Trek Model PZD700A M/S

Piezo Driver/Power Amplifier



Trek's PZD700A M/S Piezo Driver/Amplifier system provides precise voltage control and delivers twice the current of our standard PZD700A. This high-voltage DC-powered amplifier offers voltages that can will be factory set to customer-specified ranges. It features an all-solid state design, impressive slew rates and superior bandwidth capabilities.

Other features include a four-quadrant active output stage that sinks or sources current into reactive or resistive loads throughout the output voltage range, precision voltage and current monitors, remote access and dynamic adjustment. The input is configured as non-inverting but an inverting amplifier configuration is available.

Key Specifications

Output Voltage Range Bipolar: 0 to ±700 V DC or peak AC

Unipolar (Positive): 0 to +1400 V or peak AC

and Unipolar (Negative): 0 to -1400 V or peak AC

Output Current Range Bipolar: 0 to ±200 mA

Unipolar: 0 to ±100 mA

• Slew Rate Bipolar: Greater than 380 V/µs

Unipolar: Greater than 370 V/µs

Large Signal Bandwidth Bipolar: DC to greater than 150 kHz (-3 dB)

Unipolar: DC to greater than 125 kHz (-3 dB)

DC Voltage Gain: 0 to 300 V/V, adjustable using a front panel potentiometer

Typical Applications Include

- Piezoelectric driving/control
- Laser modulation
- MEMS
- Semiconductor research
- Piezoelectric vibration damping

Features and Benefits

- Four-quadrant output for driving capacitive loads
- Closed loop system for high accuracy
- Short-circuit protected for equipment protection
- All solid-state design for maintenance-free operation
- DC-stable for programmable supply applications
- · Low output noise for ultra-accurate outputs
- NIST-traceable Certificate of Calibration provided with each unit
- C€ compliant



Model PZD700A M/S Specifications

Performance

Output Voltage Range

Bipolar: 0 to ±700 V DC or peak AC

Output Voltage

Unipolar Positive: 0 to +1400 V DC or peak AC

Range

Output Voltage Unipolar Negative: 0 to -1400 V DC or peak AC

Range

Output Current

Range

Bipolar: 0 to ±200 mA

Output Current

Range

Unipolar: 0 to ±100 mA

Input Voltage Range 0 to ±10 V DC or peak AC

Input Impedance 90 k Ω , nominal (non-inverting)

1 M Ω nominal, (inverting)

DC Voltage Gain 0 to 300 V/V, adjustable using the front panel

potentiometer

DC Voltage Gain

Better than 0.1% for factory set gain of 200 V/V

Accuracy

ranges)*

Less than ±500 mV Offset Voltage

Output Noise (all

Less than 75 mV rms to 20 kHz for a 1 nF load.

Less than 100 mV rms to 20 kHz with no load.

Slew Rate (10% to 90%, typical)

Bipolar: Greater than 380 V/µs Unipolar: Greater than 370 V/µs

Large Signal Bandwidth (-3 dB) Bipolar: DC to greater than 150 kHz Unipolar: DC to greater than 125 kHz

Small Signal

Bandwidth (-3dB)

DC to greater than 200 kHz

Settling Time Less than 50 µs when critically damped

Stability With a factory set gain of 200 V/V

Less than 50 ppm/hr, noncumulative Drift with Time

Drift with Temp Less than 100 ppm/°C

Voltage Monitor

Ratio 1 V/200 V of the high-voltage output

Current Monitor

Ratio 0.05 V/mA, ±1% of full scale

Features

BNC connection for TTL compatible signal to Digital Enable turn ON/OFF the HV output for each channel.

The gain of the Model PZD700A M/S is Gain Control

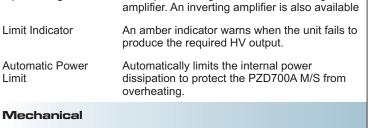
adjustable from 0 to 300 V/V

A graduated 1-turn front panel potentiometer is **Dynamics** Adjustment used to optimize the AC response of the output

signal for various load configurations.

^{*}Measured using the true rms feature of the HP Model 34401A digital multimeter)





The input is configured as a noninverting

Features (cont.)

Input Configuration

Dimensions 110 mm H x 432 mm x W 445 mm D

(4.3" H x 17" W x 17.5" D)

Weight 10 kg (22 lb)

HV Connector SHV High Voltage Connector

Operating Conditions

Temperature 0°C to 40°C (32°F to 104°F)

Relative Humidity To 85%, noncondensing

Altitude To 2000 meters (6561.68 ft.)

Electrical

Factory Set for one of two ranges: Line Voltage

90 to 127 V AC or 180 to 250 V AC,

either at 48 to 63 Hz

AC Line Receptacle Standard 3-prong with integral fuse holder

90 VA, single channel **Power Consumption**

175 VA, dual channel

HV Cable 2 m, 30.8 pf/ft @1 kHz, Nominal

Supplied Accessories

Operator's Manual PN: 23456

HV Output Cable

PN: 43874R cable and SHV mating connector

Assembly

Line Cord, Fuses Selected per geographic destination

Optional Accessories

19-in Rack Mount Kit Model 604RA (with EIA hole spacing) 19-in Rack Mount Kit Model 604RAJ (with JIS hole spacing)

Ordering Information

90 to 127 V AC Model PZD700A-L M/S CE 180 to 250 V AC Model PZD700A-H M/S CE

Notes

The Model PZD700A M/S comes from the factory with settings for an output voltage of ±700 V DC or peak AC, a voltage gain ratio of 200 V/V, with a noninverting input. Please specify voltage range (±700 V, +1400 V, or -1400 V) and input configuration (inverting or noninverting) when ordering.

Also available is the Model PZD700A with half the current capability of the PZD700A M/S.

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