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Roll:2109038,2109044

Project Name: Implementation of variable DC Power Supply

Objective:

- Convert alternating current (AC) from the mains into stable direct current (DC).
- Provide a reliable and consistent voltage output suitable for powering electronic devices and circuits.
- Protect sensitive components from power fluctuations and surges.
- Meet specific power requirements for various applications.
- Optimize performance and energy efficiency in the system.
- Ensure compatibility with different electronic components and systems.

Introduction:

A direct current (DC) power supply is a device that converts alternating current (AC) to direct current (DC) or from one voltage to another. We have been given a project to design a DC power supply. In this progress report we have added the proposed features and estimated cost for our DC power supply . This progress report contains our design for the desired source which we have simulated using Proteus software. In this lab, we are going to implement our designed with hardware.

Proposed Features: Our designed DC power source is capable of showing these features:

1. Regulated positive voltage
2. Under voltage protection
3. Over voltage protection
4. Short circuit protection

Apparatus:

SL N0.	Apparatus Name	Quantity
01	AC Source	01
02	Transformer	01
03	Diode	01
04	Capacitor	04
05	Resistor	10
06	Potentiometer	03
07	Relay	01
08	IC LM741	02
09	IC 7412	01
10	IC 7415	01
11	IC 317T	01
12	N-P-N Transistor	03
13	P-N-P Transistor	01

14	Zener Diode	02
15	LED	04
16	Multimeter	01
17	Switch	01
18	Bridge Rectifier IC	01

Cost Estimation:

SL N0.	Apparatus Name	Quantity	Cost
01	AC Source	01	N/A
02	Transformer	01	650 tk
03	Diode	01	4 tk
04	Capacitor	04	13 tk
05	Resistor	10	20 tk
06	Potentiometer	03	60 tk
07	Relay	01	50 tk

08	IC LM741	02	46 tk
09	IC 7812	01	15 tk
10	IC 7815	01	15 tk
11	IC 317T	01	35 tk
12	N-P-N Transistor	03	12 tk
13	P-N-P Transistor	01	50 tk
14	Zener Diode	02	85 tk
15	LED	04	10 tk
16	Multimeter	01	N/A
17	Switch	01	6 tk
18	Bridge Rectifier IC	01	50 tk
			Total : 1121 tk