

PWT Series Wet/Wet Differential Pressure Sensors

INSTALLATION INSTRUCTIONS

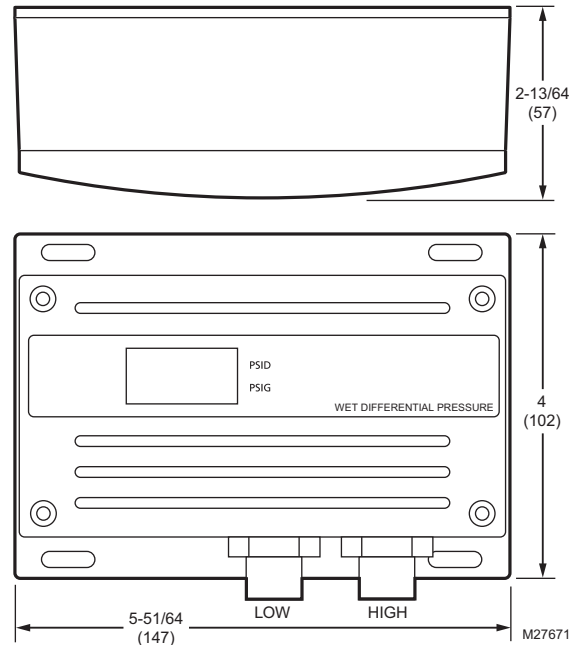


Fig. 1. Dimensions in in. (mm).

APPLICATION

The PWT Series wet/wet differential pressure sensors provide reliable, accurate measurement and control of proper applications, including the monitor and control of pump differential pressure, chiller/boiler differential pressure drop, and CW/HW system differential pressure. The PWT Series is ideal for measuring pressure across pumps, filters, heat exchangers, compressors and other non-corrosive wet media applications.

The PWT Series of pressure sensors feature four field selectable pressure ranges configurable to 4-20 mA, 0-5 Vdc, or 0-10 Vdc output.

INSTALLATION

1. Mount sensor on a duct or pipe, across the pump, filter, or other non-corrosive wet media pressure differential.
2. Wire as shown (see Fig. 2).
3. Configure the jumpers (see "Configuration" on page 2).



WIRING

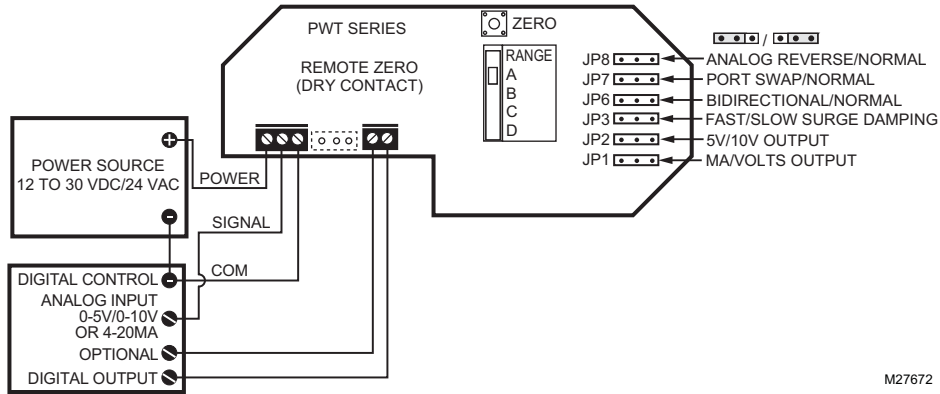
CAUTION

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

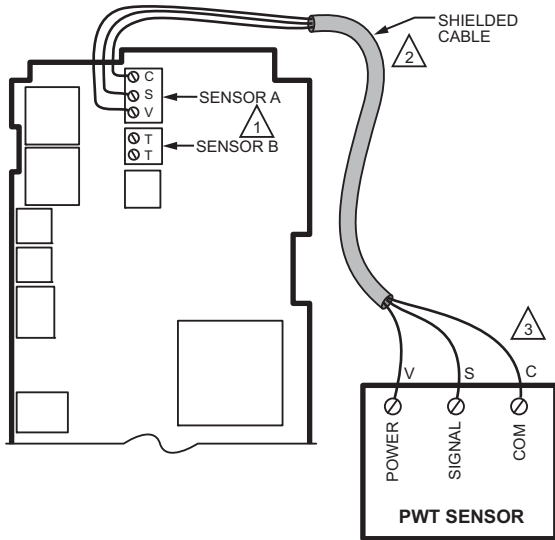
CAUTION

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



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Fig. 2. PWT wiring.



1 THE T775U WILL ONLY ACCEPT 0-10 VDC AND 4-20 mA SENSORS

2 SHIELDED CABLE MUST BE CONNECTED TO A SEPARATE EARTH GROUND, HOWEVER, DO NOT GROUND SHIELDED CABLE AT SENSOR END.

3 TO MINIMIZE NOISE PICKUP, MAKE SENSOR CONNECTION FROM SHIELDED CABLE AS CLOSE AS POSSIBLE TO SENSOR BODY.

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Fig. 3. Wiring to the T775U—3-wire shielded cable, 0-10VDC PWT Sensor input to Sensor A on the T775U controller.

CONFIGURATION

Select the proper output, mode, and pressure range using the switches and jumpers:

1. Select output using jumper JP1.
Current: mA (then skip to step 3), or
Voltage: Volts.
2. Select 0-10 Vdc or 0-5 Vdc using jumper JP2.
3. Select slow or fast response time using jumper JP3.
4. Select normal or bidirectional mode using jumper JP6.
See Table 4.
5. Select normal or port swap using JP7.
6. Select normal or analog reverse using JP8.
7. Use the range switch to select appropriate full-scale pressure range. See Table 1 for the range selection guide.

Table 1. Range Selection Guide (PSI).

Model	A	B	C	D
PWT50	50	25	10	5
PWT100	100	50	20	10
PWT250	250	125	50	25

IMPORTANT

Select operational range according to maximum gauge pressure, NOT differential pressure. Example: High gauge pressure =90 psig, select 100 psig model.

Table 2. Jumper Configuration.

Jumper	Options	Notes
JP1	Voltage (V) or Current (mA)	
JP2	0-10V or 0-5V output span	Use only if JP1 is set to V mode.
JP3	Slow or Fast	Slow mode provides 5 second averaging for surge dampening.
JP6	Normal or Bidirectional	Normal: 0 to F.S. pressure Bidirectional: -F.S. pressure to +F.S. pressure; output reads 1/2 when pressure is zero.
JP7	Normal or Port Swap	Swap 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.
JP8	Normal or Analog Reverse	Normal: output increases as pressure increases; Reverse: output is maximum when pressure differential is zero and decreases as pressure increases.

OPERATION

Blink Settings

Table 3. 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.

Auto-Zero: Press and hold the Zero button for 2 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.

**Table 4. Bidirectional Operation.
Example: PWT100**

Input Conditions		Result	Outputs Read ^a	
HI PORT	LO PORT	DP	4-20mA	0-10V
100 PSI	0 PSI	+100 PSI	20mA	10V
100 PSI	50 PSI	+50 PSI	16mA	7.5V
50 PSI	50 PSI	0 PSI	12mA	5V
50 PSI	100 PSI	-50 PSI	8mA	2.5V
0 PSI	100 PSI	-100 PSI	4mA	0V

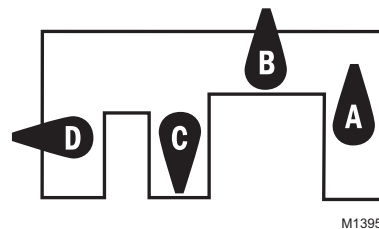
^aOutput can be mA or V.

APPENDIX

The PWT50-BP, PWT100-BP and PWT250-BP sensors were discontinued in January 2010. These sensors were shipped with a pre-assembled bypass valve. See Fig. 6.

Commissioning the PWTXXX-BP (See Fig. 5)

1. Make sure C and A are closed before beginning.
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.



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Fig. 4. Bypass valves.

Maintenance

Bleed or purge—see Commissioning

Equalize pressure—open B

Isolate sensors—close A and C

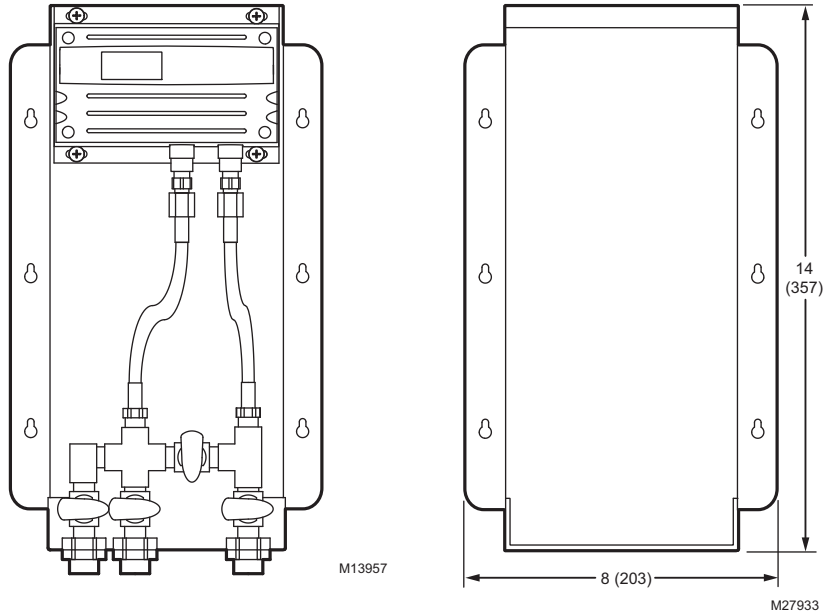


Fig. 5. Bypass valve assembly and bracket dimensions in in. (mm).

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