

Bulletin 2000-91

Model 2000

Bonded Strain Gage Oceanographic Pressure Transducer

*Completely Submersible,
Highly Accurate Pressure Sensor*



Features:

- Entirely welded 17-4 PH stainless steel pressure media cavity.
- 20-36 Vdc unregulated excitation.
- DC isolation from signal output to excitation.
- Output short circuit protected.
- Accessible zero balance and span controls.
- Rigid-edge-supported diaphragm sensing element with four active foil strain gages thermal-epoxy-bonded to controlled stress zones. Ultra-low hysteresis and non-repeatability error are primary features of design.

Options:

- Internal shunt.
- Special electrical connections and cables.

Pressure Ranges:

PSIS	BAR
0-100	0-689
0-150	0-10.3
0-200	0-13.8
0-250	0-17.2
0-300	0-20.7
0-400	0-27.6
0-500	0-34.5
0-750	0-51.7
0-1000	0-68.9
0-1500	0-103
0-2000	0-138
0-2500	0-172
0-3000	0-207
0-5000	0-345
0-7500	0-517
0-10,000	0-689

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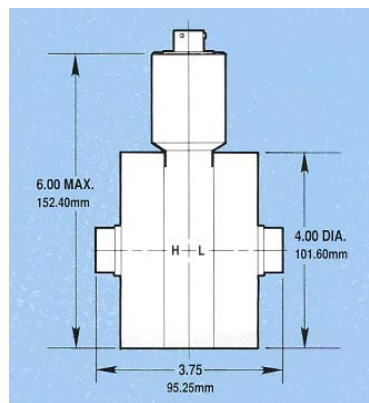
Bonded Strain Gage Pressure Transducer

Specifications:

Pressure Ranges	0-100 thru 0-10,000 PSI corresponding to an interval between 225 and 22,400 feet of sea water (68 and 6788 meters).			
Pressure Media	Sea water exposed to 17 -4PH stainless steel. Other media cavity and case materials available upon request.			
Full Scale Output	5.000 ±0.050 Vdc for a 50k ohm load or greater.			
Accuracy	Accuracy at any single temperature including linearity, hysteresis, and repeatability via RSS method within ±0.20% FSO.			
Resolution	Infinite.			
Natural Frequency	Range	Frequency (kHz)	Range (PSI)	Frequency (kHz)
	0-100	8	0-1000	39
	0-150	11	0-1500	48
	0-200	13	0-2000	50
	0-250	14	0-2500	62
	0-300	15	0-3000	68
	0-400	20	0-5000	107
	0-500	25	0-7500	132
	0-750	31	0-10,000	152
Proof Pressure	Application of 3 times FS pressure will not cause any change in performance characteristics.			
Burst Pressure	Greater than 4.5 times FS pressure.			
External Case Pressure	15,000 PSI maximum.			
Compensated Temperature Range	-30°F to + 170°F (-34°C to +77°C).			
Operating Temperature Range	-65°F to +200°F (-54°C to +93°C).			
Thermal Sensitivity Shift	Less than ±0.005% FSO per °F over compensated temperature range (±0.009% FSO per °C).			
Thermal Zero Shift	Less than ±0.010% FSO per °F over compensated temperature range. (±0.018% FSO per °C).			
Excitation	20 to 36 volts dc unregulated. Reverse polarity protected. ±100 volts 10 microsecond spikes will not cause permanent damage.			

Specifications:

Triaxial Mechanical Shock	100 G's applied for 11 milliseconds will not cause change in performance characteristics.
Excitation	20 to 36 Vdc unregulated. Reverse polarity protected.
Current Drain	20 mAdc typical.
Signal Conditioning	Integrated circuit DC isolated voltage regulator and DC amplifier providing high level-low output impedance signal electrically isolated from power source.
Insulation Resistance	Greater than 1000 megohms at 50 Vdc between all terminals in parallel and case at +70°F (+21°C).
DC Isolation	Greater than 1000 megohms at 50 Vdc from excitation to signal output leads at +70°F (+21°C).
Pressure Fitting	½ NPT female. Options available.
Electrical Receptacle	Submersible bulkhead connector receptacle type XSJ-5BCR with type XSJ-5CCP cable connector plug and 2 ft. cable pigtail. (Right angle CCP cable connector and special cable lengths available as options). Standard wiring: Excitation +1, -3; Signal +4, -5; No Connection 2.
Weight	Approximately 45 ounces (1.3 Kg).



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