Rotary Pulser

Fixed-mount, Retrievable or Floating Positive Mud Pulse Transmitter

SureShot-MP

APS Technology's patented Rotary Pulser* is the toughest, most advanced mud pulse transmitter in the industry. Our Rotary Pulser chews through LCM content which would choke any other pulser, over a wide range of mud weights and conditions.

APS's commitment to continuous improvement has increased reliability and decreased power consumption in our pulser. Recent improvements include an ultra-reliable, high-efficiency DC brushless motor and controller which can run thousands of hours without a failure. The motor/controller combo is 30% more efficient when pulsing and consumes 1/3 the quiescent power of the previous generation. Other improvements include more durable shafts and seals, and better serviceability.

The APS Rotary Pulser is designed to operate with batteries or with the APS Turbine Alternator.† It offers a reliable, economical alternative to pulsers from other OEMs. Crossovers to other popular MWD systems are available, or can be custom-designed. All materials are highly wear-resistant to provide exceptional reliability and service life in demanding drilling environments.

Features	Advantages	Benefits
New DC brushless motor	> Increased reliability > Improved power consumption	> Improved MTBF > Works with 8 DD cell (28v) and 10 DD cell (36v) systems
Oscillating rotary motion	> Self-clearing > Low shaft speed	> Reliable operation with high LCM concentrations >Improved sealreliability/life
Open flowpath	> No screens to plug	> Enhanced reliability in wells with poor solids control
Direct-drive magnetic coupling	> Ruggeddrivetrain > No rotating seals in mud	> Enhanced service reliability > Reduced service cost
Tungsten carbide flow surfaces	> Superior fluid erosion properties	> Extended component life > Reduced service cost
Adjustable pulse width and magnitude	> Adaptable to all flow rates, depths and mudweights	> Extends the range of reliable operation
Wide range of pulser sizes for 3.125 in. (79 mm)to 9.5 in. (241 mm) or larger BHAs	> Easily convertible between sizes, and between fixed-mount or retrievable configurations	> Reliable operation in any hole size > Reduced inventory
Retrievable or fixed-mount options	> Basic design and construction are consistent without regard to configurations	> Adaptable to fit customer needs > Reliable service in all configurations

**U.S.Patents#6,714,138and#7,327,634* *† U.S.Patent#7,201,239*

APS TECHNOLOGY

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Product Specifications

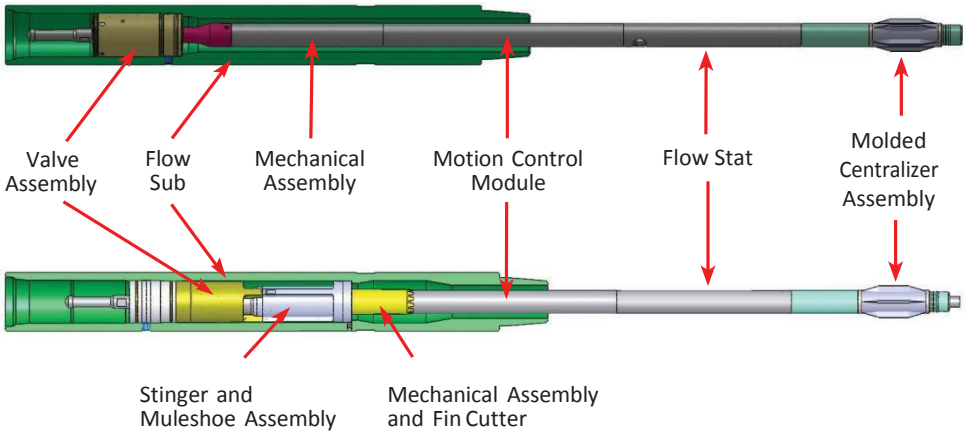
Signal Transmission	Positive Mud Pulse	
Pulser Mounting	Fixed mount, Retrievable or Floating (string anchored at bottom)	
Operating Manner	Reciprocating oscillating shear	
Pulse Height	Adjustable	
Activation	Electromechanical	
Operating Voltage	28 - 40 VDC	
Current Generation	G4 &G5 (More power efficient and higher transmission rate)	
Pulser Sub O.D.	9.5§, 8, 6.25 to 6.75, 4.75, 3.5 & 3.125 in**	241§, 203, 159 to 171,121, 89 & 79 mm**
Flow Ranges	9.5" or larger : 650 ~ 1200 gpm 8" : 300 ~ 1200 gpm 6.25" ~ 6.75" : 150 ~ 750 gpm 4.75" : 125 ~ 350 gpm 3.125" & 3.5" : 70 ~ 250 gpm	241mm or larger : 41 ~ 76 L/Sec 203mm : 18.9 ~ 76 L/Sec 159mm ~ 171mm : 9 ~ 47 L/Sec 121mm : 7.9 ~ 22 L/Sec 79mm & 89mm : 4 ~ 16 L/Sec
LCM Tolerance	50 lb. per bbl medium nut plug	143 kg/m³ medium nut plug
Sand Content	Sand ≥3% by volume recommended	
Data Rate	≥ 1bps	
Operating Temperature	-25˚ to 150˚C; 175˚C option	
Maximum Pressure	Standard: 20,000 Psi (140MPa); High pressure: 25,000 Psi (175MPa) or Ultrahigh pressure: 30,000 Psi (210Mpa) (Option)	
Differential Pressure	No requirement	
Dogleg Capability	API connectionlimited	

** Specifications subject to change without notice*

§ Larger O.D. subs can be accommodated using the pulser for 9.5 in. (241 mm) O.D.

*** Pulsers for 3.125 in. (79 mm) & 3.5 in. (89 mm) BHAs are available in fixed-mount only*

Fixed-mount Pulser



Retrievable Pulser

Headquarters · Wallingford · USA
7 Laser Lane, Wallingford, CT 06492 USA
Phone: 860.613.4450 · Fax:203.284.7428
contact@aps-tech.com

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