

LV Power Distribution Design

Overview

This course provides an overview of the design of low voltage power distribution systems for buildings

Course Aim

The aim of this course is to give electrical engineers an understanding of the principle aspects of LV distribution design with particular emphasis on design and selection of the LV switchgear system

Learning Objectives:

At the end of the course attendees will have learned

- LV Distribution System – Typical applications
- Awareness of the main standards relative to LV switchgear
- How to design LV distribution boards
- How to select appropriate protective devices
- How to select the Power Factor Correction Equipment

Programme

Part 1 – Design of the LV Distribution System – Typical applications

- Residential / Apartments
- Office Block
- Industrial Premises
- Mission critical sites with UPS and Generator systems.

Part 2 – LV Switchgear Standards

- Overview of IEC Standard 61439 Part 1 &2
- Overview of ETCI - “Code of Practice” LV Switchboards ET201: 2005”
- Other Publications

Part 3 – Design of Main LV - Switchboards

- Enclosure, compartmentation, form of separation, degree of protection
- Busbars compartments, clearance and creepage distances
- ESB metering compartments
- Protective devices - Switchfuses, MCCBs and ACBs
- Protective devices – Coordination and Discrimination
- Automatic transfer switches - ATSS
- Mechanical and electrical interlocking of switches and breakers
- Surge protection devices - SPDs
- Double ended main LV switchboards
- Approximate sizing of LV switchboards

Part 3 – Design of Final Distribution Boards –

- Cabinet type distribution boards
- Pan assembly type distribution boards -
- Consumer unit type distribution boards -
- Final circuit protective devices:- MCBs, RCBOs etc.

Part 4 - Busbar Trunking Systems

- Lighting busbar trunking
- Main power busbar systems
- Tap off boxes and final power connection to load

Part 5 Power Factor Correction Equipment:

- Power factor analysis
- Calculation of VARs
- Capacitors, reactors, detuned systems
- Reactive power regulator:

Who Should Attend



This course will benefit electrical engineers and contractors involved in the supply chain of electrical services for buildings

Duration:

1 day – 7 Hours

Trainer Profile:

Brendan Dervan is a Chartered Engineer with over 40 years' experience in all aspects of mechanical and electrical building services including; design, installation, commissioning and maintenance. After completing an electrical apprenticeship in 1982 he went on to study electrical engineering in DIT. He has worked in M&E consultancy at senior engineer / director level since 1990. In 1999 he started his own M&E consultancy Dervan Engineering Consultants (DEC) which merged with Cundall in 2016. His Company provided M&E consultancy and project management services to a diverse range of clients in both the public and private sectors. He is owner and director of Best Training since 2019.