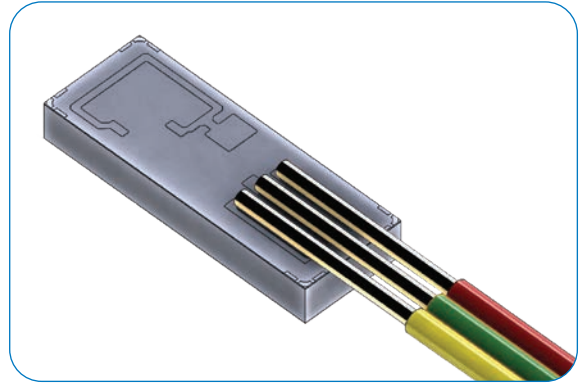




P330W

Absolute Pressure Sensor 1F (330 μ m)



NovaSensor's P330W Absolute Pressure Sensor is a Piezoresistive (PRT) Pressure Die, offering the same superior stability and sensitivity as in larger die, but in an extremely small footprint, making it ideal for invasive applications where small size is critical. Additionally, it has excellent measurement accuracy, which also makes it ideal for demanding applications with restricted dimensional profiles, such as medical catheters and IC packages.

P330W employs NovaSensor's proprietary SenStable[®] processing technology, providing excellent long-term stability and repeatability.

When excited with a DC voltage source, P330W produces a mV output that is proportional to the applied pressure. P330W employs a half-bridge design, which requires two external resistors to complete a full-bridge configuration. Additional components may be added to calibrate the output of the sensor.

Wire

Standard lengths of micro-cable available at 3 ft and 6 ft.

Samples currently offered utilizing 46 AWG (40 μ m) core wire.

Contact your AAS representative for custom cable lengths or AWG size.

Applications

- Cardiovascular
- Respiratory
- Intracranial
- Urological/Rectal
- Ablation

Features

- Extremely small size: 900 μ m x 330 μ m x 120 μ m cross -section
- Stable accurate pressure measurement of +/-6 mmHg (preliminary)
- Low power consumption
- Absolute pressure sensing
- Standard pressure range of 450 to 1050 mmHgA
- 4500mm HgA burst pressure

Amphenol

Advanced Sensors

P330W Technical Specifications

Parameter (Note 1, 2)	Unit	Value	Comment
Pressure Range	mmHg	450 to 1050	Absolute Pressure
Proof Pressure ³	mmHg	3000	
Burst Pressure ⁴	mmHg	4500	
Excitation	Volts	1 to 6	DC Voltage
Bridge Resistance ⁵	kohm	2.0±0.6	
Symmetry ⁶	%	±5	
Offset Voltage ⁷	mV/V	±3	
Output Voltage	mV/V	9	Typical @ 750mmHg
Sensitivity ⁷	µV/V/mmHg	15	Typical
Pressure Non Linearity ⁷	mmHg	±1	Typical BFSL, 300 mmHg Range
TC Offset ⁷	µV/V/°C	±20	Maximum
TC Sensitivity ⁷	%/°C	-0.2	Typical
TC Resistance ⁷	%/°C	0.13	Typical
Operating Temperature ⁸	°C	15 to 45	59 to 113°F
Storage Temperature	°C	-40 to +85	-40 to 185°F
Media Compatibility ^{9, 10}	Clean, dry and non-corrosive gases		

Notes

1. Values measured at room temperature unless noted with 3000-ohm resistors completing the bridge.
2. Pressure sensor performance can be affected by die mounting. Packaging stress should be minimized to achieve the specified performance.
3. Proof Pressure: The maximum pressure at which the sensor may be subjected as an uncommon event and for a short duration of time without permanent damage or performance degradation. If the Proof Pressure is exceeded, the die performance is no longer guaranteed.
4. Burst Pressure: The pressure at which permanent damage to the sensor may occur. Specification is for quasi-static pressure in an oil medium applied to the diaphragm side of the die.
5. Parameter is measured at the wafer-level 100% at room temperature, atmospheric pressure and 3V.
6. Symmetry is calculated as $2*(r1 - r2)/(r1 + r2)$, where r1 and r2 are two piezoresistors measured separately.
7. Parameters marked "Typical" are verified by testing samples from each wafer. TCR of sensor resistors only. TCR of bridge circuit will be affected by the resistor values completing the bridge.
8. Die may be used beyond this range with additional validation.
9. Die with protective layers has been successfully used in various medical and biological applications.
10. If the sensor is to be exposed to radiation, it is recommended to shield the die from radiation and implement auto-zeroing.

Safety

The product shall be used only within power supply and electrical input and output limits as specified by the datasheet. Improper use of the product may result in product damage and property loss and/or personal injury. In use of the product, the customer has sole responsibility for designing and implementing a solution, which will ensure safe operation (including review of appropriate reliability or required redundancy, mitigation of failure modes, and/or meeting appropriate standards). The customer is responsible for review of any special conditions for use including, but not limited to, environmental conditions, electrical supply, residual risk, etc. Amphenol makes no warranty, representation or guarantee regarding the suitability of this product for any particular application, including safety critical applications. Nor does Amphenol assume any liability arising out of the application or use in any product or circuit. Amphenol specifically disclaims all liability without limitation consequential or incidental damages.

Shipping and Handling P330W on Spool

P330W die with trifilers have both die and rear-end wires tapes to the surface of spool is also available. The rear ends have been used for electrical testing of samples. Therefore, end of cores can be separated by gaps and sometimes bents.

Handling of the samples requires extreme care as both diaphragm of the sensor and contact mode can be easily damaged by mechanical contact with an external object. The contact node should not be loaded with forces acting perpendicular to the top plane of the die where the solder joints are located.

In most cases, Amphenol provides results of die testing together with the samples. Each die has a unique number. This allows for traceability up to die level.

Contact Amphenol Representative in case of questions. Amphenol personnel will be able to answer your questions related to the samples and provide recommendations on sensor conditioning /calibration.

Ordering Information

Part Number	Description
EP330W-3FT	3FT P330W
EP330W-6FT	6FT P330W

P330W Eval Kits

Part Number	Description
P330W-EVAL-D3	P330W Eval Kit, Digital Output
P330W-EVAL-A3	P330W Eval Kit, Analog Output

