Acoustic Products

Acoustic Detector / QO-AD10

Acoustic Detector - Debris Listening Device

QO-AD42 is designed to facilitate the work of search and rescue teams in situations where people are likely to be trapped under debris, such as earthquakes or mining accidents. Using piezo technology, it amplifies sounds to a level that the human ear cannot perceive, allowing for the detection of faint noises emanating from beneath the rubble. This enables a clear identification of sounds made by individuals trapped under debris and increases the chances of reaching and aiding those who are injured. The product consists of two main components: a control computer and a detector. The control computer processes the sound received from the detector through various software algorithms and transmits it to a headset output, allowing the operator to hear the sounds. It also visually presents sound signals to the user through its oscilloscope software and touch screen. The incoming sound is filtered within the desired frequency ranges to eliminate external noise, allowing only the desired sounds to be heard. With FFT and spectrogram features, the incoming sound is analyzed on a frequency basis, helping to determine the source of the heard sound. All these features assist search and rescue teams in making quick and effective decisions. Additionally, the operator can record the sounds in high quality onto a MicroSD card for data retention and future analysis. The system operates on a 18650 battery, providing up to 10 hours of usage on a single charge. The applications of QO-AD42 are quite diverse. It is of vital importance in disaster scenarios like earthquakes and mining accidents and aids in search and rescue operations. It saves time for search and rescue workers, helping them detect and rescue individuals trapped under debris more rapidly.

Features

- User-Friendly Interface
- Up to 10 hours of continuous use on battery
- Precise Sound Detection with Sound Filtering Feature
- Audio Recording Feature with MicroSD Card
- Osilloscope, FFT, and Spectrogram features

Applications

- Earthquake Zone
- Mining Accidents
- Search and Rescue Operations
- Military Field Usage

Absolute Maximum Values and Characteristic Features (T_A = 25°C)

Parameter	Symbol	Min	Typical	Maks	Unit
Operating Time	Q_{OPR}	-	10	12	Hour
Charging Time	Q_{CHRG}	-	120	-	Minute
Operating Temperature	T_{OPR}	-10	-	50	°C
Storage Temperature	T_{STG}	-20	-	70	°C
Sampling Rate	F_{IN}	-	100	-	KHz
FFT Frequency Range	F_{FFT}	0	-	50	KHz