

# SonicDiagnostic

NDT Instruments and Measurement Systems

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## PA Series Power Amplifiers



PA-180-2-V



PA-180-2-I

## Description

The PA series power amplifiers are high voltage, wideband, linear amplifiers specifically designed to drive high capacitance piezo actuators. The PA amplifiers are available in different voltage and current ranges:

Model	Max. Output Voltage	Max. Output Current	Type
PA-180-2-V	$\pm 90$ V (180 Vpp)	2 A	Voltage Amplifier
PA-180-2-Q	$\pm 90$ V (180 Vpp)	2 A	Charge Drive
PA-180-2-I	$\pm 90$ V (180 Vpp)	2 A	Current Source
PA-180-8-V	$\pm 90$ V (180 Vpp)	8 A	Voltage Amplifier
PA-300-4-V	$\pm 150$ V (300 Vpp)	4 A	Voltage Amplifier

- **Voltage Amplifiers** are general purpose linear amplifiers for high voltage instrumentation and laboratory use, piezo actuator drive, etc.
- **Current Source** Amplifier is specially designed for magnetic field excitation in eddy current inspection coils.
- **Charge Drive** Amplifier is specially designed to pump charge into piezo actuators to reduce hysteresis and linearize the movement of piezo actuator.

Voltage and current monitor outputs are provided to allow real-time monitoring of the load voltage and current. The scaled and buffered outputs can be used in applications such as power monitoring and impedance analyzer.

## Applications

- Piezo Transducer Drive
- Magnetic Field Excitation
- High Voltage Impedance Analyzer
- High Voltage Instrumentation
- Vibration and Modal Analysis

## Specifications

Model	PA-180-2-V	PA-180-2-I	PA-180-2-Q	PA-180-8-V	PA-300-4-V
Output Voltage	±90 V	±90 V	±90 V	±90 V	±150 V
Output Current	2 A	2 A	2 A	8 A	4 A
Gain	10 V/V	0.2 A/V	Customized	10 V/V	15 V/V
Slew Rate ( $R_L = 100 \Omega$ )	60 V/ $\mu$ S	60 V/ $\mu$ S	60 V/ $\mu$ S	30 V/ $\mu$ S	25 V/ $\mu$ S
Power Bandwidth @Max. Output Voltage	100 kHz	100 kHz	100 kHz	50 kHz	25 kHz
Voltage Monitor Ratio	1/10	1/10	1/10	1/10	1/20
Current Monitor Ratio	5 V/A	5 V/A	5 V/A	1.25 V/A	2.5 V/A
Input Voltage Range	±10 V				
Input Impedance	10 k $\Omega$				
Supply Voltage	100 to 240 V, 50 to 60 Hz				
Connectors	BNC				
Casing	Rack mount 3U / 4U				

\* Max. Slew Rate ( $SR_{Max}$ ) for capacitive loads is limited by  $SR_{Max} < I_{Max} / C_L$ . For example, given a capacitive load  $C_L = 100nF$ , and  $I_{Max} = 2 A$  (Model PA-180-2-V), then  $SR_{Max} < 20 V/\mu S$ .

\* Power Bandwidth ( $BW_P$ ), Slew Rate and peak-to-peak sine wave output ( $V_{pp}$ ) are related by  $SR = \pi BW_P V_{pp}$ . For example, given  $SR = 60 V/\mu S$  and  $V_{pp} = 180V$ , the Power Bandwidth is 106 kHz.

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