

SOI Pressure Transducers

Overview

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 Draft

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 (>400°F/205°C). 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*

SOI Pressure Transducers

Specifications

Performance Characteristics:	Unamplified Single Output Amplified Single Output
Pressure Range:	10-5000 psi
Reference:	Absolute, Sealed Gage, True Gage, Differential
Absolute Error[1]:	<±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
Input Impedance:	1200 V minimum N/A
Output Impedance:	2500 V maximum <100 V
Insulation Resistance:	100 MV at 500 VDC 100 MV 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

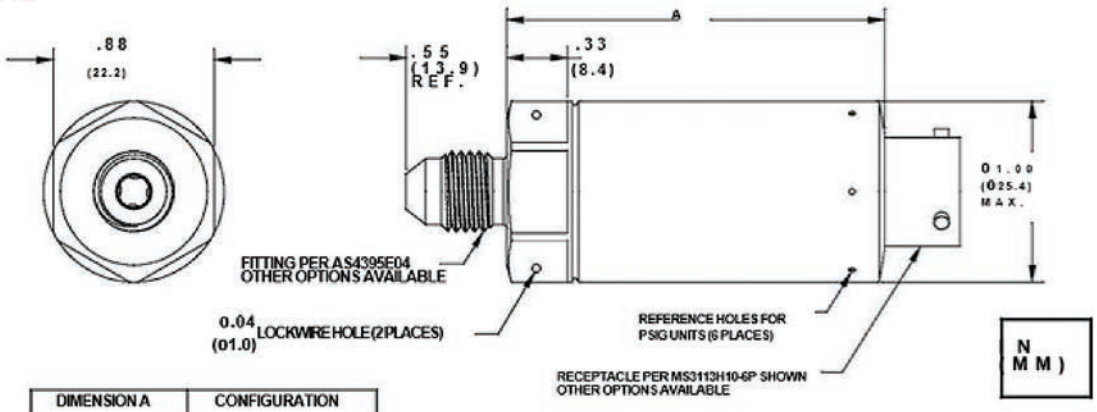
Compensated Temp Range:	-65°F to +300°F (-54°C to +125°C) -65°F to +257°F (-54°C to +125°C)
Shock:	20G at 11 ms 20G at 11 ms
Vibration:	20Gpk sinusoidal from 20 to 2000 Hz –

Physical Characteristics

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

1. including non-linearity, hysteresis, repeatability and thermal effects.

Dimensions



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

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