



Australian Government

UEEEEC0064 Solve oscillator problems

Release: 1

UEEEEC0064 Solve oscillator problems

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 oscillator problems.

It includes preparing to work on oscillator sections, solving oscillator section problems, completing work and reporting problem-solving activities.

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

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEEEEC0074 Troubleshoot resonance circuits in an electronic apparatus

UEEEEC0067 Troubleshoot basic amplifier circuits

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to work on oscillator sections

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) requirements and workplace procedures for relevant work area are identified, obtained and applied

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| | 1.2 | Risk control measures are applied in accordance with workplace procedures prior to commencing work |
| | 1.3 | Nature of oscillator problems is obtained from documentation or relevant person/s to determine the scope of work |
| | 1.4 | Instructions for coordinating work with others are obtained from relevant person/s and applied |
| | 1.5 | Materials required for work are determined 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 Solve oscillator section problems | 2.1 | Workplace risk control measures and procedures are applied |
| | 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 | Appropriate methods are used to solve problems from measured and calculated values as they apply to oscillator sections in an electronic apparatus |
| | 2.5 | Unplanned situations are dealt with safely and with the approval of relevant person/s |
| | 2.6 | Problems are solved without unnecessary damage to apparatus circuits, the surrounding environment or services applying sustainable energy practices |
| 3 Complete work and report 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 reported in accordance with workplace procedures and job specifications |

- 3.4** Work completion reporting is completed 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.

Solving oscillator problems must include at least the following:

- three problems in typical oscillator sections of electronic apparatus

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH142A Solve oscillator problems.

Links

Companion Volume implementation guides are found in VETNet - -

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

Assessment Requirements for UEEEC0064 Solve oscillator problems

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying problem-solving techniques
- applying relevant risk identification, assessment, reporting and control requirements
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- applying sustainable energy principles and practices
- coordinating work with relevant person/s
- correctly and accurately calculating parameters
- correctly and accurately taking measurements
- dealing effectively with unplanned events
- determining live testing/measurement requirements
- identifying and accessing materials, tools, apparatus and testing devices
- isolating circuits/machines/systems
- providing justification for the solutions to problems
- providing solution to oscillator component/circuit problems.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- oscillator problem solving, including:
 - relevant industry standards, codes and regulations
 - requirements for oscillation
 - Wien bridge oscillators
 - phase shift oscillators
 - Colpitts oscillators and Hartley oscillators
 - crystal oscillators
 - astable oscillators

- 555 timer circuit and applications
- voltage-controlled oscillator (VCO) circuits
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to troubleshooting oscillators
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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