

## Model 205-2

### Pressure Transducer

For Corrosive Liquids or Gases  
Gauge and Absolute PSI Ranges

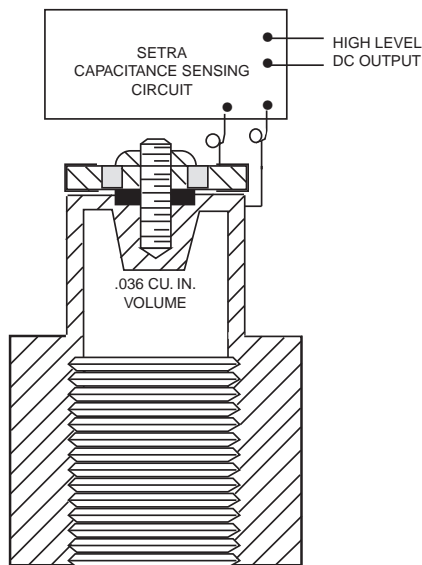


Setra Systems 205-2 pressure transducer is designed for accurate pressure measurement of gases or liquids compatible with stainless steel. The high level output signal requires no additional signal conditioning and results in excellent stability, accuracy, and fast dynamic response, making the 205-2 ideal for high performance applications. The stable electronic circuit, combined with Setra's patented variable capacitance sensor, results in the ultimate in design simplicity. The sensor features a one-

piece 17-4 PH stainless steel pressure sensor and an insulated electrode, which forms a variable capacitor. As the pressure increases, the capacitance decreases. This change in capacitance is detected and converted to a linear DC electric signal.

### Pressure Ranges

Standard Pressure Ranges (psi)	Proof Pressure (psi)	Burst Pressure Rating (psi)	Approximate Natural Frequency (KHz)
0-25	50	150	2.0
0-50	75	200	2.5
0-100	150	500	3.5
0-250	375	1000	5.0
0-500	750	1500	8.0
0-1000	1250	3000	11.0
0-3000	3750	4500	15.0
0-5000	6000	7500	25.0



*Extremely low hysteresis and very stable operation under extreme temperature conditions are inherent in this sensor design.*

### Applications

- High Accuracy General Purpose
- R&D Test & Measurement
- Vacuum Systems
- Dynamometers
- Engine Test Cells

### Features

- Low Price
- 0.11% FS Accuracy
- 5 VDC Output
- High Cycle Life
- Fast Response  
1 Millisecond
- Solid One-Piece  
Stainless Steel Sensor
- Fast Warm-Up
- Intrinsically Safe  
(Option)
- Meets CE Conformance  
Standards

*When it comes to a product to rely on - choose the Model 205-2.  
When it comes to a company to trust - choose Setra - an ESOP  
(Employee Owned) Company.*



Visit Setra Online:  
<http://www.setra.com>

**setra**  
**800-257-3872**

NOTE: Setra quality standards are based on ANSI-Z540-1.  
The calibration of this product is NIST traceable.

U.S. Patent nos. 3859575

# Model 205-2 Specifications

## Performance Data

Accuracy RSS* (at constant temp)	±0.11% FS
Non-Linearity, BFSL	±0.10% FS
Hysteresis	0.05% FS
Non-Repeatability	0.02% FS
<u>Thermal Effects**</u>	
Compensated Range °F(°C)	+30 to +150 (-1 to +65)
Zero Shift %FS/°F(%FS/°C)	±0.02 (±0.036)
Span Shift %FS/°F(%FS/°C)	±0.015 (±0.027)
Warm-up Shift	±0.5% FS (±0.1% FS residual shift after 5 minutes)
Response Time	1 Millisecond
Static Acceleration Effect	0.05 psi/g

\*RSS of Non-Linearity, Hysteresis and Non-Repeatability.

\*\*Units calibrated at nominal 70°F.

Maximum thermal error computed from this datum.

## Environmental Data

Temperature	
Operating* °F(°C)	0 to +175 (-18 to +79)
Storage °F(°C)	-65 to +250 (-54 to +121)
Vibration	2g from 5 Hz to 500 Hz
Shock	50g
Acceleration	10g Maximum

\*Operating temperature limits of the electronics only.

Pressure media temperatures may be considerably higher or lower.

## Physical Description

Case	Stainless Steel
Electrical Connection	2ft. Multiconductor Cable
Pressure Fitting	1/4" -18 NPT Internal
Weight	4 ounces

## Electrical Data (Voltage)

Circuit	4-Wire (+Exc, -Exc, +Out, -Out)
Excitation	18 to 30 VDC
Output*	0 to 5 VDC**
Output Impedance	400 Ohms
Output Noise	100 Microvolts RMS (0 Hz to 10 KHz)

\*Calibrated into a 50K ohm load.

\*\*Zero output factory set to within ±50 mV.

\*\*Span (Full Scale) output factory set to within ±50 mV.

NOTE: Both output leads are nominally 1.6 VDC above the negative excitation lead at zero pressure. Either negative excitation or negative output should be connected to case (ground). But both leads cannot be connected to case (ground). Unit is calibrated at the factory with the negative excitation connected to case (ground).

## Pressure Media

Liquids or gases compatible with 17-4 PH Stainless Steel.

Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel

## Available Options

### Electrical Options

Option # 602	Special Output 1-5 VDC
Option # 640	Intrinsic Safe Design FM Approved for Class I, II, III, Division 1, Groups A, B, C, D, E, F, G Hazardous Locations.

### Performance Options

Option #702	Extended Compensated Temperature Range -65°F to +250°F (-55°C to +121°C). Results in 2x the standard thermal effect error.
Option #710	0.073% FS (RSS) Accuracy

### Mechanical Options

Option #803-825	Up to 25 ft. of cable can be supplied. Specify cable length when ordering (i.e., 805 for 5 ft. cable). Consult factory for cable lengths longer than 25 ft.
Option #865	NEMA 4 Weatherproof Enclosure
Option #866	Explosion Proof PT Housing, FM Approved for: CL. I, Div. 1&2, Groups B, C, D; CL. II, Div. 1&2, Groups E, F, G; CL. III, Div. 1&2 and NEMA 4 Weatherproof when factory installed in this enclosure.

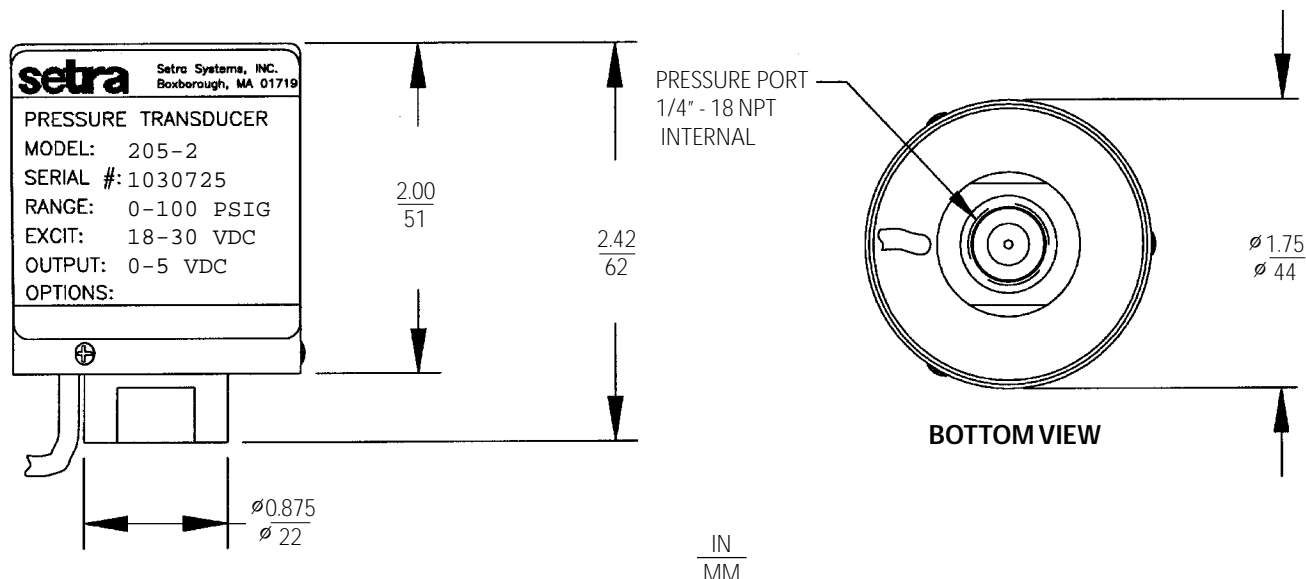
### Calibration Certificate Option

Option #901	11-point Calibration Certificate
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Specifications subject to change without notice.

Application of some available options may impact standard specifications.

## Outline Drawings



## ORDERING INFORMATION

**Example:** Order a Model 205-2, 25 PSIA, Option #710 for a 25 PSIA Absolute Pressure Range with the improved Accuracy of 0.073% FS.