

ICP® Strain Sensors

Monitor forces indirectly via strain measurements on machine tools, production machinery, mechanical presses, and plastics molds

- Measure Longitudinal Strain on Machinery Structures
- Control Press Forces and Other Processes
- Monitor Quality, Safety, and Reliability
- Robust Construction Endures Harsh, Industrial Environments
- Simple Installation is Non-Invasive to Process



Series M240
Industrial ICP® Strain Sensors
(Actual Size)

The Series M240 Industrial ICP® Strain Sensors incorporate piezoelectric quartz sensing crystals that respond to a longitudinal change in distance. The resultant strain measurand is an indirect measurement of stress forces acting along the structure to which the sensor is mounted. As such, these devices can provide insight into the behavior of mechanical systems or processes that generate an associated machinery reaction.

Monitoring such measurement signals can provide the necessary indication for process interrupt and pass - fail decisions or for determining wear and degradation of equipment and tooling. The sensors are used for controlling processes in plastics injection molding, stamping, and pressing, as well as monitoring processes and final product quality. These devices are easy to install and can be powered by any ICP® sensor signal conditioner.

As with all equipment from PCB, these sensors are complemented with toll-free applications assistance, 24-hour customer service, and are backed with a **Total Customer Satisfaction** guarantee.

Specifications

Individual Model Performance

Sensitivity ($\pm 20\%$):	
Model M240A01	100 mV/ $\mu\epsilon$
Model M240A02	50 mV/ $\mu\epsilon$
Model M240A03	10 mV/ $\mu\epsilon$
Amplitude Range:	
Model M240A01	50 pk $\mu\epsilon$
Model M240A02	100 pk $\mu\epsilon$
Model M240A03	300 pk $\mu\epsilon$
Broadband Resolution (1 Hz to 10 kHz):	
Model M240A01	0.0001 $\mu\epsilon$
Model M240A02	0.0002 $\mu\epsilon$
Model M240A03	0.001 $\mu\epsilon$

Common Specifications

Low Frequency Response (-5%)	0.004 Hz
Amplitude Linearity	$\pm 2\%$

Electrical

Excitation Voltage	20 to 30 VDC
Constant Current Excitation	2 to 20 mA
Output Bias Voltage	8 to 14 VDC
Discharge Time Constant	≥ 150 sec

Environmental

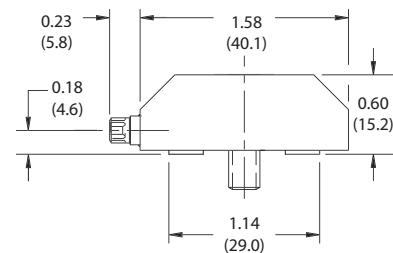
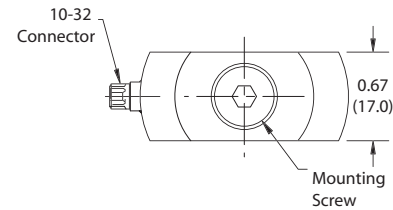
Operating Temperature	-65 to +250 °F (-54 to +121 °C)
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Mechanical

Sensing Element	Quartz
Housing	Stainless Steel
Electrical Connector	10-32 coaxial
Size (w x l x h)	0.67 x 1.81 x 0.6 in (17 x 46 x 15.2 mm)
Weight	1.6 oz (45 gm)
Mounting Thread	M6 x 1.00-6g

Supplied Accessories

Mounting Screw (metric)	M6 x 1.00-6g
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**Series M240
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Dimensions shown are in inches (millimeters)



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ISO 9001:2000 CERTIFIED

A2LA ACCREDITED to ISO 17025

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The Force/Torque Division of PCB® Piezotronics, Inc. specializes in the development, application, and support of piezoelectric and strain gage force sensors, load cells, strain sensors, and torque sensors for a wide range of research, test, measurement, monitoring, and control requirements. This product focus, coupled with the strengths and resources of PCB, permits the Force/Torque Division to offer exceptional customer service, 24-hour technical assistance, and a **Total Customer Satisfaction** guarantee.

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