

Well Temperature, Gamma, and CCL Tool (TGC)

Well Temperature, Gamma, and CCL Tool (TGC) primarily used for depth correction and leak detection.

This tool integrates the parameters of **Well Temperature, Gamma, and CCL**, it can be combined with other logging tools from our company for use in well logging.

Description

- **Principle of Natural Gamma Ray Measurement**

The natural gamma ray section consists of a photomultiplier tube (PMT) and a sodium iodide (NaI) scintillation crystal. The sensor detects gamma radiation emitted from the geological formations.

- **Principle of Wellbore Temperature Measurement**

The wellbore temperature measurement circuit employs a PT100 platinum resistance thermometer (PRT), which has a linear relationship with ambient temperature.

- **CCL Measurement Principle**

The CCL consists of an inductive coil, magnetic steel, and an amplifier. The inductive coil is positioned between the magnetic steel pieces. As the tool moves within the casing, the magnetic field strength within the coil changes correspondingly with the variation of the magnetic flux from surrounding ferromagnetic objects, thereby generating an induced voltage.

Applications

- The Correlation of cased hole logging curves between the casing and the wellbore.
- Depth control
- Lithology identification
- Leakage inspection using a high-resolution temperature logger



Specifications

TGC-1	
General Spec	
Maximum Pressure	15,000PSI (103MPa)
Minimum Temperature	-4 °F (-20°C) / 2 Hours
Maximum Temperature	350°F (175°C) / 2 Hours
Diameter	43mm (1-11/16 in)
Tool Length	1230mm (48.42in)
Effective Length	1180mm (46.45in)
Weight	7.5kg (16.53lbs)
Maximum Logging Speed	32 ft/min (600 m/h)
Working Pressure	15VDC~30VDC
Zero Length	GR Section - 15.15in (385mm)
	CCL Section - 37.91in (963mm)
	Temperature Section - 6.5in(165mm)
Gamma	
Test Range	0 ~10,000 CPS
Resolution	1 CPS
Background Noise	≥100 CPS
Sensor Type	NaI
Fluctuation Range	≤ 7%
High-Pressure Range	< 2000V
Dynamic Range	10 kHz ~ 50 kHz
SNR	≥ 5 kHz
Temperature	
Probe Type	PT100
Test Range	-13°F ~ 350°F (-25°C~175°C)
Accuracy	±1.8°F (±1°C)
Resolution	0.09°F (0.05°C)
Response Time	≤ 1S
CCL	
Signal Range	0 ~3300 (mv)
SNR	≥ 5 kHz
Signal Transmission	
Tool Bus Type	CAN
Signal Transmission Rate	1Mbit/s