SOI Pressure Transducers

DESCRIPTION

AMETEK has extensive experience supplying pressure transducers for aircraft fuel, air, hydraulic and lube oil systems. Available in absolute, gage or differential pressure configurations, AMETEK's Silicon-on-Insulator (SOI) transducers represent AMETEK's latest accomplishment. Compact, lightweight and employing an all welded construction, AMETEK's SOI transducers are ideal for high shock and high vibration environments. The electrical output can be configured as a passive unamplified signal (100 mV typical), or amplified to provide either a voltage signal (0.5 to 5.5 VDC typical) or current signal (4-20 mA) output. The architecture of the signal conditioning circuitry makes it possible to offer other electrical outputs, including digital.

PROPRIETARY Field-Shield™ ELIMINATES DRIFT

AMETEK's SOI technology and proprietary Field-Shield™ design yields high accuracy with unmatched reliability and stability in the most demanding environments. AMETEK's unique Field-Shield™ eliminates the main cause of long-term instability associated with piezoresistive pressure transducers, especially at elevated temperatures. All competing transducer technologies will creep significantly with use and time, causing inaccuracies and a loss of optimum system performance. AMETEK eliminates the root cause of this drift and is able to provide SOI transducers that result in unmatched performance with greatly reduced long-term operating and maintenance costs.

AMETEK's SOI transducers have been tested to, and meet the most stringent EMC and HIRF requirements of MIL-STD-461F, DO-160E and D6-16050-5. Fully compatible with many wet media, these transducers can be adapted to have any pressure or electrical connection. Independent dual and 3 channel transducers are also available to provide pressure sensor redundancy and outputs. Additionally, temperature sensing capabilities can be packaged within the same transducer.

BENEFITS OF SOI TRANSDUCER TECHNOLOGY

AMETEK's proprietary Field-Shield™ design yields unsurpassed stability, along with protection against electromagnetic interference, resulting in unmatched performance and reliability. The Silicon-on-Insulator technology allows for stable and accurate operations at elevated media temperatures (>400ºF/205ºC). Pressure fittings and connectors are easily adaptable to any installation, thus greatly reducing development lead time. Other sensors, such as temperature, can readily be packaged together to reduce overall system cost and weight.

FEATURES

- ✓ *Proprietary Field-Shield™*
- ✓ *Extremely accurate over a wide temperature range*
- ✓ *Low hysteresis, excellent linearity, repeatability, and stability*
- ✓ *Unamplified and amplified output available*
- ✓ *Dual redundant output and differential measurements available*
- ✓ *Certified to DO-160D*
- ✓ *Technology easily customized for application specific requirements*
- ✓ *User selected pressure port and connector*

AMETEK®
AEROSPACE & DEFENSE

SOI Pressure Transducers

SPECIFICATIONS

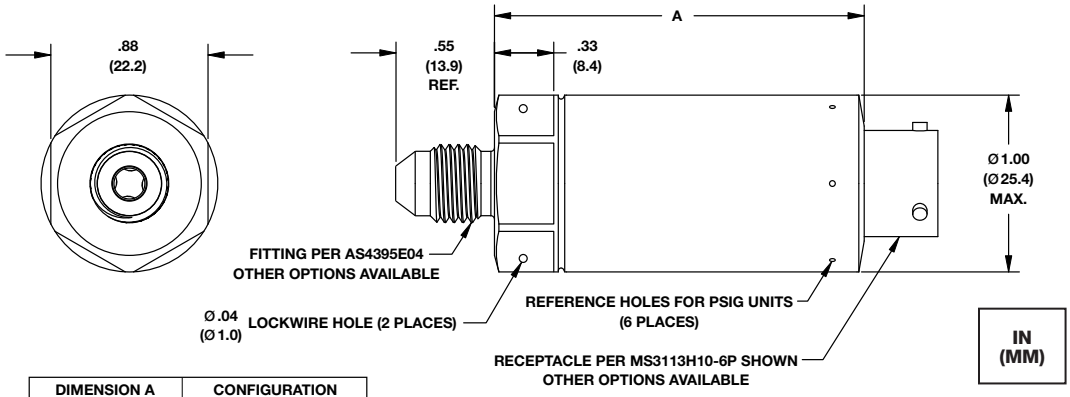
PERFORMANCE CHARACTERISTICS[1]	Unamplified Single Output	Amplified Single Output
Pressure Range	10-5000 psi	
Reference	Absolute, Sealed Gage, True Gage, Differential	
Absolute Error (including non-linearity, hysteresis, repeatability and thermal effects)	<±2.0% FS	≤±1.0% FS
Proof Pressure	2X or 7500 psi (whichever is less)	
Burst Pressure	3X or 7500 psi (whichever is less)	

ELECTRICAL CHARACTERISTICS		
Excitation Voltage	10 VDC nominal (regulated)	12-40 VDC
Full Scale Output	100 mV nominal	0 to 5 VDC (differential or single ended) .5 to 5.5 VDC (differential or single ended) 1 to 6 VDC (differential or single ended) 0 to 10 VDC (differential or single ended) 1 to 11 VDC (differential or single ended)
Input Impedance	1200 Ω minimum	N/A
Output Impedance	2500 Ω maximum	<100 Ω
Insulation Resistance	100 MΩ at 500 VDC	100 MΩ at 500 VDC
Dielectric Withstanding	500 VAC for 60 sec (per MIL-STD-202)	500 VAC for 60 sec (per MIL-STD-202)

ENVIRONMENTAL CHARACTERISTICS[1]		
Compensated Temperature Range	-65°F to +300°F (-54°C to +125°C)	-65°F to +257°F (-54°C to +125°C)
Shock	20G at 11 ms	20G at 11 ms
Vibration	$20G_{pk}$ sinusoidal from 20 to 2000 Hz	–

PHYSICAL CHARACTERISTICS[1]	
Pressure Port	AS4395E04 (7/16-20 UNJF-3A)
Electrical Connection	Per MS3113H8-4P Per MS3113H10-6P 4-wire shielded cable
Qualification	RTCA/DO-160D MIL-STD-461F MIL-STD-810 D6-16050-5 TSO C45a (Pending) TSO C47 (Pending)

Note 1: *The Performance, Environmental and Physical Characteristics represent the minimum requirements. Customization to meet specific needs is available. Please consult factory.*



DIMENSION A	CONFIGURATION
2.25 (57.2) MAX.	Amplified
1.85 (47.0) MAX.	Unamplified

DIMENSIONS

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