

# Engineering NEWS



**ALTEC**  
LANSING

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A Division of **ELC** LING ALTEC, INC.

1515 S. Manchester Avenue,

Anaheim, California

## ALTEC 9473A LIMITER AMPLIFIER

TECHNICAL LETTER NO. 187

### FEATURES:

- o Spectral Separation
- o Instantaneous Attack.....No Thump or Overshoot
- o Solid-State Design - Fully Transistorized
- o Internal Crossover Network
- o Single and Dual Band Release
- o Insulated Gate Field Effect Transistor
- o Gain Reduction of up to 40 dB
- o Stereo Interconnect
- o Extremely Low Distortion



### SPECIFICATIONS:

Model: 9473A  
Type: Limiter Amplifier  
Gain: 50 dB  
Frequency Response:  $\pm 1$  dB 20 - 20,000 Hz  
Power Output: +24 dB maximum output level  
T.H.D.: 1% at 20 dB compression 32 Hz to 20 KHz (Typical 0.5%)  
Noise Level: 74 dB below rated output  
Source Impedance: 150 or 600 ohms  
Load Impedance: 150 or 600 ohms  
Maximum  
Compression: 40 dB  
Attack Time: 10  $\mu$ s (100% recovery)  
Release Time: 0.4 sec. above 250 Hz; 3.6 sec. below 250 Hz,  
OR Selectable 0.4 sec.  
OR 23.6 sec.

OR Dual release as a function of controlling frequency  
Threshold: +15 dBm with output level control at maximum  
Compression Ratio: Selectable 4:1, 12:1, or 20:1  
Controls: INPUT Level Control, 20 step attenuator, 2 dB/step  
DUALBAND, SINGLE BAND, 0.4 sec., 3.6 sec.  
Compression Ratio Interlocked 20:1, 12:1, 4:1  
POWER switch  
OUTPUT Level Control, 20 step attenuator, 2 dB/step  
Power Supply: 120/240 ac 50/60 Hz at 15 watts  
Dimensions: 5-1/4" H x 19" L x 7-3/16" D  
Color: Dark Green  
Weight: 14 pounds

### DESCRIPTION:

The ALTEC 9473A Limiter Amplifier, designed primarily for recording studios, characterizes the concept of spectral separation, through the technique of an internal crossover network, eliminating the classical problems of envelope distortion caused by too short a release time and loss of program following a high energy peak when release time is too long.

The ALTEC 9473A Limiter Amplifier, a solid-state, fully transistorized unit, separates the incoming program material into two bands, each band controlled by a separate limiter circuit. The distortion figure, allowable at the lowest frequency of that band, determines the release time, from 250 Hz up at 0.4 seconds, and below 250 Hz at 3.6 seconds.

(Over)

Unmatched in versatility, the ALTEC 9473A Limiter Amplifier utilizes two front panel meters to indicate dB of compression within the respective frequency spectrum, and provides instantaneous attack with no thump or overshoot by use of an insulated gate Field Effect Transistor in a unique new way.

The Dual Band Dual Release position operates on each band separately, compression in one band not affecting the other.

The Single Band Dual Release position control voltages are slaved together, with the largest signal controlling both sides. In this mode, the ALTEC 9473A is a standard wideband compressor with the added advantage of allowing the release time to vary from 0.4 seconds to 3.6 seconds, as a function of the frequency of the largest signal present. For example, high frequency passages may be severely compressed by peaks with a rapid release thus eliminating prolonged loss of audio, while

low frequency passages are released slowly to eliminate envelope distortion.

Two ALTEC 9473A Limiters provide stereo control in all modes of operation for both high and low frequency bands, via "stereo interconnect" jacks on the rear of the panel. When connected for stereo operation, compression in either ALTEC 9473A will cause a corresponding degree of compression in the other, thereby maintaining channel gain balance.

Well positioned controls provide unobstructed vision for ease of operation, and a hinged front panel facilitates servicing.

Perpetually modern, the ALTEC 9473A Limiter Amplifier represents a measure of merit that insures the superior quality of ALTEC Engineered components, designed for professional broadcast, recording, and motion picture industries.