

# Micromate Plus

featuring



and **Live Data**



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, environmental and other applications. Our products have contributed to the success of our customers' projects in over 85 countries and on countless sites. From specialized sensors and recording options, to remote data collection and a cloud-based data hosting solution, Instantel provides solutions that work.

We are proud of our position as an industry leader, boasting many industry firsts, but it does not stop there. We are committed to continuous improvement through innovation. We understand that our customers face challenging environments daily and need reliable data fast to ensure the success of their projects. We specialize in providing the tools that complete each project safely, quickly, and within compliance.

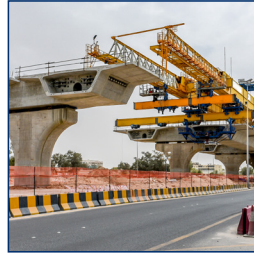
Our flexible product portfolio allows our customers to select the monitoring solution that best meets their needs - whether deep in the earth, above ground, or underwater.



Construction



Quarries



Civil Projects



Pile Driving



Blasting



Tunnels & Subways



Underground Mines



Oil & Gas Exploration



Remote Monitoring



Demolition

# A Better Way to Monitor

## Designed for Ease of Use

- Quick-access function keys for common operations
- Touchscreen icons
- Scheduling to the minute
- Seamless integration with Vision II software
- Multiple languages

## Time-Synchronized Sensors

- Simultaneously connect a geophone, air overpressure microphone and sound level microphone.
- Record both decibel levels (dB) and audio clips with the sound microphone (helps identify the source).

## Advanced Geophone Functionality

- Interchangeable geophones that are not tied to a specific base unit.
- One geophone meets multiple standards.
- Easily mount the geophone horizontally or vertically on a floor or wall.
- Switch between tri-axis and uni-axis mode in one geophone.

## Sensor Calibration

- Only the geophones and microphones require calibration, not the unit, allowing the Micromate Plus™ to remain in the field.
- With additional inventory, you can easily swap out your sensor with one that is already calibrated and avoid downtime.

## Rugged and Reliable

- Color-coded Mil-Spec connectors that can be used while wearing gloves.
- Aluminum case, IP68 rating, and protective boot (easily inserted and removed).
- -40°C to 55°C (-40°F to 131°F) operating temperature.
- Solar circuit supports a direct solar panel connection.

## Customizable Compliance Reporting

- Easily toggle between national and international standards, such as DIN and ISEE.
- With Vision II software, create user-defineable compliance reporting to meet any local requirements.

## Flexibility of Data Retrieval

- Online devices: Automatic upload of data via Wi-Fi or cellular connection to the Vision II platform.
- Offline devices: Built-in USB-C port to connect a thumb drive or a cabled link to a computer.

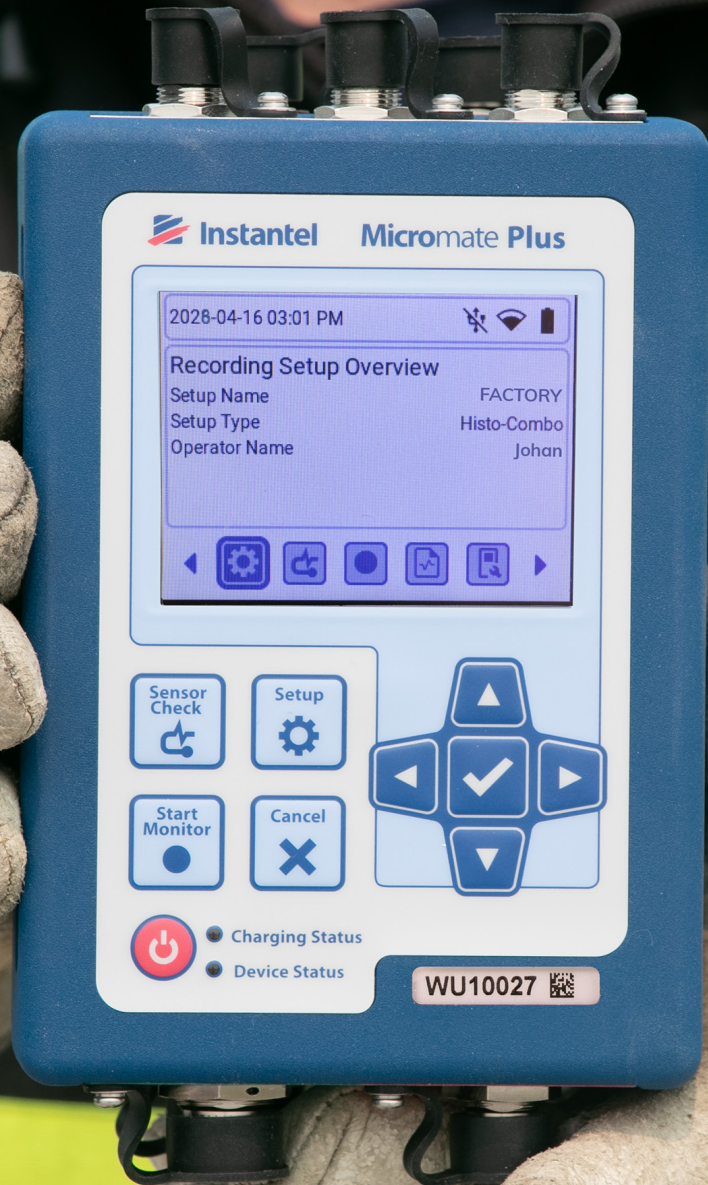
## Fail-Safe Keypad

- Permits in-field configuration, even if cellular coverage is not available.

## Built-In Features

- Wi-Fi Modem
- Cellular Modem
- GPS
- Supports direct solar panel connection
- USB-C for fast-charging or data transfer
- Optional AUX Port
- Fast-Charging Battery
- Touchscreen Interface
- Connectors for geophone, air overpressure microphone and sound level microphone

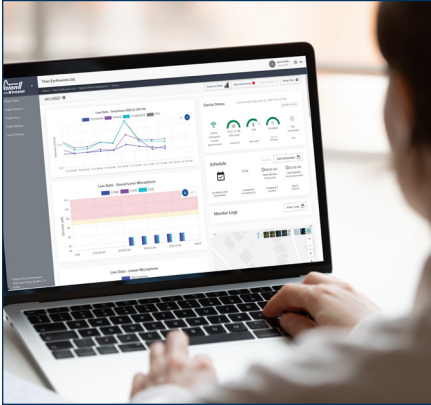
All with no locked-in monthly fees.





## Built-in Features Without Locked-in Fees

The Micromate Plus™ monitoring unit offers robust, reliable monitoring with built-in features, including a Wi-Fi and cellular modem, GPS, battery, and a solar charge controller. The USB-C port provides fast charging and facilitates data transfer when a wireless network is unavailable. Solar panels can be connected through the power port, and data retrieval is seamless with Vision // software—no monthly subscription fees are required.



## Flexibility of Data Retrieval

Your data gets uploaded automatically via Wi-Fi or cellular connection to the InstanTEL cloud-based Vision II platform. For offline devices, use the built-in USB-C port to connect a thumb drive or use a cabled link to a computer. There's always a way to get your data—24/7/365.





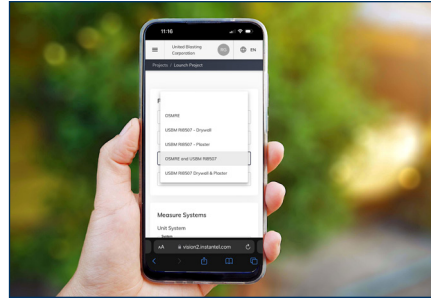
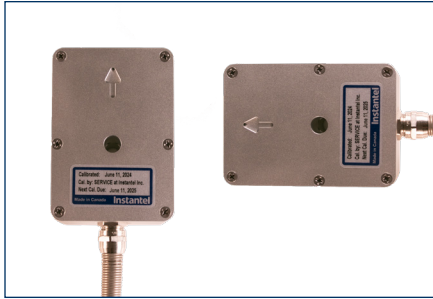
## Time-Synchronized Sensors

Simultaneously connect a geophone, linear microphone, and sound microphone to monitor all three in real time. You can also integrate third-party sensors to the Micromate Plus™. The sound level microphone is capable of recording both decibel levels (dB) and audio clips that allow you to easily identify the source of the noise.



Part# T24000  
Access Point  
SKU# 100010  
Base Color: INSTANTEL

InstanTel Micromate Plus



## Advanced Geophone Functionality

The geophones can easily be mounted horizontally or vertically on a floor or wall. Each geophone is configured to a full spectrum of industry standards to ensure you can use it for multiple projects. With Vision II software, easily toggle between one standard and the next as your project requirements change. Switch between triaxial and uniaxial configuration in one geophone.

## Sensor Calibration

Only the geophones and microphones require calibration, not the unit, allowing the Micromate Plus™ to remain in the field. With additional inventory, you can easily swap out your sensor with one that is already calibrated to avoid downtime.

## Designed for Ease of Use

The Micromate Plus™ is designed for effortless operation in your daily tasks. Its user-friendly interface features quick-access function keys for common operations, while seamless integration with Vision II software transforms the Micromate Plus™ into a comprehensive monitoring solution. Easily toggle between national and international compliance standards, such as ISEE and DIN, or create user-defineable compliance reports to meet any local requirements. Schedule your monitoring to the minute, and if you are in an area without a cellular connection, use the fail-safe keypad on the unit for in-field configuration.



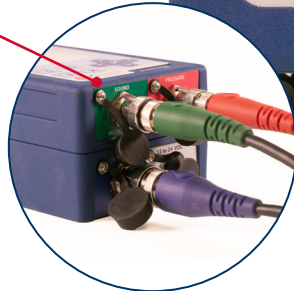
Rugged aluminum case with IP68 rating.

Fast-charging battery.

Easy-grip handgrips for transport.

Fail-safe keypad for in-field configuration.

Color-coded, robust Mil-Spec connectors for vibration, sound, and air overpressure, designed for easy use, even with gloves.



Dust caps on the connectors for added protection when not in use.

User-friendly screen with menu access for common functions while monitoring.

Designed for use with our cloud-based Vision II platform.

Serial number with bar code on the front of the unit for clear visibility even if the unit is in a protective boot.

Built-in Wi-Fi, GPS, Cellular, USB-C, and optional Aux Port.





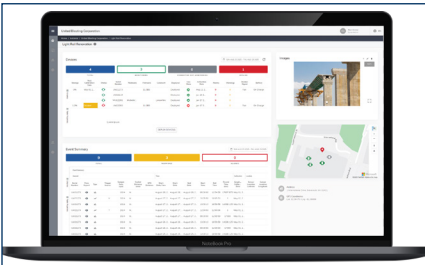
Built-in USB-C port for data transfer in areas without cellular connection.



The easy-to-install geophone is not tied to a specific unit and features multiple standards that you can toggle between. The same geophone can be floor or wall-mounted.



Connect a geophone, sound microphone and an air overpressure microphone at the same time for complete project management. Allows for future expansion of other sensors.



Monitor, plan, and change the unit settings remotely with Vision II software.



Color-coded Mil-Spec connectors feature robust internal pins for durability, a thumb guide for ease of use, and a dust cap that protects the connector when not in use.



Operating temperature range of -40 °C to 55 °C (-40 to 131 °F) provides the highest level of durability even in the most challenging applications.



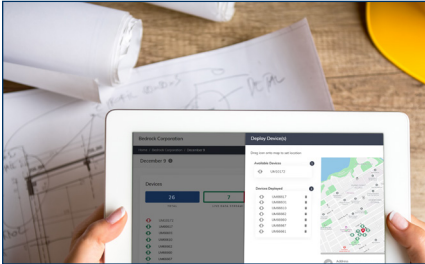
With our Vision // cloud-based monitoring platform featuring Live Data, turn your Micromate Plus™ into a complete monitoring system. Monitor vibrations, sound level, audio recording, and air overpressure all time-synchronized. Push or change the settings on any device with an internet connection. Manage your Micromate Plus™ from the convenience of your office, from your car, or on site — 24/7/365.

Each Micromate Plus™ includes the following standard software features with additional optional features<sup>1</sup> for advanced monitoring:



Company Management	Add and manage as many companies as required.
User Management	Add and manage as many users as required and assign roles and user groups.
Project Management	Add and manage as many projects as required. Manage project settings.
Compliance Reports	Utilize and publish standard compliance graphs to a PDF. Optional custom compliance settings (build a graph.)
Device Management	Add as many devices as required. Search devices, assign, or remove them from projects. Manage device settings.
Gauges for Critical Information	Dashboard view of monitoring type, storage, battery, modem signal strength and GPS connectivity.
Warnings and Alerts	Set limits for caution and exceedance and receive email warnings and alerts based on these limits.
Site Map	Visualize your entire project with an interactive map displaying the precise locations of all deployed devices.
Project Images	Add up to 50 images per project to help keep track of on-site installations.
Sensor Calibration Tracking	Quickly identify which sensors are due for calibration directly from the inventory screen, and use the summary donut at the top for a quick visual overview.

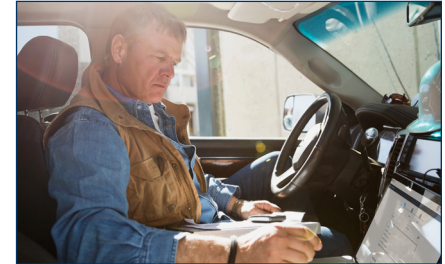
<sup>1</sup> See the Vision // Specification Sheet for complete feature details.



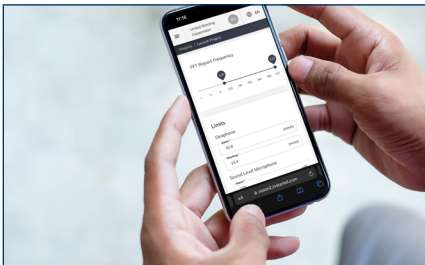
Device Management — Add your Micromate Plus™, deploy or remove it from a project. View its history and see if it requires calibration.



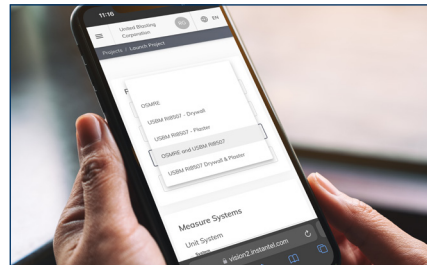
Live Data — Watch and monitor vibration, air overpressure, and noise levels in near real time, as if you were right there, on site. Optional feature.



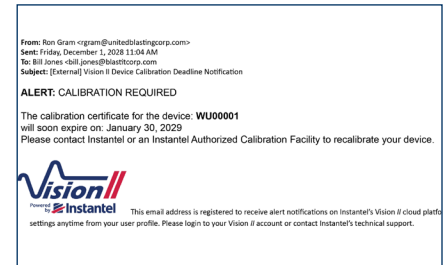
Project Management — Set up and configure your unit whether in the field, in the office, or your vehicle.



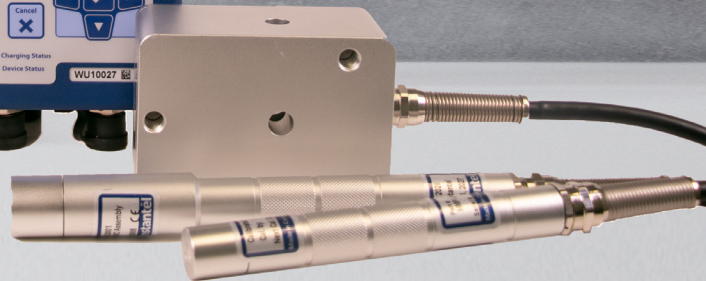
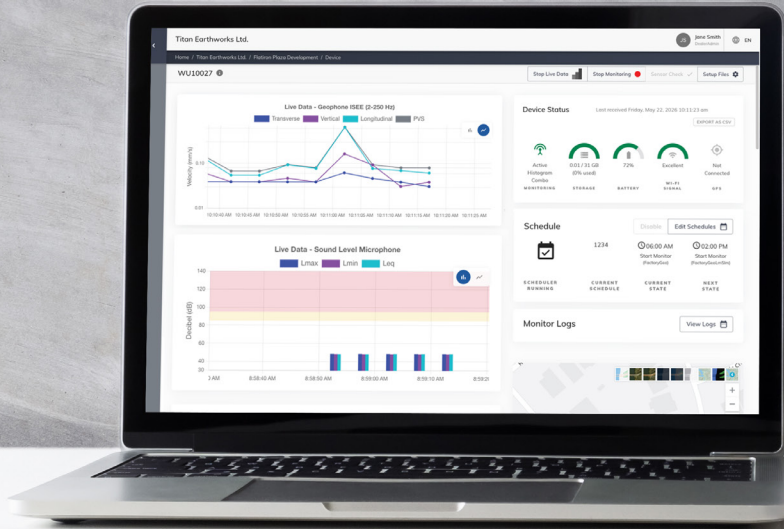
Avoid Fines and Prevent Project Shutdowns — Set up custom alerts and notifications for your Micromate Plus™ and take preventative action before exceedances occur.



Standards — Vision // includes a full set of industry standards, including ISEE and DIN, that you can toggle between and update the geophone from any device that has an internet connection.



Calibration Notices— Allows you to switch out the existing geophone with another one to avoid downtime.



# Product Specifications

## General Specifications

Micromate Plus Channels    Channels 1 to 3: Triaxial/Uniaxial Geophone  
 Channels 4 to 5: Sound Level Microphone and Audio Channel  
 Channel 6: ISEE Linear Microphone

Geophone	ISEE Mode	DIN Mode	Swedish Mode
Range	Up to 254 mm/s (10 in/s)	Up to 254 mm/s (10 in/s)	0.1 to 254 mm/s (0.003 to 10 in/s)
Response Standard	ISEE Seismograph Specification (2022)	DIN 45669-1	SS_25211 SS_4604866
Resolution	0.00788 mm/s (0.00031 in/s)	0.00788 mm/s (0.00031 in/s)	0.00788 mm/s (0.00031 in/s)
Frequency Range	2 to 250 Hz	1 to 80Hz	2 to 250 Hz, 5 to 150 Hz, 5 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.	1 to 315 Hz DIN 45669-1 Standard	<3% deviation Supports tri-axis and uni-axis modes
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 (3,280.8 ft)		

Microphones	Linear Microphone	Sound Level Microphone
Weighting Scales	-	A-Weight or C-Weight
Response Standard	ISEE Seismograph Specification (2022), SS25210 (1996)	Fast (125ms) or Slow (1s)
Range	2 to 1000 Pa (0.145 psi) [154 dB]	30 to 140 dB A or C
Resolution	0.0156 Pa (2.2662x10 <sup>-6</sup> psi) [0.05 dB]	0.05 dB
Frequency Range	2 to 250 Hz, 2 to 315 Hz	Up to 20 kHz
Accuracy	ISEE: 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 SS25210: 2 Hz: -3 dB slope 6 dB/octave, 315 Hz: -3 dB slope 12 dB/octave	IEC 61672 Class 1
Maximum Cable Length	75 m (246.1 ft)	75 m (246.1 ft)

## Optional Advanced Sensors

High Pressure Microphone, Uniaxial and Triaxial Accelerometers, Hydrophone  
 (Please contact InstanTel for more information).

## Other Sensors

Borehole Geophone

## Physical Specifications

Dimensions	20(l) x 11.9(w) x 8(h) cm (7.9 x 4.7 x 3.2 in); length dimension includes connectors and dust caps.
Unit Weight	2.27 kg (5 lb)
Battery	172 Wh
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-C
Auxiliary Inputs and Outputs	External Trigger and Remote Alarm
Environmental	
- LCD Operating Temperatures	-20 °C to 55 °C (-4 to 131 °F)
- Electronics Operating Temperature	-40 °C to 55 °C (-40 to 131 °F)
- Sound Level Microphone	-20 °C to 55 °C (-4 to 131 °F)
- Water Resistance	IP68 – submerge main unit to 30 cm (1 ft) for 24 hours, 1.5 meters (4.9 feet) for 1 hour. Not rated for continuous immersion.
Remote Communications	Built-in Cellular and Wi-Fi modems. Automatically transfers events when they occur.
Other Features	
- GPS	Factory installed, for time synchronizing event data, location stamping and geofencing (future).
- Vision II (cloud-based software)	Provides stakeholders with secure, encrypted, access to event data, and allows instant sharing for time-sensitive projects.
Electrical Standards	CE Class A

## Recording

### Waveform

Record Modes	Waveform, Waveform Manual
Storage Capacity	32 GB
Seismic Trigger	0.13 to 254 mm/s (0.005 to 10 in/s)
Linear Acoustic Trigger	2.0 to 1000 Pa (0.00029 to 0.145 psi) [100 to 154 dB]
Sound Level Microphone Trigger	33 to 140 dB (A or C)
Sample Rate (per channel)	1,024, 2,048, 4,096, S/s (independent of record time)
Record Stop Mode	Fixed record time, AutoRecord™ (see Auto Record Time below)
Record Time	2 - 90 seconds (plus pre-trigger)
Auto Record Time	An event is recorded until the vibration activity remains below the trigger level for the duration of the auto window. When the maximum of 90 seconds is reached, recording continues as a new event file.
Cycle Time	Recording uninterrupted by event processing, monitoring, or communication - zero dead time between events.
Maximum Event Storage	2,000: All 6 channels including audio using a 1-second pretrigger for a 3-second event at 2,048 S/s.

## Recording

### Histogram

Record Modes	Histogram and Histogram Combo™ (Unit captures triggered waveforms while recording in Histogram mode.)
Recording Interval	2 seconds up to 3600 seconds (1hour)

Refer to the Specification Sheet for complete information. Subject to change. \* Currently in development.



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# Our customers matter

We take pride in the level of service that we provide to our customers. Everything we do, from product training to support to pricing and product deliveries, is with our customers in mind.

## Our Services



### Calibration

We calibrate above and beyond industry standards, and not just on a subset, so you can be sure your unit 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, or contact our team of experts.

**Contact us for more information and pricing details.**

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