



Australian Government

UEECD0043 Solve problems in direct current 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 determine correct operation of single source direct current (d.c.) series, parallel and series-parallel circuits and provide solutions to various electrotechnology work functions.

It includes working safely; using voltage, current and resistance measuring devices; and providing solutions to measurement and calculation problems derived from single and 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) alternating current (a.c.) or 120 V 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, a relevant contract of training, such as an apprenticeship, may be required.

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.

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

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Identify d.c. electrical circuits

- 1.1** Nature of the circuit problem is obtained from relevant documentation, electrical drawings or personnel to determine the scope of work to be undertaken
- 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** Tools, equipment and circuit measuring devices required for the electrical work are obtained and checked for correct operation and safety in accordance with workplace procedures
- 1.4** Electrical apparatus is visually inspected, and components and circuits are identified

2 Determine electrical d.c. circuit problem

- 2.1** Electrical hazards are identified, risks are assessed and control measures are implemented
- 2.2** Need to test or measure live electrical work is conducted in accordance with WHS/OHS workplace safety procedures and regulatory requirements
- 2.3** Circuits are checked and isolated in accordance with workplace procedures and regulatory requirements
- 2.4** Expected circuit parameters are calculated from relevant component ratings/specifications
- 2.5** Circuit parameters are measured in accordance with industry standards and checked against expected values
- 2.6** D.c. circuit problems are assessed from measured and calculated values using established methodologies as they apply to circuits
- 2.7** Circuit solutions are determined from measured and calculated values of resistance, voltage, current and power in series, parallel, and series-parallel circuits in accordance with industry standards
- 2.8** Solutions are tested in accordance with workplace procedures and industry standards
- 2.9** Problems are resolved without damage to apparatus, circuits, the surrounding environment or services using

		sustainable energy practices
	2.10	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 resolve circuit problems is documented
	3.4	Work completion is documented, electrical drawings are updated, 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.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEE104A Solve problems in d.c. circuits.

Links

Companion Volume implementation guides are found in VETNet - -

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