

DC Voltage Amplifier

MODEL 5200

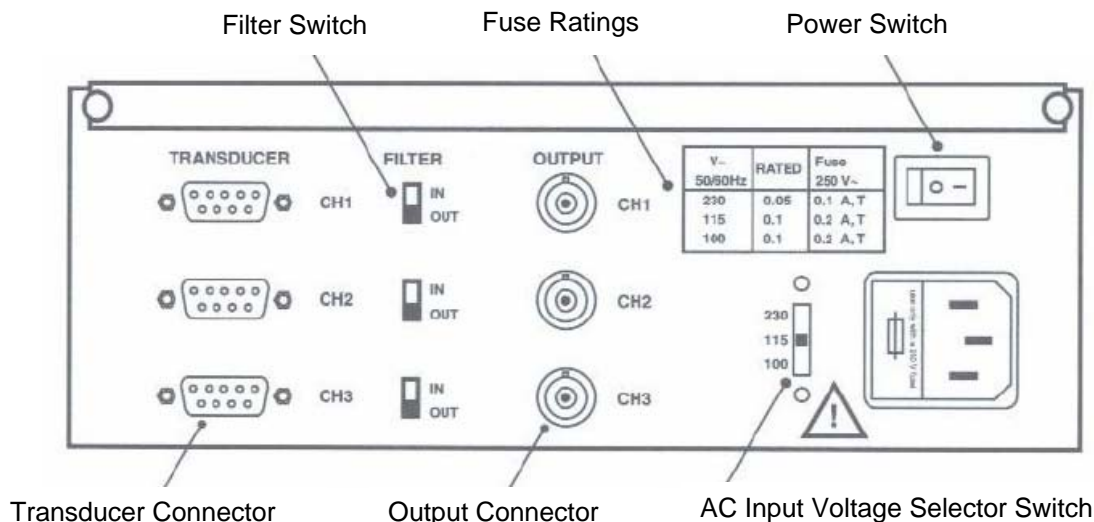
- 3-Channel DC Voltage Amplifier
- Programmable Gain & Voltage Excitation
- Front Panel Switch for Shunt Calibration
- DC to 200 kHz Bandwidth
- Optional Plug-in Low Pass Filters



Description:

The VIP Sensors **DC Voltage Amplifier Model 5200** is a microprocessor-controlled, 3-Channel amplifier that is designed for use with bridge type sensors such as differential output accelerometers and pressure transducers. Model 5200 incorporate variable gain adjustment, shunt calibration capability and multiple excitation level settings. Dual 12-bit digital to analog converters (DAC) are used on each channel to set amplifier gains from 0.00 to 999.9 with $\pm 0.5\%$ precision. These DAC's are also used to auto-zero the input and output amplifiers for DC input signals.

Each of the 3 amplifiers has a 150 kHz full power and a 200 kHz small signal bandwidth and can drive 10mA into a 1K ohm load. A low pass filter socket is provided to filter broadband noise for each amplifier where specific frequency roll-off is required. The transducer excitation supply is individually adjustable for each channel from 0.00 to 10.00 Vdc. Any setting above 10.00 Vdc will generate an excitation voltage of 14.00 Vdc. The outputs are short circuit protected and can supply up to 30mA each. Remote sense leads are provided to eliminate errors caused by long cable lengths



VIP Sensors Model 5200 Rear Panel

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SPECIFICATIONS

The following performance specifications are at +75°F (+24°C) and 100 Hz, unless otherwise noted.

	UNITS	
INPUTS CHARACTERISTICS		
Number of Channels		3
Input Type		Differential
Input Range	V pk	0 to ±10 Vdc, or Vac
Input Impedance	Megohms	> 1
Common Mode	V pk	± 10 (including signal) 50 V peak without damage
Common Mode Rejection	dB	70 Minimum, ≤200 ohms imbalance, DC to 60 KHz, gain >100
Common Mode Rejection	dB	20 (typical), ≤200 ohms imbalance, DC to 60 KHz, gain = 1
Auto Zero Range	mVdc	± 10 for gain < 1,000 ± 100 for gain ≤ 100
	VDC	± 1 for gain ≤ 10 ± 10 for gain ≤ 1
Auto Zero Accuracy	mV	± 25 typical, ± 75 maximum
OUTPUTS CHARACTERISTICS		
AC/DC Voltage		Single ended, short circuit protected
Linear Output	V	± 10 peak
Output Current	mA	10 minimum, 30 maximum per channel
Impedance	ohms	0.2 maximum
Temp Stability	µV/deg C	± 5 RTI, ± 100 RTO
Time Stability	µV/deg C	± 20 RTI, ± 5000 RTO after 1 hour warm up
Accuracy	%	± 1 maximum
Protection		Thermally, short circuit protected
Noise & Ripple	mV rms	1 maximum, 10 Hz to 50KHz, with 1 Kohm load
TRANSFER CHARACTERISTICS		
Gain		
Range		0.00 to 999.9
Resolution		0.000 to 9.99 for 0 ≤ Gain < 10 10.00 to 99.99 for 10 ≤ Gain < 100 100.0 to 999.9 for 100 ≤ Gain < 1000
Accuracy	%	± 0.5 of full scale max, DC to 1 kHz, with filters disabled
Linearity	%	± 0.1 of full scale, best fit straight line at 1kHz reference
Noise	µV rms	20 RTI or 1000 RTO
Freq Response		DC to 200 kHz, -3dB small signal response DC to 150 kHz, -3dB full power
Filter		Optional Plug-in Module
Crosstalk	dB	80 RTI between channels
POWER REQUIREMENTS		
Voltage	VAC	100 / 115 / 230 50-60Hz, switch selectable
Current	mA	0.1 / 0.1 / 0.05
PHYSICAL CHARACTERISTICS		
Dimensions	mm	210 W x 83 H x 235 D (8.25 x 3.25 x 9.25 inches)
Weight	kilograms	1.6 (3.5 lbs)
Case material		Aluminum