



Model 270

SETRACERAM™ for Barometric, Gauge or Absolute Pressure

The Model 270 is Setra's highest performing analog sensor for barometric, absolute and gauge pressure measurements. Its decades worth of installations have built a reputation of reliability and remains the trusted choice for critical installations. The ceramic sensor on the 270 delivers high performance; its $\pm 0.03\%$ FS accuracy over a wide temperature range outperforms competitive transducers in the environmental sensing market. The 270 offers multiple options to fit the needs of difficult applications, making it easier to install and gather higher quality data for your project.

High Accuracy For Demanding Applications

The Model 270 pressure transducer is the most accurate analog sensor Setra manufactures. The available 0.03% FS accuracy is perfect for vital installations where precise measurements determine success or failure of the application.

Improved Performance With Ceramic Sensor

The 270 utilizes a variable capacitance sensor that is made using ceramic material fused together with glass and gold to form the SETRACERAM™ pressure element. This stable material and design offers class leading thermal performance and low hysteresis, allowing integration into demanding installations. The ceramic sensor enables improved performance compared to other stainless steel sensors, enabling the 270 to give accurate measurements and better test results.

Flexibility in Installation

The 270 offers mechanical and electrical options that can be installed into existing applications. These options reduce engineering design time, allowing for earlier project completion.



- Highest Accuracy Analog Sensor
- Captures Dynamic Pressure Changes
- Robust For Severe Weather Detection

Model 270 Features:

- High Optional Accuracy: $\pm 0.03\%$ FS
- Stable Ceramic Sensor
- Repeatability Within 0.01% FS
- Excellent Long-Term Stability: 0.1% FS/YR
- Low Power Consumption
- Instant Warm-Up
- Fast Response Time

Applications:

- High Accuracy Barometric Pressure Measurement
- Weather and Environmental Data
- Data Buoys and Remote Weather Stations
- Engine Test Cells

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ORDERING INFORMATION

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| Model | Pressure Range | | Units | Pressure Type | | Fitting | | Output | | Termination | | Accuracy | | Options | | |
|------------|------------------|----------|-------|---------------|---|------------------------|----|-------------------|----|-------------------------|----|---|---|------------------------|----|--|
| 2701 = 270 | 600 | 600-1100 | M | mb/hPa | A | Absolute | 1F | 1/8" NPT Internal | 2B | 0 to 5 VDC (24 VDC EXC) | 02 | 2' Cable | N | ±0.05% FS | NN | None |
| | 800 | 800-1100 | M | mb/hPa | G | Gauge (PSI units only) | | | 3B | 0 to 5 VDC (12 VDC EXC) | 10 | 10' Cable | Y | ±0.03% ² FS | C | 11 PT Cal. Certificate |
| | 005 ¹ | 0-5 | P | PSI | | | | | | | 25 | 25' Cable | | | D | Mate with Datum |
| | 010 | 0-10 | P | PSI | | | | | | | XX | Consult factory for other cable lengths | | | F | Nema 4 Enclosure |
| | 020 | 0-20 | P | PSI | | | | | | | | | | | L | Etched SS Tag |
| | 050 | 0-50 | P | PSI | | | | | | | | | | | 2 | -13 to -150°F Compensated Range ² |
| | 100 | 0-100 | P | PSI | | | | | | | | | | | | |

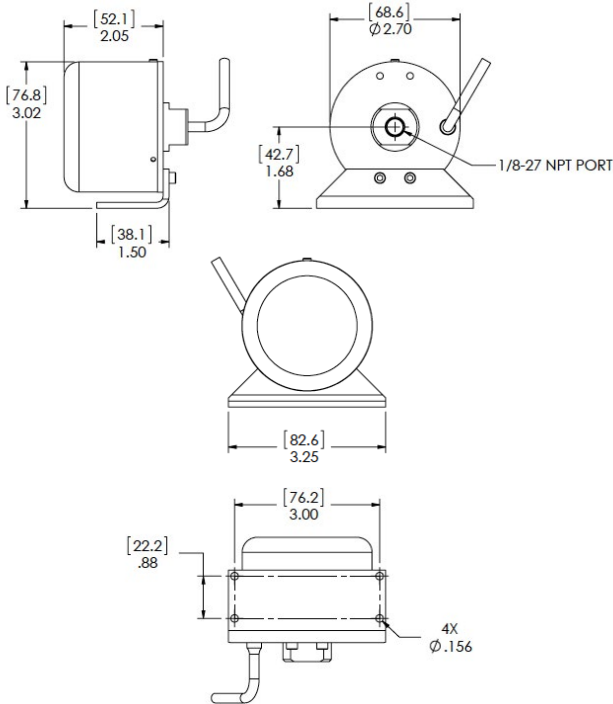
Example: Part No. 2701800MA1F2B02YNN = Model 270, 800-1100 mb/hPa pressure range, Absolute, 1/8" NPT internal fitting, 0 to 5 VDC Output, 2' Cable Length, ±0.03% FS Accuracy.

¹Available in Gauge Pressure Type Only
²Accuracy "Y" and Option "Z" cannot be combined

Both boxes must be filled in alphanumeric order:

- If No options: N + N
- If 1 option: Option Code + N
- If 2 options: Option Code + Option Code

DIMENSIONS



PROOF PRESSURE

| Type of Pressure | Pressure Range | Maximum Pressure |
|------------------|--|------------------|
| Barometric | 600 to 1100 hPa/mb 800 to 1100 hPa/mb | 20 psia |
| Absolute | 0 to 10, 20, 50, 100 psia | 1.5 x rated |
| Gauge | 0 to 5, 10, 20, 50, 100 psig | 1.5 x rated |

GENERAL SPECIFICATIONS

| Performance Data | | Environmental Data | |
|---|--|---------------------------------|---|
| Accuracy RSS ¹ (at constant temp) | ±0.05% FS | Temperature | |
| Non-Linearity | | Operating °F(°C) | 0 to +175 (-18 to +80) |
| End Point | ±0.05% FS | Storage °F(°C) | -65 to +250 (-54 to +120) |
| Best Fit Straight Line | ±0.03% FS | Vibration | 2g from 5Hz to 500 Hz |
| Hysteresis | <0.01% FS (TYR) | Acceleration | 10g |
| Resolution | Infinite, limited only by output noise level (0.005% FS) | Shock | 50g Operating, 1/2 sine 10ms |
| Thermal Effects ² | | Pressure Fitting | 1/8"-27 NPT Internal |
| Compensated Range °F(°C) | +30 to +120 (-1 to +49) | Electrical Connection | 2' Multiconductor Cable |
| Thermal Zero Shift %FS/°100F (%FS/50°C) | | Weight (approx.) | 9 ounces (0.25 Kgm) |
| Barometric | ±0.2 (±0.18) | Electrical Data | |
| Other Ranges | ±0.1 (±0.09) | Electrical Circuit ³ | 4-Wire (+Exc, -Exc, _Out, -Out) |
| Thermal Coefficient Sensitivity | ±0.1 (±0.09) | Excitation ⁴ | 24 VDC (22-32 VDC) 12VDC (11-15 VDC) Reverse Wiring Protection |
| Long Term Stability | < ±0.1% FS/YR | Output ⁵ | 0 to 5 VDC ⁶ |
| Warm-Up | < ±0.04% FS shift after 20 minutes at constant temp. | Isolation | The insulation resistance between all signals leads tied together and case ground is 100 ohms minimum at 25 VDC |
| Time Constant | <10 milliseconds to reach 90% final output with step function pressure input | Output Impedance | <5 ohms |
| Pressure Media | | Output Noise | <200 microvolts RMS (0 Hz to 100 Hz) |
| Non-condensing air or gas compatible with hard anodized aluminum, alumina ceramics, gold, fluorocarbon elastomer sealant & Buna-N O-Ring. | | Current Consumption | 8 mA (0.2 Watts) |
| Approvals | | | |
| CE | | | |