

HPO Analog Pressure Transducer

FEATURES

- Accuracy $\pm 0.05\%$ of span or better
- Absolute, gauge, vacuum and compound pressure types
- Voltage or current output
- NEMA 4X housing
- External zero and span adjustment
- Broad pressure media compatibility
- 316 Stainless steel and Inconel® wetted materials



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Analog Pressure Transducer

SPECIFICATIONS

Accuracy:	$\pm 0.05\%$ of span including nonlinearity, hysteresis, and nonrepeatability at reference conditions (72 °F)
Temperature Effects:	Storage: -40 to 200 °F Operating: -40 to 150 °F Compensated Range: 20 to 120 °F Temperature coefficients: $\pm 0.004\%$ of span per °F from 72 °F Thermal Repeatability: $\pm 0.025\%$ of span (typical)
Response Time:	3 ms (typical)
Frequency Response:	300 Hz
Warmup Time:	5 minutes to rated accuracy, 30 minutes to full stability
Shock:	1000 G in 3 mutually perpendicular axis – no effect on calibration
Media Type:	Gas, vapor or liquid
Pressure Ranges:	0-5 psi through 0-10,000 psi or equivalent metric ranges (see range chart)
Pressure Types:	Gauge, absolute, vacuum, and compound
Overpressure Limit:	4 times span 0/5 to 0/250 psi 1.3 times span 0/300 to 0/10,000 psi
Sensor Volume:	Approximately 4 cc to 250 psi Approximately 0.38 cc above 250 psi
Volumetric Displacement:	Approximately 0.5 cc to 250 psi Negligible for ranges over 250 psi
Mounting Position Effect:	Less than the values indicated below per 30 degree inclination in any plane for zero only – no effect on span Up to 250 psi: 0.05% of span (max) Over 250 psi: 0.3% of span (max) Note: Correctable by zero adjustment

KEY BENEFITS

- Available with current or voltage output
- Available with gauge, compound, vacuum or absolute pressure ranges

Output Signals:	0-5 Vdc, 0-10 Vdc, -5 to 5 Vdc (3 wire or optional 4 wire), or 4-20 mA (2 wire)
Resolution:	0.01% Full scale
Power Requirements:	20-40 Vdc (3-wire non-isolated voltage output) 15-24 Vdc (4-wire isolated voltage output) 12-24 Vdc (current output)
Power Supply Effect:	Negligible over operating range
Zero Adjustment:	Externally accessible $\pm 3\%$ of span (typical)
Span Adjustment:	Externally accessible $\pm 3\%$ of span (typical)
Wetted Materials:	Inconel® 718 and 300 Stainless steel
Process Connection:	$\frac{1}{4}$ Male NPT through 5,000 psi. $\frac{1}{16}$ -18 UNF-2B high pressure over 5,000 psi
Electrical Connector:	3-foot pigtail – standard, Bendix® PTO – optional
Housing:	304 Stainless steel, sealed (NEMA 4X) with vent through pigtail connector
Mounting:	Stem, optional pipe/wall mounting bracket
Weight:	10 oz

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STANDARD GAUGE and ABSOLUTE PRESSURE RANGES							
psi	in. H ₂ O	in Hg	Millimeters Mercury or Torr	Pascals kPa	kgcm ² kpcm ² or Bar	Millibar or Centimeters Water	Millimeters Water
5	150	10			1.0		5,000
10	200	20	300	50	1.6	500	6,000
15	300	30	500	60	2.5	600	10,000
20	400	32	600	100	4.0	1000	
30	500	36	760	160	5.0	1600	
	600		1000	250		2000	
						2500	
						3000	
						5000	
50	1000	50	1500	400	6.0	6000	
60	1500	60	2000	500	10	10,000	
100	2000	100	3000	600	16	16,000	
150	3000	200	5000	1000	25		
200	4000	300	6000	1600	40		
300			10,000	2500	60		
500				4000	100		
600				6000	160		
800				10,000	250		
1000				16,000	400		
1500					600		
2000				mPa	1000		
2500				25			
3000				40			
4000				60			
5000							
6000							
7500							
10000							

STANDARD VACUUM RANGES							
5		10					
10		15					
14.7		20					
		30					

STANDARD COMPOUND PRESSURE RANGES					
PSI		Inches Hg		Output Signal	
Pressure	Vacuum	Pressure	Vacuum		
3	3	10	10	Specify bi-polar voltage or unipolar voltage or current	
5	5	15	15		
10	10	20	20		
15	15	30	30		
30	15	60	30	Unipolar voltage or current only	
50	15	100	30		
100	15	150	30		
150	15	300	30		

Note: Range values in-line with values in parallel columns does not imply equivalency.

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ORDERING CODE	Example:	HP	4	B	PV	N	G	53.90	MO
HP - HPO Transducer		HP							
Output									
1 - 0-5 Vdc									
2 - 0-10 Vdc									
3 - -5 Vdc to 5 Vdc									
4 - 4-20 mA									
5 - 0-5 Vdc (Isolated)									
6 - 0-10 Vdc (Isolated)									
7 - -5 Vdc to 5 Vdc (Isolated)									
Accuracy									
B - +/- 0.05% of span									
Electrical Connection									
PV - 3 Foot pigtail vented									
BV - Bendix® connector (with mating connector)									
PI - 3 Foot pigtail vented (for isolated voltage output)									
BI - Bendix® connector (for isolated voltage output)									
Pressure Connection									
N - ¼ NPT Male (standard up to 5,000 psi)									
A - ¼-18UNF 2B (5,000 psi and higher)									
M - MS33656E4 flared tube fitting with gasket									
S - ¼ Gland fitting compatible with VCR® with ¼-18 gland nut, standard finish									
P - ¼ Gland fitting compatible with VCR® with ¼-18 gland nut, 10-20 Ra finish									
X - ¼ Gland fitting compatible with VCR® with ¼-18 gland nut, 3-5 Ra finish									
Pressure Type									
G - Gauge									
A - Absolute									
V - Vacuum									
C - Compound									
Pressure Range (select next highest standard range, specify exact range and units in special instructions)									
Gauge and Absolute in psi									
5.61									
8.71									
13.7									
17.19 (absolute only)									
17.67 (no absolute)									
24.32									
37.62									
53.90									
69.40									
90.86									
107.97									
137.35									
176.44									
223.10									
272.80									
363									
550									
660									
880									
1100									
1650									
2200									
2700									
3300									
4400									
5500									
6600									
8250									
11000									
See Ordering (Continued on Next Page)									

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ORDERING CODE (Continued)	Example:	HP	4	B	PV	N	G	53.90	MO
Compound psi									
5.10									
7.92									
12.46									
16.08									
22.11									
34.20									
51.38									
63.09									
82.60									
98.15									
129.50									
160.40									
213.35									
248									
Vacuum									
5.61									
8.71									
13.70									
17.67									
Options									
M - Wall mounting bracket									M
O - Cleaned for oxygen service									O
S - Sealed housing (Bendix® connector only)									
V - Atmospheric reference port									

DIMENSIONS

For reference only, consult Ashcroft for specific dimensional drawings

