

CS90

Downhole Pressure Sensor

FEATURES

- $\leq \pm 0.2\%$ BFSL accuracy
- -40°C to $+204^{\circ}\text{C}$ operating temperature range
- Configurable pressure ranges from 5,000 to 30,000 PSI sealed gauge
- PT1000 RTD temperature output
- High strength Inconel 718 (UNS N07718) sensing element
- Compensated over pressure and temperature
- Polynomial data available upon request

GREAT FOR....

- Measurement While Drilling (MWD)
- Logging While Drilling (LWD)
- Pressure While Drilling (PWD)
- Wireline and Rotary Tools
- Downhole Tools
- Oil & Gas Exploration



About the CS90

The **CS90 Downhole Pressure Sensor** uses a fully active four arm Wheatstone bridge, dielectrically isolated bulk silicon sensing element based on proprietary technology. This sensor is designed to withstand the high pressure, high temperature environments that are common in downhole oil & gas exploration. The compact design allows for installation in downhole tools without sacrificing space. Standard offering includes a 3/8"-24 UNF-2A w/ 74° cone process connection, compensated millivolt output signal, 12.7mm diameter housing, and solder hooks. An additional PT1000 RTD temperature output is standard for further measurement capabilities.



Miniature Package - High Millivolt Output

The CS90 Downhole Pressure Sensor offers a **typical compensated output of 10mV/V with a maximum excitation of 10VDC**. This provides a large amount of usable output, simplifying signal conditioning. For legacy installations, 2.6mV/V is available. Additional output sensitivities are available upon request.

All of these features come in a **small, compact package with a typical diameter of 12.7mm**. The CS90 comes standard without a hex on the front end of the sensor (near the process connection threads) to ensure fitment in drilling tools with confined spaces. A hex comes standard on the back end of the sensor (near the solder hooks) which can be used during installation.

SPECIFICATIONS

Performance

Accuracy @ 25°C*	≤ ± 0.2% BFSL
Stability (1 Year)	≤ ±0.25% of FS
Overpressure	1.5X rated pressure
Burst Pressure	3X rated pressure
Platinum Resistance Temperature Detector (RTD)	Class A, PT1000

* Accuracy includes non-linearity, hysteresis and non-repeatability

Environmental

Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27

Mechanical

Process Connection	3/8"-24 UNF-2A w/ 74° cone
Wetted Material	Inconel 718 (UNS N07718)
Installation Torque	12-14 Nm
Installation Information	Mount using supplied Inconel 600 replaceable metal seal

Thermal

Operating Temperature	-40°C to +204°C
Compensated Temperature	+25°C to +150°C
TC Zero	±0.025% FS per °C, typical
TC Span	±0.025% FS per °C, typical

Electrical (Millivolt)

Outputs	Millivolt compensated (mV/V)
Excitation*	10VDC, max
Zero Offset	≤ ± 3% FSO (5mV/V & 10mV/V output) ≤ ± 5% FSO (2.6mV/V output)
Span Tolerance	≤ ± 3% FSO (5mV/V & 10mV/V output) ≤ ± 5% FSO (2.6mV/V output)
Full Scale Sensitivity	See Model Number Configuration for options
Isolation Voltage	250VDC
Input Impedance	2.5KΩ, typical
Response Time	0.1ms, typical 0.2ms, max

* Sensor will operate off of any voltage up to 10VDC. Output is ratiometric to supply voltage used.

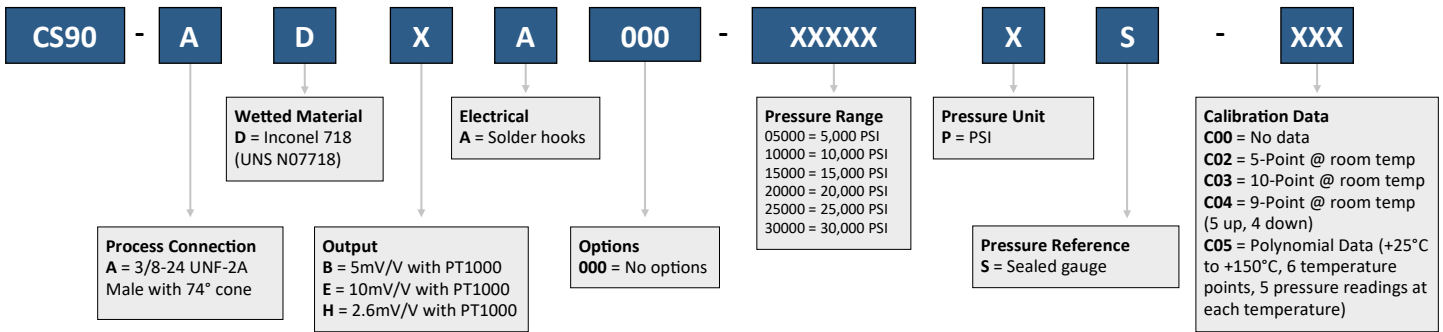
DIMENSIONS

*Dimensions are for reference only



Wiring	
PIN	Function
A	+Excitation
B	+Signal
C	-Signal
D	-Excitation
E	PT1000
F	PT1000

MODEL NUMBER CONFIGURATION



Ordering Example: CS90-ADEA000-20000PS-C00 (3/8"-24 UNF-2A Male w/ 74° cone, Inconel 718, 10mV/V with PT1000, Solder hooks, 0-20000 PSI sealed gauge, No data)
 Not all configurations are available. Our sales team can recommend the closest available configuration based on your requirements.
 Contact Core Sensors for configurations not shown.
 Visit our [How To Buy](#) page or [contact us](#) for a quote.

****Disclaimer:** Unless otherwise agreed in writing, Core Sensors products are not authorized for use in applications including medical devices, life support systems, in-flight aerospace, nuclear or any other application where the product failure could result in personal injury or death.

Warranty information can be found online at core-sensors.com.