

Series ST1300

Space Rated Pressure Sensors

ST1300



Description

The ST1300 series is intended for use in orbital environments when repair and replacement is difficult or impossible and the transducer is required to perform over the life of the mission.

The space environment is harsh and mission success can be jeopardized due to the various types of radiation-induced damage to semiconductors that often occurs in high earth orbit. The ST1300 series meets this challenge by incorporating into its design semiconductors which have been qualified by DSCC to be “Rad Hard” and compliant to the Grade 1 requirements of EEE-INST-002. These qualified components minimize the potential for radiation damage to the transducer in high earth orbit.

High reliability space rated transducer designs require the highest standards of workmanship. Stellar Technology Inc. maintains the “as designed” reliability by having electrical assemblies manufactured to NASA 8739.3. The required levels of reliability assurance are achieved through our years of space flight manufacturing experience on various space programs.

The ST1300 series offers rugged, reliable bonded foil strain gage technology and “state of the art” circuit design. The unit provides low sensitivity to shock and vibration, infinite resolution and high response rates.

The specifications listed on the back are a brief overview of the more important parameters of interest. Please contact the sales office closest to you for further information on the options available.

Standard Features

- Stainless Steel Construction
- Small Size
- Hermetically Sealed
- RAD HARD per DSCC
- Grade 1 Electronics per EEE-INST-002
- Traceability to NIST

Optional Features

- Alternate Materials of Construction
- Special Ranges
- Alternative Pressure Ports
- Electronics can be downgraded
- 72 Vdc Bus Compatible

Your “Application-SolutionSM” Source

Series ST1300 Specifications

Baseline Configuration Specs Represented.
Modifications Encouraged - See Below

Performance

Static Accuracy

Linearity: $\pm 0.20\%$ FSO.
Hysteresis: $\pm 0.20\%$ FSO.
Repeatability: $\pm 0.10\%$ FSO.

Resolution

Infinite.

Thermal Zero Shift

$< \pm 0.005\%$ FSO/ $^{\circ}$ F.

Thermal Span Shift

$< \pm 0.005\%$ FSO/ $^{\circ}$ F.

Insulation Resistance

> 100 megohms at 50 Vdc at 70 $^{\circ}$ F.

Zero Balance

$\pm 1\%$ FSO at 70 $^{\circ}$ F.

Full Scale Output

5.00 Vdc $\pm 1\%$ FSO at 70 $^{\circ}$ F.

Mechanical Characteristics

Standard Ranges

0 - 15, 25, 30, 50, 75, 100, 200, 500,
750, 1000, 1500, 2000, 3000, 5000,
7500, 10000 PSIA .

Proof Pressure

1.5 times range or 500 PSI,
whichever is greater.

Burst Pressure

3.0 times range or 1500 PSI,
whichever is greater.

Operating Media

Fluids and gases compatible with
stainless steel. Inconel and other
materials optional.

Enclosure

Body of stainless steel.

Pressure Fitting

Stainless Steel/Titanium weld tubes and
MS type ports available.

Vibration and Shock

Random > 25 Grms.
Pyroshock > 5000 G.

Weight

Approximately 10 oz.

Modifications

We realize transducer applications vary greatly and as such our designs are flexible. Choice of pressure port, electrical termination, material compatibility and performance characteristics are a few of the many options available. Specifications on this datasheet represent the standard configuration only. Product and company names listed are trademarks of their respective companies. Specifications subject to change without notice. See accessory listing for additional choices.

Electrical Characteristics

Excitation

16-34 Vdc unregulated.

Electronics Reliability Classification

Class S / Grade 1 per MIL-STD-975
and GSFC INST-EEE-002.

DSCC Electronics Radiation Qualification

100K rad TID.

MTBF (MIL-STD-217)

Greater than 1500 years in orbit.

Electrical Protection

- EMI/RFI protected per MIL-STD-461.
- Reverse polarity protected.
- Short circuit protected

Electrical Isolation

Input to output isolation greater than
100 megohms at 50 Vdc at 70 $^{\circ}$ F.

Electrical Termination

Customer specify.

Environmental Characteristics

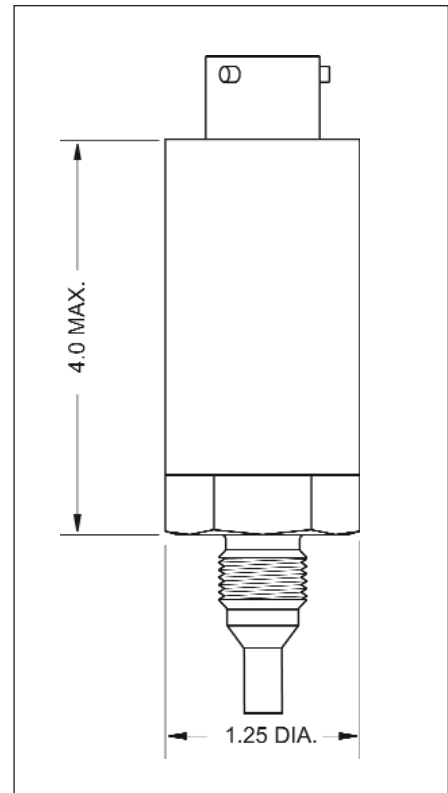
Compensated Temperature Range

-60 $^{\circ}$ F to +200 $^{\circ}$ F.

Operating Temperature Range

-60 $^{\circ}$ F to +200 $^{\circ}$ F.

Dimensions (inches)



Stellar Technology Incorporated is an
ISO 9001:2000
Registered Company

Represented By:



Warranty

Stellar Technology warrants that its product shall be free from defective workmanship and/or material for a twelve month period from the date of shipment, provided that Stellar Technology's obligation hereunder shall be limited to correcting any defective material FOB our factory. No allowance will be made for any expenses incurred for correcting any defective workmanship and/or material without written consent by Stellar Technology. This warranty is in lieu of all other warranties expressed or implied.

Ordering Information

Contact the factory or your Authorized
Stellar Technology, Inc. Representative.

Due to the nature of technology, changes are inevitable. For latest technical specifications, see our website.



Copyright © 2004 Stellar Technology Incorporated • All Rights Reserved
Datasheet P/N: 227278A

237 Commerce Drive • Amherst, NY 14228 • USA
Tel: 716.250.1900 • Fax: 716.250.1909
Email: info@stellartech.com

