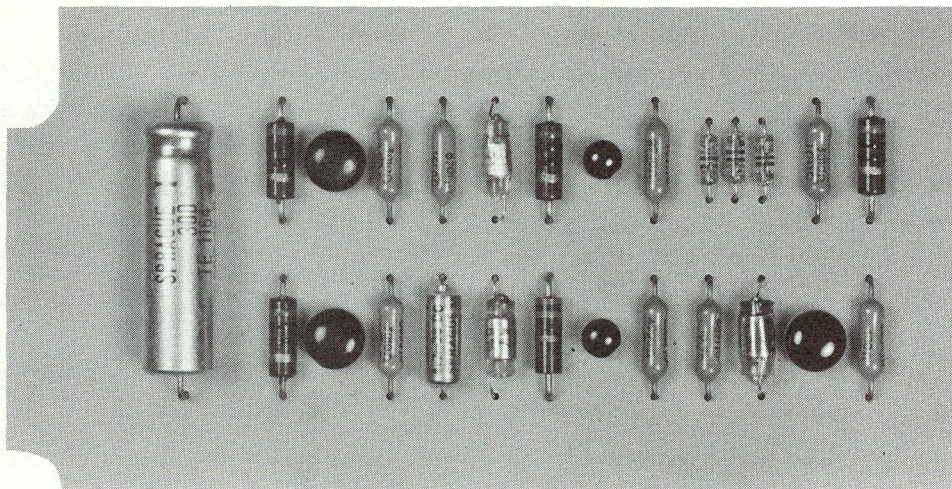




## MODEL 103 "ZERO AMP"™ MIXING AMPLIFIER\*



(Actual Size)

### GENERAL DESCRIPTION

Introducing the most advanced concept in combining audio signals for minimum cost console systems, the SPECTRA SONICS Model 103 "ZERO AMP"™ Mixing Amplifier has demonstrated capability superior to existing "brute force" active combining networks in both the areas of console performance and flexibility: 1) Audio signal inputs are mixed while providing maximum isolation between them; 2) Gain is provided to maintain the console signal-to-noise ratio and to eliminate the need for booster amplifiers in each microphone input, rather than incurring a conventional mixing loss; and 3) A constant output level is assured, irrespective of the number of inputs being switched on or off. Thus, for the first time, the audio engineer has an approach that is both electronically modular and mechanically modular when using the Model 103 "ZERO AMP"™ Mixing Amplifier. Flexibility during operation and for future console expansion at any time is provided.

In a typical 8 microphone input console, with echo capability, the Model 103 "ZERO AMP"™ Mixing Amplifier eliminates 16 amplifiers normally required for the position inputs alone, while maintaining outstanding performance: 80 dB signal-to-noise ratio (20 Hz to 20 kHz); unmeasurable distortion (below measurement residual); square wave reproduction (at 20 kHz); and greater than 100 dB isolation between all inputs. Standard console designs utilizing the Model 103 "ZERO AMP"™ Mixing Amplifier are available on request.

### SPECIFICATIONS

INPUT IMPEDANCE . . . . .	Zero ohms
ISOLATION BETWEEN INPUTS . . . . .	Better than 100 dB (Measurement capability)
VOLTAGE GAIN . . . . .	Variable from 0 to greater than 100 dB (Typical console application: -10 dB to + 20 dB. Different gain for each input if desired.)
MAXIMUM UNDISTORTED OUTPUT . . . . .	+18 dBm
FREQUENCY RESPONSE (+18 dBm) . . . . .	Within .1 dB from 10 Hz to 200 kHz
INTERMODULATION DISTORTION . . . . .	Unmeasurable: less than 4/100ths of 1% (Measurement Residual)
(+18 dBm, 20 Hz to 20 kHz)	
TOTAL HARMONIC DISTORTION . . . . .	Unmeasurable: less than 1/100th of 1% (Measurement Residual)
(+18 dBm, 20 Hz to 20 kHz)	
PHASE REVERSAL . . . . .	Output 180° from input signal
OUTPUT LOADING . . . . .	600 ohms to INFINITY
AMBIENT TEMPERATURE RANGE . . . . .	40° to 140° F
POWER REQUIREMENT . . . . .	24 V dc at 30 mA
PHYSICAL CHARACTERISTICS . . . . .	Solid state device in modular (plug-in) printed circuit card form (2½" x 5" x ½") containing all silicon transistors and diodes. Net weight 2 oz., shipping weight 8 oz.

\* Patent Pending