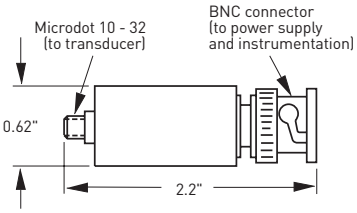
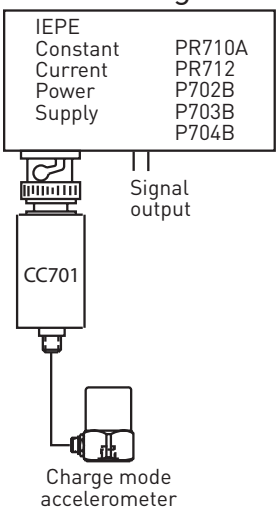
Wilcoxon Research

Model CC701
Charge converter

The CC701 charge converter is a solid state, in-line device which converts the charge output of a high impedance piezoelectric vibration sensor to a low impedance voltage signal. It incorporates an overload protection circuit and the low noise Piezofet® amplifier. The CC701 yields a strong signal, immune to cable motion noise. It is compatible with standard signal readout equipment such as monitors, voltmeters, analyzers, etc. Long cables can be driven without signal loss. The CC701 charge converter is powered by the constant current source of a Wilcoxon Research power unit/amplifier (models P702, P703B, P704B, PR710 or PR712), or it can be supplied from an external constant current supply of 18 - 30 VDC, capable of delivering from 2 - 10 mA (a 4 mA constant current diode is recommended).



Power diagram



Transfer characteristics[1]

Sensitivity, ±5%	1 mV/pC
Frequency response:	
±5%	2 - 25,000 Hz
–3 dB	0.5 Hz
Nonlinearity	‹1%
Harmonic distortion	‹1%

Input characteristics

Allowable source capacitance, max	6,000 pF

Output characteristics

Output voltage, max					5 V rms
Electrical noise, nominal:					
Source capacitance (transducer + cable)		500	1,000	5,000	pF
Broadband	2.5 Hz to 25 kHz	5	7	10	µV
Spectral	10 Hz	.50	.50	.50	µV/√Hz
	100 Hz	.06	.07	.15	µV/√Hz
	1,000 Hz	.04	.04	.07	µV/√Hz
	10,000 Hz	.02	.03	.05	µV/√Hz
Output impedance (depending on source capacitance)		25 - 150 Ω			
Bias output voltage, nominal		10 VDC			

Power requirements

Voltage	18 - 30 VDC
Constant current[2]	2 - 10 mA

Environmental

Temperature range	–40 to 100°C

Physical characteristics

Weight	40 grams
Case material	stainless steel
Connectors:	
Signal input	Microdot 10 - 32
Signal output	BNC

Notes: [1] Measured with 1,000 pF source capacitance, 21V supply, 4 mA

[2] To minimize the possibility of signal distortion when driving long cables with high vibration signals, a 24 to 30 VDC powering is recommended. The higher level constant current source should be used when driving long cables (please consult Wilcoxon customer service).

Options: Filtered for high temperature charge mode with sensitivity of 4 mV/pC (CC701-HT); sensitivity 0.1 mV/pC (CC701-1); sensitivity 10 mV/pC (CC701A)

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