

Micromate® Sound Level Microphone

Introduction

The Sound Level Microphone for Micromate, also called a noise microphone, can perform unattended monitoring of noise, such as building activities, construction, traffic, and mining operations. It is now possible to combine noise and vibration monitoring on the same unit, making the Micromate a cost effective and flexible monitor for these applications. The microphone ships with a microphone stand and windscreen.

The Instantel® Sound Level Microphone for the Micromate meets the requirements for IEC 61627 Class 1, which includes A and C weighted specifications. It has a measuring range from 30 to 140 dB with a Fast or Slow response. The record mode can be set to Manual trigger, Waveform (records up to 90 seconds once a preset trigger level has been exceeded), Histogram (with intervals from 2 seconds to 30 minutes) or Histogram-Combo (combining histogram and waveform monitoring at the same time).

The microphone connects directly to the Microphone port of the Micromate. This microphone can be connected directly to the unit or using an extension cable up to 75 meters (250 feet) long.



Sound Level Microphone

Package Contents

This kit contains one Instantel Microphone (Part No. 721A2301), microphone stand, microphone windscreen and this instruction sheet.

Tools and Materials Required

- Instantel Micromate monitoring unit
- Instantel Sound Level Microphone (Part No. 721A2301)
- Instantel Blastware Compliance Software
- Optional Extension Cables as required
- Optional Field Calibration

Physical Installation

1. (Optional) If required, assemble the stand.
2. Locate the microphone in the desired location.
3. Point the microphone in the direction of the sound or noise source.
4. Connect the red microphone cable connector to the red microphone port of the Micromate.
5. Perform a sensor check by touching the **Sensor Check** icon on the screen.
6. (Optional) If required, place the windscreen on the end of the microphone.

Specifications

Weighting	A-Weight or C-Weight
Frequency Range	Up to 20 kHz
Response	Fast (125 ms) or Slow (1 s)
Resolution	0.05 dB (display limit 0.1 dB)
Range	Automatic
Trigger Levels	33 dB to 140 dB
Temperature Range	-10° to 50°C (14° to 122°F)
Cable Length	6 ft. (2 m)
Maximum Amplitude	160 dB

Setting Up the Sound Level Microphone

Once the Sound Level Microphone has been attached to the Micromate, you can set it up on the Micromate, or through Blastware. Do one of the following:

- Follow the **Micromate Sound Level Microphone Setup** procedure below, then the **Micromate Trigger Level Setup** procedure.
- Follow the **Blastware Setup** procedure on the following page.

Micromate Sound Level Microphone Setup

NOTE: On the Micromate, you can use the touch screen or keypad to select items.

1. With the Sound Level Microphone connected to the Micromate, and the Micromate turned on, touch the **Setup** icon on the screen.
 2. Touch **View/Edit Current Setup**.
 3. Touch **Active Sensors** until either **Microphone** or **Geophone/Microphone** is selected.
 4. Touch **Microphone Type** until **Sound Level** is selected.
 5. Proceed to the **Micromate Trigger Level Setup** procedure below.
- When you exit the screen, you will be prompted to apply the changes to the setup file.

Micromate Trigger Level Setup

1. With the Sound Level Microphone connected to the Micromate, touch the **Setup** icon on the screen.
 2. Touch **View/Edit Current Setup**.
 3. Touch **Trigger Level**.
 4. Touch **Microphone Trigger** until **Enabled** is selected.
 5. Touch **Trigger Level**, then swipe up or down to move each digit in the selected spinner wheel.
 6. Touch the **Cancel** button to return to the previous screen.
 7. Touch **Response Time** until the desired response time (**Fast** (125 ms) or **Slow** (1 s)) displays.
 8. Touch **Frequency Weighting** on the screen until the desired frequency weighting (**A** or **C**) displays.
 9. Touch **LN1** on the screen, then swipe up or down to move each digit in the selected spinner wheel.
 10. Touch **LN2** on the screen, then swipe up or down to move each digit in the selected spinner wheel.
- NOTE** LN2 must be greater than LN1.

When you exit the screen, you will be prompted to apply the changes to the setup file.

Blastware Setup

1. Start Blastware.
2. Check the **Micromate** check box in the lower left corner of the main Blastware window.
3. Click the **Compliance Setup** icon on the toolbar.
4. On the **Micromate Recording Setup** tab, check the **Enable Sound Level Microphone** check box.
5. Check the **Enable Trigger** check box and type a level (in dBs) in the **Trigger Level** box.

NOTE When you select the **Trigger Level** box, the acceptable trigger range appears.

6. Check one of the following check boxes:
 - **A-Weighting**
 - **C-Weighting**
7. Check one of the following response time check boxes:
 - **Fast** (125 ms)
 - **Slow** (1 s)
8. To set statistical noise level **LN1**, type a percentage that is between 1-98 and is less than LN2.
9. To set statistical noise level **LN2**, type a percentage that is between 2-99 and is greater than LN1.
10. When complete, transfer the compliance settings to the monitor by clicking the **Send to Unit** button at the bottom of the dialog window.

Sound Level Microphone Field Calibration

It is the operator's responsibility to ensure that the optional Class 1 Sound Microphone (Part No. 721A2301) is calibrated. The Calibrate Sound Level Microphone function will calibrate a Sound Level Microphone (optional) in the field. The calibration date is set to the current date, and the name of the calibrator is set to "Field Calibration", which will appear on event reports. In order to use Calibrate Sound Level Microphone, Instantel recommends the following sound level microphone calibrators:

- Delta OHM HD9101 Class 1
 - Brüel & Kjaer Sound Calibrator Type 4231
 - Rion NC-74 Sound Calibrator
1. With the Sound Level Microphone connected to the Micromate, and the Micromate turned on, touch the **Setup** icon on the touch screen.
 2. Touch **Maintenance Menu**.
 3. Touch **Calibrate Sound Level Microphone**.
 4. Follow the instructions in the operator manual of the field calibration device to attach the field calibration device to the end of the microphone and set the reference to 94dB at 1kHz. Turn the calibrator on.

NOTE Remove the windscreen from the Sound Level Microphone before attaching the calibration device.

5. Touch the **Calibrate** button on the screen.
6. In the **Proceed with calibration** confirmation box, touch the **check mark** button on the screen.

NOTE The Micromate displays "Running Calibration".

7. When the calibration is finished, the Micromate displays "Field Calibration Complete" and displays the Sound Pressure, Gain, and Offset.
8. In the Field Calibration Complete confirmation box, touch the **check mark** button.

Warranty

All InstanTEL products come with a one-year warranty. Micromate monitors and sensors will have the warranty extended for a second year if they are returned to the InstanTEL factory for service and calibration within 30 days of the 'Next Calibration' date printed on the calibration label located on the product.

If within a period of one year from the date of shipment to a customer the instrument fails to perform in accordance with InstanTEL's published specifications and the operator's manual, due to a defect in materials or workmanship, it will be repaired or replaced at InstanTEL's option, free of charge. This warranty is void if the equipment has been dismantled, altered or abused in any way. This warranty is nontransferable.

The above warranty does not include any implied warranty of functionality for a particular purpose. InstanTEL assumes no responsibility for damages of any description resulting from the operation or use of its products. Since it is impossible to anticipate all of the conditions under which its products will be used either by themselves or in conjunction with other products, InstanTEL cannot accept responsibility for the results unless it has entered into a contract for services which clearly define such an extension of responsibility and liability. Any shipments returned directly to InstanTEL must have our prior approval and all packages must display the Return of Material Authorization (RMA) Number issued by InstanTEL. Shipping charges to InstanTEL's factory will be paid by the customer and those for return to the customer will be paid by InstanTEL. To protect your warranty, you must complete and return a Warranty Registration Certificate, or complete the online Warranty Registration Form, within ten days of purchase. Units will be assumed out of warranty if there is no warranty card on file at InstanTEL.

EC Warning

This is a CE Class B product. If this product is not used as outlined, it may cause radio interference.



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