

# 160PC...-PCB Series

## Fully signal conditioned low pressure transducer

### FEATURES

- Pressure ranges from 0...±2.5 inH<sub>2</sub>O (0...±6.4 cm H<sub>2</sub>O) to -20...120 cm H<sub>2</sub>O
- 1...6 V output
- Output ratiometric to supply voltage
- Precision temperature compensated and calibrated
- EMC-proof

### SERVICE

Non-corrosive, non-ionic working fluids, such as dry air and dry gases

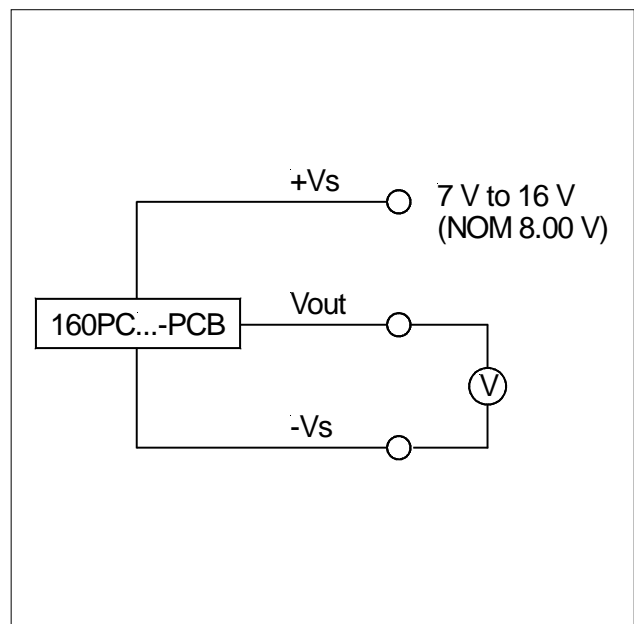


### SPECIFICATIONS

#### Maximum ratings

Excitation voltage	7...16 V
Output current	
Source	10 mA
Sink	5 mA
Output load capacitance	10 nF
Temperature limits	
Operating	-25 to +85°C
Storage	-40 to +125°C
Compensated	-18 to +63°C
Humidity (non-condensing)	0 - 95 %RH
Proof pressure <sup>1</sup>	350 mbar

### ELECTRICAL CONNECTION



# 160PC...-PCB Series

## Fully signal conditioned low pressure transducer

### **161PC01D-PCB PERFORMANCE CHARACTERISTICS**

(unless otherwise noted,  $V_S = 8.00\text{ V}$ ,  $R_L > 100\text{ k}\Omega$ ,  $t_{amb} = 25^\circ\text{C}$ )

Characteristics	Min.	Typ.	Max.	Unit
Operating pressure	0		-1.0	psid
Zero pressure offset	0.95	1.00	1.05	V
Span <sup>4</sup>		5.0		
Full scale output	5.90	6.00	6.10	
Thermal effects (-18 to +63 °C) <sup>3</sup>	Offset		±1.0	%FSS
	Span		±1.0	
	Combined offset and span		±1.0	
Non-linearity (BSL) <sup>2</sup>			±1.0	
Hysteresis and repeatability		±0.15		
Ratiometricity	7 to 8 V and 8 to 9 V	±0.5		
	9 to 12 V	±2.0		
Current consumption (no load)			20.0	mA
Response time			1	msec
Radiated, radio frequency electromagnetic field immunity (RFI), EN6100-4-3 grade 3, 80 to 1000 MHz, 80 % AMC (1 KHz)	10			V/m

### **162PC01D-PCB PERFORMANCE CHARACTERISTICS**

(unless otherwise noted,  $V_S = 8.00\text{ V}$ ,  $R_L > 100\text{ k}\Omega$ ,  $t_{amb} = 25^\circ\text{C}$ )

Characteristics	Min.	Typ.	Max.	Unit
Operating pressure	0		1.0	psid
Zero pressure offset	0.95	1.00	1.05	V
Span <sup>4</sup>		5.00		
Full scale output	5.90	6.00	6.10	
Thermal effects <sup>3</sup> (-18 to +63 °C)	Offset		±1.0	%FSS
	Span		±1.0	
	Combined offset and span		±1.0	
Non-linearity (BSL) <sup>2</sup>			±1.0	
Hysteresis and repeatability		±0.15		
Ratiometricity	7 to 8 V and 8 to 9 V	±0.5		
	9 to 12 V	±2.0		
Current consumption (no load)			20.0	mA
Response time			1	msec
Radiated, radio frequency electromagnetic field immunity (RFI), EN6100-4-3 grade 3, 80 to 1000 MHz, 80 % AMC (1 KHz)	10			V/m

# 160PC...-PCB Series

## Fully signal conditioned low pressure transducer

### **163PC01D36-PCB PERFORMANCE CHARACTERISTICS**

(unless otherwise noted,  $V_S = 8.00\text{ V}$ ,  $R_L > 100\text{ k}\Omega$ ,  $t_{amb} = 25^\circ\text{C}$ )

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure		-5		+5	inH <sub>2</sub> O
Zero pressure offset		3.45	3.50	3.55	V
Output voltage	at -5"H <sub>2</sub> O	0.80	1.00	1.20	
	at +5"H <sub>2</sub> O	5.90	6.00	6.10	
Thermal effects (+5 to +45 °C) <sup>3</sup>	Offset			±1.0	%FSS
	Span			±1.0	
	Combined offset and span			±1.0	
Non-linearity (BSL) <sup>2</sup>				±1.0	
Hysteresis and repeatability			±0.25		
Ratiometricity	7 to 8 V and 8 to 9 V		±0.5		
	9 to 12 V		±2.0		
Current consumption (no load)				20.0	mA
Response time				1	msec
Radiated, radio frequency electromagnetic field immunity (RFI), EN6100-4-3 grade 3, 80 to 1000 MHz, 80 % AMC (1 KHz)		10			V/m

### **164PC01D37-PCB PERFORMANCE CHARACTERISTICS**

(unless otherwise noted,  $V_S = 8.00\text{ V}$ ,  $R_L > 100\text{ k}\Omega$ ,  $t_{amb} = 25^\circ\text{C}$ )

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure		0		10	inH <sub>2</sub> O
Zero pressure offset		0.95	1.00	1.05	V
Span <sup>4</sup>			5.0		
Full scale output		5.90	6.00	6.10	
Thermal effects (+5 to +45 °C) <sup>3</sup>	Offset			±1.0	%FSS
	Span			±1.0	
	Combined offset and span			±1.0	
Non-linearity (BSL) <sup>2</sup>				±1.0	
Hysteresis and repeatability			±0.25		
Ratiometricity	7 to 8 V and 8 to 9 V		±0.5		
	9 to 12 V		±2.0		
Current consumption (no load)				20.0	mA
Response time				1	msec
Radiated, radio frequency electromagnetic field immunity (RFI), EN6100-4-3 grade 3, 80 to 1000 MHz, 80 % AMC (1 KHz)		10			V/m

# 160PC...-PCB Series

## Fully signal conditioned low pressure transducer

### **163PC01D75-PCB PERFORMANCE CHARACTERISTICS**

(unless otherwise noted,  $V_S = 8.00\text{ V}$ ,  $R_L > 100\text{ k}\Omega$ ,  $t_{amb} = 25^\circ\text{C}$ )

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure		-2.5		+2.5	inH <sub>2</sub> O
Zero pressure offset		3.45	3.50	3.55	V
Output	at -2.5"H <sub>2</sub> O	0.80	1.00	1.20	
	at +2.5"H <sub>2</sub> O	5.90	6.00	6.10	
Thermal effects (+5 to +45 °C) <sup>3</sup>	Offset			±1.25	%FSS
	Span			±1.25	
	Combined offset and span			±1.25	
Non-linearity (BSL) <sup>2</sup>				±1.0	
Hysteresis and repeatability			±0.25		
Ratiometricity	7 to 8 V and 8 to 9 V		±0.5		
	9 to 12 V		±2.0		
Current consumption (no load)				20.0	mA
Response time				1	msec
Radiated, radio frequency electromagnetic field immunity (RFI), EN6100-4-3 grade 3, 80 to 1000 MHz, 80 % AMC (1 KHz)		10			V/m

### **164PC01D76-PCB PERFORMANCE CHARACTERISTICS**

(unless otherwise noted,  $V_S = 8.00\text{ V}$ ,  $R_L > 100\text{ k}\Omega$ ,  $t_{amb} = 25^\circ\text{C}$ )

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure		0		5	inH <sub>2</sub> O
Zero pressure offset		0.95	1.00	1.05	V
Span <sup>4</sup>			5.0		
Full scale output		5.90	6.00	6.10	
Thermal effects (+5 to +45 °C) <sup>3</sup>	Offset			±1.25	%FSS
	Span			±1.25	
	Combined offset and span			±1.25	
Non-linearity (BSL) <sup>2</sup>				±1.0	
Hysteresis and repeatability			±0.25		
Ratiometricity	7 to 8 V and 8 to 9 V		±0.5		
	9 to 12 V		±2.0		
Current consumption (no load)				20.0	mA
Response time				1	msec
Radiated, radio frequency electromagnetic field immunity (RFI), EN6100-4-3 grade 3, 80 to 1000 MHz, 80 % AMC (1 KHz)		10			V/m

# 160PC...-PCB Series

## Fully signal conditioned low pressure transducer

### **163PC01D48-PCB** PERFORMANCE CHARACTERISTICS

(unless otherwise noted,  $V_s = 10.00\text{ V}$ ,  $R_L > 100\text{ k}\Omega$ ,  $t_{\text{amb}} = 25^\circ\text{C}$ )

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure		-20		120	cm H <sub>2</sub> O
Zero pressure offset		1.59	1.74	1.89	V
Output	at -20 cm H <sub>2</sub> O		1.00		
	at 120 cm H <sub>2</sub> O	5.82	5.97	6.12	
Thermal effects (+5 to +45 °C) <sup>3</sup>	Offset			±1.0	%FSS
	Span			±1.0	
	Combined offset and span			±1.0	
Non-linearity (BSL) <sup>2</sup>				±1.0	
Hysteresis and repeatability			±0.15		
Ratiometricity	9 to 10 V and 10 to 11 V		±0.5		
	7 to 10 V and 11 to 12 V		±2.0		
Current consumption (no load)				20.0	mA
Response time				1	msec
Radiated, radio frequency electromagnetic field immunity (RFI), EN6100-4-3 grade 3, 80 to 1000 MHz, 80 % AMC (1 KHz)		10			V/m

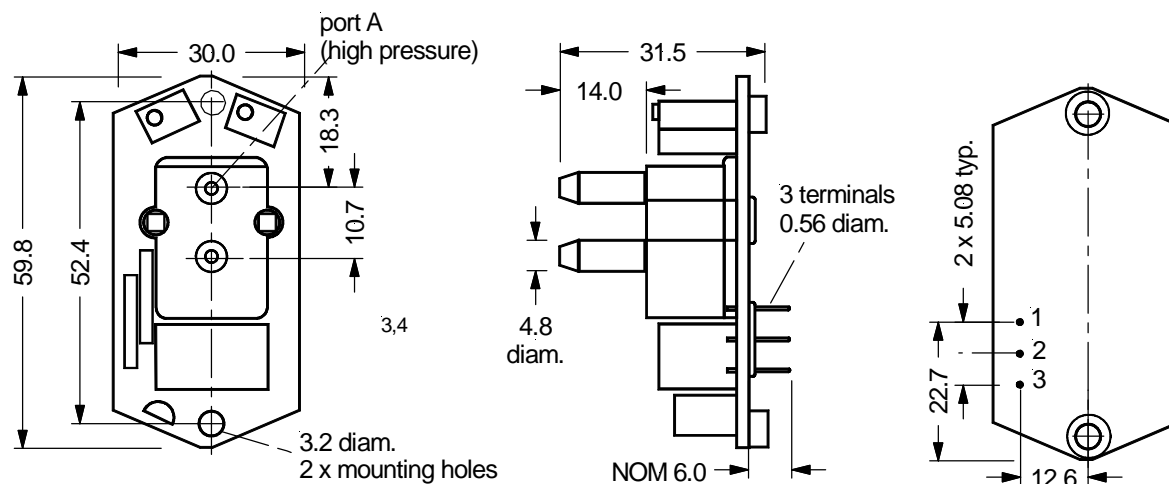
#### Specification notes:

1. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
2. Non-linearity - the maximum deviation of measured output at constant temperature, from "Best Straight Line" through three points (offset pressure, full scale pressure and 1/2 full scale pressure).
3. Thermal effects tested and guaranteed in the specified temperature ranges relative to 25°C. All specifications shown are relative to 25°C.
4. Span is the algebraic difference between lowest and highest specified pressure.

# 160PC...-PCB Series

## Fully signal conditioned low pressure transducer

### OUTLINE DRAWING



mass: 20 g

pin	connection
1	+Vs
2	-Vs
3	Vout

dimensions in mm

### ORDERING INFORMATION

Operating pressure	Part number
0...-1 psid	161PC01D-PCB
0...+1 psid	162PC01D-PCB
-5...+5 inH <sub>2</sub> O	163PC01D36-PCB
0...+10 inH <sub>2</sub> O	164PC01D37-PCB
-2.5...+2.5 inH <sub>2</sub> O	163PC01D75-PCB
0...+5 inH <sub>2</sub> O	164PC01D76-PCB
-20...+120 cm H <sub>2</sub> O	163PC01D48-PCB

Custom calibrations are widely available. Please contact First Sensor.

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