Bently Nevada

Welcome to System 1

Version 25.2 [Nov 2025]

Welcome

Bently Nevada is pleased to present System 1 (Figure 1) version 25.2, with new capabilities.

Users upgrading to version 25.2 will benefit from the many capability enhancements to effective outcomes, which are summarized below.

Bently Nevada remains focused on delivering the world’s premier plant-wide machinery management software through bi-annual product releases.

For a detailed overview of System 1, please visit the website.

Bently Nevada

System 1 v25.2
Key Features

3500 Retrofits	Seamlessly replace 3500 device with Orbit 60 device in System 1.
Plot Enhancements	Overlay fault frequency starting from the associated machine point or bearing in plot.
	Shaft Centerline plot now supports Gap measurements of custom channels.
Scout 200	Receive and display Off-Route Long Time Waveform from SCOUT 200 device.
Edge Devices - Orbit 60	Monolithic Style Recip Hyper Compressor machine train is now available for configuration and channel mapping in System 1.
	Hyper Plunger channel along with its static and dynamic measurements is now supported.
	System 1 now connects to single-slot CMMs installed on Orbit 60 device.
	Recip Cylinder pressure channel included in the Server Load calculator sheet.
Edge Devices - Orbit DCM	Existing BN Standard Transducers are now available in the Transducer Type drop-down list for configuring Orbit DCM.

Figure 1 System 1 v25.2 Features

Thank you,

Jeff Sipek, Product Manager

On behalf of your System 1 Leadership and Development Teams

CONTENTS

Before you Begin

! Postgres version upgrade !

System 1 25.1 and later will support PostgreSQL 17 as the historian. Databases on PostgreSQL 14 needs to be upgraded to PostgreSQL 17.

Users are recommended to create backup before installing System 1 25.1 or above.

After upgrade to PostgreSQL17 on System 1 25.1 or above, rollback installation to previous System 1 versions is not allowed. Rollback is only possible by restoring VSS/Acronis backup.

Users with Postgres 14 database as historian can upgrade to Postgres 17 by launching Database Manager tool and clicking “Upgrade PostgreSQL Database”.

! License Enhancements !

Before upgrading Replication (Rx) server to version 25.1 or later:

- If you have not applied license on Replication (Rx) server, then you must license it with latest version of System 1 Database Replication license.
- If you have applied license on Replication (Rx) server in System 1 v24.2 or earlier and your database has Portable (PDC) Configuration, then you must return the System 1 Database Replication license assigned to your device in the licensing portal. Assign the latest System 1 Database Replication license (version 25.1 or later) and then upgrade System 1 software to version 25.1 or later. Failure to do this might prevent System 1 Server from working. For detailed instructions, see “Manage System 1 Database Replication License on Replication (Rx) Server” in System 1 install folder.

Users need to be Server Administrator to assign or return System 1 License.

After the grace period of a subscription license is over, data and alarm event collection are stopped until the license is renewed.

! Best Practices !

Bently Nevada’s Best Practice is to create full backup before upgrading to a new version of System 1.

1. SYSTEM 1 V25.2 FEATURE OVERVIEW

Table -1 : System 1 v25.2 – Improved Productivity

Core Features		
3500 Retrofits		
3500 Replacement with Orbit 60 Device	Seamlessly replace a 3500 device with Orbit 60 device in System 1.	4.1.1
Plot Enhancement		
Overlay Fault frequencies of Selected Asset Points	System 1 now overlays fault frequency starting from the associated machine point or bearing in plot.	4.2.1
Support for Gap from Custom Channels on SCL Plot	Shaft Centerline plot now supports Gap measurements of custom channels.	4.2.2
SCOUT 200		
Long Time waveform Support	System 1 now receives and displays Off-Route Long Time Waveform from SCOUT 200 device.	4.3.1

Edge Devices Monitoring		
Orbit 60		
Monolithic Style Recip Hyper Compressor Support	Monolithic Style Recip Hyper Compressor machine train is now available for configuration and channel mapping in System 1	5.1.1
Hyper Plunger Channel Support	Hyper Plunger channel along with its static and dynamic measurements is now supported in System 1	5.1.2
Single-Slot CMM Support	System 1 now connects to single-slot CMMs installed in Orbit 60 devices.	5.1.3
Server Load Calculator Sheet Updates	Recip Cylinder pressure channel included in the Server Load calculator sheet	5.1.4
Orbit DCM		
Bently Standard Transducers Support	Orbit DCM is compatible with existing BN standard transducers, which are now included in the Transducer Type drop-down list.	5.2.1

2. DECISION SUPPORT

2.1 Decision support is now available to download

Valid M&S Agreement Required

Starting with System 1 version 23.2, Decision Support Developer will be included with all new orders of System 1. Decision Support and System 1 both remain as separate products. However, they will be delivered through the same download folder in Flexera. Decision Support is now part of the System 1 package, and therefore does not require a separate license for installation. This excludes the Decision Support Analytics (formerly known as InsightPaks) and the DS Analytics library, which also remains as a separate commercial product. For more information on this change, contact your sales manager.

2.2 Decision Support Analytics Support

Existing installations of Decision Support Analytics are supported with Decision Support v23.2. However, if installing Decision Support Analytics for the first time after installing Decision Support v23.2, the latest version of Decision Support Analytics is required.

3. VERSION SUPPORT & OPERATING SYSTEM COMPATIBILITY

3.1 System 1

System 1 follows a semi-annual release cadence with targeted releases in May and November of each year. Versions are fully supported for a minimum of two years from the published date of availability (Refer System 1 Datasheet).

New Versions of System 1 benefit from:

- Compatibility with the latest Microsoft Client & Server Operating Systems
- Client backwards compatibility to previous versions under support (25.2 Client to 24.1 Server DB)
- Database upgrade from previous versions released within last 3 years (23.1→25.2)
- For Replicated setups, database upgrade of Tx and Rx databases from previous versions released within last 2 years (24.1→25.2)
- Security patch and update testing for the latest available version
- Bug fixes included in the latest available version.
- Standard technical support with escalation to engineering as required.

Versions no longer supported:

- Standard support is provided for common FAQ type questions, however, escalation to engineering is not available. Users are encouraged to update software to the latest version to benefit from new features, OS (Operating System) compatibility, and bug fixes.

Table 3.1 : System 1 Version Support & OS Compatibility Matrix

System 1 Versions & Support			Windows Server OS (64bit)				Windows Client OS (64bit)	
Version	Available	End of Support	2025	2022	2019	2016	11*	10**
25.2	Nov-25	Nov-27	✓	✓	✓	✓	✓	
25.1	May-25	May-27	✓	✓	✓	✓	✓	✓
25.0	Feb-25	May-25		✓	✓	✓	✓	✓
24.2	Nov-24	Nov-26		✓	✓	✓	✓	✓
24.1	May-24	May-26		✓	✓	✓	✓	✓
23.2	Nov-23	Nov-25		✓	✓	✓	✓	✓
23.1	May-23	May-25		✓	✓	✓	✓	✓

*Windows 11 version compatibility will track Microsoft's published release and support model. The latest version of System 1 will be tested and supported on all versions of Windows 11 under support as published on their website based on the System 1 version's published date of availability.

System 1 v25.2 (Windows 11 Pro 24H2, 23H2)

System 1 v25.1 (Windows 11 Pro 24H2, 23H2)

System 1 v25.0 (Windows 11 Pro 23H2, 22H2)

System 1 v24.2 (Windows 11 Pro 23H2, 22H2)

System 1 v24.1 (Windows 11 Pro 23H2, 22H2)

System 1 v23.2 (Windows 11 Pro 22H2, 21H2)

System 1 v23.1 (Windows 11 Pro 22H2, 21H2)

System 1 v22.2 (Windows 11 Pro 21H2)

Support for Windows Enterprise versions have the same System 1 support lifecycle as Windows Pro.

**Windows 10 version compatibility will track Microsoft’s published release and support model. The latest version of System 1 will be tested and supported on all versions of Windows 10 under support as published on their website based on the System 1 version’s published date of availability.

System 1 v25.1 (Windows 10 Pro 22H2)

System 1 v25.0 (Windows 10 Pro 22H2)

System 1 v24.2 (Windows 10 Pro 22H2)

System 1 v24.1 (Windows 10 Pro 22H2)

System 1 v23.2 (Windows 10 Pro 22H2, 21H2)

System 1 v23.1 (Windows 10 Pro 22H2, 21H2)

System 1 v22.2 (Windows 10 Pro 22H2, 21H2, 21H1)

Support for Windows Enterprise versions have the same System 1 support lifecycle as Windows Pro.

3.2 Decision Support

System 1 Decision Support follows a semi-annual release cadence. Versions are fully supported for a minimum of two years from the published date of availability (see below).

System 1 Compatibility

- Decision Support is designed to work with System 1 version 20.1 and newer, utilizing PostgreSQL for Historical Database (Proficy not supported)
- Decision Support is compatible with the same Operating Systems supported by System 1 (see previous section).

New Versions of System 1 Decision Support Benefit from:

- Compatibility with the latest Microsoft Client & Server Operating Systems
- Client backwards compatibility to previous versions under support (25.2 Client to 24.1 Server DB)
- Security patch & update testing for the latest available version
- Bug fixes included in the latest available version.
- Standard technical support with escalation to engineering as required.

Versions no longer supported:

- Standard support is provided for common FAQ type questions, but users are encouraged to update software to latest version to benefit from new features, OS compatibility, and bug fixes.

4.CORE FEATURES

4.1 3500 Retrofits

4.1.1 3500 to Orbit 60 Device Replacement

System 1 version 25.2 streamlines replacing legacy 3500 monitoring systems with Orbit 60 devices, while ensuring historical data continuity and preserving trends, alarms, and reference datasets without interruption. Automated mapping of compatible measurements and waveforms significantly reduces time and effort required to configure new hardware and helps complete retrofits faster and with greater confidence. The process supports both offline configuration files and direct device connections for different deployment scenarios, while aligning with existing asset hierarchies. This release supports replacement for standard 3500 devices only.

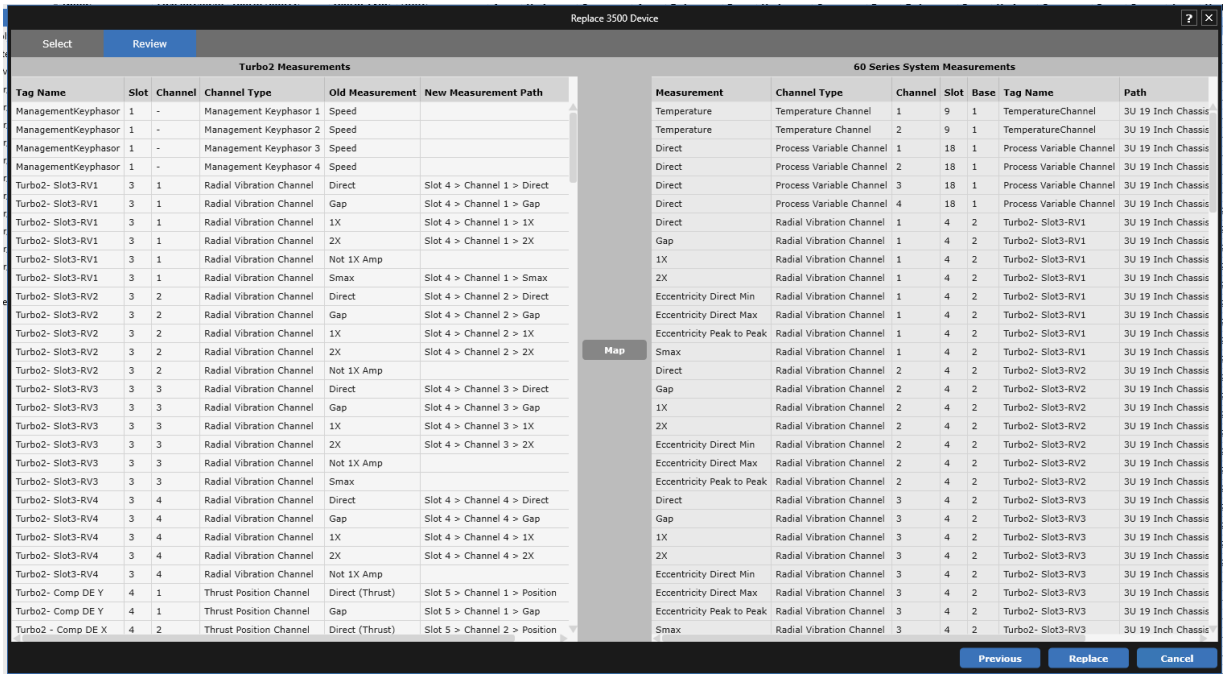


Figure 4.1.1 Example of a Device Mapping Review Screen

Moreover, this feature reduces risk during critical system upgrades. It keeps the historical and current data accessible for analysis and reporting even after the transition to Orbit 60. Users can review the mappings before the replacement, providing transparency and control over the process. If canceled, the system restores the original configuration, maintaining integrity. After completion, the new device configuration is displayed automatically, enabling continuous monitoring without manual effort.

Note:

- If a 3500 measurement is not Mappable to an Orbit 60 measurement in the "Replace 3500 Device" Screen, & if you continue with replacement, the historical data will not be available for that 3500 measurement variable.
  If you wish to retain the data – please take a full backup or create an Audit file to access the Historical data.

4.2 Plot Enhancements

4.2.1 Overlay Fault frequencies of Selected Asset Points

In System 1 version 25.1 and earlier, users had to scroll through the list of fault frequencies assigned to a machine train to find the fault frequency of interest.

Starting with version 25.2, pressing "F" key displays fault frequencies starting from the associated machine point or bearing, making it easier to identify the relevant frequencies, especially when multiple fault frequencies exist in the given machine.

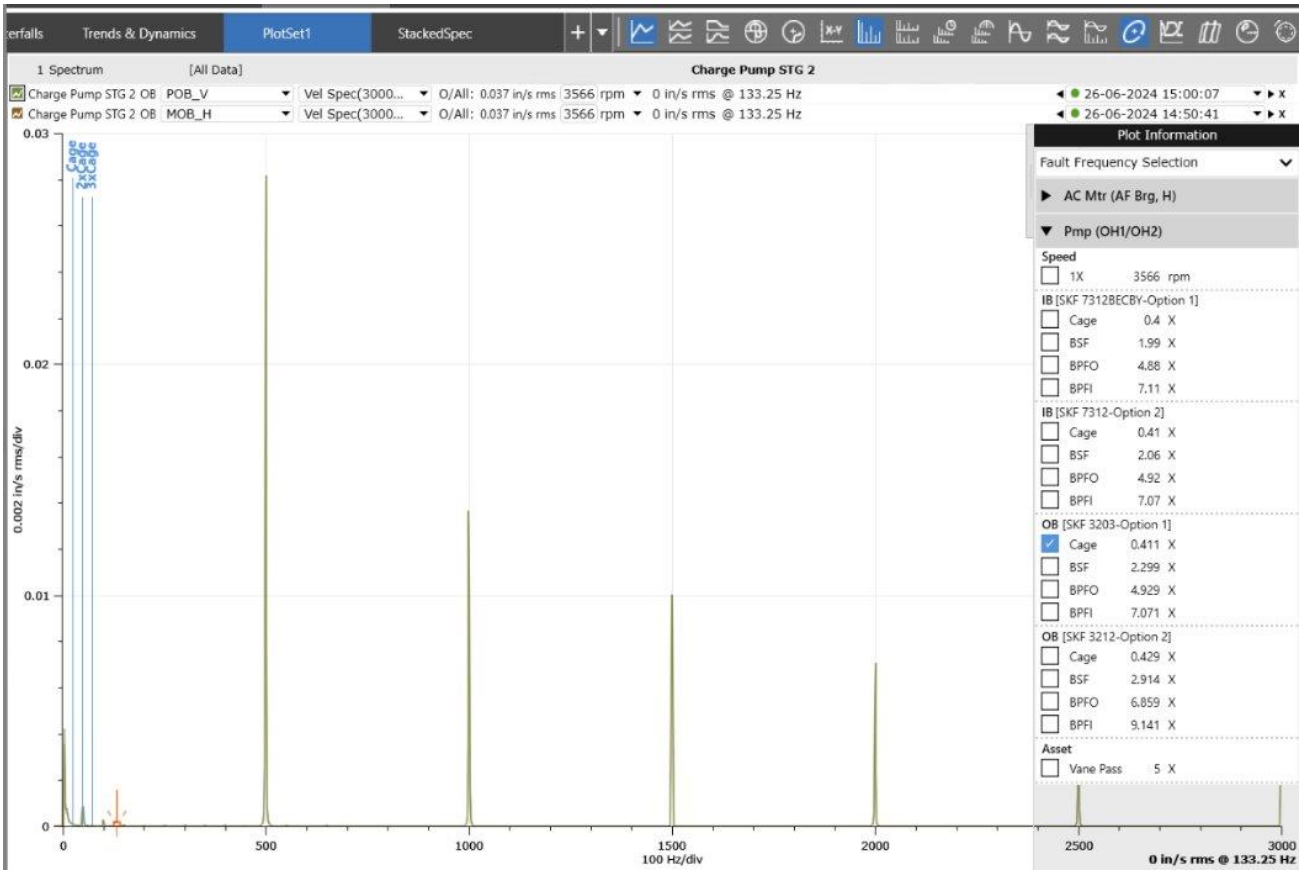


Figure 4.2.1 Fault Frequency Selection

4.2.2 Support for Gap Measurements from Custom Channels on SCL plot

Starting with System 1 v25.2, users can view Shaft Center Line (SCL) plots for Gap measurements in custom channels migrated from System 1 Classic, even though these channels aren't natively supported. This feature enables analysis of Gap measurements using SCL plots for 3500 Hydro Custom Channels.

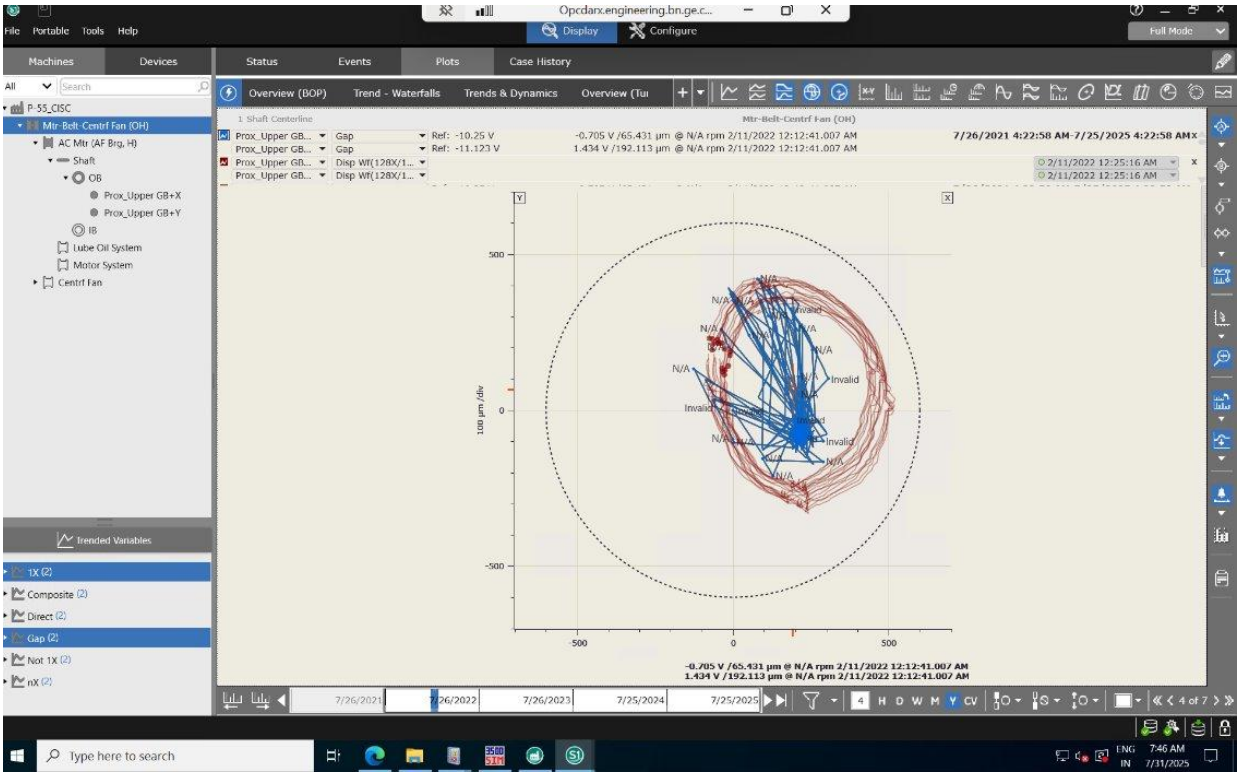


Figure 4.2.2 Shaft Center Line (SCL) Plot Showing Gap measurements of Custom Channels

4.3 SCOUT 200

4.3.1 Long Time Waveform Support

System 1 v25.2 enables users to receive Off-Route Long Time Waveform measurements collected in SCOUT200 and perform analysis using plots and plot tools. The Long Time Waveform is useful to analyze slow-speed machines like extruders, Klins and agitators, used in variety of industries like paper and pulp, cement, mining, and so on. System 1 v25.2 and later allows users to leverage Partial Waveform analysis, Spectrum, Time base, Waterfall and Cascade plots, and related tools.

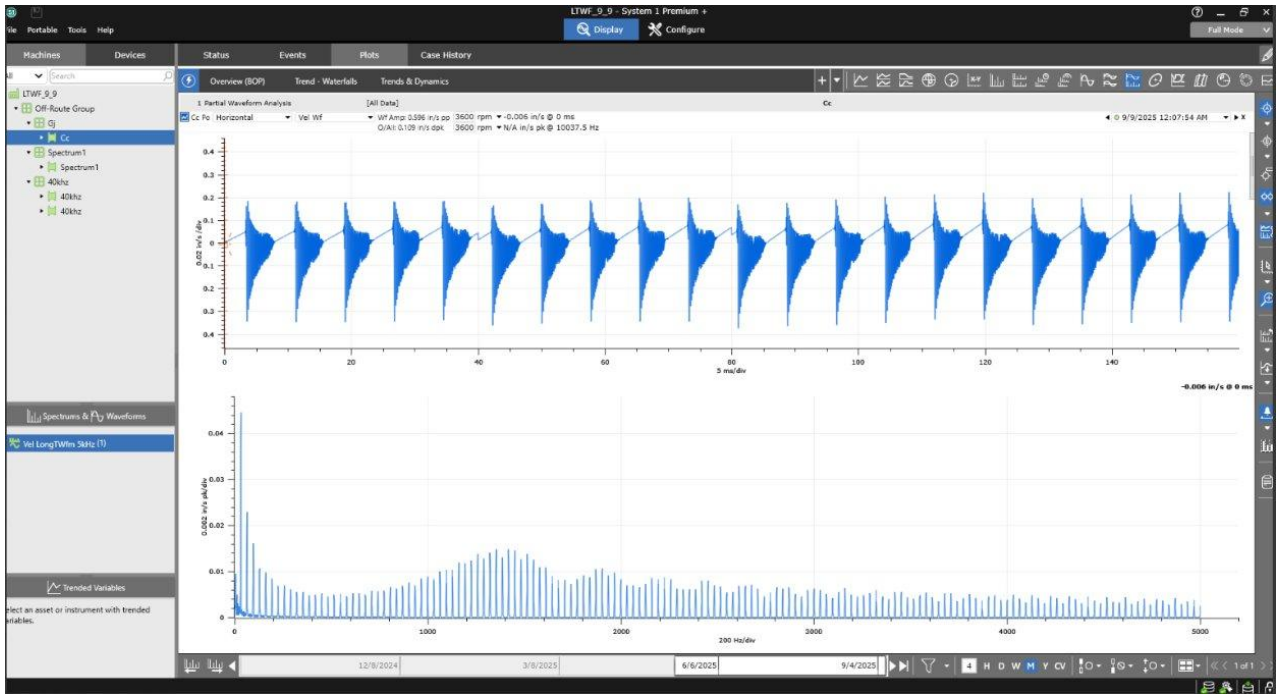


Figure 4.3.1 Long Time Waveform from SCOUT200 device in System 1

5. EDGE DEVICES MONITORING

5.1 Orbit 60

5.1.1 Monolithic Style Recip Hyper Compressor Support

System 1 now includes the Monolithic Style Reciprocating Hyper Compressor machine train in its asset library. Users can add this machine train under machines hierarchy, configure its properties. and map channels such as Hyper Plunger, Impulse Acceleration, Recip Velocity, and speed to the mappable points. After the channels are mapped, the Hyper compressor’s machinery model configured in the protection configuration is automatically applied to the machine train in System 1.

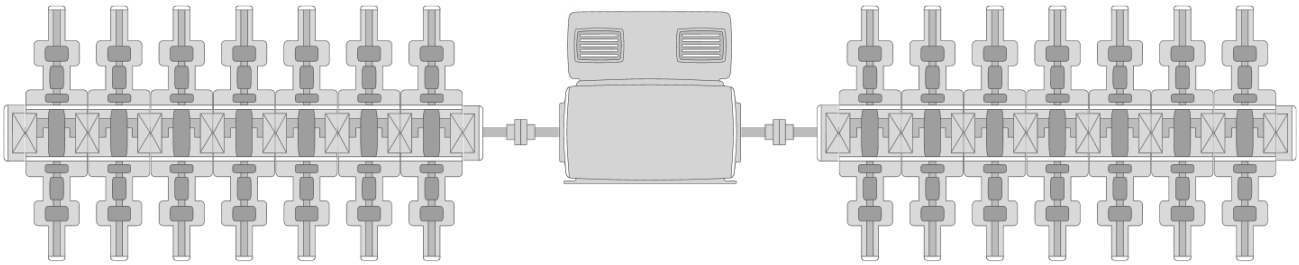


Figure 5.1.1 Monolithic Style Recip Hyper Compressor Machine Train

5.1.2 Hyper Plunger Channel Support

System 1 v25.2 adds support for the Recip Hyper Plunger channel of the Monolithic Style Recip Hyper Compressor. Users configure the channel as part of the Protection configuration using Orbit Studio. After adding Orbit 60 device in System 1, map the channel to the Hyper Plunger’s points (Horizontal and Vertical) on both the Left and Right cylinder of the Hyper compressor. System 1 displays static and waveform data for the Hyper Plunger channel in various plots. The new channel provides Pk-Pk displacement of the plunger within a chamber of Hyper compressor throw.

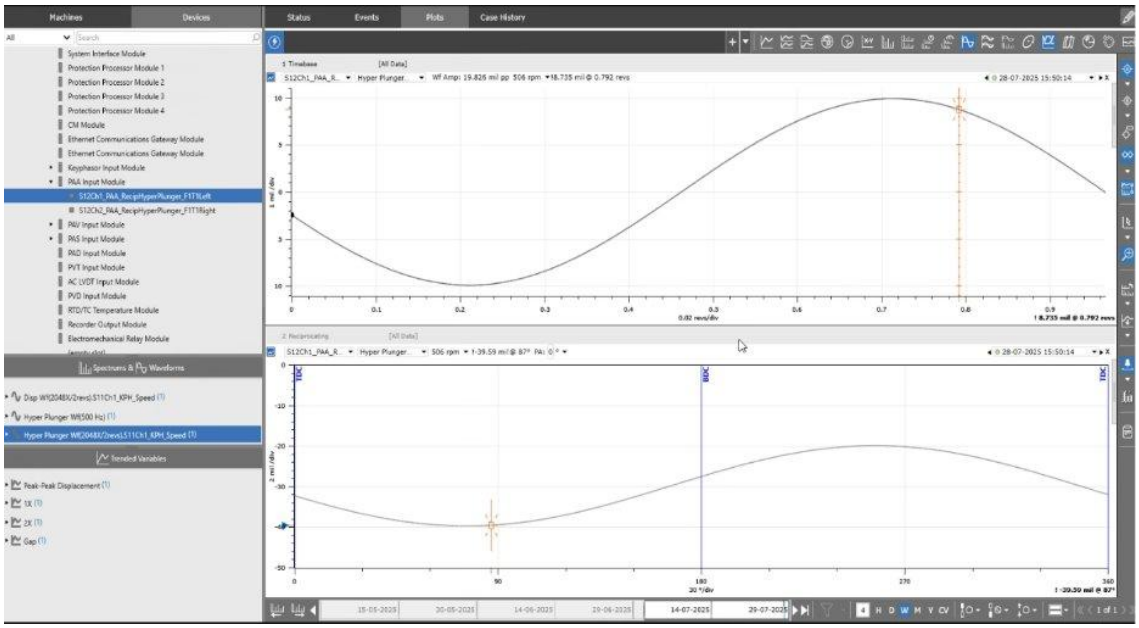


Figure 5.1.2 Hyper plunger channel waveforms in System 1 Display

5.1.3 Single-Slot CMM Support

Until System 1 v25.1, only two-slot Condition Monitoring Modules (CMM) were supported in the Orbit 60 device and System 1. The module consumed an extra slot in the rack. The single-slot CMM, however, occupies only a single-slot in Orbit 60 rack and allows more measurement points to be added. Replacing the two-slot CMM with single-slot CMM is straightforward in both the hardware and within System 1. Starting System 1 v25.2, when a CMM is added under device hierarchy, the added module occupies only one slot.

5.1.4 Server Load Calculator Sheet update

The server load calculator sheet now includes the Orbit 60 Recip Cylinder Pressure channel, which significantly contributes to the server load. Users can now calculate the server load with the channel configured by specifying the number of Recip Cylinder Pressure channels per device, waveform size, number of software variables and waveforms and so on.

Server Configuration Details

Server Specifications		
Server Type	Standard	-
RAM	64	GB
CPU: # of Logical Processors	24	#
Database Storage Settings		
Available HDD Space	8	TB
Short Term Span	30	Days
Long Term Span	5	Years
No. of Alarms per Device	2	per Day
No. of Transients per Database	30	per Month

Results

Server Load		
Total Load	0	%
Estimated Database Size		
Total Space	0.00	TB
Short Term Trend Store	0.00	TB
Long Term Trend Store	0.00	TB
Alarm Store	0.00	TB
Transient Store	0.00	TB

Device Configuration Details

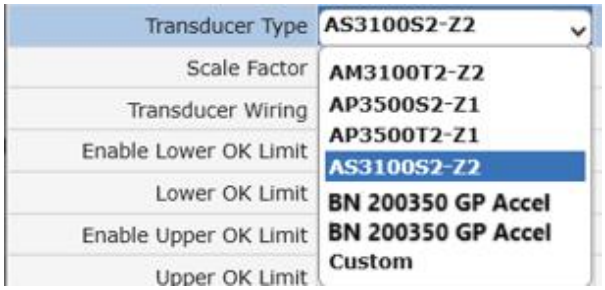
Device Type	#	Max # of Devices	Point Type	# Points per device	# Wfms per point	Wfm Size	ST Storage Rate Wfm (min)	LT Storage Rate Wfm (min)	# Device Trended Vars per point	Storage Rate Device Trended Vars (s)	# SW Vars per point			Storage Rate SW Trended Vars (min)	Estimated Size / Device (GB)
											SW Trended Vars	Perf. Trended Vars	SW Waveform		
3500	0	Max of 30	Vibration/AirGap	44	2	2048	10	180	8	1	2	0	0	1	
			Process/KPH	4	-	-	-	-	1	1	-	-	-	-	0
			Recip Cyl. Pressure	0	2	1440	10	180	8	1	7	4	4	-	
TDI Secure	0	Max of 30	Vibration	20	2	2048	10	180	8	1	2		-	1	
			Process/KPH	2	-	-	-	-	1	1	-	-	-	-	0
3701	0	Max of 40	Vibration	12	3	8192	10	180	5	1	2	0	-	1	
			Process/KPH	2	-	-	-	-	2	1	-	-	-	-	0
Commtest vbOblins	0	Max of 200	Vibration	12	3	8192	10	180	5	30	2	0	-	10	
			Process/KPH	2	-	-	-	-	2	30	-	-	-	-	0
2300	0	Max of 450	Vibration	2	3	8192	10	180	6	1	2	0	-	1	
			Process/KPH	1	-	-	-	-	1	1	-	-	-	-	0
Trendmaster	0	Max of 10	Vibration	512	3	2048	1440	1440	4	30	1	0	-	1440	
			Process/KPH	26	-	-	-	-	1	30			-	-	0
6x Connector	0	Max of 10	Vibration	88	2	2048	10	180	8	1	2	0	-	1	
			Process/KPH	108		-	-	-	1	1			-	-	0
Ranger Pro Sensors	0	Max of 1400	Vibration	3	1	2048	1440	1440	1	1800	0	0	-	30	
			Process	2	-	-	-	-	1	1800	-	-	-	-	0
Modbus Points	0	Max of 15000	Process	1	-	-	-	-	1	1	-	-	-	-	0
OPC DA Tags	0	Max of 15000	Process	0	-	-	-	-	1	1	-	-	-	-	0
OPC UA Tags	0	Max of 40000	Process	1	100	8192	10	180	2	1	-	-	-	-	0
Orbi60	0	Max of 40	Vibration/AirGap	44	2	8192	10	180	8	1	2	0	0	1	
			Process/KPH	4	-	-	-	-	1	1	-	-	-	-	0
			Recip Cyl. Pressure	0	3	8192	10	180	8	1	7	4	4	-	
OrbiDCM	0	Max of 100	Process	4	-	-	-	-	1	1				-	
			Vibration	16	2	8192	10	180	2	1	2	0	-	1	0
			KPH	4	1	8192	10	180	2	1	-	-	-	-	

Figure 5.1.4 Server Load Calculator Sheet

5.2 Orbit DCM

5.2.1 Bently Standard Transducers Support

The Transducer type drop-down list now includes all transducers that are compatible with Orbit DCM, which is useful during the Orbit DCM configuration process. After a transducer is selected, all associated properties are automatically updated. This helps to streamline the configuration process, resulting in quicker setup times and reducing the potential for errors.



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