PW20

Wet-Wet Pressure Transmitter Compatible with Senva 25, 50, 100, 250, 500psig pressure sensors

IMPORTANT WARNINGS

- 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

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

IMPORTANT!

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

INSTALLATION

1. Plumb pressure gage sensors to media. Plumb PWS elements to the side or top of pipe, as plumbing to the bottom will cause sediment to settle and could affect sensor accuracy. (1) No bypass valve manifold is necessary. Use only Senva gage pressure sensor elements provided with the transmitter. **Optional shutoff valves are available** - we recommend closing service valves when flushing system to prevent contaminents from damaging PWS sensing elements.

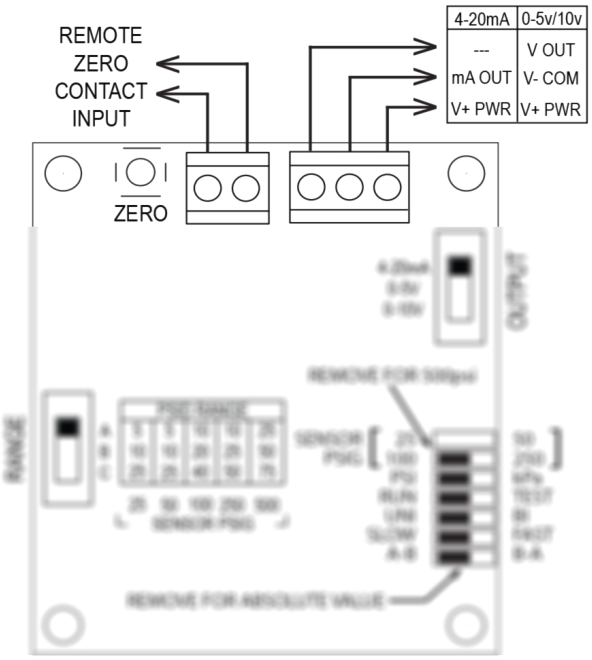
2. Mount PW20 pressure transmitter such that provided cables can reach gage pressure sensors.

3. Plug custom length cables into installed gage pressure sensors, **matching the cable connector label to the PWS sensor element label.** (2)

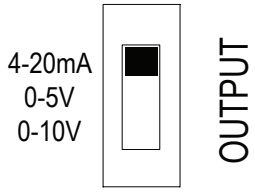
4. Wire PW20 transmitter for voltage or current output as shown:

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

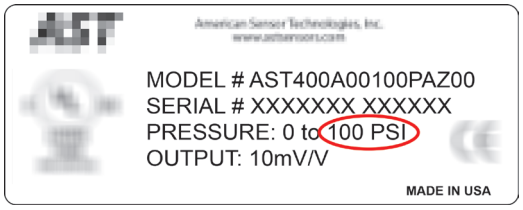
0-5v/0-10v wiring:
V OUT = Voltage output, 0-5 or 10vdc
V- COM = Ground/Common
V+ PWR = Power supply excitation voltage

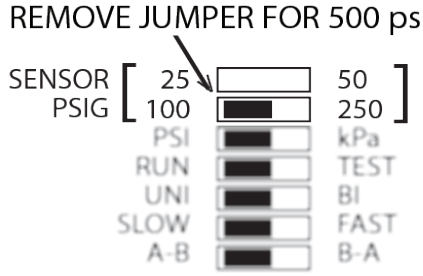


5. Select 20mA, 10v, or 5v output using OUTPUT switch based on wiring configuration.



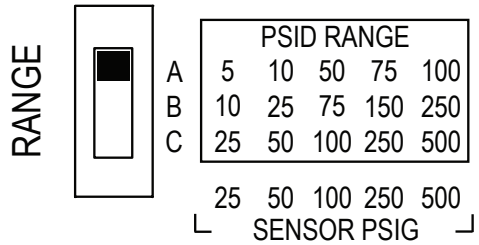
6. Configure PW20 transmitter with gage pressure sensor PSIG by setting jumper to PSI rating on sensors. PSI rating on Senva gauge pressure sensors must be higher than maximum PSIG expected in application.



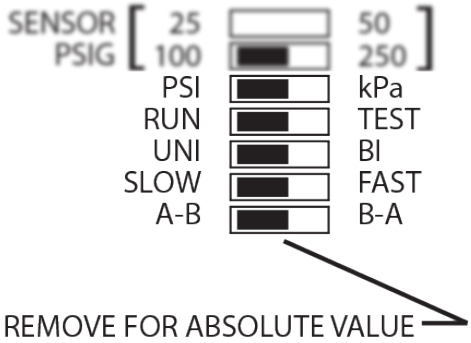


INSTALLATION CONTINUED

7. 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).



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



9. Apply power to sensor. TEST MODE jumper may be used to force full-scale output for testing wiring and panel set up. For ZEROING see note (3) below.

(1) It is advisable to use PTFE tape on the PWS element threads, or other thread sealing alternative, to improve sensor accuracy.
(2) Do not attempt to screw in or tighten the PWS elements while the cables are connected, as you run the risk of pulling the wires from the cable attachments.
(3) Push ZERO button for 5-seconds to zero device. Continue holding for 10 seconds to re-zero device to factory settings.

CONFIGURATION JUMPERS

Sensor Select	Select FS range of pressure sensor.
Display Units	PSI or kPa
Test Mode	Forces outputs to full-scale
Direction Mode	Uni/Bi-Directional
Response Time	Slow or Fast
Port Swap	A-B or B-A
-Absolute Mode	Absolute value (always positive)

Bi-Directional Mode Example:

A	B	DP	OUTPUT
100	0	+100	20mA/10V/5V
100	50	+50	16mA/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

CALIBRATION

Senva PWS sensors are factory calibrated. No field calibration is necessary or recommended.

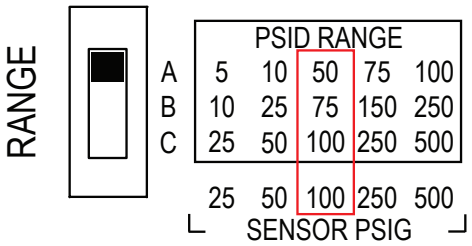
TROUBLESHOOTING

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 6-seconds
	Continue holding ZERO button for 10-15 seconds to restore factory settings.

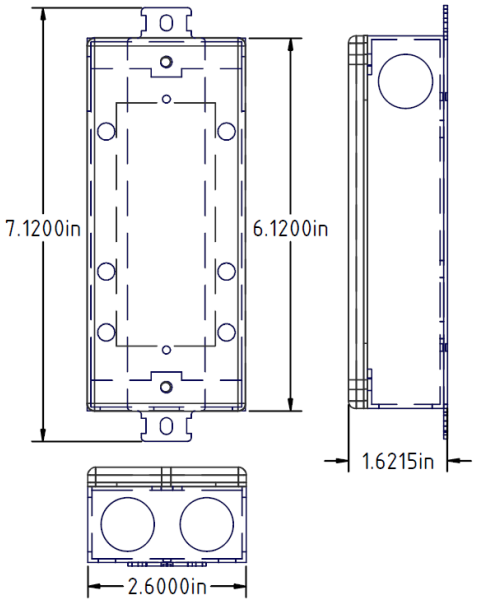
PSID RANGE SELECTION EXAMPLE

Each PWS gage pressure sensor element offers three ranges for PSID. The PSID range is selected via the switch on the PW20 transmitter board. The PSID range options are in the column directly above the gage sensor PSIG rating.

This example encapsulates the three ranges for the 100 PSIG elements. The installer can select the proper PSID range by moving the switch to the desired position. The O/R symbol on the LCD will flash if the selected differential pressure is over range.



DIMENSIONS



SPECIFICATIONS

Power supply	Voltage output mode (0-5v) Voltage output mode (0-10v) Current (4-20mA) output mode	12-30vdc/24vac [(1)], 20mA max. 15-30vdc/24vac required for 10v f.s. output 12-30vdc, 20mA max.
Outputs	Switch selectable	2-wire 4-20mA, 3-wire 0-5v/10v
Pressure ranges (Switch selectable)	25psig sensor (PWS025) 50psig sensor (PWS050) 100psig sensor (PWS100) 250psig sensor (PWS250) 500psig sensor (PWS500)	5/10/25psid 10/25/50psid 50/75/100psid 75/150/250psid 100/250/500psid
Operating Temperature	Transmitter	32 to 140ºF (0-60ºC)
Media Compatibility	Type Temperature	Water, other 17-4 SS compatible media 32 to 250ºF (0-125ºC)
Zero adjustment	Automatic	Pushbutton, terminal block switch input Press button for 5-seconds to re-zero Hold for 10-seconds to restore factory setting.
Transmitter Performance	Accuracy [(2)]	Range A B/C All PSIG Elements +/-2% FS +/-1% FS
Sensor Type		Micro-machined silicon strain gauge
Sensor (PWS[xxx])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 20,000psi (whichever is less)
	Pressure Cycles	> 100 Million
	Compensated Range	30 to 130ºF (0-55ºC)
	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, PW20 Transmitter	Construction	Powder coated steel
	Sealing	IP65 (Installed with water-tight fittings.)

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) FS is defined as the full scale of the selected range in bi-directional mode.