

INTERTECHNOLOGY INC.

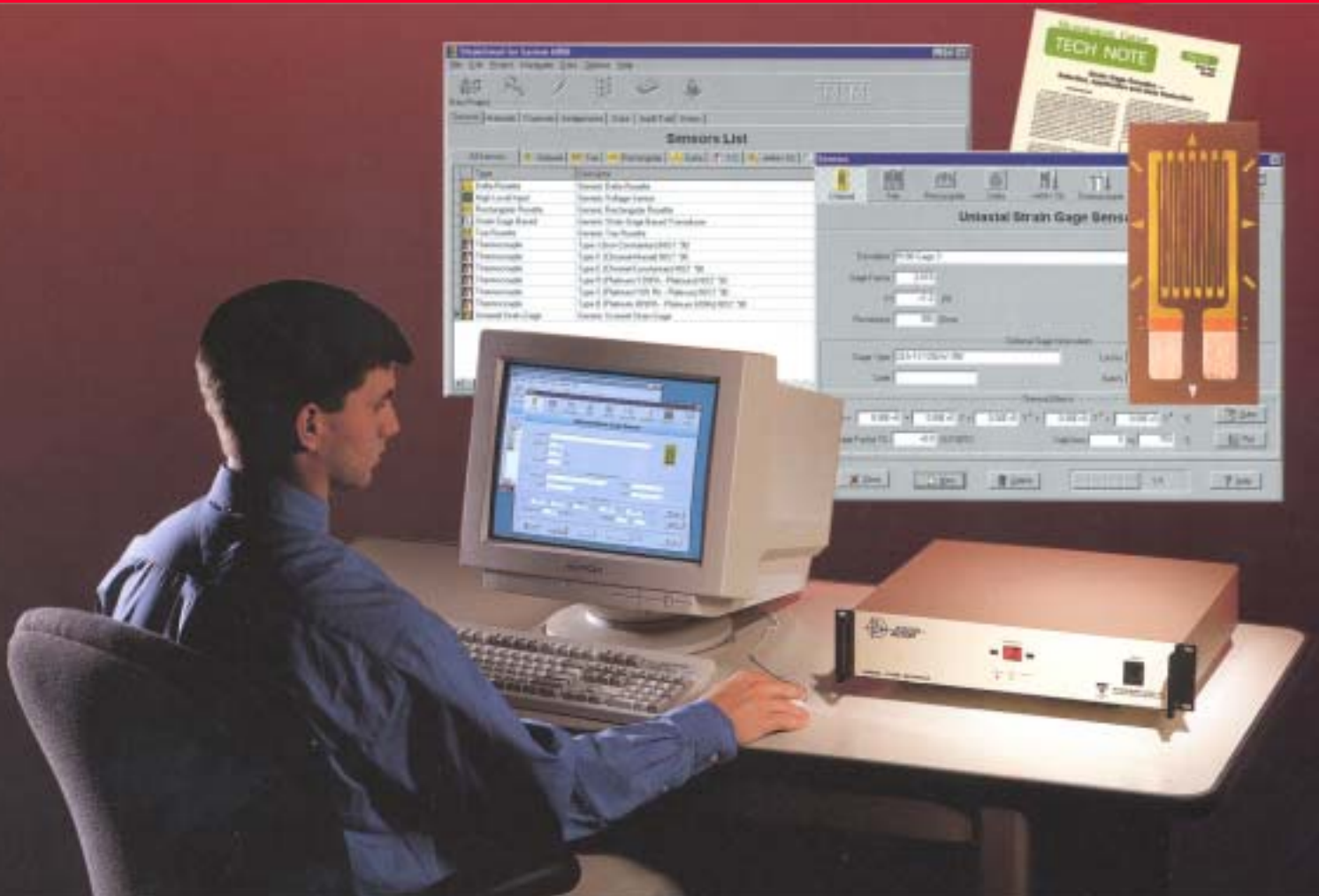
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System 6000

Stress Analysis Data System

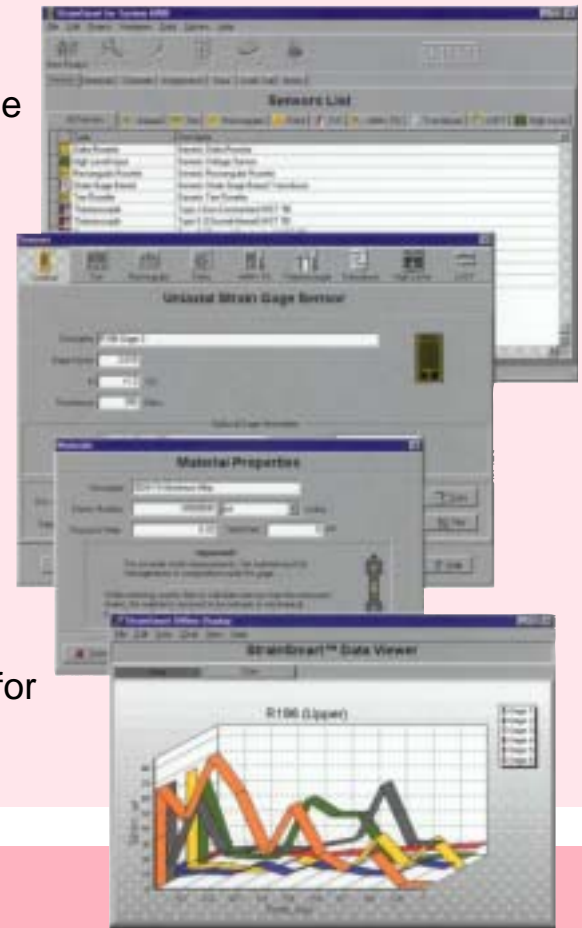


Enhanced hardware and software
for stress analysis, structural and
materials testing at rates of up to
10,000 samples per second per sensor

StrainSmart Software

Features

- Complete Windows NT-based software designed for the experimental stress analyst.
- East-to-use **StrainSmart**[™] wizards for fast test setup and for data acquisition, reduction and presentation.
- Sensor-Specific assignment of inputs (strain gauges, thermocouples, etc.), as well as user-defined assignments for mathematical manipulation of measurement data.
- One-touch autobalance.
- Shunt calibration of strain-gauge inputs.
- Reduced data available offline as Paradox data tables, ASCII text, or online by OLE Automation connection to spreadsheets, word processors, LabView[™] and other third-party applications.
- Test setup and commonly used parameters available for saving and reuse for subsequent testing.



Description

The ready-to-use **StrainSmart**[™] software supplied with System 6000 makes test setup fast and easy for strain gauges, strain-gauge-based transducers, thermocouples, temperature sensors, LVDT's, potentiometers and other commonly used transducers. Using the parameters input for sensors, materials and instrumentation hardware, **StrainSmart**[™] automatically outputs the results of the test data in engineering units for both time and frequency domains. Test setups and measurement data can also be permanently stored for off-line display or for use in databases, word processors and spreadsheets.

Accurate strain measurements require attention to the unique characteristics of the strain gauge and measurement system - thermal output, temperature coefficient of gauge factor and transverse sensitivity of strain gauges, as well as nonlinearity errors inherent in the Wheatstone bridge. StrainSmart software takes these into account automatically.

All strain-gauge bridges are scaled for the number of active bridge arms. Data from measurements with delta, rectangular and tee rosettes are reduced to principal strains and stresses, as well as the equivalent stresses for common failure mode criteria.

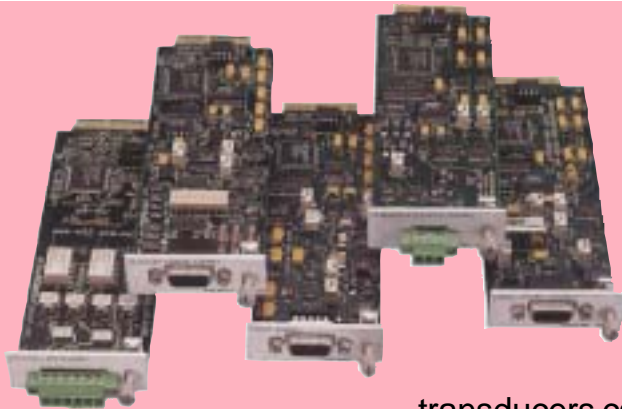
Fully reduced and corrected measurement data can be monitored online and recorder at predetermined limits or at user-defined intervals.

An online Help system, featuring the Micro-Measurements Interactive Guide to Strain Gauge Technology, is always at your fingertips.

System 6000 Hardware

Features

- From 1 to 1,200 input channels.
- Individual input cards for strain gauge and strain gauge based transducers (Model 6010), thermocouples (Model 6020), sensors with high-level voltage outputs (Model 6030) and LVDT's (Model 6040).
- Built-in bridge completion for 120-, 350- and 1,000-Ohm strain gauges.
- Stable, accurate, low-noise signal conditioning.
- Simultaneous sampling with anti-aliasing filter and analog-to-digital conversion for each channel.
- Maximum scan rate of 10,000 samples per second per channel; maximum throughput of 200,000 samples per second.
- Selectable digital filtering of measurement signals.
- High-speed PCI hardware interface.
- Digital I/O for triggering external events.



Description

System 6000 hardware is designed to incorporate all the features required for precision strain measurements under a variety of loading conditions while maintaining flexibility and ease of use. A system can be configured with from 1 to 1,200 sensors. Strain gauges, strain-gauge-based transducers, thermocouples, LVDT's, potentiometers and other transducers can be intermixed by choosing the appropriate sensor card. Each Model 6100 Scanner (holding up to 20 input cards) functions independently and all System 6000 components can be easily configured for each test requirement.

Utilizing the benefits of individual analog-to-digital conversion on each channel and simultaneous sampling data acquisition for all channels, System 6000's Model 6100 Scanners record test data at rates of up to 10,000 samples per second per channel of instrumentation hardware. The PCI hardware interface between the scanners and a PC running **StrainSmart™** software in the Windows NT environment enables a combined throughput of up to 200,000 samples per second for all channels (for example, 20 channels at 10,000 samples per second per channel or 40 channels at 5,000 samples per second per channel).

Selectable, digital FIR low-pass filtering is incorporated into each instrumentation channel to meet a variety of testing requirements. Custom filters are also available.

The Next Generation

The Measurements Group's System 4000 revolutionized strain measurement with the introduction of a complete hardware/software approach to data acquisition, reduction and presentation for strain gauges and related sensors for stress analysis testing. System 5000, introduced in 1995, took this concept into the next generation of static data acquisition by using new developments in hardware and software to add features not previously possible. Today, more than fifty thousand channels of Measurements Group stress analysis data systems are in use around the world in virtually every industrial testing application, major research facility and university laboratory.

Now, the latest generation - System 6000 - breaks through the barrier of static measurements with data acquisition rates of up to 10,000 samples per second per channel.

System 6000

Strain gauge technology, the stress/strain measurement technique most widely used around the world, is the foundation of all Measurements Group stress analysis data systems. Our Tech Notes and other technical publications for the accurate acquisition and understanding of strain gauges measurements, developed over the years by our Micro-Measurements Division, are recognized as the authoritative reference for strain gauge measurement by practitioners throughout the world. The Windows NT-based **StrainSmart™** software utilize by System 6000 automatically applies these techniques and corrections to your test measurements. Faster, easier, more comprehensive. Stress analysis test management has never been easier.



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