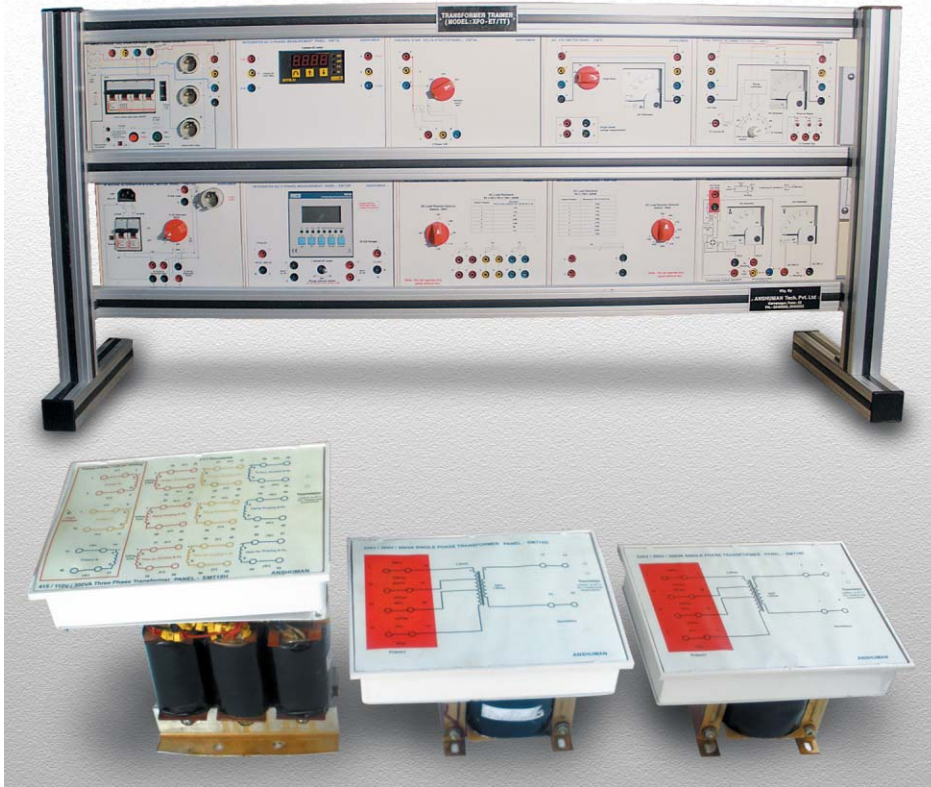


# TRANSFORMER TRAINER (Model : XPO-TT)



TUV NORD



## SALIENT FEATURES

- ◆ Each of following standalone Electrical trainers may need a set of associated panels which are mounted in a light weight sturdy aluminium flat demo panel system.
- ◆ 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.

**Mechanical specifications:** ◆ **Aluminum rack:** of 1 x 4/2 x 5 matrix used as flat panel demo panel system to house 4/10 panels needed for the trainer ordered. ◆ **Dimensions :** 500(H) x 910(L) x 300(D)mm or , 940(H) x 1176(W) x 305(D)mm

## 1] 1 Phase & 3 Phase transformer trainer (Model TT) :

Sr. No.	Technical Specs	Model I (Default)		Model II (MOQ Restriction)	
1.	VA rating	300VA		1 KVA/3 KVA	
2.	1/3 Phase	1 phase	3 phase	1 phase	3 phase
3.	Construction	2 Nos. of double wound iron core EI step down Transformer / Star secondary design.	1 No. of iron core strip lamination type step down Delta primary	3 Nos. of double wound iron core EI step down Transformer / Star secondary design.	1 No. of iron core strip lamination type step down Delta primary
4.	Primary	230Vac/1.3A, 50Hz brought out on 2x2 sockets x 2 primaries	3 Nos. Isolated primaries 0-415 /0.24 A at 50Hz brought out on 3 x 3 sockets	230Vac / 4.5A, 50Hz brought out on 2x2 sockets x 3 primaries	3 Nos. Isolated primaries 0-415 /2.5 A at 50Hz brought out on 3 x 3 sockets
5.	Secondary	200 Vac / 1.5 Amp. brought out on 2 x 2 sockets x 3 Secondaries on 3x3x3 Sockets.	3 Nos. Isolated windings groups main 110V/0.5A, zigzag 110V/0.5A, Tertiary 220 V / 0.25 A brought out	110 Vac / 9 Amp. brought out on 2 x 2 sockets x 3 Secondaries. brought out on 3x3x3 Sockets.	3 Nos. Isolated windings groups main 56V/ 9A, zigzag 56V/ 9A, Tertiary 110 V / 2 A
<b>List of Panels :</b> Input 3 phase DOL starter panel, AC Secondary voltmeter panel, AC Primary voltmeter panel, Dual range primary side AC ammeter panel, Dual range secondary side AC ammeter panel, FWD - OFF-Rev switch panel, Milliohmmeter (V-I method) / Rect -Cap load panel, Resistive load panel, Dimmer panel, 3 pole ON OFF panel, 230 V / 1 Transformer panel, 415V/ 3 Transformer primary panel, 415V/ 3 Transformer secondary panel, 1 MCB isolator panel, Integrated AC (1phase) measurement panel.					
<b>Optional Accessories :</b> a) Wattmeter 2.5 / 5 Amp. 50 / 100V -1, b) 3 Phase Deemer 1 Amp-1, c) Additional EMT20F (Parelleling 1 -1).					
6.	More than 25 Experiments	<ul style="list-style-type: none"> <li>● Finding Transformer equivalent circuit.</li> <li>● Study of transformer regulation.</li> <li>● Measurement of winding temperature.</li> <li>● Effect of type of load on transformer output waveform.</li> <li>● Three phase transformer connections.</li> <li>● Scott connection : Using 2 Nos. of 1phase transformer 3 to 2 conversion.</li> <li>● Parallel Operation on 1 Phase transformer.</li> <li>● Effect of variety of three phase connections on regulation and current carrying capacity of transformers.</li> <li>● Harmonic cancellation &amp; shift in phasor diagram due to different connections.</li> <li>● Back to back test (sumpner test) on two identical single phase transformers. (3<sup>rd</sup> X'mer not needed for 300VA, 1 ).</li> </ul>			

## 2] Ward-Leonard Speed Control Trainer

**Electrical Specifications:** "Ward-Leonard Speed Control Trainer consist of XPO-EMT flat demo panel rack + 4 set of machines coupled as follows :-"

- 1) Squirrel cage Induction Motor 2 speed coupled to 300W Trunnion mounted DC integrated m/c (generator),
- 2) Trunnion mounted 500W DC shunt m/c (motor) coupled to 300 W, 3 Phase AC integrated m/c (load). **NOTE:** Can also perform Word Leonard Speed Control using XPO-EMT by adding one extra Trunnion mounted DC integrated m/c in a 7 m/c EMT set"

**Experiments covered:**

- 1) Open loop torque speed characteristics with DC motor, 2) Closed loop speed control / Regulation characteristics using speed / Armature voltage feedback using Ward Leonard as well as P/PI modes of converter. 3) Transfer function determination (optional).

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Specifications subject to change without notice