

Switching Mode Power Supply (SMPS)

Model : SB-121



SINCOM SB-121 Switching Mode Power Supply (SMPS) Trainer is a remarkable very useful simply designed trainer to study the concept, operation, line and load regulation characteristics of a Switching Mode Power supply (SMPS) in a simple experimental way. The Trainer is without meters and has the facility to connect the external analog or digital Voltmeter and Ammeter in the circuit.

Features

- ❖ User friendly Design
- ❖ +12V SMPS Regulated DC Output voltage
- ❖ Wide AC Input Voltage range
- ❖ PWM based HF Power Switching circuit
- ❖ SMPS based on SMT Transformer, Full Wave bridge Rectifier, Power Transistor Control Switching, High Frequency rectifier and Capacitor Filter circuit
- ❖ Variable Resistive Load
- ❖ Low Output voltage Ripples
- ❖ High operating Temperature range
- ❖ Facility to apply variable single phase AC Input voltage from Dimmerstat
- ❖ Very Easy for Operation
- ❖ Multi color Circuit Diagram is screen printed on the front of the white color acrylic board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Facility to connect external Digital/Analog Voltmeter and Ammeter
- ❖ Interconnections by 2mm high quality banana sockets and pins
- ❖ Maximum Test points to explore all the corners of experiment
- ❖ 1 Year Warranty

Technical Specifications

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| ▪ AC Mains Power Supply | : 230V \pm 10%, 50Hz |
| ▪ AC Input Voltage Range V_{in} | : Single Phase AC 50V-280V, 50Hz |
| ▪ Regulated DC Outputs V_o | : +12V |
| ▪ Output Load Current | : 1A Max |



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| ▪ Transformer type | : Switching Mode Transformer (SMT) |
| ▪ Rectifier and Filter | : Full Wave bridge Rectifier with Capacitor filter |
| ▪ Switching | : Power Transistor PWM based |
| ▪ Load Resistor | : Variable Resistive Load of 10K Ω |
| ▪ Regulation type | : Line and Load Regulation |
| ▪ Weight | : 3.0 kg (approx) |
| ▪ Dimensions (mm) | : L 220 x W 270 x H 110 |
| ▪ Interconnections | : 2mm Banana sockets |
| ▪ Operating Temperature | : 0-50 $^{\circ}$ C, 80% RH |

Learning Scope

- To Study the operation of Switching Mode Power Supply (SMPS) Circuit.
- To Observe & Note the regulated DC O/P.
- To observe & Note the time period/frequency of Switching.
- To Study Change in O/P Voltage w.r.t. change in I/P Voltage with Load RL constant (Line Regulation)
- To Study Change in O/P Voltage w.r.t change in Load RL with I/P voltage constant (Load Regulation)

Other Instruments Required :

SINCOM Digital Multi VI meter (DMVI) : Model DMVI-03 Range V_1 -20V, I_1 -20mA, V_2 -20V, I_2 -200mA DC, Digital Multimeter, Oscilloscope, Dimmerstat.

Accessories Included : Set of Patch Cord and Details Instruction Manual