Quick Guide for Battery Voltage Measurement

This is a quick guide for how to monitor battery voltage using SYL-2813 auto gauge. This gauge SYL-2813 can read 0-10V signal which is not enough to measure the voltage of car batteries directly. However, if adding two identical resistors, the user can monitor the voltage.

A. Wiring and Setting

1) Two identical 1/4 Watts resistors (R1 and R2) are needed. The resistance should be in the 1-2 KΩ range. The wiring example of measure the voltage in Channel1 of SYL-2813 is shown in Figure 1.

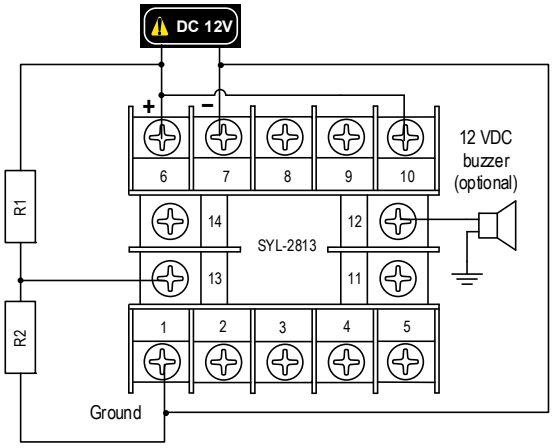

Figure 1. Wiring diagram of measuring voltage on Channel1 of SYL-2813.

2) Setting the parameters: a) enter the Basic Parameter Setting Mode using code 0089; b) set the input type "Int1" to "10v" as for 0-10V signal; c) set the "dot1" to "1" to display readings with one decimal point; d) set PuL1 = 000.0 and PuH1 = 020.0.

3) To set the high alarm to be on at 15.0 V and be off at 14.8 V, enter access code 0001 and then set AH1 = 15.0 and AL1 = 14.8. The detail can be found in section D.2 of the instruction manual.

Note:

Two identical resistors are used as a voltage divider because the gauge can only read 10 V whereas car battery can reach 15 V. This voltage divider allows the gauge to read and display 0 to 20.0 V. ¼ watt resistors in the range of 1 to 2 KΩ are recommended for easy calculation. If the resistance is lower than 500 Ω, the power consumption of the resistor might pass the ¼ w rating. In that case, resistor with higher wattage rating might be needed. If the resistance is more than 2 KΩ, the gauge input impendence (100 KΩ) needs to be included in the voltage divider calculation.

For example, if R1 = R2 = 15 KΩ, the resistance between terminal 13 and 1 is 13.04 KΩ since the R2 and the gauge impendence (100 KΩ) are connected in parallel. Since the voltage on terminal 13 and on terminal 6 (which is the battery voltage) is proportional to the resistance.

$$\frac{13.04k\Omega + 15k\Omega}{13.04k\Omega} = \frac{PuH}{10V}$$

To display the voltage of the battery, set PuH=021.5.

Using a proper divider will allow this gauge to read much higher voltage. Please contact us, it you have difficult in calculating the PuH.