


*SmartPort P/T Gauge*

### Key Features

- HPHT Fibre Optic Gauge
- No Downhole Electronics
- All Metal Sealing
- Long Life at Extreme Temperature
- High Multi-Drop Capability
- Annulus, Tubing or Ported Pressure Configurations
- Low Profile 3/4" Design
- Low Cost

### About SmartPort

SmartPort is a low profile 3/4" fibre optic P/T gauge. Pressure is communicated via a small pressure port on the gauge body to SmartPort's novel internal optical sensing mechanism where pressure and temperature measurements are made using two fibre Bragg grating sensors. Annulus pressure and temperature are simply measured by leaving the pressure port open to the wellbore. For formation pressure and temperature measurements, the low profile gauge can be deployed open hole behind the casing. For tubing pressure and temperature measurements, SmartPort can be attached to a gauge mandrel with the use of dual metal o-ring or c-ring seals. Pressure from alternative locations can be communicated to SmartPort via a tube which seals to the gauge at the mandrel interface.

Multiple SmartPorts can be multiplexed on a 1/4" downhole cable to which the gauges are sealed using pressure testable swaged connections. Optical connection between SmartPort gauges is made using our [SmartLink](#) or [SmartSplit](#) product. Up to 10 SmartPort gauges can be multiplexed on every 2 fibres. So, for instance, 20 gauges can be deployed using a 4 fibre main cable and one downhole 'Y' SmartSplit.

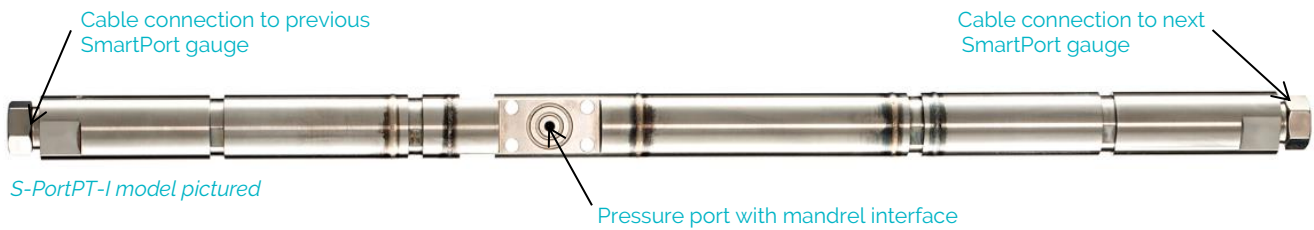
For HT and/or HP application with increased stability, an HPHT SmartPort is under development. Contact us for further details.

### Specifications

Measurement	Pressure and Temperature of Annulus, Tubing or Ported Fluid			
Working Pressure Range (psi / bar)	1,450/100	10,150/700	15,000/1,034	20,000/1,379 <sup>1</sup>
Overload Pressure	150 %FS			
Working Temperature Range	-4 to 392 °F / -20 to 200 °C (>392 °F / 200 °C to follow)			
Pressure Accuracy (psi / mbar)	< 0.1 %FS			
	15/100	10/700	15/1,034	20/1,379 <sup>1</sup>

Pressure Resolution at 0.1 Hz (psi / mbar)	< 0.005 %FS			
	0.07/5	0.5/35	0.75/52	1/69*
Temperature Accuracy	0.2 °F / 0.1 °C			
Temperature Resolution	0.02 °F / 0.01 °C			
Pressure Measurement Drift	at 140 °F / 60 °C		Immeasurable	
	at 257 °F / 125 °C		0.1 %FS/yr*	
	at 392 °F / 200 °C		0.5 %FS/yr*	
Multi-Drop Capability	Up to 10 gauges per 2 fibres, denser multiplexing available on request			
Wetted Parts	Inconel 718 (NACE MR0175)			

SmartPort Variant	Sensor Type	Upper Connection	Lower Connection	Diameter in (mm)	Length in (mm)	Weight lb (kg)
S-PortPT-I	In-line	2 fibre pigtails	2 fibre pigtails	0.75 (19)	15.1 (384)	1.48 (0.67)
S-PortPT-T	Terminal	2 fibre pigtails	None	0.75 (19)	10.6 (270)	0.98 (0.45)



\* Expected performance, not yet verified.  
 1. Under development.

Specifications may change without notice

## Ordering Information

Product Type	Housing Type	Pressure Rating	FBG Wavelength
S-PortPT	- XX	- XX	- X
	I	15k	AA to JJ
	T	10k	AB to KL
		15k	

Order code example:  
**S-PortPT-I-10k-AA**

Variant Description	Variant Options	Variant Code
Housing Type	In-line	I
	Terminal	T
Pressure Rating	1,500 psi / 100 bar	15k
	10,000 psi / 700 bar	10k
	15,000 psi / 1,034 bar	15k
FBG Wavelengths	<b>Two channel connection options (sensor combinations suitable for connection onto two channels)</b>	
	P= 15xx, T= 15xx	AA
	P= 15xx, T= 15xx	BB
	P= 15xx, T= 15xx	CC
	P= 15xx, T= 15xx	DD
	P= 15xx, T= 15xx	EE
	P= 15xx, T= 15xx	FF
	P= 15xx, T= 15xx	GG
	P= 15xx, T= 15xx	HH
	P= 15xx, T= 15xx	II
	P= 15xx, T= 15xx	JJ
	<b>Single channel connection options (sensor combinations suitable for single channel connection)</b>	
	P= 15xx, T= 15xx	AB
	P= 15xx, T= 15xx	CD
	P= 15xx, T= 15xx	EF
	P= 15xx, T= 15xx	GH
	P= 15xx, T= 15xx	IJ
	P= 15xx, T= 15xx	KL