



SALIENT FEATURES

- ◆ Facilitates study of CT, PT tests. 3 ph., 1 ph., power measurement, calibration of energy meter, PF measurement etc.
- ◆ Facilitates easy and safe wiring by students due to 4mm sturdy shrouded banana patch cords and shrouded socket arrangement for high voltage circuits.
- ◆ Each panel has ABS molded plastic sturdy enclosure, and colorful screwless overlays showing circuit diagram & its connection tag numbers for easy understanding and connections.
- ◆ Set of Instructor Guide & Student Workbook.
- ◆ Digital multifunction meters for measurement of all parameters (V,I,W,PF,VA,VAR,Energy).
- ◆ Short circuit protection due to over loading or wrong connections.
- ◆ Measurement CTs and protection CT provided to plot magnetization curve of CTs.

Technical Specifications

A] Aluminum rack 4 x 3 profile sturdy Modular flat panel (table top) system, carrying various high voltage components housed in plastic enclosures (panel) to minimize shock possibility.

- ◆ **Input 3 phase DOL Starter panel (EMT 1)**
(10 Shrouded Banana)
 - 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.
 - Green SBS5 socket is provided for extend earth.
- ◆ **Integrated AC (1phase) measurement panel (EMT 20F)**
(8 Shrouded Banana) - 2 Nos.
 - Bidirectional Multifunction Meter
 - 3 Phase 3/4 wire, 415V, CT Input 5A
 - LCD/LED display, Aux supply 230V, 45-65 Hz, 5W
 - V.I., Hz, Pf, KVA, KW, KWH
 - Modbus RTU RS 485 (optional)
 - Green SBS5 socket is provided for extend earth.
- ◆ **Integrated AC (3/1 phase) measurement panel (EMT 34)**
(8 Shrouded Banana)
 - Digital meter (96X96mm) for measurement of 3Ø & 1Ø parameters.
 - Voltage line to line & line to neutral.
 - Current for all 3Ø up to 5A.

- Power factor, frequency, watts, VAR, VA and energy in Kwhr.
- Green SBS5 socket is provided for extend earth.
- ◆ **Potential Transformer [PT] Panel (EMT 40)**
(33 Shrouded Banana)
 - Consists of 2 nos. of PTs (230V:24V secondary), 200VA with both primary & secondary terminated at shrouded 4mm sockets.
 - Null detection & balancing components- 2 capacitors (100pF, 0.001uF) & 47K, 33K resistors & 470K pot.
- ◆ **Current Transformer [CT] Panel (EMT 46)**
(39 Shrouded Banana)
 - Consists of 2 nos. of EI core CTs (5A:1A secondary) and 1 no. of ferrite CT (40A: 0.4A Sec.) with both primary & secondary terminated at shrouded 4mm sockets.
 - Null detection & balancing components- 3 capacitors (10uF, 1uF, 0.1uF) & 100E / 0.25W, 0.1E, 0.01E 5W resistors, 500E pot.
- ◆ **Single Phase Input MCB Panel (EMT 16A)**
(10 Shrouded Banana)
 - 1 Ph. MCBs of 4A/1.6A 2nos.
 - 1 no. of Lamp Holder with input terminals.
- ◆ **Lamp Load (EMT 7)**
(12 Shrouded Banana)
 - 230V /15/40/60/100W X 3 bulbs with individual ON/OFF using 6A toggle switch.
- ◆ **Resistor Load panel (EMT 14A/14B)** (18 Shrouded Banana)
 - (1) AC Resistors : 10K / 5K / 3.5K / 2.5K / 2K / 1.5K / OFF 200W x 3 phases / 6 taps.

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Note: Specifications are subject to change.

- (2) DC Resistors : 750E / 600E / 300E / 212E / 162E / 125E / 112E / 100E / 400W / 8 taps + OFF + separate 60E tap for DC series Gen.

◆ **LC Load panel (EMT 15A/15B)**

(30 Shrouded Banana)

- (1) Inductive load : 0.15H/0.3H/0.45H/0.6H/0.75H/1.5H/ 3H /400mA X 3Nos.

- (2) Capacitive load : 1.25u /2.5u/5u/415VX 3Nos

◆ **Variable AC Voltage & current injector Panel (EMT23A)**

(16 Shrouded Banana)

- Variable AC voltage O/P : 0-270V/0.75A

- Variable AC current O/P : 0-12 Amp

◆ **3 phase variable variac: 415VAC/3A**

◆ **Optional Accessories :**

The following 3 accessories are costly and not supplied [Optional] with XPO-VIEW. Need to order separately.

- **Phase Shifting Transformer :** 3 phase 300W AC slipping motor mounted on chassis with replaceable PSLR mechanism to make phase shifting transformer using built in worm wheel & gear mechanism.

• **Phase angle meter panel (EMT61 panel):**

- Measure phase angle between two voltages (230/ 440 Vac, 50Hz)

- Internally 2 PTs provided for isolation

- **1 phase 300VA transformer** with primary 0-230Vac and secondary 0 - 115 - 230Vac as sample to measure iron loss in transformer using Lloyd fisher square method

List of Experiment :

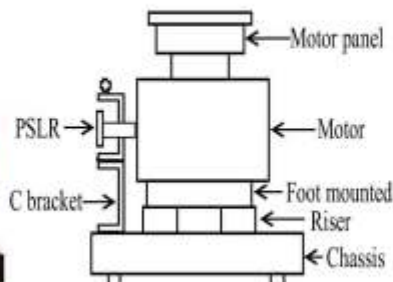
1. Current transformer (CT) testing
2. Potential transformer (PT) testing
3. Calibration of single phase energy meter
4. Measurement of 3 ϕ power by 2 wattmeter method
5. Measurement of 3 ϕ power by 1 & 3 wattmeter method
6. Measurement of power in a 1 ϕ AC circuit using 3 ammeter method
7. Measurement of power in a 1 ϕ AC circuit using 3 voltmeter method
8. Find out filament resistance at cold and hot condition.
9. Power factor improvement technique using shunt capacitor
10. Study effect of grounding of the neutral point in a 3 ph. system.
 - a) Solidly grounded neutral
 - b) Resistance grounded neutral
 - c) Floating neutral (ungrounded)
11. Plot the magnetization curve of measurement CT & Protection CT & determine knee point voltage.
12. Iron Loss Measurement in a X'mer using Lloyd fisher square method. Needs **optional** 300VA transformer.
13. Self and mutual inductance measurement of PT
14. Measurement of 3 phase power by using 2 CTs and 1 Wattmeter.
15. Measurement of 1 phase power by using external CT & PT.
16. Current Transformer (CT) testing by Silsbee method
Need to order phase shifting transformer separately
17. Calibration of LPF wattmeter by phantom loading

◆ **Mechanical Dimension(mm):**

960(L) x 300(W) x 720(H)

- **Net Wt. : 40 kg., Gross Wt. : 51 kg.**

Phase Shifting Transformer (Optional)



Note: Chassis mounted 3 ph. AC motor need to be purchased separately

Note: Specifications are subject to change.