

Auber SYL-1812RA Retransmit Setup Example v1.1

Goal: Program the SYL-1812RA retransmit output as 0 - 5V with temperature range from 0 to 700° F (or 700°C). 1mV output represents 1° F (or 1°C) and 700mV output represents 700° F (or 700°C).

A. Hardware requirement.

To set the retransmit as 0 - 5V output instead of 0-20mA, an external 250 Ohm resistor is needed. This resistor needs to be wired in parallel to the retransmit output terminals of this gauge. One end of this resistor goes to pin 3 and another end goes to pin 10.

1) Resistor wattage consideration. Maximum wattage consumption of the resistor ($I^2 \times R$) is 20 mA x 20 mA x 250 Ohms = 0.1 Watts. So, an 1/8 Watts resistor or larger is sufficient. An ¼ watt resistor is preferred considering the safety margin and size.

2) Resistance accuracy. Within 1% is preferred. However, it is not critical as long as you have a good multimeter to get an accurate resistance measurement.

B. Setup the parameters.

1) The meter was set as 4-20 mA output by factory default. It needs to be changed to 0-20 mA first. Go to access code 0036 and change parameter obty from 4-20 to 0-20.

2) (Optional) Change the display from Fahrenheit to Celsius. This meter was set to Fahrenheit by factory default. To change it to Celsius, go to access code 0089 and change parameter CorF from F to C for Celsius.

3) Set the retransmit upper and lower limits. Under the same access code 0036, change the lower limit parameter obL to 0 and upper limit parameter obH to 5000. So, at the lowest temperature (0 degree, theoretical value), the retransmit output is 0V and at the highest temperature (5000 degree, theoretical value), the retransmit output is 5V. Also, when the display is 700 degree, output is 700mV.

C. Discussion

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

2) If the output reading at several calibration points is all 5mV lower, then, you can shift both obL and obH 5 degree higher: obL = -5 and obH = 4995.

3) ObL parameter can be a negative number. For example, if you want to output 0mA at -200°C and 20mA at 100°C, you can still set obL as -200 and obH as 100.

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