

System 1* Version 6.87

Optimization and Diagnostics Software



Description

System 1* Software is a patented, modular machinery management platform for process and equipment optimization, condition monitoring and event diagnostics. The client/server-based architecture is both scalable and flexible. This allows you to focus on your most critical needs and then continue to expand your system by adding new application packages and system extenders. System 1 software integrates all of this into a single system, with a single display environment and common database structure.

The System 1 platform enables operators, equipment engineers, process engineers, instrument technicians, and other plant personnel to quickly identify, evaluate, and respond to important events to optimize the business impact. This increases equipment availability and reliability, and reduces maintenance costs.

A growing suite of specially-designed application packages exists to meet the needs of individual plant equipment and users. These packages supplement the System 1 Platform and support high-resolution data acquisition, trending, alarming, exception reporting, and user notification.

The highly modular architecture of the System 1 software facilitates the expansion of data acquisition capabilities and the addition of machinery/asset management tools. These tools provide connectivity to the Snapshot* for Windows® CE portable data collector, TDXnet*, TDe and TDI communications processors, 1701 FieldMonitor* system, OPC, Modbus® devices, Dynamic Scanning Module for the Trendmaster* Pro system, and Essential Insight.mesh*.

System 1 software also provides a suite of System Extender* applications to complement and expand the capability of the system. These applications include options for CMMS Interfaces (SAP PM and MRO Maximo® interfaces), Data Exporters (OPC A&E, OPC DA, and OLE Automation), Event Relay Card software, Smart Notifier, State-Based Analysis, AnomAlert* motor and generator anomaly detection, and The Bearing Expert™ software. In addition, the Decision Support* Studio with Rule Logic Results allows users to embed their domain knowledge into the system. These extender applications permit the system to evaluate real-time data, generate sophisticated alerts and alarms, and produce intelligent advisories that deliver Actionable Information* data to designated users.

The System 1 platform employs Microsoft® Server technology for data acquisition and Decision Support functionality. It also uses a specialized Microsoft SQL database design for fast data storage, event capture and history, equipment properties and configuration information. The system provides a variety of industry standard interfaces to integrate with control and automation applications. System 1 software has been developed specifically for the Microsoft Windows® XP/Vista/7/2003/2008 operating systems to provide users with a familiar interface and significant installed base of these industry standard operating systems.

Table 1: The System 1 Application Packages

Application Name	Function
Turbo Machinery	Advanced on-line condition monitoring and diagnostic software package for critical rotating machinery applications. Features sophisticated vibration diagnostics capabilities.
Hydro Machinery	Advanced on-line machine condition monitoring and diagnostic software package for hydro turbines and generators. Included specialized diagnostics tools and measurement support.
Electrical/Multilin Assets	Advanced on-line electrical equipment condition monitoring and diagnostic software package for motors, generators, and transformers.
Wind Turbines	Advanced on-line machine condition monitoring and diagnostic software package for wind turbines.
Reciprocating Compressors	Advanced on-line mechanical and performance condition monitoring and diagnostic software package for critical reciprocating machinery applications. Includes sophisticated Pressure-Volume analysis capabilities.
Performance Visualization	Provides plots associated to thermodynamic performance data (note: the Performance Visualization Application Package does not include the calculation of thermodynamic data). Optional pre-engineered calculation templates (Bently PERFORMANCE* software) are available for machines such as gas turbines, compressors, pumps, steam turbines, and generators.
Portable Data Collector	Portable walk-around application supporting the Snapshot family of portable data collectors. This includes a two-channel, one-channel IS, and PDA portables for operator rounds.
Essential Insight/Trendmaster Pro	Supports both Essential Insight.mesh and Bently Nevada* Trendmaster Pro online scanning systems intended for managing essential and balance-of-plant machinery.
Static Data Management	Provides a suite of plots to manage static data collected using industry standard protocols, as well as from Bently Nevada protection systems.

Lubricant Analysis Data Import	Provides tools to import and view lube oil analysis reports, analysis alerts, analysis diagnostics to be used in data correlation and asset condition monitoring.
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Table 2: The System 1 System Extender Applications

Application Name	Function
CMMS Interfaces (MAXIMO and SAP) ¹³	Provides an interface to select Computerized Maintenance Management Systems. Includes ability to link to CMMS assets, view work history, Manual work request, and Automated work request.
Rule Logic Results	Decision Support rules use inputs and generate outputs (events, calculations, etc.). In order for rules to be processed, Rule Logic Results must be available in the system. This provides scalable real-time rule processing.
State-Based Analysis	State-based monitoring provides more sophisticated diagnostics of machines, with the ability to define machine states that can control data storage, filter plot data, and help correlate process data with machinery data.
Smart Notifier	Smart Notifier is a stand-alone application that filters events much like Notification Plans but collects them in one place where each user can check on events for which he or she is responsible.
Event Relay Card and Software	The Event Relay Notification component can trip a relay in response to an event of a specified type, severity and asset location. Works with the Decision Support Application.
The Bearing Expert	Enhances configuration of machines with rolling element bearings by providing a bearing database. Identifies key parameters based on Manufacturer, model or dimension of the bearing. Software works with System 1 Configuration. Install on the Configuration computer.
GENyus	GENyus provides anomaly detection for GE Oil & Gas Reciprocating Compressors by leveraging OEM design and performance expertise. Detected anomalies are available through System 1 Display.

Specifications and Ordering Information
Part Number 174590-01
Rev. AT (06/13)

Rightrax Corrosion & Erosion Monitoring	Enables on-line condition monitoring of critical fixed assets (piping and vessels) via Rightrax wall thickness measurements, data logging, and communications infrastructure. Data can be displayed, stored, and plotted as trends and managed via System 1 alarms.
AnomAlert	Enables data collection via OPC from the AnomAlert Enterprise Server (AES). You must order 390125-01 for the AES software. Reference Data Sheet 286754-01 for information regarding ordering the AnomAlert hardware.

TDe Transient	Provides dynamic, static, transient and steady state data from a 3300 TDe channel. There is no need to purchase a separate TDe Enabler. Applies to all TDe channels with a waveform enabled for transient data collection
TDe Steady State	Provides dynamic, static and steady state data from a 3300 TDe channel. There is no need to purchase a separate TDe Steady State Enabler. Applies to all TDe channels with a waveform enabled for steady state data collection.
Portable Data Collector Points	Provides dynamic and static data from portable data collector devices.
Trendmaster Pro Points	Provides dynamic and static data from a Trendmaster Pro system.
DCS/Historian Tags	Provides data from OPC and Modbus devices.
Essential Insight.mesh Static Points.	Provides static temperature and vibration data from an Essential Insight.mesh network.
Essential Insight.mesh Dynamic Points.	Provides dynamic vibration data from an Essential Insight.mesh network.
Bently Nevada Monitor Static Channels	Provides static data from channels on Bently Nevada monitors that do not have a waveform enabled.
Dynamic Channels (Non TDI/TDe)	Provides dynamic and static data from communications processors other than 3500 TDI and 3300 TDe. Applies to channels that have waveforms enabled.
Electrical/Multilin Devices	Provides all static and dynamic data (if dynamic data is applicable) collected from a Multilin device. Supported Multilins include: G60 Generator Management Relay*, 489 Generator Management Relay*, 269Plus Motor Management Relay*, 369 Motor Management Relay*, 469 Motor Management Relay*, M60 Motor Management Relay, Power Quality Meter (PQM), T60 Transformer Management Relay*, T35 Transformer Management Relay*, 745 Transformer Management Relay*, and 750 Transformer Management Relay* products.

Table 3: The System 1 Data Importers

Type	Function
TDI Transient	Provides dynamic, static, transient and steady state data from a 3500 TDI channel. There is no need to purchase a separate TDI Enabler. Applies to all TDI channels with a waveform enabled for transient data collection. (Exceptions are for channels used in Reciprocating Compressor and Hydro applications – see below.)
TDI Steady State	Provides dynamic, static and steady state data from a 3500 TDI channel. There is no need to purchase a separate TDI Steady State Enabler. Applies to all TDI channels with a waveform enabled for steady state data collection. (Exceptions are for channels used in Reciprocating Compressor and Hydro applications – see below.)
TDI Recip Steady State	Provides dynamic, static and steady state data from a 3500 TDI channel used in Reciprocating Compressor applications. There is no need to purchase a separate TDI Enabler. Applies to all TDI channels on the 3500/70M, 72M and 77M monitors.
TDI Hydro	Provides dynamic, static and steady state data from a 3500 TDI channel used in Hydro applications. There is no need to purchase a separate TDI Enabler. Applies to TDI channels on the 3500/46M that have waveforms enabled.

Table 4: The System 1 Data Exporters

Type	Function
Data Exporters	Exports real-time data from System 1 to the DCS, Historians, etc. Includes OPC A&E, OPC DA and OLE.
Yokogawa PRM™	Exports real-time data and configuration information from

	System 1 to Yokogawa's Plant Resource Manager (PRM) software via OPC interface.
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Table 5: Additional System Components

Application Name	Function
Data Acquisition	Communicates and acquires data from many sources.
Database (SQL Server)	Stores all historical machinery data, asset information, system hardware, and enterprise configuration.
Display and Configuration	Displays all data on any connected data acquisition or database station. Configures the system hardware and software.
File Based Configuration	Allows rapid configuration of large number of process points by importing/exporting to Microsoft Excel. (System1 v6.81 supports Excel version 2003 and greater.)
System 1 Management Console	Provides system administration and system health & performance functionality.
Essential Insight.mesh Management Gateway	Provides access to an Essential Insight.mesh wireless network within System 1. One license per management gateway (wireless network) is required.

The System 1 client/server architecture allows you to place Display (client) stations anywhere within your plant's Local Area Network (LAN), Wide Area Network (WAN), or Remote Access Server, providing the ability to display and share data with one or more data acquisition (server) stations.

System 1 software can share data with plant control and automation systems using OPC, or OLE Automation protocols. Trendmaster Pro DSM can export data to control and automation systems using Modbus. Data exporters that provide formatted output of all static variables and status data support a network interface. System 1 software supports time-synchronization with other systems (e.g., process control or machine control systems) using appropriate computer peripherals and software available from GE.

Specifications

System Minimum Computer Requirements

System 1 should only be installed and configured on computing platforms approved by Bently Nevada. If installed on non-approved platforms, technical support will not be available.

For demanding online DAQ (Data Acquisition) installations, we strongly recommend that you use an approved and tested server grade computer. For a list of approved servers, please contact your local Sales and Service representative.

For limited portable, or Display/Configuration installations, the following requirements are the recommended minimum for the System 1 software to operate. If your system does not meet these requirements, the performance of the application may not be acceptable, and in some cases the software will not run properly. We strongly recommend that you contact your local Sales and Service representative for a list of tested and approved workstations.

2.83 GHz Intel Xeon processor

2 GB RAM

250 GB hard disk drive

Available USB port

DVD-ROM drive

256 MB video card

System 1 is supported on **Virtual Machines**²⁵. Minimum specification for virtual machines supported is as below:

- High End HP/DELL Host Server with VMware ESX
- Virtual Machines hosted on the above server should have System 1 supported Operating System for the Server / Client machines
- Min 8GB RAM on the host machine, with 8GB additional for each virtual machine being hosted
- Virtual machines should be configured with 2 or more processors
- Drive space on the virtual machines should be at least 3X the total combined size of the System 1 databases or 300GB.

Operating System¹³

Data Acquisition; Database (Microsoft SQL Server® 10, 12) Software

- Windows Server® 2003 SP2
- Windows Server 2008 SP2
- Windows Server 2008 R2 x64¹⁵

Display; Configuration; Data Acquisition (Small Snapshot Only) Software

- Windows XP SP 3
- Windows Vista SP2
- Windows 7
- Windows Server 2003 SP2
- Windows Server 2008 SP2¹³
- Windows Server 2008 R2 x64¹⁵

Number of simultaneous Display/Configuration clients for Data

Acquisition /SQL Server Station

Windows Server® 2003/ Windows Server 2008

Virtually unlimited simultaneous clients restricted by licenses/CALs

Windows XP / Vista /Windows 7

10 simultaneous clients restricted by licenses/CALs

Note: When ordered from GE, server operating systems come with 5 Client Access Licenses (CALs). Further, server operating system licenses are restricted to only be used for GE applications or in support of GE applications.

Supported Hardware

Systems may support the following hardware depending on the ordered Application Packages. System limitations are listed below.

Supported Monitor Systems and Communication Processor Types:

- 3500, 3300, 2201, 1701
- TDI, TDXnet, TDXconnX*, TDe

Supported Portable/Scanning Types:

- Trendmaster Pro DSM
- Essential Insight.mesh
- Snapshot Portable
- Portable IS
- Snapshot Clipboard* via PDA
- Note:** See Snapshot Clipboard data sheet, part number 162458-01, for additional devices.

Maximum number of Communications Processors (CP)/ Equivalent FieldMonitor units per data acquisition station:

12

Maximum number of TrendMaster Pro DSMs per data acquisition station:

150

Maximum number of nodes in an Essential Insight.mesh network:

100

Maximum number of points (100 nodes X 4 points per node) in an Essential Insight.mesh network:

400

Maximum number of Essential Insight.mesh networks supported per DAQ (without exceeding 2500 total points per DAQ limit):

5

Maximum number of Modbus® devices per data acquisition station:

150

Maximum number of FieldMonitor units per data acquisition station:

36 (3 FieldMonitor units = 1 TDXnet CP)

Maximum number of Snapshot devices per data acquisition station:

Unlimited

Note: 1 Snapshot DAQ per Enterprise

Maximum number of configurable machine trains:

Unlimited

Maximum number of configurable portable points per enterprise:

20,000 portable points

Note: 1 Snapshot DAQ per Enterprise

Maximum number of configurable online/scanning points (includes Trendmaster Pro, Essential Insight.mesh and communication processor points) per data acquisition station:

2500 total combined online/scanning points

Maximum number of configurable points per enterprise:

45,000 (Limited only by the maximum number of points per data acquisition station)

Maximum number of lube test results:

20,000:

Total portable points + lube results may not exceed 20,000

Data Historian Maximum Limits (Process Data Only)

Mid-Range Server

5,000 configured tags/DAQ server

SQL Server on Mid-Range Server

5000 events/second

High Range Server (requires 4GB RAM)

25,000 tags/DAQ server

SQL Server on High Range Server (requires 4 GB RAM)

Maximum trend file length

Unlimited; dependent on available system hard drive space.

Maximum number of system/alarm events per data acquisition station

Unlimited; dependent on available system hard drive space.

Maximum number of concurrent viewable events

10,000 events viewable within event list.

Network Support

Ethernet

Network Transport Protocols

TCP/IP

Display Plots

You can select the following plots from stored data, Alarm Event Data, or Baseline Data. You can also configure Display to show only the applicable plots for any given application package.

- Current values
- Bargraph
- Machine train diagram
- Alarm/System event list
- Trend / Multivariable trend
- Tabular list
- Timebase (with option for superposition of baseline data)
- Orbit / Timebase (with option for superposition of baseline data)
- Orbit (with option for superposition of baseline data)
- Shaft average centerline
- Spectrum / Full spectrum (with option for superposition of baseline data)
- X vs. Y
- Waterfall / Full waterfall
- Polar/Acceptance region
- Bode
- Cascade / Full cascade

- Reciprocating compressor plots
- Rod position
- Crank angle waterfall
- Crank angle overlay
- Compressor maps
- Exhaust gas temperature (EGT)
- Performance map
- Rotor stator profile
- Rotor shape
- Hydro air gap
- Phasor
- Histogram
- Octave

Languages

System1 clients – Display, Configuration, Smart Notifier and DAQ Connection manager – have been translated into 10 non-English languages. A language license is per Enterprise. The supported operating system for non-English translations is the English version of Microsoft Windows. The Online Help system is available only in English.

- Chinese (Simplified)
- Japanese
- Korean
- Spanish (European)
- German
- French (France)
- Russian
- Italian
- Finnish
- Swedish

Ordering Information

Step 1

3060/00 System 1

3060/00-AXX

A: Order Type

- 01** New order (DVD, key, binder, Microsoft Excel)
- 02** Expansion order (license key)
- 03** Core System 1 software (DVD and binder)
- 98** Replacement licenses (key)
- 99** Update (DVD)

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Step 2 (Software)

3060/01 System 1 Software and Licenses

3060/01-AXX-BXX-CXX-DX-EXX-FXX

A: Order Type

- 0 1 New order (DVD, key, binder, Microsoft Excel)
- 0 2 Expansion order (key only)
- 0 3 Core System 1 software (DVD and binder)
- 9 8 Replacement licenses (key)
- 9 9 Update (DVD)

Note: Option A is for information only and is the value chosen under Step 1.

B: License Protection Type

- 0 0 None
- 0 1 USB key disk

C: Customer Type

- 0 1 Not available
- 0 2 All

D: Quantity

- XX Number of new Enterprise orders, from 1 to 10.

Example: 1 = 1 order

1 0 = 10 orders

Note: Option D determines the quantity of new Enterprise orders (sets of DVDs, binders, and Microsoft Excel) and applies only to the Option A -01 option.

E: Training Accessories

- 0 0 None
- 0 1 Machine Library CBT
- 0 2 Data Acquisition CBT
- 0 3 Machine Library and Data Acquisition CBT

F: Printed Manuals

- XX Number of printed manual, from 1 to 10.

Example: 0 1 = 1 printed set

1 0 = 10 printed sets

Note: Printed manuals include the following: the System 1 Software Installation Quick Start Guide and System 1 Software Operations Quick Start Guide.

B: Hydro Machinery

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

C: Electrical/Multilin Assets

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

D: Wind Turbines

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

E: Reciprocating Compressors

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

F: Performance Visualization

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

G: Portable Data Collectors

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

H: Essential Insight/TM Pro

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

I: Static Data Management

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

J: Lubricant Analysis Data Import

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

3060/10 Enterprise Application Packages

3060/10-AXXX-BXXX-CXXX-DXXX-EXXX-FXXX-GXXX-HXXX-IXXX-JXXX

A: Turbo Machinery

- XXX Number of new licenses, from 0 to 100.

Example: 0 0 0 = 0 licenses

1 0 0 = 100 licenses

3060/12 Display

3060/12-AXXXXX-BXXXXX

A: Number of Diagnostic Display Client Access Licenses

XXXXX Number of licenses, from 0 to unlimited

Example: **00000** = 0 licenses
99998 = 99998 licenses

99999 = Unlimited licenses per Enterprise

XX Number of copies of SQL Server with 10 CAL licenses, from 0 to 25

B: Not Available

3060/13 Data Export

3060/13-AXXX-BXXX-CXXX-DXXX-EXXX-FXX

A: OPC A&E

XXX Number of licenses, from 0 to 100.

Example: **000** = 0 licenses
100 = 100 licenses

B: OPC Legacy

XXX Number of licenses, from 0 to 100.

Example: **000** = 0 licenses
100 = 100 licenses

C: OPC Legacy to A&E Upgrade

XXX Number of licenses, from 0 to 100.

Example: **000** = 0 licenses
100 = 100 licenses

D: Not Available

E: OLE

XXX Number of licenses, from 0 to 100.

Example: **000** = 0 licenses
100 = 100 licenses

F: System 1 Enterprise Connection

- 00** None
- 01** Custom
- 02** Yokogawa PRM™

3060/14 DAQ

3060/14-AXXX-BXX-CXX

A: Data Acquisition Licenses

XXX Number of licenses, from 0 to 500, up to 10 per Enterprise

Example: **000** = 0 licenses
500 = 500 licenses

B: Microsoft SQL Server 2008 R2 with 5 CAL¹²

XX Number of copies of SQL Server with 5 CAL licenses, from 0 to 25

C: Microsoft SQL Server 2008 R2 with 10 CAL¹²

3060/15 Data Importers

3060/15-AXXXXX-BXXXXX-CXXXXX-DXXXXX-EXXXXX-FXXXXX-GXXXXX-HXXXXX-IXXXXX-JXXXXX-KXXXXX-LXXXXX-MXXXXX-NXXXXX

A: TDI Transient Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

B: TDI Steady State Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

C: TDI Recip Steady State Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

D: TDI Hydro Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

E: TDe Transient Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

F: TDe Steady State Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

G: Portable Data Collector Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

H: Trendmaster Pro Channel Licenses

XXXXX Number of licenses, from 0 to 99998

Example: **00000** = 0 licenses
99998 = 99998 licenses

- I:** DCS/Historian Tag Licenses
XXXXX Number of licenses, from 0 to 99998
Example: **00000** = 0 licenses
99998 = 99998 licenses
- J:** Bently Nevada Monitor Static Channel Licenses
XXXXX Number of licenses, from 0 to 99998
Example: **00000** = 0 licenses
99998 = 99998 licenses
- K:** Dynamic Channel (non-TDI/TDe) Licenses
XXXXX Number of licenses, from 0 to 99998
Example: **00000** = 0 licenses
99998 = 99998 licenses
- L:** Electrical/Multilin Device Licenses
XXXXX Number of licenses, from 0 to 99998
Example: **00000** = 0 licenses
99998 = 99998 licenses
- M:** Essential Insight Static Channel Licenses
XXXXX Number of licenses, from 0 to 99998
Example: **00000** = 0 licenses
99998 = 99998 licenses
- N:** Essential Insight Dynamic Channel Licenses
XXXXX Number of licenses, from 0 to 99998
Example: **00000** = 0 licenses
99998 = 99998 licenses

3060/16 System Extenders

3060/16-AXX-BXX-CXX-DXX-EXX-FXXXXX-GXX-HXX-IXX-JXX-KXXX

- A:** CMMS MAXIMO Links¹³
- 00** None
 - 01** 20 links
 - 02** 50 links
 - 03** 100 links
 - 04** 250 links
 - 05** 500 links
 - 06** Unlimited links per Enterprise
- B:** CMMS SAP PM (pre-Version 4.7) Links
- 00** None
 - 01** 20 links
 - 02** 50 links
 - 03** 100 links
 - 04** 250 links
 - 05** 500 links
 - 06** Unlimited links per Enterprise

- C:** CMMS SAP PM (Version 4.7) Links
- 00** None
 - 01** 20 links
 - 02** 50 links
 - 03** 100 links
 - 04** 250 links
 - 05** 500 links
 - 06** Unlimited links per Enterprise
- D:** Rule Logic Results
- 00** None
 - 01** 50 results
 - 02** 150 results
 - 03** 250 results
 - 04** 500 results
 - 05** Unlimited results per Enterprise
- E:** State-Based Analysis Machine Trains
- 00** None
 - 01** 5 machine trains
 - 02** 10 machine trains
 - 03** 20 machine trains
 - 04** 40 machine trains
 - 05** 80 machine trains
 - 06** 100 machine trains
 - 07** Unlimited machine trains per Enterprise
- F:** Smart Notifier
- XXXXX** Number of client accesses, from 0 to unlimited
Example: **00000** = 0 licenses
99998 = 99998 licenses
99999 = Unlimited accesses
- G:** Event Relay
- 00** None
 - 01** Relay software
 - 02** Relay software and hardware
- H:** The Bearing Expert (REB Database) Licenses¹⁶
- XXXXX** Number of licenses, from 0 to 99998
Example: **00000** = 0 licenses
99998 = 99998 licenses
- Note:** The Bearing Expert software works with System 1 Configuration and is sold on a per user rather than concurrent user basis. A single license for The Bearing Expert software may not be shared or used concurrently on different computers. Each user must have their own license. Please refer to The Bearing Expert License Agreement for further details.
- I:** GEnyus
- 00** None

GEnyus System 1 Extender & GEnyus software

- 01** 1-4 Throws
- 02** 5-6 Throws
- 03** 7-8 Throws
- 04** 9-10 Throws

GEnyus System 1 Extender only

- 11** 1-4 Throws
- 12** 5-6 Throws
- 13** 7-8 Throws
- 14** 9-10 Throws

J: GEnyus Number of Compressors

- XX** Number of compressors, from 0 to 50
- Example:** **00** = 0 licenses
50 = 50 licenses

K: Rightrax Corrosion & Erosion Monitoring

- XXX** Number of Rightrax Sensors, from 0 to 999
- Example:** **000** = 0 Rightrax Sensors
050 = 50 Rightrax Sensors
999 = 999 Rightrax Sensors

Note: Rightrax components have ATEX Zone II approvals only.

L: AnomAlert

- XXX** Number of AnomAlert Devices, from 0 to 100
- Note:** You must order 390125-01 for the AES software. Reference Data Sheet 286754-01 (motors) or 288496-01 (generators) for information regarding ordering the AnomAlert hardware.

3060/18 Essential Insight.mesh Management Gateways

3060/18-AXXX

A: Management Gateways

- XXXX** Number of management gateways, from 0-2000

3060/36 Decision Support

3060/36-AXX

A: Edition

- 01** Studio Developer

The following options are ordered separately from the 3060/00 catalog number.

3060/56 DSM Modbus Exporter

3060/56-AXX

A: Order Type

- 001** DMS Modbus – 100 Tags
- 005** DMS Modbus – 500 Tags
- 025** DMS Modbus – 2500 Tags

- 050** DMS Modbus – 5000 Tags
- 100** DMS Modbus – 10000 Tags
- 200** DMS Modbus – 20000 Tags
- 300** DMS Modbus – 30000 Tags

Note: Ordering this option includes the System 1 software DVD and DSM license key.

3060/65 Data Manager 2000 Migration

3060/65-AXX-BXX

A: Order Type

- 01** Vibration Data Only
- 02** Vibration & Process Data

B: Licensing

- XX** Number of communications processors, up to 12
- Example:** **12** = 12 comm. processors

Note: A01 and A02 include DVDs, License Key, Binder, Microsoft Excel, Citrix, and the following manuals: the System 1 Software Installation Quick Start Guide, System 1 Software Operations Quick Start Guide and the System 1 Data Manager 2000 Upgrade Manual.

3060/90 System 1 Languages

3060/90-AXX-BXX-CXX-DXX-EXX-FXX-GXX

Notes: No language order is required if the desired System 1 language is English.

The supported Operating System is the English version of Microsoft Windows.

The Online Help system is available only in English.

A: Order Type

- 01** New order (CD, key, binder, Microsoft Excel)
- 02** Expansion order (key only)
- 03** Core Language CD (CD and binder)
- 98** Replacement licenses (key)
- 99** Update (CD)

B: License Type

- 00** None
- 01** USB key disk

C: Customer Type

- 01** Not Available
- 02** All

D: 1st Language

- 00** None
- 01** Chinese
- 02** Japanese
- 03** Korean
- 04** Spanish
- 05** German
- 06** French
- 07** Russian

- 08 Italian
 - 09 Finnish
 - 10 Swedish
- E: 2nd Language**
- 00 None
 - 01 Chinese
 - 02 Japanese
 - 03 Korean
 - 04 Spanish
 - 05 German
 - 06 French
 - 07 Russian
 - 08 Italian
 - 09 Finnish
 - 10 Swedish
- F: 3rd Language**
- 00 None
 - 01 Chinese
 - 02 Japanese
 - 03 Korean
 - 04 Spanish
 - 05 German
 - 06 French
 - 07 Russian
 - 08 Italian
 - 09 Finnish
 - 10 Swedish
- G: 4th Language**
- 00 None
 - 01 Chinese
 - 02 Japanese
 - 03 Korean
 - 04 Spanish
 - 05 German
 - 06 French
 - 07 Russian
 - 08 Italian
 - 09 Finnish
 - 10 Swedish

- 01 Professional workstation (no monitor)²
- 02 Mid-range HP server (tower, no monitor)^{3, 11, 17}
- 03 Mid-range HP server (rack, rack keyboard/drawer, no monitor)^{3, 4, 11, 18, 20, 23}
- 04 High-performance HP server (tower, no monitor)^{3, 7, 11, 21}
- 05 High-performance HP server (rack, rack keyboard/drawer, no monitor)^{3, 4, 7, 11, 18, 22, 23}
- 06 Mid-range HP server (rack, rack keyboard only, no monitor)^{3, 5, 11, 18, 20, 23}
- 07 Mid-range HP server (rack, no keyboard/drawer, no monitor)^{3, 11, 18, 20, 23}
- 08 High-performance HP server (rack, rack keyboard only, no monitor)^{3, 5, 7, 11, 18, 22, 23}
- 09 High-performance HP server (rack, no keyboard/drawer, no monitor)^{3, 7, 11, 18, 22, 23}
- 10 High performance DELL server (rack, rack keyboard/drawer, no monitor)^{3, 7, 11, 18, 24}
- 11 High performance DELL server (rack, rack keyboard only, no monitor)^{3, 7, 11, 18, 24}
- 12 High performance DELL server (rack, no keyboard/drawer, no monitor)^{3, 7, 11, 18, 24}

B: Monitor

- 00 No monitor
- 03 22" TFT flat panel monitor
- 04 24" TFT flat panel monitor

C: Microsoft SQL Server (for servers only)⁸

- 00 None
- 03 Standard SQL 2008 R2 embedded – 5 CALs¹⁰
- 04 Standard SQL 2008 R2 embedded – 10 CALs¹⁰

D: Printer

- 00 No printer
- 02 220V laser (duplex, parallel, and USB)
- 03 110V laser (duplex, parallel, USB, and Ethernet)
- 04 220V laser (duplex, parallel, USB, and Ethernet)
- 06 220V color laser (USB)

System 1 Software Platform

Note that all on-line systems require MS SQL Standard, which you may order through the 3010/11 C option or 3060/00. You will need one Client Access License (CAL) per client computer

Any computer with a System 1 client or DAQ software that connects to a System 1 database running on SQL Server Standard or Enterprise editions must have one Client Access License (CAL) each.

3010/11 System 1 Software Platform

3010/11-AXX-BXX-CXX-DXX-EXX-FXX-GXX-HXX-IXX-JXX-KXX-LXX-MXX-NXX-OXX

A: System 1 Workstation/Platform (No Monitor Included)

- 00 No workstation/platform

- 07 110V color laser (USB, and Ethernet)
- 08 220V color laser (USB, and Ethernet)
- E: Time Synchronization
 - 00 No time synchronization
 - 01 Client software (1 license)
 - 10 Client software and NTP time server
 - 20 IRG-B time card
- F: Serial Communication Card (for servers only)⁸
 - 00 No serial communication card
 - 01 RS232 serial communication card
 - 02 RS232/RS485 serial communication card
- G: Network Interface Card (NIC)
 - 00 No network interface card
 - 01 Dual port NIC (for servers only)^{1,8}
 - 02 Single port NIC (for workstations only)⁹
- H: Redundant Components (for servers only)⁸
 - 00 None
 - 01 Redundant power supply
 - 02 Redundant cooling fan kit
 - 03 Redundant power supply and cooling fan kit
- I: Uninterruptible Power Supply (UPS)
 - 00 No UPS
 - 01 110V 1440VA rack 2U (North America)
 - 02 110V 1440VA tower (North America)
 - 03 220V 1500VA tower (international)
- J: Second Processor Card (for servers only)⁸
 - 00 No second processor card
 - 01 Second processor card for mid-range DAQ integration platform
- K: Sound Adapter and Speakers
 - 00 No sound adapter and speakers
 - 01 Sound adapter and speakers
- L: Backup Device / Drives (for servers only)^{8,18}
 - 00 No backup device
 - 01 Internal tape backup
- M: Event Relay (for servers only)⁸
 - 00 No event relay hardware
 - 01 Event relay hardware
- N: Addition Memory (for servers only)⁸
 - 00 None
- O: Remote Access (for servers only)^{6, 7, 8, 19}

- 00 No remote access offering
- 01 Citrix™ starter kit (DVD w/ 5 users + 5 TS CALs for Win 2003)
- 02 Citrix™ starter kit (DVD w/ 5 users + 5 TS CALs for Win 2008 or 2008 R2)
- 03 Citrix™ extra users (5 users + 5 TS CALs for Win 2003)
- 04 Citrix™ extra users (5 users + 5 TS CALs for Win 2008 or 2008 R2)
- 05 Microsoft TS CAL 5 users (Windows 2003, 2008, or 2008 R2)

System 1 Technical Support Plan

TSA_EXTENSION-AXX-BXX-CXX-DXX-EX-FXX-GX-HX

A: TSA Level

- 01 Platinum
- 02 Gold
- 03 Small Enterprise (Single DAQ only with limited number of channels)
- 04 Supporting Service Agreements (Sold only with SSAs)
- 05 Power Generation (System 1 for Power Generation Packages only)

B: Number of Data Acquisition Licenses

- 01 One (1) Data Acquisition License
- 02 Two (2) Data Acquisition Licenses
- 03 Three (3) Data Acquisition Licenses
- 04 Four (4) Data Acquisition Licenses
- 05 Five (5) Data Acquisition Licenses
- 06 Six (6) Data Acquisition Licenses
- 07 Seven (7) Data Acquisition Licenses
- 08 Eight (8) Data Acquisition Licenses
- 09 Nine (9) Data Acquisition Licenses
- 10 Ten (10) Data Acquisition Licenses
- 11 Eleven (11) Data Acquisition Licenses

- 12 Twelve (12) Data Acquisition Licenses
- 13 Thirteen (13) Data Acquisition Licenses
- 14 Fourteen (14) Data Acquisition Licenses
- 15 Fifteen (15) Data Acquisition Licenses
- 16 Sixteen (16) Data Acquisition Licenses
- 17 Seventeen (17) Data Acquisition Licenses
- 18 Eighteen (18) Data Acquisition Licenses
- 19 Nineteen (19) Data Acquisition Licenses
- 20 Twenty (20) Data Acquisition Licenses

- 05 Five (5) GateCycle User Licenses
- 06 Six (6) GateCycle User Licenses
- 07 Seven (7) GateCycle User Licenses
- 08 Eight (8) GateCycle User Licenses
- 09 Nine (9) GateCycle User Licenses
- 10 Ten (10) GateCycle User Licenses
- 11 Eleven (11) GateCycle User Licenses
- 12 Twelve (12) GateCycle User Licenses
- 13 Thirteen (13) GateCycle User Licenses
- 14 Fourteen (14) GateCycle User Licenses
- 15 Fifteen (15) GateCycle User Licenses
- 16 Sixteen (16) GateCycle User Licenses
- 17 Seventeen (17) GateCycle User Licenses
- 18 Eighteen (18) GateCycle User Licenses
- 19 Nineteen (19) GateCycle User Licenses
- 20 Twenty (20) GateCycle User Licenses

C: Number of ADRE Sxp Licenses (Sold Separately)

- 00 No Option Licenses
- 01 One (1) ADRE Sxp License Licenses
- 02 Two (2) ADRE Sxp Licenses Licenses
- 03 Three (3) ADRE Sxp Licenses Licenses
- 04 Four (4) ADRE Sxp Licenses Licenses
- 05 Five (5) ADRE Sxp Licenses Licenses
- 06 Six (6) ADRE Sxp Licenses Licenses
- 07 Seven (7) ADRE Sxp Licenses Licenses
- 08 Eight (8) ADRE Sxp Licenses Licenses
- 09 Nine (9) ADRE Sxp Licenses Licenses
- 10 Ten (10) ADRE Sxp Licenses Licenses
- 11 Eleven (11) ADRE Sxp Licenses Licenses
- 12 Twelve (12) ADRE Sxp Licenses Licenses
- 13 Thirteen (13) ADRE Sxp Licenses Licenses
- 14 Fourteen (14) ADRE Sxp Licenses Licenses
- 15 Fifteen (15) ADRE Sxp Licenses Licenses
- 16 Sixteen (16) ADRE Sxp Licenses Licenses
- 17 Seventeen (17) ADRE Sxp Licenses Licenses
- 18 Eighteen (18) ADRE Sxp Licenses Licenses
- 19 Nineteen (19) ADRE Sxp Licenses Licenses
- 20 Twenty (20) ADRE Sxp Licenses Licenses

E: ADAPT.wind Number of Turbines (1-1000)

F: Number of Years

- 1 One (1) Year
- 2 Two (2) Years
- 3 Three (3) Years
- 4 Four (4) Years
- 5 Five (5) Years

D: Number of GateCycle Users (Sold Separately)

- 00 No option Licenses
- 01 One (1) GateCycle User License Licenses
- 02 Two (2) GateCycle User License Licenses
- 03 Three (3) GateCycle User License Licenses
- 04 Four (4) GateCycle User License Licenses

G: TSA Scope – Products Covered

- 01 System 1
- 02 ADRE Sxp
- 03 ADRE for Windows
- 04 3500 Rack Configuration
- 05 3500 DAQ/Display
- 06 Bently Balance
- 07 Bently Lube
- 08 1701 Field Monitor
- 09 GateCycle - External
- 10 GateCycle - Internal

H: TSA Type

- 01 Extension (Extension of a currently active TSA)

02 Renewal (Renewal of an

expired TSA)

Note: Initial purchase of System 1 includes 1-year of Platinum level support.

For questions regarding the Technical Support Agreement program call Technical Support at (775) 215-1818.

Footnotes:

- 1 When ordering the additional network card, note that the mid-range and high-end servers provide 4 available network ports. Ordering an additional card will provide 5 or 6 network ports and is not supported on the same purchase order line item.
- 2 You can order this workstation for Snapshot systems with 2000 or fewer points, or for a Display or Configuration workstation.
- 3 When ordering a server computer, you must determine whether the mid-range or high-end computer will be appropriate. If the system will have more than 6 Communication Processors or more than 1500 online or scanning points you need to order the high-end server option.
- 4 You should order the 'Rack Keyboard/Drawer' option for the rack mount server when using the integrated keyboard/drawer and adjustable rail rack option kit in a non-Bently Nevada cabinet.
- 5 You should order the 'Rack Keyboard only' option for the rack mount server when using the standard keyboard with built-in mouse in a Bently Nevada cabinet.
- 6 You cannot order Citrix when ordering the workstation computer.
- 7 When ordering the high performance server to run DAQ and Remote Access, the server will only support up to 6 Communication Processors and no more than 1500 online or scanning points.
- 8 'For Servers Only' options are not supported in the workstation computer. Note that the high-end server already comes standard with a redundant power supply and fan and 6 GB of RAM.
- 9 'For Workstations Only' options are not supported in the server computers.
- 10 Standard SQL Embedded CALs (Client Access Licenses) can only be ordered with a System 1 Server platform. System 1 version 6.81 and greater will ship with SQL Server 2008 R2, rather than SQL Server 2008. This version of SQL can only be used for GE software applications and can only be installed by GE on GE premises.
- 11 A restricted Microsoft embedded operating system license now comes with the servers (64 bit Windows Server 2008 R2). It restricts the use of the operating system for only GE applications or support of GE applications. In other words, this

Operating System license cannot be used for any application other than for use with GE products unless the end user purchases an Operating System license.

- 12 Standard SQL Royalty CALs (Client Access Licenses) can only be ordered with the System 1 Software options 3060/00 A01 or A03. Note that SQL Server 2008 R2 will ship with System 1 version 6.81 and greater. This Royalty version of SQL can only be used for GE software applications and can be installed by end users.
- 13 Interface to Maximo is not supported on Windows 2008 server.
- 14 Snapshot devices can communicate only via Ethernet on Windows Vista, Windows 7 and Windows Server 2008/2008 R2.
- 15 System 1 v6.81 and later has full support for 64 bit Windows Server 2008 and 2008 R2 as well as 64 bit versions of SQL Server.
16. Starting with v6.81, the Bearing Expert has been updated to v2.60.2. This version works with Windows 7 as well as Windows XP and Vista. Note that the Bearing Expert is not supported on server operating systems.
17. The mid-range tower server is an HP ML350p G8 server with 64 bit Windows Server 2008 R2, one 300GB drive and 16GB RAM. See document #284755 for details.
18. The tape backup option is not available for the low profile rack servers due to compatibility issues.
19. Note that the Citrix XenApp Fundamentals licenses are user licenses and not concurrent access licenses (CALs). Once a user logs in, the license is locked to that user and is not released automatically when that user logs out. In order to be used by a different user, that license would have to be revoked in the Citrix Quick Start tool. See the Citrix XenApp Fundamentals license agreement for details.
20. The mid-range rack mount server is an HP DL380p G8 (2U) server with 64 bit Windows Server 2008 R2, one 300GB drive and 16GB RAM. See document #284756 for details.
21. The high end tower server is an HP ML350p server with 64 bit Windows Server 2008 R2, six 300GB drives and 24GB RAM. See document #284757 for details.
22. The high end rack mount server is an HP DL380p G8 (2U) server with 64 bit Windows Server 2008 R2, six 300GB drives and 24GB RAM. See document #323772 for details.
23. The HP DL380p G8 rack server has an overall length of 29.75" (755mm) and does not fit properly in a standard 800mm cabinet. If the depth will be a problem in your planned installation, please order one of the DELL options.
24. The DELL high performance rack server is the R520 model with 64 bit Windows Server 2008 R2, six 300GB drives and 24GB RAM. See document 100M5365 for details. The overall depth of this server is 26.2" (669mm).
25. For more information regarding System 1 support on Virtual Machines contact Technical Support.

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