



# **VERITAS Engineering**

Catalog  
Of

**Electrical Machine Trainer**

**Brand: VERITAS**

**Model: VEMT-003**

## Features

- This is a well-designed tabletop electrical machine training system,
- It offers integrated solution for the electrical & mechanical performance test,
- Verification and measurement of different AC/DC motors.
- User can select different electrical machines on this system to realize related test experiment
- Motors/generators come with standard aluminium profile mounting base, coupling for easy experimental combination via universal shaft couplings.
- The experiment of each motor is operated with electrical panel through 4mm safety sockets.
- The frame adopts complete aluminium profile as support frame with engraved and colored printed panel be inserted into grooved aluminium profile.



**Picture: Electrical Machine Trainer**

## List of Experiment

- Rotation of electric motors
- Electric motor safety
- Motor speed measurement
- Motor winding resistance measurement
- DC series, shunt, compound motors
- DC permanent magnet motor
- AC resistor starting motor
- AC capacitor starting/ running motors
- Three phase AC induction motors
- Two speed induction motor
- Slip ring induction motor

### **Synchronous motor / generator Configuration:**

#### ➤ **Frame part:**

- Complete grooved aluminum profile frame structure
- Rubber cushions on frame bottom
- Engraved and colorized printed inclined panel of 60-degree angle
- Motor mounting plate of 810mm\*240mm\*20mm grooved aluminum profile
- Circular connectors for main frame with power/rotary encoder
- Size: 855 405mm\*460mm (approx.)

- **DC calibrated machine:** 220V, 1500r/min, 2.2A, 355W

#### ➤ **AC power supply:**

- Through 4mm safety socket
- Short current & leakage protection, phase indication
- Start, stop and emergency switches
- Three phase 380V output
- Three phase 220V output
- Single phase 220V output

#### ➤ **DC power supply:**

- Fixed DC 24V output, max 2A with power switch, indicator and short circuit protection
- Variable DC 0- 24V, max 4A output with voltage indication, indicator and short circuit protection
- Fixed DC 220V output, max 0.5A with power switch and short circuit protection
- Variable armature DC 0-220V output with voltage indication, power switch and short circuit protection

#### ➤ **Load resistor:**

- Variable resistor 0 $\Omega$ /30 $\Omega$ /60 $\Omega$ /90 $\Omega$ /infinite, max 0.3A, with selective switch
- Load resistor 300 $\Omega$ , 100W, max 0.5A
- Field resistor 1k $\Omega$ , 100W, max 0.38A with rotary switch
- Field resistor 2k $\Omega$ , 150W, max 0.27A with rotary switch



- **Load lamp & switch unit:**
  - Lamp AC220V, green x 3
  - One-way toggle switch x 2
  - Three-way toggle switch x 2
- **Voltage & Current measurement:**
  - Voltmeter digital AC0 ~ 450V
  - Voltmeter digital DC0 ~ 300V
  - Ammeter digital AC0 ~ 3A
  - Ammeter digital DC0 ~ 5A
- **Speed measurement:**
  - Digital Tachometer: 0 ~ 9999 rpm
  - Optical encoder with synchronous belt and wheel,
- **Accessories:**
  - Shaft couplings for each motor
  - Safety whole sealing cable:
  - conductor cross section: 16AWG tinned copper wire, 3kV, 20A, with axial socket
  - Experiment guide book
  - Wiring instruction map

## List Of Motors:

- **Squirrel cage motor (1):**
  - Type: 3P asynchronous;
  - Voltage: 380V (A);
  - Current: 1.12A;
  - Power: 180W;
  - Speed: 1430r/min
- **Squirrel cage motor (2):**
  - Type: 3P asynchronous;
  - Voltage: 220V (A)/380V (Y);
  - Current: 1.14A/0.66A;
  - Power: 180W;
  - Speed: 1430r/min
- **Squirrel cage motor (3):**
  - Type: 3P asynchronous;
  - Voltage: 220V (A);
  - Current: 0.5A;
  - Power: 100W;
  - Speed: 1420r/min
- **Squirrel cage motor (4):**
  - Type: 3P dual speed,
  - Voltage: 220V (A/YY),
  - Current: 0.6A Power: 90W / 120W,
  - Speed: (2820/1400) r/min,



- **Wound rotor motor:**
  - Type: 3P
  - Voltage: 220V(Y)
  - Current: 0.6A
  - Power: 120W
  - Speed: 1380 r/min
- **Synchronous motor/generator:**
  - Type: 3P
  - Voltage: 220V
  - Current: G (0.45A), M (0.35A),
  - Power: G (170W), M (90W)
  - Speed: 1500 r/min,
- **Resistor split phase motor:**
  - Type: 1P,
  - Voltage: 220V
  - Current: 1.45A,
  - Power: 90W,
  - Speed: 1400 r/min,
- **Capacitor running motor:**
  - Type: 1P,
  - Voltage: 220V,
  - Current: 1A,
  - Power: 120W,
  - Speed: 1420 r/min,
- **Capacitor starting motor:**
  - Type: 1P,
  - Voltage: 220V,
  - Current: 1.45A,
  - Power: 90W,
  - Speed: 1420 r/min,
- **DC series motor:**
  - Type: DC motor,
  - Voltage: 220V,
  - Current: 0.8A,
  - Power: 120W,
  - Speed: 1400 r/min,
- **DC shunt motor:**
  - Type: DC motor,
  - Voltage: 220V,
  - Current: 1.2A,
  - Power: 185W,
  - Speed: 1600 r/min,



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- **DC compound generator:**
  - Type: DC generator,
  - Voltage: 220V,
  - Current: 0.5A,
  - Power: 100W
  - Speed: 1600 r/min
- **DC permanent magnet motor:**
  - Type: DC motor,
  - Voltage: 220V,
  - Current: 1.5A,
  - Power: 200W,
  - Speed: 1800 r/min
- **Three phase voltage regulator:**
  - Power: 1KW regulator,
  - variable output: 3 Phase 0 ~ 450V, 1 Phase 0 ~ 250V
  - Indicating Lamp R/G/Y
  - Output voltage monitoring meter x3
  - Selective input and output voltage display,
- **Spring gauge force readout mechanism:**
  - Dynamometer of limit load 50N
  - Coupling for motor connection
  - Belt connection with micro bearing mechanism