



Australian Government

UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits

Release: 1

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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 multiple path extra-low voltage (ELV) alternating current (a.c.) circuits.

It includes working safely, applying problem-solving procedures, measuring devices, and providing solutions from measurements and calculations to problems in multiple path circuits.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) a.c. or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, skills and knowledge described in this unit require a relevant contract of training, such as an Australian Apprenticeship.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Permits may also be required for some work environments, such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.

No other 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 and

UEECD0043 Solve problems in direct current circuits

or

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

Competency Field

Cross Discipline

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to work on multiple path ELV a.c. electrical circuits

2 Solve multiple path ELV a.c circuit problems

PERFORMANCE CRITERIA

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

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures for a given work area are identified, obtained and applied
- 1.2** WHS/OHS risk control measures and workplace procedures in preparation for the work are followed
- 1.3** Scope of circuit problem is obtained from documentation and/or work supervisor
- 1.4** Advice is sought from work supervisor to ensure work is coordinated effectively with others
- 1.5** Sources of materials required for work are identified and accessed in accordance with workplace procedures
- 1.6** Tools, equipment and testing devices required for work are obtained and checked for correct operation and safety
- 2.1** WHS/OHS risk control work measures and workplace procedures are followed
- 2.2** Need to test and measure live work is determined in accordance with WHS/OHS requirements and workplace procedures
- 2.3** Circuits are checked and isolated, as required, in accordance with WHS/OHS requirements and workplace procedures
- 2.4** Methods are used to solve a.c circuit problems from measured and calculated values as they apply to multiple

path electrical circuits

- 2.5** Unplanned situations are dealt with safely in accordance with workplace procedures and approval of relevant person/s
- 2.6** Problems are solved without damage to apparatus, circuits, the surrounding environment or services using sustainable energy practices
- 3 Complete work and document problem-solving activities**
- 3.1** WHS/OHS work completion risk control measures and workplace 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 person/s 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.

Circuit problems must include at least two of the following:

- determining the operating parameters of an existing circuit
- altering an existing circuit to comply with specified operating parameters
- developing circuits to comply with a specified function and operating parameter

Unit Mapping Information

This unit replaces and is equivalent to UEENEEE119A Solve problems in multiple path extra-low voltage (ELV) a.c. circuits.

Links

Companion Volume implementation guides are found in VETNet - -

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