



Revised 3/3/00

ORDELA MODEL 8208A-AMP/HV

Spectroscopy Grade Amplifier

DESCRIPTION

The Model 8208A-AMP/HV Spectroscopy Grade Amplifier and High Voltage Power Supply is a self-contained, amplifier and high voltage bias supply. Housed in a rugged aluminum enclosure that can either standalone or mount in a standard 19" wide rack. The Model 8208A-AMP/HV Spectroscopy Grade Amplifier and High-Voltage Supply contains the following functional circuits and sub-systems: One spectroscopy grade pulse-shaping amplifier, one high-voltage bias supply and interlock circuit, and DC Power supply .

The Model 8208A-AMP/HV Spectroscopy Grade Amplifier and High Voltage Power Supply provides for optimum pulse shaping and amplification of preamplifier pulses from the ORDELA Model 8210A and 8208A Large-Area Ionization Chambers. When used to amplify pulses from the Model 8210A or 8208A the nominal gain of the system is .8 V/Mev. This gain is adjustable from the front panel of the rack-mounted or stand-alone system.

With these circuits, the Model 8208A-AMP/HV contains all functions necessary for high-resolution alpha spectrometry of low-background samples.

SPECIFICATIONS:

PERFORMANCE:

- AMPLIFIER GAIN RANGE - Continuous adjustable from 13 to 45.
- AMPLIFIER PULSE SHAPE - 5 usec, Gaussian.
- AMPLIFIER FILTER - Sallen-Key.
- AMPLIFIER INTEGRAL NONLINEARITY - <0.05%.
- HIGH-VOLTAGE OUTPUT - Continuously adjustable from 0 to 3000 V, 0 to 1 mA.
- HIGH-VOLTAGE RIPPLE - 6 mV peak to peak.
- HIGH-VOLTAGE STABILITY - 0.005% per hour after 1/2 hr warm-up, 0.02% per 8 hours.
- OPERATING TEMPERATURE - 0 to 50 degrees C

INPUTS:

- AC POWER - front-panel standard 3-prong NEMA-type connector; accepts 110/115 V or 220/230 V, 50/60 Hz input power.
- PREAMPLIFIER - Rear panel, 9-pin sub-D connector to send test pulses to the preamplifier, transmit power to the preamplifiers, and connect the preamplifier outputs to the Spectroscopy Amplifier.

PULSE GENERATOR - Rear panel BNC connector enables sending test pulses to the preamplifier, 100 ohm input impedance, <100 ns rise-time, and >50 μ fall-time to simulate a charge output from the ionization chamber.

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INHIBIT - Rear-panel, BNC connector allows disabling high-voltage bias when the ionization chamber pressure switch closes (at low pressure).

OUTPUTS: AMPLIFIER OUTPUT - Rear-panel BNC connector; provides positive, unipolar pulses, 0 to 10 V amplitude; 2.5 μ s dwell time, 100 ohm output impedance.
H.V. BIAS - Rear-panel, SHV connector, provides 0-3000 V (positive), 0-1 mA output current to bias ionization chamber.

CONTROLS: GAIN - Front-panel precision 10-turn potentiometer; allows the OUTPUT gain setting to be varied from 0.4 to 1.4 times the nominal gain, thus calibrating the amplifier output amplitude from .8 V/MeV to 1.1 V/MeV when interconnected with the ionization chamber and preamplifier.
POWER - front-panel rocker switch; controls power to unit from ac power source.
H.V. BIAS - front-panel rocker switch; controls power to High Voltage Supply.
H.V. ADJUST - FACTORY SET, side-panel (left), screwdriver-adjustable 20-turn potentiometer, adjusts the H.V. BIAS output. Nominally set to provide 1500 V bias and is adjustable from 0 to 3000 V.

INDICATORS: PWR - front-panel red LED; when illuminated it indicates application of power to the unit.
HV-BIAS - Front-panel red LED; when illuminated it indicates the High Voltage Bias Supply is on.

DIMENSIONS: 48.3 cm wide, 12.7 cm high, 30.5 cm long

SHIPPING WEIGHT: 6.8 kg

WARRANTY

ORDELA, Inc. warrants its products to be free from defects in materials and workmanship for 12 months after shipment. No other warranty is included. Specifically, no warranty of merchantability or fitness for a particular purpose is implied. ORDELA's liability under this warranty is limited to repairing or replacing the product at ORDELA's option. This warranty is void if the product is operated improperly, disassembled, or modified other than in the ORDELA laboratory.