Fuel/oil Pressure Sender Installation Guide

A. Wiring and Setting

1) Wiring the sensor as shown in Figure 1. Connecting power lead (red or brown) to terminal 9 which provides +5V DC, signal lead (green or blue) to terminal 14 for Channel2, and ground lead (black) to terminal 1. The 12V DC buzzer is optional.
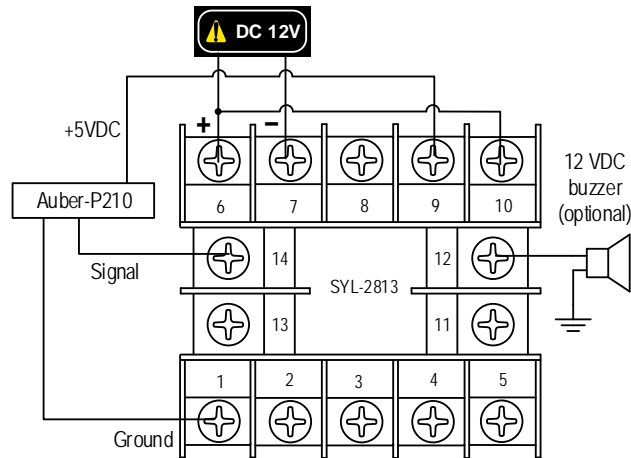

Figure 1. SYL-2813 wiring example of P210 pressure sender in Channel 2.

2) To display the pressure unit in PSI (1 PSI resolution), a) enter the Basic Parameter Setting Mode using code 0089; b) then set input type "Int1" to 5v for 0-5 V input; c) set the decimal point "dot2" to 0; d) set PuL2 = -018 and PuH2 = 0163.

3) To display the pressure unit in Bar (0.1 Bar resolution), enter the Basic Parameter Setting Mode using code 0089, b) set input type "Int2" to 5v for 0-5 V input; c) set the decimal point "dot2" to 1; d) set PuL2 = -01.2 and PuH2 = 011.3.

4) To set the high alarm to be on at 6.5 Bar and be off at 6.4 Bar, enter code 0001 and then set AH2 = 6.5 and AL2 = 6.4. The detail can be found in section D.3 of the instruction manual.

5) Zero Adjustment. If the pressure does not show 0.0 Bar or 0 PSI when no pressure is applied, you can adjust the display to zero by shifting the value of PuL2 and PuH2 by the same amount. For instance, if the display shows 2 psi when no pressure is applied to the sensor, you can minus 2 from PuL2 and PuH2. Set PuL2 to "-020" (-18-2=-20), and PuH2 to "0161" (163-2=161). The overall accuracy of the sensor is 1.5% of full scale. It is normal to see the zero point to fluctuate slightly.

B. Discussion

1) The Peak Value mode is set for displaying the highest pressure recorded. To display the peak pressure, or display the pressure in the peak value mode continuously, press the Shift key (">") once. The PK2 LED will be on, indicating the display is in the Peak Value mode. Press ">" again to change it back to Normal Operating mode to display current pressure. Press and hold Down key

("V") for 3 second will reset the memory. The detail can be found in section D.3 of the instruction manual.

2) If you want the meter to display a pressure unit that is not Bar or PSI, or if you have a pressure sensor (sender, transducer or transmitter) that has different output specification, you need to find the value of PuL and PuH. Appendix 1 shows how the Auber-P210 sensor parameter is determined. If you need help, please email us the specification of your sensor to info@auberins.com

C. Appendix 1

1) An example of how to determine the set up parameters for Auber-P210 transducer.

For a pressure sensor that is powered by 5V DC, the linear range of the output signal will be above 0V and less than 5 V due to the nature of mechanics and electronics. The published data for Auber-P210: 0 bar = 0.5V, 10 bar =4.5 V. What these data tell us is that the sensor has a linear output range between 0.5 and 4.5 V when the input signal is between 0 and 10 Bar, In other words, within this range, the relationship between pressure and output voltage can be represented by
$$V = a * P + b \qquad (1),$$
where P is the pressure, V is the voltage, **a** is the slop, and **b** is the intersection at zero pressure. Because the gauge is set for 0-5V linear input, we need to find out what is the pressure when we extend the equation (1) from 0.5-4.5V to the range of 0-5 V.

Calculating the slop **a** and the intersection **b.**
Since **a** = (4.5-0.5)/(10-0) = 0.4, and **b** = 0.5,

So the equation (1) can be written as:
$$V = 0.4*P +0.5 \qquad (2),$$
or as:
$$P = (V-0.5)/0.4 \qquad (3),$$

Therefore, at V = 0 V, P = -1.25 Bar; and at V = 5V, P = 11.25 Bar.

To display pressure in Bar, set "dot2" to 1, PuL2 = -1.2, PuH2 = 11.3.

To display the pressure with PSI units instead of Bar, multiply the number by 14.5 (1 bar = 14.503 PSI), set "dot2" to 0, PuL2 = -18, PuH2 = 163.