

# Model 121 Precision Low Noise DC Amplifier



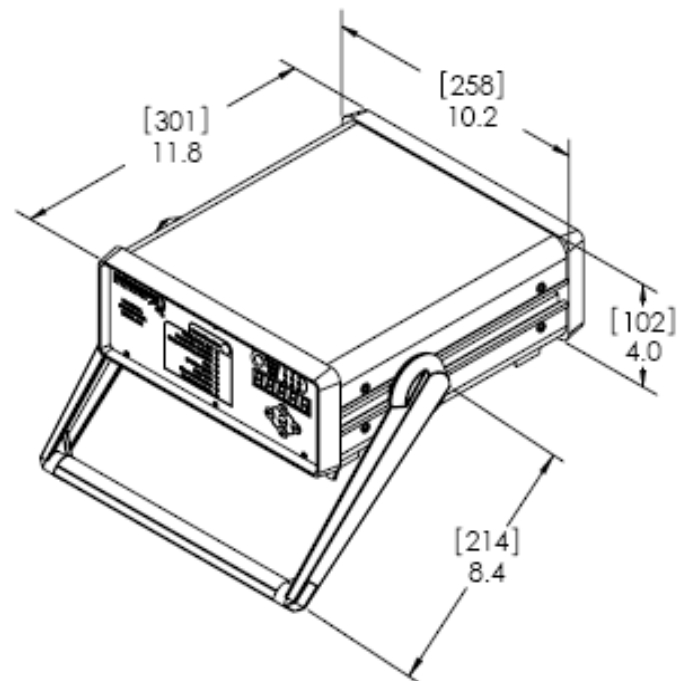
3-Channel DC Differential Amplifier  
 Programmable Gain & Output Scaling  
 $<20\mu\text{Vrms}$  Input Noise  
 Includes Auto-Zero Function  
 DC to 200kHz Bandwidth



**The Model 121** is a state-of-the-art, 3-Channel Precision DC Amplifier designed to be used with bridge type or differential output accelerometers, pressure transducers, and load cells. The amplifier offers an exceptionally low input noise floor of  $<20\mu\text{Vrms}$  and wide bandwidth to 200kHz, ideal for transient measurements.

The Model 121 amplifier is also shunt calibration capable and incorporates adjustable 4-pole Butterworth filter modules.

## dimensions



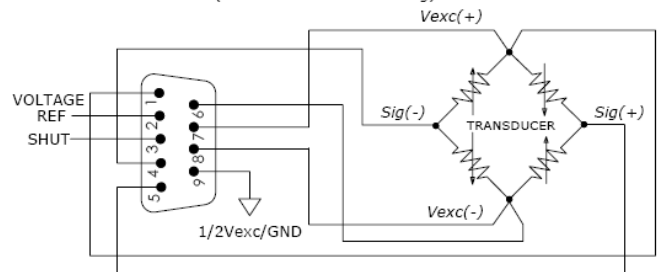
## FEATURES

- AC/DC Front Panel Voltage Display
- $\pm 12.5\text{Vdc}$  Dual Excitation Voltage
- 0-25Vdc Single-Ended Excitation Voltage
- $\pm 20\text{mV}$  Auto-Zero Function
- 4-pole Butterworth LP Filters
- Shunt Calibration Function

## APPLICATIONS

- Instrumentation Labs
- Test Stands
- Process Monitoring
- Vibration & Shock Testing

Typical Hookup for Bridge Type Sensors  
 (Alternate sense lead wiring)



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## performance specifications

Parameters	
<b>INPUT SPECIFICATIONS</b>	
Input Range	Differential $\pm 12\text{Vdc}$ or peak Vac
Input Connector	9-pin D-sub connector for each of the 3 channels
Input Impedance	$>1$ Megohm minimum
Common Mode Input Range	$\pm 12\text{Vdc}$ or peak Vac
Autozero Adjustment Range	The greater of $\pm 100\text{mVdc}$ or $\pm 10/\text{gain}$
Autozero Accuracy	Within $\pm 20\text{mV}$ , user actuate/unactuate
<b>OUTPUT SPECIFICATIONS</b>	
AC/DC Voltage	Single ended, short circuit protected. User selectable for DC or AC measurement.
Output Connector	BNC connector for each channel for each of the 3 channels
Output Impedance	0.2 ohms max
Linear Output	$\pm 10\text{Vpeak}$
Current Output	20mA max
Excitation Voltage	$\pm 12.5\text{Vdc}$ dual or 0 to 25 Vdc single-ended, user selectable for each channel
Excitation Voltage Accuracy	The greater of $\pm 1\%$ or 50 mVdc
Excitation Current	30mA maximum per channel, short circuit protected
Shunt Calibration	User configurable to shunt any of the four legs of bridge. 150 kohm default value for shunt.
<b>TRANSFER CHARACTERISTICS</b>	
Gain Range	0 to 9999
Accuracy	$\pm 0.5\%$ of full scale
Linearity	$\pm 0.1\%$ of full scale
Noise	20uVrms RTI plus 1mVrms RTO
Frequency Response	DC to 200 kHz
Low Pass Output Filter	User-installed plug in module (optional), enable/disable switch, two pole
Isolation	Channel to channel signal grounds not isolated, signal ground to case ground isolated
<b>POWER REQUIREMENTS</b>	
Voltage	110/220V~ 50/60 Hz, auto-detects
<b>PHYSICAL CHARACTERISTICS</b>	
Weight (w/o power cord)	8.2 lbs (3.7 kg)
Case Material	Aluminum
Dimensions (H x W x L)	4.0 x 10.2 x 11.8 inches (102 x 258 x 301 mm)
<b>ENVIRONMENTAL</b>	
Temperature Range, Operating	$+32^\circ\text{F}$ to $+122^\circ\text{F}$ ( $0^\circ\text{C}$ to $+50^\circ\text{C}$ )
Temperature Range, Storage	$-40^\circ\text{F}$ to $+185^\circ\text{F}$ ( $-40^\circ\text{C}$ to $+85^\circ\text{C}$ )
Humidity	$<90\%$

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## ordering info

### DESCRIPTION

DC Amplifier  
 DC Amplifier  
 DC Amplifier

### PART NUMBER+POWER CORD OPTION

121-U NEMA 5-15 USA 3 pin Plug (120V, 60Hz)  
 121-E CEE 7/16 Europlug (220V, 50Hz)  
 121-A AS-3112 China, Australasia (220V, 50HZ)

### Optional Accessories

Filter Module, 20Hz, 4-Pole Low Pass AC-A04542-020  
 Filter Module, 100Hz, 4-Pole Low Pass AC-A04542-100  
 Filter Module, 1kHz, 4-Pole Low Pass AC-A04542-1K0  
 Filter Module, 10kHz, 4-Pole Low Pass AC-A04542-10K  
 Filter Module, 20kHz, 4-Pole Low Pass AC-A04542-20K  
 DB9 Connector AC-G03253