

**FEATURES**

- Ranges from 10 mbar to 7 bar gage or differential, 1 bar absolute
- Precision temperature compensated
- Calibrated offset and span
- Voltage excitation
- Excellent long term stability

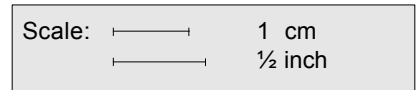
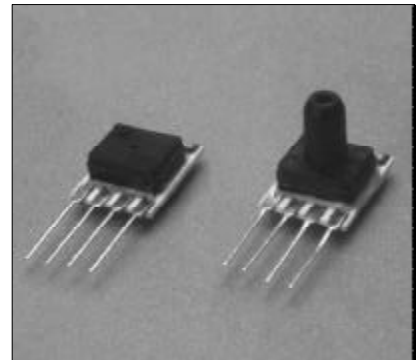
**APPLICATIONS**

- Medical equipment
- Environmental controls
- Industrial chemical instrumentation
- HVAC

**GENERAL DESCRIPTION**

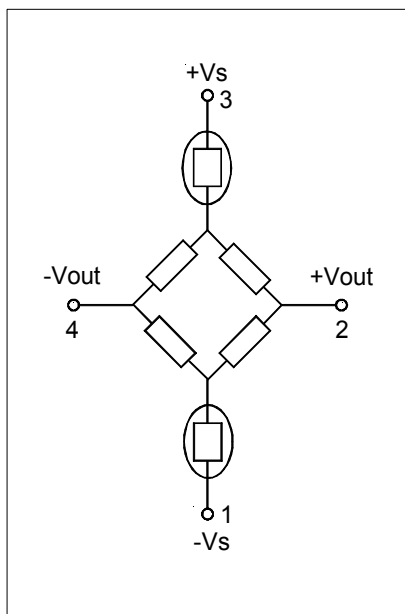
The PCM series of pressure sensors use state of the art silicon micro-machined pressure sensors in a variety of package options for PC board mounting. These models provide mV-output with calibration and temperature compensation. Output offset errors due to changes in temperature, warm-up drift, long term drift are reduced to a minimum.

This series is intended for use with non-corrosive, non-ionic working fluids such as clean dry air, dry gases and the like. The media wetted materials of pressure port B are the silicon diaphragm, glass

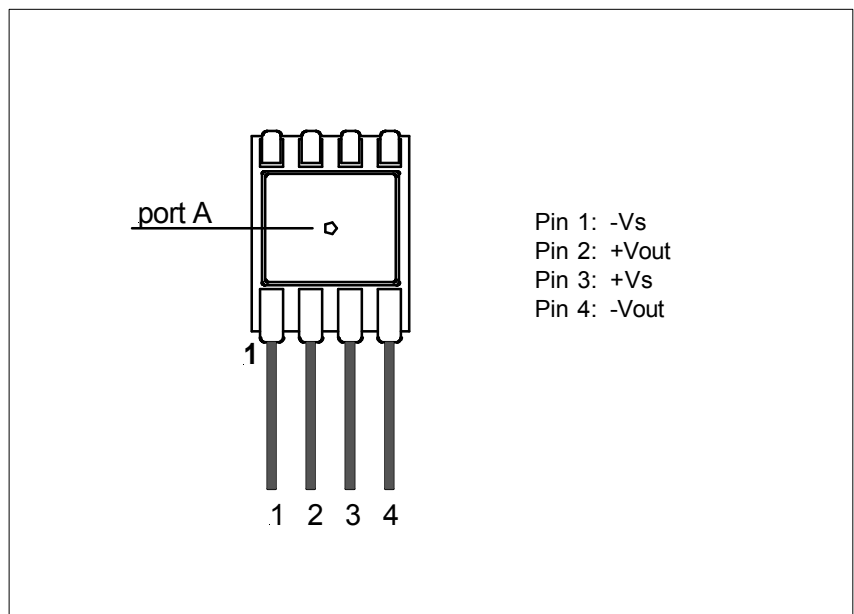


filled nylon, RTV and alumina ceramic ( $Al_2O_3$ ). At the A port the media wetted parts are the front side of the silicon sensor chip, glass filled nylon and alumina.

**EQUIVALENT CIRCUIT**



**ELECTRICAL CONNECTION**



### Maximum ratings (for all devices)

Supply voltage $V_s$	4 - 16 V
Common-mode pressure	3 bar
Lead temperature (soldering 2 - 4 seconds)	250°C

### Environmental specifications (for all devices)

Temperature range	
Compensated	0 - 70°C (50°C)
Operating	-25°C to +85°C
Storage	-40°C to +125°C
Humidity limits	0 to 95 %RH (no condensation)

## PRESSURE SENSOR CHARACTERISTICS<sup>1</sup>

### Standard pressure ranges

Part no.	Operating pressure	Proof pressure <sup>2</sup>	Burst pressure <sup>3</sup>	Full scale span <sup>1,4</sup>
PCM0010...G(D)...H	0 - 10 mbar (4"H <sub>2</sub> O)	250 mbar	350 mbar	25 mV
PCM0020...G(D)...H	0 - 20.7 mbar (0.3 psi)	500 mbar	750 mbar	20 mV
PCM0070...G(D)...H	0 - 69 mbar (1 psi)	700 mbar	1400 mbar	18 mV
PCM0350...G(D)...H	0 - 345 mbar (5 psi)	1 bar	1.7 bar	60 mV
PCM1000...A(G,D)...H	0 - 1034 mbar (15 psi)	2 bar	3 bar	90 mV
PCM2000...G(D)...H	0 - 2068 mbar (30 psi)	4 bar	6 bar	90 mV
PCM7000...G...H	0 - 6895 mbar (100 psi)	10 bar	13 bar <sup>8</sup>	100 mV

### PCM0010...H PERFORMANCE CHARACTERISTICS<sup>1</sup>

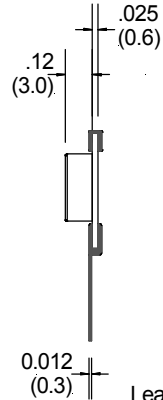
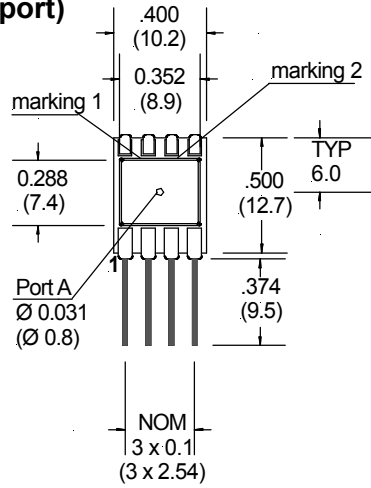
Characteristics	Min.	Typ.	Max.	Unit
Zero pressure offset			±0.5	mV
Full scale span <sup>4</sup>	24	25	26	
Combined non-linearity and hysteresis <sup>5</sup>		±0.25	±0.5	%FS
Temperature effects (0°C to 50°C) <sup>6</sup>	Span		±1.0	
	Offset		±0.5	mV
Repeatability		±0.1		%FS
Input resistance	5			kΩ
Output resistance		3		
Response time (10 to 90 %FS)		500		μs
Common mode voltage <sup>7</sup>		6.0		V

### PCM0020...H to PCM7000...H PERFORMANCE CHARACTERISTICS<sup>1</sup>

Characteristics	Min.	Typ.	Max.	Unit	
Zero pressure offset			±0.5	mV	
Full scale span <sup>4</sup>	PCM0020...H	19.0	20.0		21.0
	PCM0070...H	17.8	18.0		18.2
	PCM0350...H	59.4	60.0		60.6
	PCM1000/2000...H	89.0	90.0		91.0
	PCM7000...H	99.0	100.0		101.0
Combined non-linearity and hysteresis <sup>5</sup>		±0.2	±0.5	%FS	
Temperature effects (0°C to 70°C) <sup>6</sup>	Span		±1.0	mV	
	Offset		±0.5		
Repeatability		±0.1		%FS	
Input resistance	5			kΩ	
Output resistance		3			
Response time (10 to 90 %FS)		500		μs	
Common mode voltage <sup>7</sup>		6.0		V	

**PHYSICAL DIMENSIONS**

**Package version (without port)**

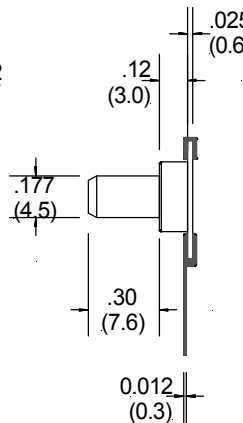
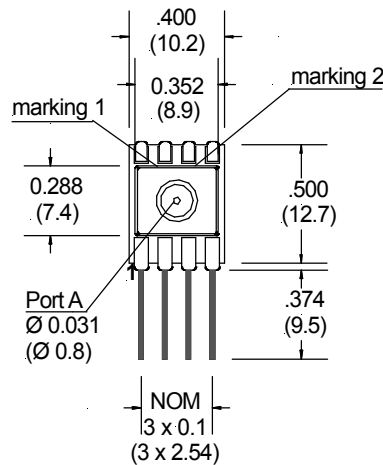


Lead size  
TYP 0.02 x 0.012  
(0.5 x 0.3)

dimensions in  
inches (mm)

mass: ca. 1 g

**Package version F**

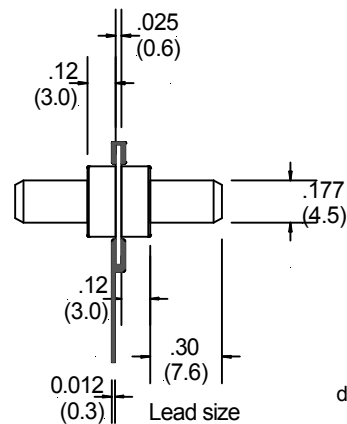
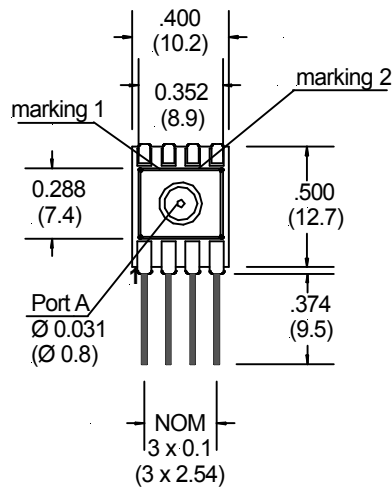


Lead size  
TYP 0.02 x 0.012  
(0.5 x 0.3)

dimensions in  
inches (mm)

mass: ca. 1 g

**Package version D**



Lead size  
TYP 0.02 x 0.012  
(0.5 x 0.3)

dimensions in  
inches (mm)

mass: ca. 1 g

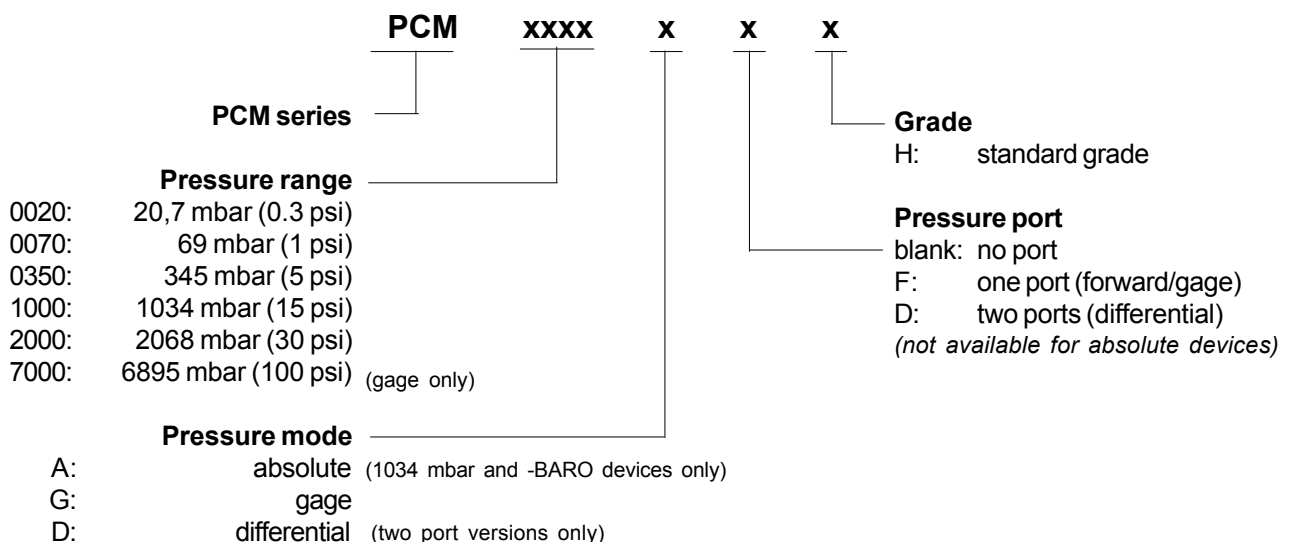
### Specification notes:

1. Reference conditions: unless otherwise noted, supply voltage  $V_S = 12\text{ V}$ ,  $T_A = 25^\circ\text{C}$ , common-mode pressure 0, pressure applied to port A.
2. Proof pressure is the maximum pressure which may be applied without causing durable shifts of the electrical parameters of the sensing element.
3. Burst pressure is the maximum pressure which may be applied without causing damage to the sensing element or leading to leaks of the housing.
4. Full scale span is the algebraic difference between the output voltage at full-scale pressure at the output at zero pressure. The span is ratiometric to the supply voltage.
5. Non-linearity refers to the **Best Straight Line** fit measured for offset pressure, full-scale pressure and  $\frac{1}{2}$  full-scale pressure.
6. Shifts relative to  $25^\circ\text{C}$ .
7. This is the common-mode voltage of the output arms (pins 3 and 5) for  $V_S = 12\text{ V}$ .
8. For this pressure range the housing has to be manifolded or supported mechanically, otherwise it may lead to leaks of the housing.

### MARKING

Pressure range	Marking 1 (color dot)	Marking 2 (color dot)
10 mbar	white	gold
20.7 mbar	pink	gold
69 mbar	green	gold
345 mbar	blue	gold
1034 mbar	purple	gold
2068 mbar	orange	gold
6895 mbar	brown	gold

### ORDERING INFORMATION



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