



Australian Government

Assessment Requirements for UEEEC0074 Troubleshoot resonance circuits in an electronic apparatus

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

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 work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - using risk control measures
- carrying out fault-finding activities without waste and damage to materials, apparatus, the environment or services
- checking and isolating circuits
- completing work and documenting troubleshooting activities
- dealing with unplanned situations safely and with the approval of relevant person/s
- demonstrating correct set-up and usage of oscilloscope for alternating current (a.c.) measurements
- obtaining and checking tools, equipment and testing devices for correct operation and safety
- obtaining scope of the fault from documentation and/or work supervisor
- preparing to troubleshoot resonance circuits
- seeking advice from work supervisor to ensure work is coordinated effectively
- solving problems in resonance circuits
- testing and measuring live circuits
- using sustainable energy practices
- calculating resonance parameters, including reactance and resonant frequency from supplied or measured values
- making measurements on resonance circuits
- making adjustments to resonance circuits.

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:

- filter characteristics, including bandwidth, roll off, attenuation and response curves

- filter principles and types, including high pass, low pass, bandpass and band-reject
- principles of inductance and inductive reactance
- impedance, voltage and current characteristics of parallel-resonant circuits
- impedance, voltage and current characteristics of series-resonant circuits
- measuring equipment for a.c. circuits
- Ohm's law for a.c. circuits
- power factor principles
- problem-solving techniques
- quality factor (Q) principles
- relevant checking and isolation methods for circuits
- relevant circuit measurements and parameter values calculations
- relevant industry standards
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications and operating instructions
- relevant materials, tools, equipment and testing devices
- relevant resonance circuits
- relevant resonance formulae and definitions
- relevant testing and measuring methods
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace instructions, policies and procedures
- series, parallel and series-parallel a.c. circuits
- sinusoidal alternating voltage and current principles
- sustainable energy principles
- transformer principles and construction.

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, facilities and equipment currently used in industry
- resources that reflect current industry practices in relation to troubleshooting frequency

dependent circuits

- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

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