Australian Government

UEEIC0042 Solve problems in single phase electronic power control circuits

Release: 1

UEEIC0042 Solve problems in single phase 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 single phase electronic power control circuits.

This unit includes preparing and solving problems in single phase electronic power control systems. It also includes testing and documenting solutions to single phase electronic power control.

Typical single phase electronic power control problems are those encountered in meeting performance requirements and 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

Where prerequisite pathways have been identified, all competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s)

Common Unit Group

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

Electrotechnology Pathway Group

UEEEC0060 Repairs basic electronic apparatus faults by replacement of components

UEEEC0067 Troubleshoot basic amplifier circuits

UEEEC0065 Solve problems in basic electronic circuits

Electronics and Communications Pathway Group

UEEEC0060 Repairs basic electronic apparatus faults by replacement of components

UEEEC0074 Troubleshoot resonance circuits in an electronic apparatus

UEEEC0067 Troubleshoot basic amplifier circuits

Electrical Pathway Group

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

Instrumentation and Control Pathway Group

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

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

UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals

UEEIC0041 Solve problems in pressure measurement components and systems

UEEIC0038 Solve problems in density/level measurement components and systems

UEEIC0039 Solve problems in flow measurement components and systems

UEEIC0043 Solve problems in temperature measurement components and systems

UEEIC0029 Set up and adjust PID control loops

UEEIC0030 Set up and adjust advanced PID process control loops

UEEIC0048 Verify compliance and functionality of instrumentation and control installations

UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks

Competency Field

Instrumentation & Control

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 problems in single phase electronic power control system	**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 single phase electronic power control problems are determined from performance specifications, situation reports and consultations with relevant person/s
	1.4 Activities are planned to meet scheduled timelines in consultation with relevant person/s
	1.5 Tools, equipment and testing devices needed for the work are obtained in accordance with workplace procedures and checked for correct operation and safety
2 Solve problems in single phase electronic power control system	**2.1** WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
	2.2 Single phase electronic power control devices, circuit operation characteristics and applications are used to develop solutions for control problems
	2.3 Parameters, specifications and performance requirements in relation to each single phase electronic power control problem are obtained in accordance with

		workplace procedures
	2.4	Approaches to resolving single phase electronic power control problems are evaluated to provide most effective solutions
	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 solved efficiently using sustainable energy practices without waste of materials, damaging apparatus, the surrounding environment or services in accordance with workplace procedures
3 Test and document solutions to single phase electronic power control	**3.1**	WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
	3.2	Solutions to single phase electronic power control problems are tested to determine effectiveness and modified as necessary
	3.3	Adopted solutions are documented, including instructions for implementation, incorporating risk control measures
	3.4	Justification for solutions used to solve single phase electronic power control problems are 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 must include at least four of the following:	• single phase electronic power control systems

Unit Mapping Information

This unit replaces and is equivalent to UEENEEI148A Solve problems in single phase 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