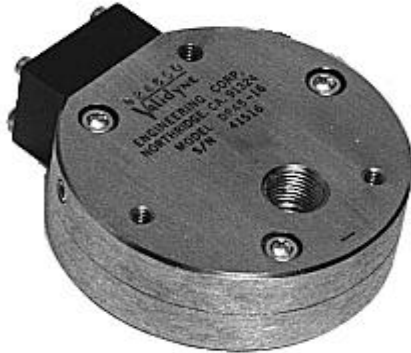




DP45

VERY LOW RANGE
DIFFERENTIAL
PRESSURE TRANSDUCER
VARIABLE RELUCTANCE

AC Output



VERY LOW RANGE WET-WET CAPABILITY

Features

- Low Range: ± 0.6 to 90 in.H₂O FS
- Low Internal Volume
- Symmetrical Construction
- Small Volumetric Displacement
- High Natural Frequency

Description

The Validyne DP45 Very Low Differential Pressure Transducer is designed for extremely low pressure measurement in the order of ± 1 inch water column. This instrument is used extensively in connection with flow measurements where dynamic response at low flow rates is required. Dynamic line pressure effects are minimized due to the combination of low internal volume, symmetrical construction, and small volumetric displacement inherent in the DP45 design.

All surfaces exposed to the media are corrosion resistant steel. The design and construction of the DP45 permits the user to disassemble the instrument for cleaning, diaphragm replacement, or changing the transducer range. The transducer range is changed by substituting a different sensing diaphragm chosen from the Diaphragm Selection Chart on the reverse side of this sheet.

Used with a typical Validyne carrier demodulator, pressure inputs as low as 0.6 in.H₂O will produce up to a $\pm 10V$ output. The exceptionally low acceleration sensitivity of the DP45 ensure accuracy under all types of mounting conditions.

Specifications

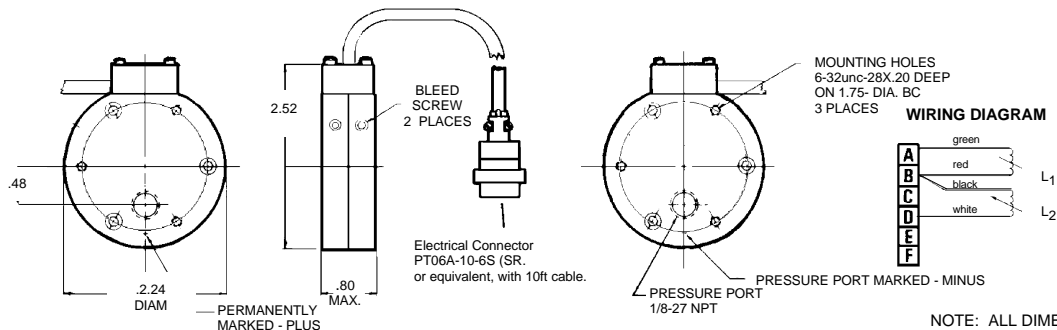
Range:	± 0.6 to 90 in. H ₂ O FS
Accuracy:*	$\pm 0.5\%$ FS
Hysteresis:	0.25% pressure excursion
Overpressure:	15 psid
Line Pressure:	15 psid
Zero Shift:	less than 1% FS psi (with Line Pressure).
Output:	25mV/V FS, nominal.
Inductance:	20mH nominal, each coil.
Zero Balance:	Within $\pm 5m$ V/V.
Excitation	
Rated:	5 Vrms at 5 KhZ
Limits:	30 Vrms at 3 KhZ
Pressure Media:	Corrosive liquids and gases, both sides compatible with 410 CRES and inconel.**
Temperature:	0 to 160°F
Thermal Zero Shift:	1% FS/100°F Typical.
Thermal Sensitivity Shift:	2% FS/100°F Typical.
Pressure Cavity Volume:	10-2 cubic inch.
Volumetric Displacement:	10-3 cubic inch FS.
Natural Frequency:	Greater than 600 Hz at all ranges.
Pressure Connection:	1/8-27 NPTF
Electrical Connection:	Bendix PT06A-106S(SR) or equivalent** with 10ft. cable.
Weight:	12 ounces (336 grams).
Diaphragms:	Changes instrument range or replace diaphragms with selection from chart on reverse side of this data sheet.

* Includes the effects of linearity, hysteresis, and repeatability.

** See Ordering Information for available options.

INSTALLATION DRAWING

DP45 Very Low Range Differential Pressure Transducer



DIAPHRAGM SELECTION CHART

DASH NO.	PRESSURE RANGE					
	PSI	"HG	"H ₂ O	KPA	mmHG	CMH ₂ O
14	0.020	0.041	0.55	0.14	1.03	1.40
16	0.032	0.055	0.89	0.22	1.65	2.25
18	0.05	0.102	1.40	0.35	2.58	3.50
20	0.08	0.16	2.22	0.55	4.14	5.60
22	0.125	0.35	3.5	0.86	6.5	8.80
24	0.20	0.41	5.5	1.40	10.3	14.0
26	0.32	0.65	8.9	2.2	16.5	22.5
28	0.50	1.02	14.0	3.5	25.8	35.0
30	0.80	1.6	22.2	5.5	41.4	56.0
32	1.25	2.5	35.0	8.6	65.0	88.0
34	2.0	4.1	55.0	14.0	103.0	140.0
34	3.2	6.5	90.0	22.0	165.0	225.0

How to use the Pressure Range Chart

First enter the chart by selecting the appropriate engineering units desired (PSI, IN. H₂), etc.). Move down the 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 through 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 mmHg. 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** and **Diaphragm Dash No.**

---6 (DP45) --- -16 thru -34

Ordering Information For transducers, specify part numbers as follows:

PRESSURE RANGE Dash Number from Range Selection Chart.	O-RINGS: A = NONE	TEMPERATURE RANGE S = 0° to 160° F	<table border="1"> <thead> <tr><th>CABLE LENGTH</th><th>CABLE</th></tr> </thead> <tbody> <tr><td>A. 1 FT</td><td>Belden 8434</td></tr> <tr><td>B. 18 inches</td><td>Belden 8434</td></tr> <tr><td>C. 5 FT</td><td>Belden 8434</td></tr> <tr><td>D. 10 FT</td><td>Belden 8434</td></tr> <tr><td>E. 15 FT</td><td>Belden 8434</td></tr> <tr><td>F. 25 FT</td><td>Belden 8434</td></tr> <tr><td>G. 50 FT</td><td>Belden 8434</td></tr> <tr><td>H. 100 FT</td><td>Belden 8434</td></tr> <tr><td>J. NONE</td><td>NONE</td></tr> <tr><td>K. Length as Specified</td><td>4 Leads 24 GA</td></tr> <tr><td>L. Length as Specified</td><td>Belden 8434</td></tr> </tbody> </table>	CABLE LENGTH	CABLE	A. 1 FT	Belden 8434	B. 18 inches	Belden 8434	C. 5 FT	Belden 8434	D. 10 FT	Belden 8434	E. 15 FT	Belden 8434	F. 25 FT	Belden 8434	G. 50 FT	Belden 8434	H. 100 FT	Belden 8434	J. NONE	NONE	K. Length as Specified	4 Leads 24 GA	L. Length as Specified	Belden 8434
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DP45 - XX - A - 1 - S - 4 - A																											
ELECTRICAL CONNECTOR 1 = PT06A-10-6S (STD) 2 = PT06E-10-6S 3 = WK-4-21 C -1/4 4 = WK-4-22 C -1/4 6 = NONE 7 = NONE CABLE END PIGTAILED 8 = NONE LEADS PIGTAILED	SENSOR MATERIAL 4 = 410 Stainless Steel																										



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