Auber SYL-1812RA retransmit 0-5.0V set up

Goal: Set up the retransmit output as 0-5.0V, 1 mV output corresponding to 1 F (or 1C) and range from 0 to Max. e. g. 700F (or 700C) corresponding to 700 mV.

A. Hardware requirement.

To set the retransmit as 0-5V output instead of 0-20 mA, a 250 Ohm resistor is needed.

1) resistor wattage consideration. Maximum wattage consumption of the resistor is 20 mA x 20 mA x 250 ohm = 0.1 watts. So, a 1/8 Watts resistor or larger is sufficient. ¼ watt resistor is preferred considering the safety margin and size.

2) Accuracy of the resistor. 1% is preferred. However, it is not critical as long as you have a good multimeter to get an accurate measurement the resistance.

B. Set up the parameter.

1) The meter was set as 4-20 mA output at the factory. It needs to be changed to 0-20 mA first. Enter code 0036. Then, change "obty" from 4-24 to 0-20. Press set.

2) set obL=0, set obH=5000 (that means the lowest temperature it can retransmit is 0 degree (C or F) and 5000 degree (C or F) is corresponding to 5 V (or 5000mv).

C. Discussion

1) Calibration. If you have a 255 Ohm resistor instead of 250 Ohm, then, the maximum 20 mA output becomes to 5.1v instead of 5.0 V. In that case, set obH=5100, if you have a 244 Ohm resistor, set obH=4880

2) If the output reading at several calibration points are all 5 mv lower, then, you can shift the setting 5 degree higher by setting obL= -5 and obH=4995.

3) if your data logger or data acquisition system has a noise level higher in 1 mv, but you want to have 1 degree resolution and you measurement range is small, you can set 2 mV for each 1 degree temperature by setting obH=2500.