

**3 3/8" Product Line**

**Orientation Sub**

The Orientation Instrument provides the input to calculate the exact position of the downhole instruments. It can be run in any combination, e.g. with borehole imaging instruments and calipers. In order to allow for maximum flexibility in combining the tools, the Orientation Instrument is a separate device. From the measurements of the three accelerometers and three magnetometers, the (drift) azimuth, relative bearing and deviation values are calculated. The tool can be run in open hole and cased hole (deviation only) and is independent of the mud system.

Specifications			
Diameter:	86 mm	(3.39")	Sensors: Accelerometers: 3 Magnetometers: 3
Length:	2127 mm	(83.7")	
Weight:	46 kg	(101 lbs)	
Max. Temp:	175°C	(350°F)	Measure Point (from bottom): 898 mm (35.4")
Max. Pressure:	140 MPa	(20 000 psi)	
Telemetry required:	yes		
Top Connector:	yes		
Bottom Connector:	yes		

Measuring Parameters			
<u>Measuring Range:</u>		<u>Accuracy:</u>	
Deviation:	0...180°	Deviation:	± 0.1°
Direction:	0...360°	Azimuth:	± 1.5°
		DriftAzimuth:	± 1.5° for Dev > 10°

Logging Parameters			
Recommended		Recommended	
Min. Hole Diameter:	127 mm (5.0")	Logging Speed:	to 25 m/min to 4920 ft/hr
Max. Hole Diameter:	NA	Sample rate:	selectable

Displayed Standard Curves	
Azimuth in deg	Direction of Pad No. 1 (referenced to North)
RelBearing in deg	High Side of the instrument referenced to Pad No. 1.
DriftAzimuth in deg	Direction of the borehole referenced to North in deg.
Deviation in deg	Deviation of the borehole referenced to Vertical in deg

**Combinability**

With all other 3 3/8" instruments

