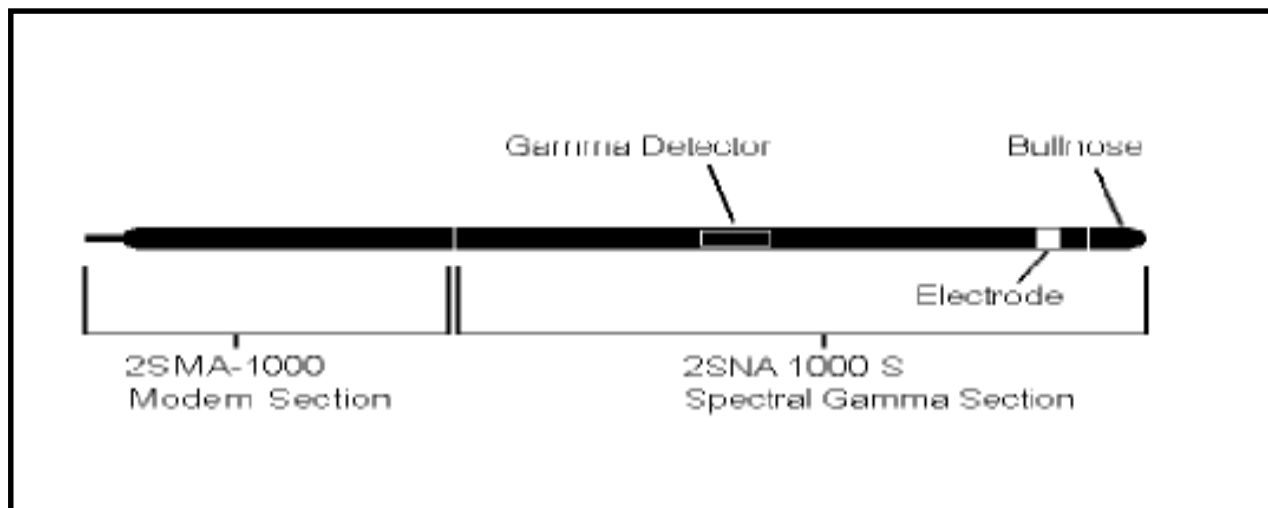


2SNA-1000-S Spectral Gamma Borehole Logging Tool



2SNA-1000-S Spectral Gamma Tool

The 2SNA-1000-S DX series spectral gamma probe section is a versatile tool that can be used in a wide variety of logging applications. The tool section measures natural gamma spectra, single point resistance, and spontaneous potential. Since the tool is part of the DX family of probes, it can be operated with any DX probe section. In this manner, additional measurements (such as density) can be added to the tool string.

Users can select from three operational modes (256, 512, or 1024 channel) based on their survey needs. The tool section is offered with several different options. The standard 2SNA-1000-S uses a 0.875 by 3 inch NaI(Tl) scintillator. The probe section is available with a BGO scintillator (2SNA-1000-SB) for more efficient detection of high energy gamma particles (and poorer energy resolution and accuracy).

The 2SNA-1000-S provides real time temperature compensation not typically offered by others. The response from conventional tools drifts as temperature changes. This drift is extreme when using a BGO scintillator. The 2SNA-1000-S has been calibrated at the factory using several different sources and a swept temperature bath. Calibration coefficients resulting from these tests are stored inside the tool so that real time temperature compensation can be performed.

Specifications:

Maximum pressure	3000 PSI
Operation temperature range	0 to 60 degrees C
Storage temperature	-40 to 70 degrees C
Natural gamma energy range	0 - 3 MeV
Natural gamma energy accuracy	2% of full scale
Natural gamma energy resolution	10% full width half max.
Sensor location (from bottom of probe)	22.83 inches (58 cm)
Single point resistance range	0-1000 ohms
Single point resistance accuracy	1% of full scale
Single point resistance resolution	0.5 ohm
Sensor location (from bottom of probe)	5.11 inches (13 cm)
Spontaneous potential range	-2000-2000 mV
Spontaneous potential accuracy	1% of full scale
Spontaneous potential resolution	0.5 mV
Sensor location (from bottom of probe)	5.11 inches (13 cm)
Length (assembled)	46.61 inches (118.4 cm)
Diameter	1.5 inches (3.81 cm)
Weight	11 lbs (4.99 kg)
Length (when connected to a 2SMA-1000)	71.26 inches (181 cm)

ADVANTAGES:

- **User-Selectable resolution**
- **True real-time temperature compensation**
- **Stripping software for isotope concentration analysis available.**
- **Combinable with other downhole measurements**
 - **Real-time calibration models**
 - **Up to five energy windows for analysis**