

Model 2205

Piezo Driver/Power Amplifier



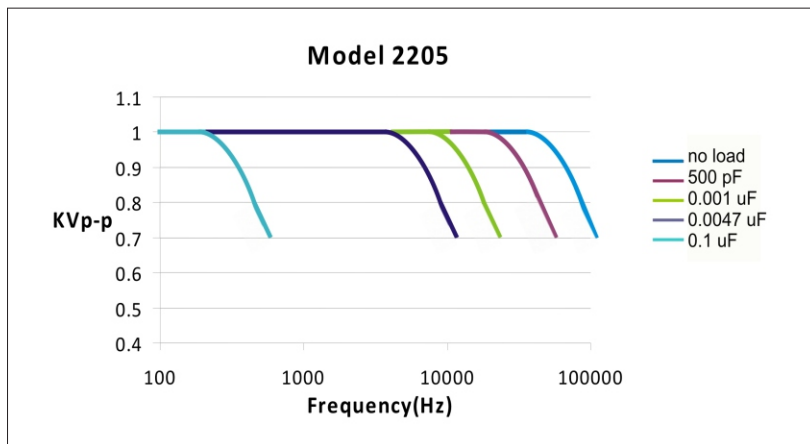
Trek Model 2205 is a member of Trek's 2200 Series of high-voltage 40 watt amplifiers offering high performance at an attractive price. Model 2205 provides precise control of output voltages in the range of 0 to +/-500 V DC or peak AC with an output current range of 0 to +/-80 mA peak AC and large signal bandwidth DC to 75 KHz (-3dB).

The Model 2205 incorporates high performance features including DC stability, wide bandwidth, well regulated and controlled AC output signals, full four-quadrant class AB all-solid-state output stages, DC offset adjustment with front panel metering, and auto-recovery shutdown to protect the output from being overpowered.

The output stage sinks or sources current into reactive or resistive loads throughout the output voltage range. This is essential for achieving the accurate output response and high slew rates demanded by reactive loads.

Model 2205 comes with a 2-year warranty, is CE marked, RoHS compliant and HALT tested.

Applications for Model 2205 include piezoelectric, electro-optic, MEMS and many other areas of research.



- Output Voltage Range: 0 to ± 500 V
- Output Current: 0 to ± 40 mA DC
0 to ± 80 mA peak AC (for 5 ms minimum)
- Slew Rate: 150 V/ μ s, typical
- Large Signal Bandwidth (-3dB): DC to greater than 75 kHz
- Small Signal Bandwidth (-3dB): DC to greater than 75 kHz 100 kHz
- DC Voltage Gain: 50 V/V
- DC Voltage Gain Accuracy: Better than 0.5% of full scale
- DC Offset Adjust Range: 0 to ± 500 V (switch selectable polarity)
- 2 Year Warranty
- RoHS Compliant
- CE Compliant
- HALT Tested



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Model 2205 Specifications

All specifications are with no load unless otherwise noted.

Outputs

Output Voltage Range
0 to ± 500 V

Output Current Range
0 to ± 40 mA DC
0 to ± 80 mA peak AC
(for 5 ms minimum)

Amplifier Input

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

Input Impedance
10 k Ω , nominal

Features

Digital Enable

A BNC connection for a TTL compatible signal to turn on and off the high-voltage output is provided for each channel. A TTL high (or open) turns off the high-voltage output. A TTL low turns on the high-voltage output.

Response

A graduated potentiometer is used to optimize the AC response of the output signal under various load parameters.

High-Voltage LED

Front panel red LED illuminates when the high-voltage is on.

Voltage Monitor

A buffered output provides a low-voltage replica of the high-voltage output.

Scale Factor

1/50th of high-voltage output

Current Monitor

A buffered output provides a low-voltage representation of the load current.

Scale Factor

0.1 V/mA

Features (cont.)

DC Offset Adjustment Range
0 to ± 500 V
(switch selectable polarity)

Accuracy

Better than 1% of reading

Offset

2 counts maximum

Performance

DC Voltage Gain (Accuracy)

50 V/V

(Better than 0.5% of full scale)

Offset Voltage

Less than 1 V.

Output Noise

Less than 25 mV rms

Slew Rate (10% to 90%, typical)

Greater than 150 V/ μ s

Large Signal Bandwidth (-3dB)*

DC to greater than 75 kHz

Small Signal Bandwidth (-3 dB)

DC to greater than 100 kHz

Settling Time to 1%

Less than 30 μ s for a 0 to 500 V step

Internal Capacitance (HV output)

300 pF

Automatic Power Limit

Automatically limits the internal power dissipation to protect the Model 2205 from overheating.

Stability

Drift with Temperature

Less than 180 ppm/ $^{\circ}$ C

Drift with Time

Less than 300 ppm/hr,
noncumulative

General

Dimensions

85 mm H x 205 mm W x 325 mm D
(3.3" H x 8.1" W x 12.8" D)

Weight

2 kg (4.4 lb)

High-Voltage Output Connector

SHV connector

Amplifier Input

BNC connector

Voltage Monitor

BNC connector

Current Monitor

BNC connector

Digital Enable Connector

BNC connector

Power Supply

Input Power

90 to 265 V AC, at 50/60 Hz
line power

Output Power

24 V DC, regulated at
1.75 A maximum

Note: The power supply is an integral part of the system and is provided by Trek.

Operating Conditions

Temperature

0 $^{\circ}$ C to 40 $^{\circ}$ C

Relative Humidity

To 85%, noncondensing

Accessories

Accessories Supplied

Operator's manual, SHV high-voltage cable assembly and external 24 VDC (± 0.5 V) regulated power supply.

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All specifications are subject to change. 1152/DEC.

*Large Signal Bandwidth, Square Wave Response and Output Noise are optimized using the "Dynamic Adjustment" on the front panel of the amplifier



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