ACCUMEASURE™ Capacitance Probes

for ACCUMEASURE™ D series

up to 10x range extension

Standard and Custom Capacitance Probes Available
## Probe Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cable and Probe Temperature Rating:</strong></td>
<td>-130°C (-202°F) to 200°C (392°F). Cryogenic and higher temperature probes are available up to 1200°C - consult MTI Factory. A BNC to SMA adapter is required.</td>
</tr>
<tr>
<td><strong>Connector Temperature Rating:</strong></td>
<td>-65°C (-85°F) to 85°C (185°F).</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>±0.01% FSR or better, of range when probe and amplifier are calibrated to a known standard at x1 range extension.</td>
</tr>
<tr>
<td><strong>Probe and Cable Interchangeability:</strong></td>
<td>Accurate to within ± 0.2% at X1 range extension without recalibration.</td>
</tr>
<tr>
<td><strong>Pressure Rating Standard:</strong></td>
<td>1400 kPa (200 psig)</td>
</tr>
<tr>
<td><strong>Material:</strong></td>
<td>Stainless steel construction, no active internal electronics</td>
</tr>
<tr>
<td><strong>Cable Length</strong></td>
<td>1m (3.28') length - see below for extension cables. Connector type probes require selection of cable assembly upon ordering.</td>
</tr>
</tbody>
</table>

1. As range extension increases linearity decreases. Probe resolution is approximately 0.000000085 V/F SR. Noise increases proportionally to range extension selected. X2 range extension will decrease resolution by 2X. Increasing the averaging function will decrease noise but also decrease the amplifier’s bandwidth (consult user manual). Decreasing the probe’s cable length will also increase system noise and decrease resolution proportionally.

2. Contact factory to increase ILA/ILR/PSR cable to non-standard cable lengths, or purchase the optional special low noise probe extension cable (information on brochure). Extension cables do not require an adapter as they are male to female SMA connectors.

## Probe Style

- **Connector Type: Radial**
  - An SMA connector is built in to the probe. The cable is connected to the capacitive sensor with a connector and it exits the probe radially.

- **Integral Lead: Radial**
  - The cable is low-noise highly flexible silicone integral to the ILR probe and exits the probe radially.

- **Connector Type: Axial**
  - The cable is connected to the CTA capacitive sensor with a connector and it exits the probe axially.

- **Integral Lead: Axial**
  - The cable is low-noise highly flexible silicone integral to the ILA probe and exits the probe axially.

- **Pan Cake Square: Radial**
  - The PSR probe is thin, the cable is low-noise highly flexible silicone integral to the PSR probe and exits the probe radially.
### Measuring Range

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>PRODUCT #</th>
<th>Min. Range</th>
<th>Max Range</th>
<th>E</th>
<th>D</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>µm</strong></td>
<td><strong>mils</strong></td>
<td><strong>mm</strong></td>
<td><strong>Inch</strong></td>
<td><strong>mm</strong></td>
</tr>
<tr>
<td><strong>25 µm</strong></td>
<td><strong>1 mil</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASP-25M-CTR</td>
<td>8100-1001-000</td>
<td>1.27 0.05</td>
<td>10x 0.043</td>
<td>9.49</td>
<td>0.374</td>
<td>25.50</td>
</tr>
<tr>
<td>ASP-25M-ILR</td>
<td>8100-3001-4XX</td>
<td>1.27 0.05</td>
<td>9x 0.043</td>
<td>2.39</td>
<td>0.094</td>
<td>9.50</td>
</tr>
<tr>
<td><strong>Resolution at 50Hz RMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>0.2 nm</strong></td>
<td><strong>0.008 µi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASP-25M-CTR</td>
<td>8100-0001-000</td>
<td>1.27 0.05</td>
<td>10x 0.043</td>
<td>6.39</td>
<td>0.251</td>
<td>63.50</td>
</tr>
<tr>
<td>ASP-25M-ILR</td>
<td>8100-2001-4XX</td>
<td>1.27 0.05</td>
<td>9x 0.043</td>
<td>2.39</td>
<td>0.094</td>
<td>9.50</td>
</tr>
<tr>
<td><strong>Resolution at 5kHz RMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1.5 nm</strong></td>
<td><strong>0.059 µi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASP-25M-CTR</td>
<td>8100-1001-000</td>
<td>1.27 0.05</td>
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</tr>
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<td><strong>Resolution at 5kHz RMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 nm</strong></td>
<td><strong>0.118 µi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>ASP-25M-CTR</td>
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<td>6.39</td>
<td>0.251</td>
<td>63.50</td>
</tr>
<tr>
<td>ASP-25M-ILR</td>
<td>8100-2001-4XX</td>
<td>1.27 0.05</td>
<td>9x 0.043</td>
<td>2.39</td>
<td>0.094</td>
<td>9.50</td>
</tr>
</tbody>
</table>

*XX indicates the length of the cable, which can be customized. Example: a product number ending with a 415 would result in a cable that is 1.5 meters in length.
Measuring Range
500 µm  20 mils

Resolution at 50Hz RMS
3 nm  0.118 µi

Resolution at 5kHz RMS
30.1 nm  1.185 µi

Resolution at 50Hz RMS
7.5 nm  0.295 µi

Resolution at 5kHz RMS
75.1 nm  2.957 µi

Max Range
µm  mils

Extension
mm  Inch

L
PRODUCT CODE PRODUCT # Min. Range Max Range E D L
ASP-500M-CTR 8100-1005-000 25.4 1 3x 5.00 0.197 11.00 0.433 25.50 1.004
ASP-500M-ILR 8100-3005-4XX 25.4 1 2x 5.00 0.197 7.99 0.315 9.50 0.374
ASP-500M-CTA 8100-0005-000 25.4 1 4x 5.00 0.197 11.00 0.433 63.50 2.500
ASP-500M-ILA 8100-2005-4XX 25.4 1 2x 5.00 0.197 7.99 0.315 9.50 0.374

Measuring Range
1250 µm  50 mils

Resolutions at 50Hz RMS
7.5 nm  0.295 µi

Resolution at 5kHz RMS
150.3 nm  5.917 µi

Max Range
µm  mils

Extension
mm  Inch

L
PRODUCT CODE PRODUCT # Min. Range Max Range E D L
ASP-1250M-CTR 8100-1006-000 63.5 2.5 2x 7.99 0.314 25.00 0.984 25.50 1.004
ASP-1250M-ILR 8100-3006-4XX 63.5 2.5 2x 7.99 0.314 25.00 0.984 9.50 0.374
ASP-1250M-CTA 8100-0006-000 63.5 2.5 2x 7.99 0.314 25.00 0.984 63.50 2.500
ASP-1250M-ILA 8100-2006-4XX 63.5 2.5 2x 7.99 0.314 25.00 0.984 9.50 0.374

Measuring Range
2500 µm  100 mils

Resolution at 50Hz RMS
15 nm  0.591 µi

Resolution at 5kHz RMS
150.3 nm  5.917 µi

Max Range
µm  mils

Extension
mm  Inch

L
PRODUCT CODE PRODUCT # Min. Range Max Range E D L
ASP-2500M-CTR 8100-1007-000 127 5 2x 11.25 0.443 25.00 0.984 25.50 1.004
ASP-2500M-ILR 8100-3007-4XX 127 5 2x 11.25 0.443 25.00 0.984 9.50 0.374
ASP-2500M-CTA 8100-0007-000 127 5 2x 11.25 0.443 25.00 0.984 63.50 2.500
ASP-2500M-ILA 8100-2007-4XX 127 5 2x 11.25 0.443 25.00 0.984 9.50 0.374

Measuring Range
5000 µm  200 mils

Resolution at 50Hz RMS
30.1 nm  1.185 µi

Resolution at 5kHz RMS
30.1 µm  1.185 µi

Max Range
µm  mils

Extension
mm  Inch

L
PRODUCT CODE PRODUCT # Min. Range Max Range E D L
ASP-5000M-CTR 8100-1008-000 254 10 2x 15.93 0.627 38.00 1.496 25.50 1.004
ASP-5000M-ILR 8100-3008-4XX 254 10 2x 15.93 0.627 38.00 1.496 9.50 0.374
ASP-5000M-CTA 8100-0008-000 254 10 2x 15.93 0.627 38.00 1.496 63.50 2.500
ASP-5000M-ILA 8100-2008-4XX 254 10 2x 15.93 0.627 38.00 1.496 9.50 0.374

*XX indicates the length of the cable, which can be customized. Example: a product number ending with a 415 would result in a cable that is 1.5 meters in length.
Probe Recommended Stand-off Ranges

Specify Range Extension Required
Inform MTI the range extension upon ordering (1x, 2x, 3x and 8x) **Default = 1x and 2x**

### Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA female to BNC male Adapter (for MTI Analog Amplifiers)</td>
<td>8000-6890</td>
</tr>
<tr>
<td>BNC female to SMA male Cable (for legacy probes)</td>
<td>8000-6892-201</td>
</tr>
<tr>
<td>T Connector (for multiple Synchronization)</td>
<td>8000-6889</td>
</tr>
<tr>
<td>Synch Cable (1.8 meters)</td>
<td>8000-6888</td>
</tr>
<tr>
<td>Special Low Noise Probe Extension Cables</td>
<td></td>
</tr>
<tr>
<td>- SMA male to SMA female</td>
<td></td>
</tr>
<tr>
<td>1 meter</td>
<td>8000-6891-210</td>
</tr>
<tr>
<td>2 meters</td>
<td>8000-6891-220</td>
</tr>
<tr>
<td>4 meters</td>
<td>8000-6891-240</td>
</tr>
</tbody>
</table>

**Description**

**Product Number**

- **24 VDC Power Supply**: 8000-6925
- **D Series SDK (DLL, .NET and NI LabVIEW™)**: 8000-6831
- **Amplifier Calibrator (probe simulator for amplifier checking)**: 8000-4111-D
- **KD-CH-4D Calibration Fixture**: 8000-6952
- **Ethernet Cable (1.8 meters)**: 8000-6887
- **USB-A to Micro USB-B (1 meter)**: 8000-6929
- **DIN rail (to mount amplifier)**: 8000-6882

**KD-CH-4D calibrator**

A precision fixture that secures a non-contact displacement sensor and accurately varies the position of a target relative to the sensor. It provides an excellent means of obtaining calibration data at the user's facility.

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**Compatible with**

**ACCU MEASURE™ D series**

**Capacitance Amplifier**

True Direct Digital Capacitive Displacement Sensor
Up to 0.01% FSR Linearity

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