

System 1 Software

Datasheet

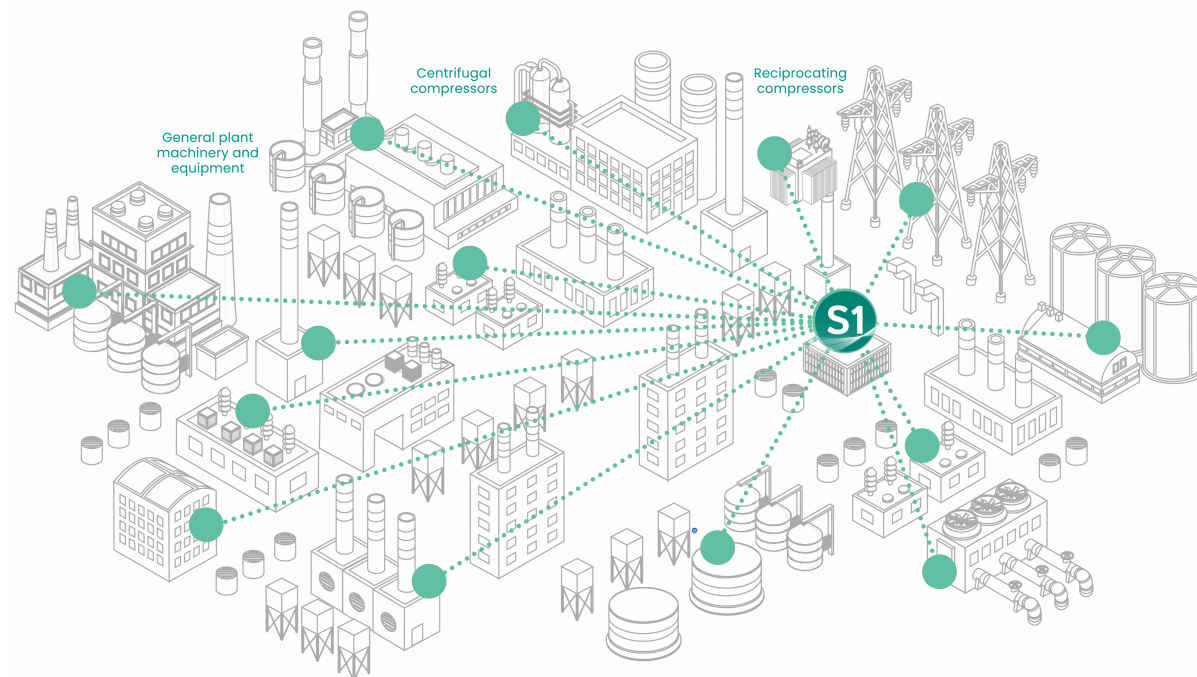
Cordant™

108M5214 Rev. BD

Offering plant-wide condition monitoring insights to reduce risk, increase productivity, and minimize unplanned downtime.

System 1™ streamlines decision-making processes by bringing machine data into a single platform, providing clarity and context to your operations and enterprise. Harnessing the power of Bently Nevada's decades of machinery research and advanced diagnostics expertise, this powerful tool is a key component of successful digital transformation in any industrial facility. By combining its **Connectivity**, **Analytics**, and **Visualization** capabilities, System 1 is the premier Edge historian and condition monitoring platform among industrial operators.

System 1 brings it all together



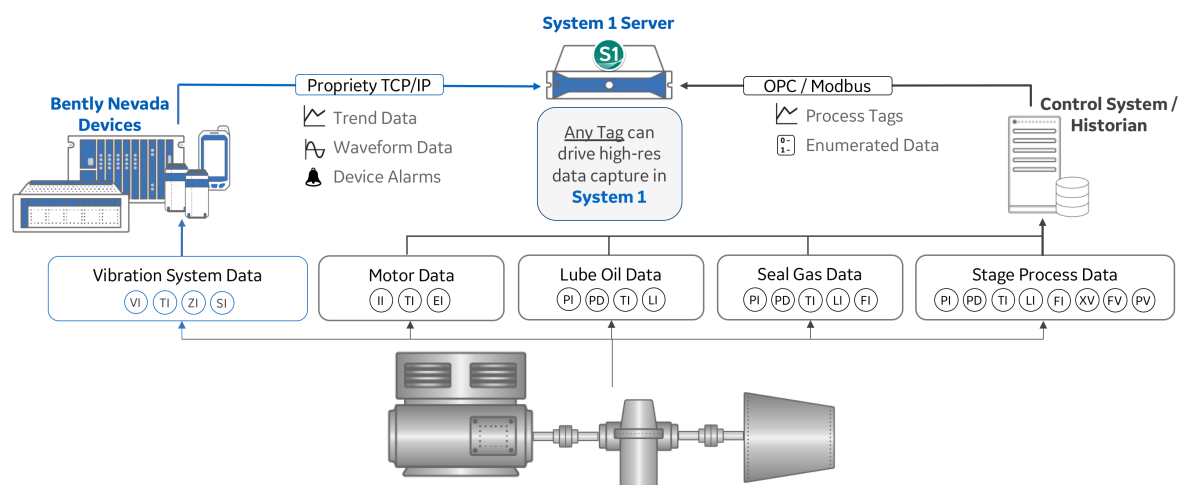
Bently Nevada has a rich heritage in helping customers solve industrial maintenance challenges that is over 60 years strong. Through user research in 25 countries with more than 500 end users, we have studied our customers' team dynamics, site processes, and technology suites to determine how System 1 can best support plant-wide machinery management. The resulting platform is the most comprehensive and user-intuitive condition monitoring solution ever developed.

Baker Hughes 

Connectivity + Analytics + Visualization = A Complete Solution



Connectivity



System 1 connects to data sources on the Edge and collects high resolution vibration, process, and control system data. This data can be collected at up to once-per-second from a Bently Nevada Device, such as 3500 or Ranger Pro, from a Programmable Logic Controller (PLC), or from another Historian. In addition, an alarm on any tag mapped to a machine will trigger high-resolution data capture from all other tags, which includes 100ms static data from Bently Nevada's 3500 and Orbit 60 Series devices.



Analytics

Within System 1, threshold alarms can be configured per machine operating state, with adjustable settings for time delay, latching, and suppression. Four levels of alarm setpoints can be configured per measurement, regardless of the source of the data (e.g., Bently Device, OPC, Modbus). Decision Support extends the analytic capabilities of System 1, enabling users to build custom rules for deeper insights into the behavior of their machines and enhanced knowledge across plants or entire enterprises. Bently Performance further expands analytic capabilities within System 1 by offering online thermodynamic performance monitoring.



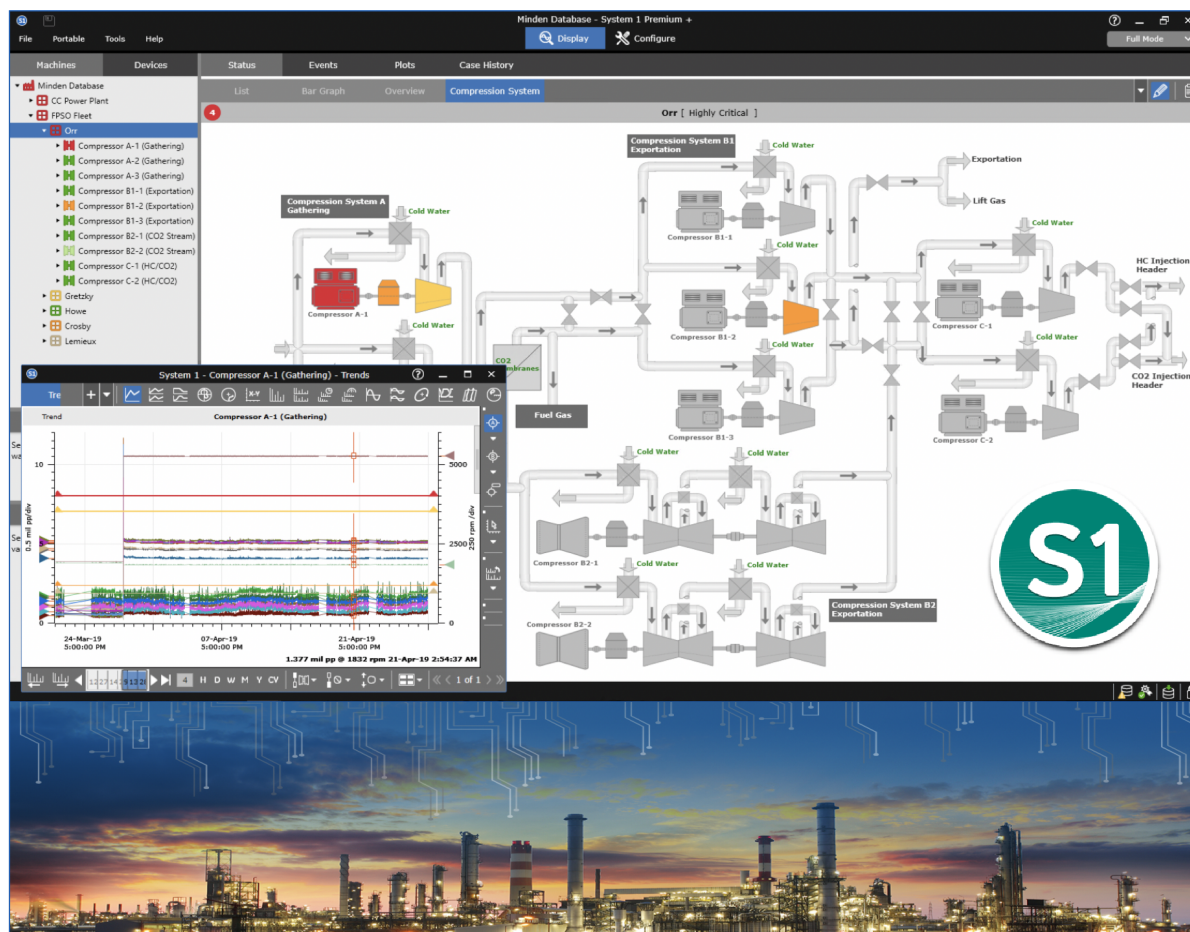
**Decision
Support**



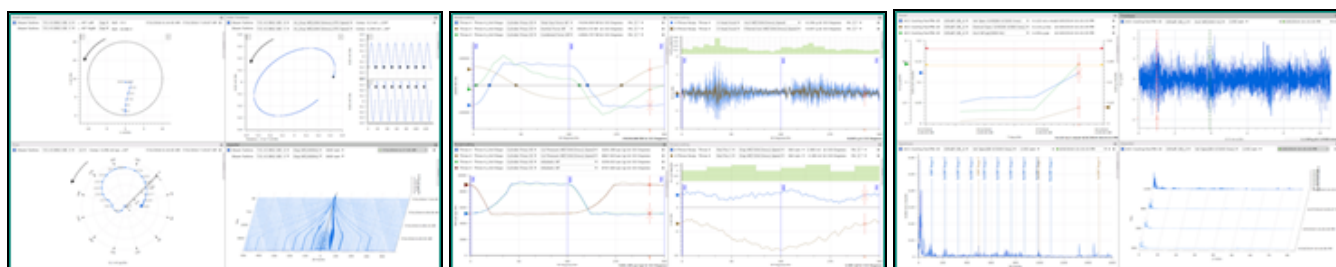
**Bently
Performance**



Visualization



Post collection and analysis, System 1 provides best-in-class visualization tools. The HMI builder allows users to graphically represent their entire Plant System using the built-in symbol library. The HMI view graphically depicts operational health, allowing users to focus on their high priority assets. Collected data can be viewed and manipulated within the plotting workspace, enabling users to diagnose machinery health issues. With a multitude of plot types and tools, users can quickly identify abnormalities and assess their impact on the smooth operation of their facility.



General Capabilities

Distributed Client/Server Deployment

- TCP/IP Client to Server Communication (Ports 7550 and 7551)
- Clients can connect to five different condition monitoring databases simultaneously on a server.
- A single Server 1 server can support online data collection for up to 5 databases.
- System performance tested with 15 simultaneous client connections to one online database.

Data Replication

- Access System 1 on the business network by replicating data across a data diode or firewall.
- Reduce Cyber Security risks to an acceptable level.

User Security Roles

- Leverages Windows Domain and local accounts
- Administrator Role (Read, Write, Database Management)
- Advanced Role (Read, Write)
- Basic Role (Read Only)
- Users with the Edit Settings right can modify the settings for the Advanced and Basic roles.
- Users with server administrator privileges can add new user-defined roles.

Database and Server Capacity

- System 1 Server can run five online condition monitoring databases.
- The System 1 Server can contain multiple portable databases in addition to the online databases.
- Each condition monitoring database can contain a maximum of 5000 pieces of equipment. (Motor + Pump = 2)
- Embedded PostgreSQL for data storage and management
- Edit Trend, Alarm, and Transient Data Store sizes and monitor health over time to avoid losing data. Available only for online data.

Display Unit Preferences

Effortlessly switch between As Configured, Imperial, and SI unit systems from Display.

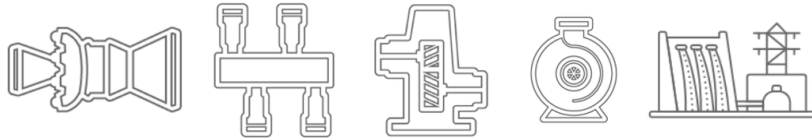
System Specifications and Recommendations

Standard Server	Intel Xeon 6515P 16-Core, 2.3GHz Processor (16 cores, 32 logical)* Minimum 64 GB RAM Operating System Storage: Minimum 300 GB 10K RPM SAS, RAID1 Historian Storage: 10K RPM SAS, RAID6** Optional DVD-RW *Processors with additional cores and/or high clock speed may be utilized **For Replication servers with 5 or more Tx databases, the use of Solid State Storage is recommend.
Workstation	Intel Xeon® W-2123 (3.6 GHz Processor) 16 GB RAM or above 1 GB Graphics Card 1 TB Hard Drive – 7200 RPM DVD-RW
Laptop	i7 – 8850H (2.6 GHz Processor) 6 Core® 16 GB RAM or above HD Graphics Card 512GB Solid State Drive DVD-RW
Virtualized Systems	Refer to System 1 Virtualization Guide, document 125M6425 which can be obtained from a Bently Nevada Sales and Service or from Tech Support.
Network speed	Minimum 100 Mbps recommended
Supported Operating Systems	• Microsoft Windows® 2025 Server Standard Edition 64 bit • Microsoft Windows® 2022 Server Standard Edition 64 bit • Microsoft Windows® 2019 Server Standard Edition 64 bit • Microsoft Windows® 2016 Server Standard Edition 64 bit • Microsoft Windows® 11 Professional 64 bit (26H1, 25H2, 24H2) (Recommended for Client)

System 1 Ordering

Package Types

Asset-Based: Order by condition monitoring criticality and quantity of assets.



System 1 Wind: Specifically for wind power generation.



License Types

Subscription

Year-over-year payments via OPEX

Includes Software Maintenance & Support [M&S] for N-3 versions (where N is the latest released version of System 1)

License expires after a 30 day grace period if not renewed, however is not tied to a product generation i.e. has entitlement to vendors next generation offering as available

Includes one-time professional implementation service for new orders*

Includes once-per-year software version update and gap analysis service*

*Included services are considering remote access. If to be conducted on-premises, then subject to additional travel expenses.

Additional Information

What is a System 1 Display Client?

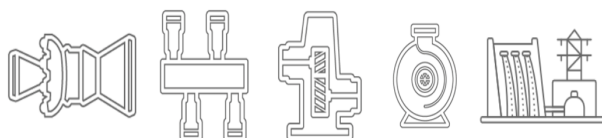
A System 1 Display Client can connect to the System 1 Server residing locally on the same computer or remotely via network access. Local clients can have full access to the condition monitoring database. Remote clients can connect to a condition monitoring database only when direct or networked access to the server is available.

What is a System 1 Server?

A System 1 Server may contain one or more condition monitoring databases accessible from one or more Display Clients. Historical data and configuration structure reside on the server. Hence, the databases are always available.

Subscription Solutions

Asset-Based Packages



Asset-Based Packages are ordered by condition monitoring asset criticality and quantity, with four asset categories:

Category A Assets

- High criticality assets
- Dedicated online continuous monitoring & protection

Category B Assets

- Essential Assets
- Dedicated online-periodic monitoring or shared continuous monitoring & protection

Category C Assets

- Low Criticality Assets
- Online periodic monitoring only or distributed protection & monitoring

Category D Assets

- Balance of Plant
- Offline periodic monitoring using portable devices

Package	Online Continuous Monitoring & Protection ¹	Shared Monitoring & Protection or Dedicated Scanning & Process CM ²	Shared Scanning CM or dedicated distributed solution ³	Offline Portable ⁴	Replication	Static Data Import/Export	Modbus Import
Asset A	✓	✓	✓	✓			
Asset B		✓	✓	✓			
Asset C			✓	✓			
Asset D				✓			
CMS Core						✓	✓

¹ Dedicated 3500 rack

² Typically shared 3500 rack or dedicated Orbit DCM/vbOnline Pro/TrendMaster

3 Typically 2300/1900/Ranger Pro or shared Orbit DCM/vbOnline Pro/TrendMaster

4 SCOUT and vbX Series portables for offline periodic monitoring

Subscription	
3073/75 System 1 Asset Package	
A: Purchase Type	
01	New (First time purchase)
02	Renewal
03	Expansion
04	Migration
B: Term (Subscription Term in Months)	
##	Numeric Entry (1 – 60 Months)
Note: New and Renewal orders should be made in 12-month increments.	
C: Capabilities	
01	CMS Core
D: Host Infrastructure	
01	Customer Cloud
02	Baker Hughes Cloud
03	Customer On-Premise
04	Other
E: Industry	
01	Oil & Gas Upstream
02	Oil & Gas Midstream
03	Oil & Gas Downstream
04	Petrochemical
05	LNG
06	Power Gen – Thermal/Nuclear
07	Other Markets

Subscription	
08	Power Gen – Hydro
F: Category A Assets	
Qty #	0 – n
G: Category B Assets	
Qty #	0 – n
H: Category C Assets	
Qty #	0 – n
I: Category D Assets	
Qty #	0 – n
J: Category E Assets	
	Not Available
K: Quantity of Tx Databases/Instances	
##	Numeric Entry [1 – 25]

Decision Support Analytics

Subscription	
3072/53 Decision Support Analytics	
A: Purchase Type	
01	New (First time purchase)
02	Renewal
B: Term (Months)	
##	Numeric Entry (1 – 60 Months) Note: New and Renewal orders should be made in 12-month increments.
C: Qty of CAT-A Assets	
Qty #	0 – n
D: Qty of CAT-B Assets	
Qty #	0 – n

Subscription	
E: Qty of CAT-C Assets	
Qty #	0
F: Qty of CAT-D Assets	
Qty #	0
G: Functionality	
01	Decision Support Analytics
H: Server/DB Qty	
Qty #	0 – n
I: Industry	
01	Oil & Gas Upstream
02	Oil & Gas Midstream
03	Oil & Gas Downstream
04	Petrochemical
05	LNG Liquefaction
06	Power Gen – Thermal/Nuclear
07	Other Markets
08	Power Gen – Hydro



Decision Support and Decision Support Analytics work only with databases using PostgreSQL. Decision Support applied to a targeted Rx server will support a maximum of 8 Rx replicated databases with a maximum of 10,000 results per database. Results may come from Decision Support analytics and / or custom analytics.



Unlike the 3073 part number offerings, 3072/75 does not include a services component.

Performance Monitoring

Subscription	
3072/17 System 1 Performance	
A: Purchase Type	
01	New (First time purchase)
02	Renewal
03	Expansion
B: Term (Subscription Term in Months)	
##	Numeric Entry (1 – 60 Months) Note: New and Renewal orders should be made in 12-month increments.
C: Complex Machines	
Qty #	0 – n
D: Simple Machines	
Qty #	0 – n
E: S1 Servers with Performance	
Qty #	0 – n
F : Not Applicable	
Qty #	0
G: Industry	
00	Baseline
01	Oil & Gas Upstream
02	Oil & Gas Midstream
03	Oil & Gas Downstream
04	Petrochemical
05	LNG Liquefaction
06	Power Gen – Thermal/Nuclear
07	Other Markets

Subscription	
08	Power Gen – Hydro



Unlike the 3073 part number offerings, 3072/17 does not include a services component.

Database Replication

Subscription
3073/16 CMS Data Centralization/Replication

A: Purchase Type

01	New (First time purchase)
02	Renewal
03	Expansion

B: Term (Subscription Term in Months)

##	Numeric Entry (1 – 60 Months)
Note: New and Renewal orders should be made in 12-month increments.	

C: Capabilities

01	System 1 Replication
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D: Host Infrastructure

01	Customer Cloud
02	Baker Hughes Cloud
03	Customer On-Premise
04	Other

E: Industry

01	Oil & Gas Upstream
02	Oil & Gas Midstream
03	Oil & Gas Downstream
04	Petrochemical
05	LNG
06	Power Gen – Thermal/Nuclear

Subscription	
07	Other Markets
08	Power Gen - Hydro
F: Quantity of Tx Source Databases	
Qty #	0 – n
G: Quantity of Rx Servers/Instances	
Qty #	0 – n
H: Existing Source System 1 (Tx) License Type	
01	Perpetual
02	Subscription

System 1 Wind

Subscription	
3072/84 System 1 for Wind Generation	
A: Purchase Type	
01	New (first time purchase)
02	Renewal
03	Expansion
B: Term (Subscription Term in Months)	
##	Numeric Entry (1 – 60 Months) Note: New and Renewal orders should be made in 12-month increments.
C: MW Output of Wind Farm	
##	Numeric Entry [7– 1000 MW]
D: Quantity of Server Licenses	
##	Numeric Entry [1 – 25]
C: License Type	
01	TX
02	RX



Unlike the 3073 part number offerings, 3072/84 does not include a services component.

Cyber Asset Protection



Includes tested, documented, scripted and securely delivered patches for supported Microsoft® Windows® operating systems, Microsoft® products, and antivirus software on a monthly basis for use with System 1 servers and clients. 3072/40 can be added to Subscription licensing only.

Subscription

3072/40 System 1 Cyber Asset Protection (CAP)

A: Purchase Type

01	New (first time purchase)
02	Renewal

B: Term (Subscription Term in Months)

##	Numeric Entry (1 – 60 Months) Note: New and Renewal orders should be made in 12-month increments.
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C:CAP Computers (per site)

Qty #	1 – n
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D: Antivirus Product

01	Symantec
02	McAfee
03	None



All Anti-virus Options in 3072/40 include Microsoft Defender definition updates.

Accessories

BN Part Number	Title	Description
136M4565-01	System 1 Disk	Latest version of System 1 on DVD
117M5159-01	System 1 Languages Disk	Latest version of System 1 Languages on DVD

BN Part Number	Title	Description
150M1856-01	Decision Support Disk	Latest version of Decision Support on DVD
125M9816-01	System 1 Performance Monitoring Disk	Latest version of System 1 Performance Monitoring on DVD



The 3071/30 System 1 Servers are now in a separate datasheet, see document 133M3049.



The offerings and part numbers contained in this datasheet are subject to change at discretion of Seller. Listing in the datasheet is not a guarantee of availability.

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