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New Intellinova version launched

Earlier this year, SPM introduced yet another version of our successful Intellinova online system. Intellinova Compact has the same functionality as its big brother, but with a reduced number of channels.

Intellinova Compact is well suited for remote monitoring or industrial environments with measuring points in spread-out clusters. Wind turbines, pumping stations and auxiliary equipment in the pulp and paper industry are a few examples where Intellinova Compact is the ideal condition monitoring solution. Fans and gear boxes are other typical applications. Because it implements the new and sophisticated SPM®HD measuring technique, it is also the appropriate choice for any low speed application, such as agitators, crushers and conveyors.



The system is available in three versions, each with a fixed channel configuration for shock pulse and vibration measurement. All versions come with multiple rpm and analog inputs as well as status outputs.

As an option, all units have wireless communication capability, enabling remote monitoring, service and support. Utilizing all the channels, Intellinova Compact is a very cost efficient solution. By installing multiple smaller units, connected through a standard Ethernet cable, the costs for transducer cabling can be significantly reduced. When configured with application specific data, Intellinova Compact also works as a standalone unit, using the status outputs for alarm purposes.

Visit spminstrument.com for more information about Intellinova Compact!

Despite its modest size, Intellinova Compact is a powerhouse of measurement performance. Meticulous engineering, using state-of-the-art electronics, brings measurement quality to a new level.

Intellinova Compact measurements on direct-drive generator



Over the past months, Intellinova Compact has been field tested extensively and with excellent results on various customer site applications. One particularly interesting test run was done on a direct-drive generator in a wind turbine.

Test measurements have been carried out on the bearings of a direct drive generator in a 2,0 MW Enercon E82 wind turbine. Designed to improve efficiency and reduce maintenance costs, direct-drive generators are attracting more and more interest in the windpower industry. Although generally bigger, heavier and more expensive, they are considered more reliable and slightly more efficient than conventional, gear-driven generators. The simple and robust gearless design requires no excitation power, and fewer mechanical parts means lower maintenance costs.

Condition measurement on conventional wind turbines is a challenge

per se; on a direct-driven generator, the challenges are bigger still. On the gearless wind turbine, rotational speed is low and will vary from one moment to the next. A normal range of speed during the course of one measurement is approximately 8 to 16 rpm. In addition, the direct-driven generator emits severe electrical interference because the generator is mounted directly on the turbine rotor.

However, thanks to the high dynamics of the SPM HD measuring method used for shock pulse measurement in Intellinova Compact, the low energy signals caused by bearing problems are clearly distinguishable from the electrical noise.



Tim Sundström, R&D manager at SPM, says: "Intellinova Compact is the most advanced measuring system SPM has developed to date. Covering the 0-40 KHz range, it has extremely good measurement dynamics and because it has fewer channels, the measurement cycles per channel are short. The standard, 32-channel Intellinova system is appropriate where there is a large number of measuring points in close proximity, whereas Intellinova

Compact is a cost-effective solution where measuring points are fewer. During the field tests, we have been able to conclude that the SPM HD measuring method yields significant advantages on both low and high rpm machinery, especially in terms of longer forewarning times."

Another field test example is a paper mill, where Intellinova Compact has successfully measured bearing condition on a high pressure rotary feeder. At the time of these measurements, the rotational speed of the feeder was about 9 rpm. The high pressure rotary feeder is part of the fiber line, where wood chips and pulping liquor are transferred from low to high pressure.

Other test sites include:

- *Cement plant*; measurements on gearbox operating at approx. 100 rpm
- *Wind turbine*; measuring on the high-speed end of a Vestas V66 wind turbine, approximate running speed 200 rpm
- *Paper mill*; measurements on wood chipper running at ca 250 rpm



Partial and automated Condmaster backup

In the Condmaster Nova 2010.004 revision, new options have been implemented in the database backup function.

When making Condmaster backup copies, you can now select only a portion of the database contents for backup. Such a partial backup is useful in many situations; when you need to keep data transfer to a minimum for performance or other reasons, when you want to send a certain period of measurements for analysis, or perhaps when you want to replicate only recent changes between master and slave databases.

To implement partial backup, go to **System > Database Maintenance > Safety Copy** and select the *'Measuring results within a*

defined date interval' option under **Settings** in the **Safety Copy** window. Enter **From** and **To** dates as required.

Moreover, Condmaster is now also capable of handling automated backup routines, set up via the *Scheduled Tasks* function in the Windows operating system. Via this function, the operating system offers the possibility to schedule various routines, which are then automatically run. This is a convenient solution to automate backup as well as reloading of safety copies in Condmaster. When reloading a partial backup, any existing database content not part of that particular backup will be left intact.

Want to know more on this subject? Contact your local SPM representative!

New Managing Director for SPM USA

Patrick Parvin has succeeded John Phelps as the new managing director of SPM Instrument, Inc. in Eugene, Oregon.

After nearly ten years as managing director, John Phelps went into partial retirement in January, 2011. For his remaining time with SPM, John's role is Business Development Manager, focusing primarily on developing the SPM distribution network.



The new MD Patrick Parvin has been employed with SPM since 1996 as a sales and service engineer. He has a deep knowledge of SPM products and technologies and is very familiar with SPM customers, representatives and distributors on the North American market.

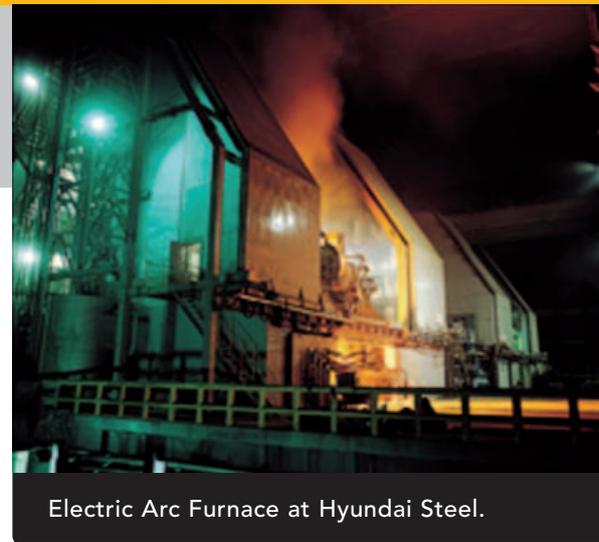
Hyundai Steel monitors rolling mill with SPM®HD

With an annual steel production capacity of twelve million tons, Hyundai Steel in DangJin, Korea is the world's second largest EAF steel manufacturer.

Hyundai Steel's products are used in shipbuilding, construction, engineering, railway and other industrial areas. The company distributes its products on the domestic and overseas markets.

In the past, Hyundai Steel has tried various vibration monitoring systems on their rolling mill gearboxes. Until

SPM HD, no method provided reliable condition information. Since the installation of the Intellinova online system, Hyundai Steel has been very successful in using SPM HD for condition measurement on its rod mill, where the shafts normally runs at 60-90 rpm. In the near future, the system will be expanded to cover a hot strip mill as well.



Electric Arc Furnace at Hyundai Steel.

Successful PDM program saves money in North American lumber mill

In a large lumber mill in northern Idaho, Keith Katzenberger runs a predictive maintenance program involving condition monitoring using SPM equipment.



Keith Katzenberger, a Journeyman Millwright, has been working with the predictive maintenance program at the sawmill for seventeen years. "The overall objective of the PDM program", Keith says, "is to eliminate downtime during production hours, reduce costs and maintain

equipment value". To accomplish this, Keith measures bearing condition and vibration levels on critical sawmill equipment. Optimization of lubrication condition is also a priority.

When the PDM program was initialized, the equipment was classified by initial value and criticality, prioritizing the most expensive machine centers and those that would cause immediate production stops. Hence, the most critical equipment is the primary log breakdown machines (bandmills), edgers and any other machinery that will cause production to stop immediately. Using an A30 instrument from SPM, the measuring rounds cover about 135 measuring points, and

most machines are on a 28-day rotation. All measuring points are monitored with shock pulse measurement and on about half of them, EVAM is used for vibration monitoring. On one half, temperature is recorded also.

Over the years, the PDM program has generated significant savings. There are 24 six foot bandmill wheels in the sawmill. Back in 1994, about two wheels a month were changed, some of them during production hours. Today, wheels are changed only a few times a year during planned stops, causing no downtime; thanks to condition measurements, it can be determined that some wheels last well beyond life expectancy.

Example, bearing replacement savings*

Problem	Bandmill wheel bearing failure
Machine	Sharpchain
WO no.	4555789
Downtime	None
Equipment	#3 Saw top wheel
Total cost	\$2454.03
Savings	\$19.632.24

*) Estimate based on industry standard factor



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