



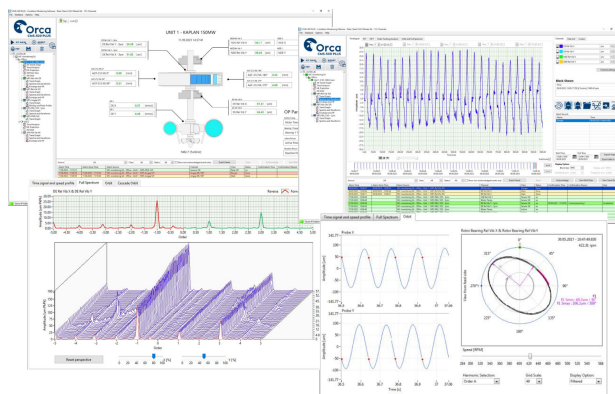
Condition Monitoring Software

CMS-500 PLUS

The CMS-500 PLUS Orca is a powerful condition monitoring software for multi-plant and multi-machine monitoring, built on a PostgreSQL database for reliable long-term trending, event recording and advanced diagnostics of the Rhino product family.

KEY FEATURES

- Long term storage database software for the Rhino product family
- Multi-instruments and multi-units data handling
- Long term trending and alarm log data storage
- Built-in database replication
- Event based data storage and analysis
- Unit startup, overspeed and shutdown based data storage and analysis
- Single and dual planes balancing tools



MONITORING SOLUTIONS



Endwinding



Air gap



Magnetic flux



Roller bearing



Axial thrust position



Shaft & bearing vibration



Rotor poles temperature

DESCRIPTION

The CMS-500 PLUS Orca is a powerful condition monitoring software designed for multiple plant and multiple machine monitoring. The system is built around the most advanced open source relational database, PostgreSQL, which gives the Orca system great features such as long term trending and event recording with excellent reliability. Rhino products are fully integrated into the CMS-500 PLUS Orca.

The CMS-500 PLUS Orca includes two independent software packages running as a client and server system:

- **CMS-500 PLUS Data Server** acquires data streamed from the Rhino monitoring modules and stores them in the SQL database.
- **CMS-500 PLUS Data Client** connects to the SQL database and allows the recorded data to be visualized.

The connection between the database and CMS-500 PLUS Orca is done by TCP/IP, allowing the data to be accessed remotely from different computers through the LAN.

The CMS-500 PLUS Data Client displays the data structured by companies, sites, units and instruments. The available visualization and diagnostic functions are automatically defined by the configuration of the instruments. The system displays a machine overview with actual vibration/gap parameters in the form of bar graphs, trend data and raw data for analysis.

The available visualizations include, but are not limited to: site and machine overview with sensor bar graph, Time Signal, Pole Profile and Speed Profile, Mingap, Flux and Temperature pole signatures, FFT, STFT, Cascade and Waterfall (order or frequency based), Orbits (unfiltered, filtered and super-imposed), Cascade orbits and full spectrum, Bode and Polar plots (magnitude and phase), Shaft Center Line, Airgap Polar View with stator and rotor roundness, and Trend vs time and trend correlation.

GLOBAL SPECIFICATION

ARCHITECTURE

Operating system	Windows 10, 11 / Windows Server 2019 and 2022
Client–Server architecture	Streaming from multiple modules via TCP/IP, client access via TCP/IP
Database	PostgreSQL Version 16.x and 17.x
Recommended system requirements	32GB RAM, 1TB SSD space, x64 Intel Xeon 12 or more logical cores, Gigabit Ethernet adapter, display resolution 1920×1200 (depending on the number of devices)

CMS-500 PLUS DATA SERVER

Max. number of modules 64 × Rhino modules / 256 channels (depending on the settings)

Real time data recording

- RAW data

Continuous data recording: typically last 15 min in circular memory

Discontinuous data recording: user selectable

- Trending data

Continuous storage: every 1s, 1h in circular memory

Historical data recording

- RAW data

Event recording (post-triggered, on alarms)

On schedule (via CMS-500)

Machine Run Up and Run Down auto recording

- Trending data

Every 1, 2 or 5 seconds, last X years (configurable)

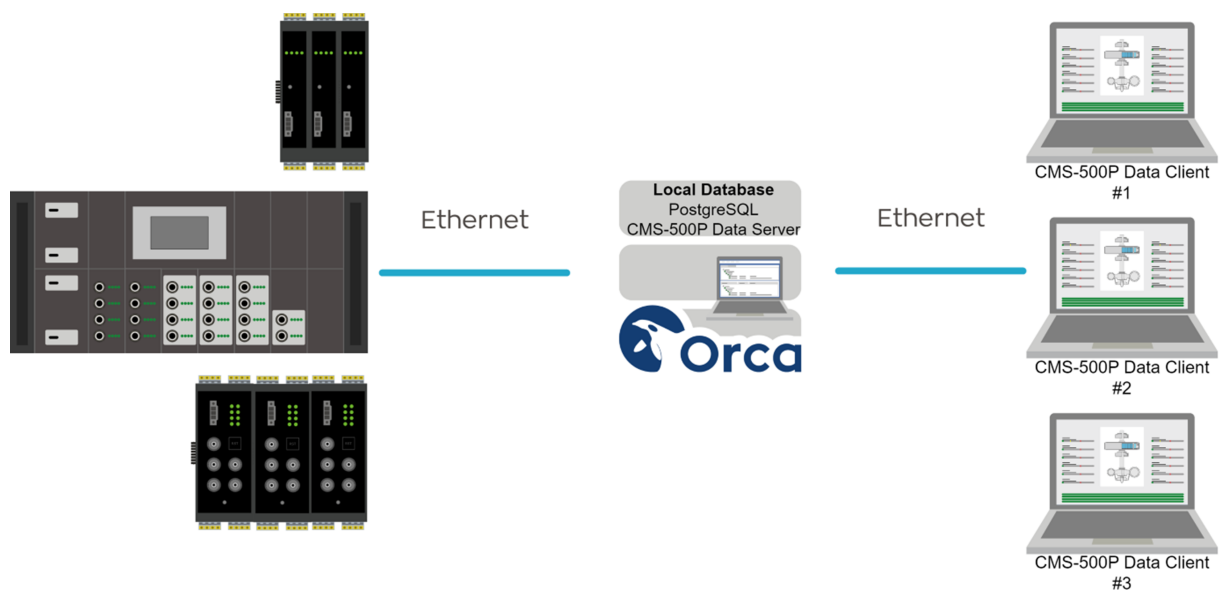
Every 1, 2 or 5 minutes (Min, Max, Avg), last X years (configurable)

Every 10 minutes (Min, Max, Avg), unlimited

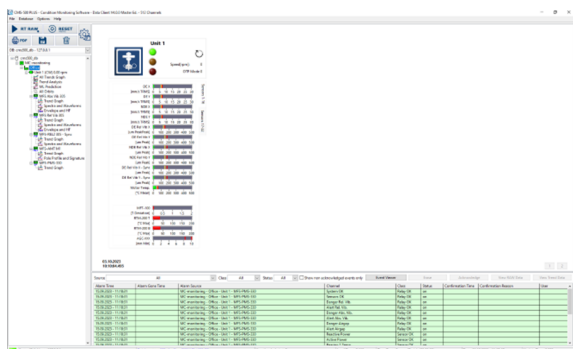
Every 1 hour (Min, Max, Avg), unlimited

CMS-500 PLUS DATA CLIENT

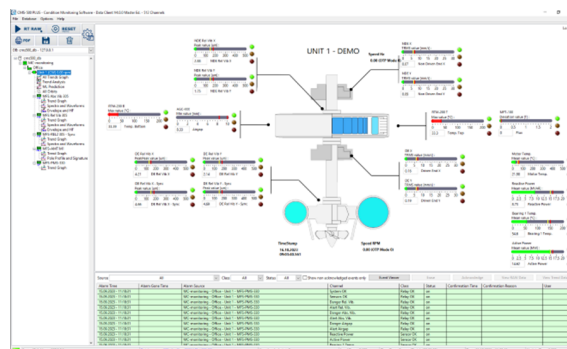
Max. number of simultaneous users 20 by default (can be changed in the PostgreSQL configuration)



SCREENSHOTS



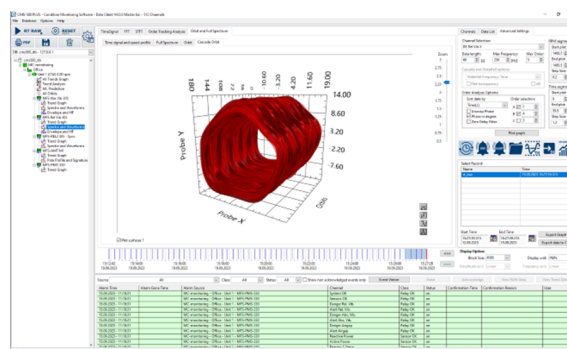
Site Overview



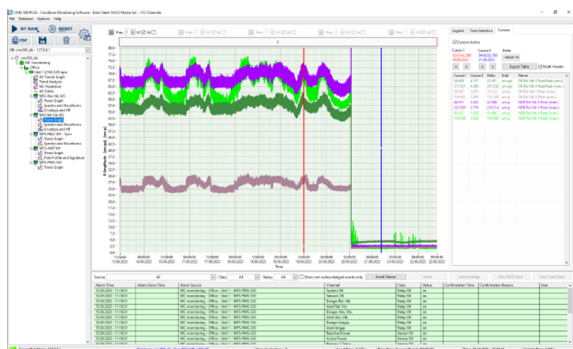
Unit Overview



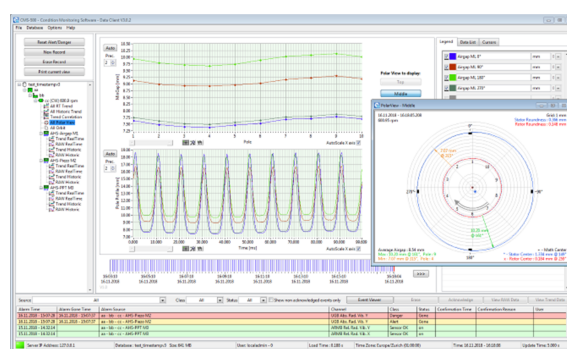
Full Spectrum



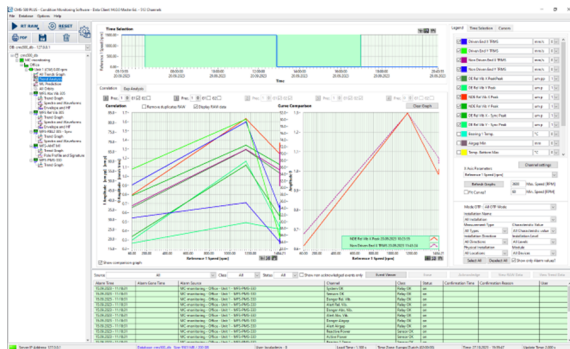
Cascade Orbits



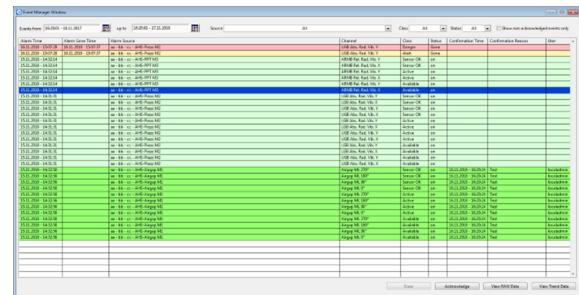
Trend Historical



Airgap



Trend Analysis



Events logger

DATA CLIENT FUNCTIONALITIES



CMS-500P Data Client

CMS-500P Data Server
Configurator

CMS-500P Data Server

Functionality	Basic Edition	Advanced Edition
Site, Unit and Instruments Overview	✓	✓
Real Time and Historic Trend Values	✓	✓
Trend Correlation	x	✓
Alert and Danger Trend Graph	✓	✓
Roller Bearing Severity Map (ISO 13373)	✓	✓
All Polar View	x	✓
All Orbit View	x	✓
Time Signal	✓	✓
FFT and STFT	✓	✓
Orbits	✓	✓
Shaft Center Line	✓	✓
Full Spectrum	x	✓
Cascade and Waterfall	x	✓
Order tracking	x	✓
Cascade Orbits	x	✓
Bode and Polar Plot	x	✓
Speed Profile	✓	✓
Pole Profile	x	✓
Polar View	x	✓
Min Gap Signature	x	✓
Magnetic Flux Signature	x	✓
Pole temperature	x	✓
RAW export to CSV and WAV	x	✓
Trend export to CSV	✓	✓
Single and dual plane balancing	✓	✓

ORDERING INFORMATION

Part type CMS-500P Orca Advanced Edition
 Ordering Code 21.500.400 – **A**

A	Number of channels	016	License up to 16 physical channels
		032	License up to 32 physical channels
		048	License up to 48 physical channels
		064	License up to 64 physical channels
		080	License up to 80 physical channels
		096	License up to 96 physical channels
		112	License up to 112 physical channels
		128	License up to 128 physical channels
		256	License up to 256 physical channels

Example: 21.500.400 – **048**: CMS-500P Orca Advanced Edition with license up to 48 physical channels.

Part type CMS-500P Orca Basic Edition
 Ordering Code 21.500.401 – **A**

A	Number of channels	016	License up to 16 physical channels
		032	License up to 32 physical channels
		048	License up to 48 physical channels
		064	License up to 64 physical channels
		080	License up to 80 physical channels
		096	License up to 96 physical channels
		112	License up to 112 physical channels
		128	License up to 128 physical channels
		256	License up to 256 physical channels

Example: 21.500.401 – **048**: CMS-500P Orca Basic Edition with license up to 48 physical channels.

Part type CMS-500P Orca Advanced Edition — Discovery
 Ordering Code 21.500.420



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Quality certification



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