SEN-1000 SUBMINIATURE DOWNHOLE PRESSURE TRANSDUCER OR TRANSMITTER

- Silicon-on-Sapphire or 17-4PH Diaphragm
- Fast response time <100 microseconds
- Infinite cycle life @ rated FSPR
- Abrasion-proof diaphragm
- All Stainless Steel 316 or Inconel 625 construction
- Shock and vibration proof design
- No signal decay
- No hysteresis

OPTIONAL

- Media Temperature Measurement
- Millivolt Output
- 4-20 mA Output
- 0-5 VDC, 0-10 VDC Outputs
- Custom configurations available
- Pressure Ranges from 3K to 30K PSI

APPLICATIONS

- Livewire Logging
- Cementing
- Fracturing
- Measurement While Drilling
- Logging
- Wellhead Measurements
- Logging While Drilling

11164 Young River Ave, Fountain Valley, CA 92708 (714) 799-1616 * (714) 799-4116 Fax
www.sensonetics.com sales@sensonetics.com

SEN-1000 SUBMINIATURE DOWNHOLE PRESSURE TRANSDUCER OR TRANSMITTER

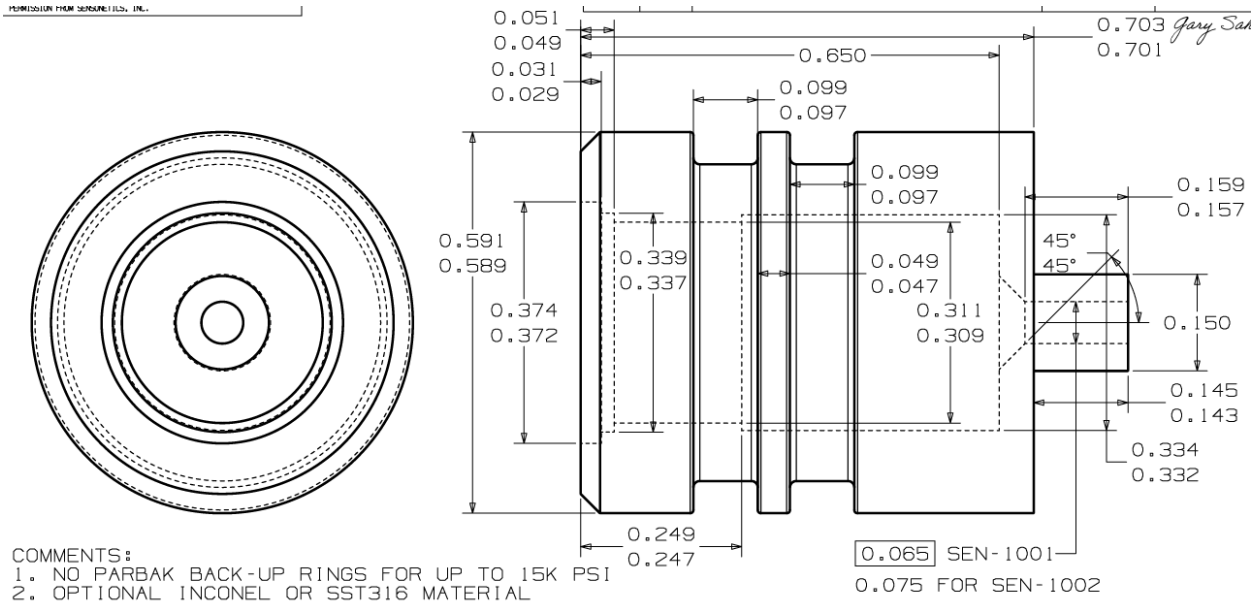
State-of-the-art Silicon-on-Sapphire pressure transducers and transmitters have a proven track record in the aerospace, flight test, plastics and downhole markets. Piezoresistive strain gauges grown onto a single-crystal radiation-hardened structure have negligible hysteresis. Silicon-on-Sapphire is a perfect electrical insulator that does not require silicon diode isolation junctions found on diffused semiconductor pressure transducers and transmitters. Silicon-on-Sapphire is chemically inert allowing compatibility with virtually all measured media.

A Silicon-on-Sapphire pressure transducer offers a significant improvement in performance over diffused semiconductor technologies at competitive prices. These pressure transducer and pressure transmitter sensor products are perfect for high volume OEM pressure sensing applications on gas pipelines, downhole drilling and applications where a highly accurate pressure and temperature measurements are required in tough environments.

A Silicon-on-Sapphire pressure sensor provides a total error of ± 0.1% FSO with effectively no hysteresis. Long term drift of less than ±1% FSO and proof pressures up to 5X the rated line pressure are additional features of these versatile transducers.

Electron beam welded stainless steel construction compliant with MRO-175 for corrosive service and rated for depths of 6000 meters (20,000 ft) are standard features.

SEN-1000 WITHOUT BACK-UP O-RINGS AND mV OUTPUT:



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PRODUCT SPECIFICATIONS

OUTPUT SIGNAL FOR TRANSDUCER: (final test data is sent with each device)	1-6 mV/V ± 10% (diaphragm and pressure dependent)
OUTPUT SIGNAL FOR TRANSMITTER: (board is attached with flying leads)	4-20 mA 0-5 VDC 0-10 VDC
ZERO OFFSET FOR mV OUTPUT TRANSDUCER:	± 5% FSO
LINEARITY ERROR:	< 0.20% FS
HYSTERESIS:	< 0.10% FS
LONG-TERM STABILITY:	<0.20% FS/Year
COMPENSATED TEMPERATURE RANGE:	-40°F to +390°F for 17-4PH Diaphragm -65°F to +650°F for SOS Diaphragm
TEMPERATURE EFFECT ON ZERO:	± 0.02% FS/°F
TEMPERATURE EFFECT ON SPAN:	± 0.015% FS/°F
INPUT VOLTAGE FOR mV TRANSDUCER:	5-12 VDC Typical (15 VDC Maximum for 17-4PH)
INPUT VOLTAGE FOR TRANSMITTER: (transmitter board is attached with flying leads)	14-24 VDC for 4-20 mA 14-36 VDC for 0-5 V (12 V battery option available) 14-36 VDC for 0-10 V (12 V battery option available)
INSULATION RESISTANCE:	>500 MEGAOHMS @ 250 VDC
DIELECTRIC STRENGTH:	500 VAC. 50-60 HZ, 5 mA MAX. 1 Min.
REVERSE POLARITY:	Current Limiting
PROOF PRESSURE:	150% of Rated Range-Maximum 31,900 PSI
BURST PRESSURE:	200% of Rated Range-Maximum 34,809 PSI
OPERATING LIFE:	100 Million Cycles
EMI/RFI (If offered):	100 Volts/Meter up to 1.0 GHz
WETTED PARTS:	Sapphire or 17-4PH
ENCLOSURE:	SS316 or Inconel
OPERATING TEMPERATURE RANGE:	-55°F to +410°F for 17-4PH Diaphragm -65°F to +650°F for SOS Diaphragm
VIBRATION:	10-200 Hz @ 20 G's RMS
SHOCK:	500 G's for 1 milliseconds
TOLERANCE CAUSED BY SHOCK, VIBRATION, ACCEL:	<0.01% FS/G

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ORDERING GUIDE

SEN - ** - *** - * - ** - ** - ***

MODEL: _____
1 = SUBMINIATURE

1,2 = PULL THREADS/0=NONE: _____

OUTPUT: _____
0 = 1-6 mV/V FOR TRANSDUCER (10 VDC TYP INPUT)
1 = 0-5 VDC FOR TRANSMITTER (14-36 VDC INPUT)
2 = 4-20 mA VDC FOR TRANSMITTER (14-24 VDC INPUT)
3 = 0-10 VDC FOR TRANSMITTER (14-36 VDC INPUT)

OUTPUT: _____
1 = PRESSURE ONLY
2 = PRESSURE AND TEMPERATURE
3 = TEMPERATURE ONLY

PRESSURE RANGE: _____
AVAILABLE RANGES – 5C PSI TO 30M PSI
(EXAMPLES – 5C = 500 PSI; 10M = 10000 PSI; 30M = 30000 PSI)

REFERENCE PRESSURE: _____
A = ABSOLUTE G = GAUGE

PRESSURE FITTING: _____
F1 = DUAL O-RING
F2 = ADD BACKUP PARBAK O-RINGS

ELECTRICAL CONNECTION: _____
FL = FLYING LEADS

SPECIAL: _____
S = SPECIAL CONFIGURATION OR CUSTOMER REQUIREMENT

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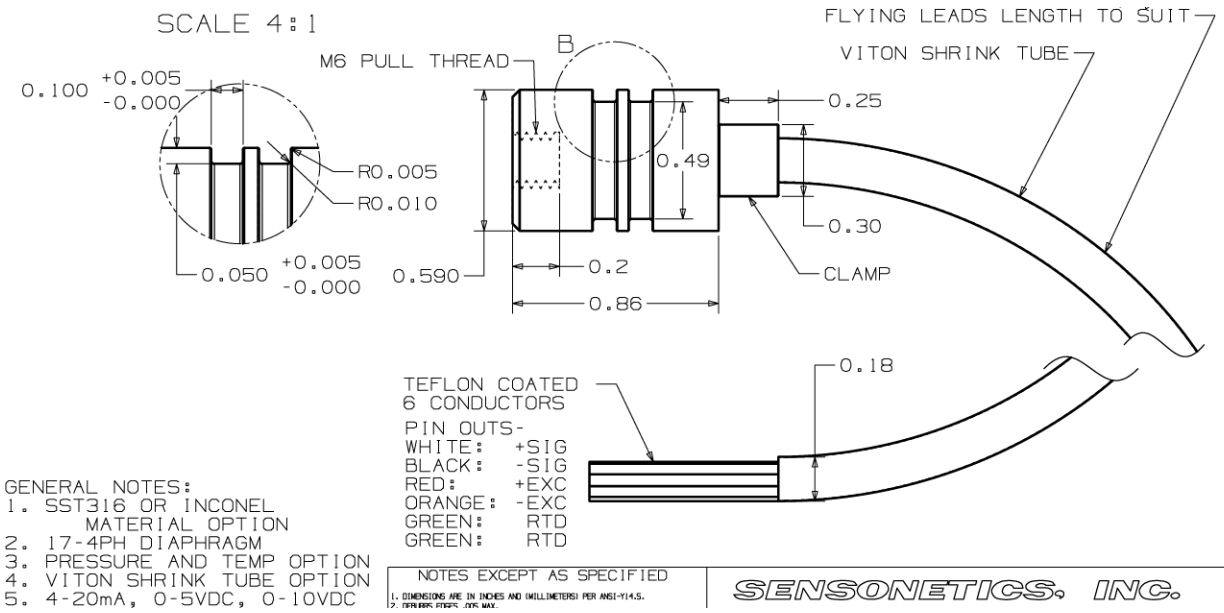
SEN-1000 WITH PULL THREADS AND mV OUTPUT:



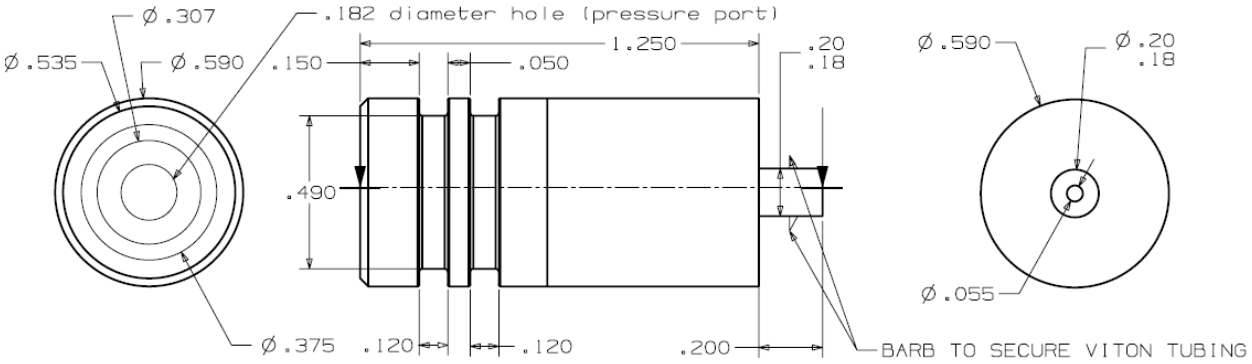
GENERAL NOTES:
1. SST316 OR INCONEL MATERIAL OPTION
2. 17-4PH DIAPHRAGM
3. PRESSURE AND TEMP OPTION
4. VITON SHRINK TUBE OPTION
5. 4-20mA, 0-5VDC, 0-10VDC

NOTES EXCEPT AS SPECIFIED
1. DIMENSIONS ARE IN INCHES AND (MILLIMETERS) PER ANSI-Y14.5.
2. DEBURR EDGES .005 MAX.

SENSONETICS, INC.

SEN-1000 WITH BACK-UP O-RINGS AND mV OUTPUT:

GENERAL NOTES:
1. #011 Viton o-rings with Parbak backup: up to 392°F temperature applications.
2. Optional material type for body material replace 316SST with Inconel 625 for sour gas applications.
3. Diaphragm material is 17-4PH.
4. M23053/13-001-0 Viton shrink tubing for flying lead protection. 98" length X 0.040 wall after shrinkage of 3/16" tube.



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