LUFKIN Well Manager 2.0 with NOVAWAVE™

Revolutionizing production automation with the industry's only advanced wave equation for deviated wells.

Designed specifically for deviated wells, LWM 2.0 with NOVAWAVE features a patent-pending algorithm to more accurately control and analyze rod-pumping systems, upgrading the capabilities of the world's most widely used controller.

Combining advanced diagnostics, enhanced production insights, and proactive failure mitigation, this next-generation solution helps overcome the challenges of modern well trajectories in which friction and gravitational effects can mask downhole pump behavior. The system also automatically adapts to the legacy algorithm for non-deviated wells.

- **More accurate data improves pumping performance.** NOVAWAVE is a proprietary algorithm designed specifically for deviated wells, providing more accurate pump fillage, fluid loads, and pump intake pressure.
- **More realistic pump cards.** The shape of the pump card provides insights into downhole pump performance. Superior pump cards facilitate accurate system assessment
- **Flexible programming and I/O expansion capabilities enable production control to evolve.** In addition to rod-pump control, the LWM 2.0 with NOVAWAVE also operates as a PLC, supporting function block logic and PID control with multiple options for I/O expansion including AI, AO, DIO, PDI, RTD, and thermocouple inputs.
- **View well data from any location.** Though compatible with most available SCADA Systems, a SCADA system is not required for remote access.
- **Acts as a web server, no proprietary software required.** Retrieve data by simply connecting using a laptop, tablet, PC, or mobile device.
- **Features a full-color, high-resolution, multi-language user interface** complete with on-board Wi-Fi connectivity.

WHY LWM 2.0 WITH NOVAWAVE?

- More accurate control of deviated wells
- Optimizes production
- Reduces operating costs
- Minimizes equipment failures
- Facilitates visual remote monitoring
- Enables expansions and upgrades
- Adapts to non-deviated wells
- Configures easily
- Protects valuable assets



AUTOMATE AND OPTIMIZE WITH SEAMLESS SERVICE

The LUFKIN team can easily upgrade your LWM 2.0 to NOVAWAVE upon request. To maximize operational efficiencies and protect critical control equipment, LUFKIN is committed to providing the best technical expertise in design, installation, optimization, troubleshooting, and training.

An advanced algorithm built on the industry's most relied-on technology for controlling and analyzing rod-pumping systems.

lufkin.com/automation

Data-driven insights, empowered by the only algorithm designed for deviated wells.

ADVANCING PERFORMANCE AT EVERY TRAJECTORY

Legacy software is designed to evaluate and control vertical wells. If the well has significant deviation, legacy software calculates inaccurate quantitative performance parameters. Using distorted card shapes and erroneous parametric input, legacy software struggles to make control decisions.

LWM 2.0 with NOVAWAVE applies an advanced patent-pending waveform equation to provide the insight operators need to proactively address these challenges, optimizing performance and extending uptime.

- Proactive failure mitigation that identifies risks accurately
- Extended rod life by minimizing stress and shock loading
- Seamless integration, compatible with existing LWM 2.0 systems for quick deployment

Enhanced capabilities

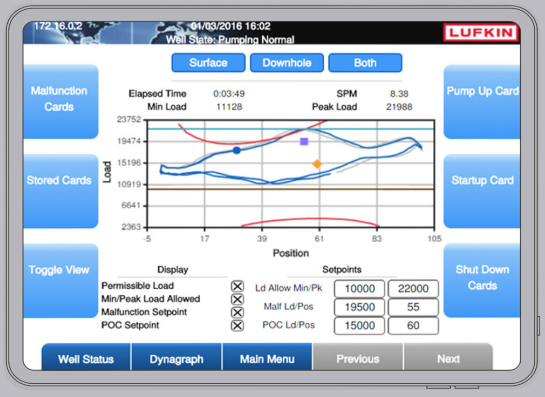
LWM 2.0 with NOVAWAVE offers control capabilities like variable speed pump fill control, fluid pound avoidance, torque control functions. Advanced functions include API 11E gear reducer torque control calculations, pump-tag monitoring and mitigation, intra-stroke speed control, and pump card pattern matching analysis.

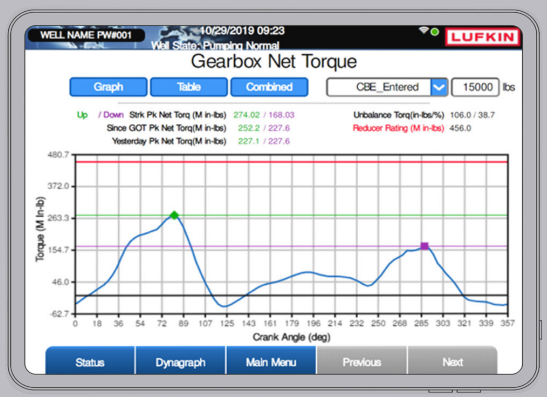
Increased flexibility, multiple communication modules

Providing easy field-service solutions, the LWM 2.0 with NOVAWAVE features a communications module with multiple Ethernet ports, RS-232, RS-485, and Wi-Fi communications. In a SCADA environment, Modbus RTU and TCP are supported in both master and slave configurations. Connectivity via Ethernet is fully supported. Dynamic Modbus Register Configuration functionality provides the operator with the flexibility to design an efficient interface to a SCADA system.

LWM 2.0 SPECIFICATIONS

Applications	Rod Pump Control with and without VSD. Conventional and linear pumping units. Compatible with DH pressure gauge input.
Operator Interface	640 x 480 TFT Color Wi-Fi, Web Server for remote access
I/O	8 AI, 2 AO, 8 DIO, 2 PDI (Exp.to 8 AI, 4 AO, 16 DIO, 4 PDI)
Memory	512MB DDR3 RAM, 1GB on Board Flash
Temp. Rating	-40 to +158° F (-40 to +70° C)
USB for additional storage	Yes
User Interface	High resolution color screen, keypad w/ direct-sun-readable, dynamic menu options
Ingress Protection	RPC: NEMA 4X/IP66
Power Input	100 – 240VAC, 50/60 Hz 12VDC
Certification/ Standard	cULus, IEC
Communications	RS232, RS485, Ethernet, Wi-Fi Web Server compatible with any standard internet browser, including Apple Safari, Google Chrome, and Microsoft Internet Explorer. Compatible with smartphone Internet browsers.





Control function
Intuitive dynagraph setup with permissible loads

Gear Reducer Torque
For every stroke, the LWM 2.0 calculates gear reducer torque per 15 deg. Crank Angle intervals utilizing actual Polished Rod Load utilizing the API RP11E method. A VFD is not required to generate the torque plots.

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