



**Australian Government**

# **UEEEL0024 Test and connect alternating current (a.c.) rotating machines**

**Release: 2**

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## Modification History

Release 2. This is the second release of this unit of competency in the UEE Electrotechnology Training Package.

Typographical error fixed in performance criteria 2.5

Workplace evidence requirements updated in Performance Evidence and Assessment Conditions.

Assessor requirements updated in Assessment Conditions.

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 test and connect alternating current (a.c.) rotating machines. It includes safe working practices, ascertaining correct operation of a.c. machines and solving problems as they apply to servicing, fault finding, installation and compliance work functions

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, a relevant contract of training, such as an Australian 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

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UEEEL0019 Solve problems in direct current (d.c.) machines

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

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

Electrical

## Unit Sector

Electrotechnology

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Prepare to test and connect a.c. rotating machines**

#### **2 Test and connect a.c. rotating machines**

### PERFORMANCE CRITERIA

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

- 1.1** Nature of machine/s problem is obtained from relevant documentation or work supervisor to determine scope of work
- 1.2** WHS/OHS requirements and workplace procedures for a given work area are identified and applied
- 1.3** Hazards are identified, risks are assessed, and control measures are implemented
- 1.4** Materials required for work are determined in accordance with workplace procedures
- 1.5** Tools, equipment and testing devices required for work are obtained and confirmed fit for purpose and serviceable in accordance with workplace procedures
- 2.1** WHS/OHS risk control measures and workplace procedures for carrying out work are followed
- 2.2** Need to test or measure live work is determined in accordance with WHS/OHS job safety assessment

requirements and work is conducted using safety control measures and workplace procedures

- 2.3 Relevant circuits, machines and/or plant are checked as being isolated, as required in accordance with WHS/OHS requirements and workplace procedures
- 2.4 Problem-solving techniques are used to resolve problems from measured and calculated values as they apply to a.c. rotating machines
- 2.5 Machine is verified as electrically safe and connected to electrical supply and commissioned in accordance with workplace procedures and industry standards
- 2.6 Unplanned situations are dealt with safely and with the approval of an authorised person/s
- 2.7 Problems dealt with safely and without damage to machines, the surrounding environment or services using sustainable energy practices

### **3 Complete work and document 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 problems is documented in accordance with workplace procedures
- 3.4 Work completion is documented and an appropriate 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.

Testing and connecting a.c. rotating machines must include at least three of the following types of motor (must include at least one single phase and one three phase):

- capacitor start capacitor run motors
- capacitor start motors
- permanent magnet motor
- permanently split capacitor motor
- portable generator
- shaded pole motor
- split phase motors
- standby generator
- three phase squirrel-cage motor
- three phase synchronous generator
- three phase synchronous motor
- three phase wound rotor motor
- universal motor.

## 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>