



## Wide-Range Wet-Wet Capability

### Features

- Continuous range coverage from  $\pm 0.08$  to  $\pm 3200$  psid
- Equal pressure inlet volumes
- Field replaceable sensing diaphragms
- Withstands extreme pressure overloads
- Accepts corrosive liquids and gases, both sides

### Description

The DP15 Pressure Transducers are designed for low and medium pressure measurements of laboratory accuracy, and are used for aircraft and missile flight and ground test applications including air speed, fuel flow, altitude, fuel pressure, tank level and aerodynamic load pressures. In typical AC excited bridge circuits, the system delivers a full scale output of 35 millivolts per volt at 3,000 Hz. The transducer operates with carrier systems, including the Validyne CD15 with 10 volts DC output.

The pressure sensing element is a flat diaphragm of magnetic stainless, clamped between case halves of the same material, in a symmetrical assembly. Pick-off coils, embedded in the case halves, sense the diaphragm deflection. The embedded coils are covered with a non-magnetic stainless layer, so that the pressure cavity presents a completely stainless exposure to the working fluid vent valves facilitate complete liquid filling for dynamic measurement

### Model DP215

The DP215 fill the need for a more corrosion resistant transducer – specifically for clean and salt water applications. Constructed entirely of Armco 17-7 PH stainless steel, the corrosion resistant approaches that of type 304 ss. The DP215 meets all of the DP15, except those listed below.

**Pressure Media:** Corrosive liquids and gases both sides, compatible with 17-7 PH ss

**Replacement Diaphragm:** See next page

**Ranges:**  $\pm 10$  psid FS to  $\pm 3200$  psid FS

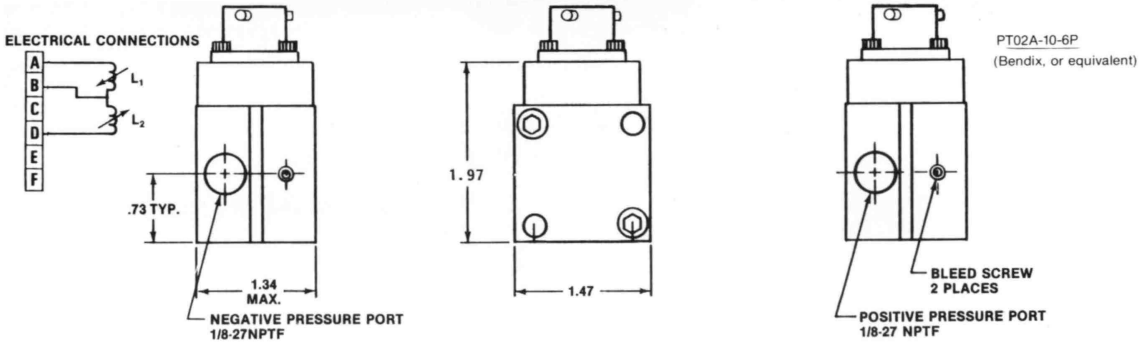
\* Can be factory conditioned for higher overpressure on special order

\*\* See Ordering Information for available options.

### Specifications

<b>Standard Ranges:</b>	$\pm 0.08$ psid FS to 3200 psid FS (See Range Selection Chart on the following page)
<b>Accuracy:</b>	$\pm 0.25\%$ FS (including effects of linearity, hysteresis and repeatability)
<b>Overpressure:</b>	200% FS up to 4000 PSI maximum, with less than 0.5% zero shift *
<b>Line Pressure:</b>	3200 psig operating
<b>Line Pressure Effect:</b>	Less than 1% FS zero shift/1000 psig
<b>Output:</b>	35 mV/V full scale nominal
<b>Inductance:</b>	20mH nominal, each coil
<b>Zero Balance:</b>	Within 5 mV/V
<b>Excitation:</b>	Rated: 5V rms, 3kHz to 5kHz Limits: 30V rms at 3kHz 1kHz to 20kHz with 20mH coils
<b>Pressure Media:</b>	Corrosive liquids and gases both sides, compatible with 410ss and inconel **
<b>Temperature:</b>	Operating: $-65^{\circ}\text{F}$ to $250^{\circ}\text{F}$ ** Specified: $0^{\circ}\text{F}$ to $160^{\circ}\text{F}$
<b>Thermal Zero Shift:</b>	1% FS/100 $^{\circ}\text{F}$ typical
<b>Thermal Sensitivity Shift:</b>	2% /100 $^{\circ}\text{F}$ typical
<b>O-Rings:</b>	Buna N **
<b>Pressure Cavity Volume:</b>	$4 \times 10^{-3}$ cubic inch
<b>Volumetric Displacement:</b>	$3 \times 10^{-4}$ cubic inch for full scale
<b>Pressure Connection:</b>	1/8-27 NPTF **
<b>Electrical Connection:</b>	PT02A-10-6P, Bendix or equivalent. Mating connector PT06A-10-6S (SR) not furnished. **
<b>Weight:</b>	12 ounces (.34 Kg)
<b>Replacement Diaphragm:</b>	See next page

# DP15 Variable Reluctance Differential Pressure Transducer



Pressure Diaphragm Selection Chart						
Range Dash No.	PSI	IN HG	IN H <sub>2</sub> O	KPA	TORR	CM H <sub>2</sub> O
	.08	.16	2.22	.55	4.14	5.60
20	.125	.25	3.5	.86	6.5	8.80
22	.20	.41	5.5	1.40	10.3	14.0
24	.32	.65	8.9	2.2	16.5	22.5
26	.50	1.02	14.0	3.5	25.8	35.0
28	.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	140
34	3.2	6.5	90	22.0	165	225
36	5.0	10.2	140	35.0	258	350
38	8.0	16.0	222	55.0	414	560
40	12.5	25.0	350	86.0	650	880
42	20	41.0	550	140	1030	1400
44	32	65.0	890	220	1650	2250
46	50	102	1400	350	2580	3500
48	80	160	2220	550	4140	5600
50	125	250	3500	860	6500	8800
52	200	410	5500	1400	10300	14000
54	320	650	8900	2200	16500	22500
56	500	1020	14000	3500	25800	35000
58	800	1600	22200	5500	41400	56000
60	1250	2500	35000	8600	65000	88000
62	2000	4100	55000	14000	103000	140000
64	3200	6500	8900	22000	165000	225000

### How To Use The Pressure Range Chart

First, enter the chart by selecting the appropriate engineering units desired (PSI, H<sub>2</sub>O, etc.). Move down this column until the desired full-scale pressure range is located. Then, select the Diaphragm 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 Diaphragm Dash Number for the next higher range.

Example: To obtain a 1 PSI transducer, select a -30 diaphragm. This transducer may then be calibrated for any full-scale pressure range from 0.81 to 1.25 PSI. Should the pressure range desired fall on a range listed, then use the Diaphragm Dash Number in the left most column.

Example: To obtain a 65.0 mmHg transducer, select a -30 diaphragm. This transducer may then be calibrated for any full-scale pressure range from 41.5 to 65.0 . When this pressure range chart is so used, the transducer will meet all of the performance specifications for the model.

To order replacement diaphragms, specify:

Model Code	Range Dash No.
3(DP15) →	-20 thru -64
3(DP15) →	-40 thru -64

## Ordering Information *For Transducers, specify part numbers as follows:*

**Pressure Range**  
Dash Number from Range Selection Chart

**Temperature Range**  
S = 0° to 160°F  
W = -65° to 250°F

**Sensor Material**  
4 = 410 Stainless Steel  
5 = 410 Nickel-Plated  
6 = 410 SST Gold Plated

# DP15 - XX - N - 1 - S - 4 - A

**O-Rings**  
N = Buna-N (STD)  
E = Ethylene Propylene  
V = Viton-A  
S = Silicone  
T = Teflon

**Electrical Connectors**  
1 = PTA02A-10-6P (STD)  
2 = PT02E-10-6P  
3 = WK-4-32S  
4 = WK-5-32S  
6 = NONE

	Pressure Port	Bleed Port
A	1/8-27 NPTF Female	None
B	1/8-27 NPTF Female	None
C	1/4 O.D. x 1" Ig. Tube	None
D	5/16-24 Female Per ANI0050-2	None
E	5/16-24 Female Per ANI0050-2	None
F	O.D. X 1" Ig. Tube	None



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