

Dimmer scr 2000w

Description:

Dimmers are devices connected to a light fixture and used to lower the brightness of the light. By changing the voltage waveform applied to the lamp, it is possible to lower the intensity of the light output.

Although variable-voltage devices are used for various purposes, the term dimmer is generally reserved for those intended to control the light output from resistive incandescent, halogen, and (more recently) compact fluorescent lights (CFLs) and light-emitting diodes (LEDs). More specialized equipment is needed to dim fluorescent, mercury vapor, solid-state, and another arc lighting.

Most of the appliances are powered from the AC supply such as Lights, TVs, and Fans, etc. We can turn ON/OFF them digitally if needed, using Arduino and Relays by building a Home automation setup. But what if we need to control the power of those devices for example to dim the AC Lamp or to Control the speed of the Fan.

In that case, we have to use a phase control technique and static switches like TRIAC to control the phase of AC supply voltage.

TRIAC is a three-terminal AC switch that can be triggered by a low energy signal at its gate terminal. In SCRs, it conducts in only one direction, but in the case of TRIAC, the power can be controlled in both directions.

When we put a single diode to an AC signal, we get a half-wave rectifier.

With just one diode, the positive part of the AC waveform remains & the negative part is chopped.

In order to control power, all we have to do is to control the time between the zero-cross and when we fire the pulse at the TRIAC gate. So we will use a potentiometer to change the delay timing. The Arduino code will read the value of a potentiometer and map that value to a delay between 1 and 10 milliseconds.

Features:

Input Supply Voltage: 110V ~ 250V AC

The Maximum Output Current: 25A

The Maximum Output Power: 2000W