

Bonded Element, Stainless Steel Isolated Pressure Transducers



The all new Bonded Element general-purpose industrial pressure transducers were developed for a variety of pressure applications and industries; providing excellent media compatibility with all stainless steel wetted parts. It is the ideal choice for applications where both media compatibility and high cycle life are essential.

The BE transducer features a Bonded Element sensing technology, providing exceptional accuracy, stability, repeatability and temperature performance. This is ideal for OEM applications that need a low cost but highly accurate reading.

The transducers provide an amplified analog output voltage which is directly proportional to the pressure. Several versions are available including two different housing materials (Stainless Steel and Plated CRS). The CRS housing offers a lower cost solution for applications where SS is not required. The pressure port material exposed to the media is 17-4PH stainless steel.

APPLICATIONS

- Industrial Controls
- Pressure Instrumentation
- Hydraulic Systems
- Refrigeration Systems
- HVAC Systems
- Pumps and Compressors

FEATURES

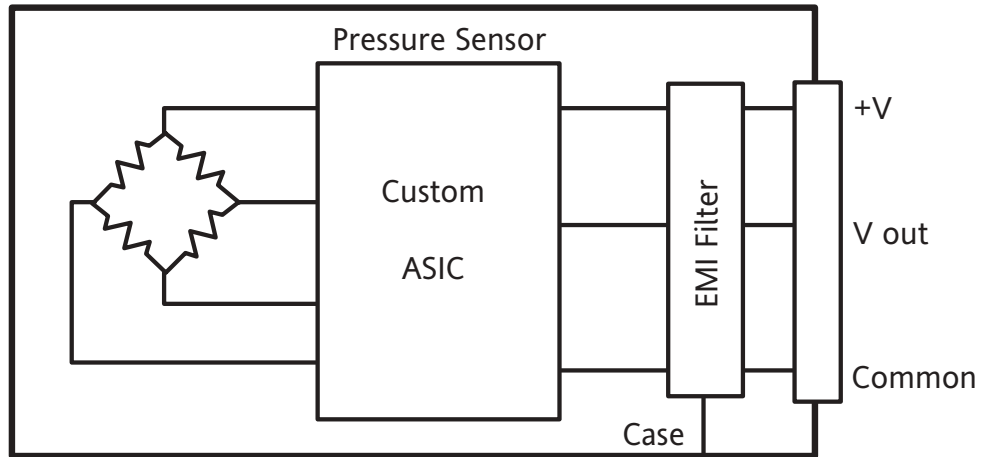
- Amplified Outputs
- High Cycle Life (>20M Cycles)
- Reliable Semiconductor Technology
- Stainless Steel Isolated Pressure Port
- ESD, EMI and RFI Immunity
- Reverse Voltage Protection
- 0.5 – 4.5V Ratio-metric Outputs



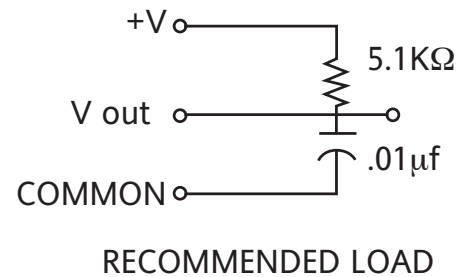
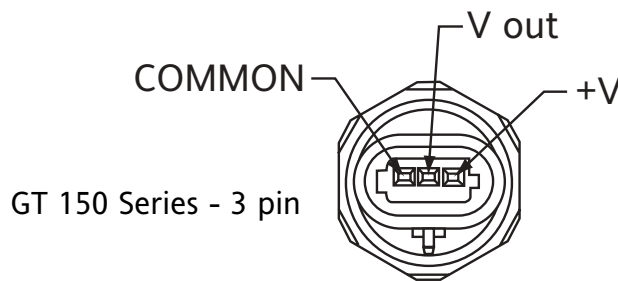
**Invensys**
Sensor Systems

Bonded Element, Stainless Steel Isolated Pressure Transducers

BLOCK DIAGRAM



ELECTRICAL CONNECTIONS



RATINGS

Supply Voltage (Vs)	4.75Vdc to 5.25Vdc
Over Voltage	16V
Reverse Polarity	-16V
Consumption Current	10mA (max)
Output Current-sink	2mA (max)
Output Current-source	2mA (max)

ENVIRONMENTAL SPECIFICATIONS

Temperature Ranges		Electromagnetic Interference	Immunity >100V/m
Compensated	-20°C to +85°C		1KHz to 1000MHz
Operating	-40°C to +125°C		
Storage	-40°C to +125°C	ESD	8kV@pins, 15kV@case
Vibration	10G@20-2000Hz	Salt Spray	168 Hrs
Shock	50G for 11mS	Life	>20 million cycles

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SPECIFICATION NOTES

Note 1: Reference Conditions (unless otherwise noted): Supply voltage, $V_S=5.0 \pm 0.01$ Vdc; $T_a=25^\circ\text{C}$. Output is ratiometric within the supply voltage range (V_S).

Note 2: Span is the algebraic difference between the output voltage at the specified pressure and the output at zero pressure. Span is ratiometric to the supply voltage.

Note 3: Accuracy is the combined errors from offset and span calibration, linearity, pressure hysteresis, and temperature effects.

Linearity is the measured deviation based on a straight line.

Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.

Calibration errors include the deviation of offset and full scale from nominal values.

Note 4: Response time for a 0 psi to full scale pressure step change, 10% to 90% rise time.

Note 5: If burst pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.

Note 6: The maximum pressure that can be applied without changing the transducer's performance or accuracy.

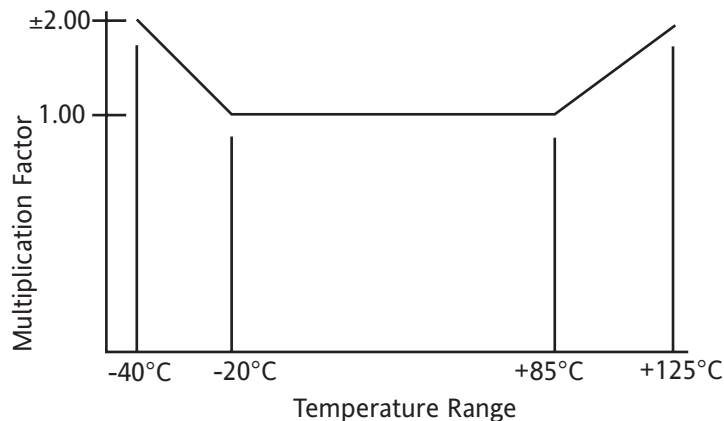
PRESSURE RANGE SPECIFICATIONS

SenSym Part No.	Pressure Range	Burst Pressure ⁽⁵⁾	Sensitivity
BE-4R125PG5DC	0-125 psig	500 psig	32mV/psig
BE-4R125PG5DS	0-125 psig	500 psig	32mV/psig
BE-4R500PG4DS	0-500 psig	1500 psig	8mV/psig
BE-4R5000PG6DC	0-5000 psig	15000 psig	0.8mV/psig
BE-4R5000PG6DS	0-5000 psig	15000 psig	0.8mV/psig

PERFORMANCE CHARACTERISTICS⁽¹⁾

Characteristic	Symbol	Min	Typ	Max	Units
Zero Pressure Offset	V _{off}	0.440	0.500	0.560	V
Full-Scale Span ⁽²⁾	V _{fss}		4.00		V
Output @ FS Pressure	V _{fso}	4.440	4.500	4.560	V
Accuracy ⁽³⁾				±1.5%	%V _{fss}
Response Time ⁽⁴⁾				10	mS
Output Noise				10	mV RMS
Proof Pressure ⁽⁶⁾			2x Rated		psig
Burst Pressure ⁽⁵⁾			3x Rated		psig

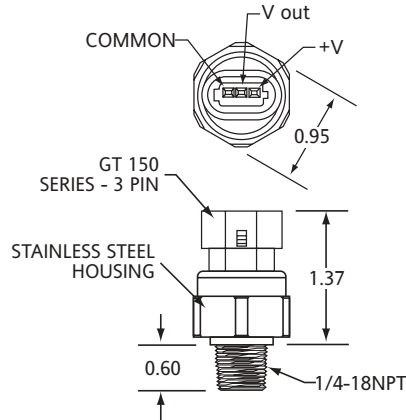
PRESSURE TRANSDUCER PERFORMANCE CHARACTERISTICS (TYPICAL)



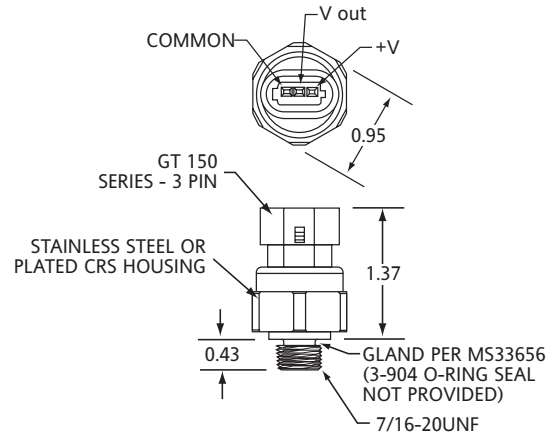
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PHYSICAL PROPERTIES

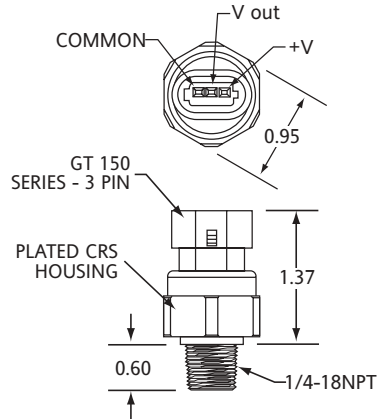
BE-4R125PG5DS



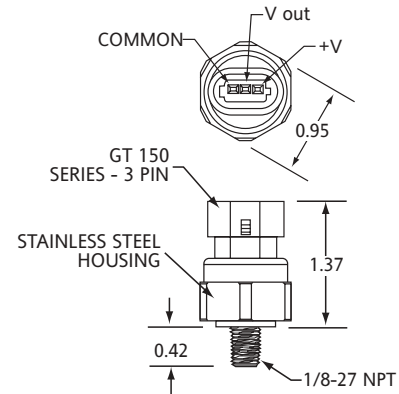
BE-4R5000PG6DC & BE-4R5000PG6DS



BE-4R125PG5DC



BE-4R500PG4DS



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ORDERING INFORMATION - PART # DESCRIPTION

Pressure Range	SS Housing 1/4 NPT	CRS Housing 1/4 NPT	SS Housing 1/8 NPT	SS Housing 7/16-20 UNF	CRS Housing 7/16-20UNF
0-125 psig	BE-4R125PG5DS				
0-125 psig		BE-4R125PG5DC			
0-500 psig			BE-4R500PG4DS		
0-5000 psig				BE-4R5000PG6DS	
0-5000 psig					BE-4R5000PG6DC



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