



Department of Electrical and Control Eng.

Lab 150-A



Electrical Motors

Capacity: 20 Students

Operation and Protection

The laboratory provides the essential knowledge for relay logic control of a three phase induction motor with the main switches and protection elements. Besides that, a smart relay is used for motor control and to simulate a process with inputs/outputs simulator panel. Also, the necessary measurements of current and voltage are provided. The laboratory consists of three identical

LABORATORY EQUIPMENTS

- Direct online motor starter.
- Star/Delta motor starter.
- Forward/Reverse motor operation.
- Forward/Reverse motor operation using timer.
- Remote/Local motor operation.
- Phase sequence detection.
- Motor Overload and Short Circuit Protection.
- Star/Delta motor starter using smart relay.
- Two motors sequential operation.
- Remote/Local motors controlled operation.
- Filling Bottles plant simulator.
- Motor operations using Zelio PLC.
- Logic, Timer, Counter operation using Zelio PLC.



MAJOR EXPERIMENTS

- ✓ Direct online motor starter.
- ✓ Star/Delta motor starter.
- ✓ Forward/Reverse motor operation.
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- ✓ Motor Overload and Short Circuit Protection.
- ✓ Star/Delta motor starter using smart relay.
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- ✓ Motor operations using Zelio PLC.
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The Laboratory Serves the Following Courses

Course No.	Course Title	Semester
EE442	Power System Protection 1	5
EE512	Automated Industrial System 1	6
EE518	Automated Industrial System 2	10