

# Rugged, Industrial, Dynamic ICP<sup>®</sup> Pressure Sensors

Monitor and Detect Pulsations and Surges in Liquid or Pneumatic Systems for Troubleshooting, Predictive Maintenance, and Process Improvement

- All-welded, Hermetically Sealed, Stainless Steel Construction
- Solid-state, Piezoelectric, Quartz Crystal Sensing Elements with Built-in, Microelectronic Signal Conditioning
- Electrical Case Isolation Prevents Noise Interference and Ground Loop Problems
- 1/4" NPT Process Fitting for Ease of Installation (Metric Optional)
- Rugged, 2-pin MIL Connector or Submersible, Integral Cable



**Series 121**  
Industrial Dynamic ICP<sup>®</sup> Pressure Sensors

Piezoelectric pressure sensors offer the unique ability to respond to very rapid pressure spikes, pulsations and surges. They can also sense minute pressure fluctuations while being subjected to very high static pressures. The **Series 121** Industrial Dynamic ICP<sup>®</sup> Pressure Sensors satisfy such measurement requirements in monitoring, diagnostic, troubleshooting, and control applications in harsh, factory environments. Applications include: leak detection; locating sources of damaging water hammer and cavitation; troubleshooting pulsations in liquid delivery systems; and fine tuning pumping system and valve behavior to improve efficiencies and reduce maintenance.

As with all PCB<sup>®</sup> instrumentation, these sensors are complemented with toll-free applications assistance, 24-hour customer service, and are backed by a no-risk policy that guarantees satisfaction or your money refunded.



## Individual Specifications

Available Models / Range	100 psi (700 kPa)		1000 psi (7000 kPa)		5000 psi (35,000 kPa)	
2-pin, MIL-C-5015 Connector	121A21		121A22		121A23	
Molded, Integral 2-conductor Cable	121A31		121A32		121A33	

Performance	English		SI		English		SI	
Sensitivity (± 20%)	50 mV/psi	7.25 mV/kPa	5 mV/psi	0.725 mV/kPa	1 mV/psi	0.145 mV/kPa		
Dynamic Measurement Range	100 psi	700 kPa	1000 psi	7000 kPa	5000 psi	35,000 kPa		
Broadband Resolution	0.004 psi	0.028 kPa	0.01 psi	0.07 kPa	0.04 psi	0.28 kPa		
Maximum Dynamic Pressure	200 psi	1400 kPa	1000 psi	7000 kPa	7200 psi	50,000 kPa		
Maximum Combined Pressure	600 psi	4200 kPa	6000 psi	41,000 kPa	7200 psi	50,000 kPa		
Resonant Frequency	≥ 200 kHz	≥ 200 kHz	≥ 200 kHz	≥ 200 kHz	≥ 200 kHz	≥ 200 kHz		
Rise Time	≤ 2 μsec	≤ 2 μsec	≤ 2 μsec	≤ 2 μsec	≤ 2 μsec	≤ 2 μsec		
Low Frequency Response (-5%)	0.5 Hz	0.5 Hz	0.005 Hz	0.005 Hz	0.005 Hz	0.005 Hz		
Discharge Time Constant	≥ 1 sec	≥ 1 sec	≥ 100 sec	≥ 100 sec	≥ 100 sec	≥ 100 sec		
Non-Linearity	≤ 2% FS	≤ 2% FS	≤ 2% FS	≤ 2% FS	≤ 2% FS	≤ 2% FS		

## Common Specifications

Environmental	English	SI
Acceleration Sensitivity	≤ 0.04 psi/g	≤ 0.028 kPa/m/s <sup>2</sup>
Temperature Range	-65 to +250 °F	-54 to +121 °C
Temperature Coefficient of Sensitivity	≤ 0.06 %/°F	≤ 0.108 %/°C

Electrical	English	SI
Output Polarity (positive pressure)	Positive	Positive
Excitation Voltage	20 to 30 VDC	20 to 30 VDC
Excitation Constant Current	2 to 20 mA	2 to 20 mA
Output Impedance	≤ 100 ohm	≤ 100 ohm
Output Bias Voltage	8 to 12 VDC	8 to 12 VDC
Electrical Case Isolation	≥ 10 <sup>9</sup> ohm	≥ 10 <sup>9</sup> ohm

Mechanical	English	SI
Size	See Drawing	See Drawing
Weight (approximate, without cable)	2 oz	56 gm
Mounting Thread	1/4-18 NPT*	1/4-18 NPT*
Sensing Element	Quartz	Quartz
Case Material	Stainless Steel	Stainless Steel
Sealing (welded)	Hermetic	Hermetic

**Options (indicate using prefix letter shown)**

\* M - Metric installation via M14 × 1.25 straight thread

These products conform to applicable European Directives for CE marking.



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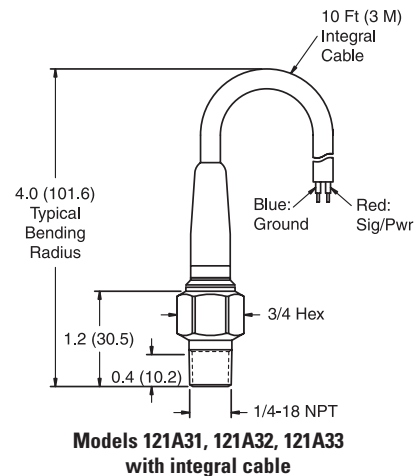
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A2LA ACCREDITED to ISO 17025

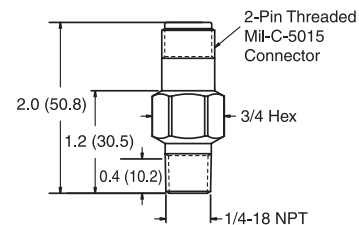
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Dimensions in inches (mm)



The Pressure Division of PCB® Piezotronics, Inc. specializes in the development, application, and support of piezoelectric and piezoresistive pressure sensors, transducers, and transmitters for dynamic and static pressure test, measurement, monitoring, and control requirements. This product focus, coupled with the strengths and resources of PCB, permits the Pressure Division to offer exceptional customer service, 24-hour technical assistance, and a **Total Customer Satisfaction** guarantee.

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