



### MODEL 249 PRESSURE TRANSDUCER

- ◆ 0-5 thru 0-100K PSI
- ◆ Compact and lightweight
- ◆ All welded, stainless steel construction
- ◆ Internal shunt calibration
- ◆ Sealed zero and span adjustments

The Model 249 Series from Viatran is a family of robust, high-accuracy pressure transducers. They are designed to provide reliable, repeatable pressure measurements within demanding aerospace and engine testing, as well as fluid power control applications.

#### PERFORMANCE

Full Scale Pressure Ranges	0-5, 15, 25, 50, 100, 200, 300, 500, 1000, 1.5K, 2K, 3K, 5K, 7.5K, 10K, 15K, 20K, 25K, 30K, 40K, 50K, 60K, 75K, 100K PSIA, PSIS, PISG
Accuracy (RSS) (BFSL Non-Linearity, Hysteresis, Repeatability)	0-60K PSI $\leq \pm 0.12\%$ FSO 75K-100K PSI $\leq \pm 0.25\%$ FSO
Full Scale Output (FSO)	5 Vdc
Resolution	Infinite
Compensated Temperature Range	70°F to 170°F (21°C to 76°C)
Operating Temperature Range	-40°F to 185°F (-40°C to 85°C)
Storage Temperature Range	-65°F to 250°F (-54°C to 121°C)
Long Term Stability (%FSO)	$\leq \pm .25\%$ FSO per 6 months
Thermal Effect on Zero	$\leq \pm 1\%$ FSO per 100°F Typical
Thermal Effect on Span	$\leq \pm 1\%$ FSO per 100°F

#### ELECTRICAL

Output Signal	0-5 Vdc
Supply Voltage	9-40 Vdc
Power Supply Regulation	$\leq \pm .01\%$ FSO per volt
Load Impedance	125K Ohms minimum
Circuit Protection	Reverse polarity protected
Voltage Spike Protection	Withstand 1000 volt spike per EN 61000-4-5
Insulation Resistance	< 5 nS to case ground
Response Time	$\leq 4$ millisecond to reach 90% of FSO
Range Calibration Signal	80% FSO $\pm 5\%$ by shorting pins E&F
Calibration Power Supply Voltage	8.5 -28 VDC
Calibration Signal Accuracy	Readings on calibration certificate are within $\pm 0.2\%$ FSO of actual Cal signal output
Bridge Resistance	5K Ohms, nominal
Standard Electrical Connection	Mates with 6 pin, Hermetic, bayonet style, 303 SST weld mount connector

#### Pin Outs

Pin A	+Power
Pin B	-Power
Pin C	+Signal
Pin D	-Signal
Pin E	Calibrate
Pin F	Calibrate



# MODEL 249 Pressure Transducer



## HIGHLY ACCURATE

Design of the Viatran Model 249 Series incorporates three unique sensing technologies, to help achieve maximum transducer output-for-size and precision measurement accuracy.

For ranges 0-5 to 0-150 PSI, a MEMS-based piezoresistive sensing element offers accurate readings with high over-pressure protection. Bonded foil strain gage elements support models in the 200 to 15K PSI range, where MEMS-based designs can be vulnerable to transient spikes.

For ranges over 20K PSI, Viatran has developed its own proprietary “tube” sensor. Constructed of high-strength stainless steel, the sensor ensures high-accuracy and durability, in applications where traditional diaphragm-type sensors can rupture.

All Viatran Model 249 Series pressure transducers are compact and lightweight, for ease of installation within space constrained areas. The incorporation of welded bodies, stainless steel connectors and sealed adjustments ensure protection from contamination.



## MECHANICAL

Pressure Port:	
5-15K	1/4" NPT female
20K-50K	1/4" F250-C high pressure tube
60K-100K	5/16" F312-C150 high pressure tube
Proof Pressure	
5-150 PSI	3X range minimum
151-15K PSI	1.5X range
20K-100K PSI	1.2X range
Burst Pressure	
5-150 PSI	Consult factory
151-15K PSI	5X range or 30K PSI, whichever is less
20K-100K PSI	1.5X range or 125K PSI, whichever is less
Pressure Cavity Volume	
5-150 PSI	0.25 cubic inch
200-15K PSI	0.32 cubic inch
10K-100K PSI	0.10 cubic inch

## MATERIALS OF CONSTRUCTION

Wetted Materials	
5-150 PSI	316, 304 Stainless Steel
200-15K PSI	15-5PH Stainless Steel
20K-100K PSI	13-8 Mo Stainless Steel
Enclosure Material	316L Stainless Steel
Identification	Laser marked on body of unit
Weight	15 oz. nominal

## OPTIONS

BZ	Micro change connector
DG	Improved temperature compensation
DH	Special Range
DK	Special calibration setting
DM	Modified output (i.e., 0-10 Vdc)
DN	Improved accuracy
DQ	Cleaning for oxygen service
EA	Special Calibration run
NH	Customer specific identification
PW	Meter with unit
YA	MS33649-04
YG	MS16142-04
YI	1/8" NPT (F)
YK	1/4" NPT (M)
YM	1/4" F250-C High pressure tube (standard for 20K-50K PSI)
YN	3/8" NPT (F)
YS	5/16" F-375-C High pressure tube
YR	1/2" NPT (F)
YV	MS33649-08

Information is accurate to the best of Viatran's knowledge. We reserve the right to change specifications at any time. Please contact Viatran for specific order inquiries.



## BUILT TO PERFORM

Model 249 is equipped with electronic linearization, a compensation circuit that corrects for non-linearities in the sensor. Surface-mount technology (SMT) allows this complex circuitry to be incorporated into a small package and yield a linearity specification of  $\leq 0.1\%$  FSO (optional to  $\leq 0.05\%$  for  $\leq 15\text{K PSI}$ ).

Encapsulation of PC board surface mount components helps to prevent damage from severe vibration. Zero and span adjustments allow for user recalibration of the pressure transmitters in the field. An internal calibration circuit permits easy two-point calibration without an external pressure source.

Optional performance features of the Viatran Model 249 series include improved accuracy, temperature compensation, special ranging, modified output, and alternate pressure ports.

### APPROVALS

KG CRN (Canadian Registration Number)

### ACCESSORIES

- Mounting Bracket
- Mating electrical assembly
- Digital indicator
- DL Series Dual Line, Analog Input Process Meter

### TYPICAL APPLICATIONS

- Jet Engine Test
- Internal Combustion Engine Test
- Rolling Mills
- Die Casting
- Brake Test
- Injection Molding

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**Your local applications specialist:**



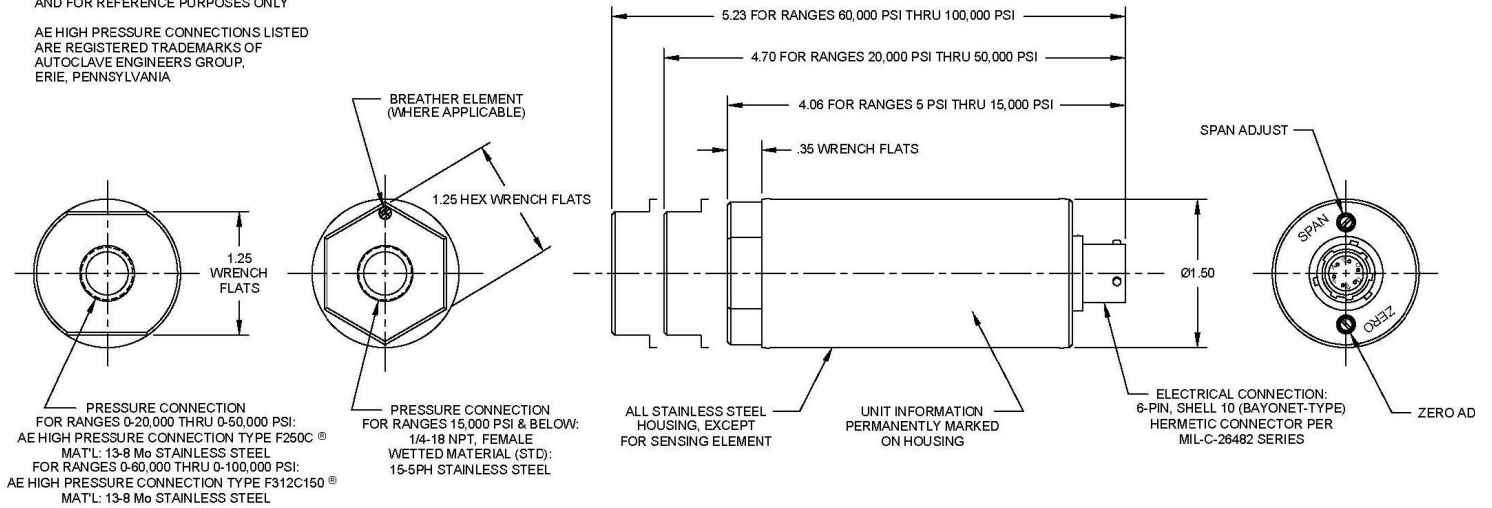
[www.viatran.com](http://www.viatran.com)

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## DIMENSIONAL DATA

ALL DIMENSIONS ARE NOMINAL, IN INCHES AND FOR REFERENCE PURPOSES ONLY

AE HIGH PRESSURE CONNECTIONS LISTED ARE REGISTERED TRADEMARKS OF AUTOCLAVE ENGINEERS GROUP, ERIE, PENNSYLVANIA



## NOTES:



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