



Australian Government

Assessment Requirements for UEEEC0075 Troubleshoot single phase input d.c power supplies

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
- checking tools, materials, equipment and testing devices for correct operation and safety
- testing or measuring on live and operating system safely
- ensuring circuits are isolated
- communicating effectively with relevant stakeholders
- completing work and required documentation
- maintaining a clean worksite and equipment
- referring to relevant documentation to determine the fault
- solving direct current (d.c.) power supply problems
- troubleshooting d.c. power supplies with single phase input, including:
 - using methodical problem-solving methods
 - providing written justification for the solutions to d.c. power supplies problems
 - dealing with unplanned events in accordance with workplace procedures
 - taking measurements correctly and accurately
 - calculating parameters correctly and accurately
 - providing solution to power supply 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:

- power supplies operating principles and applications, including:
 - block diagram identifying each sub-system
 - constant voltage and current

- expected waveforms in a power supply
- power supply function
- d.c. rectification circuits, including:
 - dual rail supply
 - half wave and full wave rectifiers
 - junction diode characteristics
 - transformer turns ratio and losses
- filter circuits, including:
 - capacitive and inductive filters
 - ripple
- zener diode regulator, including:
 - load and line regulation definitions
 - operating parameters and data sheets
 - zener shunt regulator circuit
- three terminal regulator circuits, including:
 - line and load regulation
 - need for regulation
 - regulated power efficiency
 - remote voltage sensing
 - short circuit protection
 - three terminal regulator characteristics and faults
- electronic testing and measuring devices and techniques, including:
 - test/measuring devices and their application, including:
 - multimeters
 - signal generators and oscilloscopes
 - voltage and digital testers
 - connection of test/measuring devices into a circuit, including:
 - circuit arrangement of test/measuring devices
 - safety procedures
 - taking readings
 - storage, maintenance and care of test/measuring devices
- d.c. power supply testing and fault-finding including:
 - rectifier diode faults
 - zener diode faults
 - three terminal regulator faults
 - capacitor faults
- safe working practices and relevant standards, codes and regulations.

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 workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in 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
- 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>