

LUFKIN Well Manager™ 2.0 Upgrade Kit

Easily upgrade all first-generation LUFKIN Well Manager Controllers.

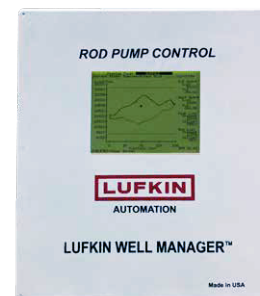
The LUFKIN Well Manager 2.0 (LWM 2.0) Upgrade Kit offers the latest enhancements and capabilities of the new LWM 2.0 to install in all existing first-generation LWM controller housings easily and quickly with minimal downtime.

LUFKIN continues to propel its legacy of pioneering rod pump controller technology forward with its Well Manager 2.0. This next generation device provides the most advanced intelligent control solutions, more efficient data-gathering capabilities, and an intuitive interface to maximize well performance while improving artificial lift equipment operation.

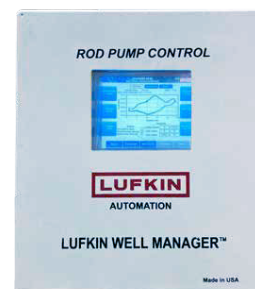
- ✓ **Produces accurate data which results in better pumping performance.** Downhole calculations are considered the most accurate in the industry, utilizing intelligent control algorithms to enhance productivity.
- ✓ **Flexible programming and I/O expansion capabilities enable production control to evolve.** Separate from rod pump control, the LWM 2.0 also operates as a PLC, supporting function block logic and PID control functions with multiple options for I/O expansion including AI, AO, DIO, PDI, RTD, and thermocouple inputs.
- ✓ **Remote access facilitation to view well data from any location** to assist operators in visualizing well data and performance. 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 UPGRADE TO LWM 2.0?

- Quick, easy installation
- Maximize production by resolving lift issues in real-time to boost well performance
- Reduce operating costs by tracking equipment performance to maintain optimum production and minimize the risk of failure
- Ensure safe operations with remote monitoring and control functionality, minimizing in-field and on-site personnel requirements



BEFORE INSTALLATION



AFTER INSTALLATION

Trusted timeless design and reliability, now with intelligent technology that provides operators enhanced connectivity, functionality and flexibility.



ENHANCED FUNCTIONS

Advanced Control Capabilities At Your Fingertips

More than a rod pump controller, the LWM 2.0 features advanced control functions, including Variable Speed Pump-Off Control, Fluid Pound Avoidance, Torque Functions and Pump Tag Mitigation to optimize production in dynamic conditions. Pump-Off Control can be configured to utilize pump fillage or live or calculated pump intake pressure as a setpoint.

Minimize Risk of Early Equipment Failures, Extend Uptime

Advanced functions such as gear reducer torque and pump tag monitoring provide the operator with the tools to quickly verify that the pumping system is operating within its operating limits, minimizing the risk of early equipment failures.

Additional Advanced Functions:

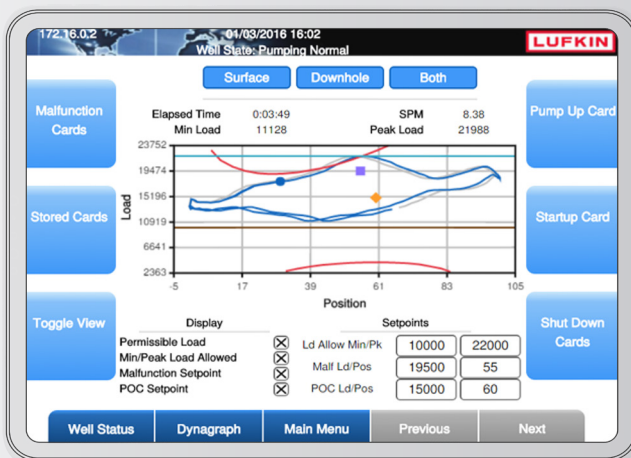
- Intra-Stroke VSD Fluid Pound Mitigation
- Pump Tag Mitigation
- Scheduled Pump Card Pattern Matching Analysis

Increased Flexibility, Multiple Communication Modules

The modular design of the LWM 2.0 provides easy field service solutions and includes a communications module complete 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 a most efficient SCADA system.

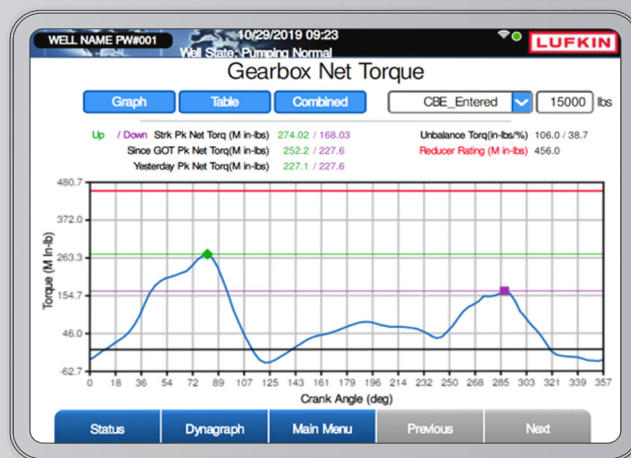
LWM 2.0 SPECIFICATIONS

Applications	Rod Pump Control with and without VSD. Conventional, linear, and hydraulic 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 (Micro SD, future)
User Interface	High resolution color screen, keypad w/ dynamic menu options
Ingress Protection	POC: NEMA 4X/IP66
Power Input	100 – 240VAC, 50/60 Hz 12VDC
Certification	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 smart phone 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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