



SALIENT FEATURES

- ◆ Simulates 2 & 3 wire DC transmission line and study load distribution under various conditions.
- ◆ Operates at scaled down $\pm 12V$ voltages for convenience of learning without shock. Optionally high voltage ($\pm 200V$) setup offered.
- ◆ Facilitates easy and safe wiring by students due to use of 4mm sturdy Shrouded banana patch cords and shrouded socket arrangements for high voltage circuits.
- ◆ Aluminum profile Sturdy (5x4) Modular Flat Panel system, carrying various components housed in plastic enclosures (panels) with colorful screwless overlays showing circuit schematic & its connection tag numbers for easy understanding and connection.
- ◆ Set of Instructor Guide & Student Workbook.
- ◆ Results can be verified using PC based simulator (Optional).

Technical Specifications

- ◆ **Variable power supply panel (EMT8) X 4 nos.**
(5 banana sockets)
 - DC Multi Output power supply.
 - Supplies DC power to neighboring signal conditioning circuit panels like EMT9, CIP1, CIP2, MIT12, CE7 etc. through 20 pin FRC cable.
 - Provides 1 Ph. AC supply through 3 MCB's, 4A each to power up other panels in the rack.
 - Optionally Multichannel 4 position DPM for Speed, Torque etc
 - Green shrouded socket provided to extend earth.
- ◆ **Digital DC voltmeter & ammeter panel (EMT 68) X 14 nos.**
(10 Shrouded Banana)
 - DC voltmeter 0-50V.
 - DC ammeter 0-5A
- ◆ **DC transmission line panel (EMT80) X 1no.**
(54 Shrouded Banana)
 - Simulated model for transmission line constructed using 12 numbers of 0.22E/10W resistors to construct 2/3 wire Short, Medium and Long DC transmission lines.
- ◆ **Load panel (EMT81) X 1 no.:** **(20 Shrouded Banana)**
 - Consists of 5 numbers of 25E/20W resistors & 12V/2W light bulbs each to load transmission line at various nodes.

List of Experiments :

A) Study of 2 wire DC distribution system

- Study 2 wire DC distribution fed at both ends and calculates various load currents for short transmission line.
- Study 2 wire DC distribution fed at both ends and calculates various load currents for medium transmission line.
- Study 2 wire DC distribution fed at both ends and calculates various load currents for long transmission line.

B) Study of 3 wire DC distribution system

- Study 3 wire DC distribution and calculate the various load current for short transmission line fed at double end
- Study 3 wire DC distribution and calculate the various load current for medium transmission line fed at double end
- Study 3 wire DC distribution and calculate the various load current for long transmission line fed at double end
- Study of ring distribution system in DC network and calculate the various load current for ring connected transmission line.
- Optionally verifying above results using PC based simulator.