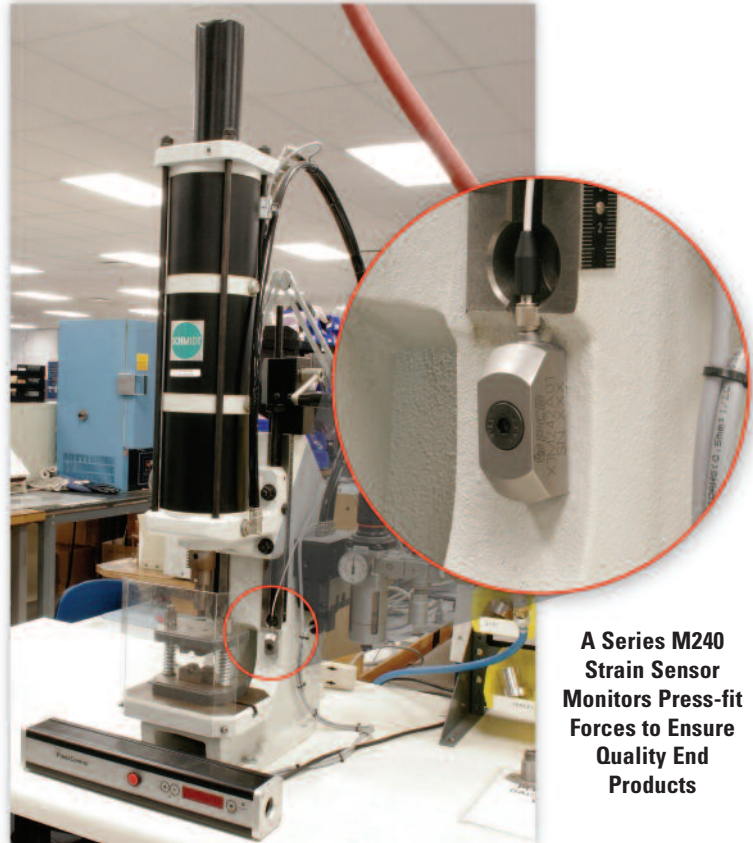




Simple Assembly Force Monitoring System

Highlights

- Monitors Force During Manufacturing Processes
- Avoids Damage & Detects Tool Wear
- Monitors Process Deviations
- Helps Ensure Quality & Zero Defects
- Installs easily on machines with a single screw



A Series M240 Strain Sensor Monitors Press-fit Forces to Ensure Quality End Products

Do your customers demand zero defects?

Simple, ready-to-use monitoring systems that use piezoelectric quartz ICP® strain sensors and signal conditioners are ideal for product quality assurance applications that require the measurement of repetitive cycles. ICP strain sensors feature high stiffness, sensitivity stability, repeatability, high resolution, extremely long life, and robust packaging for harsh industrial environments.

Proper assembly force is vital to the strength of a formed metal part. An assembly force that is too low results in poor mechanical strength of the joint. A force that is too high causes excessive deformation, and can damage or reduce the fatigue life of a component. Processes such as clinching, circuit board assembly, orbital forming, press-fit, riveting, staking, and other assembly operations may be monitored in-process to determine whether the joint has been properly manufactured.

Strain sensor signals may also be used to protect machinery from excessive forces, trend tool wear, capture process deviations, and document the process to help ensure delivery of high quality parts with zero defects.

As with all PCB® instrumentation, these products 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.



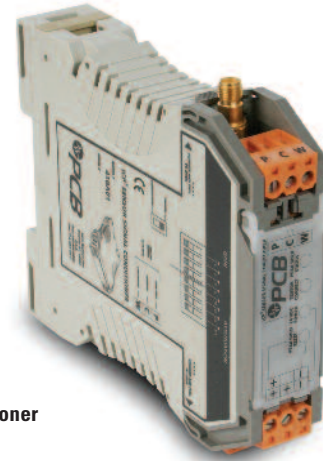
Series M240 ICP® Strain Sensors



Assembly Force Monitoring System



Series M240 ICP® Strain Sensors



Model 410B01
ICP® Sensor Signal Conditioner

ICP® Strain Sensors			
Model	M240A01	M240A02	M240A03
Performance			
Sensitivity (± 20%)	10 mV/με	50 mV/με	100 mV/με
Measurement Range	300 pk με	100 pk με	50 pk με
Low Frequency Range (-5%)	0.004 Hz	0.004 Hz	0.004 Hz
Broadband Resolution (1 to 10,000 Hz)	0.001 με	0.0002 με	0.0001 με
Environmental			
Temperature Range (Operating)	-65 to +250 °F (-54 to +121 °C)		
Electrical			
Output Bias Voltage	8 to 14 VDC		
Discharge Time Constant	≥ 150 sec		
Mechanical			
Sensing Element	Quartz		
Housing Material	Stainless Steel		
Electrical Connector	10-32 Coaxial Jack		
Sealing	Epoxy		
Mounting Torque	7.38 ft-lb (10 N-m)		
Size (Width x Length x Height)	0.67 x 1.81 x 0.6 in 17 x 46 x 15.2 mm		
Supplied Accessories			
Model M081A100 M6 x 1.00 flathead screw			
Optional Versions (specify with prefix letter shown)			
J - Ground Isolated			

ICP® Sensor Signal Conditioner	
Model	410B01
Performance	
Channels	1
Output Voltage (Instantaneous)	+/- 10 V
Output Voltage (Peak)	0 to 10 V
High Frequency Response	10 kHz
Low Frequency Response, AC coupled (-5%)	0.5 Hz
Low Frequency Response, DC coupled	0 Hz
Voltage Gain (Incremental Steps)	x0.5, x1, x2, x4, x8, x10, x16, x20
Environmental	
Temperature Range (Operating)	-60 to +110 °F (+15 to +45 °C)
Electrical	
Power Required (± 10%)	24 VDC
Current Draw	100 mA
Broadband Electrical Noise (1 Hz to 10 kHz)	20 μV rms
Peak Hold Reset	Solid State Relay
Discharge Time Constant (AC coupled)	1 sec
Mechanical	
Size (Width x Length x Height) in (mm)	3.58 x 4.41 x 0.91 91 x 112 x 23
Mounting	
DIN Rail	
Electrical Connector (Sensor Input)	SMA
Electrical Connection	
(Analog Output, Peak Output, Power, Ground)	Removable Screw terminals



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Toll-Free in USA 800-828-8840

24-hour SensorLineSM 716-684-0001

Fax 716-684-0987 E-mail info@pcb.com

Web Site www.pcb.com

AS9100 CERTIFIED ■ ISO 9001 CERTIFIED ■ A2LA ACCREDITED to ISO 17025

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