



شركة ميرك العربية السعودية
MEIRC Saudi Arabia

Electric Motors Maintenance & Troubleshooting

Duration 5 Days

Introduction

This course is designed to teach the necessary knowledge and understanding of electric motors. Topics include principles of operation, motors types, speed control and starting methods

Who should Attend

This course is suitable for electric technicians maintenance staff.

Course Objectives

At the end of the program, participants will be able to:

- ↪ Understand basic principles of electric motors
- ↪ Recognize motors types
- ↪ Understand motor failures
- ↪ Understand motor speed control

Course Outlines

1. Induction Motor

- 1.1. construction
- 1.2. Basic Induction Motor Concept
- 1.3. Power Losses in Induction Motor
- 1.4. Torque Speed Characteristics
- 1.5. Induction Motor Starting
- 1.6. Types of Induction Motors

2. Speed Control of Electric Motors

- 2.1. By Changing Line Frequency
- 2.2. By Changing Line Voltage
- 2.3. Changing Rotor Resistance

3. Motor Failure Modes & Diagnostics

- 3.1. Unusual Service Conditions
- 3.2. Insulation
- 3.3. Failure Modes
- 3.4. Diagnostic Testing for Motors
- 3.5. Motor Repairs

4. Solid State motor Drives

- 4.1. Power Electronics Components
- 4.2. Invertors
 - 4.2.1. external Commutation Invertors



4.2.2. Self-Commutated invertors

4.2.3. Pulse Width Modulators

5. Variable Speed Drives

5.1. Basic Principles

5.2. Transients, Harmonics, Power Factor and Failure

5.2.1. Common Failure Modes

5.2.2. Thyristor failures and Testing

6. Motor Applications, Maintenance, Specification & selection

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