Micromate®

The Industry's #1 Selling Vibration Monitor

With over 40 years of expertise, Instantel has set the industry standard with our vibration, air-overpressure and sound monitoring units. The Micromate monitoring unit is used worldwide enforcing our reputation as a global leader of tough, rugged and reliable products.

Key Features

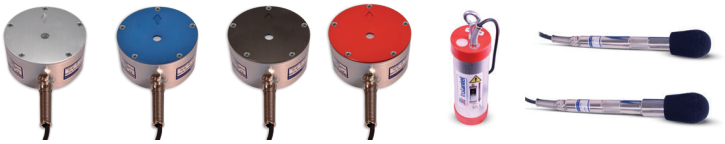
- Fits in the palm of your hand.
- Histogram-Combo mode captures full-waveform events in parallel to Histogram recording.
- Versatile USB Port for USB memory sticks, field printer, and modem.
- Large, easy-to-read, color touch-screen display.
- Can store over 1,000 events (4,000 with optional memory).
- Trigger multiple units within 1 sample of each other.
- Synchronizes Class 1 noise monitoring or air-overpressure and vibration data on the same monitoring unit.
- Internal battery lasting up to 15 days.
- Uninterrupted monitoring with zero dead-time between events.

Protective Boot

ISEE Geophone with a Linear Microphone or Sound Level Microphone

Range of Applications

- Construction
- Blasting
- Demolitions
- Pile Driving
- Compaction
- Heavy Transportation
- Environmental
- Tunnels and Subways
- Sound/Noise
- Structural
- Bridges



Available Sensors

Monitor Remote Locations

- Integrates seamlessly into theTHOR/Vision Event Management Software.
- Auto Call Home relays any Instantel unit's data to you via the THOR or Vision software.
- Schedule diagnostics, monitoring or Auto Call Home using the Scheduler tool in the THOR software.

Sensor Options

- ISEE Triaxial Geophone
- DIN Triaxial Geophone
- Triaxial Borehole Geophone
- Swedish Pile Driving Geophone
- Swedish Blasting Geophone
- ISEE Linear Microphone
- Sound Level Microphone

Enhance Your Data Analysis Using 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 Software 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 Ponderation
- GFEE + Ministère Environnement
- Harmoniska Svangningar
- Indian CMRI, DGMS India (A) & (B)
- Indonesian SNI 7571:2010
- ISEE Seismograph Specification (2022)
- New Zealand 4403:1976
- NOM-026-SESH-2007
- QLD APP Standard
- NZS/ISO 2631-2:1989 Combined curves
- Recommendation GFEE/GFEE*
- Swiss SN 640 312a (Mining/Pile Driving/Traffic)
- Toronto 514-2008
- Turkey Mining & Quarry
- USBM RI8507 And OSMRE

General Specifications

Micromate Unit Channels	Microphone and Triaxial Geophone (ISEE or DIN)	
Geophone	**ISEE**	**DIN**
• Range	Up to 254 mm/s (10 in/s)	Up to 254 mm/s (10 in/s)
• Response Standard	ISEE Seismograph Specification (2022)	DIN 45669-1
• Resolution	0.00788 mm/s (0.00031 in/s)	0.00788 mm/s (0.00031 in/s)
• Frequency Range	2 to 250 Hz	1 to 315 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.	DIN: 45669-1 standard
• Phase Response	Phase shift from 2.5 to 250 Hz <10% of maximum absolute value of 2 superimposed harmonic vibrations.	
• Transducer Density	2.2 g/cc (137 lbs/ft3)	
• Maximum Cable Length	1,000 m (3,280 ft)	
Microphones	**ISEE Linear Microphone**	**Sound Level Microphone**
• Weighting Scales	ISEE Linear Microphone	A-Weight or C-Weight
• Response Standard	ISEE Seismograph Specification (2022)	Fast (125 ms) or Slow (1 s)
• Range	Up to 500 Pa (0.0725 psi) [148 dB]	30 to 140 dB, max 160 dB (A or C)
• Resolution	0.0156 Pa (2.2662 x 10-6 psi) [0.05 dB]	0.05 dB (display limit 0.1dB)
• Frequency Range	2 to 250 Hz	10 Hz to 20 kHz
• 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	IEC 61672 Class 1
• Maximum Cable Length	75 m (250 ft)	75 m (250 ft)
• Temperature Range	-40 to 50 °C (-40 to 122 °F)	-10 to 50 °C (14 to 122 °F)

Waveform Recording

Record Modes	Waveform, Waveform Manual
Seismic Trigger	0.13 to 254 mm/s (0.005 to 10 in/s)
Linear Acoustic Trigger	2.0 to 500 Pa (0.00029 to 0.0725 psi) [100 to 148 dB]
Sound Level Microphone Trigger	33 to 140 dB (A or C)
Sample Rate	1,024 / 2,048 / 4,096 S/s per channel (independent of record time)
Record Stop Mode	Fixed record time, AutoRecord™ (see Auto Record Time below)
Record Time	1-90 seconds (programmable in one-second steps) plus a pre-trigger at 0.25, 0.50, 0.75, or 1.0 second
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 - zero dead time between events.
Waveform Storage Capacity	1,000 1-second events at 2,048 S/s (memory upgrade optional up to 4,000 1-second events at 2,048 S/s)

Histogram Recording

Record Modes	Histogram and Histogram-Combo™ (unit captures triggered waveforms while recording in Histogram mode)
Recording Interval	2 to 30 seconds (1-second increments), and 30 seconds to 30 minutes (30-second increments)
Histogram Storage Capacity	222,000 intervals (Examples: 5 days at 2-second intervals, 150 days at 1-minute intervals)
Histogram Combo Storage Capacity	30 days of Histogram recording at 1-minute intervals, and over 900 1-second waveform events

Physical Specifications

Dimensions	101.6 x 135.1 x 44.5 mm (4.15 x 5.32 x 1.75 in)
Unit Weight	0.5 kg (1.1 lbs)
Battery	10 day rechargeable lithium ion (optional 15 day battery upgrade available)
User Interface	10 domed tactile keys, colour touch screen, with display keyboard and dedicated shortcuts for common functions
Display	QVGA, 320 x 240 color touch screen
PC Interface	USB
Auxillary Inputs and Outputs	External Trigger and Remote Alarm (factory installed option)
Environmental	
• LCD Operating Temperature	-10 to 55 °C (14 to 131 °F)
• Electronics Operating Temperature	-40 to 45 °C (-40 to 113 °F)
• Operating Temperature	-40 to 55 °C (-40 to 131 °F) (LCD screen saver enabled and set to a maximum time-out of 2 minutes (Without USB sensors).
Remote Communications	Supported modems: Sierra Wireless™ Airlink® RV-55, GX-450, RV-50, GX-400, LS-300. Automatically transfers events when they occur through the Auto Call Home feature, monitor start/stop timer.
Optional Features	
• Printer	Precision high-resolution
• GPS	Synchronize time and download coordinates
• Vision (Cloud-Based Software)	Provides stakeholders with secure, encrypted, access to event data, and allows instant sharing for time-sensitive projects.
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Electrical Standards	CE Class B - The Micromate has been tested and passed IEC 61010-1:2010 (CB scheme test report available).

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