

## DP45 Very Low Range Differential Pressure Transducer



### Features:

- **Low Range  $\pm 0.89$ "H<sub>2</sub>O to 90"H<sub>2</sub>O FS**
- **Low Internal Volume**
- **Symmetrical Construction**
- **Small Volumetric Displacement**
- **High Natural Frequency**

The Validyne DP45 Very Low Differential Pressure Transducer is designed for extremely low pressure measurement in the order of  $\pm 1$  inch water column. This pressure sensor 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 410 stainless 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.

Used with a typical Validyne carrier demodulator, pressure inputs as low as 0.89"H<sub>2</sub>O will produce up to a  $\pm 10$ V output. The exceptionally low acceleration sensitivity of the DP45 ensure accuracy under all types of mounting conditions.

### The DP45 is Ideal for:

- **Veterinary Pulmonary Research**
- **HVAC Measurements**
- **Low Pressure Applications**
- **Leak Detection**



# DP45 Very Low Range Differential Pressure Transducer

## Specifications

### General Specifications –

**Ranges:**  $\pm 0.89$ "H<sub>2</sub>O to  $\pm 90.0$ "H<sub>2</sub>O FS

**Accuracy:**  $\pm 0.5\%$  FS including effects of linearity, hysteresis, and repeatability.

**Overpressure:** 15 psid

**Line Pressure:** 15 psid

**Zero Shift:** <1% FS/15psi

**Output:** 25 mV/V FS, nominal

**Inductance:** 20mH nominal, each coil.

**Zero Balance:**  $\pm 5$  mV/V

**Excitation**  
**Rated:** 5 Vrms @ 5 KHz  
**Limits:** 30 Vrms @ 3 KHz

**Pressure Media:** Corrosive liquids and gases, both sides compatible with 410 SST.

**Operating Temperature:** 0°F 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:** >600 Hz at all ranges

**Pressure Connection:** 1/8-27 NPTF

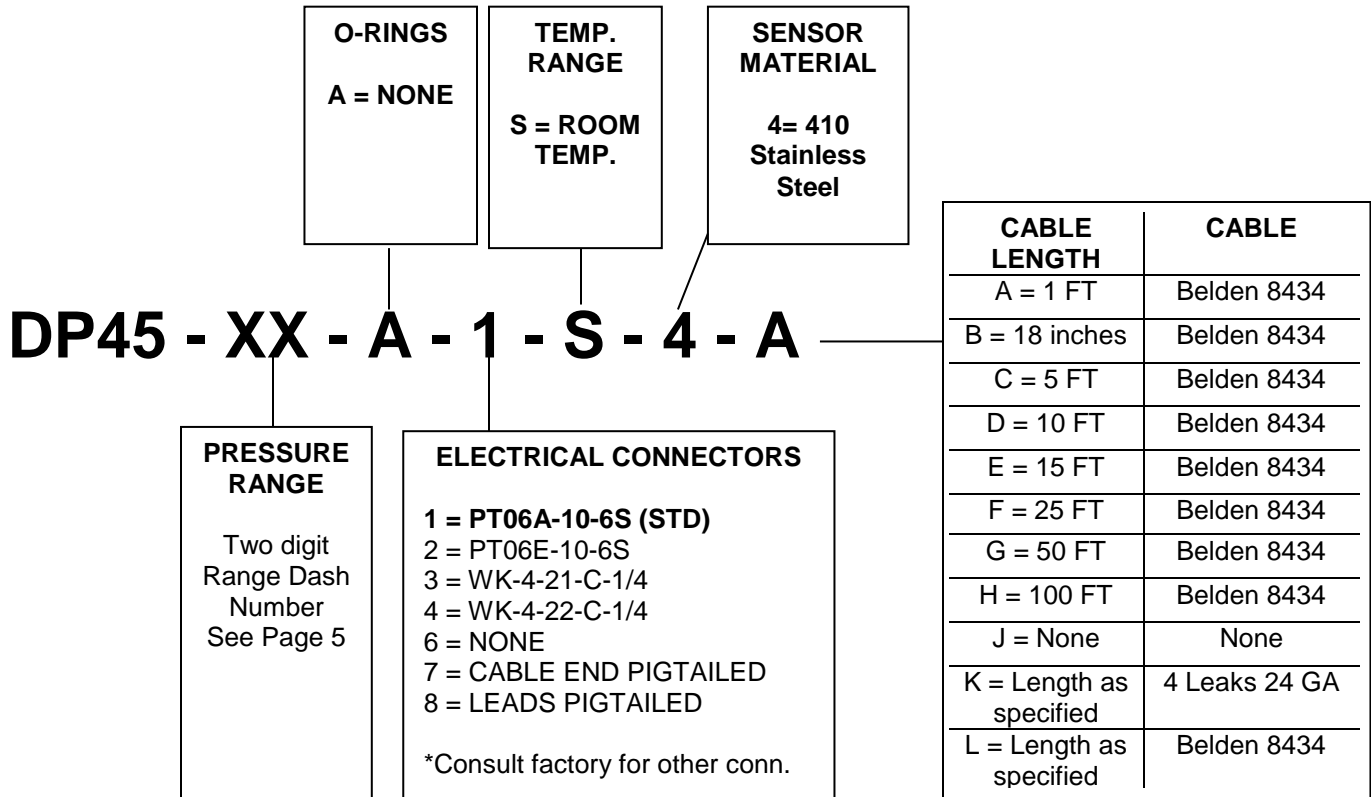
**Electrical Connection:** Bendix PT06A-10 6S(SR) or Equivalent with 10ft. cable.

**Weight:** 12 ounces (336 grams)

### Compatible Validyne Carrier Demodulators and DAQ's -

- CD15  $\pm 10$  VDC analog output signal
- CD16 DC powered  $\pm 5$  VDC or 4-20 mA analog output signal
- CD17 single channel digital output via USB or Serial.
- CD23/223 3.5 digit LED display with  $\pm 10$  VDC analog output
- USB2250 DAQ Up to 16 channels for data logging to a PC
- USB2251 DAQ Up to 16 channels for data logging to a PC
- Rack-mountable MC1 series of signal conditioning systems with modular inputs.

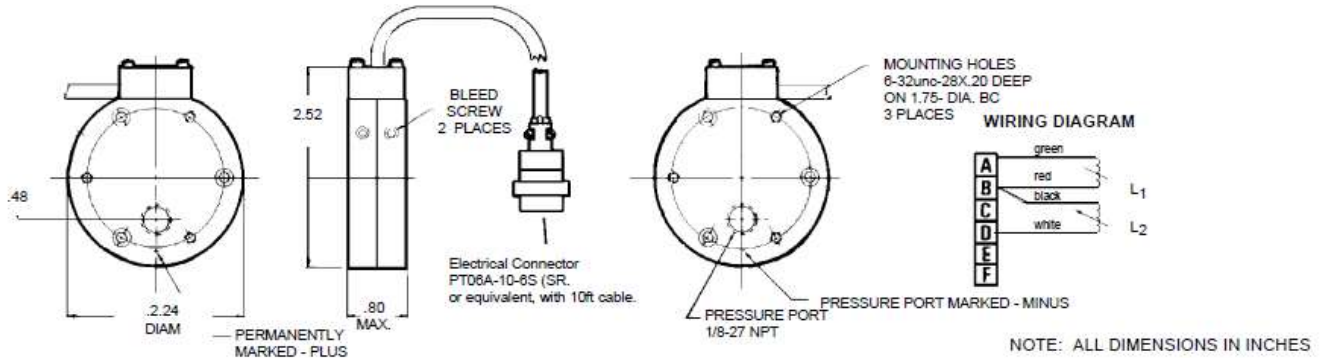
## Ordering Information



### Special Requirements?

With over 3000 custom specifications already we are confident we can customize a solution to fit your needs. Form factor, housing, pressure ports, electrical connectors, outputs and calibrations are all customizable. Contact our factory via email or phone today!

## Outline Drawing & Connections



## Ordering Information – Range Chart

Range Code	Psi	In Hg	In H2O	KPa	mmHG	CM H2O
14	0.032	0.055	0.89	0.22	1.65	2.25
16	0.05	0.102	1.40	0.35	2.58	3.50
18	0.08	0.16	2.22	0.55	4.14	5.60
20	0.125	0.25	3.5	0.86	6.5	8.80
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	90.0	22.0	165.0	225.0

- Units can be calibrated in other engineering units as well. Contact the factory for details.
- For pressures in between range codes, pick the next range code