

# 830 Series – Wet/Wet Differential Pressure Transducer



- ▶ Liquid Media on Both Ports
- ▶ Bleed Screws for Accurate Results
- ▶ Optional Manifold for Easy Installation

The 830 Series is designed for wet-to-wet differential pressure measurements of liquids or gases. They feature fast-response capacitance sensors that respond approximately 20x faster than conventional fluid-filled transducers! Sensors are coupled to signal conditioned electronic circuitry for highly accurate, linear analog output proportional to pressure. Both unidirectional and bidirectional models are available for line pressures up to 250 psi (17 bar). These units feature bleed ports that allow for total elimination of air in the line and pressure cavities.

## Common Specifications

Input	
Pressure Range	0 to 100 psid (0 to 6.9 bar)
Proof Pressure	see ordering chart
Burst Pressure	see ordering chart
Common Line Pressure	<250 psia (17 bar)
Fatigue Life	>1 Million Cycles
Performance	
Supply Voltage (Vs)	9-30 VDC (13-30 VDC for 10 VDC output)
Long Term Drift	0.5% FS/year
Accuracy	0.25% FS
Thermal Error Zero	0.02% FS/°F (0.036% FS/°C)
Thermal Error Span	0.02% FS/°F (0.036% FS/°C)
Compensated Temperatures	30°F to 150°F (-1°C to +65°C)
Operating Temperatures	0°F to 175°F (-18°C to +80°C)
Storage Temperatures	-65°F to +250°F (-54°C to +121°C)
Zero Tolerance	0.5% FS
Span Tolerance	0.5% FS
Mechanical Configuration	
Pressure Port	see ordering chart
Wetted Parts	17-4 PH Stainless Steel, 300 Series SS, Viton and Silicone
Electrical Connection	7/8" Knock Out for 1/2" Conduit, Screw Terminal Strip
Enclosure	Stainless Steel, Aluminum
Vibration	5g Peak Sinusoidal, 5 to 500 Hz
Acceleration	10g
Shock	50g
Approvals	CE
Weight	15 oz

## Individual Specifications

Voltage Output Units	
Output	0-5 VDC or 0-10 VDC (3 wire)
Min. Load Resistance	5000K ohms
Current Output Units	
Output	4-20 mA (2 wire)
Max. Loop Resistance	(Vs-9) x 50 ohms



3-Valve Manifold Assembly



Gems optional 3-valve manifold assembly eases installation and maintenance.

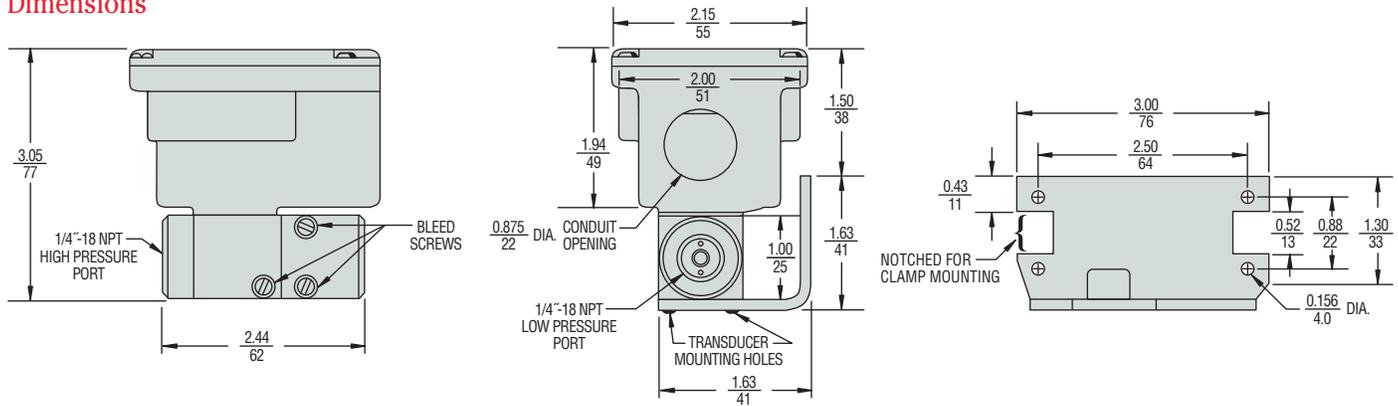
## Applications

- Energy Management Systems
- Process Control Systems
- Liquid & Gas Flow Measurement
- Filter Monitoring
- Liquid Level Measurement

## How They Operate

A unique isolation system transmits the motion of the differential pressure sensing diaphragm from the high line pressure environment to the dry enclosure where it moves one of a pair of capacitance plates proportionally to the diaphragm movement. Electronic circuitry linearizes output vs. pressure and compensates for thermal effects of the sensor.

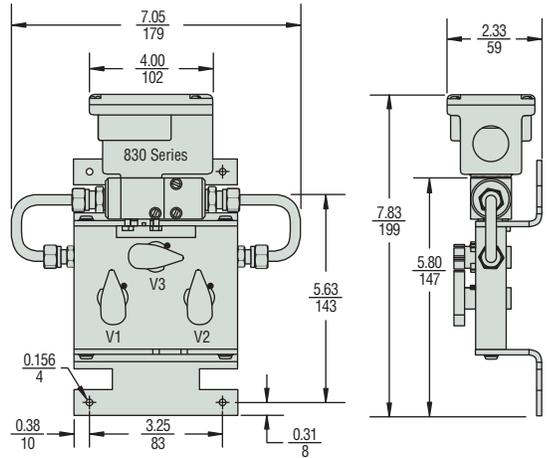
**Dimensions**



**3-Valve Manifold**

Gems optional 3-valve manifold assembly eases installation and maintenance. Machined of brass, it eliminates internal pipe connections and the associated chance of internal leaks. When manifold and 830 Series transducer are ordered together, they are assembled at the factory and shipped ready for mounting. Specify the **3V** Pressure Port code when ordering.

<b>Wetted Parts</b>	360 Brass, Copper 122, Acetal plug valves, and Nitrile O-rings
<b>Valve Type</b>	90-degree on/off
<b>Process Connections</b>	1/4" NPTF
<b>Dimensions</b>	7.05" x 6.25" x 2.16" D (179 mm x 159 mm x 55mm)
<b>Weight</b>	2.5 lbs



**How to Order**

Use the **bold** characters from the chart below to construct a product code

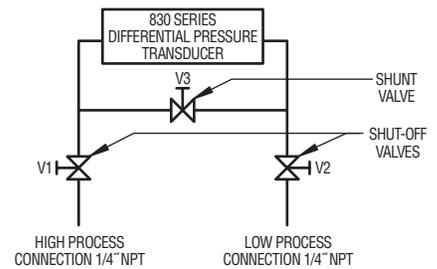
**SELECT**

**8301 025PD 2F 11 B X**

- Series **8301** - 830 Series
- Pressure Range Code **025PD**

Unidirectional psid Ranges	Proof Pressure – psi			Bidirectional psid Ranges	Proof Pressure – psi		
	High Side	Low Side	Burst		High Side	Low Side	Burst
<b>001PD</b> - 0-1	20	2.5	200	<b>0R5PB</b> - ±0.5	20	1.25	200
<b>002PD</b> - 0-2	40	5.0	200	<b>001PB</b> - ±1	40	2.50	200
<b>005PD</b> - 0-5	100	12.5	600	<b>2R5PB</b> - ±2.5	100	6.25	600
<b>010PD</b> - 0-10	100	25.0	1000	<b>005PB</b> - ±5	100	12.50	1000
<b>025PD</b> - 0-25	250	62.5	1000	<b>010PB</b> - ±10	200	25.00	1000
<b>030PD</b> - 0-30	250	62.5	1000	<b>025PB</b> - ±25	250	62.50	1000
<b>050PD</b> - 0-50	250	125.0	1000	<b>050PB</b> - ±50	250	125.00	1000
<b>100PD</b> - 0-100	250	250.0	1000				
- Pressure Port **2F** - 1/4" NPTF  
**3V** - 3-Valve Manifold Assembly Installed
- Output **11** - 4-20 mA  
**2D** - 0-5 Vdc  
**2E** - 0-10 Vdc
- Bleed Screw Seals **B** - Viton/Silicon Standard  
**A** - Buna-N Optional
- Optional **C** - Calibration Certificate

**Valve Schematic**



**PRESSURE TRANSDUCERS**