Instruction Sheet

Uniaxial Accelerometer Adapter (Part No. 720A4901),
Triaxial Accelerometer Adapter (Part No. 720A5201)

Introduction
Instantel® provides two types of adapters for connections between accelerometers and Instantel Minimate Pro4™ or Minimate Pro6™ monitoring units.

The Uniaxial Accelerometer Adapter (Part No. 720A4901) allows you to connect one of the three supported accelerometers (0.5g, 50g and 500g) directly to the Minimate Pro4 or Minimate Pro6 monitoring unit. If additional Uniaxial Accelerometer Adapters are required, connect them to the monitoring unit using a Series IV 3-way splitter box (Part No. 720A5501). These configurations provide complete flexibility when installing the individual accelerometer sensors.

The Triaxial Accelerometer Adapter (Part No. 720A5201) allows you to connect up to three of the supported accelerometers (0.5g, 50g and 500g) to the Minimate Pro4 or Minimate Pro6 unit, in either a triaxial or uniaxial configuration.

Available Accelerometers
0.5 g Low Level Accelerometer
The 0.5 g Low Level Accelerometer (Part No. 714A7101) measures low level accelerations for sensitive monitoring applications including computer rooms, integrated circuit manufacturing, optical balances, and electron microscopes.

50 g and 500 g High Frequency Accelerometer
The High Frequency Accelerometers measure acceleration up to 50 g (Part No. 720A6301) or 500 g (Part No. 720A6401).

NOTE: Contact your Instantel Dealer Representative or Instantel for additional applications that can be monitored using accelerometers.

Package Contents
This kit contains:
• one Uniaxial Accelerometer Adapter (Part No. 720A4901), or
• one Triaxial Accelerometer Adapter (Part No. 720A5201).

Accelerometers are sold separately.

Tools and Materials Required
• Minimate Pro4 or Minimate Pro6
• Blastware Advanced software
• One or more accelerometers (0.5 g, 50 g, 500 g)
• Uniaxial or Triaxial Accelerometer Adapters as required
• Accelerometer cables as required
• (For triaxial configurations) Triaxial mounting block

WARNING: The 0.5 g Low Level Accelerometer (Part No. 714A7101) is a fragile sensor. To maintain the warranty, handle the accelerometer with care. Do not drop the accelerometer. For storage and shipping purposes, always use the supplied case and packing materials.
Specifcations

<table>
<thead>
<tr>
<th>Specification/Sensor</th>
<th>0.5 Low Level Accelerometer</th>
<th>50 g High Frequency Accelerometer</th>
<th>500 g High Frequency Accelerometer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amplitude Range</td>
<td>0.5 g</td>
<td>50 g</td>
<td>500 g</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>0.5 Hz to 500 (±3dB)</td>
<td>1 Hz to 3 kHz</td>
<td>1 Hz to 3 kHz</td>
</tr>
<tr>
<td>Nominal Sensitivity</td>
<td>6.4451998 V/g</td>
<td>0.064452 V/g</td>
<td>0.0064452 V/g</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.0000155 g</td>
<td>0.00155 g</td>
<td>0.0155 g</td>
</tr>
<tr>
<td>Minimum Trigger Levels</td>
<td>0.00032 g</td>
<td>0.032 g</td>
<td>0.256 g</td>
</tr>
<tr>
<td>Recommended Sample Rate</td>
<td>2048</td>
<td>16384 or greater</td>
<td>16384 or greater</td>
</tr>
<tr>
<td>Natural Frequency</td>
<td>815 Hz</td>
<td>≥ 22 kHz</td>
<td>≥ 38 kHz</td>
</tr>
<tr>
<td>Cable Length</td>
<td>1.8 m (6 ft) Accelerometer Cable (Part No. R6-2-JSA-6)</td>
<td>3 m (10 ft) Accelerometer Cable (Part No. 002C10)</td>
<td>3 m (10 ft) Accelerometer Cable (Part No. 002C10)</td>
</tr>
<tr>
<td>Maximum Amplitude</td>
<td>&lt; 10 g peak</td>
<td>+/- 10,000 g</td>
<td>+/- 10,000 g</td>
</tr>
<tr>
<td>Optional</td>
<td></td>
<td>Triaxial Mounting Adapter (Part No. 080A11)</td>
<td>Triaxial Mounting Adapter (Part No. 080A11)</td>
</tr>
</tbody>
</table>

Uniaxial Configuration Installation Procedures

There are multiple ways to install accelerometers for uniaxial monitoring. Follow the appropriate procedure for your desired configuration:

- To Install a Single Accelerometer in a Uniaxial Configuration
- To Install Multiple Accelerometers in a Uniaxial Configuration Using Uniaxial Accelerometer Adapters
- To Install Accelerometers in a Uniaxial Configuration Using a Triaxial Accelerometer Adapter

To Install a Single Accelerometer in a Uniaxial Configuration

Refer to Section A of the setup diagram on Page 4 for proper installation.

1. Install the accelerometer to measure in the axis of interest.
2. Connect the accelerometer to one of the following cables:
   - For the 0.5 g Low Level Accelerometer, Accelerometer Cable (Part No. R6-2-JSA-6, included with Part No. 714A7101).
   - For the 50 g or 500 g High Frequency Accelerometer, Accelerometer Cable (Part No. 002C10, sold separately).
3. Connect the Accelerometer Cable to the Uniaxial Accelerometer Adapter (Part No. 720A4901).
4. Proceed to the Monitoring Unit Setup procedure on Page 5.

To Install Multiple Accelerometers in a Uniaxial Configuration Using Uniaxial Accelerometer Adapters

Refer to Section B of the setup diagram on Page 4 for proper installation.

1. Install an accelerometer to measure in the axis of interest.
2. Connect the accelerometer to one of the following cables:
   - For the 0.5 g Low Level Accelerometer, Accelerometer Cable (Part No. R6-2-JSA-6, included with Part No. 714A7101).
   - For the 50 g or 500 g High Frequency Accelerometer, Accelerometer Cable (Part No. 002C10, sold separately).
3. Connect the accelerometer cable to the Uniaxial Accelerometer Adapter (Part No. 720A4901).
4. Repeat Steps 1-3 for each accelerometer.
5. Connect the Uniaxial Accelerometer Adapters to the Splitter Box (Part No. 720A5501).
6. Connect the Splitter Box to the Minimate Pro.
7. Proceed to the Monitoring Unit Setup procedure on Page 5.

If longer cables are required, Instantel recommends extending the shielded coaxial cable between the accelerometer and the Instantel accelerometer adapter.
To Install Accelerometers in a Uniaxial Configuration Using a Triaxial Accelerometer Adapter

You can use a Triaxial Accelerometer Adapter (Part No. 720A5201) to create a uniaxial configuration. Using this procedure, you can install a single accelerometer or multiple accelerometers.

Refer to Section C of the setup diagram on Page 4 for proper installation, however, do not attach the accelerometers to the Triaxial Mounting Adapter (Part No. 080A11) as pictured.

1. Install an accelerometer to measure in the axis of interest.
2. Connect the accelerometer to one of the following cables:
   • For the 0.5 g Low Level Accelerometer, Accelerometer Cable (Part No. R6-2-JSA-6, included with Part No. 714A7101).
   • For the 50 g or 500 g High Frequency Accelerometer, Accelerometer Cable (Part No. 002C10, sold separately).
3. Connect the accelerometer cable to the Triaxial Accelerometer Adapter (Part No. 720A5201).
4. Repeat Steps 1-3 for each accelerometer.
5. Connect the Triaxial Accelerometer Adapter cable to the Minimate Pro.
6. Proceed to the Monitoring Unit Setup procedure on Page 5.

Triaxial Configuration Installation Procedure

You can install 50 g or 500 g High Level Accelerometers in a Triaxial Configuration using the To Install 50 g or 500 g High Level Accelerometers in a Triaxial Configuration procedure.

NOTE: If you wish to install a 0.5 g Low Level Accelerometer in a triaxial configuration, contact Instantel for more information.

If longer cables are required, Instantel recommends extending the shielded coaxial cable between the accelerometer and the Instantel accelerometer adapter.

To Install 50 g or 500 g High Level Accelerometers in a Triaxial Configuration

Refer to Section C of the setup diagram on Page 4 for proper installation.
1. Connect the accelerometers to the Mounting Block (Part No. 080A11). Align the accelerometers, one each, to the transverse (Tran), vertical (Vert), and longitudinal (Long) axes.
2. Attach the mounting block at the point of interest securely.
3. Connect the 50 g or 500 g High Frequency Accelerometer to one of the Accelerometer Cable (Part No. 002C10, sold separately).
4. Connect each accelerometer cable to the Triaxial Accelerometer Adapter (Part No. 720A5201).
5. Connect the Triaxial Accelerometer Adapter cable to the Minimate Pro.
6. Proceed to the Monitor Setup procedure on Page 5.
Identifying the Sensitivity of Accelerometers

To set up monitoring units to use an accelerometer, you need the nominal sensitivity for the accelerometer. This is a calculated sensitivity value for use with Minimate Pro monitors. It is not the same sensitivity value that appears on the accelerometer manufacturer’s calibration report, provided with the sensor.

For Instantel accelerometers, the nominal sensitivity has been calculated, and appears in the Specifications table in this document.

To Determine the Sensitivity of an Instantel Accelerometer
- Consult the Specifications table in this document.

To Determine the Sensitivity of a Third-Party Accelerometer
1. Refer to the accelerometer’s calibration certificate for the actual sensitivity of the accelerometer.
2. Multiply the actual sensitivity by 0.64451998.
3. Proceed to the Monitoring Unit Setup procedure.

Monitoring Unit Setup

Once you have connected the accelerometer(s) to the monitoring unit and you have identified the sensitivity of your accelerometer by following one of the procedures above, follow the procedure below.

To Set Up a Monitoring Unit
1. Start the Blastware Advanced software.
2. Click the Advanced Setup button.
3. In the Sensitivity box for each channel, type the accelerometer sensitivity.
4. In the Sensor Settling Time box, type a settling time, in seconds.

NOTE: Setting a sensor settling time accommodates the fact that accelerometers require several seconds to stabilize after powering up.
5. Do one of the following:
   - For the 0.5 g Low Level Accelerometer (Part No. 714A7101), in the Sample Rate box, choose any rate.
   - For 50 g or 500 g High Frequency Accelerometers (Part No. 72002401 or Part No. 72002701), in the Sample Rate box, choose a rate of 16384 or greater.
6. To send the advanced settings to the monitoring unit, click the Send to Unit button.

NOTE: Auto Zero cannot be used with these accelerometers.

Warranty

All Instantel®, a division of Xmark, products come with a one-year warranty. Series III monitors (Blastmate III™, Minimate Blaster™, and Minimate Plus™), Series IV monitors (Minimate Pro4™ and Minimate Pro6™) 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 plant 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. Retain this portion and the proof of purchase for your records.

EC Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.