

## **Trendmaster® Pro Asset Condition Scanning System**

*Improved online monitoring for less-critical machinery*

Since 1989, our Trendmaster® family of products has been leading the revolution to deliver cost-effective online monitoring to less-critical machinery and other assets in the plant, rather than reserving online systems for only your most critical turbomachinery. The Trendmaster system's innovative sensor-bus architecture provides the benefits of asset condition information updated every few minutes rather than at weekly or even quarterly intervals as with offline portable data collection strategies, all at a cost that is typically one-fifth (or less) than that of a traditional rack-based continuous monitoring system intended primarily for critical machinery. Such online scanning systems can extend asset Mean Time Between Failure (MTBF) by a factor of 10 or more relative to run-to-failure or intermittent portable monitoring strategies, enhancing plant competitiveness by lowering asset lifecycle maintenance costs and reducing costly process interruptions.

Now, we're pleased to announce the release of the Trendmaster® Pro asset condition scanning system, the latest in the Trendmaster family of products. As with previous generations of the Trendmaster platform, Trendmaster Pro consists of 5 basic components:



**1 Host Software** that accepts conditioned signals from the data acquisition hardware and provides the user with diagnostic and trending capabilities for the connected equipment assets.

**2 Signal Processing Hardware** that accepts the sensor-bus cabling and its signals and provides power to the connected transducers through a distributed sensor-bus network.

**3 Transducer Interface Modules (TIMs)** that accept raw signal inputs from a variety of transducers, condition the signal for use by the data acquisition hardware, and assign a unique address to each transducer point in the system so these points can be scanned in the order configured by the user.

**4 Cabling** that runs from the signal processing hardware to the TIMs. A single cable can generally support more than 100 TIMs and includes options for installation in hazardous areas using only a single I.S. barrier per cable, rather than one barrier per transducer.

**5 Transducers** that are mounted directly on the equipment assets of interest to make the required vibration, speed, pressure, temperature, and other measurements.

### ***And don't forget about Service...***

Bently Nevada provides comprehensive service offerings to install, integrate, and optimize the configuration of Trendmaster Pro, System 1, and any of the other products in our portfolio of asset management solutions. We can even contract with you to use these tools remotely or on-site if you prefer to outsource portions of your asset management program and use Bently Nevada as a full-service condition monitoring information provider instead of a tools supplier.

Trendmaster Pro introduces all-new technology for three of the basic system components listed above – new host software, new signal processing hardware, and new TIMs – improving overall system performance,

further reducing installation costs, and enhancing diagnostic capabilities and information delivery for faster, better asset operating and maintenance decisions.

## 1 NEW HOST SOFTWARE

Unlike previous generations of Trendmaster®, which required a separate software application from our other online and offline systems, Trendmaster Pro uses System 1™ software, meaning all the assets in your plant can be managed and monitored via a single, unified software application. System 1 brings together our continuous machinery protection systems, our Snapshot™ family of portable data collectors, and now our Trendmaster hardware. The result is fewer applications to support and a single user interface providing a window to every monitored equipment asset in the plant. In addition to Trendmaster hardware support, version 4.0 of our System 1 software introduces other important capabilities that will benefit Trendmaster users, such as improved support for rolling element bearings (as found in many of the rotating machines typically addressed in a Trendmaster installation), broad new Decision Support<sup>SM</sup> functionality that



can be applied to any asset in System 1 (not just critical machinery), improved connectivity to process control and plant automation systems through OPC and other open protocols, and engineered interfaces for integration with computerized maintenance management systems (CMMs), reliability engineering applications, and other asset management tools.

## 2 NEW SIGNAL PROCESSING HARDWARE

Our DSM is the interface between System 1™ host software and the network of cables and transducers running through your plant. If you already have a Trendmaster system in your plant, the DSM replaces previous Signal Processing Adapter (SPA) cards. The DSM scans more than 4 times faster than the SPA card, which allows you to get data more quickly or add more points. This compact, external module accepts



both Trendmaster sensor-bus cables as well as direct point-to-point wiring of 4-20 mA signals and generic transducers providing static and/or dynamic signal outputs. Its Ethernet connectivity to the host computer provides tremendous flexibility in system topography, resulting in lower installation costs. Off-the-shelf wireless Ethernet components can be used with the DSM, providing even more options to reduce expensive cable runs, allowing the system to be deployed throughout your plant at lower cost than previous Trendmaster architectures. Because

the DSM functionality no longer resides on a SPA card installed in a host computer, it is compatible with a much broader range of computing platforms, offering greater flexibility and easier migration to new platforms as processor speeds and performance improve. And, the DSM is fully backwards compatible with existing TIMs, flexiTIMs, and Trendmaster cabling that may already be installed in your facility, ensuring your existing investment is protected while enabling all the power of new signal processing hardware and our System 1 software.

### 3 NEW TRANSDUCER INTERFACE MODULES

Transducer Interface Modules (TIMs) are the interface between our sensor-bus cabling and each individual transducer, such as thermocouples, vibration sensors, pressure sensors, and other supported measurements in the Trendmaster platform. A major advantage of the new proTIM is that each of its two channels may be a different measurement type. The TIM provides a unique “address” to each sensor on the bus, allowing a single cable to support many transducers in a multi-drop, multiplexed architecture. Our new proTIMs add digital technology to the basic TIM functionality, allowing easier system configuration (including new auto-configuration features). They also incorporate innovative conduit and DIN-rail mounting features that help lower even further the already attractive installation costs of a Trendmaster system.



The next issue of ORBIT magazine will feature a full-length article on Trendmaster Pro, with additional information on this powerful platform for managing those assets in your plant that merit more than a portable walk-around program, yet can't justify the cost of a critical machinery protection system. We'll also feature a synopsis of how companies in various industries, ranging from steel rolling mills to cement plants to

refineries to pharmaceutical plants, are using the Trendmaster platform to dramatically increase plant safety, enhance asset reliability and availability, and reduce their maintenance costs.

For more information on Trendmaster Pro, visit us online at [www.bently.com](http://www.bently.com) for an informative brochure, or contact your local Bently Nevada Sales Professional. 