**12V Auto Cut Off + Level Indicator**

I will be making a two in one Auto cut off charging controller with battery level indicator for this circuit you need following components a 12 volt relay 1.5 33 and 56 kilo ohms resistors two pieces one and four double zero seven diodes 470 2000 uf capacitor 100 NF tantalum capacitor BC double five seven p and p transistor 10K and 100K multi-turn potentiometers some red green and blue LEDs four pin terminal connector and brain of this project lm3914ic with IC holder I also prepared the circuit diagram for this project where I used lm3914ic to indicate battery charging levels from 10 to 100 percent and on reaching 100 it will automatically cut off charging to battery through this transistor and this connector works as a switch which remains on until battery charging reaches to 100 then it turns off so you can use one line.

I cleaned the PCB with isopropyl alcohol and here our PCB is looking nice and clean now let's place the IC into the base holder connect the DC wires into this connector before connecting to DC set both potentiometers to maximum limit now I will connect multimeter to keep track of voltage also connect variable power supply to calibrate the circuit for the battery I will set lowest voltage to 11.7 volts where it will indicate battery is low now use the screwdriver and rotate the second potentiometer anti-clockwise till the last red LED turns off so the lowest point is set Now set the cut off voltage where battery level should also read as 100 just set it to 13.8 volts you can set it by your choice now use screwdriver and rotate first potentiometer anti-clockwise to Green LED turns on then rotate slowly to clockwise till blue LED turns on so the cutoff voltage is also set now let's try to test the circuit by decreasing voltage you can see on decreasing voltage to 12 volts it will show 10 percent charge left and then below last LED also turns off indicating battery is at zero percent now on increasing voltage back to 12 volts it will indicate 10 percent and on increasing voltage to further it will indicate higher different percentages and on reaching to 13.8 volts blue LED will turn on indicating 100 charged and at the same time cutoff will disconnect charging to battery as discussed earlier this connector works as charger switch it remains on until battery charging reaches 200 it turns off the charger I interfaced this light with the circuit the negative of this light is directly connected with negative and the positive is connected between the switch so when the battery level is low it will turn on charging and when the battery level reaches to 100 it will immediately turn off charging at the cutoff voltage set by you also you can use this connector to show battery levels as graph or dot mode but the preferred mode should be dot mode because it consumes less power for indicating battery levels.