

Miniature Charge Amplifier

5820

The Columbia Series 5820 Charge Amplifiers are designed for use with virtually all piezoelectric transducers to form various airborne vibration and shock data acquisition systems. These devices feature a very small package size and extremely low power consumption.

The Series 5820 Charge Amplifiers provide dual signal outputs, one biased around +2.50VDC and one unbiased capacitance coupled, and are available in seven standard charge conversion ranges, each offering a 10:1 tandem gain adjustment capability. A range of seven low-pass filters are available to meet your individual vibration measurement needs. **Consult the factory for customized versions of these amplifiers.**

Note: Exports from the United States are subject to the licensing requirements of the Export Administration Regulations (EAR) and/or the International Traffic in Arms Regulations (ITAR)

SPECIFICATIONS

	5820
Electrical	
Input Source Resistance	25MΩ Min
Input Source Capacitance	10000pF Max. to meet all specifications
Overload Recovery	5000pcmb 1mS Half-Sine, No Effect
Input Connection	Single Ended, Referenced to Circuit Board
Output Impedance	Biased: 100Ω Max., Direct Coupled Unbiased: 100Ω Maximum, 22uF Coupling Capacitor, 20K Internal Load
Output DC Bias	+2.500 +0.075VDC @ Biased Output 0.000+0.050/-0.000VDC @ Unbiased Output
Output Limiting	Biased Output: +5.40 +0.20VDC, 0 +0.05VDC
DC Power Input	+12 to +32VDC, +28VDC Nominal
Supply Current	25mA Max.
Minimum Linear Output Voltage	4.65V Pk/Pk (1.64VRMS)
Maximum Linear Output Current	0.500mA Pk/Pk
Frequency Response	+5%, 5Hz to 10kHz Available (Refer to Filter Chart)
Residual Noise	5.0mV RMS Max
Amplitude Linearity	1% Max.B.F.S.L.
Gain Stability	Temperature:+2% Max over Operating Temperature Input Capacity: <0.10%/1000pF
Total Harmonic Distortion	1% Max.
Warm-up Time	30 Seconds Max.
Case Ground Isolation	Circuitry Isolated by 50MΩ Min. @50VDC

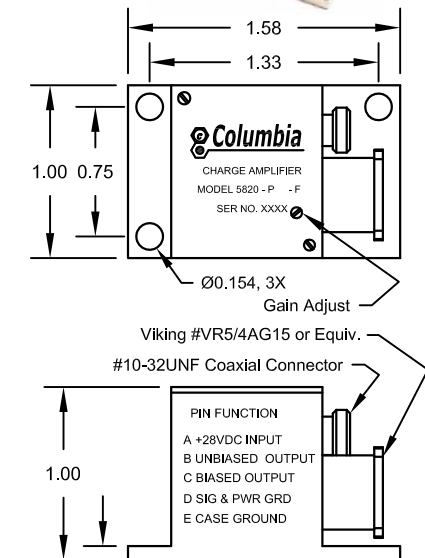
Environmental

Temperature, Operating	-55 to +85°C
Temperature, Storage	-55 to +125°C
Vibration	20G PK from 50Hz to 2kHz
Shock	100G PK with 6.5mS Sawtooth pulse
Humidity	Hermetic Grade Epoxy Seal
Altitude	200,000 Ft Max.

Physical

Weight	50gms Max.
Size	1.575" L x 1.00" W x 1.00" H (4cm L x 2.5cm W x 2.5cm H)
Case Material	Aluminum
Electrical Interface	Output: Viking VR5-4AG15, 5-Pin Cylindrical Input: Double Insulated #10-32 Coaxial
Case Mounting	(3) #6 Thru Holes for #6-32 Socket Head Cap Screw

- Biased or Unbiased Signal Outputs
- 10:1, 20-Turn Gain Adjustment Potentiometer
- Choice of Butterworth Low Pass Filter
- Ultra Miniature Electronic Package



STANDARD GAIN RANGES	
SUFFIX	CONVERSION GAIN RANGE
P1	0.2 TO 2.0 mV/pcmb
P2	0.5 TO 5.0 mV/pcmb
P3	1.0 TO 10.0 mV/pcmb
P4	2.0 TO 20.0 mV/pcmb
P5	5.0 TO 50.0 mV/pcmb
P6	10.0 TO 100.0 mV/pcmb

LOW-PASS FILTERS		
SUFFIX	±5% RESPONSE	ROLLOFF
F1	5Hz TO 100Hz	-12dB/OCT
F2	5Hz TO 200Hz	-12dB/OCT
F3	5Hz TO 500Hz	-12dB/OCT
F4	5Hz TO 1000Hz	-12dB/OCT
F5	5Hz TO 2000Hz	-12dB/OCT
F6	5Hz TO 5000Hz	-12dB/OCT
F7	5Hz TO 10000Hz	-12dB/OCT

Ordering Information:
5820

