

Single Axis In-Line Charge Converter

5810

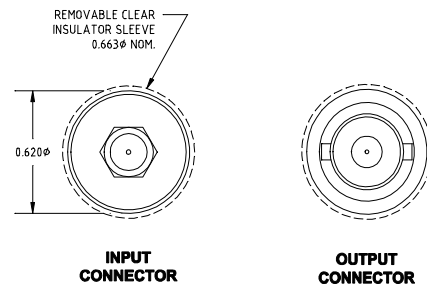
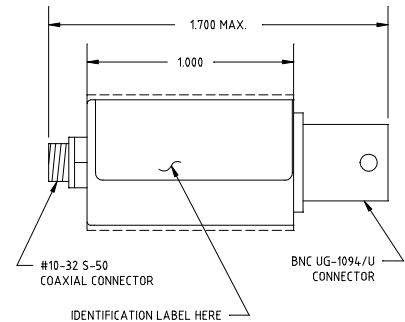
Columbia Series 5810 In-Line Charge Converters are designed to convert the charge signal from a high impedance piezoelectric sensor into a voltage signal output with low impedance, thereby eliminating the need for costly charge amplifiers in many applications. This device can be used with all Columbia non-integrated piezoelectric accelerometers and pressure sensors.

The converter is available in three fixed gain settings of 0.1, 1.0 and 10.0 mV/pcmb. This device requires a constant current power source as provided by Columbia Model 5421 (single channel) or Model 5424 (4-channel).

Series 5810 In-Line Charge Converters are ideal for applications where a low impedance sensor cannot withstand high temperature environments due to limitations of its internal electronics.

When used with Columbia's Constant Current Power Source Model 5421, a LNHT-x-BNC should be ordered for each channel.

- Choice of Three Conversion Gains
- Two-Wire Configuration
- Wide Frequency Response
- Rugged Small Package



Specifications

Electrical

	5810
Input Source Resistance	10MΩ Min.
Input Source Capacitance	5000pF Max.
Output Impedance	<50Ω for Models 5810-01 and 5810-1 <200Ω for Model 5810-10
Output Load Capacitance	100nF Max for No Effect Gain Accuracy Below 10kHz
Output DC Bias	9-11 Volts Typical
Output Voltage Swing	15 Volts Min.
Output Voltage Limiting	No Internal Limiting; Supply Voltage Must be Limited to <40 Volts
Operating Current Range	2mA to 20mA
Gain Accuracy	± 3% 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 4 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	20G PK from 55Hz to 2000Hz
Shock	100G PK with 3.6mS Half sine pulse
Humidity	95% R.H.

Physical

Weight	2.0 oz Max
Size	0.625" Dia x 1.0" L
Case Material	Stainless Steel Tube
Electrical Interface	Output: BNC Connectors Input: #10-32 Microdot Connector
Case Isolation	Case Isolated with Clear Teflon Sleeve

Model 5810 Options

Model	Gain
5810-01	0.1 mV/pcmb
5810-1	1.0 mV/pcmb
5810-10	10 mV/pcmb



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