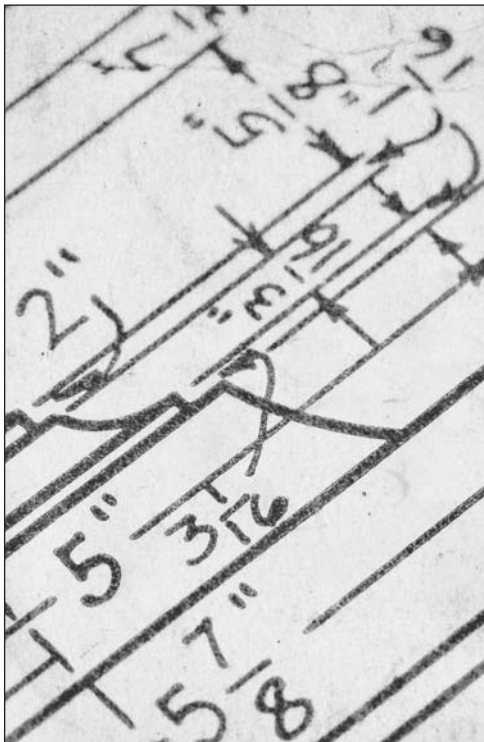

ELECTRICAL DRAWINGS AND SCHEMATICS



WHAT YOU WILL LEARN:

- How to interpret schematic diagrams
- The purpose of symbols in logic drawings
- The use of colours and line types in representing various objects
- How to interpret electrical, earthing and cabling layouts
- The governing standards in electro-technology and their symbols

WHO SHOULD ATTEND:

- Electrical Engineers
- Electronics Engineers
- Design Engineers
- Electricians
- Instrumentation Engineers
- Consulting Engineers
- Production Managers
- Process Engineers
- Maintenance Engineers



Technology Training that Works

The Workshop

The objective of this workshop is to familiarise engineers and technicians with the various standards and practices used for reading and interpreting electrical drawings and schematics. It will help you understand the symbols and the language used in electrical drawings in line with the international standards and practices, giving you a detailed insight into the various types of electrical drawings used in the industry, their purpose and applications and also to differentiate between the types of drawings.

The workshop observes the practices being followed by drawing offices for the development, management and control of drawings.

This workshop will be helpful for those from the electrical discipline - in the field of design, project or maintenance.

Practical Sessions

This is a practical, hands on workshop enabling you to work through practical exercises which reinforce the concepts discussed.

To gain full value from this workshop, please bring your laptop/notebook computer.



On-Site Training

- ✓ **SAVE** over 50% by having an IDC workshop presented at your premises.
- ✓ Customise the training to **YOUR** workplace.
- ✓ Have the training delivered when and where you need it.

Contact us for a **FREE** proposal.

The Program

DAY ONE

INTRODUCTION

- Drawings - their relevance to engineering
- Origin of worldwide standards in electro-technology
- Purposes served by different types of drawings
- Standards in a drawing office
- Organisation of a typical drawing office
- Printing and distribution - different options for making multiple copies

COMPONENTS OF A DRAWING, DRAWING SIZES AND SCALES

- What is a typical engineering drawing made up of?
- Various categories of electrical drawings
- Planning a drawing
- Title block in a drawing and what should a title block contain?
- Legend block
- Bill of materials block
- Drawing notes block
- Revision history, revision numbering and use of revision marks

SYMBOLS USED IN ELECTRO TECHNOLOGY AND GOVERNING STANDARDS

- Which are the drawings that need symbols?
- Symbols as per electro-technology standards - particularly IEC
- Non-standard symbols - when and why?
- Use of colors and line types in representing various services
- Company standards for drawings - why?

SINGLE LINE AND THREE LINE DIAGRAMS

- Purpose
- Typical examples
- Use of symbols
- The differences between single line and three line diagrams
- Applications
- Conventions used

Practical exercises involving reading and interpretation of single line diagrams

SCHEMATIC DIAGRAMS

- Purpose
- Typical examples
- Use of symbols
- Applications
- Schematics spread over a number of sheets
- Cross-referencing between coils and contacts

Practical exercises involving reading and interpretation of schematic drawings

DAY TWO

LOGIC DIAGRAMS

- Purpose
- Typical examples
- Use of symbols
- Applications
- Logic diagrams spread over a number of sheets
- Cross-referencing

Practical exercises involving reading and interpretation of logic diagrams

CABLING AND WIRING DRAWINGS

- Purpose
- Typical examples
- Sub types of cabling drawings
- Applications
- Conventions used

Practical exercises involving reading and interpretation of cabling drawings

LAYOUT DRAWINGS

- Purpose
- Typical examples
- Sub types of layout drawings
- Applications
- Conventions used

Practical exercises involving reading and interpretation of layout drawings

ADVANCES ARISING FROM COMPUTER AIDED DRAFTING (CAD)

- Drawing office revolution by CAD and the role of PC based CAD applications
- 2-D and 3-D CAD applications and links to CAM
- Drawing to true dimensions in CAD applications
- Use of symbols, attributes and symbol libraries
- Automated bill of material generation from a CAD drawing
- Information sharing on multi-disciplinary drawings
- Concept of layers and their use in sharing information
- Automation of drawing through programming
- Linking imagery with drawings - GIS related applications

MANAGEMENT OF DRAWINGS

- Planning and assigning of drawings
- Need for drawing numbering standards
- Drawing process flow
- Revision control and ownership of drawing
- Comments and their marking
- Drawing management system for work flow control
- On-line distribution of drawings - the end of the era of paper drawings?
- Drawing as a database for engineering and construction - the future

SUMMARY AND OPEN FORUM