



CASED HOLE LOGGING HTHP - Production Logging Instrumentation

Spartek Systems specializes in providing the oil and gas industry with high quality data to monitor well performance and diagnose potential problems. Founded in 1994, Spartek Systems leads the industry in providing cost effective solutions for acquiring reliable production data.

Product Overview

Spartek's second-generation HTHP Production Logging System represents a new family of engineered solutions designed to meet the challenges of high-temperature, high-pressure production logging.

Building on our industry-leading SS8000 Production Logging Technology, this system introduces a versatile family of Controller Modules that operate in either Memory or SRO mode, reducing costs and improving operational reliability. In memory mode, the controller is powered by a 3 C-cell battery module providing 12 VDC. For SRO operation, the cable head connects via the same industry-standard high-temperature GO connector.

Key New Features:

- ▶ Integrated Controller, Electronics, and Sensors in a single module
- ▶ Separate Battery Power Module
- ▶ Built-in HTHP Pressure Bulkhead
- ▶ Improved Telemetry

All temperature sensitive component are packaged in a high pressure thermal heat shield. This special pressure housing provides both an improved pressure rating, 20,000 psi and protects the electronics and key sensors from temperatures up to 300°C for 6 hours (350°C for shorter durations).

The improved internal modem for SRO operations, provides bi-directional, high-speed, digital communications enabling real-time logging, recording and visualization of view downhole data from all sensors over a single conductor wireline.

The following sensors are available:

- ▶ Accelerometer
- ▶ Gamma Ray, Casing Collar Locator
- ▶ Pressure and Temperature
- ▶ Fluid ID: Dielectric and Density
- ▶ Flowmeters: Folding and Continuous (Jewel)

The Fluid ID module which includes the Capacitance and Acoustic Density sensors are limited to approximately 220°C as the sensors are exposed to the full wellbore temperatures.



Applications

- ▶ Hostile Environment Production Monitoring
- ▶ Monitor well efficiency
- ▶ Production Diagnostics
- ▶ Analyze production profile by zone
- ▶ Monitor well stimulations
- ▶ Well mechanical integrity analysis
- ▶ Time lapse logging
- ▶ Well treatment verification

SPARTEK SYSTEMS

Providing Our Customers With "Best In Class" Technology

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Specifications:

Operating Specifications				
Pressure Rating	20,000 psi (max)	Temperature Range	-40°F to 662°F [-40°C to 350°C]	
Housing Material	Inconel 718* (sour)	Dimensions	1.689" OD	
Power Requirements		HTHP Power Module	3.78 ft	
Memory Operation		<u>HTHP SRO/Memory Controllers</u>		
Voltage	12 V (3 C cell pack)	Memory Controller	4.65 ft	
Current (max)	200 mA	SRO Controller (Telemetry)	6.48 ft	
SRO Operation		SRO/Memory Sapphire PTS	5.13 ft	
Voltage	125 V - 175V @ Cable head	SRO/Memory CCL-GR-PTS	6.87 ft	
Current (max)	100 mA	Memory Controller Sapphire PTS ⁽¹⁾	4.96 ft	
Memory Only Sapphire PTS		<u>HTHP Sensor Electronic Modules</u>		
Voltage	6 - 7.8 V (2 AA cell Pack)	Quartz PT-CCL-GR-Spinner	6.54 ft	
Current (max)	20 mA	Fluid ID (Cap, AC Den) - Spinner ⁽²⁾	5.63 ft	
Communications	USB	<u>HTHP Flowmeters</u>		
Data Acquisition		Caged Flowmeter	1.09 ft	
<u>Memory</u>		Full Bore Flowmeter	2.25 ft	
Memory Size	128 Mb (16 Mb)	<u>HTHP Centralizers</u>		
Sample Rate	1, 2, 5, or 10 samples/sec	InLine Roller Centralizers	2.67 ft	
Logging Time	Standard PLT (8 sensors) at 1 sec sample for 135 hours	E-Line Roller Centralizer	2.55 ft	
<u>SRO</u>		(1) Controller supports ONLY external Spinner Flowmeter. 16 Mbyte memory/ AA Battery		
Sample Rate	10 samples/sec	(2) Capacitance and Acoustic Density limited to		
Performance Specifications				
Spinner		Pressure	<u>Sapphire</u>	<u>Quartz</u>
Range	+/- 200 rps	Range	20,000 psi	20,000 psi
Operating Diameter	1.81" minimum Caged Spinner	Resolution	0.003% F.S.	0.00006% F.S.
Resolution	0.083 rps	Accuracy	0.05% F.S.	0.024% F.S.
Accuracy	+/- 2%	Acoustic Density		
Threshold		Sensor	Vibrating Element	
In Line	8 ft/min (oil flow)	Range	0 - 2 g/cc	
Caged	4 ft/min (oil flow)	Resolution	0.01 g/cc	
Fullbore	2 ft/min (oil flow)	Accuracy	0.03 g/cc	
Temperature		Fluid Capacitance		
Range	-40°C to 350°C	Resolution	0.1%	
Resolution	0.01°C	WHI Accuracy	2% (range 0% - 30%)	
Accuracy	+/- 1°C		5% (range 30% - 60%)	
Gamma Ray		Casing Collar Locator		
Detector Type	Scintillation	Detector Type	Electromagnetic	
Range	0 - 10,000 API			
Accelerometer		Roller Centralizer		
Range	+/- 2 g	Range	1.4 to 8.2 inches	
Resolution	0.01 g			

Specifications subject to change without notice

For More Information, Pricing, and Technical Support Contact:



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