

## March Project : Car Voltage Gauge

The Car Voltage Gauge is based on 3 parts. The input circuit is an Analog to Digital Converter (IC2 CA3162E). The purpose of this chip is to sample an analog voltage and convert it to a decimal value which is read by a Display/Decoder Driver (IC1 CA3161E). This chip will turn each seven segment display on through the driver transistor Q1 - Q3. The power is derived from the car and is converted to 5 volts

by the 5 volt regulator. The circuit works as follows: The 10uf capacitor is charged up by the cars voltage. Its value is then read by IC2 and a decimal value of that voltage is provided to IC1 which multiplexes the three display units. Each display is turned on sequentially with its appropriate value displayed.

The transistors Q1 through Q3 control the drive to each seven segment display. By monitoring the cars voltage with an accurate multimeter you can adjust the "Zero Adj." pot and the "Gain Adj." pot for accurate readings. LED 1 and 2 are optional. They can be used to indicate power on or can light up a cut out display that says "Volts". This can be made by a plastic module that has a thin plastic cover on it with the word "Volts" cut into it. The LED's would be mounted inside the module.

