

“Slimhole” BSR Array System

Miniaturized Multi-component Borehole Sonde String



Digital Module Features:

- *Slimhole BSR Array: Borehole Seismic Receiver Array*
- *24-Bit x 4-Channel Digitizer in each Shuttle*
- *Ultra Low Noise Digitizer enables recording of low amplitude microseismic events, 3D-VSP, Crosswell Seismic Imaging, etc.*
- *Slimhole sonde 1.6 inch O.D. (<41 mm)*
- *3C Sensor Packages available: 3C Tri-axis Orthogonal Geophone.*
- *OMNI-2400 High-output Geophone Sensors*
- *Machined Stainless Steel Housing Minimizes Mechanical Resonance for High Resolution, High Frequency Recording*
- *Direct connection sub-arrays, Armored Wireline or Rigid Interconnects available with high-pressure multi-conductor booted connectors*
- *Flexible or Rigid Interconnects may be connected “back-to-back” to form longer intervals*
- *Maximum distance between sonde modules is 100 meters*
- *Maximum Temperature Rating —150 °C*
- *Maximum Pressure Rating — 20,000 psi*
- *Up to 480 3-Component levels per well deployment*
- *Configurations for vertical, deviated, horizontal wellbore deployments*
- *Adaptable housing for user defined , application specific coupling devices*

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SPECIFICATIONS

Outside Diameter	1.6 in	(4.064 cm)		
Length	16 in	(40.64 cm)		
Tool Weight	5 lbs	(1.866 kg)		
Anchoring System	Mechanical in each shuttle		Tubing Mandrel	Permanent (cemented)
Anchoring-to-Weight Ratio	7:1	(passive spring)		
Tool Anchoring Range	Custom adaptors for dimension ranges		Sizes available upon request	
Points of Contact	5 points, including opposing clamp axis			
Sensor Package	3-C w/ OMNI-2400, mutually orthogonal sensor set standard		3-C w/ OMNI-2400	
Interconnect Options	Rigid Tubing (Stainless steel)		Flexible Armored Wireline Cable	
Standard Lengths	3, 6, 9 meters		9, 12, 15, 20 meters	
	Custom lengths up to 100 meters available upon request			
Maximum Temperature Rating	150 °C			
Maximum Pressure Rating	20,000 psi			

Digital Module 4-CH x 24-Bit Digitizer SPECIFICATIONS

Sampling Rates	1/4, 1/2, 1, 2, and 4 ms			
Pre-amplifier Gains	<u>0 dB</u>	<u>8 dB</u>	<u>19 dB</u>	<u>31 dB</u>
Equivalent Input Noise@ 2 ms	1.830 μ volts rms	0.774 μ volts rms	0.304 μ volts rms	0.202 μ volts rms
Maximum Input Signal	1.590 vrms	0.635 vrms	0.187 vrms	0.045 vrms
Gain Accuracy	< 1%			
Frequency Response	3 to 1.6 KHz			
Anti-alias filter	80% Nyquist			
Instantaneous Dynamic Range	119 dB			
Cross-feed Isolation	>90 dB			
THD	0.0018%			
System Timing Accuracy	Better Than 1 PPM			

Note: All specifications subject to change at sole discretion of OYO Geospace



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