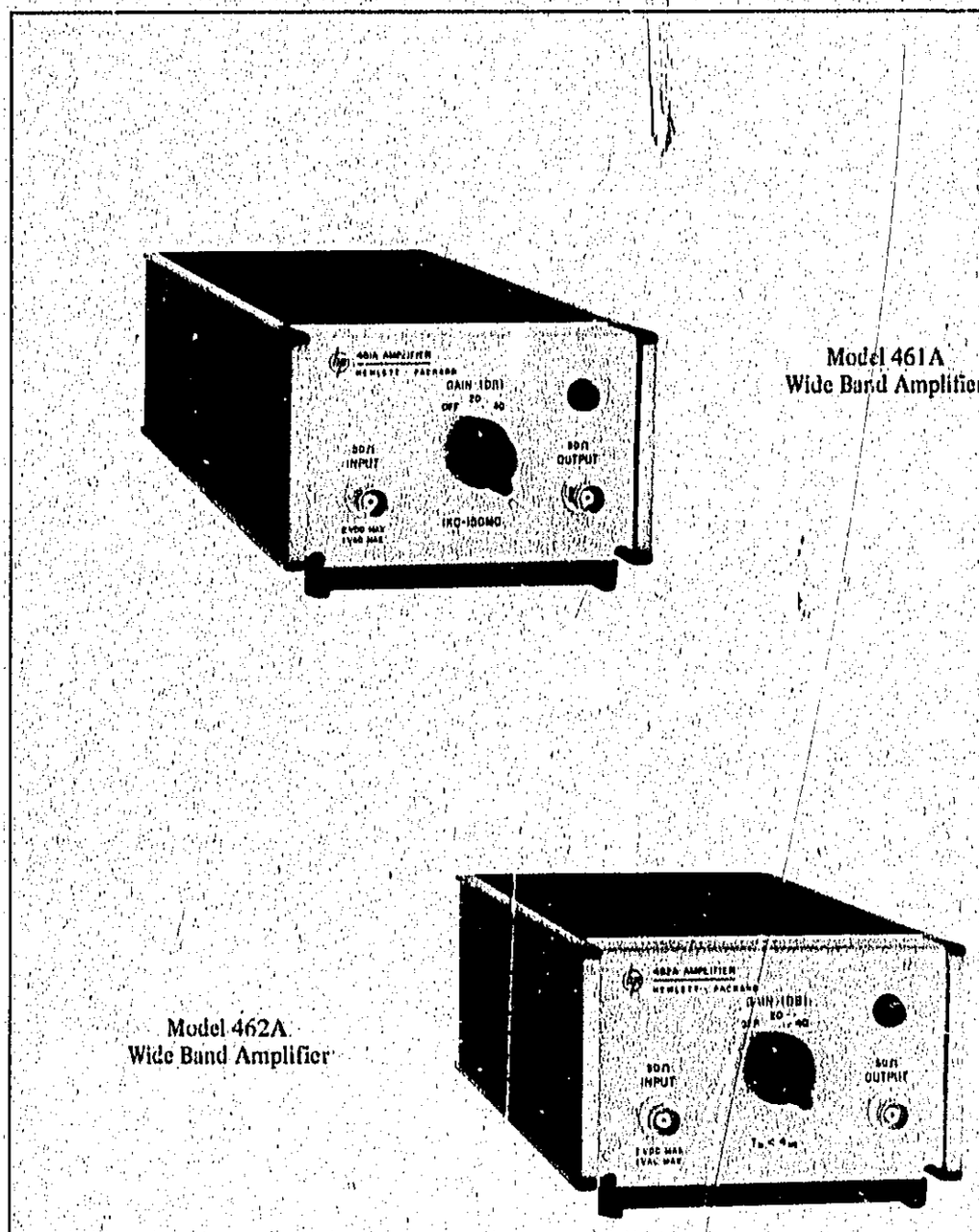

Figure 1-1. Hewlett-Packard Model 461A/462A Wideband Amplifier

SECTION I
GENERAL INFORMATION

1-1. GENERAL INFORMATION.

1-2. The -hp- Model 461A Wide Band Amplifier is used primarily where flatness is important. The -hp- Model 462A Wide Band Amplifier is used primarily where rise time is important. The Model 461A frequency response is ± 1 dB from 1 kHz to 150 MHz. The Model 462A rise and fall times are less than 4 nanoseconds. Either 40 dB or 20 dB gain can be selected with the front panel GAIN (DB switch). The Models 461A and 462A are shown in Figure 1-1. The specifications for both instruments are given in Table 1-1.

1-3. Since the Models 461A and 462A are nearly identical, this manual will discuss the instruments in terms of the Model 461A. The Model 462A will be mentioned only when its operation differs from that of the Model 461A.

1-4. ACCESSORIES AVAILABLE.

1-5. The -hp- 11048C 50-ohm feedthrough termination is an available accessory that is connected at the output of the Model 461A. The feedthrough termination should be used to ensure that the Model 461A is operating into its rated impedance in the event the instrument is connected to a device with an impedance greater than 50 ohms.

Table 1-1. Specifications.

MODEL 461A	MODEL 462A
Frequency Range: 1 kHz to 150 MHz.	Pulse Response: Leading Edge and Trailing Edge Rise Time: Less than 4 nanoseconds Overshoot: Less than 5%
Frequency Response: +/-1 dB, 1 kHz to 150 MHz when operating into a 50 ohm resistive load (500 kHz reference).	Pulse Overload Recovery: Less than 1 us for 10 times overload.
Gain at 500 kHz: 40 dB +/-0.5 dB; or 20 dB +/-1.0 dB, selected by front panel switch (inverting).	Pulse Duration for 10% Droop: 30 us.
Input Impedance: Nominal 50 ohms.	Equivalent Input Noise Level: Less than 40 uV in 40 dB position when loaded with 50 ohms.
Maximum Input: 1 volt rms or 2 volts p-p pulse.*	Input Impedance: Nominal 50 ohms.
Maximum dc Input: +/-2 Volts.*	Maximum Input: 1 volt rms or 2 volts p-p pulse.*
Maximum Output: 1/2 volt rms into 50 ohm resistive load.	Maximum dc Input: +/-2 Volts.*
Equivalent Wideband Input Noise Level: Less than 40 μV in 40 dB position when loaded with 50 Ω.	Gain: 20 or 40 dB selected by front panel switch (inverting).
Distortion: Less than 5% at maximum output and rated load.	Maximum Output: 1 volt peak-to-peak into 50 ohm resistive load.
Overload Recovery: Less than 1 microsecond for 10 times overload.	Delay: 12-14 nanoseconds.

*For the protection of the input circuitry.

Table 1-1. Specifications (Cont'd)

GENERAL	
Power Supply: 115 or 230 V +/-10%, 48 to 440 Hz, 5 watts.	Weight: Net: 4 lbs (1,8 kg). Shipping: 5 lbs (2,3 kg.).
Dimensions: 5 1/8 in. (13 cm) wide, 3 in. (7,6 cm) high, 11 in. (27,9 cm) deep.	Accessory Furnished: Detachable power cord.
Accessory Available: -hp- 11048C, 50 ohm feedthrough termination.	

1-6. INSTRUMENT IDENTIFICATION.

1-7. Hewlett-Packard uses a two-section serial number. The first section (prefix) identifies a series of instruments. The last section (suffix) identifies a particular instrument within the series. If a letter is included with the serial number, it identifies the country in which the instrument was manufactured. If the serial prefix of your instrument differs from the one on the title page of this manual, a change sheet will be supplied to make this manual compatable with newer instruments or the backdating information in Appendix C will adapt this manual to earlier instruments. All corresponcence with Hewlett-Packard should include the complete serial number.