

# Model 400R Rotary Mud Pulser Kit

## Add-on Rotary Mud Pulse Kit for AP-250 EM MWD Systems



### D a t a s h e e t

## Features

- Temperature Range: -40°C to +150°C
- Sub Size: 4.75", 6.5", 8"
- Pressure Range: 0-137 MPa (0-20,000 psi)
- Collar Mounted (non-retrievable)
- Fast Data Rate (2 baud)
- Optimized for minimal power consumption
- Excellent performance in high concentrations of LCM (Loss Circulation Material)
- Non-compensated (oil free)

## Description

The Applied Physics Systems Model 400R Rotary Mud Pulser Kit is a downhole system for data transmission utilizing mud pulse telemetry.

The Model 400R add-on kit allows Applied Physics customers to convert their existing Applied Physics AP250 and AP350 EM MWD systems into mud pulse-based MWD systems.

When a pulser is used, a wet sub is used in place of the EM system gap sub. This wet sub contains a flow sleeve with selectable silicon carbide wear sleeves. Sleeve selection depends upon the expected mud flow rate.

The common elements of the pulser MWD and EM systems are the lithium battery modules, the sensor module, the surface gear, and the system software. The sensor module contains the system directional sensor and gamma sensor.

Use of a rotary pulser design in the Model 400R system results in an MWD system that is extremely tolerant to the use of solids in the mud, including all types of LCM.

The pulser rotor blades are driven by a powerful, brushless DC motor that is capable of cutting through most types of LCM.

Rotary pulsers typically use more power as compared to hydraulically driven pulsers. But, the Model 400R system has been carefully designed to minimize power consumption. Typically, the system can operate for 200 hours using two lithium battery stacks.

The Model 400R system uses a patented high-pressure rotary feedthrough to drive the system rotor. This feature enables the system to be non-compensated (oil free), simplifying setup and maintenance.

## Specifications

Operating Temperature	-40° C to 150° C
Collar Sizes	4.75", 6.5", and 8"
Overall System Length	23' (2 battery modules)
Pressure Rating	0-137 MPa (20,000 psi)
Flow Rates	150-800 gal/min (with appropriate sleeves)
Pulse Type	Positive
Encoding Type	Proprietary "5 data bit 6 transmit code" scheme in which 5 data bits are used with a lookup table to choose a 6-bit code.
Retrievability	Collar mounted (non-retrievable)
Maximum Baud Rate	2 baud
Operational Time	200 hours (2 lithium batteries, typical)

