

46585A Transmission Line Trainer is a rugged training system for the Electrical laboratories mounted on Aluminum profile rack with sturdy table top flat panel. Each panel has ABS molded plastic sturdy enclosure with 4mm shrouded connectors showing circuit diagram & its connection tag numbers for easy understanding and connections. The product helps you to get fully acquainted with the basic concepts and functioning of an Transmission Line Trainer.

EXPERIMENT MOTOR LIST

1. Experiments – Short & medium Transmission Line

- 1.1. Study of No Load Test
- 1.2. Study of VAR compensation
- 1.3. Study of Symmetry and un-Symmetry faults in transmission line
 - 1.3.1. Line to Ground (L-G) Fault analysis of a Single Phase Transmission Line
 - 1.3.2. Single Line to Ground Fault (L-G) analysis of a Three Phase Transmission Line
 - 1.3.3. Line to Line Fault (L-L) analysis of Three Phase Transmission Line
 - 1.3.4. Double Line to Ground Fault (L-L-G) analysis of Three Phase Transmission Line
 - 1.3.5. Symmetrical L-L-L Fault analysis of Three Phase Transmission Line
 - 1.3.6. Symmetrical L-L-L-G Fault analysis of Three Phase Transmission Line
- 1.4. Determination of transmission line constants ABCD.
- 1.5. Study of flow of real & reactive power



- 1.6. Load test calculation of regulation, efficiency of transmission line
- 1.7. Study of effect of length
- 1.8. Open circuit Test
- 1.9. Load variation Test
- 1.10. Ferranti Effect Verification
- 1.11. Voltage Drop Analysis with load
- 2. Experiments – Types of network**
 - 2.1. Symmetrical network Pi
 - 2.2. Symmetrical network T
 - 2.3. Unsymmetrical network Pi
 - 2.4. Unsymmetrical network T

Board are ABS plastic panel mounted on the aluminum profile rack with mimic diagram. All input & output shrouded sockets of 4mm and 4mm Banana cables for experiments.

To understand Transmission Line Trainer we provided below panels: 69530, 69700, 69701, 69702, 69703, 69709, 69711, 69801, 69802, 69803, 69804, 69805

Technical Specification of Panels



THERMAL OVERLOAD RELAY
Order Code - 69530

Thermal overload relays are protective devices. They are designed to cut power if the motor draws too much current for an extended period of time. The module has been made with safety and protection in mind and with strong insulation. Thermal relay consists of a three-phase protection against overload and phase loss through a high sensitivity different device with protection against faulty starting.

- Isolating rated voltage: 690 V
- Thermal rated current of the auxiliary circuit: 10 A
- Compensation of the variation of the ambient temperature is between -25°C and +60°C



INPUT 3 PHASE DOL STARTER PANEL
Order Code - 69701

- 1 MCB 4 pole 4Amp.
- 2 DOL 9A Contactor with 415V / 50 Hz / 11VA COIL .
- 3 RYB Indicator
- 4 Emergency Switch
- 5 Shrouded socket 8Nos.
- 6 Push button switch for Stop/Start



ALUMINUM FRAME - MODULAR PANELS
Order Code - 69700

Electrical motor trainer rack made up aluminium profile size 40x40mm, foldable and light in weight 10 panel setup can be interchange conveniently to perform experiments. Dimension Length 1100xHeight 1000xDepth 350mm.



MULTIFUNCTION METER (Single Phase/ Three Phase AC 50Hz)
Order Code - 69702.1

- 1 Bidirectional Multifunction Meter
- 2 3 Phase 4 wire, 440V, Current 5A / Modbus communication with PC
- 3 LED display,
- 4 Aux supply 230V, 45-65Hz, 5W
- 5 To measure parameters ie Voltage Current., KVA, Frequency, Power factor, Active Power (W), Reactive Power (vary) etc.
- 6 Shrouded socket 08Nos. etc.
- 7 Provision USB to PC with Multifunction Meter

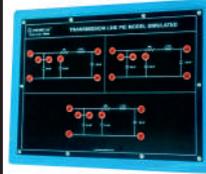
Note: Specifications are subject to change.



FWD/REV AND STAR-DELTA STARTER PANEL

Order Code - 69703

- 1 FWD/REV, 3 pole 3 way Switch with centre OFF, 10A/ 440V.
- 2 Star/Delta switch 3 pole, 3 way with centre OFF, 10A/ 440V.
- 3 Shrouded socket 12Nos.



TRANSMISSION LINE PIE MODEL SIMULATED

Order Code - 69802

- 1 Inductance 0.15H - 03 Nos.
- 2 Resistors 10E - 03 Nos.
- 3 Capacitors 2.5 uF - 09 Nos
- 4 Shrouded socket - 21Nos.



AC LOAD RESISTOR

Order Code - 69709

- 1 AC Resistors 10K/ 5K/ 3.5K/ 2.5K/ 2K/ 1.5K/ OFF 200W x 3 phases/ 6 taps
- 2 Load Resistance switch 3 POL 7 Way/10Amp.
- 3 Cooling Fan size 4" 230V Operated
- 4 Shrouded socket 12Nos.



TRANSMISSION LINE COMPENSATION PANEL (AC LOAD CAPACITOR)

Order Code- 69803

- 1 AC Capacitor 2, 4, 6, 8, 10 & 15 x 3 phases/ 6 taps
- 2 Load Capacitor switch 3 POL 7 Way/10Amp.
- 3 Shrouded socket 12Nos.



AC LOAD INDUCTOR

Order Code - 69711

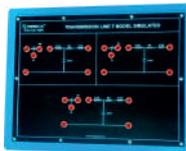
- 1 Inductive load =0.15H/0.3H/ 0.45H/0.6H/0.75H/1.5H/3H/ 400mA X 3Nos.
- 2 Load inductor switch 3 Pole 7 Way/10Amp.
- 3 Shrouded socket 12Nos.



THREE PHASE TRANSMISSION LINE FAULT SIMULATION TRAINER

Order Code - 69804

- 1 Socket BNC - 11 Nos.
- 2 Switch SPST - 06 Nos.
- 3 Fuse - 04 Nos.
- 4 Current transformer
- 5 Shrouded socket - 22Nos.



TRANSMISSION LINE T MODEL SIMULATED

Order Code - 69801

- 1 Inductance 0.15H - 06 Nos.
- 2 Resistors 10E - 03 Nos.
- 3 Resistors 10E center Tape - 3 Nos
- 4 Capacitors 2.5 uF - 03 Nos
- 5 Shrouded socket - 21Nos.



THREE PHASE DIMMER

Order Code -69805

- 1 Input : 415V, 50-60 Hz
- 2 Output : 0-450V
- 3 Output Current : 6 Amp.
- 4 Terminal : 4 Nos.

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23.03.2022 **Tesca Technologies Pvt. Ltd.**

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,
Tel: +91-9829132777; Email: info@tesca.in, tesca.technologies@gmail.com
Website: www.tescaglobal.com