



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

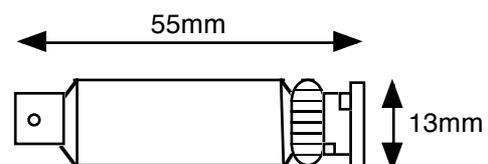
The FE-074-HA/C is an inline Charge head amplifier operating on the IEPE principle. The amplifier delivers its signal down a single coax which also serves to provide power for the amplifier from the (nominally) -6mA source situated in the receiving amplifier. It is ideal for applications with low signals 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 | | ± 0.5% typ. ±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 ±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) | 14µV RMS 1Hz - 60kHz measurement. |
| | | (5mV/pC) | 35µV RMS 1Hz - 60kHz measurement. |
| | | (10mV/pC) | 70µV 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.