



Symphony Plus Condition Monitoring

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Introducing the new family of condition monitoring products



Symphony Plus' Condition Monitoring products integrate powerful hardware with intelligent software and when used along with a proactive maintenance policy, can reduce and often eliminate costly machine failures. ABB has solutions for continuous improvement that will help increase your plant's uptime and profitability.

ABB continues to draw on the benefits of a global R&D organization dedicated to developing best-in-class products. Our aim supports all business segments with fresh, innovative products and technology portfolios, backed by a proven track record of success.

Symphony Plus' Condition Monitoring offering leverages the expertise that has been developed over the last 35 years. Combining experience with innovation allows this condition monitoring suite of products to provide best-in-class solutions.

The power generation and process industries depend on the reliable and predictable operation of rotating machinery. In striving to meet this objective, nearly every plant monitors its critical and essential rotating machinery assets with a continuous on-line protection system.

Symphony Plus' Condition Monitoring suite of products have been developed to suit the power and process industries needs and have been installed on all types of rotating machinery at numerous sites around the world. They continuously monitor and protect rotating machinery by measuring relative, seismic and absolute vibration, along with specialized turbine supervisory measurements such as eccentricity, thrust, case expansion and differential expansion.

Symphony Plus' Condition Monitoring offering consists of the MCM800 and CMM11 condition monitoring modules and Analyst™ graphical analysis software. The MCM800 is the latest in condition monitoring and protection hardware. Each module has multiple channels that can be configured independently for vibration and additional supervisory functions, providing safe operation of critical and essential rotating machinery.



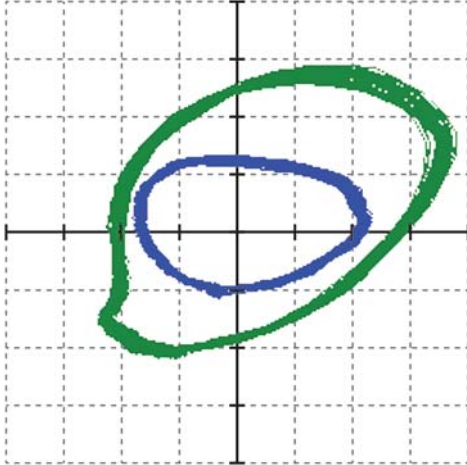
MCM800

The MCM800 Condition Monitoring module operates equally well in standalone and fully integrated configurations. The unique all-in-one design reduces necessary parts inventory and simplifies personnel training requirements. As a key component of any effective condition monitoring program, the MCM800 protects the valuable assets necessary to keep any plant running continuously and at peak performance.

Analyst is a graphical analysis software application that provides specialized plots for assessing the condition of rotating machinery. The application uses various plot types to present the current and historical vibration data to the vibration expert, so that significant patterns and trends can be quickly recognized. The user can now proactively identify problems and deviations in the condition of the rotating machinery and address them before adversely affecting operations. With remote options, one expert can monitor multiple assets at multiple locations without the need for time consuming travel.

Symphony Plus Condition Monitoring

Simplifying data analysis for rotating machinery monitoring



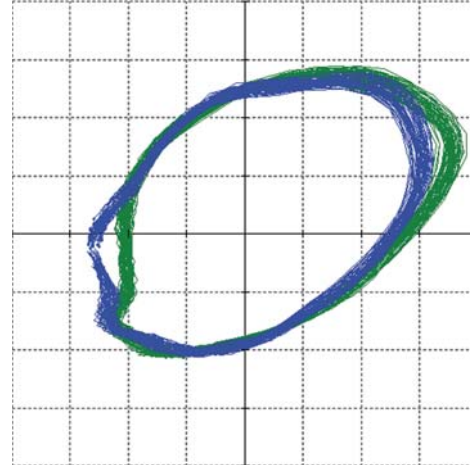
Full Scale 2.50 mils

Direct Orbit after event

Symphony Plus' Condition Monitoring offering allows you to gather valuable data from your plant's rotating assets to ensure safety of personnel and assess overall machinery health and condition.

The ability to recognize signs of abnormalities in the operation of critical equipment is imperative to any proactive maintenance program. At ABB, we recognize that plant personnel possess the greatest amount of knowledge and experience regarding the behavior of their plant's rotating machinery. Our software provides valuable information to quickly assess the health of the plant equipment.

The real value of diagnostic software lies in that it simplifies the user's ability to sort and reduce large amounts of data and identify possible changes in machinery operating conditions, either due to normal wear or an actual machine fault condition.



Full Scale 2.50 mils

Direct Orbit over time

Our solution provides customers with a system that simplifies the user interface, performs time saving reduction of data, identifies significant or undesirable changes in machine condition and produces the necessary information for plant personnel to leverage their own expertise.

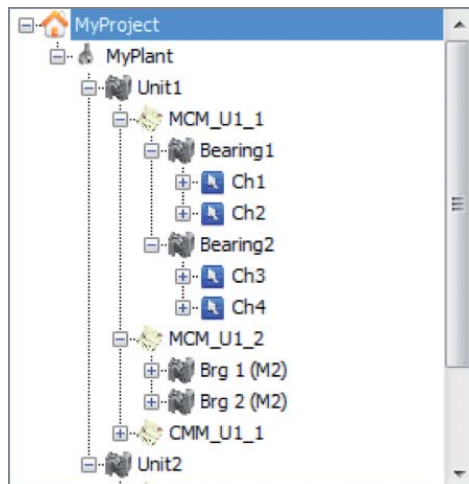
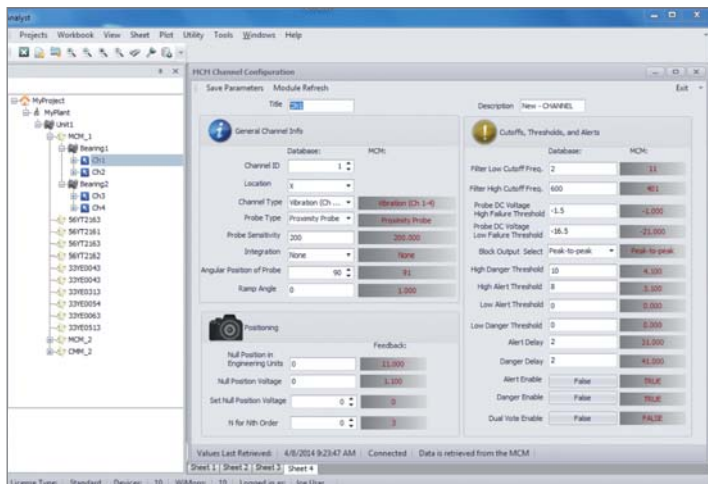
MCM800

The latest in condition monitoring technology

The MCM800 is ABB's latest technology in proactive condition monitoring, adding advanced supervisory functions to both proprietary and open architecture systems. The MCM800 integrates and complements ABB's Symphony Plus and System 800xA platforms. Additionally, the MCM800 communicates via PROFIBUS, MODBUS, and OPC for complete integration into open systems.

MCM800 provides a complete set of functions designed to address the monitoring and protection needs for rotating machinery:

- Vibration: displacement, velocity and acceleration
- Eccentricity
- Thrust (rotor) position
- Differential (relative) expansion
- Case (absolute) expansion



Universal module

Cost effective - one module does it all

The MCM800's single module design provides four independently configurable channels which accept inputs from most industry standard transducers as well as analog (4-20mA) inputs. The processor based design makes it easily programmable for unique applications that would otherwise require custom or specialty modules.

Flexibility and scalability

The MCM800 interfaces with many different rotating machinery types and system sizes.

The MCM800 supports stand-alone applications as well as fully integrated systems. As a fully integrated system these modules may also be applied in a remote configuration to reduce field wiring from the monitored machinery. Eliminating the need for a special rack and backplane makes the MCM800 cost effective for both large and small applications. Using an industry standard 35mm DIN rail mounting system, the MCM800 may be placed strategically in commonly used instrument housings. Use of industry standard power supplies and communications interfaces further reduces the total cost of ownership through reduced spare parts inventory.

To further reduce costs for stand-alone applications, the MCM800 utilizes Analyst Tools for configuration and monitoring.

Innovative, easy to configure products

The entire set of hardware and software is designed with ease of implementation in mind. The MCM800 uses Analyst Tools software for configuration and basic monitoring of the device. To avoid multiple software packages, Analyst Tools are embedded into Analyst software.

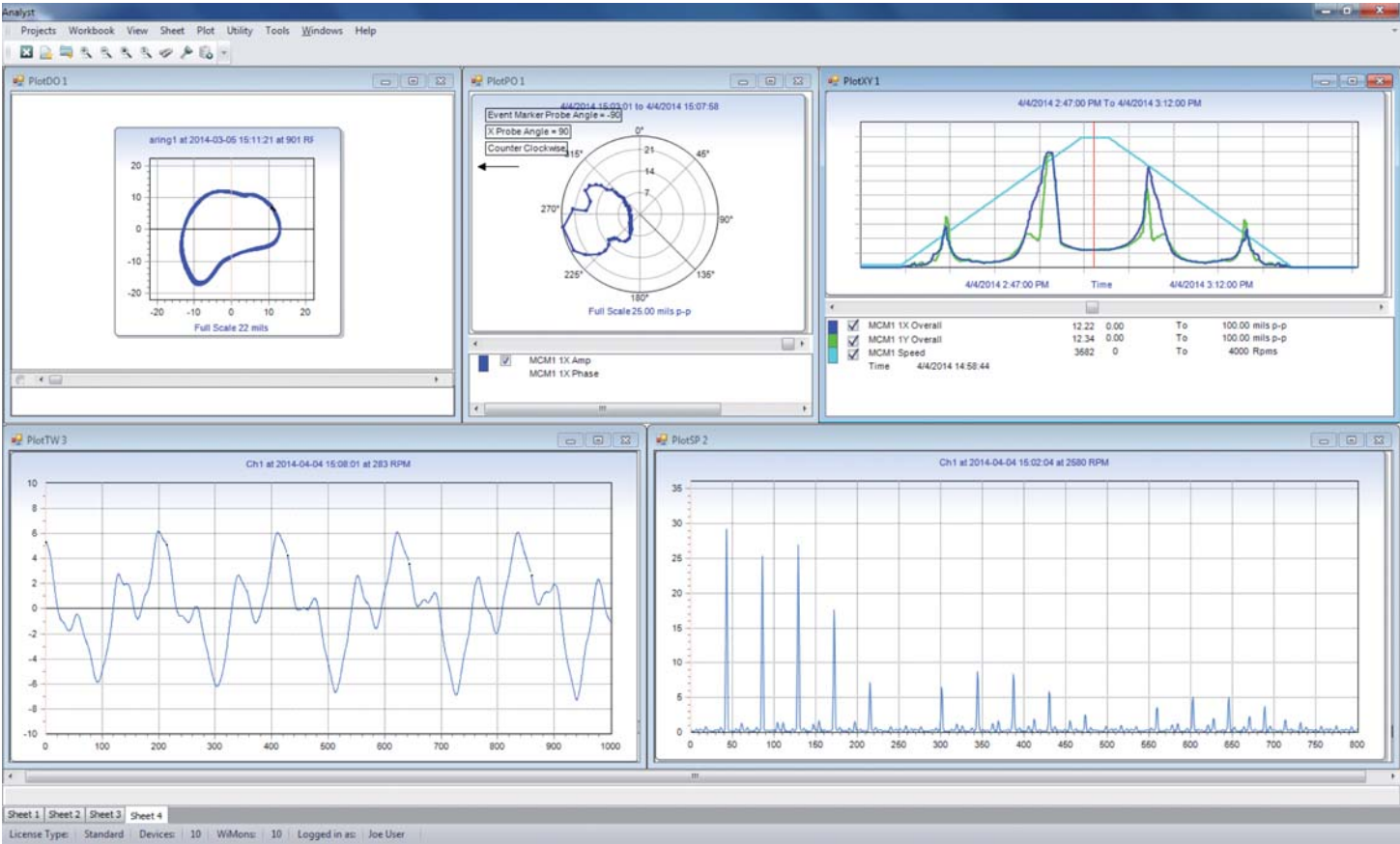
Open, high-speed communication

Fast, open, standard, reliable

The MCM800 communicates to other systems via standard communication protocols, such as TCP/IP, ModbusRTU, and PROFIBUS. Each module includes redundant serial connections and an Ethernet port that supports connectivity to the Analyst diagnostic software and an OPC server for access to channel static variables (amplitudes and phase angles).

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Redesigning Graphical Analysis



Analyst

Symphony Plus’ Condition Monitoring portfolio includes the ability to display complex data in a graphical analysis form. Analyst provides specialized plots for assessing the condition of the monitored rotating machinery. The application uses various plot types to present the historical vibration data and selected unit parameters to the vibration expert, so significant patterns and trends can be quickly recognized. This allows the expert user to identify problems or changes in the condition of rotating machinery assets so they may be addressed before adversely affecting operations.

MCM800 hardware products provide data for the following plots available only by using Analyst:

Process Variables	High Precision Waveform Data
X-Y Plot	Time Waveform
Boide Plot	Direct Orbit
Polar Plot	Direct Time Waveform
Polar + Trend Plot	(Full) Spectrum
Filtered Orbit Plot	(Full) Cascade
Shaft Centerline Plot	

Analyst packaged solutions

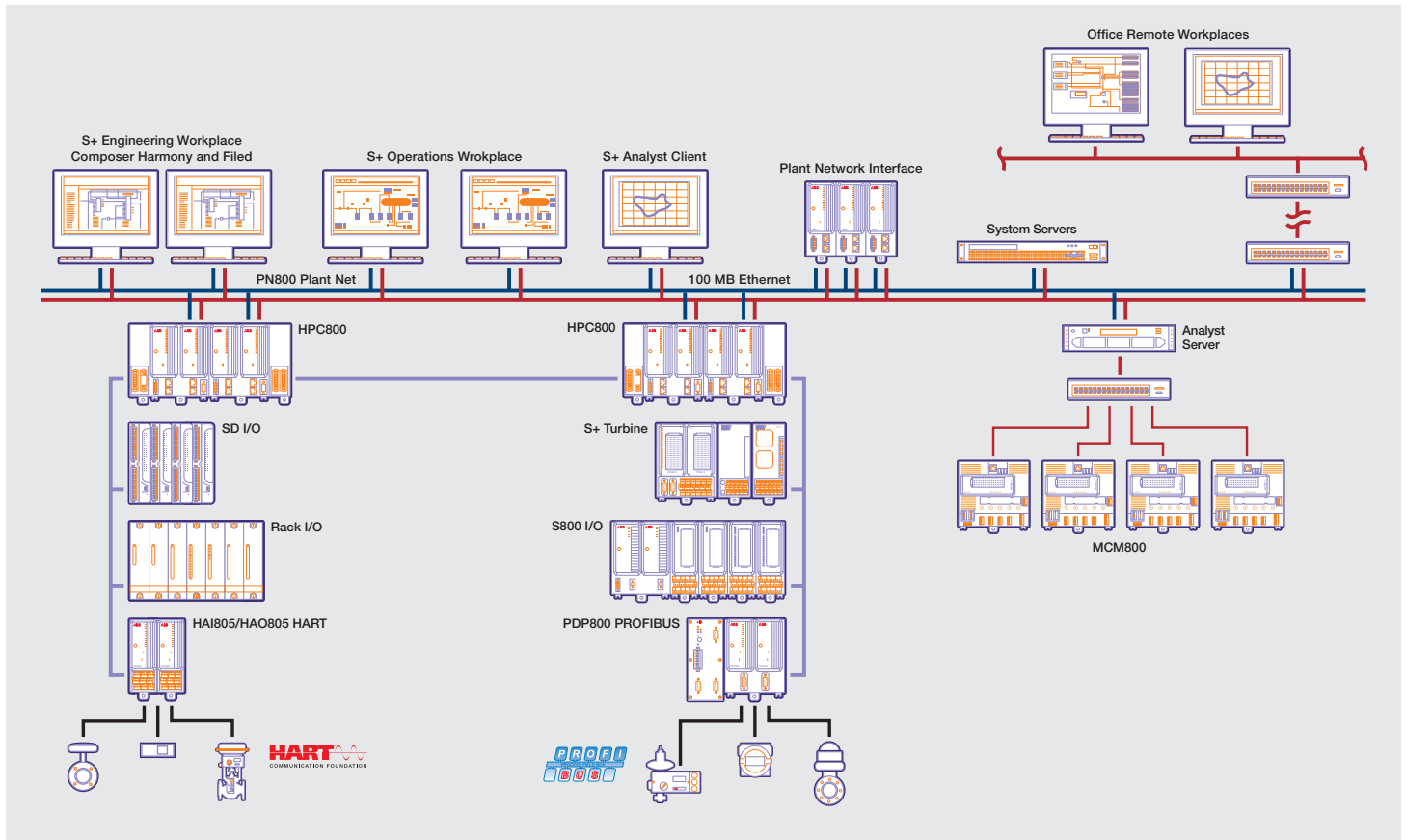
Analyst software is the center of control, for all platforms including: integrated, standalone or open connection. This allows everyone from the installation technician to the vibration expert to be familiar with a single tool and work together more effectively.

Condition monitoring benefits

Condition monitoring is no longer an alternative, but a necessity for plants to operate at peak performance. Today’s modern machinery runs at or near design limits, placing a premium on reliable operating data and machinery health feedback.

Symphony Plus Condition Monitoring

A versatile solution



Analyst System Architecture

Employing a sound philosophy for the monitoring and protection of machinery assets and securing quality products and services from a reliable vendor like ABB reduces cost, increases availability, improves performance and ensures the safety of plant personnel.

Why choose ABB?

ABB is a world class supplier of plant automation products, providing the most advanced monitoring systems available today. Your investment in ABB provides you with access to a wide range of resources:

- Industry experts
- Extensive knowledge base
- Global presence and local expertise
- Worldwide installations
- Reliable service
- Innovative technology
- Complete solutions from a single company

Versatile and flexible

The MCM800 can be fully integrated with the distributed control system or mounted as a standalone protection system to monitor all types of rotating machinery, or a combination of both. With multiple communication paths, the MCM800 can connect to different platforms in a centralized or remote location. The Analyst software can be included in the original system design or added any time in the future. The versatility of the products allow for any size system. Additionally, the architecture easily allows for future expansion as the need to monitor more assets increase.

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