

## Bonded Element Pressure Transducers

Stainless Steel Isolated Pressure Transducer

*BE Series*

### 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 V to 4.5 V ratiometric outputs

### TYPICAL APPLICATIONS

- Industrial controls
- Pressure instrumentation
- Hydraulic systems
- Refrigeration systems
- HVAC systems
- Pumps and compressors



The Bonded Element general purpose industrial pressure transducers were developed for a variety of pressure applications and industries. They provide 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 which provides 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 stainless steel is not required. The pressure port material exposed to the media is 14-4PH stainless steel.

### **⚠ WARNING**

#### **PERSONAL INJURY**

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### **⚠ WARNING**

#### **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

# Bonded Element Pressure Transducer

Stainless Steel Isolated Pressure Transducer

*BE Series*

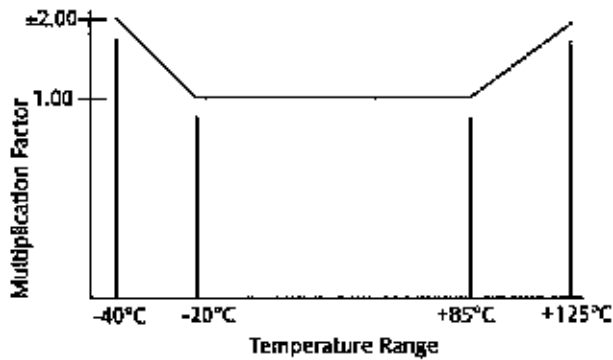
## RATINGS

Supply voltage (Vs)	4.75 Vdc to 5.25 Vdc
Over voltage	16 V
Reverse polarity	-16 V
Consumption current	10 mA max.
Output current-sink	2 mA max.
Output current-source	2 mA max.

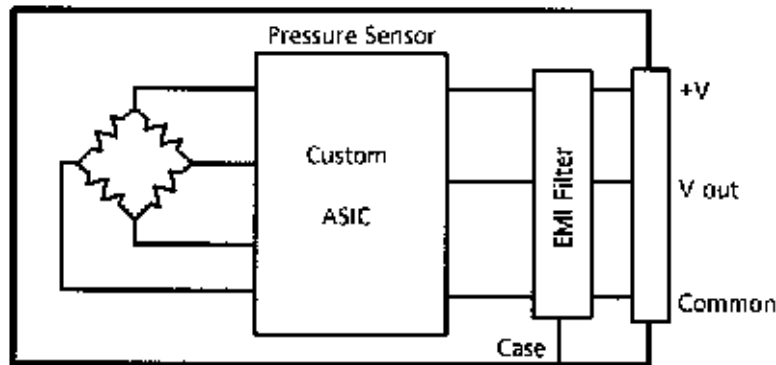
## ENVIRONMENTAL SPECIFICATIONS

Temperature ranges	
Compensated	-20 °C to 85 °C [-4 °F to 185 °F]
Operating	-40 °C to 125 °C [-40 °F to 257 °F]
Storage	-40 °C to 125 °C [-40 °F to 257 °F]
Vibration	10 G @ 20 Hz to 2000 Hz
Shock	50 G for 11 ms
Electromagnetic interference	Immunity > 100 V/m 1 KHz to 1000 MHz
ESD	8 kV @ pins, 15 kV @ case
Salt spray	168 hours
Life	> 20 million cycles

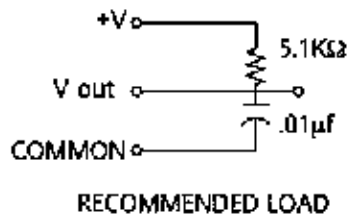
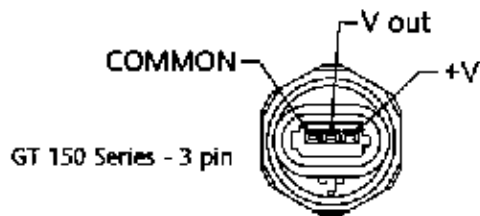
## PRESSURE TRANSDUCER PERFORMANCE CHARACTERISTICS (TYPICAL)



## BLOCK DIAGRAM



## ELECTRICAL CONNECTIONS



# Bonded Element Pressure Transducer

Stainless Steel Isolated Pressure Transducer

*BE Series*

## PERFORMANCE CHARACTERISTICS <sup>(1)</sup>

Characteristic	Symbol	Min.	Typ.	Max.	Units
Zero pressure offset	V <sub>off</sub>	0.440	0.500	0.560	V
Full-scale span <sup>(2)</sup>	V <sub>fss</sub>		4.00		V
Output @ FS pressure	V <sub>fso</sub>	4.440	4.500	4.560	V
Accuracy <sup>(3)</sup>				± 1.5%	%V <sub>fss</sub>
Response time <sup>(4)</sup>				10	mS
Output noise				10	mV RMS
Proof pressure <sup>(6)</sup>			2x rated		psig
Burst pressure <sup>(5)</sup>			3x rated		psig

### NOTES:

- Reference conditions (unless otherwise noted): Supply voltage, V<sub>s</sub> = 5.0 Vdc ± 0.01 Vdc; T<sub>a</sub> = 25 °C [77 °F]. Output is ratiometric within the supply voltage range (V<sub>s</sub>).
- 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.
- 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
- Response time for a 0 psi to full-scale pressure step change, 10% to 90% rise time.
- If burst pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.
- The maximum pressure that can be applied without changing the transducer's performance or accuracy.

## PRESSURE RANGE SPECIFICATIONS

Honeywell Part Number	Pressure Range	Burst Pressure <sup>(5)</sup>	Sensitivity
BE-4R125PG5DC	0 psig to 125 psig	500 psig	32 mV/psig
BE-4R125PG5DS	0 psig to 125 psig	500 psig	32 mV/psig
BE-4R500PG4DS	0 psig to 500 psig	1500 psig	8 mV/psig
BE-4R5000PG6DC	0 psig to 5000 psig	15000 psig	0.8 mV/psig
BE-4R5000PG6DS	0 psig to 5000 psig	15000 psig	0.8 mV/psig

## ORDERING GUIDE

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 7/16-20 UNF
0 psig to 125 psig	BE-4R125PG5DS				
0 psig to 125 psig		BE-4R125PG5DC			
0 psig to 500 psig			BE-4R500PG4DS		
0 psig to 5000 psig				BE-4R5000PG6DS	
0 psig to 5000 psig					BE-4R5000PG6DC

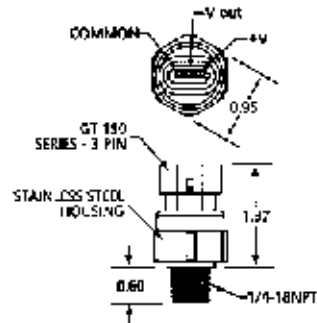
# Bonded Element Pressure Transducer

Stainless Steel Isolated Pressure Transducer

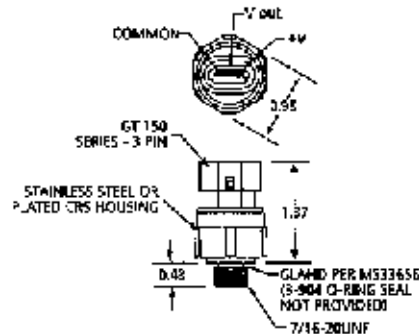
*BE Series*

## PHYSICAL PROPERTIES

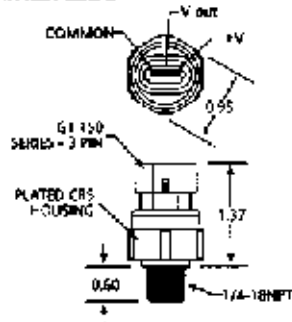
BE-4R125PG5DS



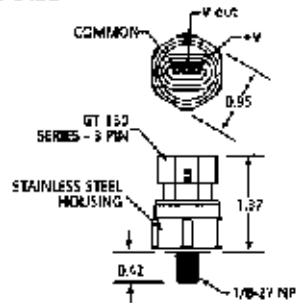
BE-4R5100PG6DC & BE-4R5000PG6DS



BE-4R125PG6DC



BE-4R500PG4DS



## WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

1-800-537-6945 USA/Canada

1-815-235-6847 International

## FAX

1-815-235-6545 USA

## INTERNET

[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

[info.sc@honeywell.com](mailto:info.sc@honeywell.com)

**Honeywell**

Sensing and Control  
[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

Honeywell  
11 West Spring Street  
Freeport, Illinois 61032