Micromate®

The Industry's #1 Selling Vibration Monitor

Instantel®

Micromate®

Seamlessly record vibration, sound/noise level, or air overpressure with just one monitoring unit. The Micromate monitoring device was custom engineered with a rugged and reliable design to withstand harsh conditions, including water-resistance. The Micromate unit can store up to 1,000 events, or upgrade to 4,000 events with the extended memory option.

Light and portable, it is small enough to fit in the palm of your hand and features a high resolution color touchscreen display with a QWERTY keypad. The built-in USB port allows you to connect a USB flash drive to transfer events or even update the unit's firmware - quickly, easily and all in the field without the need of a computer. With three channels for a triaxial geophone and one channel for an air overpressure or sound level microphone, the Micromate is the ideal choice for all your monitoring needs.

Events captured by the Micromate unit can be seamlessly uploaded to our Vision *II* cloud-based platform. With Vision *II*, take control of your monitoring projects–anytime, anywhere–with round-the-clock bi-directional connectivity. Remotely configure your Micromate units on any internet-connected device, including setting up of projects, and defining warning and alarm thresholds. The platform's customizable dashboards provide intuitive visualization of your data, simplifying the processes of storage, reporting, and analysis. With powerful tools like Live Data, you have immediate access to critical event information, helping you make timely decisions and take preventative actions before compliance thresholds are exceeded. Built with the user experience in mind, it streamlines your daily workflow, enhances decision-making, and keeps your entire project team informed–no matter where they are.

Small enough to fit in the palm of your hand, versatile enough for wherever you may need it.

Geophone Input

Auxiliary Port
Remote Alarm Wire
Trigger

Microphone Input

Built-in USB Port

PC Connection

5V Mini USB Power

A full range of applications:

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

Optional sensors and accessories to accommodate every requirement:

ISEE Triaxial Geophone (2-250 Hz)

DIN Triaxial Geophone (1-315 Hz)

Swedish Blasting Geophone (5-300 Hz)

Swedish Pile Driving Geophone (2-150 Hz)

Borehole Geophone ISEE (2-250 Hz) DIN (1-315 Hz)

Linear Microphone (2-250 Hz)

Sound Level Microphone (Class 1)

Micromate Optional Features

Print your reports in the field with our high-resolution compatible printer.

Synchronize time and download coordinates with GPS.

Our cloud-based software provides stakeholders with secure, encrypted access to event data, and allows instant sharing for time-sensitive projects.

The most rugged and reliable monitoring unit in the industry.

Record and store event data easily with uninterrupted monitoring and zero dead time between events.

Waveform Recording

Use this mode to record multiple events with no dead time between events, for example when recording blasting activity.

Histogram Recording

Use this mode to record over a long-term period, such as when you are monitoring pile driving operations.

Histogram-Combo

Use this mode to monitor activities that induce repetitive vibrations (Ex.: pile driving, dynamic compaction), and monitor triggered waveforms (Ex.: blasting).

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 seconds
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 interrupted by event processing, monitoring, or communication - zero dead time between events
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)
Storage Capacity	Histogram: 222,000 Intervals (Examples: 5 days at 2-second intervals,150 days at 1-minute intervals) Histogram-Combo: 30 days of Histogram recording at 1-minute intervals, and over 900 1-second waveform events

Specifications

General Specifications

Channels	Microphone and Triaxial Geophone (ISEE or DIN)
Geophone:	
Range	ISEE / DIN: Up to 254 mm/s (10 in/s)
Response Standard	ISEE Seismographic Specification (2022) DIN 45669-1
Resolution	ISEE / DIN: 0.00788 mm/s (0.00031 in/s)
Frequency Range	ISEE: 2 to 250 Hz DIN: 1 to 315 Hz
Accuracy	ISEE: 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: DIN 45669-1 standard
Phase Response	ISEE / DIN: Phase shift from 2.5 to 250 Hz <10% of maximum absolute value of 2 superimposed harmonic vibrations.
Transducer Density	ISEE / DIN: 2.2 g/cc (137 lbs/ft^3)
Maximum Cable Length	ISEE / DIN: 1,000 m (3,280.8 ft)
ISEE Linear Microphone:	
Weighting Scales	ISEE Linear Microphone
Response Standard	ISEE Seismograph Specification (2022)
Range	Up to 500 Pa (0.0725 psi) [148 dB]
Resolution	0.0156 Pa (2.2662 x 10^{-6} psi) [0.05 dB]
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 (246.1 ft)
Temperature Range	-40 to 50 °C (-40 to 122 °F)
Sound Level Microphone:	
Weighting Scales	A-Weight or C-Weight
Response Standard	Fast (125 ms) or Slow (1 s)
Range	30 to 140 dB, max 160 dB (A or C)
Resolution	0.05 dB (display limit 0.1 dB)
Frequency Range	10 Hz to 20 kHz
Accuracy	IEC 61672 Class 1
Maximum Cable Length	75 m (246.1 ft)
Temperature Range	-10 to 50 °C (14 to 122 °F)

Physical Specifications

Dimensions	101.6 x 135.1 x 44.5 mm (4.15 x 5.32 x 1.75 in)
Weight	0.5 kg (1.1 lbs)
Battery	10 day rechargeable lithium ion (15 day optional upgrade available)
User Interface	10 domed tactile keys, color touch screen, with display keyboard and dedicated shortcuts for common functions
Display	QVGA, 320 x 240 color touch screen
Computer Interface	USB
Auxiliary Inputs and Outputs	External Trigger and Remote Alarm (factory installed option)
Electrical Standard	CE Class B; the Micromate has been tested and passed IEC 61010-1-2010 (CB scheme test report available)
Remote Communications	Supported modems: Sierra Wireless™ Airlink® RV-55, RV50X, LX60

Strong Recommendation: While using modems, safe security measures should be undertaken, such as strong, unique passwords and the use of trusted IP addresses (IP allowlisting/whitelisting).

Environmental Specifications

LCD Operating Temperature	-10 to 55 °C (14 to 131 °F)	(LCD screen saver enabled and
Electronics Operating Temperature	-40 to 45 °C (-40 to 113 °F)	set to a maximum time-out of
Operating Temperature	-40 to 55 °C (-40 to 131 °F)	2 minutes without USB sensors.)

About Instantel

For over 40 years, Instantel has been a global leader with best-in-class vibration, noise and air overpressure equipment for quarries, mining, construction, civil, geotechnical and other applications. Our products are around the world, contributing to the success of our customer's projects in over 85 countries. From specialized sensors and recording options, to remote data collection and a cloud-based data hosting solution, Instantel continues a history of innovation and industry firsts.

Our Services

Calibration

We calibrate at every frequency on the spectrum, not just a subset, so you can be sure it is working in accordance with industry guidelines and specifications.

Service

Whether your unit is sent in for upgrades, calibration, or repairs, we pride ourselves in our quality workmanship.

Support

Instantel is dedicated to providing the highest quality of service through knowledgeable and responsive technical support. Browse our website's frequently asked questions (FAQ) for fast, easy information.

Order Your Micromate:

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Learn more about the Micromate.

www.instantel.com