OIL & GAS CASE STUDY

OPTIMIZING ESP PERFORMANCE WITH PRECISION MOTOR CONTROL

CHALLENGE

A major ESP (electric submersible pump) manufacturer needed a more reliable way to control permanent magnet motors operating 10,000–15,000 feet downhole. Because too little voltage can cause an immediate shutdown, these motors are highly sensitive to voltage fluctuations – which can result in costly restart delays of up to 12 hours. While permanent magnet motors offer clear advantages, including smaller pump assemblies and reduced drilling costs, achieving the precise control required to keep them running efficiently had proven difficult with existing solutions.

SOLUTION

AID developed a custom control solution using Fuji Pump Master ESP drives that were specifically programmed to compensate for voltage losses across long cable runs and transformers. This approach ensured voltage remained above critical thresholds, preventing unexpected motor shutdowns while maintaining optimal efficiency. The solution, integrating seamlessly into the OEM's pump systems to support the unique demands of downhole applications.

RESULT

The solution enabled more reliable ESP performance while unlocking the full benefits of permanent magnet motor technology. Out in the field, customers realized cost savings through reduced drilling requirements due to smaller borehole diameters, along with easier installation in challenging well conditions. By delivering precise, dependable control, AID provided a competitive alternative to legacy solutions and helped operators improve efficiency and uptime in critical oil field operations.

DRIVE OPTIONS

Our PumpMaster drives have a proven history of performing in the most demanding conditions in the world. Serving applications that include ESP, HPS, Rod Lift, Jet Pump, Progressive Cavity, and MobileDuty, the advanced engineering and premium components inside our drive packages give you the dependability and control you need to increase production and extend equipment life.