

# Pressure Sensors

240PC Series

## High Pressure Gage, Vacuum Gage/Amplified



### FEATURES

- Internal O-Ring seals for contamination resistance
- Screw-in or flat-pack mounting
- Rugged aluminum housing

### 240PC SERIES PERFORMANCE CHARACTERISTICS at 8.0 ±0.01 VDC Excitation, 25°C

	Min.	Typ.	Max.	Units
Excitation	7.00	8.00	16.0	VDC
Supply Current	---	8.00	20.0	mA
Current Sourcing Output	---	---	10	mA
Null Offset (241/242PC) *	0.95	1.00	1.05	V
Null Offset (243PC) **	3.45	3.50	3.55	V
Output at Full Pressure **	5.80	6.00	6.20	V
Span (241/242PC)	4.80	5.00	5.20	V
Span (243PC)	---	±2.5	---	V
Ratiometricity Error 7 to 8 V or 8 to 9 V	---	±0.50	---	%Span
9 to 12 V	---	±2.00	---	
Stability over One Year	---	±0.50	---	%Span
Response Time	---	---	1.00	msec
Weight	---	85	---	grams
Short Circuit Protection	Output may be shorted indefinitely to ground			
Output Ripple	None, DC device			
Ground Reference	Supply and output are common			

\*Positive (or negative) pressure measurement  
 \*\*Positive and negative pressure measurement

### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40° to +85°C (-40° to +185°F)
Storage Temperature	-40° to +85°C (-40° to +185°F)
Compensated Temperature	-18° to +63°C (0° to +145°F)
Shock	MIL-STD-202, Method 213 (50 g, half sine, 6 msec)
Vibration	MIL-STD-202, Method 204 (10 to 2000 Hz at 10 g)
Media	P2 port Wetted materials; die-cast aluminum housing, O-ring seal, silicon, borosilicate glass, and silicon-to-glass bond*

\*Liquid media containing some highly ionic solutions could potentially neutralize the chip-to-glass tube bond.

Amplified

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### 241/242PC SERIES ORDER GUIDE, GAGE AND VACUUM GAGE, Buna-N O-Ring Port Seal

Catalog Listing	Pressure Range psi	Null & Sensitivity Shift (%Span)		Sensitivity V/psi	Overpressure psi Max.	Linearity, %Span B.F.S.L., Max.	Repeatability & Hysteresis %Span Typ.
		25 to -18° 25 to +63°C Max.	25 to -40° 25 to 85°C Typ.				
241PC15M*	0--15	±1.0	±2.0	0.330	45	±1.50	±0.25
242PC15M*	0-15	±1.0	±2.0	0.330	45	±1.50	±0.25
242PC30M*	0-30	±1.0	±2.0	0.167	60	±1.50	±0.25
<b>242PC60G</b>	0-60	±1.5	±2.0	0.083	120	±0.50	±0.25
<b>242PC100G</b>	0-100	±1.0	±2.0	0.050	200	±0.50	±0.25
<b>242PC150G</b>	0-150	±1.5	±3.0	0.033	300	±0.50	±0.25
<b>242PC250G</b>	0-250	±1.0	±2.0	0.020	500	±0.50	±0.25

### 242PC SERIES ORDER GUIDE, GAGE, Ethylene propylene O-Ring Seal

Catalog Listing	Pressure Range psi	Null & Sensitivity Shift (%Span)		Sensitivity V/psi	Overpressure psi Max.	Linearity, %Span B.F.S.L., Max.	Repeatability & Hysteresis %Span Typ.
		25 to -18° 25 to +63°C Max.	25 to -40° 25 to 85°C Typ.				
242PC60GS	0-60	±1.5	±2.0	0.083	120	±0.50	±0.25
242PC100GS	0-100	±1.0	±2.0	0.050	200	±0.50	±0.25
242PC150GS	0-150	±1.5	±3.0	0.033	300	±0.50	±0.25
242PC250GS	0-250	±1.0	±2.0	0.020	500	±0.50	±0.25

### 243PC SERIES ORDER GUIDE, VACUUM GAGE, Buna-N Port Seal

Catalog Listing	Pressure Range psi	Null & Sensitivity Shift (%Span)		Sensitivity V/psi	Overpressure psi Max.	Linearity, BFSL		Repeatability & Hysteresis %Span Typ.
		25 to -18° 25 to +63°C Max.	25 to -40° 25 to 85°C Typ.			P2 > P1 Max.	P2 < P1 Max.	
<b>243PC15M*</b>	±15	±1	±2.0	0.167	50	±1.50	±0.75	±0.25

\*Adhesive between thermoplastic and aluminum instead of O-ring seal.

#### PORT SEAL O-RING

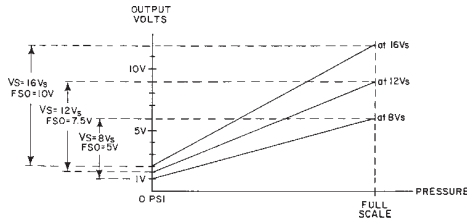
Material	Resistant To:
Buna-N (general use)	Petroleum products, freon 12 and others
Ethylene propylene	Phosphate esters and others

# Pressure Sensors

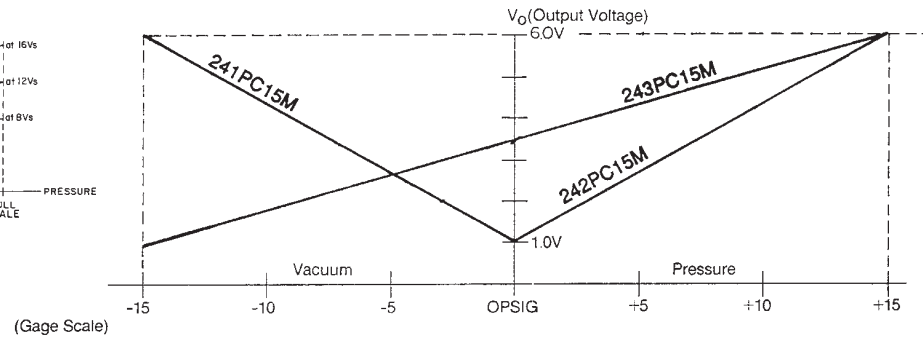
## High Pressure Gage, Vacuum Gage/Amplified

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### RATIOMETRICITY



### SCALING OF 240PC SERIES WITH 8V EXCITATION



Ratiometricity refers to the output voltage being directly proportional to supply voltage. 240PC sensors in this catalog are calibrated at 8 VDC supply voltage to provide a 1-6 volt (5 V Span) output swing. For example, if supply increases by 50% to 12 VDC, the output voltage increased by 50% to 1.5-9 volts (7.5 V Span).

#### NOTE

The output is not perfectly ratiometric. See Accuracy specifications for the degree of error.

242PC15M	Gage	$V_o = 1 \text{ V at } 0 \text{ psig \& } 6 \text{ V at } 15 \text{ psig}$
241PC15M	Vacuum Gage	$V_o = 1 \text{ V at } 0 \text{ psig \& } 6 \text{ V at } -15 \text{ psig}$
243PC15M	Gage	$V_o = 1 \text{ V at } -15 \text{ psig \& } 6 \text{ V at } 15 \text{ psig}$

NOTE: 241PC sensors are scaled for greater pressure on the P1 side of the chip. 242PC sensors are scaled for greater pressure on the P2 side of the chip. Other scalings available upon request.

Amplified

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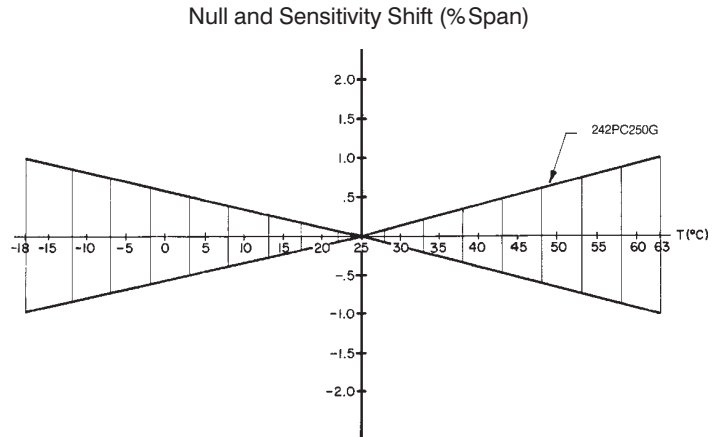
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## High Pressure Gage, Vacuum Gage/Amplified

### NULL AND SENSITIVITY TEMPERATURE SHIFT

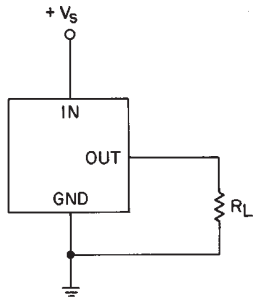
Amplified pressure sensors are 100% tested to ensure that the maximum null and sensitivity temperature shift does not exceed the specification. The diagram illustrates how null and sensitivity shift relates to temperature. Note that the maximum shift occurs at temperature extremes. Therefore, if a sensor is not exposed to the entire temperature range, the maximum null and sensitivity shift will actually be less than the value specified.

This diagram indicates the temperature shift pertaining to a few listings. Maximum null and sensitivity shift varies from listing to listing.



### ELECTRICAL CONNECTIONS

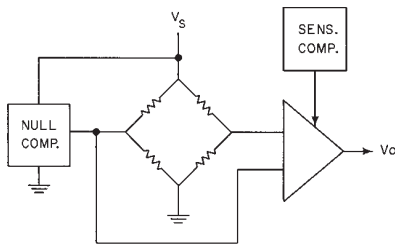
#### Voltage Excitation



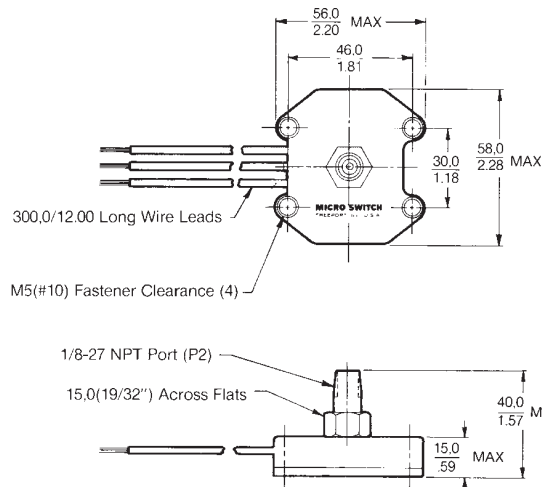
### NOTES

1. Terminals are labeled on the sensor.
2. Input and output share a common ground.
3.  $R_L$  must be greater than or equal to 3000 ohms.

### INTERNAL CIRCUITRY



### MOUNTING DIMENSIONS (For reference only)



- Leadwires  
 1 - Red, Vs  
 2 - Black, Ground (-)  
 3 - Green, Output