

How advanced plant monitoring can lead to smart preventative maintenance and reduced costs

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Manufacturers, especially in times of increasing energy costs, need to respond to global competition and manufacturing sourcing. Therefore, manufacturers need to look for lean manufacturing solutions based on justifications to reduce cost, eliminate risks, improve system design and help manage maintenance to maximise reliable production. Condition Monitoring on the shop floor together along with Energy Monitoring should therefore be integrated with the Enterprise system. To optimise maintenance service there must be complete transparency throughout the enterprise, from shop floor to top floor.

Mitsubishi Electric's SmartCheck solution is an independently operating, compact, modular measurement system for the permanent monitoring of machines / systems with mechanical bearings. Mitsubishi Electric's SmartCheck solution is available in the market for use as an individual monitoring device for smaller standalone units as well as for integrated concepts such as comprehensive condition monitoring of machines and manufacturing processes.

Mitsubishi Electric's SmartCheck solution takes intelligent machine monitoring to a new level. Compact, easy to operate and at a unique price/performance ratio, it makes the online monitoring of **compressors, pump sets** and **gearboxes** very cost-efficient.

This innovative real time monitoring system employs ground-breaking technologies and trend-setting functions. These include the combination of information provided by the measurement of classic parameters and vibration based process parameters. The measuring system detects potential damage to machines early and reliably helps to avoid unplanned shutdowns and costly secondary damage.

Thus, the Mitsubishi Electric's SmartCheck solution already offers numerous options that future machine monitoring schemes cannot be imagined without.

The scalable monitoring system provides high system availability and contributes towards ensuring trouble-free, continuous operation. The overall system efficiency and energy efficiency are also very closely linked. Furthermore, the solution allows predictive maintenance to be carried out. This not only reduces lifecycle costs but also plays a role in reducing energy consumption thanks to its ability to detect early signs of wear.

Completed by a unique full service around machine diagnosis and rolling bearings, the Mitsubishi Electric's SmartCheck solution makes a valuable contribution to optimizing processes and reducing Life Cycle Cost (LCC) as well as Total Cost of Ownership (TCO).

One recent successful application involved a sewage treatment plant with the capacity to serve 34,000 residents. At the secondary sedimentation tank three pumps are connected to the return-activated sludge pumping station. Within one year, one of the three screw pumps failed due to bearing damage. This resulted in costly, time-consuming repair work and loss of service.

A Mitsubishi Electric's SmartCheck solution was installed on the three pumps to help solve the problem re-occurring in the future.

Now the SmartCheck devices measure the vibrations and temperature of the gearboxes. In the event of changes in vibration, the system provides data at an early stage about these deviations, which can be the initial signs of potential damage. In the event of irregularities, a detailed error message is sent to the customer's control system via the Mitsubishi Electric control unit. This ensures that the problem can be rectified quickly and in a target-oriented manner.

Smartcheck supports the concepts of transparency through different levels of measurement. Information can be automatically transferred to multiple information levels. Smartcheck allows Mitsubishi Electric to provide a holistic approach to assess the condition of your building or plant.

For more information contact **00353 1 419 8800**, email sales.info@meir.mee.com
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Image 1: Mitsubishi Electric's Smartcheck solution helps prevent unplanned shutdowns, and so, saves downtime costs

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With around 124.000 employees the company recorded consolidated group sales of 39,3 billion US Dollar* in the fiscal year ended March 31, 2014.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

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