

# Chapter-11

(Understand the concepts of different type of Electrical circuit)

Lecture-2

## Light Dimmer Circuit:

- This light dimmer circuit is built with various electrical and electronic components like resistors  $R_1=68$  kilo ohms,  $R_2=280$  kilo ohms and  $R_3=10$  kilo ohms, variable resistors  $VR_1=100$  kilo ohms and  $VR_2=200$  kilo ohms, capacitors  $C_1$ ,  $C_2$  and  $C_3=0.33$   $\mu\text{F}/400\text{V}$ , TRIAC is BT136 and DIAC is ER900.

- **Working Procedure:**
- Modern light dimmers work by changing the duty cycle of the AC voltage which is applied to the lights being controlled. For instance, if the voltage is applied to half of the AC cycle, then the light bulb will appear with less intensity when it gets the full AC voltage. Because it gets the low power to heat the filament. These light dimmers use the brightness knob to control at what point each cycle to switch the light ON and OFF.

- Typical light dimmers are built with thyristors and the fixed time when the thyristor is activated virtual to the zero crossings of the AC power is used to determine the level of power. When the thyristor activates then it keeps directing until the current passing through when it goes to zero. The phase can be changed when the TRIAC is activated, you change the duty cycle and thus the brightness of the light.

# Circuit Diagram:

