

*Reliability and Quality for
Science and Industry
Worldwide*

Avionics



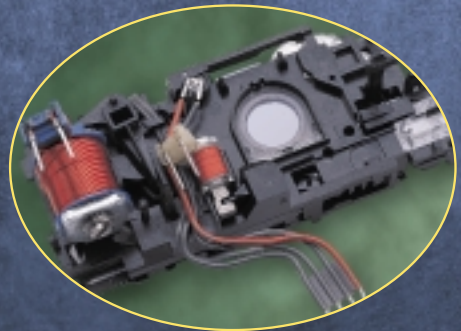
*Inertial
Sensors*



*Panel
Meters*



*Precision
Solenoids*



DECADES OF EXPERIENCE

Leadership For The New Millennium

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Jewell Instruments is a world leader in the manufacture and distribution of panel meters, avionics components, inertial sensors and precision solenoids. Jewell Instruments provides custom solutions for a diverse group of industries, including aerospace, medical, industrial, telecommunications and many more. Jewell Instruments' experienced engineering team works with customers to produce high quality, reliable products that meet or exceed all customer requirements.

For over 60 years, Jewell Instruments has provided commercial and industrial panel meter solutions under the JEWELL and MODUTEC brand names. In today's market, we offer our customers the only complete range of panel meter options available anywhere: analog and digital meters in surface, bezel and window mounts as well as switchboard and edgewise configurations.

Our market leadership in high quality JEWELL brand sensors includes both accelerometers and inclinometers. We serve industries ranging from aerospace, marine, communications and rail to various industrial applications. Our depth of applications experience, product knowledge and engineering expertise makes us the solution of choice.

Jewell Instruments specializes in valued-added avionics components. We are an industry-leader in both standard and custom designs. We manufacture our avionics components completely in-house — ensuring that we meet or exceed your toughest specification.

Our industry leading experience in providing MAGNETEC brand linear solenoids for challenging applications stretches over the past three decades, serving the aerospace, medical, office equipment, photographic and safety and security systems markets.

We have built our success on:

- *high quality, reliable products,*
- *custom designs for unique requirements,*
- *superb applications knowledge,*
- *creative engineering expertise,*
- *“extended staff” relationships with our customers’ engineering teams.*



Manchester, New Hampshire



Barbados, West Indies

JEWELL

- *Accelerometers, Inclinometers, Sensor Assemblies*
- *Analog and Digital Panel Meters*
- *Avionic Mechanisms and Indicators*

MODUTEC

- *Analog Panel Meters*
- *Digital Panel Meters*

MAGNETEC

- *Precision Solenoids*

Try us, test us and see for yourself

PANEL METERS

JEWELL and MODUTEC

Jewell Instruments is the only panel meter manufacturer that offers a full spectrum of panel meters. We make panel meters that cover the range...

- Analog
- Digital
- Switchboard
- From 5% accuracy to 0.5 % accuracy
- Off the shelf to highly customized

We've seen it all. Your design may have specifications new to you, but they probably won't be to us. No matter how unique your requirements, we've got a proven solution. Digital, analog. Any size, any shape. Surface mount, window mount, bezel mount. We'll meet your requirements immediately... with reliability earned over the course of 60 plus years of experience... and from thousands of customers around the world.

If you need to measure it — we can display it... with accuracy and reliability — without compromising your custom requirements. We're the industry's top performer. We give you the best display technology in the business, optimum delivery, unlimited flexibility and applications experience, as well as superior pricing. These qualities make *Jewell Instruments* your only choice for both new and traditional analog and digital panel meter applications as well as value added assemblies. Jewell Instruments — the one stop for measuring and displaying your data the way you want to read it.

A Few Measured Parameters

<i>Variable</i>	<i>Sensor Types</i>
<i>dc Amps</i>	<i>Shunt</i>
<i>dc Volts</i>	<i>Direct</i>
<i>ac Amps</i>	<i>Current Transformer</i>
<i>ac Volts</i>	<i>Potential Transformer</i>
<i>Temperature</i>	<i>Thermocouple</i>
<i>RPM</i>	<i>Magnetic Pickup</i>
<i>Flow</i>	<i>Paddle Wheel</i>
<i>Liquid Level</i>	<i>Float Arm</i>
<i>Speed</i>	<i>Anemometer</i>
<i>Position</i>	<i>LVDT</i>



Applications

- Analytical Devices
- Control Equipment
- Electronics
- Fiber Optics
- Level Monitoring
- Process Control
- Telecommunication



INERTIAL SENSORS ACCELEROMETERS & INCLINOMETERS

JEWELL

Jewell Instruments has over 35 years of experience in acceleration and tilt sensing applications. We understand your requirements.

More importantly, as the industry's leading solutions provider, Jewell Instruments' engineers can quickly design to your unique requirements. Our widely acclaimed quality and reliability are built into your solution. We are an extension of your engineering expertise... your resource for sensing solutions.

JEWELL brand custom products consistently solve the problems that off-the-shelf inclinometers/accelerometers can't solve.

Our reliable, high accuracy sensors offer features such as:

- $\pm 1.0^\circ$ to $\pm 90^\circ$ and $\pm 0.01G$ to $\pm 10G$, full range
- $<0.02\%$ nonlinearity
- high level ± 5 volt output
- less than 0.0001 volt noise
- $<0.001\%$ repeatability and hysteresis
- μ radian resolution and dc response

Jewell Instruments makes it easy. We offer the best overall value in the industry. For many aerospace and industrial applications, our sensors are the perfect solution — our applications engineers won't be satisfied until your requirements are met.



Aircraft

- Autopilot
- Angle of Attack
- Stall Warning
- Fatigue Monitoring
- Flight Testing
- Attitude Heading & Reference

Marine

- Ship Attitude Control
- Offshore Platform Leveling & Control
- Remote Submersible Control
- Sea State Monitoring
- Barge Leveling
- Test Instrumentation

Missile Flight

- Autopilot
- Stage Separation
- Thrust Measurement
- Safety & Monitoring
- Destruct Decision

Military Tilt Sensing

- Antenna Leveling & Control
- Fire Control
- Missile Erecting
- Torpedo Attitude Control
- Platform Stabilizing
- Land Navigation

Industrial

- Automotive Performance Testing
- Elevator Control
- Seismic Monitoring
- Oil & Gas Well Logging
- Land Surveying
- Antenna Leveling
- Dam Monitoring
- Machine Tool Motion Control

Rail

- Railbed Monitoring
- Car Tilt Control
- Acceleration & Deceleration Control
- Performance Testing



AVIONICS

JEWELL

Your requirements are just that — yours. We at *Jewell Instruments* completely manufacture our avionics components — insuring that we meet or exceed even your toughest specs. We are the industry leader in both standard and custom designs. Product reliability, on time delivery and an attractive price/performance ratio make it clear why our avionics components are the solutions of choice. *Jewell Instruments* also manufactures complete avionics indicators and instruments. Our expertise in avionics mechanisms allows us an unprecedented advantage in assembling, calibrating and testing these higher level assemblies.

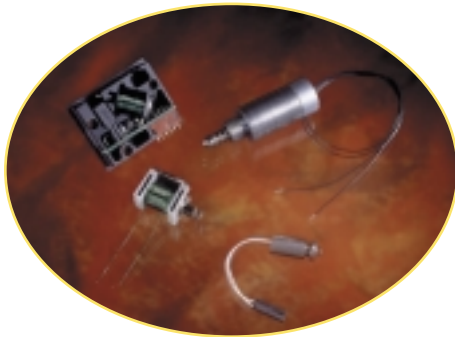
Mechanism Functions

- Engine Monitoring
- Instrument Clusters
- Autopilots
- Warning Flags
- Deviation Bars



Applications

- Horizon Situation Indicators
- Attitude and Direction Indicators
- Fuel Gauges
- Oil Pressure and Temperature Gauges
- Hover Indicators
- Roll Trim Indicators
- Engine Vibration Indicators



Applications

- Office Equipment/Printers
- Electric/Electronic Locks
- Photographic/Optical
- Medical Instrumentation
- Coin and Bill Changers
- Cash Drawers and Automatic Teller Machines
- Ground Fault Current Interrupters
- Computer Disk Drive Storage Devices
- Firearm Safety Locks
- Interlocks for Doors and Safety Panels
- Air/Liquid Dispensing Valves

PRECISION SOLENOIDS

MAGNETEC

Superb product design sets our *MAGNETEC* solenoids apart from the competition. Our engineering expertise covers the mechanical, electro-mechanical, magnetic and electronics disciplines. Add to that our broad applications experience and you can see why we have a solid reputation for quality, reliability, innovative solutions, unmatched customer service and flexible production scheduling.

MAGNETEC Precision Solenoids

Solenoid solutions for tough requirements:

- Standard, modified and custom designed solenoids.
- Stroke of up to an inch or force up to 20 pounds, with custom designs for greater requirements.
- Patented tubular *TriCore™* solenoids.
- Interposer latching solenoids.
- Open frame solenoids.
- Bi-directional solenoids.
- Frameless and stopless solenoids.
- Electronic modules to power down your solenoids.
- Time-delay input signals for your solenoids or other electro-mechanical components.
- Custom electromagnets, value-added assembly.

RELIABILITY AND QUALITY ARE WHAT WE DELIVER

Jewell Instruments provides OEMs and end-users with industrial electro-mechanical and electro-magnetic products. We specialize in reliability, value and responsiveness. Our standard modified and custom designed industrial products provide optimal price/performance ratios for our customers.

Engineering Teamwork

Cooperation and joint planning between our engineering groups and yours drive our customer care experience. Whether your application calls for a standard unit or a wholly custom job, our Applications Specialists will develop specs that ensure the products delivered to you meet or exceed all of your requirements. We work as an extension of your engineering and manufacturing teams to solve problems, improve products, shorten lead-times and bring more value to your products and services. Superb customer support is the cornerstone of our many successful, long-term customer relationships.

Why we're different

- *Bullet-proof designs*
- *Broad applications experience extends your engineering staff*
- *Value-added assembly and services*
- *Complete Customer Care tailored to your unique need*

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Toll Free: 800 227-5955
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Panel Meters

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(800 638-3771)
Facsimile: 603 622-2690