

Druck

LPM / LPX 9000 Series

Low Differential Pressure Sensors

- Ranges 0.04 inH₂O to 150 psid
- Accuracy better than 0.1% FS BSL
- Line pressure from vacuum to 3000 psi
- Uni-directional or bi-directional operation
- Excellent thermal and long term stability
- Full wet/wet media compatibility



The LP 9000 Series accurately measure low differential or relative pressure of gases and liquids from 0.04 inH₂O to 150 psid full scale. With a choice of current or voltage output, they are suitable for uni-directional, for example, 0 to 8 inH₂O or bi-directional, for example, -8 to +8 inH₂O.

An innovative eddy current measurement system enables the use of low displacement sensor diaphragms operating well within elasticity limits. In addition, the 'dry cell' sensor concept means no internal fluid is used. Combined with a rugged design, this ensures high performance with long term reliability, even when operating over a wide temperature range.

The LP 9000 Series are therefore ideally suited to a wide range of high precision applications including leak detection, test benches and low flow measurement of liquids and gases amongst many others.

LPM / LPX 9000 Series



Low Differential Pressure Sensors

STANDARD SPECIFICATION

Pressure Range	Overpressure
0.04, 0.08, 0.2 inH ₂ O D	0.75 psi
0.4, 0.8 inH ₂ O D	15 psi
2, 4 inH ₂ O D	75 psi
8 inH ₂ O D	15 psi
20 inH ₂ O D	30 psi
40 inH ₂ O D	45 psi
80 inH ₂ O D	60 psi
75 psid	75 psi
15 psid	120 psi
30 psid	150 psi
75 psid	300 psi
150 psid	450 psi

Static (line) Pressure

Vacuum to 750 psig ranges 0.04 to 4 inH₂O,
Vacuum to 3000 psig ranges 8 inH₂O to 150 psid

Pressure Media

Fluids/gases compatible with 316L SS, Inconel X750, Inconel 600; for ranges 0.04 to 0.2 inH₂O: Beryllium copper, brass, and solder (Pb/Sn)

Relative Humidity

0 to 100%

Transduction Principle

Variable Inductance (Eddy current)

Excitation Voltage

10-30 Vdc	2-wire, 4 - 20mA, 12±8mA;
	3-wire, 0 - 5 Vdc
15-30 Vdc	3-wire, 0 - 10 Vdc
10-30 Vdc	4-wire, 2.5 - ±2.5 Vdc
±8 to ±15 Vdc	4-wire, 0 - ±5 Vdc

Supply Sensitivity

0.05% FS/volt

Insulation Resistance

100 MOhms at 50 Vdc

Output Signal

LPX (uni-directional):	4-20 mA	(2 wire)
LPX (bi-directional):	12±8mA	(2 wire)
LPM (uni-directional):	0-5 Vdc	(3 wire)
	0-10 Vdc	(3 wire)
LPM (bi-directional):	2.5 V ±2.5 V	(3 wire)
	0±5 V	(3 wire)
	5±5 V	(3 wire)

Load Impedance

LPX: 0.05 (V_{supply}-10) KOhms maximum
LPM: 5 KOhms minimum

Resolution

Infinite

Combined Non-linearity, Hysteresis and Repeatability

±0.1%FS BSL all ranges

Asymmetry (Bidirectional operation only)

<1%FS

Static Pressure

Zero: <0.6% FS/750 psi

Span: <0.35% Rdg./750 psi

These errors are repeatable and reversible; they can be eliminated using the potentiometer at operating pressure.

Mounting Position Effect

Possible zero offset which can be corrected with zero potentiometer, no span effect.

Zero Offset Adjustment

±15% of Full Scale

Span Setting Adjustment

±20% of Full Scale

Operating Temperature Range

-40°F to +250°F

Compensated Temperature Range

-4°F to +180°F

Temperature Effects

Zero: ±0.005% FS/°F

Span: ±0.005% Rdg./°F

Response Time

Set at 10 ms; may be factory set 10ms to 2 sec.

Vibration

50g up to 2kHz

Dead Volume

7 ±0.1cm³ ranges 0.04 to 4 inH₂O
6 ±0.1cm³ ranges 8 inH₂O and up

Weight

4.3 pounds for ranges 0.04 to 4 inH₂O
3.4 pounds for ranges 8 inH₂O and up

Sensor Body

316L stainless steel

Measuring Diaphragm

Inconel X750 or Beryllium Copper

Environmental Sealing

NEMA 4X (IP66)

Electrical Connection

Cable gland with screw terminal block accessible under housing cover

Pressure Connection

1/8" NPTF via adapter

OPTIONS

(A) Mounting Bracket

(B) Remote electronics

For severe environments i.e. high temperatures, very low temperatures, ionizing radiation

ORDERING INFORMATION

(1) Select model number

Code	Model
LPX	Current output
LPM	Voltage output
9	Base Model
3	Inconel X750
4	Beryllium copper
8	Cable gland, PG7
1	Temp. Comp.
	-4 to 180°F

(2) State pressure range

(3) State output required

(4) State options (if required)

Continuing development sometimes necessitates specification changes without notice.

ASSOCIATED PRODUCTS

Signal Conditioning/Digital Readouts

Refer to DPI 260 and DPI 280

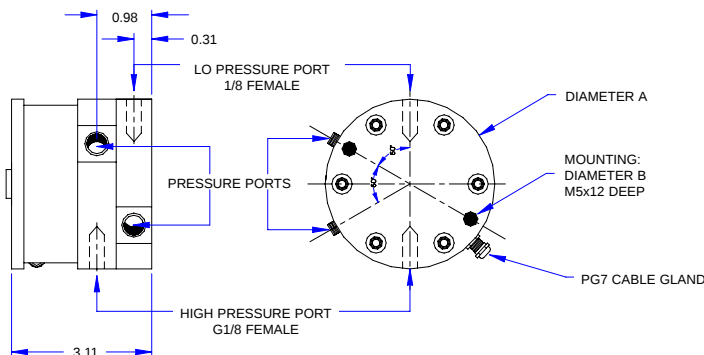
Calibration Instruments

Refer to DPI 510, DPI 602, DPI 605 and DPI 650
Druck/Pressurements
V1600 Series Dead Weight

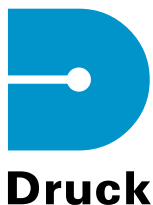
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INSTALLATION DRAWINGS: Dimensions in inches



RANGE (psi)	DIA. A (inch)	DIA. B (inch)
Up to 4 inH ₂ O	3.70	3.30
8 inH ₂ O and above	3.30	2.87



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