

SEPTEMBER 2020

# ABB Electrification Products

## UK Electrification CPD Seminars

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### ELCPD-01

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#### Selectivity & Coordination with Power Circuit Breakers

This is a basic introduction to the different IEC types of LV circuit protection & all the relevant coordination standards prevalent in the UK and international markets. The needs of each type are described with the implications on each at installation. The presentation identifies generic classes of circuit breakers, their physical characteristics & ratings.

The relative requirements of Time/Current Selectivity, Energy Selectivity and Back-Up Protection are explained in full, whilst more advanced zone selectivity techniques are also covered.

**Duration:** 1 Hour **CIBSE CPD Approved**

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### ELCPD-02

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#### Selecting Circuit Breakers Using Software Based Sources

This topic 'demystifies' the digital selection of coordinated upstream and downstream devices, focussing on the differences between back-up protection, or as it is sometimes incorrectly termed, cascading, and full energy-based selectivity. The presentation also provides examples of how to achieve selectivity using comprehensive energy-based criteria, rather than purely 'Short Circuit' and 'Overload' protection. There is a working example of a Amtech ProDesign Selectivity study and we examine the detail of selection criteria. We also consider a few tips and tricks when using trip unit settings to achieve total selectivity.

**Duration:** 1 Hour **CIBSE CPD Approved**

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### ELCPD-03

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#### Advanced Circuit Protection In Buildings and Infrastructure

Explains the role of ANSI codes in identifying the choice of basic protection functions, protection relays, software and other future digital means.

There is also an introduction to the microgrid buildings concept incorporating a requirement for interface and adaptive protection; load shedding; ATS functioning; synchronization and load managing through a power controller. This shows methods of achieving such facets through 'conventional' means & also through contemporary digitised methods. The topic discusses the future of software as a service for digital delivery

In concluding the topic covers time based & zone selectivity, as well as directional versions of the same parameters of protection across the buildings sector.

**Duration:** 1 Hour **CIBSE CPD Approved**

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### ELCPD-04

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#### Protection Against Electric Shock & Thermal Effects According to BS 7671 18th Edition

Introducing BS7671:2018 and specifically highlighting new measures on protection against electric shock, thermal effects and the risks of fire therein.

The presentation covers more detail on the development and electrical solutions now available around modern thermal protection devices.

It also considers and explains impending BS7671:2018 recommendations on upstream arc quenching devices, optical arc detection and mitigating devices.

**Duration:** 1 Hour **CIBSE CPD Approved**

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### ELCPD-05

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#### Life Safety Transfer Switching

Detailing influences on the growing importance of transfer switch classification in life safety applications. Including an assessment of global standards and typical applications.

This covers preferred applications on all switching types; MTS, RTS & ATS controlling methods; as well as open delayed, open in phase & closed transition.

There is a full explanation of utilisation categories and the relative importance of fixed, switched and overlapping neutrals. Contains a description of how single and dual by-pass systems impact on design.

**Duration:** 1 Hour **CIBSE CPD Approved**

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### ELCPD-06

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#### LV Switchboard Design to BS EN 61439

Discusses the consequences of change from BS 60439 in 2014 to the contemporary, BS EN 61439.

Emphasis on explaining the impact of forms of separation on panel design, built-in life protection measures and the dangers associated with potential internal arc faults.

A consideration of measures that can be applied to achieve comprehensive functional safety and avoid such life-threatening energy release, with consideration on the potential consequence of such incidents.

**Duration:** 1 Hour **CIBSE CPD Approved**

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**ELCPD-07****Electronic Power Breaker Trip Units.**

An outline of the differences between Thermal/Magnetic Circuit Breakers and Electronic equivalents. A comparison of the basic advantages and disadvantages for each.

The topic also explains other such features as Earth Fault Loop Impedance Values (Zs); lower trip unit ambient sensitivities; and comparative preferential power losses exclusively from electronic trips over thermal/mag counterparts.

Modern electronic breakers now include on-board analytical features such as embedded metering to class 1 and asset and facilities management; plus advanced direct comms and BMS/EMS interoperability.

**Duration:** 1 Hour **CIBSE CPD Approved**

**ELCPD-08****Smart & Connected Communications (Bus Communications)**

Contemporary fundamentals of bus communication with an impact assessment on power systems from remote control and settings, supervision, automation, diagnosis and maintenance. A consideration of potential modern communications issues. An assessment of protocols and their respective use and benefit. The emergence of IEC 61850 with a look at the difference between horizontal and vertical communications.

**Duration:** 1 Hour **CIBSE CPD Approved**

**ELCPD-09****Energy Management and Asset Management**

This CPD looks at the subject of trends in the Energy and Asset management market. How can we save money and avoid penalties and at the same time improve energy efficiency and productivity by optimizing through digital transformation? Learn how to create a roadmap for energy management processes including accreditation to ISO 50001:2018 and how predictive maintenance enables OPEX savings in assets highlighting return of investment (ROI) calculation.

This includes an example of an energy and asset management platform for MV and LV power-distribution with advanced features to support the elevation of quality in electrical systems through Energy Monitoring; Energy Forecasting; Power Control; Power Quality; Predictive & Condition based maintenance; Asset Monitoring & Alerting and Notification.

**Duration:** 1 Hour **CIBSE CPD Approved**

**ELCPD-10****De-carbonising buildings (Low & Zero Carbon Buildings)**

An assessment of how to improve a building's energy usage and an assessment of current directives & legislation to deliver Low to Zero Carbon (LZC), or Net Zero building optimisation.

The use of energy performance optimisation equipment and software such as embedded metering, asset management, communication, operational logic, and load management control.

The importance of network analysis, power quality and harmonics improvements are considered in the contemporary building designs.

**Duration:** 1 Hour **Awaiting CIBSE CPD Approved**

**ELCPD-11****Modern Solutions for LV Breaker Distribution Applications**

An outline of the main UK market share for power breakers in order to determine brand reference points for comparison of technical features. This compares respective technical feature terminology and branding covering basic and advanced protection; communications protocols and standard embedded features; respective trip unit upgrades functions and test kits; comparative trip unit adjustments; and part number cross reference sheets. It also assesses online methods for search for specific technical features

**Duration:** 1 Hour **CIBSE CPD Approved**

**ELCPD-12****EV Charging**

Considering changes to building regulations; ABB and EV charging in general; the overall market (including cars & standards); DC versus AC charging and the choice of the correct charger for the application. This topic is a comprehensive summary of this rapidly growing and changing technology.

The content covers remote software updates, diagnostics and back office management. It considers the market moves towards interoperability and public rapid chargers to accept debit / credit card payments, as well as reduced charge time requirements in line with the trend for longer range EVs. The new obligatory mandate for EV chargers in most new buildings is considered in detail.

**Duration:** 1 Hour **CIBSE CPD Approved**

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