

PWxxxS



PWxxxBP

# PW Series

## Wet Media Differential Pressure Transducer

### Product Overview

The PW Series pressure transducer measures the differential pressure across pumps, filters, heat exchangers, and other non-corrosive wet media. Several operational pressure ranges are available, and the analog output is user selectable (4 to 20 mA, 0 to 5 V, or 0 to 10 V). PW Series devices are warranted to meet accuracy specifications for a period of five years.

The optional pre-assembled bypass valve is designed for easy maintenance and one-step installation.

### Product Identification

	<b>Local Display</b>	<b>NIST</b>	<b>Operational Range*</b>	<b>Options</b>
PW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	L = LCD Display X = No Display	N = NIST X = None	03 = 0 to 50 psig 04 = 0 to 100 psig 05 = 0 to 250 psig	S = Standard BP = With mounted bypass assembly

\* Select operational range according to maximum gauge pressure, NOT differential pressure.  
Example: High gauge pressure=90 psig, Select 100 psig model (04).



### NOTICE

- This product is not intended for life or safety applications.
- Do not install this product in hazardous or classified locations.
- Read and understand the instructions before installing this product.
- Turn off all power supplying equipment before working on it.
- The installer is responsible for conformance to all applicable codes.

If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this material.

### Specifications

<b>Media Compatibility</b>	17-4 PH stainless steel
<b>Input Power</b>	Class 2; 15 to 30 Vdc, 24 Vac nom. 50/60 Hz*
<b>Maximum Current Draw</b>	DC: 125 mA; AC: 280 mA
<b>Output</b>	3-wire transmitter; user-selectable 4 to 20 mA/0 to 5 V/0 to 10 V*
<b>Status Indication</b>	Dual-color LED
<b>Proof Pressure</b>	2x max. F.S. range***
<b>Burst Pressure</b>	5x max. F.S. range***
<b>Accuracy at 25 °C**</b>	Ranges A and B: ±1% F.S. typical***; Range C: ±1.5% F.S. typical***; Range D: ±2% F.S. typical***
<b>Surge Damping</b>	Electronic; 1 or 5 second averaging
<b>Temperature Compensated Range</b>	0 to 50 °C (32 to 122 °F); TC Zero <1.5% of product F.S.*** per sensor TC Span <1.5% of product F.S.*** per sensor
<b>Sensor Operating Range</b>	-20 to 85 °C (-4 to 185 °F)
<b>Operating Environment</b>	-10 to 50 °C (14 to 122 °F); 10 to 90% RH non-condensing
<b>Media Temp. Limits</b>	-20 to 85 °C (-4 to 185 °F); 0 to 90% RH non-condensing
<b>Long Term Stability</b>	±0.25%
<b>Zero Adjust</b>	Pushbutton auto-zero and digital input (two-position terminal block)
<b>Zero Offset (Bidirectional and Port Swap modes only)</b>	0.5%
<b>Fittings</b>	1/8" NPT female thread, stainless steel 17-4 PH
<b>Physical</b>	White powder-coated aluminum, NEMA 4, IP65

## Specifications (cont.)

PRESSURE RANGES	
<b>0 to 50 psig</b>	5/10/25/50 psid
<b>0 to 100 psig</b>	10/20/50/100 psid
<b>0 to 250 psig</b>	25/50/125/250 psid

Note: To conform to EMC Standards, use shielded cabling. Technical information is available from the factory on request.

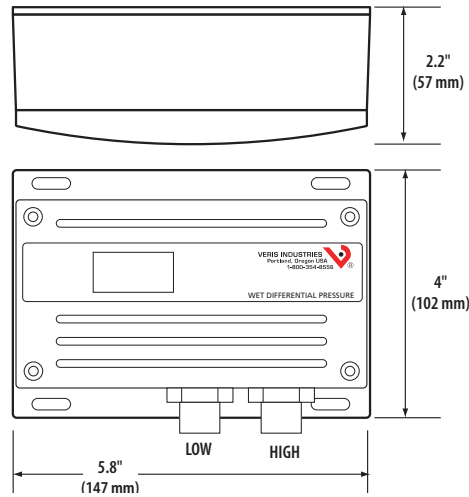
\* VFD systems and system wiring generate fields that can disrupt electrical devices. Ensure that these fields are minimized and are not affecting the sensor or sensor wiring.

\*\* Accuracy combines linearity, hysteresis, and repeatability.

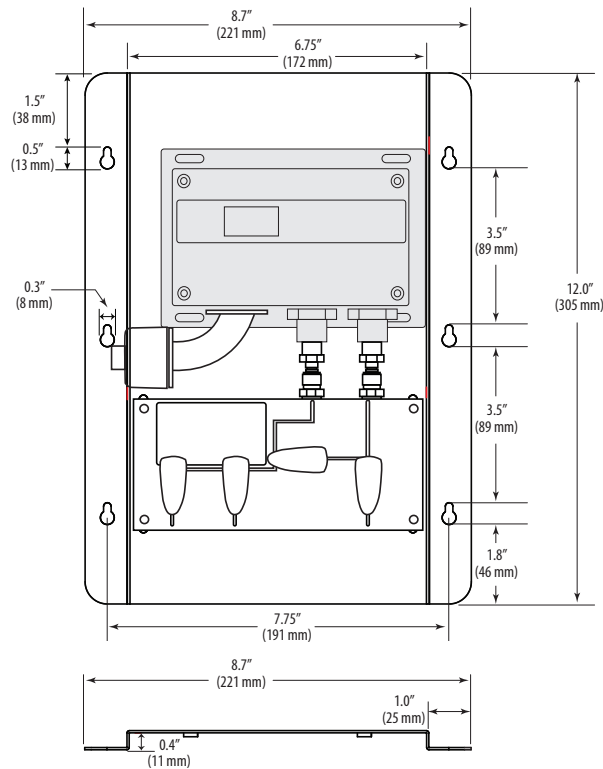
\*\*\* F.S. is defined as full span of selected range in bidirectional mode.

## Dimensions

### PWxxxS



### PWxxxBP

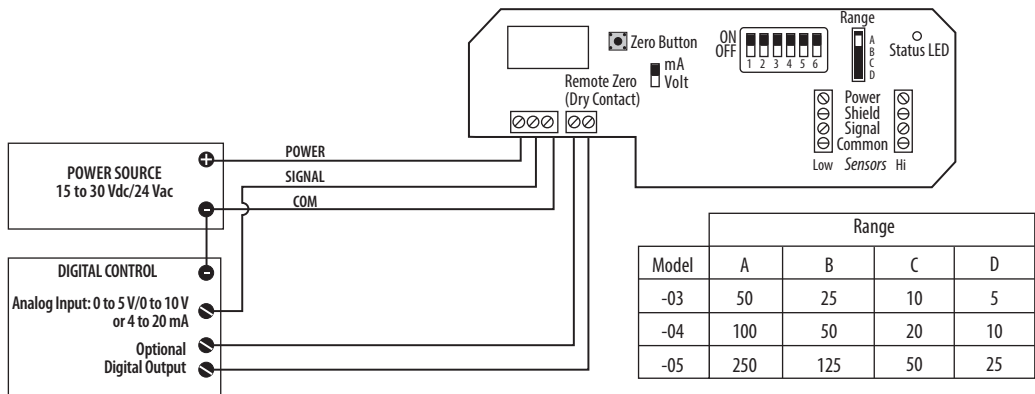


# Installation



Observe precautions for handling static sensitive devices to avoid damage to the circuitry that is not covered under the factory warranty.

1. Find a suitable mounting position near the location to be measured. Mount the PW housing using the self-tapping screws provided.
2. Remove the lid from the housing to reveal the board. Wire the PW terminals to the power source and to the digital control system as shown. Configure the jumpers for desired operating parameters. Replace the cover.

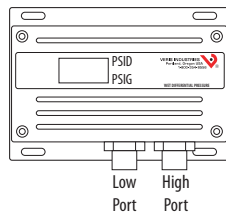


Model	Range			
	A	B	C	D
-03	50	25	10	5
-04	100	50	20	10
-05	250	125	50	25

DIP Switches		
Num	Function	Off/On <sup>1</sup>
1	Damping	Fast/Slow
2	Test	Operate/Test
3	Mode	Normal/Bidirec.
4	Analog	Normal/Reverse
5	Port	Normal/Swap
6	Voltage Out <sup>2</sup>	0 to 10 V/0 to 5 V

1. "Off" position is the default setting for all DIP switches.  
 2. Ignored in mA mode.

3. Connect tubing to the high and low ports on the PW.



4. Connect the other ends of the tubing to a pipe or duct, across the pump, filter, or other pressure differential.

### Notes

During operation, the LCD shows two pressure values. The value adjacent to the PSID label shows the differential pressure, while the value adjacent to the PSIG label shows the high port gauge pressure. The gauge pressure value is read from the high port if DIP switch #5 is in the Normal position. If this DIP switch is in the Port Swap position, the PSIG value is read from the low port, and the value is usually a negative number.

This product uses a half-wave rectifier power supply. If the installer is using a transformer to power the device, do not use the same transformer to power other devices utilizing non-isolated full-wave power supplies.

Optional: Connect the Zero terminals to the digital output (contact closure) of the control system. The Zero input is for dry-contact only. Do not apply voltage to the Zero terminals.

To use the auto zero function, press and hold the Zero button for two seconds or provide contact closure on the auxiliary 'Remote Zero' terminal to reset the output to zero pressure. To protect the device from accidental zeroing, this feature is only enabled when the detected pressure is within 5% of factory calibration.

## LED Blink Codes

LED Color	Status
Solid Green	Normal operation.
Flashing Green	Low > High; use port swap jumper or bidirectional mode.
Solid Red	Differential pressure is too high; select a higher pressure range.
Flashing Red	Gauge pressure over sensor range; reduce line pressure or replace with a higher range device.
Alternating Green/Red Flash	Sensor input is below sensor range. Verify that the sensor is connected correctly.

## Commissioning (PWxxxBP only)

1. Close C and D.
2. Open B (null).
3. Open D (bleed or purge).
4. Slowly open A to bleed air from line.
5. Close B, then fully open A.
6. Slowly open C to bleed air from line.
7. Close D, then fully open C.

*Valve positions: All closed*



*Valve positions: All open*



*Valve positions: Normal operation*



## Maintenance (PWxxxBP only)

1. Bleed or purge: see Commissioning step.
2. Equalize pressure: open B.
3. Isolate sensors: close A and C.