



STRESS ENGINEERING SERVICES, INC.

Houston 281-955-2900 • Cincinnati 513-336-6701

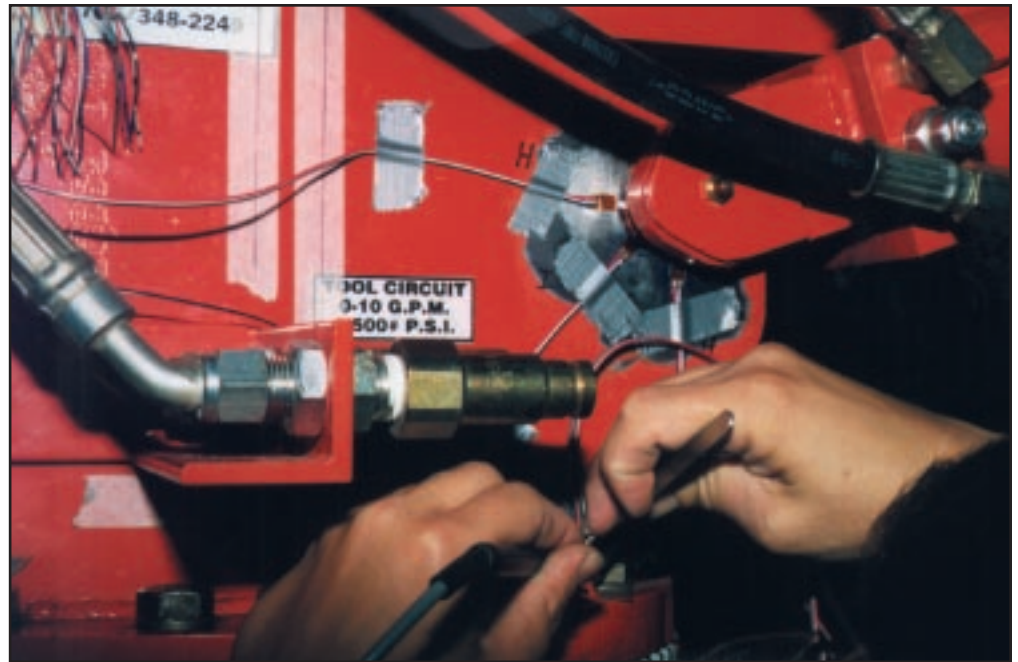
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LabVIEW-Based Data Acquisition for Strain Gage Testing

SE routinely uses LabVIEW to monitor static and dynamic strain levels when conducting third party testing programs in its Houston and Cincinnati labs. The test program illustrated here was conducted to verify that the client's crane complied with the requirements of a standard industry specification. A total of 77 strain gages were monitored while a series of load conditions were tested at points throughout the crane's working envelope.

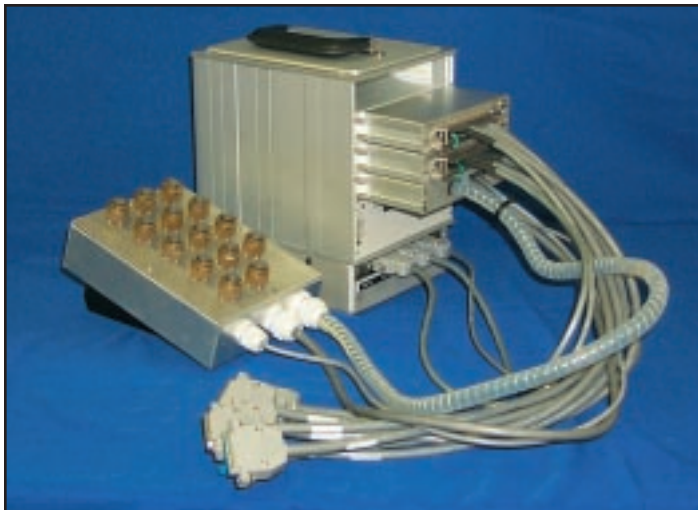


A combination of welded and adhesively bonded strain gages were used in this application. Crane geometry and expected orientation of the stress field determined whether single element, two-element rosette or three-element rosette gages were used at each location. Strain data from each gage was collected during testing and stresses were automatically calculated using post processing routines developed by SES. Stress values were then compared with allowable limits. In addition to documenting specification compliance, test results also provide the manufacturer with data for product improvement and development.



SES Offers Customized LabVIEW Code...

SES has developed custom code which allows high channel-count data acquisition systems to be deployed quickly and easily. Each channel can be configured individually to provide flexibility in acquiring data from mixed signal types during the same test. Reduction of multiple-element rosette data can be performed automatically. Collected data is logged to disk and can be post-processed after testing, or formatted for input to other packages for further analysis.



...and Signal Conditioning Equipment

SES has designed and builds a variety of electronic modules to provide signal conditioning for strain gages and other sensor types. This equipment is particularly useful in providing compact, portable, cost-effective systems for high channel-count testing projects. Several configurations are available that can be expanded from 8 to 128 channels or more. This equipment has been developed by SES and is used for it's own testing work, so it offers the benefit of proven performance and durability in both the laboratory and field applications.

**For more information on how we can help you use LabVIEW,
or about our unique strain gage hardware and software,
call the SES office nearest you today.**

...or visit our web site at www.stress.com

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