P24 Ruggedized Pressure Transducer

Features

- ❒ **Ranges From ±0.125 psi to ±10,000 psi FS**
- ❒ **Wet-Wet Capability**
- ❒ **Line Pressures up to 10,000 psig**
- ❒ **±5Vdc or 4-20mA Output**
- ❒ **Extrememly rugged contruction**
- ❒ **Fully Potted – Sensor and Electronics**

The P24 Differential Pressure Transducer is the combination of a variable reluctance pressure transducer and a miniature carrier demodulator integrated into a single package to provide for operation from mobile dc power and deliver a standardized dc output suitable for recording or telemetry.

P24 Absolute Pressure Transducer provides a sealed absolute reference cavity in the variable reluctance pressure transducer integrated into a single package with the miniature carrier demodulator.

Electrically the P24 is a true four terminal device, the two output terminals being completely isolated from the two power input terminals. In addition, neither input common or output common are connected to case ground.

The electronics and sensor are fully potted inside the NEMA 4 enclosure making the rugged P24 ideal for harsh environments. The 4 screw holes allow for easy installation on any flat surface. The compact design and pressure port location is ideal for use in military and marine applications.

The 24 is available in three output configurations: 4-20 mA current sink output, DC output and isolated DC output. The 4-20 mA output version is a true-two-wire system which will operate over a supply voltage of 9 to 55 Vdc. Zero and span controls are available for external adjustments

The DC version is a direct replacement for the Vdc signal. The isolated DC output version provides the same ±5 Vdc signal, isolated from the power supply by 100 MOhms.

Pressure port placement like shown in the picture above have the pressure port and the connector at a 180º angle.

The P24 is ideal for:

- Pressure measurement in Extreme environments
- Hydraulic Systems

Specifications

General Specifications -

Type: Differential, Absolute or Gage Pressure Transducer

Full Scale Ranges: ±0.125 to ±10,000 PSID Other Eng. Units available

Accuracy: ±0.25% FS includes non-linearity, hysteresis and non-repeatability. ±0.5% FS above 3K PSI

Over Pressure: 200% FS to 10,000 psid (Max. 0.5% Output shift)

Maximum Line Pressure & Error: 3,200 PSI or 10,000PSI. 1%/1000, 3% Max.

Pressure Ports: 1/8" Female NPT (Other options available)

Environmental Specifications -

Operating Temp.: -65ºF to 250ºF (-54ºC to 121ºC)

Compensated Temp.: 0 to 160ºF (-17ºC to 71ºC) -65ºF to 250ºF (-54ºC to

Temperature Error: ±0.5% FS over Compensated temp range.

Sensor Physical Specifications -

Pressure Media: Fluids and gases compatible with 410, 316SST and Inconel.

O-Rings: Buna-N (STD), other compounds available

Weight: 24 Oz. (680 grams)

Approx. Size: 5.25" x 1.71" x 2.63"

Pressure Cavity Volume: 4e-3 cu. In., each port

Volumetric Displacement: 3e-4 cu. In. at FS

Electrical Connector: PT02A-10-6P (STD), other options available

Power Requirements -

Power Supply 9 to 55 Vdc

Current Draw 3mA,

Signal Output -

Option E and F: 4 to 20 mA

Options A,B,C: ±5 Vdc @ 0.5mA

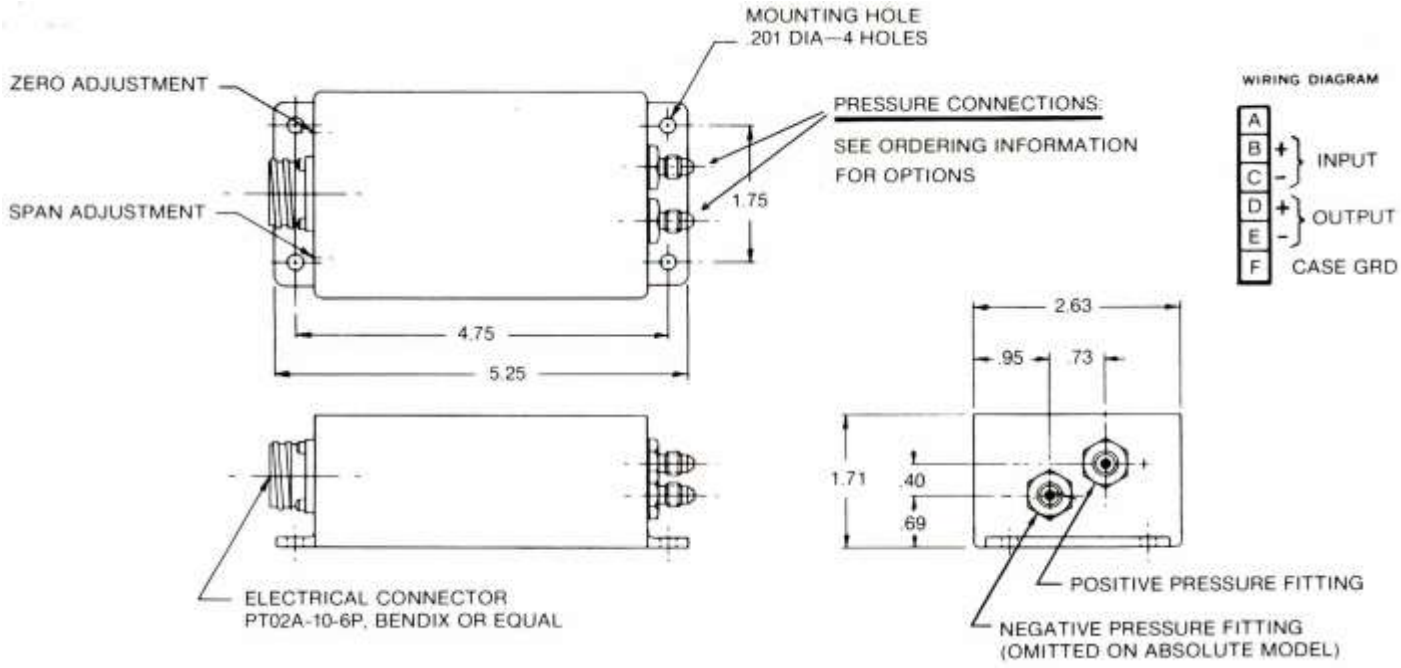
Load Impedance: 10k Ohms or greater

Output Impedance: 100 ohms, max

Output Ripple: 10 mv peak to peak

Frequency Response: Flat to 200Hz

Outline Drawing & Connections



P24 voltage Output Connection

Ordering Information – P24

Type of Measurement

D = Differential (STD)

A = Absolute

E = Extended Accuracy. 0.1% FS

ELECTRICAL CONNECTORS

1 = PT02A-10-6P (STD)

2 = PT02E-10-6P (NEMA)

3 = WK-6-32S, Cannon

5 = D38999 A35 (MIL-STD-1560)

*Consult factory for other conn.

COMP. TEMP. RANGE

S = 0˚ to 160˚ F (STD) [-17ºC to 71ºC}

W = -65˚ to 250˚ F [-54 ºC to 121ºC]

*Other Temp. Ranges available.

SENSOR MATERIAL

3 = 316 SS (Teflon coated dia.)

4 = 410 SST (STD)

5 = 410 SST Nickel Plated

6 = 410 SST Gold Plated

8 = Inconel (Teflon coated dia.)

MODEL NUMBER

P24D - 1 - N -1- A - XX - S - 4 - 1

O-RINGS

N = BUNA-N (STD)

E = Ethylene Propylene

V = Viton-A

S = Silicone

T = Teflon

*Consult factory for other o-rings

Input Voltage

1 = 9-55 Vdc

CALIBRATED OUTPUT (DC):

	-FS	ZERO	+FS
A =		**0**	**+5v**
B =	-5v	0	+5v
C =	0	+2.5v	+5v
D =	-2.5V	0	+2.5V
E =	-	4mA	20mA
F =	4mA	12mA	20mA

PRESSURE RANGE

Two digit Range Dash Number

See Page 5

PRESSURE PORT OPTIONS

PRESSURE PORT

1 = 1/8" Flared Tube, per MS33656-2E (STD)

2 = ¼" Flared Tube, per MS33656-4E

3 = 1/8" – 27 NPT Female

4 = 1/8" -27 NPT Male

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!

Ordering Information - Range Chart

Range Code	Psi	In Hg	In H2O	KPa	Torr	CM H2O
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	28500	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
68	8000.0	160000	222000	55000	414000	560000

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

Update: 10/11/2018