

ProTherma™ Geothermal PTS Tool

Provides production logging and formation measurements in either surface readout or memory mode, in high-pressure and ultra-high-temperature environments

Applications

- Geothermal and steam injection well surveys
- Monitor well performance
- Reservoir management

Features and Benefits

- Operating temperatures up to 662°F (350°C) makes it suitable for geothermal and high-temperature wells
- Provides comprehensive data by measuring pressure, temperature, flow rate, formation gamma ray, and casing collars, essential for detailed well analysis
- Capable of operating in both memory and surface readout mode, offering operational flexibility

Tool Description

The Weatherford ProTherma geothermal PTS tool is a production logging tool that provides pressure (using precision quartz pressure sensor) temperature, flow rate, gamma ray, and casing collar measurements in either memory or surface readout mode in ultra-high-temperature environments.

Specifications

Ratings and dimensions

	1.69 in.	1.83 in.
Maximum temperature	6 hr at 482°F (250°C)	4 hr at 662°F (350°C) 6 hr at 572°F (300°C)
Maximum tool pressure	15,000 psi at 482°F (103.4 MPa at 250°C)	17,500 psi at 600°F (120.6 MPa at 316°C)
Outer diameter	1.688 in. (42.87 mm)	1.830 in. (46.48 mm)
Length	SRO: 7.33 ft (2.23 m) Memory: 9.0 ft (2.74 m)	
Weight	SRO: 55.0 lb (25.0 kg) Memory: 60.0 lb (27.2 kg)	SRO: 60.0 lb (27.2 kg) Memory: 65.0 lb (29.5 kg)



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Specifications, continued

Hardware specifications

Acquisition mode	Memory or SRO (with SDS Warrior™ or ALT OPAL™)
Memory size	8 MB
Sample rate	P,T,F: 1 sps CCL: 20 sps
Materials	NACE MR0175 / ISO 15156 compliant
Connections	Top: 5/8 in. API Pin (Memory Configuration) Top: 1 3/16 in.- 12 GO Box (SRO Configuration)

Pressure measurements

Sensor Type	Quartz
Resolution	< 0.1 psi
Accuracy	0.02% F.S.
Pressure range	0 – 5,000 psi or 0 – 10,000 psi (0 – 34.4 or 0 – 68.9 MPa)
Transducer maximum	10,000 psi (68.9 MPa)

Temperature measurements

Sensor type	RTD
Resolution	0.002% F.S.
Accuracy	0.15% F.S.
Response time	1.5 sec/10°C
RTD Max	662°F (350°C)

Flowmeter/spinner

Sensor type	Triple reed switch		
Outer diameter	Continuous spinner		
	1.688 in. (42.8 mm)	2.125 in. (53.9 mm)	3.0 in. (76.2 mm)
	Fullbore spinner		
	4.5 in. (114.3 mm)	7.5 in. (177.8 mm)	
Resolution	1 RPM		
Threshold range	30 - 18,000 rpm		

Gamma ray

Sensor type	Nal scintillation
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