

# Accumeasure D200HD

Picometer Resolution Capacitance Measurement System



# ACCUMEASURE D200HD

The D200HD is a two-channel, picometer scale, capacitance based, displacement measurement instrument for conductive targets.

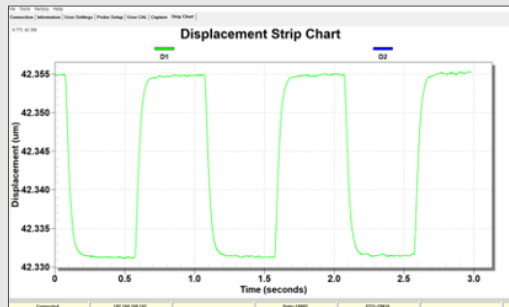
The D200HD achieves very high resolution with the aid of external preamplifiers that are located close to the probes that eliminate parasitic capacitance effects which cause noise. Digital communication is provided via Ethernet or USB. The bandwidth and range extension of the probes are digitally programmable. Resolutions as low 20pm may be achieved with a 10um range probe.

## Key Specifications:

<b>Resolution</b>	$\leq 0.0000001 \sqrt{\text{Hz}}$ FSR
<b>Temp</b>	Amplifier useable from 0-40°C, Preamp up to 50°C, Probes up to 150°C
<b>Drift</b>	< 200 PPM / ° C (Amplifier & Probe Preamp )
<b>Probe Standoff</b>	10% of specified probe range
<b>Linearity</b>	$\pm 0.01\%$ FSR (at 1X)
<b>Range extensions</b>	Up to 5X, and up to 10 range extensions per channel (2 standard)
<b>Digital Frequency response</b>	5kHz

## Displacement Strip Chart

Shown is an actual 25nm displacement signal at 10Hz bandwidth. The resolution is 200 pico meters pk-pk with a 50  $\mu\text{m}$  range probe using a 2X extension (100  $\mu\text{m}$  total range).



# What's in the Box



Ethernet cable  
dR network



Cable  
USB A to Micro-B



Connector  
12 pos terminal block

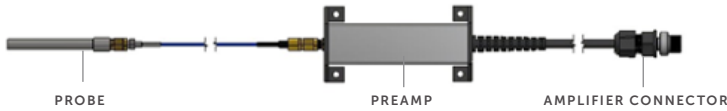


Wrenches (2)  
8MM 5-1/2 In Combo Hex



Preamplifier  
Cable SMA(S) to S  
Probe (not include)

High definition probe, preamp and amplifier connector. The probe to preamp coaxial cable length is limited to 177 mm (7 inches).



PROBE

PREAMP

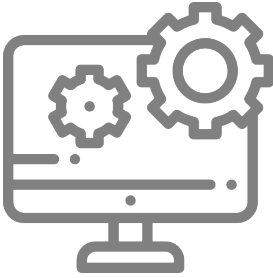
AMPLIFIER CONNECTOR

# Accumeasure D200HD Specifications

Measurement Range	0 to 2mm
Noise	≤ 0.0000001 V(Hz) FSR
Repeatability	100PPB
Digital Resolution (LSB)	1pm
Long Term Stability/Drift	20ppm/month or better at 20°C
Digital Linearity Accuracy	±0.01 % FSR
Digital Frequency Response	5kHz
Output Data Rate	20k (SPS)
Temperature Stability	± 100 ppm/°C
Digital Butterworth Filter	50, 100, 500, 1kHz, or 5kHz
Exponential Filter	No filtering
Range Extensions	5X max
ADC bit count	24 bits
Basic Interface	Command-Response, ASCII commands
Digital Output	Micro USB and RJ-45 Ethernet 10-100
Digital Latency	< 4ms (Cap input to Ethernet output)
Encoder Input	0-24VDC max A quad B 500k RPM
Included Software	MTI Basic, LabView, .NET and DLL Drivers

Operating Temperature	0-40°C, 95% non-condensing
Operating Environment	IP40
Power Requirements	24 VDC < 8W
Target Ground Return	Integrated with power connector
Input Protection	Reverse Polarity (Over volt to 35VDC)
ESD Protection	± 4kV Contact and ±8kV Air
Amplifier Case Dimensions	2"(53mm) H x 4"(103mm) W x 4.7"(120mm)D
Case Mount	DIN Mount Kit
Preamp Connectors	M12-8
Power and Connectors	Phoenix screw terminal
Preamp to Amp cable length	3 meters
Preamp Case Dimensions	87mm L x 47mm W x 25 mm H
Probe Connectors	SMA
Probe to preamp cable length	177mm (7 inch)
Number of Channels	1-2)
Multi channel synchronization	Master Slave (simple wire)

## MTI Basic Software Included



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MTI's easy user interface allows exporting data to image files or Excel CSV files or data logging for data analysis and reports. The user settings tab allows adjustment of range, filter, data rate and other items.

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## MTI Accumeasure High Definition Probes

MTI has the expertise to create an HD probe suitable to specific requirements. Our probes can operate at multiple ranges through digital range extension. Contact MTI to discuss probe needs.



**mti instruments**

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