

stress analysis services



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# Acceleration & Vib



- Dynamic/Piezo-electric sensors: acceleration, force & pressure
- Impulse hammers, sensor signal conditioners, & sensor cables
- Calibration Services for dynamic sensors from all manufacturers



Vibration test controls for electrodynamic & servo-hydraulic shakers:

- Test modes: Sine, Random, Shock, SoR, RoR, SRS, & more
- Features: Fatigue Damage Spectrum, Kurtosis, Field Data Replication, Transient Capture, & more



Advanced vibration test equipment: Electro-dynamic shakers, slip tables, head expanders and multi-axis shakers.



- Point-lasers & 2D/3D line scanners (triangulation & time-of-flight technology)
- Confocal chromatic displacement measurement systems
- Hi-accuracy position, thickness, & surface measurements



Non-contact capacitive displacement sensors, gap sensors, bore gauges, parallelism and density sensors with matching capacitance amplifiers, data acquisition systems, linearization



- LVDT displacement transducers for all applications
- Signal conditioning, amplifiers & digital displays



- Load Cells & Force sensors
- Torque sensors: reaction, rotating & wireless
- Multi-axis transducers
- Instruments: Digital displays & hand-held meters
- Calibration systems & services



Custom force, torque & strain measurement:

- Custom strain gage installation on components
- Data acquisition & field instrumentation services
- Custom transducer design & calibration
- OEM transducer manufacturing



# Displacement

# Force

Flow



**Badger Meter**



**Cox**  
Turbine Flow Meters

Flow meters: Turbine, Coriolis, magnetic, positive displacement, oval gear, & more.

- COX precision turbine flow meters for gases & liquids
- EXACT dual rotor turbines
- FLOW DYNAMICS NVLAP flow calibration services
- High precision flow meter calibration systems



Pressure



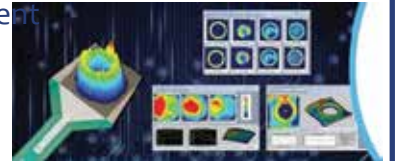
Pressure & level solutions for municipal, industrial, & process markets:

- Sensors for hostile service including slurries
- Submersible pressure & level sensors



**Tekscan**<sup>®</sup>

Thin-film tactile pressure & force measurement for gaskets, seals, grip/ergonomics, seating/bedding, brakes, tires, roller-nip & many other applications.



Data Acquisition

**Gantner**  
instruments

Ethernet/EtherCAT-based data acquisition and control solutions (24-bit, 100kHz A/D per channel) for test cells, test labs, portable/in-vehicle, & stand alone/data-logger applications.



High performance data acquisition including:

- Synergy multi-mode systems: recorder, scope, spectral, modal, & combustion analyzer
- Echelon in-vehicle DAQ: I/O, CAN, GPS, & video. IP-68



High-speed, high-channel count signal conditioning & data acquisition solutions for aerospace, military, university, & other research testing applications.



**MICRO**  
**MEASUREMENTS**  
A VPG Brand

StrainSmart<sup>®</sup> high performance data acquisition instrument utilizing strain gages and related sensors for stress analysis testing.



Wireless



The smallest, lightest, most power efficient, wireless measurement systems for torque, acceleration and other sensing application.



# OEM Sensors/Custom



- Custom OEM force, pressure & torque
- Sensor design & manufacturing
- Amplifiers & integrated electronics
- OEM transducer manufacturing



Manufacturer of force sensors & other strain-gage based sensors, specializing in custom OEM applications for aircraft applications including sensors for flight controls, braking, steering, and fuel systems.



- Dynamic/Piezo-electric sensors: acceleration, force, & pressure
- Health Monitoring Systems (HUMS) accelerometers
- Calibration Services for dynamic sensors from all manufacturers



High-performance OEM pressure sensors, transducers, and transmitters, which are hermetically sealed and compatible with harsh media.



- Custom OEM Pressure Solutions
- Pressure sensors: MEMs, MEMS isolated, Bonded Foil, & Capacitive
- Pressure gauges: Digital & analog dial; diaphragm & bourdon tube
- Pressure & vacuum switches



# Contract Manufacturing



Custom manufacturer of wire harnesses, interconnects, cable & wire assemblies including over-molding.

# Temperature



Thermocouples: general purpose, hand-held, RTD, and industrial probes. In addition to our standard products, we can also custom design and build probes to your specifications.



- Temperature transmitters: 4-20mA, HART, & wireless
- signal conditioners, digital indicators, & closed-loop controllers for temperature applications



- OEM electric heaters : cartridge, band, mica band, ceramic band, polyimide, silicon rubber, pump line, cable, hot runner, nozzle, strip, finned strip, & cast aluminum
- SSR & SCR power relays and PID temperature controls



# Strain/Stress



- Strain gage & sensor installation services
- Field & lab services for strain measurement & data acquisition
- Contract services for sensor design
- OEM transducer manufacturing



State-of-the-art, non-intrusive Digital Image Correlation (DIC) optical tool for shape, strain and deformation analysis of solid, granular and liquid subjects.



Fiber-optic based strain & temperature measurement specializing in aerospace, automotive, defense, and composites industries.



# Signal Conditioning



- Wireless telemetry
- Strain gage amplifiers & signal conditioners
- Indicators & digital display electronics



# Test



Testing, instrumentation, & measurement solutions. Field test services sensor application & instrumentation. Designing & configuring data acquisition systems, recording/reducing data, & writing test reports.



Environmental test chambers including: temperature, humidity, thermal shock, & altitude chambers.



# Tilt



Precision inclinometers & tilt sensors for the measurement of horizontal & vertical angular inclination for OEM & end-user applications in the aero, defense, industrial, & test markets

