



New HPO Precision Pressure Transducers

- Accuracy $\pm 0.05\%$ F.S. or better
- Absolute, gauge, vacuum or compound pressure types
- High-level voltage or current output
- Superior long-term stability and repeatability
- NEMA 4X housing
- Isolated 4-wire voltage output available
- Externally accessible zero and span adjustments
- Broad pressure media compatibility
- Accuracy is expressed as the sum of non-linearity, nonrepeatability and hysteresis at reference conditions of 72°F
- Improved shock resistance
- Gettered absolute sensors

*Shown with optional Bendix PTO connection



The Heise® HPO precision pressure transducers combine the timeproven precision and stability of the Heise photo-optic sensor with an all-new SMD electronics circuit. These features provide exceptional performance with accuracies of $\pm 0.05\%$ of span or better. The patented photo-optic sensor has no moving parts, linkages, epoxies or O-rings which can contribute to drift and instability.

The wetted materials are 300 series stainless steel and Inconel X718. The welded construction of the pressure sensor boundary ensures long life and broad pressure-media compatibility. Standard pressure fittings include ¼ male NPT and Aminco/Autoclave F250. For barometric and absolute ranges up to 30 psia, exceptional long-term stability is ensured by the inclusion of a getter material in the evacuated reference chamber. This material acts like a sponge to absorb gas molecules as they are

released from the surface of the reference chamber. This ensures the integrity of the vacuum reference over time.

For convenience, the zero and span adjustments are accessible without removing the cover. Access is gained by removing the appropriate screw from the top of the housing. Two electrical connectors are available, including a three-foot pigtail (with integral vent tube for sealed housing applications) or a Bendix PTO type connector. Output signals include 0/5 Vdc, 0/10 Vdc, ± 5 Vdc and 4/20 mA.

Each unit is furnished with a 20-point certificate of calibration traceable to the National Institute of Standards and Technology (NIST). Our calibration systems meet the requirements of Mil-STD-45662A, and quality assurance conforms to the provisions of Mil-I-45208A. The new HPO transducers set a new standard for precision pressure measurement.

Performance Specifications

Accuracy: Within $\pm 0.05\%$ 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:
 $\pm 0.004\%$ F.S. per °F from 72°F
 Thermal Repeatability:
 $\pm 0.025\%$ F.S. (typical)

Response Time: 3ms (typical)

Frequency Response: 300 Hz

Warm-up Time: 5 minutes to rated accuracy, 30 minutes to full stability

Shock: 1000G in 3 mutually perpendicular axes – no effect on calibration

Functional Characteristics

Service: Gas, vapor or liquid

Pressure Ranges*: 0-5 psi through 0-10,000 psi or equivalent metric ranges
 *See Price Sheet HPO/PS for complete range listings

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

Output Signals: 0/5 Vdc, 0/10 Vdc, -5/+5 Vdc (3 wire or optional 4 wire), or 4/20 mA (2 wire)

Resolution: 0.01% FSO

Power Requirements:
 20-40 Vdc (voltage output)
 12-40 Vdc (current output)

Power Supply Effect:
 Negligible over operating range

Physical Characteristics

Zero Adjustment:
 Externally accessible $\pm 3\%$ F.S. (typical)

Span Adjustment:
 Externally accessible $\pm 3\%$ F.S. (typical)

Wetted Materials: Inconel 718 and 300 Series Stainless Steel

Process Connection:
 $\frac{1}{4}$ male NPT through 5000 psi.
 $\frac{3}{8}$ -18 UNF-2B high pressure over 5000 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

Ordering Information

To Order Please Specify The Following

Model:
 HPO

Range:
 Full range list available on price sheet
 HPO/PS

Pressure Type:
 Gauge, compound, absolute or vacuum

Electrical Connection:
 Standard pigtail, optional Bendix

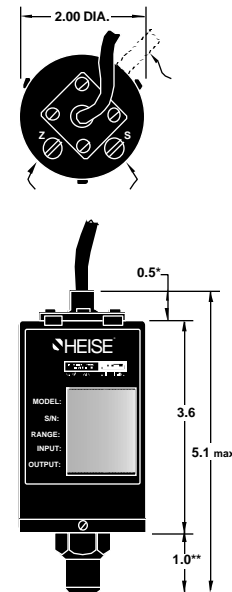
Output:
 0/5 Vdc, 0/10 Vdc, -5/+5 Vdc, or 4/20 mA

Specify:
 3-wire or optional 4-wire isolated output for voltage units

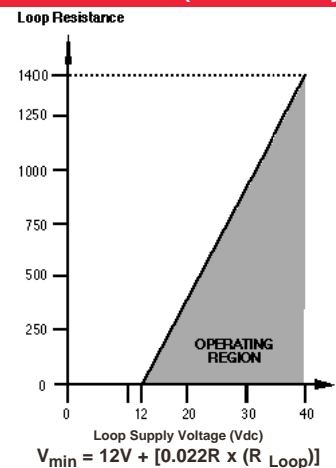
Pressure Connection:
 $\frac{1}{4}$ NPTM, $\frac{1}{8}$ NPTF standard to 5000 PSI, Aminco $\frac{3}{8}$ -18 UNF-2B for ranges from 5001-10,000 psi. Contact factory for other connection requirements.

Options:
 Bendix connector, mounting bracket, special cleaning, atmospheric reference port, atmospheric port with $\frac{1}{8}$ NPTM fitting

Dimensions (inches)



Load Limitations (4/20 mA Only)



Domestic Headquarters

P.O. Box 5605
 153 South Main Street
 Newtown, CT 06470
 Phone: (203) 426-3115
 FAX: (203) 426-4349

International Headquarters

250 East Main Street
 Stratford, CT 06497
 Phone: (203) 378-8281
 FAX: (203) 385-0357