

### Bently Nevada\* Trendmaster\* Pro Condition Monitoring and Diagnostics

application package

The Trendmaster Pro Application Package integrates the full suite of Bently Nevada Trendmaster Pro online scanning data acquisition hardware with System 1\*, Optimization and Diagnostic Platform. Trendmaster Pro is designed to provide cost-effective online condition monitoring capabilities for those equipment assets that merit more than portable data collection, yet do not justify more expensive critical asset protection systems. With System 1 and Trendmaster Pro, these less-critical but essential assets can now be monitored and managed with the full benefit of System 1 and a common environment for all equipment data.

The benefits of Trendmaster Pro can be demonstrated in many different ways. With its online scanning monitoring capability, Trendmaster Pro enables operators to monitor both process and condition parameters on rotating as well as fixed equipment, and optimize the way they operate the equipment to extend asset service life. Trendmaster Pro enables early detection of potential failures, which quickly translates to less risk of potential safety and environmental accidents and minimized collateral damage because repairs can now be planned and scheduled – before catastrophic failure occurs. Trendmaster Pro can replace walk-around programs where not feasible due to area hazards, access constraints, or because more frequent and reliable data sampling is needed, resulting in increased monitoring effectiveness while reducing manpower requirements for these programs. And because of Trendmaster Pro's outstanding flexibility and options for reducing installation and wiring costs, these benefits are achieved cost-effectively.

#### Benefits

- Optimized maintenance strategies, effectiveness, and activity
- Minimized safety and environmental risks
- Reduced costs through proactive maintenance planning
- Optimized equipment operation by correlating process and machinery behavior
- Minimized personnel time in hazardous or unsafe areas
- More frequent and reliable data than “walk around” program
- Reduced costs in hazardous areas due to unique system architecture

#### Capabilities

- Acceleration enveloping for early fault detection
- Backwards compatibility with previous generations of Trendmaster hardware
- Proactive operator “smart” advisories available on a 24/7 basis
- Integration with The Bearing Expert™ roller element bearing library and database
- Compatibility with existing networks using Ethernet TCP/IP protocol
- Network and remote access for multiple users
- Galvanic Isolator allows multiple sensors into hazardous area with single isolator



### How does Trendmaster Pro work?

Trendmaster Pro is a patented sensor bus and quasi-continuous scanning architecture. Machine-mounted transducers and process variable inputs are connected to a strategically located Dynamic Scanning Module (DSM) by way of Transducer Interface Modules (TIM's) on a sensor bus, or via Direct Input cards. The DSM acts as a bridge between these inputs and the host computer using conventional wired or wireless Ethernet. For wireless applications the customer can take advantage of current off-the-shelf wireless technology to reduce installation costs. The system periodically collects data values and dynamic waveforms under steady state and alarm conditions and provides this information by way of trend and diagnostic plots to the user through System 1 display software.

### Key Features

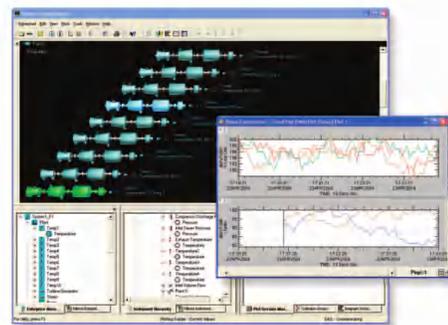
With the Trendmaster Pro Application Package and supporting Trendmaster Pro data acquisition hardware, System 1 is able to store, display, and process critical dynamic data which is paramount for diagnosing and managing plant equipment. Additionally, acceleration enveloping is used for vibration signals to provide advanced warning of potential failures and enable more proactive maintenance planning. Acceleration enveloping is a powerful signal processing technique used to enhance acceleration signals, allowing early detection of small vibration level changes indicative of roller element bearing faults, gear wear, and other malfunctions such as cavitation. Acceleration enveloping is highly applicable to most rotating machinery that is already a good business fit with Trendmaster Pro, since roller element bearings are frequently used in these equipment classes.

### Embed Knowledge using Decision Support\*

Tight integration of Trendmaster Pro with System 1's Decision Support enables intelligent alarms and notifications, and customization of knowledge-based rules. Decision Support allows you to embed knowledge and rules in System 1, and use that embedded intelligence to automatically analyze collected data – spectral content, waveform shape, trends, rate-of-change, alarm statuses, and any other data attribute. This enables 24/7 automated data interrogation and Actionable Information\* in the form of “what happened,” “where,” “when,” “how bad is it,” and “what should be done about it” automatically sent to personnel who can take action to affect equipment operation and maintenance planning.

### Compatible Inputs

- Vibration and position transducers including proximity probes, moving-coil and solid-state velocity transducers, and accelerometers
- Temperature and Pressure sensors
- A special-purpose seal-leak detection transducer
- Oil condition sensors
- Generic dynamic voltage/current signals from third-party transducers or monitor system buffered outputs
- Speed and phase reference (Keyphasor\*) transducers



- For complete product specifications and ordering information:
- contact your local salesperson
  - call 775-782-3611 and ask for “System 1” at the prompt
  - e-mail us at [system1info@ge.com](mailto:system1info@ge.com)
  - visit our Web site at [www.gepower.com/system1](http://www.gepower.com/system1)



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