

# Model 470

## Digital Pressure Transducer



### DESCRIPTION

Setra Systems Model 470 offers extremely high accuracy and unmatched stability in a digital output configuration. Environmental monitoring and test & measurement systems around the world rely on Setra's experience in barometric pressure measurement instrumentation, as well as high accuracy measurements of higher pressures. The 470 utilizes Setra's unique SETRACERAM™ sensor, which is combined with advanced microprocessor based circuitry and sophisticated firmware to provide system accuracy to better than ±0.02% FS.

The Model 470 is intended for applications which do not require local display of pressure or key pay access to commands. The 470's solid stability, reliability and versatility make it the first choice for weather observation systems worldwide. It is programmable for continuous, interval or on-demand printing at an adjustable (300-9600) Baud rate.

### BENEFITS

- ±0.02% Full Scale Accuracy
- Bidirectional RS-232 Digital Communications I/O Port
- Engineering Unit Conversions for Pressure and Altitude
- Digital Altimeter Setting Indicator (DASI) and Corrected Altimeter Mode
- Programmable Non-Linear Functions

### APPLICATIONS

- Automatic Weather Reporting Systems
- Pressure Transfer Standard
- Altimeter Calibration Recertification
- Lab or Production Process Monitoring
- Altitude Chambers

### SPECIFICATIONS

Performance Data		Physical Description			
Accuracy <sup>1</sup>	±0.02% FS <sup>2</sup> at 70o F(21°C)	Pressure Fitting	Barbed Fitting for 1/8" I.D. Tubing	Digital Output	Pressure data is accessible through the Bidirectional RS-232 I/O port, which is user programmable for continuous, interval or on-demand printing at an adjustable (300-9600) baud rate. The data is reported in a simple string of ASCII characters in response to a command consisting of an ASCII character, for example, P (for PRINT) instructs the device to report a pressure reading.
Non-Linearity	±0.012% FS (End Point)	Pressure Connection	10-32 Internal Thread		
Hysteresis	0.010% FS	Excitation	DB-9S, (9 Pin D-Sub Female) Pin: 3 GRD, 9 + 5 VDC		
Non-Repeatability	0.010% FS	Communications	DB-9S, (9 Pin D-Sub Male) Pin: 2 TXD, 3 RXD, 5GRD		
<b>Pressure Media</b>		Weight	Approx. 2.4 lbs.	Operating Power	5VDC ±1%, 70 mA max.
Clean dry air or other gases (non-condensable)		<b>Thermal Effects</b> <sup>3</sup>		Digital Interface	Bidirectional RS-232 interface. Access data, functions and commands via an RS-232 compatible remote terminal, data acquisition system or data storage device. 300, 600, 1200, 2400, 4800, 9600 Baud Rate, adjustable. Typical data printouts below:
<sup>1</sup> RSS of Non-Linearity, Non-Repeatability and Hysteresis <sup>2</sup> FS = 300 hPa/mb for 800-1100 hPa/mb range; 500 hPa/mb for 600-1100 hPa/mb range <sup>3</sup> Unit calibrated at 70°F. Maximum thermal error is computed from this datum.		Compensated Range °F(°C)	+32 to +110 (0 to +45)	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px dashed black; padding: 5px;"> <p style="text-align: center;">System Status</p> <p>Elev: + 120 feet</p> <p>Max: + 15.552 PSI A</p> <p>Min: + 11.793 PSI A</p> <p>Hi A: + 16.000 PSI A</p> <p>Lo A: + 11.000 PSI A</p> </div> <div style="border: 1px dashed black; padding: 5px;"> <p style="text-align: center;">Datalogging</p> <p style="text-align: center;">600. sec/reading</p> <p style="text-align: center;">14.595 PSI A</p> <p style="text-align: center;">14.596 PSI A</p> <p style="text-align: center;">14.598 PSI A</p> </div> </div>	
		Zero Shift %FS/°C	0.002 (0.004)		
		Span Shift %FS/°C	0.001 (0.002)		
		Altitude Resolution	1 ft. (4 ft. for 100 psia range)		
		Stability	0.005% FS, 24 hours 0.02% FS, 30 days 0.05% FS, 1 year		

### PRESSURE RANGES

Type of Pressure	Pressure Range	Readout or Report	Altitude Range <sup>1</sup>
Barometric	600 to 1100mb/ hPa	600.00 to 1100.00	-1000 to 13,800 ft.
	800 to 1100 mn/hPa	800.00 to 1100.00	-1000 to 6,400 ft.
Absolute	0 to 10 psia	10.0000	10,300 to 100,000 ft.
	0 to 20 psia	20.0000	-1000 to 100,000 ft.
	0 to 50 psia	50.0000	-1000 to 100,000 ft.
	0 to 100 psia	100.0000	-1000 to 100,000 ft.

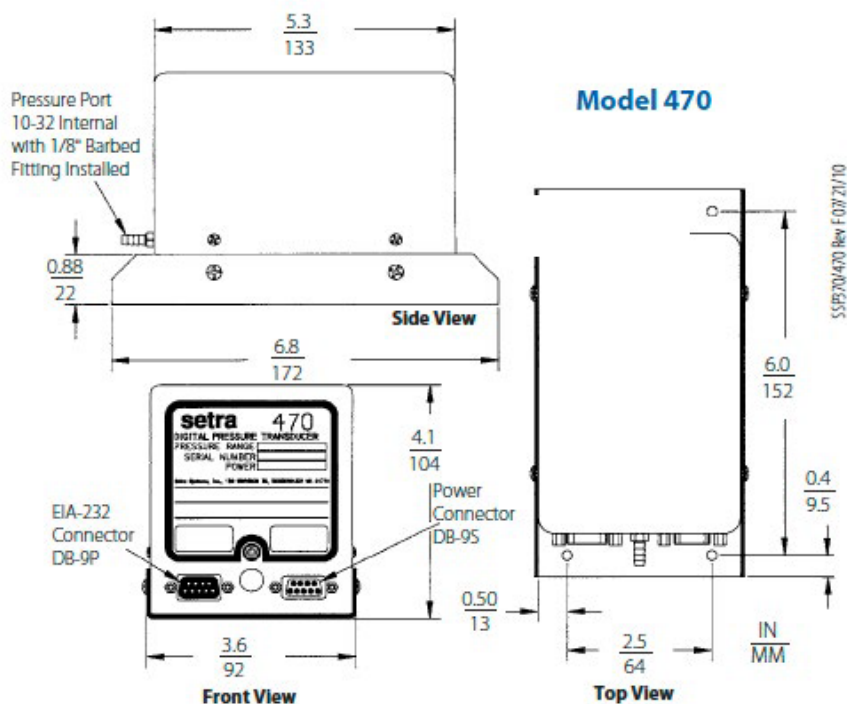


<sup>1</sup> Altitude is calculated using a pol Smithsonian Meteorological Tables, Vol. 114"  
 Ranges greater than 20 psia not recommended for altimeter recertification.  
 Proof Pressure: 150% of full scale pressure range.

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### DRAWINGS & DIMENSIONS



### ORDERING INFORMATION

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Model	Pressure Range	Units	Pressure Type	Fitting	Output	Accuracy	Options
4701   470	600   600-1100	M   mb/hPa	A   Absolute	1B   1/8" Barb	4T   RS-232/5VDC	Y   ±0.02% FS	NN   None
	800   800-1100	M   mb/hPa					L   Etched SS Tag
	010   0-10	P   PSI					
	020   0-20	P   PSI					
	050   0-50	P   PSI					
	100   0-100	P   PSI					

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