



# OmniSens™

## MICROPROCESSOR COMPENSATED PRESSURE TRANSDUCER

# MODEL 7-11

OmniSens™ is a new line of high accuracy pressure transducers that incorporate microprocessor technology to give unprecedented reliability flexibility and value.

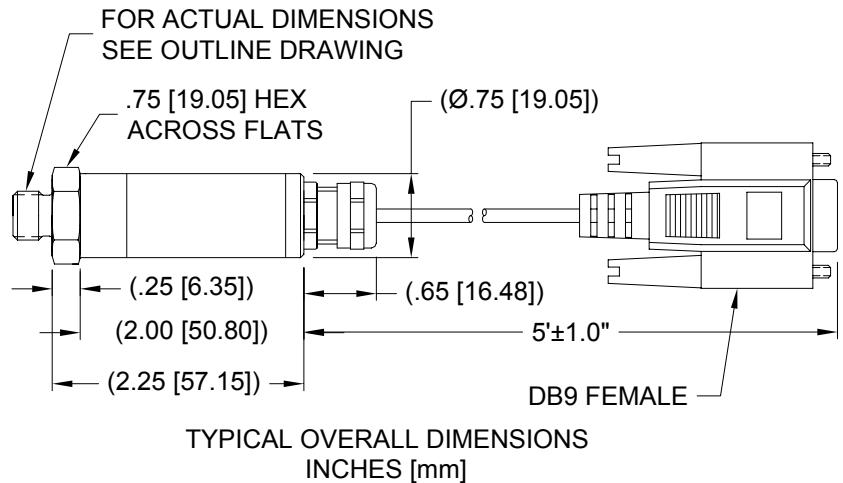
The OmniSens™ product is a pressure transducer that incorporates a micromachined pressure sensor and a microprocessor with embedded ADC (analog to digital converter) and DAC (digital to analog converter). The microprocessor's software employs a third-order regression polynomial algorithm to compensate the pressure die's nonlinearity and temperature dependency. A 5-point spline algorithm is used to compensate for the internal errors of the DAC and to linearize the digital temperature output. The software compensation approach results in significant improvement in accuracy and performance of the product.

The microprocessor allows easy re-zero and re-span of the transducer using either pushbuttons or computer control. The Re-zero on Command allows instant zero offset calibration. The Re-span on Command allows a transducer's full span output (FSO) to be set to various pressure ranges.

Each OmniSens™ pressure transducer outputs a Digital and an Analog signal. Various analog output signals are available as standard. The Digital output has standard UART (Universal Asynchronous Receiver Transmitter) duplex hardware features and provides data flow in digital framed format.



- MULTIPLE OUTPUT TYPES***
- ZERO RECALIBRATION ANYTIME***
- MULTIPLE PRESSURE RANGES from a SINGLE UNIT***
- HIGHLY CORROSION RESISTANT***



PIN ASSIGNMENT	
PIN	DESCRIPTION
1	+ INPUT POWER
2	DIGITAL OUTPUT
3	DIGITAL INPUT
4	NOT USED
5	POWER RETURN (SIGNAL COMMON)
6	OUTPUT VOLTAGE (ANALOG)
7	NOT USED
8	NOT USED
9	FACTORY SERVICE

- *Fluid Control*
  - *Liquid Level*
  - *Pulp & Paper*
- *Test Stands*
  - *Gas Compressors*
  - *Lubrication Systems*

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# OmniSens™ MICROPROCESSOR COMPENSATED PRESSURE TRANSDUCER

## Product Specifications

### Performance

Output Signal	See Ordering Information
Accuracy L & R	±0.25% FSO @ 21°C
Zero & Span Offset	±0.25% FSO (Max)
Long-term Stability	±0.35%FSO/Year w/Re-Zero on Command
Compensated Temperature	-40°C to 85°C (-40°F to 185°F)
Temperature Effect	Zero: ±0.25% FSO Span: ±0.25% FSO ±0.10% Typical Zero & Span
Digital Resolution	16 Bits
Analog Resolution	1.22mV Steps (12 Bits)

### Operating

Input Power	6 - 30 VDC @ 4.5mA (Max)
Insulation Resistance	100 Megohms @ 50 VDC
Dielectric Strength	500 VAC 50-60Hz, 5mA Max, 1min
Load Impedance	5 Kilohm (Analog)
Baud Rate	9600 BPS
Proof Pressure	150% of Rated Range
Burst Pressure	200% of Rated Range
Response Rate	250ms
Radiated Susceptibility	10V/m to 1.0GHz
Weight	5.4oz

### Environmental

Max Operating Temperature	-40°C to 85°C (-40°F to 185°F)
Wetted Parts	316L SST
Vibration	15 G's, 10-2000Hz
Shock	100 G's for 11ms, Half-sine
Enclosure	NEMA 4 & 4X (Except Vented Gage)

## Ordering Information

**7 - 11- XXXX X - X X X - XX**

### Instrument Family

7 = OmniSens™ Strain Gage

### Sensor Type

11 = Voltage Output

### Pressure Ranges (PSI)

Absolute & Vented Gage		Sealed Gage
5	60	500
10	100	1000
20	150	1500
25	200	2000
30	250	3000
50	300	5000

### Reference Pressure

A = Absolute G = Vented Gage S = Sealed Gage

### Pressure Fittings

0 = MS33656-E4 Male	4 = 1/4-18 NPT, Female
1 = 7/16-20 Straight, Male	5 = 9/16-18 Straight
2 = 1/4-18 NPT, Male	Flush Diaphragm
3 = 1/8-27 NPT, Male	

### Electrical Connections

0 = PT1H-10-6P	8 = DB9
3 = 6-Wire Shielded	

### Output Signal

A = 0.05 to 5.0 VDC	E = 0.10 to 10.0 VDC
B = 0.5 to 5.5 VDC	F = 1.0 to 11.0 VDC
C = 1.0 to 5.0 VDC	
D = 1.0 to 6.0 VDC	

### Custom Configurations

00 = No Custom Requirements



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