Focus on Maintenance


# Set your own conditions for online Condition Monitoring

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THE NUMBER OF DIFFERENT CONDITION MONITORING AND REPORTING OPTIONS NOW AVAILABLE MEANS MORE CHOICE, BUT ALSO MORE POTENTIAL CONFUSION. DAVE MANNING-OHREN, CONDITION MONITORING MANAGER AT ERIKS, LOOKS AT THE VARIOUS OPTIONS AND THEIR SPECIFIC BENEFITS FOR YOUR OPERATIONS.

Condition Monitoring began with a green light. And a red, and an amber. At its simplest, a light on a control panel is still how the output from Condition Monitoring is notified to operators or engineers. However, things have moved on considerably and, at the most advanced end of the spectrum, you can now have an online notification which enables technicians to carry out a complete fault diagnosis remotely.

Of course, there are also options available between these two extremes, and an experienced supplier of the full range of Condition Monitoring equipment, solutions and services should be able to offer you the full choice. In addition, you should expect to have the system highly tailored to your specific needs, and fully integrated, to provide the most comprehensive and accurate reporting with the minimum disruption or changes to your existing systems and processes.

As an advance on the simple machine-mounted 'traffic light', you could opt for a system which displays data and alerts on an HMI on an embedded PLC. Or you could have alerts and data uploaded to the Internet. Taking this even further, a yet more sophisticated option not only provides alerts and data online but also enables full online diagnostics, eliminating the need for a site visit. This system can be incorporated into your PLC, and integrated into your site and process as much or as little as you require.

The parameters which can be monitored are not limited to vibration alone. Temperature, speed, pressure and airflow can all be monitored in applications where changes would indicate a problem. In fact, a competent supplier should be able to provide you with the means to monitor anything which can have a PLC input, to suit your specific needs.

Finally, the ultimate Condition Monitoring solution involves cloud-hosted PPM and asset management information, with embedded RFID tags in required locations and in high maintenance or high value assets. These facilitate maintenance routines specific to the location and the technician inspecting the equipment.

A cloud-based database of maintenance routines is established, including test values, alarms, check items, process and condition monitoring information, along with RFID plant/equipment/area identification, and inspection routes are written based on visit frequency and the skills necessary for the tasks and routines.

Once the RFID tags are embedded, on subsequent visits the engineer will carry a data acquisition device, preloaded with the route and supplementary information (risk assessments, method statements, COSHH information etc.). The software will then produce a list of tasks at each location, to be performed on the particular piece of equipment or in the specified area.
As each one is completed it is entered into the engineer's handheld device and, once the route is complete, the information is uploaded to the database on the cloud server. This is programmed to respond immediately on receipt of the data, generating inspection, diagnostic and other reports specific and relevant to the tasks undertaken on the plant, and to the recipients. The database also links and integrates other work that has been carried out off-site, such as repair reports, oil analysis and other post-data acquisition condition monitoring reports.

This system can also be used to send alerts from fixed monitoring equipment direct to ERIKS' specialists, or other nominated contacts on-site, when pre-set limits are reached. This enables a quicker reaction time, which in turn can help to prevent shutdowns and damage to critical equipment.

So having all this information available in one place saves time, facilitates an easier flow of information, and can increase uptime. In addition, the cloud-based database creates an html file for every report it is asked to generate, which can be used to create a web portal where report information is available for viewing by all interested parties.

ERIKS has installed its own online monitoring system at its Revolvo bearing manufacturing premises, with an internet portal for viewing data and conducting remote analysis if an alarm is triggered. This proved its worth recently when, due to excessive vibration, a Revolvo machine was unable to generate sufficient speed to achieve the required surface finish to a component. On-site engineers were set to undertake a complete replacement of a pulley system, but remote analysis of the data by ERIKS' engineers revealed the harmonics in the vibration occurred only at certain frequencies, which enabled the cause of the vibration to be pinpointed to the feet on which the motor was mounted. Simply tightening the feet eliminated the vibration so the machine could again run at the required speed. Total diagnosis and repair time: under one hour.

This highlights the fact that gathering data through Condition Monitoring is only half the story. The other half is interpretation of that data by highly-qualified Condition Monitoring specialists such as those at ERIKS, who are expert at using it to gain insights into the nature of the problem.

ERIKS not only offers four Condition Monitoring options, but can also provide the support outlined above, and – equally importantly – listen carefully to the customer to determine exactly what is needed, then deliver a bespoke solution based on these options. All of which helps to ensure that your equipment runs more efficiently, and is maintained more cost-effectively.