![Brüel & Kjær Vibro]

Product Specification

Compass 6000 Safety Monitoring Workstation- type 7126 *plus*
### Configuration, Data Visualization and "Snapshot" Software

*The **type 7126** is the basic software used to configure the communications and monitoring modules of the **VIBROCONTROL 6000 safety monitoring system** (VC-6000®). The software can be used as a control room user-interface to display measurement data and acknowledge alarms from any number of VC-6000® monitoring systems. During machine commissioning, all measurements can be stored at regular intervals in a file for baseline documentation.*

The **type 7126 *plus*** is an "Add-on" software module that can do a **"snapshot" of your machine** after commissioning.

The **7126 *plus*** provides

- **FFT** spectra of all channels

- **ORBIT** plot of all channels with rotor dynamic measurements

- **BODE** plot of all channels with rotor dynamic measurements

Possibility to store the results as CSV-file to have data for comparison, if your machine shows an unknown vibrational behaviour.
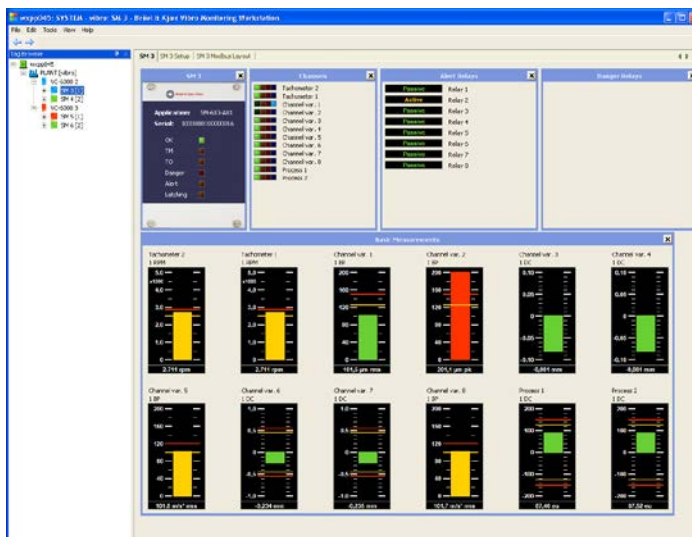
Applications

Monitoring configuration
7126 *plus* software is used to configure the parameters of the monitoring tasks of the VC-6000® safety monitoring system.

Measurement overview
7126 *plus* provides an overview of all the machines, their alarm status and measurements. The software provides measurement displays for a given monitoring configuration.

Commissioning and Baseline documentation of machines
An accurate record of the condition of new and overhauled machines can be easily made. Vibration and process data from the VC-6000® can automatically be saved at user-defined intervals to a spreadsheet compatible format. This therefore enables basic diagnosis and analysis.
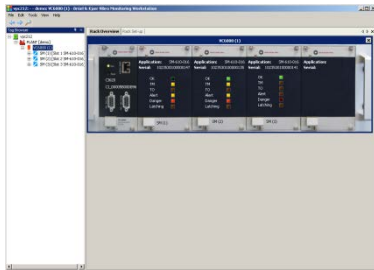
Fig. 2 Monitoring configuration dialogue (VC-6000 rack level)

Fig. 3 Relay logic configuration dialogue

Fig. 4 Modbus communications configuration dialogue

Software Functionality

The **7126 *plus*** software is based on Brüel & Kjær Vibro's **Compass 6000** software, which is the primary platform used for condition monitoring purposes. The **7126 *plus*** is a stand-alone software specially adapted to the VC-6000® safety monitoring system. Configuration information and data can be saved to a file. Data and alarm information from the VC-6000® is automatically and continuously accessed and displayed by the **7126 *plus*** via a LAN interface. The software communicates with the VC-6000® via an OPC interface, and can thus be installed on a computer in a Local Area Network remote from the VC-6000® monitors.

Monitoring Configuration

The **7126 *plus*** software is used to configure the communication interface modules, monitoring modules and measurement points and the outputs.
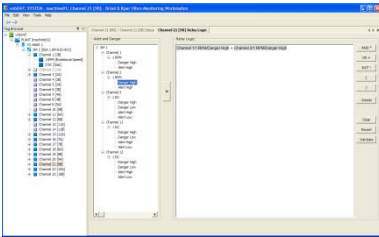
Relay Logic Configuration

Some VC-6000^{TM} module configurations allow the relays to be configured using user-defined relay logic statements with AND, OR, NOT and ( ). The simple software setup provides enormous flexibility. It is possible to use the logic setup to configure any number of measurements for such modules to control a single relay. The relays can be set up of these SM-610 Monitoring Modules to any voting logic standards, e.g. 2-out-of-3. By setting up the relay logic in the software rather than directly in the hardware, machine commissioning can be performed faster, and there is no re-wiring necessary when changing the relay logic.

Communications Configuration

The VC-6000® can communicate measurement data directly to a distributed control system (DCS) using the following protocols:

- OPC (<u>O</u>le for <u>P</u>rocess <u>C</u>ontrol)
- Modbus RTU

With OPC and Modbus RTU, both measurement values and alarm data are available to the DCS. Often Modbus is chosen as the fastest and most reliable data link to the DCS Operator's workstation SCADA system. Relays can also be reset via Modbus (the VC-6000® system configuration and alarm acknowledgement has to be performed via LAN from the **7126 *plus*** PC server).

The VC-6000^{TM} Communication Interface Modules (CI-6xx) can be configured using the **7126 *plus*** software:

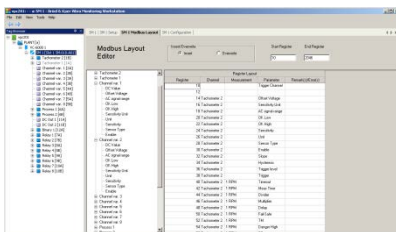- **LAN**

- **Serial**: RS-232, RS-485

Tag Browser

The 7126 software can be used in a control room to overview the entire monitoring status of the machines.

The tag browser allows you to navigate through all the machines and measurement points within the entire plant. The measurement and alarm status of several VC-6000® racks can easily be seen in an overview display. The colour of the icons in the Tag browser indicates the alarm status, disabled tags, etc. at a glance. By right clicking on the tag browser icons it is possible to acknowledge alarms.

Data Logging

All scalar data monitored by the VIBROCONTROL 6000 – both steady state and transient - can be saved to a spreadsheet format (*.csv). The logging interval and period is user defined. The file can then be plotted in a spreadsheet such as Microsoft Excel® to document the baseline condition of the machine during machine commissioning. This data-logging feature can of course also be used for documenting the machine quality in terms of vibration measurements after a maintenance operation.

Fig. 5 FFT spectra 7126 plus

The 7126 *plus* functions:

FFT Spectra
up to 5 kHz with 1600 lines resolution.
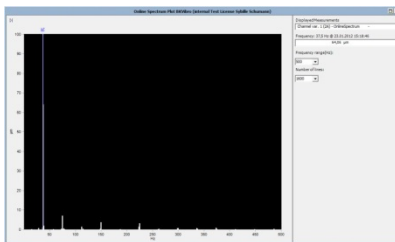
- Cursor functionality and indication
- Export to CSV-file

Fig. 6 BODE plot 7126 plus

BODE plot
shows you the vibrational behaviour during run-up or coast-down of the machine to identify resonances.

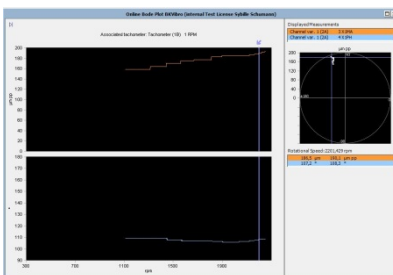- Cursor functionality and indication
- Export to CSV-file

Fig. 7 ORBIT plot7126 plus

ORBIT plot
shows you the kinetic movement of the center of the the shaft. Depending on speed and machine state you get information about unbalance, alignment, resonance and more of slide bearing machines.

- Cursor functionality and indication
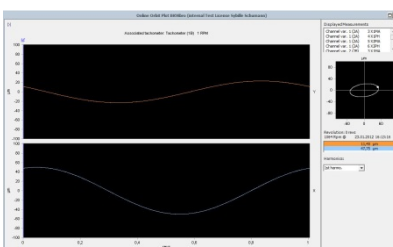- Measuring 1st or 1st and 2nd Harmonics
- Export to CSV-file

Specifications for 7126 *plus*

PC Operating system*:

Windows® 7 SP 1 (64 Bit), Windows® 8.1 (64 Bit)

*for more details see BUM0090 installation manual

PC Hardware:

CPU - 1GHz or higher. Intel Pentium 4 or similar
RAM – Minimum 100MB free RAM
LAN (Ethernet) – 10Mbit minimum
Graphics card – 1024 x 768 pixels or better

Setup:

- Measurements for VC-6000 modules – These include:
    - Relative shaft vibration according to DIN ISO 7919
    - Shaft position / shaft displacement
    - Axial displacement
    - Absolute casing vibration according to DIN ISO 10816
    - Rolling-element bearing condition
    - Temperature and process variables
    - Casing expansion
    - Eccentricity
    - Narrowband tracking filter
    - Speed
    - Over-speed
    - Rod-drop
    - Vector and rotor-dynamic values
    - Binary signals (on-off)
    - General vibration measurements with variable filters

- Communication parameters – Modbus RTU (slave), OPC
- Relay Logic – AND, OR, NOT and ( ) operators
- Data Logging
    - Measurement interval: 1 to 60 seconds
    - Logging period: 1 minute to 5 hours
    - File format: Comma separated values (.csv)

- Analysing Functions
    - FFT spectra
    - BODE
    - ORBIT

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

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