

Models P0621P / P0621N

High-Voltage Power DC Amplifiers



The Model P0621N and P0621P are DC-stable, high-voltage power amplifiers are designed to provide precise control of output voltages. Model P0621P voltage range is 0 to +30 kV DC or peak AC with a current capability of 0 to ± 20 mA DC or peak AC. Model P0621N voltage range is 0 to -30 kV DC or peak AC with current capability of 0 to ± 20 mA DC or peak AC. Both are configured as noninverting amplifiers with fixed gains of 3000 V/V.

The Models P0621N and P0621P feature an all solid-state design, high slew rate, wide bandwidth, and low-noise operation. The four-quadrant, active output stage sinks or sources current into reactive or resistive loads throughout the output voltage range. This is essential for achieving the accurate output response and high slew rates demanded by reactive loads. The Models P0621N and P0621P are protected against over-voltage and over-current conditions that may be generated by active loads or by output short circuits to ground.

Precision voltage and current monitors provide buffered low-voltage representations of the high-voltage output and load current for monitoring purposes or for use as feedback signals in a closed-loop system. The Remote High Voltage On/Off feature provides a connection for a remote device to turn on and off the high voltage of the instrument. This makes the P0621N and P0621P suitable for automated or computer controlled systems.

OUTPUTS

Model P0621P (Positive Polarity)

0 to +30 kV DC or peak AC.

Output Current Range

0 to ± 20 mA DC or peak AC.

Model P0621N (Negative Polarity)

0 to -30 kV DC or peak AC.

Output Current Range

0 to ± 20 mA DC or peak AC.

AMPLIFIER INPUT

Input Voltage Range

0 to ± 10 V DC or peak AC.

Input Impedance

50 k Ω , nominal.

PERFORMANCE

DC Voltage Gain

3000 V/V.

DC Voltage Gain Accuracy

Better than 0.1% of full scale.

Offset Voltage

Less than ± 4 V.

Output Noise

Less than 5 V rms (measured using the true rms feature of the Hewlett Packard Model 34401A digital multimeter).

Slew Rate (10% to 90%, typical)

Greater than 350 V/ μ s

Large Signal Bandwidth (1% Distortion)

DC to greater than 3.5 kHz.

PERFORMANCE (cont.)

Small Signal Bandwidth (-3dB)

DC to greater than 25 kHz.

Automatic Power Limit

Automatically limits the internal power dissipation to protect the Models P0621P and P0621N from overheating.

GENERAL

Dimensions

222 mm H x 483 mm W x 584 mm D
(8.75" H x 19" W x 23" D).

Weight

24.9 kg (55 lb).

- Unipolar Positive P0621P
+30 kV at ± 20 mA
- Unipolar Negative P0621N
-30 kV at ± 20 mA
- Slew Rates greater than
350 V/ μ s
- DC Voltage Gain
Accuracy better than
0.1% of full scale
- Remote High-Voltage
ON/OFF capability
- Voltage and Current
Output Monitors provide
low-volt representations
of output voltage and
load current
- Adjustable Current Limit
or Current Trip
- Dynamic Adjustment



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