**Quick Guide for Resistive Pressure Sensor**

June 29, 2009

Wiring the meter as shown in Fig 1. Connect 12 VDC to terminal 1 (+) and 2 (-). Connect the pressure sender to terminal 7 and 8. Jump a wire between terminal 6 and 7. The 12V DC buzzer optional.

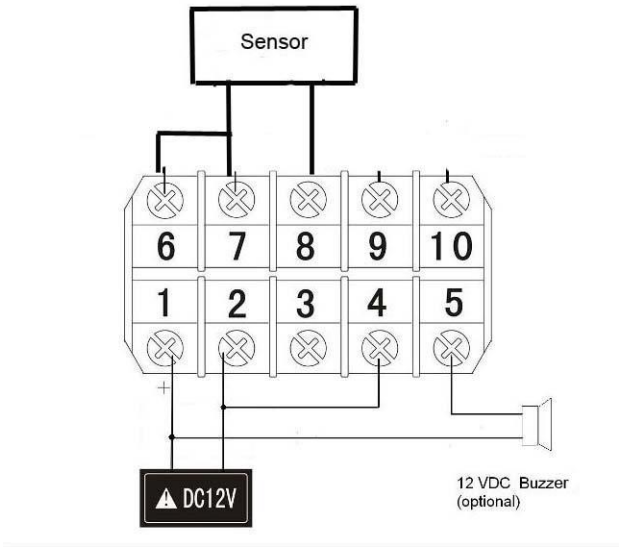


Fig 1. Wiring diagram

1) Configure the meter input. The factory configuration for the signal input type was set for K type thermocouple. It needs to be changed to 0-375 ohm pressure sensor before using it. To do that, Press SET, enter code 0089. Press SET again to get in the parameter setting mode, It will display Inty. Press SET again, then, use ^ key until you see 375r. Press SET again. Press ^ until display show END. Press SET again. The detail can be found in section C1 of the instruction manual.
2) Set the resolution, dot. If you want to display the pressure in PSI, we recommend you to set the decimal point to 000.1. If you want to display the pressure in Bar, we recommend you to set the decimal point to 00.00.
3) Set the display scale, PuL and PuH determine what the meter should display when input resistance is at zero and maximum (375ohm). Most pressure transducer resistance change range is less than 375 ohm. You need to extend the factory provided data to find out what is the supposed pressure value at 0 and 375 ohm, assuming the output is linear to the full 0-375ohm range. e.g. For the VDO 10 Bar pressure transducer, we need to set PuL = -1.07 and PuH=20.67 (see Appendix 1 for how to obtain these data).
4) To set the alarm on at 6.5 Bar and off at 6.4 Bar, Enter code 0001 to set AH1=6.5 and AL1=6.4. The detail can be found in section C 2 of the instruction manual.

5) The peak holding function is set for display the Maximum pressure. To display the peak pressure from the last run, or display the pressure in the peak holding mode continuously, press the “>” key once. The MAX (MIN) LED will be on, indicating the display is in the peak mode. Press “>” again to change back to display the current pressure. Press and hold “Λ” for 3 second will reset the memory. Three additional peak parameters have been turned off for this meter. They are, the time that the maximum pressure was recorded, the minimum pressure and its recording time. If you want see them, use code 0037 to turn on these functions. The detail can be found in section C3 of the instruction manual.

Appedix 1, Determine the scale parameter for VDO 10 bar pressure sensor.

| MEASURING RANG -10BAR | | | | | 10-180 OHMS | |
|---|---|---|---|---|---|---|
| BAR | 0 | 2 | 4 | 6 | 8 | 10 |
| OHM | 10 | 52 | 88 | 124 | 155 | 184 |

Table 1, VDO 10 Bar sensor pressure/resistance relation.

Table 1 shows the pressure- resistance relation of the VDO 10 Bar sensor. Since the pressure sensor is not very liner at the zero pressure and maximum pressure, we only use the points in the middle to find the equation that represents the data. We put the data in Excel, Make a X, Y plot. Then, use the Format Trendline function to find the equation.

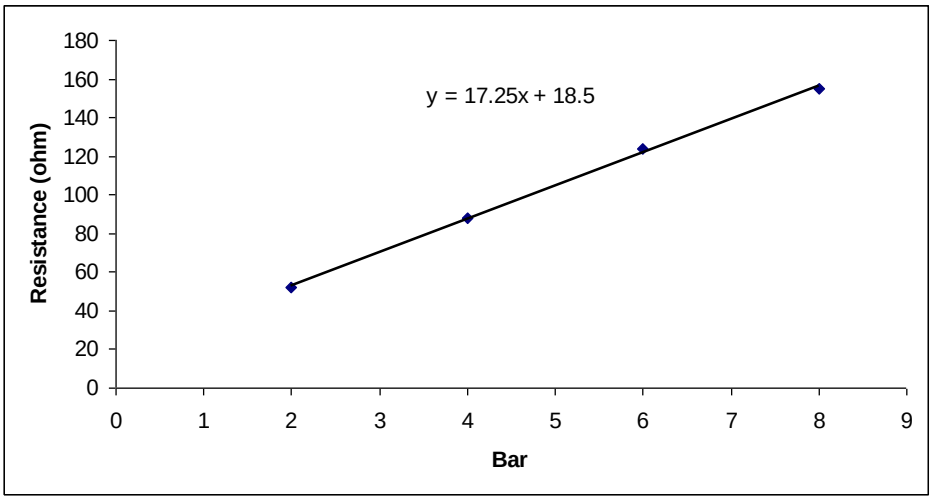


Fig 1,Pressure-Resisrtance Chart generated by X,Y plot of Excel.

From the equation, we need to find the pressure values at zero and 375 ohm. The equation in the figure can be rewritten as
P = (R-18.5)/17.25, where P is pressure and R is resistance.

Therefore, When R=0, P=-1.07 bar, When R=375, P=20.67.
Therefore, set dot = 00.00, PuL = -1.07 and PuH=20.67.

**Auber Instruments Inc.**
5755 North Point Parkway, Suite 99,
Alpharetta, GA 30022
www.auberins.com
Email: info@auberins.com
Tel: 770-569-8420