



**Australian Government**

# **UEECD0046 Solve problems in single path circuits**

**Release: 1**

# UEECD0046 Solve problems in single path circuits

## Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

## Application

This unit involves the skills and knowledge required to solve problems in single path circuits.

It includes working safely; applying problem-solving procedures, including the use of basic voltage, current and resistance measuring devices; and providing known solutions to predictable circuit problems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

## Competency Field

Cross Discipline

## Unit Sector

Electrotechnology

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### 1 Prepare to work on single path electrical circuits

### PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

**1.1** Scope of work to be undertaken is determined from relevant documentation, electrical drawings or relevant person/s

**1.2** Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures for a given work area are identified and applied

- 1.3 Electrical hazards are identified, risks are assessed, and control measures are implemented
  - 1.4 Advice is sought from the relevant person/s to ensure the work is coordinated effectively with others
  - 1.5 Materials required for work are identified and accessed in accordance with workplace procedures
  - 1.6 Tools, equipment and testing devices needed to carry out work are obtained and checked for correct operation and safety
- 2 Solve problems in single path electrical circuits**
- 2.1 The need to test or measure live electrical work is determined in accordance with WHS/OHS requirements and, when necessary, conducted in accordance with workplace procedures
  - 2.2 Circuits are checked as isolated in accordance with workplace procedures and regulatory requirements
  - 2.3 Expected circuit parameters are calculated from relevant component ratings/specifications
  - 2.4 Circuit parameters are measured in accordance with industry standards and checked against expected values
  - 2.5 Circuit problems are assessed using measured and calculated values as they apply to single path, single source circuits
  - 2.6 Circuit solutions are determined from measured and calculated values of resistance, voltage, current, and power in single path circuits
  - 2.7 Solutions are tested in accordance with workplace procedures and industry standards
  - 2.8 Problems are resolved without damage to equipment, circuits, the surrounding environment or services using sustainable energy practices
  - 2.9 Unplanned situations are responded to in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- 3 Complete work and document problem solving activities**
- 3.1 WHS/OHS work completion risk control measures and procedures are followed

- 3.2 Worksite is cleaned and made safe in accordance with workplace procedures
- 3.3 Justification for solutions used to solve circuit problems is documented
- 3.4 Work completion is documented, and relevant personnel are notified in accordance with workplace procedures

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Installation, fault finding, maintenance or development work functions of single source series circuits containing more than one load must be demonstrated in one of the following disciplines:

- computers
- data communications
- electrical
- electronics
- fire protection
- instrumentation
- refrigeration and air conditioning
- renewable and sustainable energy systems
- security technology

## Unit Mapping Information

No equivalent unit

## Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>