



Product Information

VC-6000™ - A Modern and Compact, Multi-channel Replacement for Ageing Safety Monitoring Systems

Many safety-monitoring systems currently used to protect critical machinery are either obsolete or no longer reliable. Failure to upgrade these systems increases the risk of unexpected breakdowns and may result in loss of production and possible damage to personnel and machinery. The Brüel & Kjær Vibro VC-6000™ safety monitoring system uses modern technology to offer high-quality, cost-effective machine protection that is ideal for such upgrades or replacements.

Machine Protection

Critical rotating and reciprocating machinery is often equipped by the OEM with stand-alone safety monitors or monitoring systems, which continuously measure vibration, shaft positions and temperature levels. They activate alarm and danger signals through relays to the control system or shut the machine down if detected levels are severe enough.

Just as machine uptime can be extended through careful maintenance and replacement of worn parts, safety monitors can benefit from regular maintenance to ensure ongoing reliability. However, as electronic components reach the end of their design life it is often more economical to replace the complete system. Higher channel density and the improved reliability of modern electronic components make modern safety monitoring systems very cost effective and easy to install.

OEM Independent

While most safety monitoring systems are delivered as part of the OEM machine package, there is no requirement to continue using the same brand of monitors. Brüel & Kjær Vibro has many years of monitoring experience with machines from many of the world's major machine manufacturers. Our independency enables us to work closely with all machine suppliers to ensure their machines are correctly and reliably monitored.

Compatible with existing sensors

The rack based VC-6000™ safety monitoring system is compatible with all commonly used machine-monitoring sensors, regardless of manufacture.

A safety monitor can only be as reliable as the signals it receives. Therefore we recommend a full reliability audit of all sensor lines to identify any potential faults.

Brüel & Kjær Vibro has an extensive range of vibration sensors with the same thread types and mounting studs as the existing sensors. For example, in most cases the old sensors can simply be replaced, retaining existing mounting brackets and junction boxes.

High Channel Density

The 19" rack based design of the VC-6000™ fits readily into existing commercially available cabinets. Because it has higher channel density (up to 48 channels per half size 19" monitor rack – 3 units height), it requires much less space than older systems for the same number of channels.

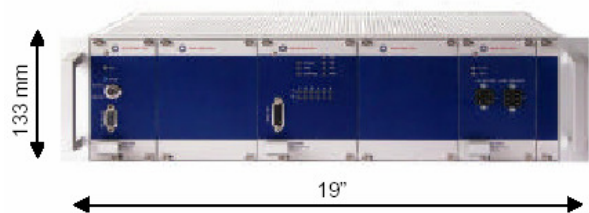


Figure 1 The compact design of the VC-6000™ fits readily into existing cabinets

API 670 compliant

The VC-6000™ rack based safety monitoring system is compliant with all relevant specifications, including API 670.

Improved Reliability

Advances in electronic component design mean that the Mean Time Between Failures (MTBF) of a VC-6000™ monitor is many years - typically 12 years. With a Mean Time to Repair (MTTR) of 4 hours, monitor availability is above 99.9%.

Interfacing

The flexibility of the VC-6000™ monitor gives several options for interfacing to other systems. One or all of the interfaces can be used for each monitor. The flexible design means that you can freely select the most suitable interface method.

- Single/Dual MODBUS RTU
- Alarm and Danger Relays
- 4 - 20mA
- OPC (Ole for Process Control)

Hot-swap capability

It is too expensive and often operationally difficult to shut critical machinery down when the safety monitors require maintenance. The VC- 6000™ has therefore been designed to allow modules to be exchanged while under power to minimise interruption of the monitoring function.

Time Synchronisation

Root cause analysis after a machine shutdown requires that all systems have synchronised clocks. The VC-6000™ can be synchronised directly with a plant clock using NTP in an Ethernet LAN.

Local Display

Older safety monitors offer only limited bar-graph type LCD or LED displays. The VC-6000™ offers the option of a touch screen PC that displays live and historical data for all measured points. Graphics can be built up as required using digital images.

Power Redundancy

If required, the VC-6000™ can be equipped with dual or triple power supplies.

Reciprocating Machines

The VC-6000™ safety monitoring system offers a reciprocating compressor monitoring module that measures real time rod-drop to assess the rider-ring condition. Cylinder pressure, cylinder and crosshead impact vibrations and valve temperatures can also be measured and monitored to give an accurate and overall picture of the machine's running condition.

Time is of the Essence

Brüel & Kjær Vibro understands that time is often critical; therefore our experienced team of site engineers can configure, test and install the VC-6000™ in a matter of days.



Figure 2 Front panel view of the VC-6000™

Upgradeable to Condition Monitoring

To get more information about the actual condition of a machine, the VC-6000™ can be readily upgraded to interface with our Compass 6000™ trending or diagnostic monitoring package. Compass 6000™ analyses the vibration signals from the VC-6000™ in both the transient and steady-state operating modes of the machines.

Existing or new Cabinet

The VC-6000™ is designed to fit readily into the instrument cabinets of the safety system being replaced.

Additional Information

For more detailed information about the VC-6000™ safety monitoring system and associated products please visit our website or contact us by e-mail to arrange a face-to-face consultation.

Brüel & Kjær Vibro reserves the right to change specifications without notice

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