



Mini-Seis I and II Seismographs

*“The World’s Most Powerful, Rugged
and Economical Mini-Seismographs”*



Features and Capabilities

◆ Four Memory Models to Address Short and Long Term Monitoring Needs

Mini-Seis I 1.0M – 1.0 megabyte of memory.
Mini-Seis II 1/2M – 1/2 megabyte of memory.
Mini-Seis II 1/4M – 1/4 megabyte of memory.
Mini-Seis II 1/8M – 1/8 megabyte of memory.

Up to 341 blast events.
Approximately 150 to 250 blast events.
Approximately 50 to 100 blast events.
Approximately 10 to 20 blast events.

◆ Low Cost, Lightweight and Easy to Use

◆ Two Line, 40 Character Display and Six Key Keypad

◆ External Ground Motion Sensing Package and Acoustic Microphone

◆ Complimentary, Full-Featured Data Analysis Software For Windows (see inside for details)

◆ Major Features and Capabilities*

- Data access by direct serial connection or remote modem.
- Wave form and bar graph recording modes.
- Optional transducer gains for recording very low and very high vibration levels.
- Review event summary history for the last 341 events regardless of memory size.
- Long lasting, rechargeable internal battery.
- Sturdy case resistant to RF interference and convenient carrying case.
- Auto-Report feature by direct connection or modem.
- Print records on-site with many commercial, portable field printers.

**Meets or exceeds ISEE performance and calibration standards.*

MINI-SEIS I AND II SPECIFICATIONS

Microphone	Ceramic element rated to at least 160 dB.
Memory	Solid state with all summary data, setup parameters, and recorded wave form and bar graph data retained with power off. A lithium backup battery retains data if primary power fails.
Auto-Report	After receiving a trigger, the instrument will automatically send out a report indicating that one or more records need to be downloaded. This report can be sent directly through the serial connector or through a modem. When received, the Seismograph Data Analysis Software will process the report and automatically download the events.
Clock	A 24 hour clock maintains the date and time even if primary power fails.
Timer Mode	Allows an instrument to be active only during selected hours on a daily basis.
Display	The high contrast LCD has two lines of 40 characters to facilitate the instrument's setup. It also allows the operator to view operating parameters and summary data.
Keypad	Contains 6 keys for entering setup data and operating commands.
Power on Log	A log of the last 64 on/off cycles is kept in memory to indicate the active monitoring periods. If the timer is used, the log is updated each time it activates.
Battery	Internal 6 volt rechargeable.
Operating Time	With a fully charged battery all models will operate from 7 to 10 days at 1024 samples/sec.
External Battery	A deep cycle battery will keep the internal battery at full charge for several months at moderate temperatures.
Charging	An internal charging circuit allows charging with the supplied plug-in wall mount charger or any 10 to 15 volt DC supply. Power supplies for international use are available.
Operating Temperature	0 to 130 degrees F (-18 to 54 degrees C)
Case	Heavy gauge aluminum for effective electrical shielding and rugged protection.
Size	Approximately 7.5 in. x 4.5 in. x 2.5 in. (190 mm. x 114 mm. x 64 mm.)
Weight	Approximately 3.5 lbs. (1.6 Kg.) without accessories.
Weight w/Accessories	Approximately 6 lbs. (2.7 Kg.) including the storage case.
Records Stored	Approximately 10 to 341, 3 to 5 second duration blast events depending on memory.
Summary Data	Summarized data include the event time, date, battery voltage, peak measurements, unit serial number and frequencies.
Sample Rate	From 2048 to 32 samples per second per channel, depending on model.
Recording Units	English (U.S.) or metric.
Seismic Ranges	From 0.0013 ips to 40 ips (0.033 mmps to 1016 mmps) depending on transducer gain.
Acoustic Ranges	From 100 dB to 160 dB, depending on the microphone gain.
Trigger Levels	Seismic – from 0.0025 ips to 4.56 ips (0.064 mmps to 116 mmps) depending on the range. Acoustic – from 106 to 142 dB or 112 to 148 dB. Optional trigger levels from 118 to 154 dB and 124 to 160 dB are available.
Manual Trigger	Allows triggering from the keyboard or by an external input.
Record Duration	At 1024 samples per second, from 1 to 12 seconds depending on model. Changing the sample rate proportionally changes the duration.
Cal Test (Seismic)	A dynamic transducer test is performed automatically after each event or manually on command. The test is stored in the summarized data and may be downloaded as an event.
Cal Test (Acoustic)	An electronic test of the microphone is performed with the seismic test and is stored in memory along with the seismic test.
84 Hour Cal Test	In a remote installation, an automatic calibration test will occur if no event has been recorded for 84 hours.
RS232 Serial Port	Data can be downloaded and setup commands can be uploaded directly by computer or remotely by modem at baud rates from 1200 to 38.4K baud.

SEISMOGRAPH DATA ANALYSIS SOFTWARE FEATURES*

USER INTERFACE

- Easy to use menus and toolbar.
- View records in a list, in a list with graphics, or as thumbnails.
- Combine or separate wave form and bar graph records.
- Context sensitive on–line help system.
- English, French, Spanish and Italian language capability.

COMMUNICATIONS

- ▼ Download any White seismograph by serial connection or modem.
- ▼ Simple communications and downloading.
- ▼ Advanced communications for more downloading control, modem access, gain and eeprom modifications, seismograph setup and special functions.
- ▼ Enable automatic reporting of data by direct connection or modem.

WAVE FORM ANALYSES

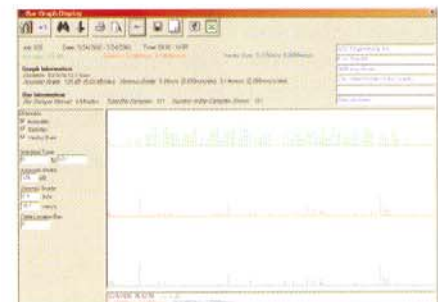
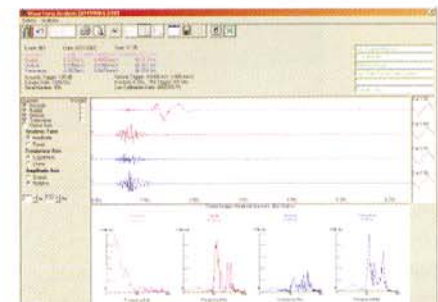
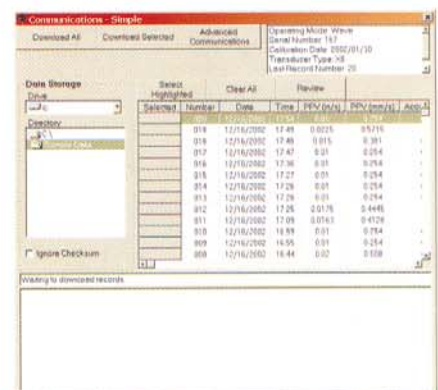
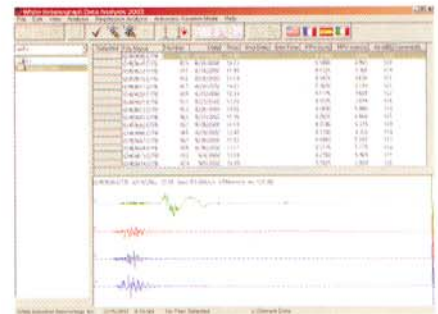
- ⇒ Standard presentation with time and amplitude scaling controls.
- ⇒ Fourier frequency analysis (FFT) amplitude or power spectrum (velocity, displacement and acceleration wave forms).
- ⇒ Velocity versus frequency curves (velocity, displacement and acceleration wave forms).
- ⇒ Compare characteristics and frequencies of two distinct wave forms.
- ⇒ Band pass filter acoustic and seismic channels.
- ⇒ Displacement and acceleration wave form conversion.
- ⇒ Pseudo response spectra (frequency based and wave form).
- ⇒ Power spectrum transfer function (for determining natural frequency).
- ⇒ French ponderation function.

BAR GRAPH ANALYSES

- Graphics presentation with time and amplitude scaling controls.
- Numerical list of data.

OTHER FEATURES

- ◆ Create custom velocity versus frequency criteria.
- ◆ Send reports to Microsoft Word or Excel.
- ◆ Process multiple wave form or bar graph records automatically.
- ◆ Create data summaries and multi–record transcriptions on a single page.
- ◆ Save records and analyses as text files.
- ◆ Regression analysis.
- ◆ File management functions – create directories, copy, move and delete files.



*Features listed apply to **Seismograph Data Analysis 2003** and higher versions. The software is available as a complimentary download from our web page at <http://www.whiteseis.com>, subject to the terms of the license agreement.



A Mini-Seis Testimonial



"I would like to take this opportunity to thank you personally for the outstanding support you have given to my company and me. Since I formed Quarrytech, Inc., I have monitored literally thousands of individual blast events and your instruments have worked flawlessly. Recently, an instrument that I had in a remote location in a metal box was damaged when the 12-volt battery in the box caught fire. The wires were literally burned off the transducer and the microphone melted. The paint on the seismograph box was charred. To my amazement, the instrument was still working and the data from previous blasts was intact."

Sincerely,

Jay Howard Heck, Sr.

Jay Howard Heck, Sr.
President – Quarrytech, Inc.

This testimony is one of many we have received over the years. While we don't suggest setting your seismograph on fire to test its durability, we were not surprised when Jay told us this story. In addition to being set on fire, our seismographs have been run over by heavy equipment, dropped off moving vehicles, hit by flyrock, and many other accidents which would have left other seismographs dead and useless.

No matter where you are in the world, the Mini-Seis can handle the inevitable rough handling resulting from the field monitoring of many tens of thousands of blasts. To date, after 15 plus years of supplying seismographs, we have not retired any seismographs due to failure from age.

For More Information Contact: White Industrial Seismology, Inc.
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