



### SALIENT FEATURES

- ◆ Facilitates distance protection of transmission line & Auto release function.
- ◆ Above trainer has built in requisite relay testing kit typically consisting of RL Transmission Line (125Kms / 250kms), trip relay logic etc.
- ◆ The Trainer needs a few set of associated relay testing panels (7-10 nos. typically) which are mounted in a light weight sturdy aluminum

profile flat demo panel system. Do not need any separate testing kit.

- ◆ 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, each panel has ABS molded plastic sturdy enclosure, and colorful screwless overlays showing circuits diagrams & its connection tag numbers for easy understanding and connection.
- ◆ Auto reclose facility of Distance relay is demonstrated.

### Technical Specifications

- ◆ **Input 3 phase DOL Starter panel (EMT1)**
  - 4 pole MCB of 415 V/2A.
  - DOL 9A Contactor with 230V / 50 Hz / 11VA Coil.
  - Bimetallic thermal O/L relay with range 1.4A - 2.3A, also work as circuit breaker.
  - R-Y-B Input Indicators. Separate NO contact brought out for auto recloser & NC for trip.
  - Green SBS5 socket is provided for extend earth.
- ◆ **1 phase AC Input supply panel (EMT16A)**
  - 1ph. MCBs of 4A/1.6A - 2nos.
  - Bulb Load.
- ◆ **3 Phase Power cum Energy meter panel (EMT34) x 2 Nos.**
  - Multifunction
  - 3 phase 3/4 wire, 415VAC, CT Input 5A
  - LCD/LED display, Aux. supply 230V, 45-65Hz, 5W,
  - V, I, Hz, Pf, KVA, KW, KWH.
  - Modbus RTU RS 485 (optional)
  - Green SBS5 socket is provided for extend earth.
- ◆ **Distance Relay Panel (EMT53)**
  - All connection of relay are brought out on this panel
  - 2 NO Trip contacts, 1 NC Trip contacts, 1 NO Auto reclose contact.
  - Aux. Supply 230VAC.
- ◆ **CT panel (EMT48)**
  - Consist of 5/5 Amp. CT 6 Nos.
  - Primary side of CTs are brought on 3 x 2 x 2 SBS-5 sockets.
  - Secondary side of CTs are Star connected in group of 3 & brought out on 4 x 2 SBS-5 sockets.
- ◆ **415/110VAC, Star/Star Step Down Transformer Panel (EMT54)**
  - This panel consisting of 415/110VAC, 50VA, Star/Star Step Down

#### Transformer Panel

- All the connections of transformer primary and secondary are brought on SBS5 on the top of panel.
- ◆ **FWD-OFF-REV, Switch Panel (EMT 4A)**
  - FWD/REV, 3 pole 3 way switch with center OFF, 6A/440V.
- ◆ **Transmission line Panel (EMT38)**
  - ◆ **Table Top Panel consisting of:**
    - Simulated model for short transmission line using R(10 ohm/600W), L(0.15H/5A) & C(2.2uF/630V) 6 No. each component.
    - Simulated model for medium length 125kms & long length 250kms transmission line.
    - Forced Air cooled using 2 fans.
  - ◆ **Resistive Load panel (EMT 42A) (Table Top panel)**
    - 3 nos of 600W resistors with switch selectable 7 nos of taps at 100, 112, 125, 150, 175, 200 & 225 Ohm
    - Forced Air cooled using 2 fans.

#### Protection relay type (Numerical) :

Numerical type distance protection relay, current rating 1A/5A for protection of transmission line, RS232 port for PC communication, relay setting with software on CD, RS232 to USB converter for USB interface.

#### List of Experiments :

- 1) To perform experiment for distance protection of transmission line LG, LL, LLG, LLL, LLLG.
- 2) To perform experiment for auto reclose function of the relay for transient type faults.

#### ◆ Mechanical Dimension (mm) / Weight of Trainer :

- 1165(L) x 300(W) x 990(H)
- **Net Wt. : 30 kg. Gross Wt. : 41 kg.**
- **EMT 38 : Net Wt. : 103 kg. Gross Wt. : 123 kg.**
- **EMT 14B : Net Wt. : 20 kg. Gross Wt. : 41 kg.**

Note: Specifications are subject to change.