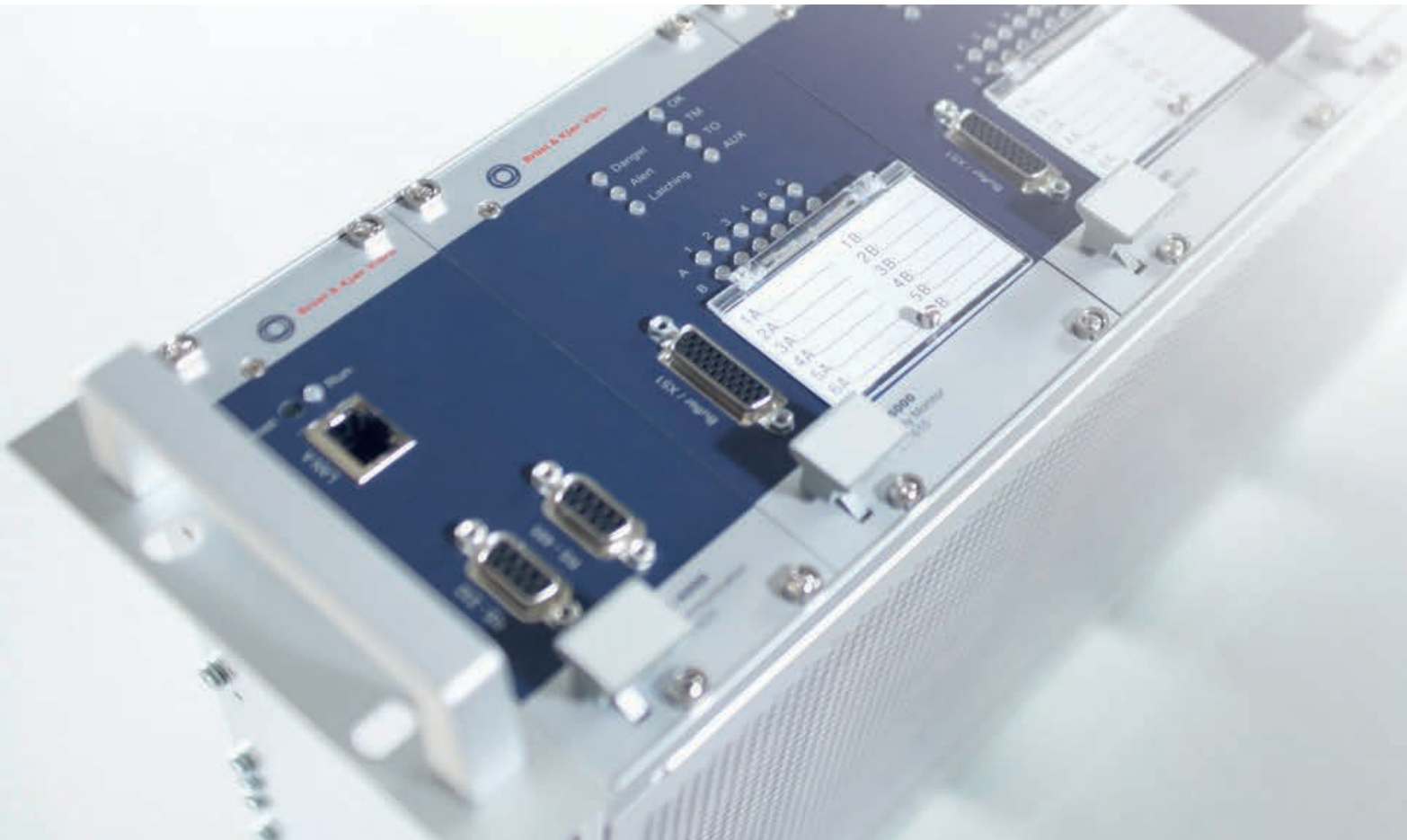




Brüel & Kjær Vibro



VIBROCONTROL 6000®

**Reliable Machine Protection and
Data Acquisition for Condition Monitoring**

Thousands of machines worldwide are being protected by VIBROCONTROL 6000®



The VIBROCONTROL 6000® monitoring system has been developed to the highest technical standards for reliability, scalability, performance and ease of use. Developed from over 60 years of experience, VIBROCONTROL 6000® has been designed in close cooperation with both machine manufacturers and end-users for a wide range of machines and industries.

The system is fully supported by our renowned world-wide sales and support network to ensure all system components are optimally selected, installed and commissioned to satisfy the client's requirements for the most demanding applications.

Since its introduction, VIBROCONTROL 6000® has played a vital role in increasing uptime and preventing catastrophic events at plants all around the world.

★ Examples of machine types we monitor:

- Steam turbines
- Gas turbines
- Hydro turbines
- Axial compressors
- Centrifugal compressors
- Reciprocating compressors
- Motors and generators
- Pumps
- Ventilators
- Extruders
- Agitators
- Gearboxes
- ...and many more

Wide Reaching Applications

VIBROCONTROL 6000® is a plant-wide system that continuously monitors vibration and process signals on many types of critical machines and balance-of-plant for a wide range of operating conditions and industrial processes.

It is well suited for both machine OEM installations and new or retrofit end-user installations in the oil and gas, energy and process industries.

VIBROCONTROL 6000® is compliant to API 670 and a number of other international standards and is designed to be highly compatible with existing installations, thus simplifying retrofits. VIBROCONTROL 6000® plays an important role in plant modernization to replace the growing number of ageing machine protection systems in the market that are less reliable, less user-friendly and difficult to maintain.

★ Our customer base includes large companies of worldwide renown in the oil and gas, the petrochemical and power generating industries.

Oil & Gas



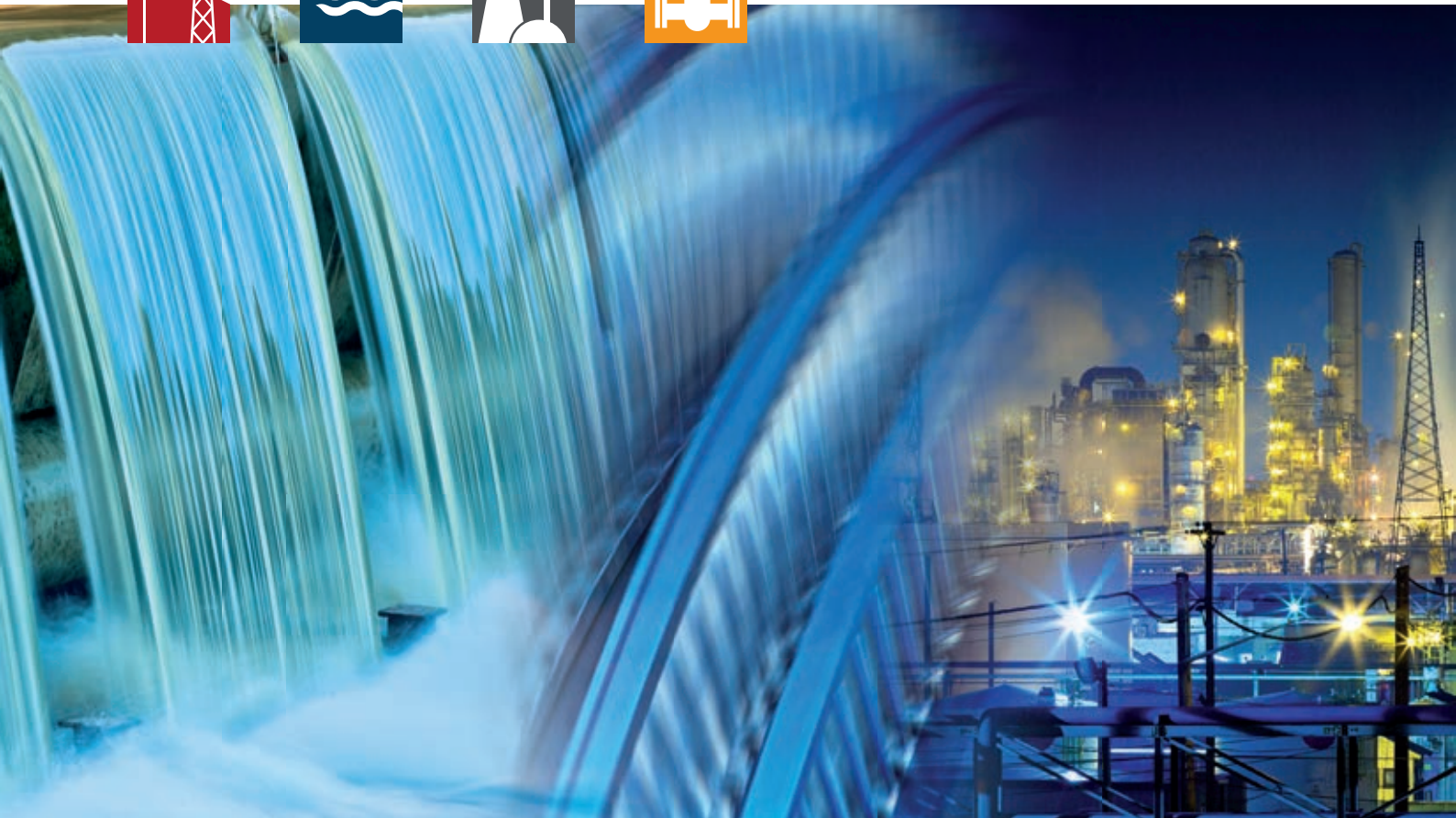
Hydro Power



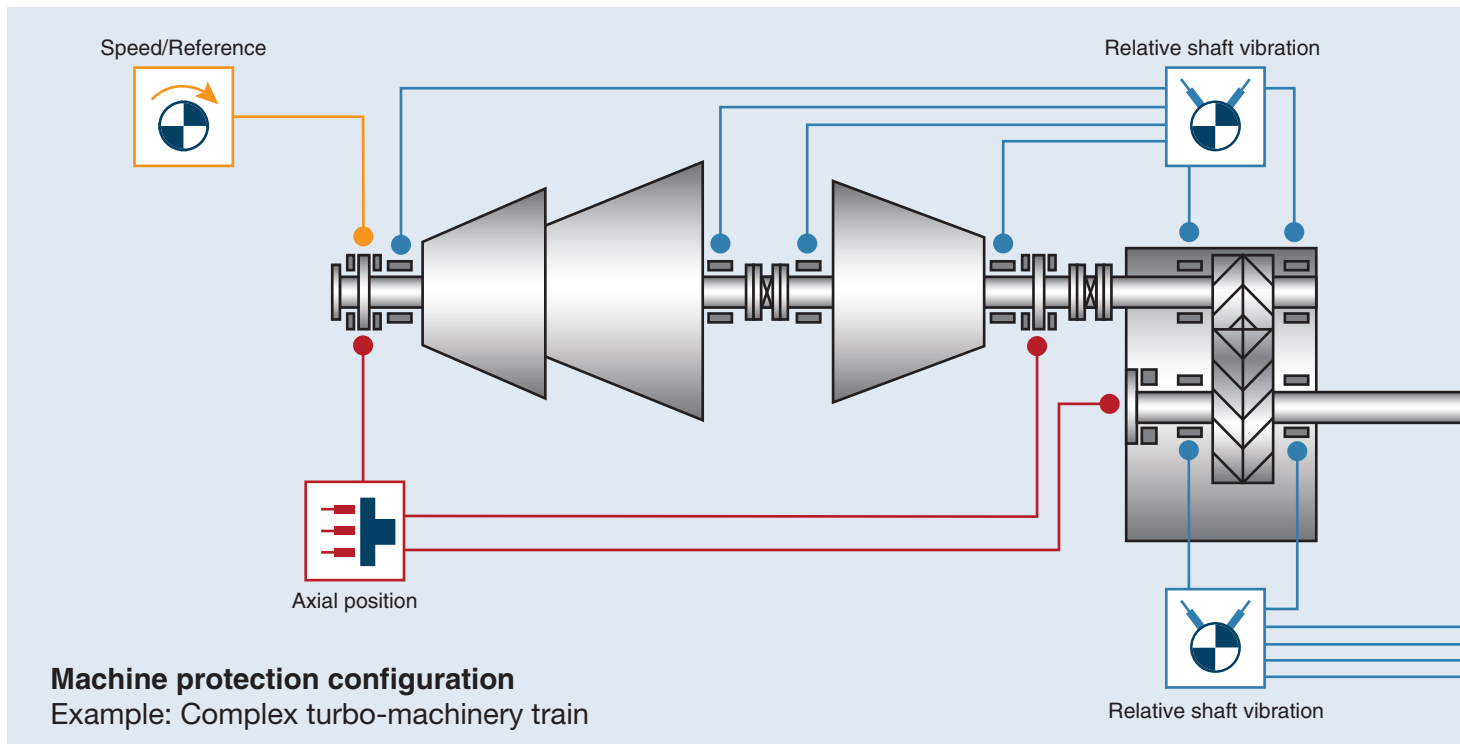
Thermal Power



Process



Modular design, advanced measurements, versatile communications



VIBROCONTROL 6000® was designed with scalability, reliability, performance and versatility in mind. All monitoring modules are hot swappable and work independently of each other, with a very fast reaction time. The system graphical user interface provides easy system setup and on-the-spot visualization of the measurements. Scalar vibration and process data can be readily exported to SCADA and DCS systems. The interfaces also allow alarms and settings to be exported and enable operators to reset relays from a remote location. All of these system features add up to give our customers value in managing their machines.

Moreover, VIBROCONTROL 6000® is based on a modular application design concept that allows it to cost-effectively fit most monitoring applications with minimal setup. High reliability with powerful performance and technology does not need to be complicated or expensive.

★ Advanced measurement functionality, not just broadband:

- Relative shaft vibration
- Axial position
- Case vibration
- Eccentricity
- Differential expansion
- Case expansion
- Piston rod drop
- Temperature
- Speed/Reference
- Process data
- Machine states with different limit sets for enhanced protection

1 Communication module

Configures VIBROCONTROL 6000® to transfer scalar data and time signals and provides full integration into plant monitoring systems.

2 Monitoring modules

Factory pre-configured modules for specific machine types or fully user-configurable modules for measurements, outputs and voting logic relay control. These provide easy setup and great flexibility to all applications.

3 Power supply module

This independent module can be used in different configurations, including redundant power supply.

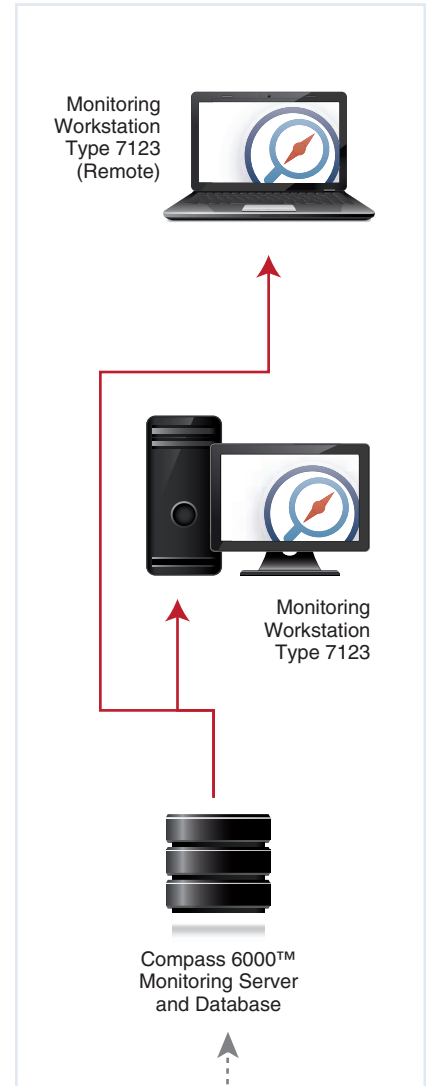
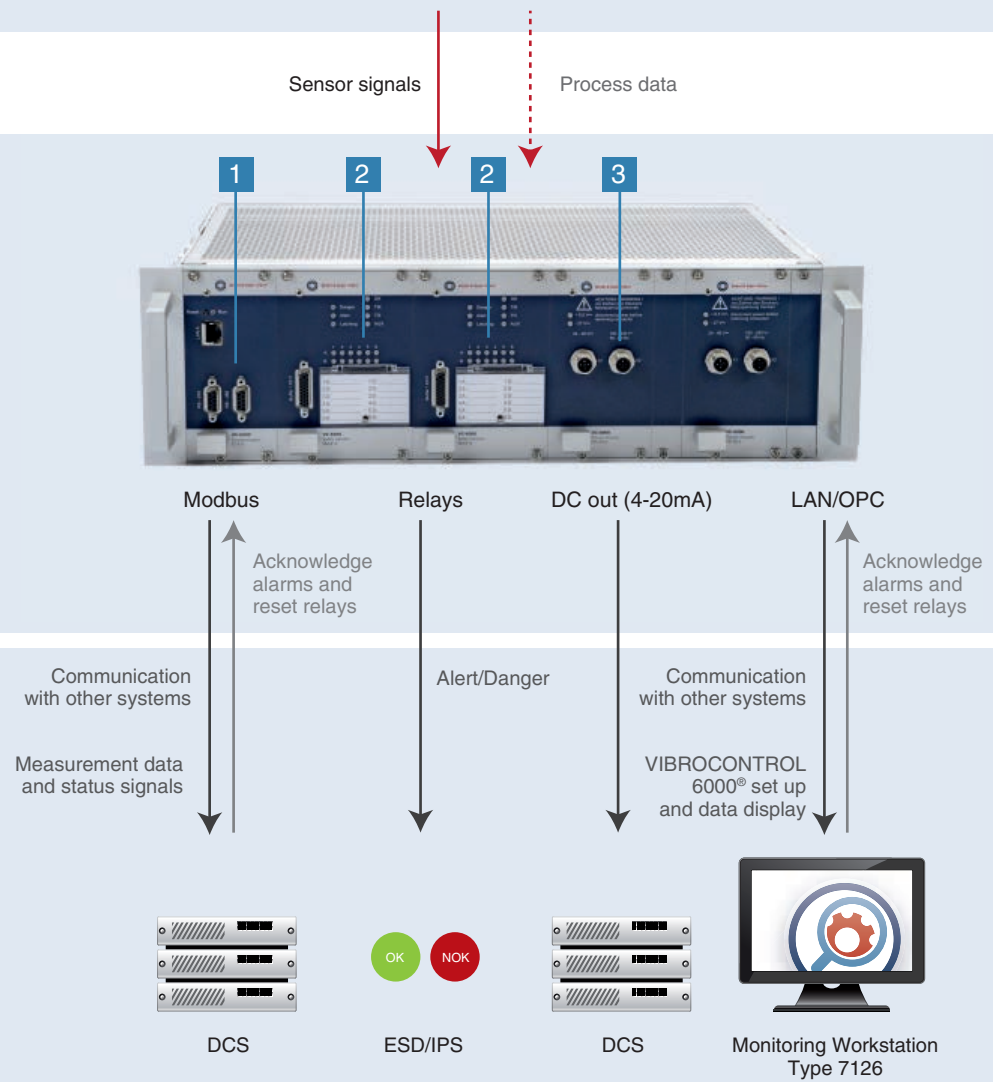
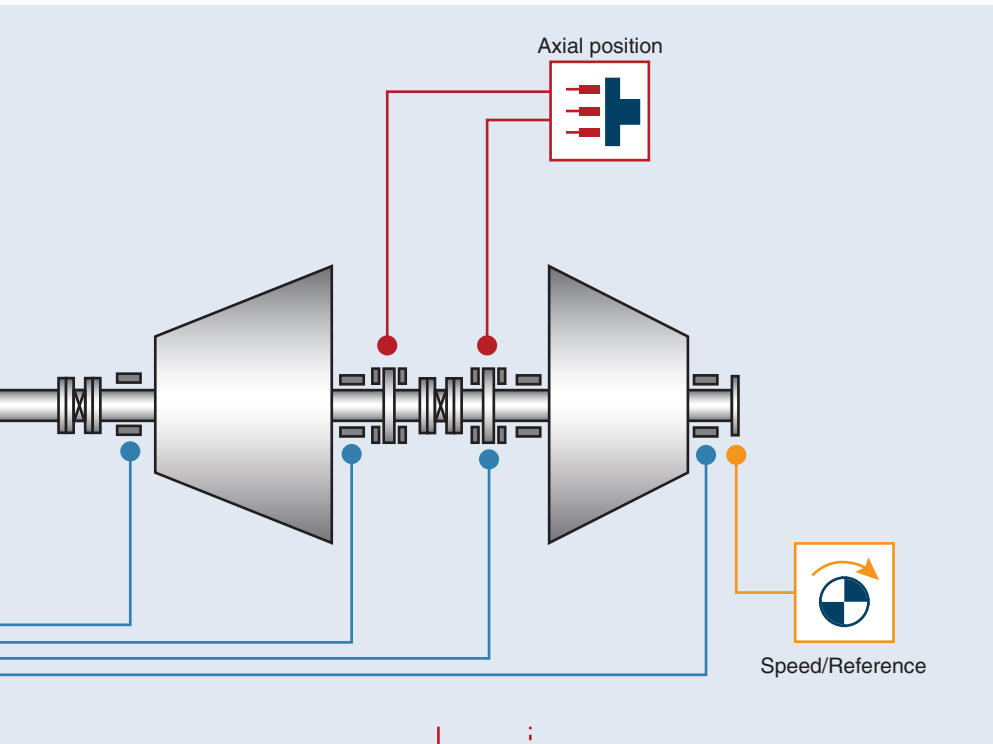
Compatibility

VIBROCONTROL 6000® can easily replace existing 19" rack-based protection systems with room to spare, making it ideal for retrofits.

Extensive range of inputs

Accepts displacement sensors, velocity sensors, acceleration sensors, temperature sensors, pressure sensors, etc.

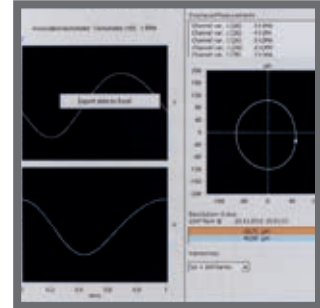
Optional Upgrade: **COMPASS 6000™** Condition Monitoring System



Configure, display and diagnose

The Monitoring Workstation Type 7126 package is used to configure the communication settings and the monitoring modules of VIBROCONTROL 6000®. It is easy to use and Windows™-based, so it can also be used as a control room user-interface for displaying measurement data, alarm status and settings, and for acknowledgement of alarms from any number of VIBROCONTROL 6000® monitors. During machine commissioning, all measurement values can be stored for baseline documentation.

Type 7126 *plus* provides a user-requested “snapshot” of the machine condition. This is a useful feature during commissioning for creating baselines, or performing basic machine fault diagnostics if no condition monitoring system is used. FFT spectra, orbit plots and Bodé plots can be displayed, and all the measurement results can be saved in a *.csv file format for reporting.



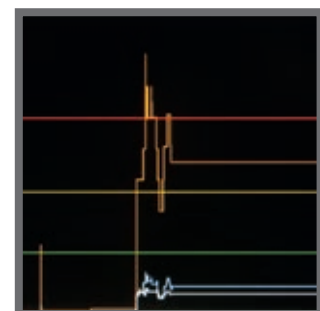
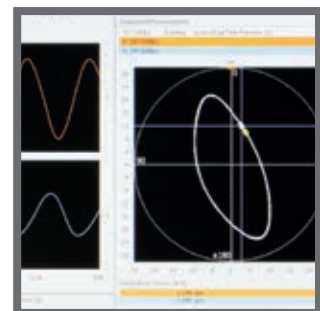
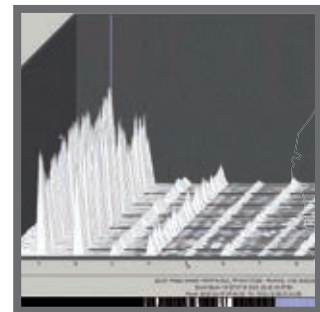
Type 7126 plus provides on-demand information on the machine condition.

VIBROCONTROL 6000® in combination with the Compass 6000™ Condition Monitoring System

VIBROCONTROL 6000® can at any time also be used as a data acquisition platform for the Compass 6000™ condition monitoring system, without interfering with its protection monitoring functions.

Pre-conditioned scalar measurements and time series data are continuously exported from VIBROCONTROL 6000® over the LAN for viewing alarm and trend information, and for performing advanced diagnostics on the Compass 6000™ platform, such as spectra, envelope analysis, vectors, orbits, etc.

An integrated condition monitoring solution reduces machine life cycle costs!

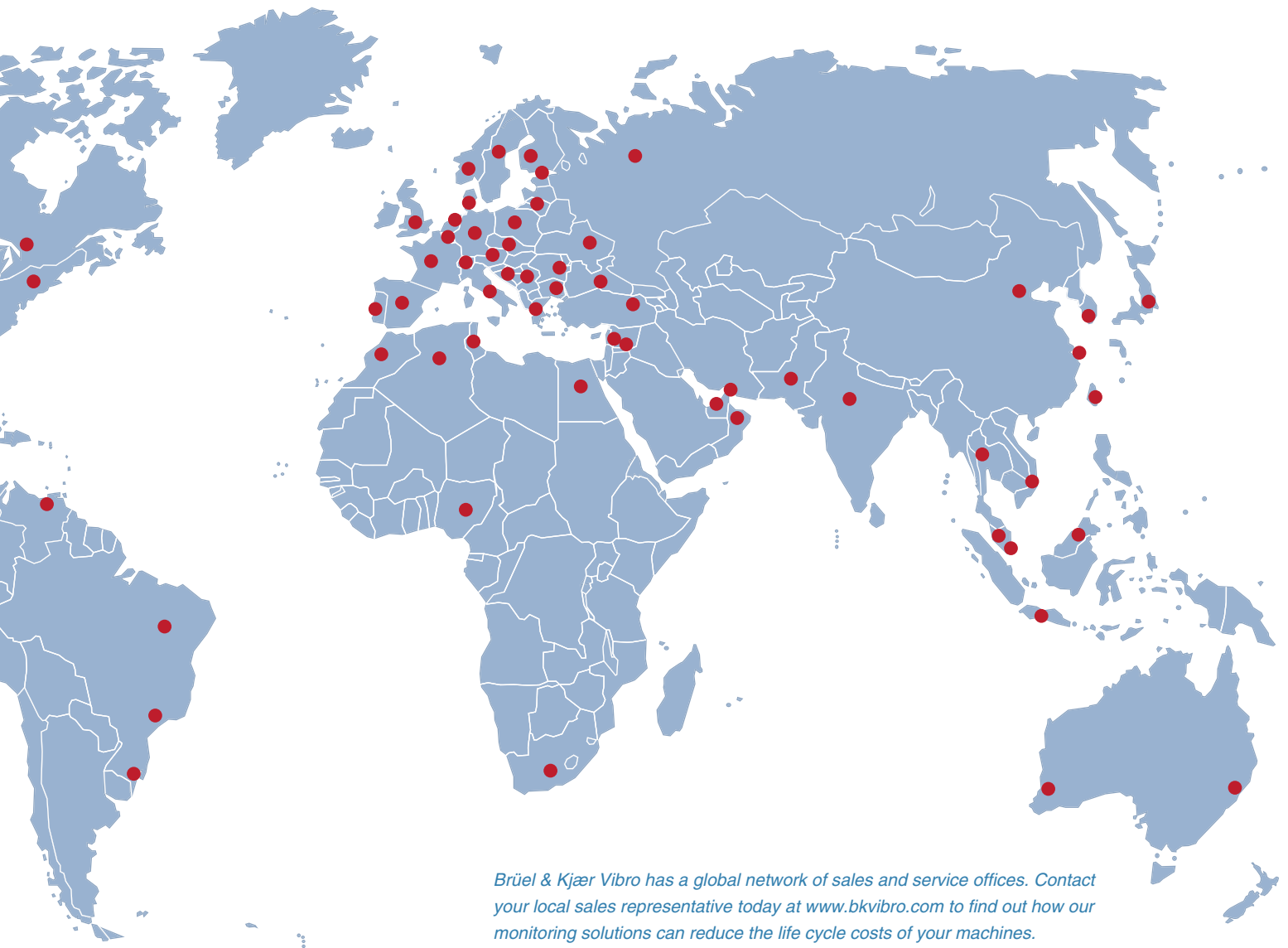


Examples of the powerful plotting functionality of Compass 6000™. Top to bottom: Waterfall spectrum plot, orbit plot, multi-trend plot



Optimise your monitoring system installation and performance with Brüel & Kjær Vibro services

Our renowned services ensure you obtain maximum benefit from your monitoring solution. A wide range of services are offered that cover the entire life of our customers' systems, including quick start-up, reliable and high performance operation, timely upgrades, compliance and system maintenance. The individual services can be customized and delivered to customers' needs, or packaged in Long-Term Service Agreements (LTSA). Our services are provided by Brüel & Kjær Vibro's field experts who have been trained in our training centers and factories.



Brüel & Kjær Vibro has a global network of sales and service offices. Contact your local sales representative today at www.bkvibro.com to find out how our monitoring solutions can reduce the life cycle costs of your machines.

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