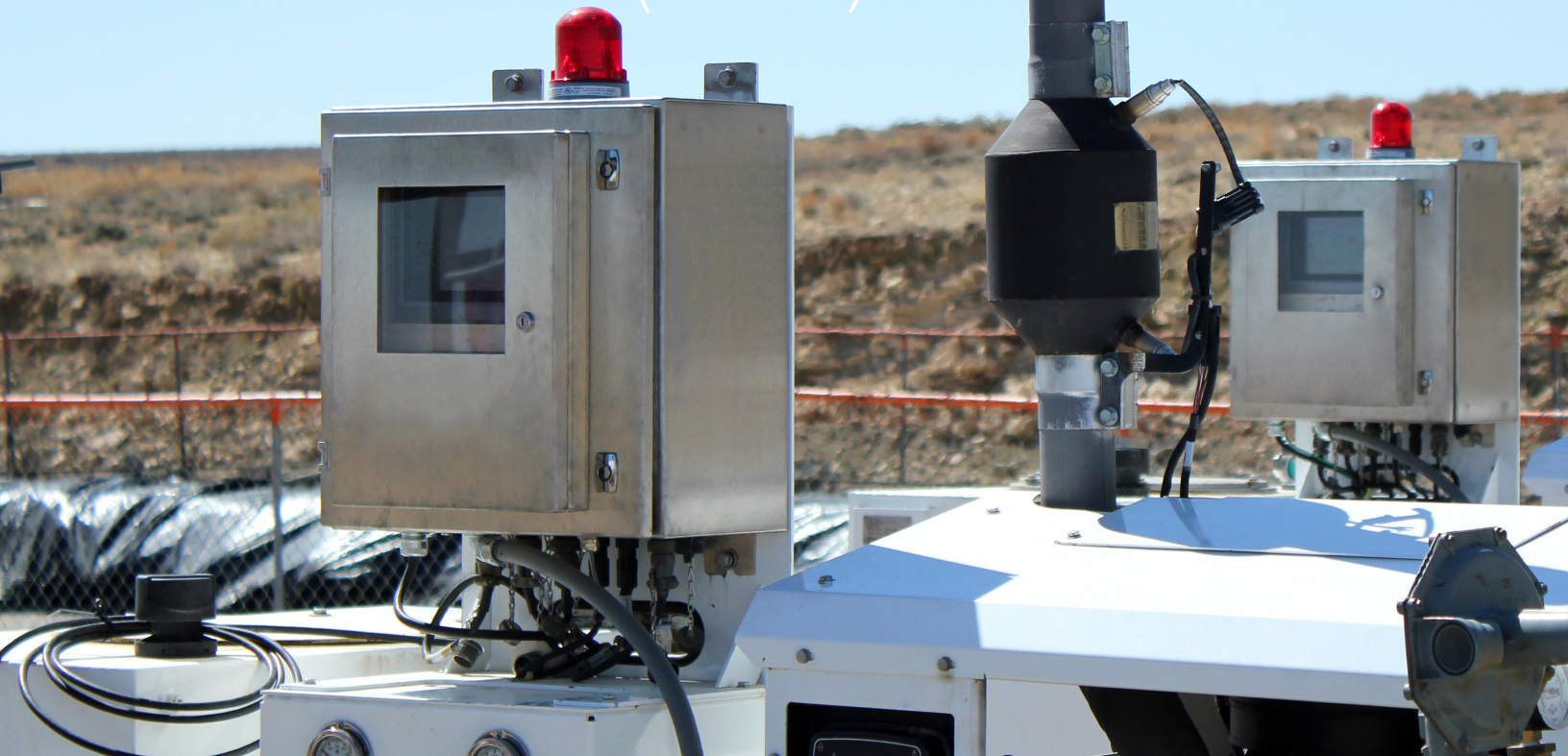# Hydraulic Pump Controller (HPC)

Provide **economical** pump-off control of hydraulic rod pumping systems.

Our Hydraulic Pump Controller provides economical pump-off control of hydraulic sucker-rod pumping systems. Using sophisticated modeling and control software and a powerful processor, the HPC computes surface and downhole conditions to best regulate the starting, stopping, or speed adjustment of the pumping unit. Comprehensive monitoring and reporting capabilities provide daily gauging, fault and event logging, a user-configurable data sampler, and more. HPC units are rugged and have been designed to withstand the harsh environments of the oil patch.

Automatic Optimization
Throughout the life of every well, there are factors that can prevent reaching optimal production levels. By reducing the negative effects of these factors, the production rate for each well can be optimized without losing efficiency and reliability. The HPC has the capability to automatically detect these factors and instantaneously adjust the operation of the pumping unit to maximize system performance.

Maximum Pump Fill
By controlling the speed of the system, the HPC will automatically adjust stroke speed to produce the maximum amount of fluid from the reservoir and keep the system operational instead of shutting down due to low inflow downhole. This feature combined with the Hydraulic

Rod Pump surface equipment results in a full system that automatically adapts to various inflow conditions and prevents wear on the downhole equipment by reducing the number of cycles required to pump equal amounts of fluid.

Full Color Touch Screen Display
The user-friendly, color, touch-screen display makes the HPC the first controller to use a touch screen interface. The software is Windows CE based and allows for all changes to be made by simply touching your finger to the screen.

Stroke speed and length, as well as acceleration and deceleration of the hydraulic ram can all be changed from the main screen. The data for hydraulic load, strokes per minute, and mast position is also shown on the main screen. All well characteristics are displayed in real-time and can be changed via the touch-screen while the rod pumping system is in operation. This translates to easier control and less production downtime. HPC's interface was designed to be very easy to navigate from page to page.

NOV Completion & Production Solutions

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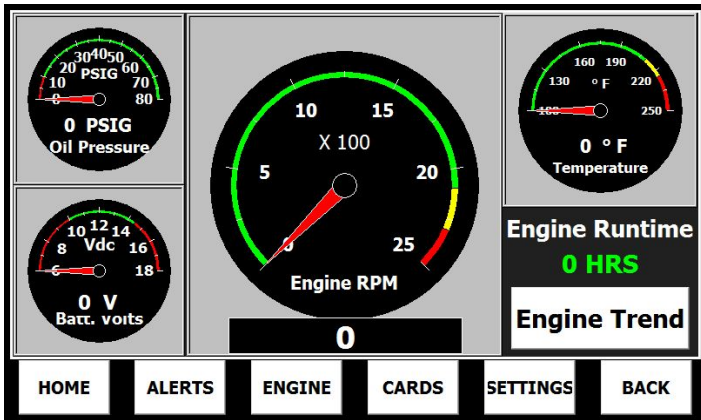
Hydraulic Pump Controller Features & Benefits

Hardware
- 12V DC/24V DC AC supply input
- State-of-the-art expandable controller
- Weatherproof design
- Rugged NEMA 4X Stainless Steel Enclosure
- -40° C to 125° C
- 7" Color Graphic Touch Panel Display
- External SD Micro Memory Card Storage
- Field replaceable CPU
- Optimized to work with NOV Pumping Units
- Firmware Field Upgradable

Inputs/Outputs
- Field configurable I/O
- Four Isolated Analog Inputs
- Two Isolated Analog Outputs
- Ten Discrete Inputs
- Six Discrete Outputs

Sensors
- Pressure Transducers
- Linear Displacement Transducer
- Red Beacon Alarm Indicator

Communications
- Standard Ethernet Communications
- Modbus RTU/TCP Protocol
- Cellular Modem Option
- Satellite Communication Option

Control
- Pump-off Control
- Timer Control
- Automatic Re-start Capability
- Adaptive Pump Control

Displays
- Simplified Well Configuration
- Full Color Graphic Display of all key functions including:
  - Rod load limits
  - Pump velocity
  - Pump position
  - Pump load
  - Pump fill
  - Pump stroke
  - Daily fluid production
  - Daily leakage loss
  - Daily average pump fill
  - Daily average pump speed
  - Pump intake pressure
  - Discharge pressure
  - Tubing pressure
  - Casing pressure
  - Fluid level
  - Fluid flow

Data Collecting/Reporting
- Well production/performance report
- Time-stamped event/fault logging
- Time-stamped user-definable data sampler
- Web-based monitoring/control
- Third-party head-end software interface (Case, Theta)

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