



**Australian Government**

# **UEEIC0040 Solve problems in polyphase electronic power control circuits**

**Release: 1**

# UEEIC0040 Solve problems in polyphase electronic power control 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 polyphase electronic power control circuits.

It includes preparing and solving problems in polyphase electronic power control circuits. It also includes testing and documenting solutions.

Typical polyphase electronic power control problems are those encountered in meeting performance requirements and industry compliance standards, revising control operating parameters and dealing with control malfunctions.

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 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, is 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

UEECD0020 Fix and secure electrotechnology equipment

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

UEEEL0003 Arrange circuits, control and protection for electrical installations

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

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

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UEEEL0008 Evaluate and modify low voltage heating equipment and controls

UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment and controls

UEEEL0010 Evaluate and modify low voltage socket outlets circuits

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

UEEEL0025 Test and connect transformers

UEEIC0020 Fault find and repair analogue circuits and components in electronic control systems

UEEIC0042 Solve problems in single phase electronic power control 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

Instrumentation & Control

## Unit Sector

Electrotechnology

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Identify problems in polyphase electronic power control circuits**

### PERFORMANCE CRITERIA

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

- 1.1** WHS/OHS requirements and workplace procedures are identified and applied
- 1.2** Hazards are identified, risks are assessed and control measures implemented
- 1.3** Extent of polyphase electronic power control problems are determined from performance specifications, situation reports and consultations with relevant person/s
- 1.4** Work activities are planned to meet scheduled timelines in consultation with relevant person/s

- 1.5** Tools, equipment and testing devices needed for work are obtained in accordance with workplace procedures and checked for correct operation and safety
- 2 Solve problems in polyphase electronic power control circuits**
- 2.1** WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
- 2.2** Polyphase electronic power control devices, circuit operation characteristics and applications are applied to developing solutions to control problems
- 2.3** Parameters, specifications and performance requirements in relation to each polyphase electronic power control problem are obtained in accordance with workplace procedures
- 2.4** Solutions to polyphase electronic power control problems are evaluated to determine most effective resolution
- 2.5** Unplanned situations are responded to in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- 2.6** Problems are resolved using sustainable energy practices and principles without wasting materials, damaging apparatus, the surrounding environment or services in accordance with workplace procedures
- 3 Test and document solutions to polyphase electronic power control problems**
- 3.1** WHS/OHS risk control measures and procedures for carrying out the work are followed
- 3.2** Solutions to polyphase electronic power control problems are tested to determine effectiveness and modified, as required
- 3.3** Solutions are documented, including instructions for implementation, incorporating risk control measures
- 3.4** Solutions used to solve polyphase electronic power control problems are justified and documented 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.

Solving electrical problems in polyphase electronic power control circuits must include at least four of the following:

- polyphase electronic power control circuits

## Unit Mapping Information

This unit replaces and is equivalent to UEENEEI149A Solve problems in polyphase electronic power control circuits.

## Links

Companion Volume implementation guides are found in VETNet - -

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