## Rugged, Industrial, Dynamic ICP® 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® 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® 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® 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	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			
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>8</sup> ohm	≥ 10 <sup>8</sup> ohm	
Mechanical			
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	

<sup>\*</sup> M - Metric installation via M14 x 1.25 straight thread



These products conform to applicable European Directives for CE marking.



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Web site www.pcb.com

ISO 9001:2000 CERTIFIED

A2LA ACCREDITED to ISO 17025

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PRS-121-0604

Printed in U.S.A.

4.0 (101.6)
Typical
Bending
Radius

1.2 (30.5)

1.4-18 NPT

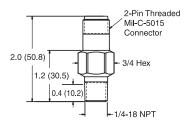
Models 121A31, 121A32, 121A33

with integral cable

Dimensions in inches (mm)

10 Ft (3 M)

Integral Cable



Models 121A21, 121A22, 121A23 with 2-pin MIL connector

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.

Visit www.pcb.com to locate your nearest sales office