Micromate®

The Industry’s #1 Selling Vibration Monitor!

With over 38 years of expertise, Instantel has set the industry standard with our vibration, air-overpressure and sound monitoring units. The Micromate 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.

Range of Applications
- Construction
- Blasting
- Demolitions
- Pile Driving
- Compaction
- Heavy Transportation
- Environmental
- Bridges
- Tunnels and Subways

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

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 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 Ponderation
- GFEE + Ministère Environnement
- Harmoniska Svangningar
- Indian CMRI, DGMS India (A) & (B)
- Indonesian SNI 7571:2010
- ISEE Seisograph Specification -2017
- 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 Channels

- **ISEE**
  - Up to 254 mm/s (10 in/s)
  - ISEE Seismograph Specification (2017)
  - 2 to 250 Hz
  - 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.

- **DIN**
  - Up to 254 mm/s (10 in/s)
  - DIN 45669-1
  - 0.00788 mm/s (0.00031 in/s)
  - 1 to 315 Hz

### Geophone

- **ISEE**
  - ISEE Linear Microphone
  - 2 to 250 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

- **DIN**
  - DIN Linear Microphone
  - 1 to 315 Hz

### Microphones

#### ISEE Linear Microphone

- **ISEE**
  - ISEE Linear Microphone
  - 2 to 500 Pa (0.00029 to 0.0725 psi [88 to 148 dB])
  - 0.0156 Pa (2.2662x10-6  psi)
  - 2 to 250 Hz
  - 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

- **DIN**

### Record Modes

- **Seismic Trigger**
  - Waveform, Waveform Manual
  - 0.13 to 254 mm/s (0.005 to 10 in/s)

- **Linear Acoustic Trigger**
  - 2.0 to 500 Pa (100 to 148 dB)

- **Sound Level Microphone**
  - Sample Rate: 33 to 140 dB (A or C)
  - Fixed record time, AutoRecord™ (see Auto Record Time below)

- **Auto 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
  - Event is recorded until activity remains below trigger level for duration of auto window, or until available memory is full.

### Waveform Recording

- **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)

- **Histrogram 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™ Airtlink® 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.

### 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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