Well iKnow

Intelligent Well Management System

By combining our vast years of experience in the Oil/Gas market with the versatility of the Schneider Electric™ Altivar™ 930 variable frequency drive (VFD), the Well iKnow by Industrial Controls Solutions is the ultimate solution in Sucker Rod Pump control.

Whether deployed as a stand-alone beam pump drive, pump off controller, or as a part of an enterprise level oil/gas field strategy, the Well iKnow Series can be tailored to fit all your needs from the basic to the most complex.

The Well iKnow Basic is a powerful variable frequency drive (VFD) which acts as an electronic sheave to allow your pumper to match the production of the pump with the production of the formation. By controlling the speed of the motor through the cycle of the pump, the Well iKnow Basic can reduce your energy usage 15-40%. As an additional benefit, running the pump continuously at a slower speed and having the ability to “soft” start or stop the drive you will reduce the mechanical stresses on the gear box, rod string, and other moving parts therefore reducing maintenance costs.

The Well iKnow Pro is fully integrated with the Genesis™ Intelligent Asset Manager from Spirit, which is the first automated well site manager to use artificial intelligence to deliver maximum performance and optimized production from your rod pumped wells. The Well iKnow with Genesis™ Intelligent Asset Manager offers a versatile, programmable platform that is customizable to your unique rod pumping environment, and provides remote, real-time diagnostics and alerts, through it’s easily configurable 10” color display or via personal computer, using it’s built in WIFI capabilities. The Well iKnow provides reliable, remote management of your well site assets as resources are limited and safety concerns are on the rise. Some Key Features Include:

- 3D pump simulation and simple interpretation
- Real-time diagnostics and equipment loading
- Simultaneous VSD and pump off control
- Fluid production calculation
- Safest and most accurate laser position measurement
- 180-day operational history
- Intuitive, user-friendly menus

*25hp Wall Mount Shown - Image may vary depending on horsepower.

- Increased Production
- Lower Energy Consumption
- Lower Capital Cost
- Fewer Mechanical Failures
- Improved safety due to Remote Monitoring
- Enables early detection of problem to avoid expensive repairs
- Extends pump life
Reliable, remote management of your well site assets is increasingly important in a business environment where safety concerns are paramount and resources are stretched thin. Ensuring optimal production and maximum performance are just the beginning of your challenges. You also need a management system that provides pump diagnostics and operational histories—all in an intuitive, user-friendly design.

The GENESIS™ Intelligent Asset Manager from SPIRIT is the industry’s first automated well site manager to use artificial intelligence to deliver maximum performance and optimized production from your rod pumped wells. GENESIS provides a versatile, programmable platform, customizable to your unique pumping environment. Featuring an easy-to-use interface, it provides remote, real-time diagnostics and alerts, allowing you to focus your energy where and when it is needed most.

**Well iKnow Features:**


**GREATER PRODUCTION CONTROL**
Real-time diagnostics and equipment loading, coupled with simultaneous variable speed drive and pump-off control, helps ensure increased production while decreasing environmental impacts and safety risks.

**INSTANT GO-TO-WELL TECHNOLOGY**
Compatible with any web browser and mobile device, and the industry’s first POC to enable real-time well view and access from anywhere in the world.

**PLUG AND PLAY DESIGN**
Ready to go right of the box, with built-in 3D pump simulation and fluid production calculations accessible from intuitive, user-friendly menus.
Remote set up, control, and disabling of a range of pump monitoring devices.

GENESIS™ Intelligent Asset Manager features 12 digital outputs, 14 digital inputs, 10 analog inputs, and 2 analog outputs, all monitored and controlled from an I/O screen. This functionality accommodates a multitude of monitoring and control devices in addition to the pump-off controller, including transmitters, flow meters, vibration and leak detectors, and tank level monitors.

The system is built with full RTU functionality from the outset, which eliminates the need to add expensive PLCs or RTUs later.

Authorized users can log into a well and see a Master Well Status page, a high-level dashboard that summarizes critical pumping and production data, including current pump runtime, operating efficiencies of the various components of the pumping system, pressures of the casing and tubing, and a summary dynagraph card for the well, which plots the load on the rod versus its position.

The Real-Time Card dashboard provides a wealth of operational analysis in graphical form, including real-time surface and pump dynagraphs that track the load on the rod and pump, and stroke statistics including the average strokes per minute and the volume of pump fillage as a function of its total capacity.

A collection of reference pump card shapes is also available that the user can compare with the shape of their actual pump card to get a better idea of the condition of the system.
The GENESIS system stores a 180-day operational history, including dynagraph cards every hour for 60 days and every event. Unique to the GENESIS, it provides real-time rod string loading and pump animations for every stroke. The system processes and collates this information and automatically generates a detailed report on the well's performance. The system provides a deep understanding of the lift system in a matter of minutes and helps the operator avoid the long delays, high costs, and deferred production associated with having to pull a rod and pump after a catastrophic failure.

**REMOTE AND REAL-TIME WELL MANAGEMENT**

The GENESIS system affords real-time analytical capability, allowing you to get a clearer picture of the action of your downhole pumps from thousands of feet away at the surface. This real-time feature also gives you the capability and control to quickly and efficiently optimize your pump's operation.

**WELL MANAGEMENT MADE EASIER**

The GENESIS Intelligent Asset Management system incorporates a number of design features that bring clarity to pump operation and put subsequent analysis in sharper focus. Each wellsite control system comes with built-in wifi and internet access, and includes an intuitive, easy-to-use color touch panel to quickly access a range of critical pump operating parameters and up-to-date production information. Pump conditions can be quickly reset in the field with a few swipes/keystrokes, thus optimizing production while minimizing down time.

**OPTIMIZED PRODUCTION UPTIME**

The GENESIS Intelligent Asset Management system provides you with a wealth of control options to ensure that the rod pump is operating with the highest efficiency, and as a result, your well is producing at optimal levels. A first-of-its-kind laser sensor obtains precise positioning of the beam as it moves, information that is used to generate highly accurate and detailed dynagraph cards. The system's array of sensors also monitor and record production volumes, tank levels, and pressures. This assures a rod pumping system that regulates itself to optimize production and protect against failures.
A Full Solution for Optimizing Field Performance

The GENESIS™ Intelligent Asset Manager is an integral component of an operator’s production optimization strategy—from each individual well to the field as a whole. At the well level, the system combines the SPIRIT GENESIS pump-off controller (POC) with THETA XSPOC—Expert Supervisory Pump-Off Control—the industry’s most advanced software for rod pumping wells. This solution takes the wealth of information provided by the POC in the field—load and position data, pump rate, fillage data—and transmits it wirelessly to the corporate office for review by production engineers and field management.

A Wealth of Well Data at Your Fingertips

By opening up XSPOC on any desktop, the user can access information from any well in the field. The easily accessible and easy-to-use well management system gives users the tools to make actionable decisions aimed at improving pump performance and maximizing production.

Such functions include:
• Full host-based POC control and data acquisition
• Expert diagnostic analysis for each well
• Data history graphing with trends of pump efficiency, runtime, and production
• Statistical process control limit methods to automatically signal when a critical parameter goes outside statistical limits
• Well performance monitoring, including daily reports that highlight problem wells and make specific recommendations to resolve the problem and get the well running at optimal levels.

Go-Live Functionality

The GENESIS Intelligent Asset Management system improves on the functionality of XSPOC with its “Go-to-Well” functionality. Now instead of accessing data with a 5- to 10-minute lag time between when it was collected and when it is available at the office, the user gets instant access by pressing a “Go-Live” button in the GENESIS dashboard. This functionality, a first for the industry and only available through GENESIS, allows office personnel to see the exact same data as the field personnel at the same time. Such real-time data access enables more meaningful troubleshooting between the office and the field, and ensures that corrective actions are implemented more quickly.
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