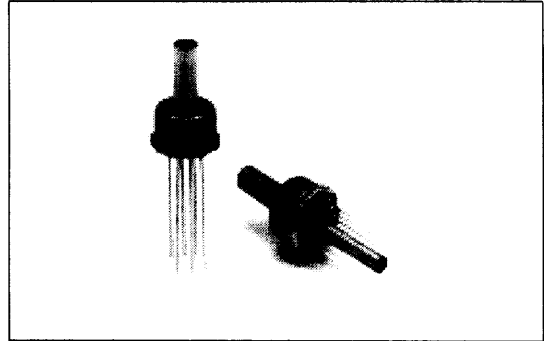


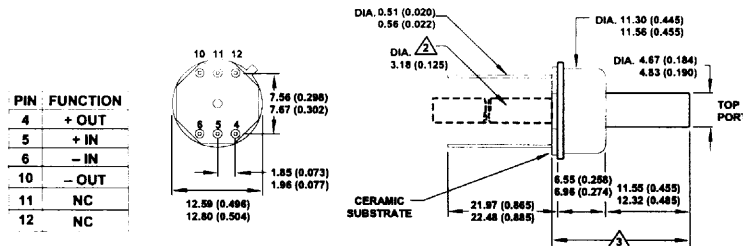
NovaSensor® NPH Series Solid State Pressure Sensor (Low Pressure)



Description

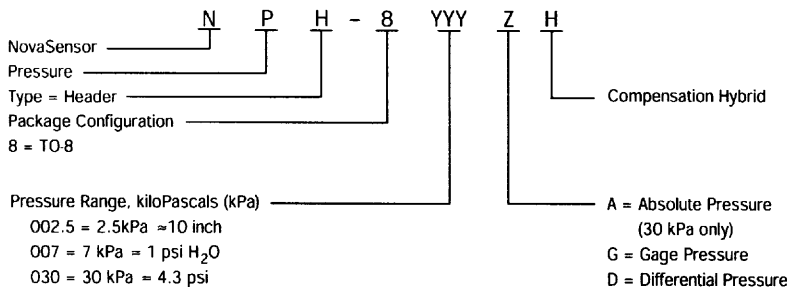
The NPH sensor incorporates a micromachined and ion-implanted piezoresistive silicon sensor die into a metal can package that is PC board mountable. This low pressure sensor is available in the 2.5 kPa (10 inch of water), 7 kPa (1 psi) and 30 kPa (4.3 psi) pressure ranges. All sensors use the SenStable technology that enables the NPH sensor to have excellent output stability. The offset is calibrated and the output is temperature compensated from 0°C to 70°C.

Package Dimensions



- Notes:
- All dimensions in millimeters (inches).
 - Backside differential tube is 17.145 ± 0.254 (0.675 ± 0.010) long, measured from back of header to tip, not from backplane of ceramic to tip.
 - Length is 19.33 - 0.635/+0.889 (0.761 - 0.025/+0.035) for gage type and 19.33 - 0.635/+1.40 (0.761 - 0.025/+0.055) for differential type.
 - Do not reverse power polarity!

Ordering Information



Applications

- Process Control, P-to-I Converters
- Pneumatic Control Systems
- HVAC Controls
- Biomedical: Infusion Pumps, Sphygmomanometers, Respirators
- Altimeters, Barometers, Cabin Pressure Sensors

Features

- Solid State, High Reliability
- Temperature Compensated
- 10 inch, 1 psi and 5 psi pressure ranges
- PC Board Mount
- Small Size

Operating Characteristics

PARAMETER	VALUE	UNITS	NOTES					
GENERAL								
Pressure Range	2.5 7 30	kPa kPa kPa	≈ 0-10" H2O ≈ 0-1 psi ≈ 0-5 psi					
Maximum Pressure	5x		rated pressure ⁽⁸⁾					
ELECTRICAL @ 25°C (77°F) unless otherwise stated								
Input Excitation	1.5	mA	2mA max.					
Insulation Resistance	10 ⁷	Ω	@ 50 V _{DC}					
Input Impedance (10", 1PSI)	3,200	Ω	± 25%					
Input Impedance (30kPa)	4,000	Ω	± 20%					
Output Impedance	5,000	Ω	± 20%					
Bridge Impedance	5,000	Ω	± 20%					
ENVIRONMENTAL								
Temperature Range Operating ⁽⁹⁾	-40 to +125	°C	-40° to +257°F					
Compensation Range	0 to +70	°C	+32° to +158°F					
Vibration	10	g _{RMS}	20 to 2000Hz					
Shock	100	g	11 milliseconds					
Life (Dynamic Pressure Cycle)	1 x 10 ⁶	cycles						
MECHANICAL								
Weight	<5	grams	<0.2 oz.					
Media Compatibility	Noncorrosive gases and dry air							
Wetted Materials	Top Port:	Nickel, gold plated Kovar, silicone gel, gold wire, RTV, silicon & glass.						
	Bottom Port:	Gold plated Kovar, silicon, glass and RTV. ⁽¹⁰⁾						
PERFORMANCE⁽⁷⁾								
COMPENSATED⁽¹⁾								
		2.5 kPa	7 & 30 kPa					
PARAMETER	UNITS	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	NOTES
Offset	mV	-8	± 2	8	-4	± 2	4	
Full Scale Output								
2.5 kPa	mV	25	50	90	50	75	150	2
7 kPa	mV				75	100	125	2
30 kPa	mV							2
Linearity	%FSO	-1.0	0.1	1.0	-0.25	0.05	0.25	3
Hysteresis and Repeatability	%FSO	-0.2	0.05	0.2	-0.2	0.05	0.2	
Thermal Accuracy of Offset	%FSO	-3	0.5	3	-2	0.5	2	4
Thermal Accuracy of FSO	%FSO	-3	-1	3	-1.5	-0.5	1.5	4
Thermal Hysteresis	%FSO	-0.75	±0.5	0.75	-0.5	±0.2	0.5	5
Short-Term Stability of Offset	μV/V		±25			±25		6, 11

Notes:

- Performance with offset, thermal accuracy of offset, and thermal accuracy of FSO compensation resistors.
- FSO measured with 1.5mA input excitation.
- Best fit straight line.
- 0 to +70°C with reference to 25°C
- 0 to +70°C
- Normalized offset/bridge voltage — one minute.
- All values measured at 25°C and at 1.5mA, unless otherwise noted.
- Reduced performance outside compensation range.
- Backside differential tube is nickel.
- Top side pressure.
- Typical specifications are for reference only; absolute values may vary.

Sales Terms: NovaSensor standard sales terms apply. Prices and specifications are subject to change without notice. Prior to design-in, consult NovaSensor on product availability.

Warranty: NovaSensor warrants its products against defects in material and workmanship for 12 months from date of shipment. Products not subjected to misuse will be repaired or replaced. THE FOREGOING IS IN LIEU OF ANY OTHER EXPRESSED OR IMPLIED WARRANTIES. NovaSensor reserves the right to make changes to any product herein and assumes no liability arising out of the application or use of any product or circuit described or referenced herein.

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