

Bently Performance™ SE™

Helping protect and manage all machinery



Understand Asset Performance...



The Bently PERFORMANCE™ SE™ software extends the functionality of System 1™ to include on-line thermodynamic performance monitoring of machinery. Since it is completely integrated with System 1™ database and display modules, Bently PERFORMANCE™ SE™ provides comprehensive information on the condition of machines in combined mechanical *and* thermodynamic formats.

Bently PERFORMANCE™ SE™ includes the engineering services necessary to evaluate customer's requirements for performance-related calculations and to fully implement them. Bently PERFORMANCE™ SE™ is sold as an engineered system to ensure that it is installed, configured, and commissioned to match your application and to meet industry standards for accuracy and repeatability.

Bently PERFORMANCE™ SE™ provides extensive, highly configurable capabilities for both simple and complex performance-related calculations.

Actual: Calculations for Current Ambient Conditions

Expected: Expected output for comparison to Actual outputs

Corrected Actual: Actual outputs are transposed to Standard Day Conditions (ISO or Site specific rating).

Corrected Expected: Expected outputs are transposed to Standard Day Conditions. Enables unambiguous performance trending.

It performs these computations based on standard machine templates and feeds this information back into the System 1™ software using Microsoft's NetDDE protocol. Once in the System 1™ software, all performance data can be viewed from any System 1™ display. By using these displays to correlate and compare performance data and vibration data, you can understand the overall health of your machinery more completely. Because Bently PERFORMANCE™ SE™ co-resides on the System 1™ server, it enjoys identical capabilities for networking and remote access as System 1™ software.

Bently Manual Input Software can be used to provide data points that are not otherwise available through System 1™ Data Acquisition. These additional points added using the Bently Manual Input can be used in performance calculations and can be viewed and trended in System 1™ Display.

Integration of Bently PERFORMANCE™ SE™ data with plant control and automation systems can be accomplished using System 1™ numerous interface options for importing and exporting data using industry-standard, open protocols. This integration allows measurements for performance-related calculations to be obtained from existing machine control, plant control, and process control systems. It also allows alarms, calculated variables, trends and other System 1™ and PERFORMANCE™ SE™ data to be exported and shared as required with other plant systems and computers.

Supported Asset Types

- Gas Turbines
- Steam Turbines
- Compressors
- Pumps
- Generators
- HP/IP/LP Steam Turbines
- Heat Recovery Steam Generators
- Feed Heaters
- Condensers
- Chillers
- Plant Heat Balance
- Turbo-expanders
- Reciprocating Compressors/Engines
- Custom Asset types available (contact your Bently Nevada representative)
- And many others...

Applications

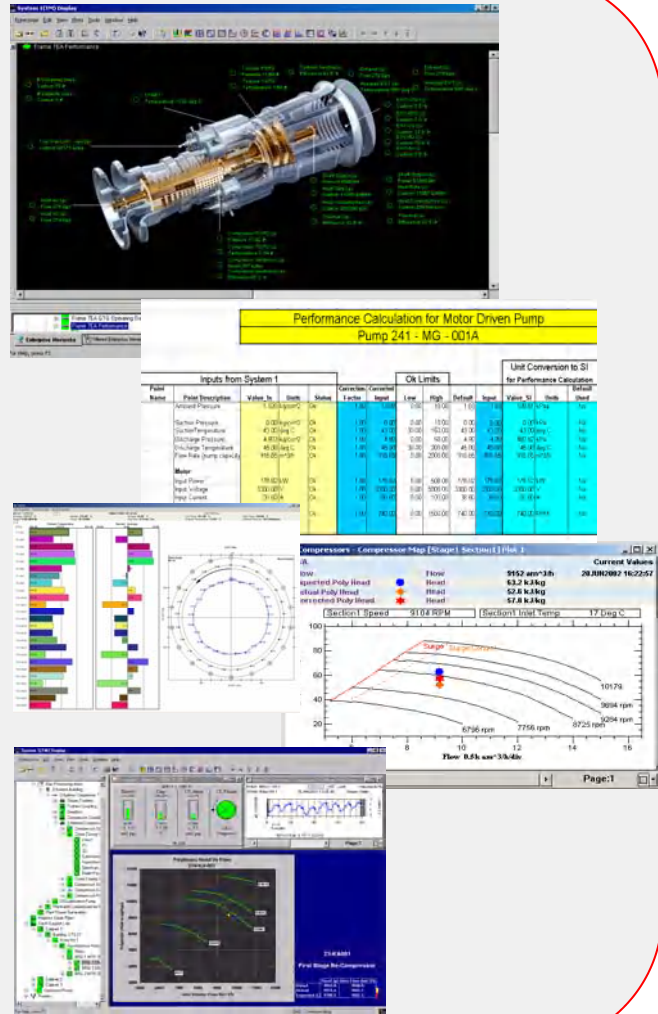
- > Gas Turbine Generators
- > Gas Turbine Mechanical Drives
- > Compressor Stations
- > LNG Trains
- > Refineries
- > Pipelines
- > And many others...

BENEFITS

- Detects inconsistent measurements
- Determines machine degradation by comparing measured data with expected data ('new & clean')
- Calculates performance under reference conditions
- Clear analytical displays, e.g. compressor maps, generator D-curves, XY-plots
- Provides tight integration with System 1™

Capabilities

- > **Gas Turbine Modeling**
 - Single / two shaft / three shaft / aero derivatives
- > **Steam Turbine Modeling**
 - Condensing, non-condensing, with/without extraction, and with/without induction
- > **Compressors/ Pumps**
 - Air / process / side stream compressors
- > **Generators**
- > **Accurate Real Gas Calculations** using extensive library of gas properties and Equations of State
- > **Hydrocarbon Processing Pedigree**
- > **Traditional Displays/ Plots**
 - Bargraphs
 - Multi-variable Plots
 - Trend Plots
 - Train Diagrams
 - Compressor Maps
 - Multi-purpose Performance Maps
- > **SI/ English units**
- > **Tight integration with System 1™, Decision Support™ with RuleDesk™** to enable intelligent alarms and customization of knowledge-based rules.



SERVICES = SOLUTIONS

Software Support Plan

To ensure that the value that Bently PERFORMANCE™ SE™ brings to your assets will be sustained and even grow over time, Bently Nevada offers a Technical Support Plan which will:

- > Correct any nonconformance that is preventing the software from operating in accordance with published specifications.
- > Enable you to contact Bently Nevada's Corporate Product Service for technical assistance with the software.
- > Give you access to all product enhancements - usually 2 per year.
- > Allow you to download new software releases via our software Update site on the World Wide Web at www.bently.com.

Free software revisions and updates are features of this support. Contact your local Bently Nevada Sales Professional for more information on this plan.



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