PS309 Digital Pressure Manometer

Features

- ❒ **Portable, Lightweight Construction**
- ❒ **Internal Battery or Optional AC Converter**
- ❒ **Line Pressure to 10,000 psig**
- ❒ **Optional Features Include 2 wire, 4-20mA, Sq Root**
- ❒ **Wet-Wet Capability**
- ❒ **Full Scale Pressures from 0.125 PSI to 8000 PSI**

The PS309 is a portable, completely self-contained digital pressure manometer, available in absolute, gauge and differential ranges. In addition to the front panel LCD display, the unit also provides a 2 Vdc analog output suitable for recording, remote display or control purposes.

Featured are an integral pressure sensor, solid state electronics module, 4½ digit LCD and battery pack with six 1.5V penlight cells for truly portable operation. The units can also be powered from an external DC power supply or AC battery eliminator (converter) module.

The pressure manometer features all corrosion resistant materials in contact with the pressure media (both ports in differential units), very low internal cavity volumes and ultra-low volumetric displacement with full-scale pressure excursion. Calibration is unaffected by dielectric properties of the sensed fluid. Gauge and differential pressure sensors may be disassembled and range changed by simple diaphragm replacement.

Individual meter scaling adjustments are provided for both single and dual operating modes which permit display of output in any popular engineering or scientific pressure and flow units. Decimal points are user-programmable by easy internal adjustment.

Optional features include switch-selected dual operating modes – “Pressure” (output linear with applied pressure), and “Flow” (output proportional to square root of ΔP). Each output has a separate 2 Vdc analog output and individual display scaling adjustments.

Power options include two-wire, 4-20 mA current output configurations with single and dual operating modes and AC-powered battery eliminator power source.

A universal mounting brackets for panel mounting is available as an option.

PS309 Digital Pressure Manometer

Specifications

General Specifications -

Type: Absolute, Differential or Gage

Full Scale Ranges: ±0.125 to ±8,000 PSID Other Eng. Units available

Accuracy: ±0.25% FS includes non-linearity, hysteresis and non-repeatability.

±0.5% FS above 3.2K PSI

Over Pressure: 200% FS to 10,000 PSID (Max. 0.5% Output shift)

Maximum Line Pressure & Error: 3,200 PSI or 10,000PSI. 1%/1000, 3% Max.

Pressure Ports: 1/8" Female NPT (Other options available)

Environmental Specifications -

Operating Temp.: 0ºF to 160ºF (-17ºC to 71ºC)

Compensated Temp.: 77ºF (25ºC)

Temperature Error: <0.02% FS/ºF

Sensor Physical Specifications -

Pressure Media: Any fluid compatible with 316SST, 410SST or Inconel. Other materials available – See ordering information.

O-Rings: Buna-N standard. Other materials available. See ordering information.

Pressure Cavity Volume: 4×10^{-3} cu. In.

Volumetric Displacement: 3×10^{-4} cu. In. F.S.

Weight: 35 ounces including batteries

Power Requirements -

Input Power Voltage: 6 x 1.5V AA batteries; External 8-32 Vdc power supply or, optional AC adapter (auxiliary input power jack And plug provided)

4-20mA: Two Wire, 14-40 Vdc power supply only

Signal Output Connections -

Voltage Output Units: Mini Phone jack, Switchcraft TR-2A "Micro-Jax" or equal. Two provided for dual output Mating plug(s) provided.

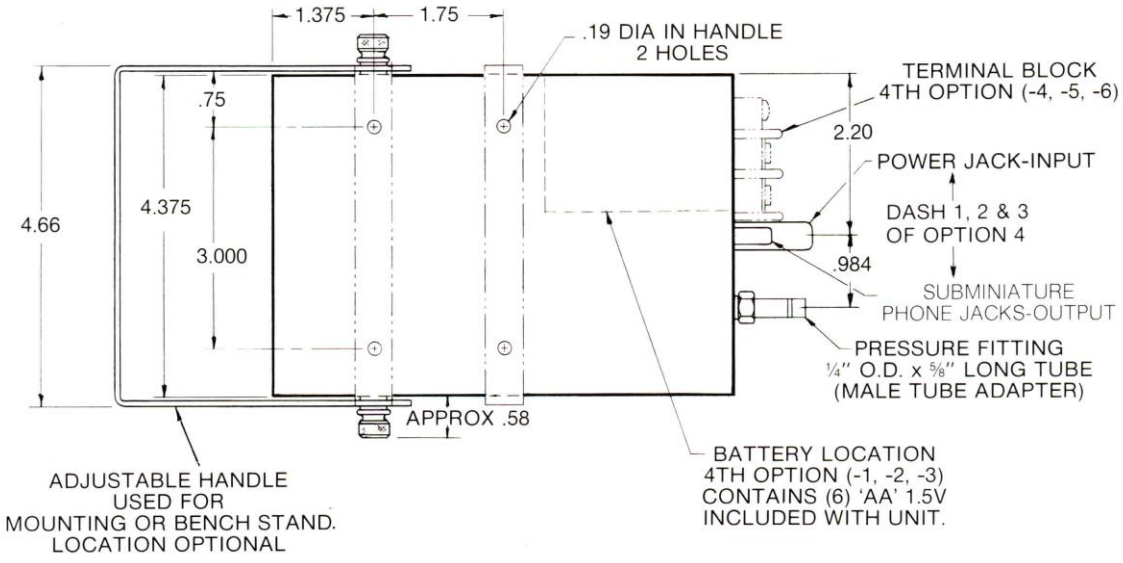
Current Output Units: Two terminal barrier strips

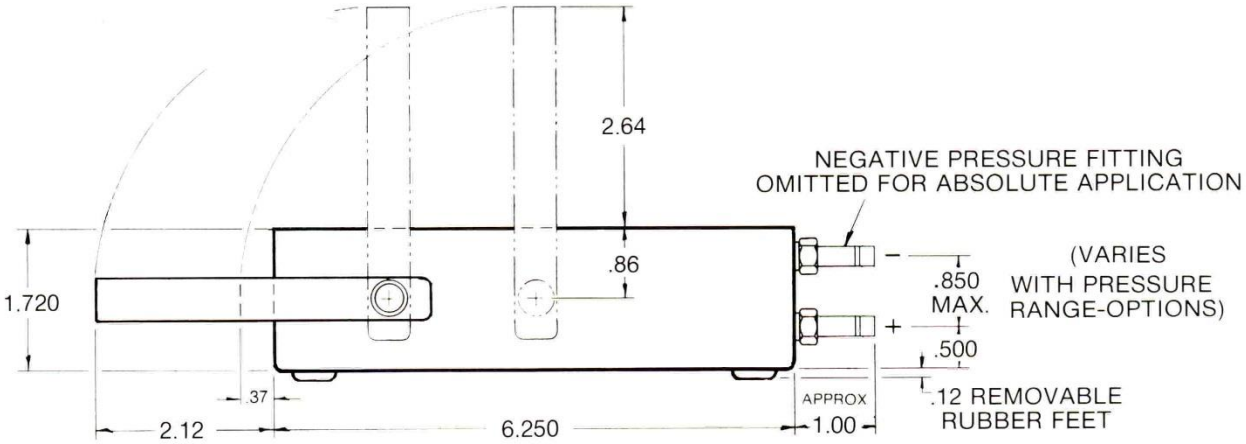
Pressure Connections -

Two brass tube end male Adapters, ¼" OD x 5/8" long One for absolute units.

Mounting: Maybe be panel mounted, or secured to horizontal or vertical surfaces using a universal bracket (optional).

Outline Drawing & Connections





Ordering Information

MODEL NUMBER **P309D - 2 - N - 1 - XX - S - 4 - _**

Measurement

D = Differential (STD)

G = Gage

A = Absolute

Display

2 = 4 ½ digit display

COMP. TEMP. RANGE

S = 77˚ F [23ºC]

SENSOR MATERIAL

3 = 316 SS (Teflon coated dia.)

4 = 410 SST (STD)

5 = 410 SST Nickel Plated

6 = 410 SST Gold Plated

8 = Inconel (Teflon coated dia.)

O-RINGS

A = None (PS309A)

N = BUNA-N (STD)

E = Ethylene Propylene

V = Viton-A

S = Silicone

T = Teflon

*Consult factory for other O-rings

CALIBRATED OUTPUT (DC):

	Sq. Root	-FS	ZERO	+FS
1 =	**-**	**-**	**0V**	**+2V**
2 =	-	-2V	0V	+2V
3 =	X	-	0V	+2V
4 =	-	-	4mA	20mA
5 =	-	4mA	12mA	20mA
6 =	Y	-	4mA	20mA
7 =	Z	-	0V	+2V
8 =	Z	-2V	0V.	+2V

X: $E_0 = 2\sqrt{(P_{IN} / P_{FS})}$ Vdc

Y: $I_0 = 4 + 16\sqrt{(PIN / PFS)}$ mA dc

Z: $E_0 = P_{IN} / P_{FS}$ (Linear)

PRESSURE RANGE

Two digit Range Dash Number

See Page 5

Time Constant		Low Pass Frequency
A	1.0 sec	0.159 Hz
B	0.10 sec	1.59 Hz
None (STD)	**0.01 sec**	**15.9 Hz**

Accessories

3000-1602 – 115 VAC Power Supply

3000-1603 – 220 VAC Power Supply

Special Requirements?

With over 3000 custom specifications already we are confident we can customize a solution to fit your needs. Form factor, housing, pressure ports, electrical connectors, outputs and calibrations are all customizable. Contact our factory via email or phone today!

Ordering Information - Range Chart

Range Code	Psi	In Hg	In H2O	KPa	Torr	CM H2O
20	0.125	0.25	3.5	0.86	6.5	8.8
22	0.20	0.41	5.5	1.40	10.3	14.0
24	0.32	0.65	8.9	2.2	16.5	22.5
26	0.50	1.02	14.0	3.5	25.8	35.0
28	0.80	1.6	22.2	5.5	41.4	56.0
30	1.25	2.5	35.0	8.6	65.0	88.0
32	2.0	4.1	55.0	14.0	103.0	140.0
34	3.2	6.5	89.0	22.0	165.0	225.0
36	5.0	10.2	140.0	35.0	258.0	350.0
38	8.0	16.0	222.0	55.0	414.0	560.0
40	12.5	25.0	350.0	86.0	650.0	880.0
42	20.0	41.0	550.0	140.0	1030.0	1400.0
44	32.0	65.0	890.0	220.0	1650.0	2250.0
46	50.0	102.0	1400.0	350.0	2580.0	3500.0
48	80.0	160.0	2220.0	550.0	4140.0	5600.0
50	125.0	250.0	3500.0	860.0	6500.0	8800.0
52	200.0	410.0	5500.0	1400.0	10300	14000
54	320.0	650.0	8900.0	2200.0	16500	22500
56	500.0	1020.0	14000	3500.0	28500	35000
58	800.0	1600.0	22200	5500.0	41400	56000
60	1250.0	2500.0	35000	8600.0	65000	88000
62	2000.0	4100.0	55000	14000	103000	140000
64	3200.0	6500.0	89000	22000	165000	225000
66	5000.0	10200	140000	35000	258000	350000
68	8000.0	160000	222000	55000	414000	560000

- **For pressures not shows pick the closest dash number and specify the pressure range and engineering units when ordering.**