

Bulletin 2403-91

Model 2403

Bonded Strain Gage Pressure Transducer

0-5 Vdc Isolated Output Signal



Features:

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

Options:

- Pressure fitting per MS33656-4, AE F250-C[®] or Cajon 4 VCR[®] internal or external thread.
- Internal shunt.
- Compensation available from -65°F to +250°F (-54°C to +121°C).
- Alternate pressure media cavity materials.
- EMI input/output filtering.
- Special electrical receptacles.

Pressure Ranges:

PSIA or PSIS	BAR
0-50	0-3.45
0-100	0-6.89
0-150	0-10.3
0-200	0-13.8
0-250	0-17.2
0-300	0-20.7
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
0-3500	0-241
0-4000	0-276
0-5000	0-345
0-7500	0-517
0-10,000	0-689
0-15,000	0-1033
0-20,000	0-1378

(PSIS has 14.7 PSIA Ref.)

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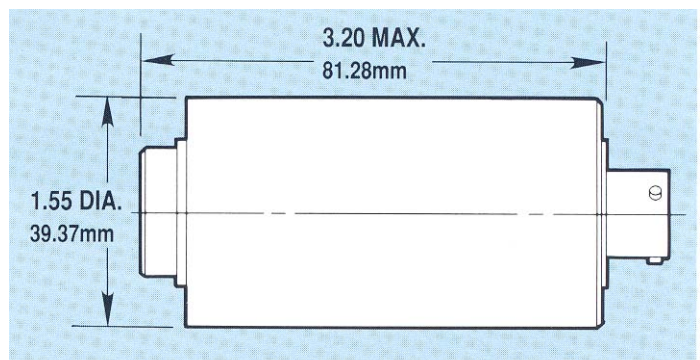
Bonded Strain Gage Pressure Transducer

Specifications:

Measured Fluids	All fluids compatible with 17-4 PH stainless steel.			
Full Scale Output	5.000 ±0.050 volts dc for a 50k ohm load or greater.			
Zero Balance	0.000 ±0.050 Vdc at +70°F (+21°C).			
End Point Linearity	Within ±0.25% FSO for 0-50 thru 0-500 PSI ranges. Within ±0.15% FSO for 0-750 thru 0-20,000 PSI ranges.			
Hysteresis	Within 0.10% FSO.			
Repeatability	Within 0.10% FSO.			
Resolution	Infinite.			
Natural Frequency	RANGE	FREQUENCY (kHz)	RANGE (PSI)	FREQUENCY (kHz)
	0-50	9.5	0-1500	48.0
	0-100	13.0	0-2000	50.0
	0-150	11.0	0-2500	62.0
	0-200	13.0	0-3000	68.0
	0-250	14.0	0-5000	107.0
	0-300	15.0	0-7500	132.0
	0-500	25.0	0-10,000	152.0
	0-750	31.0	0-15,000	259.0
	0-1000	39.0	0-20,000	300.0
Proof Pressure Rating	0-50 thru 0-300 PSI ranges: 4.0 times range. 0-500 thru 0-20k PSI ranges: 2.0 times. Application of proof pressure will not cause any change in performance characteristics.			
Burst Pressure Rating	0-50 thru 0-300 PSI ranges: 6.0 times range. 0-500 thru 0-20k PSI ranges: 3.0 times range.			
Compensated Temperature Range	-30°F to +170°F (-34°C to +77°C). Options available.			
Operating Temperature Range	-65°F to +250°F (-54°C to +121°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).			
Triaxial Mechanical Shock	30 G's applied for 11 millisecond will not change performance characteristics.			
Triaxial Acceleration Error	Less than ±0.005% FSO/G.			
Triaxial Vibration Error	Less than ±0.005% FSO/G. 30G peak, 50 to 2000 Hz or 1.0 inch DA from 5 to 50 Hz.			

Specifications:

Excitation	20 to 36 volts dc unregulated. Reverse polarity protected. ±100 volt 10 microsecond spikes will not cause permanent damage		
Current Drain	35 mAdc typical.		
Output Impedance	25 ohms typical.		
Output Noise	Less than 15 millivolts peak to peak at less than 300 kHz.		
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 terminals at +70°F (+21°C).		
Pressure Connection	0-50 thru 0-10,000 PSI ranges... 7/16-20 internal thread per MS33649-4 pressure fitting. 0-15,000 thru 0-20,000 PSI ranges AE F250-C [®] , 9/16-18 UNF thread. Options available.		
Pressure Cavity	Range (PSI)	Volume (in ³)	Volume (ml)
Volume (excluding pressure fitting)	0-50 thru 0-750	0.05	0.82
	0-1000 thru 0-5000	0.025	0.41
	0-7500 thru 0-20,000	0.015	0.25
Electrical Receptacle	Stainless steel hermetic receptacle to mate with MS3116-1 0-6S. Standard wiring: Excitation +A, -D; Signal +B, -C; No Connection E, F. Options available.		
Enclosure	Entirely welded and hermetically sealed stainless steel.		
Weight	Approximately 10.25 ounces (287 g).		



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