulting from late or non delivery, or malfunction or failure of its products.

ADDITIONAL INFORMATION

Additional information and product literature are available from your SPOTMASTER Distributor or Broadcast Electronics, Inc.

AUTHORIZED SERVICE CENTERS

● Equipped to serve you with *Spotmaster*® parts and repairs — both in and out of warranty

● Regional depots reduce parts delivery time and repair turn-around time



UNITED STATES

1. **Riggins Electronics**
3272 E. Willow St.
Long Beach, CA 90815
Ph: (213) 598-7007
George Riggins
States Covered:
Alaska Nevada
Arizona Oregon
California Washington
Hawaii
2. **Dyma Engineering**
Route 1, Box 51
Taos, NM 87571
Ph: (505) 758-2686
Carroll Cunningham
States Covered:
Colorado
New Mexico
Oklahoma
Texas
Utah
3. **TV Engineering Corporation**
519 Rudder Road
Fenton, MO 63026
Ph: (314) 343-5605
Jack Vines
States Covered:
Arkansas Missouri
Kansas Mississippi
Louisiana Nebraska

4. **Communication Medias**
1223 Tilghman Street
Allentown, PA 18102
Ph: (215) 437-0607
Bill Davies
States Covered:
Connecticut New Jersey
Delaware New York
Maine Pennsylvania
Maryland Rhode Island
Massachusetts Vermont
New Hampshire Washington, DC

5. **Broadcast Services, Inc.**
Micro Road
Micro, NC 27555
Ph: (919) 284-2102
Al Moore
States Covered:
Alabama
Florida
Georgia
North Carolina
South Carolina
Tennessee
Virginia
West Virginia

6. **Allied Broadcasting Equipment**
124 South 6th St.
Richmond, IN 47374
Ph: (317) 962-8596
Roy Ridge
States Covered:
Illinois Michigan
Indiana Ohio
Kentucky

7. **Electronic Industries**
19 East Irving St.
Oshkosh, WI 54901
Ph: (414) 235-8930
Bud Tedlie
States Covered:
Iowa South Dakota
Minnesota Wisconsin
Montana Wyoming
North Dakota

8. **MCB Laboratories**
5151 Wisconsin Ave., N.W.
Washington, D.C. 20016
Ph: (202) 244-2345
Mac Burleson
States Covered:
District of Columbia

CANADA

9. **Nortec West, Ltd.**
325 West Fifth Avenue
Vancouver 10, B.C., Canada
Ph: (604) 872-8525
Bob Whitehouse
Provinces Covered:
British Columbia
Yukon Territory
10. **Nortec West, Ltd.**
7056B Farrell Road
Calgary, Alta., Canada
Ph: (403) 252-8141
Ron Hill
Provinces Covered:
Alberta
Manitoba
NW Territory
Saskatchewan
11. **J-Mar Electronics, Ltd.**
6 Banigan Drive
Toronto 17, Ontario, Canada
Ph: (416) 421-9080
Bill Woods
Provinces Covered:
New Brunswick
Nova Scotia
Ontario
Quebec



BROADCAST ELECTRONICS, INC.

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