PCB PIEZOTRONICS
AN AMPHENOL COMPANY

SERIES **422E5X**

IN-LINE ICP® CHARGE CONVERTERS

- Condition signals from charge output piezeoelectric sensors
- Convert high impedance charge signals into low impedance voltage signals
- Operate with ICP® sensor signal conditioners or readout devices having an ICP® sensor input
- Fixed charge conversion regardless of input capacitance

TYPICAL APPLICATIONS

- High temperature vibration measurements
  - – Thermal stress screening
  - – Steam turbine testing
  - – Engine vibration analysis
- High temperature pressure measurements
  - – Compressor analysis
  - – Ballistic/Gun measurements
- 3-Component force measurements
- Applications that demand high temperature, charge mode piezoelectric sensors

FOR CONDITIONING HIGH TEMPERATURE, CHARGE MODE, PIEZOELECTRIC SENSORS

In-line ICP® charge converters serve to convert high impedance charge mode piezoelectric sensor signals into low impedance voltage signals for input into readout, recording, and analysis instruments. Powered by ICP® sensor signal conditioners, series 422E5x converters are placed between the sensor and signal conditioner. They can also connect directly to a DAQ system or readout device if the system includes ICP® power. Low noise cabling must be used to connect the sensor to the converter. Standard coaxial cabling can be used to connect the output of the converter to the signal conditioner or readout device.

These units are well suited for use with high temperature piezoelectric sensors operating in environments up to 500 °F (260 °C). The series features a ±5.0 V output, a variety of gain options, and comes in a small, rugged package. They offer a less expensive option compared to laboratory charge amplifiers, which makes them very attractive for multi-channel requirements.

As with all equipment from PCB®, these charge converters are complemented with toll-free applications assistance, 24-hour customer service, and are backed by our Total Customer Satisfaction guarantee.

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FEATURED PRODUCT
422E5X IN-LINE CHARGE CONVERTER

Charge output accelerometer

Low noise cable

Standard output cable

ICP® sensor signal conditioner

IN-LINE ICP® POWERED CHARGE CONVERTERS (FOR USE WITH SENSORS OPERATING UP TO 500 °F)					
Model Number	**422E51**	**422E52**	**422E53**	**422E54**	**422E55**
Gain (Charge Conversion Sensitivity)	100 mV/pC (±5%)	10 mV/pC (±2.5%)	1 mV/pC (±2.5%)	0.1 mV/pC (±2.5%)	0.5 mV/pC (±2.5%)
Input Range	±50 pC	±500 pC	±5000 pC	±50,000 pC	±10,000 pC
Output Voltage Range	±5.0 V				
Frequency Response (-5%) [1]	5 to 100k Hz				
Broadband Electrical Noise	49 µV rms	33 µV rms			
Temperature Range	-65 to +250 °F -54 to +121 °C				
Excitation Voltage	18 to 28 VDC				
Constant Current Excitation	2 to 20 mA				
Input Connector	10-32 Jack				
Output Connector	BNC Jack				
Resistance (Minimum required at input)	10^8 ohms				
Size	3.4 x 0.5 in 86 x 13 mm				
Notes					
[1] High frequency response may be limited by supply current and output cable length					

In addition to the 422E5x series, PCB® also offers the 422E3x series for use with sensors operating above 500 °F, and the 422E6x series for use in radiation environments.

10-32 JACK INPUT AND BNC OUTPUT CONNECTORS
SERIES 422E3X

10-32 JACK INPUT AND OUTPUT CONNECTORS
SERIES 422E6X

IN-LINE ICP® POWERED CHARGE CONVERTERS(FOR USE WITH SENSORS OPERATING ABOVE 500 °F)			
Model Number	**422E35**	**422E36**	**422E38**
Gain (Charge Conversion Sensitivity)	1 mV/pC ±2%	10 mV/pC ±2%	0.1 mV/pC ±2%
Input Range	±2500 pC	±250 pC	±25,000 pC
Output Voltage Range	±2.5 V		
Frequency Response (-5%, 20 mA)	5 to 100k Hz		
Resistance (Minimum required at input)	10000 ohms		

IN-LINE ICP® POWERED CHARGE CONVERTERS (FOR USE IN RADIATION ENVIRONMENTS)		
Model Number	**422E65/A**	**422E66/A**
Gain (Charge Conversion Sensitivity)	1 mV/pC ±2%	10 mV/pC ±2%
Input Range	±5000 pC	±500 pC
Output Voltage Range	±5.0 V	
Frequency Response (-5%, 4 mA)	5 Hz to 35k Hz	5 Hz to 90k Hz
Radiation Exposure Limit - Gamma Fluence	≤ 1 Mrad	
Radiation Exposure Limit - Neutron Fluence	≤ 10^{10} N/cm²	≤ 10^{10} N/cm²
Resistance (Minimum required at input)	10000 ohms	10000 ohms
Notes		
Use 023 hardline cable in radition area		

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3425 Walden Avenue, Depew, NY 14043 USA

pcb.com | info@pcb.com | 800 828 8840 | +1 716 684 0001