

## OnCare CM

Early detection and elimination of malfunctions





# OnCare CM – So that your entire machine runs smoothly

The smallest malfunctions in the machine often remain unnoticed over a long period, but they can cause enormous damage. With OnCare CM, Voith offers an efficient maintenance tool to prevent this.

OnCare CM combines both technology monitoring as well as machine monitoring in just one system and with its precise measurements decisively contributes to increased machine availability and thus to the increased productivity of the system.

## Focus on efficiency

An important objective for Voith is making paper manufacturing more efficient. Thus, in terms of an integrated total solution, the entire process from raw material to the finished paper is constantly in focus. This central idea is also taken up with OnCare CM: the system gives a continuous overview of the condition of the entire plant.

## Strong in practice

The monitoring system supplies important information about the equipment condition, processing and end product. Emerging malfunctions and their respective causes are detected at an early stage. By initiating suitable countermeasures, damage to the machine and unplanned production shutdowns don't even happen to begin with.

## Product benefits OnCare CM

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- + reduction of unplanned machine downtime
- + intelligent expert system for early detection of bearing damage
- + quick and automatic detection of process malfunctions and direct assignment of causes
- + easy operation in a standardized program with manifold analytical possibilities
- + comprehensive and competent service via telephone hotline or remote control

## System characteristics OnCare CM

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- integration of browser-oriented user interface in other systems is possible
- immediate alarm due to unexpected measurements
- storage of all measurement data in the database for several years, e.g., to show a trend without any gaps
- easy data exchange with other systems thanks to manifold interfaces
- modular design for easy and inexpensive expansion of the system through additional measurement points



1/2 OnCare CM is an efficient analytical for monitoring the entire paper machine.

### **Clear bearing diagnostics**

If sudden bearing damage occurs, severe damage to the machine can come about. For this reason, OnCare CM determines the condition of the bearings either via the acceleration sensors installed on the bearing housings or with mobile sensors.

Thanks to the proven envelope analysis, bearing damage is detected at a very early stage with the aid of special signal processing. In addition, the integrated expert system is in a position to evaluate the vibration signals measured and inform the maintenance personnel clearly and intelligibly about the nature of the damage and how advanced it is.

### **Detailed process monitoring**

The technology monitoring integrated in OnCare CM gives the paper maker additional information about the process that is not available in the machine control systems.

The system monitors important areas online such as pressure pulsation in the approach flow system or the vibrations of presses, coating units and calenders. In case of irregularities in the paper, the respective cause is automatically identified via synchronous time averaging. A high-frequency online analysis investigates important quality data such as basis weight, caliper and moisture.

### **Uniform rotation**

Irregularities in roll behavior can lead to bearing damage, pump failures or other mechanical damages and failures. The consequences include poor runability of the machine, very short felt running times and even protracted and expensive total shutdowns.

With comprehensive monitoring, OnCare CM provides quick troubleshooting support. In addition, the clearly arranged software gathers all data and thus allows generation of trends, working out measures for optimization and alarm in case of irregularities.

OnCare CM can be put together according to the specific requirements of each customer. The core unit is a Voith data acquisition unit which is available as installed or mobile unit. A quick overview and detailed diagnosis for thousands of measurement points is made possible by the modular expansion and thus flexibility of the system. The software prepares all data both in real time as well as in long-term trends with arbitrary intervals, as needed. The user-defined visualization with arbitrary diagnostic functions and data transfer via LAN or USB additionally facilitates handling for the maintenance crew. For an extensive analysis, OnCare CM can also be combined with other sensors, for temperature or pressure measurement, for example.



**Customer** Leipa Georg Leinfelder GmbH  
Germany  
**Paper machine** PM 4  
**Paper grade** Light Weight Coated

### Optimized tissue

Reliable and high-quality production processes are necessary to meet the demands of the tissue paper market.

Important quality features such as softness, thickness and uniform fiber input can be negatively influenced by disturbance variables such as mechanical vibrations of rolls and Yankee. In addition, an uneven load can result in lasting mechanical damage and thus production downtimes lasting several days for the entire system. With OnCare CM, quick and unambiguous identification of what caused the malfunction is ensured.

With the aid of the Voith monitoring system, it is not just protracted severe damage and unplanned cost-intensive downtimes that can be prevented; regular downtimes used for maintenance and service activities as well as the ordering of necessary replacement parts can also be optimally planned.

The exact measurement data of OnCare CM are correlated with one another and with other signals, such as those of existing scanners and sensor. Thus, malfunctions in the process can be directly assigned online and eliminated in an accordingly speedy fashion to ensure a smooth production of all kinds of tissue paper.

### Perfect calendering

Despite cutting-edge technology, the multi-nip calender is always a critical process section due to its compact design and the number of rolls used. Vibrations in the multi-nip and super-calender can not only cause quality variations in the paper profile but also lead to severe mechanical damage in the long term.

Manual measurements for bearing diagnostics and exact adherence to predefined maximum hours of operation can help in containing these problems. However, over a certain period of time, damages occur to the roll itself, the roll cover, the bearing or the drive train. With OnCare CM, any issue that may cause a malfunction can be directly detected so prevention or damage repair can take place accordingly.

Numerous online measurements have already confirmed that roll offset helps to extend running times. Furthermore, with the OnCare CM system maintenance downtimes can be optimally planned, thereby avoiding unplanned downtimes and subsequent damage.

As measurements of the monitoring system are correlated with the scanner signals already available, malfunctions in the process can be directly assigned online to a certain nip.



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- 1 The user-friendly software gathers all data and generates trends, working out measures for optimization and signaling any irregularities.
- 2 With the aid of the mobile data gathering device, the values can be gathered on site and analyzed via a mobile end device.
- 3 The VC NodeCU data gathering unit has 16 analog inputs. Thanks to the modular structure, other units can be added.

### Mobile data acquisition

Important data can be gathered from the entire system with the MD200 mobile data gathering device. Operation and quick diagnosis is carried out with any Android device. Optimization measures can thus be quickly implemented. Along with troubleshooting, the mobile data gathering device is also optimally suited to the task of manual measurement for preventive maintenance. It can also be used as an addition to the fixed installation. Due to the complete integration of this mobile device in the central VibroCheck software, all functions of the diagnostic tool can be used.

### Product features

- Rugged aluminum enclosure meeting IP65
- Three channels for vibration detection
- Two analog and one digital measuring input
- Easy operation via Android end device
- Optimal for quick diagnosis and manual measurement
- Direct data transmission via email
- Connection to the VibroCheck analytic software

### Fixed installation: data acquisition

With its versatility, the VC NodeCU data gathering unit is the optimal solution for improvement of mechanical maintenance in nearly all areas. Together with the VibroCheck software, the measured values are clearly and informatively shown for every user in the form of diagrams, alarms and histories. With its expansion modules and software connections, this fixed installation is proving itself in the most varied applications. An interface to the existing OnCare AM maintenance tool tops off the system and thus makes more than condition monitoring possible.

### Product features

- Flexible installation of the top hat rail module
- 16 channels for vibration detection
- Expansion to more than 2,000 measurement points possible
- Additional modules for digital and analog inputs
- Professional diagnostic software with database
- Bearing and technology monitoring
- Connection to guidance systems and the OnCare AM maintenance software



# OnCare CM

## Successfully used worldwide

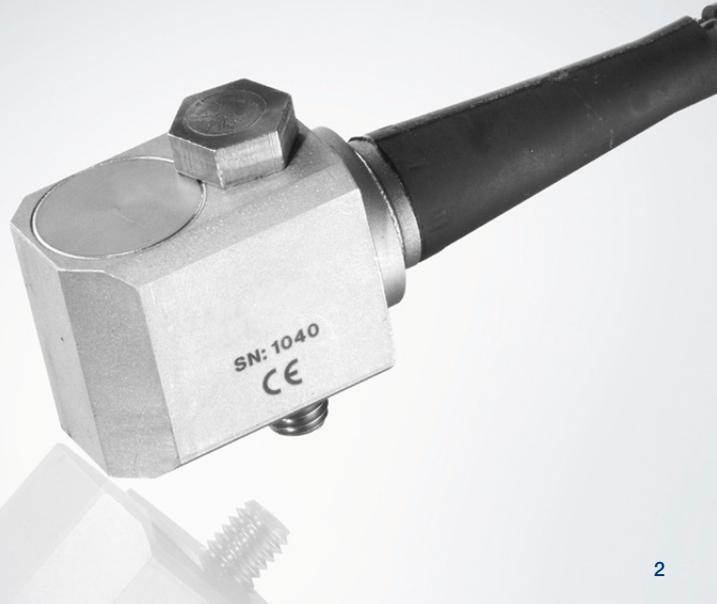
**Bellow you will find more details about the service packages and the successful operation of the vibration monitoring system at Leipa Georg Leinfelder GmbH.**

When building its PM 4 in 2004, the Leipa Georg Leinfelder GmbH paper mill in Germany also opted for a vibration monitoring system. The 78 sensors in the technology module and the 401 sensors included in machine monitoring are used all over the machine from the stock preparation unit to the rewinder station. The system is much appreciated by maintenance and production staff, as it is simple and user-friendly.

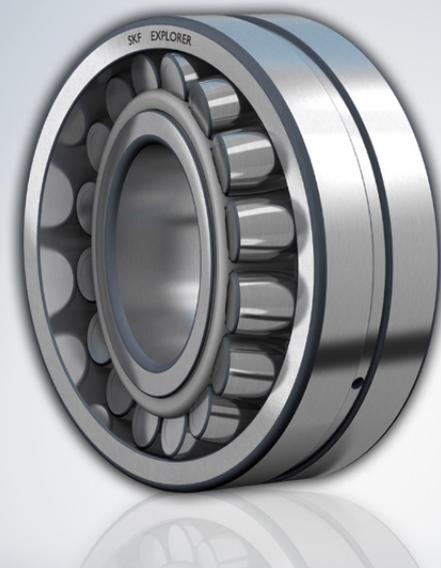
According to Michael Gebauer, plant engineer for technical diagnostics at Leipa: "Initially we had our doubts as to whether the system would actually be beneficial. But Voith gave us such good support from the very outset that our concerns quickly vanished. The system is simply indispensable for identifying bearing damage or roll barring early on and therefore saving costs."

### Package scope

### Bolt-ons



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- 1 Three service packages for the perfect fit – OnCare CM is available as single package as well as service agreement.
- 2 The sensitive sensors facilitate comprehensive recording of all data.
- 3 Precise monitoring of all rolling bearings.



- Mobile data gathering device with loading station
- One vibration sensor with magnetic base
- Professional diagnostic and configuration software for the Windows operating system (including database)
- Software licenses for 500 offline measurement points



- BASIC service package plus:
- Data gathering unit for 16 installed vibration detectors and 14 speed triggers used for continuous measurement
  - 12 vibration sensors, two speed triggers with cable and connection boxes
  - Server PC with installed software and database
  - Software licenses for 16 online measurement points
  - Electrical documentation, configured system including acceptance inspection (FAT)



- COMFORT service package plus:
- Expansion with vibration sensors, speed trigger and pressure transmitter
  - Software with technological emphasis, synchronous averaging (STA)
  - Expansion of software licenses (offline and online measurement points)
  - Additional mobile data gathering device with vibration sensor
  - Interface to OnCare AM (maintenance management system)
  - Interface to central lubrication

- Planning and configuration with implementation of the BASIC service package
- Assembly monitoring up to complete system installation
- Start-up of the OnCare CM system including I/O check and system training
- Manual data gathering by running the measurement points
- Monthly or quarterly diagnostic report with maintenance suggestions
- Support via phone and email and system checking via remote access or on site
- Basic and system training

## Headquarters

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Engineered Reliability