TEGAM®
MODEL 2340/2350

SINGLE/DUAL CHANNEL HIGH-VOLTAGE AMPLIFIERS

TEGAM models 2340/2350 are designed for applications that require high-voltage amplification beyond the standard voltage limitations of most waveform, function, or pulse generators.

PRODUCT HIGHLIGHTS

- Precise signal amplification with low distortion
- High voltage output up to 400 Vp-p (± 200 V)
- DC to 2 MHz small signal bandwidth (-3 dB)
- Full power bandwidth from DC to 200 kHz (-0.1 dB)
- Single or dual channel
- Independent 200:1 voltage monitor output for each channel
- Compatible with all TEGAM arbitrary waveform and function generators
- Competible with any signal generator that can drive 50 Ω impedance
- Excellent choice for MEMS, electrostatic, or piezoelectric applications

AT A GLANCE

Number of Channels

1 Channel - Model 2340

2 Channel - Model 2350

Input Voltage

110/220 VAC

Input Impedance

50 Ω Direct Coupled

Output Impedance

<0.2 Ω

Slew Rate

>250 V/µs

OVERVIEW

With a maximum output voltage of 400 Vp-p, the models 2340/2350 come standard with a fixed gain of +50. Gains from 10 to 100 are available by special order.

Each channel is rated for 40 mA continuous current with 0.2 Ω output impedance. Each channel has an independent, buffered, voltage monitor output for applications that require a low-level representation of the output signal. The buffers produce a reduction of 200:1 for 50 Ω inputs and 100:1 for 1 MΩ and above inputs.

The output current is sensed in both directions by the current limit function. This provides maximum protection to the amplifier during operation. A built-in power supply monitor protects the power amplifiers by tracking the DC power supply. If a high-voltage DC fault occurs, the monitor will disconnect the power supply from the power amplifiers. Cycling the supply power resets the fault. The amplifiers can drive capacitive loads up to 200 pF while maintaining a full power bandwidth exceeding 200 kHz.

For maximum user safety, the outputs are grounded to the instrument chassis to prevent accidental voltage loops. A binding post is provided on the front panel for a direct chassis ground connection.

The models 2340/2350 are cost- effective solutions for specialized applications where low distortion and precise signal amplification is required. These units are particularly suited for high frequency, electrostatic applications that require high voltage.

PRODUCT SPECIFICATIONS

Electrical Specifications	
Number of Channels	1 channel (model 2340) or 2 channel (model 2350)
Input Impedance	50 Ω direct coupled
Output Voltage Range	0 to ± 200 VDC (400 Vp-p)
Maximum Output Current	40 mA per channel
Output Impedance	< 0.2 Ω
Voltage Gain	+50 fixed (special order +10-100)
Sine Wave Distortion (THD)	Refer to figure 4
Small Signal Bandwidth	DC to 2 mHz -typical (-3 dB) - refer to figure 1
Full Power	200 kHz / 400 Vp-p sine - typical (-0.1 dB) (CL<200 pF)
Slew Rate	>250 V/µs
Square Wave Response	< 0.8 µs for 200 volt step
Aberrations	< 2 % 50 Ω voltage monitor outputs 50 Ω input Z (200:1 ratio) (one for each channel) > 1 MΩ input Z (100:1 ratio)
Safety	
Conforms with IEC 61010-1, CE Marked	
Enviromental	
Operating Temperature	0°C to +45°C, (+32°F to +113°F) Ambient
Storage Temperature	-20°C to +50°C (-4°F to +122°F)
Humidity Range	< 80 % RH Non-Condensing
General	
Input Supply Voltage	110/220 VAC 50/60 Hz – Rear Panel Selectable
Power Rating	100 VA 80 W
Dimensions (H x W x L)	11.5 x 25.8 x 30.0 cm (4.51 in x 10.14 in x 11.81 in)
Weight (approximate)	4.5 kg (10 lb)
Recommended Calibration Cycle	1 Year
Warranty	
1 Year Parts and Labor	
Included Accessories	
User Manual	P/N 810044-CD
BNC to High-Voltage BNC Cables (3 ft)[1]	P/N 740949

Note:

1. One cable for P/N 2340, two cables for P/N 2350

PERFORMANCE GRAPHS

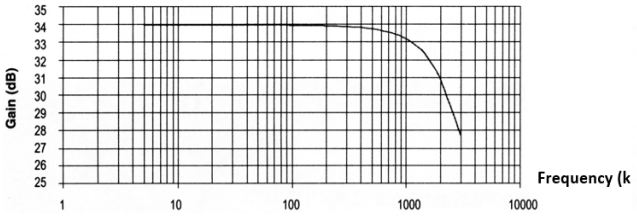

Figure 1: Small Signal Frequency Response (Typical)[1]

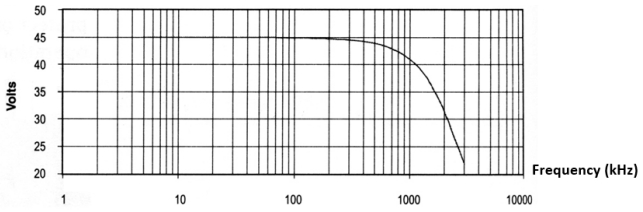

Figure 2: Small Signal Frequency Response[2]

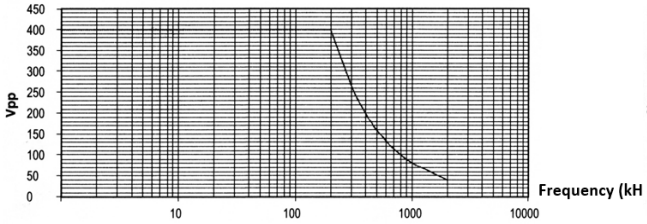

Figure 3: Maximum Vp-p vs. Frequency[3]

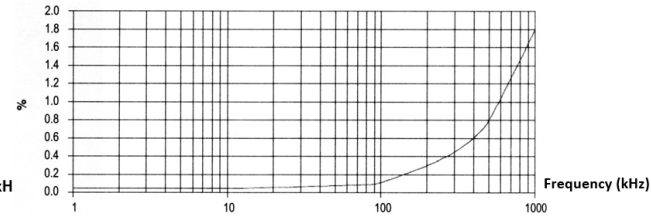

Figure 4: Distortion (Typical)[4]

Note:

1. Amplifier gain measured with 900 mV peak-to-peak input. Amplifier frequency response (-3 dB) at 2 mHz.
2. (Typical)amplifier gain measured with 900 mV peak-to-peak input. Same as figure 1 but Y-axis is volts instead of dB.
3. Amplifier's maximum peak-to-peak output roll off with frequency. This is due to the amplifier's slew rate of 250 V/µs.
4. Distortion measurements were made operating the amplifier at 75 % of the maximum Vp-p output obtained from figure 3.

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four 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.

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Advanced Energy

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