

## Description

Novel piezoelectric actuators and stages for high bandwidth and/or nanopositioning applications require unique power and drive electronics.

DSM's linear piezo amplifiers and controllers are high-power electronic devices for open- and closed-loop servo control of piezoelectric systems. Amplifiers are typically sold as single channel benchtop instruments, and multi-channel and OEM styles are also available.

The amplifiers feature output voltage limits compatible with most low voltage (less than 300V) standard piezoelectric materials. The benchtop unit's enclosure dimensions are 4" x 9.5" x 13" (100 x 240 x 330 mm).

## VF Linear Piezo Amplifier Series

DSM's **VF-500** amplifies a low voltage analog input signal. An optional user interface menu available through the front panel LCD allows the operator to set up the amplifier and to configure the DC voltage offset, amplitude, and frequency of an integrated sinusoidal waveform generator.

### VF-500 Benchtop Linear Amplifier

- Maximum continuous current: 500 mA (RMS current into a capacitive load)
- Maximum peak current: 1 A
- Electrical noise on output\*: ~3 mV,rms
- Amplifier bandwidth: ~5 kHz (-3 dB)
- Optional integrated sinusoidal waveform generator
- -30V/+150V or -30V/+200V output ranges (output range can be custom configured up to 300Vp-p)
- Over-temperature, over-current, and short-circuit protection
- Gain: 20

### VF-90 Compact OEM Amplifier

- Maximum continuous and peak current: 90 mA
- Dimensions (NI cRIO 9952 chassis): Approx. 3.5" x 4" x 0.9"
- Electrical Noise on Output\*: ~1 mV,rms
- Amplifier bandwidth: > 5 kHz (-3 dB)
- Short circuit, over-current, and over-temperature protection
- RoHS compliant, FCC and CE Compliant
- Gain: 40

\* Noise measurement is performed with an oscilloscope (bandwidth set to 20Mhz)



12 Channel VF-500 System

## SA Series Piezo Servo Controllers

The **SA-500** servo controller includes the functionality of the VF-500 amplifier and adds capabilities for communication, I/O, and stand-alone servo control of piezo devices in high resolution, closed-loop positioning applications.

### SA-500 Benchtop Servo Controller

- Same general specifications as the VF-500
- *Standard* features: integrated PID servo controller serial communication (RS-232), LabVIEW VIs, 24-bit analog input channel, analog or digital feedback for closed-loop control signal, user-configurable PID gain parameters, 9-pin D-sub feedback connector
- *Optional* features: second 24-bit analog input channel, two channels each of digital I/O for enabling TTL lines (customized software for enabling digital I/O functionality can be provided)
- Menu-driven user interface, LabVIEW VI files



Standard VF/SA Single Channel Amplifier



VF-90 OEM Single Channel Amplifier