

AMPEX

**AA-80
Professional Audio
Amplifier**

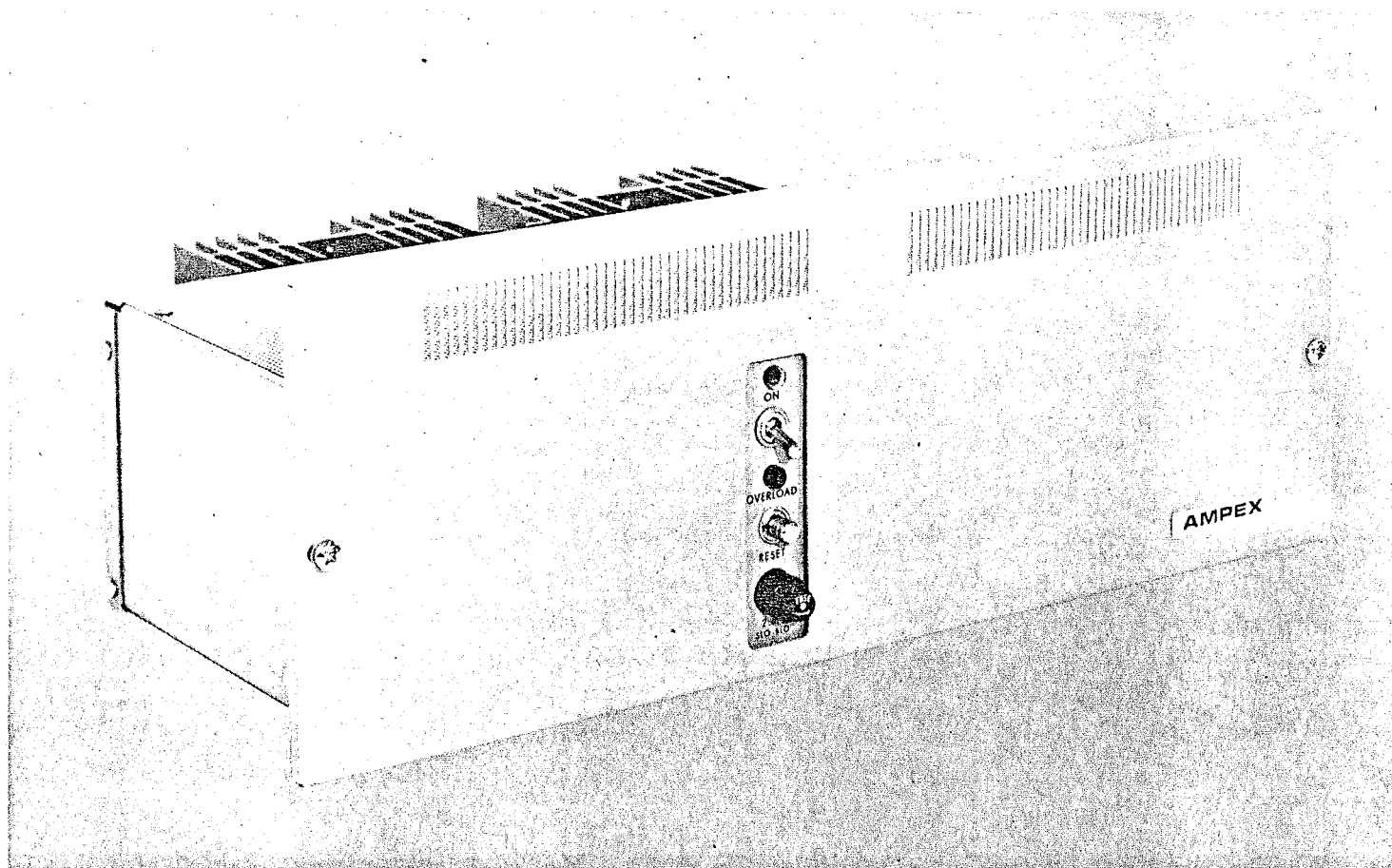


Figure 1-1. AA-80 Amplifier

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AA-80 AMPLIFIER

1-1 INTRODUCTION

1-2 The Ampex AA-80 Amplifier 4020163-02 (Figure 1-1) provides reliable sound amplification for any installation where a high-level, continuous-duty, minimum-maintenance amplifier is required. The amplifier, which mounts in a standard 19-inch equipment rack, is ideal for applications in sound systems of recording and broadcast studios, theatres, meeting halls, and industrial paging.

1-3 DESCRIPTION

1-4 The amplifier circuit contains silicon transistors only, and the output circuit is the quasi-complementary symmetry type. An output transformer couples any 8 to 20 ohm load for rated-power operation. For use with a 3 to 6 ohm load, the output transformer is bypassed resulting in only a slight reduction in peak power (with a 4-ohm load, the maximum power output before clipping is reduced less than 0.3 dB).

1-5 Four output transistors are paralleled for high-dissipation capacity in the power output stage. An SCR is used to sense any dangerous current level in the power transistors, such as that caused by a short-circuited output line and/or an excessively high input signal. The action of the SCR is extremely fast, so that the power transistors are biased OFF at the instant an overload is detected. Operation at a high level, very low frequency, and with an open-circuited output could be dangerous; but if this condition occurs, the SCR also

acts to prevent damage. Visual indication that such an overload has occurred is by a red lamp on the front panel that is turned on by the SCR. A reset button is provided for use in returning the circuit to normal operation. The red lamp lights if the overload condition has not been cleared. Signal frequencies higher than 20 kHz should not be applied for prolonged periods, as overheating of the driver transistors can result.

1-6 A great deal of power dissipation capability is built-in therefore during normal program use, the power transistors become only slightly warm. During installation, care should be taken to provide air-circulation clearance above and below the heatsinks (at the rear of the chassis), and especially if the amplifier is to be operated with a high sine-wave power output for long periods.

1-7 A recessed receptacle is provided (in the center of the front panel) for accessory input or equalizer circuit modules. A dummy circuit card must be inserted in this receptacle whenever an accessory module is not in use. This receptacle is accessible only by removing the front cover.

1-8 An accessory tone-control module makes it possible to adjust the bass or the treble frequencies as desired; a typical range of control is ± 5 dB at 50 Hz and 10 kHz. Studio acoustical compensation is also provided by this same module; therefore selected frequencies in the vicinity of 3 kHz may be boosted up to 6 dB.

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Table 1-1. Specifications and Leading Particulars

ITEM	DATA
POWER OUTPUT	80 watts rms into 8-, 12-, or 16-ohm load (through a tapped output transformer); slightly reduced output with 3- to 5-ohm load (output transformer bypassed)
DISTORTION	No greater than 0.5% total harmonic, 50 Hz to 5 kHz, within the output limits specified
INPUT SENSITIVITY	0.25 volts at 80 watts output
FREQUENCY RESPONSE	±1 dB from 40 Hz - 20 kHz at 80 watts (all components)
INPUT IMPEDANCE	100K ohm potentiometer
NOISE LEVEL	90 dB below rated power output
CONTROLS	Gain: On-Off; Overload Reset
INDICATORS	Power and Overload Condition (Red Lamp)
POWER CONSUMPTION	25 watts at no signal; 200 watts at 80 watts output
OPERATING TEMPERATURE	0 - 55°C ambient
POWER LINE VOLTAGE	110 to 125 volts AC, 50-60 Hz. Slight reduction in clip level with line voltage reduced to 105 volts AC
DIMENSIONS	Mounts in 19-inch standard rack, 5-1/4" Height x 11" Depth
WEIGHT	40 pounds
ACCESSORIES (WITH HANDBOOK)	
UNBLANACED BRIDGING INPUT (100K OHM) AMPLIFIER	4010093-01 (with Dummy Card) 4010093-02 (with Acoustics and presence equalizer) 4010093-03 (with Acoustic equalizer)
BALANCED INPUT AMPLIFIER	4010093-04 (with low-impedance microphone preamplifier) 4010093-05 (with balanced-line bridging) 4010093-06 (with 600 ohm balanced-line matching)

