

Single Axis In-Line Charge Converter

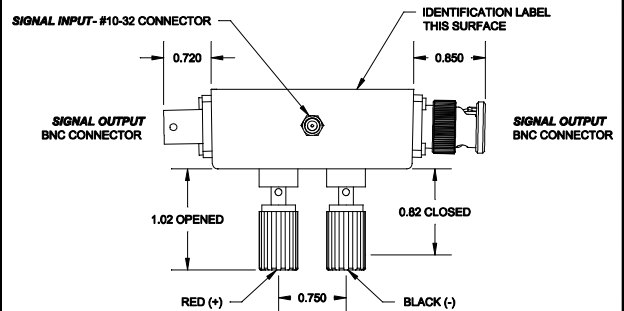
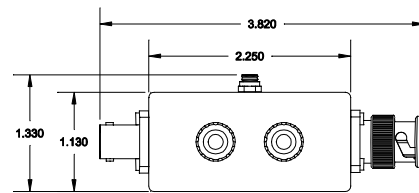
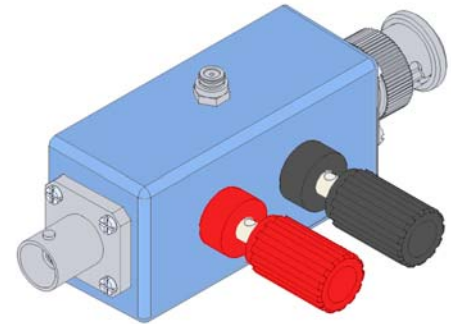
5814

The Columbia Series 5814 In-Line Charge Converters are specifically designed to convert the charge signals from a high impedance piezoelectric sensor into a voltage signal output with low output impedance, thereby eliminating the need for costly charge amplifiers in many applications. This device can be used with all Columbia non-integrated piezoelectric accelerometers and pressure sensors.

The advantage of this device is that it contains an active signal channel powered from a common external standard DC power supply. This makes it the perfect signal-conditioning match for any high impedance piezoelectric sensor. The converter is available in three factory setting of 0.1, 1.0 and 10.0 mV/pcmb. Sensor inputs utilize a #10-32 coaxial connector with the signal output presented on both male and female BNC connectors. Power is applied via the two binding posts.

Consult the factory for customized versions of these sensors.

- Choice of Three Conversion Gains
- 10-32 Coaxial Input
- Self Contained Signal Conditioners
- Utilizes Standard DC Power Supply



Model 5814 Options	
Model	Gain
5814-01	0.1 mV/pcmb
5814-1	1.0 mV/pcmb
5814-10	10 mV/pcmb

Note: An optional mounting plate for permanent installation is available. Please consult factory for details.

Specifications

Electrical	5814
Input Source Resistance	10MΩ Min.
Input Source Capacitance	5000pF Max.
Output Impedance	<50Ω for Models 5814-01 and 5814-1 <200Ω for Model 5814-10
Output Load Capacitance	100nF Max for No Effect Gain Accuracy Below 10kHz
Output DC Bias	9-11 Volts Typical
Output Voltage Swing	10 Volts Min. @ +22VDC Power 15 Volts Min. Above +25VDC Power
Output Voltage Limiting	No Internal Limiting; Supply Voltage must be Limited to <40 Volts
Operating Voltage Range	+22 to +32 Volts
Gain Accuracy	± 5% Max.
Frequency Response	2Hz to 20,000Hz Min for <5% Gain Deviation
Residual Noise	150μV RMS Max. with Source Capacitance of 1000pF 1.0mV RMS Max. with Source Capacitance of 10nF
Gain Stability	2% Gain Change Max. from -40°C to +85°C; 0.2% Gain Change Max. from 5mA to 20mA Oper. Current
Total Harmonic Distortion	1% Max. @ Output Voltage of 10 volts P-P
Warm-up Time	30 Seconds Max

Environmental

Operating Temperature	-40°C to +85°C
Vibration	15G PK from 55Hz to 2000Hz
Shock	100G PK with 3.6mS Halfsine pulse
Humidity	95% R.H.

Physical

Weight	4.0 oz (113.4 gm) Typ
Size	3.80" x 1.33" x 1.80" Typ
Case Material	Aluminum
Electrical Interface	Output: (2) BNC Connectors Input: #10-32 Microdot Connector Power: (2) Binding Posts 0.75 on Center
Case Isolation	Signal Ground connected to Case



Columbia Research Laboratories, Inc. 1925 MacDade Blvd Woodlyn, PA 19094 USA

Phone: 1.800.813.8471 / Fax: 610.872.3882 / email: sales@crlsensors.com / Web: www.crlsensors.com