

# Gamma Temperature/Pressure Tool

## Titan Division | Instruments

**Built using Hunting's proprietary and patented shock mounting technology, Hunting's Gamma Temperature/Pressure tools are a rugged and reliable means of correlation depth control while obtaining pressure and temperature data prior to and after perforating.**

Able to withstand extreme shock and impacts encountered in today's balanced, underbalanced and overbalanced completions, the tool's design applications include gamma, temperature and pressure surveys; stratigraphic depth correlation; conducting select fire or addressable perforating gun operations, and setting plugs and packers.

High-resolution temperature-compensated pressure and wellbore temperature measurements are continuously transmitted to the surface using digital telemetry. Data acquisition services are available for SDS Warrior and other standard surface systems. Pulse telemetry tests are also available on request.

For operational safety, all Hunting Perforating Gamma Ray tools operate at +50 VDC and are available in both negative fire and dual fire configurations.

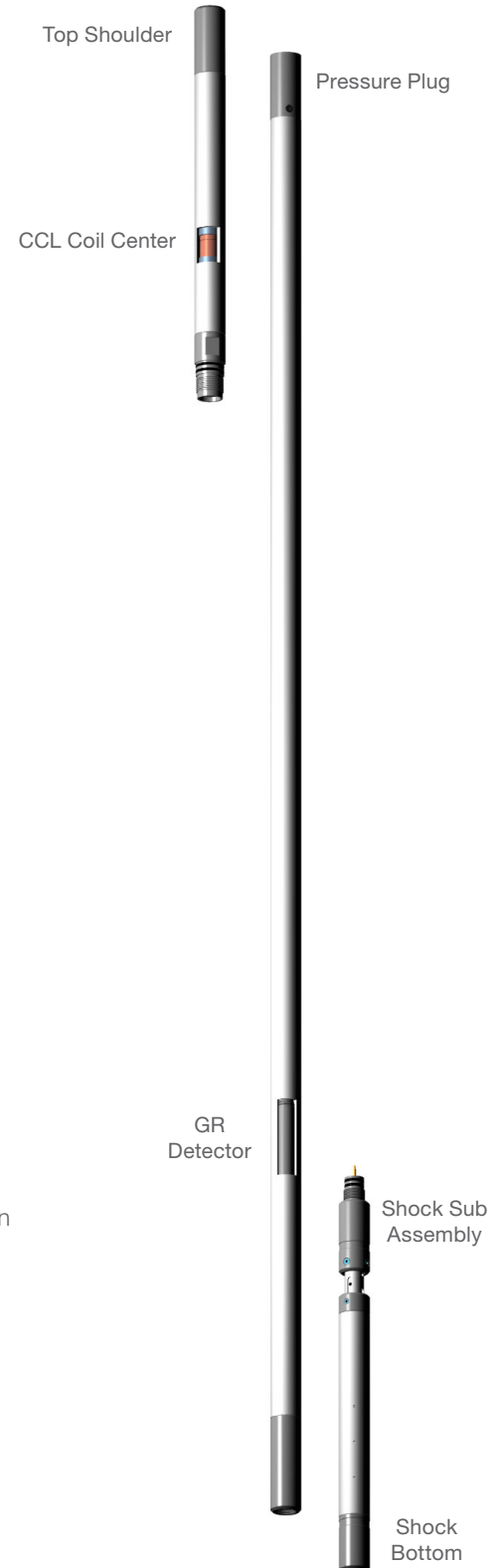
Hunting scintillation perforating detector reliability and efficiency exceeds that found in older Geiger-Muller detector technology.

### Features

- Compatible with most types of detonators, igniters and firing modules
- Easily matched with Hunting's EBFire® and ControlFire® perforating switches
- Hardened CCL's constructed with strong Alnico 5 magnets
- Ruggedized CCL for repetitive perforating operations
- Available for various perforating polarity configurations, Negative Fire and Dual Fire
- Larger and more sensitive scintillation detectors
- Optional integrated shock sub for additional protection
- Patented shock protection technology
- Sizes from 1-11/16 in. (42.9 mm) to 2-3/4 in. (70 mm) OD with optional configurations

### Benefits

- All sensors captured simultaneously in one well trip
- Wellbore temperature and pressure measurement immediately before and after perforation
- Output compatibility with standard surface equipment
- Reliable operation in extreme shock environments
- Higher logging speed
- Reduced maintenance cost due to high MTBF
- Improved tool reliability in underbalance and overbalance completion conditions
- Accurate real-time wellbore temperature and pressure data
- Easier stratigraphic correlation for depth control



**Perforating GR/Pressure/Temp/CCL/Shock Specifications**

Part Number	Dual Fire		Negative Fire	
	1-11/16 in (43 mm)	2-3/4 in (70mm)	1-11/16 in (43 mm)*	2-3/4 in (70mm)*
Standard	8138-1685FSF070-06-06	N/A	8138-16857SF070-06-06	N/A
High Temperature	8138-168BFSF070-06-06	8138-275BFSF100-04-01	8138-168B7SF070-06-06	8138-275B7SF100-04-01
<b>Measurements</b>				
Offset from Bottom				
Comp. Temp Probe (in)[cm]	78.68 [199.85]	68.37 [173.66]	78.68 [199.85]	68.37 [173.66]
Center of Pressure Port (in)[cm]	78.68 [199.85]	68.37 [173.66]	78.68 [199.85]	68.37 [173.66]
Center of Crystal (in)[cm]	20.86 [52.98]	20.72 [52.64]	20.86 [52.98]	20.72 [52.64]
Center of CCL (in)[cm]	88.42 [224.59]	81.96 [208.18]	88.42 [224.59]	81.96 [208.18]
Compensating Temperature Range (°F)[°C]	0 - 500 [0 - 260]	0 - 500 [0 - 260]	0 - 500 [0 - 260]	0 - 500 [0 - 260]
Pressure Range (psi)[MPa]	500 - 20K [3.45 - 138]	500 - 20K [3.45 - 138]	500 - 20K [3.45 - 138]	500 - 20K [3.45 - 138]
Accuracy	0.5% of Full Scale	0.5% of Full Scale	0.5% of Full Scale	0.5% of Full Scale
Gamma Detector Size OD - L (in)[cm]	4 [10.1]	4 [10.1]	4 [10.1]	4 [10.1]
Rec. Logging Speed (ft/min)[m/min]	30 - 40 [9.1 - 12.1]	30 - 40 [9.1 - 12.1]	30 - 40 [9.1 - 12.1]	30 - 40 [9.1 - 12.1]
<b>Environmental</b>				
Temperature Rating				
Standard (°F)[°C]	350 [177]		350 [177]	
High Temperature (°F)[°C]	500 [260]	500 [260]	500 [260]	500 [260]
Pressure Rating (psi)[MPa]	18,000 [124]	18,000 [124]	18,000 [124]	20,000 [138]
Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
<b>Mechanical</b>				
Outside Diameter (in)[mm]	1.69 [42.9]	2.75 [69.9]	1.69 [42.9]	2.75 [69.9]
Length (in)[cm]	101.87 [258.87]	120.64 [306.42]	101.87 [258.75]	120.64 [306.42]
Weight (lb)[kg]	40 [18.14]	100 [45.36]	40 [18.14]	100 [45.36]
Max. Tension (lbf)[kN]	46,000 [204]	115,000 [512K]	46,000 [204]	115,000 [512K]
Top/Bottom Connection	1-3/16" GO Box • 1-3/16" GO Box	1-3/16" GO Box • 1-3/16" GO Box	1-3/16" GO Box • 1-3/16" GO Box	1-3/16" GO Box • GO Quick Change Box
<b>Electrical</b>				
Operating Voltage & Current	+50 VDC @ 50±5 mA	+50 VDC @ 50±5 mA	+50 VDC @ 50±5 mA	+50 VDC @ 50±5 mA
Shooting Polarity	Positive and Negative	Positive and Negative	Negative only	Negative only
Max Positive Voltage	300 VDC			
Max Negative Voltage	-200 VDC			

\* Use "0" for plain upper head; "1" for upper head connection 2-in. fishing neck  
 # Use "A" for stainless steel housing; blank for normal steel housing  
 Call your titan representative to request tools with integrated shock subs

\* Recommended Shock Sub 1-11/16 in. PN = 3100-168-S200  
 2-3/4 in. PN = 3100-275-S000

**Further Information****Global Headquarters****Hunting Energy Services Inc.**

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