

Pulser Driver System

Driver Control Module

The intelligence in our pulser-driver system

“Newsco has a full suite of MWD telemetry tools. The jewel of the company is the highly-efficient, rugged, and intelligent MWD driver system that is superior to conventional solenoid-type drivers.

This driver control module is the intelligent control of the system.”

Our Challenge

Every MWD operation is all too familiar with the problems associated with conventional solenoid mud-pulser systems. They consume expensive batteries far too quickly and are expensive to setup and maintain. We saw the need for a system that would dramatically improve efficiency and reduce servicing time and costs—so we created one.

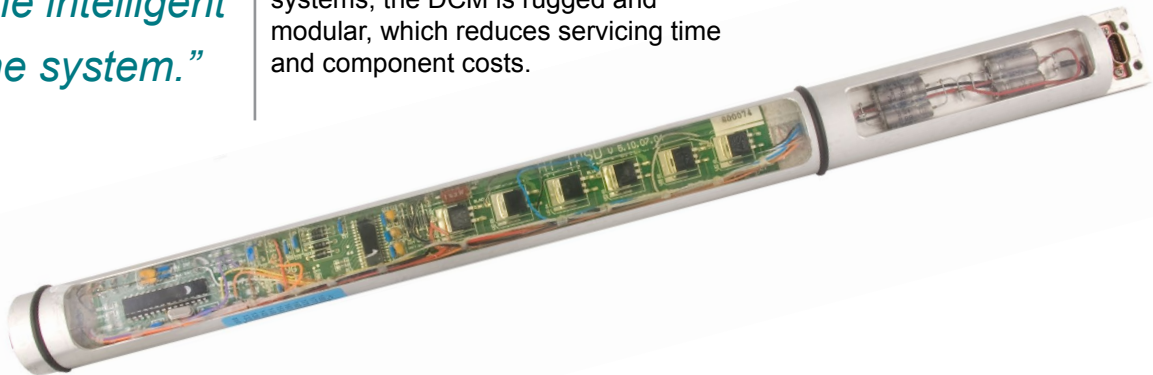
Our Solution

We started our redesign with a powerful DC motor and a linear drive assembly to drive the servo poppet, and then created an electronic control module that would manage those two components in a way that would give the highest reliability in mud pulse transmission. As with our other systems, the DCM is rugged and modular, which reduces servicing time and component costs.

The Intelligence of the System

The DCM has six major functions: drive motor control, mud-flow sensing, power regulation, record keeping, programmable functions, and diagnostic interface.

Drive Motor Control: This component of the DCM intelligently and efficiently produces motor commutation that opens and closes the servo poppet. The on-board sensors in the motor provide feedback to the DCM, indicating whether the poppet is fully seated or obstructed. If the poppet is obstructed, it will increment an error counter and lift the poppet to clear the obstruction. Since the DCM knows precisely where the poppet is in its travel at any time, it constantly



Driver Control Module Specifications

| | |
|-------------------------|---|
| Battery life | ≈ 700 hrs @ 1.5 sec DR |
| Battery operating range | 16-30 VDC |
| Operator interface | Pulser Driver Software Interface (PDSI) |
| Carrier | 6061-T-6 alloy aluminum |
| Circuit board, solder | High-temp polyimide, high temp solder |
| Operating temperature | 150 °C |

recalibrates to adjust for wear in any of the mechanical components, greatly reducing assembly time and need for servicing.

Mud-Flow Sensing: The DCM incorporates a sensitive vibration flow switch that sends a signal on the flow line to tell the other electronic modules in the system to begin sending data.

Power Regulation: The DCM operates over a wide voltage range of 16-30 VDC to squeeze the most energy from an expensive lithium battery.

Record Keeping: You need to track the wear and tear on the tool, so you can fine tune your preventative maintenance program. Record keeping includes the serial number, build date, service date, technician's name, flow switch sensitivity, maximum temperature, tool run hours, and total number of pulses accumulated.

Programmable Functions: With this function, you can set the flow sensitivity, switch mode, and serial number.

Diagnostic Interface: This feature of the DCM allows you to check the functionality of the tool, using the Pulser Driver Software Interface (PDSI), to ensure that it is operating properly.

Rugged Construction

To ensure durability, we protected the unit from mechanical vibration and thermal expansion and contraction. The DCM incorporates a vibration dampener and is housed in an

aluminum strong back to support and protect the electronic circuitry. The electronic components are mounted on a high-temperature circuit board with high-temperature solder, and the entire board is surrounded by a shock-absorbing silicone potting compound.

Modularity

Ease of serviceability has always been a prime objective when designing system components, and we have achieved this by making our components modular. The DCM can be easily separated from the mechanical portion of the pulser and sent in for repair.

Other System Components

Pick up a brochure on the complete Pulser Driver Assembly, Pulser Driver Motor and Linear Drive Assembly, or call us for additional information.

NEWSCO

The Leader in Innovative Drilling Solutions

7000 Railway Street SE
Calgary, AB
Canada T2H 3A8

Office: 403.243.2331

Fax: 403.243.2563

E-mail: sales@newsco.ca

www.newsco.ca

Pulser Drivers □ DCM □ DC Motors □ Ball Screw Assemblies □ Linear Driver Assemblies □ Complete MWD Kits

MWD Systems □ MWD Services and Support □ Surface Display Systems □ Test Equipment □ Automated Purge Systems