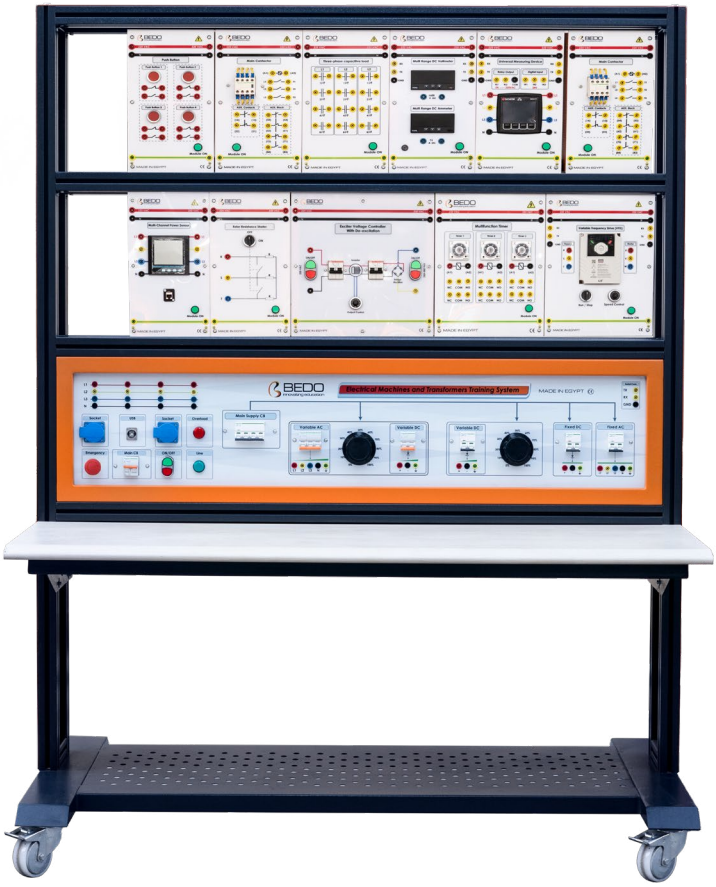
AD - 1000

1kW AC Drives kit

Overview

1KW AC Drives kit are used to control all aspects of the electrical machines. The trainer introduces trainees to electrical drives to allow studying their operation and applications. The trainer adopts the modular design to install electrical machines modules to a sturdy metal frame to allow trainees to connect modules to each other using safety cables. The trainer is supplied with a software to measure the machines parameters and display the measured values.



Specifications

- The 1KW AC Drives kit facilitates building a true-to-life learning environment that mirrors real-life work of study and industry relevant skills including how to operate, install and tune major types of AC systems.
- Many applications can be explained through this trainer such as control of speed acceleration ramp time and deceleration ramp time in various applications
- The trainer allows trainees to operate, control and test the drivers.
- The 1KW AC Drives kit can work with the 1K Watt Machines **(not inculded)** easily, also it`s designed as modular that can fit perfectly on the Machine & Drive Lab Supply Unit **(not inculded)**, the kit contain many modules that can be used together to execute different experiments

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- **AC VFD Drive Module:**

  The basic function of a variable Frequancy drive (VFD) is to control the flow of energy from the mains to the process. Variable speed drives sit between the electrical supply and the motor. Power from the electrical supply goes into a drive and the drive then regulates the power that is fed to the motor.

  - » Technical data
    - Input:
      - » 3-Phase, 380-480V, 48,63Hz
      - » AC Voltage Range: 342-528V
    - Output:
      - » 3-Phase, 0-240Hz
      - » AC Voltage Range 0-460V
      - » Continuous Amps: 4A

- **AC Vector Drive Module:**

  Vector Control Technique used in 3 phase AC induction motor output by means of controlling the voltage magnitude, voltage angle and the frequency. It was used initially for applications that require constant torque over full speed range, constant speed irrespective of load variations, and full torque at zero speed.

  - » Technical data
    - Input:
      - » Normal Duty: 3PH 380-480V 50/60Hz 8.7A
      - » Heavy Duty: 3PH 380-480V 50/60Hz 8.3A
    - Output:
      - » Normal Duty: 3PH 0-480V, 6A, 4.8KVA, 2.2KW, 3HP
      - » Heavy Duty: 3PH 0-480V, 5.7A, 4.5KVA, 1.5KW, 2HP
    - Frequency Range: 0-599Hz

- **Load Torque Controller Module**
  - » input voltage: 220VAC
  - » Input signal : potentiometer 10k ohm
  - » output: dc PWM with swithching frequancy 3khz
- **Line Fuse Module**
  - » 3 x DIN-Rail Mounted Fuses Holders with 38*10 Fuses 10A
- **Load Reactor Module**
  - » Inductance: 1 mH
  - » Rated Current: 5A
- **Isolating Transformer Module**
  - » 380/380V Δ/Y, 1.5 kVA
- **Three-Phase Squirrel Cage Motor with Encoder:**
  - » Motor: 220/380 Δ/Y, 1500 rpm, 2 HP
  - » Encoder: 4.75-30 VDC, 3600 Imp
- **Eddy Current Brake**
  - » Nominal shaft speed: 1500rpm
  - » Rated braking power: 1200W
  - » Nominal Input voltage: 0- 12 VDC

Learning Objectives

- Learning of the operation, characteristics, and construction of different AC electric motor drives.
- Understanding the principles and installation of VFD units
- AC motors control explanation: inverter drives.
- Studying of acceleration/ torque control requirements of AC motors and load matching

Scope of Delivery

- 1KW AC Drives kit (AD - 1000)
- Hard copy user manual

Required for Operation

- Machine & Drive Lab Supply Unit (ML-100)
- Laboratory PC

Options

- Digital content (BI-01)

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