

Precision Measurement News July 2010



A640 Series Accelerometer



The **Sherborne Sensors** A640 Series Linear Accelerometers utilise advanced micromachined technology to measure linear acceleration to high accuracy with standard ranges from $\pm 1g$ to $\pm 20g$. The sensor incorporates air damping that is essentially independent of temperature effects and has positive mechanical stops to confer excellent mechanical shock resistance.

The sensor offers a full range output of $\pm 5Vdc$ from a 6 to 32Vdc unregulated supply and is thermally compensated for the effects of temperature on both zero and sensitivity. Filtered and unfiltered outputs are simultaneously available. The unfiltered frequency response is range dependent and operates from dc up to 600 Hz, whilst the filtered output has a frequency response of dc to 5 Hz @ -3dB. Further options of connector or

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Customized Inertial Sensor Helps to Ensure Infrastructure Safety



Structural health monitoring (SHM) of buildings, bridges, wind turbines, cooling towers and other infrastructure is critical for ensuring the architectural, civil and structural integrity of these structures over time. SHM can also serve as an essential preventative maintenance strategy, one which can offer early warning of impending structural integrity problems and potential public safety hazards.

Traditional SHM evaluations are carried out sporadically, or with a fair element of subjectivity, as a substitute for tangible, real-time empirical data collected within a given testing environment. Recognizing the industry-wide need for a highly precise means of continuous, real-time structural health monitoring, the New York City, USA-based

solder pin terminations, mating connector and 1g bias for vertical mounting are available.

Typical applications include the precise and reliable measurement of acceleration in data acquisition systems, fatigue life monitoring, flight simulators, railway monitoring and control, road bed analysis and low frequency vibration monitoring.

The [A640 data sheet](#) details just our A640 standard offerings. **Sherborne Sensors** design and develop custom sensors to meet customers specific applications. So if the standard product does not meet your requirements please contact our experienced applications engineering team on applications@sherbornesensors.com to discuss your requirements. Over half of Sherborne Sensors current production is associated with custom bespoke products.

Focus On Continuous Improvement



Following our recent successful accreditation to the Aerospace Quality Standard AS9100B, we are proud to announce the addition of Mr. Greg Hill to our Staff as the Manager of our Continuous Improvement Team.

Greg brings to **Sherborne Sensors** over 35 years experience in production, technical and logistics management within a variety of electro-mechanical manufacturing organizations. This wealth of experience will be used to further optimize and improve **Sherborne's** advanced manufacturing and calibration facility, to support customer requirements and deliveries as the Company continues to grow.

Greg's team will initially focus on working with our Engineering and Production departments as we expand our existing and new product portfolios. Ongoing efforts will include projects to optimize work flow in the factory and further reduce manufacturing cycle times, including a greatly expanded workforce cross-training program.

Look for additional information on our expanded Continuous Improvement Program in future issues of Precision Measurement News.

Sherborne Sensors

firm STRAAM Corporation (www.straam.com) developed a system using customized algorithms to accurately provide a real-time SHM status of a structure. The data feed to these algorithms required the use of a highly specialized, three-axis accelerometer. Based on their reputation for developing customized accelerometer solutions, **Sherborne Sensors** was approached by STRAAM for assistance to develop the needed enabling sensor technology.

Within three months from concept approval, devices were delivered and available for use. By incorporating **Sherborne Sensors'** custom linear servo accelerometer technology into their proprietary SHM data collection and analysis system, STRAAM's experts can say whether a structure transfers loads as designed. Simply placed on a high floor of a high rise, or a single position on most bridges for a few hours, the instrument records a structure's three-dimensional movement in extreme detail. Signals can be induced, but vibrations from ambient sources, (*e.g. gusts of wind, doors closing, dropped packages in the halls*), usually generate more than enough data to accurately define the dampening characteristics of a structure.

Data from the STRAAM system allows its analysts to compare the dissipation of vibrations with either the predicted behavior of the structure, given its design and materials, or with baseline measurements captured earlier. Michael Horodniceanu, president of New York City Metropolitan Transportation Authority Capital Construction Company, has tested the STRAAM service for both constant monitoring and structural analysis of fragile buildings. Notes Horodniceanu, "This is a great tool that will allow us to look at buildings differently. It takes a lot of the guesswork out of it," he says. "We are very excited about continuing to use this system."

For more information about structural health monitoring service offerings available from STRAAM Corp., visit www.straam.com. For more information on the inertial sensor and accelerometer technologies described, visit www.sherbornesensors.com.

