

Production logging consists of several measurements to evaluate fluid movement in and out of wellbores, is a technic that traces its origin to the 1930s, with much evolution since then. Mostly is used to determine fluid and flow properties commonly measured with a spinner flowmeter (a blade that rotates when fluid moves past it) which requires a calibration process to compensate friction in the spinner bearings and effects from fluid viscosity (nonlinear velocity responses). EngRD is adding to his regular tool string a new acoustic flowmeter that allows measuring flow rates on real-time as well as fluid density. Our telemetry allows us to send 100 samples per second to surface opening a window of opportunity to gather way more data while logging using a susceptible and accurate temperature sensor, and a fast response quartz pressure sensor. You can make qualitative conclusions about fluid entries



using our acoustic flowmeter and our temperature sensor, particularly in very low-flow rate zones in which a spinner may not be sensitive enough to those ranges. Of course, our Gamma Ray and Casing Collar Locator provide depth control and correlation with completion components. Another advantage is our dual operation mode: Real-Time / Memory. Our tool string always run recording all data to the memory in case you need to have a backup. To use the tools on a Slickline or Coiled Tubing operation, you need to add a Battery Housing, a Battery pack, and our Depth Time System (DTS). The tools are rated to 177 deg C, 15,000 psi of working pressure, and sour service ready. For surface data acquisition, you need a Warrior 8 System.

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
SHUNT CURR	23.30		ENG RD_FHT-A (100) FAST HYBRID TELEMETRY	2.23	1.69		
THYDOLT	23.30						
INSTEMP	22.48						
OWEIVOLT	21.07			ENG RD_CEN-A (100) 4-ARM ROLLER CENTRALIZER	2.60	1.69	
CCL	17.78			ENG RD_GCT-A (100) GAMMA RAY, COLL TEMP	3.85	1.69	
QRHIGHVOLT	15.49			ENG RD_QPT-A (100) QUARTZ TIME PRESSURE TEMPERATURE	2.17	1.69	
QR	15.49						
TEMP	14.91						
QTEMP	12.86			ENG RD_WHT-A (100) CAPACITANCE WATER HOLDUP	2.30	1.69	
QPRESS	12.86						
CAP	10.84			ENG RD_AFM-A (100) ACOUSTIC FLOW METER	4.50	1.69	
AFMTEMP	8.30						
AFM	7.22			ENG RD_CEN-A (100) 4-ARM ROLLER CENTRALIZER	2.60	1.69	
AFMSSTOP	7.22			ENG RD_FBF-A (100) FULLBORE SPINNER ELECTRONICS	1.29	1.69	
AFMTOF	7.22			ENG RD_FBFVECA (100) FULLBORE SPINNER MECHANICS	1.87	1.69	
SPEEDOF SQUIRT	7.22						
FBF	1.08						

Dataset: ENG\_RD  
Total length: 23.30 ft  
Total weight: 36 lb  
O.D.: 1.69 in

