MC101

DC Servo Motor Control Training System

Overview

The trainer is a bench-top unit designed to study position and speed control of a servo motor. The system is able to analyze servo motor performance. The unit adaptable nature allows the trainee to create a variety of alternative analysis and control activities to fit their needs.Using this training system, trainees will grasp the basic fundamentals and the working principle of DC motors as well as familiarization with the key characteristics of such systems. The trainer has a DC servo motor, DC Generator & flywheel.



Specifications

- The training unit exposes trainees to the operation and features a typical DC servo motor.
- The DC generator dynamicaly loads the servo motor.
- A reduction gear box included for position control .
- Signal output terminals are included within the training unit enabling trainees to perform the adjacent required measurements.
- A rotary encoder is included within the training system which gives feedback of rotational speed where its output can also be measured.
- Trainees will be able to control torque & speed using pulse width modulation driver.
- An LCD is provided within the system in order to display and monitor the system results.
- The unit is supplied with a software system in order to display the system parameters as well as to operate some built-in features.
- The software system can be displayed and operated by connecting the unit to an external Laboratory PC via the included USB port. Hence, trainees will be able to start and use the provided software.

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- The system is supplied with main ON/OFF for the training system and an emergency button in case of any inconvenience.
- A schematic diagram of the process is printed on the training unit in order to provide clear illustration and interpretation of the process.

Experiments

- Servo motor operating principles
- Proportional control
- Proportional and integral control
- Proportional, integral plus derivative control
- Servo motor control system
- Position control
- Properties of brake's load
- Torque control
- Speed control

Technical Data

DC motor output power: 400w, RPM 0-1500 RPM

Rotary incremental encoder:

» Resolution 3600 P/R,

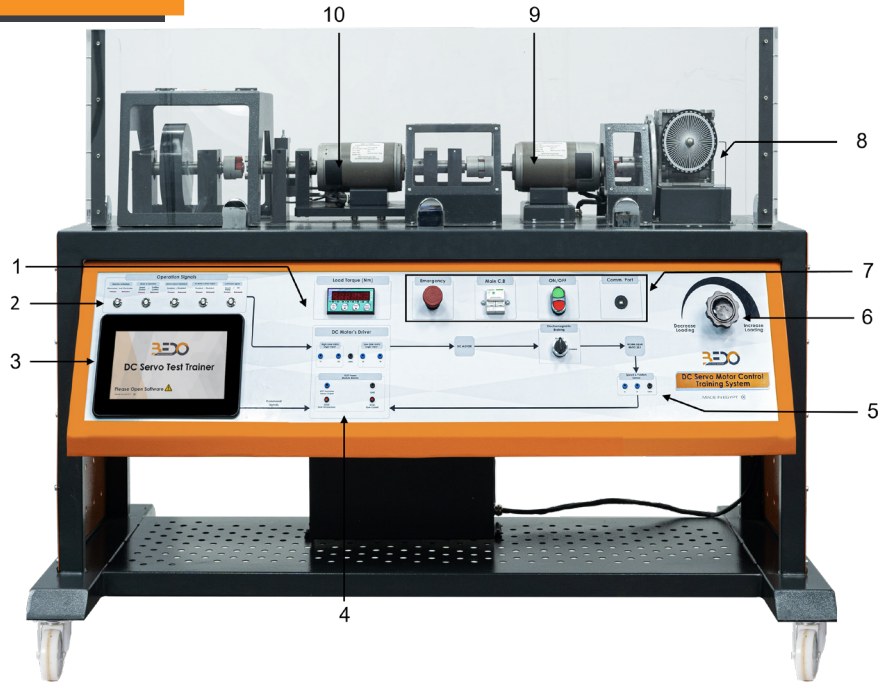
Load Torque meter

Electrical supply

» 50-60Hz with earth

» 380-460 VAC, 10A

Components



1	Load torque meter	2	Operation signals buttons
3	Touch screen	4	DC Servo Driver indications
5	Speed & Position Sensors	6	Loading knob
7	Control unit	8	Angular disc
9	DC machine 1	10	DC machine 2

Scope of Delivery

- DC servo motor control training system (MC101).
- Hard copy user manual.
- DC servo software.

Required for Operation

- Laboratory PC

Options

- Digital content (BI01)

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