

# ADVANCED LOW VOLTAGE ELECTRICAL TROUBLESHOOTING FOR TECHNICIANS (FARADAY CENTRE)

## (REF:OTSLVET001)

### Course Objectives

To gain a detailed understanding of the troubleshooting on LV equipment.

### Course Description

This course is designed to increase the trouble shooting skills and fault diagnostic processes for technicians and maintenance teams on LV equipment. The practical elements of the course centre on advancing the candidate's knowledge of diagnosing electrical faults. The course will progressively move toward advancing the candidate's knowledge of the faults and their rectification on a range of electrical systems.

### Who Should Attend

Electrical Technicians who have the responsibility for maintaining LV electrical operating systems. Engineers who need to trouble shoot and understand LV systems and need to advance their knowledge and skills of these systems.

### Pre-Requisites

All Attendees should have a sound power generation and electrical background.

### Course Outcome

At the end of this course you will be able to troubleshoot low voltage systems.

### Course Outline

#### Day 1

Introduction, course objectives, content and expectations  
Guidance on Electricity at Work and risk assessment  
Competence – the importance of your skills, capability, training and experience  
Fundamental electrical principles – Three effects of current on a conductor  
Electrical terminology – Volts, Amps, Ohms, Watts.  
Safe use of multi-meters and their limitations

#### Day 2

*Three phase principles – Single and three phase generation*

Capacitance and inductance in electrical circuits – Safety implications  
Electrical test equipment – The safe use of Megger & Clip on ammeter  
Transformers – Centre tap, equipotential and isolating

#### Day 3

Proving dead with approved methods and indicators  
Fuse types and M.C.B's  
Perception of electrical shock  
Methods of reducing the risk – R.C.D's and reduced voltage  
Prospective fault currents - fused leads video

#### Day 4

Electric arcs – awareness session  
Discrimination and diversity in electrical systems.  
Earthing methods and bonding and the importance of earthing.  
Induction motor starting methods.  
Induction motor testing.  
Motor protection - Thermal, magnetic electro mechanical and electronic relays.  
Feeder, transformer and generator protection overview.

#### Day 5

Methods of achieving discrimination with time, magnitude and comparison.  
Understanding of the component parts in common electrical control panels - Overloads, isolator, timers, relays, control, indication and power circuits.  
Safe systems of work for dead fault finding techniques and practice.  
Reading and understanding schematic diagrams.  
Course Review and Feedback

