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Model 4601 Low-Cost Charge Amplifier

The Columbia Model 4601 Charge Amplifier is a *Low Cost, High-Performance* instrument for general purpose use with piezoelectric transducers for the measurement of acceleration, force and dynamic pressure.

The Model 4601 features wide bandwidth, low noise, low output offset and a gain control calibrated directly in transducer sensitivity for easy setup.



Specifications

INPUT:

Connection	Microdot 50 series coaxial connector
Type	Single-ended, one side connected to circuit ground
Minimum Source Impedance	50 megohms
Maximum Input Capacitance	30,000 pF
Maximum charge input	5,000 pcmb. on two most sensitive ranges, 50,000 pcmb on remaining ranges

SCOPE/TAPE OUTPUT:

Connection	BNC connector
Type	Single-ended, one side connected to circuit ground
Output Impedance	10 ohms maximum
D.C. Offset Voltage	20 mV maximum
Full-scale Output Level	10 V peak-to-peak (+/- 5 V)
Maximum Output Voltage	20 V peak-to-peak minimum (+/- 10 V)
Maximum Output Current	10 mA maximum
Frequency Response	+/- 5% from 2 Hz to 20 kHz
Maximum Gain	500 mV/pcmb on most sensitive range, with Transducer Sensitivity control set to 1.00
Gain Accuracy	+/- 2%
Gain Ranges	1, 3, 10, 30, 100 and 300 g (or psi) full-scale with transducer sensitivity of 10 – 100 pcmb per g (or psi); and 10, 30, 100, 300, 1000 and 3000 g (or psi) with transducer sensitivity of 1 – 10 pcmb per g (or psi)
Residual Noise	Less than 5 mV RMS plus 3 mV RMS per 1000 pF of source capacitance
Harmonic Distortion	1% maximum

VARIABLE OUTPUT:

Same as Scope/Tape Output, except:

Gain Adjustment Adjustable from 0% to 105% of Tape/Scope Output

INDICATORS and CONTROLS:

Meter..... 2-1/2" jewelled movement
Meter Reading Accuracy +/- 4% of full scale
ON/OFF switch Integral with power entry module on rear panel
Power indicator LED indicates power on
Overload indicator LED indicator lights on 150% of full scale output
Transducer Sensitivity Control..... 10-turn potentiometer with calibrated dial
Range Switch..... 6- position rotary switch
Variable Output Adjustment 10-turn screwdriver adjustment

GENERAL:

Operating Temperature Range +40F to +125F
Power Requirements 105 – 125 VAC, 50-60 Hz, 15 W
(220 VAC available on request)
Power Connection Power entry module with integral ON/OFF switch
and EMI filter and removable line cord
Dimensions..... 5.5"H x 7" W x 10" D
Options Case with integral handle
Custom low-pass filter settings
(consult factory for price and availability)

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