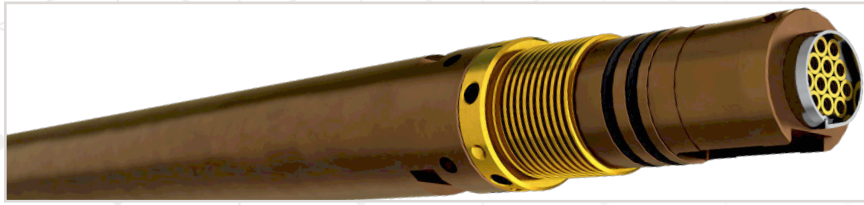


Intelligent Navigation Tool (iNAV)



The Intelligent Navigation Tool utilizes a high resolution directional sensor package to determine the wellbore trajectory and the position of the logging tool with respect to the wellbore.

The high resolution directional sensor consists of a 3-axis accelerometers and a 3-axis magnetometers, these measurements are used to determine the gravitational force and magnetic field acting on each axis from which the navigation and borehole orientation information are derived.

The measurements from the iNAV tool aid in analyzing data from other tools in deviated wellbores and can be used in the answer products from other sensors (eg cross-dipole azimuthal anisotropy analysis). The iNAV tool is fully compatible with the rest of the Signum Instruments micro slim tool suite and its advanced range of conveyance options.

LOGGING APPLICATIONS:

- Determining borehole trajectory (azimuth and inclination)
- Applying speed correction to formation evaluation data
- Direction and orientation measurements for other sensors (Relative bearing and tool azimuth)

MECHANICAL:

| | |
|------------------|------------------------|
| LENGTH | 7.2 ft (2.2 m) |
| DIAMETER | 2.25 in (57 mm) |
| WEIGHT | 54 lbs (24.5 kg) |
| PRESSURE RATING | 20,000 psi (140 MPa) |
| TEMP RATING | 350 °F (175 °C) |
| MAX HOLE SIZE | No limit |
| TENSILE STRENGTH | 65,000 lbs (289,134 N) |

MEASUREMENT:

| | |
|---------------------|--|
| OUTPUT | Borehole azimuth, inclination, relative bearing and tool azimuth |
| RANGE | 0 to 360° |
| VERTICAL RESOLUTION | 3 in (7.6 cm) |
| ACCURACY | Azimuth: $\pm 1.5^\circ$, Inclination: $\pm 1^\circ$ |



3 axis accelerometers and 3 axis magnetometers