



Welcome to our latest newsletter, keeping our customers and partners up-to-date with the latest developments at Sensonics. New projects, new products and case-studies, all helping to protect your critical rotating plant.



ACCELEROMETERS FOR WIND TURBINE APPLICATIONS

Our established range of PZS accelerometers... have been extended to provide a vibration monitoring solution for wind turbine applications. The proven shear mode constructed PZS accelerometer series have been supplied for many applications, including wind turbine monitoring over the past 5 years. This enhancement of the product range provides a frequency response down to 0.1Hz and permits effective monitoring of both the wind turbine main shaft and input gearbox bearings below rotational speeds of 20RPM.

Meeting industry requirements...

Condition monitoring is important as it's an industry requirement for wind turbine condition monitoring systems and as with any rotating machinery in a critical application the monitoring of vibration plays an effective role in the early detection of mechanical problems on the machine. The PZS accelerometer response is suitable for measuring vibration across the full wind turbine machine train. This is for not only the low frequency front end, but also the planetary gearbox stages and generator, providing an upper frequency response in excess of 10kHz.

The key to successful implementation of low frequency accelerometers...

The shear mode sensor is electrically and thermally isolated from the main accelero-

meter housing, minimising the effect of electrical interference on the measured signal and the impact of thermal changes, which can result in base strain effects. These are key factors to the successful implementation of low frequency accelerometers.

SENTRY G3 – High Integrity Monitoring For your Critical Plant

Built on the success of Sensonics established API 670 compliant Sentry vibration monitoring and supervisory system, the new Sentry G3 offers unrivalled measurement integrity. The hardware configuration has been designed to offer scalability in combination with high fault tolerance. Each measurement channel is completely independent with regards to the signal processing right through to alarm generation; an improvement over current systems on the market where typically two or more channels are handled by the same signal processing path.



The 19" rack based system operates from dual redundant, hot swappable power supplies encompassing the latest power supply converter technology. The PSU circuitry is fully solid state offering a higher level of reliability over conventional power supplies.

The four channel module is field programmable and universal for all measurement options, minimising the spares requirement.

Sentry G3 has the measure of all your vibration, position, temperature and speed monitoring requirements.

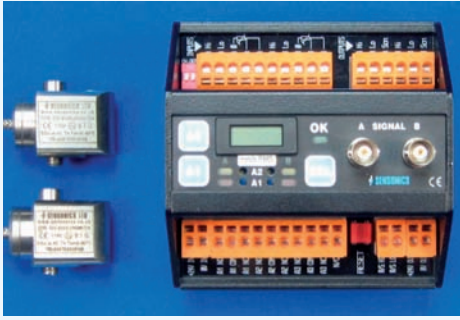
SENSOR CALIBRATION

Periodic calibration of vibration transducers and associated signal processing equipment is essential to ensure both the accuracy and frequency response of the instruments are as expected for both machine protection and condition monitoring applications.



Sensonics calibration facility (pictured above) operates fully integrated measurement systems that perform UKAS traceable calibrations for all types of accelerometers, velocity transducers and monitoring equipment. We offer a competitive, fast turnaround and flexible service on both Sensonics and other manufacturer's instruments. With the additional support of our experienced site team, we can offer a full turn key service for your outage requirements.

Product Focus – DN2611 SIL Vibration Protection



The new Machinery directive came in to force during the end of 2009 (Directive 2006/42/EC). The protection requirements of the directive demand that machine manufacturers identify the hazards and risks their products present to users. Any risks identified must be reduced to as low a level as is reasonably practicable.

Reduce risk...

The monitoring of vibration can play a key role in meeting the protection requirements of the machinery directive. Failure of rotating plant can not only be expensive in terms of repair cost and lost revenue through downtime, but also pose a significant health and safety risk.

What level of integrity does a vibration protection system need to ensure safe shutdown under all operational conditions? What maintenance regime do we implement to maintain this system integrity? The IEC61508 international standard for functional safety can be applied in conjunction with the directive to ensure sufficient integrity is designed in to the electrical / electronic systems employed for this function.

The methodology starts with targeting the appropriate 'Safety Integrity Level' or SIL required for the process. With a proposed protection system in place, a failure mode and effects analysis is carried out on the overall control loop, from sensor to shutdown actuator. This determines not only the MTBF of the equipment but also the diagnostic coverage and the safe failure fraction. These factors in combination with protection system redundancy are used to calculate the overall SIL level.

Helping you meet the latest protection requirements...

Sensonics for a number of years have provided robust vibration protection systems for many industrial sectors. The DN2611 is a SIL rated dual channel monitor, ideal for machine casing and bearing vibration monitoring, offering dual level alarms (warning and danger) for each channel and providing a relay interface for plant shutdown and health monitoring.

Current loop outputs for each channel are provided for interfacing with a PLC for trending and further alarm monitoring. The transducer interface can be configured for operation with or without safety barriers.

In a simplex configuration the monitor used in conjunction with Sensonics PZS4 accelerometer is suitable for SIL 1 applications. In a duplex configuration (2 parallel channels), protection can be provided at a SIL 2 level. While the probability of failure to trip on demand for each configuration is designed to meet SIL target, the resulting spurious trip performance is also excellent - offering a high integrity protection solution with minimal risk of downtime due to spurious events.



20 YEARS OF SERVICE TO SENSONICS

In recent months three senior employees at Sensonics have reached significant milestones in their length of service.

Martin Madge, Colin Rance and Michael Samsonoff (L to R) have worked for Sensonics for over 20 years and during this time played key roles in establishing the company as a world leader in the supply of machine monitoring and protection systems.

Russell King, Managing Director added,

"Customers benefit on a daily basis from the knowledge and experience these individuals bring to our instrumentation business. They are a testament to the work ethic at Sensonics and are passionate about this challenging and exciting industrial sector we work in"

RECENT CONTRACT AWARDS

- Turbine HP case and crabbing monitoring retrofit for conventional power facility.
Location UK
- Sentry G3 protection systems for steam turbine drive train monitoring.
Location China
- Low frequency vibration monitoring systems for cooling fan application.
Location Russia
- SIL rated vibration protection systems for centrifuge application.
Location UK
- Volume direct 4-20mA O/P vibration transducers for industrial process monitoring.
Location Peru

Take a look at our all-new web site: www.sensonics.co.uk

Sensonics are a leading supplier of turbine supervisory and high integrity protection equipment to industry. With 30 years experience in providing vibration, displacement and speed instrumentation solutions in demanding environments, not only do they supply a full range of sensors and API 670 compliant measuring and protection equipment, but also offer design through to installation & commissioning services.



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