C4 Pressure Transmitter with Display

Zone Pressure Sensors (ZPS)

Rev. 11/01/05

Features & Options

- 5 Direct and 5 Bi-Directional Standard Ranges
- Inches of Water Column (W.C.) or Pascal Operation
- 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC Output
- Pressure Range and Output Settings are Field Selectable
- Microprocessor Controlled Auto-Zero
- Rugged (IP66 rated) Housing
- Fits Standard 1/8" I.D. or 1/4" I.D. Tubing
- Mounting Tabs for Easy Installation
- Three Year Warranty
- Applications:
  Duct, Room or Building Static Pressure
  Air Velocity and Volume • Air Filter Pressure Drop
  Coil Airflow Monitoring • Room-to-Room Differential Pressure • Exhaust Fan Control

Differential Pressure Transmitter with LCD Display

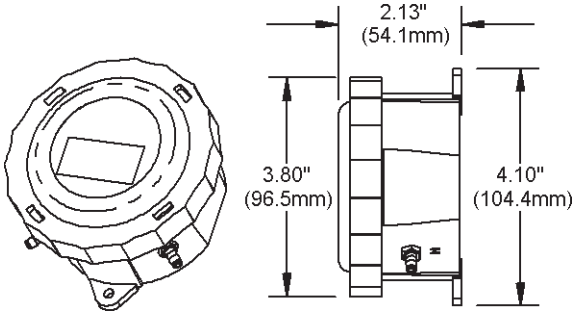
BAPI's Zone Pressure Transmitter is an accurate, rugged and economical solution for measuring and reporting duct/building static pressure, room-to-room differential pressure or air velocities/volumes. The LCD model offers an additional level of troubleshooting and monitoring capability over the standard model by displaying the actual differential pressure over the entire operational range (-5 to +5 inches W.C. or -1,000 to 1,000 Pascals) regardless of which individual pressure range is selected for output to the system controller. If the pressure range of 0 to 1" W.C. is selected on the pressure transmitter for instance, then an actual pressure of 2" W.C. "maxes out" the transmitter output. The facility manager does not know the true differential pressure, only that it is above the 0 to 1" W.C. range. With the LCD Display model, the facility manager knows the true pressure which helps to isolate and correct the source of a pressure problem.

The heart of the Zone Pressure Transmitter is a micro-machined silicon piezoresistive pressure sensor specifically developed for low pressure. The sensor receives a five-point error correction over the compensated temperature range for excellent accuracy, repeatability and stability. The pressure sensor's custom ASIC (Application Specific Integrated Circuit) provides error correction and signal amplification using digital compensation while maintaining an analog signal path–a unique design among piezoresistive sensor products. This technique provides both the high level of error correction found in microprocessor-based circuits and the high bandwidth generally found only in analog circuits. The result is a pressure sensor that offers the ultimate in high accuracy, while preserving the fast response and smooth output inherent to silicon sensors.

With an easy-mounting, rugged enclosure and short circuit proof output and reverse polarity protected inputs, this device is built to perform under real world conditions. The unit installs quickly by connecting standard 1/8" or 1/4" tubing to the two pressure ports. The various Output Ranges and Pressure Ranges are all field selectable with DIP switches, and the auto-zeroing process is microprocessor-controlled for simplicity (flip a switch, wait five seconds, flip it back and walk away).

Specifications

Material: ABS Plastic
Rating: IP 66
Environmental Specifications:
Temperature: 32 to 140 °F (0 to 60 °C)
Humidity: 0 to 95%, non-condensing



Differential Pressure Transmitter with LCD Display

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Pressure Transmitter with Display

Zone Pressure Sensors (ZPS)

Rev. 11/01/05

Specifications

Power:
8.5 to 45 VDC *(4-20 mA output)*
8.5 to 45 VDC or 8.5 to 32 VAC (*0-5 VDC output)*
13 to 45 VDC or 13 to 32 VAC (*0-10 VDC output)*

Load Resistance:
Voltage Output - 1 kΩ minimum
Current Output - 500 Ω max.
(depending on available voltage)

Power Consumption: .53 VA maximum

Accuracy:
±1% on 0 to 0.1 range and ±0.1 range,
±0.5% on other ranges

Stability: ±2 % F.S. (full scale) per year

Temperature Error:
Zero - ±0.025% F.S. per °C,
Span - max ±0.03% F.S. per °C

Environmental Specifications:
Temperature: -13 to 176 °F (-25 to 80 °C)
32 to 140 °F (0 to 60 °C)
compensated range
Humidity: 0 to 95% RH, non-condensing

Wiring:
*2 *(loop powered)* or 3 *(AC powered)* wires

Overpressure:
Proof - 5 PSI, Burst - 10 PSI

Optional Field Mounting Kit

For more information, see page C8.

ZPS with Field Mounting Kit

* **BAPI** recommends that you do not run wiring for the pressure transmitter in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.
Note: Mount unit with the pressure fittings on the bottom to prevent condensation from entering the sensor.

Ordering Information — ***Zone Pressure Sensor with Display***

ZPS

Output Range ‡

-20	4 to 20 mA	(8.5 to 45 VDC Supply ONLY)
-05	0 to 5 V	(8.5 to 45 VDC Supply or 8.5 to 32 VAC Supply)
-10	0 to 10 V	(13 to 45 VDC Supply or 13 to 32 VAC Supply)

Pressure Range ‡

-SR(range) Standard Pressure Ranges - *replace (range) with option # shown below*

Option	Range *(inches W.C.)*	Option	Range *(Pascals)*
01	0 to 0.10	**11**	0 to 25
02	0 to 0.25	**12**	0 to 50
03	0 to 1.00	**13**	0 to 300
04	0 to 2.50	**14**	0 to 500
05	0 to 5.00	**15**	0 to 1,000
06	-0.10 to 0.10	**16**	-25 to 25
07	-0.25 to 0.25	**17**	-50 to 50
08	-1.00 to 1.00	**18**	-300 to 300
09	-2.50 to 2.50	**19**	-500 to 500
10	-5.00 to 5.00	**20**	-1,000 to 1,000
	Custom Range *(W.C.)*		Custom Range *(Pascals)*
CI	[x.xx to y.yy]*	**CP**	[xxxx to yyyy]**

Accessory Options

-NT	No Tube or Probe Included
-ST	Static Pressure Measurement Probe

Pressure Port Fitting Size

-125	Port accepts 1/8" I.D. tubing
-250	Port accepts 1/4" I.D. tubing

LCD Display

-D	LCD Display

Mounting Kits (Optional)

-FMK	Field Mounting Kit
-FM	1/2" conduit adaptor only
-PM	Panel Mount

EXAMPLE

ZPS	**-20**	**-SR01**	**-NT**	**-125**	**-D**	**-FMK**	

Example Part Number: ZPS-20-SR01-NT-125-D-FMK

Your Part Number:

*For custom W.C. ranges, x.xx and y.yy can be any pressure from -5.00 to +5.00 inches W.C. However, x.xx must be less than y.yy and y.yy - x.xx must be at least .1 inches. (Example Part #: ZPS-20-SRCI[0.00 to 3.00]-NT-250-D

**For custom Pascal ranges, xxxx and yyyy can be any pressure from -1250 to +1250 Pascals. However, xxxx must be less than yyyy and yyyy - xxxx must be at least 25 Pascals. (Example Part #: ZPS-20-SRCP[0 to 100]-NT-250-D

‡ Custom output ranges and higher accuracy units are available. Contact BAPI for details.