



Industrial Seismology, Inc.

Mini-Seis III Seismograph Specifications

General

Channels

Three (3) seismic channels and (1) acoustic channel standard (Optional 8 channel upgrade available).

Seismic (tri-axial geophone package)

Range

Standard 254 mm/s (10 in/s) .

Resolution

0.008 mm/s (0.0003 in/s).

Frequency Range (ISEE)

Varies with sample rate, from 2 to 250 Hz at 1024 samples/s.

Frequency Range (DIN)

Varies with sample rate, from 2 to 250 Hz at 1024 samples/s.

Accuracy (ISEE)

1 to 315 Hz (minimum 2048 sample rate needed).

Accuracy (DIN)

Conforms with the ISEE Performance Specifications for Blasting Seismographs.
DIN 45669-1 Standard.

Transducer Density

Approximately 2.01 g/cc (125 lb./ft³) .

Acoustic

Weighting

Linear Weighting or A Weighting.

Linear Range

58 to 148 dBL (512 Pa, 5.12 Mb, 0.074 PSI).

Linear Resolution

0.0156 Pa (0.000156 Mb, 0.00000023 PSI).

Linear Frequency Response

Varies with sample rate, from 2 to 250 Hz at 1024 samples/s.

Linear Accuracy

Conforms with ISEE Performance Specifications for Blasting Seismographs.

A-Weighting Range

66 to 134 dBA.

A-Weighting Resolution

0.02 dBA.

Timer

Allows an instrument to be active only during selected times on a daily basis.

Communication

USB Serial – baud rates from 1200 to 230400.

External Data Storage

Write to USB drive.

External Printing

A rechargeable external printer is available as an option.

System Log

A log is kept in memory to track the active monitoring periods and whenever important setup changes are made.

Waveform Modes

Modes

Waveform

Waveform, Manual, Auto, Snapshot, Waveform/Histogram.

Manual (under development)

Standard mode used for blast monitoring and discrete transient event monitoring.

Auto (under development)

Trigger from the keypad or an external switch. Multiple units can be chained together and triggered simultaneously (under development).

Snapshot (under development)

When triggered, the instrument will continue to record until the levels are below the trigger thresholds for some period of time (under development).

Waveform/Histogram

The instrument will trigger and record at user specified intervals (under development).

Sample Rate

A histogram is recorded while the instrument is in Waveform Mode (under development).

Duration

1024, 2048 and 4096 [rates of 8192, 16384 and 65536 (single channel) are under development.]

Pre-Trigger

1 to 60 seconds at 1024, 2048 or 4096 sample rate.

Minimum Trigger Levels

1 second at 1024 sample rate. The pre-trigger time decreases proportional to the sample rate.

Records Stored

Seismic - 0.127 mm/sec (0.005 in/s).

Downtime Between Events

Acoustic - 88 dBL, 68 dBA .

Dynamic Sensor Test

Varies depending on the sample rate and duration. The unit can store well over 1000 records at a 1024 sample rate and 5 second duration.

Automatic Sensor Test

There is no downtime or data loss between events regardless of the sample rate or duration.

A dynamic sensor test is performed at the end of every event. This test will appear in the pre-trigger of continuous events.

The unit will automatically generate a sensor test after a user-specified period of inactivity.

Histogram Modes

Modes

Histogram and Histogram/Waveform.

Histogram

Standard mode for recording discrete measurements from continuous and semi-continuous sources.

Histogram/Waveform

A waveform is recorded when one of the trigger thresholds is received.

Sample Interval

1, 10, 20, 30, 40, 50 or 60 seconds.

Data Stored

Channel peaks and their frequencies, also the vector sum.

Records Stored

Histogram data will vary depending on the sample interval. The unit can store approximately 100 eight hour days at a 10 second interval.

Dynamic Sensor Test

The number of waveform records that can be recorded is limited by the available memory.

A dynamic sensor test is performed at the beginning and end of every histogram.

Physical

Size

Approximately 15 cm. x 11.5 cm. x 9 cm. (6 in. x 4.5 in. x 3.5 in.).

Weight

Approximately 1.6 Kg. (3.5 lbs.) without accessories .

Approximately 2.7 Kg. (6 lbs.) with accessories including the storage case .

Battery

Internal 6 volt rechargeable.

Display

The high contrast graphics display facilitates the instrument's setup. It also allows the operator to view operating parameters and summary data.

Keypad

The alphanumeric keypad can be used to supply comments and setup data.

Clock

A 24 hour clock maintains the date and time to the second, even if the primary power fails.

Operating Time

With a fully charged battery the unit will operate from 7 to 10 days at 1024 samples per second. Longer times may be obtained using the timer mode or external power from a solar panel or deep cycle battery.

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).

Timer

Allows an instrument to be active only during selected times on a daily basis.

Communication

USB Serial – baud rates from 1200 to 230400 .

Remote Access

Compatible with any network device that supports serial or USB.

External Data Storage

Write to USB thumb drive.

External Printing

A rechargeable external printer is available as an option.

System Log

A log is kept in memory to track the active monitoring periods and whenever important setup changes are made. (this feature is working, but needs more development).

External Alarm

Supports attaching a strobe and/or horn when threshold levels are exceeded. (optional feature - not yet available).

Integrated GPS

Saves the latitude and longitude in the event summary and syncs the clock. (optional feature - not yet available).

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(Specifications May Be Subject To Change)