

Envision™ Condition Monitoring Software

Frequently Asked Questions

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Dresser-Rand Controls Systems has been designing control systems for various applications for more than 50 years and with this heritage comes a wealth of experience designed into every system.

What is the Envision Suite of Condition Monitoring Software?

The Dresser-Rand Envision™ suite of machinery software was developed to enhance equipment control systems, provide intelligent condition monitoring, and constantly measure the performance and efficiency of rotating machinery. These attributes help equipment operators make educated, timely decisions regarding the control and maintenance of their equipment.

The Envision suite combines several user interfaces into a single software program that displays process parameters and equipment control. It also conducts real-time performance calculations and vibration analysis. The software generates reports and can generate automatic email notifications to operators when alarms are triggered. Multiple compressor trains can be monitored from a single computer that can be accessed from anywhere in the world through an Internet connection. When accessing Envision tools remotely, users encounter the same experience as they would if they were physically on-site.

How long has the Envision software suite been in place?

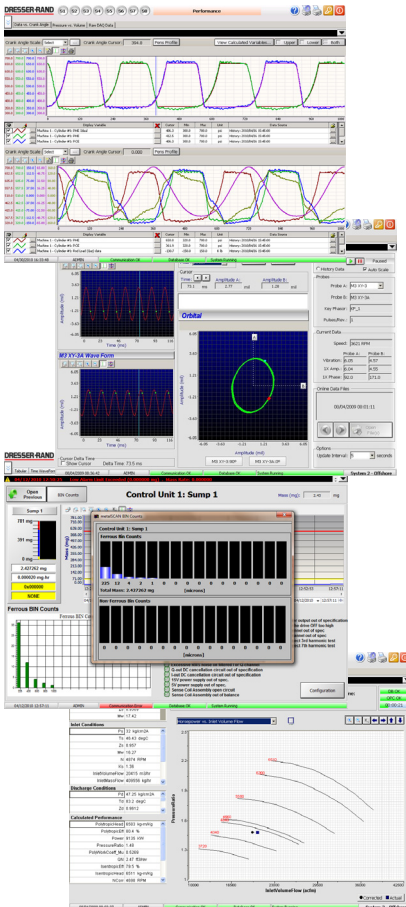
The evolution of Envision software dates to a beginning almost a decade ago. The modules have been used in various applications for several years, including the D-R HMI (Human Machine Interface), which has been supplied on most D-R control systems manufactured since 2006. Many of the modules have evolved from the design calculations that have gone into Dresser-Rand compressors for more than half a century. In fact, the Envision performance monitor has provided some clients with an actual test-stand based performance calculation for every minute of their installed runtime. With the introduction of vibration monitoring in the last decade, and its integration with performance calculators in D-R HMI-based control systems, the Envision suite now provides a powerful, yet simplified, means to monitor Dresser-Rand reciprocating and centrifugal compressors.

Where are Envision suite installations today?

The D-R HMI and Envision software suite are installed in compression applications around the world, from the United States Gulf region, to the North Sea, to the Gulf of Thailand.

Why do clients want condition monitoring and why do they want it integrated?

Condition monitoring products historically focused solely on vibration monitoring. They are disjointed systems implemented separately from a machine's control system, and include different acquisition electronics, different software interfaces and separate user access points. Equipment operators want a single user interface, lower cost and meaningful diagnostics that include machinery performance management – not just vibration monitoring. They want information provided in a single-point access that allows for quick action if necessary. Offshore platform operators



For more information on [Envision Condition Monitoring Software](#), contact:

Dresser-Rand Control Systems
1202 West Sam Houston Pkwy. N.
Houston, TX 77043
Tel: (Int'l +1) 713-365-2630
Fax: (Int'l +1) 713-365-2660

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For a complete list of D-R products and services, visit us at www.dresser-rand.com or contact one of the following locations:

Dresser-Rand Corporate Headquarters

West8 Tower Suite 1000
10205 Westheimer Road
Houston, TX 77042 USA
Tel: (Int'l +1) 713-354-6100
Fax: (Int'l +1) 713-354-6110
email: info@dresser-rand.com

112, Avenue Kleber
75784 – Paris Cedex 16
Tel: (Int'l +33) 156 26 71 71
Fax: (Int'l +33) 156 26 71 72
email: info@dresser-rand.com

Regional Headquarters

The Americas

Dresser-Rand
West8 Tower Suite 1000
10205 Westheimer Road
Houston, TX 77042 USA
Tel: (Int'l +1) 713-354-6100
Fax: (Int'l +1) 713-354-6110

EMEA

(Europe, Middle East, Africa)
Dresser-Rand S.A.
31 Boulevard Winston Churchill
Cedex 7013
Le Havre 76080 France
Tel: (Int'l +33) 2-35-25-5225
Fax: (Int'l +33) 2-35-25-5366 / 5367

Asia-Pacific

Dresser-Rand Asia Pacific Sdn Bhd
Unit 9-4, 9th Floor
Bangunan Malaysian Re
17 Lorong Dungun, Damansara Heights
50490 Kuala Lumpur, Malaysia
Tel: (Int'l +60) 3-2093-6633
Fax: (Int'l +60) 3-2093-2622

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place especially high value on the Envision system, which delivers information from all operational functions to their machinery experts located on-shore.

What makes the Envision suite better than other condition monitoring solutions?

The Envision suite combines operations with machinery performance and diagnostics – a solution that often requires two or more separate systems. As an example, many controls feature an HMI for operation and a separate system for vibration analysis. The Envision suite combines these systems into one platform. With a simple “point and click” of the mouse, a user can move easily from operation to diagnostic screens.

While some condition monitoring systems struggle to provide monitoring relevant to a particular machine or process, the Envision suite harnesses Dresser-Rand’s machinery knowledge and can be used to monitor almost any brand of rotating equipment.

Does the Envision suite help lower operating costs and improve client communication for installed equipment?

The Envision suite helps lower clients’ operating costs by providing early detection of potential problems, so intervention can be planned in consideration of current production needs with pending maintenance schedules. This optimizes human and material resources while reducing the impact on production. In the context of procurement costs, when the Envision suite is considered in conjunction with the fabrication of a new control panel, or added to an existing Dresser-Rand control panel, supplemental costs for performance and condition monitoring can be significantly less.

What are other advantages of the Envision system?

A major advantage, beyond meeting the direct needs of operators, is the strategic role it can play for machinery owners that prefer to operate machinery under a service and maintenance contract. The system’s networking and diagnostics tools allow Dresser-Rand to better leverage its internal strengths in service execution. When the Envision suite is installed at client sites that are under service agreement, Dresser-Rand can better utilize its intangible resources and machinery heritage to benefit the client.

Do the Envision suite capabilities extend beyond the vibration analysis and compressor performance analysis options?

Yes. The Envision suite provides a platform for continual evolution, allowing users to upgrade capabilities as their needs change. The Envision suite can also address roller bearing-based machines through seismic vibration analysis techniques and oil particle detection. When these elements are combined with the Envision suite gas turbine performance module, a critical aeroderivative gas turbine can be monitored with the same thoroughness as that of a driven compressor. The Envision suite provides an ideal platform for meeting users current needs, while remaining flexible for seamless integration of future rotating equipment.

