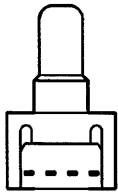


Pressure Sensors

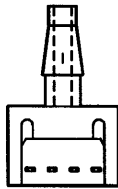
Port Selections

20PC Product Family

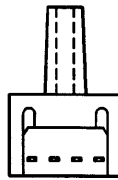
Straight



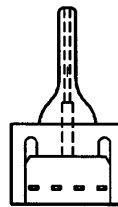
Barbed



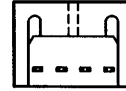
Luer



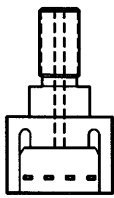
Needle



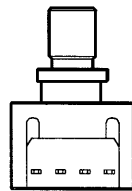
Modular



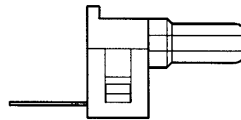
M5 Thread



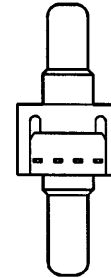
1/4-28 Thread



90° Port



Differential



20PC Series Catalog Number System

2 Product Family	4 Circuit Type	PC Pressure Transducer	A Pressure Range	F Type of Seal	A Type of Port	2 Termination Style	G Pressure Measurement
2 20PC Family	2 Noncompensated low cost 4 Noncompensated 6 Compensated		A 1 psi B 5 psi C 15 psi D 30 psi E 0.5 psi F 100 psi G 250 psi	F Fluorosilicon	A Straight B Barbed C Luer D Modular H M5 Thread I 90° Port J Needle M 1/4-28 UNF G Small Flow-Through P Large Flow-Through	1 1 x 4 (.400") 2 2 x 2 5 Wire harness (Flow-through) 6 1 x 4 (.600")	G Gage D Differential

ACCESSORIES SELECTION GUIDE

Catalog Listing	Description
PC10182	Steel lockring (Included with Port Style A, 1 x 4 terminals only), 24, 26PC only
PC-15015	Mounting bracket
PC-10949	Single hole plastic bracket
20PCWHRC	Flow-through wire harness and retaining clip.
PC-15111	Cable retaining clip for large port Flow-Through sensor only
26PCBKT	Mounting bracket for large port Flow-Through sensor only

NOTE: Not all catalog listings are established. Please refer to the Order Guides, or contact the MICRO SWITCH Application Center at the 800 number.

Pressure Sensors

Gage/Unamplified-Noncompensated

Basic Sensors



FEATURES

- Lowest priced pressure sensor
- Miniature package
- Can be used to measure with vacuum or positive pressure



22PC SERIES PERFORMANCE CHARACTERISTICS at 10.0 ±0.01 VDC Excitation, 25°C

	Min.	Typ.	Max.	Units
Excitation	---	10	12	VDC
Null Shift, 25° to 0°, 25° to 50°C	---	±2.0	---	mV
Null Offset	-30	0	+30	mV
Linearity, P2 > P1, BFSL	---	±0.25	±1.0	%Span
Sensitivity Shift, 25° to 0°, 25° to 50°C	---	±6.0	---	%Span
Repeatability & Hysteresis	---	±0.15	---	%Span
Response Time	---	---	1.0	msec
Input Resistance	---	5.0 K	---	ohms
Output Resistance	---	5.0 K	---	ohms
Weight	---	2	---	grams

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40° to +85°C (-40° to +185°F)
Storage Temperature	-55° to +100°C (-67° to +212°F)
Shock	Qualification tested to 150 g
Vibration	Qualification tested to 0 to 2 kHz, 20 g sine
Media (P1 & P2)	Limited only to those media which will not attack polyetherimide, silicon and fluorosilicone seal

Unamplified

22PC SERIES ORDER GUIDE

Catalog Listing	Pressure Range psi	Span, mV			Sensitivity mV/psi Typ.	Overpressure psi, Max.
		Min.	Typ.	Max.		
22PCA Type	1.0	25	42	59	42	20
22PCC Type	15	156	225	294	15	45
22PCF Type	100	147	225	303	2.3	200

SENSOR SELECTION GUIDE

2 Product Family	2 Circuit Type	PC Pressure Transducer	A Pressure Range	F Type of Seal	A Type of Port	6 Termination Style	G Pressure Measurement
2 20PC Family	2 Noncompensated low cost		A 1 psi C 15 psi F 100 psi	F Fluorosilicone	A Straight B Barbed D Modular	6 1 x 4 (.600")	G Gage

Example: 22PCAFA6G

Non-compensated low cost 1 psi sensor with fluorosilicone seal, straight port, 1 x 4 termination and gage pressure measurement.

Note: Not all catalog listings are established. Please refer to the Order Guides, or contact the MICRO SWITCH Application Center at the 800 number.

Pressure Sensors

Gage and Differential/Unamplified-Noncompensated

Basic Sensors



FEATURES

- Lowest priced pressure sensor
- Miniature package
- Variety of gage pressure port configurations - easily and quickly modified for your special needs
- Choice of termination for gage sensors
- 2 mA constant current excitation significantly reduces sensitivity shift over temperature*
- Can be used to measure with vacuum or positive pressure

24PC SERIES PERFORMANCE CHARACTERISTICS at 10.0 ±0.01 VDC Excitation, 25°C

	Min.	Typ.	Max.	Units
Excitation	---	10	12	VDC
Null Offset	-30	0	+30	mV
Null Shift, 25° to 0°, 25° to 50°C	---	±2.0	---	mV
Linearity, P2 > P1, BFSL	---	±0.25	±1.0	%Span
Sensitivity Shift, 25° to 0°, 25° to 50°C	---	±5.0*	---	%Span
Repeatability & Hysteresis	---	±0.15	---	%Span
Response Time	---	---	1.0	msec
Input Resistance	---	5.0 K	---	ohms
Output Resistance	---	5.0 K	---	ohms
Stability over One Year	---	±0.5	---	%Span
Weight	---	2	---	grams

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40° to +85°C (-40° to +185°F)
Storage Temperature	-55° to +100°C (-67° to +212°F)
Shock	Qualification tested to 150 g
Vibration	Qualification tested to 0 to 2 kHz, 20 g sine
Media (P1 & P2)	Limited only to those media which will not attack polyetherimide, silicon and fluorosilicone seal

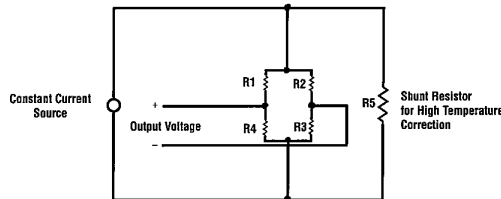
24PC SERIES ORDER GUIDE

Catalog Listing	Pressure Range psi	Span, mV			Sensitivity mV/psi Typ.	Overpressure psi Max.
		Min.	Typ.	Max.		
24PCE Type	0.5	24	35	46	70	20
24PCA Type	1.0	30	45	60	45	20
24PCB Type	5.0	85	115	145	23	20
24PCC Type	15	165	225	285	15	45
24PCD Type	30	240	330	420	11	60
24PCF Type	100	156	225	294	2.25	200
24PCG Type	250	145	212	280	0.85	500

* Non-compensated pressure sensors, excited by constant current instead of voltage, exhibit temperature compensation of Span. Application Note #1 briefly discusses current excitation.

Constant current excitation has an additional benefit of temperature measurement. When driven by a constant current source, a silicon pressure sensor's terminal voltage will rise with increased temperature. The rise in voltage not only compensates the Span, but is also an indication of die temperature.

Constant Current Excitation Schematic



Pressure Sensors

Gage and Differential/Unamplified-Noncompensated

24PC Series

SENSOR SELECTION GUIDE

2 Product Family	4 Circuit Type	PC Pressure Transducer	A Pressure Range	F* Type of Seal	A Type of Port	2 Termination Style	G Pressure Measurement
2 20PC family	4 Noncom- pensated		A 1 psi B 5 psi C 15 psi D 30 psi E 0.5 psi F 100 psi G 250 psi	F Fluorosilicone	A Straight B Barbed C Luer D Modular H M5 Thread I 90° Port J Needle M ¼ - 28 UNF Thread	1 1 x 4 2 2 x 2	G Gage D Differential

Example: 24PCAFA2G

Standard, non-compensated 1 psi sensor with fluorosilicone seal, straight port, 2 x 2 terminals, and Gage pressure measurement.

*Other media seal materials may be available.

ACCESSORIES SELECTION GUIDE

Catalog Listing	Description
PC10182	Steel lockring (Included with Port Style A, 1 x 4 terminals only)
PC10949	Single hole plastic bracket (Must be separately ordered)

Not all combinations are established. Contact 800 number before final design. The following listings are typically stocked in small quantities.

Unamplified

Pressure Sensors

Gage and Differential/Unamplified-Compensated

Temperature Compensated Sensors



FEATURES

- Lowest priced sensor with temperature compensation and calibration
- Variety of gage pressure port configurations - easily and quickly modified for your special needs
- Choice of termination for gage sensors
- Calibrated Null and Span
- Temperature compensated for Span over 0 to 50°C
- Provides interchangeability
- Can be used to measure with vacuum or positive pressure

26PC SERIES PERFORMANCE CHARACTERISTICS at 10.0 ±0.01 VDC Excitation, 25°C

	Min.	Typ.	Max.	Units
Excitation	---	10	16	VDC
Null Offset	-1.5	0	+1.5	mV
Null Shift, 25° to 0°, 25° to 50°C	---	±2.0	---	mV
Linearity, P2 > P1, BFSL	---	±0.25	±1.0	%Span
Sensitivity Shift, 25° to 0°, 25° to 50°C	---	---	±1.0	%Span
1 psi Sensitivity Shift	---	---	±2.0	%Span
100 psi Sensitivity Shift	---	---	±1.5%	%Span
Repeatability & Hysteresis	---	±0.20	---	%Span
Response Time	---	---	1.0	msec
Input Resistance	---	7.5 K	---	ohms
Output Resistance	---	2.5 K	---	ohms
Stability over One Year	---	±0.5	---	%Span
Weight	---	2	---	grams

Total error calculation, see page 78

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40° to 85°C (-40° to +185°F)
Storage Temperature	-55° to +100°C (-67° to +212°F)
Compensated Temperature	0° to +50°C (32° to +122°F)
Shock	Qualification tested to 150 g
Vibration	MIL-STD-202. Method 213 (150g halfsine, 11 msec)
Media (P1 & P2)	Limited only to those media which will not attack polyetherimide, silicon and fluorosilicone seal

26PC SERIES ORDER GUIDE

Catalog Listing	Pressure Range psi	Span, mV			Sensitivity mV/psi Typ.	Overpressure psi Max.
		Min.	Typ.	Max.		
26PCA Type	1	14.7	16.7	18.7	16.7	20
26PCB Type	5.0	47	50	53	10	20
26PCC Type	15	97	100	103	6.67	45
26PCD Type	30	97	100	103	3.33	60
26PCF Type	100	95	100	105	1.00	200

Pressure Sensors

26PC Series

Gage and Differential/Unamplified-Compensated

SENSOR SELECTION GUIDE

2 Product Family	6 Circuit Type	PC Pressure Transducer	B Pressure Range	F* Type of Seal	A Type of Port	2 Termination Style	G Pressure Measurement
2 20PC family	6 Compensated Calibrated		A 1 psi B 5 psi C 15 psi D 30 psi	F Fluorosilicone	A Straight B Barbed C Luer D Modular H M5 Thread I 90° Port J Needle M ¼ - 28 UNF Thread	1 1 x 4 2 2 x 2	G Gage D Differential

Example: 26PCBFA2G

Compensated and calibrated 5 psi sensor with fluorosilicone seal, straight port, 2 x 2 terminals, and Gage pressure measurement.

*Other media seal materials may be available.

ACCESSORIES SELECTION GUIDE

Catalog Number	Description
PC10182	Steel lockring (Included with Port Style A, 1 x 4 terminals only)
PC10949	Single hole plastic bracket (Must be separately ordered)

Not all combinations are established. Contact 800 number before final design. The following listings are typically stocked in small quantities.

Unamplified

Pressure Sensors

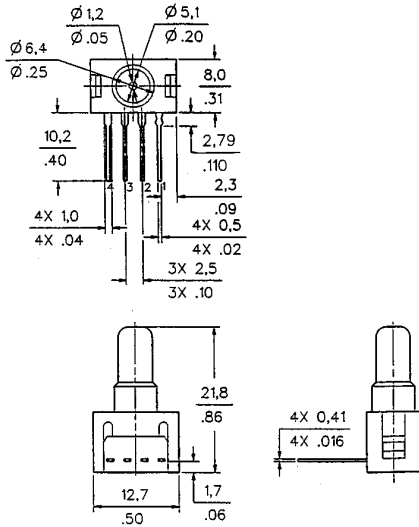
Gage and Differential/Unamplified

MOUNTING DIMENSIONS (for reference only)

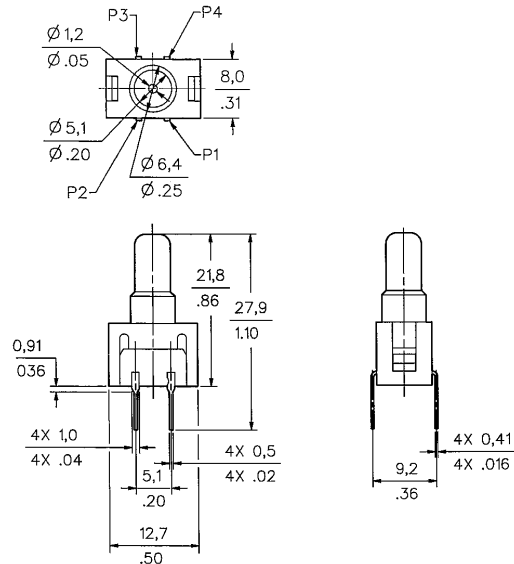
GAGE SENSOR

Pressure is applied to port P2.
Port P1 vents to ambient pressure.

"1 x 4" Termination (Style 1), Port Style A, Straight
Pin 1 is notched, and is shown at the right of the package.
Pin 2 is next to pin 1, etc.

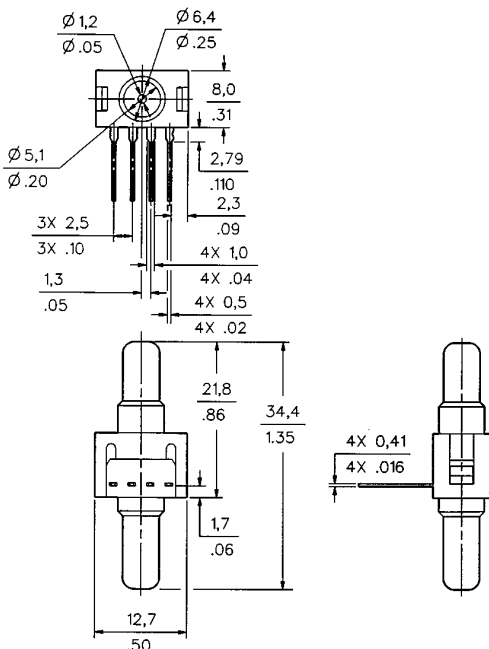


"2 x 2" Termination (Style 2), Port Style A, Straight
Pin 1 is notched, and is shown at lower right corner.
Pins 2, 3 and 4 are clockwise.



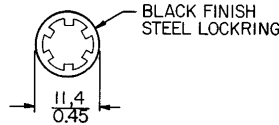
DIFFERENTIAL SENSOR

Straight Port, 1 x 4 termination (Style 2) ONLY
Port P1 is near terminals.

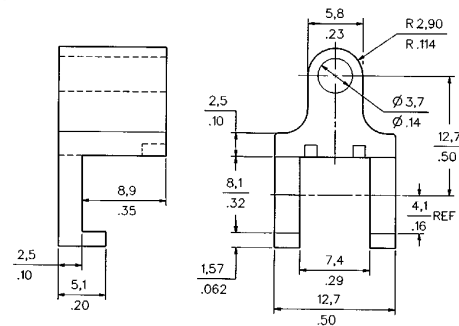


ACCESSORIES

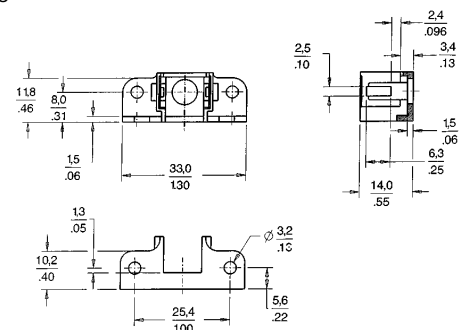
Lockring (included with A port)
PC10182



Single hole Plastic Bracket (purchase separately)
PC10949



Dual Port Plastic Bracket (purchase separately)
PC15015

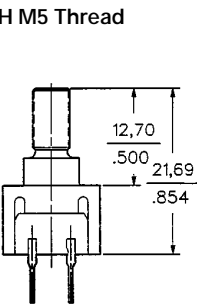
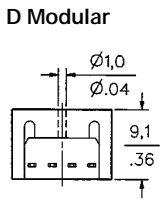
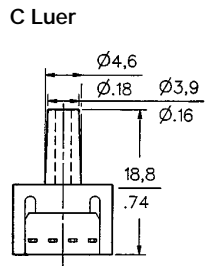
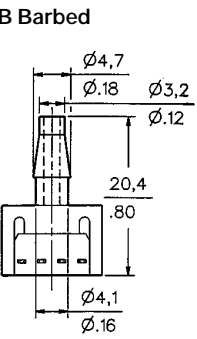


Pressure Sensors

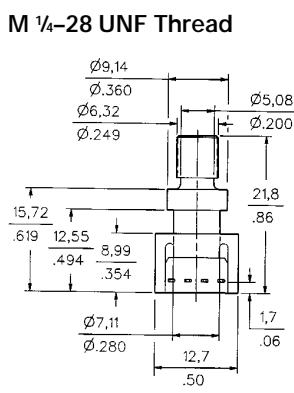
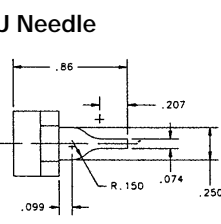
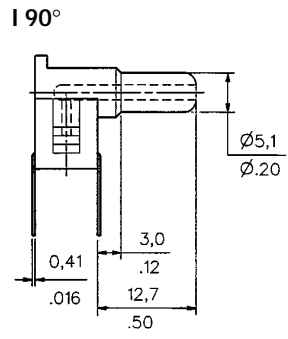
Gage and Differential/Unamplified

22/24/26PC Series

OTHER GAGE SENSOR PORT STYLES (2 x 2 or 1 x 4 Termination)



O-Ring
Size 007
O-Ring Counterbore
.040" deep $\pm .005 \times .30 \pm .003$ "



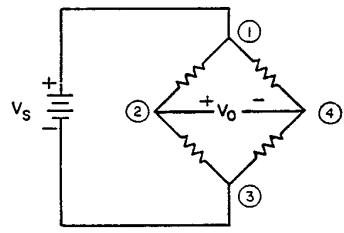
O-Ring
Size 009
O-Ring Counterbore
.040" deep $\pm .002 \times .360 \pm .003$ "

20PC SERIES CIRCUIT - NOTES

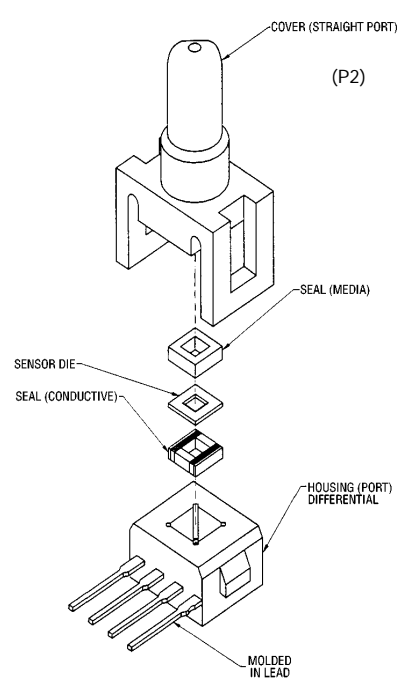
1. Circled numbers refer to Sensor Terminals (interface pins).
2. V_0 increases with pressure change.
3. $V_0 = V_2 - V_4$
4. Pin 1 designated with a notch.

Pin Designation
Pin 1 $V_S (+)$
Pin 2 Output (+)
Pin 3 Ground (-)
Pin 4 Output (-)

EXCITATION



20PC Construction



Unamplified