

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

▪ AC Mains Power Supply	: $230V \pm 10\%$, 50Hz
▪ AC Input Voltage Range Vin	: Single Phase AC 50V-280V, 50Hz
▪ Regulated DC Outputs Vo	: +12V
▪ Output Load Current	: 1A Max



An ISO 9001:2015 Co.

▪ 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 10KΩ
▪ 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°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 V₁-20V, I₁-20mA, V₂-20V, I₂-200mA DC, Digital Multimeter, Oscilloscope, Dimmerstat.

Accessories Included : Set of Patch Cord and Details Instruction Manual