



FE-077-DCA Differential Charge Amplifier

The FE-077-DCA is intended for application with double ended (differential) accelerometers typically used for machine vibration monitoring.

Calibrated to develop an output voltage proportional to input charge, versions are available with a sensitivity of 0.1mV/pC 1mV/pC or 10mV/pC . Setting accuracy is better than 0.1dB.

Utilising the ICP* technique, the amplifier is able to receive power and transmit the output signal down a single co-axial cable, and is compatible with equipment featuring the popular 4mA ICP source.

Dynamic range extends from the millivolt range up to 4V pk, with a frequency response from 2Hz to >20kHz.

Standard input connector is the TMW R04; a BNC socket is used for the output. Special connectors are available on request.

Differential Charge Amplifier
for ICP connection.



Capable of driving long cables.



0.1mV/pC, 1mV/pC & 10mV/pC versions



Wide frequency response.

*ICP is a registered trade mark of PCB Piezotronics Inc.

General

The FE-077-DCA is a Differential Charge Amplifier for use with differential piezo accelerometers, which operates using the Integrated Circuit Piezo (ICP principle). Thus the amplifier receives power and outputs an amplified signal down a single coaxial cable which can extend up to 50m without detriment to the signal quality. Alternatively, the amplifier will operate with multicore or twisted pair cables. An led situated next to the output BNC connector indicates connection status.

Specification

Input	Type	Differential, to suit balanced Piezo transducer
	Capability (1mV / pC version)	5000pC
Filter	CMR	>35dB (50Hz to 1kHz)
	Cable	Low noise carbon screened differential type. Sensitivity essentially independent of cable length.
Connector		R04 (alternatives available).
Sensitivity	Available settings	Med 1mV / pC. High 10mV / pC
	Accuracy	±1%
	Linearity	better than ±0.1%.
Noise level	2Hz - 10kHz	100µV pk (equiv. 0.001g pk for 100pC/g transducer.
LP Filter	Arrangement / Response type	Differential / Butterworth.
	Poles	2 (-12dB / octave in the stop band).
	Setting	>20kHz (-3dB)
HP Filter	Setting	2Hz (-3dB), 6Hz (-5%)
Output	Type	ICP
	Capability	Up to 3V RMS (Sinewave) >4V pk.
	Connector	BNC socket (alternatives available)
	Cable Type	Coax, multicore or twisted pair.
	Length	Sensitivity essentially independent of cable length. Capable of operation with 50m of RG174 coax.
Power supply	Requirement	ICP 18-24VDC @4 - 6mA ICP compatible.
	Indication	Red LED illuminates when ICP current flow correct.
Temperature	Range	0 - 50°C operating.
Mechanical	Dimensions / Weight	62mm (L) x 57mm (W) x 35mm (H) / 180g.
	Fixing	M4 button head screw 2.5mm Allen key.

