Model 470
Digital Pressure Transducer

setra

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

DESCRIPTION

Setra Systems Model 470 offers extremely high accuracy and un-matched stability in a digital output configuration. Environmental monitoring and test & measurement systems around the world rely on Setra's experience in barometric pressure measurement instrumenta-tion, 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 firm-ware 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.

SPECIFICATIONS

Performance Data		Physical Description			
Accuracy[1]	±0.02% FS[2] at 70° 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	Operating Power	5 VDC ±1%, 70 mA max.
Pressure Media		Weight	Apprx. 2.4 lbs.	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:
Clean dry air or other gases (non-condensable)		**Thermal Effects [3]**			
[1] RSS of Non-Linearity, Non-Repeatability and Hysteresis [2] FS = 300 hPa/mb for 800-1100 hPa/mb range; 500 hPa/mb for 600-1100 hPa/mb range [3] Unit calibrated at 70°F. Maximum thermal error is computed from this datum.		Compensated Range °F(°C)	+32 to +110 (0 to +45)		
		Zero Shift %FS/°F (%FS/°C)	0.002 (0.004)		
		Span Shift %FS/°F (%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		

System Status
```
Elev:   + 120 feet
Max:    + 15.552 PSI A
Min:    + 11.793 PSI A
Hi A:   + 16.000 PSI A
Lo A:   + 11.000 PSI A
```

Datalogging
```
600. sec/reading

14.595 PSI A
14.596 PSI A
14.598 PSI A
```

PRESSURE RANGES

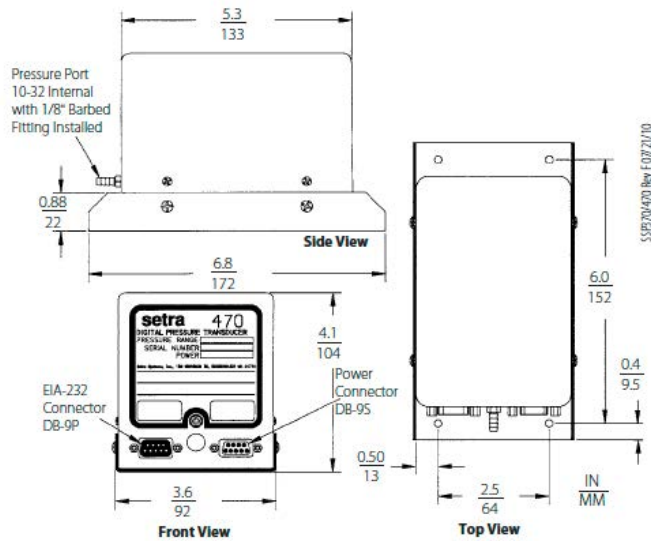| Type of Pressure	Pressure Range	Readout or Report	Altitude Range[1]
Barometric	600 to 1100mb/ hPa 800 to 1100 mn/hPa	600.00 to 1100.00 800.00 to 1100.00	-1000 to 13,800 ft. -1000 to 6,400 ft.
Absolute	0 to 10 psia 0 to 20 psia 0 to 50 psia 0 to 100 psia	10.0000 20.0000 50.0000 100.000	10,300 to 100,000 ft. -1000 to 100,000 ft. -1000 to 100,000 ft. -1000 to 100,000 ft.

[1] 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.

ISO 9001

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DRAWINGS & DIMENSIONS

Pressure Port
10-32 Internal
with 1/8" Barbed
Fitting Installed

5.3 / 133

0.88 / 22

6.8 / 172

Side View

4.1 / 104

EIA-232
Connector
DB-9P

Power
Connector
DB-9S

3.6 / 92

Front View

6.0 / 152

0.4 / 9.5

0.50 / 13

2.5 / 64

IN / MM

Top View

SSP470/470 Rev F 07/21/10

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-232/5 VDC	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

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