

NOTICE:

As a result of a temporary parts shortage, the 4-position slide switch used for range selection has been replaced with a 5-position slide switch in a limited period of production runs. See pages 3-4 for details.



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.

PW2 Series

Wet Media Differential Pressure Transducer

Product Overview

The PW2 Series sensor is designed to accept high differential pressure. Install the sensor on a duct or pipe across a pump, filter, heat exchanger, compressor, or other non-corrosive wet media. The dual sensor design eliminates the need for a bypass valve, and the bi-directional capability reduces installation errors. A pushbutton allows easy zero adjustment.

Product Identification

PW2	Local Display	NIST	Operational Range*	Options
	<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

*** IMPORTANT!**

Select operational range according to maximum gauge pressure, NOT differential pressure.

Example: High gauge pressure=90 psig, select 100 psig model (04).

Specifications

Media Compatibility	17-4 PH stainless steel
Input Power	Class 2; 12 to 24 Vdc, loop powered (polarity insensitive)
Output	2-wire transmitter; 4 to 20 mA (clipped and capped)
Proof Pressure	2x max. F.S. range
Burst Pressure	5x max. F.S. range
Accuracy at 25 °C*	Ranges A, B, C: $\pm 1\%$ F.S.** Range D: $\pm 2\%$ F.S.**
Surge Damping	Electronic; 5-second averaging
Temperature Compensated Range	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
Sensor Operating Range	-20 to 85 °C (-4 to 185 °F)
Long Term Stability	$\pm 0.25\%$ per year
Zero Adjust	Pushbutton auto-zero
Operating Environment	-10 to 55 °C (14 to 131 °F); 10 to 90% RH non-condensing
Fittings	1/8" NPT female thread, stainless steel 17-4 PH
Physical	White powder-coated aluminum
PRESSURE RANGES	
0 to 50 psi (0 to 3.45 bar)	5/10/25/50 psid (0 to 0.34/0.69/1.72/3.45 bar)
0 to 100 psi (0 to 6.89 bar)	10/20/50/100 psid (0 to 0.69/1.38/3.45/6.89 bar)

Specifications (cont.)

0 to 250 (0 to 17.24 bar)

25/50/125/250 psid (0 to 1.72/3.45/8.62/17.24 bar)

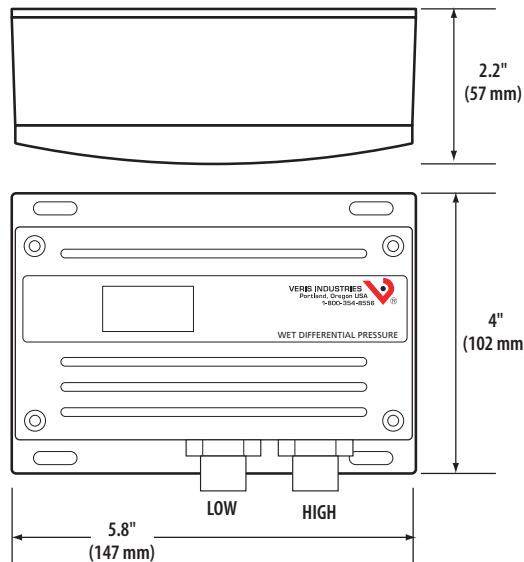
Note: To conform to EMC standards, use shielded cabling. Technical information is available from the factory on request.

* Accuracy combines linearity, hysteresis, and repeatability.

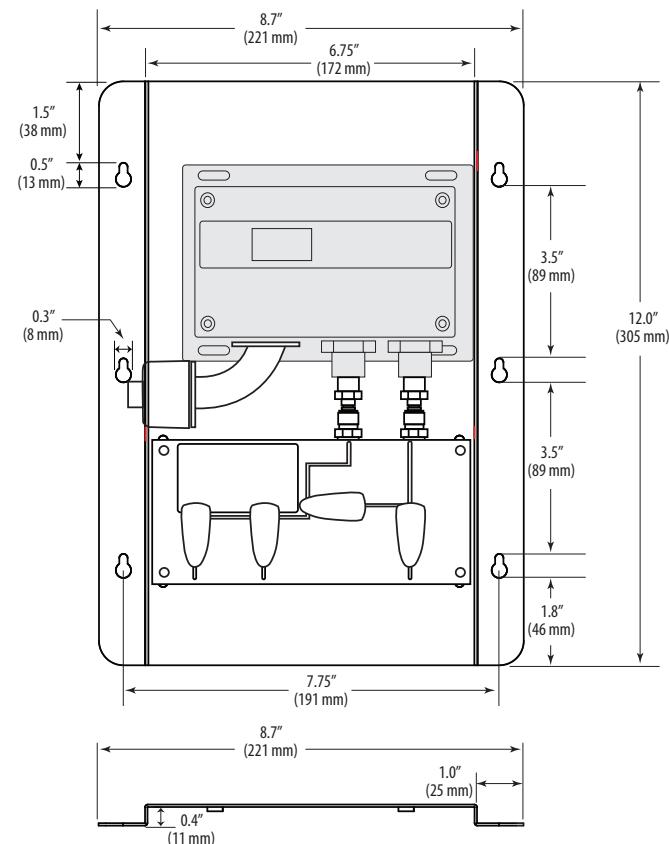
** F.S. is defined as full span of selected range in bidirectional mode.

Dimensions

PW2xxxS



PW2xxxBP



Installation

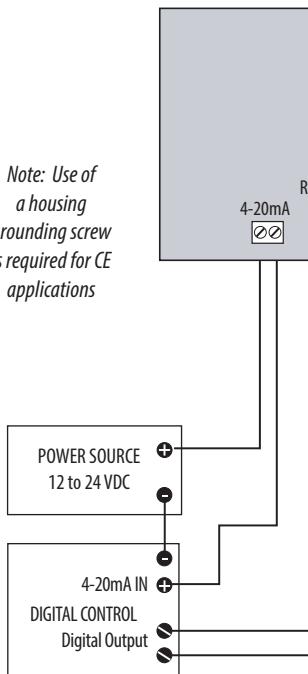


ATTENTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES TO AVOID DAMAGE TO THE CIRCUITRY THAT IS NOT COVERED UNDER FACTORY WARRANTY.

1. Mount sensor on a duct or pipe, across the pump, filter, or other pressure differential.
2. Wire as shown below.
3. Configure the jumpers as described below.

*Note: Use of
a housing
grounding screw
is required for CE
applications*



A-High
B-Mid High
C-Mid Low
D-Low
Pressure
Range

Port Swap/Norm
Bi-Dir/Normal
Slow Avg/**Fast Norm**
Analog Rev/**Norm**
Bar/PSI
Settings

Default Settings in bold.
Insert jumper to activate other features.

Model	A	B	C	D
PW2xx03	50	25	10	5
PW2xx04	100	50	20	10
PW2xx05	250	125	50	25

Model	A	B	C	D
PW2xx03	3.45	1.72	0.69	0.34
PW2xx04	6.89	3.45	1.38	0.69
PW2xx05	17.24	8.62	3.45	1.72

Output is mA only.
Example: PW2xx04

Bidirectional Operation		Outputs mA only. Example: PW2xx0	
Input Conditions		Result	Outputs Read
HI PORT	LO PORT	DP	4-20mA
100 psi	0 psi	+100 psi	20mA
100 psi	50 psi	+50 psi	16mA
50 psi	50 psi	0 psi	12mA
50 psi	100 psi	-50 psi	8mA
0 psi	100 psi	-100 psi	4mA

Optional: Connect Zero terminals to digital output (contact closure) of control system.

Caution: Zero input is for dry-contact only. Do not apply voltage to the Zero terminals.

Range: Use the Range switch to select F.S. differential pressure.

Jumper	Notes
Port Swap/Norm	Reverses polarity of the pressure ports (i.e. makes the LO port operate as the HI port and vice versa); used when the sensor is incorrectly plumbed.
Bi-Dr/Normal	Normal: 0 to F.S. pressure Bidirectional: -F.S. pressure to +F.S. pressure; output reads 1/2 when pressure is zero.
Slow Avg/Fast Norm	Slow mode provides 5-second averaging for surge damping.
Analog Rev/Norm	Normal: Output increases as pressure increases; Reverse: Output is maximum when pressure differential is zero and decreases as pressure increases.
Bar/PSI	Select output units.

NOTICE:

As a result of a temporary parts shortage, the 4-position slide switch used for range selection has been replaced with a 5-position slide switch in a limited period of production runs. This will have a minor impact on how the range selection works on the affected models. The 5-position switch will be used in models produced between these dates:

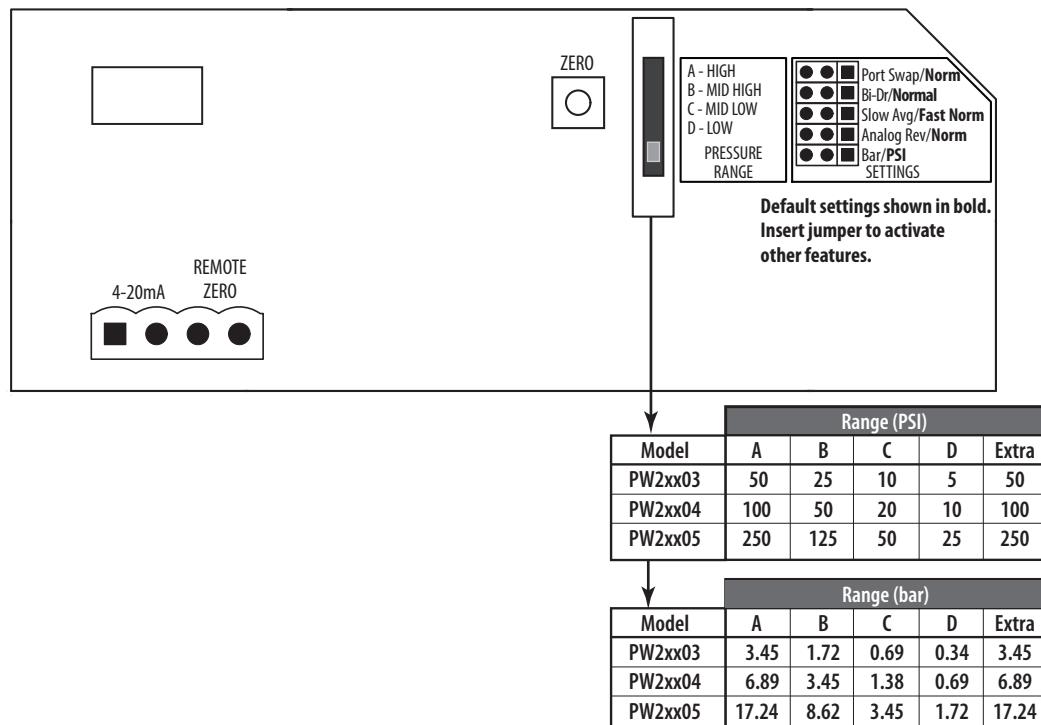
Installation (cont.)

- Start Date: January 21, 2025 (Date Code: 2503)
- End Date: January 31, 2025 (Date Code: 2505)

For PW2 product models, the extra (fifth) position will align below the range "D" text printed on the product PCB. When this position is selected, the product will treat this the same as if range "A" is selected.

The presence of the 5-position switch can be determined one of two ways.

- Look at the date code printed on the product label. If the date code falls between the starting date and ending date listed above, inclusive of those values, then the product will have a 5-position range switch.
- Look at the range selection switch. The switch body will extend toward the center of the PCB past the silkscreen square around the "PRESSURE RANGE" text (see figure below).



Operation

Auto-Zero: 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.

Commissioning (PW2xxxBP only)

- Close C and D.
- Open B (null).
- Open D (bleed or purge).
- Slowly open A to bleed air from line.
- Close B, then fully open A.
- Slowly open C to bleed air from line.
- Close D, then fully open C.

Valve positions: All closed



Valve positions: Normal operation



Valve positions: All open



Maintenance (PW2xxxBP only)

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