Minimate Pro 4™

Advanced Vibration, Air Overpressure and Sound Monitoring Using 4 Channels

With over 38 years of expertise, Instantel has set the industry standard with our vibration, air-overpressure and sound monitoring units. Our monitoring units are used worldwide enforcing our reputation as a global leader of tough, rugged and reliable products.

Key Features

- Monitor Remote Locations
  - Integrates seamlessly into Instantel's THOR/Vision Event Management Software
  - Auto Call Home relays your data straight to you or automatically posts the data to Vision

Sensor Options (Requires THOR Advanced Licence)

- ISEE Triaxial Geophone
- Triaxial Borehole Geophone
- ISEE Linear Microphone
- DIN Triaxial Geophone (1-80 Hz or 1-315 Hz)
- Sound Level Microphone

Sensor Options (Compliance)

- ISEE Triaxial Geophone
- Triaxial Borehole Geophone
- ISEE Linear Microphone
- DIN Triaxial Geophone (1-80 Hz or 1-315 Hz)
- Sound Level Microphone

Enhance Your Data Analysis Using Instantel’s THOR Advanced Software

- Reduce vibrations efficiently using the Signature Hole Analysis feature.
- Calculate the structural response based on a comparison of two waveforms recorded inside and simultaneously outside a structure.
- Calculate the effects of vibrations (Vibration Dose Value, VDV) with our Human Exposure Reports feature.

THOR Includes the Following Compliance Standards and Graphs

- Australia 2187.2-1993
- Brazilian Standard NBR 9653/2005
- British Standard 7385
- BS 6472:1992 (Curves 8,16,20,32,60,90,128)
- Criterio Prevencion (Une 22.381)
- Czech and Slovak Standard
- DIN 4150
- DIN 45669-1 (2010)
- Function de Pponderation
- GFEE + Ministere Environnement
- Harmonisaka Svangningar
- Indian CMRI, DGMS India (A) & (B)
- Indonesian SNI 7571:2010
- ISEE Seismograph Specification-2017
- New Zealand 4403:1976
- NOM-026-SESH-2007
- NZS/ISO 2631-2:1989 Combined curves
- QLD APP Standard
- Recommendation GFEE/GFEE+
- Swiss SN 640 312a (Mining/Pile Driving/Traffic)
- Toronto 514-2008
- Turkey Mining & Quarry
- USBM RI8507 And OSMRE
### General Specifications

<table>
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<tr>
<th>Minimate Pro Channels</th>
<th>Channels 1-3, ISEE or DIN Triaxial Geophone or various configurations of advanced sensors. Channel 4, ISEE Linear Microphone or Sound Level Microphone or a single channel advanced sensor.</th>
</tr>
</thead>
</table>
| **Geophone**          | **ISEE**  
| • Range               | Up to 254 mm/s (10 in/s)  
| • Resolution          | 0.00788 mm/s (0.00031 in/s)  
| • Frequency Range     | 2 to 250 Hz  
| • Accuracy            | From 2 to 4 Hz and 125 to 250 Hz: +5% to -3 dB of an ideal flat response, from 4 to 125 Hz: ±5% or ±0.5 mm/s (0.02 in/s) whichever is larger. Phase shift from 2.5 to 250 Hz <10% of maximum absolute value of 2 superimposed harmonic vibrations. |
| **Microphones**       | **ISEE Linear Microphone**  
| • Frequency Range     | 2 to 250 Hz  
| • Accuracy            | @ 2 Hz: -3 dB ± 1 dB, @ 3 Hz: -1 dB ± 1 dB, from 4 Hz to 125 Hz: ±1 dB, @ 200 Hz: +1 dB to -3 dB, @ 250 Hz: +1 dB to -4 dB  
| • Maximum Cable Length| 75 m (250 ft)  

| **Optional Advanced Sensors** | High Pressure Microphone, High Frequency Geophone, High Frequency Borehole Geophone, Uniaxial and Triaxial Accelerometers, Hydrophone (Please contact Instantel for more information). |

### Waveform Recording

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<thead>
<tr>
<th>Record Modes</th>
<th>Waveform, Waveform Manual</th>
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<tr>
<td>Seismic Trigger</td>
<td>0.13 to 254 mm/s (0.005 to 10 in/s)</td>
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<tr>
<td>Linear Acoustic Trigger</td>
<td>2.0 to 500 Pa (0.00029 to 0.0725 psi)</td>
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</tbody>
</table>
| Sound Level Microphone | 33 to 140 dB (A or C)  
| Sample Rate (per channel) | 512, 1,024, 2,048, 4,096, (with an advanced license: 8,192, 16,384, 32,768, 65,536) S/s (independent of record time)  
| Record Stop Mode      | Fixed record time, AutoRecord™ (see Auto Record Time below)  
| Record Time           | 1-9,000 seconds (1-30 seconds, then 30-second increments up to 9,000 seconds) plus a 0.25 second pre-trigger.  
| Auto Record Time      | Event is recorded until activity remains below trigger level for duration of auto window, or until available memory is full.  
| Cycle Time            | Recording uninterrupted by event processing, monitoring, or communication - no dead time below 65 KHz.  
| Storage Capacity      | 64 MBs. Optional 240 MBs.  
| Full Waveform Events  | 8,000+ 1-second events at 1,024 S/s sample rate (32,000 with extended memory)  

### Histogram Recording

<table>
<thead>
<tr>
<th>Record Modes</th>
<th>Histogram and Histogram-Combo™ (unit captures triggered waveforms while recording in Histogram mode)</th>
</tr>
</thead>
</table>
| Recording Interval    | 2 seconds up to 30 seconds (1-second increments), 30 seconds up to 60 minutes (30-second increments)  
| Histogram Storage Capacity | 800,000 intervals, (18.5 days at 2-second intervals, >2 years at 1.5-minute intervals)  
| Histogram Combo Storage Capacity | 30 days of Histogram recording at 1-minute intervals, and over 7,500 1-second waveform events at 1,024 S/s  

### Physical Specifications

| Dimensions            | 25.4(l) x 11.75(w) x 10.80(h) cm (10.00 x 4.63 x 4.25 in); length dimension includes connectors and dust caps  
| Unit Weight           | 2.27 kg (5 lbs)  
| Battery               | 10 Days  
| User Interface        | 10 domed tactile with separate keys for common functions  
| Display               | 7-line x 32-character, high-contrast, backlit LCD  
| PC Interface          | Ethernet® cable, supplied, for PC to unit connection or RS-232 with an optional USB adapter  
| External Trigger and Remote Alarm | External Trigger and Remote Alarm  
| Environmental         | -20 to 45 °C (-4 to 113 °F)  
|                      | -40 to 45 °C (-40 to 113 °F)  
| Water Resistance      | IP67 – submerse to 30 cm (1 ft) for 24 hours  
| Remote Communications | Supported modems: Sierra Wireless™ Airlink® RV-50, GX-400, LS-300. Automatically transfers events when they occur through the Auto Call Home feature, monitor start/stop timer.  
| Optional Features     | Factory installed, for time synchronizing event data. Provides stakeholders with secure, encrypted, access to event data, and allows instant sharing for time-sensitive projects.  
| Electrical Standards  | CE Class B. The Minimate Pro has been tested and passed IEC 61010-1 (2nd ed. 2001) (CB scheme test report available).