Advanced Energy

TREK PZD350A M/S

High voltage piezo driver/power amplifier system provides precise voltage control and delivers twice the current of the standard PZD350A.

The Trek® PZD350A M/S piezo driver/amplifier system provides precise voltage control and delivers twice the current of our standard PZD350A. 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 is inverting but an inverting amplifier configuration is available.

PRODUCT HIGHLIGHTS

- 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

TYPICAL APPLICATIONS

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

AT A GLANCE

Output Voltage Range

Bipolar
0 to ±350 V DC or peak AC

Unipolar (Positive)
0 to +700 V or peak AC

Unipolar (Negative)
0 to -700 V or peak AC

Output Current Range

Bipolar: 0 to ±400 mA
Unipolar: 0 to ±200 mA

Slew Rate

Bipolar: Greater than 550 V/µs
Unipolar: Greater than 400 V/µs

DC Voltage Gain

0 to 150 V/V, adjustable using a front panel potentiometer

TREK PZD350A M/S HIGH VOLTAGE POWER AMPLIFIER

TECHNICAL DATA

Performance Specifications		
	Bipolar	**Unipolar**
Output Voltage Range	0 to ±350 V DC or peak AC	Unipolar Positive: 0 to +700 V DC or peak AC
		Unipolar Negative: 0 to -700 V DC or peak AC
Output Current Range	0 to ±400 mA	0 to ±200 mA
Input Voltage Range	0 to ±10 VDC or peak AC	
Input Impedance	90 kΩ, nominal (non-inverting)	
	1 MΩ nominal, (inverting)	
DC Voltage Gain	0 to 150 V/V, adjustable using the front panel potentiometer	
DC Voltage Gain Accuracy	Better than 0.1% for factory set gain of 100 V/V	
Offset Voltage	Less than ±500 mV	
Output Noise[1]	Less than 100 mV rms to 20 kHz w/100 pF load	
	Less than 150 mV rms to 20 kHz with no load	
Slew Rate	Greater than 500 V/µs (10% to 90%, typical)	Greater than 400 v/µs (10% to 90%, typical)
Settling Time	Less than 30 µs when critically damped	
Large Signal Bandwidth	DC to greater than 250 kHz (-3 dB)	DC to greater than 200 kHz (-3 dB)
Small Signal Bandwidth	DC to greater than 350 kHz (-3dB)	DC to greater than 250 kHz (-3dB)
Stability (With a factory set gain of 100 V/V)	Drift with Time: Less than 50 ppm/hr, noncumulative	
	Drift with Temp: Less than 100 ppm/°C	

Voltage Monitor Specifications	
Ratio	1 V/100 V ±0.1% of full scale

Current Monitor Specifications	
Ratio	0.025 V/mA, ±1% of full scale

Mechanical Specifications	
Dimensions (H x W x D)	Dual Channel: 110 x 432 x 445 mm (4.3 x 17 x 17.5 in)
Weight	Dual Channel: 10 kg (22 lb)
HV Connector	SHV High Voltage Connector

Electrical Specifications	
Line Voltage	Factory Set for one of two ranges: 90 to 127 VAC or 180 to 250 VAC, either at 48 to 63 Hz
AC Line Receptacle	Standard three-prong with integral fuse holder
Power Consumption	Single Channel: 90 VA
	Dual Channel: 175 VA
HV Cable	2 m, 30.8pf/ft @ 1kHz, nominal.

Environmental Specifications	
Temperature	0 to 40°C (32 to 104°F)
Relative Humidity	To 85%, noncondensing
Altitude	To 2000 meters (6561.68 ft.)

[1] Measured using the true rms feature of the HP Model 34401A digital multimeter

TECHNICAL DATA

Features	
Digital Enable	BNC connection for TTL compatible signal to turn ON/OFF the HV output for each channel
Gain Control	The gain of the Trek PZD350A M/S is adjustable from 0 to 300 V/V
Dynamic Adjustment	A graduated one-turn front panel potentiometer is used to optimize the AC response of the output signal for various load configurations
Input Configuration	The input is configured as a non-inverting amplifier. An inverting amplifier is also available
Limit Indicator	An amber indicator warns when the unit fails to produce the required HV output.
Automatic Power Limit	Automatically limits the internal power dissipation to protect the Trek PZD350A M/S from overheating

REFERENCE NUMBERS

The Trek PZD350A M/S comes from the factory with settings for an output voltage of ±350 V DC or peak AC, a voltage gain ratio of 100 V/V, with a noninverting input. Please specify voltage range (±350 V, +700 V, or -700 V) and input configuration (inverting or non-inverting) when ordering. The Trek PZD350A is also available with half the current capability of the PZD350A M/S.

PZD350A M/S	
PN	**Description**
PZD305A-L	Trek PZD350A-L M/S CE, 90 to 127 VAC
PZD305A-H	Trek PZD350A-H M/S CE, 180 to 250 VAC

Included Accessories	
PN	**Description**
23434	Operator's Manual
43874R	HV Output Cable Assembly, cable and SHV mating connector
Varies	Line Cord, Spare Fuses, selected per geographic region

Optional Accessories	
PN	**Description**
604RA	19 in Rack Mount Kit (with EIA hole spacing)
604RAJ	19 in Rack Mount Kit (with JIS hole spacing)

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

Advanced Energy

For international contact information, visit advancedenergy.com.

sales.support@aei.com
+1.970.221.0108

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