

# PW31 Series Single Diaphragm Wet-to-Wet Differential Pressure Sensor

±0.25% accuracy  
Stand-alone transducer, 3-valve, or 5-valve options  
Rugged IP65 construction for harsh environments  
Optional LED display for ease of commissioning and troubleshooting



## DESCRIPTION

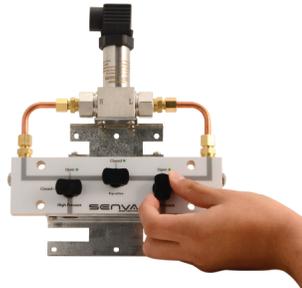
Senva's PW31 Series is designed to streamline installation and provide maximum accuracy. Options for standalone transducer or 3-valve and 5-valve bypass assemblies allow flexibility and save time on installation and commissioning. The single-diaphragm element is temperature compensated to provides superior ±0.25% accuracy. The PW31's compact, light, and rugged structure combined with IP65 stainless steel construction make it ideal for most installations and capable of withstanding the most rugged environments. Now available with a highly visible, loop-powered LED display. Just plug it in for ease of commissioning and troubleshooting (4-20mA version only).

## APPLICATIONS

- Meet rigid accuracy and/or bypass specifications
- Demand measurement in HVAC systems for pump speed control and local indication
- Process control systems
- Measurement of gases, vapors, and liquids
- Measure pressure changes on pumps for efficiency regulation and energy savings
- Level measurement in tanks and vessels
- Filter status monitoring
- System leak detection
- Great for data center wet pressure sensing



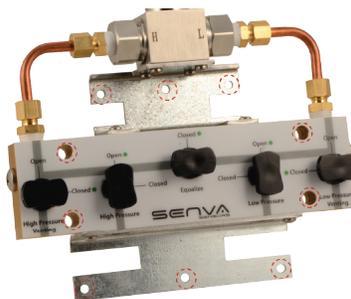
*IP65 LED display option for ease of troubleshooting*



*3-valve and 5-valve bypass assemblies to meet specifications*



*High accuracy ±0.25% single-diaphragm element*



Easy-to-use bleed valves

Securely screw-mount or clamp to any pipe

DIN43650 connection for ease of wiring

**FEATURES**

- Temperature compensated element for high accuracy in any environment
- 3-valve or 5-valve bypass options available to meet specifications
- DIN 43650 connector with screw terminals - no splicing necessary
- Versatile 1/4" FNPT allows simplified conduit connections - connect to any EMT, flex, or liquid-tight conduit
- Easy-access bleed valves for quick commissioning
- Calibration certificate included with every sensing element
- Optional LED display is highly visible and makes commissioning and troubleshooting simple (IP65)

**ORDERING**

	-		-		-		-	
<b>Model</b>		<b>Bypass</b>		<b>Transducer Range</b>		<b>Output</b>		<b>Display</b>
PW31		X = None 3V = 3 Valves 5V = 5 Valves		005 = 0-5 PSID 010 = 0-10 PSID 025 = 0-25 PSID 050 = 0-50 PSID 100 = 0-100 PSID 150 = 0-150 PSID		A = 0-5V B = 0-10V C = 4-20mA		D = Display* *for 4-20mA units only

**Display Only**



PW31-DISPLAY

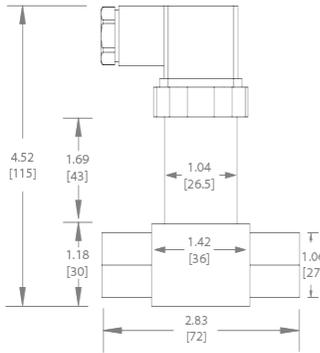
**Ordering the Correct Transducer**

Transducer Ordering #	PSID Range (Differential)	Expected PSIG Pressure Range (Max Line Pressure)
005	0-5 PSID	0-25 PSIG
010	0-10 PSID	0-50 PSIG
025	0-25 PSID	0-100 PSIG
050	0-50 PSID	0-250 PSIG
100	0-100 PSID	0-500 PSIG
150	0-150 PSID	0-750 PSIG

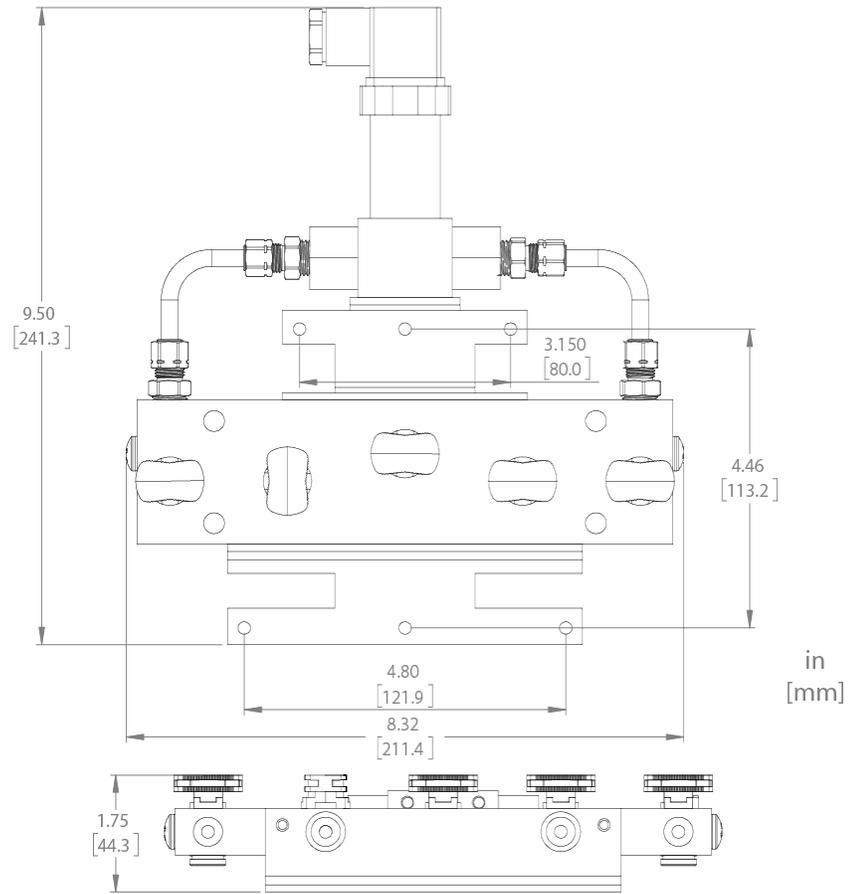
*\*Using a lower range PSID transducer for higher PSIG applications will result in inaccurate readings and may reduce the life span of the transducer. See "line pressure effect" in specification section.*

**DIMENSIONS**

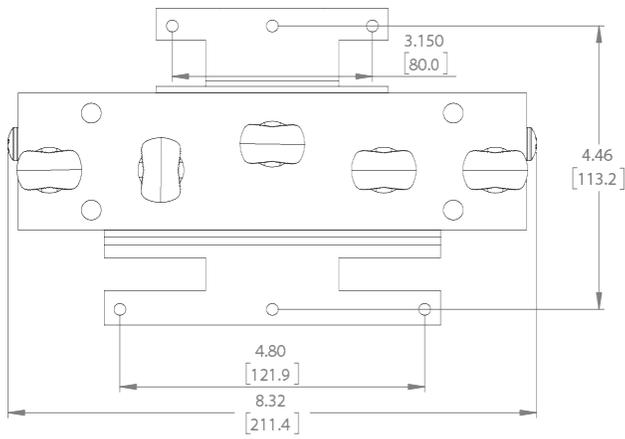
Transmitter Only



3-Valve and 5-Valve Assemblies (same dimensions)



Manifold Only



**Warning:** The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS		
Power supply		15-35vdc, 20mA max.
Outputs		2-wire 4-20mA, 3-wire 0-10V, 3-wire 0-5V
Operating Temperature (3)	Operating Temperature	-4 to 175°F (-20-80°C)
	Compensated range	30 to 158°F (0-70°C)
Media Compatibility Transmitter	Transmitter Only	316L SS compatible liquids and gases, Fluororubber O-rings
Media Compatibility Manifold	Connection	Copper tube, CW614n Brass fittings (2.5-3.5% lead content)
	Manifold O-Rings	Neoprene
	Manifold Valves	Glass filled Acetal (Polyacetal Resin)
	Manifold Material	Anodized Aluminum
Sensor Performance	Type	Micro-machined silicon strain gauge
	Temp coefficient zero	For units <25PSI: $\pm 1.7\%$ FS/100°F; $\pm 1.5\%$ FS/50°C For units >25PSI: $\pm 1.1\%$ FS/100°F; $\pm 1.0\%$ FS/50°C
	Temp coefficient span	For units <25PSI: $\pm 1.7\%$ FS/100°F; $\pm 1.5\%$ FS/50°C For units >25PSI: $\pm 1.1\%$ FS/100°F; $\pm 1.0\%$ FS/50°C
	Line Pressure Effect	Zero Shift $\leq 0.0035\%$ FS/PSIG line pressure
	Differential Pressure Ranges	0-5, 0-10, 0-25, 0-50, 0-100, 0-150 PSID
	Differential Overload Pressure	150%FS
	Maximum Pressure (1)	500%FS
	Accuracy (2)	$\pm 0.25\%$ FS
	Sensor Enclosure	Laser welded housing, IP65
	Long Term Stability	$\pm 0.5\%$ FS/Year
Connection	Shock and Vibration	30G. 5G @ 50Hz; 10G peak
	EMI/RFI Protection	Per CE Requirements
	Pressure Connection Transmitter	1/4" NPT Female
	Pressure Connections Manifold	1/4" NPT female
	Electrical Connection	DIN43650A
Environmental	Environmental	IP65 (Installed with water-tight fittings)
		1/2" conduit adapter included
Display	Accuracy	0.1%
	Output	4-20mA
	Voltage Drop	<3.5VDC
	Sample Rate	4/s
	Environmental	IP65
Agency	Transmitter Only	CE, RoHS
	Manifold	CE

(1) This is the maximum gauge pressure to maintain 0.25% accuracy.

(2) FS is defined as the full scale of the selected range. Accuracy includes non-linearity, hysteresis, repeatability, zero, and span tolerance.

(3) Stated operating range is for electronics only; Media temperature may be considerably higher. Use of devices outside of compensated range may result in drift.

\* Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.