

# VMS-1001

## Vibration Monitoring System



### About the VMS

A failure of large power systems results always in economic losses due to breakdown of the electric supply immense repair costs. That is the reason for the monitoring and diagnostics of operational states of the machine components, and why it attracts more attention than ever before.

### The VMS is capable of:

**Online monitoring** — available for different machine states such as run-up, run-down, nominal operation

**Analysis and alarming** — full frequency analysis, identification of eigen frequencies and modes, online alarms from amplitude or rms value triggering

**Archivation** — data are stored on database server for potential further offline analysis and data mining, remote control of the archive

### Target applications

The VMS targets the field of vibration monitoring inside rotating machines (steam turbines, rotary pumps, compressors, etc.) where the high frequency sampling (up to 100Mhz) is needed for identification of the failure phenomena. Typical applications include vibrations in rotating components (blades), localization of cracks based on guided waves, motion of loose parts in rotating machines, etc.

The sampling capability of current systems cannot sufficiently detect impending damage early enough. Suitable system or technology for special cases (such as online monitoring of rotating shrouded blades) is not currently available on the market at all. The VMS system is bridging this gap.

## VMS-1001 specification

- Online monitoring of vibration phenomena
- High accuracy (12-bit resolution)
- Sampling frequency 100 MHz/ch
- 16 measurement channels/unit
- 100 Mbps ethernet interface

**Actual residual lifetime of blades is an important indicator for the early service action to prevent the turbine failure.**

**The VMS for shrouded blades is based on non-contact measurement and analysis of time differences between blade tips.**

### VMS compatible sensors:

- **Optical probes** (lensed or unlensed) based on laser beam — we use especially green lasers for optimal response in steam environment.
- **Eddy current or magneto-resistive probes**

**Customer's needs, preferences, and the operating environment determine the final choice of sensors.**

**Early-stage diagnosis of failure phenomena in rotating machines helps to improve their durability and maintenance management. Therefore, VMS system is suitable for operators as well as for manufacturers of rotating machines.**



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## We offer already proven services in the area of:

**Design and Customization** — customer's needs and preferences are included into the design and development phase such as customized displays and data communication protocols

**Installation** — our engineers are prepared to be available on site and/or participate in installation of sensors and VMS monitoring system and to inspect the completed installation

**Data Analysis Services** — we share our machinery troubleshooting knowledgebase ad-hoc or periodic reporting of the machine condition

**Software Maintenance** — continuous responding to customer requests leads to independent software improving — SW maintenance package entitles the user to all available software updates

**Operator training** — on-site training of the customer's staff

