Condition Monitoring and Protection Solutions Brief

Bently Nevada* Asset Condition Monitoring
Why the Bently Nevada product line from GE?

We have earned your trust. For five decades GE’s Bently Nevada product line has supported the most demanding applications in multiple industries, from oil and gas to power generation. And even as we protect and monitor your most critical machinery, we constantly strive to refine and improve our offerings—and help enable your success.

We design and deliver solutions for all of your monitoring needs—including sensors, distributed and rack-based monitors, software, and supporting services—with the following goals in mind:
- Increased availability and production
- Lowered maintenance costs
- Reduced risk in terms of safety, environmental, and asset upsets

And we have impressive statistics to back up our extensive experience:
- Over 50 years of condition monitoring leadership
- More than 240 international patents issued, including over 150 in the U.S.
- More than 360 international patents pending, including over 95 in the U.S.
- Over 75,000 1500 Series monitoring systems installed globally
- Over 4 million sensor monitoring points
- Over 20 years of offering overspeed detections systems

Applicable across all critical levels of your rotating machinery...

Criticality is defined by assessing consequence of failure for each piece of equipment in 5 key areas of impact including, Staff and Public Safety, Regulatory and Environmental Compliance, Production, Operations and Maintenance Costs (O&M), and Product Quality. This understanding of equipment criticality along with your maintenance strategy drives the proper monitoring strategy.

Bently Nevada software solution: Condition monitoring and diagnostics...

BN System 1*

System 1 software is at the core of Bently Nevada’s Condition monitoring solution and represents a refreshed approach in our mission of providing users with a single system designed to enable plant-wide machinery management.

Leverage Condition monitoring alarms, long term trended data, and diagnostics to understand the health of your equipment. Combine this with people and process to enable strategic data driven maintenance planning and decision making.

User Experience

Modern consumer software applications have pushed the envelope when it comes to user experience; we believe the same expectations apply for industrial Condition monitoring applications:
- Modern and intuitive interface
- Continuous user involvement
- User driven condition monitoring and diagnostic workflows

Capability

System 1 provides scale when it comes to database management, diagnostics, and work prioritization:
- High resolution trend, alarm and startup/shutdown data
- Bulk template configuration
- Best in class anti-friction & hydrodynamic bearing diagnostics

Accessibility

Successful Condition monitoring programs require collaboration between departments and controlled access to the tools:
- Distributed client/server deployment model
- Remote portable data transfer
- User security profiles

Embedded Expertise

Bently Nevada differentiates itself by providing equipment focused solutions and best practice configuration and diagnostics:
- Equipment templates
- Technical associates proven method wizard
- Embedded iso 10816-3, 10816-7, and 14694 wizards

...Condition monitoring and diagnostics...
...complemented by a full line of protection and condition monitoring solutions

But it all starts with the proper transducer...

From the early days when Don Bently pioneered the first commercially successful use of Proximity Probe systems (for direct rotor vibration and position measurements within journal bearing machines)—to the application of accelerometers and Velomitors to measure casing vibration on rolling element bearing (REB) machines—Bently Nevada has installed more than 2 million sensor points worldwide.

3500 Series
Machinery Monitoring and Protection
Anticipate and prevent mechanical failures with continuous, online machinery protection and asset condition monitoring. The 3500 Series solution represents our most capable and flexible system in a traditional rack-based design and offers numerous features and advantages not provided by competitor systems.

ADAPT* Series
Advanced Distributed Architecture Platform Technology
This distributed architecture monitoring technology is well suited to support essential rotating equipment across multiple industries. The growing application-based ADAPT product family offers an easy, user-defined configuration that is skid-mountable, flexible, and optimized for hydro, aero, wind, emergency shut down (ESD), and general purpose applications.

2300 Series
Vibration Monitor
The 2300 vibration monitors delivers cost-effective vibration monitoring and protection capabilities for less critical machinery. It is designed specifically to provide continuous monitoring and protection for low to medium critical equipment. With the 2300/20 monitor, you can perform condition based maintenance of your assets in a wide range of industries—including oil and gas, power generation, water treatment, pulp and paper, manufacturing, food & beverage, pharmaceutical, mining, and cement.

AnomAlert* and MSIM Systems
Motor Monitoring
Designed for low to medium criticality, the AnomAlert general industrial motor monitoring system is well suited to almost any motor as well as motor-driven loads such as pumps, fans, compressors, and blowers. The motor stator insulation monitor (MSIM) system, for highly critical uses, provides the only continuous, online, direct measurement with the 3500 monitoring system for stator winding capacitive and resistive leakage currents.

vbOnlinePro
Next Generation of Economical Simultaneous Scanning Condition Monitoring
Targeted for the hundreds of small pumps, motors, blowers, fans, fixed equipment and other assets that populate a typical plant, that are spared or have a minor impact on plant output when they fail, but represent appreciable collective maintenance costs and can benefit from some form of condition monitoring, vbOnlinePros innovative parallel/sequential architecture delivers the right level of cost-effective condition monitoring for these machines.

Trendmaster* Pro System
Online Condition Monitoring
The Bently Nevada Trendmaster Pro System is specifically designed to address critical and non critical assets that require more frequent surveillance. Using a single cable that can host hundreds of permanently mounted sensors ranging from pressure to vibration and temperature.

In addition using the direct input card option will enable the Trendmaster to have higher scan rate when used as distributed monitor.

ADRE*
Machine Condition Data Analyzer
As the world’s premier rotating equipment data acquisition system, ADRE enables professionals to quickly assess machinery conditions, in the field and on the test stand. Whether you are collecting data from control valves to understand process dynamics, studying the electromagnetic behavior of locomotive motors on a test stand, performing structural analysis and impact testing on piping, or collecting start-up data on the rotor dynamics of a recently overhauled steam turbine, the flexibility of the ADRE System is a perfect fit.

SCOUT* and COMMTEST* Series
Portable Data Collection and Analysis
The SCOUT platform brings GE’s industry-leading Bently Nevada condition monitoring expertise to the world of portable data collection and analysis, giving you access to a dependable, efficient, and cost-effective condition monitoring solution that is deployable across your entire plant.
Protection and condition monitoring solutions - System 1

Online Continuous monitoring and/or protection

Online Periodic monitoring

Offline

System 1 Optimization and Diagnostic Platform

Data Historian

3500 & TDI

3701 ADAPT

WIRELESS (2017)

SPA LINE

vbOnline Pro

SCOUT200 Portable Data Collectors

Design and Installation

Let our experts help retrofit or modify your existing machinery (such as turbines, compressors, and fans) for the installation of monitoring systems or transducers. By combining our services with our hardware and software, GE delivers fully installed, fully engineered solutions tailored to your specific requirements. We have completed more than 1,000 design and installation project retrofits to rotating and reciprocating machinery.

Technical Support Agreements

A one-year renewable technical support agreement (TSA) is automatically included with every product we sell. Its structure consolidates all products installed at your site under a single agreement for ease of administration and entitles you to phone, email, and Web-based support from our global network of experienced support experts.

Supporting Services Agreements

A supporting services agreement (SSA) is a custom-tailored combination of individual remote and site-based service offerings that addresses the unique needs of your site and your installation. We work with you to help your instrumentation to perform well and to provide hands-on assistance that allows you to realize the full potential of your condition monitoring system.

Your SSA can include remote monitoring and diagnostic (RM&D) services to help your facility managers and operators recognize problems before they occur. Our dedicated team of global engineers is available 24/7 in our Remote Monitoring Centers to provide timely machine health information, analysis, and collaborative resolutions that help you realize lower project costs, reduce your outage costs, and improve your bottom line.

Machinery and Diagnostics Services (MDS)

Our more than 70 machinery diagnostic engineers around the world are recognized globally for their expertise in gathering and analyzing data to document baseline conditions and troubleshoot even the most complex machinery problems. They can work onsite, offsite, and in our Remote Monitoring Centers.

Training

Our customers routinely praise our in-depth technical training for its highly effective “learn by doing” labs coupled with classroom-style instruction. A comprehensive suite of product training courses is augmented by coursework in the fundamentals of rotating machinery behavior and diagnostic techniques. Our courses can be provided at any of our global training centers or even brought to your site.

Services and support
For more information about GE’s Bently Nevada asset condition monitoring solutions contact your local GE sales professional or visit us online at www.gemeasurement.com
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*“Quantifying the ROI of an asset performance management program”* – Hydrocarbon Processing.

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