VALIDYNE ENGINEERING

DP215

AC OUTPUT
17-7 ph SST
DIFFERENTIAL
PRESSURE TRANSDUCER

Features

- **Continuous range coverage from ± 8 to ± 3200 psid**
- **Equal pressure inlet volumes**
- **Field interchangeable sensing diaphragms**
- **Withstands extreme pressure overloads**
- **Accepts corrosive liquids and gases, both sides**

DESCRIPTION

The Module DP215 Differential Pressure Transducer is exssentially the same as the Model DP15 except that the material used for the transducer housing and diaphragm is 17-7 ph stainless steel rather than type 410, for improved long term compatibility with corrosive pressure media, such as saline solutions, sea water, etc.

Like the DP15, the DP215 features take-apart construction with a wide range of interchangable sensing diaphragms that may be exchanged in the field, covering full scale pressure ranges from ± 8 psid through ± 3200 psid.

Thanks to the exclusive Validyne diaphragm sizing procedures, the user can select a diaphragm – or a transducer, for that matter – to cover virtually and full scale pressure range between the minimum and maximum limits for the model (see the Pressure Range/Diaphragm Selection Chart or the reverse side of this data sheet for details), without compromising the accuracy of the measurement.

Other features include:

- All surfaces in contact with the pressure media are stainless steel, Inconel-X or the O-ring compound selected (see Ordering Information for available choices), in both the postitive and negative cavities, thus eliminating the need for isolating diaphragms and fluids (a trus “wet-wet” design).
- Total diaphragm deflection for full scale pressure change is less than 0.0015”, resulting in extremely lowe volumetric change, and corresponding high dynamic response characteristics.
- Equal volumes in both the positive and negative pressure cavities ensure truly symmetrical preformance in bidirectional differential meaurements.
- A bleed port is provided in each pressure cavity to eliminate undersirable entrapped air in liquid measurements.

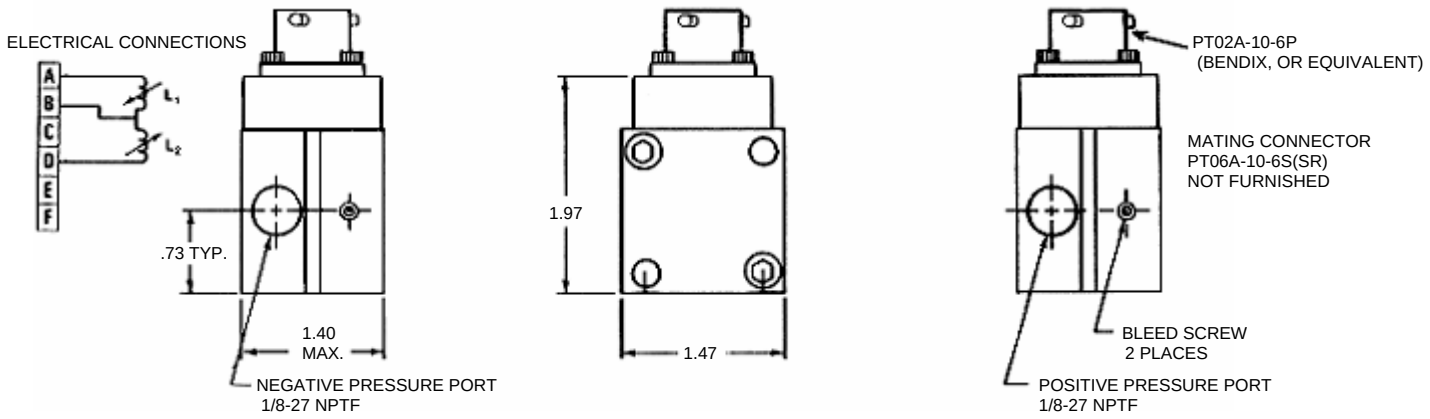
Specifications

Standard Ranges:	± 8 psid FS to 3200 psid FS (see Range Selection chart on reverse side)
Accuracy:	± 0.25% FS (including effects of linearity, hysteretic and repeatability)
Overpressure:	200% FS up to 4000 PSI maximum, with less than 0.5% zero shift*
Line Pressure:	3200 psig operating
Line Pressure Effect:	Less than 1% FS zero shift/1000 psig
Output:	35 mV/V full scale nominal
Inductance:	20mn nominal, each coil
Zero Balance:	Within 5 mV/V
Excitation:	Rated: 5 Vrms, 3 kHz to 5 kHz; Limited: 30 Vrms at 3 kHz 1kHz to 20 kHz with 20 mH coils
Pressure Media:	Corrosive liquids and gases both sides, compatible with 17-7 ph stainless steel and Inconel
Temperature:	Operating: -65°F to 250°F** Specified: 0°F to 160°F
Thermal Zero Shift:	1% FS/100°F typical
Thermal Sensitivity Shift:	2%/100°F typical
O-Rings:	BUNA-N **
Pressure Cavity Volume:	4×10^{-3} cubic inch
Volumetric Displacement:	3×10^{-4} cubic inch for full scale
Pressure Connection:	1/8 – 27 NPTF **
Electrical Connection:	PT02A-10-6P, Bendix or equivalent. Mating connector PT06A-10-6S (SR) not furnished. **
Weight:	12 ounces (.34 Kg)
Replacement Diaphragm:	See reverse side

*Can be factory conditioned for higher overpressure on speical order

**See Ordering Information section for available options.

Installation Drawing



Pressure Range/Diaphragm Selection Chart

RANGE DASH NO.	PSI	IN HG	IN H_20	KPA	MmHG TORR	CM H_20
_	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	28500	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	89000	22000	165000	225000

How to Use the Pressure Range Chart

First enter the chart by selecting the appropriate engineering units desired (PSI, IN H_20, 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 1000 PSI transducer, select a -60 diaphragm. 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 diaphragm dash number in the left most column. Example: to obtain a 1250 PSID transducer, select a -60 diaphragm. This transducer may then be calibrated for any full scale pressure range from 800 to 1250 PSID. 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.
__9	___-40 thru -64

Ordering Information **For transducers, specify part number as follows:**

PRESSURE RANGE
Enter the Range Dash Number from Range Selection Chart.

TEMPERATURE RANGE

Option Letter	
S	0° to 160°F
W	-65° to 250°F

PRESSURE AND BLEED PORT OPTIONS

Option Letter	Pressure Port	Bleed Port
A	1/8-27 NPTF FEMALE	8-32 BLEED SCREW
B	1/8-27 NPTF FEMALE	1/8-NPTF FEMALE

DP215 – XX – N – 1 – S – 7 – A

O-RINGS

Option Letter	
N	BUNA-N (Std)
E	Ethylene Propylene
V	Viton-A
S	Silicone
T	Teflon

ELECTRICAL CONNECTOR

Option No.	
1	PT02A-10-6P (STD)
2	PT02E-10-6P
3	WK-4-32S
4	WK-5-32S
6	NONE

SENSOR MATERIAL

Option No.	
7	17-7 ph Stainless Steel

VALIDYNE ENGINEERING
8626 Wilbur Avenue - Northridge, CA 91324-4498
(818) 886-2057 - FAX (818) 886-6512
http://www.validyne.com - e-mail to sales@validyne.com