

SECTION I

GENERAL INFORMATION

1-1. GENERAL INFORMATION.

1-2. The -hp- Models 461A and 462A Wide Band Amplifiers can faithfully amplify both sinusoidal and complex signals in the 1 KHz to 150 MHz range. The Model 461A is best suited for sinusoidal inputs, and the Model 462A is designed for complex and pulse inputs. 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- 11048B 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 uV in 40 dB position.	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%, 50 to 400 Hz, 5 watts.	Weight: Net: 4 lbs (1,8 kg). Shipping: 5 lbs (2,3 kg). Accessory Furnished: Detachable power cord.
Dimensions: 5 1/8 in. (13 cm) wide, 3 in. (7,6 cm) high, 11 in. (27,9 cm) deep.	Accessory Available: -hp- 11048B, 50 ohm feedthrough termination.

1-6. INSTRUMENT IDENTIFICATION.

1-7. Hewlett-Packard uses a two-section eight-digit serial number (000-00000). If the first three digits of the serial number on your instrument do not agree with those on the title page of this manual, change

sheets supplied with the manual will define differences between your instrument and the Model 461A described in this manual.

1-8. If a letter prefixes the serial number, the instrument was manufactured outside the United States.