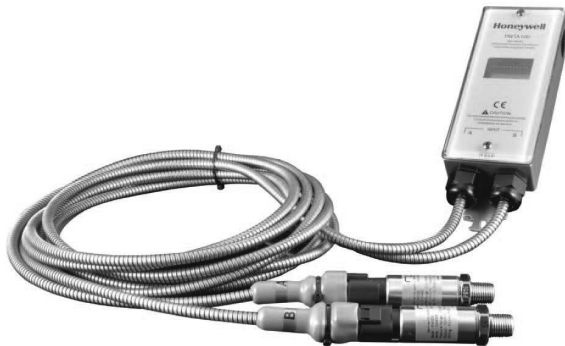


# Honeywell

# PWTA Series Cable Wet Pressure Transmitters

## INSTALLATION INSTRUCTIONS



## APPLICATION

The PWTA 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 PWTA Series is ideal for measuring pressure across pumps, filters, heat exchangers, compressors and other non-corrosive wet media applications. The PWTA Series of pressure sensors feature three field selectable pressure ranges, bi/uni-directional modes with configurable output: 4-20 mA, 0-5 Vdc, or 0-10 Vdc output.

## ⚠ WARNING

- Only qualified trade installers should install this product.
- This product is not intended for life-safety applications.
- Do not install in hazardous or classified locations.
- The installer is responsible for all applicable codes.
- De-energize power supply prior to installation or service.

## ⚠ AVERTISSEMENT

- Seuls les installateurs spécialisés sont autorisés à installer ce produit.
- Ce produit n'est pas destiné aux applications de sécurité ou de sauvetage.
- Ne l'installez pas dans des endroits dangereux ou classés comme tels.
- L'installateur doit respecter tous les codes applicables.
- L'installateur doit respecter tous les codes applicables.

## Product Application Limitation

Honeywell products are not designed for life or safety applications. Honeywell products are not intended for use in critical applications such as nuclear facilities, human implantable device or life support. Honeywell is not liable, in whole or in part, for any claims or damages arising from such uses.

### IMPORTANT

- Do NOT exceed gauge pressure rating of sensor.
- Use ONLY Honeywell gauge pressure sensors provided with your PWTA transmitter to obtain the specified transmitter accuracy.
- Follow instructions step by step to ensure proper setup.

## Limites de l'application du produit

Les produits Honeywell ne sont pas conçus pour des applications de sécurité ou de sauvetage. Les produits Honeywell ne sont pas conçus pour les applications critiques, comme les installations nucléaires, les dispositifs implantables dans le corps humain ou d'assistance vitale. Honeywell n'est pas responsable, en tout ou en partie, des réclamations ou dommages découlant d'une telle utilisation.

### IMPORTANT

- Ne dépassez PAS la pression manométrique nominale du capteur.
- Utilisez UNIQUEMENT des capteurs de pression manométrique Honeywell fournis avec votre émetteur PWTA pour obtenir la précision spécifiée de l'émetteur.
- Suivez les instructions détaillées pour assurer une configuration adéquate.



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## DIMENSIONS

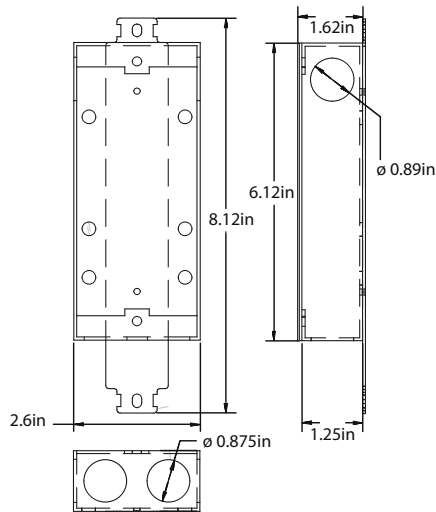


Fig. 1.

## CONNECTION WIRING

Honeywell recommends 22 AWG stranded, 4 conductor shielded cable to wire between the PWTA transmitter sensor.

Terminals are rated for 24-14 AWG, 3.5 lb-in of torque.

## INSTALLATION

1. Identify PWTA sensors A & B and their respective PSIG rating.

**If the expected system gauge pressure exceeds the PSIG rating on the PWTA sensors call factory and DO NOT proceed with install.**

**PWTA40 = 100 PSIG (50/75/100 PSID)  
PWTA100 = 100 PSIG (10/20/40 PSID)  
PWTA250 = 250 PSIG (75/150/250 PSID)**

2. Plumb sensors to media. Sensor A is intended for supply pressure and sensor B is intended for return pressure of the system. Plumb sensors to the side or top of pipe, as plumbing to the bottom will cause sediment to settle and could clog or affect sensor accuracy. **It is advisable to use a single wrap of PTFE tape on the sensor threads, or other thread sealing alternative, to improve sensor accuracy.** Do not attempt to screw in or tighten the elements while the cables are connected, as you run the risk of pulling the wires from the cable attachments.

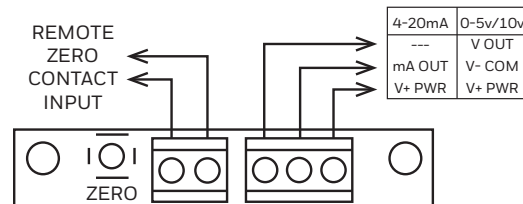
No bypass valve manifold is necessary. Use only Honeywell gauge pressure sensor elements provided with your transmitter.

Honeywell recommends closing service valves when flushing system to prevent contaminants and water hammer from damaging sensing elements.

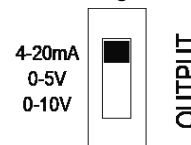
3. Mount the PWTA pressure transmitter such that provided cables can reach gage pressure sensors.
4. Plug custom length cables into installed gage pressure sensors, **matching the cable connector label to the pressure sensor element label.**
5. Wire PWTA transmitter for voltage or current output as shown:

4-20mA wiring:  
mA OUT = 4-20mA output return  
V+ PWR = Loop supply excitation voltage

0-5v/0-10v wiring:  
V OUT = Voltage output, 0-5 or 10vdc  
V- COM = Ground/Common  
V+ PWR = Power supply excitation voltage



6. Select 20 mA, 10 V, or 5 V output using OUTPUT switch based on wiring configuration.



7. Configure PWTA transmitter with gage pressure sensor PSIG by setting jumper to PSI rating on sensors. PSI rating on Honeywell gauge pressure sensors must be higher than maximum PSIG expected in application.

PWTA40 = 100 PSIG	SENSOR PSIG	[ 25	50
PWTA100 = 100 PSIG		[ 100	250
PWTA250 = 250 PSIG		[ PSI	kPa
		[ RUN	TEST
		[ UNI	BI
		[ SLOW	FAST
		[ A-B	B-A

8. Select differential pressure range using RANGE switch. O/R symbol on the LCD will flash if differential pressure is over range. Selectable PSID ranges are based on the gage sensor PSIG rating. (See 'PSID Range Selection Example' for further clarification).

RANGE		PWTA40	PWTA100	PWTA250
	A	10 PSID	50 PSID	75 PSID
	B	20 PSID	75 PSID	150 PSID
	C	40 PSID	100 PSID	250 PSID

9. Configure product by setting remaining jumpers as shown on diagram. (See 'Configuration Jumpers' section for details on each parameter).

SENSOR PSIG	[ 25	50
DISPLAY UNITS	[ PSI	kPa
TEST MODE	[ RUN	TEST
DIRECTION MODE	[ UNI	BI
RESPONSE TIME	[ SLOW	FAST
PORT SWAP	[ A-B	B-A

REMOVE FOR ABSOLUTE VALUE

- Apply power to sensor. TEST MODE jumper may be used to force full-scale output for testing wiring and panel set up.

**Display Units:** LCD will display readings in PSI or kPa. LCD will indicate PSI or kPa at top of screen.

**Test Mode:** In 'Test Mode' sensor forces outputs to full-scale for testing wiring and panel set up.

**Direction Mode:** PWTA transmitter can be setup in Uni or Bi directional mode.

**Table 1. Bi-Directional Mode Example range set at 100 PSID.**

A	B	DP	OUTPUT
100	0	+100	20mA/10V/5V
100	50	+50	6mA/7.5V/3.75V
50	50	0	12mA/5V/2.5V
50	100	-50	8mA/2.5V/1.25V
0	100	-100	4mA/0V/0V

**Response Time:** In 'Slow Mode' the output returns a reading averaged over 64 samples. In 'Fast Mode' the output returns the most recently calculated reading for PSI.

**Port Swap:** If Sensor A was plumbed to the return (low) side and Sensor B was plumbed to the supply (high) side instead of re-plumbing the sensors, the Port Swap can be utilized without a physical reconfiguration. If this jumper is removed, transmitter is in Absolute Mode, where values will always be reported positive.

- To custom zero the device (optional), hold down the zero button for 5 seconds (until the LCD blinks once). Hold down for 10 seconds (until LCD blinks twice) to reset/clear the zero value.
- Seal remaining conduit knockouts on PWTA transmitter.

## CALIBRATION

Honeywell wet pressure sensors are factory calibrated as a set to each PWTA transmitter.

## RECYCLING

Product should not be thrown away in regular trash. Instead, it should be recycled according to local municipality.

## TROUBLESHOOTING

**Table 2.**

Symptom	Solution
No output	Check wiring. Ensure power supply meets requirements.
Pressure reading error	Verify control panel software is configured for correct output scaling.
	Verify switch and jumper settings.
Device will not zero	Hold ZERO button for full 5-seconds until LCD blinks once.
	Continue holding ZERO button for 10-15 seconds, until LCD blinks twice, to restore factory settings.

## SPECIFICATIONS

**Table 3.**

Power supply	Voltage output (0-5 V)	12-30 VDC/24 VAC <sup>(1)</sup> , 20mA max.
	Voltage output (0-10 V)	15-30 VDC/24 VAC
	Current output (4-20 mA)	12-30 VDC, 20mA max.
Outputs	Switch selectable	2-wire 4-20 mA, 3-wire 0-5 V/10V
Pressure ranges (Switch selectable)	PWTA40	10/20/40 PSID
	PWTA100	50/75/100 PSID
	PWTA250	75/150/250 PSID
Operating Temperature	Transmitter	32 to 140°F (0-60°C)
Media Compatibility	Type	Water, other 17-4 SS compatible media
	Temperature	-40 to 248°F (-40-120°C)
Zero adjustment	Automatic	Pushbutton, terminal block switch input Press button for 5 seconds to re-zero Hold for 10 seconds to restore factory settings
Sensor Type		Micro-machined silicon strain gauge
PWTA40 Transmitter	Accuracy <sup>(2)</sup>	Range A: +/-4% FS Range B/C: +/-2% FS
PWTA100/250 Transmitter	Accuracy <sup>(2)</sup>	Range A: +/-2% FS Range B/C: +/-1% FS

**Table 3. (Continued)**

Sensor Performance	Accuracy	< +/-0.5% BFSL
	Zero Offset	< +/-2% FS
	Span Tolerance	< +/-2% FS
	Stability (1 year)	+/-0.25% FS, typ
	Over-range protection	2x rated pressure
	Burst pressure	5x or 20,000 PSI (whichever is less)
	Pressure Cycles	> 100 Million
	Compensated Range	30 to 130°F (0-55°C)
	Temperature Compensation	Zero, <+/-1.5% of FS Span, <+/-1.5% of FS
	Shock	100G, 11 msec, 1/2 sine
	Vibration	10G peak, 20 to 2000 Hz.
	EMI/RFI Protection	Yes
Enclosure, Transmitter	Construction	Powder coated steel
	Sealing	IP65 (Installed with water-tight fittings.)
Enclosure, Sensor	Construction	Stainless Steel, 17-4, 1/4" MNPT, Deutsch DT series connector

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.

(2) For PWTA Transmitter performance accuracy, FS is defined as the full scale of the selected range in bi-directional mode.

## SPECIFICATION BY PRODUCT

**Table 4.**

Product Number	Max PSIG	Selectable PSID Range	Cable Length	Armored Cable
PWTA40-PC-9	100 PSIG	10/20/40 PSID	9 ft	No
PWTA100-PC-9	100 PSIG	50/75/100 PSID	9 ft	No
PWTA250-PC-9	250 PSIG	75/150/250	9 ft	No
PWTA40-PC-50	100 PSIG	10/20/40 PSID	50 ft	No
PWTA100-PC-50	100 PSIG	50/75/100 PSID	50 ft	No
PWTA250-PC-50	250 PSIG	75/150/250	50 ft	No
PWTA40-AC-9	100 PSIG	10/20/40 PSID	9 ft	Yes
PWTA100-AC-9	100 PSIG	50/75/100 PSID	9 ft	Yes
PWTA250-AC-9	250 PSIG	75/150/250	9 ft	Yes
PWTA40-AC-50	100 PSIG	10/20/40 PSID	50 ft	Yes
PWTA100-AC-50	100 PSIG	50/75/100 PSID	50 ft	Yes
PWTA250-AC-50	250 PSIG	75/150/250	50 ft	Yes

## WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)



Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and

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