Geo-Sense Filter/Gain Interface

Application & Functionality

- Interfaces the Geo-Sense UHR single channel mini-streamers to any Third Party recording system
- Provides high quality analogue frequency filters and a two-stage analogue gain

Operational Features

- Dedicated 4-pin connection to power the pre-amplifier of the Geo-Sense streamer and to receive the signal
- Standard BNC connections for signal output to any seismic recorder and signal input from any Third Party streamer
- Audio output to headphone on front panel
- Mains power 110-230 V AC / 50-60 Hz

General Features

The Geo-Sense filter/gain interface is designed to operate with the Geo-Sense mini-streamers and allows the Geo-Sense mini-streamers to be used with ANY digital recording system. The interface is also designed to accept signal input, via BNC cable, from any other type of streamer. It is a stand-alone unit that applies high quality, non-distorting analogue filters and two-stage gains to a single-channel seismic signal.

Analog Frequency Filtering

There are four settings for analogue filtering:
1) bandpass filter of 80 Hz - 2.5 kHz
   This is usually the best setting for the sparker spectrum. Other filter settings can be provided.

2) high-pass (low-cut) filter of 80 Hz
   To remove low frequency noise, it is usually sufficient to filter only the low frequencies, which are difficult to remove digitally.

3) low-pass (high-cut) filter of 2.5 kHz
   To cut out the high frequencies.

4) no filter

Analogue Gain

To minimise distortion and to avoid saturation, the seismic signal is amplified in two stages:
- 0-6-12-18 dB (four levels), the first stage gain is applied after the high-pass filter.
- 0-6-12-18 dB (four levels), the second stage gain is applied after the low-pass filter.

By using the maximum gain setting for both stages, you can achieve a total amplification of 36 dB.

Audio Control

You can now listen to your streamer using a headphone connected to the audio socket on the front panel. Often your ear can recognize the source of the noise.
Geo-Sense Filter/Gain Interface

**Filter & Gain Parameters**

- **First stage**: Switchable high-pass (low-cut) filter / 80 Hz 4th order
- **Second stage**: Switchable amplifier / 0-6-12-18 dB
- **Third stage**: Switchable low-pass (high-cut) filter / 2.5 kHz 4th order
- **Fourth stage**: Switchable amplifier / 0-6-12-18 dB

**Technical Data & Schematics**

**Dedicated Geo-Sense Streamer Connection**

The 4-pin connection is used for both the signal input from the streamer and the 12 V DC power supply to the streamer’s internal pre-amplifier. This power supply replaces the standard battery box (which is normally also provided with the mini-streamer).

The four pins are assigned as follows:

- **Pin 1**: +12 V DC power to pre-amplifier
- **Pin 2**: Ground shield (earth)
- **Pin 3**: Positive (+) signal from pre-amplifier
- **Pin 4**: Ground signal from pre-amplifier

**BNC Input and Output**

The two BNC connections at the rear of the unit are for the single-ended input from the streamer, and the signal output to any digital recorder (with four settings for signal level voltage peak to peak of 0.3, 1, 3 and 10 V).

**Optional Functions**

- Customised filter settings are available on request.