AP10

Absolute Pressure Transducer

AC Output

Ranges From 4 TORR Full Scale Overpressure Protected

Features

- ☐ **Ranges: 0-0.08 PSIA Full Scale to 0-3200 PSIA Full Scale**
- ☐ **Overpressure: The Greater of 20 PSIA or 200% Full Scale**
- ☐ **All-Welded CRES Construction**
- ☐ **Very Low Internal Volume**
- ☐ **Low Attitude/Acceleration Sensitivity**

Description

The AP10, Absolute Pressure Transducer, is designed for low and medium pressure measurements, to laboratory accuracy, of corrosive liquids and gases. In typical AC excited bridge circuits, this transducer delivers a full-scale output of 40 mV per volt at 3kHz. The unit operates with carrier systems including the Validyne CD15 sine wave carrier demodulator and CD16 miniature DC input DC output carrier demodulator to produce a high level analog DC output suitable for recording and control.

The pressure sensing element is a flat diaphragm of magnetic stainless steel, welded between case halves of the same material, in a symmetrical assembly. Pickoff coils, embedded in the case halves, sense the diaphragm deflection. The embedded coils are covered with a non-magnetic stainless steel layer so that the pressure cavity presents a completely stainless steel exposure to the working media. One side of the diaphragm is exposed to an evacuated reference chamber. This reference chamber and the diaphragm utilize all-welded seals. No o-rings or gaskets are used in the unit.

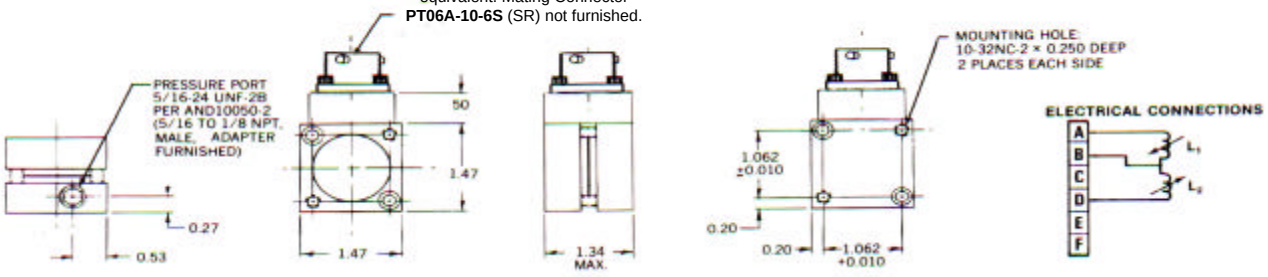
Specifications

Ranges:	0-0.08 psia (0-4 TORR) to 0-3200 psia (1.65 X 10 TORR) (See Selection Chart on the following sht)
Linearity:	±1/2% F S best straight line
Hysteresis:	½% pressure excursion
Overpressure:	20 psia or 200% of range, whichever is greater
Output:	40 mV/V full scale nominal
Inductance:	20mH nominal, each coil
Zero Balance:	Within 5 mV/V
Excitation:	Rated: 5V rms, 3kHz to 5kHz Limits: 30V rms at 3kHz 1kHz to 20kHz with 20mH coils
Pressure Media:	Corrosive liquids and gases, compatible with 410ss
Temperature:	Operating: -65°F to 250°F Compensated: 0°F to 160°F
Thermal Zero Shift:	2%FS/100°F, 2 psi and above 4%/FS/100°F, below 2 psi
Thermal Sensitivity Shift:	4% of reading/100°F
Pressure Cavity Volume:	4×10^{-3} cubic inch
Volumetric Displacement:	3×10^{-4} cubic inch for full scale
Pressure Connection:	5/16-24 UNF-2B, per AND 10050-2 (adapter, 5/16, to 1/8NPT, male, furnished)
Electrical Connection:	PT02A-10-6P, Bendix or equivalent. Mating connector PT06A-10-6S (SR) not furnished.

* See Ordering Information for available options.

Installation Drawing

PT02A-10-6P, Bendix or equivalent. Mating Connector **PT06A-10-6S** (SR) not furnished.



Pressure Range Selection Chart

Range Dash No.	PSI	IN HG	IN H_20	KPA	TORR	CM H_20
	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	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	10300	140000
64	3200	6500	8900	22000	16500	225000

How To Use The Pressure Range Chart

First, enter the chart by selecting the appropriate engineering units desired (PSI, H_20, etc.). Move down this column until the desired full-scale pressure range is located. Then, select the Range 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 Range Dash Number for the next higher range.

Example: To obtain a 1 PSI transducer, select a –30 range. 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 Range Dash Number in the left most column.

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

Ordering Information For Transducers, specify part numbers as follows:

Pressure Range
Two-Digit Range Dash Number
From Pressure Range Chart

Temperature Range
S = 0° to 160°F (STD)
W = -65° to 250°F

Sensor Material
4 = 410 Stainless Steel (STD)
7 = 17-7 PH SST
(8 PSI & Above)

AP10 - XX- N - 1 - S - 4 - A

Adapter Fitting O-Rings

A = None
N = Buna-N (STD)
E = Ethylene Propylene
V = Viton-A
T = Teflon (2 psi & above)
S = Silicone

Electrical Connectors

1 = PTA02A-10-6P (STD)
2 = PT02E-10-6P
3 = WK-4-32S
4 = WK-5-32S

6 = NONE

Pressure & Bleed Port Options

	Pressure Port	Bleed Port	Adapter Fitting Installed
A	5/16-24 Female Per ANI0050-2	None	To 1/8 Male Pipe Thd'd (STD)
B	5/16-24 Female Per ANI0050-2	None	To 1/8 Female Pipe Thd'd
C	5/16-24 Female Per ANI0050-2	None	To 1/8 Flared Tube (MS33656-4)
D	5/16-24 Female Per ANI0050-2	None	To 1/4 Flared Tube (MS33656-4)
E	5/16-24 Female Per ANI0050-2	None	None
F	O.D. X 1" lg. Tube	None	None

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