

# ELECTRICAL COURSES

## INSTRUMENT TRANSFORMERS & ENERGY MEASUREMENT (E28A)

**OBJECTIVE:**

This course is designed to provide the attendees with the theoretical and practical details about instrument transformer and energy measurement including their construction, operation, protection, testing, and connection.

**WHO SHOULD ATTEND?**

This course is recommended for electrical engineers, supervisors, and technicians who have basic experience about instrument transformer and energy measurement and need more details of current and potential transformers.

**COURSE CONTENT:**

- Introduction
- Why Instrument Transformer?
- Instrument Transformer theory
- Types of instrument transformer
- Potential Transformer construction, operation, protection, testing, and connection.
- Current Transformer and classification.
- Current Transformer construction, operation, protection, testing, and Connection.
- Energy measurement in electrical fields.

**Duration: 5 Days**

Date:	Venue:	Cost:
Mar 1 – 5	Dammam	SR6,000
Aug 2 – 6	Dammam	SR6,000
Dec 6 – 10	Abha	SR7,000

## INTRODUCTION TO PROTECTIVE RELAYS (E10A)

**OBJECTIVE:**

This seminar provides the participants with a practical understanding of the testing and maintenance of protective relays - such as overcurrent relay, directional overcurrent relay, differential relay, and distance relay. These relays are typically found in industrial or utility systems.

**WHO SHOULD ATTEND?**

This course is suggested for experienced technicians and supervisors working on electrical maintenance (protection).

**COURSE CONTENT:**

- CT and PT Polarity and Connections
- Relays Fundamentals
  - Classification of Relays
  - Principles of Operation
  - Overcurrent and Overvoltage Relays
  - Voltage Controlled Overcurrent Relay
  - Directional Overcurrent Relay
  - Differential Relay
- Transformer Protection
- Protection of Transmission Line by Distance Relay
- Test Procedures and Inspection of Differential, Distance Relays

**PRACTICAL TASKS:**

- Overcurrent relay & Undervoltage relay
- Pick-up/Time current tests
- Instantaneous

**Duration: 5 Days**

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