

# MOTOR BRAKING METHODS TRAINER (Model : XPO-MBM)



## SALIENT FEATURES

- ◆ Student can study different types of AC & DC motor braking methods.
- ◆ AC & DC motors are mounted on finely painted sturdy base frame with fly wheel.
- ◆ Facilitates easy and safe wiring by students due to use of 4mm sturdy shrouded banana patch cords and socket arrangements.
- ◆ Set of Students workbook and Instructors Guide.

## Technical Specifications :

**Aluminum profile sturdy flat panel (table top) system, carrying various high voltage components housed in plastic enclosures (panel) to minimise shock possibility.**

- ◆ **Input 3 phase DOL Starter panel (EMT1)**  
[10 Shrouded Banana]
  - 4 pole MCB of 415 V/2A .RYB three colour phase indicators.
  - DOL 9A Contactor with 230V / 50 Hz / 11VA COIL .
  - Bimetallic thermal O/L relay with range 1.4A-2.3A
- ◆ **Integrated AC (3/1 Ph. measurement panel (EMT34)**  
[8 Shrouded Banana]
  - Digital meter (96X96mm) for measurement of 3 Ph. & 1 Ph. parameters.
  - Voltage line to line & line to neutral.
  - Current for all 3 Ph. up to 5A.
  - Power factor, frequency, watts, VAR, VA and energy in Kwhr.
- ◆ **Variable AC/DC power Supply Panel (EMT 23) X 2 nos.**  
[8 Shrouded Banana]
  - AC output 0 to 270V / 3Amp.
  - DAC output 0 to 230V / 3Amp.
- ◆ **DC ammeter panel (EMT 6B)**  
[14 Shrouded Banana]
  - DC Ammeter (0-5A) with polarity protection diode
  - Field failure relay to control Armature supply. Both 6A/6B needed simultaneously.
- ◆ **Timer & Elapsed Time Counter panel (EMT 71A/B)**
  - Needs 1 ph..Aux. supply for its operation
  - Consists of contactor with 4 NO & 4 NC contacts & 4 relays with NO, NC.
- Elapsed time counter range 999.001 sec, resolution 1 msec.
- 25 $\mu$ F/400V AC capacitors X 3 nos. for self excited braking.
- ◆ **Manually settable timer**  
**Aux supply:** 2VA max 20/240Vac or 12/240Vdc operated supply coil. Timer ON indication: LED. 1 relay NO contact
- ◆ **Resistive load panel (EMT 14A)**
  - AC resistors: 10K, 5K, 3.5K, 2.5K, 2K, 1.5K, 200W x 3 phases/ 6 taps
- Resistive 20E/200W rheostat mounted on horizontal profile of rack**
- ◆ **3 Phase AC Integrated Machine**  
**Voltage :** 415VAC, 50Hz  
**Capacity/RPM /Terminals :** 300W/4 Pole m/c / 1500RPM 10 terminals Rotor Construction : Star connected, four terminals including star point brought out on 4 slip rings mounted on shaft.  
**Stator construction :** Six terminals to be brought out to start the machine using STAR-DELTA starter.  
**Winding Temp. :** A embedded Thermistor brought out on 2 eyelets mounted on terminal box for monitoring winding temperature.  
**Frame/ Mounting Shaft dia :** 100 Frame, Chassis mounted 19mm dia. With easily swappable gear coupling **Net Weight :** 35Kg **Gross Weight :** 54Kg
- ◆ **DC Integrated (Foot mounted) Machine**  
**Voltage :** Varm= 180V Vfield = 180V

**Capacity/RPM /Terminals** : 300W/2 Pole m/c / 1500RPM 6 terminals Rotor Construction: Standard commutator / brush arrangement with laminated stack, brought out on 2 terminals Stator construction : Separately excited field winding with laminated solid yoke 2 pole and series winding brought out on 4 terminals.

**Winding Temp.:** A embedded Thermistor brought out on 2 eyelets mounted on terminal box for monitoring winding temperature.

**Net Weight:** 42 kg. **Gross Weight:** 61Kg

◆ **List of Experiments :**

1. To study the regenerative braking of 3 $\Phi$  AC motor
2. To study the AC dynamic braking of 3 $\Phi$  AC motor
3. To study the DC dynamic braking of 3 $\Phi$  AC motor
4. To study the self excited braking of 3 $\Phi$  AC motor
5. To study the zero sequence braking of 3 $\Phi$  AC motor
6. To study the rheostatic braking of separately excited DC motor.
7. To study the Plugging of separately excited DC motor.