



Features

- Operational temperature up to 150°C
- Digital interface
- High sensitivity crystal with photomultiplier tube design
- Rugged design for use in high shock and vibration environments
- Axial and transverse 50 gee accelerometers for vibration monitoring

Applications

- Geosteering in narrow/thin zones
- Evaluation of downhole strata in drilling and logging applications
- Evaluation of downhole vibration and shock magnitudes



The Applied Physics Systems Model 751F Focused Natural Gamma Sensor measures the gamma radiation occurring in well bores to detect the presence of porous petroleum reservoirs. The sensor's scintillation crystal and tungsten shield shields one side of the formation from the gamma sensor, which allows operators to differentiate sands from limestones. This allows operators to determine the downhole lithology and accurately place the well path inside the producing (sand) zone.

To operate the sensor, rotation in the drillstring is stopped and the sensor is oriented in a specific direction (usually up or 0° and then down or 180°) and readings are taken to determine if any corrective steering action is necessary to stay within the target zone.

The 751F sensor can be used as either a standalone system or in with the Applied Physics Model 760 or 850 directional sensors. Communication with the 751F is achieved using a bi-directional TTL serial port. To achieve high gamma sensitivity, a 0.7 inch diameter by 5.3 inches long scintillation crystal is used to detect gamma rays.

The 751F sensor also has two 50 gee vibration sensors to monitor drilling induced vibration and shock. The vibration sensors are oriented to measure axial and lateral shock and vibration.

Model 751F

Focused Natural Gamma Sensor



Applied Physics
Systems



PHYSICAL	
Outside Diameter (OD)	1.25" (31.75 mm)
Length	18.95" (481.33 mm)
Weight	3.6 lb (1.63 kg)
Scintillation Crystal	0.7" diameter (17.78 mm) x 5.3" long (134.62 mm) in a stainless steel case
Photomultiplier Tube	Hamamatsu
Main Connector	MDM9SH003P (ITT Cannon)
Mating Connector	MDM9PH003L (ITT Cannon)
ELECTRICAL	
Input Voltage Range	+15 V to +30 V
Current Draw	40 mA @ 15 V, 20 mA @ 30 V
Logic Level	TTL/CMOS
Baud Rate	User programmable up to 9600 baud
Protocol	User selectable: ASCII or binary
ENVIRONMENTAL	
Operating Temperature Range	0°C to 150°C
Storage Temperature Range	-25°C to +195°C
Shock	1000 g 1 ms half sine wave
Vibration	10 g rms, 50 Hz to 250 Hz
PERFORMANCE	
Accuracy	±0.5%
Thin-bed Resolution	6" (152.4 mm) in an 8" (203.2 mm) diameter hole

Specifications are subject to change without notice.