



DESCRIPTION

The DP303 is a true bidirectional, "Wet-Wet" differential pressure transducer designed for applications where very low differential pressures are to be measured in fluid systems involving high line, or working, pressures up to 5000 psig. Typical applications include core sampling studies, flow measurements in high pressure gas systems and null-sensing in hydraulic systems.

The DP303 features "take-apart" construction enabling the user to easily disassemble the unit for cleaning or to change full scale range by exchanging the sensing diaphragm. As noted from the Pressure Range/Diaphragm Selection Chart on the reverse side of this Data Sheet, a family of interchangeable diaphragms are available to cover virtually any full scale pressure range from 0.08 psid full scale to 5,000 psid full scale—all rated for operation at 5,000 psig line pressure!

As all surfaces of the transducer which may come in contact with the fluid being measured are Type 410 stainless steel, Inconel or the cavity seal O-ring material—in both the positive and negative pressure cavities—a wide variety of corrosive liquids or gases may be used without the need for add-on isolators and internal transfer fluids. For applications involving fluids not compatible with Type 410 Stainless steel, or the standard BUNA-N O-ring compound, the DP303 may be ordered with all wetted surfaces nickel or gold plated, and/or with alternative O-ring materials. (See the Ordering Information Section on the reverse of this Data Sheet for a listing of the available options).

Wet-Wet Differential

Ranges ± 0.08 psid to ± 5000 psid
5,000 psig Line Pressure

Features

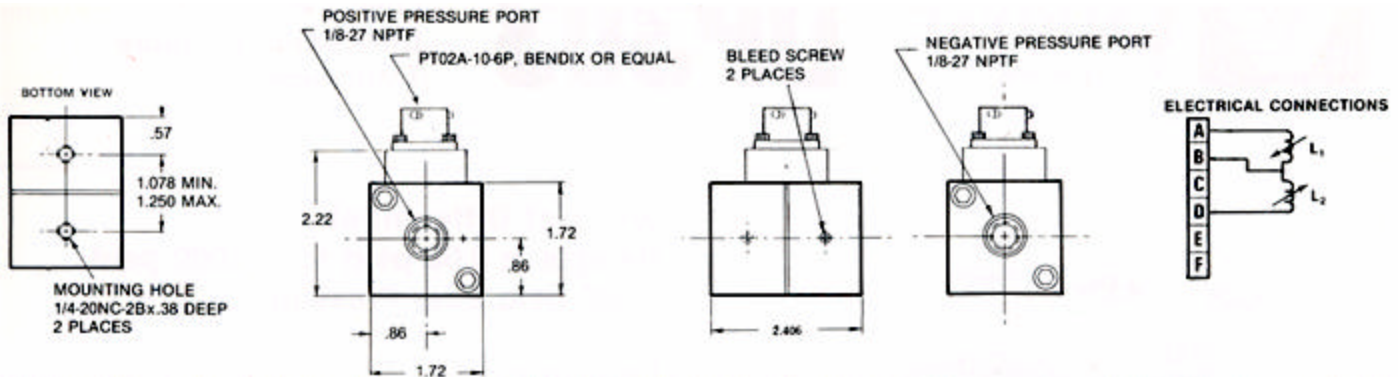
- ☐ Ranges from ± 0.08 to ± 5000 psid
- ☐ High line pressure, to 5000 psig
- ☐ Wide dynamic response range
- ☐ Accepts corrosive liquids and gases, both sides
- ☐ High natural frequency
- ☐ Field interchangeable replacement diaphragms

Specifications

Standard Ranges:	± 0.08 psid FS to $\pm 5,000$ psid, FS. See Diaphragm Selection Chart on reverse side
Accuracy:	.5% FS, including linearity, hysteresis and repeatability.
Hysteresis:	$\frac{1}{2}$ % pressure excursion
Overpressure:	500% FS or 7500 psi, whichever is less
Line Pressure:	5,000 psig operating, zero shift 1% FS/1000 psi, 3% max.
Output:	33 mV/V full scale nominal
Inductance:	20 mH nominal, each coil
Zero Balance:	Within 5 mV/V
Excitation:	Rated: 5V rms, at 3kHz to 5kHz Limits: 30V rms, at 3kHz 1kHz to 20kHz with 20mH coils
Pressure Media:	Corrosive liquids and gases both sides, compatible with 410sst, Inconel and BUNA-N O-ring*
Temperature:	Operating: -65°F to 250°F Specified 0°F to 160°F
Thermal Zero Shift:	1.0%FS/100°F Typical
Thermal Sensitivity Shift:	2.0% FS/100°F Typical
O-Rings:	BUNA-N std.*
Pressure Cavity Volume:	4×10^{-3} cubic inch
Volumetric Displacement:	3×10^{-3} cubic inch
Pressure Connections:	1/8-27 NPTF female ports.*
Electrical Connections:	PT02A-10-6P, Bendix or equal. Mating connector PT06A-10-6S (SR) not provided
Weight:	2 pounds (0.91 Kg)

*See Ordering Information section for available options.

Installation Drawing



Pressure Range Selection Chart

Range Code	Psi	In Hg	In H ₂ O	KPa	Torr	CM H ₂ O
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	25800	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

Pressure Range/Diaphragm Selection Chart

How to Use the Pressure Range Chart

First, enter the chart by selecting the appropriate engineering units desired (psi, kPa, etc.). Move down this column until the desired full scale pressure range is located. Then, select the Range Dash Number that corresponds to the desired pressure range (number located in far left column). Should the pressure range desired fall between the ranges listed, use the Range Dash Number for the next higher range. Example: to obtain a 1000 psi transducer, select a -60 range. This transducer may then be calibrated for any full scale pressure range from 801 through 1250 psi. Should the pressure range desired fall on a range listed, then use the Range Dash Number in the left most column. Example: to obtain a 5000 psid transducer selects a -66 range. This transducer may then be calibrated for any full scale pressure range from 3200 to 5000 psid. When this pressure range chart is so used, the transducer will meet all of the performance specifications for the model.

Ordering Information to order, specify part number as follows:

PRESSURE RANGE
Enter the two-digit Range Dash Number from the Pressure Range/Diaphragm Selection Chart

ELECTRICAL CONNECTOR
OPTION NO. DESCRIPTION

1	= PT02A-10-6P, Bendix or Equal (STD)
2	= PT02E-10-6P, Bendix or Equal
3	= WK-4-32S, Cannon
4	= WK-5-32S, Cannon
6	= NONE

SENSOR MATERIAL
Option No. Description

4	Type 410 Stainless Steel (STD.)
5	Type 410, Nickel Plated *
6	Type 410, Gold Plated

*Consult factory for thermal characteristics

DP303 - XX - N - 1 - S - 4 - A

O-RING MATERIAL
Option Letter Description

N	BUNA-N (STD.)
E	Ethylene Propylene
V	Viton-A
S	Silicone
T	Teflon (2 psi & above)

TEMPERATURE RANGE
Option Letter Description

S	0° to +160°F (STD.)
W	-65° to +250°F

PRESSURE PORT OPTIONS
Option Letter Pressure Port:

A	1/8-27 NPTF (STD)
B	7/16-20 UNF-2B per MS16142-4