

Micromate Plus™

The future of monitoring today

With over 40 years of expertise, InstanTel has set the industry standard with our vibration, air-overpressure and sound monitoring units. The Micromate Plus monitoring unit reinforces our position as a market leader.

Key Features

- Equipped with an internal modem for cellular capability.
- Built-in Wi-Fi, GPS, USB-C.
- Use multiple sensors at the same time — connect a geophone, air overpressure microphone and a sound microphone for complete project management.
- Calibration is not required on the base unit allowing it to remain in the field. With an additional geophone inventory, you can easily swap out your geophone with one that is already calibrated and avoid downtime.
- One geophone is configured to all standards. Toggle between standards within Vision II.
- Easy floor or wall-mounting of the geophone
- Flexible Data Retrieval — using our cloud-based Vision II software platform uploaded via a cellular or Wi-Fi connection, directly from the unit using a portable USB-C drive, or by directly connecting to a computer.
- Months of battery life.
- Easy-to-use, fail-safe keypad for in-field configuration in areas without cellular coverage.
- Color-coded robust connectors for durability, a thumb guide for ease of use, and dust caps to protect the connectors when not in use.

Range of Applications

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

Monitor Remote Locations with Vision II Software

- Integrates seamlessly into Vision II software — monitor as if you were on site 24/7/365.
- Change settings on the unit without wait time on any device with an internet connection.
- Monitor vibrations, air overpressure, sound level, and audio recording, all time-synchronized.

Sensor Options

- Triaxial Geophone
- ISEE Linear Microphone
- Sound Level Microphone

Future Advanced Sensor Options

- High-Frequency Geophone
- High-Pressure Microphone
- Hydrophone
- High-Frequency Borehole Geophone
- Uniaxial and Triaxial Accelerometers

Vision II Software can Include Custom Graphs as well as International Compliance Standards and Graphs¹

- Australia 2187.2
- Brazilian Standard NBR 9653
- 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
- Function de Ponderation
- GFEE + Ministère Environnement
- Harmoniska Svängningar
- Indian CMRI, DGMS India (A) & (B)
- Indonesian SNI 7571
- ISEE Seismograph Specification
- New Zealand 4403
- NOM-026-SESH
- QLD APP Standard
- NZS/ISO 2631-2 Combined curves
- Recommendation GFEE/GFEE*
- Swiss SN 640 312a (Mining/Pile Driving/Traffic)
- Toronto 514-2008
- Turkey Mining & Quarry
- USBM RI8507 And OSMRE



Standard Sensors:
Triaxial Geophone
Sound Level Microphone
ISEE Linear Microphone

General Specifications

Micromate Plus Channels Channels 1 to 3: ISEE or DIN Triaxial Geophone.
Channels 4 to 5: Sound Level Microphone and Audio Channel, or two single-channel advanced sensors.
Channel 6: ISEE Linear Microphone or one single-channel advanced sensor.

Geophones

	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 the maximum absolute value of 2 superimposed harmonic vibrations.	
Transducer Density	2.2 g/cm ³ (137 lbs/ft ³)	2.2 g/cm ³ (137 lbs/ft ³)
Maximum Cable Length	1,000 m (3,280 ft)	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 1000 Pa (0.145 psi) [154 dB]	30 to 140 dB (A or C)
Resolution	0.0156 Pa (2.2662 x 10 ⁻⁶ psi) [0.05 dB]	0.05 dB
Frequency Range	2 to 250 Hz	Up 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 31672 Class 1
Maximum Cable Length	75 m (250 ft)	75 m (250 ft)

Recording

	Waveform	Histogram
Record Modes	Waveform, Waveform Manual	Record Modes Histogram and Histogram Combo™ (Unit captures triggered waveforms while recording in Histogram mode.)
Storage Capacity	32 GB	Recording Interval
Seismic Trigger	0.13 to 254 mm/s (0.005 to 10 in/s)	• 2 seconds up to 30 seconds (1-second increments)
Linear Acoustic Trigger	2.0 to 1000 Pa (0.00029 to 0.145 psi) [100 to 154 dB]	• 30 seconds up to 60 minutes (30-second increments)
Sound Level Microphone Trigger	33 to 140 dB (A or C)	Histogram
Sample Rate (per channel)	1,024, 2,048, 4,096, (with an advanced license: 8,192, 16,384, 32,768, 65,536) S/s (independent of record time)	Storage Capacity
Record Stop Mode	Fixed record time, AutoRecord™ (see Auto Record Time below)	200 million intervals (>12 years at 2-second intervals)
Record Time	1 - 86,400 seconds (plus pre-trigger)	Histogram-Combo
Auto Record Time	An event is recorded until the vibration activity remains below the trigger level for the duration of auto window, or until the available memory is full.	Storage Capacity
Cycle Time	Recording uninterrupted by event processing, monitoring, or communication - zero dead time between events.	1.8 million 1-second waveform events at 1,024 S/s. >20 years of Histogram recording at 1-minute intervals.
Full Waveform Events	1 million 1-second events at 2,048 S/s sample rate	

Physical Specifications

Dimensions	20.1 x 11.9 x 8.1 cm (7.9 x 4.7 x 3.2 in) LWH; length dimension includes connectors and dust caps
Unit Weight	2.27 kg (5 lbs)
Battery	172 Wh
User Interface	10 domed tactile keys, color touch screen, with display keyboard and dedicated shortcuts for common functions
Display	QVGA, 320 x 240 color touchscreen
PC Interface	USB-C
Auxiliary Inputs and Outputs	External Trigger and Remote Alarm
Environmental	
- LCD Operating Temperatures	-20 to 55 °C (-4 to 131 °F)
- Electronics Operating Temperatures	-40 to 55 °C (-40 to 131 °F)
- Water Resistance	IP68 – submerge to 30 cm (1 ft) for 24 hours, 1 meter (3.3 feet) for 1.5 hours.
Remote Communications	Built-in cellular modem and Wi-Fi to automatically transfer events when they occur.
Other Features	
- GPS	Factory installed, for time synchronizing event data, location stamping and geofencing.
- 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 B

1. Note: not all graphs may be available at the time of release.