



Australian Government

UEEEEC0066 Troubleshoot amplifiers in an electronic apparatus

Release: 1

UEEEEC0066 Troubleshoot amplifiers in an electronic apparatus

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 troubleshoot amplifiers in an electronic apparatus.

It includes preparing to troubleshoot amplifiers, troubleshooting amplifiers, completing work and documenting troubleshooting 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

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEEEEC0067 Troubleshoot basic amplifier 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

Electronics and Communications

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 Prepare to troubleshoot amplifiers

- 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
- 1.2** Risk control measures are applied in accordance with workplace procedures prior to commencing work
- 1.3** Nature of amplifier fault is obtained from documentation or from 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 Troubleshoot amplifiers

- 2.1** Workplace risk control measures and procedures are applied
- 2.2** The need to test or measure live work is determined, as required, in accordance with WHS/OHS requirements and workplace procedures
- 2.3** Circuits are isolated where necessary in accordance with WHS/OHS requirements and workplace procedures
- 2.4** Fault finding is undertaken methodically using measured and calculated values of parameters relevant to amplifiers
- 2.5** Unexpected situations are dealt with safely and with the approval of relevant person/s
- 2.6** Fault finding is conducted efficiently minimising waste of materials, damage to apparatus, the surrounding environment or services applying sustainable energy practices

3 Complete work and document troubleshooting

- 3.1** Workplace risk control measures and procedures are applied

activities

- 3.2 Worksite is cleaned and made safe in accordance with workplace procedures
- 3.3 Justification for troubleshooting solutions is provided in the required format
- 3.4 Work completion is documented in accordance with workplace procedures and relevant person/s notified

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.

Troubleshooting amplifiers must include at least the following:

- troubleshooting the amplifier stages of two types of electronic apparatus
- two different types of amplifier faults.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH113A Troubleshoot amplifiers in an electronic apparatus.

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 UEEEC0066 Troubleshoot amplifiers in an electronic apparatus

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 relevant risk identification, assessment, reporting and control requirements
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements
- applying sustainable energy principles and practices
- applying the principles of amplifiers
- coordinating work with relevant person/s
- dealing effectively with unplanned events
- determining live testing/measurement requirements
- methodically fault finding using measured and calculated values of parameters
- identifying and accessing materials, tools, apparatus and testing devices
- isolating circuits/machines/system
- troubleshooting amplifiers, including:
 - applying methodical problem-solving methods
 - calculating parameters correctly and accurately
 - correctly and accurately taking measurements
 - providing solutions to amplifier problems
 - providing written justification for the solutions to 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:

- amplifier troubleshooting, including:
 - fundamentals of amplifiers
 - classes of power amplifier operation (basics)
 - complementary-symmetry power amplifiers

- differential amplifiers
- multistage amplifier coupling methods
- negative feedback
- other solid-state power amplifier design
- relevant standards, codes and regulations
- single stage discrete amplifier:
 - direct current (d.c.) characteristics
 - small signal characteristics
 - capacitive coupling
- 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 suitable simulated 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 other 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 amplifiers
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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