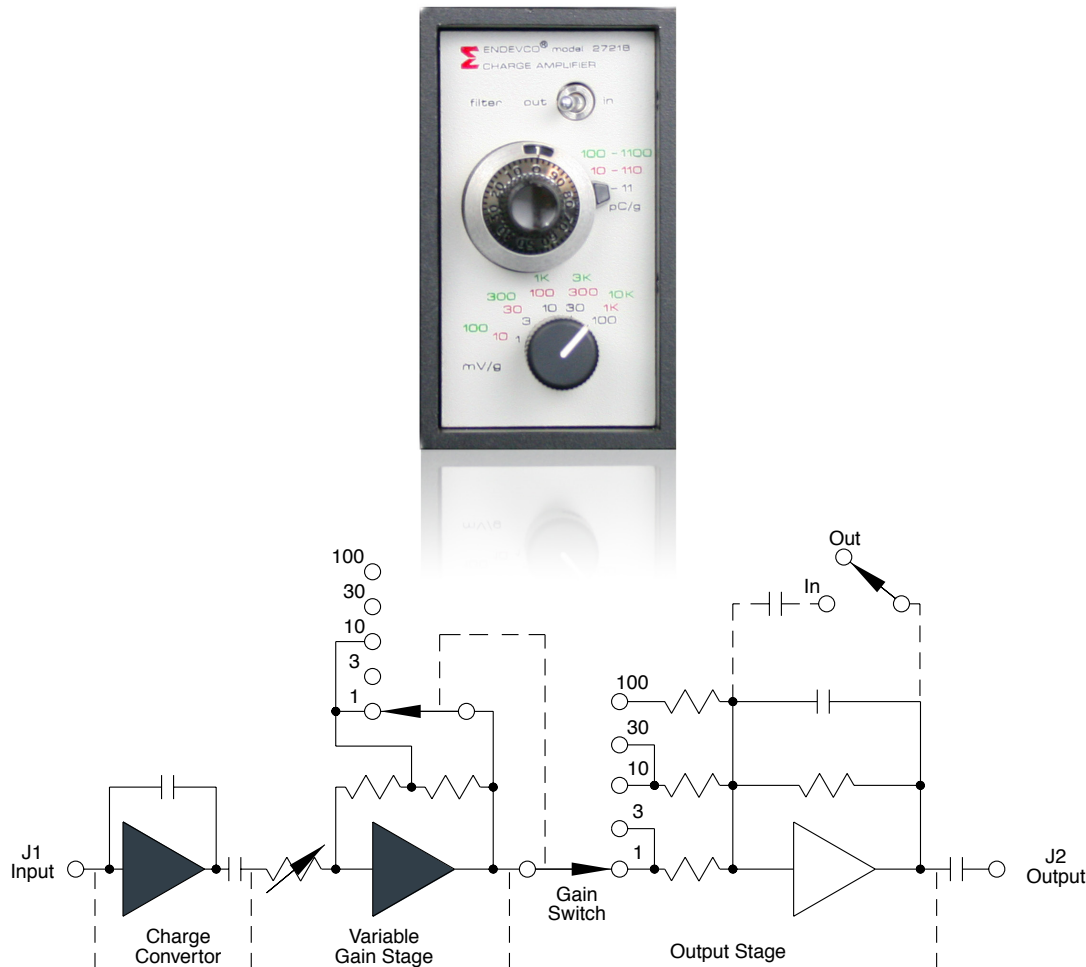


Laboratory charge amplifier

Model 2721B



Key features

- Front panel selectable filter
- Dial-in sensitivity for set output in mV/g
- Small unit for laboratory and field use
- Optional 19" rack mountable with adapter

The Endevco® model 2721B is a charge amplifier for use with piezoelectric transducers with resistance as low as 1kΩ. Its small size and ±15 VDC operation are suited to laboratory and field use. The output voltage of the amplifier is proportional to the charge at the input.

This amplifier features a flat frequency response from 3 Hz to 10 kHz, output signal decoupling, front panel switchable filter and range switching in mV/g. Operation is simple, just dial for the transducer sensitivity and select the desired gain switch position. The output is then normalized in mV/g. Up to nine model 2721B's may be powered from a single Endevco model 4221A AC operated power supply.

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Specifications

Inputs

Type	Piezoelectric single-ended with one side connected to circuit common
Impedance	1000 Ω minimum, 30 000 pF maximum
Input without overload	30 000 pC minimum
Input slew rate	1000 pC/μs

Outputs

Type	AC voltage, single-ended with one side connected to ground
Impedance	10 Ω ±10% in series with at least 8 μF
Linear voltage	10.0 V pk minimum for output loads of 5000 Ω or greater
Linear current	2.0 mA maximum
DC offset	50 mVDC maximum

Transfer characteristics

Gain accuracy	±1% (±2% with source impedance less than 10 kΩ or greater than 10 kF)	
Gain stability vs temperature	±0.02%/°F max	
Range		
High sensitivity transducers	100 to 1100 pC/g range	100, 300, 1K, 3K, 10K mV/g (green scale)
Medium sensitivity transducers	10 to 110 pC/g range	10, 30, 100, 300, 1K mV/g (red scale)
Low sensitivity transducer	1 to 11 pC/g range	1, 3, 10, 30, 100 mV/g (black scale)
Residual noise	Q noise (rms) = $\sqrt{Qa^2 + Qb^2}$ RTI or 100 μV maximum RTO where $Qa = .03 \text{ pC rms} + .008 \text{ pC rms}/1\text{nF}$ of input shunt capacitance, $Qb = 100 \div \sqrt{Rs} = \text{pC rms}$ (for shunt resistance [Rs] <100 kΩ)	
Frequency response	Flat within its bandwidth. The gain at the upper and lower cutoff frequency is 5% lower than the gain at 1 kHz.	

Lower cutoff frequency The lower cutoff frequency is dependent on the input shunt resistance as follows:

Maximum frequency	2721B
1 Hz	N/A
2 Hz	> 100 kΩ
5 Hz	10 kΩ to 100 kΩ
50 Hz	1 kΩ to 10 kΩ

Upper cutoff frequency 10 kHz

Environmental

Temperature	Operating: 32°F to 167°F (0°C to 75°C) Storage: -67°F to 185°F (-55°C to 85°C)
Humidity	95% R.H. maximum

Power:

This signal conditioner has been designed for use with the Endevco model 4221a power supply.

Supply voltage	±15 Vdc (±14 Vdc minimum, ±18 Vdc maximum)
Supply current	±7.5 mA DC (±9 mA maximum)

Physical

Dimensions	3.00" h x 1.75" w x 5.125" d [76.2 mm x 44.5 mm x 130.2 mm]
Weight	1 lb (450 gm) typical
Connectors	Input: Microdot type 10-32 Output: BNC type coaxial receptacle Power: Terminal strip with three #2-56 screw terminals.

Front panel controls

Range	Five position rotary switch selects the mV output per g input range.
Sensitivity	A potentiometer and a turns counting dial set transducer pC/g sensitivity
Filter enable/disable switch	Toggle switch selects an internal, single pole low pass filter.

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Accessories

21732 Accessory kit includes:
EH200—screw, mach, #4-40 x 1/4" (4 each)
EHR77—rubber stand-off feet (4 each)

Optional accessories

4221A Power supply-

Notes

1. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

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