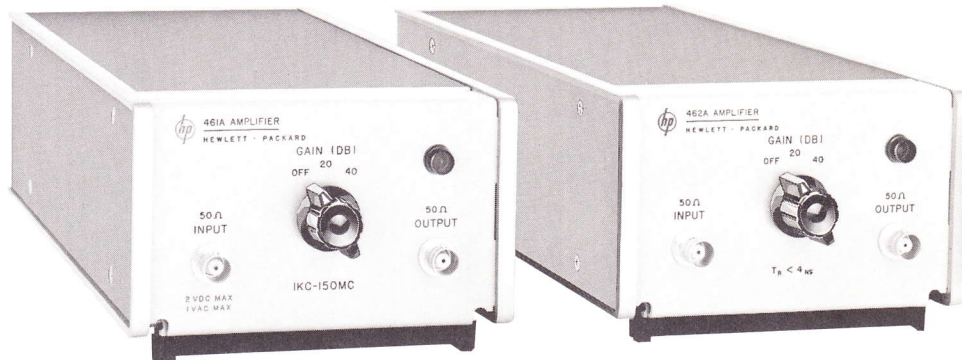


TECHNICAL DATA 1 NOV 68



HP Model 461A

HP Model 462A

FEATURES

- 20 and 40 dB gain
- Rise time < 4 nanoseconds
- Wide frequency range
- 50 ohm input impedance
- Output matched to 50 ohms
- Amplification of fractional microsecond pulses
- Solid state
- Small, light weight

USES

- Loop gain measurements
- Measurement of wide band noise and VHF signals
- Preamplifier for voltmeters, oscilloscopes and counters
- Pulse preamplifier
- Linear amplifier
- Wide band video amplifier
- General laboratory preamplifier

Description

The solid-state HP Model 461A and 462A Amplifiers are ideal wherever wide frequency range, low distortion, and portability are desired.

Unique features such as exceptional stability, wide bandwidth, and linear amplification are obtained through ultra high speed transistors and multiple feedback techniques.

The HP 461A Amplifier is a general purpose instrument designed to deliver stable gain over a wide frequency range. Either 20 dB or 40 dB gain may be selected with a front panel switch. Both input and output impedances are matched to 50 ohms. Maximum output is 1/2 volt rms.

The ability of the 462A to amplify very fast pulses can be seen in Figure 1. The upper trace (A), shows a 20 nsec pulse applied to the input of the 462A Amplifier. The lower trace shows the same pulse amplified 40 dB, as viewed on the HP 185B sampling oscilloscope.

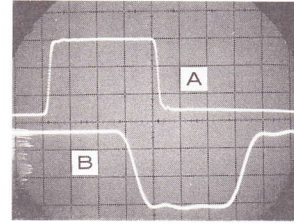


Figure 1. (A) Input Pulse to HP 462A (5 mV peak to peak). (B) Output Pulse of HP 462A (500 mV peak to peak). Gain control set in 40 dB position. Sweep Speed is 5 ns/cm.

SPECIFICATIONS

HP MODEL 461A

- Frequency Range:** 1 kHz to 150 MHz.
- Frequency Response:** ± 1 dB, 1 kHz to 150 MHz when operating into a 50 ohm resistive load (500 kHz reference).
- Gain at 500 kHz:** 40 dB ± 0.5 dB; or 20 dB ± 1.0 dB, selected by front panel switch (inverting).
- Input Impedance:** Nominal 50 ohms
- Maximum Input:** 1 volt rms or 2 volts p-p pulse.
- Maximum dc Input:** ± 2 Volts.*
- Maximum Output:** 1/2 volt rms into 50 ohm resistive load.
- Equivalent Wideband Input Noise Level:** Less than 40 μ V in 40 dB position.
- Distortion:** Less than 5% at maximum output and rated load.
- Overload Recovery:** Less than .1 microsecond for 10 times overload.
- Price:** HP 461A \$325

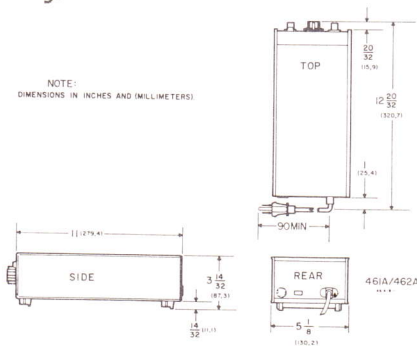
*For the protection of the input circuitry.

HP MODEL 462A

- Pulse Response:**
 - Leading Edge and Trailing Edge
 - Rise Time: Less than 4 nanoseconds
 - Overshoot: Less than 5%
- Pulse Overload Recovery:** Less than 1 μ s for 10 times overload.
- Pulse Duration for 10% Droop:** 30 μ s.
- Equivalent Input Noise Level:** Less than 40 μ V in 40 dB position.
- Input Impedance:** Nominal 50 ohms
- Maximum Input:** 1 volt rms or 2 volts p-p pulse.
- Maximum dc Input:** ± 2 Volts.*
- Gain:** 20 or 40 dB selected by front panel switch (inverting).
- Output:** 1 volt peak-to-peak into 50 ohm resistive load.
- Maximum Output:** 1 volt peak-to-peak into 50 ohm resistive load.
- Delay:** 12-14 nanoseconds.
- Price:** HP 462A \$325

GENERAL

Outline Drawing:



Weight: Net: 4 lbs. (1,8 kg); Shipping: 6 lbs. (2,7 kg).

Power Supply: 115 or 230 V $\pm 10\%$, 50 to 400 Hz, 5 watts.

Accessories Available:

- HP 11048B 50-ohm feed-thru termination, \$10.
- HP 1051A (\$110.) or 1052A (\$120.) Combining Cases (holds six HP 461A/462A amplifiers).

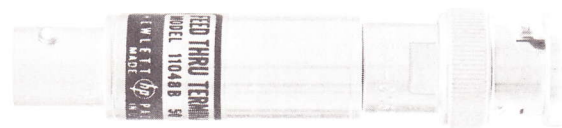


Figure 2. 11048B 50-ohm Feed-thru Termination