



FE-074-HA/C Charge Head Amplifier

For IEPE style connection.



0.1mV/pC to 10mV/pC versions available.



Capable of driving long cables.



Wide frequency response.



Low Noise (Typ. 0.007pC equiv.)

The Fylde FE-074-HA/C ICP Charge Amplifier is a unit intended for application as a head amplifier in IEPE type systems using nominally 2 - 4mA.

Designed for use with piezo type transducers, the 074-HA/C is calibrated to develop an output voltage proportional to input charge, measured in pico-coulombs.

Versions are available with a sensitivity of 1mV/pC and 10mV/pC (standard). 0.1mV/pC up to 5mV/pC versions are available to special order.

The unit will operate to transmit ac signals down low cost co-axial cable and is compatible with IEPE sources of 2 to 6mA.

The frequency response extends from approximately 1Hz to >50kHz with a dynamic range extending from the millivolt range through to 5V RMS.

Connection is BNC or micro-dot input and BNC output.

Description

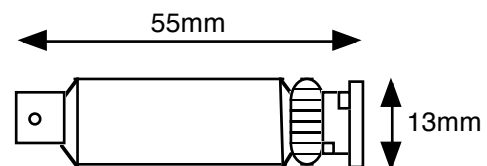
The FE-074-HA/C is an inline Charge head amplifier operating on the IEPE principle. The amplifier delivers its signal down a single coax which also serves to provide power for the amplifier from the (nominally) -6mA source situated in the receiving amplifier. It is ideal for applications with low signals in noise and vibration measurements originating in piezoelectric transducers.

Specification

Input	Sensitivity		1mV/pC, 5mV/pC & 10mV/pC available (See separate spec. for 0.1mV/pC).
	Accuracy		$\pm 0.5\%$ typ. $\pm 1\%$ max.
	Cable		Low noise cable - see text below.
	Connector		BNC socket (Microdot adaptor available).
Output	Supply		standard 4mA IEPE (2 - 6mA).
	Bias Level		10V DC $\pm 1V$.
	Protection		against reverse or over-voltage.
	Range		5V RMS (15V pk-pk) maximum.
	Cable		10,000pF maximum (100m coaxial cable).
	Connector		BNC plug.
Frequency response		(1mV/pC)	<0.7Hz to >50kHz -3dB.
		(5mV/pC)	<1Hz to >50kHz -3dB.
		(10mV/pC)	<1.25Hz to >50kHz -3dB.
Harmonic distortion			< 0.05%
Noise	Referred to O/P	(1mV/pC)	14 μ V RMS 1Hz - 60kHz measurement.
		(5mV/pC)	35 μ V RMS 1Hz - 60kHz measurement.
		(10mV/pC)	70 μ V RMS 1Hz - 60kHz measurement.
	Referred to I/P	(1mV/pC)	0.014pC RMS (0.00014g RMS for a 100pC/g transducer).
		(5 & 10mV/pC)	0.007pC RMS (0.00007g RMS for a 100pC/g transducer).
Physical	Temperature.		0°C to 70°C max operating.

General Arrangement

The amplifier is presented as an aluminium tube of external dimensions 13mm x 55mm including BNC socket input and BNC plug output.
An optional input BNC to Microdot adaptor is available.



Connection

The input should be connected to the piezoelectric transducer using low noise coaxial cable, having a special treatment to eliminate triboelectric induced noise. On cost grounds alone, the input cable length should be minimised, although up to 20m will cause no deterioration in performance. FYLDE are able to supply suitable input cables to order. An optional BNC to Microdot adaptor is available. The output may be connected using any convenient screened cable up to 100m long.

Verification

On connection to an IEPE source, the output should assume the specified bias voltage within 30s.