

MODEL AP1250

DUAL TELEMETRY SYSTEM

FEATURES

- Available:
 - 4.75" (NC38)
 - 6.50" (NC46 and NC50)
 - 8.00" (6 5/8 Reg)
 - Larger sizes can be made available
- Modular approach to Dual Telemetry
- Integrates Applied Physics product lines
- Provides backup communications via EM or Mud Pulse
- Expands available bandwidth by combining both telemetries
- Seamless, wireless link to MWD system

APPLICATIONS

- Low cost, reliable replacement to mud pulse systems
- Underbalanced drilling
- High speed drilling where fast data rates are required
- Low pressure formations or lost circulation situations
- Geosteering in tight formations and long laterals
- Collision avoidance situations
- Real time survey measurements, annular pressure, bore pressure, RPM, vibration and gamma

Applied Physics Systems introduced the AP1250 Modular Dual Telemetry System in 2018. This system provides a modular design that allows for adding a pulse system on the bottom of the AP250 EMWD System.



RELATED PRODUCTS

- AP250 EM MWD System
- AP400 Mud Pulse MWD System
- AP600 Near Bit System

EM DOWNHOLE SYSTEM	
Carrier Frequency	2 Hz to 10 Hz (user selectable)
Baud Rate	The baud rate is one half of the transmission frequency. A transmission frequency of 9 Hz has a baud rate of 4.5
Power	Batteries typically consist of 2 DD stacks of 8 moderate rate cells each, producing 29 V at a 29 ampere-hour capacity. Battery life: <ul style="list-style-type: none"> - At 10 Watts power level, battery life is 80 hours. - At 20 Watts power level, battery life is 40 hours. - At 40 Watts (maximum power), battery life is 20 hours.)
Gap Sub Sizes	4.75" (120.65 mm) OD x 67.375" (1711.325 mm) L 3.50" (88.9 mm) IF pin at bottom box at top 6.5" (165.1 mm) x 72.0" (1828.8 mm) L
Tool String Approximate Length (2 batteries)	222" (5638.8 mm)
Sensors	Directional Sensor: Model 750 Gamma Sensor: Model 751
Dipole Head Annular and Bore Pressure Sensors	0 to 5000 PSI Tolerance: $\pm 2\%$ Units: PSI, bar, kPa (user selectable in Detect MWD software)

EM/MP UPHOLE SYSTEM	
Preamp Gain Selectable	0 to 42
Amplifier Gain Selectable	0 to 96
Power	115 V @ 1 A 220 V @ 0.5 A
Size	19" (482.6 mm) W x 3.5" (88.9 mm) H x 13" (330.2 mm) D (rock mountable)

EM/MP DOWNLINK SYSTEM	
Main Power	115 V @ 10 A 220 V @ 2.5 A
Size	16" (406.4 mm) W x 7.5" (190.5 mm) H x 12" (304.8 mm) D

MP DOWNLINK SYSTEM	
Data Transmission Type	Positive Mud Pulse (Poppet)
Pulse Height Avg	30-400 psi Avg - Adjustable 200-2760 kPa Avg - Adjustable
Power Requirements	Lithium (8 cells) 15-30 VDC - AP250 Battery Pack
Battery Consumption (continuous 1 sec pulse width)	150-120 hours on one medium-rate battery
Tool Outside Diameter (OD)	1.875" (47.626 mm)
Overall Length (2 batteries)	27 feet (7.2 meters)
Assembly	Rig Floor Assembly
Retrievable	Collar mounted Non-retrievable
Fixed Mounting	Yes

Specifications are subject to change without notice.

OPERATING RANGE

Operating Temperature Range	32 to +347°F 0 to +175°C
Shock Limit	1000 G 1 ms half sine wave
Rotation	0 - 300 RPM
Vibration Limit	5-30 Hz @ 1" double amplitude 30-500 Hz @ 20 g all axes
Maximum Pressure	20,000 psi (137,895 kPa)
Pressure Drop (max flow)	150 psi @ 600 GPM (900 kPa @ 2.25 m ³)
Flow Ranges	6.75" 300 to 750 gpm (1.71 mm 1.2 to 2.5m ²) 4.75" 150 to 300 gpm (120 mm 0.560 to 1.2m ²)
Sand Content	< 1-3% by volume maximum
LCM Tolerance	50 lbs per bbl medium nut plug (143 kg/m ³ medium nut plug)
Velocity Rate (max)	40 ft/sec (13 m/sec)
Operating Pulse Width	1 second
Typical Baud Rate	0.75 baud

OPERATIONAL GUIDANCE

LEVEL	SHOCK	VIBRATION
GREEN	< 17 g	< 4 g
YELLOW	17 to <26 g	4 to <6 g
ORANGE	26 to <36 g	6 to <5 g
RED	+35 g	+ 8 g

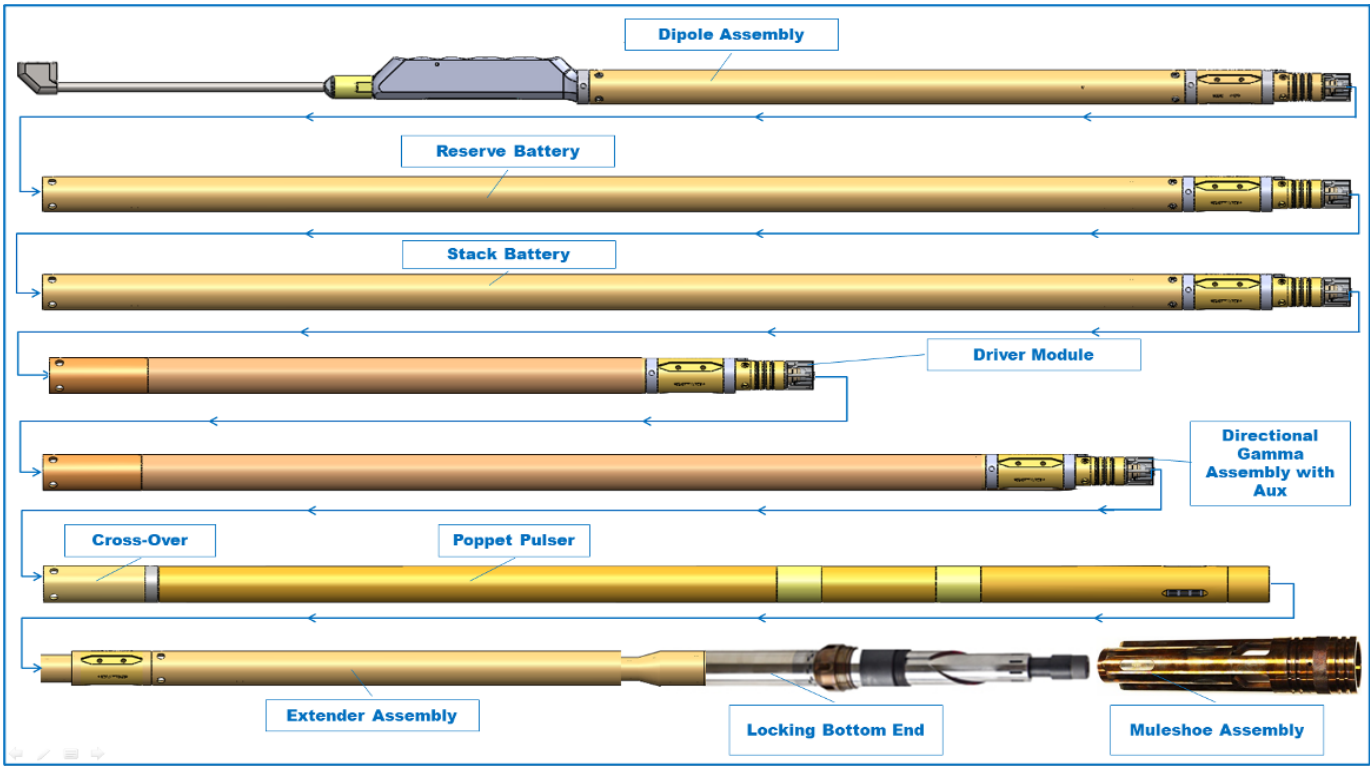
The downhole system includes an MWD laptop with a 16-bit A/D installed and a Model 555 Rig Floor Display Module. An RS-232 port is required on the computer for the Rig Floor Display.

DATA RATES	EM (9HZ)	MP (0.75 BAUD)	DUAL
Survey	2 minutes	5 minutes	2/5 minutes
Toolfaces	3-5 seconds	10-20 seconds	Split*
Gamma	3-5 seconds	10-20 seconds	Split
Near Bit Up	3-5 seconds	10-20 seconds	Split
Near Bit Down	3-5 seconds	10-20 seconds	Split
Near Bit Left	3-5 seconds	10-20 seconds	Split
Near Bit Right	3-5 seconds	10-20 seconds	Split
Pressure	3-5 seconds	10-20 seconds	Split
Average Packet	1-1.5 minutes	3-4 minutes	Split

* Can increase bandwidth and split the data between the two telemetry schemes

Specifications are subject to change without notice.

API250 DOWNHOLE SYSTEM - TOOL STRING



API250 DOWNHOLE SYSTEM - BHA

