



Brüel & Kjær Vibro
a spectris company



Application Note

VIBROPORT 8000

Rotating & Reciprocating Equipment Vibration Analyzer

Trademarks and Copyrights

All trademarks, service marks, and/or registered trademarks used in this document belong to BK Vibro America Inc., except as noted below:

Trademarks used herein are the property of their respective owners.
Data and specifications are subject to change without notice.

© Copyright 2020, BK Vibro America Inc.

All rights to this technical documentation remain reserved.

Any corporeal or incorporeal reproduction or dissemination of this technical documentation or making this document available to the public without prior written approval from BK Vibro America Inc shall be prohibited. This also applies to parts of this technical documentation.

Application Note **VIBROPORT 8000**, C107832.002 / v02, en, date of issue: 13.08.2020

Brüel & Kjaer Vibro GmbH

Leydheckerstrasse. 10
64293 Darmstadt
Germany

Phone: +49 6151 428 0
Fax: +49 6151 428 1000

Hotline

Phone: +49 6151 428 1400
E-Mail: support@bkvibro.com

Brüel & Kjaer Vibro A/S

Skodsborgvej 307 B
2850 Nærum
Denmark

Phone: +45 77 41 25 00
Fax: +45 45 80 29 37

Homepage

www.bkvibro.com

BK Vibro America Inc.

1100 Mark Circle
Gardnerville NV 89410
USA

Phone: +1 (775) 552 3110

Corporate E-Mail

info@bkvibro.com

Table of Contents

1	About this document	4
2	System Overview	4
3	VIBROPORT 8000: The right choice for you	5
4	What's in the box?	6
4.1	The Carrying Case	6
4.2	The VC-8000PDS Rack	6
4.3	The Power Supply	6
4.4	The Software	6
4.5	The Accessories	7
4.6	The Quick Start Guide	7
4.7	Training/Technical Support	7
5	Configuration Software	8
6	Selected Specifications	9
7	Ordering Information	10



1 About this document

This document summarizes the principal features and specifications when using the VC-8000 Machinery Protection and Condition Monitoring system as a portable data system. The VIBROPORT 8000 is a specially configured and packaged VC-8000 optimized for portable dynamic data collection. The VIBROPORT 8000 operates in conjunction with the SETPOINT® CMS Software and it extends steady state and transient condition monitoring to machines that are not instrumented or that only have protection systems.

2 System Overview

The VC-8000 is recognized as a world-class machinery protection system. When associated SETPOINT® CMS it serves as a condition monitoring, and diagnostic platform. The system is normally permanently installed and connected to one or several rotating or reciprocating machines. Many of our customers have found that the systems ease of use, outstanding data acquisition capability and robustness also allows them to use the system as a portable data acquisition system.

As a portable system, the VIBROPORT 8000 user enjoys multiple methods of data acquisition. The system operates equally well in standalone modes, connected to a laptop, or to an OSIsoft PI historian.

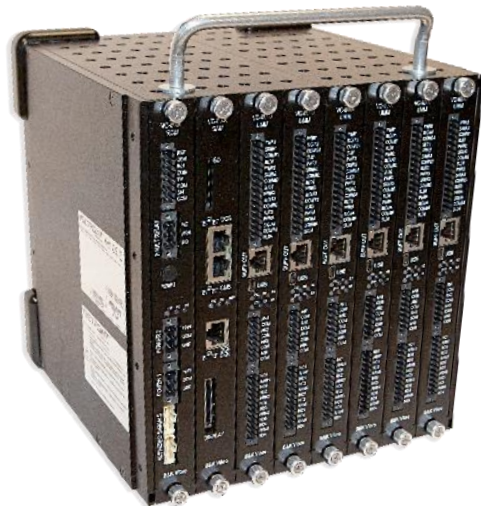
Regardless of the data depository, the SETPOINT® Condition Monitoring Software (CMS) is the primary diagnostic interface. One system, less training, more monitored machines for less cost are just some of the reasons why the VIBROPORT 8000 just makes sense.

Using the VIBROPORT 8000 you can connect to your existing machinery protection systems to immediately view, log, and share all data needed to understand machinery behaviors.

Leave the VIBROPORT 8000 connected to your machines for hours, days, or months. It collects all valuable data – even without a computer connected to the rack.

The VIBROPORT 8000 is ideal for monitoring during turnarounds or following maintenance.

Collect startup and shutdown data and keep an eye on machine resonances. Connect the VIBROPORT 8000 to your machines during process changes to monitor any degrading mechanical conditions. Gathering the data is simple and it is easy to upload data to your OSI PI system or manage the data with other database tools.



3 VIBROPORT 8000: The right choice for you

Here are few key aspects of the VIBROPORT 8000 to help you understand if this is the right product for you:

- Budget-conscious and flexible configuration
- Always capture important synchronous and asynchronous waveforms with patented i-factor technology.
- Capture continuous waveforms during fast electric motor startups with Boost Mode
- Capture and trend 80ms data (i.e. direct amplitude, gap, 1X, 2X, NX amplitude and phase)
- Best-in-class SETPOINT® Condition Monitoring Software (CMS)
- Support I-factor (change based), time-based, and speed-based acquisition strategies
- Configure to any of the hundreds of industry-standard vibration sensors
- Configure inputs for buffered transducer signals, sensors, or 4-20mA signals
- View trend data and high-speed sensor machinery data with our SETPOINT® CMS diagnostic software
- View transient and steady state plots, including, time based, table, orbits, half and full spectrum, cascade, waterfall, bode, polar and shaft centerline
- Transfer data directly to an OSIsoft PI database or export to PI (including offline data)
- Rugged reliable hardware, with proven MTBF exceeding 100 years
- Wide environmental limits for the most extreme conditions no internal fan needed
- Support all types of rotating and reciprocating equipment
- Save, load and reuse configuration templates
- Simplify training, spares, purchasing, and data management by using one system for multiple needs



4 What's in the box?

4.1 The Carrying Case

A rugged industrial transport case to carry the VIBROPORT 8000, a 14-inch laptop (special order only available in the US), power supply, and cables.

4.2 The VC-8000PDS Rack

The VIBROPORT 8000 includes several Universal Monitoring Modules (UMMs) based on your needs. Each UMM supports up to four sensor inputs (e.g. displacement, velocity, acceleration, speed/phase, and 4-20mA process inputs).

The VIBROPORT 8000 rack also includes a 32 GB SD card for automatic data backups and manual file transfers (up to approximately two months) and a 256 GB internal SSD drive for longer internal data storage. The 32 GB SD card can be removed and directly read by SETPOINT® CMS, the internal SSD drive needs a laptop connection for data viewing and retrieval.



4.3 The Power Supply

We supply each VIBROPORT 8000 with a 110V/220V power supply with international plug options.

4.4 The Software

The VIBROPORT 8000 operates with three software applications:

1. VIBROPORT 8000 configuration and maintenance software
2. SETPOINT® Adapter software to configure connections between the VIBROPORT 8000 and connected databases
3. SETPOINT® CMS (for portable and permanently installed systems)

4.5 The Accessories

Connect the VIBROPORT 8000 directly to your existing machinery protection system via BNC connectors with full support for DC to 20Khz signals from most industry standard sensors.

We include a power supply cable, a USB cable, UMM-to-RJ45 cables, and a 10ft long cable to connect to your existing protection system's BNC connectors. Use our Cat 5/6 cables as plug-and-play connections to your existing protection system.

4.6 The Quick Start Guide

A short guide helps gets you started and collecting data in just a few minutes!

4.7 Training/Technical Support

We include four hours of dedicated remote "online" training for new users. We train you to understand how to navigate and use the VIBROPORT 8000 hardware to collect data. Then we will teach you how to navigate and get the most from your SETPOINT® CMS Software. We also include 12 months of premium technical support.

We also provide complete Machinery Diagnostic courses to help improve your diagnostic skills. Provided separately please ask for a quote.





5 Configuration Software

VIBROPORT 8000 software is optimized for a portable user workflow. Many protection features (for example relays) are not available. To use VC-8000 as a protection system, please use the VC-8000 setup & maintenance software in conjunction with the VC-8000 maintenance manual.

VIBROPORT 8000 Filter * the grid here... x

File Home

Connect Disconnect Default Units Get Prepare to Send Data Collection Boost Waveforms Setpoint CMS Quick Start

Ethernet Connection Defaults Configure Capture Monitor

On	Slot	Channel	Type *	Name *	CMS Navigation Path *	Measurement * ▲	FMax	Number of Lines	Samle Rate	Collection Duration
<input checked="" type="checkbox"/>	3	1	Diagnostic Proximity	Brg 1X	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	3	1	Diagnostic Proximity	Brg 1X	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	3	2	Diagnostic Proximity	Brg 1Y	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	3	2	Diagnostic Proximity	Brg 1Y	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	3	3	Diagnostic Proximity	Brg 2X	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	3	3	Diagnostic Proximity	Brg 2X	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	3	4	Diagnostic Proximity	Brg 2Y	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	3	4	Diagnostic Proximity	Brg 2Y	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	4	1	Diagnostic Proximity	Brg 3X	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	4	1	Diagnostic Proximity	Brg 3X	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	4	2	Diagnostic Proximity	Brg 3Y	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	4	2	Diagnostic Proximity	Brg 3Y	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	4	3	Diagnostic Proximity	Brg 4X	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	4	3	Diagnostic Proximity	Brg 4X	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	4	4	Diagnostic Proximity	Brg 4Y	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	4	4	Diagnostic Proximity	Brg 4Y	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	5	1	Diagnostic Proximity	Brg 5X	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	5	1	Diagnostic Proximity	Brg 5X	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	5	2	Diagnostic Proximity	Brg 5Y	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	5	2	Diagnostic Proximity	Brg 5Y	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	5	3	Diagnostic Proximity	Brg 6X	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	5	3	Diagnostic Proximity	Brg 6X	Unit	Synchronous	50 X	800	128	16 revolutions
<input checked="" type="checkbox"/>	5	4	Diagnostic Proximity	Brg 6Y	Unit	Asynchronous	500 Hz	800	1280	1.60 sec
<input checked="" type="checkbox"/>	5	4	Diagnostic Proximity	Brg 6Y	Unit	Synchronous	50 X	800	128	16 revolutions

Channels Waveforms Measurements Live Data Ethernet Modules

● Not Connected

6 Selected Specifications

Refer to VC-8000 specifications S1077785.002 and S1077787.002 for detailed specifications. All specifications are typical for a temperature of +25 °C unless otherwise stated. These specifications are available at bkvibro.com

General Specifications	
Removeable Storage	32 GB SD storage card
Internal Storage	256 GB internal SSD
Connection	10/100/1000 BASE-T connector for full static and dynamic (waveform) data
Signal Conditioning Specifications	
Converters	24 bit A/D
Dynamic Range	105dB
Input impedance	Programable for industry standard sensors, 4 to 20mA or > 1M ohm when Hi Z input is selected for connection to buffered sensor outputs
Input voltage range	-24 to +19 VDC
Accuracy	DC to 20kHz +/-0.3% of selected full scale Or +/- 1.0 mV DC
Phase	+/- 1 degree
Speed	+/- 1 RPM 1 – 7500 RPM, +/- .1% 7500 – 60,000 RPM, +/- .2% 60,000 – 100K RPM
Asynchronous spectral lines	Programmable to 400, 800, 1600, 3200, 6400 and 12800 lines
Synchronous sampling rates (samples/rev)	16, 32, 64, 128, 256, 512, 1048
Environmental Specifications	
Operating Temperature	-20C to +65C
Storage Temperature	-40C to +85C
Humidity	5% to 95% non-condensing



7 Ordering Information

Choose from two configurations:

16-Channel	24-Channel
VIBROPORT 8000 Part Number - C107836.001	VIBROPORT 8000 Part Number - C107835.001

And select power supply:

Part Number	Description
Power Supply	
VC-8000/PPS-XX	Portable power supply (90W) -01 North America (Type B plug) -02 Europe (CEE 7/7 plug) -03 UK (Type G plug) -04 Australia /NZ (Type I plug) -05 Argentina (Type I plug reversed line/neutral)

Each configuration includes the following parts:

Part Number	Description
Pelican Case	
C106712.001	Pelican case with foam insert
Other	
N/A	Quick Start guide
C106547.001	VIBROPORT 8000 setup software
C106542.001	SP-2020/Condition Monitoring Software
VC-8000/UMM-01-05	Universal Monitoring Module spare
VC-8000/RCM-05	Rack Connection Module
VC-8000/SAM-73-05	System Access Module
C106607.001	106821, UMM Signal to RJ45 Cable
C106604.001	94070-012, Inline CAT5 Cable Connector
C106692.001	BNC Breakout Cable Assembly, 10ft
C106613.001	96014-012, 2m USB 2.0 A/Mini-B Cable

Contact

Brüel und Kjaer Vibro GmbH

Leydheckerstrasse 10
64293 Darmstadt
Germany

Phone: +49 6151 428 0
Fax: +49 6151 428 1000
Corporate E-Mail: info@bkvibro.com

Brüel & Kjaer Vibro A/S

Skodsborgvej 307 B
2850 Nærum
Denmark

Phone: +45 77 41 25 00
Fax: +45 45 80 29 37
Homepage: www.bkvibro.com

BK Vibro America Inc.

1100 Mark Circle
Gardnerville NV 89410
USA

Phone: +1 (775) 552 3110