



520 AMPLIFIER

Capteura® Series Non-Contact Displacement Sensing System

Capteura 520 Amplifier

New ultra stable, low noise, non-contact capacitive displacement measurement system

- New 520-XL dual channel amplifier card with a 2U, 55.5 x 100 mm size
- ESD protected inputs
- Easy push button calibration
- 0.05% accuracy
- New 208 and 216 electronic racks are three times smaller than the previous generation



Model 208 (8-channel rack) with (4) 520-XL amplifiers and (1) 200-C oscillator card



Capteura® 200 Series modular 8-channel design versus legacy 8-channel system

- Better than 65,000:1 resolution (38nm) with HPC-150E-A-L2-1-B sensor, 200Hz bandwidth and 2.5mm range (double the range of competitive systems)
- Customer selectable frequencies, 200Hz, 4KHz, or 16KHz
- Cable length changes of $\leq 10'$ (3.05m) result in $<0.2\%$ change in output

Lab and field testing has confirmed that the new **Capteura 520** has the industry best performance combining small sensor size and large displacement range with long cable lengths

520 Amplifier Rack Specifications

The **Capteura 520 Amplifier** rack system combines two amplifiers into each card slot allowing it to be twice as dense as most systems. Its small size allows for a smaller rack than the previous generation. The **Capteura 520 Amplifier** is available in three different form factors powered by either 90-240VAC or 9-36VDC power input.

The 208 rack has 4 card slots for up to 8 channels and the 216 rack has 8 card slots for up to 16 channels. The rear panel of the 208 and 216 racks hold a single-ended BNC connector for each primary analog output plus one or two secondary 25-pin D-Sub connectors providing single ended or differential analog output.

The 200-ENC enclosure has a single card slot. This configuration allows two channels in a compact standalone system. The Capteura 520-XL-ENC includes the 520-XL amplifier card in the 200-ENC enclosure option.

Channels	Enclosure	520-XL	200-C	200-CP
2	200-ENC	1	-	1
2-8	208	1-4	1	-
10-16	216	5-8	1	-



Capteura® Model 200-ENC dual channel enclosure, 5-12V DC power, output cable provided



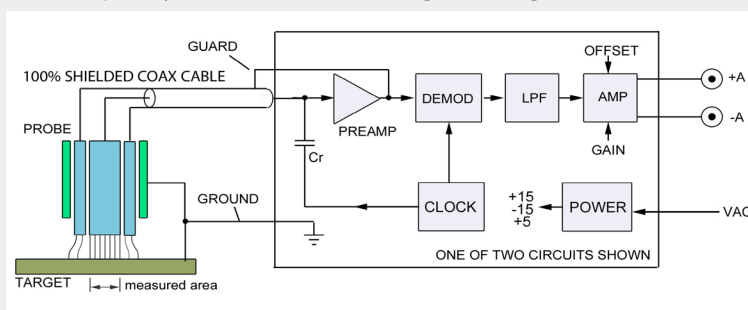
Capteura® 208-ACU, 90-240V 50/60HZ universal AC power, BNC and D-Sub output



Capteura® 208-DCU, 9-36V DC power, BNC and D-Sub output

Capacitance Measurement Technology

Capacitance sensing is based on two conductive objects in close proximity, where the capacitance between objects varies with the gap. Typically, one object is grounded. The other is connected to a high-impedance amplifier that measures capacitance to ground by exciting it with a high-frequency current and measuring its voltage.



Capacitec supplies non-contact capacitive displacement probes to the Aerospace, Automotive, Coating/Printing/ Photocopying, Extreme Environment, High Temperature/ Cryogenic, and Power Generation markets worldwide.

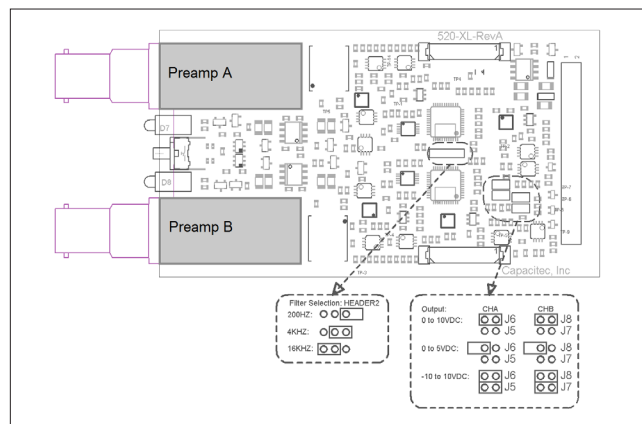
Non-contact capacitive displacement and gap sensors are used in many critical applications like Aircraft Engine Rotor Eccentricity Realignment to maintain perfect concentricity. This gap measurement is 0.075" (1.91 mm) maximum with 20 feet of cable (6.10m) and HPC-75C-A-L3-20-M.

Capacitec "V" series is the only family of standard catalogue parts for high temperature, non-contact displacement sensors with operation to 1600°F (870°C). The "V" series can also be exposed to a 2 tesla magnetic field along with 10^7 RADS of radiation and extreme pressure.

System Specifications

The **Capteura 520** multi-channel capacitive amplifier systems are configured according to user-specific needs. They can be built in several different configurations of bandwidth vs. signal to noise ratios and differential analog outputs.

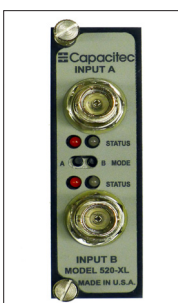
- **200-ENC** Single card enclosure
- **208-ACU** 8 Channel AC rack
- **208-DCU** 8 Channel DC rack
- **216-ACU** 16 Channel AC rack
- **216-DCU** 16 Channel DC rack
- **520-XL** Amplifier card
- **520-XLC** Amplifier card with **200-CP** oscillator
- **200-C** Oscillator card
- **200-CP** Oscillator module / DC power converter
- **200-DAQ** DAQ card (requires separate 200-CP)



520 amplifier card shown

Model 520 Amplifier Specifications

Size	3.94" x 2.15" x 0.75" (100mm x 55mm x 19mm) Amplifier card	
Bandwidth	200 Hz, 4 kHz, or 16 kHz frequencies (user specified switch selectable)	
Linear Range	Typically 2/3 sensor diameter	
Temperature Stability	110 ppm/°C temperature coefficient from 0 to 60°C	
Low Noise, High Resolution	2.5 nm measurement, HPC-150E-A-L2-1-B, 250 µm range, 200Hz	
Linearity	+/- 0.05% of full scale or better to 2/3 sensor diameter	
ESD	Electrostatic discharge protected probe sensor, guard, or electronic rack	
Power Consumption	2W for 2 channels, 10W for 8 channels, 20W for 16 channels	
Input	BNC female connector	
Power	ACU	Universal 90-240V 50/60Hz
	DCU	9-36V DC
	ENC	5-12V DC
Extension Cable	10 foot (3.05m) cable length change affects the output by less than 0.2% , to 32.8' (10m) maximum	
Output	0-10 VDC, +/- 10 VDC, or 0-5VDC (specify for calibration). Optional USB digital output	
Output Type	Single-ended or differential outputs standard (specify for calibration)	



Two-channel amplifier
1"x 3.325" (25.4mm x 84.5mm) front panel

- **520-XL** two-channel amplifier
- **520-XLC** two-channel amplifier with **200-CP** oscillator module

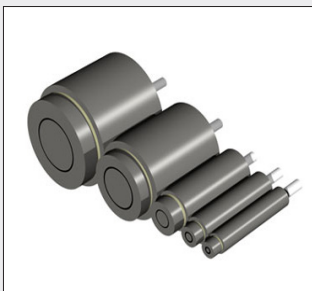


Oscillator or DAQ card
0.8"x 3.325" (20.3mm x 84.5mm) front panel

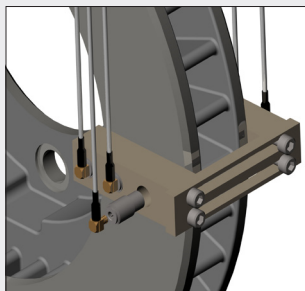
- **200-C** dedicated oscillator card
- **200-DAQ** optional USB digital output DAQ for use with **520-XLC**

Accessories

Optional Accessories



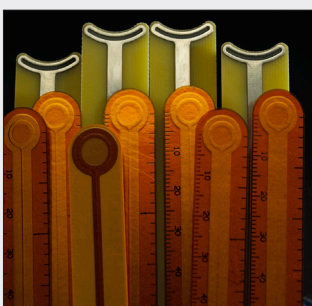
Capacitive Displacement Sensors
Full line of standard cylindrical, threaded and button sensors



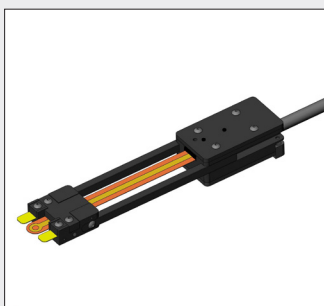
Disc Brake Wear Analysis Sensors
The model HPC-150C-H-IC-00 sensor assembly combines the benefits of small size and high temperature 750°F (400°C)



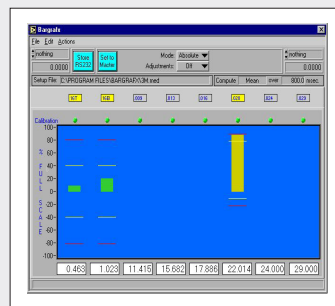
Calibration Stands
Calibration stands and micrometers



Thin Capacitive Probes
Standard models from .004" [0.1mm] thickness with .100" [2.54mm] linear range



Wand Holders
Wand holders with adjustable insertion length and slot guides.



BargrafX™
LabView® based data acquisition, linearization and display software.

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